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MOLINE PROJECT

EXPLORATION LICENCE 4508

FINAL REPORT

MOLINE MANAGEMENT PTY LTD
REF: MH/LN: 0156.918
AUGUST 1990

JOINT VENTURE PARTICIPANTS Hudspeth and Company Pty Ltd, Zinnanda Pty Ltd
# CONTENTS

1. INTRODUCTION
2. TENEMENT
3. GEOLOGY
4. EXPLORATION COMPLETED
5. EXPENDITURE - CYRPUSS GOLD AUSTRALIA CORPORATION

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Element(s)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Geological Plan</td>
<td></td>
<td>EL 4508</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Aeromagnetic Survey</td>
<td></td>
<td>EL 4508</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Rock Chip Geochemistry</td>
<td>Pb</td>
<td></td>
</tr>
<tr>
<td>Figure 4</td>
<td>Rock Chip Geochemistry</td>
<td>Ag</td>
<td></td>
</tr>
<tr>
<td>Figure 5</td>
<td>Rock Chip Geochemistry</td>
<td>Au</td>
<td></td>
</tr>
<tr>
<td>Figure 6</td>
<td>Rock Chip Geochemistry</td>
<td>As</td>
<td></td>
</tr>
<tr>
<td>Figure 7</td>
<td>Rock Chip Geochemistry</td>
<td>Cu</td>
<td></td>
</tr>
<tr>
<td>Figure 8</td>
<td>Rock Chip Geochemistry</td>
<td>Zn</td>
<td></td>
</tr>
<tr>
<td>Figure 9</td>
<td>Thermatic Mapper Plan</td>
<td></td>
<td>Moline Region</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

This report was prepared by Moline Management Pty Ltd for
the N.T. Department of Mines & Energy, and documents explora-
tion work carried out on EL 4508 up to its expiry in May
1990.

The tenement was initially granted to Greenbushes Tin N.L.
in 1984. That year it became subject to the Moline Joint
Venture agreement between Greenbushes and Cyprus Gold Aus-
tralia Corporation (initially Amoco Minerals Australia Ltd.)
Cyprus was appointed exploration manager of the tenement
until early 1990, when Arimco N.L. replaced Cyprus in the
Moline Joint Venture, and Moline Management Pty Ltd took the
responsibility for managing the Joint Venture tenements.

Cyprus had previously reported the results of all explora-
tion of the Joint Venture tenements in an annual report.
The results of previous exploration on EL 4508 are detailed
by Cyprus in the following reports.

1.1 Exploration Licences 3008, 4492, 4508
Report for period ending March 15, 1985
by G.C. Miller

1.2 Exploration Licences 3008, 4492, 4508
Report for period ending November 30,
1985 by G.C. Miller

1.3 Moline Project Exploration Licences 3008,
4492, 4508 and 4894; Mineral Leases 748,
749 and 750
Report for period ending March 15, 1987

1.4 Moline Project Exploration Licences 3008,
4492, 4508 and 4894; ERL 75 & 76; Mineral
Leases 748, 749 and 750
Report for period ending March 15, 1988

1.5 Moline Project, Exploration Licences
4492, 4508, 4894 and 5674; Exploration
Retention Leases 75 & 76
Report for period ending March 15, 1989
1.6 Moline Project, Exploration Licences 4492, 4508, 4894, and 5674; Mining Lease N 1059, 2944 - 2957, 3042 - 3081, 3088 - 3089 and 3181 - 3187
Report for period ending January 15, 1990

This report summarizes the exploration carried out by Cyprus on the Moline Joint Venture's behalf for the term of EL 4508.
2.0 TENEMENT

EL 4508 was granted on the 25th March 1984 and expired on the 24th May 1990. Initially covering 19 sq. kms the licence was reduced to 6 sq. kms after year 1, and to one graticular block or approximately 3 sq. kms after year 4. The tenement was originally registered in the name of Greenbushes Tin N.L. and was later jointly held by Cyprus Gold Australia Corporation and Greenbushes Ltd.

As Manager of the Moline Joint Venture, Cyprus Gold Australia Corporation was responsible for the implementation of field work and reporting to the N.T. Department of Mines & Energy on work carried out.
3.0 GEOLOGY

The original tenement area was located on the western contact between the Cullen Granite and South Alligator Group sediments. The northern and western blocks were relinquished after an initial inspection of the Allamber Creek Granite, (part of the Cullen Batholith). Work concentrated on the overturned anticline in Wildman Siltstone and Mundo-gie Sandstone in the east and central graticular blocks. This geological setting is similar to that at the Enterprise Mine in Pine Creek, that is an anticlinal fold structure in the thermic aureole of the Cullen Granite. However, the host rocks are the pyritic carbonaceous silt of the Wildman Siltstone, rather than the younger South Alligator Group sediments.
4.0 EXPLORATION

4.1 Period Ending 15th March 1985

During the first year of the Exploration Licence, Cyprus carried out an aeromagnetic survey of the tenement area. Sensor height was 80 metres and line spacing 200m. Magnetic data were collected at 15 metre intervals along flight and tie lines. The contoured aeromagnetic plan of EL 4508 are shown in Figure 2.

The aeromagnetic data were examined by geophysicist, P. Staples. The main structural geological feature of EL 4508 the south-east plunging folds (Big W - Figure 1) were shown to have complex high amplitude magnetic responses. The magnetic response coincided with the Koolpin Formation of the South Alligator Group and the older Wildman Siltstone and Mundogie Sandstone. Outside of the area of structural complexity, these units do not have the same amplitude of magnetic response. The Cullen Granite in the north of the area shows a typical flat response.

4.2 Period Ending 30th November 1985

Preliminary ground reconnaissance was carried out in this period. The geological setting of the major regional gold, base metal and tin deposits was evaluated, and the 4 graticular blocks covering the Cullen Granite were relinquished.

4.3 Period Ending 15th March 1987

Cyprus collected 2 - 3 kgm rock chip samples using 1:25,000 scale coloured air photographs for ground control. Previous stream sediment, soil sampling and rock chip geochemistry by United Uranium, Anaconda, Greenbushes and Cyprus had delineated a number of base metal anomalies in the area, but only sporadic, low order gold anomalies.
Figure 2
COMPOSITE GEOLOGIC AEROMAGNETIC INTERPRETATION

Scale 1:25,000

GEOLOGICAL REFERENCE

Zamu Dolerite  Pdz
Chloritised medium quartz dolomite; amphibolite within cordierite hornfels zone.

Gerowie Tuff  Peg
Brown & grey argillite, glassy black tuffaceous chert & glassy black spotted crystal tuff.

Koolpin Fmtn.  Psx
Ferruginous phyllite & carbonaceous shale with chert bands, lenses and nodules; massive limonitic ironstone & silicified dolomitic marl.

Wildman Siltstone  Ppw
Laminated fine to coarse sandstone, siltstone & phyllite, laminated red & white banded phyllite.

Mundowie Sandstone  Ppm
Medium to coarse, pebbly feldspathic quartzite & arkose, minor chert & coarse pebble conglomerate, carbonaceous phyllite siltstone.

--- Geologic mapped fault
----- inferred parallel, or continuation of faults
	strong magnetic response
	within formation. Probably
	primarily magnetite source
	Moderate magnetic response
	within formation
Cyprus collected a total of 22 rock chip samples along the axial plane of the anticline (Figures 3 - 8) within EL 4508. All samples were assayed for gold, arsenic, copper, lead and zinc by Australian Assay Laboratories, Pine Creek. The analytical technique and levels of detection were:

<table>
<thead>
<tr>
<th>Code (technique)</th>
<th>Level of Detection</th>
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<tr>
<td>Gold</td>
<td>0.01 ppm</td>
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<tr>
<td>Arsenic</td>
<td>2 ppm</td>
</tr>
<tr>
<td>Copper</td>
<td>2 ppm</td>
</tr>
<tr>
<td>Lead</td>
<td>5 ppm</td>
</tr>
<tr>
<td>Zinc</td>
<td>2 ppm</td>
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</table>

**Lead (Pb)**

Anomalous results were obtained from the fold axis and one sample 25703 produced an analysis result of 17.7% Pb.

**Silver (Ag)**

All silver values were less than 1 g/t. Unfortunately the silver results for ten samples have been lost including those for sample 25703 (i.e. 17.7%).

**Gold (Au)**

Only two samples exceeded 0.1 g/t Au. However, the samples 41345 (0.42 g/t Au) and 41358 (1.23 g/t Au) located 200m apart along the axial plane of the regional anticline certainly warrant follow-up.

**Arsenic (As)**

Generally the arsenic grades were high (minimum 230 ppm, average 410). The two maximum results 3750 and 6800 ppm coincided with the two anomalous gold results.
Figure 3
EL 4508
Rock Chip Geochemistry - Lead ppm

Scale 1:12,500
Figure 5

EL 4508

Rock Chip Geochemistry - Gold

Scale 1:12,500
Figure 7

EL 4508

Rock Chip Geochemistry - Copper

Scale 1:12,500

E.L.4508

Psg
Figure 8

EL 4508

Rock Chip Geochemistry - Zinc

Scale 1:12,500

E.L.4508
Copper (Cu)

Copper values ranged from 28 to 487 ppm. The maximum result was associated with the peak lead value in sample no. 25703.

Zinc (Zn)

Generally zinc grades in the core of the anticline were lower than average. Those on the northern limb of the anticline were higher grade with the maximum 1080 ppm Zn in sample 25706.

4.4 Period Ending 15th March 1988

Remote Sensing and Geological Services carried out a Thermatic Mapper (TM) study of the Moline Joint Venture tenements including EL 4508.

The Thermatic Mapper Scanner was mounted aboard the Landsat 4 satellite system along with the MSS (multi-spectral scanner) sensor. The T.M. sensor records data in 7 bands from visible blue to micrometres thermal. Scanner resolution is 30m.

The T.M. sensor enables major rock units and some subordinate members to be mapped. Many structural features and major lineaments not observable at the surface can be delineated using this technique. Figure 9 shows the results of this study.

4.6 Period ending 15th March 1990

During this period, Cyprus spent $3,262.12 on EL 4508. The costs were incurred by staff and geological consultants reviewing data.
Figure 9
EL 4508
Thematic Mapper Plan

Mundie Sandstone

13°40′5″
13°45′5″
Pine Creek

1000m
5.0 CYPRUS GOLD AUSTRALIA CORPORATION
EL 4508 MOLINE PROJECT

<table>
<thead>
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<th>Start Date</th>
<th>End Date</th>
<th>Amount</th>
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<td>28th February 1985</td>
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<td>1st September 1985</td>
<td>$2,139.49</td>
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<td>1st December 1985</td>
<td>28th February 1987</td>
<td>$13,221.74</td>
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<td>1st March 1985</td>
<td>28th February 1984</td>
<td>$16,262.80</td>
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<tr>
<td>1st March 1987</td>
<td>28th February 1988</td>
<td>$16,160.69</td>
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TOTAL EXPENDITURE

$55,397.13