OTTER GOLD NL

PARTIAL RELINQUISHMENT REPORT FOR

EL9538

(Muriel Range East 1)

Part of the McFarlane Agreement

24 July 2000 – 23 July 2002

TANAMI REGION
NORTHERN TERRITORY

COMPILED BY: M MUIR

DISTRIBUTION:
NT Dept of Business, Industry & Resource Development
Newmont NFM Exploration
File copy
**SUMMARY**

Exploration Licence 9538 (Muriel Range East 1) was granted on the 24th of July 2000, for a period of six years. At the end of the second year of the Exploration Licence it was decided because of escalating tenement costs that the ground be reduced from 2 blocks (6.42 km²) to 1 block (3.21 km²).

The relinquished ground included 15 regional surface samples completed by Otter Gold NL where results were less than 0.4 ppb Au. The surface samples were taken in bulk and sieved at a later date on a 500m x 500m grid using a Robinson Helicopter for access.
# TABLE OF CONTENTS

1.0 INTRODUCTION ............................................................................................................. 1

2.0 LOCATION AND EXPLORATION HISTORY ............................................................... 1
   2.1 Location and Leasing .................................................................................................. 1

3.0 GEOLOGY ...................................................................................................................... 4
   3.1 Regional Geology ..................................................................................................... 4
   3.2 Local Geology .......................................................................................................... 6

4.0 EXPLORATION on RELINQUISHED GROUND .......................................................... 6
   4.1 Pre 2000 ................................................................................................................. 6
   4.2 2000 – 2001 ........................................................................................................... 6
   4.3 2001 – 2002 ............................................................................................................ 7

5.0 REFERENCES ............................................................................................................... 15
LIST OF FIGURES

Figure 1  Tenement Map showing original EL9538
Figure 2  Tenement Map showing relinquishment regions within EL9538
Figure 3  Outcrop geology (BMR) for EL9538
Figure 4  Basement Geology for EL9538
Figure 5  1vd aeromagnetics for EL9538
Figure 6  TMI aeromagnetics for EL9538
Figure 7  Surface sample location for EL 9538 on relinquished ground
Figure 8  Surface sample results for EL 9538
Figure 9  Worm Diagram for EL 9538

LIST OF TABLES

TABLE 1  Comparison of stratigraphic nomenclature

LIST OF APPENDICES

APPENDIX 1  Surface Sample Data
1.0 INTRODUCTION

Exploration Licence (EL) 9538 was granted to Otter Gold NL (OGNL) on 24th July 2000 for a period of six years. The 2 blocks cover 6.42 km² and is wholly owned by Otter Gold NL (100%).

At the end of the second year of tenure the decision to relinquish ground was made. The ground will be reduced from 2 blocks to 1 block. The relinquished ground consists of alluvial sediments and sheet flow colluvium. No Proterozoic outcrop occurs with predominantly Killi Killi Beds interpreted to underlie cover sediments. Muriel Range Sandstone lies to the south east of the relinquished ground. The areas of relinquishment also have been partially surface sampled on regional basis (15 surface samples) and not returned significant results (<0.4ppb Au). These regions have unconfirmed depth of cover.

2.0 LOCATION AND EXPLORATION HISTORY

2.1 Location and Leasing

Exploration Licence 9538 (Muriel Range East 1) was granted to Otter Gold NL on the 24th July 2000 for a period of six years. The Exploration Lease is part of the McFarlane Agreement between Otter Gold NL and the Traditional Owners.

The tenement originally comprised 2 blocks covering an area of 6.42 square kilometres, 65 kilometres south west of The Granites Gold Mine, and approximately 18km south of Tanami Downs Cattle Station. Access is via the Tanami Track on the Tanami Downs Station track. From Tanami Downs old exploration tracks and station tracks would be used to access the tenement. Access is limited through the wet season (December to March). See Figure 1 for a Location Map.

With control of Otter Gold NL being gained by Newmont NFM it was decided because of escalating tenement costs that the ground should be partially relinquished. During July of 2002 a decision was made to reduce EL9538 ground from 2 blocks to 1 block. The relinquished ground was considered as a voluntary reduction for the period ending 23rd July 2002. See Figure 2 for approximate ground relinquished.

In December 2001 – January 2002 Normandy NFM gained a controlling interest in Otter Gold NL, the Normandy NFM team took control of Mining Leases and Exploration ground. The ore from the Normandy NFM discovery - Groundrush was transported to the Tanami Mine for crushing and milling (in which it (Normandy NFM) has a 60% interest as Otter Gold, the other 40% is controlled by Anglogold). By May 2002 Newmont Gold had taken over Normandy and had a controlling interest in Normandy NFM (now Newmont NFM) and thus Otter Gold NL.
3.0 GEOLOGY

3.1 Regional Geology

The Granites – Tanami Block is bounded to the west by the Canning Basin, and to the east by the Wiso Basin and is considered to be one of the westernmost Palaeoproterozoic inliers of the Northern Australian Orogenic Province. The block is thought to have developed around the Barramundi Orogeny – major event 1845 – 1840 Ma (Blake et al., 1979).

The stratigraphy of the Tanami Region has been revised as a result of an intensive study recently completed by the NTGS (Hendrickx et al., 2000). The stratigraphy outlined by Blake et al (1979) has had some significant modifications (Table 1).

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Birrindudu Group</td>
<td>Coomarie Sandstone</td>
</tr>
<tr>
<td></td>
<td>Talbot Well Formation</td>
</tr>
<tr>
<td></td>
<td>Gardiner Sandstone</td>
</tr>
<tr>
<td></td>
<td>Birrindudu Group</td>
</tr>
<tr>
<td></td>
<td>Coomarie Sandstone</td>
</tr>
<tr>
<td></td>
<td>Talbot Well Formation</td>
</tr>
<tr>
<td></td>
<td>Gardiner Sandstone</td>
</tr>
<tr>
<td></td>
<td>Suplejack Downs Sandstone</td>
</tr>
<tr>
<td>Suplejack Downs Sandstone</td>
<td>Nanny Goat Creek Volcanics</td>
</tr>
<tr>
<td>Mount Winnecke</td>
<td>Mount Winnecke Group</td>
</tr>
<tr>
<td>Pargee Sandstone</td>
<td>Mount Charles Formation</td>
</tr>
<tr>
<td></td>
<td>Pargee Sandstone</td>
</tr>
<tr>
<td>Tanami Complex</td>
<td>McFarlane Peak Group</td>
</tr>
<tr>
<td>Mt. Charles Beds</td>
<td>Killi Killi Formation</td>
</tr>
<tr>
<td>Killi Killi Beds</td>
<td>Twigg Formation</td>
</tr>
<tr>
<td>Nanny Goat Creek Beds</td>
<td>Dead Bullock Formation</td>
</tr>
<tr>
<td>Nongra Beds</td>
<td></td>
</tr>
<tr>
<td>Helena Creek Beds</td>
<td></td>
</tr>
<tr>
<td>Archaean</td>
<td>Browns Range Metamorphics</td>
</tr>
<tr>
<td></td>
<td>“Billabong Complex”</td>
</tr>
</tbody>
</table>

Table 1. Comparison of stratigraphic nomenclature (Hendrickx et al, 2000).

The Archaean Billabong Complex and Browns Range Metamorphics are the oldest rocks in the area. Browns Range Metamorphics comprise granitic gneiss and muscovite schist intruded by fine-grained granite, thin granitic sills, aplite and pegmatite. The Billabong Complex comprises banded granitic gneiss’, which are generally elongated and fault bound.

Lying unconformably above the Archaean basement is the Palaeoproterozoic McFarlane Peak Group. These rocks are characterised by a thick sequence of mafic volcanic, volcaniclastic and clastic sedimentary rocks, which possess a distinctive magnetic and gravity signature. This package of rocks is structurally complex and is considered to have a tectonic contact with the overlying Tanami Group.
The Tanami group is subdivided into three formations:

- **Twigg Formation**: purple siltstone with minor sandstone and chert
- **Killi Killi Formation**: turbiditic sandstone
- **Dead Bullock Formation**: siltstone, mudstone, chert and banded iron formation

The Dead Bullock Formation occurs at the base of the Tanami Group and is dominated by fine-grained sedimentary rocks. The rocks outcrop at Dead Bullock Soak, Lightning Ridge and Officer Hill. At the Granites the rocks have been metamorphosed to amphibolite facies to form andalusite, garnet and hornblende bearing schists. The Dead Bullock formation is host to significant gold mineralisation at the Granites and Dead Bullock Soak.

The Killi-Killi Formation conformably overlies the Dead Bullock Formation and is the most extensive formation in the group. The sequence of turbidites includes micaceous greywacke, quartzwacke, and lithic greywacke, quartz arenite and lithic arenite, interbedded with siltstone, mudstone and occasional thin chert beds. Detrital mica is a characteristic feature. The Killi-Killi is metamorphosed to lower greenschist facies and is interpreted to be up to 4km thick.

The Twigg formation is confined to a narrow package of rocks immediately west of the Tanami Mine corridor. It comprises a sequence of interbedded purple siltstone with thin-bedded chert and minor medium bedded greywacke.

The Pargee Sandstone unconformably overlies the Tanami Group and is exposed on the western side of the Coomarie Dome extending into Western Australia. The Pargee Sandstone comprises thick-bedded quartz arenite, lithic arenite and conglomerate with pebbly sandstone and conglomerate at the base.

The Mount Charles Formation comprises an intercalated package of basalts and turbiditic sediments, which occur on the western side of the Frankenia Dome. The Mount Charles Formation is host to structurally controlled vein hosted gold mineralisation in the Tanami Mine Corridor. Sediments include sandstone, mudstone, carbonaceous mudstones and intraclast conglomerate. Basalts are predominantly massive units with pillow basalts and basaltic breccias also evident.

The Mt Winnecke Group is also interpreted to lie unconformably over the Tanami Group. This group is divided into two units including siliciclastic sediments and felsic volcanics.

The Nanny Goat Volcanics are characterised by extrusive volcanic rocks including quartz-feldspar ignimbrite, feldspar ignimbrite, rhyolite lava, basalt and minor siliciclastic sediments.

The Birrindudu group comprises 3 units with Gardiner Sandstone at the base, overlain by Talbot Well Formation and Coomarie Sandstone. The Suplejack Down sandstone is interpreted to belong to this group but is relationship is unclear. The Birrindudu group lie unconformably over the Browns Range Metamorphics, MacFarlane Peak Group, Tanami Group, Pargee Sandstone, Nanny Goat Creek Volcanics and Mount Winnecke Group.
Cenozoic laterite, silcrete, calcrete, and Quaternary debris cover 60 – 70% of the Tanami Desert. The Quaternary sediments are generally unconsolidated, representing the most recent phase of erosion and deposition of sands, gravels and lithic fragments.

### 3.2 Local Geology

The area to be relinquished within the Muriel Range East 1 region (EL9538) is covered by variable depths of alluvial sediments and sheet flow colluvium deposits. To the south west of the relinquishment a significant outcrop of Muriel Range sandstone exists. Muriel Range Sandstone comprises of sublithic arenite, quartz arenite, minor siltstone, shale, conglomerate very thin to medium-bedded and is cross-bedded in part with arkose and breccia noted. A major Palaeochannel exists 2.5km to 10km to the east of the tenement.

See Figures 3, 4, 5 & 6 for geology and regional aeromagnetics over the region.

### 4.0 EXPLORATION on RELINQUISHED GROUND

#### 4.1 PRE 2000

Prior to Otter Gold NL North Flinders Mining (NFM) {currently Newmont NFM} held the ground as part of their Officer Hill tenement holdings. NFM took two lag samples in this region with no significant results.

#### 4.2 2000 – 2001

The areas of relinquishment have been partially surface sampled on regional basis (15 surface samples) and did not return significant results (<0.4 ppb Au). The samples were taken on 500m x 500m grid using a helicopter (Robinson). The samples were taken at an average depth of 30cm. Orange brown sandy loam was predominantly logged. The topography was seen as flat overall. Samples were taken in bulk bags and later sieved with a 200um sieve. The sieved samples were sent to ALS for their ZARG analysis. See Figure 7 & Figure 8 for location and sample results.

Otter in conjunction with Fractal Graphics in Perth, undertook to worm the detailed magnetic and gravity datasets using a relatively new process developed by Fractal Graphics and the CSIRO. The resulting data process provides a new way a viewing the old data in three dimensions.
4.3 2001 – 2002

Work programmes were put on hold within this region. The change of control from Otter Gold to Newmont Exploration demanded that work priorities should to be assessed across the Tanami – Granites Licences. Work during this year involved remote discrimination of targets using an enhanced geophysical technique, the multiscale edge analysis (worming) process (developed by Fractal Graphics) that Otter Gold applied over the Tanami Region. The worming process was designed to generate targets within stratigraphic units with moderately to strongly contrasting internal magnetic signatures. No worm targets were discriminated within the areas of relinquishment. An assessment of all available data was also made but this did not result in any further targets being generated within the area to be relinquished. Figure 9 represents a 2D image of a worm image within the region of EL9538.
Figure 3

Relinquished Ground 2002

Granite

Killi Killi Beds

Muriel Range Sandstone

Quaternary Alluvium

Pedestal Beds

Calcite

Quaternary Sediments

Otter Gold NL

EL9538

Outcrop Geology

Scale: 1:75000
Projection: AMG Zone 52 (AGD 84)
Otter Gold NL

EL9538
1st regional aeromagnetics

Figure 5

Relinquished Ground 2002
Figure 7

Relinquished Ground 2002

Otter Gold NL

Surface Sample Location

EL9538

Scale: 1:75000
Projection: AMG Zone 52 (AGD 84)
EL9538 surface sampling
Au (ppb) - ZARG Analysis

- 5 to 5,000
- 1 to 5
- 0.5 to 1
- 0.2 to 0.5
- 0.1 to 0.2
- 0.05 to 0.1
- 0 to 0.05

Otter Gold NL

Surface Sample Results

Figure 8

Relinquished Ground 2002
Figure 9

Relinquished Ground 2002
5.0 REFERENCES


Muir, M., 2001, Annual Report For EL’s 8602, 9537, 9538, 9539, 9540, 9538 & 9761 Tanami Region, NT, Unpublished Company Report