A REPORT TO
GIOCONDA MINES LIMITED
ON A
GEOLOGICAL & GEOPHYSICAL EVALUATION
OF THE
MAY CLAIM GROUP

Claim Sheet Number 105-D-10
Wolf Creek Area, Yukon Territory
Latitude 60° 37' - Longitude 135° 00'
September 23, 1968 - October 9, 1968

Toronto, Ontario
November 14, 1968

Wayne B. Pelette
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Maps

SUMMARY

In September and October of 1968, an examination was made for Gioconda Mines Limited on their May group of claims in the Whitehorse area of Yukon Territory. Although the area, known as the Whitehorse Copperbelt, is a significant mining camp, no indications of economic mineralization were found on the Gioconda property, and no further work is recommended.

INTRODUCTION

During the period of September 23, 1968 to October 9, 1968, exploration was carried out for Gioconda Mines Limited on their Whitehorse area property in Yukon Territory. The work consisted of geological mapping, a magnetic survey, and electromagnetic investigation of certain magnetic anomalies.

This report describes the nature and results of the exploration programme, as well as a general description of the Whitehorse Copperbelt.

PROPERTY

The May claims, in the Whitehorse Mining Division, originally consisted of 20 claims. Eight of these were refused recording because of encroachment on private surface rights and the White Pass and Yukon Railway.

As a result, the Gioconda property presently consists of two groups, with 5 claims lying to the west, and 7 claims to the east of the railroad, more fully described as follows:

Claim No.	Claim Name	Date Staked	Date Recorded	Staker's Name
Y18101	May 4	May 8, 1967	May 9, 1967	Bruce Patnode
Y18103	May 6	May 8, 1967	May 9, 1967	Bruce Patnode
Y18105	May 8	May 8, 1967	May 9, 1967	Bruce Patnode
Y18106	May 9	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18107	May 10	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18109	May 12	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18111	May 14	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18112	May 15	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18113	May 16	May 8, 1967	May 9, 1967	T. Reamsbottom
Y18114	May 17	May 8, 1967	May 9, 1967	H. Cohen
Y18115	May 18	May 8, 1967	May 9, 1967	H. Cohen
Y18117	May 20	May 8, 1967	May 9, 1967	H. Cohen

On a payment of $50.00 per claim in lieu of work, a common date of November 9, 1968 was granted by the Mining Recorder in Whitehorse.

Claims May 8, 10, and part of May 9 are recorded as overlapping a portion of the AT group. No evidence of the AT claims could be found, and it is therefore assumed that the May claims were staked within open ground.

LOCATION AND ACCESS

The property is located in the west central portion of claim sheet 105-D-10, and has central co-ordinates of approximately 135° 00' west longitude and 60° 37' north latitude.

The Alaska Highway, at mileage 908.25 passes through the northeast corner of the property, which straddles the White Pass and Yukon Railway right-of-way.

Whitehorse is accessible via the Alaska Highway from Edmonton, the WP & Y Railway from Skagway, Alaska, and by commercial airline from Edmonton and Vancouver. The property is eight miles south of Whitehorse.

CLIMATE AND TOPOGRAPHY

The climate is not as severe nor the topography as rugged in the valley of the Yukon River as elsewhere in the Territory.

Yearly precipitation averages about 11 inches, 6.5 of which fall in the form of rain. Mean daily temperatures range from 3°F in December to 56°F in July. June has 20 hours of daylight, while the month of December has only four.

The May claims lie at an elevation of 2,400 feet, with the mountains, confining the Yukon River valley, rising to a maximum height of 5,600 feet. The valley floor is well timbered, and vegetation gradually decreases with increasing elevation to the tree-line, which occurs at 4,000 feet ASL.

Several small creeks drain the area of the property, creating minor valleys, which constitute the only local topographic features.

HISTORY

Copper was first discovered in the Whitehorse area by gold-seekers enroute to the Klondike, in the latter 1890's. Between 1900 and 1920, minor and sporadic amounts of good to high-grade copper ore were shipped from seven different properties.

From 1946 to 1948, Noranda Mines Limited carried out exploration (including diamond drilling) on a few of the deposits.

In 1963, New Imperial Mines Limited undertook long range exploration of the Whitehorse Copperbelt. As early as 1955, they had begun an acquisition of property, so that present holdings total over 500 claims, covering all of the important known copper occurrences in the area.

Exploration on the New Imperial property has been in the form of detailed and varied geophysics, geological mapping and comprehensive diamond drilling. This work culminated in March, 1967, with the beginning of production on the Little Chief deposit, at a rate of 2,000 tons per day.

With the encouraging results obtained by New Imperial, came a renewed interest in the area. Early this year, the May claims were acquired by Gioconda Mines Limited. No work is known to have been done on the ground, other than possibly reconnaissance prospecting in earlier years.

REGIONAL GEOLOGY

The Whitehorse area lies along the eastern margin of the Coast Mountains' batholithic complex and the Tagish belt of Mesozoic clastic sediments, limestones, volcanics and schists.

In the area of the Whitehorse Copperbelt, the Lewes River Group of clastic sediments and the younger sediments of the Laberge Group have been folded in a northwesterly direction and invaded by the Coast Intrusions' granitic rocks. In addition, large remnants of the Lewes River sediments occur as "roof pendants" enclosed in the granitic plutonic complex. Faulting, though common, is not on a large scale.

The youngest rocks in the area are the Miles Canyon basaltic flows, which are largely vesicular, and possess good columnar jointing.

Outcrop is scarce on the valley floor, with much of the area covered by glacial debris.

WHITEHORSE COPPERBELT

TABLE OF FORMATIONS

ERA	PERIOD	FORMATION	LITHOLOGY
CENOZOIC	Quaternary		alluvium, glacial drift
		Miles Canyon	basalt
MESOZOIC	Cretaceous	Coast Intrusions	granite, granodiorite, quartz monzonite, diorite
	Lower Jurassic and Later	Laberge Group	quartzite, greywacke, siltstone, arkose, conglomerate
	Upper Triassic	Lewes River Group	quartzite, arkose, greywacke, argillite, limestone, skarn

LOCAL GEOLOGY

The only outcrops encountered on the May claims were in the southwest corner of the property, on claim Y18107. Several outcrops of flat-lying basalt have the appearance of being relatively small outliers sitting on the granite basement, the contact indicated by sharp changes in magnetic intensity.

From the results of the magnetic survey, it would seem that the property is almost entirely underlain by granitic rocks, with local areas of basalt.

ECONOMIC GEOLOGY

The important mineral deposits of the Whitehorse Copperbelt are considered to be contact metasomatic in nature. They occur, for the most part, in skarn zones within the recrystallized limestone of the Lewes River Group, very near the contact with the granitic rocks. The predominant copper minerals are bornite and chalcopyrite, associated with magnetite and numerous other copper and iron minerals. All copper deposits contain some gold and silver, and New Imperial's Cowley Park has enough molybdenum to warrant recovery.

New Imperial Mines Limited have outlined 10.11 million tons grading 1.55% Cu, in six skarn-type deposits. The most important to date, is the Little Chief, currently, the only producer. Although originally planned as an open pit operation, the underground reserves of this deposit are estimated to be 5 million tons, grading 2 percent copper. The "ore to depth" conception is relatively new in the Whitehorse Copperbelt.

Deep penetration geophysical methods are the most logical exploration tools in the area. The best possibility for new mineral discoveries would seem to be along drift covered portions of the favourable belt, where remnants of Lewes River limestone may be caught up in the intrusive rocks. Since the origin of mineralization is believed to be the granitic batholith, porphyry-type copper deposits are a distinct possibility.

EXPLORATION METHODS

A north-south picket baseline was cut on each of the two groups of claims. At chained intervals of 400 feet, crosslines were blazed on a compass bearing. One hundred-foot stations were measured by pacing, and marked with flagging tape. A total of 16 miles of line were laid out.

Magnetic readings were taken at 100-foot intervals, and corrected for diurnal variation. Where the difference in magnetic intensity was excessive between stations, intermediate readings were taken.

Geological mapping was carried out in conjunction with the magnetometer survey, and important topographic features were noted. Two magnetic anomalies were checked for electromagnetic response.

All data obtained during the course of exploration has been plotted on the accompanying 200-scale map.

The instruments used in the geophysical surveys were: (1) a Sharpe MF-1 fluxgate magnetometer, with a sensitivity of 20 gammas per scale division, (2) a Ronka EM-16 electromagnetic unit, utilizing a horizontal primary field originating from Seattle, Washington, on a frequency of 18.6 kcs.

DISCUSSION OF RESULTS

Because of the presence of magnetite, along with the copper minerals, in the ore zones, magnetic surveys are considered to be the optimum primary tool in the search for ore deposits in the Whitehorse Copperbelt. As a result, a magnetic survey was performed on the Gioconda property.

Magnetic background is in the order of 400 gammas, while values range from minus 2,570 to plus 4,380 gammas.

The areas of high magnetic intensity, in the southern portion of the property, are thought to be due to basic rock types (Miles Canyon basalt), rather than magnetite skarn zones.

Anomalous areas of moderate magnetic intensity were checked for conductivity, but with negative results. These anomalies centre at 4 + 50 W on line 24 + 00 S (grid No. 1) and 11 + 00 W on line 4 + 00 S (grid No. 2).

Only a very small portion of the property is outcrop, but the magnetometer survey indicates that granite is probably the predominant rock type, with a few remnants of overlying basalt.

CONCLUSIONS AND RECOMMENDATIONS

Work carried out on the May claims did not prove encouraging, and further expenditure at the present time is not recommended.

Respectfully submitted,

WATTS, GRIFFIS AND McOUAT LIMITED

Wayne Pelette

Toronto, Ontario
November 14, 1968

Wayne B. Pelette

BIBLIOGRAPHY

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CERTIFICATE

I, Wayne B. Pelette, hereby certify:

1. That I am an engineering technologist and reside at 400 Wilson Avenue, Burlington, Ontario.

2. That I graduated from the Provincial Institute of Mining, Haileybury, Ontario in 1961, and have been continuously engaged in my profession since that time.

3. That the foregoing report is based upon information obtained from maps and reports as listed in the bibliography, and personal examination of the property during September and October of 1968.

4. That I have no interest, nor do I expect to receive any, directly or indirectly, in either the properties or the securities of Gioconda Mines Limited.

Wayne Pelette

Toronto, Ontario
November 14, 1968

Wayne B. Pelette.

STATEMENT OF EXPENDITURES

The following is a statement of expenditures incurred in the performance of the work described in this report.

Head Office Engineering and Administration	$ 962.15
Field Engineering and Administration	2,090.10
Field Crew Salaries (line-cutting)	750.00
Field Accommodation	301.50
Car Rental	254.15
Geophysical Equipment Rental	190.00
Travel and Expenses	450.80
Reports, Typing, Draughting, Reproductions, etc.	97.23
Miscellaneous Engineering Supplies	9.40
	$5,105.33

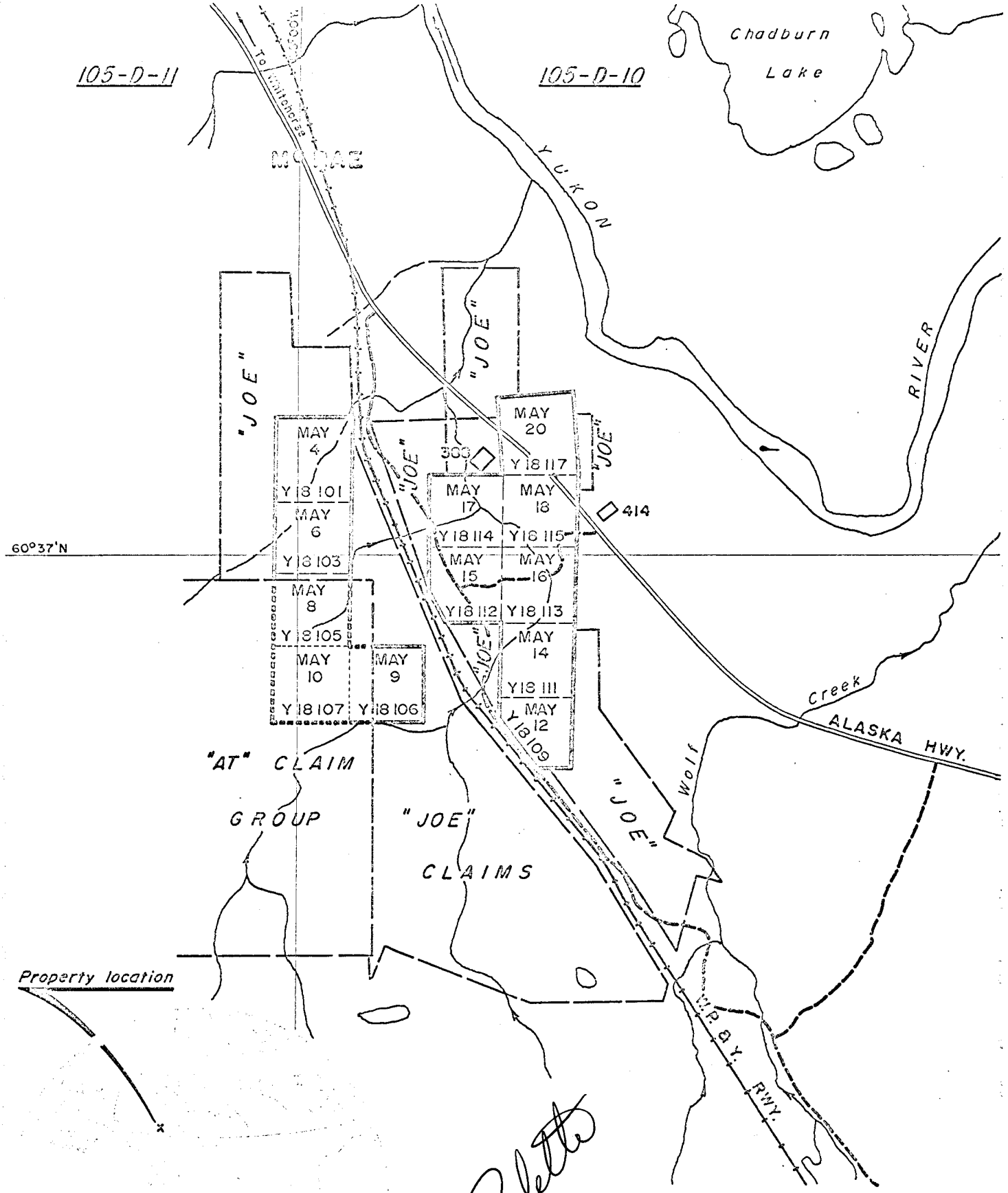
I hereby swear that the above statement is to the best of my knowledge correct.

WATTS, GRIFFIS AND McOUAT LIMITED

G. McKenna
Secretary-Treasurer

Sworn and subscribed to at Toronto, Ontario this 6th day of February, 1969.

Kelly O'Connor
A Commissioner for Oaths for Yukon Territory.



Wayne Pelletier

WATTS, GRIFFIS & McOUAT LIMITED

GIOCONDA MINES LIMITED

Whitehorse Mining District

— YUKON TERRITORY —

"MAY" CLAIMS

Scale — 1 inch = 1/2 mile

TORONTO, ONTARIO OCTOBER 1968

N

GRID № 2

MAY 4

Y 18101

MAY 6

Y 18103

MAY 8

Y 18105

MAY 10

Y 18107

MAY 9

Y 18106

WHITE PASS & YUKON RAILWAY

GRID № 1

MAY 20

Y 18117

MAY 17

Y 18114

MAY 18

Y 18115

MAY 16

MAY 15

Y 18113

Y 18112

MAY 14

Y 18111

MAY 12

Y 18109

WHITEHORSE ALASKA HIGHWAY

CREEK

ROAD

0+00

4+00 S

8+00 S

12+00 S

16+00 S

20+00 S

24+00 S

28+00 S

32+00 S

36+00 S

40+00 S

44+00 S

48+00 S

52+00 S

56+00 S

60+00 S

64+00 S

Ba BASALT

Gr GRANITE

OUTCROP

STRIKE & DIP

CLAIM POST (LOCATED)

CLAIM POST (NOT LOCATED)

CONTOUR INTERVAL - 1000 GAMMAS

GIOCONDA MINES LIMITED

MAY CLAIMS

WHITEHORSE MINING DISTRICT

YUKON TERRITORY

MAGNETOMETER SURVEY

1" = 200'

NOVEMBER, 1968

Wayne Pelletier