GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

OAKE CLAIM GROUP

WATSON LAKE MINING DISTRICT
WOLF LAKE AREA, YUKON TERRITORY
N.T.S. 105 B/7
(60°16'N; 130°37'W)

For

AMAX MINERALS EXPLORATION

By

C. G. Verley, B.Sc., Geologist


CORDILLERAN ENGINEERING
1418 - 355 Burrard Street
Vancouver, B.C. V6C 2G8

DECEMBER, 1980

CLAIMS: Oake Mineral Claims. Numbers 1-16 inclusive

LOCATION: 109 air-km (68 air-mi) Northwest of Watson Lake

DATE: July 22 to August 2, 1980

090675
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $4,400.00.

Resident Geologist of Resident Mining Engineer

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

S.R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory
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PLATES

PLATE 1 Geology
PLATE 2 Soil Geochemistry
FIGURE 2: Oake Property, looking SE.
The Oake property consists of 16 mineral claims (Figure 3) located 109 kilometres (68 miles) northwest of Watson Lake in the Watson Lake Mining District. The claims are accessible by helicopter.

The ground was acquired by Cordilleran Engineering for Regional Resources Ltd. in March, 1980. Motivation for the acquisition was anomalous Pb, Zn soil geochemistry as determined from regional work in the area during the 1979 field season. The claims are presently under option to AMAX Minerals Exploration.

The property is underlain by a gentle, southeasterly dipping succession of Lower Cambrian metasediments. Work on the property in 1980 consisted of soil sampling and geological mapping. Subtle geochemical anomalies exist on the property, but no further work is recommended at the present time.
CLAIM MAP

OAKE GROUP

WATSON LAKE MINING DISTRICT, YUKON TERRITORY

N.T.S. 105B-7

SCALE: 1 inch = 1/2 mile
CONTOUR INTERVAL = 500 feet

FIGURE 3
Regionally, the Oake group is situated in a belt of Lower Cambrian or earlier (?) metasedimentary rocks in the Omineca Crystalline Belt, northern Cassiar Mountains. Intrusive rocks of the Cassiar batholith are located approximately 2 miles to the south of the property. Exposure on the claims is practically restricted to the Meister River. A thick blanket of glacial outwash forms a kettle and kame topography on the group.

Preliminary mapping on the Oake has resulted in the succession being subdivided into three units, described below.

LITHOLOGIES

LOWER CAMBRIAN AND EARLIER(?)

Unit L\textsubscript{E1}: Schists

This sequence, of unknown thickness, consists of a variety of interbedded phyllites, schists and grits. Near the top
of the section pale greenish, presumably chloritic phyllites predominate. Fine-grained clastic rocks, mainly quartzites increase in abundance down section. Pelitic interbeds in the grits become more schistose down section and contain garnets. Quartz-chlorite veins (5 to 15 cm thick) are relatively common in this package. Several larger (1 m) quartz veins contain pyrite and traces of chalcopryite.

Unit **Le₂**: Argillaceous Limestone

This unit consists of rusty weathering, thin-bedded dark to medium grey, medium crystalline, argillaceous limestone. Thin phyllitic sections are common in the sequence which is estimated to be approximately 30 metres thick.

Unit **Le₃**: Schist

The lithologies in this unit are very similar to those found in **Le₁**, consisting of phyllites and interbedded grits. Approximately 30 metres of this sequence is exposed. Thickness is unknown.

**STRUCTURE**

The succession on the Oake dips gently to the east. Two sets of lineations exist in the phyllites suggesting that at least two phases of deformation have taken place. No major faults appear to occur on the property.
A program of soil sampling was conducted on the Oake group. A total of 374 samples were collected (337 on the property) at intervals of 50 metres on lines spaced at 200 metres apart. Soils on the property consisted of a sandy glacial outwash material. Line control was by hip-chain and compass. A limited amount of rock-chip sampling was undertaken. The results of this work are listed in Table I.

Samples collected were placed in numbered kraft bags. Sample sites were marked with plastic flagging. The samples were shipped to the North Vancouver laboratory of Bondar-Clegg and Co. Ltd. where they were dried, sieved to the -80 mesh fraction and analyzed for Cu, Pb, Zn, Mo and Ag. The analytical method consisted of perchloric and nitric acid digestion followed by atomic absorption analysis.
**TABLE I**

ROCK CHIP GEOCHEMISTRY

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Cu ppm</th>
<th>Pb ppm</th>
<th>Zn ppm</th>
<th>Mo ppm</th>
<th>Ag ppm</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>KR-1</td>
<td>9</td>
<td>3</td>
<td>66</td>
<td>1</td>
<td>0.2</td>
<td>Phyllite</td>
</tr>
<tr>
<td>4</td>
<td>61</td>
<td>6</td>
<td>16</td>
<td>1</td>
<td>0.3</td>
<td>Phyllite</td>
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<tr>
<td>5</td>
<td>16</td>
<td>3</td>
<td>113</td>
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<td>0.2</td>
<td>Phyllite</td>
</tr>
<tr>
<td>8</td>
<td>42</td>
<td>3</td>
<td>34</td>
<td>&lt;1</td>
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<td>Quartz vein</td>
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<tr>
<td>10</td>
<td>40</td>
<td>5</td>
<td>47</td>
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<td>0.2</td>
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<td>11</td>
<td>28</td>
<td>8</td>
<td>83</td>
<td>1</td>
<td>0.2</td>
<td>Grit band</td>
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<tr>
<td>12</td>
<td>39</td>
<td>13</td>
<td>69</td>
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<td>0.2</td>
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<td>13</td>
<td>13</td>
<td>26</td>
<td>16</td>
<td>5</td>
<td>0.2</td>
<td>Limestone</td>
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<td>14</td>
<td>13</td>
<td>14</td>
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<td>Limestone</td>
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<td>7</td>
<td>11</td>
<td>79</td>
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<tr>
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<td>6</td>
<td>14</td>
<td>&lt;1</td>
<td>0.2</td>
<td>Phyllite</td>
</tr>
<tr>
<td>18</td>
<td>17</td>
<td>5</td>
<td>80</td>
<td>1</td>
<td>0.2</td>
<td>Phyllite</td>
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<td>19</td>
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<td>6</td>
<td>8</td>
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<td>20</td>
<td>12</td>
<td>4</td>
<td>86</td>
<td>&lt;1</td>
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<td>Grit band</td>
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<tr>
<td>21</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>0.2</td>
<td>Quartz vein</td>
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<tr>
<td>22</td>
<td>86</td>
<td>8</td>
<td>74</td>
<td>1</td>
<td>0.2</td>
<td>Garnet schist</td>
</tr>
</tbody>
</table>
Cumulative Frequency Distribution

Cu, Pb, Zn, Ag in Soils - Oake Property

100% = 373 samples

Figure 4
Results of the sampling indicate values in soils range up to 505 ppm Cu, 87 ppm Pb, 590 ppm Zn, 1.3 ppm Ag and 8 ppm Mo. Statistical categories (Figure 4 and Plate 2) were defined such that the upper 3% of the values are anomalous. Similarly, the upper 15% are considered to be possibly anomalous. On this basis it can be seen that some of the anomalous values form a cluster on line 2000N between 1650W to 2050W, but high values are also scattered across the grid. Sampling results do not appear to extend or confirm anomalies obtained by 1979 regional work. The relative intensity of anomalous values suggests that overburden may be obscuring a true response of bedrock. Soil profiling at anomalous sample sites may be a useful approach to aid in determining if high values are reflecting mineralization below overburden on the Oake.
The Oake property consists of 16 mineral claims on Meister River in the Watson Lake Mining District, Yukon Territory (105 B-7). Access to the claim group is by helicopter, from Watson Lake, a distance of 109 km.

The Oake was acquired in 1980 for Regional Resources Ltd. by Cordilleran Engineering and is presently under option to AMAX Minerals Exploration.

Work conducted during the 1980 field season consisted of soil sampling (374 samples) and geological mapping. Results of this work suggest that subtle Pb, Zn anomalies occur over the underlying succession of Lower Cambrian and earlier (?) metasediments.

No further work is recommended at the present time.
APPENDICES

APPENDIX "A" Certificates
APPENDIX "B" Statutory Declaration
APPENDIX "C" Personnel
I, Carl G. Verley of Vancouver, British Columbia

hereby certify that:

1. I am a geologist residing at 301-1867 West 3rd Ave., and employed by Cordilleran Engineering of 1418-355 Burrard Street, Vancouver, B.C. V6C 2G8

2. I am a graduate of the University of British Columbia, B.S., in 1974, and have practiced my profession since that time.

3. I am an Engineering Pupil with the Association of Professional Engineers of the Province of British Columbia.

4. I am the author of this report which is based on work conducted on the Oake #1-16 mineral claims during the period July 22 to August 2, 1980. This work included geological mapping and geochemical sampling, undertaken on behalf of AMAX Minerals Exploration.

CORDILLERAN ENGINEERING

Carl G. Verley, B.Sc.,
Geologist

December, 1980
Vancouver, B.C.
SUPERVISOR'S CERTIFICATE

I, John W. Stollery of Vancouver, British Columbia hereby certify that:

1. I am a geologist residing at 4423 Patterdale Drive North Vancouver, British Columbia and employed by Cordilleran Engineering of 1418-355 Burrard Street, Vancouver, B.C., V6C 2G8.

2. I am a graduate of the Michigan Technological University, B.S., in 1961 and have practiced my profession since that time.

3. I am a member of the Association of Professional Engineers of the Province of British Columbia and Ontario.

4. I supervised the writing of this report which is based on the results of a field program conducted by Cordilleran Engineering during the period June 1 to September 15, 1980.

December, 1980
Vancouver, B.C.
In the matter of a geological and geochemical Report on behalf of AMAX Minerals Exploration

TO WIT:

I, Carl G. Verley, Agent for Cordilleran Engineering of 1418-355 Burrard Street, Vancouver, B.C. V6C 2G8

do solemnly declare, that geological mapping and geochemical sampling were conducted on the Oake #1-16 (inclusive) mineral claims, Watson Lake Mining District, Y.T., during the period July 22 to August 2, 1980. Expenditures for this work include:

Salaries, Management Fees and Consulting  $ 4,928.00
Helicopter ...................................  1,414.50
Analyses and Sample Shipping ............  2,347.99
Food .........................................  423.96
Rentals .....................................  312.50

TOTAL:  $9,426.95

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at Vancouver in the Province of B.C. this 28 day of November 1980

[Signature]

[Notary Public in and for the Province of British Columbia]
PERSONNEL

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1418-355 Burrard St.
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P. Power  Cook
1418-355 Burrard St.
Vancouver, B.C.

P. Smith  Assistant
1418-355 Burrard St.
Vancouver, B.C.
EXPLANATION

SOIL SAMPLE SITE, SAMPLE INTERVAL 50 m

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>BACKGROUND</th>
<th>POSSIBLY ANOMALOUS</th>
<th>ANOMALOUS</th>
</tr>
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<tbody>
<tr>
<td>Cu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ag</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cu: 0 - 20 ppm, 21 - 35 ppm ≥ 36 ppm
Pb: 0 - 20 ppm, 21 - 27 ppm ≥ 28 ppm
Zn: 0 - 10 ppm, 151 - 209 ppm ≥ 210 ppm
Ag: 0 - 0.2 ppm, 0.3 ppm ≥ 0.4 ppm

MEISTER RIVER JOINT VENTURE
AMAX MINERALS EXPLORATION
Cu, Pb, Zn, Mo, Ag
SOIL GEOCHEMISTRY
OAKE CLAIM GROUP

WATSON LAKE MAP SHEET, N.T.S. 005B-7
WATSON LAKE MINING DISTRICT, YUKON TERRITORY

BY CORDILLERAN ENGINEERING
H-8 - 355 BURRARD STREET
VANCOUVER, B.C. V6C 2S8

DECEMBER 1980
PLATE 2