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## ASSESSMENT REPORT OF THE

PHYSICAL AND GEOPHYSICAL PROGRAM ON THE SNOUSHOE AND TEA CLAIM GROUPS
(SNOWSHOE 1-4, LARRY; TEA 1-4 Claims)

## Omineca Mining Division

Latitude $55^{\circ} 08^{\prime} /$ Longitude $124^{\circ} 07^{\prime} \mathrm{W}$
NTS 93N/1E

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Owned and Operated by: BP RESOURCES CANADA LIMITED 700 - 890 West Pender Street Vancouver, B.C. V6C 1 K 5
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R. H. Wong February, 1990.
PaRT $\operatorname{OF}$

## TABLE OF CONTENTS

PAGE NO.

1. SUMMARY ..... 1
2. INTRODUCTION ..... 2
A) Location and Access ..... 2
B) Topography and Vegetation ..... 3
C) Claims Status ..... 3
D) History ..... 4
3. REGIONAL GEOLOGY ..... 5
4. PHYSICAL WORK ..... 6
A) Road Construction ..... 6
B) Line-Cutting ..... 6
5. GEOPHYSICAL SURVEYS ..... 7
A) Airborne Magnetometer and VLF-EM ..... 7
B) Ground Magnetometer ..... 8
6. CONCLUSIONS and RECOMMENDATIONS ..... 11FIGURE NO.FOLLOWING PAGE NO.
7. Location Map ..... 3
8. Claim Map ..... 4
9. Regional Geology ..... 5
10. Location of 1989 Road and Grid Work ..... 6
5a. Total Magnetic Field Contour Map - South Grid In Pocket
5b. Total Magnetic Field Contour Map - North Grid ..... In Pocket
LIST OF APPENDICES
FOLLOWING PAGE NO.
APPENDIX NO. I Statement of Costs ..... 11
II Statement of Qualifications ..... 11
III Airborne Geophysical Survey SNOWSHOE and TEA Claim Area (Aerodat Limited) In Pocket

## 1. SUMMARY

The SNOWSHOE and TEA claim areas, lying immediately west of the large Mt. Milligan porphyry copper-gold project in northcentral B.C., was the subject of a 425 line-km airborne magnetometer and VLF-EM survey in June, 1989. The survey, conducted by Aerodat Limited, revealed two areas of anomalous magnetic response.

Following completion of access roads into the anomalous areas in September, 1989, two grids totalling 47.7 line-km were completed.

A ground magnetometer survey was completed over the cut grid in order to more closely delineate the magnetic anomalies. Results of this survey indicate a number of discrete magnetic highs which may indicate small, magnetite-associated intrusive stocks, and several north-south trending magnetic lows which may indicate structures.

Additional ground magnetometer coverage is warranted and an induced polarization survey is recommended to determine the presence of sulphides associated with the magnetic anomalies.

A total of $\$ 53,200$ has been applied to the SNOWSHOE Group and upon acceptance will maintain all claims to their anniversary dates in 1995.

A total of $\$ 15,600$ has been applied to the TEA Group and upon acceptance will maintain all claims to their anniversary dates in 1992.

## 2. INTRODUCTION

## A) LOCATION AND ACCESS

The SNOWSHOE and TEA claim groups are centred at latitude 55 08'N and longitude 12407 'W in the Omineca Mining Division. Fort St. James is 90 km to the south and Mt. Milligan (elevation 1508 m ) is 7 km to the north (Figure 1 ).

Access to within 2 km of the eastern edge of the property is via gravel road which extends 10 km beyond the Rainbow Creek bridge at the end of the Philips North Main Line logging road. The Philips North Main Line extends from Windy Point on Highway 97 which is approximately 150 km north of Prince George.

The access road was extended in 1989 along the northern side of the small lake, known locally as Heidi Lake, to reach to within 1.5 km of the common boundary between the TEA and SNOWSHOE groups.

For 1990, a logging road has been proposed which would connect Heidi Lake to the Fort St. James - Germansen Landing all-weather gravel road, a distance of approximately 8 km .

## B) TOPOGRAPHY AND VEGETATION

The claim area covers the western foot-slope of the northnorthwest trending ridge extending from Mt. Milligan. Elevations range from 1000-1250 m above sea-level. The area is drained by a series of westerly-flowing tributaries of Suschona Creek. Recent beaver dams along these tributaries have created a chain of small lakes locally.

Vegetation consists mainly of relatively widely-spaced lodgepole pine with locally thick patches of alder occurring immediately above the main stream channels.

## C) CLAIMS STATUS

The property consists of 154 contiguous units which were staked in February, March and October of 1989 and are wholly owned by BP Resources Canada Limited. The eastern edge of the property adjoins the Mt. Milligan claims held jointly by Continental Gold Corp. (70\%) and BP Resources Canada Limited (30\%) (Figure 2).

The claims were grouped on February 9, 1990 as the SNOWSHOE group (SNOWSHOE 1-4 and LARRY claims - 76 units) and the TEA group (TEA 1-4 claims - 78 units).

Essential claim data are listed as follows:


| Group <br> Name | Claim <br> Name | No. of Units | Record No. | Recording $\qquad$ | *Expiry <br> Date |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SNOUSHOE | SNOWSHOE | 120 | 10156 | 02/18/89 | 02/18/95 |
| n | SNOWSHOE | 20 | 10157 | 02/23/89 | 02/23/95 |
| " | SNOUSHOE | 315 | 10225 | 03/11/89 | 03/11/95 |
| " | SNOWSHOE | 420 | 10260 | 03/24/89 | 03/24/95 |
| " | LARRY | 1 | 11195 | 10/27/89 | 10/27/95 |
| TEA | TEA 1 | 20 | 10386 | 04/24/89 | 04/24/92 |
| " | TEA 2 | 20 | 10387 | 04/25/89 | 04/25/92 |
| " | TEA 3 | 20 | 10388 | 04/26/89 | 04/26/92 |
| n | TEA 4 | 18 | 10389 | 04/27/89 | 04/27/92 |

## D) HISTORY

The claim area has had no known previous exploration and was acquired largely in response to exploration success on the adjoining Mt. Milligan copper-gold porphyry prospect. A drill-inferred geological inventory exceeding 200 million tons at grades approximating $0.3 \%$ copper and $0.02 \mathrm{oz} /$ ton gold has been reported for the Mt. Milligan prospect (February, 1990).


## 3. REGIONAL GEOLOGY

The claim area is situated in the central part of the Quesnel Trough, within the Intermontane Tectonic Belt of the Canadian Cordilleran. The Quesnel Trough assemblage consists principally of Upper Triassic Takla Group volcanic and sedimentary rocks which are correlative with the Nicola Group in southern B.C. and the Stuhini Group in northern B.C. (Richards 1976, Monger, 1977). The volcanic rocks are islandarc type calc-alkaline to alkaline pyroxene-rich flows and volcaniclastic rocks of predominantly submarine origin. They are interlayered with volcanic-derived greywacke and siltstone, with minor limestone and conglomerate. The assemblage was intruded by comagmatic alkaline intrusions and by the Jura-Cretaceous Omineca calc-alkaline intrusions, principally the Hogem Batholith. Northwest and northeast trending transcurrent and block faults, and minor folding have offset and juxtaposed major sections of the volcanic stratigraphy with the intrusive and sedimentary rocks (Figure $3)$.


## 4. PBYSICAL YORK

## A) Road Construction

In September, 1989, approximately 2.1 km of access road was completed along the north side of Heidi Lake. The road extended from the Continental Gold/BP Resources camp at the eastern end of the lake to the western end of the lake at the periphery of the SNOWSHOE claims (Figure 4). A D68E Komatsu, contracted from Quest Canada Drilling Ltd., was used to construct this road.

In October, 1989 , this road was extended an additional 1.6 km to provide access to the gridded area in the northern portion of the TEA and SNOWSHOE groups. Unfortunately, the route chosen proved to be relatively damp and was not driveable.

## B) Line-Cutting

A total of 47.7 line- $k m$ of grid, cut to I.P. standard, was completed by Grassroots Enterprises Ltd., in September and October, 1989. Grid lines were oriented east-west at 100 m intervals. Two separate grids positioned over airborne magnetometer anomalies, were completed; a North Grid consisting of 25.0 line- km , and a South Grid consisting of 22.7 line-km (Figure 4).


FIGURE 4: LOCATION OF 1989 ROAD AND GRID WORK
5. GEOPHYSICAL SURVEYS

## A) Airborne Magnetometer and VLF-EM

From June 15-24, 1989 Aerodat Limited of Mississauga, Ontario completed 425 line-km of airborne magnetometer and VLF-EM survey over the claim area.

The survey was flown in an east-west direction with lines every 100 m . The magnetometer and VLF-EM receiver were flown at a nominal terrane clearance of 48 m .

Further details of this survey, including all pertinent maps, are included in Appendix III.

## Total Field Magnetics

The total field magnetic values in the survey area vary over a range 57,805 to $59,715 \mathrm{nT}$.

The survey area is magnetically active, with magnetic highs and lows typically 300 to 400 m wide. The edge of a large (1000 m or more width) magnetic high is evident to the northwest. Its centre would be located several hundred metres outside the survey boundary.

General magnetic trends are intensely variable.

## VLF-EM Total Field Contours

Examination of the VLF-EM contours reveals a general northsouth trend. The transmitting station NSS, Annapolis, Maryland would be maximum coupled with conductors striking in approximately this direction.

Conductor amplitudes are quite small, over the survey area, generally being less than 8 percent.

## B) Ground Magnetometer

## Survey Specifications

The survey, contracted to Lloyd Geophysics of Vancouver, was carried out on lines 100 metres apart with readings taken every 12.5 metres.

The equipment used was the OMNI PLUS field magnetometer and the OMNI 4 recording base station magnetometer both manufactured by EDA INSTRUMENTS INC., Toronto, Canada.

The system is completely software/microprocessor controlled. A portable proton precession magnetometer measures and stores in memory the total earth's magnetic field at the touch of a key. It also identifies and stores the location and time of each measurement and computes the statistical error of the reading and stores the decay and strength of the signal being measured. Throughout each survey day a similar base station magnetometer measures and stores in memory the daily
fluctuations of earth's magnetic field. The use of two magnetometers eliminates the need for a network of base stations on the grid. At the end of each day the field data is merged with the base station data in the field computer and automatic diurnal corrections are applied to correct the field data, resulting in a very accurate ( $+5 n T$ ) measurement of the earth's total magnetic field.

## South Grid

Magnetic response for the southwestern portion of the grid (Figure 5a, in pocket) is generally low with values ranging from $900-1000 \mathrm{nT}$. In contrast, the eastern and northeastern portions of the grid display magnetic values from 1200-1500nT. It is probable that the lower and more uniform values in the southwest indicate thicker overburden.

In the eastern and northeastern portions of the grid, higher magnetic readings occur both north and south of sinuous northwest-southeast to east-west trending magnetic low (values down to 739 nT ). Alternatively, these lows could be interpreted as a series of en-echelon, north-trending structures.

## North Grid

Magnetic variations over this grid (Figure 5b, in pocket) are greater than over the South Grid. These variations range from about 500 to 1000 nT . There are definite continuous zones of
both high and low magnetic relief within the grid area.
Trends are predominantly in a north-south direction with a discrete magnetic low at 10900N/7200E and a discrete high at 11000-11100N/7700-8000E. The latter anomaly is unclosed to the south and warrants additional surveying in this direction.

## 6. CONCLUSIONS AND RECOMMENDATIONS

The North and South Grids cover the two areas selected from the low-level airborne magnetometer/VLF-EM survey for detailed ground follow-up. Results of the ground magnetometer survey confirm that these grid areas lie on the western flank of a large area of high magnetics thought to represent the Mt. Milligan intrusive complex. Discrete magnetic highs evident from the ground magnetometer survey may indicate small stocklike apophyses of this complex. North-south trending magnetic lows support the VLF-EM results which suggest a general northsouth trend to apparent conductors.

Additional ground magnetometer coverage is warranted to the south of the eastern portion of the North Grid. An induced polarization survey should be undertaken in both grid areas to determine the presence of sulphides in association with the discrete magnetic and VLF-EM features.

## APPENDIX I

## STATEMENT OF QUALIFICATIONS

## STATEMENT OF QUALIFICATIONS

I, Russell H. Wong of \#700-890 West Pender Street, in Vancouver, in the Province of British Columbia, do hereby state:

1. That I am a graduate of the University of British Columbia, Vancouver, B.C., where I obtained a B.Sc., in Geology in 1975.
2. That $I$ have been active in mineral exploration since 1973.
3. That $I$ have practiced my profession continuously as a staff geologist for BP Resources Canada Limited, since 1979.

APPENDIX II

## STATEMENT OF COSTS

## STATEMENT OF COSTS

1) ROAD CONSTRUCTION
( 3.7 km )

$$
\begin{array}{ll}
.96 \mathrm{~km} \text { apportioned to TEA GROUP } & -\$ 1,870 \\
2.74 \mathrm{~km} \text { apportioned to SNOWSHOE GROUP } & -\quad 5,370
\end{array}
$$

2) LINE-CUTTING
(47.7 line-km)
3.25 line-km apportioned to TEA GROUP - $\$ 3,270$
44.45 line-km apportioned to SNOWSHOE GROUP - 44,730
3) AIRBORNE GEOPHYSICS:
(425 line-km)
215.3 line-km apportioned to TEA Group - $\$ 6,711$
209.7 line-km apportioned to SNOWSHOE Group - 6,539
4) GROUND MAGNETOMETER:
(43.0 line-km)
3.2 line-km apportioned to TEA Group _ \$ 592
39.8 line-km apportioned to SNOWSHOE Group = 7,278

| TOTAL APPLICABLE $T 0:$ | TEA Group |
| :--- | :--- |
|  | SNOWSHOE Group |

\$76,360



