PEGASUS GOLD
AUSTRALIA PTY LTD

MCN 3668 - 3675
STOW WEST
MOUNT TODD DISTRICT, NT

FINAL REPORT ON EXPLORATION

Distribution:
NTDME  x 1
Pegasus Mt Todd  x 1

Author : Pat Manouge
Date    : January 1997
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1. **INTRODUCTION**

Mineral Claims N3668 - 75 (Stow West) were granted to Billiton Australia Gold Pty Ltd (Billiton) on 28 August 1990 for a period of five (5) years. Initially, Billiton, as manager and operator of the Mt. Todd Joint Venture between Billiton (50%) and Zapopan NL (now Pegasus Gold Australia Pty Ltd) (50%), conducted exploration within the claims. Zapopan acquired full ownership of the claims on 7 April 1992. An application by Pegasus for renewal of the claims was submitted in 1995.

On 25 October 1996 Mineral Claims N3668 - 75 were surrendered (with the renewal application still pending) and incorporated into the new Exploration Licence, EL9734, under the Mt. Todd Project Further Agreement. This report summarises all exploration activities conducted by Billiton and Pegasus within MCN’s 3668 - 75 during the period of tenure.

2. **LOCATION AND ACCESS**

MCN’s 3668 - 75 (Stow West) are located approximately 45km north-northwest of Katherine and 10km northeast of the Mt. Todd Gold Mine (see Figure 1). Access is via gravel tracks north from the Edith Falls Road, then 4WD tracks to within 1km of the claims.

Topography within MCN’s 3668 - 75 is rugged, ranging from 150 - 260 metres above sea level, and is steeply incised by creeks and drainages. The boundary of the Katherine River (Nitmuluk) National Park lies 4km to the east of the claims.

The claims are located approximately 4km south of the abandoned Driffield Mining Centre which historically was intensely prospected for gold mineralisation. Small scale underground mining at Driffield produced 5,300oz of gold, and significant unrecorded gold production has been won from alluvial sources.

3. **REGIONAL GEOLOGY**

The Stow West claims are located within the southeastern portion of the Early Proterozoic Pine Creek Geosyncline. Metasediments, granitoids, basic intrusives, acid and intermediate volcanic rocks occur within this geological province (Figure 2).

Within the Mt. Todd district, the oldest outcropping rocks are assigned to the Burrell Creek Formation. These rocks consist primarily of interbedded greywackes, siltstones and shales of turbidite affinity, which are interdispersed with minor volcanics. The formation contains slump structures, flute casts, graded beds and occasional crossbeds.

Rocks of the Burrell Creek Formation have been folded about northerly trending F1 fold axes. The folds are open to closed style and have moderate to steep westerly dipping axial planes, with some rocks being overturned. A later north-south compression event
Fig. 2  Regional Geological Setting
resulted in east-west trending open style upright D2 folds.

Metasediments of the Burrell Creek Formation outcrop throughout the mineral claims. Ridges and creeks host exposures of massive greywacke with minor siltstone and rare laminated shales. These sediments have been folded into a series of south-plunging open folds with axial planes trending 000° - 020° magnetic.

Moderate quartz veining is apparent, often occurring as massive, white, bucky veins striking 340° - 020°M, subparallel to the axial planes and limbs of the fold structures. Rare thin stockwork or sheeted quartz veining is also observed.

4. EXPLORATION HISTORY

4.1 Previous Exploration

The area covered by MCN’s 3668 - 75 was previously explored by Eupene Exploration Enterprises Pty Ltd for Driffield Mining on Exploration Licence 2044. No sampling was undertaken within the area of the claims, but sparse stream sediment sampling immediately to the east of the area produced very poor results.

4.2 Billiton Exploration

Billiton completed a programme of stream sediment sampling, airborne magnetic and radiometric surveying and limited geological reconnaissance.

A total of 11 stream sediment samples were collected from drainages in the claims. Samples (approximately 5kg) were sieved to -2mm in the field and assayed for Au utilising the BLEG technique with a 0.1ppb Au detection limit. In addition a -80# fraction sample was collected and analysed for Cu, Pb, Zn by AAS methods, and As, Sn by XRF methods.

Initial results reported several weakly anomalous values including 8.55ppb Au and 3.95ppb Au. Repeat and additional sampling did not support these initial results, with repeat samples returning 0.3ppb and 0.6ppb respectively. No anomalous Cu, Pb, Zn, As or Sn values were detected. See Figure 3 for sample location and Au assay results.

MCN’s 3668 - 75, as part of a much larger regional airborne geophysical survey, was flown for magnetic and radiometric data. Total magnetic intensity contours for the Stow West claims (Figure 4) show a relatively flat response while, according to Billiton, radiometric data defines the contact between the Burrell Creek and Kombolgie Formations (Figure 5).
4.3 Pegasus Exploration

Exploration completed by Pegasus comprised stream sediment sampling, rock chip sampling, geological reconnaissance, and acquisition and brief analysis of airborne geophysics.

Duplicate stream sediment sampling was undertaken to check the inconsistent values generated by the Billiton programme, as well as increasing sample density. Approximately 5kg of material from 3 sites across each drainage was sieved to -2mm in the field. Samples were assayed by Assay Corp in Pine Creek for Au using the BLEG technique for a 0.1ppb detection limit. In addition a -80# fraction was produced at the laboratory and analysed for Cu, Pb, Zn and As using AAS methods.

The stream sediment sampling returned low assays with maximum values of 1.6ppb Au, 22ppm Cu, 22ppm Pb, 53ppm Zn and 44ppm As. Check sampling of the inconsistent Billiton stream samples returned low assays in the same order of magnitude as the Billiton repeat sampling. All stream sediment sample locations and Au results are shown on Figure 3, with full analytical results listed in Appendix 1.

During geological reconnaissance and drainage sampling 3 rock chip samples were collected from quartz vein stockworks. Samples were assayed by Assay Corp for Au only using fire assay techniques for a 0.01ppm detection limit. Rock chip sampling failed to return any anomalous values, with a peak of only 0.03ppm Au. Sample locations are shown on Figure 3 and analytical results are listed in Appendix 2.

A regional airborne geophysical survey, including coverage of MCN’s 3668 - 75, was completed for Zapopan NL (now Pegasus Gold Australia Pty Ltd) by World Geoscience during June 1995 at 50m flight line spacing. Specifications of the survey are detailed below:

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<th>Aircraft</th>
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<td>Resolution : 0.001 nano Tesla</td>
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<td>Cycle Rate : 0.1 seconds</td>
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<tr>
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<td>Sample interval : 6.0 metres</td>
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<td>Packets Perm. 1000 256 Channel</td>
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<td>Volume : 16.56 litres</td>
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<td>Packets Pads 1000 digital acquisition system</td>
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<td></td>
<td>11 Channel RMS GR33A Chart Recorder</td>
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- Zapopan 1995 BLEG Au(ppb)
- Zapopan 1995 Rock Chip Au(ppm)
- Billiton BLEG Au(ppb) Phase 1
- Billiton BLEG Au(ppb) Phase 2
SURVEY SPECIFICATIONS

AIRCRAFT

VH-NDI Cessna 206g Stationair II

MAGNETOMETER

Split boom cesium omnidirectional v-201

RESOLUTION 0.04 nanotesla

CYCLE RATE 0.3 second

SAMPLE INTERVAL 15 metres

SPECTROMETER

Geometrics Explorer 9 magnetometer

VOLUME 16.70 litres

CYCLE RATE 1.2 second

SAMPLE INTERVAL 62 metres

DATA ACQUISITION

8 channel multichannel ge 6700 chart recorder

nuradale digital acquisition system

headset hoarder 3025 computer

FLIGHT LINE SPACING

TRAVERSAL LINES 300 metres

TE LINES 3000 metres

FLIGHT LINE DIRECTION

TRAVERSAL LINES 060-270 degrees

TE LINES 000-180 degrees

SURVEY HEIGHT

180 metres

no terrain clearances

FLIGHT PATH RECOVERY

onto n.g. controlled recovery planes

MCN3668-75
SURVEY SPECIFICATIONS

AIRCRAFT
VH-NDI Cessna 206g Stationair II

MAGNETOMETER
Spelham 3000 m/sabre V201

RESOLUTION
0.04 nanotesla

CYCLE RATE
0.3 second

SAMPLE INTERVAL
15 metres

SPECTROMETER
Geometrics Explorer 6000B

VOLUME
16.78 litres

CYCLE RATE
1.2 seconds

SAMPLE INTERVAL
62 metres

DATA ACQUISITION
A channel molnaba mi E7000 chart recorder
AERODE digital acquisition system
Hewlett Packard 9825 computer
FLIGHT LINE SPACING

TRaverse LINES
300 metres

TR I LINES
3000 metres

FLIGHT LINE DIRECTION

TRaverse LINES
090-570 degrees

TR I LINES
090-180 degrees

SURVEY HEIGHT
80 metres - mean terrain clearance

FLIGHT PATH RECOVERY
onto m.g. controlled recovery photos
Flight Line Spacing  Traverse Lines: 50 metres  
Tie Lines: 984 metres  
Flight Line Direction  Transverse Lines: 270 - 090 degrees  
Tie Lines: 000 - 180 degrees  
Survey Height  60 metres - mean terrain clearance  
Navigation  GPS satellite positioning system  

See Figure 6 for total field magnetic contours.

Brief analysis of the aeromagnetic data suggested the existence of thin, weakly magnetic horizons slightly offset by northwest striking dextral faults. The intersections of the weakly magnetic bodies and the faults are conceptual targets that require further evaluation.

5. REHABILITATION

Ground disturbance was kept to a minimum during the tenure of MCN’s 3668 - 75. No dozing or clearing of tracks was undertaken. Geochemical sampling was undertaken using a light 4WD vehicle, and hence rehabilitation is not required at this stage.

6. CONCLUSIONS AND RECOMMENDATIONS

The initial exploration of MCN’s 3668 - 75 by Billiton using stream sediment sampling produced variable results between the original and repeat sampling programmes.

First stage evaluation of the Billiton results by check stream sediment sampling, rock chip sampling and geological reconnaissance returned background values. Further investigation of the weakly anomalous Au assays and conceptual geophysical targets from the airborne magnetic survey is required. Exploration of the claim areas will continue under the new Exploration Licence (EL9734).
PEGASUS GOLD
AUSTRALIA PTY LTD

MCN 3668 - 3675
STOW WEST
MOUNT TODD DISTRICT, NT

APPENDIX 1

STREAM SEDIMENT ANALYSES
ASSAY CODE: AC 22113

Zapopan NL - Mt Todd

Client Reference: 1902
Project:
Cost Code:

Date Received: 09/06/1995
Number of Samples: 14

Sample Preparation

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<th>Detection Limit</th>
<th>Data Units</th>
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<tr>
<td>Zn</td>
<td>AAS/MA-3</td>
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<tr>
<td>As</td>
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<td>Prec. ± 10%</td>
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<td>ppm</td>
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Authorisation: Ray Wooldridge
Report Dated: 21/06/1995
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<th>Cu (ppm)</th>
<th>Pb (ppm)</th>
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PEGASUS GOLD
AUSTRALIA PTY LTD

MCN 3668 - 3675
STOW WEST
MOUNT TODD DISTRICT, NT

APPENDIX 2
ROCK CHIP ANALYSES
**ASSAY CODE:** AC 22092

**Zapopan NL - Mt Todd**

**Client Reference:** 1906

**Project:**

**Cost Code:**

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**Date Received:** 08/06/1995

**Number of Samples:** 8

**Sample Preparation**

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<th>Data Units</th>
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**Authorisation:** Ray Wooldridge

**Report Dated:** 11/06/1995
ASSAY CODE: AC 22092

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