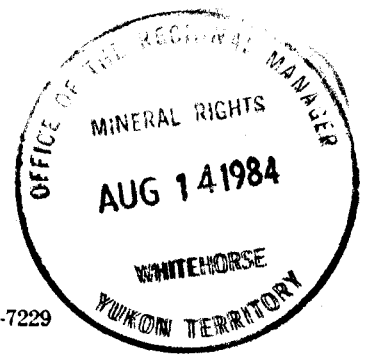


*G. MACDONALD AND ASSOCIATES LIMITED*  
Consulting Professional Geologists

4 Hyland Crescent  
Whitehorse, Y.T.  
Y1A 4P6

(403) 668-2044

(403) 667-7229



**SUMMARY REPORT  
ON  
QUIET LAKE PROPERTY**

**NTS 105C-14; 60°56' N/133°03'W**

**FOR**

**YUKON OIL AND GAS DEVELOPMENT LTD.**

**by**

**G. MACDONALD, P. GEOL.**

**Whitehorse, Yukon**

**February 15, 1984**

**091574**



This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mill Project and is allowed as  
approved for work for amount

of \$ 3,518.00.

for

*D. D. Emmond*

Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

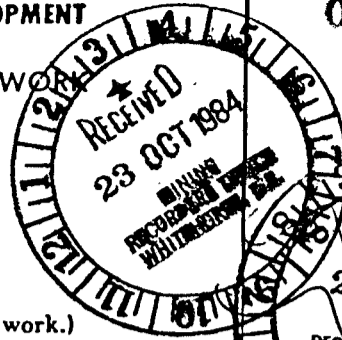


DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT  
YUKON QUARTZ MINING ACT  
FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

091574

(This form required in duplicate with sketch showing location of work.)

*R. J. LINDSAY* *PRESIDENT*  
 (Name) Yukon Oil and Gas Development Limited Occupation Company  
 (Postal Address) P. O. Box 4571, Whitehorse, Yukon. Y1A 2R8



MAKE OATH AND SAY, THAT:

- I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.
- I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

- ML No. 1
- CL No. 1
- LINDSAY No. 21
- LINDSAY No. 22
- LINDSAY No. 12

situated at south of Quiet Lake Claim Sheet No. 105-C-14  
 in the Whitehorse Mining District, to the value of at least \$1,800.00  
 dollars, since the 12th day of August 1983.

to represent the following mineral claims under the authority of Grouping Certificate No. \_\_\_\_\_

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

- |                            |                            |
|----------------------------|----------------------------|
| ML No. 1 - YA19676         | LINDSAY No. 15 - YA23785 - |
| ML No. 2 - YA19677         | LINDSAY No. 16 - YA23786 - |
| CL No. 1 - YA19674         | LINDSAY No. 17 - YA23787 - |
| CL No. 2 - YA19675         | LINDSAY No. 18 - YA23788 - |
| LINDSAY No. 9 - YA23779 -  | LINDSAY No. 19 - YA23789 - |
| LINDSAY No. 10 - YA23780 - | LINDSAY No. 20 - YA23790 - |
| LINDSAY No. 11 - YA23781 - | LINDSAY No. 21 - YA23791 - |
| LINDSAY No. 12 - YA23782 - | LINDSAY No. 22 - YA23792 - |
| LINDSAY No. 13 - YA23783 - |                            |
| LINDSAY No. 14 - YA23784 - |                            |

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

The work on the above claims included cleaning out and re-exposing old trenches and pits for the purpose of geological examination, study, and sampling of re-exposed trenches and Re-examination, assaying, and thin section study of diamond drill core from the ML No. 1, CL No. 1 mineral claims.  
 Re-examination and study of all reports, surveys, and assays related to and from previous work conducted on the above claims.  
 Based on the above work a professional report was prepared from the new information uncovered resulting in a new geological model for the claims, indicating a potential hosting lode gold possibilities.

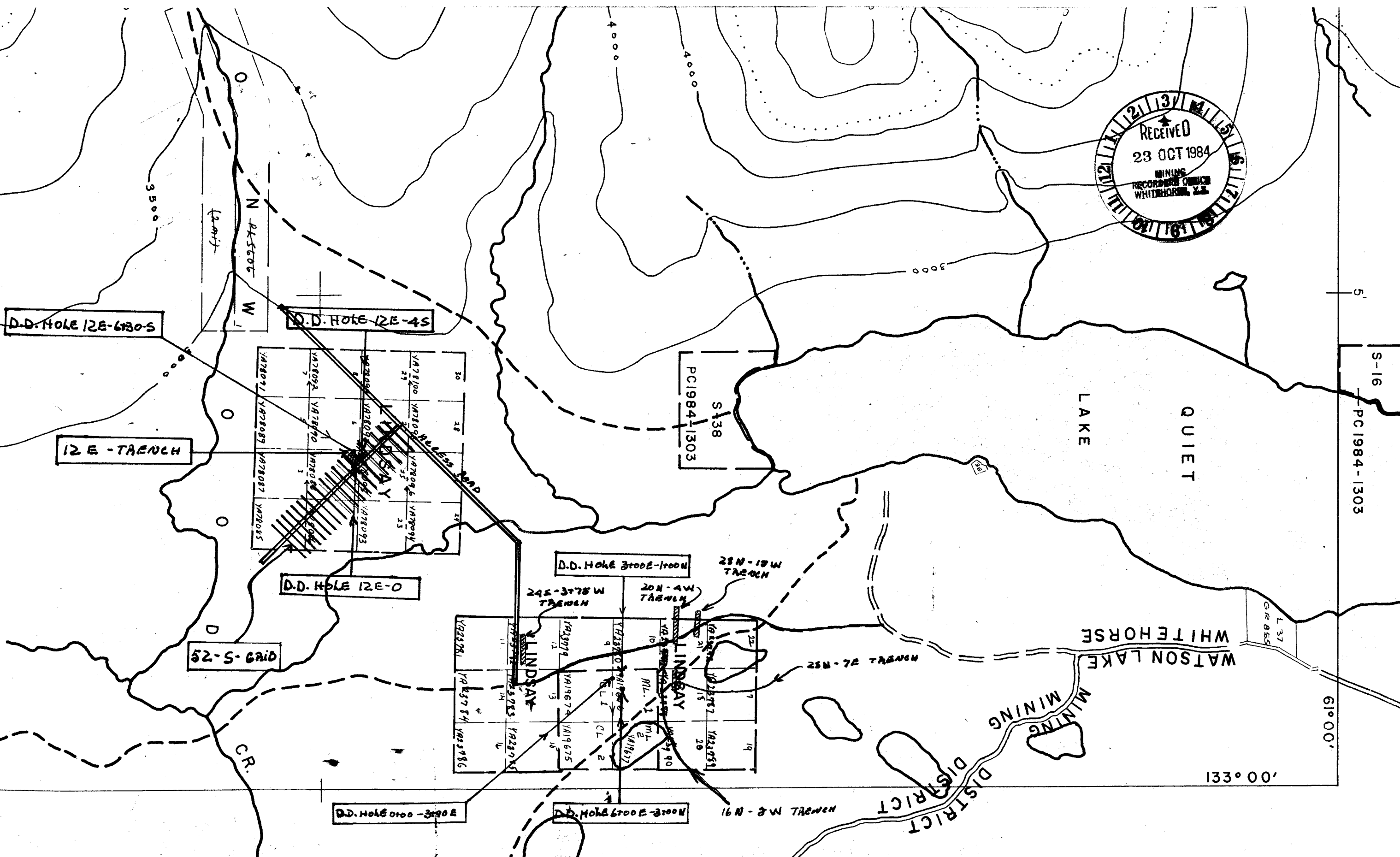
The work was carried out during the months of August, 1983, through to February, 1984.

Sworn before me at Whitehorse, Y.T.  
 this 23 October 1984

*[Signature]*  
 Notary Public in and for Yukon Territory

*[Signature]*  
 Applicant

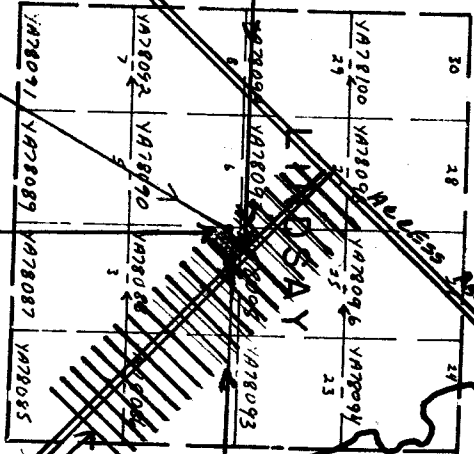




D.D. HOLE 12E-6130-S

D.D. HOLE 12E-45

12E-TRENCH



D.D. HOLE 12E-0

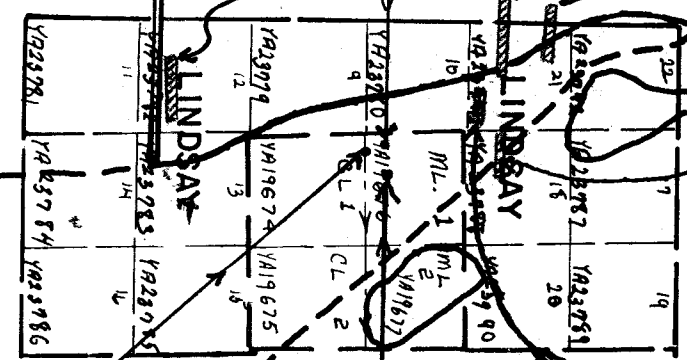
52-S-GRID

D.D. HOLE 3+00E-1+00W

24S-3+7S W TRENCH

20N-4W TRENCH

28N-17W TRENCH



25M-7E TRENCH

CR.

D.D. HOLE 0+00-3+00E

D.D. HOLE 6+00E-3+00W

16N-8W TRENCH

WATSON LAKE

MINING

DISTRICT

LAKE QUIET

S-16 PC 1984-1303

61°00'

133°00'

L 37 GR 855



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Certificate of Qualifications
List of References
Thin Section Analyses

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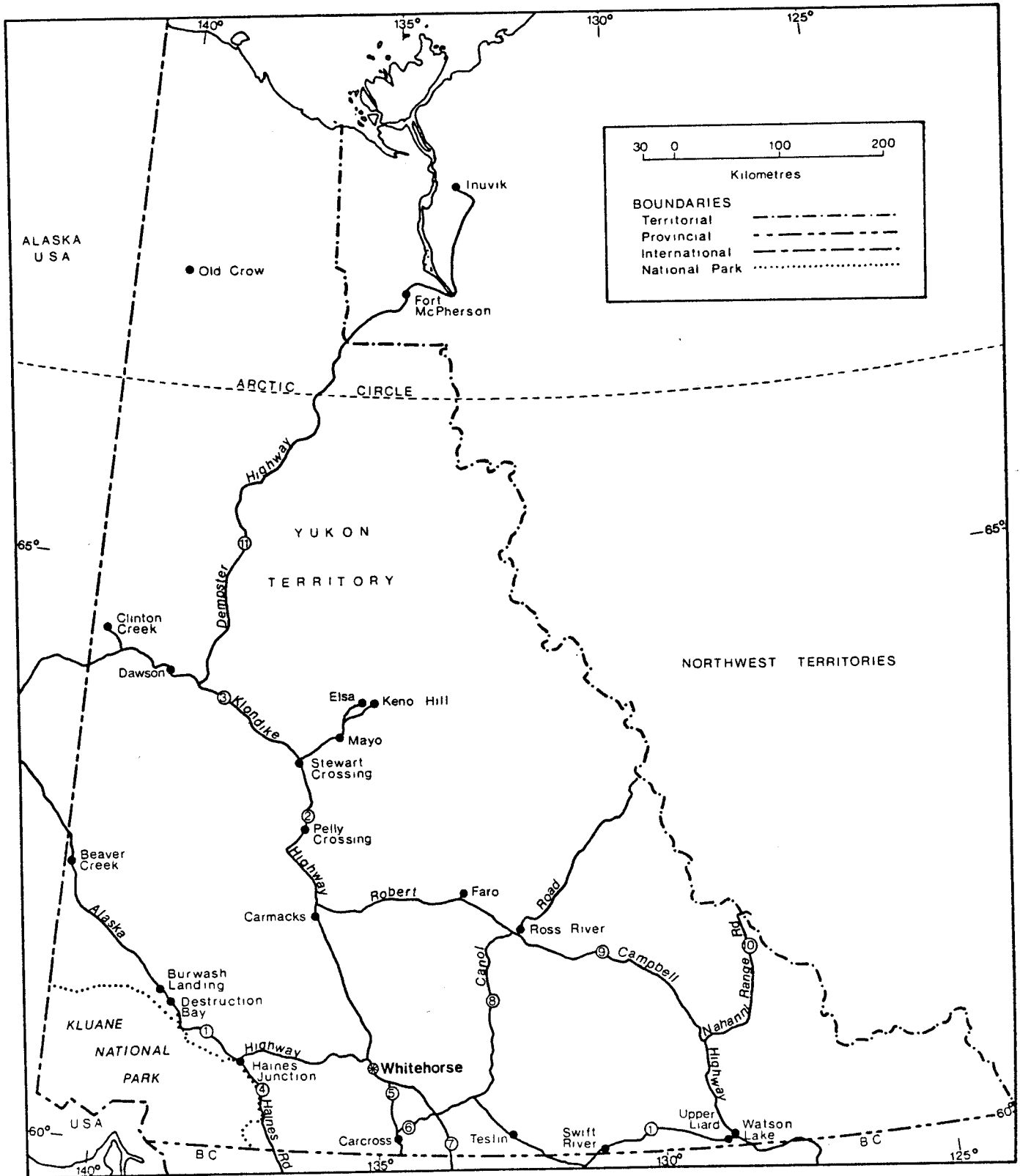
## INTRODUCTION

This report was prepared at the request of J. Lindsay on behalf of Yukon Oil and Gas Development, Limited and Mr. Lindsay. The report compiles a review of public and private information made available by Mr. Lindsay. As a part of this evaluation, the property was examined by the author, accompanied by Mr. Lindsay in August, 1983. The author is familiar with the area, having directed exploration programs in the vicinity from 1973 to 1980.

---

# MAP 1

## The Yukon Territory



### SUMMARY

The Lindsay-Yukon Oil and Gas claims cover geology permissive to host economic concentrations of gold. A series of springs is present along a major steeply-dipping fault structure. A highly altered (carbonatized) and sheared ultramafic body is present sandwiched along a major thrust-fault which has brought older Big Salmon Complex lithologies over Ordovician-Devonian (?) Englishman's Group sediments. The Englishman's Group is highly deformed internally and locally thermally altered near the spring-bearing linear structure. Cretaceous granitic rocks have intruded all other units to the west and north of the property. Marcasite and pyrite, with subordinate amounts of enargite, sphalerite and chalcopryrite have been deposited in open spaces in the more competent lithologies present where these units were prepared (brecciated or fractured) for movement and deposition of mineralizing solutions. The competent units include the amphibolitic rocks in the western part (Block 2 area) and the quartzitic rocks in the eastern part (Block 1 area) of the property. Induced Polarization and EM surveys of a reconnaissance nature to date have indicated moderate to strong conductive zones in areas favourable to develop significant mineral occurrences.

Drilling and trenching have not adequately explained the geophysical responses obtained. The presence of gold values (assay grab sample of 0.25 ounces per ton) detected in 1983 work suggests that the claims cover geology permissive to develop significant gold occurrences.

A three-phased program is therefore proposed to evaluate the gold potential of the Lindsay-Yukon Oil and Gas property.

**PROPERTY**

The Quiet Lake property controlled by Mr. Lindsay and Yukon Oil and Gas is comprised of 34 claims in 2 blocks. (See Figure 2 - Claim Location Plan)

Table 1 - Claim Status

Name	Grant Number	Expiry Date
<u>a) Block 1</u>		
ML 1,2	YA 19676 - 677	12 August, 1984
CL 1,2	YA 19674 - 675	12 August, 1984
Lindsay 9-22		23 October, 1984
<u>b) Block 2</u>		
Lindsay 1-8	YA 78085 - 092	1 August, 1984
Lindsay 23-30	YA 78093 - YA 78100	1 August, 1984

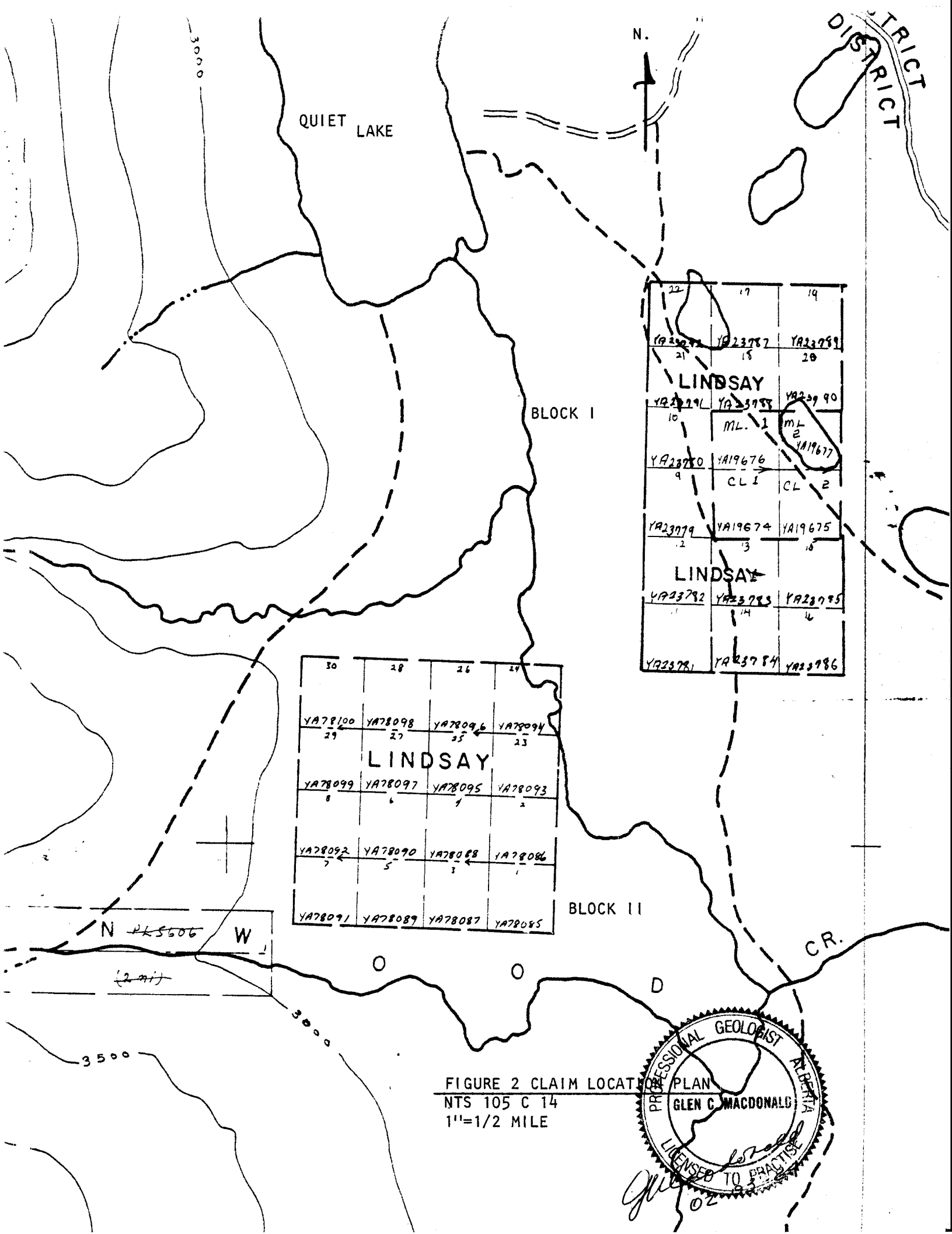
Yukon mineral claims, such as these, are held pursuant to the regulations of the Yukon Quartz Mining Act and require annual work expenditures of \$100.00 per claim to be maintained in good standing. Payment may be made in lieu of actual work requirements. The Lindsay-Yukon Oil and Gas claims are administered by the Whitehorse District Mining Recorders office in Whitehorse, Yukon.

**Location and Access**

The Lindsay-Yukon Oil and Gas Development property is located approximately 32 miles north-northeast of Johnsons Crossing, Yukon. The claims are located in the northeast corner of N.T.S. claim map 105 C-14. Geographical coordinates of the property are 60° 56' north and 133° 03' west.

The claims are accessible by a 3.7 mile tote road leaving the government- maintained south Canol Road at mile 45.4. The South Canol Road connects to the Alaska Highway at Johnsons Crossing 70 miles south of Whitehorse, Yukon.

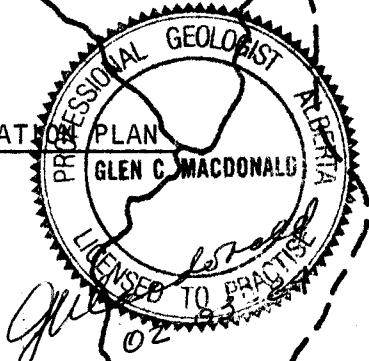
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22	17	19
YA23787	YA23787	YA23789
21	18	20
LINDSAY		
YA23791	YA23788	YA23790
10	ML. 2	ML. 2
YA23780	YA19676	YA19677
9	CL 1	CL 2
YA23779	YA19674	YA19675
2	3	18
LINDSAY		
YA23782	YA23783	YA23785
1	14	16
YA23781	YA23784	YA23786

30	28	26	24
YA78100	YA78098	YA78096	YA78094
29	27	25	23
LINDSAY			
YA78099	YA78097	YA78095	YA78093
8	6	4	2
YA78092	YA78090	YA78088	YA78086
7	5	3	1
YA78091	YA78089	YA78087	YA78085

FIGURE 2 CLAIM LOCATION PLAN  
 NTS 105 C 14  
 1"=1/2 MILE



### **Physiography and Climate**

The topography of the area in which the Lindsay-Yukon Oil and Gas claims occur is generally low rolling hills, with elevations between 2,600 and 2,800 feet above sea-level. Glacial till covers the area as a thin veneer and outcrop is less than 1%. Muskeg swamps blanket low-lying areas and the region is poorly drained. Forest cover consists of white pine along ridges and black spruce and poplar near swamps.

The climate of the Quiet Lake area is typical of the interior continental region at this latitude. Winters are characteristically long with short hours of daylight and minimum temperatures to below  $-50^{\circ}\text{C}$ . Summers are warm and pleasant, although sometimes quite rainy. Break-up usually occurs early in May and freeze-up takes place late in October.

### **History and Previous Work**

The Quiet Lake area has been explored intermitantly since prospectors first ascended the Big Salmon River to Quiet Lake in 1897-98 searching for placer gold deposits. This work and similar placer exploration on the Nisutlin River system was encouraged by development of successful gold placer mining operations in the Livingston camp some 35-40 miles northwest after 1898. In the mid-1930's placer gold mining activity was concentrated on Iron Creek and Cottonwood Creek (12 and 4 miles south of the south end of Quiet Lake respectively).

These early explorers, and the Geological Survey of Canada geologists who visited them, recognized the prospecting potential of the general Big Salmon River area. As a result, sporadic exploration surges occurred from time to time in the areas readily accessible by water transport. Construction of the Canol Pipeline Road during World War

Two led to greatly improved road access to much of the area through the upper Nisutlin River and Rose River areas and some significant mineral discoveries followed.

The general area south of Quiet Lake was prospected following completion of the highway construction and numerous gossans were located. The gossan zones were staked by Mr. Lindsay in 1966 and optioned to Newmont Mining Corporation who conducted a magnetometer geophysical survey, soil geochemical survey and limited geological reconnaissance mapping. In 1967 Atlas Explorations Limited briefly investigated a part of the property with an EM survey. The claims were then transferred to Trans Yukon Exploration Ltd. which explored the area with airborne magnetometer, EM, and radiometric surveys and preliminary geological mapping and soil sampling in 1968. Reconnaissance style Induced Polarization surveys and ground magnetometer surveys were conducted for Trans Yukon during 1969 by Eagle Geophysics Ltd. Several bulldozer trenches were cut from 1966 to 1970, but depth of overburden limited the amount of useful information that could be obtained in the areas of most interest. Additional EM surveys were conducted for Trans Yukon during 1972 by S. Presunka.

During the fall of 1972, two AX-sized diamond drill holes totalling 516 feet were drilled to test EM-17 (Presunka) and I.P. anomalies located in 1969 and 1970 geophysical surveys. The second hole was extended during 1973 to a final depth of 253 feet from 180 feet. These holes intersected scattered sulphide mineralization (pyrite, marcasite and pyrrhotite) in fractures and as disseminations in the host rock. A third hole was drilled in 1973 to further test the I.P. anomaly and again intersected up to 10% sulphides locally (but usually less than 2%). This hole may not have been drilled deep enough to test the down-dip projection of the I.P. responsive lithology. Drilling in this area to date has not adequately explained the cause of the I.P. and E.M. anomalies.



During the period July-October 1978, three diamond drill holes, totalling 1,109 feet, were completed near the gossans explored by Newmont. These holes were designed to test EM and magnetic anomalies outlined by geophysical surveys. The area was also moderately anomalous in some zinc, lead, nickel and copper soil geochemical samples. Again in this area, as in the earlier drilling done on the west zone area (Block 2) the cause of the anomalies was inadequately explained.

Block 2 was allowed to lapse in 1981 and Mr. Lindsay demonstrated his confidence in the area by restaking it in 1983 and continuing to prospect the claims.

Further work during 1982-1983 by Mr. Lindsay has included limited prospecting and examination of the area of the previous drill programs.

---

## GEOLOGY

### General Geology

The Lindsay-Yukon Oil and Gas claims are underlain by an assemblage of highly metamorphosed, and non-metamorphosed to weakly metamorphosed sedimentary and volcanic rocks. Schist and amphibolite are present on the western part of the claims area (Block 2) and quartzite, schist and shale occur on the eastern part (Block 1). These units are separated by an ultra-basic intrusive. Granite rocks intrude the metamorphic lithologies immediately west and north of the claims areas, and apophyses from these batholiths may intrude the rocks underlying the property (see Figure 3 - Geological Plan).

### Geological Summary

The highly regionally metamorphosed quartzite and amphibolite lithologies on the western portion of the claims (Block 2) are the oldest rocks present in this area, and represent the Mississippian "Big Salmon Complex" (GSC unit 1-d). A thin section analysis of a hand specimen from a bulldozer trench cut across the IP anomaly (Line 12 + 50 E - 1 + 00S) and another of drill core from the bottom of DDH-3 feet) indicate that the rocks which host the IP and EM anomalies are amphibolites or meta-diorites. The rock is composed primarily of plagioclase and hornblende with lesser amounts of epidote and quartz. Epidote is an alteration phase of the plagioclase. Accessory minerals include chlorite, sericite, sphene, apatite and ilmenite. Sulphide minerals present include marcasite, pyrite and, rarely, chalcopyrite, sphalerite and enargite.

Rocks underlying the eastern (Block 1) portion of the property are highly contorted and sheared, recessive weathering, graphitic shaly quartzites, limy shaly quartzites and muscovite - sericite - graphite

- quartz schist. These lithologies are typical of the Ordovician-Devonian rocks on the adjoining (along strike) Quiet Lake Map Sheet (unit OSDqc) and represent the "Englishman's Group" on the Teslin Map Sheet (Units 2, 3). Two thin sections made of drill core in this area indicate that the rock is composed primarily of quartz sericite, graphite, calcite and hematite. Sulphides present include maracasite (to 5%) with lesser amounts of sphalerite, chalcopryrite, enargite and pyrite.

The ultrabasic unit present in the central portion of the property area is composed of dark grey weathering gabbro, peridotite and greenstone. This lithology is typical of the Permian Anvil allochthonous package. On the Lindsay-Yukon Oil and Gas property this rock is intensely deformed internally and often highly altered. The unit is typically sheared and carbonatized.

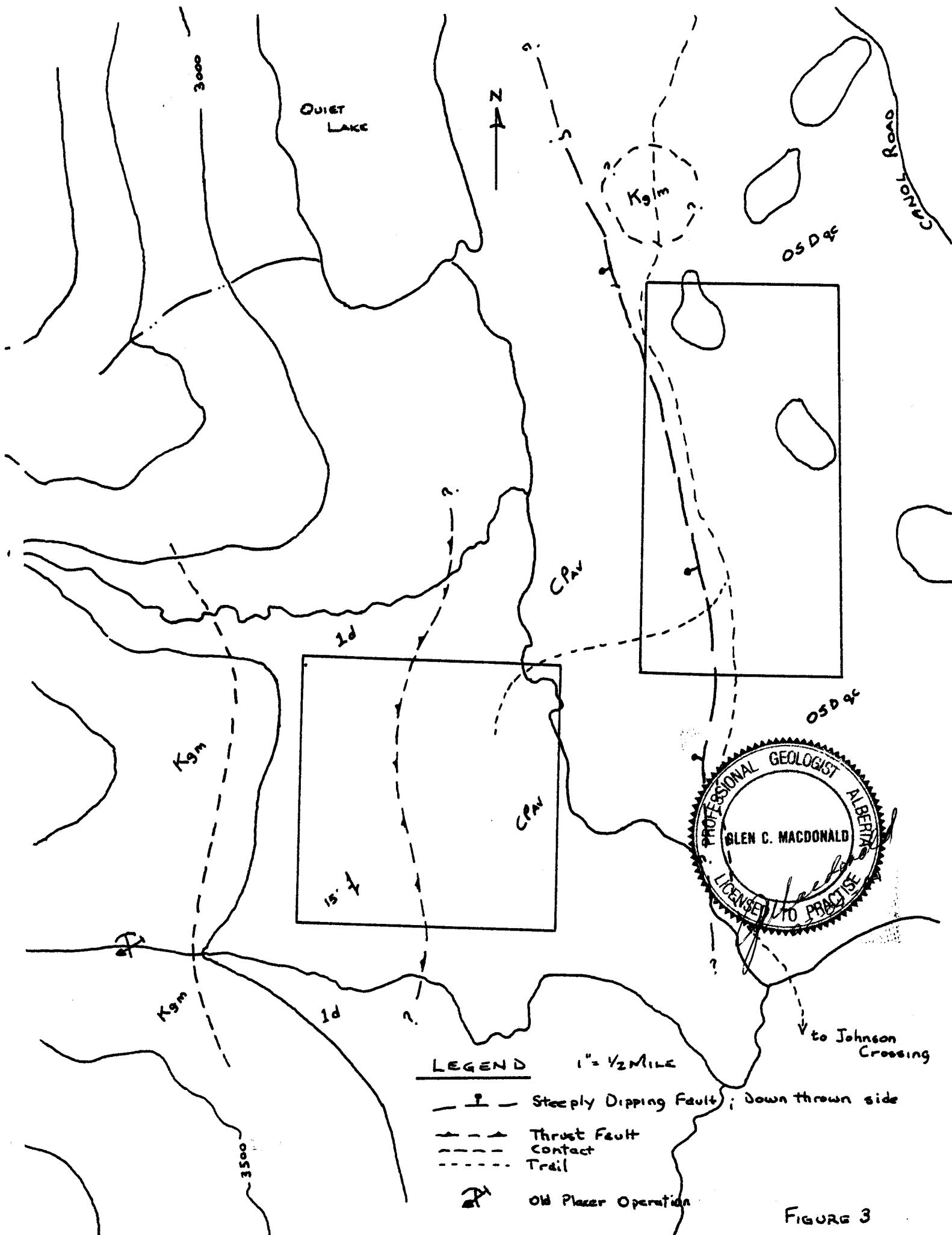
Cretaceous granitic batholiths intrude the stratified rock units immediately west of the Block 2 claims. These intrusive rocks are typically fresh, medium grained granites and quartz nonzonites. See Table III - a Table of Formations - for a summary of the local geology and Figure III - Geological Plan - for a geological presentation.

---

TABLE IITable of Formations

Quaternary	Q	Glacio-fluvial deposits
Cretaceous	Kgm	Medium grained, fresh, pinkish quartz manzonite and granodiorite.
Permian (?)	CPAV	Anvil allochthonous ultramafic assemblage; highly altered and sheared, gray weathering peridotite, amphibolite, and gabbro.
Ordovician-Devonian	OSDqc	Recessive weathering graphitic or limy shaly quartzites; muscovite - sericite - graphite - quartz schist.
Mississippian (or earlier)	1d	Resistant weathering greenish chlorite rocks; chiefly biotite - quartz schist and amphibolite or gneiss.

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**LEGEND**

1" = 1/2 MILE

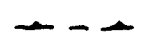
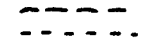


-  Steeply Dipping Fault; Down thrown side
-  Thrust Fault
-  Contact
-  Trail
-  Old Placer Operation

FIGURE 3

Structurally, the geology of the Lindsay-Yukon Oil and Gas property is complicated by major faulting. Rocks of the Big Salmon Complex are probably in a tectonic relationship (i.e. - thrust fault) with the Englishman's Group series further east. The Anvil allochthonous rocks have probably been forcefully intruded along the thrust fault plane. Air photo lineaments suggest the presence of a steeply dipping normal fault crossing the eastern part of the property (Block 1 area). Further north on the Quiet Lake Map Sheet, this fault structure has been interpreted to have the west side down thrown. Any sense of lateral movement is presently impossible to determine. A series of springs, giving rise to the gossans prospected earlier by Mr. Lindsay, Newmont Mining, and others, show an alignment along the projected fault structure and may be derived from deep seated magmatic waters.

---

### Economic Geology

The Lindsay-Yukon Oil and Gas property contains occurrences of gold, chalcopyrite, galena, sphalerite and enargite mineralization in sub-economic concentrations. Table III provided a summary of assays and geochemical results obtained during 1983.

Table III

Table of Assays

Location	Sample	Au(PPB)	Au(OPT)	Ag(PPM)	Hg(PB)	As(PPM)
Hole #3 - 185-185'	4158	44	Tr	1.3		NA
Hole #3 - 251-253'	4159	160	Tr	4.9		NA
Hole #3 - 245-247'	4160	135	Tr	2.0		NA
Hole #1 - 135-148'	4161	1100	0.03	9.3		NA
Hole #2 - 206-208'	4162	145	Tr	3.4		NA
Hole #1 - 140-140.1'	4163	3000	0.25	26.0		NA
	79377		-	NA	100	4
	79378		-	NA	1000	4

\* NA - Not Assayed

Sample Number 4163 was a grab sample of diamond drill core from DDH - #1 (140-140.1 feet). This rock is a sheared amphibolite with approximately 5% marcasite and pyrrhotite in fractures with quartz, ankerite (?), calcite and gypsum (?). Sample number 79378 is a grab sample from a trench along section 16 + 00 N near 5 + 00E N (Newmont grid). The rock is a brecciated graphitic quartzite with trace amounts of pyrite. Some fragments of totally altered material (Kaolinite) are present. The high concentration of mercury (1000 ppb) is significant because of the zones proximity to the system of springs. Newmont also reported anomalous lead values in this region.

## CONCLUSIONS

It is apparent that the Lindsay-Yukon Oil and Gas property warrants additional exploration to evaluate its gold potential.

Geological exploration parameters indicate that the claims cover an environment permissive to host gold mineralization:

- 1) Suitable host rocks are present and prepared to accept mineralizing solutions (brecciated and fractured amphibolite and quartzite lithologies);
- 2) A potential highly altered, carbonatised source rock for gold (the ultrabasic unit) is present proximal to the host rock.
- 3) Major structural systems are present along which hot magmatic waters might ascend to the host environment;
- 4) Granitic batholiths are present in the immediate area to provide a deep seated source of magmatic waters;
- 5) Placer gold with no apparent lode source is present in some of the local streams; and
- 6) Anomalous amounts of gold (grab sample drill core assays to 0.25 ounces per ton) and the pathfinder element mercury (to 1000 ppb) have been found in samples from the property in 1983.

Exploration work from 1966 - 1978 has been of a general reconnaissance nature and has indicated geophysically significant IP, magnetic and EM anomalies which drilling has not adequately explained to date. This earlier work has provided a framework to design an effective exploration program for the future.



## RECOMMENDATIONS

Further exploration work is warranted on the Lindsay-Yukon Oil and Gas claims to assess the gold potential of the property.

A three-phase program is suggested to conduct this evaluation as follows:

### PHASE I

---

#### a) BLOCK I

##### Grid

- (re-cutting some Newmont lines) Appx. 8 miles @ \$500/mile  
\$ 4,000

##### Geophysical Surveys

a) Detail Magnetometer Survey	8 Miles @ \$400.00	3,200
b) EM (Pulse-EM technique)	8 Miles @ \$800.00	6,400

##### Bulldozer Trenching

- (D-7 or equivalent) 50 hrs @ \$90.00 4,500

Geochemical Sampling (Rock and Soil) 2,500

Geological Mapping and Control 2,000

Re-log and Sample Old Core 1,000

Total Phase I \$ 23,600

Plus Contingencies 1,400

Total \$ 25,000

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## RECOMMENDATIONS Cont'd

---

**b) BLOCK II**

## Grid

- (NW orientation Base Line) 15 miles @ \$500/mile \$ 7,500

## Geophysical Surveys

a) Magnetometer 7.5 Miles @ \$400.00 3,000

b) EM 5 Miles @ \$800.00 4,000

Geochemical Sampling (Rock and Soil) 2,500

Geological Mapping and Control 2,500

Re-log and Sample Old Core 1,000

Total Phase I 19,500

Plus Contingencies 1,000

Total 20,500

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## RECOMMENDATIONS Cont'd

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 PHASE II

## a) BLOCK I

Diamond Drilling 1,000 feet @ \$40.00	\$ 40,000
---------------------------------------	-----------

## b) Block II

Diamond Drilling 500 feet @ \$40.00	20,000
-------------------------------------	--------

---

## PHASE III

## a) BLOCK I

Additional Geophysical Survey Work and Grid	25,000
Diamond Drilling 2,500 feet @ \$35.00/foot	87,500

## b) Block II

Additional Geophysical Survey Work and Grid	25,000
Diamond Drilling 2,500 feet @ \$35.00/foot	87,500

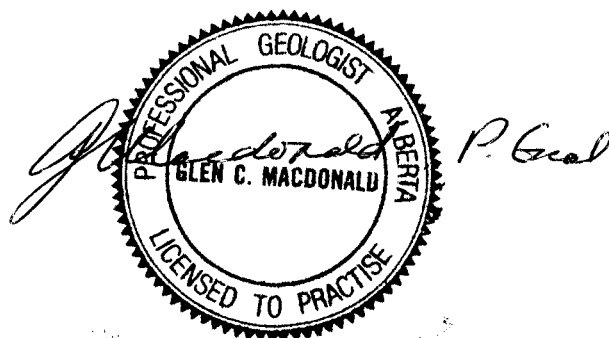
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The proposed program would define diamond drill targets in the two general areas of previous interest with Phase I exploration work. Several drill holes to a suggested maximum of 400 feet in length, utilizing "N" core, should be able to identify the source of geophysical anomalies. The total cost of Phase I plus Phase II is

## RECOMMENDATIONS Cont'd

\$65,000 for Block 1 and \$45,000 for Block 2. Following completion of this program additional exploration, if warranted, could be competently designed and should consist of expansion of the grid system, additional geophysical survey work and more diamond drilling.

---



**APPENDIX**



G. MACDONALD AND ASSOCIATES LIMITED  
Consulting Professional Geologists

4 Hyland Crescent  
Whitehorse, Y.T.  
Y1A 4P6

(403) 668-2044

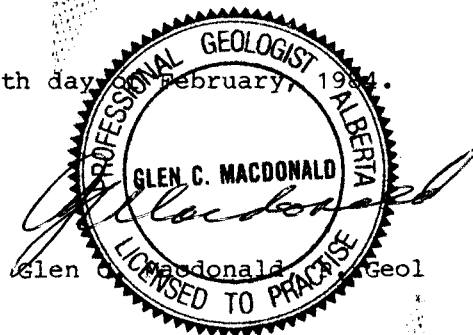
(403) 667-7229

CERTIFICATE OF QUALIFICATIONS

I, Glen C. Macdonald, with business and residential address in Whitehorse, Yukon, do hereby certify that:

- 1.- I am a consulting professional geologist.
- 2.- I am a graduate of the University of British Columbia (B.Sc. Geology, 1973 and B.A. Economics 1971).
- 3.- I am registered as a Professional Geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (No. 36214).
- 4.- I am a member in good standing of the Canadian Institute of Mining and Metallurgy.
- 5.- I have practiced Mining and Exploration geology in Yukon, northern British Columbia and Northwest Territories since 1973. I began private practice in 1982 after leaving the position of Regional Geologist for Noranda Exploration Company, Limited, Whitehorse, Yukon.
- 6.- I have examined the showings and area of the property of Yukon Oil & Gas Development Ltd. and have reviewed all available private and public information on the property to compile this report.
- 7.- I have not received, nor do I expect to receive, any interest in properties or securities of Yukon Oil & Gas Development Ltd.
- 8.- I hereby grant my permission for Yukon Oil & Gas Development Ltd. to use this report for filing with the Vancouver Stock Exchange as partial requirement of a Statement of Material Facts or for any legal purposes normal to the business of Yukon Oil & Gas Development Ltd.

DATED at Whitehorse, Yukon this 29th day of February, 1984.





# Vancouver Petrographics Ltd.

JAMES VINNELL, Manager  
JOHN G. PAYNE, Ph. D., Geologist

P.O. BOX 39  
8887 NASH STREET  
FORT LANGLEY, B.C.  
VOX 1J0

PHONE (604) 888-1323

Invoice 4103

Report for: George Camsell,  
209 - 10160 Ryan Road,  
Richmond, B.C.

September 15, 1983.

Sample #GC-1 Amphibolite (metadiorite)

This is a medium grained, equigranular dark green rock with a hypidiomorphic-granular texture. It is composed mainly of hornblende and plagioclase. It has been slightly metamorphosed with the formation of a vague foliation due to subparallel alignment of the hornblende. The plagioclase has altered, in part, to epidote.

#### Composition is:

hornblende	62%
plagioclase	20
epidote	12
quartz	2
biotite	minor
sphene	3
opaque	1
chlorite	trace
apatite	trace
sericite	trace

Hornblende forms ragged, bladed grains 0.5 to 1.5mm in size, averaging about 0.8mm which are intergrown with squat anhedral plagioclase grains 0.3 to 0.8mm in size, averaging about 0.6mm. Minor quartz occurs between the plagioclase and hornblende grains. This forms shapeless interlocking grains about 0.1mm in size which occur in small aggregates. Within the hornblende grains there are small patches 0.1 to 0.4mm in size which consist of biotite.

A large part of the plagioclase has been altered to epidote. The epidote forms rounded to prismatic grains 0.01 to 0.1mm in size occurring in patches within the plagioclase. The finer grains tend to form a rim around the edges of the grains. The larger, more prismatic grains are scattered within the plagioclase. Some epidote occurs in vein-like patches less than 0.2mm in width which cuts through the plagioclase and hornblende. There are also veins and stringers of quartz; most of the quartz in the rock occurs in these. Traces of chlorite, forming clusters of flakes about 0.1mm in size between the quartz grains. Traces of sericite occur in small patches between plagioclase grains and in the quartz stringers.

(cont.)

Sample #GC-1 (cont.)

Sphene forms subidiomorphic grains 0.1 to 0.3mm in size which occur in clusters of a few grains around the edges of the hornblendes. Some of them have a core of an opaque mineral (probably Fe-oxide) and opaque grains also occur around the edges of the hornblendes. These are rounded or irregularly shaped and vary in size from 0.05 to 0.2mm. Some have been altered to reddish goethite.

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