EXPLORATION LICENCE 6685

MOUNT TYNH AREA NORTHERN TERRITORY.

REPORT FOR THE YEAR ENDING 18TH DECEMBER 1990.

Prepared for Robert Johnston,

by

G.R. O'rtridge,
GEONORTH Pty. Ltd.,
Darwin, N.T.

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FIGURE 1. Locality map.
FIGURE 2. Topographical map. 1:50,000.
FIGURE 3. Tenement map. 1:50,000.
FIGURE 4. Regional geological map. 1:100,000.
FIGURE 5. Geology and rock sample locations. 1:10,000.
2. GEOLOGICAL SETTING.

Regionally the prospect lies in the northwestern part of the Pine Creek Geosyncline, within a north-south belt of folded metasediments belonging to the Burrell Creek Formation in the upper part of the local Early Proterozoic succession. This belt is a regional synclinorium situated between the Archaean basement highs of the Rum Jungle/Waterhouse Complexes to the northwest (with their uranium/base metal deposits), and the granite-cored Brooks Creek/Howley/Shoobridge domes to the southeast (with their gold/tin/base metal deposits).

Immediately north of the EL is the abrupt range of Mt Tymn, where a small amount of gold was produced late last century. Recently this zone of auriferous quartz veining has been fairly extensively drill tested by Billiton, apparently with inconclusive results.

Burrell Creek Formation is the only stratigraphic unit recognised in the EL area. It consists predominantly of grey to red slates and phyllites, with subordinate metagreywacke, and locally lenses of coarse grained quartz grits and fine grained quartz conglomerates. It forms a series of low hills, with good rock outcrop, interspersed with extensive alluviated flood plains (Figures 4 & 5).

The main structure appears to be a tight southeasterly plunging anticline, with the hinge line running roughly along the trend of the Mt Tymn ridge. However mapping so far is not sufficient to fully resolve this structure.

Fairly extensive quartz reefing occurs near the southern edge of the EL area, approximately on the trend of the anticlinal hinge line. Elsewhere quartz veining is infrequent.
1. INTRODUCTION.

Exploration Licence 6685 was granted to Robert Johnston for a two year term commencing 19th December 1989. It comprises two graticular blocks, with an area of six square kilometres, and is located on the Stuart Highway, just south of Mt Tynn, some fifteen kilometres southeast of Adelaide River township (Figures 1 & 2). Mineral Claims covering areas of old gold workings at the southern end of Mt Tynn are excluded from the licence.

The area falls within the Bachelor 1: 100,000 sheet, and the Burrell Creek 1: 50,000 sheet areas.

This report describes the results of geological survey and rock chip sampling, carried out in year one of the licence, with the aim of following up geochemical anomalies which had been detected, but not resolved, by previous holders of the ground.
3. PREVIOUS EXPLORATION WORK.

The area concerned was part of Exploration Licence 2473 in the 1982-1986 period, when exploration for gold was carried out by W.R. Grace Australia, and by Western Mining Corporation. They undertook extensive regional reconnaissance, including rock chip sampling and drainage and soil geochemical surveys, without discovering anything of interest.

In 1988/89 the area was held by Coronation Hill Gold Mines N.L. under EL5277. They conducted detailed drainage geochemical sampling (7 samples per square kilometre), with samples analysed for gold by cyanide leach, and for arsenic by XRF. It was concluded that weakly anomalous values were present in four areas, with maximum values reaching 5.2 ppb Au, and 130 ppm As. Figure 5 shows the anomalous locations, and samples exceeding 1.0 ppb Au. No follow up sampling was carried out.
4. WORK COMPLETED DURING 1990.

The program of exploration work during 1990 was directed primarily towards the determination of the significance of the gold "anomalies" identified by Coronation Hill Gold Mines. The program included a general geological reconnaissance of the whole area, and more detailed prospection and rock chip sampling (where appropriate) of the anomalies. Observations on anomalies "A" to "D" (Figure 5) are as follows:-

ANOMALY A. This comprises two small north-south ridges of Burrell Creek Formation outcrop, lying either side of the Stuart Highway. A possible anomaly is evident in two samples from the creek to the north of the ridges, which reported values of 1.11 and 1.78 ppb Au. This is a fairly large creek with a catchment area of several square kilometres. Outcrop is very good on the ridges and in road cuttings, and consists of phyllite with very scarce small quartz veins.

The area does not appear to be mineralised. The values in the creek samples are much less than would be expected from a nearby source of economically significant gold mineralisation. They may indicate a remote source or contamination from roadworks.

ANOMALY B. This consists of a 600m long series of low ridges lying just east of the Highway. Samples from small gullies draining the eastern side of the ridges reported values from 1.27 to 1.79 ppb Au. Outcrop is very good and consists of red slates with occasional thin conformable quartz veins up to 30cm thick and 20m long. There are no indications of significantly sized bodies of mineralisation.

If commercially significant mineralisation were present it would be expected that samples from such locations would have recorded values of about 10 ppb Au. The relatively low order of the anomaly probably indicates trace mineralisation only.
ANOMALY C. This is an area of low irregular hills in the northeast of the EL area. Samples from small gullies draining from the northeast and southwest flanks of the hills recorded values up to 2.99 ppb Au and 130 ppm As. Outcrops consist of SSE-trending phyllites and thin metagreywackes. One northeast-trending quartz reef up to 30cm thick was observed (sample 324410), and large quartz vein float was seen on the alluvial flats to the southwest (sample 324411); neither sample reported significant gold values. However the first vein occurs in a low saddle from which the two most anomalous gullies originate, and is very probably the source of the anomalies. Considering the proximity of the sampled points to the likely source, the magnitude of the anomalies is much less than would be expected from mineralisation of economic interest.

ANOMALY D. This is an irregular line of low hills, some 900m long, trending SSW on the southern edge of the area. Gullies draining from the east side of the hills recorded values of 5.22 and 2.14 ppb Au, and 28 and 76 ppm As. The country rocks consist of generally NNE-trending well bedded phyllites and metagreywackes, with some massive quartz grits and conglomerates in the south. Quartz veining is widespread, and is of two main types. Firstly, are a series of cross cutting northeast-trending zones of quartz veining, stockworks and silicious breccias up to 2.0m wide, which are locally ironstained, gossanous, or with relic unoxidised pyrite and arsenopyrite. Secondly, is a more extensive system of quartz stockworking following coordinate fracture systems in the grits and conglomerates, with widths up to 15m over a length of about 200m. No indications of sulphides were noted in this type of veining. Samples from the first type of veining reported anomalous gold values up to 0.27 g/t Au. This appears to be the source of the drainage anomaly. Composite samples of the second type of veining reported maximum values of 0.06 g/t Au (Appendixes I & II).

Expenditures made in carrying out the 1990 exploration work are estimated to be $2,482.
5. CONCLUSIONS AND RECOMMENDATIONS.

1. Anomalies "A", "B" and "C" are not indicative of economically significant mineralisation and no further follow up is warranted.

2. Anomaly "D" is of more interest, although at first sight the mineralisation appears small and low grade. However insufficient work has been done so far to clearly delineate the potential, and a limited program of follow up is recommended. This should consist of grid surveys, geological mapping at a scale of 1:1,000, and detailed rock chip sampling. This would be completed at an estimated cost of $6,000.
6. REFERENCES.


APPENDIX I.

Rock chip sample descriptions and assays.
## ROCK-CHIP SAMPLE DESCRIPTIONS.

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<tr>
<th>SAMPLE NO.</th>
<th>DESCRIPTION</th>
<th>ASSAYS g/t Au.</th>
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<tr>
<td>324406</td>
<td>composite of gossanous quartz veins and stringers with trace pyrite/arsenopyrite.</td>
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<tr>
<td>324407</td>
<td>composite of milky quartz stockwork in greenish altered grit &amp; conglomerate.</td>
<td>- 0.01</td>
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<tr>
<td>324408</td>
<td>composite sample of rubble and sub-outcrop of gossany milky quartz &amp; breccia.</td>
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<tr>
<td>324409</td>
<td>composite of silicified &amp; brecciated slate &amp; greywacke with quartz stringers.</td>
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<tr>
<td>324410</td>
<td>crudely laminated 0.3m quartz vein disconformable in phyllite &amp; greywacke.</td>
<td>0.05</td>
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<tr>
<td>324411</td>
<td>grab sample of isolated quartz outcrop in alluvium.</td>
<td>0.01 0.01</td>
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<tr>
<td>324422</td>
<td>composite of sheared, brecciated &amp; quartz veined grit and conglomerate.</td>
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<tr>
<td>324423</td>
<td>composite from zone of breccia, quartz reef and stockworking in grit.</td>
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<tr>
<td>324424</td>
<td>composite of 10m wide zone of breccia and quartz stockwork in grits.</td>
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<td>324425</td>
<td>1.0m wide zone of siliceous breccia and quartz veining in greywacke.</td>
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<td>1.5m wide zone of siliceous breccia and quartz veining in greywacke.</td>
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APPENDIX II.

Analytical Reports.
GEONORTH  
GPO BOX 3471  
DARWIN  
NT 0801

ANALYSIS REPORT:

Your Reference:  
Our Reference: 1DN0016

Samples Received: 07/01/91  
Results Reported: 10/01/91

Number of Samples: 6  
Report Pages: 1 to 1

This report relates specifically to the samples tested in so far as the samples supplied are truly representative of the sample source.

If you have any enquiries please contact the undersigned quoting our reference as above.

Approved Signature:

for

Alan Ciplys  
Manager - Darwin  
CLASSIC LABORATORIES LTD

*** RELIABLE ANALYSES AT COMPETITIVE COST ***
<table>
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<th>Dpl</th>
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**UNITS**
- DET.LIM: ppm
- SCHEME: FA1

**Page 1 of 1**
## CLASSIC LABORATORIES LTD

### Final

### ANALYTICAL REPORT

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<tr>
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<td>0.27</td>
<td></td>
</tr>
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</table>

### UNITS

- DET.LIM: 0.01 ppm
- SCHEME: FA1

**Job:** 1DN0056

**O/N:**
CAINozoic  Qa Alluvium.

EARLY  Pfb Burrell Ck.

PROTEROZOIC  Formation.
Qa Alluvium
Pfb Burrell Creek Formation.
Quartz grit & conglomerate.
Zone of quartz veining & brecciation.

* 324426 Sample location & number.
□ BLEG sample exceeding 1 ppb Au.

GEOLOGY AND ROCK SAMPLE LOCATIONS
Scale 1 : 10,000

Figure 5.