MIM EXPLORATION PTY LTD

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TITLE

EXPLORATION LICENCE 6992 "GUNN CREEK"
NORTHERN TERRITORY
THIRD ANNUAL REPORT
YEAR ENDED: 19th NOVEMBER 1993

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DATE

NOVEMBER 1993
CONTENTS

1. INTRODUCTION

2. LOCATION AND ACCESS

3. TENURE

4. REGIONAL GEOLOGY

5. PREVIOUS EXPLORATION

6. WORK BY M.I.M EXPLORATION PTY LTD
   6.1 Work Done by MIM Exploration in 1991 - 1992
   6.2 Soil Geochemistry
   6.3 Geophysics

7. CONCLUSIONS

8. REFERENCES
APPENDICES

APPENDIX 1: Geochemical Assay Results - Soil

TABLES

TABLE 1: Open File Company Reports Covering EL6808 “Lorella”.

FIGURES

FIG. 1: Location Map

LIST OF DRAWINGS

<table>
<thead>
<tr>
<th>DRAWING NO.</th>
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<tbody>
<tr>
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<td>Soil Sample Site Location Map</td>
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<td>41158</td>
<td>Au Soil Results Map</td>
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EXPLORATION LICENCE No. 6992 "GUNN CREEK"

NORTHERN TERRITORY

THIRD ANNUAL REPORT:
YEAR ENDED 19th NOVEMBER 1993

1. INTRODUCTION AND SUMMARY

Exploration Licence 6992 "Gunn Creek" is located approximately 130 km south of Darwin and covers 10 km$^2$. EL6992 was granted on 20th November 1992 for a six year tenure.

The tenement covers part of the central region of the Pine Creek Geosyncline and particularly the Early Proterozoic Burrell Creek Formation which hosts a number of gold deposits in the area. The tenement also lies across the same structural trend as Mt. Tymn, a known gold resource. This suggests that EL 6992 has potential for gold mineralisation. The area has been explored, in the past, for gold and uranium.

Soil geochemistry around Mt Darwent reaffirmed the extent of the gold anomaly, with a possible source being ferruginous quartz veins hosted by siltstones and greywackes of the Burrell Creek Formation.

A number of structural lineaments were defined using aeromagnetic data.
2. LOCATION AND ACCESS

The Licence lies on the Burnside (5171-II) and Burrell Creek (5171-III) 1:50000 scale topographic maps, approximately 130 kilometres south of Darwin, Northern Territory. The tenement is bounded by the latitudes $13^\circ023'S$ and longitudes $131^\circ014'E$ and $131^\circ016'E$ (Figure 1).

Access to the tenement area is via the Stuart Highway to a dirt road approximately 25 kilometres south of Adelaide River township. The Stuart Highway runs through the lower southwestern corner of Gunn Creek.

Within the area there are numerous dirt tracks which allow four wheel drive vehicle access most of the year round. In the wet season these dirt tracks become impassable. Both the abandoned North Australia Railway and the Darwin-Katherine Power Transmission Lines run through the area. The tenement is composed of a series of ridges interposed with flat-lying swampy areas.

3. TENURE

The tenement was granted to Carpentaria Gold Pty Ltd on the 20th November, 1990, with MIM Exploration Pty Ltd being the operators. The area covered is three one-minute graticular blocks which equals approximately 10 km$^2$.

The NTDME expenditure commitment for the third year was $10,000.

4. GEOLOGY

The tenement area lies in the central region of the Pine Creek Geosyncline on the Batchelor-Hayes Creek 1:100000 Geological Sheet area. The geosyncline contains Early Proterozoic, dominantly clastic and volcanic rocks deposited on an Archaean basement and deformed, metamorphosed and intruded by granitic rocks between 1870 m.y. and 1800 m.y. (Page et al. 1980). These sedimentary rocks were intruded by mafic sills and later unconformably overlain by Late Proterozoic and Mesozoic sedimentary rocks.

The Pine Creek Geosyncline is a major gold and uranium province which also contains many minor Cu, Pb-Zn and Sn mineral occurrences. Many of these metatlliferous deposits have probably formed by late stage magmatic fluids associated with post-orogenic granitoids (Needham and Roarty, 1980).

The Licence area lies within the Burrell Creek Formation of the Finniss River Group. The rock types are dominated by shale, siltstone, greywacke and minor conglomerate. The rocks have undergone intense folding (axes NNW-SSE) and minor faulting and have undergone low grade metamorphism. The
Fig. 1: LOCATION MAP
fault zones are highlighted by the presence of quartz veining, brecciation, slickensides and chloritisation.

5. PREVIOUS EXPLORATION

In early 1980's W.R.Grace Australia Ltd. held fourteen exploration licences in the central Pine Creek Geosyncline mainly around Mt Tymn. Three of these tenements, EL's 2473, 2477 and 4350, covered parts of the present tenement areas (Table 1). Detailed photogeological studies found numerous fault blocks defined on the ground by quartz veins, stockworks and breccias. A number of folded, altered Burrell Creek Formation sequences were also investigated. In 1982 Western Mining Corporation joint ventured into EL's 2473 and 2477 taking rock chip and minus 80 mesh soil samples over these features. Results were discouraging and the areas were all relinquished by 1985.

In 1980 Zappan Consolidated Pty. Ltd. held the southeastern corner of "Gunn Creek" under EL2478 in joint venture with Pan D'Or Mining NL. Their target was a large open-cut gold mine and exploration included air photo and structural interpretation and field inspections. No areas of interest were defined over the present tenement area. EL2478 was relinquished in 1984 to disappointing results.

Australian Coal and Gold Holdings Ltd. was granted EL4499 in 1984 and it covered the western side of the present EL6992 tenement area. Their target was hydrothermal vein deposit of either gold or tin in the Burrell Creek Formation adjacent to granite plutons. Exploration done consisted of a broadly spaced heavy mineral/geochemical stream sediment programme. No anomalous results were returned in or around the present tenement areas. Further work was considered unwarranted so the area was relinquished in 1986.

In 1987 Coronation Hill Gold Mines N.L. held a similar portion of the present tenement area as above under EL5279. A epigenetic gold deposit was their target and exploration centred around air photo interpretation, reconnaissance geological mapping, rock chip and stream sediment sampling over selective sites. No anomalous zones were defined and the area was surrendered in 1988.

EL5314 was held in joint venture between Robert Johnston and Oceania Exploration and Mining NL from 1987. A gold deposit was sought and exploration consisted of geological mapping, rock chip sampling and aeromagnetic and radiometric surveys. The lack of encouraging results form either geochemistry or geophysics lead to the area being surrendered in 1988.
## TABLE 1

OPEN FILE COMPANY REPORTS COVERING EL6992 "GUNN CREEK"

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6. WORK BY MIM EXPLORATION PTY LTD

6.1 Work by MIM Exploration in 1991 - 1992

MIM Exploration carried out an extensive vehicle and helicopter assisted stream sediment sample survey which located numerous scattered areas and one broad zone of anomalous gold. Assay results peaked at 18.3 ppb Au and averaged 2.73 ppb Au.

Follow up by infill stream sediment and rock chip sampling found a number of previously unknown Cu-Pb-Zn anomalies.

A soil grid was placed over a Cu-Au rock chip anomaly in the south of EL 6992. Five copper assays >100 ppm defined a weakly anomalous copper belt parallel to malachite-azurite bearing discontinuous quartz reef and shear zones. The belt occurs to the west of the quartz and is up to 200m wide. The size of the small size of the occurrence precluded further exploration.

In 1992 a program of float sampling was designed to follow up gossanous box worked Burrell Creek Formation float found around the base of Mt Darwent. Systematic sampling of float material at base of slope, at 100 m spacing, around the entire Mt Darwent ridge. A number of good gold and minor base metal anomalies were defined.

6.2 Soil Geochemistry

A short program of twelve soil samples was designed to test the gold anomalies below the 80m contour defined in the float sampling program in 1992. A sample location map is presented as Drawing No. 41157. The samples were assayed for Au, As, Ag, Cu, Pb and Zn by AAS9L. Only the gold results are anomalous (Drawing No. 41158), peaking at 25 ppb (range: 0.9 - 25 ppb, averaging 8.5 ppb). All samples were taken within scree of ferruginous siltstones and greywackes of the Burrell Creek Formation. Minute ferruginous quartz veinlets are also common in the scree. It is these quartz veinlets that is interpreted to be the source of the gold anomalism.

Further follow-up to the Mt Darwent gold anomaly has been delayed by the Aboriginal scared site located above the 80m contour.

6.3 Geophysics

Re-modelling of the multi-client geophysics was started. A number of broad lineaments and fold closures were defined.
7. CONCLUSION

Soil sampling reaffirmed the gold anomalies around the base of Mt Darwent.

A number of structural lineaments were defined using aeromagnetic data.
S. REFERENCES


APPENDIX 1
## ANALYTICAL REPORT

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### UNITS
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- **ppb**
- **ppm**
- **ppm**
- **ppm**
- **ppm**
- **ppm**

### DET. LIM SCHEME
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- **AAS9L**
- **AAS9L**
- **AAS9L**
- **AAS9L**
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- **AAS9L**

Page 1 of 12
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**UNITS**
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- ppm

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- 0.1

**SCHEME**
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- AAS9L
- AAS9L
- AAS9L
- AAS9L
- AAS9L
- AAS9L

Page 2 of 12
DRAWINGS