

LOON LAKE SYNDICATE

LYNX GROUP



105-E-1, Whitehorse, M.D.

Yukon Territory

by

P. H. Sevensma, Ph.D., P. Eng.

May 17, 1976



092292



This report has been examined by the Geological Commission G.M. and is recommended to the Commissioner to be considered as representation work in the amount of \$3989.67.

A handwritten signature in dark ink, appearing to be "D. Craig", written over a horizontal line.

Registered Geologist or  
Professional Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.

A handwritten signature in dark ink, appearing to be "B.R. Baxter", written over a horizontal line.

B. R. BAXTER  
Supervising Mining Recorder

A handwritten signature in dark ink, appearing to be "C. ...", written over a horizontal line.

Commissioner of Yukon Territory

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LOON LAKE SYNDICATE

LYNX GROUP

105 - E - 1, Whitehorse M.D., Y.T.

GEOLOGICAL - GEOCHEMICAL REPORT

1. INTRODUCTION

The Lynx claims cover copper-gold showings known since the late 1890's, located above the Northwest shore of Upper Loon Lake, 45 miles Northeast of Whitehorse.

In the early 1900's, a number of test-pits were dug and several adits driven. The area was dormant until 1970, when the writer conducted a work program on behalf of Colorado Corporation, when the group was known as the Beaver-Mink.

Restaked in 1972 and 1974 as the Lynx Group, the writer conducted additional geochemical and geological work in 1974.

During the 1975 field season, additional lines were cut on the East half of the property and the geological and geochemical survey extended. One additional mineralized outcrop was discovered in the field, and another new one observed from the air only.

A party of four was on the property for eight days from September 8th to 15th, 1975 inclusive; a further helicopter reconnaissance was made on September 18th.

2. PROPERTY, LOCATION, ACCESS

The property consists of the following claims:

<u>Name</u>	<u>Record No.</u>	<u>Date Staked</u>	<u>Expiry Date</u>
Lynx 1-4	Y67873-876	Dec. 23, 1972	Dec. 27, 1977
Lynx 5-8	Y67877-880	Dec. 23, 1972	Dec. 27, 1976
Lynx 9-16	Y79302-309	May 31, 1974	June 18, 1976

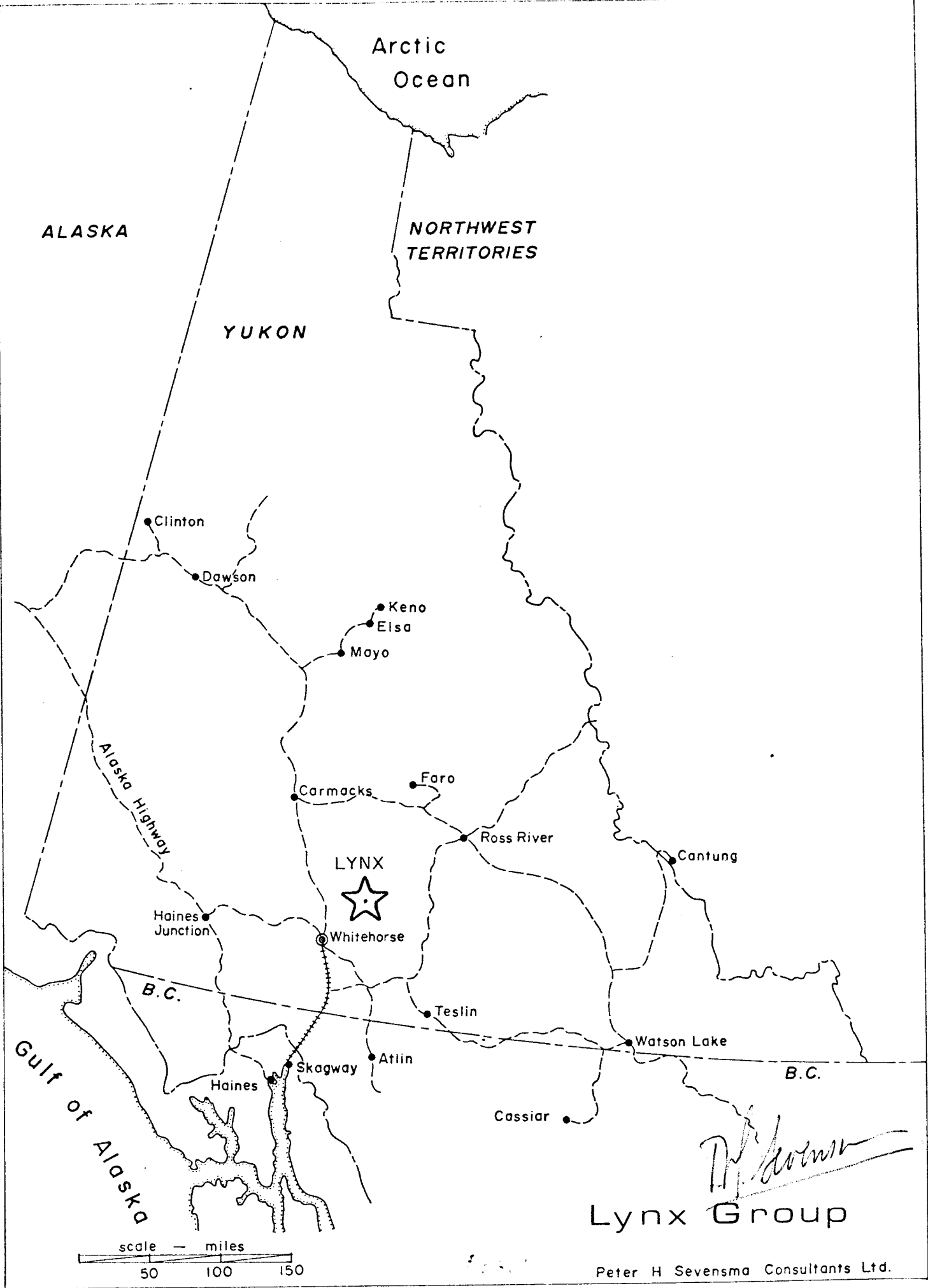
The claims lie on claim sheet 105-E-1, 45 airmiles NE of Whitehorse, at about Latitude  $61^{\circ} 12'$  North and Longitude  $134^{\circ} 11'$  West, between elevations 3300' and 4400'.

Access by float-plane from Whitehorse, or by helicopter to one of two helipads, one 200' South of the Camp on Loon Lake, and one about 1600' East of the base line, about 250' North of line 40.

There is abundant water on and near the property and good timber with butts up to 20". The area is one of moderate snowfall.

Freeze-up and breakup occur respectively about late October and late May.

The campsite is equipped with two reasonably good 12' x 14' tent frames with a floor, three bedsteads and a wood heater.



Arctic Ocean

ALASKA

NORTHWEST TERRITORIES

YUKON

Clinton

Dawson

Keno

Elsa

Mayo

Alaska Highway

Carmacks

Faro

Ross River

Cantung

LYNX



Whitehorse

Haines Junction

B.C.

Teslin

Watson Lake

B.C.

Gulf of Alaska

Skagway

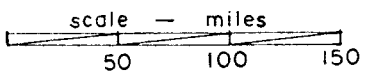
Atlin

Haines

Cassiar

*Peter H Sevensma*

Lynx Group



Peter H Sevensma Consultants Ltd.

### 3. GEOLOGY

The property lies in the "Yukon Schists" about one half a mile East of the Mesozoic formations of the Whitehorse trough. In this area, Yukon Schists consist of low-grade metamorphic quartzites, sericite-chlorite schists, black slates and some limey phyllites, tentatively identified as metamorphic Carboniferous. Some eight miles to the Southeast, the Yukon Schists are mapped as belonging to the Proterozoic-Palaeozoic Big Salmon Complex. (figure 3.)

As no good sections in either of these formations are available in the general area, the formations on the Lynx Group cannot be assigned with any certainty to either of these metamorphic complexes.

The West edge of the Cretaceous Quiet Lake Batholith lies about 4 miles East of the Lynx Group; a small offshoot of this intrusive lies about  $1\frac{1}{2}$  miles South of the Group.

The central part of the property is underlain by an assemblage of sericite-chlorite schists and by a light coloured quartzite member ranging from a fine grained cherty rock to greywacke. These formations interfinger somewhat and a sheared granodiorite or diorite, possibly a sill, occurs in the quartzite near its contact with the schists. Some rhyolitic rock may represent a pre-folding dyke.

These formations form a broad fold, from the regional Northwest strike to a local Northeast direction, with an amplitude of  $1/2$  mile or so (figure 4).

The beds dip in general at  $40^{\circ}$  -  $70^{\circ}$  in a Westerly direction, but local large scale dragfolds are suggested by local Northeast dips. Foliation cleavage is difficult to distinguish from bedding and in at least one location they appear to be at right angle to each other.

There are at least two periods of folding; the large scale dragfold is older than the folding that has produced the major broad warp in the formations.

During the 1975 fieldseason, less metamorphic black and grey slates and limey phyllites were observed, mostly on claim 11, and it is possible, that the quartzites - schists belong to the Big Salmon Complex, whereas the less metamorphic formations could correspond to the Carboniferous.

Large blocky slides and a frequent thick moss and/or humus cover preclude any detailed mapping along the steeper slopes.

The presence of abundant large granodiorite boulders in Spud Creek, on claims 3, 5 and 7, suggest the possibility of additional intrusives in the upper reaches of this Creek.

The writer's conclusion is that reconnaissance geological mapping extending for a couple of miles West and North of the claim-area may shed more light on the overall geological setting of the showings than detailed mapping on the claims.

Our working hypothesis remains the same as the one outlined in 1974 (see figure 4).

#### 4. SHOWINGS

Mineral showings of three types occur: Disseminated chalcopyrite and some pyrite in quartzites; crudely banded patchy chalcopyrite with minor pyrite in sericite-chlorite schist, usually with some quartz; specks of chalcopyrite in quartz "worms" and veinlets in quartzite.

Also, there are narrow barren milky white quartz veins without sulphides, usually of a shallow 20°-30° dip, where the quartzites appear, or are folded.

Mineralization is broadly related to the schist-quartzite contacts. Notably, in old pits across a zone about 50' wide at about L 17,200 NE, much material assaying from 2-7% Cu may be found; in the mineralized quartzite, grades vary from 0.1 to 0.5% Cu, but may rise as high as 1% Cu.

Typical assays of 6-12 lbs. samples are as follows:

Mineralized quartzite: .47% Cu, tr. Au, 0.2 oz./T Ag.  
(across 35')

Good grade schists from pits:

4.7% Cu, 0.12 oz./T Au.

3.8% Cu, 0.09 oz./T Au, 0.7 oz/T, Ag.

Occasional specks of galena have been found. Molybdenite and sphalerite are conspicuous by their absence.

Malachite and occasional azurite occur conspicuously on the main outcrop.

The main adit is said to be 350' long and to have intersected in the middle an 80' zone assaying about 2.5% Cu. Driven somewhere around 1910, in the search for gold, the entrance has been caved for many years.

The size of the old dumps suggest that the other adits are much shorter.

The presence of high-grade copper-gold mineralization, the impressive malachite-stained main outcrop, the widespread presence of soils carrying over 200 ppm copper indicative of nearby chalcopyrite in place, and the fact that the mineralization appears to be bedding-controlled, combine to make the occurrence a most attractive one, justifying continuing exploration.

In the writer's exploration experience, this occurrence, even if it is as yet impossible to categorize, has a high probability of reflecting the presence of an economic deposit.

In view of the known length of about 4000' of surface indications and the known width of some 600' of intermittent copper mineralization in the area of line 16, a potential of the order of perhaps 5-10 million tons of 2-3% copper with close to 0.1 oz/T Au is considered by the writer, a reasonable estimate of the type of deposit that may be present in this structure.

5. 1975 PROGRAM, SEPTEMBER 8 - 15, 1975.

1. Physical work

- a. 8000' of trail were cut and flagged, from the camp to line 20 on Spud Creek and in a NNE direction from camp to Fish Creek. One helipad was cleared at about 4300' N and 1600' E.
- b. Lines 20, 24, 28 and 40 were recut to the NE, as well as 2000' of baseline, rechained and repicketed or reflagged, for a total of 7800', to provide surveyed access to claims 11 and 13.
- c. 7200' of new line were cut, i. e. the ENE extensions of lines 24, 28 and 40 to the main valley and a NW-SE line from Point A 1800' to the NW and 1500' to the SE.
- d. Environment: A large pile of debris, believed to date from a 1951 camp, was cleaned up.

2. Soil Sampling

64 soil samples were taken along the newly cut lines, where this was not rendered impossible by deep humus or coarse rock slide.

3. Geology

Wherever bedrock was observed, geological information was recorded.

One geochemical rock-sample was taken from a newly discovered 20' wide highly oxidized zone carrying pyrite and minor chalcopyrite at 1650 NE on newly cut line 28. This zone appeared to strike about East-West with an 85° South dip. A rock-sample of this outcrop assayed 1140 ppm Cu, = 0.11% Cu.

## 6. SOIL SAMPLING IN 1975

All samples were taken with a stainless steel trowel in holes dug by pick, often at a depth of as much as 24", usually in a brown or beige-grey loam, and put in kraft bags which were dried in camp.

Assaying was done by Atomic Absorption by Whitehorse Assay Office's standard method, also used for samples previously taken in 1974. All samples were run for copper, lead, zinc and molybdenum.

Soil profiles may be summarized as follows:

- |  |                 |
|--|-----------------|
| 1. Surface moss, peat and black humus: | 4" - 24"        |
| 2. Volcanic ash:                       | 0 - 6"          |
| 3. Brown loam, some rock fragments:    | 4" - over 12"   |
| 4. Slide rock, some sections:          | 0 - over 2' (?) |
| 5. Decomposing bedrock:                | 0 - over 4"     |

Some areas showed humus directly over coarse slide rock, without soil.

Permafrost was encountered in the area of B + 350' NW only.

Volcanic ash occurred in only 15 locations.

The brown loam corresponds in most cases to the "C" horizon, especially where it is in contact with what appears to be decomposing bedrock.

About 2800' of line proved unsuitable for sampling due to either deep humus, or coarse slide, out of a total of 9000' of line covered in the sampling program.

Molybdenum samples, as in previous sampling, were all of low background values of trace to 2 ppm, except for one sample of 3 ppm on line 40, 3800' NE.

The low Cu values recorded on line 40 from 1600' NE to 2000' NE belong to the unmineralized quartzite population. This part of the slope is made up of a soil derived from suspected underlying quartzite. From line 40 - 2300' NE to Fish Creek, most values belong to the 50-100 ppm threshold zone, 3900' and 3935' being in the sands of the flood plain of Fish Creek. The 50-100 ppm zone suggests possible seepage with some diluted copper, confirmed by somewhat higher than normal zinc.

On line 28, at 1550' NE, a 20' wide oxidized tuff-like (?) rock carries pyrite and minor chalcopyrite (rock sample 0851: 1140 ppm Cu = 0.11% Cu), and is characterized by a 276 ppm Cu soil sample. The remaining four samples belong to the upper end of the threshold zone.

On line 24, 1200' NE, there is a near-vertical 6" - 12" wide fault zone identified by an unusual high 500 ppm lead and 288 ppm zinc, followed for 800' by higher than usual lead values, which are also present on line 28, from 1550' NE to 2100' NE. Usual background for lead and zinc in 200 samples is 8-24 ppm Pb 30-80 ppm Zn.

Two soils were taken near camp, in a 25" deep pit, in grey silt, and in a 40" deep pit, in reddish clayey sand. Both samples assayed 44 ppm, i. e. in background range.

The above suggests that assaying for Pb and Zn in soils is worthwhile, and that on the Lynx Group, any soil sample of better than 200 ppm Cu is likely to be related to visible chalcopyrite.

## 7. 1975 GEOLOGICAL OBSERVATIONS

Geological work has been confined to reconnaissance along the newly cut lines on claims Lynx 11, 13 and 14. As weather was in general wet and windy during the period of work, and the lines difficult to cut due to very heavy vegetation, no time was available for detailed surveying. At this stage of exploration on the property, moreover, general reconnaissance is of more importance than detail work, until such time as areas have been outlined where detailed work appears critical.

All cut lines, old and new, as shown on figure 2, are positioned very accurately in relation to the topography, line 40, on its actual bearing coming out on Fish Creek about 100 above the forks, as shown on the map.

The following observations are pertinent:

### a. Line 40

Quartzite fragments in the soil indicate that the quartzite extends to at least 2150' NE. Beyond this point, surface material consists of miscellaneous rock fragments, gravel in loam, and mudslide material and talus material.

The NW crossline at 40-3000' NE terminates against a massive quartzite bluff; vague bedding suggests a N 20° W strike, dip 10° SW. This bluff runs up and down the hill at about a right angle to the line and is a smaller duplicate of a similar parallel quartzite ridge through point B.

Line 40 follows in general a shallow depression, perhaps the locus of a fault which may cross the main Fish Creek valley in to the depression followed by the NE fork of Fish Creek.

At 1550' NE, there is a strong "fault-scarp" with N 10° W shearing, dip 65° W, cutting the dome of quartzite on which the helipad is located. Subsidiary shears strike N 30° E.

The quartzite carries quartz-eyes and minor disseminated pyrite, in places up to 2%, usually in 1/2 to 2 mm cubes. Small areas of box work-goethite give the rock an overall rusty appearance, in the general area of the helipad.

### b. Line 28

365' - 450' NE	Pronounced 30' deep gully at right angle to line.
900' - 1025' NE	Laminated quartzite N 35° W, dip 40° SW.

- 1450' NE Multicoloured, laminated to thin-bedded phyllite with some 6" wide limey members, N 60° W, dip 50° SW.
- 1550' NE Conspicuous oxidized outcrop, carrying some 1-3% sulphides with occasional visible chalcopyrite. Small unoxidized fragments are fine grained hornblende "schist", possibly a metavolcanic or tuff. Assay: 0.11% Cu. Soils: 276 ppm Cu. Width: 20'. Strike East-West, dip 85° S?
- 1750' NE Black Slates, N 10° W, dip 50° W, elev. 3950'.
- 2200' NE Phyllites, N 30° W, dip 45° SW, elev. 3650'.

All outcrops form cliffs up to 30' wide, cut at a sharp angle by the line. This is the first discovery of slates and phyllites on the property. The "gossan" at 1550' NE is of considerable interest.

c. Line 24

- 760' NE Grey-schists, N 20° W? dip 20° W? These are probably interbedded with quartzite.
- 850' NE Greywacke, massive beds N 75°E, dip 53° South.
- 1200' NE Grey massive tuffaceous looking cliffs, cut by a 6" - 12" wide fault with gouge, about E-W strike, dip vertical. High-lead soil below it in ppm's: Cu. 124, Pb, 500. Zn, 288. Mo, 1.
- 2000' - 2300' NE Many rusty schist fragments under beige loams. Soils taken at depths of 12" to 26", assaying 96-112 ppm Cu, ie. weekly anomalous.

d. Summary

The attitudes measured support our hypothesis of a large scale gently overturned dragfold, except that E-W strikes show about a 50° dip to the South instead of a near-flat dip. The presence of the B quartzite ridge suggests that the phyllitic to slaty beds on line 28 either lie between two quartzite beds, or that there is a complex fault pattern, the nature of which has so far escaped detection.

A large multicoloured outcrop was spotted from the air during a helicopter reconnaissance on September 18, 1975 on Lynx 15 North of line 40, 1600' NE. The coloration is quite similar to the one of the main showing.

Location of this outcrop should have priority in any further geological work on this claim.

## 8. CONCLUSIONS

The results of the 1975 program have focussed the attention on the Northeast part of the property. Aerial observation has shown a significant oxidized outcrop on claim 15, somewhere in the vicinity of line 48, and previously undetected in line-cutting and soil-sampling.

A significant, oxidized copper-bearing outcrop was discovered only 50' beyond the end of previous surveys at 1550' NE on line 28.

The relationship between an East-West fault and high-lead soil was established beyond doubt on the previously unsampled part of line 24, at 1200' NE.

The fact that a copper-bearing outcrop was found just above a 276 ppm Cu soil sample is very significant, suggesting that any area with soil sample values exceeding 200 ppm should be thoroughly investigated by prospecting and trenching.

New rock formations of a lower metamorphic grade were located along the extension of line 28.

The soil-sample results on the newly cut lines indicate an anomalous environment with most samples well exceeding the 50 ppm threshold value, whereas the 1974 survey showed the area West of Spud Creek to carry values mostly below 40 ppm.

The pyritization of the quartzite in the area of the helipad at about 4000' - 4300' NW, 1500' - 1700' NE is considered very significant, as it is unusual in the area.

The number of straight, about NNW striking, gullies observed on claims 4, 11 and 13, suggests that faulting may be more important than has been estimated so far. The N 10° W fault scarp below the helipad near 4300 NW and 1500' NE appears to be a feature of major significance.

From an economic point of view, the aerial observation of what appears to be a large outcrop similar to the main showing North of line 40 and the discovery of a 20' wide oxidized rock carrying pyrite and some chalcopyrite near line 28, 1550' NE, are the highlights of the 1975 program.

9. SUMMARY AND RECOMMENDATIONS

Additional evidence was found that chalcopyrite mineralization is widespread on the Lynx Group and that any soil sample of over 200 ppm Cu is likely to reflect the presence of chalcopyrite in place nearby.

Further work on the property should first consist in locating and assessing the large outcrop of stained rock observed from the air North of line 40, about due North of the Helipad at 4300' NW - 1600' NE, and second in assessing all occurrences of over 200 ppm Cu in the Northern half of the property by prospecting and trenching.

The same field-budget of \$25,300.00 - proposed in 1974 is recommended again, with emphasis on the areas noted above.

Respectfully submitted,

A handwritten signature in cursive script, reading "P. H. Sevensma", written over a horizontal line.

P. H. Sevensma, Ph. D., P. Eng.

Burnaby, B. C.

May 17, 1976.

✓ Checked by  
Assay Office.

WHITEHORSE ASSAY OFFICE  
BOX 4518  
WHITEHORSE, YUKON

Samples from: P.H. SEVENSMA

Lot. No.: A-866-64

					ALL RESULTS - P.P.M.					
SAMPLE #	MO	Cu	Pb	Zn	SAMPLE #	Cu	Pb	Zn	MO	
✓ A	TR	88	16	72	40-1800' NE	24	12	56	TR	
A+	110	1	32	12	56	1900' NE	28	12	56	1
	240	2	44	12	72	200' NE	16	8	48	2
	575	1	12	8	32	2150' NE	44	12	96	TR
	650	1	24	8	40	2250' NE	36	12	80	TR
	800	TR	24	12	48	2300' NE	72	16	80	TR
	1020	TR	20	12	40	2300' NE	84	12	104	TR
	1275	1	32	8	64	2400' NE	68	12	96	TR
A+	1450	TR	52	12	64	2500' NE	60	16	48	TR
B+	550' N	1	40	8	80	2600' NE	72	12	64	TR
	630' N	TR	84	12	64	2700' NE	64	12	72	TR
	650' N	TR	60	8	56	2800' NE	72	12	64	1
	750' N	1	36	8	80	2900' NE	92	12	80	TR
	850' N	TR	72	12	56	40-3000' NE	56	12	64	TR
B+	950' N	1	64	12	48	3100' NE	24	12	80	1
	G-1	1	44	8	72	3200' NE	56	12	64	1
	G-2	TR	44	8	56	3300' NE	68	16	80	1
24-	1100' NE	TR	32	12	72	3400' NE	52	12	88	1
✓	1200' NE	1	124	500	288	3500' NE	68	12	64	2
	1300' NE	3	64	72	144	3600' NE	56	12	48	2
	1400' NE	TR	36	60	104	3700' NE	120	24	88	2
	1500' NE	1	28	20	72	3800' NE	50	20	64	3
	1600' NE	1	120	32	112	3900' NE	48	8	56	1
	1700' NE	1	60	32	88	40-3935' NE	36	12	72	1
	1800' NE	1	88	32	72					
	1900' NE	2	78	20	92					
	2000' NE	1	96	20	72					
	2100' NE	1	100	12	72					
	2200' NE	1	112	56	56					
24-	2300' NE	1	96	16	56					
28-	1100' NE	TR	24	20	56					
	1200' NE	TR	40	16	56					
	1300' NE	TR	32	20	200					
✓	1550' NE	2	276	76	184					
	2000' NE	2	104	16	72					
	2100' NE	1	88	80	72					
	2200' NE	TR	60	20	48					
28-	2300' NE	TR	96	24	64					
40-	1600' NE	TR	8	12	32					
40-	1700' NE	1	8	16	24					

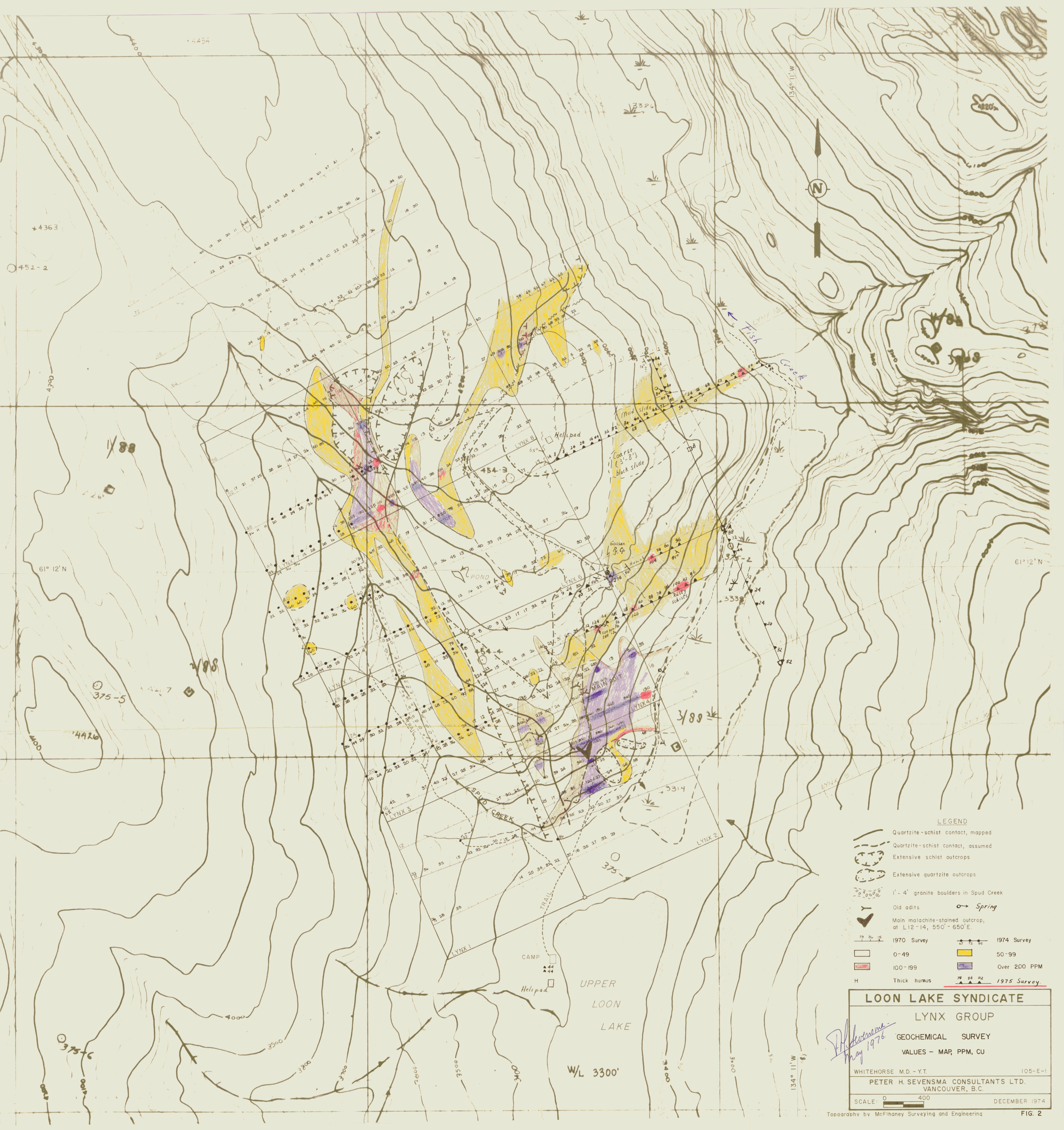
2 SAMPLE  
REC'D.

*P.H. Sevnsma*

Date: Sept. 23/75

Assayer: K. Heyland





**LEGEND**

- Quartzite-schist contact, mapped
- Quartzite-schist contact, assumed
- Extensive schist outcrops
- Extensive quartzite outcrops
- 1' - 4' granite boulders in Spud Creek
- Old adits
- Spring
- Main malachite-stained outcrop, at L12-14, 550' - 650' E.
- 1970 Survey
- 1974 Survey
- 0-49
- 50-99
- 100-199
- Over 200 PPM
- Thick humus
- 1975 Survey

**LOON LAKE SYNDICATE**

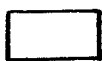
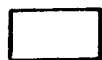
**LYNX GROUP**

GEOCHEMICAL SURVEY  
VALUES - MAP, PPM, CU

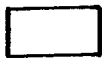
WHITEHORSE M.D. - Y.T. 105-E-1  
PETER H. SEVENSMA CONSULTANTS LTD.  
VANCOUVER, B.C.

SCALE: 0 400 DECEMBER 1974

*P.H. Sevensma*  
May 1976



pITvb Pliocene Basalt



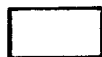
KTvdp Cretaceous and Tertiary Andecite and dacite porphyry



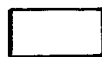
Kqm Cretaceous Granodiorite, quartz monzonite



JL Lower and Middle Jurassic Laberge Group, greywacke, arkose, conglomerate



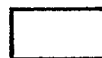
PTRc Permian and Triassic Limestone



PTRv Permian and Triassic Andesite, basalt, chert, tuff



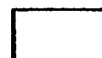
PTRub Permian and Triassic Ultramafic rocks and serpentized equivalents



PPc Pennsylvanian and Permian Limestone



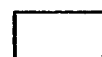
Csn Carboniferous Undifferentiated metamorphic rocks,



PIPs<sub>n</sub> Proterozoic and Paleozoic Big Salmon Complex, schist, gneiss



PIPg<sub>n</sub> Proterozoic and Paleozoic Granitoid gneiss, quartzose gneiss



PIPg<sub>dn</sub>  
Pelly gneiss,  
foliated  
granodiorite

Legend - Quiet Lake area geology

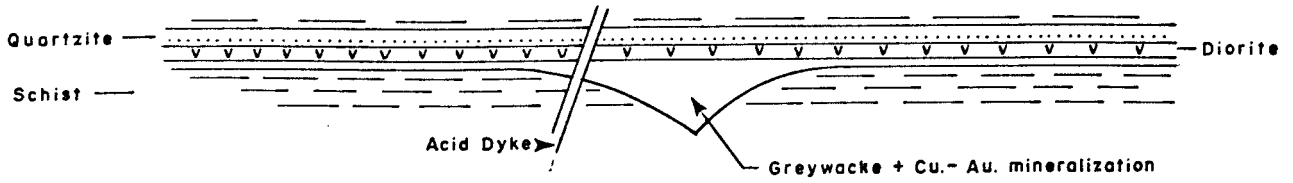
Peter H. Sevensma Consultants Ltd., Vancouver, B.C.

Scale: \_\_\_\_\_

Fig: 3



LYNX GROUP, Diagram of Possible Origin



Section normal to possible turbidite channel

scale 1" = ± 3000'



SECTION

1" = ± 1000'

PLAN

1" = ± 2000'

*P. H. Sevensma*

LYNX GROUP - STRUCTURE			
Whitehorse M.D., Y.T.		105 C-	
Peter H. Sevensma Consultants Ltd., Vancouver, B.C.			
DEC. 1974	Scale:	as noted above	Fig: 4