GOLDEN GATE EXPLORATIONS LTD.

LAY GROUP

Whitehorse M.D., 105-K-2
132° 50' W., 62° 12' N.

GEOCHEMICAL RECONNAISSANCE

by

I. Borovic
P.H. SEVENSMA CONSULTANTS LTD.


This report has been examined by the Geologic Evaluation Unit.

Approved as to technical worth by:

[Signature]
Resident Geologist

Approved as to cost in the amount of $10,250 by:

[Signature]
Resident Mining Engineer

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.

[Signature]
Commissioner YUK
TABLE OF CONTENTS

1. INTRODUCTION .................................. 1
2. PROPERTY, LOCATION, ACCESS ..................... 1 & 2
3. TOPOGRAPHY, DRAINAGE, FLORA .................... 2
4. SAMPLING PROCEDURE ............................. 2 & 3
5. ANALYTICAL PROCEDURE ........................... 3
6. SURVEY RESULTS ................................. 4
7. PHOTOGEOLOGICAL STRUCTURAL INTERPRETATION ...... 4
8. SUMMARY ........................................ 4 & 5

ILLUSTRATIONS

Fig. 1 - Claim and Property Location Map - 1" = ½ mile.
Fig. 2 - Geochemical Reconnaissance Survey - Sample Location No.
      1" = 400'.
Fig. 3 - Geochemical Reconnaissance Survey - Zn. Plot - 1" = 400'.
Fig. 4 - " " " - Pb. Plot - 1" = 400'.
Fig. 5 - " " " - Cu. Plot - 1" = 400'.
Fig. 6 - Photogeological Structural Map - 1" - ½ mile.
1. INTRODUCTION

The work reported in this report was done in the field between June 5th and June 11th, 1969 and includes geochemical analyses made by Whitehorse Laboratory and a short discussion of the geology and geochemistry and of the photogeological structural map.

Work was initiated to evaluate at an early date the inconclusive results obtained by Cominco Ltd. during the 1967 field season.

2. PROPERTY, LOCATION, ACCESS

The property on which the geochemical survey was carried out consists of the following 67 claims:-

Lay 1 - 8 incl.
Lay 12 - 70 incl.

The attached geochemical maps show the specific area tested by this survey.

The claims are located about 23 air miles NW of Ross River and 125 air miles NE of Whitehorse.

Access is by float plane or helicopter. A road suitable for 4 wheel drive vehicles, passes near the property and may be utilized under favorable weather conditions later in the season.
The camp site is at an elevation of about 3,000' and maximum altitude in the immediate area is about 4,500' above sea level. (Fig. 1)

3. **TOPOGRAPHY, DRAINAGE, FLORA**

The area covered by this investigation is the lower part of the Anvil - Vangorda area and is situated north of the Pelly River and west of the Ross River.

Long narrow lakes elongated in an E-W direction, small gently sloping hills, and swampy valleys characterize the topography of the area. The lakes are inter-connected and water runs from the higher points to the lower through small short creeks. The gentle slopes make for a poor drainage pattern, and there is no strong migration of the ground water.

Permafrost occurs approximately a foot and a half under the muskeg.

Recent muskegs are widespread and occur in all poorly drained low areas.

Thin forests cover most of the area. The principal tree is spruce which grows even in the swampy muskeg-covered valleys.

4. **SAMPLING PROCEDURE**

Each sample was taken from a shallow hole which was made with a miner's pick. Holes were 2' in diameter and not more than 18" deep.
Several soil horizons were recognized; humus, volcanic ash, buried humic layer, "B" soil horizon and the "C" horizon comprised of transported mineral soil.

The ideal section is sketched as follows:

```
Humus ("A")
Volcanic Ash
Humus (Paleo "A")
"B" Horizon (imature development)
"C" Horizon - glacial gravels
```

The surficial humus horizon is black organic muck about 3" thick and is underlain by a light grey horizon of volcanic ash up to 2" thick. The older humus layer is found under the volcanic ash horizon and thickness is about 4".

Underlying the older humus layer is the "B" horizon from which the samples were taken. It is brown to light brown coloured silt or clay mixed with sand and sometimes, in deeper holes with pebbles.

After collection, the samples were partially dried in the field and submitted without further preparation.

Major topographic, drainage and vegetation features were noted and recorded.

5. ANALYTICAL PROCEDURE

The samples were sent to the Whitehorse Laboratory to be processed.

1. Weight of sample used was 1.00 gr.
2. Extraction was done with hot HClO₄ and HNO₃.
3. An atomic absorption spectrophotometer was used.
4. Assaying was done on the -80 mesh fraction.
6. **SURVEY RESULTS**

   **Zinc, Lead and Copper**

   The zinc, lead and copper values show average background without any significant anomaly. No explanation of the Cominco lead anomaly in the same area is evident. (Figures 2, 3, 4 & 5)

   The area from which check samples were taken is comprised of mud, muskeg and swamp.

   Permafrost started just under the muskeg and humus horizon and special tools will be required to penetrate it.

   Some improvement in conditions may be expected in the latter part of the season.

7. **PHOTOGEOLOGICAL STRUCTURAL INTERPRETATION**

   This provided the structural pattern but the deep overburden which covers the area renders impossible an estimate of the actual rock types underlying the claims.

   There are a few dykes N and NE from the campsite.

   Stronger faults have an E-W direction. Several NW - SE faults are noted on the south bank of the largest lake and the SE part of the grid. (Fig. 6)

8. **SUMMARY**

   The photogeological map shows favorable structural evidence. Geochemical results were not encouraging and gave only average values. Soil sampling would now appear of questionable value in the further exploration of this property.
9. **RECOMMENDATION**

On the basis of all work to date additional geochemical work can not be recommended. A gravity survey could be of value as known sulphide deposits in this belt have a well defined gravimetric expression. It is recommended however that regional geological studies be regarded as an effective guide to favorable areas within the Vangorda belt. The ground should be retained pending further study of the geological setting of the Lay Group, as all indications suggest that the favorable ore-bearing rock-assemblage underlies at least a part of these claims.

Reference:


Respectfully submitted,

[Signature]

I. Borovic, Geologist.

Endorsed:

[Signature]

P.H. Sevensma, Ph.D., P.Eng.

CANADA  )  IN THE MATTER OF A GEOCHEMICAL SURVEY ON
YUKON TERRITORY) CERTAIN OF THE LAY GROUP MINERAL CLAIMS
TO WIT:  ) HELD BY GOLDEN GATE EXPLORATIONS LTD.

I, William J. Abraham
of, #714 West Hastings St, Vancouver 1, B.C.
HEREBY MAKE OATH AND SAY AS FOLLOWS:-

That attached hereto, this my Affidavit, marked Appendix "A" and "B" respectively is a statement of the costs incurred and a list of personnel employed in the performance of this work which I certify to be correct to the best of my knowledge and belief.

SWORN before me at the
City of Vancouver,
Province of British Columbia,
this 6th day of August,
A.D. 1969.

[Signature]

NOTARY PUBLIC IN AND FOR THE YUKON TERRITORY
## APPENDIX "A"

**Statement of Costs Incurred on Geochemical Survey of Lay Group Mineral Claims June 1st to July 3rd, 1969.**

<table>
<thead>
<tr>
<th>Name</th>
<th>Particulars</th>
<th>Chq. #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrikon Enterprises Ltd.</td>
<td>Aircraft Charter &amp; Expediting</td>
<td>2</td>
<td>$175.00</td>
</tr>
<tr>
<td>Whitehorse Assay Office</td>
<td>Assay Charges</td>
<td>4</td>
<td>144.00</td>
</tr>
<tr>
<td>Trans North Turbo Air Ltd.</td>
<td>Aircraft Charter</td>
<td>5</td>
<td>253.50</td>
</tr>
<tr>
<td>P.H. Sevensma Consultants Ltd.</td>
<td>Services &amp; Expenses</td>
<td>6</td>
<td>850.00</td>
</tr>
<tr>
<td>Terrikon Enterprises Ltd.</td>
<td>Aircraft Charter, Expediting and casual labour</td>
<td>8</td>
<td>315.00</td>
</tr>
<tr>
<td>P.H. Sevensma Consultants Ltd.</td>
<td>Services &amp; Expenses</td>
<td>9</td>
<td>697.00</td>
</tr>
<tr>
<td>Taylor &amp; Drury Ltd.</td>
<td>Groceries</td>
<td>10</td>
<td>114.08</td>
</tr>
</tbody>
</table>

**Total** $2,548.58
## Statement of Firms & Personnel Employed on Geochemical Survey of Lay Group Mineral Claims

**June 1st to July 3rd, 1969**

<table>
<thead>
<tr>
<th>Consulting Services, Supervision and Conduct of Sampling Program.</th>
<th>P.H. Sevensma Consultants Ltd., 715 - 850 West Hastings St., Vancouver 1, B.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expediting and Transportation Services.</td>
<td>Terrikon Enterprises Ltd., P.O. Box 2264, Whitehorse, Yukon Territory.</td>
</tr>
<tr>
<td>Helicopter Charter.</td>
<td>Trans North Turbo Air Ltd., P.O. Box 1979, Whitehorse, Yukon Territory. C. Armstrong, Pilot.</td>
</tr>
</tbody>
</table>
CERTIFICATE

I, PIETER H. SEVENSMA, of 908, 1280 Haro Street, in the City of Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist with a business address at 715 - 850 West Hastings Street, in the City of Vancouver, in the Province of British Columbia.

2. THAT I am a graduate of the University of Geneva, Switzerland (Physics and Chemistry, 1937; Geology and Mineralogy, 1937) where I obtained my Ph.D. in Geological and Mineralogical Sciences in 1941.

3. THAT I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers of the Province of British Columbia and of the Association of Professional Engineers of Yukon Territory.

4. THAT I have practiced my profession as a geologist for the past 30 years.

5. THAT I have, on a number of occasions, traversed the area covered by the Lay Group while constructing a road to adjacent claims, but that due to the nature of the overburden no outcrops could be examined.

6. THAT geochemical reconnaissance discussed in my report of July 3, 1969 was carried out by Mr. I. Borovic, geologist on my staff.

7. THAT I have no direct or indirect interest in any of the securities or properties of Golden Gate Explorations Ltd. (N.P.L.), nor do I expect to receive or acquire any.

Dated this 3rd day of July, 1969.

P.H. Sevensma, Ph.D., P. Eng.