GEOLOGICAL AND GEOCHEMICAL REPORT
CYPRESS RESOURCES LTD. PROPERTY
MAYO MINING DISTRICT

Field Period: June 14 to July 26, 1975

Report Period: October 1 to December 15, 1975
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INTRODUCTION

The Cypress Resources Limited claims are located in the Bonnet Plume Range of the Wernecke Mountains, approximately 110 miles northeast of Mayo on the north side of the Bonnet Plume River in the Yukon Territory (see Fig. 1). Co-ordinates of the property are 64° 15' North latitude and 133° West longitude.

Elevations range from 2,800 to 6,500 feet, and local relief is rugged. Tree line is approximately 4,500 feet.

The property is accessible by helicopter and fixed wing aircraft from Mayo. Both Porter Puddle (5 miles southeast of the property) and Raclea Lake (12 miles southwest) are suitable for fixed wing aircraft. However, Porter Puddle is too short to allow take offs with a full load.

Geological and geochemical surveys, and trenching were conducted on the claims during 1975. The field crews were employees of Brinex and Cordilleran Engineering Ltd.

The principals included in the program were:

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SUMMARY

The 1975 field work was to test the potential of the lower dolomite unit and its associated Pb-Zn soil geochemical anomalies (see Brinex report G74501). Field work during the 1975 season has shown that the lower dolomite unit has narrow zones of weakly developed solution collapse breccia. These zones are best developed in the vicinity near strong cross structures. No economic mineralization was found and none appears to be indicated by the soil geochemistry results. The shales that occur stratigraphically below the dolomite unit contain minor amounts of zinc and lead. A weathering and concentration process has resulted in development of iron oxide cemented "false" gossans that assay up to 3.2% zinc. The soils over this unit are enriched in Pb and Zn and give high results but are not related to economic mineralization.

No further work is recommended on this property.
GEOLOGY

A. Regional

The area has been mapped by Dr. S. Blusson of the Geological Survey of Canada. Open File maps were issued in June, 1974. The maps that pertain to the area are Nadaleen River (106 C, scale 1:250,000) and Goz Creek (106 C/7, scale 1:50,000) (see Fig. 2).

The area is underlain by a thick sedimentary sequence ranging in age from Hadrynian to Mississippian. The sediments, predominantly dolomite, limestone, shale and minor quartz arenite, strike northwesterly and dip steeply to the northeast.

B. Property (see Figs. 3 to 5)

The Hadrynian to Devonian rocks on the property strike N70°W and dip 40 to 70° northeasterly. Field work was confined primarily to the ?Upper Proterozoic - Lower Cambrian portion of the sequence, which has a thickness of at least 4,500 feet and can be divided into five units (see Figs. 6 and 7) that overlie each other conformably. The 1975 field work was confined primarily to Units One and Two, with Units Three to Five having been examined in 1974.

Unit One - ?Upper Proterozoic (Hadrynian)

This unit, lowermost in the section, is poorly exposed, with the majority of the outcrops confined to the creeks on the property. The estimated thickness is at least 2,500 feet. The lithologies consist of interbedded shale, siltstone and purple quartz arenite. The arenite accounts for
### LEGEND

*(To Accompany Coz Creek 1065/7 Geology Map)*

<table>
<thead>
<tr>
<th>Era</th>
<th>Formation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devonian</td>
<td>Besa River Formation</td>
<td>Black shale and siltstone, commonly pyritic.</td>
</tr>
<tr>
<td></td>
<td><strong>DMs</strong></td>
<td></td>
</tr>
<tr>
<td>Silurian</td>
<td>Light grey, well bedded dolomite, minor limestone near top; ODC undivided OSC and SDc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>SDs</strong></td>
<td></td>
</tr>
<tr>
<td>Ordovician</td>
<td>Mount Kindle Formation</td>
<td>Light and minor dark grey regularly bedded dolomite; OSC1, light grey dolomite; OSC2, dark grey dolomite; OSC black shale.</td>
</tr>
<tr>
<td></td>
<td><strong>OSC</strong></td>
<td></td>
</tr>
<tr>
<td>Lower Cambrian</td>
<td>Sekwi Formation</td>
<td>Brown and orange weathering thin-bedded dolomite, grey and buff mottled limestone, brown shale and sandstone.</td>
</tr>
<tr>
<td></td>
<td><strong>Cc5</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backbone Ranges Formation</td>
<td>EG, varicoloured quartzite, siltstone and shale, minor silty and sandy dolomite, Ecq buff to orange weathering and sauvé dolomite, in part silty and sandy, minor quartzite and shale Ec pale buff grey weathering poorly bedded in part pisolithic dolomite, minor quartzite, Ec2 buff yellow weathering, in part porous fine-grained dolomite. May be Hadrynian in part.</td>
</tr>
<tr>
<td></td>
<td><strong>Ccq</strong></td>
<td></td>
</tr>
<tr>
<td>Hadrynian</td>
<td>Sheepbed Formation</td>
<td>Brown and black recessive slate, siltstone minor quartzite, conglomerate and light grey carbonate.</td>
</tr>
<tr>
<td></td>
<td><strong>HcSc</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Grey weathering, medium to thick bedded fine-grained dolomite; basal dark brown conglomerate HcSc1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Hld1</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Light grey buff weathering, porous fine-grained dolomite.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Hld2</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hsq, brown shale, siltstone and conglomerate, minor orange weathering platy dolomite.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Hsq</strong></td>
<td></td>
</tr>
</tbody>
</table>
approximately 20% of the unit. Shales are dark brown to black in color, fine grained and locally, phyllitic. In part, the shale is quite pyritiferous and has gossan development. Sedimentary features, such as ripple marks, mud crack in-fillings, flute and groove casts, all suggest that the unit was deposited in relatively shallow water. The quartz arenites are thin-medium bedded units with a thickness of 6 to 12 inches. Some of the beds are orange-brown from iron oxide staining but the predominant color is purple. Locally, white bull quartz veins, the emplacement subparallel to bedding, suggest an origin derived from remobilized quartzite.

Unit Two - Lowermost Cambrian

This unit is approximately 500 feet thick and overlies Unit One conformably. The primary lithology is a mottled light to dark grey medium to coarse crystalline dolomite with minor thin bedded cream to dark grey-black fine grained dolomite. The dolomite unit to the west is replaced by dark grey-black shales. The unit, where exposed in Wolverine Creek, consists of interbedded dolomite and shale and where the unit is exposed in a creek (approximately 1 mile northwest of Wolverine Creek), it is composed completely of shale with the facies boundary located probably just west of Wolverine Creek.

Where there are strong cross fractures, the thinly bedded dolomite has undergone dissolution processes with the development of micro solution collapse breccias. These breccias are very narrow in thickness, on the order of less than 5 feet, and are lensoidal along strike. In places the thin bedded dolomites form cyclic subunits with interbeds of massive medium
to coarse grained dolomite. The rhythmites are on the average approximately 5 to 10 feet thick.

Within the medium crystalline dolomites there are spheroidal structures composed of dolomite and/or silica. The structures may be pisolites, concretions (accretions) or cone-in-cone structures as suggested (personal communication) by Dr. Fritz of the Geological Survey of Canada. These cone-in-cone structures would suggest an age of Lowermost Cambrian for this unit.

Unit Three - ?Lower Cambrian

This unit is moderately well exposed on the property and its thickness varies from 1,800 to 2,400 feet. The unit thins both to the east and west on the property. The unit is predominantly a light grey clay to fine crystalline dolomite. Locally, there are moderate amounts of frosted detrital quartz grains and traces of disseminated pyrite.

In part, the unit is oolitic to pisolitic and also exhibits stromatolitic banding. Also in places the dolomite has minute lenticular vugs that are subparallel to bedding and were probably formed by some dissolution process. Near the base, in the vicinity of strong cross fractures, there is some minor solution recrystallization banding present. Within the unit, there are some fairly consistent, but discontinuous, lensoidal subunits.

Near the base of the unit in the eastern part of the property, west of Grayling Creek, there is a discontinuous sandy dolomite conglomerate that
represents a local disconformity. The light grey subrounded fine grained
dolomite fragments are cemented by frosted quartz grains. This conglomerate
is usually less than 10 feet in thickness.

The major subunit is a sandy dolomite to dolomitic quartz arenite that
varies in thickness from 0 to 400 feet and occurs 100 to 600 feet below
the top of Unit Three. It exhibits strong crossbedding and graded bedding,
and east of Grayling Creek, becomes conglomeratic. Locally there is oolitic
to pisolitic dolomite above and below the sandy dolomite which is also
oolitic in places. West of Grizzly Creek, a few narrow sandy dolomite
clastic dikes were noted at the same stratigraphic position.

Unit Four - ?Lower Cambrian

This unit is well exposed and has, over most of the property, an average
thickness of 450 to 500 feet. West of Barite Hill, however, the unit thins
rapidly and on Ptarmigan Ridge is 250 feet thick.

In the area west of Grayling Creek, the unit consists primarily of a porous,
buff, fine to medium crystalline dolomite with both lateral and vertical
facies variations. There are local areas of probable "solution collapse"
cavity breccia and vug development but these are minor and restricted in
size. In general the breccias are cemented and the vugs filled with quartz
and minor dolomite and sulphides. But on Barite Hill, and to the west, the
vugs are filled predominantly with coarse white crystalline barite. On
Ptarmigan Ridge the unit can be subdivided into several subunits of which
a zone in the upper part, with 1 to 5 feet thick bands of quartz, is the
most distinctive. East of Ptarmigan Ridge, in the middle to upper part of the unit, there are locally, zones with quartz bands parallel to bedding, but these are not continuous and cannot be used as a marker horizon.

East of Grayling Creek, the unit is a repetitive sequence of porous buff dolomite and dark "wavybedded" dolomite. The wavybedded dolomite comprises most of the section and is thought to be a product of a "sabkha" environment. The wavybedded texture results from alternating broken bands of light and dark dolomite. In the unit there are good examples of solution channel in-fillings with dark sandy material which shows that a dissolution process was at work. As in the eastern part, the major cement in the breccias is quartz with minor sulphides.

Unit Five - Lower Cambrian

Unit Five is up to 1,600 feet thick and consists of strongly cleaved, thinbedded brown to black shale. The lower contact is gradational to Unit Three with dark impure dolomite that contains intraformational breccias and moderate to abundant pyrite. Within this unit and near the base there is a blue-grey fossiliferous (archaeocyathids, trilobites) limestone to ferro dolomite reefal detritus breccia that varies from 40 to 100 feet in thickness.
Sulfide mineralization is found throughout the whole sequence. The types and nature of mineralization for each unit will be discussed separately. The sulphide mineralization in Units Three and Four was examined in 1974 but a description is included here for completeness.

Unit One
The only sulphide found in this unit to date, that is megascopic in size, is pyrite. With weathering, the unit forms false gossanous talus breccias that assay anomalously high in zinc, lead or iron. The best developed gossanous zone occurs at the shale-dolomite contact east of Grayling Creek. Within the gossan there is a strongly developed south dipping lineation suggestive of cleavage in the shales. No primary sulphide mineralization was uncovered in trenching. The relatively high (see Table I) zinc content (2 to 3%) of the gossan is probably a result of concentration and enrichment from weathering of the pyritiferrous shales which themselves have assayed as high as 6,500 ppm zinc.

Minor, strongly oxidized pyrite veinlets were noted with some of the quartz arenite in the lower part of the unit.

Unit Two
In general, this unit is devoid of sulphide mineralization except for two known occurrences.
<table>
<thead>
<tr>
<th>Rock Type</th>
<th>Pb ppm</th>
<th>Zn ppm</th>
<th>Cu ppm</th>
<th>Ag ppm</th>
<th>Fe %</th>
<th>Mn ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24144</td>
<td>500</td>
<td>1,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24145</td>
<td>200</td>
<td>1,300</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>24782</td>
<td>270</td>
<td>6,500</td>
<td>7</td>
<td>0.8</td>
<td>14.6</td>
<td>1,750</td>
</tr>
<tr>
<td>24787</td>
<td>31</td>
<td>135</td>
<td>30</td>
<td>0.8</td>
<td>5.2</td>
<td>450</td>
</tr>
<tr>
<td><strong>Average:</strong></td>
<td>250</td>
<td>2,314</td>
<td>18</td>
<td>0.8</td>
<td>9.9</td>
<td>1,100</td>
</tr>
<tr>
<td><strong>Dolomite</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24735</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24150</td>
<td>400</td>
<td>1,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24786</td>
<td>104</td>
<td>900</td>
<td>1</td>
<td>0.5</td>
<td>2.76</td>
<td>700</td>
</tr>
<tr>
<td>24788</td>
<td>58</td>
<td>420</td>
<td>4</td>
<td>0.5</td>
<td>1.60</td>
<td>1,250</td>
</tr>
<tr>
<td><strong>Average:</strong></td>
<td>166</td>
<td>805</td>
<td>2.5</td>
<td>0.5</td>
<td>2.18</td>
<td>975</td>
</tr>
<tr>
<td><strong>Dolomite Gossan</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>24776</td>
<td>1,200</td>
<td>575</td>
<td>1</td>
<td>0.5</td>
<td>53.6</td>
<td>1,000</td>
</tr>
<tr>
<td>24777</td>
<td>2,800</td>
<td>482</td>
<td>13</td>
<td>0.5</td>
<td>53.6</td>
<td>800</td>
</tr>
<tr>
<td>24778</td>
<td>3,700</td>
<td>406</td>
<td>6</td>
<td>0.5</td>
<td>48.4</td>
<td>500</td>
</tr>
<tr>
<td>24780</td>
<td>3,850</td>
<td>550</td>
<td>7</td>
<td>0.8</td>
<td>51.6</td>
<td>800</td>
</tr>
<tr>
<td>24781</td>
<td>960</td>
<td>2,320</td>
<td>7</td>
<td>0.8</td>
<td>53.6</td>
<td>500</td>
</tr>
<tr>
<td><strong>Average:</strong></td>
<td>2,502</td>
<td>867</td>
<td>8</td>
<td>0.6</td>
<td>52.16</td>
<td>720 (gossan)</td>
</tr>
<tr>
<td></td>
<td>166</td>
<td>805</td>
<td>2.5</td>
<td>0.5</td>
<td>2.18</td>
<td>975 (dolomite)</td>
</tr>
<tr>
<td><strong>Shale Gossan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24779</td>
<td>100</td>
<td>23,500</td>
<td>4</td>
<td>0.5</td>
<td>53.6</td>
<td>250</td>
</tr>
<tr>
<td>24783</td>
<td>414</td>
<td>28,600</td>
<td>7</td>
<td>0.5</td>
<td>41.6</td>
<td>350</td>
</tr>
<tr>
<td>24784</td>
<td>108</td>
<td>9,600</td>
<td>12</td>
<td>0.5</td>
<td>36.0</td>
<td>800</td>
</tr>
<tr>
<td>24785</td>
<td>112</td>
<td>9,200</td>
<td>12</td>
<td>0.5</td>
<td>30.2</td>
<td>500</td>
</tr>
<tr>
<td><strong>Average:</strong></td>
<td>184</td>
<td>15,225</td>
<td>9</td>
<td>0.5</td>
<td>40.35</td>
<td>475 (gossan)</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>2,314</td>
<td>18</td>
<td>0.8</td>
<td>9.9</td>
<td>1,100 (shales)</td>
</tr>
</tbody>
</table>
In Wolverine Creek, strongly oxidized pyrite occurs as masses in cavities or in very narrow bands, subparallel to bedding.

On the eastern part of the property (Line 392 E, Station 78 N) near the Great Plains property boundary, a narrow zone of fairly massive galena was found in a shallow south dipping structure. The zone strikes almost east-west and dips 20 to 30° to the south, or roughly subparallel with the slope of the topography. The mineralized zone is approximately three feet thick and contains predominantly galena with a trace of sphalerite. The zone assayed 18% Pb and 10% Zn. This mineralized shear zone and the strongly developed cleavage in the shales are probably related to the same south dipping structure.

Unit Three
The major sulphide present is pyrite. The pyrite occurs as disseminated crystals and is more predominant near the base of the unit. West of Duo Hill, minor sphalerite, galena and pyrite mineralization with quartz and dolomite crystals may occur in isolated solution cavities that are close to strong cross-cutting fracture zones. The largest cavity is approximately two feet thick and 20 feet long, and thus the mineralization is of no importance from an economic viewpoint.

Unit Four
The majority of the mineralization so far observed on the property occurs in this Unit. The main sulphide mineral present is sphalerite with minor galena, pyrite and smithsonite, and the gangue is composed of quartz,
dolomite, minor barite and calcite. The sulphide mineralization is found in solution cavities and local collapse breccias, solution channel in-fillings, primary bedded material and also in late stage cross cutting structures, and each type of occurrence is described separately.

1. **Solution Cavities and Collapse Breccias**

   The major occurrence of mineralization is in the breccias, but these are discontinuous and restricted in size. Maximum outcrop thickness is approximately 20 feet.

   The best mineralized breccias occur east of Grayling Creek, where the dolomite fragments are cemented with sphalerite and quartz. The sphalerite varies in colour from white, through pale yellow to a yellow green. Some of the cavities are filled mostly with quartz (as botryoidal chalcedonic, massive white and clear to white subhedral crystals) and dolomite with only minor sulfides. Galena is not as common as sphalerite and usually occurs as discrete crystalline masses separate from the sphalerite.

   West of Grayling Creek the mineralization is confined primarily to solution cavity in-fillings. The cavities are usually less than 6 inches in length, and are filled with clear to milky white quartz crystals, dolomite crystals and coarse euhedral galena and fine crystalline white to pale yellow sphalerite. On Barite Hill the cavities are filled with coarse crystalline white barite and minor coarse crystalline galena with traces of fine grained white sphalerite.
2. **Solution Channel In-Fillings**

This type of mineralization seems to be a product of dissolution of the rock after mineral deposition. Sphalerite grains and detrital quartz have been carried into the solution channels where they are redeposited. Textures show laminated and graded bedding. This type of mineralization was found only on Vega Hill.

3. **Primary (?) Bedded Mineralization**

This type of occurrence is minor and was noticed in only two areas. On Knob Hill fine to medium crystalline galena is present in discontinuous bands in a folded fine grained dolomite. The mineral occurs over a 5 to 10 feet length with \( \frac{1}{2} \) to \( \frac{3}{4} \) inch bands of galena approximately every 12 inches over a thickness of 5 feet. The other occurrence of this type of mineralization is east of Grizzly Creek, on the lower slope of Tiddalick Ridge, where a few \( \frac{1}{4} \) inch bands, parallel to bedding, of pale yellow fine grained sphalerite occur over a 30 foot width.

4. **Late Stage Structures**

Galena is the most common sulphide in-filling of cross cutting joints. It is coarsely crystalline, forming masses up to 6 inches across, and the best occurrence of this type of mineralization is on Knob Hill. In the mineralized breccia zones east of Grayling Creek remobilized pale yellow sphalerite often occurs along cross cutting joints. The veinlets are usually less than \( \frac{1}{4} \) inch in width.
Unit Five

Pyrite occurs as disseminations along bedding and as large fragments in small scale sedimentary breccias in the dark impure dolomite at the base of this unit. Minor sphalerite was noted in one drillhole (74-6).
SAMPLING AND ASSAY RESULTS

Trenching with the use of cobra drill and dynamite was carried out over the soil geochemical anomalies. Chip samples were taken from the various trenches and all the pertinent data is shown in Tables I to II and Figs. 8 to 14.

The assay results show that the high values in the gossan samples are related to a weathering and concentration-enrichment process. It appears that the average Fe and Zn values are directly relatable and there probably has been scavenging of, in particular, Zn by the Fe oxides with gossanous material related to the shales. However, the gossanous material collected over areas underlain by dolomite show an enrichment in Pb and Fe with no appreciable enrichment in zinc.
### TABLE II

**TRENCH SAMPLES**

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Type</th>
<th>Thickness</th>
<th>Rock Type</th>
<th>Pb</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>24789</td>
<td>Chip</td>
<td>36 in.</td>
<td>Galena-sphalerite vein</td>
<td>18.1%</td>
<td>10.0%</td>
</tr>
<tr>
<td>24790</td>
<td>Chip</td>
<td>56 in.</td>
<td>Mottled dolomite</td>
<td>0.28%</td>
<td>0.32%</td>
</tr>
<tr>
<td>24791</td>
<td>Chip</td>
<td>30 in.</td>
<td>Mottled dolomite</td>
<td>191 ppm.</td>
<td>440 ppm.</td>
</tr>
<tr>
<td>24792</td>
<td>Chip</td>
<td>60 in.</td>
<td>Fe stained shale</td>
<td>231 ppm.</td>
<td>2,300 ppm.</td>
</tr>
<tr>
<td>24793</td>
<td>Representative</td>
<td>Gossan from weathered joint fillings in dolomite</td>
<td>.11%</td>
<td>2.46%</td>
<td></td>
</tr>
<tr>
<td>24794</td>
<td>Chip</td>
<td>48 in.</td>
<td>Gossanous shale</td>
<td>142 ppm.</td>
<td>1.30%</td>
</tr>
<tr>
<td>24795</td>
<td>Chip</td>
<td>50 ft.</td>
<td>Shale and minor quartz arenite</td>
<td>64 ppm.</td>
<td>760 ppm.</td>
</tr>
<tr>
<td>24796</td>
<td>Chip</td>
<td>63 in.</td>
<td>Fe stained shale</td>
<td>320 ppm.</td>
<td>.38%</td>
</tr>
</tbody>
</table>
BRITISH NEWFOUNDLAND EXPLORATION LTD.
SAMPLE LOCATION MAP

CYPRESS PROJECT BONNET PLUME RIVER Y.T.

DATE: DEC. 1975
SCALE: 1" = 100'
DRAWN BY D.M.

MAP NO. TRACED BY

MAP REF. 106 C/7 CHECKED BY K.B.M.

Fig. II
BRITISH NEWFOUNDLAND EXPLORATION LTD.

SAMPLE LOCATION MAP

CYPRUS PROJECT BONNET PLUME RIVER Y.T.

DATE: DEC. 1975
SCALE: 1" = 100'
DRAWN BY: D.M.
MAP NO.
TRACED BY
MAP REF. 106 C/17
CHECKED BY: K.B.M.

Fig. 12
BRITISH NEWFOUNDLAND EXPLORATION LTD.

SAMPLE LOCATION MAP

CYPRUS PROJECT BONNET PLUME RIVER Y.T.

DATE DEC. 1975  SCALE 1:100  DRAWN BY D.M.

MAP NO. TRACED BY

MAP REF. 106 C/7 CHECKED BY K.B.M.

Fig 13
BRITISH NEWFOUNDLAND EXPLORATION LTD.

SAMPLE LOCATION MAP

CYPRUS PROJECT SAGAN PLUME RIVER Y.T.

DATE: DEC. 1975  SCALE: 1:100'  DRAWN BY D.M.
MAP NO.  TRACED BY
MAP REF. 106 C17  CHECKED BY K.B.M.

Fig. 14
A total of 166,600 line feet of grid was soil sampled on the Cypress property, with 22,000 feet of baseline cut and picketed. The lines were flagged with line spacing of 200 feet and sample spacing of 100 feet east of Grayling Creek and 400 feet line spacing and 200 feet sample spacing west of Grayling Creek. Survey control was maintained with tape and brunton surveys and altimeter readings with topographic control from prepared base maps. Approximately 2,350 samples were collected. Most of the samples were collected from the C Horizon or colluvial soil and where possible the B Horizon. In general, the soils contain moderate amounts of organic material. The samples were dried and the -80 mesh fraction was analyzed (by atomic absorption) for zinc and lead.

The results are shown in Table III and Figs. 21 to 24.
### TABLE III
STATISTICAL ANALYTICAL RESULTS

**Unit Two (Dolomite)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Pb</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background</td>
<td>$0 &lt; 340$ ppm.</td>
<td>$0 &lt; 400$ ppm.</td>
</tr>
<tr>
<td>Zone of Mixing</td>
<td>$340 &lt; 600$ ppm.</td>
<td>$400 &lt; 1,300$ ppm.</td>
</tr>
<tr>
<td>Poss. Anomalous</td>
<td>$600$ ppm.</td>
<td>$1,300 &lt; 2,500$ ppm.</td>
</tr>
<tr>
<td>Anomalous</td>
<td>$&gt; 600$ ppm.</td>
<td>$&gt; 2,500$ ppm.</td>
</tr>
</tbody>
</table>

**Unit One (Shale)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Pb</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background</td>
<td>$0 &lt; 280$ ppm.</td>
<td>$0 &lt; 500$ ppm.</td>
</tr>
<tr>
<td>Zone of Mixing</td>
<td>$280 &lt; 300$ ppm.</td>
<td>$500 &lt; 2,300$ ppm.</td>
</tr>
<tr>
<td>Poss. Anomalous</td>
<td>$&gt; 300 &lt; 480$ ppm.</td>
<td></td>
</tr>
<tr>
<td>Anomalous</td>
<td>$&gt; 480$ ppm.</td>
<td>$&gt; 2,300$ ppm.</td>
</tr>
</tbody>
</table>
DISCUSSION

Anomalous results occur over Units One and Two. These will be discussed separately.

A. Unit One

The major anomalous zones consist of zinc values with several small coincidental lead anomalies. Trenching and rock chip sampling over the anomalous zones has shown that most of the anomalies are related to a weathering and process concentration of minor metal values contained in the underlying pyritiferrous shales. The major exception to this is the anomaly on Line 394E between Station 70 North and 77 North. This anomaly is caused by downslope migration of sulphides and metal ions from the small galena-sphalerite vein that was exposed 50 feet south easterly of Line 392E Station 79 North. Another contributor to the geochemical zinc soil anomalies, is downslope mechanical and probably chemical transport from the mineralization known to occur in Unit Four. The anomalies do not appear to be related to potential economic mineralization.

B. Unit Two

The anomalies developed over this unit are predominantly zinc with two minor lead anomalies. In general, the anomalous zones are related to the concentration of metals in an iron rich organic soil developed over a dolomite that contains only minor amounts of zinc and lead. Again downslope mechanical and chemical transport from mineralization in Unit Four has probably contributed to some of the anomalies.
The small lead anomaly on Line 394E is related to the small galena-sphalerite vein that was exposed 50 feet southeasterly of Line 392E Station 79 North.

The anomalies developed over this unit do not appear to be related to potential economic mineralization.
CONCLUSION

No follow-up work is needed on the anomalous zones outlined by the soil survey.

Respectfully submitted,

K. B. McHale, F.G.A.C.

Vancouver, B.C.
December 15, 1975