

9356

AIRBORNE  
GEOPHYSICAL REPORT  
ON THE  
TM CLAIM  
PORT ALBERNI AREA, BRITISH COLUMBIA  
FOR  
MISSILE RESOURCES LTD.

Alberni N.D.  
49° 11 N 124° 56 W  
92F/2W

July 2, 1981

W. G. Timmins Exploration & Development Ltd.  
Columbia Geophysical Services Ltd.

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CONSULTING GEOLOGISTS

SUMMARY

Missile Resources Ltd. holds the TM claim comprised of 20 units, located near Port Alberni, Vancouver Island, British Columbia.

The property is underlain by Karmutsen Formation volcanics.

The property is situated within a large magnetic depression, however the northeast end of a magnetic high extends into the southeast corner of the claim.

Three northwest trending electromagnetic conductive zones are delineated on the property or partially on the property, one of which correlates with a small magnetic high. These zones may indicate shear zones, faults or the presence of sulphide mineralization.

It is recommended that the anomalous areas be checked on the ground by geological mapping and prospecting, geophysics and soil sampling surveys.

July 2, 1981

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## INTRODUCTION

Missile Resources Ltd. has acquired the TM claim comprising 20 units, located approximately 7 miles southwest of Port Alberni on Vancouver Island, British Columbia.

The writer visited the claim area on July 8, 1980 accompanied by Mr. Larry Sosted.

An airborne VLF-EM and magnetometer survey was carried out over the property during December, 1980 and January, 1981, by Columbia Geophysical Services Ltd. This report discusses the geology and results obtained from the recently flown geophysical survey.

## PROPERTY

The property consists of one mineral claim comprised of 20 units as further described below:

| <u>Claim Name</u> | <u>Record No.</u> | <u>No. of Claims<br/>or Units</u> | <u>Expiry Date</u> |
|-------------------|-------------------|-----------------------------------|--------------------|
| TM                | 921               | 20                                | June, 1981         |

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## LOCATION AND ACCESS

The property is located approximately 7 miles southwest of Port Alberni on Vancouver Island. Port Alberni is serviced by paved highway from Parksville, on the east coast of the Island, a distance of some 30 miles.

The property is easily accessible by means of logging road along Cous Creek.

## TOPOGRAPHY AND VEGETATION

Elevations range from 250 meters to 700 meters above sea level and the property is dissected by Cous Creek and several creeks which flow into it, thus there is sufficient water available for all phases of exploration work.

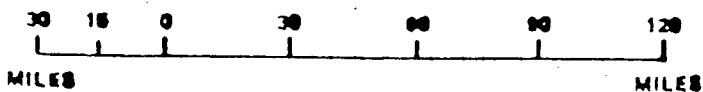
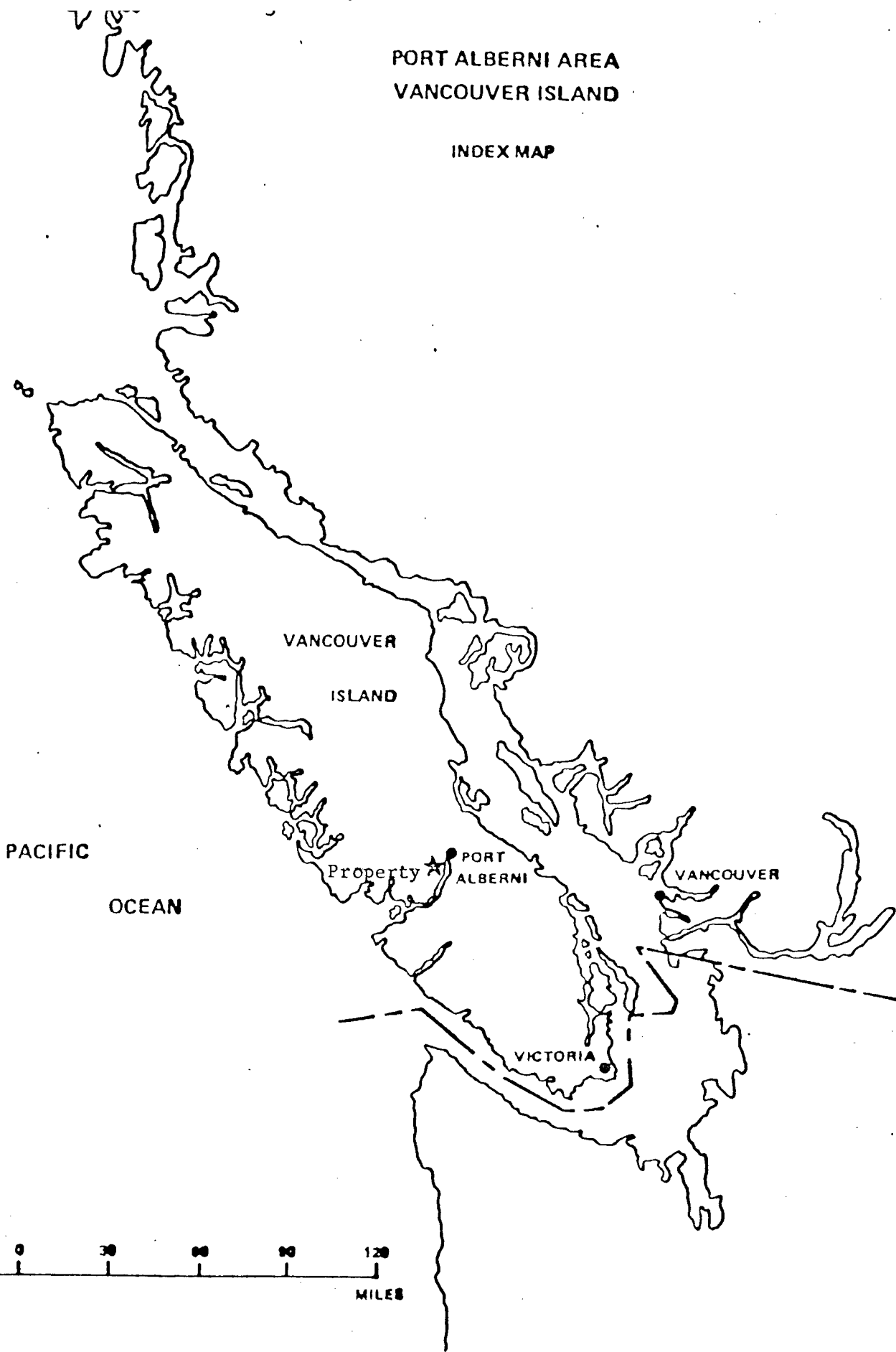
The area is vegetated with Douglas fir, cedar and spruce, however large open areas exist due to past logging operations. Shallow overburden cover is extensive except in areas where roads or creeks have exposed bedrock.

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PORT ALBERNI AREA  
VANCOUVER ISLAND

INDEX MAP



St. David Cr

St. Andrew

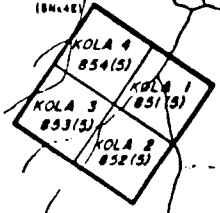
ARBUTUS SUMMIT

Creek Land



ROL 1  
917 (6)  
(58+4W)

LARRY 1  
916 (6)  
(58+4E)



TOM 1  
915 (6)  
(58+4W)

JEAN 1  
914 (6)  
(58+4E)

TM  
921(6)  
(58+4N)

MOL 1  
617(10)

MOL 2  
624(10)

Nahmini Lake



Mac

## HISTORY

There is no known history of work on the property. Sulphide mineralization has been discovered by prospectors exploring areas opened up by logging or skid roads on the adjoining Kola Creek Group of claims to the west and on the Cous Copper property about 1500 meters to the north.

## GENERAL GEOLOGY

The area is underlain by Upper Triassic and Older Karmutsen Formation consisting of pillow basalt and pillow breccia.

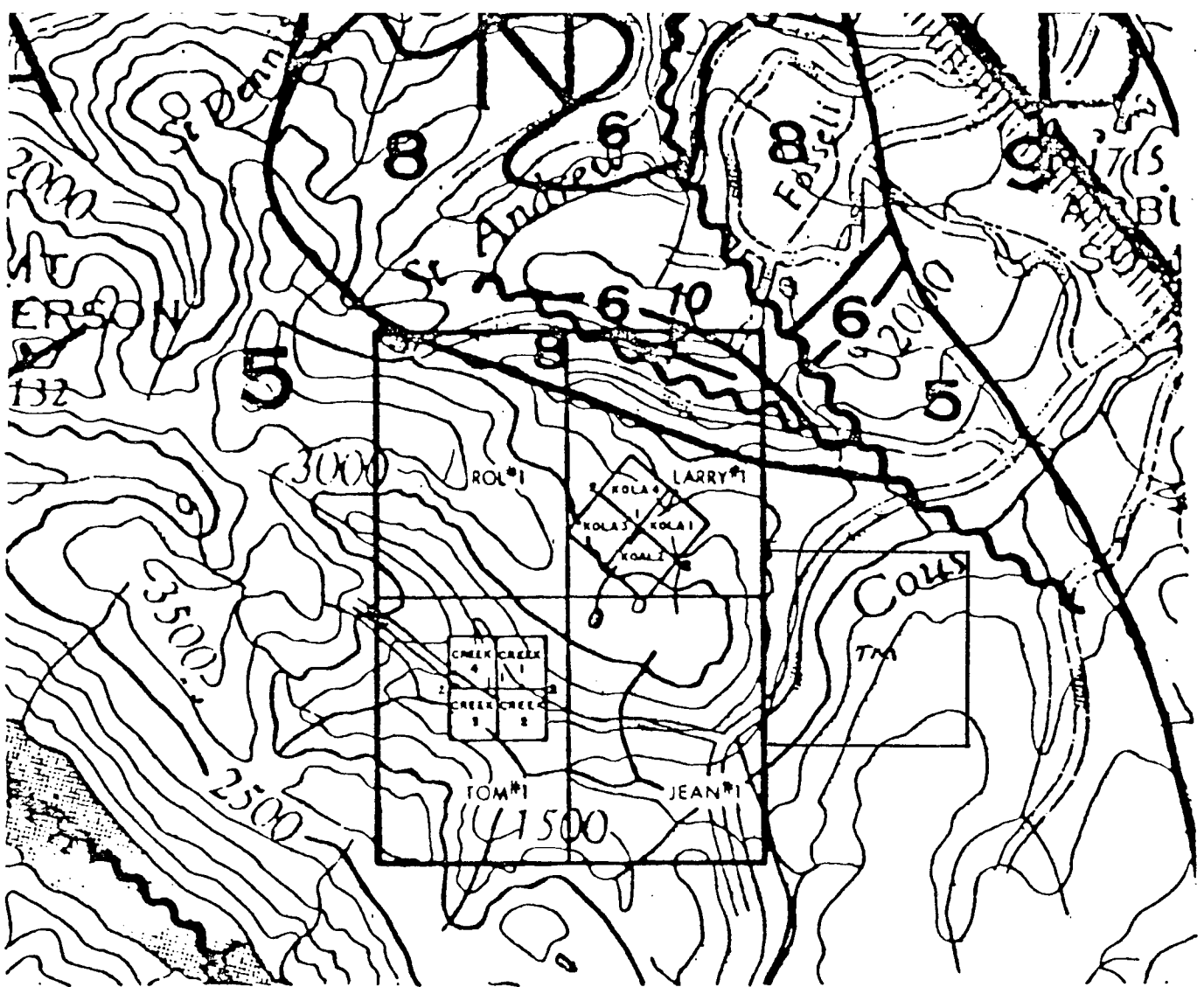
This formation is overlain by the Triassic-Jurassic Bonanza Group consisting of tuff and lavas; minor greywacke, argillite and siltstone.

Jurassic Island intrusions of granodiorite and quartz diorite occur to the northeast and southwest of the property.

## GEOLOGY OF THE PROPERTY

The property appears to be underlain mainly by basaltic pillow lavas and flows of the Karmutsen Formation.





**JURASSIC**

MIDDLE TO UPPER JURASSIC

- 9 ISLAND INTRUSIONS: biotite - hornblende granodiorite, quartz diorite

**TRIASSIC AND JURASSIC**

LOWER JURASSIC (7)

VANCOUVER GROUP (5 - 8)

BONANZA SUBGROUP (7, 8)

- 8 VOLCANIC DIVISION: andesite to latite breccia, tuff and lava; minor greywacke, argillite and siltstone

**UPPER TRIASSIC**

- 6 QUATSINO FORMATION: limestone, mainly massive to thick bedded, minor thin bedded limestone

**UPPER TRIASSIC AND OLDER**

- 5 KARMUTZEN FORMATION: pillow - basalt and pillow - breccia, massive basalt flows; minor tuff volcanic breccia, Jasperoid tuff, breccia and conglomerate at base

PORT ALBERNI AREA

VANCOUVER ISLAND

GEOLOGICAL MAP



## MINERALIZATION

Zones of mineralization consisting of pyrite, bornite and chalcopyrite containing low gold and silver values occur on the adjoining Larry #1 claim to the northwest and zones of magnetite and pyrrhotite with copper values are reported to occur on the Cous Copper Property 1500 meters to the north of the TM claim.

## GEOPHYSICAL SURVEYS

### Survey Procedure:

During the months of December, 1980 and January, 1981, a combined airborne VLF-EM and magnetometer survey was carried out over the TM claim, using a Sabre Electronics Airborne system consisting of proton precession magnetometer and VLF Electromagnetic receiver. The detecting elements are located in a two meter "bird" towed 15 meters below the aircraft at a mean terrain clearance of 75 meters with average flight line spacing of 200 meters. Flight lines were oriented in a northeast - southwest direction.

Flight line control was visual using a topographical map on a scale of 1:10,000, correlating prominent topographical features to the map and strip charts. There are numerous

visual tie points, so that flight lines are considered to be accurately plotted.

The survey was flown using a Bell 206 Jet Ranger helicopter chartered from Highland Helicopters of Agassiz, British Columbia. The air survey crew consisted of a pilot, geophysical operator, T. Rolston, and navigator, J. Dodd.

The total survey mileage flown was 100 line kilometers. All data were recorded on analog strip chart recorders and data compiled on a map scale of 1:10,000.

#### RESULTS OF SURVEY DATA

##### Magnetic Results:

With the exception of the southeast corner of the property, the claim lies within a large magnetic depression, less than 2,200 gammas, probably an area of major faulting and possible cross faults.

The northeast end of a magnetic high anomaly extends into the southeast corner of the claim. Magnetic highs in the area are indicative of basic rocks, or rocks containing magnetite and/or sulphide mineralization.

## VLF-EM Results:

A northwest trending EM conductor occurs in the central section of the property labelled anomaly A. Anomaly A crosses topography and occurs within the magnetic low. The anomaly should be geologically ground investigated.

Anomaly B also crosses topography, trends northwest - southeast extending from a magnetic high on the adjoining claim to the south into the magnetic depression in the southwest section of the TM claim. This anomaly also requires ground investigation.

Anomaly C lies across the southern boundary of the TM claim, is northwest trending and occurs over a small magnetic high of 2,300 gammas. This zone may indicate the presence of magnetic sulphides and should be ground checked in detail.

## CONCLUSIONS AND RECOMMENDATIONS

Missile Resources Ltd. holds the TM claim comprised of 20 units, located near Port Alberni, Vancouver Island, British Columbia.

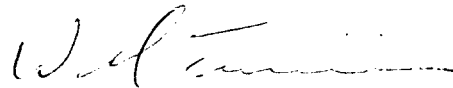
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It is recommended that the anomalous areas be checked on the ground by geological mapping and prospecting, geophysics and soil sampling surveys.

Respectfully submitted;



W. G. Timmins, P. Geol.

W.G. TIMMINS EXPLORATION & DEVELOPMENT LTD.



T. Rolston, Project Geophys.

COLUMBIA GEOPHYSICAL SERVICES LTD.

July 2, 1981

**W. G. TIMMINS EXPLORATION & DEVELOPMENT LTD.**

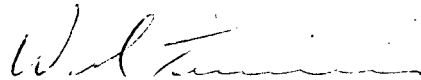
CONSULTING GEOLOGISTS

CERTIFICATE

I, WILLIAM G. TIMMINS, maintaining offices at 502 900 6th Avenue S. W., Calgary, Alberta do hereby certify that:

1. I am a geologist having been practising my profession for seventeen years.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, and have attended Michigan Technological University, Houghton, Michigan.
3. I am a member in good standing of the Association of Professional Engineers of British Columbia and of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4. I have no interest direct or indirect in the property or securities of Missile Resources Ltd.
5. This report is based on government maps, private reports, a personal visit to the area on July 8, 1980, and an analysis of geophysical data provided by a survey conducted by Columbia Geophysical Surveys Ltd. during December, 1980 and January, 1981.

Dated at Calgary, Alberta the 2nd day of July, 1981



W. G. Timmins, P. Geol.  
Consulting Geologist

**W. G. TIMMINS EXPLORATION & DEVELOPMENT LTD.**

CONSULTING GEOLOGISTS

# Columbia geophysical supplies Ltd.

7050 HALLIGAN STREET, BURNABY, B.C. V5E 1R8

Phone: (604) 528-1732  
or (604) 687-6671

## CERTIFICATE OF QUALIFICATIONS

I, Tom Rolston, of 7050 Halligan Street, Burnaby, B.C. have actively been engaged in my profession since 1953 and state as follows:

1. 1953 to 1964 with the R.C.A.F. as Instrument and Electronic Technician with crew supervisory capacity in various electronic and instrumentation systems.
2. 1964 to 1966 with Kerr-Addison Mines Ltd. as Electronic Technician servicing, repairing and maintaining various types of geophysical instruments. Also two seasons as Field Supervisor and Geophysical Instrument Operator in mining exploration, including airborne and ground geophysical surveys, geochemical surveys, geophysical and geochemical drafting and mapping.
3. 1966 to 1981 contracting geophysical/geochemical surveys in close association with mining engineers for various mining companies as Exploration Manager and Field Supervisor of geophysical and geochemical surveys and Instrument Operator of various geophysical instruments such as airborne and ground systems magnetometer, electromagnetic, gravity meter, self-potential meter, scintillometer and induced polarization.
4. Exploration Manager of Columbia Geophysical Services Ltd., airborne geophysical services.

Dated at Burnaby, British Columbia this 1 day of JAN 1981.



Tom Rolston, Project Manager

APPENDIX I



## INSTRUMENTATION AND THEORY:

### VLF-EM Unit:

A VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. was used for the VLF-EM survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF), transmitted at 18.6 KHz, from Seattle, Washington or at 17.8 KHz from Cutler, Maine.

In all electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulphide body is within this magnetic field, a secondary alternating current is induced within it which in turn induces a secondary magnetic field that distorts the primary magnetic field. It is this distortion that the EM receiver measures. The VLF-em uses a frequency range from 16 to 24 KHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can pick up bodies of a much lower conductivity and therefore is more susceptible to clay beds, electrolyte-filling fault or shear zones and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulphide bodies of too low a conductivity for other EM methods to pick up. Consequently, the VLF-EM has additional uses in mapping structure and in picking up sulphide bodies of too low a conductivity for conventional EM methods and too small for induced polarization. (In places it can be used instead of I.P.). However, its susceptibility to lower conductive bodies results in a number of anomalies, many of them difficult to explain and, thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

APPENDIX II

## MAGNETOMETER:

The magnetic survey was carried out using a portable vertical component, Model G-110 fluxgate magnetometer manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. This is a visual-null type instrument using a digital dial read-out with a range of 100,000 gammas and a reading accuracy of 10 gammas. The G-110 has a temperature co-efficient of 2 gammas per degree centigrade.

This instrument measures the vertical component of the terrestrial magnetic field by electronically measuring the degree of magnetic saturation in a vertically oriented coil of fine wire. The usual procedure involves reading the instrument at a 'check station' and then conducting a traverse. The instrument is then returned to the check station and a reading taken. Any difference between the two check station readings which may be due to instrument drift or diurnal magnetic variation is then divided amongst the traverse stations as a correction.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite. Hence, magnetic surveys are used to detect the presence of these minerals in varying concentrations. Magnetic data are also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types have different background amounts of magnetite and/or pyrrhotite.

**D. GEOLOGICAL, GEOPHYSICAL, GEOCHEMICAL**

(Details in report submitted as per section 5, 6, or 7 of regulations.)  
 (The itemized cost statement must be part of the report.)  
 (State type of work in space below.)

COMBINED AIRBORNE GEOPHYSICAL SURVEY  
 MAGNETOMETER and VLF-EM SURVEY  
 300 Line Km. @ 50<sup>00</sup>

15,000<sup>00</sup>

TOTAL OF C AND D

Who was the operator (provided the financing)?

Name: MISSILES RESOURCES INC.  
 Address: 1028-510 W. HASTINGS ST.  
 VANCOUVER B.C.

**Portable Assessment Credits (PAC) Withdrawal Request**

AMOUNT

Amount to be withdrawn from owner(s) account(s):

Name of Owner

(May be no more than 30 per cent of value of the approved work submitted as assessment work in Card (or) D.)

1. ....
2. ....
3. ....
4. ....

TOTAL WITHDRAWAL

TOTAL OF C AND (OR) D PLUS PAC WITHDRAWAL

I wish to apply \$ 2000<sup>00</sup> of this work to the claims listed below.

(State number of years to be applied to each claim, its month of record, and identify each claim by name and record no.)

APPLY ONE YEAR to TM claim Rec. # 921(6) 20 UNITS

REPORT to follow within 30 days

Value of work to be credited to portable assessment credit (PAC) account(s).

(May only be credited from the approved value of C and (or) D not applied to claims.)

Name

AMOUNT

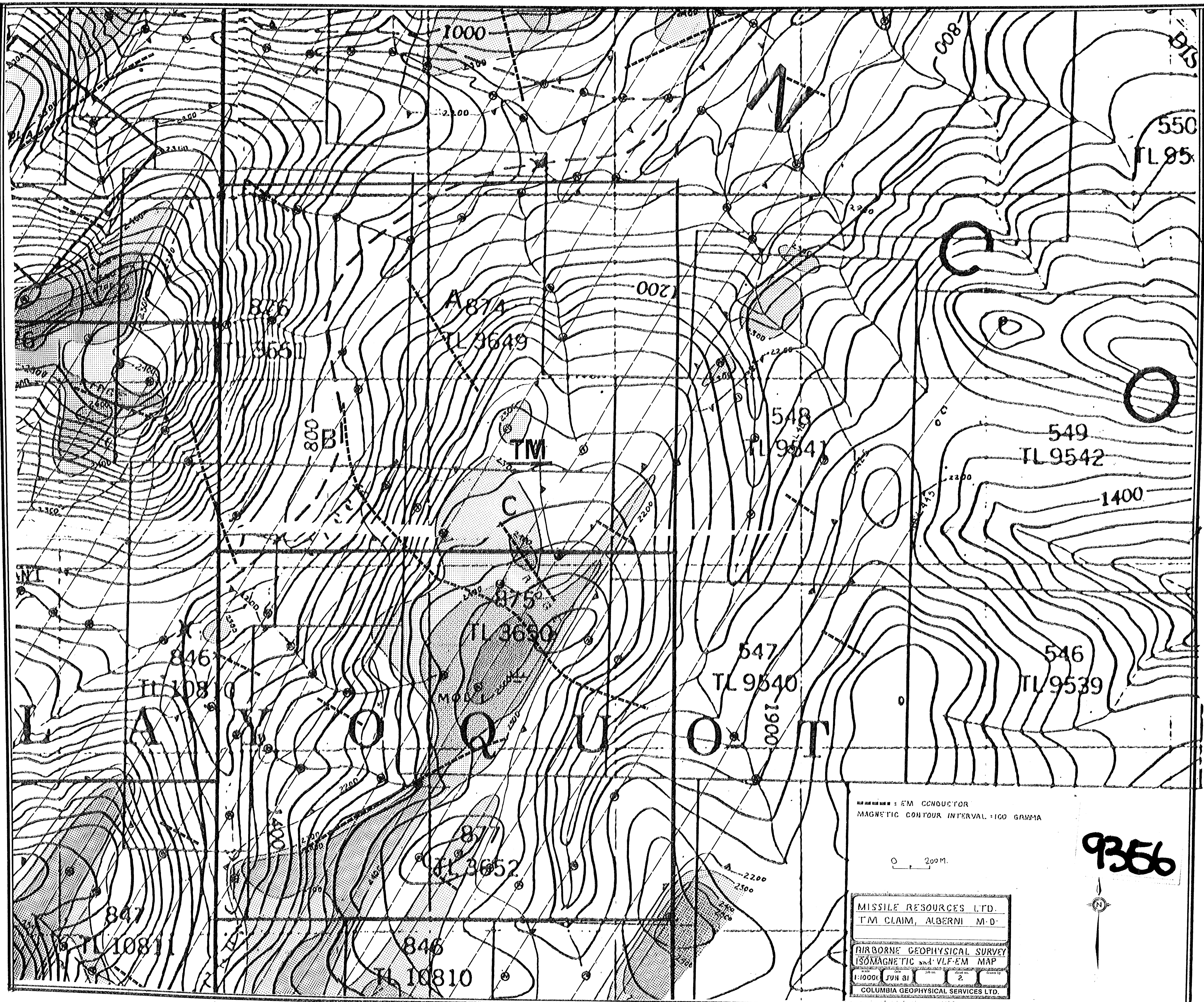
In owner(s) name

1. ....
2. ....
3. ....

Company name  
 City and State

1. ....
2. ....
3. ....





EM CONDUCTOR  
 MAGNETIC CONTOUR INTERVAL: 100 GAMMA

0 200 M.

MISSILE RESOURCES LTD.  
 T.M. CLAIM, ALBERNI M.D.

AIRBORNE GEOPHYSICAL SURVEY  
 ISOMAGNETIC and VLF-EM MAP  
 1:10000 JUN 81 2  
 COLUMBIA GEOPHYSICAL SERVICES LTD.

9356

