Burnside Operations P/L

ANNUAL EXPLORATION REPORT
RHODES PROSPECT
MLN414 - 418

YEAR ENDING 31ST DECEMBER 2003

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 2004
SUMMARY

MLNs 414 - 418 cover the Rhodes gold prospect, 115km SE of Darwin and 16km NW of Brocks Creek mill, on the Burnside (14/2-II) 1:50,000 sheet.

RC drilling programs by WMC and later by Northern Gold NL, 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.

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 economic outcomes for ongoing exploration at the higher grade Zapopan and Cosmo Howley deposits.

The Rhodes deposit has been systematically explored by RC drilling and is expected to comprise low to medium grade open pit gold ores in conjunction with the nearby Bons Rush deposit (MLN (a) 23617). Both are expected to be scheduled for treatment at the Brocks Creek facility in the event it is refurbished. In the interim the deposit will be subjected to economic review and reporting.

The expenditure for 2003 comprising reporting and review totalled $400.00.
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APPENDIX ONE  Digital copy of this report.
1.0 INTRODUCTION
This report deals with exploration activity on MLNs 414–418 inclusive during the year ended 31st December 2003. The tenements enclose the Rhodes gold prospect that is at a mature stage of exploration. The tenements are located approximately 16km north west of the Brocks Creek treatment facility.

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 and ACCESS
The 5 contiguous mineral leases, covering an area totaling 75 hectares, lie between latitudes 13°20’30” south and 13°21’30” south and longitudes 131°20’ east and 131°21’ east. They are situated within the Mount Ringwood Pastoral Lease, PL 718.

Mineral Leases North 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 of all the leases has been lodged.

Access is via the Stuart Highway to Bridge Creek, thence northwards along existing haul roads and station tracks. Access requires four wheel drive vehicles and is restricted to the dry season. During the wet season much of the ground in the area becomes inundated, and creek flow rates are high. There are no permanent creek crossings in this area.

3.0 GEOLOGY

3.1 Regional Geology
The Rhodes group tenements are situated within the Pine Creek Geosyncline, a tightly folded sequence of fine to coarse grained clastic basinal sediments of Lower Proterozoic age.

In the report area the sequence has been regionally metamorphosed to greenschist facies and has been intruded by late syn-orogenic to post orogenic granitoid intrusions. These intrusions imparted thermal contact metamorphic and metasomatic effects and contributed to the deposition of a range of economic
minerals in structurally permissive sites. Granitoids, their apophyses and cupolas, are believed to underlie large portions of the area.

There is a tendency for gold mineralisation to be focused in anticlines within strata of the South Alligator Group and lower parts of the Finniss River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies. A water-lain tuffaceous component is present and the prospective sequence has been intruded by pre orogenic mafic sills. See Fig. 3.

Less deformed Middle Proterozoic sedimentary and volcanic sequences unconformably overlie the Lower Proterozoic. In the region, Cambo-Ordovician lavas and sediments of the Daly River Basin, as well as Cretaceous strata, overlie the older sequences.

Cainozoic sediments, laterite and Recent alluvium comprising river flats obscure parts of the Pine Creek Geosyncline lithologies.

3.2 Local Geology
Outcrop within the lease boundaries is very poor due to extensive black soil and creek alluvium. 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 sills and folded into north trending structures.

Gold mineralisation at the Rhodes Prospect is hosted within quartz veining and brecciation in Zamu Dolerite, adjacent to the contact with carbonaceous cherty tuffites and siltstones of the Gerowie Tuff Formation. This setting lies on the western limb of a north trending anticline.

4.0 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 drilling 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 $10^\circ$ and $45^\circ$. 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, 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 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 deposit in that they were likely to be mined conjointly.

**5.0 WORK CARRIED OUT DURING 2003**

As discussed above the Rhodes deposit is economically dependent upon the economic viability of the Zapopan and Cosmo Howley deposits. The deposit is at a mature stage of exploration having been drilled extensively in previous programs. Its future is also bound up with the adjacent Bons Rush deposit. A strong expenditure commitment to the area has been demonstrated by previous and ongoing RC and diamond drilling programs at Zapopan and Cosmo Howley, as well as other high priority prospects in the Burnside Region.

Work during the year was confined to reporting and a study of SPOT image data. This work was costed at $400.00.

**6.0 PROPOSED EXPLORATION 2004**

The Rhodes resource will be revisited as part of the ongoing search for viable gold resources for the Brocks Creek mill. A joint focus on the Bons Rush and Rhodes deposits is anticipated in the event production re-commences at Brocks Creek. Expenditure during 2004 is estimated at $500.00.
7.0 REFERENCES


