# ARIS SUMMARY SHEET

District Geologist, Smithers

Off Confidential: 89.05.06

ASSESSMENT REPORT 17668 MINING DIVISION: Omineca

PROPERTY: Java
LOCATION: LAT 54 36 34 LONG 126 35 05
UTM 09 6053797 655989
NTS 093L10E
CLAIM(S): Java 100,Java 200,Perrow 100,Perrow 200
OPERATOR(S): B & H Leasco
AUTHOR(S): Gibson, N.
REPORT YEAR: 1988, 20 Pages
GEOLOGICAL SUMMARY: The claim area may be underlain by subaqueous and subaerial pyroclastic volcanics intercalated with sediments.

WORK DONE: Geophysical
MAGA 180.0 km
Map(s) - 1; Scale(s) - 1:10 000

# AIRBORNE GEOPHYSICAL REPORT
# ON THE
# JAVA 100 & 200 AND PERROW 100 & 200
# MINERAL CLAIMS
# DOME MOUNTAIN AREA,
# OMINECA MINING DIVISION, B.C.

# AIRBORNE GEOPHYSICAL REPORT ON

# JAVA 100 & 200 AND PERROW 100 & 200 MINERAL CLAIMS

# DOME MOUNTAIN AREA

# OMINECA MINING DIVISION, B.C.

54°34' North Latitude

126°30' West Longitude

NTS: 93L/10

WRITTEN FOR:

B & H LEASCO LTD

#611-470 GRANVILLE STREET

VANCOUVER, B.C.

V6C 1V5

SURVEYED BY:

COLUMBIA AIRBORNE GEOPHYSICAL SERVICES (1984) LTD.

#611-470 GRANVILLE STREET

VANCOUVER, B.C.

WRITTEN BY:

NICHOLAS W. GIBSON

DATED:

JULY 26, 1988

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LIST OF FIGURES

# 1 INTRODUCTION

This report is on the Perrow 100 & 200 and Java 100 & 200 mineral claims which consist of 80 units. The claims are located about 12 kilometers north of the village of Perrow on Highway No. 16, about 20 kilometers southeast of Dome Mountain in the Omineca Mining Division, B.C. The report is based primarily on G.C. Singhai's (1988) report, who visited and made an examination of the property in the fall of 1987.

This report describes the results of an airborne geophysical survey carried out by Columbia Airborne Geophysical Services (1984) Ltd., in the summer of 1987. The property is of interest as a potential gold prospect.

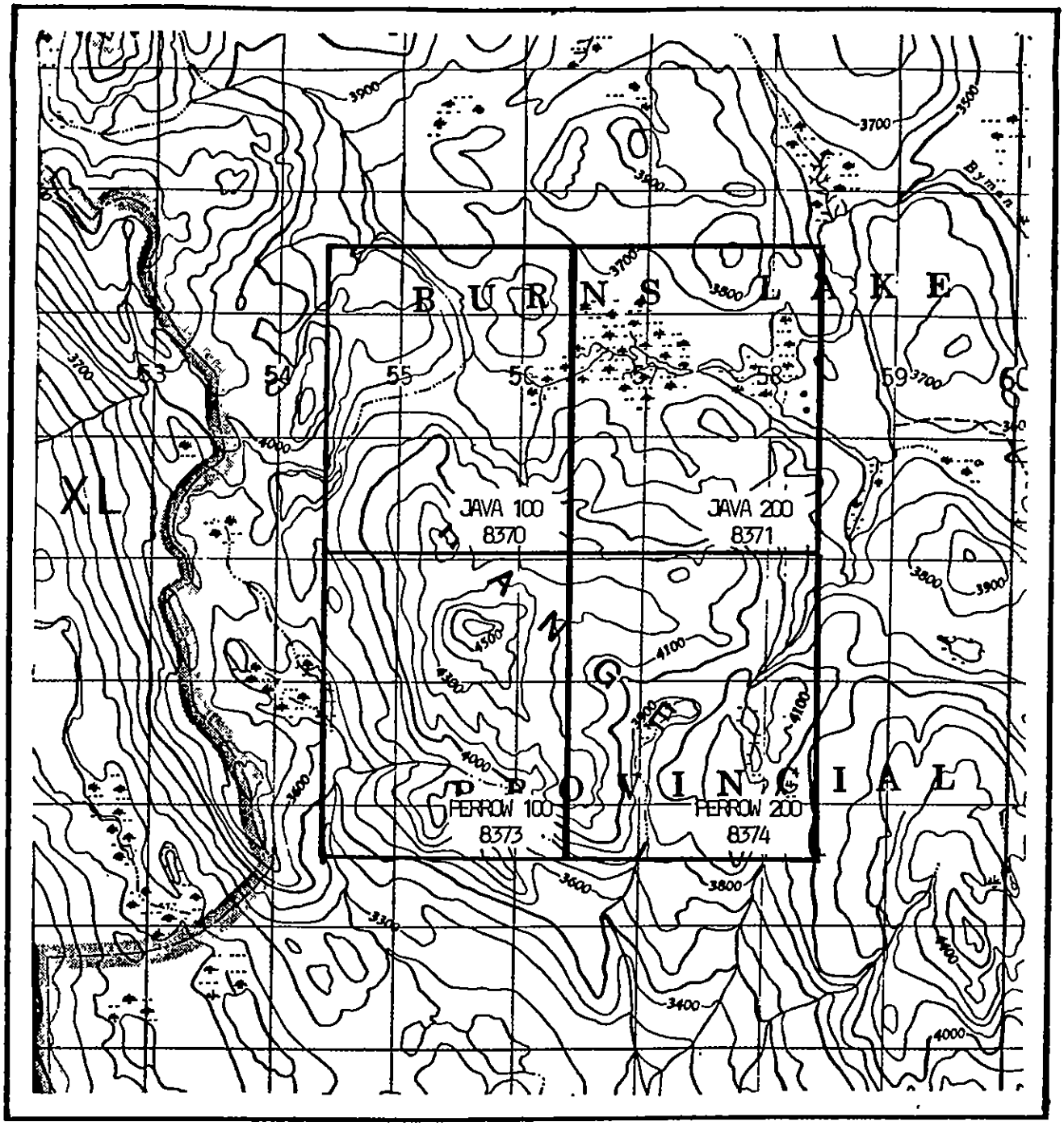
## 1.1 OWNERSHIP AND CLAIM STATUS

Figure 2 is a claim plan area. Table 1 summarizes particulars of the claim.

TABLE 1 - SUMMARY OF CLAIM INFORMATION

| CLAIM NAME | REC # | # UNITS | EXPIRY DATE | RECORDED HOLDER |
|---|---|---|---|---|
| JAVA 100 | 8370 | 20 | May 6, 1989 | Stephen Bishop |
| JAVA 200 | 8371 | 20 | May 6, 1989 | Stephen Bishop |
| PERROW 100 | 8373 | 20 | May 6, 1989 | Stephen Bishop |
| PERROW 200 | 8374 | 20 | May 6, 1989 | Stephen Bishop |

The listed expiry date does take into account the work which was the subject of this report.






B & H LEASCO LIMITED

JAVA 100 & 200 & PERROW 100 & 200
PROPERTIES
PERROW, OMINECA MINING DIVISION
B.C.

CLAIM MAP

| N.T.S. 93L/10 | July 1987 | Scale 1:50,000 | Fig.1 |
|---|---|---|---|

## 1.2 LOCATION AND ACCESSIBILITY

The property is located about 50 air kilometers southeast of Smithers and about 12 kilometers north of Perrow. It is centered approximately $50^{o}31'$ north latitude and $126^{o}30'$ west langitude.

The property is accessible by about 73 kilometers and about 18 kilometers from Smithers and Houston, respectively, by Highway 16 to Perrow, then some 12 kilometers by logging road. Part of this road is gravel and the rest is a cat trail. Other parts of the property are accessible by logging roads. These roads have to be travelled by four-wheel drive vehicle. Main supplies are available from Smithers, Houston and Prince George. (see Figure 1.)

## 1.3 TOPOGRAPHY, VEGETATION AND CLIMATE

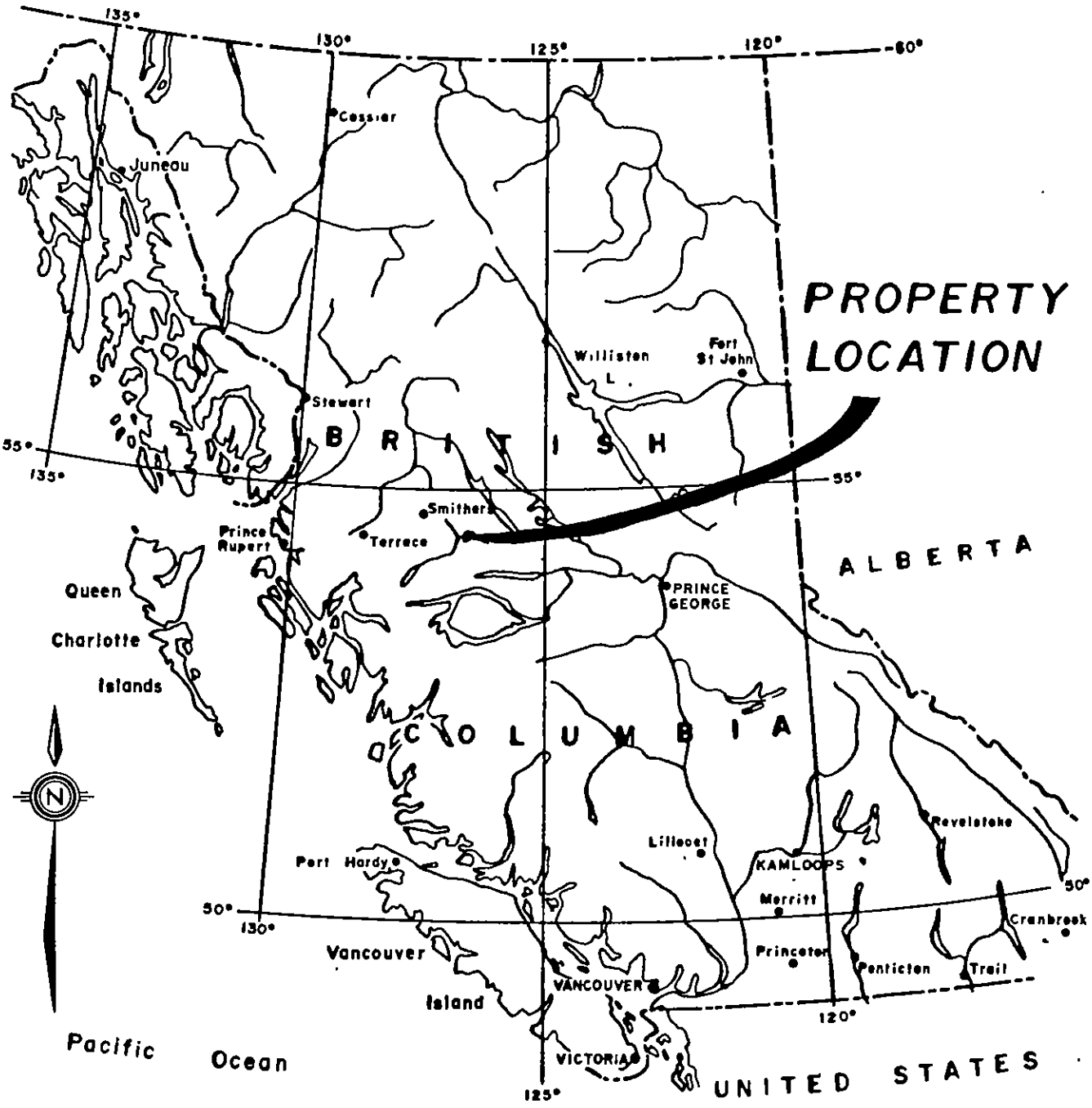
The area is located on the northern slope of the southeast end of Babine Range. The northern slope is very gentle except the eastern slope of the southern part of the property. Elevation ranges from 1000 a.s.l. on the eastern edge of the property to 1400 meters in the western areas of the property.

Most of the property is logged but there is still some parts of the area covered by coniferous forest of ecomonic value. The forest consists of fir, pine, hemlock and spruce trees and have a heavy undergrowth.

The climate in the area is similar to the West Coast. It is very pleasant in the summer but heavy snow falls in th winter to approximately 1.5 meters with temperatures varying from $90^{o}F$ to $-20^{o}F$. Mining can be carried out throughout the year by maintaining roads. There is enough water available from a lake located in the northwestern part of the area and there are other small lakes in the area which can supply water for drilling and mining.

B & H LEASCO LIMITED

BRITISH COLUMBIA PROPERTY LOCATION MAP




JAVA 100 & 200 & PERROW 100 & 200 MINERAL CLAIM LOCATION

OMINECA MINING DIVISION, B.C.

100 0 100 200 300 400 Km.

100 0 100 200 Mi.

FIGURE 2

## 1.4 HISTORY

### 1.4.1 REGIONAL

The history of the Smithers, Houston and Topley area dates as far back as the late 1800's and early 1900's. by 1914, a large number of mineral occurrences had been discovered in the regional area. Further development work on many of these prospects continued until the late 1920's and then only intermittently to present. This produced several mines including the Duthie, Cronin-Babine, Nadina and at the present time, the Equity Silver Mine near Houston, B.C.

During the period 1927 to 1929, prospecting and development work took place between Tachek Mountain and Mt. McCrea area and gold, silver, copper, lead and zinc deposits were located in Richfield Creek area.

In 1934, a 5 foot wide shear zone was discovered on the Richfield Topley Group of claims which was mineralized by two feet of quartz vein striking N45$^{O}$E, dipping 45$^{O}$SE, and carrying pyrite, chalcopyrite, sphalerite and galena. It assayed approximately $30/ton in gold, silver and copper when the gold price was $34 an ounce. As a result, some of the other groups of mineral claims such as the Gold Group, Golden Eagle Group, Three Star Group and Jack Rabbit Group were located and prospected in the area and new mineralized veins were discovered carrying 0.4 to 0.23 oz/ton gold and 1.80 to 460.0 oz/ton silver, apart from copper, lead and zinc.

Gold mineralization was discovered in the Dome Mountain area in 1914 and approximately 11 veins were located carrying high gold and silver values. In 1918, a bulk sample from the Chrisholm vein assayed 2.5 az/ton gold. Extensive development work was carried out during the period 1923 tO 1925 on the Fork vein which assayed 5.5 oz/ton gold over 25 feet. A shipment of 310 kg was sent to Ottawa for analysis in 1938 which returned as 1.76 oz/ton gold. A number of other companies

worked on the property intermittently including Amoco Canada (1970's), Reako Explorations and Panther Mines, and by 1984 a total of 255 ounces gold and 470 ounces silver was recovered. Noranda Explorations carried out an exploration program of soil sampling, trenching, and diamond drilling. Canadian United Minerals acquired the property from Noranda Explorations and developed the ore reserves of 410,000 tons grading 0.50 oz/ton gold and 3.0 oz/ton silver in a joint venture with Teeshin Resources.

### 1.4.2 PROPERTY

No information can be found in the public domain on the history of this particular property.

## 2.1 REGIONAL GEOLOGY

The general geology of the Smithers/Houston area was studied by G. Hanson, 1924; T.C. Phemister, 1928; and A.H. Lang, 1929,1938&39 and published in a geology map No. 671A of the Houston area to accompany paper No. 40-18 by H.W. Tipper and T.A. Richards of the Geological Survey of Canada and published in Bulletin No. 270, 1976. These studies indicate that the area is underlain by the Hazelton Group of volcanics and sedimentary rocks of early to middle Jurrasic Age.

The Hazelton Group of rocks represents a eugeosynclinal island-arc sequence that was deposited in the Hazelton Trough. The Hazelton Group overlies the Triassic Takla Group and underlies the middle to upper Jurassic Bowser Lake Group. This group is divided into three geological formations.

The oldest and most widespread group is called the Talkwa Formation. It mainly consists of clac-alkaline volcanics. These volcanics are dominately subaerial eruptions but within the Nilkitkwa Depression are of subaquaeous origin. It is this formation which makes up the bulk of the Babine Range.

The Talkwa Formation has been subdivided into five distinctive facies belts which represents variable depositional events across the Hazelton Trough.

The Talkwa Formations are overlain by conformable fine-grained clastic and tuffaceous assemblages of the Lower Pliensbachian to Middle Toarcian Nilkitkwa Formation. This formation indicates an abrupt and regional facies change from the underlying volcanic rocks. Volcanic rocks are prevalent throughout the formation, but are most voluminous near or at it's top where three members have been defined.

The upper formation of the Hazelton Group is the Smithers Formation. It is characterized by a widespread, shallow marine clastic tuff. (see fig.3 & 4).

## 2.2 PROPERTY GEOLOGY

The claim area may be underlain by the Babine Shelf facies and consist of subaqueous and subaerial pyroclastic volcanics intercalated with sediments.

## 2.3 MINERALIZATION

Most of the area is covered by glacial drift and few outcrops are seen in the area. The only mineralization is exposed in trenches. Most of the mineralization is noticed as fine fracture fillings and big blebs of chalcopyrite with numerous fine veinlets of calcite. The general mineral assemblage of pyrite, chalcopyrite, minor sphalerite, galena, tetrahedurite, and occasional very minor bornite. is seen in host rock of fine-grained greenish andesitic volcanics. Malachite, specularite, barite, and epidote is also noticed. The host rock, quartz, calcite and epidote, occurs as gangue minerals.

# 3 GEOPHYSICS

## 3.1 INTRODUCTION

An airborne magnetic survey was carried out during July 1987 over the Java and Perrow claims and surrounding area. This survey was carried out by Columbia Airborne Geophysical Services (1984) Ltd., totaling 218.2 line km, under the supervision of Lloyd C. Brewer. The object of the survey was to help with the geological and structural mapping of the area to find out the relationship of magnetic anomalies with the exposed mineralization.

## 3.2 INSTRUMENTATION AND THEORY

### 3.2.1 a) Magnetic Survey

The magnetic data are detected using a nuclear free precession proton magnetometer, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. The magnetometer measures the total count of the earth's magnetic field intensity with a sensitivity of one gamma. The data are recorded on magnetic tape and 12 cm analog strip chart.

The magnetic patterns obtained from a regional airborne survey are directly related to the distribution of magnetite in the survey area. However, the geology cannot be deduced from isomagnetic maps by simply assuming that all magnetic highs are underlain by gabbro or ultramafic rocks, and that all magnetic lows are caused by limestone or chert. The problem with such a simplistic approach is that magnetite is not uniformly distributed in any type of rock. Other problems arise from the fact that most geologic terrains have rocks of high susceptibility superimposed on less 'magnetic' rocks, and vice versa. Cultural features such as powerlines, pipelines and railways also complicate matters. So many variables can be involved that it may be impossible to make a strictly accurate analysis of the geology of an area from magnetic data alone. It is preferable to use other information such as geological, photogeological and electromagnetic in combination with magnetic data to obtain a more accurate geological analysis.

### 3.2.2b) VLF-EM Survey

A two-frequency omni-directional receiver unit, manufactured by Sabre Electronic Instruments Ltd., of Burnaby, B.C., was used for the VLF-EM survey. The transmitters used are NLK Arlington (Seattle), Washington, operating on 24.8 KHz, and Annapolis, Maryland, transmitting at 21.4 KHz. These signals are used due to their ideal orientaiton with respect to northwest and eastwest geological structures, and their good signal strengths. The measurement taken during the survey is the variation in the horizontal component of the signal strength.

The VLF (Very Low Frequency) method uses powerful radio transmitters set up in various parts of the world for military communications. These powerful transmitters can induce electric currents in conductive bodies thousands of kilometers away from the radio source. The induced currents set up secondary magnetic fields which can be detected at surface through deviations in the normal VLF field. The VLF method is inexpensive and can be a useful initial tool for mapping structure and prospecting. Successful use of the VLF requires that the strike of the conductor be in the direction of the transmitting station so that the lines of magnetic field from the transmitter cut the conductor. Thus, conductors with northeast to southeast strikes will respond to Annapolis transmissions, while conductors striking north to west will respond to Seattle transmissions. Conductors striking east to northeast may respond to both stations, giving coincident field strength peaks.

The theory of VLF-EM interpretation is quite simple. Conductors are located at field strength maxima. In the Gold Bridge area, one may assume that a Seattle field strength peak represents a conductor with a generally north trend, and a Annapolis peak will be a conductor with an east-west trend. This, of course, only applies to conductors with clearly linear trends and cannot be assumed for single line anomalies.

It is impossible to determine the quality of conductors with any reliability, using field strength data alone. The question of linearity is in doubt if the conductor does not appear to cross the adjacent flight lines. The relatively high frequencey results in a multitude of anomalies from unwanted sources such as swamps, creeks and cultural debris. However, the same characteristic also results in the detection of poor conductors such as faults, shear zones, and rock contacts, making the VLF-EM a powerful mapping tool.

The interpretive technique requires information from magnetic surveys, air photo analyses, and ground traverses to aid in discrimination between important and unwanted anomalies. Even armed with this information the interpreter can easily be misled.

## 3.3 SURVEY PROCEDURES

A two meter bird was fitted with a magnetometer coil and 2 omni-directional EM receivers and towed beneath the helicopter on a 10 meter cable. The terrain clearance for the bird was 50 m.

The surveys were contour flown at a line spacing varying from 100 to 200 m. Navigation was visual, using 1:50,000 scale maps blown up to 1:10,000.

The aircraft used to conduct this survey was a Bell 206 Jet Ranger, owned and operated by Bob Holt. Airspeed was a constant 60 kph so that creek valleys and canyons were penetrated thoroughly. The slow airspeed provided safely, detailed coverage of boxed-in areas, and consistency of data retrieval, which is critical in rugged terrain.

The number of line km flown covering the area as shown on Map 3 is *180 km* .

I have over 7 years of experience in conducting aerial magnetic and electromagnetic surveys from fixed and rotary wing aircraft, under all types of terrain conditions.

## 3.4 DATA REDUCTION AND COMPILATION

The observant magnetic total field was recorded on analogue strip charts. These were played back together with audio recordings containing fiducial markers, and the fiducial markers were transferred to the strip charts. The fiducial markers were identified with topographic features along the flight lines.

The magnetic data were taken from the strip charts and plotted. It was then contoured at a 100 gamma interval onto Map 3 at a scale of 1:10,000 (1 cm = 100 M).

The VLF-EM anomalies were taken from strip charts and plotted on Map 3 with the magnetic contours. For each anomaly, a heavy line along the flight line was drawn showing its half-width. An 'S' or an 'A' designated the anomaly as being from the Seattle transmitter or the Annaplois transmitter.

A question mark on the anomaly indicates that it could be caused by terrain. The survey area was some what rugged causing numerous VLF-EM anomalous responses, most of which was easily sorted out as being caused by terrain. However, some were difficult to sort out and they were therefore plotted with a question mark.

Strong anomalies were plotted with exclamation marks, and anomalies without any marks indicated average responses. Other symbols are explained on the sheets.

## 3.5 RESULTS

The magnetic field within the outlined claims is quiet, showing a relief of 1200 gammas from a low of 2000 gammas to a high of 3200 gammas. Most of the high values correspond to the topographically high areas and may be representative of a mafic body.

Magnetic trends within the property are uncertain without correlative data such as property geology, soils, or ground geophysics. However, there is a cluster of high values (2800 + gammas) which trend north through the Wolfe, Perrow 200 & Java 200 claims. Also a magnetically high and low (2200 - gammas) values trend northeast through the Melissa, Perrow 100 & Java 000 claims. The low values may represent a structural feature such as a fracture or fault.

Oriented east-west across the northern claims is a continuous zone of high and low values which may represent a structure unto itself or may be the northern extension of the features described above.

## 4 CONCLUSIONS

Regionally the property is located in a favorable geological and structrual environment. The Dome Mountain deposits of Canadian United Minerals Inc. occur in a similar geological and structural environment. The area overlies the Hazelton Group of volcanics and metasedimentary rocks of early and middle Jurrasic age. These rocks represent a eugeosynclincal island-arc sequence which was deposited in the Hazelton Trough. The Hazelton Group overlies the Triassic-Takla Group and underlies the middle to upper Jurassic Bowser Lake Group.

The magnetic field within the property is quiet. Three magnetic trends are recognized however. The western claims display northerly trending high magnetic values, the eastern claims show a northeast trending mixture of high and low values and an eastwest oriented zone of high and low values extends across the northern claims.

## 5 RECOMMENDATIONS

The number of high and low magnetic values located with the airborne survey warrants further exploration on this property. Also the property's relatively close proximity to the Dome Mountain Mine and it's similar geological environment call for a stage I exploration progam.

The first stage of exploration should include:

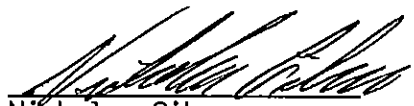
1.) A geochemical soil survey over the anomalously high and low airborne magnetic areas using a line spacing of 100 m and a station spacing of 25 m.

2.) A ground geophysical survey over the same grid as the geochemical survey. A VLF-EM survey is recommended in conjuction with a magnetometer survey because it is relatively inexpensive and the airborne magnetometer survey proved to be somewhat ineffective on its own, due to the apparent lack of difference in the magnetic susceptibilities of the various rock units.

3.) Geological prospecting and mapping over the entire property.

Contingent upon the results of stage I, a second stage of exploration could be recommended including trenching and further geophysical surveying. It is unlikely that exploratory diamond drilling would be recommended in the second stage of exploration unless stage I is very successful.

Respectfully submitted,



Nicholas Gibson
Consulting Geologist

July 26, 1988

## 6 CERTIFICATE

I, Nicholas Gibson, resident of Vancouver, Province of British Columbia, hereby certify as follows:

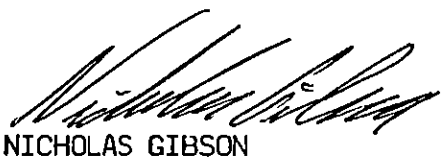
1. I am an independent consulting geologist.

2. I am a graduate of the University of Windsor, Ontario with a B.Sc. (1986) in geology.

3. I have practiced my profession since graduation.

4. I have no direct, indirect or contingent interest in the shares or business of the property which is subject of this report or of the property holder.

5. This report is based on my examination of the reports and data supplied to me by Columbia Airborne Geophysical Services (1984) Ltd.



NICHOLAS GIBSON

Dated at Vancouver, Province of British Columbia, this 26th day of July, 1988.

7 BIBLIOGRAPHY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Geochemical Soil Survey of Black Mountain Property by Noranda Explorations Ltd., Assessment Report No. 1559, ~~1967~~ 1667

Map #278A Prince Rupert Sheet, British Columbia. Scale 1" = 8 miles. Geology compiled from survey by Geological Survey.

News Releases by Canadian United Minerals Inc. in World Investment News of September, 1987.

8 COST STATEMENT

I, Lloyd C. Brewer, President of Columbia Airborne Geophysical Services (1984) Ltd., do hereby declare that the following is a true and accurate statement of costs incured in an airborne survey carried out by Columbia Airborne Geophysical Services (1984) Ltd., in July of 1987.

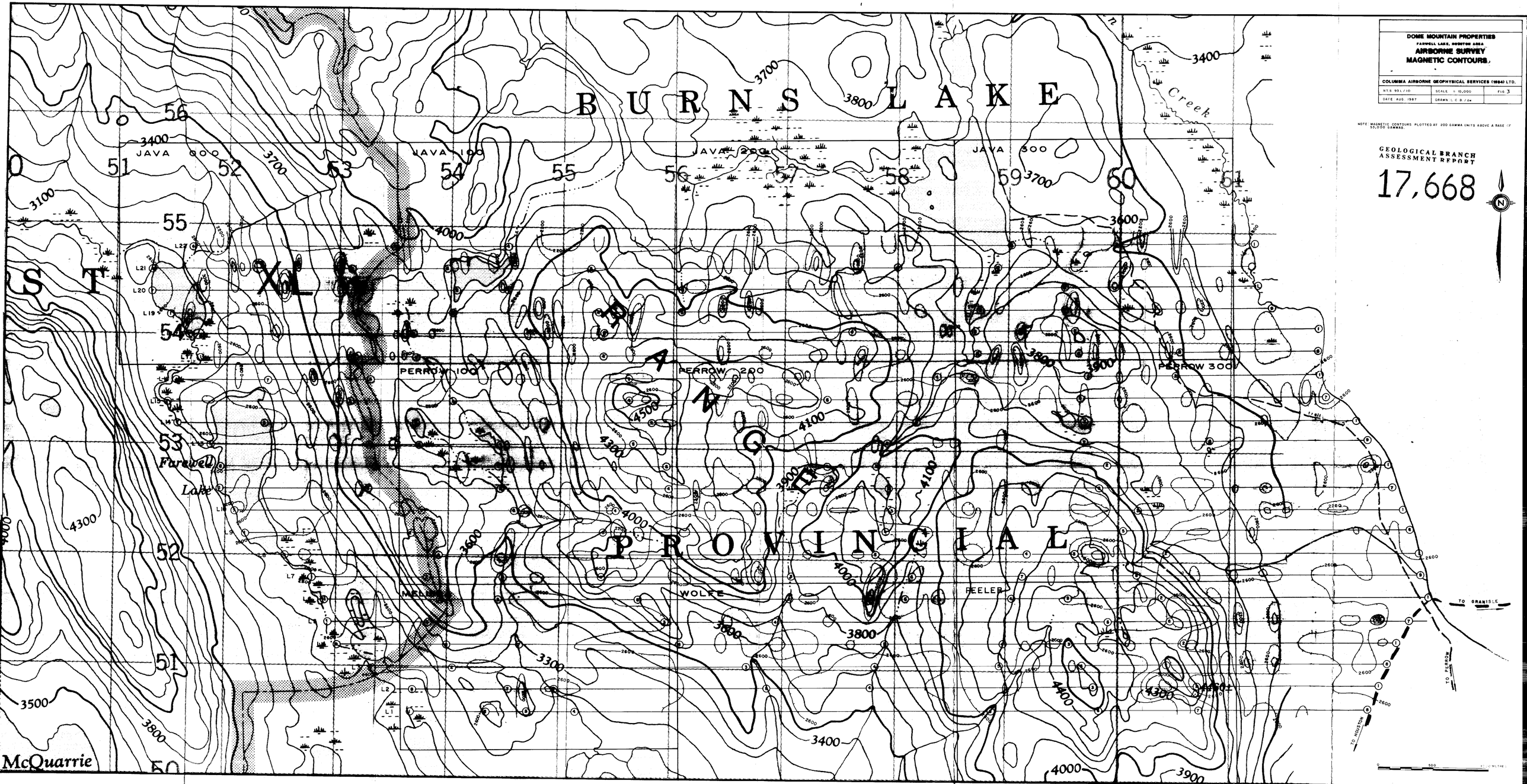
| | | |
|---|---|---|
| AERO MAGNETIC SURVEY | 180 lkm @ $100.00/lkm | $18,000.00 |

Respectfully submitted,

LLOYD C. BREWER
PRESIDENT

COLUMBIA AIRBORNE GEOPHYSICAL
SERVICES (9184) LTD.

JULY 26, 1988


DOME MOUNTAIN PROPERTIES
FARWELL LAKE, HOUSTON AREA
AIRBORNE SURVEY
MAGNETIC CONTOURS
COLUMBIA AIRBORNE GEOPHYSICAL SERVICES (1984) LTD.
NTS 93L/10
SCALE 1:10,000
FIG 3
DATE AUG 1987
DRAWN I.C.B./dw
NOTE: MAGNETIC CONTOURS PLOTTED AT 200 GAMMA UNITS ABOVE A BASE OF 53,000 GAMMAS
GEOLOGICAL BRANCH
ASSESSMENT REPORT
17,668
BURNS LAKE
JAVA 000
JAVA 100
JAVA 200
JAVA 300
PERROW 100
PERROW 200
PERROW 300
Farwell Lake
WOLFE
PEELER
TO GRANISLE
TO PERROW
TO HOUSTON
McQuarrie