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HOLLINGER MINES LIMITED

PROPOSED EXPLORATION ON WILSON AND KALSON OPTIONS

Ashmore Township
Geraldton District, Ontario

January 15, 1973



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APPENDIX I - PLAN OF ASHMORE CLAIM GROUP (1th = 1000)

I. SUMMARY OF EXPLORATION

A. Location

Ashmore Township is located in the Thunder Bay Mining Division and comprises part of the Little Long Lac gold mining area.

The property consists of 23 unpatented and 2 patented claims under option and is located approximately four miles east of Geraldton along Highway 11.

The unpatented claims included are:

TB 139350-353 incl.; TB 229616-618 incl.; TB 230337-339 incl.; TB 238726-728 incl.; TB 239955 and TB 325351-359 incl.

The two patented claims included are: TB 10164 and TB 10971.

B. Work Done

Previous to the Government Assistance Programme of 1972, Hollinger Mines Limited performed geophysical (magnetic and electromagnetic) surveys over most of the original fourteen claims. On the basis of the geophysical data, two holes were drilled in 1970 with a total length of 1117 feet. Later, in mid-1971, a geological survey was performed over the original group. Both the drilling results and the geological survey were filed for assessment.

Under the government assistance programme, geophysical (magnetic and electromagnetic) surveys were performed on the nine new claims added late in 1971. These claims (numbered TB 325351-359 incl.) were adjacent to the original group on the eastern boundary.

Under the same government programme, six holes were drilled in the first quarter of 1972. A total of 2483 feet were drilled to check anomalous copper values obtained in the 1970 drilling and to test a zone of ground conductivity.

Since that government programme expired on March 31, 1972, two patented claims, adjacent to the west boundary of the original group, have been added. In May 1972, a geological survey was completed over the nine claims to the east (numbers TB 325351-359 incl.), and in November 1972, magnetic, electromagnetic and geological surveys were completed over the two patented claims.

II. OPTION TERMS

An option agreement, dated March 23, 1970, between Donald Wilson of P.O. Box 730, Geraldton, Ontario, of the first part and Hollinger Mines Limited, of the second part, gave Hollinger the right to explore the original 14 claims and any subsequent contiguous claims staked by Wilson or Hollinger.

The payments, by which Hollinger may acquire the property, are:

A sum of \$1,500.00 upon signing the Option

\$1,000.00 on or before March 23, 1971

\$1,000.00 on or before March 23, 1972

\$1,000.00 on or before March 23, 1973

\$1,000.00 on or before March 23, 1974

and a further sum of \$100,000.00 on or before March 23, 1975.

Thus, total payments of \$105,500.00 are needed to acquire the property.

Also, for any ore mined and milled from said mining lands in excess of the first million tons, Wilson shall receive a 25-cent-per-ton royalty.

A total of \$3,500.00 has been paid to date under the above agreement.

By a similar agreement dated October 30, 1972, the two patented claims (TB 10164 and TB 10971) were optioned to Hollinger from Mr. Herbert Kalson of Geraldton, Ontario.

The payments by which Hollinger may acquire this property are:

A sum of \$1,000.00 on signing the agreement \$1,000.00 on or before October 30, 1973 \$1,000.00 on or before October 30, 1974 and a further sum of \$125,000.00 on or before October 30, 1975.

A total of \$1,000.00 has been paid to date, under the above agreement.

III. GENERAL GEOLOGY

The property is largely underlain by a sequence of Keewatin laws intruded by younger hornblende gabbro and albite porphyry. The southern portion of the property is underlain by Timiskaming sediments.

The Keewatin lavas consist of andesitic to dacitic flows and tuffs which are highly metamorphosed. Biotite and chlorite is often found in these volcanics with accessory carbonate and silica. The tuffs are characterized by numerous, small, subangular fragments in a chloritic matrix. The tuff horizons generally have a gradational contact with the massive flows.

The massive flows often contain narrow chert horizons. Initially these cherty zones were thought to represent flow tops, but there are at least three different types of occurrences:

- Chert bands gradational with the andesite (flow tops?)
- 2. Chert bands with abrupt contacts.
- 3. Zones of mixed blue grey chert and andesite (silicification?)

The hornblende gabbros are easily distinguished by the numerous blocky crystals of hornblende in a dark green chloritic matrix. Often these hornblende crystals are altered to chlorite, although the blocky habit remains.

The albite porphyry dykes are presumed to be Algoman in age. The high sodic feldspar content is diagnostic of all dykes encountered. Some of the feldspars are altered to epidote. This rock is usually pale grey in colour and quite hard.

The only Timiskaming sediments found are a few outcrops of conglomerate on the southern part of the Kalson claims. Through magnetic associations, this sequence appears to extend southeasterly across the rest of the property. The conglomerate is grey in colour with several subrounded, siliceous pebbles. In the few exposures seen, it is generally sheared in an easterly direction, which is probably related to a large dyke of albite porphyry just to the north.

IV. MINERAL POTENTIAL

In the earlier drilling, in 1970, a zone bearing anomalous copper values was found in the Keewatin lavas near the western boundary of the property. Under the government assistance programme, this zone was explored to the east, showing that the mineralization did continue along strike. With the same idea in mind, the Kalson claims were acquired to explore the zone along the western extension of the strike. Geophysical surveys revealed that the zone appears to continue westward; however, it is not seen on surface due to lack of exposure.

From correlation of geophysical and geological data, most of the magnetics encountered in drilling were related to pyrrhotite. Due to the intimate relationship between pyrrhotite and chalcopyrite, the magnetic horizons appear to be favourable drill targets. Zones, however, which are strongly magnetic and contain pyrrhotite, show a general reduction in copper content when compared with those zones of lower magnetic relief. Thus the prime purpose of this programme is to check the extension of the older zone plus testing several magnetic horizons interpreted as being favourable for copper mineralization.

V. PROPOSED EXPLORATION

Description	Estimated Cost
- one 600-foot hole to test best intersection to date, at depth	\$ 6,000.00
- two 400-foot holes to test the western extension of the zone on the Kalson claims	8,000.00
- four 400-foot holes to test different magnetic horizons for mineralization	16,000.00
Total estimated expenditure	\$ 30,000.00

A cost of \$10.00 per foot for diamond drilling was assumed so that the total expenditure is all inclusive.

Respectfully submitted,

Dric R. Olixander

Dale R. Alexander, Hollinger Mines Limited.



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HOLLINGER MINES LIMITED

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REPORT

on

GOVERNMENT EXPLORATION ASSISTANCE PROGRAMME
WILSON and KALSON OPTIONS

ASHMORE TOWNSHIP

I. SUMMARY OF EXPLORATION

A. Location

Ashmore Township is located in the Thunder Bay Mining Division and comprises part of the Little Long Lac gold mining area.

The property consists of 25 unpatented and two patented claims under option, and is located approximately four miles east of Geraldton along Highway 11.

The unpatented claims included are:

TB 139350-353 incl.; TB 229616-618 incl; TB 230337-339 incl.; TB 238726-728 incl.; TB 239955; TB 325351-359 incl.; and TB 372798-799 incl.

The two patented claims under option are:

TB 10164 and TB 10971.

B. Work Done

The original 14 claim group was acquired in March, 1970, and Hollinger Mines Limited performed geophysical (magnetic and electromagnetic) surveys over most of this group. On the basis of the geophysical data, two holes were drilled in 1970, with a total length of 1117 feet. Later in mid-1971 a geological survey was performed over this original group. Both the drilling results and the geological survey were filed for assessment.

In the last quarter of 1971, Hollinger Mines Limited applied and received a subsidy to do further work on the property through the provisions of the Ontario Government's Exploration Assistance Programme. Under this programme, geophysical (magnetic and electromagnetic) surveys were performed on nine claims that had been added in 1971. These claims (numbered TB 325351-359 incl.) were adjacent to the original group on the eastern boundary.

The assistance programme continued into the first quarter of 1972, when a drilling programme was initiated. Six holes, with a total footage of 2483 feet, were drilled to check anomalous copper values obtained in the 1970 drilling and to test a zone of ground conductivity.

Since that programme expired on March 31, 1972, two patented claims, adjacent to the west boundary of the original group, have been added. In May 1972, a geological survey was completed over the nine claims to the east (TB 325351-359 incl.), and in November 1972, magnetic, electromagnetic and geological surveys were completed over the two patented claims.

In April 1973, a second Exploration Assistance Agreement was signed to cover a drilling programme designed to test:

- (a) a coincident magnetic-electromagnetic anomaly on patented claim 10971;
- (b) the best intersection obtained in the 1972 drilling at depth; and
- (c) a magnetic anomaly assumed to be on or near the contact between the Temiskaming sediments and Keewatin volcanics.

II. OPTION TERMS

An option agreement, dated March 23, 1970, between Donald Wilson of P. O. Box 730, Geraldton, Ontario, of the first part and Hollinger Mines Limited of the second part, gave Hollinger the right to explore the original 14 claims and any subsequent contiguous claims staked by Wilson or Hollinger.

The payments, under which Hollinger may acquire the property, are:

A sum of \$ 1,500.00 upon signing the Option, \$ 1,000.00 on or before March 23, 1971, \$ 1,000.00 on or before March 23, 1972, \$ 1,000.00 on or before March 23, 1973, \$ 1,000.00 on or before March 23, 1974, and a further sum of \$100,000.00 on or before March 23, 1975.

Thus, total payments of \$105,500.00 are needed to acquire the property.

Also, for any ore mined and milled from said mining lands in excess of the first million tons, Wilson shall receive a 25-cent-per-ton royalty.

A total of \$4,500.00 has been paid to date as set out by the above agreement.

By a similar agreement dated October 30, 1972, the two patented claims (TB 10164 and TB 10971) were optioned to Hollinger by Mr. Herbert Kalson of Geraldton, Ontario.

The payments by which Hollinger may acquire this property are:

A sum of \$ 1,000.00 on signing the Option, \$ 1,000.00 on or before October 30, 1973, \$ 1,000.00 on or before October 30, 1974, and a further sum of \$125,000.00 on or before October 30, 1975.

A total of \$1,000.00 has been paid to date, as outlined in the above agreement.

III. GENERAL GEOLOGY:

The property is largely underlain by a sequence of Keewatin lavas intruded by younger hornblende gabbros, hornblende diorites and albite (or just feldspar) porphyry. The southern portion of the property is underlain by Temiskaming sediments. The Temiskaming sediments encountered were conglomerates and arkose which are similarly intruded by the gabbro, diorite and albite porphyry.

The Keewatin lavas consist of andesitic to dacitic flows and tuffs which are highly metamorphosed. Biotite and chlorite are often found in these volcanics, with accessory carbonate and silica. The tuffs are characterized by numerous, small, subangular fragments in a chloritic matrix. The tuff horizons generally have a gradational contact with the massive flows.

The massive flows often contain narrow chert horizons. Initially these cherty zones were thought to represent flow tops, but there are at least three different types of occurrences:

- 1. Chert bands gradational with the andesite (flow tops?)
- 2. Chert bands with abrupt contacts.
- 3. Zones of mixed blue grey chert and andesite (silicification?)

Although intersections of chert were quite common in the 1972 drilling, very few chert horizons were encountered in the present programme. Hence, no additional interpretations can be made about these units.

The hornblende gabbros are easily distinguished by the numerous blocky crystals of hornblende in a dark green chloritic matrix. Often these blocky crystals are altered to chlorite; however, the crystal habit usually remains. The gabbros, as with the diorites, are presumed to be Early Algoman in age.

The only hornblende diorite encountered was in hole A-14-73, on claim TB 139352. No surface exposures of this unit are noted on the property. Although the blocky crystals of hornblende still persist, as in the gabbro, they are only locally developed and calcic feldspar is the predominant mineral. Unlike the gabbro, the diorite was weakly magnetic, although there is no expression of an anomaly from the geomagnetic survey performed in the area.

The albite porphyry dykes are presumed to be Late Algoman in age, since in a couple of surface exposures the porphyries are seen to intrude the hornblende gabbro. The high sodic feldspar content is diagnostic of all dykes encountered. This rock is usually pale grey in colour and quite hard, with the main alteration noted being slight amounts of epidote after feldspar.

Temiskaming sediments are encountered in surface exposures on the Kalson claims and in drill hole A-14-73, on claim TB 139352. Most of the Temiskaming series here is represented by conglomerates, with only a few zones of arkosic material noted in the drill hole.

The conglomerate contains a variety of pebble types that show a wide range of size and shape. Many of the smaller pebbles (usually less than ½ inch), tend to be quite angular, while the larger ones (1 inch or greater), are distinctly more rounded in nature. The matrix of the conglomerate is brownish and moderately biotitic with small quartz 'eyes' scattered throughout. Local increases in alteration create a much softer, more chloritic matrix.

The arkosic bands seen in the drill hole are relatively narrow and are characterized by numerous small grains of quartz and feldspar, in a greyish to grey-green matrix. Contacts are usually gradational with the conglomerate units.

IV. RESULTS

A. Drilling

Five holes were drilled encountering the rock types previously described under general geology, being: Chert, Andesite, Hornblende Diorite, Hornblende Gabbro, Albite Porphyry, and Temiskaming sediments including arkose and conglomerate.

All of the drill logs will be filed for assessment, hence only a plan of the drilling plus a copy of the drill sections accompany this report. A total of 2391 feet were drilled; 1005 feet to test the magnetic-electromagnetic anomaly on the Kalson claims; 596 feet to check the wide copper bearing zone found in the 1972 drilling, and 790 feet to test the magnetic anomaly in the Temiskaming sediments.

The magnetic-electromagnetic anomaly on the Kalson claims was attributed to a narrow (up to one foot) band of massive pyrrhotite carrying minor pyrite and chalcopyrite. The excellent profiles obtained from the geophysical surveys from such a narrow zone are probably related to the rather shallow overburden depths in the area.

During the 1972 drilling, an intersection of 57 feet assaying .47% copper, .14 ounces/ton silver, was obtained in hole A-4-72. Hole A-12-73 was set out to cross this zone approximately 100 feet vertically below the original intersection. Although a substantial width of rock anomalous in copper was encountered, assays show the zone to be leaner at this depth.

Drill hole A-14-73 was designed to cross section a magnetic anomaly presumed to be in the Keewatin volcanics -- the additional footage allowing the hole to cut the volcanic-sedimentary contact. Unexpectedly, after 126 feet of overburden, the hole collared in Temiskaming conglomerate which extended to a dyke of hornblende diorite at 640.3 feet. The magnetic anomaly was attributed to approximately 45 feet of conglomerate containing numerous disseminated blebs of pyrrhotite.

Previous to the drilling of hole A-14-73, two claims were added along our south boundary to protect any possible results obtained in that hole. Thus, the

present number of claims mentioned at the first of this report is two greater than the number indicated upon signing the Exploration Assistance Agreement. No work was carried out on these two new claims (TB 372798 and TB 372799), so that none of the provisions of the Agreement were violated.

B. Assaying

Assaying of core samples was completed at Hollinger Mines Limited, Assay Department, by the atomic absorption method. Samples were assayed for various elements, including: copper, zinc, nickel, silver, lead and gold.

Each sample is prepared by crushing and grinding the rock to a -100 mesh fraction, then decomposing the product by the addition of hot nitric and hydrochloric acids.

A list of the assay results accompanies this report in summary form.

V. CONCLUSIONS and RECOMMENDATIONS

Exploration to date has revealed two relatively strong electromagnetic anomalies with associated high magnetics, to be related to narrow bands of massive or near massive pyrrhotite with minor accessory pyrite and chalcopyrite. One of these anomalies was outlined and drilled in 1972, the second anomaly lying within the Kalson claims and being drilled during the course of the present programme.

Further, a zone of disseminated sulphides having economic implications was previously outlined by drilling, to the east of the geophysical anomalies more recently located on the Kalson claims. Thus, the Kalson anomalies appeared to be ideal targets for drilling as suggested from the nearby pyrrhotite-chalcopyrite zone. Unfortunately, the data now available indicate that this entire section is not viable for mineral exploitation.

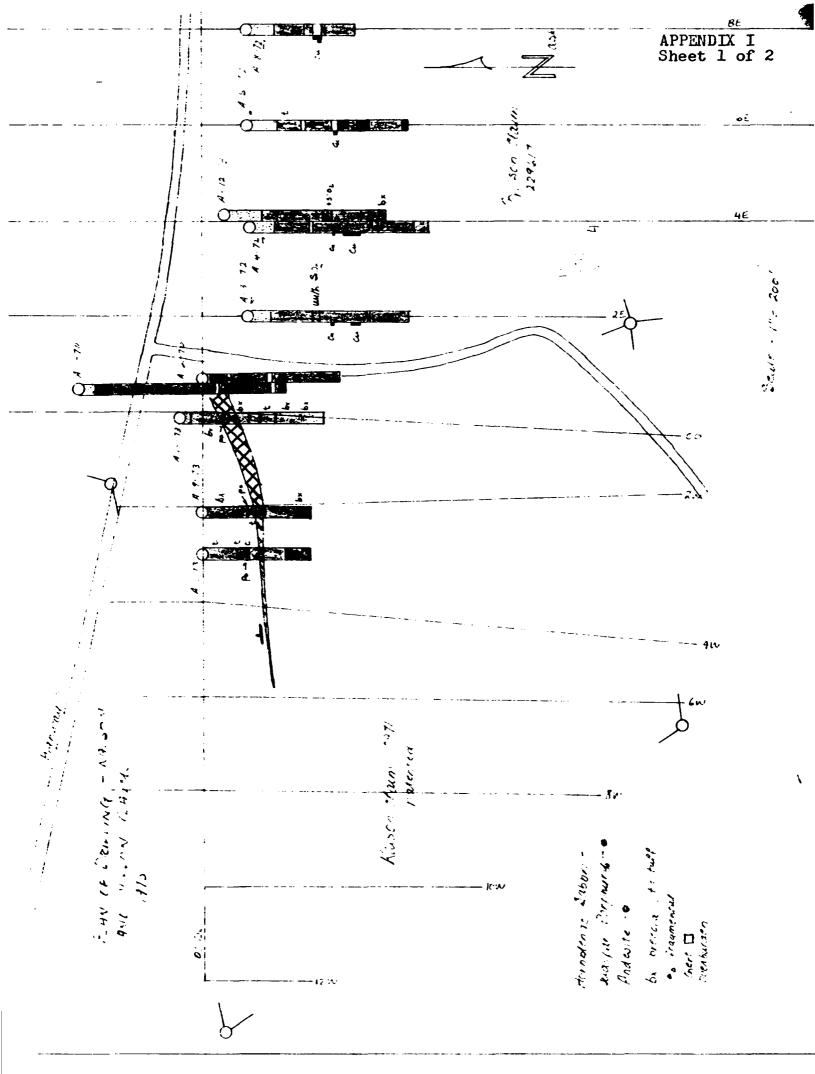
However, due to the intimate relationship between pyrrhotite and chalcopyrite noted in this area, magnetic horizons would appear to be favourable drill targets, either with or without a coincident electromagnetic anomaly. Several untested magnetic anomalies, which do not appear to be indicative of a change in rock type, remain on the Wilson claims. The most probable interpretation to be applied to this is that the anomalies suggest the presence of pyrrhotite - hopefully continuing its association with chalcopyrite.

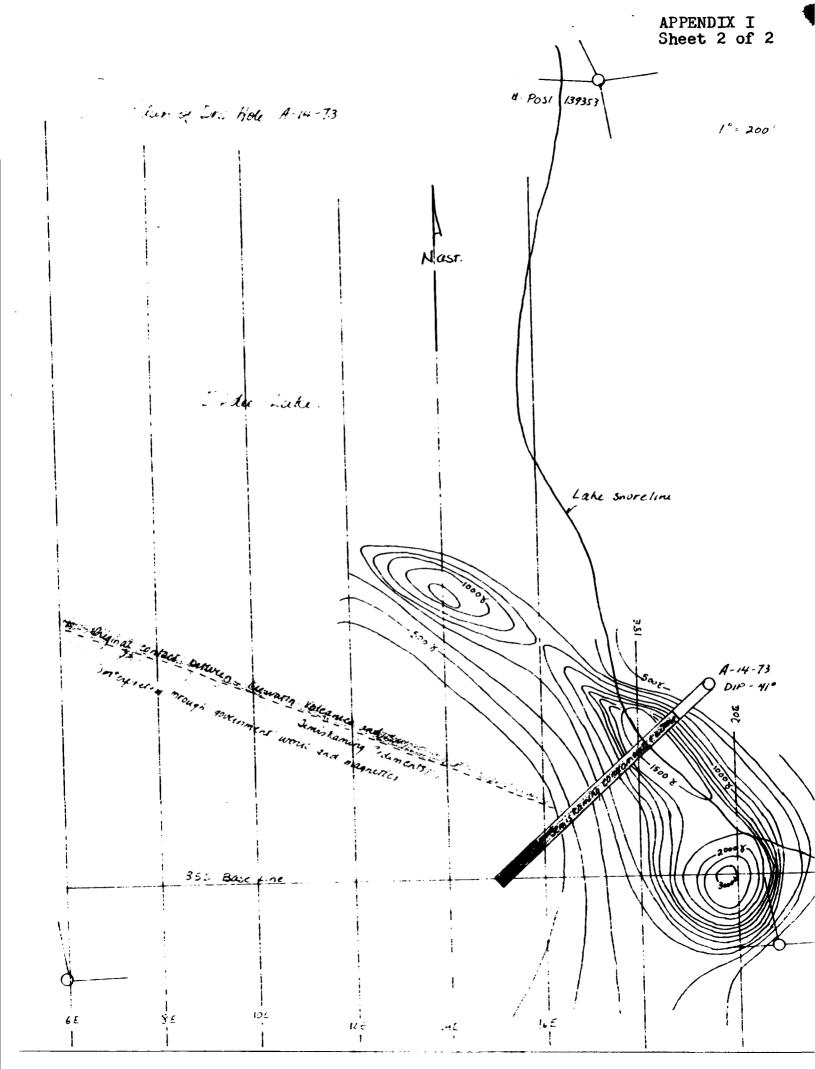
The presence of Timiskaming sediments on the property may indicate an additional exploration opportunity, in search of gold. Although most of the Timiskaming belt here has been extensively drilled, very little work has been done in the Eldee Lake area. Unfortunately, the results received to date in the sediments have been very poor and no major structural features, which are often closely associated with gold ores, appear to be indicated. In the absence of known stringer zones, or structural controls, a couple of cross-sectional holes may be warranted to test the Keewatin-Timiskaming contact.

August 1, 1973.

Dace R. Alexander
MOLLINGER MINES LIMITED

TIMMINS, ONTARIO





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SUMMARY OF ASSAY RESULTS

AVERAGE VALUES	A	V	E	\mathbf{R}	A	G	E	1	I A	L	U	E	S
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DDH A-9-73	Cu(ppm)	Zn(ppm)	Ni(ppm)	Ag(oz)	Pb(ppm)	Au(oz)
85-140	385	84	79	•04	12	Nil
265-302	725	53	126	•06	16	Nil

Highest assays: 87-90 .17% Cu, .08 oz Ag

110-112 .26% Cu, .07% Zn, .09 oz Ag - 3 bands of pyrrhotite

132-135 .28% Cu, .11 oz Ag

275-280 .17% Cu, .10 oz Ag

Two sections with gold in trace amounts:

85-87 .07% Cu, .04 oz Ag, .01 oz Au and 130-132 .01% Cu, .02 oz Ag, .01 oz Au.

The grab samples (at 25 foot intervals) for geochemistry were all background with exception to one sample @ 275 feet: 1.16% Cu, .38 oz Ag, .01 oz Au from a quartz stringer with chalcopyrite.

DDH A-10-73	Cu(ppm)	Zn(ppm)	Ni(ppm)	Ag(oz)	Pb(ppm)	Au(oz)
40-60	329	48	77	•03	20	Nil
80-135	1074	83	82	•05	13	Nil
(88-130)	1358	88	76	•05	12	Nil
240-250	783	58	73	•05	11	Nil
(242-247)	1580	82	90	•09	10	Nil
305-402	492	102	129	•05	32	Nil
(370-380)	2380	78	177	.10	20	Nil

Highest assays:

45-47 .19% Cu, .08 oz Ag 88-90 .32% Cu, .09 oz Ag 90-93 .32% Cu, .12 oz Ag

117-119 .25% Cu, .07 oz Ag 119-121 1.63% Cu, .06% Zn, .25oz Ag -1.6 feet of massive pyrrhotite with pyrite, chalcopyrite.

A-10-73 (continued)

242-245 .19% Cu, .11 oz Ag 245-247 .10% Cu, .05 oz Ag 370-375 .34% Cu, .13 oz Ag 375-380 .135% Cu, .07 oz Ag

All grab samples showed background values. All assays for gold were Nil.

DDH A-11-	- 73	Cu(ppm)	Zn(ppm)	Ni(ppm)	Ag(oz)	Pb(ppm)	Au(oz)
40-50		190	45	87	•03	12	Nil
80-130		284	82	84	•03	- 17	Nil
	Highest	assa ys:	100-105	.10% Cu	, .05 oz	Ag	
			123-125	.05% Cu py	, .09 oz rrhotite	Ag - 1 f	Coot of

All assays and grab samples in this hole were much poorer. All assays for gold were Nil.

DDH A-12-73	Cu(ppm)	Zn(ppm)	Ni(ppm)	Ag(oz)	Pb(ppm)	Au(oz)
160-195	334	37	89	•02	12	Nil
(172-177)	1608	38	121	•03	12	Nil
250-265	201	47	111	•03	14	Nil
285-360	372	89	91	•05	11	Nil
(350-360)	510	302	98	•05	10	Nil

Highest assays: 167-170 .08% Cu, .03 oz Ag
172-175 .222% Cu, .05 oz Ag
175-177 .068% Cu, .02 oz Ag
253-255 .077% Cu, .05 oz Ag
292-294 .145% Cu, .05 oz Ag
295-300 .069% Cu, .03 oz Ag
310-315 .06% Cu, .04 oz Ag
320-323 .066% Cu, .21 oz Ag
330-335 .08% Cu, .07 oz Ag
355-360 .09% Cu, .06 oz Ag

A-12-73 (continued)

Most of the grab samples in this hole yielded background values, except for two as follows:

	Cu	Zn	Ni	Ag	Pb	Au
	ppm	ppm	$\mathbf{p}\mathbf{p}\mathbf{m}$	OZ	ppm	oz
@ 2751	57	3460	35	•3	18	Nil
@ 300°	3170	85	188	2.6	38	Nil

In the light of high assays for split samples shown above, it thus appears that the interval 275' to 360' is characterized by values which are high background or slightly above.

All assays for gold values were Nil.

DDH A-14-73	Cu(ppm)	Zn(ppm)	Ni(ppm)	Ag(oz)	Pb(ppm)	Au(oz)
200-360	108	83	97	•02	19	Nil
640-695	500	40	50	•04	10	Nil
(640–655)	1240	58	54	.07	11	Nil
720-745	450	48	59	• O4	11	Nil
760-780	523	32	40	•03	12	Nil
Hig	hest assa ys:	315-320	.03% Cu	, .02 oz	Ag	
		640-645	.17% Cu	, .10 oz	Ag	
		645-650	.13% Cu	., .06 oz	Ag	
		650 – 655	.08% Cu	, .05 oz	Ag	
		732-735	.09% Cu	., .07 oz	Ag	
		737-740	.13% Cu	, .08 oz	Ag	
		764-765	.32% Cu	, .17 oz	Ag	
		768-770	.09% Cu	, .04 oz	Ag	
		770-771	.07% Cu	, .03 oz	Ag	

All grab samples yielded background values.

Although this hole intersected Temiskaming conglomerate and arkose which enhanced the prospect of finding gold, all assays for gold were Nil. The sediments would appear to be barren unless affected by a major structural feature and/or host to one or more stringer zones.

