BILLITON AUSTRALIA
THE METALS DIVISION OF THE
SHELL COMPANY OF AUSTRALIA LIMITED

FINAL REPORT FOR EXPLORATION LICENCE 6335
FOR THE YEAR ENDED 17TH NOVEMBER 1990

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SUMMARY

Exploration Licence (E.L.) 6335, Mt Porter North, is located approximately 26 km north of Pine Creek.


The geology within the licence area consists of moderately folded shales, siltstones, greywackes, tuffs and cherts of the Early Proterozoic South Alligator Group, overlain by sediments of the Early Proterozoic Burrell Creek Formation of the Finnis River Group.

This report contains a summary of all previous work carried out on E.L. 6335, with respect to the joint venture. No work has been carried out on the licence area during the current reporting period.

Results from previous work has not been encouraging and no further work is planned.
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1.0 INTRODUCTION

Exploration Licence 6335, Mt Porter North was granted to Coronation Hill Gold Mines NL on the 18th of November, 1988 for a period of three years.

On being granted, E.L. 6335 was added to the McKinlay Joint Venture between Coronation Hill Gold Mines NL and The Shell Company of Australia Limited, which commenced on the 1st July, 1988.

This report reviews work completed by Billiton Australia, The Metals Division of The Shell Company of Australia Limited, on behalf of the McKinlay Joint Venture. Shell withdrew from the joint venture effective 14th September, 1990 and retains no equity in this tenement. Exploration within the licence area has focused on locating near surface bulk tonnage gold mineralisation.

2.0 TENEMENT STATUS

Exploration Licence 6335 was granted on the 18th November, 1988 and is due to expire on the 17th November 1991.

3.0 GEOLOGY

The geology within Exploration Licence 6335 comprises of four (4) different Early Proterozoic rock units, namely:-

1. Koolpin Formation
2. Gerowie Tuff
3. Mt Bonnie Formation
4. Hurrell Creek Formation (Figure 1)
The Koolpin Formation of the South Alligator Group is the oldest unit exposed in the licence area and is found in the far northwest corner. The unit is comprised of carbonaceous metapelite, ferruginous ironstone, and phyllite.

The Koolpin Formation is conformably overlain by the Gerowie Tuff, again of the South Alligator Group. The Gerowie Tuff is found in the northwest corner of the licence area. The unit is comprised of a sequence of interbedded siltstone, phyllite, argillite, tuff and minor chert. These beds sometimes contain chert nodules.

The Gerowie Tuff is conformably overlain by the Mt Bonnie Formation the upper most member of the South Alligator Group. The Mt Bonnie Formation covers most of the central portion of the licence area. Lithologies within the unit consist mainly of highly interbedded shales, siltstones and greywacke, with minor tuffaceous chert and banded iron formation.

Unconformably overlying the Mt Bonnie Formation is the Burrell Creek Formation of the Finniss River Group. The Burrell Creek consists of interbedded shales, slate, phyllite, siltstone and greywacke, and is found mainly in the southwest portion of the licence area.

In most of this area the Burrell Creek Formation forms topographic lows and is covered by alluvium and colluvium.

Two major phases of folding can be recognised in the licence area. The older folds are tight to isoclinal and have north to northwest trending axes. A major synclinal fold axis of this generation passes through the southwest corner of the licence area. The later phase of folding consists
of widely spaced, east trending, open folds, poorly developed within the licence area.

4.0 PREVIOUS WORK

4.1 Geological Mapping and Rock Chip Sampling

Reconnaissance mapping and rock chip sampling has been confined to the northeast corner of E.L. 6335. Results have been relatively poor with best Au results of 0.1 g/t obtained from a silicified siltstone, and 1100 ppm Zn from a banded ironstone unit in the Koolpin Formation.

4.2 Stream Sediment Sampling

A total of seven composite 5kg -8# BCL Au and 200g, -80# Ag, Cu, Pb, Zn, As stream sediment samples were collected from within EL 6335. BCL Au results were disappointing with a highest value of 0.13 ppb Au. Elevated Pb and Zn values were obtained in several catchment areas with values up to 170 ppm Zn and 76 ppm Pb. The anomalous stream sediments occur in the southwest corner of the Exploration Licence associated with the Koolpin Formation.

4.3 Aeromagnetics

Detailed airborne magnetic and radiometric data was acquired from Aerodata Holdings, as part of a major multi-client survey over the Pine Creek Geosyncline. This survey was completed using a 200m flight line spacing, 5000m tie line spacing and 70m mean sensor height. Image processing was completed by Geolmage of Brisbane. Results suggest no discrete anomalies occur within the licence area.
5.0 WORK COMPLETED

No work has been carried out on the licence area during the current reporting period.

6.0 CONCLUSIONS

The exploration programme carried out on EL 6335 has failed to locate significant near surface bulk tonnage gold mineralisation. Due to negative exploration results, no further work is proposed for the licence area.
## Expenditure Statement

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<tr>
<th>Activity</th>
<th>Current Reporting Period</th>
<th>Total Expenditure</th>
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<tbody>
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<td>Regional Office - Staffing</td>
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<td>- Support</td>
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<td>Analyses</td>
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<td>Overheads</td>
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<td>850</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>3,620</strong></td>
<td><strong>9,348</strong></td>
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</tbody>
</table>
NB. These workings are in lode material typical of Tallow Formation, though possibly contactted to north by Cambrian Volcanics.
Isolated, scattered, approx. 5m in "lode" outcrops

Scattered quartz-tourmaline epidote?

Scattered "lode" rubble "lode"

NB. These workings are in lode material typical of Talisk Formation, though possibly contorted to north by Cambrian Volcanics.