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Consulting Geologist

PROSPECTUS  
MARCH 29, 1977

062083

REPORT  
ON THE  
LEACH-FAULT PROPERTY

for  
BRENDIX RESOURCES LTD.

61° 50' N  
131° 24' W  
105-G-14

by  
CLYDE L. SMITH, Ph.D., P.Eng.

Vancouver, British Columbia

February 28, 1977

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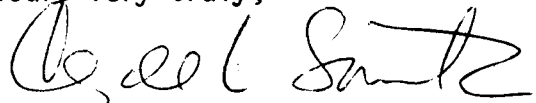
Board of Directors,  
Brendex Resources Ltd.,  
1840 - 777 Hornby Street,  
Vancouver, B.C.

Gentlemen:

I am pleased to submit herewith my report concerning your Leach-Fault group of mineral claims, situated 30 miles east-southeast of Ross River, Yukon Territory. This report was prepared at the request of Mr. Richard Lennie and Mr. Alan Carlos. During the 1966 field season I directed a program of exploration for Kerr Addison Mines Ltd. in the region and became familiar with the geology of the property area at that time. Mineralized float and geochemical silt anomalies were located west of the Leach-Fault claims and were staked by Kerr Addison. At that time I recommended follow-up work.

In my opinion your property warrants a careful preliminary exploration program and I am recommending a \$25,000.00 budget to consist of prospecting, geological mapping, geochemical soil sampling, electromagnetics and gravity. Significant anomalies derived from any of the preliminary work should be pursued intensively for the geologic setting of the property is similar to those of the deposits in the Anvil district.

Yours very truly,



Clyde L. Smith,  
Ph.D., P.Eng.

CLS/bw.

## CONCLUSIONS

Brendex Resources Ltd. holds transfer documents from the original stakers of the 104 Leach-Fault claims and is therefore in a position to formally acquire the claims at its discretion. The property is located approximately 30 air miles east-southeast of Ross River, Yukon Territory. The claims are situated southeast and on-strike with metamorphic rocks which show strong evidence of containing mineralization on the Gem claims currently held by Yukon Resources Ltd. These rocks are of similar type and age to those which serve as the host rocks for deposits in the Anvil district several miles to the northwest.

Original exploration in the region was conducted under my direction by Kerr Addison Mines Ltd. in 1966. Follow-up work by Yukon Resources in 1967 in the area of a previous Kerr Addison property revealed the presence of an important Cu-Pb-Zn geochemical anomaly with associated float and leached sulfide cavities in quartzose graphitic phyllite. Similar leached phyllite outcrops on the Leach-Fault claims and is the basis for claim acquisition.

The Leach-Fault property is worthy of a preliminary exploration program of prospecting, geologic mapping, geochemical soil sampling, electromagnetics and gravity. A \$25,000 budget is recommended.

## LOCATION AND ACCESS

The Leach-Fault property is located about 30 air miles east-southeast of Ross River in central Yukon Territory. The property is centered at 61°50'N, 131°30'W and is included in claim sheet 105 G-14 (Figs. 1, 2, 3). Access is by float-equipped fixed-wing aircraft to a lake in the center of the property, by helicopter or by foot from the Campbell Highway located about 10 miles to the south.

CLAIMS

The claims are currently held by the original stakers but it is my understanding that transfer documents are held for all claims by Brendex Resources Ltd. The following data is from the Office of the Mining Recorder, Watson Lake Mining District, Watson Lake, Y.T.

<u>Claim Name</u>	<u>Staker</u>	<u>Date of Staking</u>	<u>Date of Recording</u>
Leach 1 - 8	Lucy Brisson	November 7, 1976	December 3, 1976
" 9 - 16	Alan Sutton	"	"
" 17 - 24	Bob Lerox	"	"
" 25 - 32	Monique Gironet	"	"
" 33 - 40	Janet Gardner	"	"
" 41 - 48	Louie Tomery	"	"
" 49 - 56	Philip Atkinson	"	"
" 57 - 64	Laurence Tommy	"	"
" 65 - 72	A.H.Dieckmann	"	"
" 73 - 80	Tim Lueck	"	"
" 81 - 88	Carol Murphy	"	"
" 89 - 96	Gordon Peter	"	"
Fault 1 - 4	Heather Harris	November 7, 1976	December 31, 1976
" 5 - 12	Lash Ladue	"	"
" 13 - 18	Bill Harries	"	"

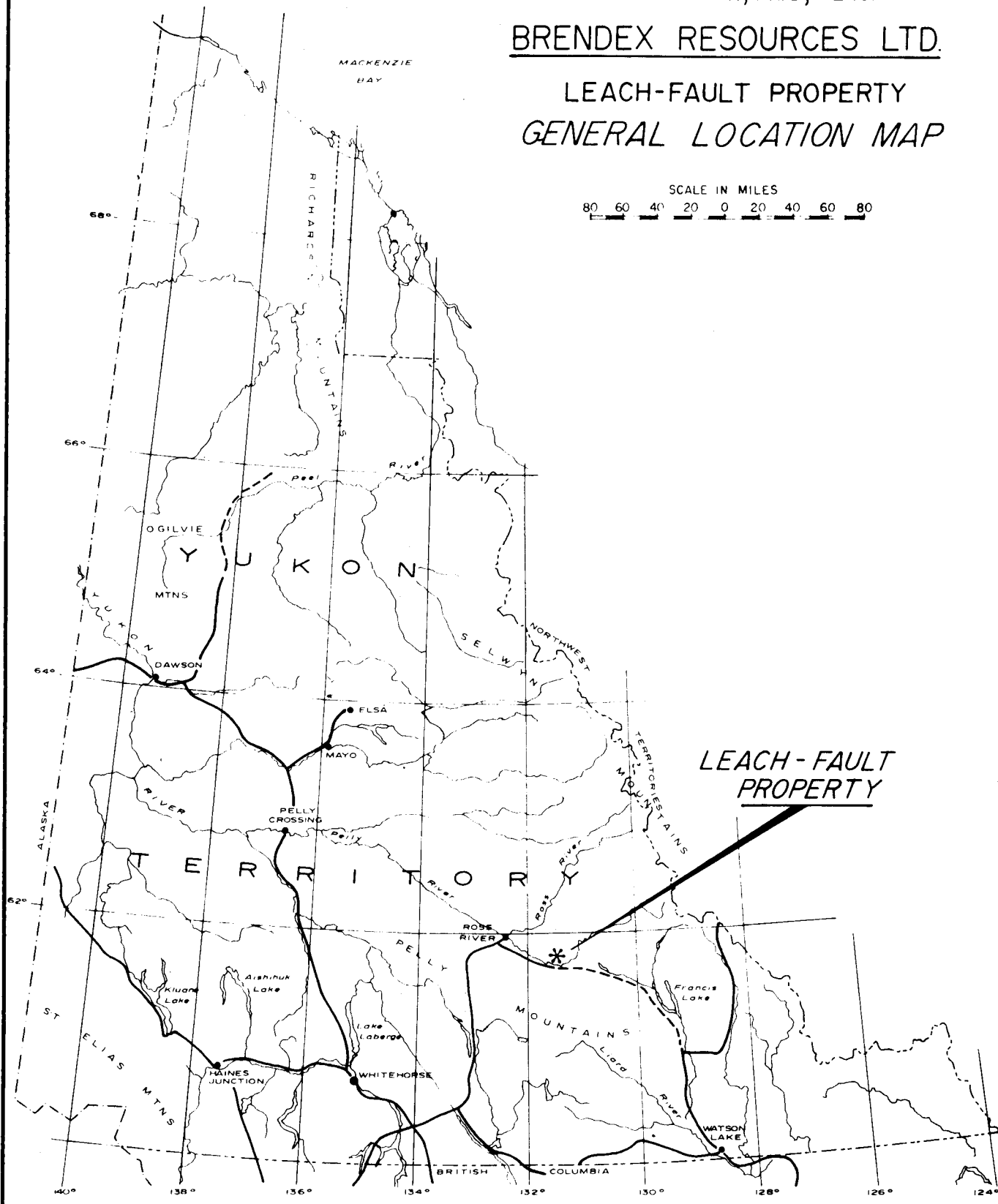
FIG. 1

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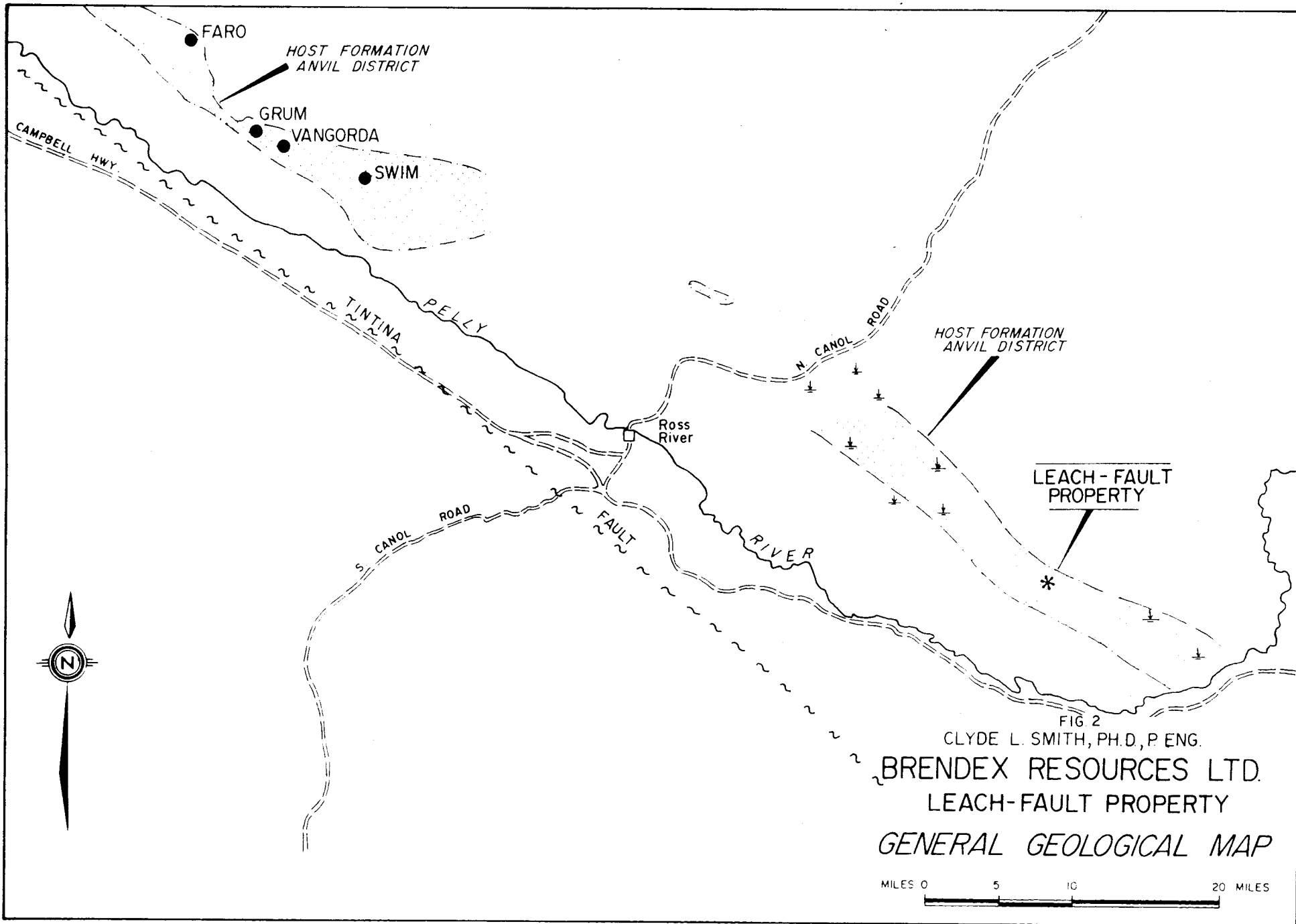
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LEACH-FAULT PROPERTY  
*GENERAL LOCATION MAP*

SCALE IN MILES  
80 60 40 20 0 20 40 60 80



LEACH-FAULT  
PROPERTY



LEACH-FAULT  
PROPERTY

FIG 2  
CLYDE L. SMITH, PH.D., P. ENG.  
BRENDX RESOURCES LTD.  
LEACH-FAULT PROPERTY  
GENERAL GEOLOGICAL MAP

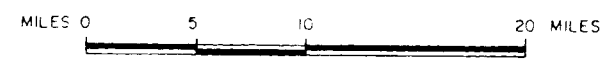


FIG. 3

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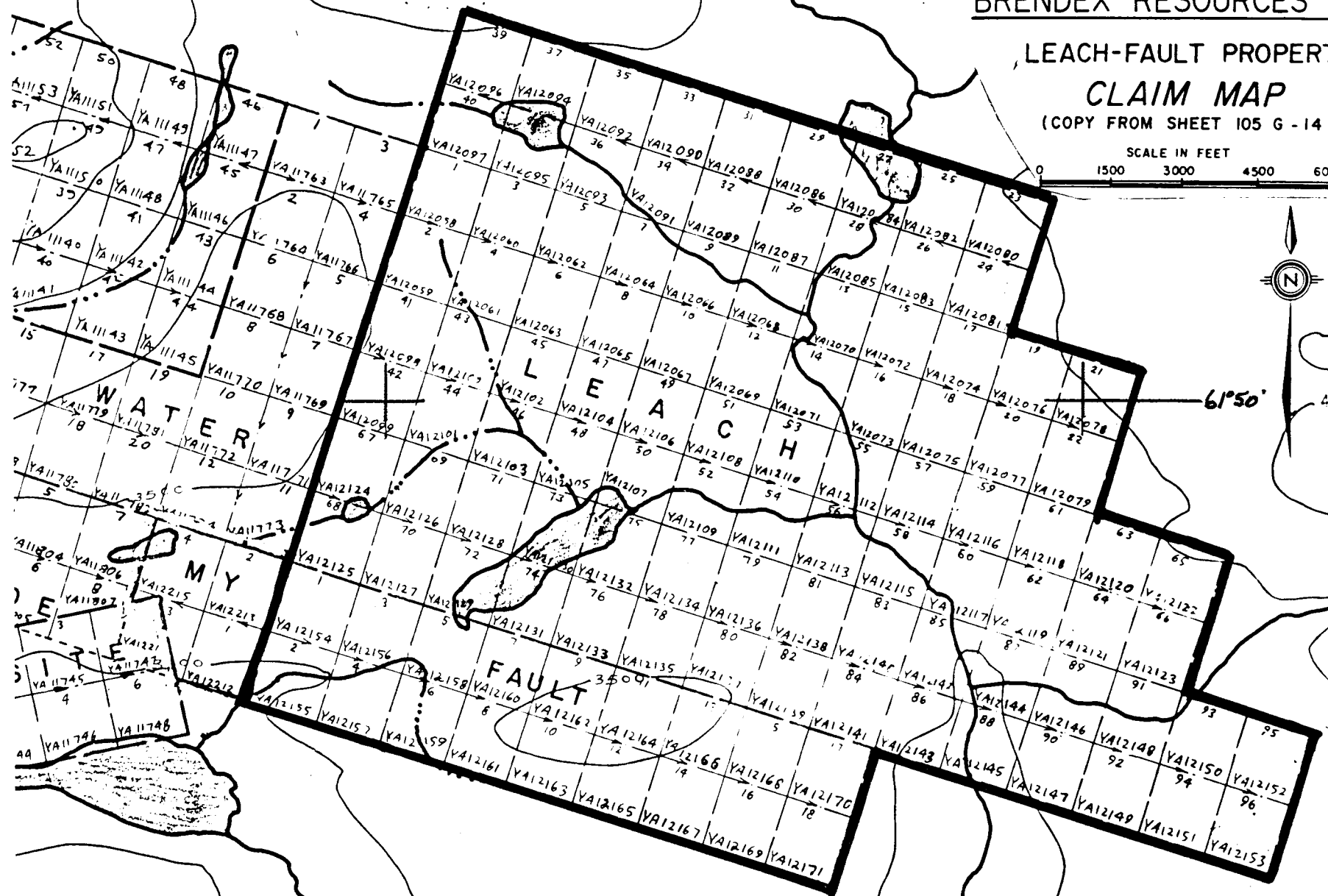
**BRENDEX RESOURCES LTD.**

LEACH-FAULT PROPERTY

**CLAIM MAP**

(COPY FROM SHEET 105 G - 14)

SCALE IN FEET



3000



## HISTORY

The area of the Leach-Fault claims was included in a regional exploration program conducted by Kerr-Addison Mines Ltd. during the summer of 1966. The Kerr-Addison program was under my direction and I devoted a considerable amount of time to geologic mapping in the region of the Leach-Fault property. A geochemical discovery was made immediately west of the property and is now covered by the Gem claims; the discovery was staked as the Kay 1-6 claims. My mapping in the area revealed the presence of phyllites and schists of similar character to those which are the host rocks in the Anvil district several miles to the northwest. In addition, mineralized float containing galena and chalcopyrite was found in the area of the geochemical anomaly. I recommended follow-up work to Kerr-Addison but the company allowed the claims to lapse the following year.

In 1973 Mr. A. Harman, acting for a Ross River group, staked 40 claims to the west of the Leach-Fault claims. These claims lapsed the subsequent year. In 1974, Mr. A. Carlos staked the area <sup>a</sup>gain, but the claims were again allowed to lapse.

In 1976 Carlos acquired the Gem 1-6 claims and optioned them to Yukon Revenue Mines Ltd. which conducted a program of prospecting, preliminary geological mapping, a geochemical soil survey, and staked additional surrounding claims. Leached metamorphic rocks suggestive of primary sulfide mineralization were noted.

Subsequent to the favorable indications on the Gem property, Carlos was responsible for having the Leach-Fault property staked to the southeast to cover extensions of the favorable formations. Carlos has located similar leached metamorphics on the property and my previous mapping indicates the formations exposed on the Gem property do in fact continue on-strike to the southeast and pass through the Leach-Fault claims.

## GEOLOGY OF THE ANVIL DISTRICT

The Leach-Fault property is located in a geologic setting which has potential for mineralization of the type found in the Anvil district. For this reason the following summary of the geology of the Anvil district and its ore bodies is included.

The Anvil district is located along the northeast side of the Tintina Trench and on the southwest flank of the Anvil arch. The Tintina Trench is a prominent topographic lineament which reflects a several mile-wide, branching rift zone trending northwest-southeast through the center of the Yukon. The Tintina rift is at least 600 miles long and has a cumulative right-lateral displacement of more than 250 miles; the rift may be as old as early Paleozoic and has been active as late as Tertiary times. Northeasterly-trending transverse lineaments branch from the rift near all deposits. The Anvil arch is a broad northwest-trending structure of Cretaceous age, cored by the Anvil granitic batholith, of about 40 miles long and 15 miles wide.

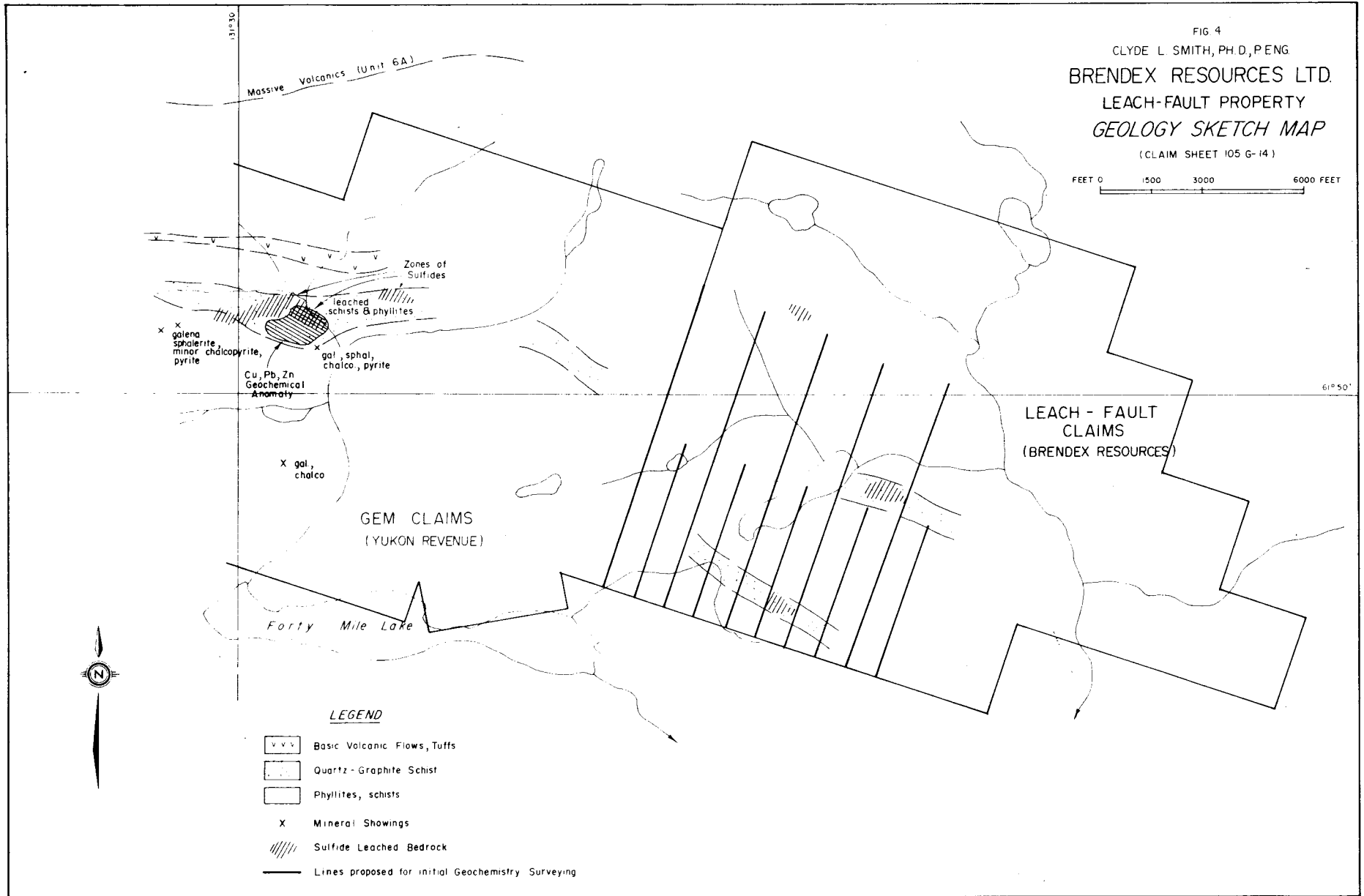
The stratigraphic succession includes Proterozoic grits, Lower Cambrian schists and calc-silicates and Lower Ordovician(?) phyllites, schists and meta-volcanics which lie below a regional unconformity separating them from un-metamorphized sediments ranging in age from Middle Ordovician to Triassic. Post-Lower Ordovician(?) regional metamorphism and folding produced greenschist and almandine amphibolite facies and sub-isoclinal cylindrical slip folds, having axial angles of 30-40 degrees and plunging northwesterly, on all scales. Lower Ordovician(?) strata may be divided into a lower 1000 foot-thick member of highly quartzose phyllite and schist, graphitic phyllite and minor tuffaceous chloritic phyllite which is distinct from an upper 3000 foot-thick member of highly micaceous phyllite and schists, amphibolitized greenstone bodies and andestic tuffaceous meta-volcanics. The lower member is host to the ore deposits.

The Anvil district includes four stratiform Pb-Zn-Ag ore deposit which stretch over a linear belt of about 17 miles long and total over 100 million tons of roughly 8-10% Pb+Zn with 1 oz. Ag/ton. The ore bodies are more or less continuous, conformable, irregular tabular lenses which are elongate to the northwest and range in length from 1500 to 4800 feet, in width from 500 to 1200 feet, and in average thickness from 70 to 120 feet. The deposits are thickest and have higher grades along their axes and thin gradually into lower grades toward their margins. The ore bodies are mineralogically simple, consisting, in order of abundance, of pyrite, sphalerite, galena, pyrrhotite, chalcopyrite and marcasite in a granular quartz matrix; barite is also an important matrix mineral. Ore has a poorly-defined layering of alternate quartz-pyrite rich and sphalerite-galena rich bands. Quartzite gangue constitutes about 50 percent of the deposits, is separated from sulfides by sharp contacts and is seen only within and at the margins of the ore zones. Margins of the deposits are relatively rich in iron sulfides and the ore bodies are surrounded by selvages of sugary quartzite which reach 50 feet in thickness. The "altered" haloes noted above are up to 300 feet thick and consist of bleached, white to buff phyllites which are higher in quartz and pyrite-pyrrhotite than surrounding rocks and are somewhat coarser-grained. Templeman-Kluit (1972) has suggested that this lithology represents a product of hydrothermal alteration or has originated through a metasomatic exchange between ore and wall rock during regional metamorphism. It should be noted that a similar rock type occurs at the margins of ore bodies at Broken Hill, Australia; here, high-grade gneisses have been retrograded to fine-grained well-laminated quartz-sericite-biotite schists apparently through differential shearing between ore and country rock.






Very little geological information is available which bears on the question of the origin of the Anvil deposits. In general, however, the conformable stratiform character of the ore bodies and their similarity in mineralogy, chemistry and isotopes to known stratiform deposits of accepted syngenetic origin implies that they are syngenetic deposits. Their proximity to and parallelism with the Tintina rift suggests that they may have formed through precipitation of ore fluids which reached local linear basins after ascending fault conduits which were part of the rift system.

FIG 4  
 CLYDE L. SMITH, PH.D., P.ENG  
**BRENDEX RESOURCES LTD.**  
**LEACH-FAULT PROPERTY**  
**GEOLOGY SKETCH MAP**  
 (CLAIM SHEET 105 G-14)

FEET 0 1500 3000 6000 FEET



LEGEND

-  Basic Volcanic Flows, Tuffs
-  Quartz-Graphite Schist
-  Phyllites, schists
- X Mineral Showings
-  Sulfide Leached Bedrock
-  Lines proposed for initial Geochemistry Surveying

GEOLOGY OF LEACH-FAULT PROPERTY

Figure 4 is a geologic sketch showing the general distribution of rock units in the property area and to the west. Outcrops are sparse and consist mainly of quartzose and micaceous phyllites and schists of greenschist and almandine amphibolite facies metamorphic grade; these metamorphics are characterized by sub-isoclinal cylindrical slip folds on all scales observed. Narrow belts of interbedded quartzose graphitic phyllite and schist and tuffaceous chloritic meta-volcanics have been distinguished within the stratigraphic succession. Strike of the formations is to the west-northwest and dips are moderate, averaging about 45 degrees northeast.

The Geological Survey of Canada (1960) has classified these rocks as Group "A" and note that they are of uncertain age. However, as noted above, they correspond in lithology and probable age with the lower member of the Lower Ordovician(?) as described from the Anvil district.

The geochemical anomalies developed by Yukon Resources to the west and the zones of sulfide leaching and float occurrences correspond with a belt of quartzose graphitic phyllite, extensions of which outcrop on the Leach-Fault claims. The phyllite contains abundant quartz in thin lenticular laminations which are up to  $\frac{1}{2}$ " thick and may be over one foot long. Leached cavities or boxworks have thin, light brown to yellow colored limonite coating the cavities.

It is possible that the cavities represent leached or oxidized sulfides which were originally present in the quartzose laminations. The associated mineralized float and geochemical anomalies located to the west emphasize that this is a reasonable conclusion.

RECOMMENDATIONS

It is recommended that a preliminary exploration program consisting of prospecting, geologic mapping, geochemical soil sampling, electro-magnetics and gravity be conducted over a portion of the Leach-Fault property.

The proposed program and budget are as follows:

Phase 1

Geochemical soil sampling - 15 line miles (as shown on Figure 4)	
- laboratory analysis: 375 samples @ \$5.00 each	\$ 1,875.00
sampler for 2 weeks	750.00
Prospector - 2 weeks	1,125.00
Geologist - 2 weeks	1,500.00
Fixed wing, helicopter	625.00
Subsistence, travel, accommodation, etc.	<u>1,500.00</u>
	\$ 7,375.00

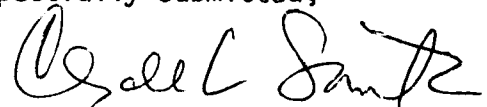
Phase 2

Geochemical soil sampling - 10 line miles (to be selected over Phase 1 anomalies; intermediate lines)	
- laboratory analysis: 250 samples @ \$5.00 each	\$ 1,250.00
sampler for 2 weeks	750.00
Prospector - 2 weeks	1,125.00
Geologist - 2 weeks	1,500.00
EM survey - over 10 line miles selected over geochemical anomalies @ \$500.00/mile	5,000.00
Gravity survey - over 10 line miles selected over geochemical anomalies @ \$500.00/mile	5,000.00
Fixed wing, helicopter	500.00
Subsistence, travel, accommodation, etc.	<u>2,500.00</u>
	\$17,625.00

## TOTAL BUDGET RECOMMENDED:

Phase 1	\$ 7,375.00
Phase 2	<u>17,625.00</u>
	<u>\$25,000.00</u>

Respectfully submitted,



CLYDE L. SMITH, Ph.D., P.Eng.

REFERENCES

Geological Survey of Canada, 1960, Map 8, "Geology, Finlayson Lake, Yukon Territory"

Templeman-Kluit, D., 1972, Geology and Origin of the Faro, Vangorda and Swim concordant zinc-lead deposits, central Yukon Territory; Geological Survey of Canada, Bull 208, 73 p.