GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

MOOSE CLAIM GROUP

WATSON LAKE MINING DISTRICT
WOLF LAKE AREA, YUKON TERRITORY
NTS 105 B/8
(60°25'N, 130°18'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: Moose Mineral Claims. Numbers 1-42 inclusive
LOCATION: 97 air-km (60 air-mi) Northwest of Watson Lake
DATE: August 2 to August 15, 1980

090676
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 $12,800.00.

Resident Geologist or Resident Mining Engineer

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

S.R. BARTER
Supervising Mining Recorder

Commissioner of Yukon Territory
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PLATES

PLATE 1 Geology
PLATE 2 Soil Geochemistry
FIGURE 2: Moose Property, looking NW
INTRODUCTION

The Moose claim group consists of 42 mineral claims (Figure 3) located 97 kilometres (60 miles) northwest of Watson Lake, in the Watson Lake Mining District (NTS: 105 B/8). The property is accessible by helicopter only.

The Moose was acquired by Cordilleran Engineering for Regional Resources Ltd. in March, 1980 on the basis of anomalous Pb, Zn stream and soil geochemistry as determined from regional work conducted in the area during the 1979 field season. The property is currently under option to AMAX Minerals Exploration.

The claims are underlain by a folded succession of Lower Cambrian and earlier(?) metasediments that are intruded by diabase sills and numerous pegmatite dykes. Work on the property in 1980 consisted of soil sampling and geological mapping.
CLAIM MAP

MOOSE GROUP

WATSON LAKE MINING DISTRICT, YUKON TERRITORY

N.T.S. 105B - 8

SCALE: 1 inch = 1/2 mile

CONTOUR INTERVAL = 500 feet

FIGURE 3
Results of soil sampling indicate there is a clustering of high and anomalous values in Pb, Zn on and around line 2800W, 1450N to 1800N. Anomalous values in all elements are also found scattered across the grid. Further work on the property should be restricted to evaluating the significance of the strongest soil anomalies.
GEOL OGY

Plate 1)

The Moose is situated, regionally, in a belt of Lower Cambrian and earlier (?) metasedimentary rocks of the Omineca Crystalline Belt, northern Cassiar Mountains. Intrusive rocks of the Cassiar batholith are located approximately 5 kilometres to the south of the property. Exposure on the claims is restricted to linear topographic depressions. Overburden is believed to be relatively thin over most of the property.

Preliminary mapping on the Moose was unsuccessful in subdividing the metasedimentary package. Two intrusive rock types were located on the claims.

LITHOLOGIES

LOWER CAMBRIAN AND EARLIER (?)

Schist:
This sequence consists predominantly of quartzites and quartz-feldspathic, psammitic rocks which vary in grain size from
from fine sand to pebble conglomerate. Pelitic schists, presumably derived from siltstones and arenaceous siltstones are not uncommon in the section. An exposure of a feldspar porphyroblastic schist near line 2600W, 1300N is the only distinctly mappable unit in the section, but is not traceable over any distance.

**CRETACEOUS (?)**

**Pegmatite Dykes**

Medium-to coarse-grained, quartz-feldspar-muscovite dykes (30 cm to 2 m wide) occur as irregular dykes and sills within the metasediments. Quartz veinlets are locally developed in the metasediments peripheral to some dykes.

**TERTIARY (?)**

**Diabase Sills**

Dark green, fine-grained dense to vesicular porphyritic diabase sills are located in the sequence near 1200W, 1200N. Four sills are exposed at this location and vary from 30 cm to 200 cm in thickness. The enclosing metasediments do not appear to be affected by the dykes.

**Structure**

Metasediments on the Moose appear to be folded into an antiform that plunges south, although this structure is not documented by mappable units. Distinct topographic depressions; trenches or gullies are prominent features on the property and have northerly, northwesterly and easterly trends.
These features may reflect fault or shear zones. Pegmatite dykes do not appear to have any preferred structural orientation.

**MINERALIZATION**

Galena and possibly sphalerite occurs at two locations on the property. Near line 1000W, 2150N galena is found in quartz veinlets and in sheared, brecciated rock which may represent a fault zone. At 600W, 2000N galena (and sphalerite?) occur on fracture surfaces in an area where manganese staining is intense, but restricted to local, highly fractured areas within the metasediments. An aphanitic, light grey, unfoliated rock occurs in the sequence at this locality and may represent an acid dyke. The width and attitude of this unit was undetermined. A ferricrete kill zone situated at 2400W, 1400N may be the expression of a mineralized pod in a fault zone.
A program of soil sampling was conducted on the Moose group. A total of 903 samples were collected (838 on the property) at intervals of 50m on lines spaced 200m apart. Soils on the property consisted of a thin veneer of ablation moraine with local areas of glacial outwash. Line control was by hip-chain and compass.

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.

Statistical categories (below) are defined such
CUMULATIVE FREQUENCY DISTRIBUTION

Cu, Pb, Zn, Ag in soils - MOOSE GROUP

100% = 903 samples

FIGURE 4
such that the upper 3% of the values are anomalous. The upper 15% (approximately) are considered to be possibly anomalous.

<table>
<thead>
<tr>
<th>Statistical Cagories - Soil Geochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
</tr>
<tr>
<td>Cu</td>
</tr>
<tr>
<td>Pb</td>
</tr>
<tr>
<td>Zn</td>
</tr>
<tr>
<td>Mo*</td>
</tr>
<tr>
<td>Ag</td>
</tr>
</tbody>
</table>

*estimated

Results of the sampling indicate that anomalous values in soils are scattered erratically over the claim group, with the exception of a cluster of high values enclosed by lines 2400W to 3000W, 1450N to 1800N. The locations of some of the anomalous samples appear to coincide with linear gullies, which suggests that an explanation for these types of anomalies may be mineralization in fault zones or veins, similar to that which has been located on the property.

Direct prospecting and profiling is an approach that may provide an explanation for the highest anomalies.
A limited amount of rock chip sampling was carried out to determine background levels in various rock types. Silt samples were collected from streams draining the central part of the property. The results of this work are listed in Table II (locations plotted on Plate 1).

**TABLE II**

**Rock Chip Geochemistry**

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Cu (ppm)</th>
<th>Pb (ppm)</th>
<th>Zn (ppm)</th>
<th>Ag (ppm)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR-1</td>
<td>15</td>
<td>20</td>
<td>56</td>
<td>0.2</td>
<td>Pelitic schist</td>
</tr>
<tr>
<td>4</td>
<td>31</td>
<td>1850</td>
<td>580</td>
<td>12.0</td>
<td>Gossanous fault zone</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>30</td>
<td>27</td>
<td>0.2</td>
<td>Pegmatite</td>
</tr>
<tr>
<td>6</td>
<td>23</td>
<td>24</td>
<td>124</td>
<td>0.2</td>
<td>Rusty weathering grit</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>8</td>
<td>133</td>
<td>0.2</td>
<td>Altered grit</td>
</tr>
<tr>
<td>9</td>
<td>29</td>
<td>10</td>
<td>77</td>
<td>0.2</td>
<td>Pelitic schist</td>
</tr>
<tr>
<td>10</td>
<td>23</td>
<td>22</td>
<td>60</td>
<td>0.2</td>
<td>Acid dyke/fault zone</td>
</tr>
<tr>
<td>11</td>
<td>29</td>
<td>140</td>
<td>92</td>
<td>0.9</td>
<td>Acid dyke/fault zone</td>
</tr>
<tr>
<td>12</td>
<td>136</td>
<td>126</td>
<td>134</td>
<td>0.7</td>
<td>Fractured gossanous grit</td>
</tr>
<tr>
<td>13</td>
<td>17</td>
<td>1060</td>
<td>610</td>
<td>1.2</td>
<td>Fractured gossanous grit</td>
</tr>
<tr>
<td>14</td>
<td>22</td>
<td>10</td>
<td>80</td>
<td>0.2</td>
<td>Pelitic schist</td>
</tr>
</tbody>
</table>

Stream Sediments:

<table>
<thead>
<tr>
<th>MS-1</th>
<th>Cu (ppm)</th>
<th>Pb (ppm)</th>
<th>Zn (ppm)</th>
<th>Ag (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>17</td>
<td>48</td>
<td>173</td>
<td>0.6</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>42</td>
<td>170</td>
<td>0.4</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>34</td>
<td>190</td>
<td>0.5</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>40</td>
<td>176</td>
<td>0.5</td>
</tr>
<tr>
<td>5</td>
<td>14</td>
<td>30</td>
<td>165</td>
<td>0.6</td>
</tr>
</tbody>
</table>
SUMMARY & CONCLUSIONS

The Moose property consists of 42 mineral claims in the Watson Lake Mining District, Yukon Territory (105 B-8). Access to the claim group is by helicopter, from Watson Lake, a distance of 97 km.

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

Work conducted during the 1980 field season consisted of soil sampling (903 samples) and preliminary geological mapping. Results of this work indicate that soil anomalies exist on the property and these anomalies may partly be explained by mineralization in open space fillings in faults or veins. An area of unexplained, high Pb, Zn geochemistry is situated between lines 2400W to 3000W, stations 1450N to 1800N. Further work is warranted to determine the cause of these anomalies as well as other
anomalous soils.

CORDILLERAN ENGINEERING

Carl G. Verley, B.Sc., Geologist

SUPERVISED BY:

CJV/z

December, 1980
Vancouver, B.C.
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 Moose $1-42 mineral claims during the period August 10 to August 15, 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

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

do solemnly declare, - that geochemical sampling and geological mapping were conducted on the Moose #1-42 (inclusive) mineral claims, Watson Lake Mining District, Y.T., during the period August 2 to August 15, 1980. Expenditures for this work include:

Salaries, Management Fees and Consulting $ 9,106.00
Helicopter 1,906.50
Analyses 4,984.05
Food 466.92
Rentals 625.00
$17,088.47

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 28th day of November 1980

[Signature]

Notary Public in and for the Yukon Territory
APPENDIX "C"

PERSONNEL

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