4254

REPORT ON

AIRBORNE GEOPHYSICAL SURVEY

2151, 2383, 2384, 2385 Marmot Groups

Lat. 56°45, Long. 126°30

N.T.S 94D 10E, 15E.

Wesfrob Mines Limited

March 15, 1973 - March 31, 1973

D. H. Brown, P.Eng.(B.C.)

R. K. Watson, P.Eng.(Ont.)
(Lockwood Survey Corporation Limited)

Vancouver, B.C. April 10, 1973

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INTRODUCTION

During the period March 23rd to March 26th, 1973, Lockwood Survey Corporation Limited carried out an airborne geophysical survey over a group of claims in the northern part of British Columbia for Wesfrob Mines Limited.

The purpose of the survey was to provide information about mineral deposits and geological structure.

1.1 AREA DESCRIPTION

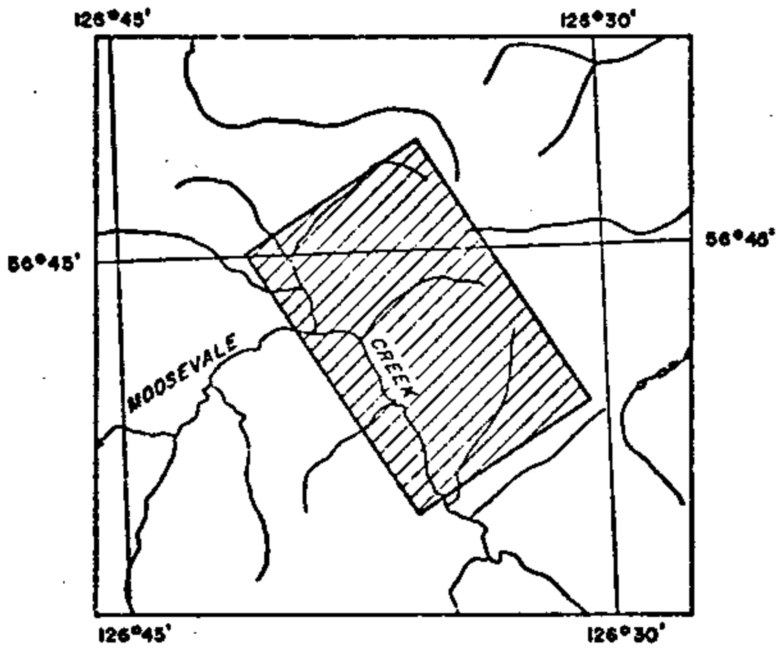
The area covered is in the vicinity of Moosevale Creek, 20 miles east of Thutade Lake in the Cassiar District. The position of the area with reference to the nearest 1^{o} quadulateral is $56^{o}126^{o}$ NE.

1.2 TOPOGRAPHY

The area is extremely rugged. Relief is in the order of 2,500 feet from the valley of Moosevale Creek to the peaks in the McConnel Range. Average elevation of the area is about 5,000 feet above sea level.

1.3 SURVEY FLIGHT PATTERN

The geophysical survey consisted of traverse lines flown at 660 feet spacing in a $N60^{O}E$ direction. All traverses



LOCATION MAP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP #1

Figure 1

were flown in drape fashion with the helicopter maintaining a ground clearance of 200 feet.

2.1 AIRCRAFT INSTRUMENTATION AND DATA RECORDING

The following equipment was installed in a Bell Jet Ranger 206A helicopter, registration CF-NMP, operated by Northern Thunderbird Airways of Prince George, B.C.

(a) The Gulf Mk.III Magnetometer

The magnetometer, in a towed bird configuration, is a saturable core fluxgate system which is used to measure the earth's magnetic field intensity in the direction of the main earth's field. It is sensitive to magnetic field intensity variation of about 1 gamma.

The magnetometer head consists of two saturable core orienting fluxgates whose axes are at right angles to each other. The axis of the measuring fluxgate is normal to the plane containing the two orienting fluxgates. In operation, the self-orienting fluxgates are maintained by servometers in a position of minimum coupling with the earth's magnetic field; the measuring fluxgate is then in a position of maximum coupling with the earth's magnetic field.

The output from the magnetometer is recorded in profile form in red ink on a moving chart paper, at an approximate scale of 1 inch to 1,320 feet. The operating range for this survey was 1,200 gammas across a 10 inch chart; the recording pen automatically steps at the side of the chart at 5/6th of the full scale range, i.e. 1,000 gammas. Chart speed was 4 inches per minute. The magnetometer trace is repeated on the MFE chart that records the electromagnetic channels. This record is 1,200 gammas across a 2 inch width. See Fig. 4.

(b) The Lockwood LHEM-200 Electromagnetometer

The helicopter-borne E.M. system used for this survey was developed by Lockwood Survey Corporation. This system measures the in-phase and out-of-phase components of the secondary electromagnetic field, in terms of the primary field at the receiver, viz., in parts per million of the primary field. The frequency of the alternating electromagnetic field is 4,000 cycles per second. Receiving and transmitting coils are held vertical and coaxial in a towed "bird", a distance of 30 feet apart and 100 feet below the helicopter. The sensitivity of the measuring system is such that the minimum recognizable in-phase anomaly is about 8 parts per million. Noise on the in-phase profile is usually less than 5 parts per million of the primary field.

This equipment is operated at a "bird" height of 100 feet.

Full scale deflection of the in-phase and out-phase channels is 400 parts per million across a distance of 2 inches. Recorder used was an MFE with a chart speed of 6 inches per minute. Scale of the record is 1" = 1040 feet. See Fig. 5.

(c) The C.A.R.L. Mk.VIII Tracking Camera

The camera used for this survey was developed by Canadian Applied Research Limited.

This camera uses a 35 mm. film and is operated in a discrete frame mode. The frame size is 25 mm. laterally and 18 mm. longitudinally. The focal length is 18.5 mm. The resulting lateral coverage is 1.5 times the terrain clearance, the longitudinal coverage is equal to the terrain clearance, i.e. at 200 feet above ground the lateral coverage is

300 feet, the longitudinal coverage 200 feet. Each frame is numbered by a prism system which exposes "veeder" counter numbers on the side of the frame at the moment of exposure. Coincident with every tenth film exposure a fiducial pulse is imprinted on the magnetometer and electromagnetometer recording charts. Exposure interval of this camera for the survey was 1.5 seconds. See Figures 4 and 5.

(d) The Bonzer Altimeter TRN-70

This equipment measures the clearance between the helicopter and the nearest object. It consists of an electronic narrow aperture transmitter operating at 1600 megahertz. Output from the altimeter system was recorded on the bottom trace of the MFE recorder along with the electromagnetometer traces. Operating range was 2,500 feet across a 2 inch chart width. See Fig. 5.

3.1 FIELD SURVEY PERSONNEL

The survey was conducted in the field by the following personnel:

Pilot	:	K. Knight
Navigator/Operator	:	H. Sandau
Data Technician	:	J. Clulow

The address of Mr. Knight is Northern Thunderbirds Airways, Prince George, B.C. The address of Mr. Sandau and Mr. Clulow is 1450 O'Connor Drive, Toronto, Ontario.

4.1 POSITIONING

The positioning of the helicopter was recorded by the vertically mounted tracking camera on 35 mm. film. The developed film was then related to the 1320 feet to 1 inch mosaics to obtain accurate positioning. The related points plotted on the mosaic were then connected in order to produce the flight path recovery.

5.1 DATA COMPILATION AND PRESENTATION

(a) Aeromagnetic Data

The magnetic data is presented as contours of the earth's total magnetic field intensity at a basic contour interval of 20 gammas. The horizontal scale of the map is 1320 feet = 1 inch. As all flights were of very short duration, the diurnal variation is minimal. A common datum was drawn on all the traverse profiles for that particular day. By inspection of adjacent lines flown on different days, the diurnal variation was removed so that all traverse lines have datums in the same plane.

From this datum magnetic values are read at the predetermined 20 gamma interval and transcribed on the base map with reference to the flight path. Points of equal magnetic intensity are joined to produce the final magnetic contour map. Fig. 2.

Evidently same treatment as for Scintrex ?EM-701

(b) Electromagnetic Data

The electromagnetic data is represented as the half wavelength of the in-phase component, being the extent of the heavy line with the dot representing the peak of the anomaly.

The electromagnetic data includes (a) instrument drift and (b) response due to regional variations in ground conductivity. These components were corrected for by fitting to both the in-phase and out-of-phase records, a series of linear datum lines to approximate the broad or regional variations in the records.

The in-phase component records were then read at the anomaly peaks and the half-wave amplitude marked.

The corresponding out-of-phase anomaly peaks were read. The extent and amplitude were then located on the base map with their in and out-of-phase values transcribed beside the peak. See Fig. 3.

INTERPRETATION

Magnetic Survey

The results of the magnetic survey are shown in contour form on Sheet No. 2. A band of relatively non-magnetic rock lies in the center of the map sheet separating two rock types which are more active magnetically. The positions of the contacts between these three units have been interpreted on the magnetic map and transcribed onto the EM interpretation map.

By relating these magnetic units to the geological units as shown on G.S.C. Sheet 962A, McConnell Creek, it is proposed that the central, unmagnetic group is a southward extension of the Sustut Group, a formation of sandstones, conglomerates and shales. The eastern magnetic formation conforms well with the Upper Triassic andesitic and basaltic tuffs (3A) which have been mapped in this location. The western magnetic rock type would appear to represent the Asitka Group which is a mixture of rhyolitic and andesitic lavas and greenstones and would likely have the active magnetic character which is seen on this map.

A displacement in the western contact has been interpreted as a fault.

Electromagnetic Survey

A large number of weak electromagnetic conductors were observed on the survey profiles. The positions of the anomalies were transcribed to the interpretation map using symbols to denote the position of the peak of the anomaly and the width of the anomaly at one half amplitude. This map was then superimposed on the magnetic contours and electromagnetic conductors were joined from line to line so as to conform with the bedrock structure as indicated by the magnetic contours. The conductors were then put into four magnetic categories: (M) those coinciding directly with a magnetic high, (L) those coinciding directly with a magnetic low, (C) those coinciding with a steep magnetic gradient which might indicate the contact between two rock types. Those having no particular magnetic characteristic are not given a letter.

The in-phase amplitude over the out-of-phase amplitude at the anomaly peak is written beside each anomaly. The conductivity-width product for the most conductive anomalies was calculated from the peak in-phase and out-of-phase values, and is shown beside the anomaly peak. The unit is mhos.

Past experience has shown that massive sulphide deposits usually have a conductivity-width value of greater than 5 mhos. Values under 5 usually relate to weak conductors such as barren or poorly mineralized faults, shale beds and other formational conductors, or clay beds within overburden. With one or two exceptions the conductivities shown in this present survey are below the range of values which represent sulphides. They fall within the range of formational conductors and their tendency to line up with the regional strike in the area would support this observation. Of course, it is important to remember that economic sulphide mineralization in certain environments can occur as thin stringers or veins which will have a low conductivity-width but may be minable by open pit methods. The type of environment and the type of deposits that are expected must be taken into account before judgment is made on the conductivity-width value that is used as a lower cut-off.

Within the rock type interpreted as the Sustut Group lies one anomaly with a conductivity-width of 8 mhos which is the highest observed in the survey. This coincides with a weak magnetic conductor and may have some potential as a sulphide deposit providing the Sustut Group is an acceptable host rock. This conductor and the others in this group, however, could also be shale beds which have been reported as part of the formation.

An exposure of copper and silver mineralization is reported on Map 962A and lies within the Upper Triassic formation 3A. Its location is not accurate enough for the writer to relate to the present conductors and so no judgment can be made as to its electromagnetic response.

RECOMMENDATIONS

The anomalies having a conductivity-width product within the range of sulphide mineralization and having a coincident magnetic response are worthy of ground follow-up on the basis of geophysics alone. This would include any anomalies with conductivity-width of 5 or greater. However, it is first recommended that a study be made of the type of bedrock in which the conductor lies to assess the likelihood of it being the type of bedrock in which sulphide minerals should occur. Once this is established the anomaly should be traced on the ground using conventional ground electromagnetic and magnetic instruments or induced polarization instruments in an environment in which disseminated mineralization is believed likely to occur.

SUMMARY AND CONCLUSIONS

An airborne magnetic and electromagnetic survey was carried out over the area under discussion using a total field Gulf magnetometer and a coaxial in-phase and out-of-phase helicopter electromagnetic instrument. From the magnetic information the surrounding bedrock geology was extended under the overburden which covered most of the survey area. Three general types of bedrock were outlined and are shown on the interpretation map. A large number of comparatively weak electromagnetic conductors were discovered, many of which are believed to represent formational conductors and shale beds. It is recommended that the few conductors which had a conductivity-width product within the range of sulphide mineralization be followed up providing the surrounding bedrock type is a potential host rock for sulphide mineralization.

LOCKWOOD SURVEY CORPORATION LIMITED,

REGISTERED PROFESSIONAL ENGINEER
R. K. WATSON
PROVINCE OF ONTARIO

Roger K. Watson, B.A.Sc.,P.Eng.
Consulting Geophysicist

APPENDIX

LIST OF CLAIMS

Lease	Claim Numbers
#2151 Marmot	102 to 141 inclusive
#2383	1 to 26 inclusive
	31 to 36 inclusive
	57
	59 to 64 inclusive
	66
#2384	27 to 30 inclusive
	65
	67 to 101 inclusive
#2385	37 to 56 inclusive
	58

Appendix B

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of the Airborne Geophysical Survey over 2151, 2383, 2384 and 2385 Marmot Groups Lat. 56°45' N., Long. 126°30' W., Omineca M. D.

I, David H. Brown

of #504 - 1112 West Pender Street, Vancouver 1, B.C.

in the Province of British Columbia, do solemnly declare that the following expenses were incurred in connection with an Airborne (Magnetometer and E.M.) Geophysical Survey covering the 2151, 2383, 2384 and 2385 Marmot Groups of mineral claims, plus other areas of the Sustut-Will-Willow, Day-Fir and Cross Groups, as detailed below.

SUSTUT-OLD FORT AIRBORNE GEOPHYSICAL (MAG. AND E.M.) SURVEY:

Period 1973		Sustut-Marmot	Old Fort
March 21-27	Helicopter (Northern Mtn Airlines, Pr. George) (Jet Ranger)	$4,739.25	$1,135.83
March 21-27	Beaver, Otter, support aircraft (Northern Thunderbird Air)	2,728.00	327.00
March 22-27	Airborne Mag. & E.M. Survey (Lockwood Survey Corp.)	10,145.85	2,044.40
March 15-20	Air Photo Mosaic (Lockwood Survey Corp.) 40% of Cost	210.00	105.00
March 15-31	Falconbridge Staff - wages, expenses and catering:		
March 20-27	D. Sutherland, geophysicist - Layout and Interpretation, 8 days - wages and expenses	1,910.68	238.83
March 19-26	J.J. Mcdougall, P.Eng., Program Coordinator, 8 days - wages, expenses	1,438.00	205.43
March 17-20) March 28-31)	D.H. Brown, Expediter and Report Compilation, 8 days - wages, expenses	836.00	418.00
March 15-27	C. Christensen) Catering and ground control support	585.00	
March 15-27	R. Macphee) Catering and ground control support	585.00	
March 15-27	Marmot Campsite - Catering supplies - 66 man days @ $10.00 per day	660.00	30.00
		$23,837.78	$4,504.49

Distribution:

Marmot 1 - 141	57.35%	$13,670.97
Sustut Areas 1, 2	19.5%	4,648.37
Sustut Area 3	6.43%	1,532.77
Sustut Areas 4, 4A	3.02%	719.90
Sustut Area 5	7.13%	1,699.63
Sustut Area 6	6.57%	1,566.14
	100%	$23,837.78

Compilation for Marmot 1-141

Proportion of above Airborne Geophysical Survey	$13,670.97	
Plus 40% of cost of production of Marmot area topographic map	631.68	$14,302.65

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the

of , in the

Province of British Columbia, this Ap 25-73

day of , A.D.

D. H. Brown

Mining Recorder

A Commissioner for taking Affidavits within British Columbia or A Notary Public in and for the Province of British Columbia.

WESFROB MINES LIMITED
1112 WEST PENDER STREET
VANCOUVER 1, B. C., CANADA
TELEPHONE: 682-6242
TELEX 04-53245

April 10, 1973

The Mining Recorder
Omineca Mining Division
Smithers, B.C.

Dear Sir:

This is to certify that the personnel cited in the accompanying Declaration of Work Statement as having contributed essential work connected with the Airborne Geophysical Survey covering the Marmot and other groups of claims are qualified as stated below:

Mr. R. K. Watson, B.A.Sc., P.Eng.(Ont.) - graduated from University of Toronto in 1959 in Engineering Physics with the Geophysical option. Since then he has been continuously employed by major Geophysical companies including Lockwood Survey Corporation, a division of Huntec Ltd. of Toronto.

Mr. D. B. Sutherland, B.A., M.A. (University of Toronto), P.Eng.(Ont.) - Chief Geophysicist for Falconbridge Nickel Mines Limited. He was responsible for flight line layout and interpretation on the ground. Mr. Sutherland has more than ten years experience with major companies directing geophysical work.

Mr. J. J. McDougall, B.A.Sc.(U.B.C.), P.Eng.(B.C.) - was responsible for coordinating all phases of the survey: geophysical, aircraft, ground control and radio contact on the site during the period of the survey. Mr. McDougall is Exploration Manager (B.C.), Wesfrob Mines Limited.

C. Christensen and R. Macphee - are qualified surveyors trained in the field by engineering staff of Falconbridge Nickel Mines Limited and Wesfrob Mines Limited over a period greater than eight years each. They also doubled as caterers for the crew of seven men involved in the survey.

I, D. H. Brown, B.A.Sc.(U.B.C.), P.Eng.(B.C.) was responsible for auxiliary engineering services and over-all supervision of the project and report compilations.

Yours very truly,

WESFROB MINES LIMITED

D. H. Brown

D. H. Brown, P.Eng.(B.C.)

DHB:fn

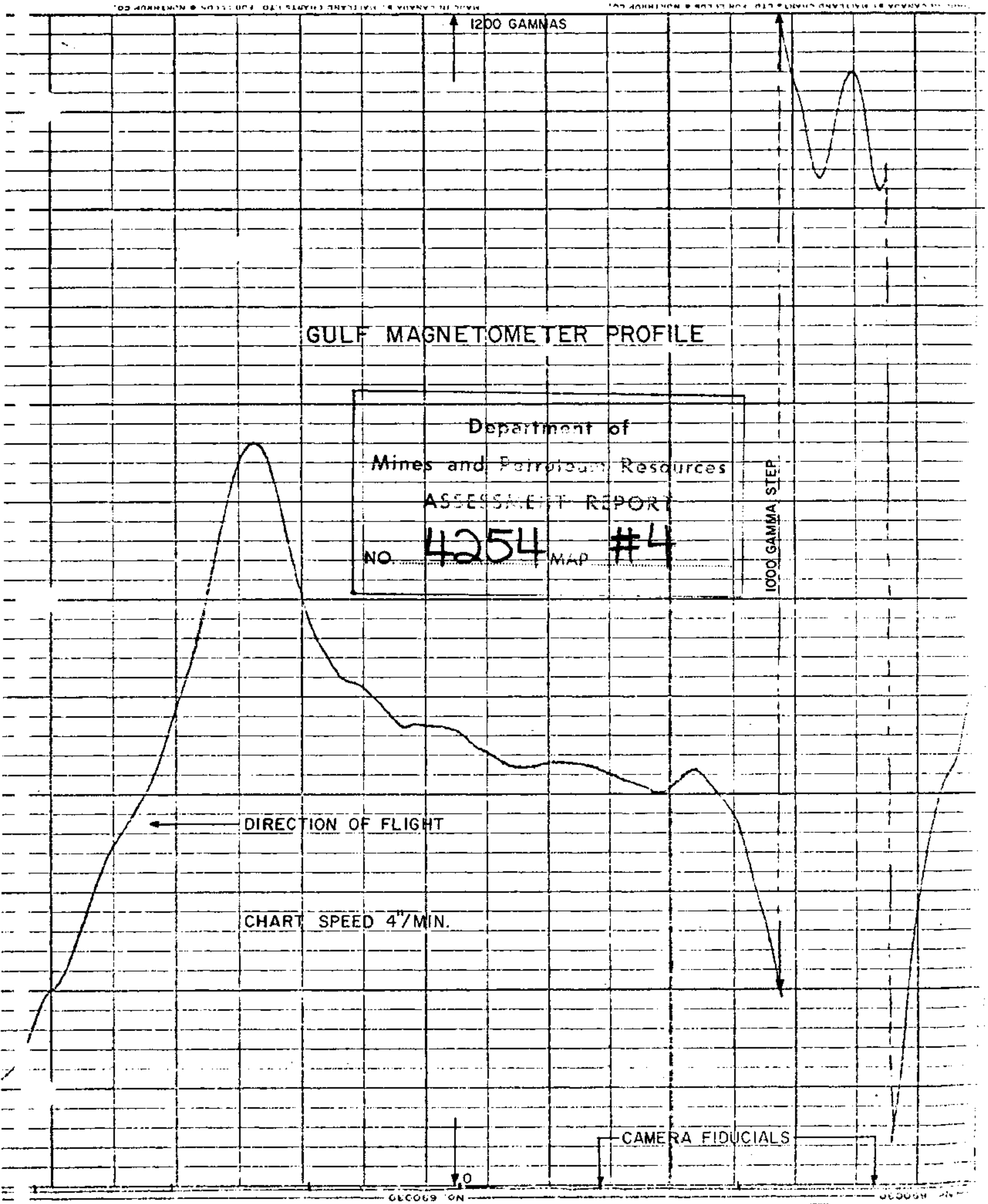

1200 GAMMAS
GULF MAGNETOMETER PROFILE
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP #4
1000 GAMMA STEP
DIRECTION OF FLIGHT
CHART SPEED 4"/MIN.
CAMERA FIDUCIALS
0

Figure 4

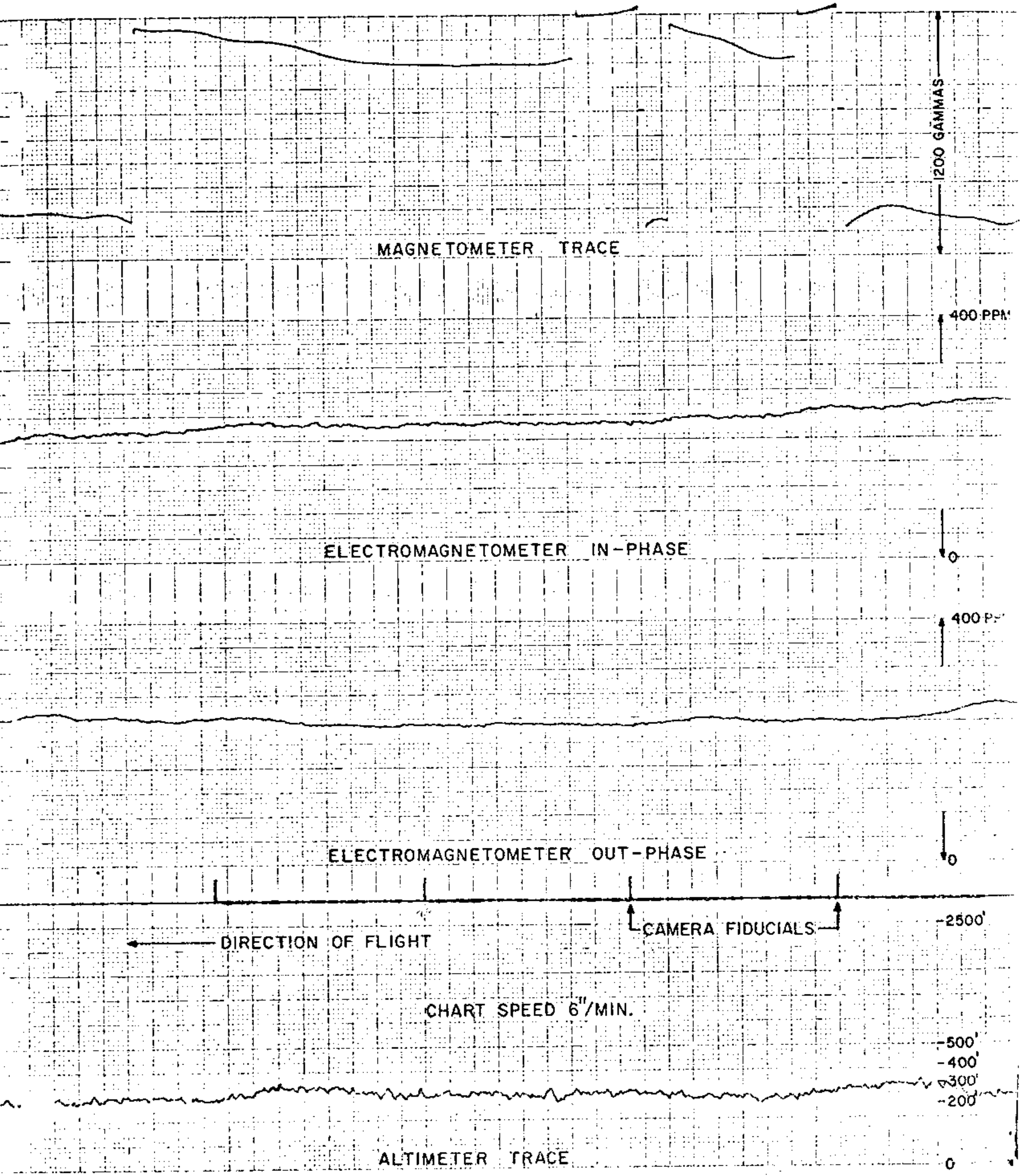

1200 GAMMAS
MAGNETOMETER TRACE
400 PPM
ELECTROMAGNETOMETER IN-PHASE
0
400 PP
ELECTROMAGNETOMETER OUT-PHASE
0
CAMERA FIDUCIALS
-2500'
DIRECTION OF FLIGHT
CHART SPEED 6"/MIN.
-500'
-400'
-300'
-200'
ALTIMETER TRACE
0

FIGURE 5

FALCONBRIJ VCR

LOCKWOOD TOR
12 APRIL 1973

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP

FALCONBRIDGE
VANCOUVER

ATTENTION DAVE BROWN

INVOICE STATEMENT MARMOT AND ALL OTHER GROUPS

TOTAL MOBILIZATION AND DEMOBILIZATION COST -

AIR FARES 2 MEN	644.00
AIRFREIGHT	790.94
LIVING ALLOWANCE 2 MEN X 3 DAYS X DOLLARS 25	150.00
	1,584.94
+ 10 PERCENT ADMIN	158.49
TOTAL	DOLLARS 1,743.43

PRODUCTION

APRIL 17 TO EVENING 27TH MARCH

11 DAYS AT DOLLARS 575/DAY — DOLLARS 6,325.00

REDUCTION AND COMPILATION OF DATA

395.4 MILES AT DOLLARS 11.00
PER LINE MILE — DOLLARS 4,349.40

GRAND TOTAL ---------------------------------DOLLARS 12,417.83

SKINNER
LOCKWOOD

FALCONBRIJ VCR

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP

+
FALCONBRIJ VCR

LOCKWOOD TOR

ATTENTION MR J MCDOUGAL
FALCONBRIDGE
VANCOUVER

12 APRIL 1973

LINE MILEAGES AS REQUESTED

MARMOT		165.	
AREA 1		36.5	
	2	6.1	
SUSTUT GROUP	3	18.5	Moosevale W-E
	4	5.1	Willow-Will Gps
	4A	3.6	
	5	8.0	Day Gp.
	6	12.5	Day N (Fir)
Areas 7 & 8 not done			Main Sustut Gp
	9	13.5	ESTIMATED
CROSS GROUP	10	18.9	Cross Gp
OLD FORT		107.7	—

TOTAL		395.4	
	Less—	107.7	Old Fort
		287.7	

57.35
19.50 Sustut
6.43 Moosevale W-E
3.02 Willow-Will Gps
7.13 Day
6.57 Cross
100.10 %

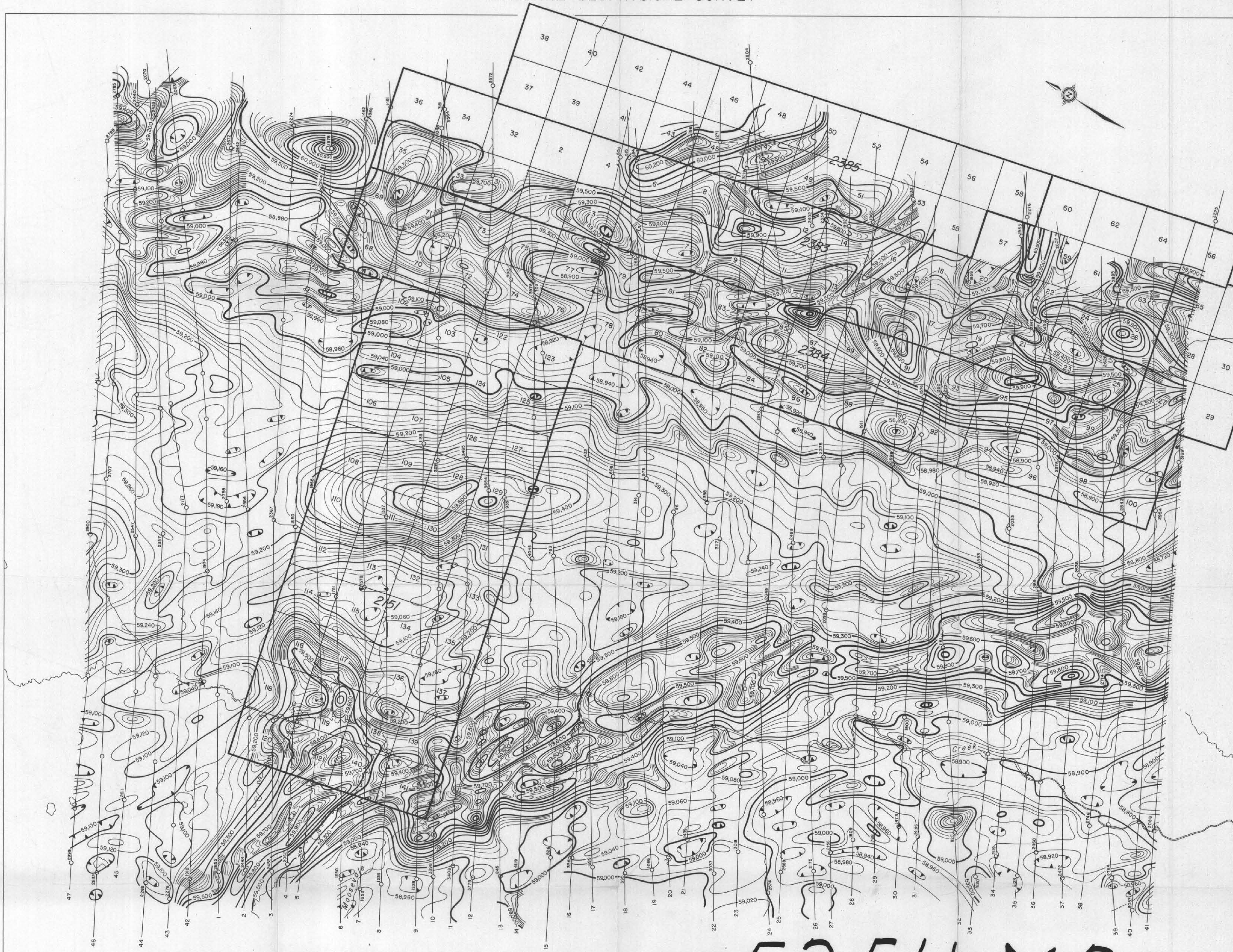
165
56.1
18.5
8.7
20.5
18.9
287.7
Old Fort - 107.7
395.4

SKINNER
LOCKWOOD

+
FALCONBRIJ VCR

LOCKWOOD TOR

AIRBORNE GEOPHYSICAL SURVEY



5254 M-2

CONTOUR INTERVAL .... 20 GAMMA
MEAN FLIGHT LINE SPACING .... 660 FEET
MEAN TERRAIN CLEARANCE .... 200 FEET
500 GAMMA CONTOUR
100 GAMMA CONTOUR
20 GAMMA CONTOUR
MAGNETIC LOW
FIDUCIAL POINTS .... O 3690
FLIGHT LINES

TO ACCOMPANY GEOLOGICAL REPORT BY ROGER K. WATSON, B.A.Sc., P. Eng.
ON THE MARMOT GROUP ON MOOSEVALE CREEK, CASSIAR DISTRICT
DATED APRIL 10, 1973

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP #2

TOTAL MAGNETIC INTENSITY
MARMOT GROUP AREA
BRITISH COLUMBIA

SCALE : 1 Inch to 1320 Feet

1000 FEET 0 1000 2000 3000 4000 5000 FEET

WESFROB MINES LIMITED
Flown and Compiled by
LOCKWOOD SURVEY CORPORATION LIMITED
TORONTO, CANADA
1973

REGISTERED PROFESSIONAL ENGINEER
R. K. WATSON
RKW
PROVINCE OF ONTARIO

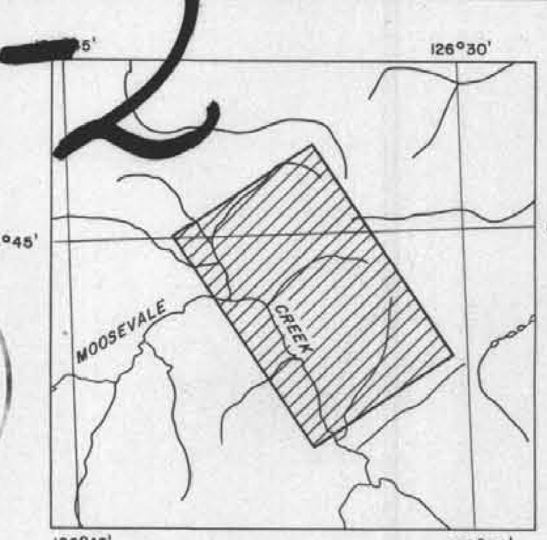
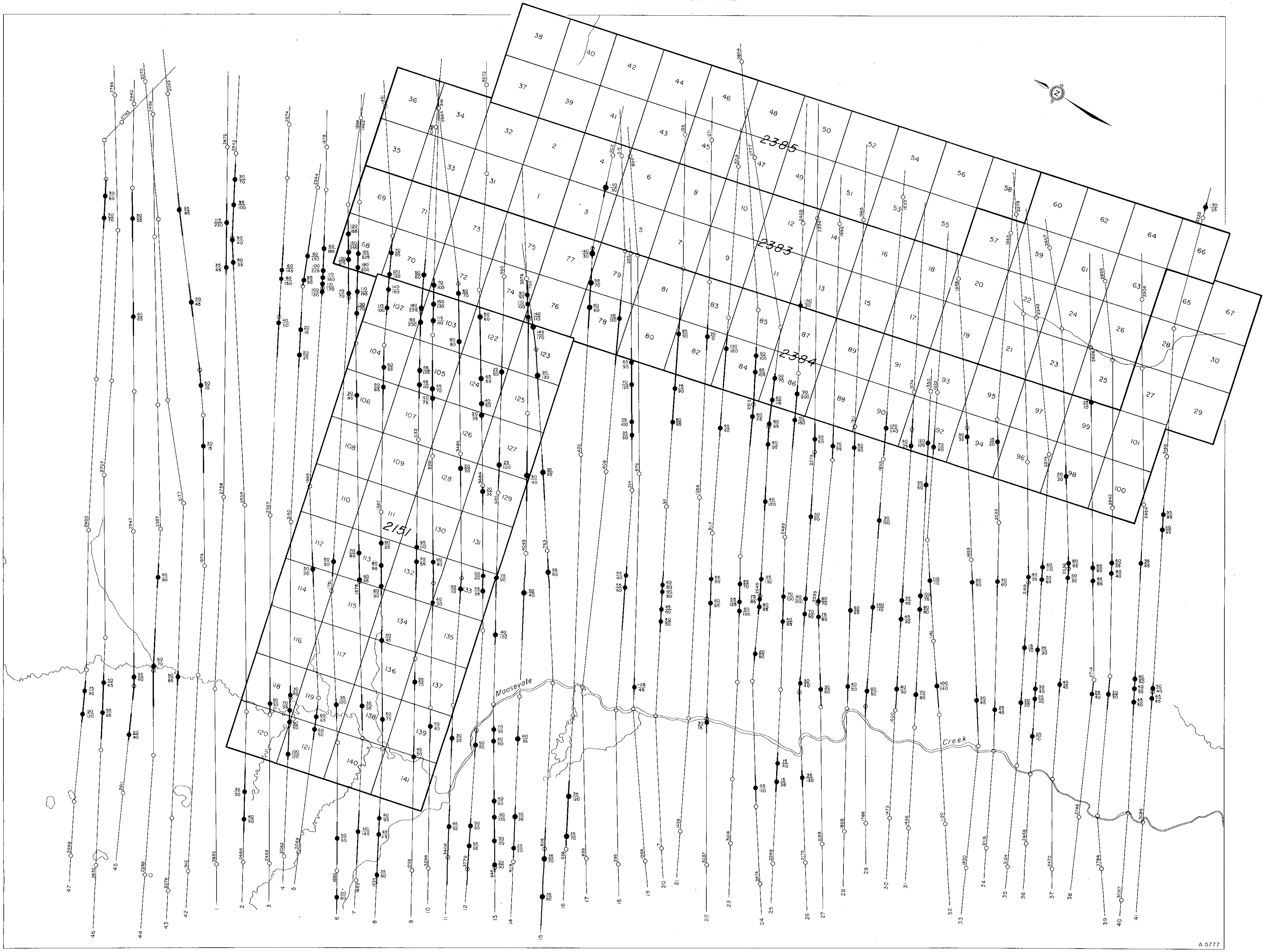


Figure 2

AIRBORNE GEOPHYSICAL SURVEY



MEAN FLIGHT LINE SPACING .... 660 FEET
MEAN TERRAIN CLEARANCE .... 200 FEET
FIDUCIAL POINTS .... ○ 3690
FLIGHT LINES ....

WIDTH AT 1/2 PEAK AMPLITUDE
20/40 REPRESENTS IN PHASE COMPONENT / OUT OF PHASE COMPONENT OF SECONDARY FIELD IN PARTS PER MILLION.

TO ACCOMPANY GEOLOGICAL REPORT BY ROGER K. WATSON, B.A.Sc., P.Eng. ON THE MARMOT GROUP ON MOOSEVALE CREEK, CASSIAR DISTRICT DATED APRIL 10, 1973

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4254 MAP #3

ELECTROMAGNETIC RESPONSE
MARMOT GROUP AREA
BRITISH COLUMBIA

SCALE : 1 Inch to 1320 Feet
1000 0 1000 2000 3000 4000 5000
FEET FEET

WESFROB MINES LIMITED
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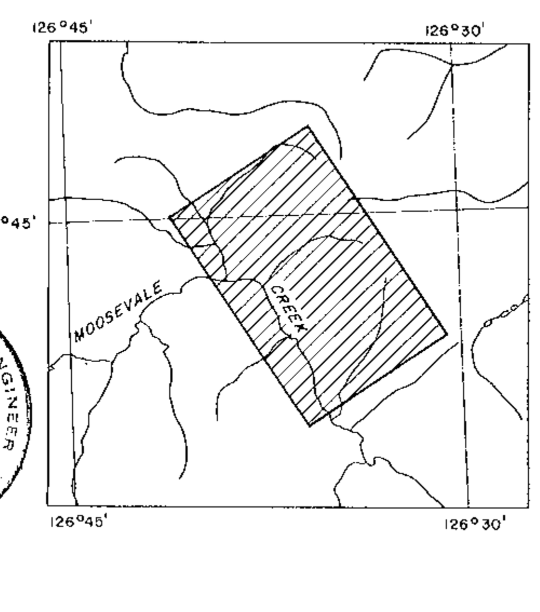
LOCKWOOD SURVEY CORPORATION LIMITED
TORONTO, CANADA
1973



REGISTERED PROFESSIONAL ENGINEER
R. K. WATSON
PROVINCE OF ONTARIO

Figure 3

AIRBORNE GEOPHYSICAL SURVEY

MEAN FLIGHT LINE SPACING .... 660 FEET
MEAN TERRAIN CLEARANCE .... 200 FEET
FIDUCIAL POINTS 3690
FLIGHT LINES

20/40 — WIDTH AT 1/2 PEAK AMPLITUDE — REPRESENTS IN PHASE COMPONENT / OUT OF PHASE COMPONENT OF SECONDARY FIELD IN PARTS PER MILLION

E.M. ANOMALY; POSITION OF PEAK, HALF AMPLITUDE WIDTH, CONDUCTANCE IN MHOS

L — CONDUCTOR WITH A LOW MAGNETIC RESPONSE

M — CONDUCTOR WITH A HIGH MAGNETIC RESPONSE

C — CONDUCTOR LYING ON STEEP MAGNETIC GRADIENT, POSSIBLY WITHIN A CONTACT BETWEEN TWO ROCK TYPES

CONTACT BETWEEN MAGNETIC ROCK UNITS

INTERPRETATION
ELECTROMAGNETIC RESPONSE
MARMOT GROUP AREA
BRITISH COLUMBIA

SCALE : 1 Inch to 1320 Feet

1000 FEET 0 1000 2000 3000 4000 5000 FEET

WESFROB MINES LIMITED

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TORONTO, CANADA
1973

TO ACCOMPANY GEOLOGICAL REPORT BY ROGER K WATSON, B.A.Sc, P.Eng. ON THE MARMOT GROUP ON MOOSEVALE CREEK, CASSIAR DISTRICT DATED APRIL 10, 1973

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ASSESSMENT REPORT
NO. 4254 MAP #3A

REGISTERED PROFESSIONAL ENGINEER
R. K. WATSON
PROVINCE OF ONTARIO

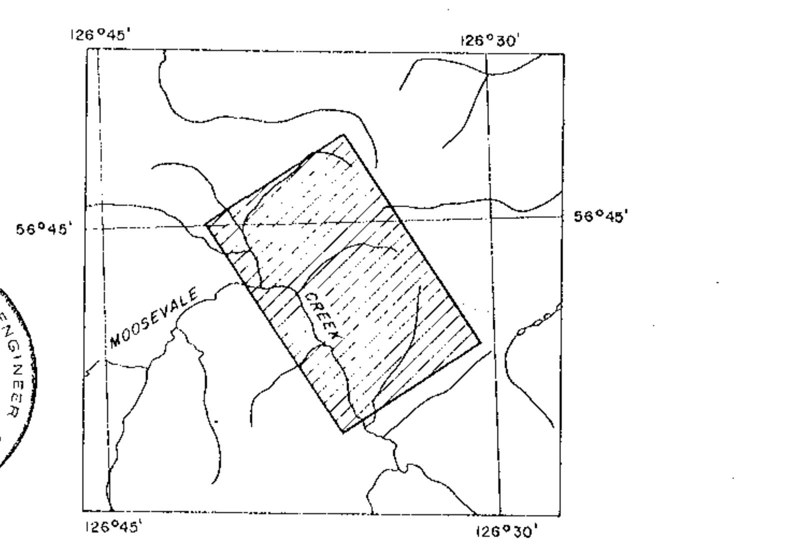

Figure 3a

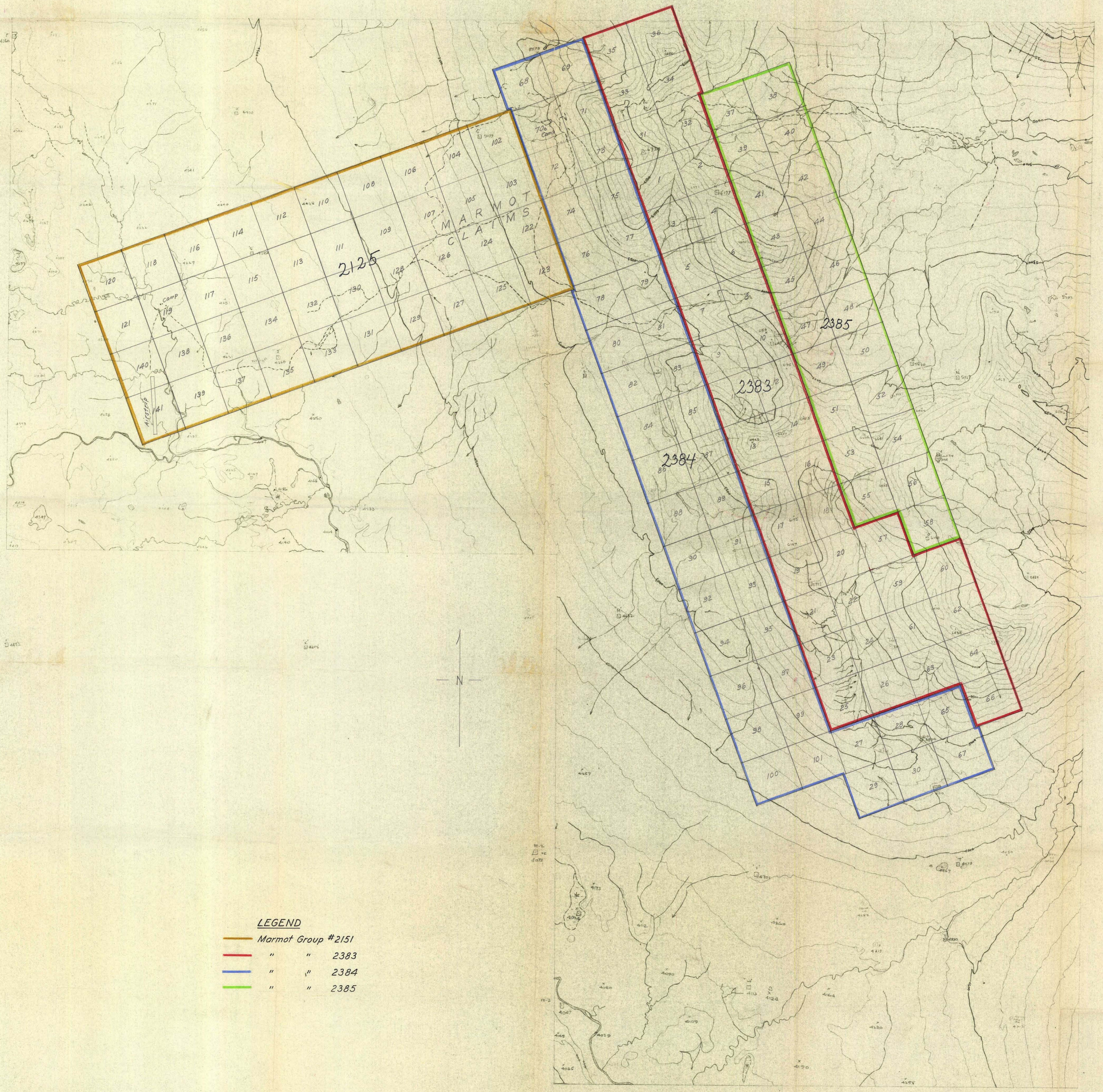

Fig.6

WESFROB MINES LIMITED		
MOOSE VALLEY CREEK Marmot Claim Groups 2151, 2383, 4 & 5		
SCALE: 1" = 1000'	CONTOUR INTERVAL 100'	MAP REFERENCE 94D/10
DATE OF PHOTOGRAPHY: AUG 1967 & FEB. 1949		
DATUM: G.S.C. (APPROX.)		
RECONNAISSANCE MAP	PENCIL MANUSCRIPT March 20, 1973	
Lockwood Survey Corporation Ltd. West Coast Division	73-47	

D H Brown