

HARMONY GOLD MINING CO LTD

Form 6-K

October 22, 2010

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO
RULE 13a-16 OR 15d-16 UNDER THE SECURITIES
EXCHANGE ACT OF 1934

For 22 October 2010

**Harmony Gold Mining Company
Limited**

Randfontein Office Park

Corner Main Reef Road and Ward Avenue

Randfontein, 1759

South Africa

(Address of principal executive offices)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

Form 20-F Form 40-F

(Indicate by check mark whether the registrant by
furnishing the information contained in this form
is also thereby furnishing the information to the
Commission pursuant to Rule 12g3-2(b) under the
Securities Exchange Act of 1934.)

Yes No

More significant exploration drill hole intercepts at Golpu – a world-class copper-gold porphyry

Johannesburg, Friday, 22 October 2010. Harmony Gold Mining Company Limited (Harmony) is pleased to announce further significant exploration drill hole intercepts at the Golpu porphyry copper-gold deposit at the Wafi-Golpu Project in Papua New Guinea (PNG), which is part of the company's joint venture with Newcrest Mining Limited (Newcrest).

During the past quarter Harmony released an updated Statement of Reserves and Resources which included an appreciable increase in the Wafi-Golpu Resource to 16Moz of gold and 4.8Mt of copper. Additional exploration drilling at Golpu undertaken during the quarter has further extended the deposit with significant intercepts as follows:

- WR347 799m@1.43g/t Au, 1.90% Cu from 883m including 616m @ 1.79g/t Au, 2.34% Cu from 910m

- WR348 561m@0.51g/t Au, 0.99% Cu from 179m including 209m@0.89g/t Au, 1.88% Cu from 359m

- WR349 327m@0.39g/t Au, 1.23% Cu from 194m including 117m @0.63g/t Au, 2.09% Cu from 262m

WR347 was drilled as a 100 metres step-out hole on the northern margin of the existing resource. The intercept correlates with a zone of bornite mineralisation and represents the highest grade results ever returned from drilling at the project. This intersection significantly extends the higher grade core of the Golpu resource to the north with the orebody remaining open in this direction and at depth.

WR349 indicates that the high grade porphyry mineralisation extends to the north and closer to the surface than previously modelled.

As a result of this drilling, the Wafi-Golpu exploration target 1 has been upgraded to 30Moz of gold and 8Mt of copper based on a tonnage range between 900 and 1,400 million tonnes. This targets growth of epithermal deposits to between 100 and 200 million tonnes at a grade range between 1.5g/t and 2.0g/t plus porphyry deposits to a range of 800 and 1,200 million tonnes at grades between 0.7 and 1.1% copper and 0.5g/t to 0.9g/t gold.

Issued by Harmony Gold Mining Company Limited

22 October 2010

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Furthermore Harmony is pleased to announce that the Wafi-Golpu concept study was completed during August 2010. The concept study was building on previous studies and was updated with new information and enhanced development approaches during the study. The concept study demonstrates that a very robust business case exists for the project and therefore both Harmony and Newcrest have approved that the project progresses to the pre-feasibility study phase.

The main value drivers, for which several options will be considered during the pre-feasibility study, are:

- Further increasing the tonnage and grade of the resource;
- Optimise the production rates from the panel caves to suit the footprint and draw heights;
- Optimise the gold recovery of the refractory Wafi ore bodies; and
- Positioning of infrastructure, waste dumps and tailings storage facilities in such areas to minimize the impact on the environment and to optimise the costs

The joint venture study team is targeting completion of the pre-feasibility study towards the end of 2011 or early 2012.

The Pre-Feasibility Study costs, which includes the construction of a new road, the establishment of a camp and associated infrastructure and the commencement of underground exploration access (decline shaft) is estimated to be US\$150 million. Approval for the construction of the access road and establishment of a camp and associated infrastructure has been obtained from the local landowners and construction of the new road will commence early during 2011.

Harmony CEO Graham Briggs says, "We can hardly contain our excitement each time new drilling results are received. The latest intercepts, together with the very positive outcome of the concept study emphasise the potential for the joint venture to establish another high quality, world-class operation in Papua New Guinea."

Ends.

Note: The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore

Reserves. The estimates of Ore Reserves and Mineral Resources in this statement were prepared in accordance with the

standards set out in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – The

JORC Code" (December 2004) as published by the Joint Ore Reserve Committee of the Australian Institute of Mining and

Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC) The JORC Code is the accepted

reporting standard for the Australian Stock Exchange (ASX).

The Exploration Results, Mineral Resources and Ore Reserves in the summary tables and are based on information compiled by

Michael Smith who is corporate member of the Australian Institute of Mining and Metallurgy and who has relevant experience of a

'competent person' as defined by the code for reporting of Mineral Resources and Ore Reserves in relation to the mineralisation

being reported on and consents to the inclusion in the report of the matters based on his information in the form and context in

which it appears. Michael Smith is a full-time employee of Harmony PNG Service Pty Ltd

1

Refer to

www.harmony.co.za

for details on Wafi Resources and the Golpu exploration target guidance.

2

100% share.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: October 22, 2010

Harmony Gold Mining Company Limited

By:

/s/

Hannes Meyer

Name:

Hannes Meyer

Title: Financial Director