## GEOLOGICAL AND GEOCHEMICAL REPORT

## BC

N.T.S. $92 \mathrm{~K} / 11 \mathbb{L}^{\prime}$<br>Lat $\mathbf{5 0}^{\mathbf{0}} \mathbf{3 0} \mathbf{~} \mathbf{N}$; Long $\mathbf{1 2 5}^{\mathbf{0}} \mathbf{2 5}{ }^{\prime} \mathrm{W}$<br>for<br>Thurlow Resources Limited 430-580 Hornby St,<br>Vancouver, B.C. V6C 3B6<br>By<br>Christopher I. Dyakowski, P.Geo<br>$$
3750 \text { West } 49^{\text {th }} \text { Ave }
$$<br>Vancouver, BC V6N 3T8

30 July, 1997


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## 1. INTRODUCTION AND SUMMARY

The D.M. Group molybdenite mineral property in south-western B.C. is under option to Thurlow Resources Ltd. (Thurlow) from B.H. Fitch of 304-420 $7^{\text {th }}$ Street, New Westminster, B.C. V3M 3L1 and from C.I. Dyakowski of 3750 West $49^{\text {th }}$ Ave, Vancouver, B.C. V6N 3 T8.

The property is within the same geological environment as the Doratha Morton gold mine and the Alexandra gold mine both located to the southeast.

Thurlow carried out a spring exploration program consisting of soil sampling, rock sampling and geological mapping. The twelve day survey concentrated on the westerly area of a north-westerly trending shear zone that crosses the claim group. This part of the program was designed to determine the surface parameters of a brecciated zone carrying molybdenite mineralization first observed during claim staking the previous year.

Ten days were spent by a three-man party in May, 1997, gaining access to the area, establishing a grid system, collecting 137 soil samples and 7 rock samples, mapping along existing logging roads and the grid lines. A two-day follow up in June was spent resampling and extending the soil sampling where warranted by the initial results.

It is recommended that a program of test pitting be carried out within several anomalous zones that were defined by the geochemical program followed up by a first stage exploratory drill program if warranted.

## 2. LOCATION AND ACCESS ( Fig. 1)

As modified after Ostler, 1997:
The D.M. Property is located in the Vancouver, B.C, Mining Division, approximately Latitude $50^{\circ} 30^{\prime} \mathrm{N}$; Longitude $125^{\circ} 25^{\prime} \mathrm{W}$, on the steep slopes of the Pembroke Range above the western shore of the mouth of Phillips Arm. The Phillips Arm area is at the western boundary of the Pacific Ranges of the coast Mountains of south-western British Columbia.

The town of Campbell River is the closest major supply and service center to the Phillips Arm area. Campbell River is on the northeastern coast of Vancouver Island near the northern end of the Strait of Georgia. It services local fishing and logging industries and most services required for property exploration and development can be found there. It is about 200 km from Vancouver to Campbell River via the Nanaimo ferry and B.C. Highway 19.


The D.M. Property is about 60 km north-northwest of Campbell River and is accessible by boat and float plane. The closest accomodation to the property-area is Cordero Lodge, located in the bay near Lorte Island in Cordero Channel about 10 km southwest of the property-area. The lodge is open all year.

Access to the southern part of the claim block (Fill claims) is by ATV or 4 Wheel Drive truck from Picton Point, a distance of 8 to 12 km to the south on Cordero Channel near the western entrance to Phillip's Arm. Access to the northern claims (HY-LO) is also by logging road from Picton Point and then via a 700 meter trail which leads to a logging road system that extends from Fanny Bay.

Elevations on the D.M. block vary from 500 to 1300 meters with moderate to precipitous slopes. Lower areas have second-growth forests ( 5 to 25 years) which makes access difficult once off the road system. Higher elevations are covered with primieval coniferous forests interrupted by numerous steep rock outcrops.

## 3. PROPERTY AND OWNERSHIP (Fig. 2)

The property comprises six located claims which are owned $100 \%$ by Christopher Dyakowski and Bernard Fitch. The claims cover 45 claim-units. The total area involved is 925 hectares, less probable minor overlap. The claims have not undergone a legal survey but are easily defined from officially surveyed monuments or recognizable mapped landmarks. Descriptions are tabled as follows (Table 1):

Table 1

## Claim Data

D.M. Group

| Claim <br> Name | No. of <br> Units | Type | Tenure No. | Registered <br> Owner | Recording <br> Date | Valid <br> Until |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| HY | 9 | MGS | 349933 | C. Dyakowski | 12 Aug 96 | 10 Aug 97 |
| Fill 2 | 1 | 2 Post | 349441 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill 3 | 1 | 2 Post | 349442 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill 4 | 1 | 2 Post | 349443 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill 5 | 1 | 2 Post | 349444 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill 6 | 1 | 2 Post | 349445 | B. Fitch | 11 Aug 96 | 11 Aug 97 |


| Fill 7 | 1 | 2 Post | 349446 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fill 8 | 1 | 2 Post | 349447 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill 9 | 1 | 2 Post | 349448 | B. Fitch | 11 Aug 96 | 11 Aug 97 |
| Fill A | 1 | 2 Post | 355556 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 10 | 1 | 2 Post | 355557 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 11 | 1 | 2 Post | 355559 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 12 | 1 | 2 Post | 355575 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 13 | 1 | 2 Post | 355576 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 14 | 1 | 2 Post | 355577 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 15 | 1 | 2 Post | 355578 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 16 | 1 | 2 Post | 355579 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 17 | 1 | 2 Post | 355580 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 18 | 1 | 2 Post | 355581 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| Fill 19 | 1 | 2 Post | 355582 | B. Fitch | 28 Apr 97 | 28 Apr 98 |
| LO | 9 | MGS | 352496 | C. Dyakowski | 10 Nov 96 | 11 Aug 97 |

TOTAL 925 ha

## 4. AREA HISTORY AND DEVELOPMENT

Gold associated with pyrite in quartz veins was discovered in the latter decades of the nineteenth century at the head of Phillips Arm. The strike of the shear zone was followed to the northwest part of the present HY-LO claims. The Doratha Morton claim at an elevation of 700 m was put into production with a mill established at tide water. Some 10,000 tons of ore yielded 4500 ounces of gold and 1200 ounces of silver during 1898 and 1899. The Alexandria mine to the southeast at tidewater produced 770 ounces of gold and 1300 ounces of silver from 1900 tons of ore.

Exploration and development activity continued along the mineralized shear until 1940 (including the driving of adits in the area of the HY-LO claims). Commencing in the early

PROGRAM


1980's Falconbridge Nickel Mines and several junior mining companies re-opened old workings and carried out mining exploration programs including ground geophysical surveys geochemical surveys, mapping and diamond drilling.

In the area that is the focus of this report, early exploration located gold veins in surface trenching and at least two adits during 1985-87. Falconbridge completed a geochemical program over part of the HY-LO claim and did some local geological mapping. Their gold grid shows continuous anomalies (from 30 ppb to over 100 ppb ) along the shear from their drill site to the end of their survey some 1.5 km southeast. Scattered gold anomalies appear in the area of the breccia zone.

Six of Falconbridge's seven drill holes insersected sections up to 10 m with anomalous gold values. Included in these sections were the following; $0.277 \mathrm{oz} /$ ton gold over 2.35 m , $0.09 \mathrm{oz} /$ ton gold over $2.01 \mathrm{~m}, 0.27 \mathrm{oz} /$ ton gold over $0.8 \mathrm{~m}, 1.70 \mathrm{oz} /$ ton gold over 0.47 m and $0.34 \mathrm{oz} /$ ton gold over 0.8 m .

## 5. REGIONAL GEOLOGY AND MINERALIZATION (Fig. 3)

The regional geology of the area around the D.M Group and the Phillip's Arm gold camp was compiled by Roddick and Woodsworth of the Geological Survey of Canada (Roddick, 1977). Their general description of the rocks of the Phillips Arm gold camp are as follows:
...most of the area is underlain by plutonic rocks, ranging from gabbro to quartz monzonite. Granodiorite and quartz diorite predominate and unlike most areas in the Coast Mountains, granodiorite is slightly more abundant. The granodiorite forms a broad central belt about 50 km wide, extending from Big Julie pluton in the southeast to Knight Inlet, with a core area of quartz monzonite between Toba and Knight Inlets. The flanking belts are underlain mainly by quartz diorite but granodiorite and diorite are also well represented. Most of the plutons, excepting the quartz monzonite, exhibit a pronounced northwesterly elongation. This pattern is accentuated by long narrow belts of metasedimentary and metavolcanic rocks... Steeply dipping metasedimentary and metavolcanic rocks form narrow bands engulfed in the main mass of the Coast Plutonic Complex. Although interrupted here and there by large plutons they are remarkably persistent along strike and are thought to represent fault slices or grabens along which 'horsts' of plutonic rock were thrust upward. The bounding shear zones in places still exist but synplutonic recrystallization has commonly reduced them to mere foliations or obliterated them entirely. In many places these 'screens' are flanked on one side by diorite and on the other by quartz diorite or, less commonly, by granodiorite. The dioritic rocks may represent remnants of a primitive granitoid basement upon which Karmutsen and later rocks were deposited. Deep burial and subsequent deformation of the

MINERAL OCCURENCES

- Cold showing or past producer

A Molybdenum occurrence

- Pyrite occurrence


NOTE:
This Figure adapted from
Borovic, 1995: Figure 3

Alexandria

$$
\begin{aligned}
& \text { Alexanorda } \\
& \text { Enid-Julie }
\end{aligned}
$$

Doratha Morton
Champion/Cownorwealth
Channe Island
Sonora
Dauglas Pine
White Pine

## GEOLOGY

## Fi:7 Karmutsen volcanic rocks and uir related sediments

Ir or Metasedimentary rocks and older greenstones

$\square$uf Undifferentiated intrusive or 1 rocks Eindre Diorite


```
Thurlow
    Bluebells
    Cuba Silver
    monte Cristo/Amethyst
        Heydon Bay
        Loughborough
        Ace
        Colossus
```

eugeosynclinal pile along with the underlying basement was probably in response to compressive forces transmitted through the North American Plate against oceanic crust. Relief came eventually with the onset of subduction, and plutonic movement upwards bounded by synplutonic faults. The open structure of the Karmutsen volcanics on Vancouver Island is in marked contrast with the strongly deformed remnants of these rocks within the coast Plutonic Complex...

Minimum final cooling dates from potassium-argon work on...granitic rocks show a range from Jurassic ( 153 m.y.)... to Eocene ( 55 m.y.) ... The general decrease in age from west to east is characteristic of the Coast Plutonic Complex between latitudes $50^{\circ}$ and $55^{\circ} \mathrm{N}$.

Locally within the belt and running across the claim block is a band of shearing that extends southeasterly for several kilometers and is host to several sulphide deposits. Pyrite is the predominant sulphide, and when found in quartz veins, usually contains gold. These mineral deposits tend to be lenticular and die out along strike, to be replaced shortly by another similar deposit.

## 6. 1997 GEOCHEMICAL SURVEY

Maps accompanying this report show the results of the soil geochemical survey completed for gold and molybdenum (Figs. 4,5). Data for copper, lead,zinc, silver, nickel, cobalt, manganese, arsenic, uranium, thorium, strontium, cadmium, tin, bismuth, vanadium, calcium, phosphorus, lanthanum, chromium, manganese, barium, titanium, boron, aluminum, sodium, potassium and tungsten were obtained and are in Appendix A.

A 550 m NW-SE baseline was established by line cutting and chain and compass control at the boundary of the HY and LO claims. Samples were taken along flagged cross lines at 25 m intervals. Each sample was taken from the " B " horizon with some exceptions where it was not possible to dig below the deep organic horizon. Samples considered satisfactory tended to have a brown to red colour. Black samples that did not appear to have any soil content were discarded and replaced by a satisfactory sample obtained nearby. A series of samples were obtained along the logging roads where they passed through the survey grid.

Samples were dried and forwarded to Acme Analytical Laboratories Ltd. of Vancouver,
B.C., where they were analyzed for 31 elements with results listed in Appendix A. In addition, seven rock samples were obtained at various outcrops and assayed for the same elements.

The main objective of this program was to obtain a possible extension of the molybdenite-chalcopyrite-pyrite mineralized zone beyond the rock quarry, where it was first observed. A secondary interest in possible gold values was motivated by a number of gold anomalies
found by Falconbridge ( $>30 \mathrm{ppb} \mathrm{Au}$ ) in the area, during their 1986 regional geochemical program in search for gold, along and in the vicinity of the gold bearing shear zone.

The molybdenum values indicated an area along the base line for a distance of 150 meters where, with one exception, values ranged up to 250 ppm . This area stretches in a northerly direction from the road quarry where the molybdenum outcropping was first discovered. No encouraging values were found south of the quarry.

Gold values were generally slightly above the chosen threshold value and showed, with one exception, no areas of strong concentration. Follow-up near a 498 ppb reading did not support the initial value.

Three of the 7 rock samples that were analyzed gave three highly anomalous readings; RS \#4 returned $5,032 \mathrm{ppm}$ Mo, sample \#6-04-04, a grab sample taken from the quarry yielded $2,817 \mathrm{ppm}$ Mo and sample \#6-04-05 taken from an outcrop below the diamond drill sites on the road returned 556 ppb gold.

No anomalous copper readings were found from either soil or rock samples.

## 7. CONCLUSIONS AND RECOMMENDATIONS

The geochemical survey succeeded in delineating an interesting Mo anomaly along 150 m of the baseline. Therefore, it is recommended that a follow-up program consisting of excavating several shallow pits over the Mo anomaly be carried out during the next exploration phase. If the pitting is successful several short ( $50-75 \mathrm{~m}$ ) exploratory holes should be drilled.

In addition, further exploration of the gold bearing shear zone where Falconbridge drilled should be carried out.

## 8. ITEMIZED COST OF THE 1997 EXPLORATION PROGRAM

## Wages:

B. Fitch, B.A.
12 days @300/day ..... $\$ 3600.00$
K. Christensen, Prospector 10 days @200/day ..... 2000.00
J. Riha, Helper
12 days @125/day ..... 1500.00
P. Poissant, Helper
2 days @150/day ..... 300.00
Rentals:
Big Bear ..... 360.00
Radio Tel ..... 105.00
C \& L Brush Saw ..... 200.00
Transporation \& Accomodation \& Meals:
Ferries ..... 80.00
Fuel ..... 35.00
Travel Meals ..... 67.00
Accomodation ..... 258.00
Field Tranportation \& Meals
Air \& Water Transportation ..... 576.00
Accomodation ..... 106.00
Barge (Marine Link) ..... 171.00
Camp Supplies:
Field Supplies ..... 163.00
Groceries ..... 317.00
Assays: ..... 2161.00

## 9. REFERENCES

Ostler, J.; 1977: Prospecting, Geochemical and Electromagnetic Surveys on the Alexandra Property 1 p., 3 maps

Roddick, J.A.;1977: Notes on the Stratified Rocks of Bute Inlet Map-area (excluding Vancouver and Quadra Islands) ; Geol. Surv. Canada, O.F. 480, 20 p., 1 map.




## APPENDIX A

## Rock Samples

| Number | Description | Assay |  |
| :---: | :---: | :---: | :---: |
| 6-04-01 | 2 m channel. Quartz in diorite. Quarry | $\begin{aligned} & \mathrm{Mo} \\ & \mathrm{Au} \end{aligned}$ | $\begin{gathered} 87 \mathrm{ppm} \\ 4 \mathrm{ppb} \end{gathered}$ |
| 6-04-02 | Chips in breccia carrying pyrite and molybdenite. Quarry | $\begin{aligned} & \mathrm{Mo} \\ & \mathrm{Au} \end{aligned}$ | 993 ppm <br> 1 ppb |
| 6-04-03 | Location $0+20 \mathrm{~N} \quad 1+65 \mathrm{E}$. Pyrite stringers in argellaceous. | $\begin{aligned} & \mathrm{Mo} \\ & \mathrm{Au} \end{aligned}$ | $\begin{gathered} 28 \mathrm{ppm} \\ 2 \mathrm{ppb} \end{gathered}$ |
| 6-04-04 | Grab from Quarry. Rich in Mo | Mo <br> Au | 2817 ppm <br> 1 ppb |
| 6-04-05 | Outcrop on road below DD sites. Calcareous carrying blebs of pyrite. | Mo <br> Au | 21 ppm 571 ppb |
| 6-04-06 | Float at $0+20 \mathrm{~N} 1+75 \mathrm{E}$. Pyrite in Qz-calcite. | Mo <br> Au | 10 ppm 9 ppb |



[^0]

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject. Reruns.



Sample type: SOIL. Samoles beginning 'RE' are Reruns and 'RRE' are Reject Reruns.


Sample type: SOIL, Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.




Sancol




Samole type: SOIL. Saroles begirning 'RE' are Reruns and 'RRE' are Rejec: Reruns.

* No afi dava, will tax it vou abserv liv avaibíle

APPENDIX B

## APPENDIX B

## CERTIFICATE OF QUALIFICATION

I, Christopher I. Dyakowski, do hereby certify that:

1. I am a geologist with a business office at 3750 West $49^{\text {th }}$ Ave, Vancouver, B.C. V6N 3 T.
2. I am a graduate in geology of the University of British Columbia (B.Sc. 1975)
3. I am a Registered Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4. This report may be used by Thurlow Resources Ltd for an Assessment Report.


Christopher 1. Dyakowski, P. Geo.

30 July, 1997


[^0]:    Samole type: soil. Samples beginning 're' are Reruns and 'rre' are Reject Reruns.

