

GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE CLARK PROPERTY, BRENT LAKE, B.C.  
CLARK 1, 2 AND 3 MINERAL CLAIMS  
OSOYOOS MINING DIVISION  
Lat. 49° 30' N; Long. 119° 45' W  
N.T.S. Map-Sheet 82E/SW

for

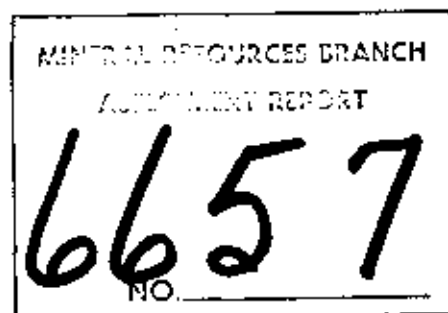
British Newfoundland Exploration Ltd.

by

R.R. Culbert, Ph.D., P.Eng.

D.G. Leighton & Associates Ltd.  
Vancouver, B.C.

28 February, 1978



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TELEPHONE: (604) 781-7867

**D. G. LEIGHTON & ASSOCIATES LTD.**  
GEOLOGICAL CONSULTANTS

3152 WEST 10TH AVENUE  
VANCOUVER, B.C.  
V6K 2K9

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GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE CLARK PROPERTY, BRENT LAKE, B.C.

INTRODUCTION

This report describes the results of exploration work completed over parts of the CLARK property located near Penticton. Work was part of a program involving regional reconnaissance surveys and property exploration covering the Okanagan region of south central British Columbia. Field work on the CLARK property was done at intervals in the Spring and Fall of 1977.

Conclusions set forth in this report are based on geochemical results combined with geological mapping and prospecting data, including ground based radiometric measurements.

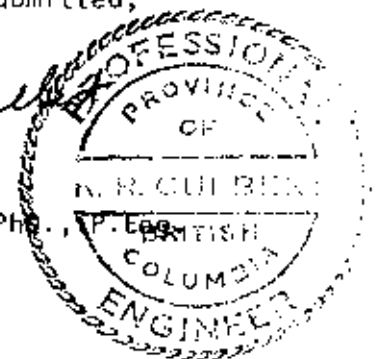
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

1. The CLARK property consists of three unsurveyed mining claims (56 units) held in the name of British Newfoundland Exploration Ltd.
2. The property, located about 25 kilometers west of Penticton, B.C., is readily accessible by road.
3. The CLARK claims are underlain by Tertiary volcanic rocks and Mesozoic granite. The contact is marked by a conglomerate unit referred to as the Springbrook Formation.
4. Work in the area has consisted of reconnaissance geological mapping and geochemical sampling plus prospecting for uranium.
5. The primary exploration targets at this time are the radioactive basal conglomerates and hydrothermally altered zones.
6. Recommended work in the next stage includes:
  - a) Detailed geological mapping of areas of interest
  - b) Additional prospecting using hand-held scintillometers
  - c) Selective soil sampling.

Respectfully submitted,

*R.R. Culbert*

R.R. Culbert, Ph.D., P. Eng.



28 February, 1978

## GENERAL DESCRIPTIONS

### Location and Access

The CLARK property is located in the south central portion of British Columbia about 25 kilometers west of Penticton.

### Background

The first and northernmost of this group was staked to include both some geochemical anomalies (on its west side) and Springbrook conglomerate mapped by the G.S.C. in the valley south of Brent Lake. Following discovery of moderately radioactive (to 250 cps) volcanic sandstones below and between the basal phonolites of the Tertiary extrusives, two more claims were staked in early 1977 to west and south of Farmleigh Lake.

A grid was cut and chained across the central portion of the CLARK property to provide ground control for geological mapping and prospecting. The north-south base line extends between the northern edge of CLARK-1 claim to the southern edge of CLARK-2. Grid lines at 100 meter intervals were extended across areas of interest. In total approximately 20 kilometers of control lines were established. The grid is shown on an accompanying map (see pocket).

### Claims

The CLARK property consists of the following claims held in the name of British Newfoundland Exploration Ltd.:

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>	<u>Record Date</u>	<u>Expiry Date</u>
CLARK-1	20	196	14 Feb., 1977	14 Feb., 1978
CLARK-2	20	262	12 April, 1977	12 April, 1978
CLARK-3	16	263	12 April, 1977	12 April, 1978

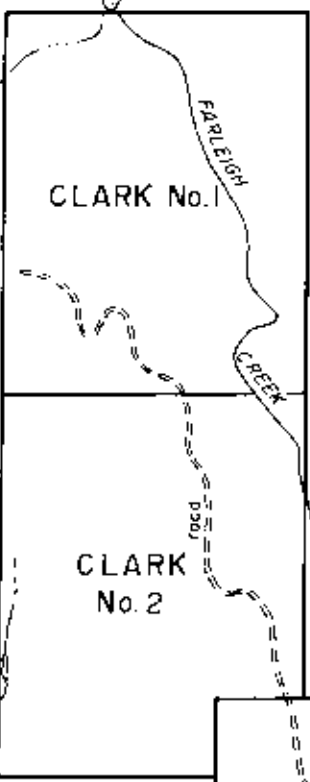
## GEOLOGY

CLARK claims cover the ridge west of Farmleigh Creek and Lake. Most of this terrain is underlain by Tertiary phonolites of the Yellow Lake member which here involve classic anorthoclase rhomb-porphyrity flows. The radioactivity of these flows varies from 200 to 300 cps, but uranium analyses have given only 2-5 ppm. A rather major section of rhyolite flows and tuffs also occurs on CLARK property. Another feature of



CLARKE  
(BRENT)  
PROPERTY

BRENT  
LAKE



CLARK No. 1

CLARK  
No. 2

CLARK  
No. 3

SHINGLE  
CREEK

ALLEN GROVE

SHATFORD

Highway

D G LEIGHTON & ASSOCIATES LTD			
CLARK PROPERTY			
INDEX MAP			
PROJECT S B C U	PROJECT No. 103	SCALE 1:50,000	DATE MARCH-1978

interest is a pink lithology of aplitic texture which underlies much of the Tertiary sequence. The relationships between it and both the overlying rhyolite and regional granodiorite are contradictory where observed so far, and require further examination. In some areas this lithology has classic brittle-fracture textures partly filled with hematite. Much of the rhyolites themselves are breccias (often reddish) in the Farmleigh area and localities of intense alteration are observed. These include breccias with granitic clasts which have been altered to where the clast margins are gradational. The rhyolite flows themselves appear to overlie the tuffs and vary from white to almost black in colour. Ignimbritic textures are locally evident. Considerable thicknesses of water-laid volcanic sandstones are associated with the top of the rhyolite and lower phonolite flows in the southern part of the property. Pyrite, magnetite and talc have been observed in some of these sandstones, whose radioactivity runs as high as 250 cps - largely due to thorium.

One unusual thing about this property has been the observation of distinctly radioactive areas of soil. These include locations over aplite and granodiorite below the Tertiary sequence, and one such soil contained 70 ppm uranium. There also appears to be a fairly narrow zone of radioactive soil along the bottom of the phonolites. Two highly radioactive occurrences have been encountered to date in outcrop during limited prospecting. One of these is a band of the radioactive pink grits which outcrops at the eastern edge of the property above the head of Farmleigh Lake. These are both less radioactive (800 cps) and less uraniferous (18 ppm) than similar grits at the Skaha Creek site. The second occurrence involved a rusty and radioactive matrix to what was either a volcanic or intrusion breccia near the tuff-aplite boundary in CLARK-1 claim. This gave readings as high as 850 cps, but again largely from thorium.

## GEOCHEMISTRY

### General

A number of soil, silt and water samples were collected on the CLARK property and tested for uranium. Sample locations and results are shown on an accompanying map entitled "CLARK Property - General Compilation" (see pocket). Also shown are the main geological features and radioactive areas (r/a) as determined from prospecting with hand-held scintillometers.

The geochemical samples were shipped to Min-En Laboratories Ltd., where they were tested using procedures as described in Appendix "A".

### Results and Interpretation

Soil samples have been taken at 50 meter intervals along a few lineaments on this property, and a variety of soil and silt samples collected during line cutting, prospecting and geological mapping.

The expectations are that uranium deposits in this situation would either be the result of hydrothermal leaching of the Tertiary rocks, or hydrothermal vein deposits in the adjacent granite or aplites. Favoured locations would be porous conglomerates or breccias, alteration zones, open space fracture zones in the aplite, or fracture lineaments. Given the difficulty in leaching uranium from the Tertiary phonolites under surficial conditions and the abrupt post-glacial topography which might expose any mineralization to weathering, this property would appear to be better suited to geochemical prospecting than most.

The results from soil and silt sampling certainly indicate that there is a low background. Except for the aforementioned radioactive soil sample, only three anomalies of even moderate strength were encountered, and two of these are from ponds whose organic sediments are well known collectors of uranium.

### BREAKDOWN OF COSTS (for assessment purposes)

Wages and salaries		
R.R. Culbert (geologist)	10 days @ \$150/day	\$1,500.00
R.J. Bilquist (prospector)	9 days @ \$80/day	720.00
D.T. Kenning (prospector)	9 days @ \$65/day	585.00
L.O. Allen (line cutter)	7 days @ \$55/day	385.00
Benefits (W.C., U.I., etc.)		<u>797.50</u>
		\$3,987.50
Truck rental	9 days @ \$20/day	180.00
Meals and accommodation	@ \$30/man/day	1,050.00
Geochemical/assays		550.00
Misc. (includes drafting and report preparation, scintillometer rental, etc.)		<u>577.00</u>
	Total	<u>\$6,344.50</u>



CERTIFICATION

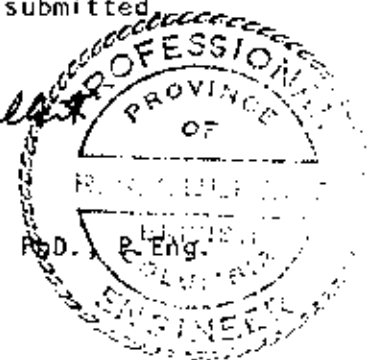
I, R.R. Culbert, do hereby certify that:

1. I am a practicing Professional Geological Engineer with offices at 3152 West 10th Ave., Vancouver, B.C.
2. I am a graduate of the University of British Columbia, B.A.Sc. (1964), Ph.D. (1971).
3. I have practiced mining exploration for fifteen years, most of which were based in British Columbia.
4. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
5. I have personally visited the CLARK property and supervised exploration work carried out there.

Respectfully submitted,

*R.R. Culbert*

R.R. Culbert, Ph.D., P.Eng.



28 February, 1978

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewick

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR  
ASSESSMENT WORKProcedure for Uranium Analysis:

Rock, soil and silt samples are dried at 110°C and then rocks are crushed and pulverized to -80 mesh.

Soils and silts are sieved and the minus 80 mesh fraction is retained for analysis.

1.000 g. sub-sample is weighed and digested for eight hours with  $\text{HNO}_3$  and  $\text{HClO}_4$ .

Then the uranium is separated chemically from other possible interfering ions as Mn, Fe, etc.

After preparation a suitable aliquote is taken and fluxed to form a 1.5 inch diameter discs in platinum dishes.

These salt discs then are compared and measured along with suitable standard with a Jarrell Ash Fluorometer.

The results are calculated accordingly to the sample aliquotes used from standard graphs.

GEOCHEMICAL ANALYSIS BY MIN-EN LABORATORIES  
LTD.

Samples are processed by Min-En Laboratories Ltd. at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by Atomic Absorption Spectrophotometers.

Copper, lead, zinc, silver, cadmium, cobalt, nickel and manganese are analysed using the  $\text{CH}_2\text{H}_2$ -Air flame combination but the molybdenum determination is carried out by  $\text{C}_2\text{H}_2$ - $\text{N}_2\text{O}$  gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Cutzit method using  $\text{Ag CS}_2 \text{ N (C}_2\text{H}_5)_2$  as a reagent. The detection limit obtained is 1. ppm.

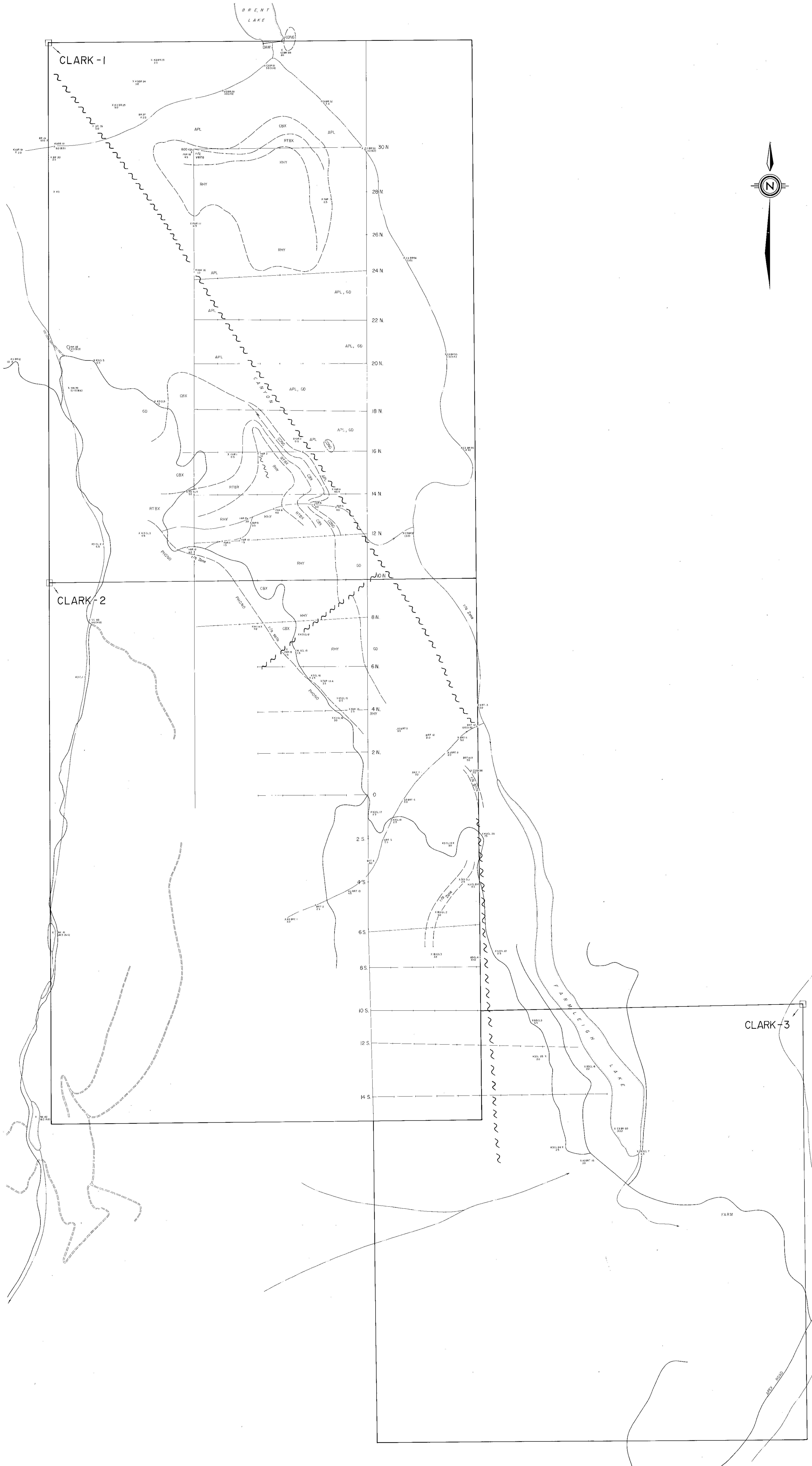
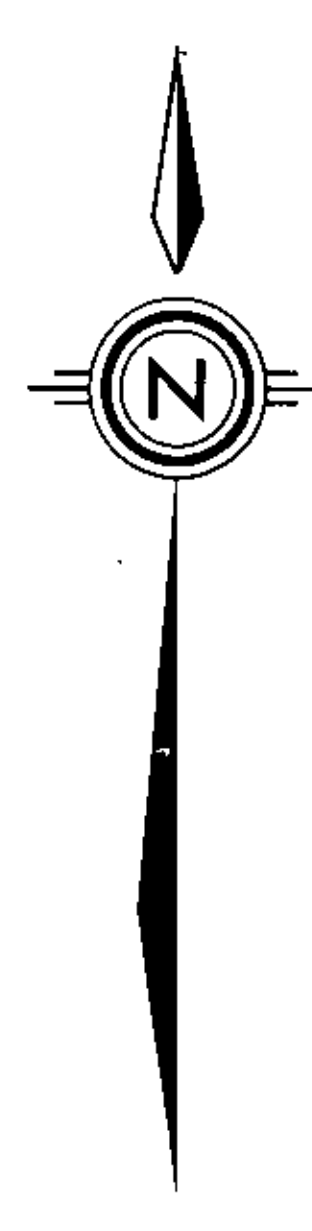
Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soils samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

BRENT  
LAKE

CLARK-1

CLARK-2

CLARK-3

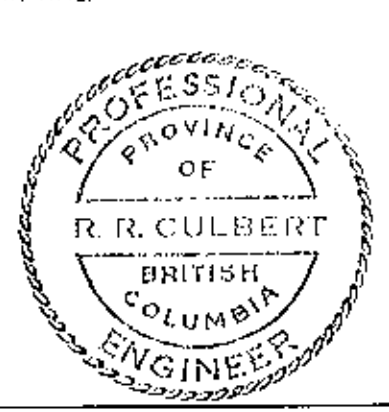


MINERAL RESOURCES BRANCH  
ASSOCIATED REPORT  
**6657**

LEGEND

- YELLOW LK. PHONOLITES (SANDS, PORPH., AUGITE)
- UNVOLCANIC FLOWS - VARIED, SOME IGNEOUS
- RED UNVOLCANIC TUFFS & BRECCIAS - RED & WHITE
- CONGLOMERATE BRECCIAS - MULTICOLOR, TUFF MATRIX
- SPRINGBROOK CONGLOMERATE
- PINK APLITES & GRANODIORITE BASEMENT

- \* 80000 SAMPLE NUMBER
- SEGMENT OF 10% URANIUM IN PPM
- WATER URANIUM IN PPM
- 1/g RADIOACTIVE ZONE
- CLASH LINE
- CONTROL GRID



D. G. LEIGHTON & ASSOCIATES LTD.

CLARK PROPERTY  
GENERAL COMPILATION

PROJECT	PROJECT No.	DATE	DRAWN
S. BC. URANIUM	103	DEC 1977	ALROY

METRES 0 50 100 200 300 400 METRES