GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORTS

DATE RECTIVED

JUL 2 3 1996

REPORT ON THE GAMBIER PROPERTY

VANCOUVER MINING DIVISION, BRITISH COLUMBIA

NTS 92G/11

49° 30' north latitude

123° 21' west longitude

By

R.M. Durfeld, B.Sc., P.Geo.

FILMED

June 1996

GEOLOGICAL SURVEY BRANCH ASSESSAESCE RESEARCH

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A.) INTRODUCTION

1) Location

The Gambier Property, comprised of the MB mineral claim group in the Vancouver Mining Division, is located on the northeast side of Gambier Island, 30 kilometres northwest of the city of Vancouver (Figure 1). More precisely, it is located at 49 degrees and 30 minutes north latitude and 123 degrees and 21 minutes west longitude. (National Topographic System Map 92G/11)

2) Access and Physiography

Access to the property to the property for this program was from Horseshoe Bay by hired boat and driver. This access was on a daily basis and the boat distance was 17 kilometres to Douglas Bay. Old skid trails originating from the beach provided good walking access to the grid.

The terrain of the property is characterized by precipitous slopes that range from sea level on the coast to 450 metres (1500 feet) in the western claim area.

The vegetation on the Gambier property is characterized as second growth coastal forest of cedar, spruce and fir, with overmature cottonwoods in the poorly drained valley bottoms. Undergrowth consists of variable salal, devils' club, alder and abundant moss.

3) Ownership

The Gambier property, comprised of four modified grid mineral claims - the GAM mineral claim group, totals 30 claim units and covers 750 hectares. The status of these claims is summarized below and the relative claim locations and the areas worked during the 1995 - 96 program are plotted as figure 2.



Figure 1. Location plan for the Gambier Island Copper Prospect 1.250,000. NTS 92G

CLAIM NAME	NUMBER OF UNITS	TENURE NUMBER	RECORD DATE	YEAR OF EXPIRY
MB 1	8	258252	January 3rd	1997
MB 10	4	258264	March 29th	1998
MB 11	6	258265	March 29th	1998
MB 18	12	258266	March 29th	1998

The year of expiry for MB 10, 11, 18 reflects the filing of the work on March 27th, 1996 and that is documented in this report.

Messrs. J.P. McGoran and R.M. Durfeld are the registered owners of the MB mineral claims.

4) History and Previous Work

The first claim staking on Gambier Island in 1905 would have coincided with the exploration and development of the Britannia Mine. The location for this staking is not given.

The next documented work was in the early 1970's, by Gaylord Mines who staked the northeast section of Gambier Island to cover old known copper showings. Gaylord Mines conducted soil sampling, EM 16 and magnetometer surveys over the northeast section of Gambier Island. This work defined anomalies centred at Copper Cove and south of Gambier Creek at a point approximately 1 kilometre inland from Douglas Bay. The Copper Cove Anomaly was tested by a single diamond drill hole that was cored at -45° for 815 feet (248 metres) and was reported to have assayed 0.117% copper over its entire length. The Gambier Creek anomaly was not tested by diamond drilling at that time. Gaylord Mines permitted the property to lapse.

The property was again staked in February 1978 by 20th Century Energy Corporation. During the period 1978 to 1981, 20th Century conducted extensive exploration in the area of the Gambier Creek anomaly, comprised of a geochemical soil sampling and induced polarization surveys followed by 5,558 metres of diamond drilling. This work defined a 'Porphyry Copper-Molybdenum Deposit' with



estimated reserves of:

- 198 million tonnes .24% Cu and .015% MoS₂, with a .20% copper equivalent cutoff or
- 56 million tonnes .36% Cu and .021% MoS₂, with a .40% copper equivalent cutoff.

In December 1984 and March 1985 the MB 1, MB 10, MB 11 and MB 18 mineral claims were forfeited and relocated by Messrs. R.M. Durfeld and J.P. McGoran.

Work conducted since 1985 on behalf of Durfeld and McGoran has consisted of geochemical (soil silt and rock sampling) and geological mapping surveys peripheral to the Gambier Creek and Copper Cove anomalies and covering much of the present claim group.

5) Work Program

The purpose of this program was to evaluate the possibility of extending the mineralized zone eastward. Geochemical soil, silt, and rock sampling were carried out on the eastern margin of the mineralized zone, from 1995-96. A ground magnetics survey conducted in early 1996 outlined a fault near the mineralized zone.

This report documents the geophysical, prospecting and geochemical surveys conducted in March 1996 by R.M. Durfeld and J.P. McGoran on the eastern side of the Gambier Creek anomaly and compiles it with previous surveys.

B.) GEOCHEMICAL SURVEYS

1) Geochemical Sample Collection and Analyses

Soil samples were collected at 20-60 metre intervals with the aid of a grub-hoe from the top of the B-horizon and placed in Kraft sample bags marked with the relative grid coordinates.

The soils are generally coarse and well drained and as such would be classed as Dystric Brunisols. The top of the B-horizon was generally between 4 and 15 centimetres in depth. However, in the Gambier Creek Area the residual soil was found to be masked by a varved light-grey glacial outwash clay and sample depths of up to 70 centimetres were necessary to get through this clay. Some of the steep outcrop areas lacked well developed soil horizons and resulted in missed samples or rock chip samples being collected instead.

Rock chip samples consisted of random chips of outcrop.

All the soil and rock samples were shipped to Acme Analytical Laboratories Ltd. at 852 East Hastings Street in Vancouver for analysis.

At the Acme laboratory, the soil samples were dried and sieved. The rock samples were crushed and pulverized. All the samples were then digested and analyzed for 30 element ICP and gold by atomic absorption. The detailed description of the analytical procedures employed at the Acme laboratory along with the geochemical results for the soil and rock samples are given as Appendix II of this report.

2) Geochemical Results

Acme Analytical Laboratories supplied the soil, silt, and rock sample results on computer disk. Computer plots were generated from this database. Appendix III, Geochemical Analyses, gives the sample, grid location, and analytical results. All samples from this and previous surveys for molybdenum, copper, gold, lead, zinc and silver are given as figures 4 through 9.

C.) GEOPHYSICAL SURVEYS

1.) Ground Magnetics

Approximately 1.4km of ground magnetics surveys was conducted on grid lines 100 metres apart with 25 metre station. This survey was conducted using a Scintrex Proton Magnetometer capable of storing grid locations and data readings. Diurnal variation was checked by rereading a central base station after each line. This variation was found to be less than 100 gammas throughout the survey and not corrected for.

The readings were downloaded to a database and contoured using a Geographic Mapping System. The contoured results are given on the Geophysical Plan, Contoured Magnetics (figure 10). The results of the magnetic survey showed a strong north-south trending contrast. Previous surveys, although run on north-south lines, had also shown this trend. It is this magnetic feature in conjunction with results for molybdenum and copper of the previous surveys that assisted in drawing the eastern boundary to the mineralized zone.

D.) GEOLOGY

1.) Regional Geology

The regional geology of Gambier Island is mapped by J.A. Roddick of the Geological Survey of Canada and is published as Memoir 335 and Open File 611. This mapping shows the southern and western portions of Gambier Island to be underlain by intrusive rocks of granodiorite composition. Volcanic and clastic rocks of the Jurassic to Cretaceous Age Gambier Group underlie the northern portion of Gambier Island. The Gambier Group rocks have a north to northwest strike and steep easterly to northeasterly dips. Ramilles Channel through McNab Creek to the north shows a strong northerly trending regional structure on the east side of Gambier Island.

2.) Local Geology

Geological mapping was completed in conjunction with the soil sampling. Outcrop exposures were mapped in the grid area. The geology is given with the location of the mineralized zone, including the soil grid, digitized topographical contours, and outline of modified mineral claims as Figure 3 for the property area.

Lithology

Rocks of Jurassic to Cretaceous Gambier Group were the oldest lithology in the Gambier property

area. Mapping divides the Gambier Group into:

Jurassic

volcanic sediments; gritstone, conglomerate, breccia, volcanic wacke

 a) propylitic sediments rich in epidote and quartz veinlets

b) black often silicious argillite

and

2) massive medium grained andesitea) hornfelsed and hypothermally altered.

During Upper Cretaceous to Tertiary (?) time the Gambier Group rocks were intruded by:

Cretaceous

heterogeneous mafic

 rich diorite, numerous mafic inclusions

<u>Tertiary</u> 4) massive medium grained diorite a) hypothermally altered

5) quartz feldspar porphyry -as dykes and small stocks

and

6) dacite porphyry dykes

<u>Structure</u>

Regionally the prominent structural directions on Gambier Island are west-northwest and north-south.

Alteration

Hydrothermal alteration products in the Gambier property area are mapped as fine hornfels and chlorite, epidote and silicification, and is closely related to the intrusive activity.

Mineralization

Due to the heavy rainfall sulphide mineralization is absent from most outcrop exposures and only noted on freshly broken surfaces. Pyrite occurs as disseminations and blebs in the matrix and on fractures and veins was noted in all lithologies. Locally the pyrite is accompanied by lesser chalcopyrite and malachite, and molybdenum.

E.) DISCUSSION

A compilation of the 1996 data and previous surveys shows areas anomalous in copper and molybdenum in the Gambier Creek and Gambier Lake areas.

Work by previous operators defined a 'Porphyry Copper-Molybdenum Deposit' coincident with the Gambier Creek anomaly (outlined on the geochemical and geological plans). Identification of and sampling through the glacial outwash clay has shown the copper and molybdenum anomalies to extend beyond the deposit boundary on the east side. Additional work by way of trenching followed by diamond drilling would test the potential of increasing the size of the deposit in this direction.



APPENDIX I

Itemized Cost Statement	
Technical Staff R.M. Durfeld (March 16th to 18th, 1996)	
3 days @ \$ 350/day	\$ 1050.00
J.P. McGoran (March 16th to 18th, 1996) 3 days @ \$ 350/day	1050.00
Assistant	с.
1. Durfeld (March 16th and 17th, 1996) 2 days @ \$ 150/day	300.00
Magnetometer Rental 3 days	300.00
Truck Rental - include fuel 3 days @ \$ 60/day	180:00
Hired Boat	200.00
2 days (2 3 200	200.00
Field Equipment	100.00
Geochemical Analyses	165.00
Report Preparation and Drafting	1500.00

TOTAL COST OF PROGRAM

4645.00

\$

Dated at Williams Lake, British Columbia.

this 20th day of June 1996.

· R.M. Durfeld, B.Sc., P.Geo. (Geologist)

P.O. Box 4438 Station Main, Williams Lake; B.C. V2G/2V5

Tel: 604/392-4691 • Cell: 604/398-0353 • Fax: 604/392-3070



Statement of Qualifications

- I Rudolf M Durfeld, do hereby certify:
- 1.) That I am a consulting geologist with offices at 1725 Signal Point Road, Williams Lake, B.C.
- That I am a graduate of the University of British Columbia, B Sc. Geology 1972, and have practiced my profession with various mining and/or exploration companies and as an independent geologist since graduation.
 - 3.) That I am a member of the British Columbia and Yukon Chamber of Mines.
- 4.) That I am registered as a Professional Geoscientist by the Association of Engineers and Geoscientists of B.C. (No. 18241)
- 5.) That this report is based on my personal knowledge of the property and member of the exploration team that conducted exploration on the Gambier property during the period March 16th to 18th, 1996.

Dated at Williams Lake, British Columbia

this 20th day of Jure 1996 R.M. Durfeld B.S¢, P.Geo. (Geologist)

P.O. Box 4438 Station Main, Williams Lake, B.C. V2G 2V5

Tel: 604/392-4691 • Cell: 604/398-0353 • Fax: 604/392-3070.

APPENDIX III

Geochemical Analyses

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