Burnside Operations P/L

ANNUAL EXPLORATION REPORT
RHODES PROSPECT
MLN414 - 418

YEAR ENDING 31ST DECEMBER 2004

Burnside (14/2-II) 1:50,000

Title Holder: - Northern Gold N.L.

Distribution: DBIRD Darwin NT
Northern Gold NL Perth WA
Burnside Operations P/L Brocks Creek
Burnside Operations P/L Perth WA

Compiled by:
John Shaw
April 2005
SUMMARY

MLN 414-418 inclusive cover the Rhodes gold prospect, 115km SE of Darwin and 3km NE of Mt Paqualin, on the Burnside 1:50,000 map sheet.

The Rhodes deposit has been systematically explored by WMC and later by Northern Gold NL. RC drilling programs outlined shallow west dipping gold mineralisation hosted by Zamu Dolerite on the western limb of a north trending anticline in Gerowie Tuff Formation. This resource was globally estimated (1997) to total 700,000t @ 1.80g Au/t and lies within 3.5km of the Bons Rush and Kazi gold deposits, also owned by the Burnside JV.

The tenements were incorporated into the Burnside Joint Venture in April 2002 and since initial ranking as a potential source of low grade mill feed Rhodes has continued to be dependent on a renewal of mining and treatment activity at the nearest facility. At present this lies at Union Reefs 62.0km to the SE. This mill, and associated tenements, was purchased by the JV in August 2004. The Brocks Creek mill that was also on care and maintenance has been sold to Tanami Gold NL.

The joint venture is presently re-considering the optimum scheduling, ranking and relative value of its various gold resources proved by drilling in the region. The shifting of the centre of focus to Union Reefs has an economic impact on all the Burnside JV deposits. The longer haul distance has to be balanced against the larger mill capacity and the presence of satellite deposits.

Pending the outcome of the present assessments, the Rhodes deposit comprises a strategic gold resource of low to medium grade that has been comprehensively explored by drilling.

In the interim the deposit will be subjected to further economic review and reporting.

The expenditure for 2004 comprising reporting and review totalled $450.00.
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1.0 INTRODUCTION
This report describes exploration activity on MLN414–418 inclusive during the year ended 31st December 2004. The tenements enclose the Rhodes gold prospect that is at a mature stage of exploration and awaiting a favourable economic setting for development.

The report outlines previous exploration activity on the ground and covers the geological setting and available remote sensing data. Expenditures and future work proposed are included.

2.0 TENEMENT DETAILS
The Rhodes tenement group comprises five contiguous granted mineral leases totaling 75 hectares. It is enclosed in turn by a larger mining lease application, MLN1152.

Mineral Leases Northern 414 to 418 inclusive were granted to W.R. Grace Australia Ltd. on the 8th of February 1978. The titles were transferred to R. Edwards in 1993.

Northern Gold N.L. and Camelot Northern Territory Limited, formerly Reynolds N.T., acquired the tenements in 1995 by exercising an option agreement. The mineral leases were renewed on the 17th of May 1999, for a period expiring on the 31st of December 2003. Application for renewal by the Burnside Joint Venture (Territory Goldfields NL and Buffalo Creek Mines NL) was granted and the term of the group now expires on 31/12/08.

3.0 LOCATION AND ACCESS
The tenements are 115km SE of Darwin and 3km NE of Mt Paqualin on the Burnside 1:50,000 map sheet. They also lie between latitudes 13°20’30” south and 13°21’30” south and longitudes 131°20’ east and 131°21’ east and are situated within the Mount Ringwood Pastoral Lease, PL 718.

Access is via the Stuart Highway to Bridge Creek, thence northwards along existing exploration roads and station tracks that are presently badly obscured by grasses. In addition the crossing of Howley Creek just south of the deposit has been washed out. A bulldozer or front end loader would be needed to re establish a crossing. A padlock is installed on the gate north of the Darwin-Adelaide railway. Permission and a key may be acquired from Mt Ringwood Station. During the wet season much of the ground in the area becomes inundated, and creek flow rates are high.
4.0 GEOLOGY

4.1 Regional Geology

The Rhodes group tenements are situated within the Pine Creek Geosyncline, a tightly folded sequence of Lower Proterozoic rocks, 10km to 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87 Ga. The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant inter-layered cherty tuff units. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87 Ga) intruded formations of the South Alligator Group.

During the Top End Orogeny (Nimbuwah Event ~1.87-1.85 Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies with phyllite in sheared zones.

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.84-1.80 Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Less deformed Middle and Late Proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Geosyncline lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

Regionally there is a tendency for gold mineralisation to be focused in anticlinal settings within strata of the South Alligator Group and lower parts of the Finnis River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies. Dated at ~1740 Ga (Sener 2004) the gold events post date the Pine Creek Orogeny and Cullen intrusive events and has favoured suitable litho-structural sites in the biotite-hornfels contact facies.

4.2 Local Geology

Outcrop within the lease boundaries is very poor due to extensive black soil and creek alluvium deposited by Howley Creek immediately to the south. Interpretation from more regional studies, and supported by drilling, shows that the Gerowie Tuff of the middle South Alligator Group underlies much of the area. This unit has been intruded by mafic Zamu sills and folded into north trending structures.
Gold mineralisation at the Rhodes Prospect is hosted within shallow west dipping quartz veining and brecciation in Zamu Dolerite, adjacent to the contact with carbonaceous cherty tuffites and siltstones of the Gerowie Tuff Formation. This reverse fault setting lies on the western limb of a north trending anticline.

5.0 PREVIOUS EXPLORATION

The Rhodes Prospect was previously managed and explored by Western Mining Corporation (WMC) and W. R. Grace Australia Ltd., as part of the Mount Ringwood Joint Venture.

The prospect was initially known as Quest 155. Numerous areas of anomalous gold mineralisation were identified within the region. Results from the exploration completed are reported in Hancock and Muir, 1987.


During 1996, Northern Gold N.L. completed RC drilling, resource evaluations, metallurgical testwork and an MMI geochemical soil sampling program.

The drilling was undertaken in order to determine the extent and style of bedrock mineralisation around the previous drilling. The drilling program consisted of 21 RC drill holes for a total of 2,620m.

Metallurgical test work was carried out on some of the RC drill samples. A summary of results is shown below.

Table 1 Metallurgical Test Work Summary

<table>
<thead>
<tr>
<th>Ore/Test No.</th>
<th>Grind P80 Target</th>
<th>NaCN Used kg/t</th>
<th>Leach Residue Au g/t</th>
<th>Au Extraction %</th>
<th>Calc’d Head Au g/t</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO 31 Test H5055</td>
<td>106</td>
<td>1.81</td>
<td>0.288</td>
<td>90.25</td>
<td>2.95</td>
</tr>
<tr>
<td>RO 42 Test H5056</td>
<td>106</td>
<td>1.42</td>
<td>0.383</td>
<td>87.39</td>
<td>3.04</td>
</tr>
</tbody>
</table>

A mobile metal ion orientation survey was completed over the Rhodes Prospect in May 1996. Approximately 500g of soil, sieved to –5mm, was collected every 5m along two 100m spaced lines. A total of 102 samples were collected and submitted to
Analabs, in Perth, W. A., for “MMI-B” Au, Ag, Co, Ni, Pd analysis, and “MMI-A” Cd, Cu, Pb and Zn analysis. The program was successful in highlighting the position of the Rhodes gold deposit. Distinct and coincident anomalies were obtained for the elements Au, Cu, Zn, Co, and Cd and to a lesser extent Ni and Pb. No significant response ratio values were reported for Pd.

During July 1996 and February 1997, resource estimates were calculated for the Rhodes Prospect. These are reported in Farrelly, 1996 and 1997.

Summary of Estimate 1996, Rhodes Resource (cut to 15.0g/t Au)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Tonnes</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured</td>
<td>552,680</td>
<td>2.59 g/t Au</td>
</tr>
<tr>
<td>Indicated</td>
<td>30,830</td>
<td>2.93 g/t Au</td>
</tr>
<tr>
<td>Total</td>
<td>583,510</td>
<td>2.61</td>
</tr>
</tbody>
</table>

The update in early 1997 is more fully described below.

Rhodes Deposit, 1997 Block Model Resource

The drill data was plotted as cross sections, at 20m intervals, with an extra section defined at 68,400mN to accommodate some drilling off section. A mineralised envelope was interpreted onto these sections on the basis of lithology and gold grade.

Several west-dipping mineralised lenses were identified that in general are hosted by Zamu Dolerite. They strike north and dip west between 10° and 45°. The lenses are curved and possibly related to an elliptical dolerite-tuff contact. The lenses were extrapolated up to 10m either side of the section, and were referred to as 101, 102, 103, 104, 105, and 106.

Further drilling is required to close out the mineralisation along strike, and more particularly, at depth.

The strike and dip of these interpreted lode zones were measured, and the deposit was divided into domains of similar trend. This resulted in a rather complex picture with 35 different domains, (really?) each requiring different anisotropic parameters for grade modeling.

Three models were generated, using successively larger search ellipses. These models represent measured, indicated, and inferred confidence levels. The measured model used a strike search of 30 metres north and south of the block center, 8m across strike, and 25m down dip. Only resource blocks with a minimum of 25% falling within the
interpreted geological solid were attributed grade. The indicated model used searches of 45m, 35m, and 16m respectively.

**Summary of Estimate 1997, Rhodes Resource**

Rhodes resource above 0.70 g/t Au:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Tonnes</th>
<th>g/t Au Cut(15) g/t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured</td>
<td>768,340</td>
<td>1.87</td>
</tr>
<tr>
<td>Indicated</td>
<td>2,810</td>
<td>3.87</td>
</tr>
<tr>
<td>Total</td>
<td>771,150</td>
<td>1.88</td>
</tr>
</tbody>
</table>

In 1999 Northern Gold N.L. completed a review of the sub-surface gold geochemistry at the Rhodes Prospect, utilising all available drilling and surface geochemical data.

During 2000 Northern Gold N.L. contracted Arnhem Exploration Services to complete an infill BLEG soil sampling program over the tenement group.

A total of 77 samples, consisting of approximately 4kg of B horizon soil, sieved to – 5mm, were collected at 40m intervals along six, 200m spaced lines. These were submitted to Assaycorp, in Pine Creek, for analysis of Au, using low level fire assay technique, and Ag, As, Cu, Pb and Zn, using MA4/G400M/ICP-MS analytical method.

The program outlined a north northeast trending soil anomaly, within the north and west of the area sampled. The peak results returned were 250 ppb Au, 110 ppb Au and 80 ppb Au.

In 2001 the tenements were subjected to geological review and ranking exercises.

In April 2002 the tenements were incorporated into the Burnside Joint Venture under the management of Burnside Operations P/L. The objective of the joint venture is to define gold ores within the JV tenements and process them at the jointly owned Brocks Creek treatment facility.

The Burnside JV reviewed all resources within the JV tenements to rank available prospects. The Rhodes deposit was classed as low to medium priority in view of its trucking distance from Brocks Creek, its complexity and relatively low grade. It was recognised as being economically dependent on the viability of the more robust and proximal Zapopan and Cosmo Howley deposits. It was also acknowledged that its potential is bound up with the nearby Bons Rush and Kazi deposits in that they were likely to be mined conjointly.
In 2003 work comprised remote sensing and interpretation using SPOT imagery.

6.0 WORK CARRIED OUT DURING 2004

As discussed above, the Rhodes deposit is at a mature stage of exploration. A resource has been quantified that is judged to be marginal and dependent upon a favourable local economic setting. The economic parameters were dramatically altered when the Joint Venture sold the Brocks Creek treatment plant and purchased the Union Reefs mill in August 2004. The haul distance of 64km to the new mill makes it *prima facie* less profitable while the economies of scale of the bigger mill have lower unit costs. These factors are being assessed by the joint venture.

Work during the year was devoted to economic review and reporting. This amounted to $450.00.

7.0 PROPOSED EXPLORATION 2005

The Rhodes resource will be reviewed as part of the ongoing search for viable gold resources for the newly acquired Union Reef mill. A joint focus on the closely spaced Bons Rush, Kazi and Rhodes deposits is anticipated in the event production recommences in 2005-2006.

Expenditure during 2005 is estimated at $500.00.
8.0 REFERENCES


