HARMONY GOLD OPERATIONS LIMITED

ANNUAL EXPLORATION REPORT

SEL9927

MAUD CREEK PROJECT

YEAR ENDING 30 NOVEMBER 2003

1:250,000 Map Sheet Katherine SD53-9
1:100,000 Map Sheet Katherine 5369

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SUMMARY


During the previous year (2002) exploration work on SEL 9927 (Maud Creek) comprised a photogeological mapping and remote sensing interpretive study that included the whole Maud Creek project area. Concurrently diamond and RC drilling was carried out on adjacent MCNs that comprise the core tenements of the Maud Creek project.

During the year ended 30th November 2003 work was restricted to resource reviews of the drilling programs (2001-2002) within newly granted MLN1978. No new exploration work was conducted in SEL9927.

Activity within the Maud Creek project tenements broadly depends on the outcome of economic studies of the Main Zone gold deposit. This deposit is a large resource with attractive grades, however there is a refractory component in the fresh mineralisation that needs addressing to achieve economic outcomes.
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1.0 INTRODUCTION

Hill 50 Gold NL purchased the Maud Creek project tenements during 2001 and undertook diamond core drilling and reverse circulation drilling programs at the Main Zone gold deposit in tenements contiguous with SEL 9927. Within the SEL Hill 50 Gold NL conducted geological reconnaissance and rock chip sampling.

Hill 50 Limited was purchased by Harmony Gold Operations Limited in mid 2002. Harmony has continued the drill evaluation of the project and also this year commissioned geological studies of the wider area around Maud Creek including SEL 9927.

2.0 TENEMENT STATUS

SEL 9927 was substituted for EL7775, 8018, 9131, 9132, 9481, and 9639. It comprises 19 blocks and was granted on 1st December 1997 for four years. A renewal was granted to Hill 50 Gold NL with the 5th year commencing on December 1st 2002. See Fig 2. Also Fig 3 at 1:20,000.

The expenditure covenant for 2003 is $26,950.

3.0 LOCATION AND ACCESS

The Maud Creek Project is located about 15km east of the town of Katherine, NT.

The preferred access is via the Stuart Highway, past Tindal airbase to a point 20km south east of Katherine. Turn left onto Ross Road travelling towards the radar dome and thence working northerly, past the present Maud Creek Station homestead along station firebreaks and fence line roads. This was the route used by haul trucks when Main Zone was mined in 2000.

Alternative but more obscure 4WD access is via the all-weather bitumen Katherine Gorge Road to the old Maud Creek Station homestead then via a firebreak track that follows Maud Creek upstream to the old Maud Creek Goldfield adjacent to the Main Zone Deposit.

Off-track access is generally reasonable except for areas covered by Kombolgie Formation or limestone units of the Daly Basin sediments (refer Figure 3). Areas of black soil and several well-incised stream channels severely limit access during the wet season. Due to seasonal thick vegetation re-growth, access can be difficult in some areas for a month or so after the wet.

4.0 GEOLOGY
The geology of the Maud Creek project area comprises folded Lower Proterozoic metasedimentary sequences. These are unconformably overlain by shallow SW dipping Cambro-Ordovician limestone and basalt flows of the Daly River Basin sequence and by scarp-forming arenaceous sediments of the Mid Proterozoic Kombolgie Sandstone.

Erosion windows in the Maud Creek project area reveal basement metasedimentary strata of the Katherine Group and underlying volcanioclastics and dolerite of the Edith River Group. Minor exposures of Finniss River Group phyllites, felsic volcanics and conglomerates are exposed in the south, adjacent to the Cambrian onlap.

At the historic Maud Creek gold and copper workings mineralisation is associated with sills of Maud Dolerite that have been faulted against sediments and felsic tuffs of the Tollis Formation.

At the Main Zone gold deposit, an east dipping thrust fault has positioned the mafic Plum Tree Creek Volcanic Member against Tollis Formation sediments.

5.0 PREVIOUS EXPLORATION

Hill 50 Gold NL commenced work in the licence in mid 2001 following acquisition of the Maud Creek tenement group from Dolomatrix International P/L.

A literature review of the tenement shows that the following activity was carried out by previous title-holders. Most activity has been carried out within MCNs that cover the Main Zone gold deposit, the central area of the Maud Goldfield and the Chessman prospect area to the north west. The SEL subject to this report is peripheral to these mineralised areas.

5.1 Historical Activity

The Maud Creek Goldfield was discovered about 1890 and a battery was set up, however, the field was virtually abandoned by 1891. The field re-opened between 1932 and 1934, but due to treatment difficulties, most likely caused by the fine particle size of the gold and the high sulphide content of the ore, only a small amount of gold was recovered.

Approximately 400t of ore was produced from some 20 shallow shafts and potholes, with an average grade of about 30-45 g/t Au. Shafts of 6m to 12m depth with drives 15m to 30m in length were common. The gold was mainly hosted by Maud Dolerite in quartz-sulphide veins with haematitic selvedges, varying from a few cm to a metre in width. The veins trended both north west parallel to Maud Creek, as well as east-west in the area between Gold Creek and Maud Creek.

5.2 Modern Exploration SEL9927
Between **1966 and 1973** several companies explored the Maud Creek area for copper and uranium. Drilling of siliceous and gossanous breccias intersected low, albeit anomalous, concentrations of copper and molybdenum and numerous pyritic zones. However, the potential for gold was not evaluated.

During **1985 and 1986** C.S.R. was granted several exploration licences covering the Maud Creek Goldfield and adjacent areas. C.S.R.’s objective was to explore for Kalgoorlie-style gold deposits in the mafic rocks.

Placer purchased all of C.S.R.’s Australian mineral assets in August **1988** and continued exploration of the project until **1992**. [In the period 1990-1991 Placer discovered and first-stage drilled the Western Shear Zone containing the Main Zone [Gold Creek] gold deposit].

In **1993/94** work completed is detailed in Berthelesen and Goulevitch (1994), which also includes work on the contained MCN’s 4218 - 4224.

Initial exploration consisted of grid establishment and reconnaissance RAB drilling.

During **1994/95** exploration completed (including MCN’s 4218-4224) is outlined in Goulevitch (1995). RAB drilling was carried out to test structures identified from aeromagnetic data collected by CSR Limited in 1985. This drilling programme was not completed due to heavy rains.

For the **1995/96** year management of exploration programs passed from Norminco to Kalmet Resources. The aeromagnetic data collected in 1985 by CSR Limited was reassessed, with the aim of identifying N-S trending structures similar to the structure hosting the Main Zone deposit (Forbes, 1996). Stephenson (1992) and Forbes (1993) give a thorough review of previous exploration.

Kalmet Resources NL and Kilkenny Gold NL carried out extensive work on SEL9927. This work included:

**1996-1997**
Surveying and gridding
Airborne magnetic and radiometric interpretation
Geological mapping
Aerial photography
Soil sampling and stream sediment sampling
RAB drilling.

**1997-1998**
In late 1997 to early 1998 SRK Consulting carried out a comprehensive geological, airmagnetic and radiometric interpretation of the Maud Creek region for Kilkenny Gold NL.
Geological mapping
Soil sampling 59 samples.
RC drilling 63 holes for 3493m
1998-1999
Geophysical interpretation and geological re mapping.

1999-2001
[The Main Zone deposit was mined by open pit methods to the transitional/primary interface by AngloGold during 2000. It was trucked and treated at the Union Reef mill.]

Hill 50 Gold NL conducted a complete review of previous exploration that led to the identification of five gold targets, one of which, “Runways”, is within SEL 9927.

This target was visited in the field during the year and it appears similar in model to the Maud Creek Main Zone, being a lithological change on a north-south corridor. It also appeared to be a possible domal structure 0.5km by 0.8km.

Reconnaissance of the structure on 8401900mN from 22800mE showed the central part was underlain by dolerite. This passed eastwards into a N-S shear zone with quartz veining over 100m width. This in turn passed into sheared tuff with quartz veining.

A total of 46 rock chip samples were collected from the SEL. The best value from the Runways prospect was 110ppb gold. The area in question is soil-anomalous in the range 2ppb to 39ppb Au. A study of the Landsat image suggested that N-S faulting has dextrally displaced and segmented the structure.

At 8400806mN 226689mE the best rock chip value of the program assayed 0.85g Au/t.

It was concluded the area needs more geochemical sampling and mapping to define drilling targets and access would be best served by a maneuverable RAB hammer rig.

2001-2002

Harmony Gold Operations P/L commissioned Stephen Snodin to carry out a photogeological interpretation map of 280 sq km in the Maud Creek area. Three days of field orientation were employed prior to the work.

He utilised existing 1:25,000 aerial photography, Landsat imagery and airborne magnetics to create his interpretation.

He concluded that extensions of the Main Zone to the north and south of the deposit comprised priority targets. The latter extends south into SEL9927 under thin Cambro-Ordovician basin cover.

He also identified ten other targets of lesser priority for exploration follow up.
The text and plan of his report is was reproduced in Appendix One of the 2002 annual report.

6.0 EXPLORATION FOR THE PERIOD ENDING NOVEMBER 30th 2003

During the year exploration activity was focused on the Main Zone gold deposit where a technical review and model was completed using all available RC and diamond drilling data.

No new exploration activity was carried out on surrounding SEL 9927 during the period.

7.0 EXPENDITURE STATEMENT SEL 9927 (year to 30/11/03)

Exploration expenditure for the period was $725.00 comprising reporting and review.

8.0 Proposed Work Program 2004

The future of the Maud Creek project as a whole relies heavily on economic outcomes for the Main Zone gold deposit. Extensive drilling programs over the 2001 and 2002 field seasons by Harmony have proved a substantial gold resource down plunge from the oxide open pit mined by AngloGold in 2000. The known refractory characteristics of this resource need to be resolved satisfactorily before an economic outcome can be predicted.

In light of this, Harmony at this stage has focused on developing the high grade Zapopan underground deposit at Brocks Creek as part of its regional strategy. As a consequence, and due to a difficult Australian gold price, work on the Maud Creek tenements has been deferred for the time being.

The program for SEL 9927 in 2004 is for low-key technical reviews, reporting and rehabilitation where required.

Expenditure is expected to be $1,200.00

9.0 CONCLUSIONS

SEL 9927 is extensively mantled to the south by Lower Palaeozoic sediments and volcanic flows that have onlapped the prospective Lower Proterozoic Tollis Formation and Plum Creek Volcanic Member.

Several structural features possibly associated with gold mineralisation have been identified as a consequence of photogeological, magnetic and radiometric interpretations by previous workers (SRK Consulting, Kalmot Resources NL, Stephen Snodin.) Some of these target structures have already had some degree of exploration in the form of drilling and geochemical work.
It is recommended that identified structural or other types of target that have not yet received sufficient exploration work should be individually reviewed. These should be prioritised in terms of location and degree of younger cover and exploration programs designed to test them.
REFERENCES


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2000 Payne, N. Geology of the Maud Creek Gold Deposit and Maud Creek Resource reconciliation. For AngloGold.


2002 October, Stephen Snodin, Photogeological Interpretation of the Maud Creek Area, Northern Territory for Harmony Gold Operations Limited.

1991 Stephenson J. Work Completed on the Maud Creek Project area, EL4669 Mt Shepherd, EL4913 Dorothy Creek, and EL4914 Maud Creek, for Placer Exploration Limited.