

1987

PART 2

MAGNETOMETER SURVEY REPORT

by

Dr. R.H. Seraphim, P. Eng. and F. Lee, Geologist

on the

CUMONT MINES LTD. PROPERTY

on and around

COPPER MOUNTAIN

49°, 120° SE

Similkameen Mining Division, B.C.

Latitude: 120°34'W

Longitude: 49°18'N

Work performed between 12th May and 28th October, 1968.

2nd April, 1969

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Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. **19876** MAP

INTRODUCTION

Cumont Mines Ltd. conducted a comprehensive investigation of part of its property holdings on and around Copper Mountain situated approximately 12 miles south of Princeton, B.C. during the field season of 1968. This report deals with the ground magnetometer survey carried out as part of the overall exploration programme. The magnetometer survey took place between 12th May and 28th October, 1968 using a McPhar M. 500A vertical field variometer magnetometer by or under the direct supervision of the resident geologist, F. Lee of Western Geological Services Ltd., Vancouver, B.C. The project was directed by Doctor R. Seraphim, P. Eng. who made regular supervisory visits to the property during the survey.

Readings were taken over grid lines spaced at 200 ft. intervals with readings taken at 100 ft. intervals along the lines. Intermediate readings were taken where a difference of 400 gammas or more occurred between adjacent readings. The grid lines lie over moderately timbered, steeply sloping mountain sides at elevations lying between 3,500 ft. and 4,800 ft. Approximately 48.7 miles of grid line were surveyed.

The geology of the area covered by the survey is broadly known. Most of the area consists of a portion of the Nicola Series of unaltered to altered volcanics, cut by numerous north-trending porphyry dykes known as "mine" dykes. Northeast and east of the Cumont base camp near the crossing of the Copper Mountain road over Wolf Creek is the Voight Stock consisting chiefly of syeno-diorite and diorite. Small patches of thin till cover exist over part of the area.

All calculations, plotting, and contouring of results were carried out at the base camp. Contouring was at 200 or 400 gamma intervals depending on the magnetic relief. Copies of results - contoured at 1,000 gamma intervals - are included with this report.

SUMMARY AND CONCLUSIONS

A magnetometer survey was carried out over portion of the Cumont Mines Ltd. property east of Copper Mountain in the vicinity of Wolf Creek near Princeton, B.C. between 12th May and 2nd November, 1968. The survey was conducted along grid lines cut over all or a portion of the following claim groups, and over other Crown Grants not grouped:

Alabama - Virginia Group

Kenley Group

Crossline readings on the grids were tied in to base line stations, the values of which were correlated to a "control base station" near the Cumont base camp. Thus it was possible to make a composite magnetic contour map of the whole area covered with the exception of the Kenley C.G. The control base station has been given the arbitrary value of 2,000 gammas.

All calculations, plotting, and contouring of results were done at the field base camp. A contour interval of 200 gamma was used for most of the area surveyed but a 400 gamma interval was used in much of the No. 14 - Falun grid area.

No large anomalies were located on the claims in the vicinity of the Voight stock area.

Magnetite is absent or only occasionally present with copper mineralization in the Nicola volcanics, thus the magnetometer is not able to indicate mineralized zones directly in those rocks. However, as

explained in the report, a magnetic survey may indicate broad areas of the volcanics which should be further investigated by other geophysical methods.

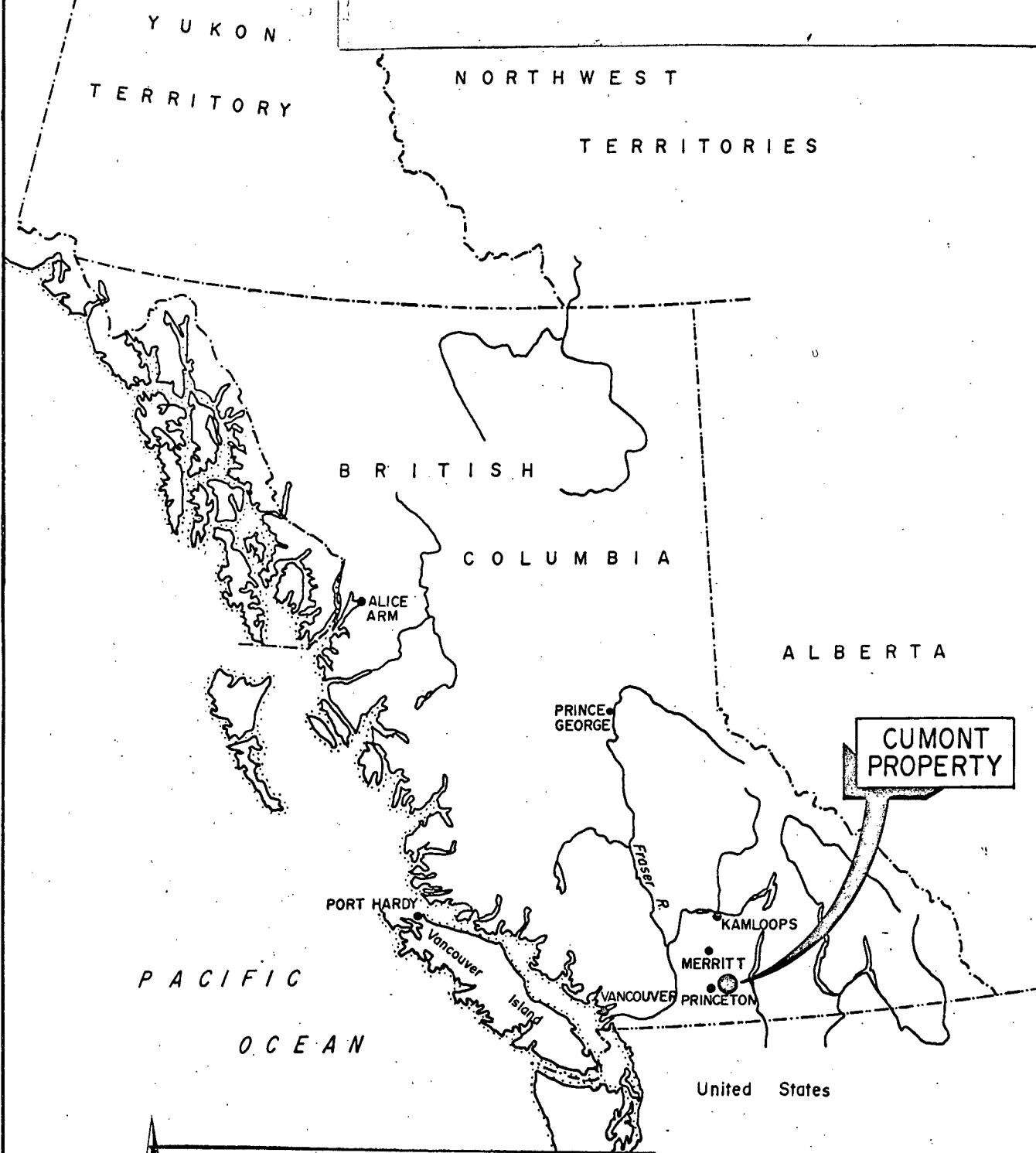
LOCATION AND ACCESS

The Cumont Mines Ltd. holdings are situated on and about Copper Mountain approximately 12 miles south of Princeton, B.C. Princeton is on the South Trans-Provincial Highway. The claims are spread over a wide area but lie chiefly between Kennedy and Voight Mountains to the west and east respectively, and between Combination Creek and Smelter Lakes to the south and north respectively. The country consists of moderately to steeply undulating mountain slopes covered by open pine forests. Elevation varies between 2,500 feet and 4,800 feet.

The company base camp is located on Wolf Creek beside the Copper Mountain road 11 miles south of Princeton at the old Voight Camp "town" site. Elevation is approximately 3,500 feet.

Access to the various parts of the property is by a paved road from Princeton to Copper Mountain and by several four-wheel drive tracks throughout the area.

TO ACCOMPANY THE MAGNETOMETER SURVEY REPORT BY F. LEE GEOLOGIST
& DR. R.H. SERAPHIM P. ENG., ON THE CUMONT MINES LTD. PROPERTY, ON
AND AROUND COPPER MOUNTAIN, SIMILKAMEEN MINING DIVISION,
DATED 2nd. APRIL, 1969



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **1987B** MAP **#1**

CUMONT MINES LTD. (N.P.L.)
COPPER MOUNTAIN PROPERTY, PRINCETON, B.C.

INDEX MAP

SCALE: 1" = 150 miles Approx.

CLAIMS

The magnetometer survey was completed over the following claims and Crown grants.

GROUP NAME: Alabama - Virginia

<u>Claim Name</u>	<u>Record No.</u>	<u>Claim Name</u>	<u>Record No.</u>
Virginia C.G.	L2428	Queen J Fr.	11645H
Automatic Fr. C.G.	L1775S	Queen I Fr.	11646H
No. 1 C.G.	L3349	Queen H Fr.	11643H
Queen D Fr.	11639H	Queen G	11642H
Queen E Fr.	11640H	Queen G Fr.	11641H
Queen J	11644H		

GROUP NAME: Kenley

Kenley C.G.	L3028		
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CROWN GRANTS NOT GROUPEd

No. 5	L3354	New Wolf Fr.	L1777S
No. 18	L3288	No. 73 Fr.	L443S
No. 18 Fr.	L2256S	No. 51 Fr.	L413S
Nelson Fr.	L1778S	No. 71	L415S
New No. 37 Fr.	L1776	No. 52	L414S
No. 33	L3359	No. 70	L62S
No. 14	L3289	No. 50 Fr.	L417S
No. 69	L61S	No. 53	L418S
		Falun	L416S

HISTORY

Mineralization was first discovered in the area in 1882 but because of difficulty of access, active prospecting on the Copper Mountain and Voight Stocks did not commence until approximately 1897. Although more exploration work was initially done on the Voight Stock prospects than on those on Copper Mountain, it was the latter area which has been productive. Production commenced at the Granby Mining Company Ltd. mine on the summit of Copper Mountain in 1925, but due to low copper prices the mine was closed down from 1931 to 1936 inclusive. The mine was reopened in 1937 and closed again in 1956.

Throughout all this period the Voight Stock and surrounding region, together with various parts of Copper Mountain outside the Granby Crown Grants, have been intermittently prospected.

In 1966 Newmont Mining Corporation took options on a portion of Kennedy Mountain and later also on the Granby Mine area and began an intensive prospecting programme. This stimulated further interest in the area.

Fort Reliance Minerals Ltd. explored various claims and Crown Grants in the Copper Mountain area from the summer of 1963 until early 1965, and in April 1965 Cumont Mines Ltd. (N.P.L.) was formed to consolidate various holdings and to direct further exploration.

Exploration was continued in 1965 and 1966 with extensive mapping, bulldozer trenching, and diamond drilling. The 1967 work

was limited to a small amount of bulldozer trenching. The 1968 work included geological mapping, geochemical and geophysical surveying, trenching, and percussion drilling.

PROCEDURE

The survey was carried out using a McPhar M. 500A vertical field variometer magnetometer having a range of from +30,000 gammas to -30,000 gammas. An accuracy within 50 gammas was achieved for most of the area covered by the survey.

Readings were taken along grid cross lines spaced at 200 ft. intervals along base lines, although due to the difficult terrain the lines diverged or converged in places by as much as 100 ft. at the ends of the lines. Most line positions were located by chain and compass, and all the grids were tied in to Crown Grant corner posts where these could be found. Readings were taken at 100 ft. intervals along the grid cross lines with the operator facing west. Where a difference of 400 gamma or more was recorded between adjacent stations intermediate readings were taken, firstly at the half-point and then at one or both of the quarter points if the 400 gamma difference was still exceeded. All grid cross line readings were adjusted for diurnal variations by tying them in to base line stations. These base line stations were selected and their values determined by running base line surveys, and tying these surveys into a "base station 00" control point located on the Wolf Creek river flat near station L36BL which is close to the Cumont base camp. Base station "00" was given an arbitrary value of 2,000 gammas. Values of the base line stations were determined by taking readings out and back along the lines, calculating diurnal variations, and then averaging the two readings for each station. Tie-ins were made within two hour intervals in all cases. Although readings were taken over a period of approximately five months the above procedure enabled correlation of results of the various grids.

All magnetometer readings were recorded, as were calculations for diurnal variation adjustments of each reading.

Results were plotted on separate grid maps and contoured using a contour interval of 200 gammas except for most of the No. 14 - Falun grid where, because of the high variation and numerous small areas of anomalies, a contour interval of 400 gammas was used. At the end of the season these contour maps were combined and a composite map with a 1,000 gamma contour interval produced. A copy of the latter map forms part of this report.

DISCUSSION

The area covered by the magnetometer survey can be divided into two broad regions using the magnetometer contours.

The smaller of the two regions lies over the eastern half of the area and covers all of the No. 14 - Falun grid, the most northerly part of the South Camp grid, and the northerly part of the Queen J/I Fr. grid. This region is marked by a large number of small but extremely strong anomalies forming a broad band along its western and southern boundary. With a background count taken as +2,000 gammas, localized anomalies of over $\pm 16,000$ gammas were recorded in this broad band. To the north and east of the "band", anomalies are more widely spaced and less intense. The outer, western edge of the band of anomalies appears to coincide roughly with the edge of the Voight Stock. Furthermore there is a marked tendency to an east-southeast orientation of the localized highs and lows. This direction may coincide with a joint set trend within and near the edge of the stock. It is thought that a concentration of hematite/magnetite mineralization occurs along widely spaced joints in this direction. The mineralization, however, is rarely strong enough to be noticed on the ground with the unaided eye.

Chalcopyrite is accessory in hematite/magnetite/calcite veins in the Voight Stock area, thus the value of a magnetometer survey of this region is apparent. However, the small extent of significant anomalies and, with one exception, their presence over existing known but small copper occurrences suggests that locating large deposits in the No. 14 - Falun grid area is unlikely.

The larger region delineated by the magnetometer survey covers most of the South Camp area, much of the Queen J/I Fr. grid, and all of the No. 18 - Virginia grid. Background over this region is about $\pm 1,500$ gammas, and superimposed on this are occasional weak to moderate anomalies of varying areal extent. With the exception of the anomaly situated on the Virginia C.G. these anomalies are much less intense than the anomalies overlying the Voight Stock.

Some of the anomalies in the South Camp area are associated with "mine" dykes. Readings are high adjacent to the dyke, low over the dyke, and taper rapidly to the background reading on either side. In fact "mine" dykes can be traced with a magnetometer over regions of no outcrop. This partial control of anomalies by "mine" dykes could explain the marked difference in the northerly trend of the elongated anomalies in the northern section of the South Camp grid compared with the east-southeasterly trend in the adjacent Voight Stock area. The "mine" dyke control of the north-trending anomalies does not explain why there is a concentration of copper mineralization at the intersection of these trends.

The largest anomaly in this second zone, both in size and strength, overlies part of the Virginia C.G. It coincides in part with "mine" dykes but may also be partly due to a more basic rock type (Dioritic material?), a little of which has been seen in trenches. Not all anomalies are, however, associated with "mine" dykes. The anomaly lying over the southwest corner of the No. 18 C.G. is approximately centred on a small area of altered mineralized volcanics.

CONCLUSIONS AND RECOMMENDATIONS

The survey suggests that the magnetometer is useful for locating mineralized zones in the stock areas on and around Copper Mountain area. Furthermore, the survey strongly indicates that there is no large magnetite/copper deposit in the Voight Stock covered by the No. 14 - Falun grid. In areas underlain by Nicola volcanics the magnetometer alone is of little value for locating zones of copper mineralization because of the general lack of magnetite in this environment.

Others have noticed in the Copper Mountain area that over areas of virtually unaltered Nicola volcanics, magnetometer readings are consistently intermediate. In areas of mildly metamorphosed and metasomatized volcanics the magnetometer readings tend to be lower. Finally, areas of high metamorphism exhibit readings of moderate intensity. In addition, copper mineralization in the Copper Mountain area tends to be best developed in the moderately metamorphosed volcanics. Thus the results of the magnetometer survey over the Nicola volcanics, though of little value alone, should prove of value when used in conjunction with the results of the I.P. Survey carried out in the latter part of the 1968 field season.

Further magnetometer work over the grids is not recommended at present.

2nd April, 1969.

R. H. Desjardins
Frank Lee

LIST OF PERSONNEL AND DATES EMPLOYED

Total number of men employed = 4

<u>Name and Address</u>	<u>Position</u>	<u>Work Performed</u>	<u>Employed from - to</u>
F. Lee Cumont Camp Princeton	Geologist	Supervision. Instrument Operating. Calculating, plotting and contouring results.	12 May - 2 November
H. Varep 915-25 Adelaide St.E. Toronto 1, Ont.	Student	Instrument Operating.	12 May - 14 June
D. Miller 8th Avenue East Princeton	Student	Instrument Operating.	24 June - 2 November
L. McIver Similkameen Road Princeton	Prospector	Line clearing, cutting, and marking.	19 May - 2 November


CERTIFICATION

I, Dr. R.H. Seraphim, of the City of Vancouver, Province of British Columbia,

HEREBY CERTIFY AS FOLLOWS:

1. I am a geological engineer residing at 4636 West 3rd Ave., Vancouver, B.C., and with office at 427 - 470 Granville St., Vancouver, B.C.
2. I am a registered Professional Engineer of British Columbia. I graduated from the University of British Columbia in 1947, and from Massachusetts Institute of Technology in 1951.
3. I have practiced my profession for 22 years.
4. I have no interest, direct or indirect, in the securities of Cumont Mines Ltd., or in the claims held by Cumont Mines Ltd.
5. I have made examinations of the claim group at approximately monthly intervals during the past year, and have reviewed and discussed the enclosed data with the field staff during these examinations.

DATED at Vancouver, B.C., this 2nd day of April, 1969.


R.H. Seraphim, P.Eng.

CERTIFICATION

I, Thomas Frank Lee,

HEREBY STATE THAT:

1. I am an Australian citizen residing in Vancouver, B.C.

2. I received a Diploma of Civil Engineering in Victoria, Australia, in 1954 and a B.Sc.(Ordinary) in geology at the Melbourne University, Australia in 1959.

3. I am a member of the Geological Society of Australia and a graduate member of the Institution of Engineers, Australia.

4. After three years practice as a structural engineer and one as an assistant office geologist, I spent three field seasons in tropical Australia as a Geologist for The Broken Hill Pty. Co. Ltd. being Officer in Charge for the last two years (1960-61). From 1962 to 1966 I was lecturer in charge of geology at the Bendigo Institute of Technology (late Bendigo School of Mines) and during the field season of 1967 was employed by Bethex Explorations Ltd. as geologist at Alice Arm, B.C. From May 1968 to the present I have been employed by Western Geological Services Ltd. of Vancouver, B.C.

Frank Lee

T.F.Lee, B.Sc., Dip.of C.E., TTTC

CANADA)
)
 COUNTY OF YORK) IN THE MATTER OF a Magnetometer Survey on the
)
 TO WIT) properties of Cumont Mines Limited (N.P.L.)

I, Seymour Wisebrot, of the City of Toronto, in the County of York, make oath and say:

1. That I am Secretary-Treasurer of Cumont Mines Limited (N.P.L.) and as such have knowledge of the matters herein deposed of.
2. That a Magnetometer Survey has been executed on the Virginia Group area, Princeton, British Columbia, between May 12, 1968 and October 28, 1968 and the following expenses were incurred.

(1) Wages

F. Lee - Geologist - 5 months at \$850/month 40% of time devoted to supervising magnetometer survey	\$4,250	\$1,700
H. Varep - Student - 1 month at \$425/month	425	425
D. Miller - Student - 4 months at \$350/month 70% of time on magnetometer survey	1,400	980
L. McIvor - Prospector - 5 months at \$600/month 50% of time on magnetometer survey= mainly line cutting	3,000	1,500
		<u>\$4,605</u>

(2) Transportation and Shipping

Nil

(3) Room and Board

Estimated at \$5 per day for Lee and Varep. Board not supplied to Miller and McIvor

\$ 450

(4) Consulting Fee and Field Administration

Total \$3250 - charge 25% to Magnetometer Survey

\$ 812

T O T A L

\$5,867

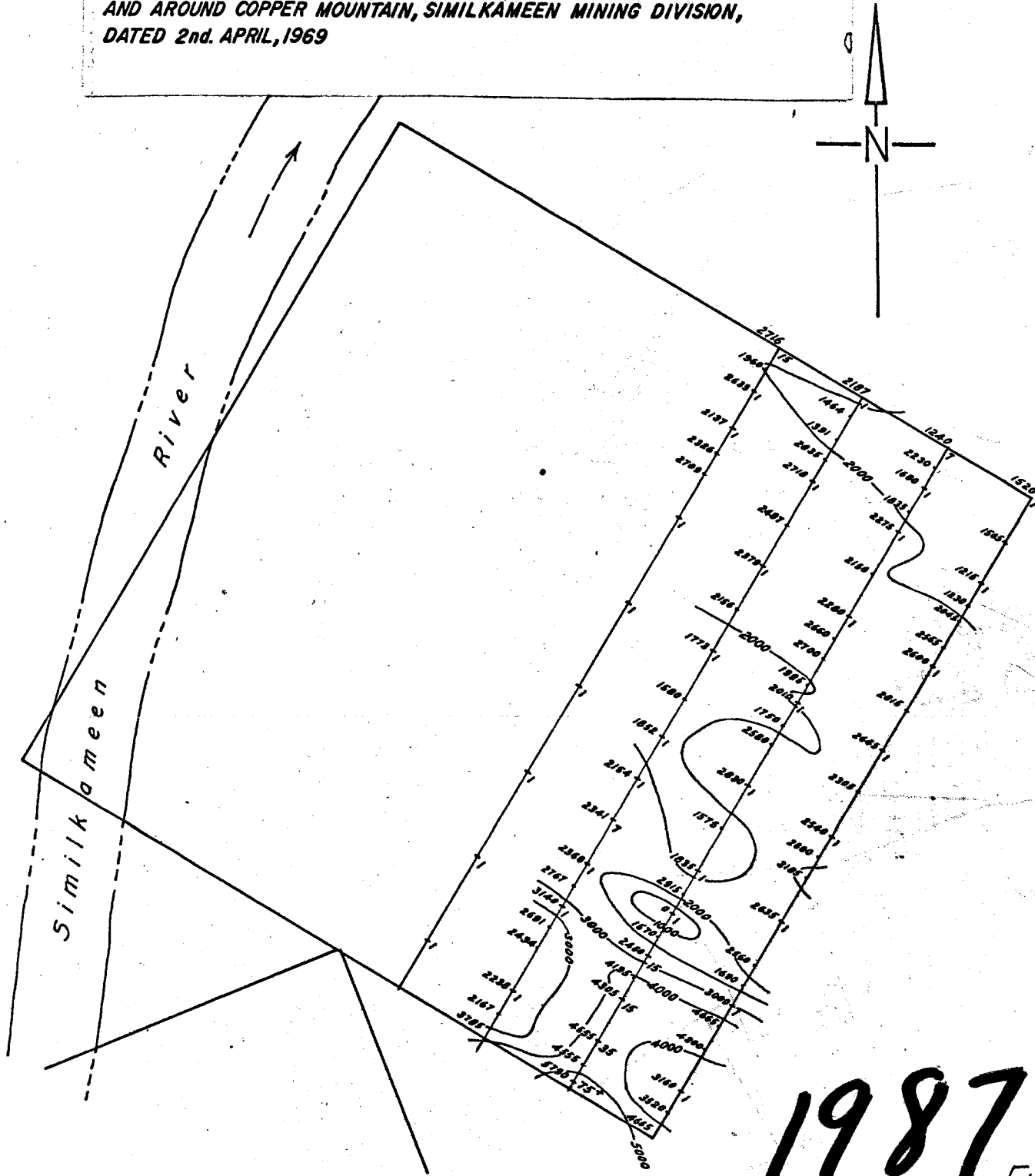
SWORN before me at the City)
 of Toronto, in the County of)
 York, this 27th day of June)
 1969)

S. Wisebrot

W. B. A. Cummins
 A Commissioner for taking
 affidavits, etc.

A Notary Public in and for
 the Province of Ontario.

TO ACCOMPANY THE MAGNETOMETER SURVEY REPORT BY F. LEE GEOLOGIST
 & DR. R.H. SERAPHIM P. ENG., ON THE CUMONT MINES LTD. PROPERTY, ON
 AND AROUND COPPER MOUNTAIN, SIMILKAMEEN MINING DIVISION,
 DATED 2nd. APRIL, 1969



2368 7
 Department of
 Mines & Geotechnical Petroleum Resources
 (Figures not tied in to base station 000)
 ASSESSMENT REPORT
 NO. **19870** MAP **#3**

CUMONT MINES LIMITED
 VANCOUVER BRITISH COLUMBIA

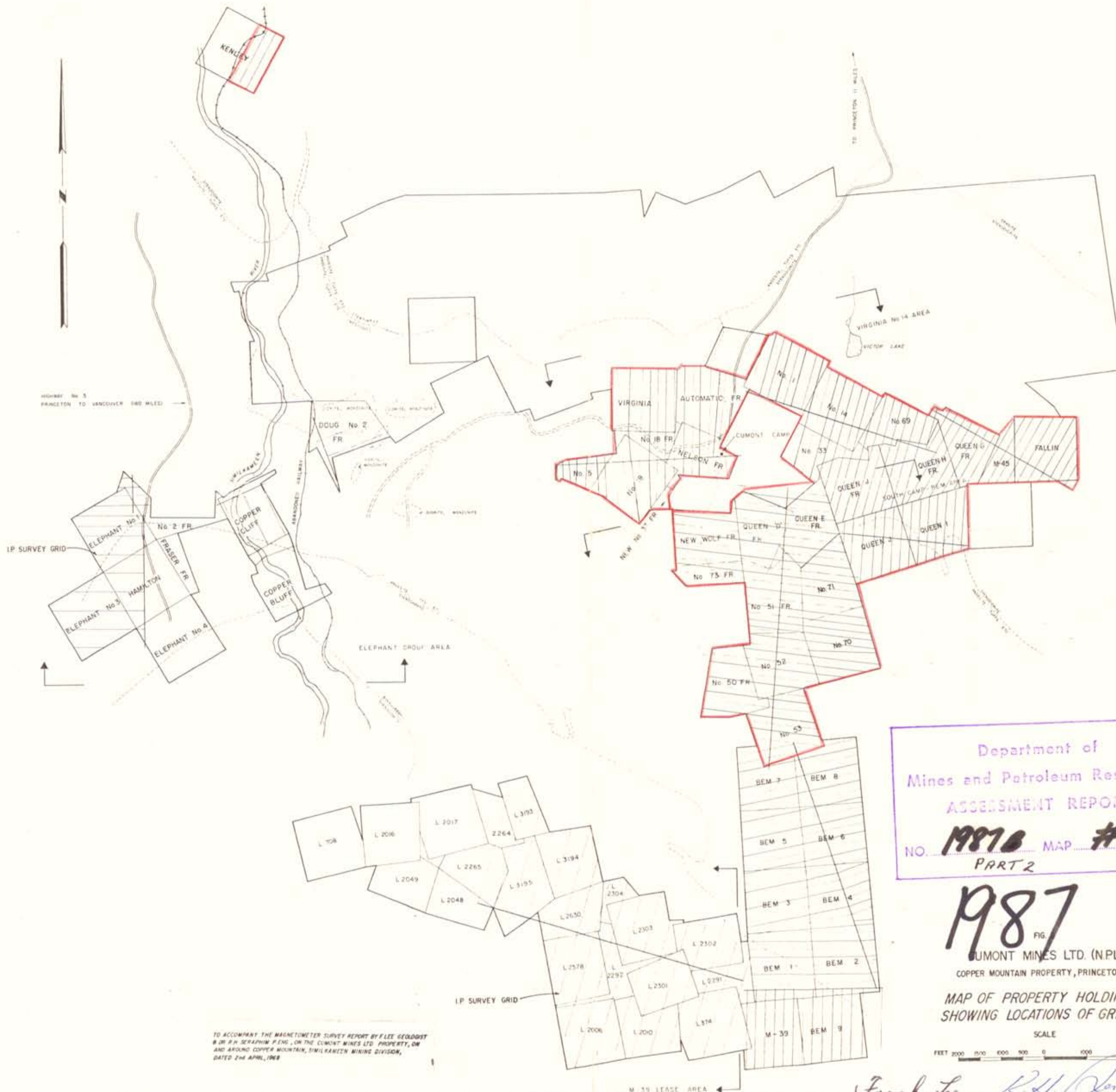
Kenley Crown Grant
 Magnetometer & Geochemical Results

W.G.S. VANCOUVER B.C.

MARCH 1969

Frank Lee

R.H. Seraphim



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **19870** MAP **#4**
PART 2

1987
FIG.

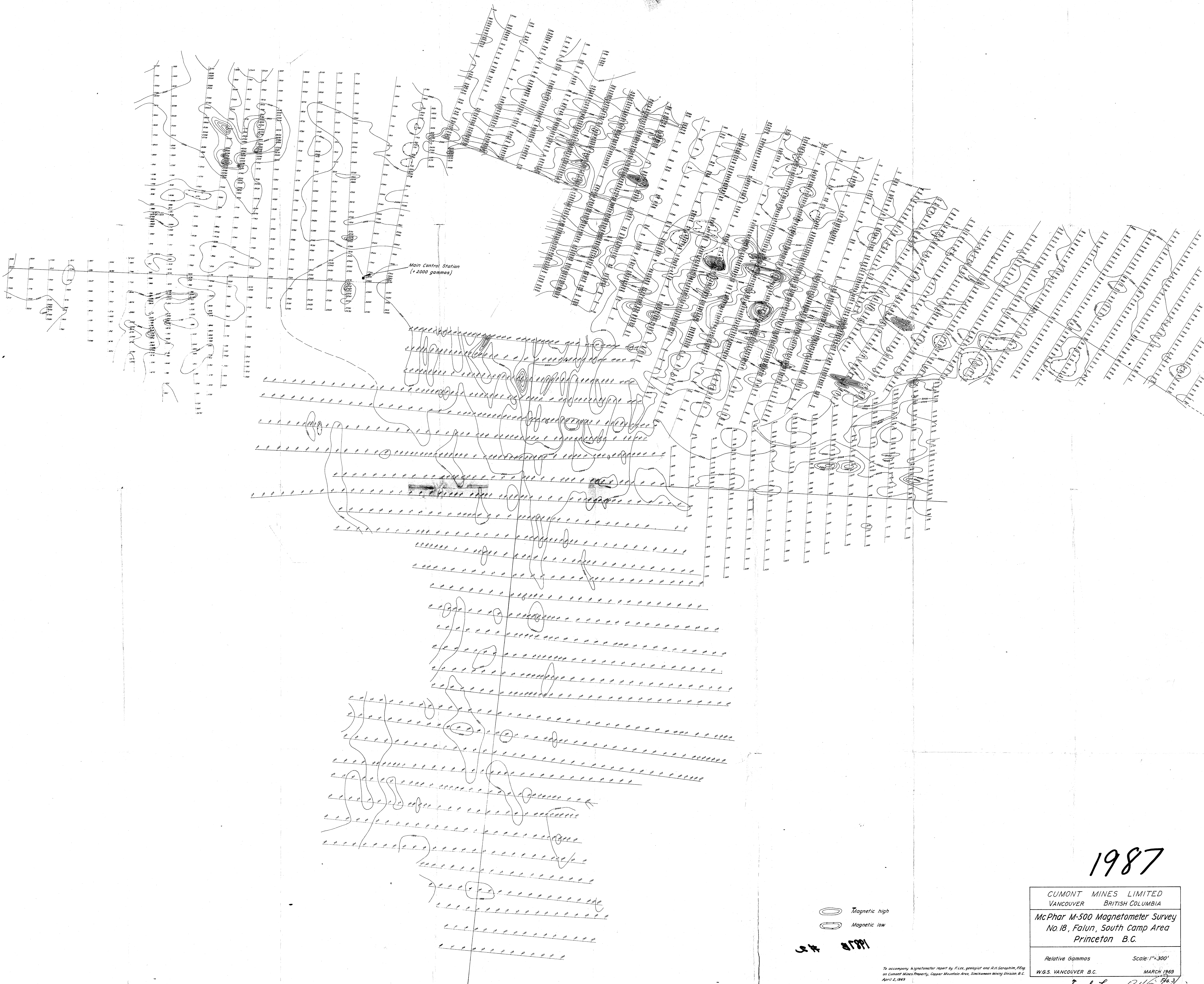
CUMONT MINES LTD. (N.P.L.)
COPPER MOUNTAIN PROPERTY, PRINCETON, B.C.

MAP OF PROPERTY HOLDINGS
SHOWING LOCATIONS OF GRIDS


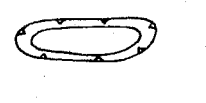
SCALE
FEET 2000 1500 1000 500 0 500 1000 1500 2000 FEET

TO ACCOMPANY THE MAGNETOMETER SURVEY REPORT BY F. LEE, GEOLOGIST
B. OR R.H. SERAPHIM P. ENG., ON THE CUMONT MINES LTD. PROPERTY, ON
AND AROUND COPPER MOUNTAIN, SIMILIKAMZIN MINING DIVISION,
DATED 24th APRIL, 1987

Frank Lee *R.H. Seraphim*



Main Control Station
(+2000 gammas)

 Magnetic high
 Magnetic low
 #5 8791

To accompany magnetometer report by F.L.S. geophysist and R.H. Stoughton, P.Eng.
on Cuscutt Mines Property, Copper Mountain Area, Southwestern Mining Division, B.C.
April 2, 1969

1987

CUMMONT MINES LIMITED VANCOUVER BRITISH COLUMBIA	
McPhar M-500 Magnetometer Survey No. 18, Falun, South Camp Area Princeton B.C.	
Relative Gammas	Scale: 1" = 300'
W.G.S. VANCOUVER B.C.	MARCH 1969

Frank Lee *[Signature]*