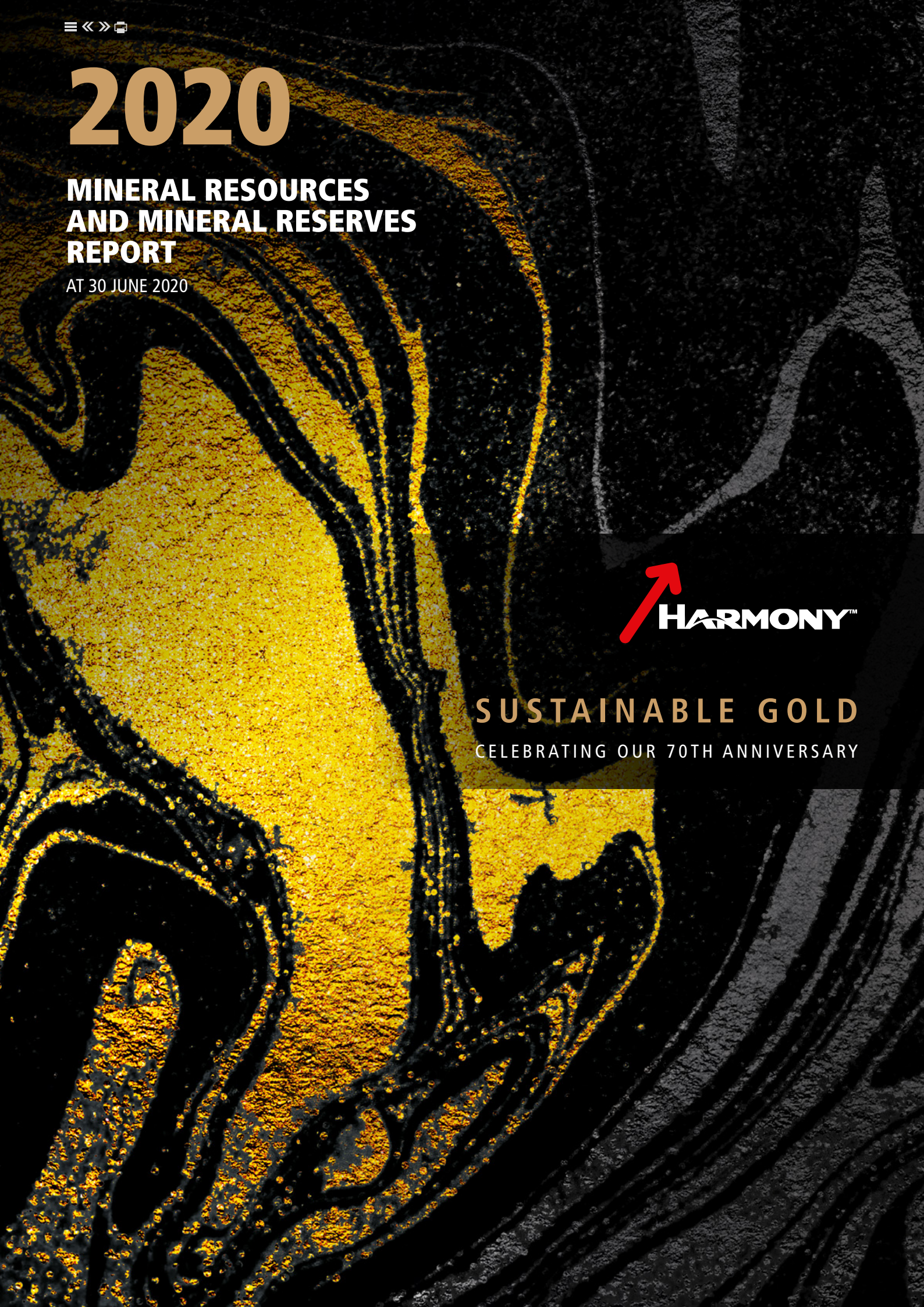
2020

MINERAL RESOURCES AND MINERAL RESERVES REPORT

AT 30 JUNE 2020



HARMONY™

SUSTAINABLE GOLD

CELEBRATING OUR 70TH ANNIVERSARY

Tshepong Operations

OUR 2020 SET OF REPORTS INCLUDES:

INTEGRATED ANNUAL REPORT 2020

MINERAL RESOURCES AND MINERAL RESERVES 2020

REPORT TO SHAREHOLDERS 2020

FINANCIAL REPORT 2020

ESG REPORT 2020

TCFD REPORT 2020

OPERATIONAL REPORT 2020

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These reports together with other supporting documents are available online at *www.har.co.za*. Other additional information can be found at *www.harmony.co.za*.

OTHER REPORTS

Form 20-F

Annual report filed with the United States Securities and Exchange Commission, in compliance with the listing requirements of the New York Stock Exchange

Global Reporting Initiative Content Index

An index of the indicators reported in terms of the Global Reporting Initiative

REFERENCE

A full glossary of terms is available on the website, *www.har.co.za*

OUR REPORTS ONLINE

Harmony's full set of 2020 reports and supporting documents are available at *www.har.co.za*.

The electronic reports are interactive pdfs, with links to sections within the document and to external websites. The interactive links are indicated by text in red italics.

ABOUT THIS REPORT

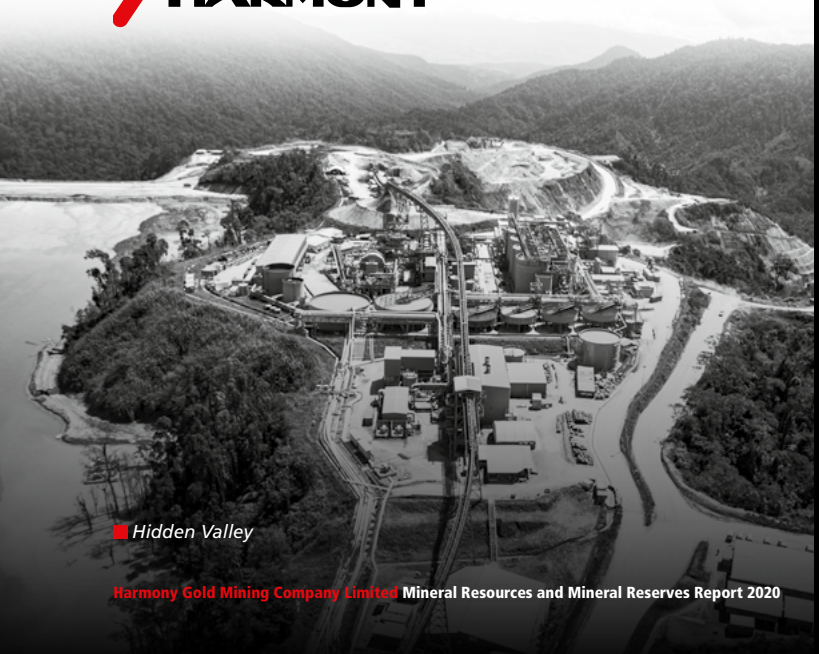
This statement of Harmony's Mineral Resources and Mineral Reserves (South Africa and Papua New Guinea) as at 30 June 2020 is produced in accordance with the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC) and section 12.11 of the JSE Listings Requirements (as updated from time to time).

In reporting on our Mineral Resources and Mineral Reserves, certain terms are used, such as 'Measured', 'Indicated' and 'Inferred' Mineral Resources, which the United States' Securities and Exchange Commission guidelines strictly prohibit US-registered companies from including in their filings. United States investors are urged to consider the disclosure in this regard in our Form 20-F which is available on our website at *www.harmony.co.za/investors/reporting/20f*.

Note:

- Unless otherwise stated, Harmony's equity interest is 100%
- The convention adopted in this report is that the Measured and Indicated Mineral Resource estimates are reported inclusive of the portion converted to Mineral Reserves
- Throughout this report, "$" or "dollar" refers to US dollar, unless otherwise stated
- "K" refers to kina, the currency of Papua New Guinea
- "Moz" refers to million ounces, "Mt" refers to million tonnes and "Mlb" refers to million pounds
- All production volumes are in metric tonnes (t), unless specifically stated as being imperial tons
- Rounding of figures may result in minor computational discrepancies in the Mineral Resource and Mineral Reserve tabulations
- Where Harmony has included the Inferred Mineral Resource in a feasibility study, this is disclosed under the relevant project, together with an explanation of the reason and the expected impact
- While our reporting currency is the South African rand, the US dollar equivalents of significant financial metrics, together with the applicable percentage movements, are also provided to aid sector and peer comparisons.

HARMONY™



Hidden Valley

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OUR BUSINESS

Harmony, a gold and copper mining and exploration company, operates in South Africa and Papua New Guinea, one of the world's premier new gold-copper regions.

With 70 years in the industry, Harmony is an experienced emerging market gold miner and the largest gold producer in South Africa. We are also a significant operator of gold tailings retreatment facilities.

Market capitalisation
as at 30 June 2020
R43.3 billion
(US$2.5 billion)

Headquartered in Randfontein, South Africa, Harmony has its primary listing on the Johannesburg Stock Exchange (HAR). It also has an American Depositary Receipt programme that is listed on the New York Stock Exchange (HMY). At 30 June 2020, our market capitalisation was R43.3 billion (US$2.5 billion) (30 June 2019: R17.1billion; US$1.2 billion).

Hidden Valley

CORPORATE PROFILE

OUR PURPOSE

To be a global, **sustainable gold producer,** with a large copper footprint, creating shared value for all stakeholders

OUR MISSION

To create value by operating safely and sustainably, and by growing our margins

OUR IMPACT

At Harmony, we understand that our activities and the conduct of our business impacts the lives of the people we employ, the communities that surround our mines and the environment.
This impact has economic and social implications for our stakeholders and for the countries in which we operate.
In line with our purpose, we strive to ensure that, on balance, our contribution is positive and that, once mining ceases, our legacy is enduring.

SHAREHOLDERS

Our largest shareholder is African Rainbow Minerals Limited (ARM) which has a stake of 12.38% in Harmony. Our remaining shareholders are geographically diverse and include some of the largest fund managers globally. By far the largest shareholder base is in the United States (more than half), followed by South Africa.

WHERE WE OPERATE

South Africa

Production:

~1.1Moz (87%)

Located on the Witwatersrand Basin and the Kraaipan Greenstone Belt, our South African operations accounted for 62% of group Mineral Resources (gold and gold equivalent ounces) and 48% of group Mineral Reserves at year end

UNDERGROUND

West Rand: Doornkop / Kusasalethu

Klerksdorp goldfield: Moab Khotsong

Free State*: Tshepong operations / Bambanani / Target 1 / Joel / Masimong

SURFACE

North West: Kalgold

Free State: Surface sources**

Papua New Guinea

Production:

~157 000oz (13%)

Located on the New Guinea Mobile Belt, in the Morobe Province, our Papua New Guinea operation accounted for 38% of group Mineral Resources (gold and gold equivalent ounces) and 52% of group Mineral Reserves at year end

Hidden Valley (open-pit gold and silver mine)

Wafi-Golpu (copper-gold joint venture – 50%)

Multiple exploration areas

* *Closure is currently underway at Unisel, where stoping activities are scaling down*

** *Includes the Tswelopele Beneficiation Operation (Proprietary) Limited in which Harmony has a holding of 70%*

OUR VALUES

No matter the circumstances, safety is our key value and main priority

We are all accountable for delivering on our commitments

Achievement is core to our success

We are all connected as one team

We uphold honesty in all our business dealings and communicate openly with stakeholders

COMPLIANCE AND SUMMARY

AS AT 30 JUNE 2020

Harmony's statement of Mineral Resources and Mineral Reserves (South Africa and Papua New Guinea) as at 30 June 2020 is produced in accordance with the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC). It should be noted that Mineral Resources are reported inclusive of Mineral Reserves.

Harmony uses certain terms in the summary such as 'measured', 'indicated' and 'inferred' resources, which the United States' Securities and Exchange Commission (SEC) guidelines strictly prohibit companies registered in the United States from including in their filings with the commission. United States investors are urged to consider the disclosure in this regard in our Form 20-F which will be available on our website at *https://www.harmony.co.za/invest/annual-reports* on 29 October 2020.

REPORTING CODE AND COMPLIANCE

The SAMREC Code was developed and established in 1998 by the South African Institute of Mining and Metallurgy and is the recommended guideline for reporting on Exploration results, Mineral Resources and Mineral Reserves for companies listed on the JSE.

The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in its Listings Requirements later that year; this was similarly the basis for the JSE Ongoing Reporting Requirements promulgated in 2005. The SAMREC Code was reviewed in 2004, updated in 2007 and amended in July 2009. The latest update of the SAMREC Code was launched on 19 May 2016 with this version superseding previous versions. In addition, Section 12.11 of the JSE Listings Requirements was subsequently updated with the revised SAMREC and SAMVAL Codes that came into effect on 1 January 2017.

The latest edition of the SAMREC Code includes an updated Table 1 template, which provides an extended list of the main criteria to be considered and reported when reporting on Exploration Results, Mineral Resources and Mineral Reserves. In complying with the principles of the code, comments relating to the items in the relevant sections of Table 1 must be provided on an 'if not, why not' basis within the competent person's report. Guidelines for the compilation of Table 1 are for (i) the first-time declaration of exploration results, a Mineral Resource or a Mineral Reserve, and (ii) instances where this information has changed materially since last publicly reported for significant projects.

Reporting on an 'if not, why not' basis ensures that it is clear to an investor or other stakeholders whether items have been considered and deemed of low consequence or are not yet addressed or resolved. Harmony has adopted the compilation and updating of Table 1 as a standard to complement internal reports.

Harmony has written confirmation from the lead competent person that the information disclosed in this report is compliant with the SAMREC Code and, where applicable, with the relevant JSE Section 12 and SAMREC Table 1 requirements, and that it may be published in the form, format and context in which it was intended.

In reporting our Mineral Reserves, distinct cognisance has also been taken of Industry Guide 7 of the United States' Securities and Exchange Commission.

OUR STRATEGY

Harmony's strategy is to produce safe, profitable ounces and increase margins. This includes delivering safely on our operational plans, reducing costs and improving productivity. Harmony's growth journey entails acquiring higher grade assets and ensuring a pipeline of mineral reserves. In FY17, Harmony invested in a life-of-mine extension at Hidden Valley and in FY18 acquired and integrated the higher-grade Moab Khotsong operations. The transaction to acquire the remainder of AngloGold Ashanti's South African assets – Mponeng and Mine Waste Solutions – was concluded in September 2020 and we took ownership of them on 1 October 2020.

ASSUMPTIONS

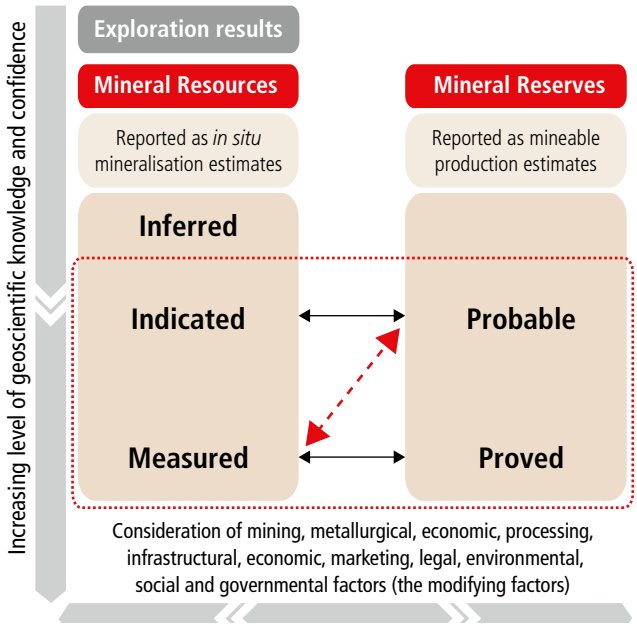
In converting Mineral Resources to Mineral Reserves, the following commodity prices and exchange rates were applied:

- **A gold price of US$1 350/oz**
- **An exchange rate of R/US$14.51**
- **The above parameters resulted in a rand gold price of R630 000/kg for the South African assets**
- **The Hidden Valley mine and the Wafi-Golpu project used commodity prices of US$1 350/oz Au, US$17.00/oz Ag, US$10.00/lb Mo and US$3.00/lb Cu at an exchange rate of US$0.72 per A$**
- **Gold equivalent ounces are calculated assuming the following: US$1 350/oz Au, US$3.00/lb Cu and US$17.00/oz Ag, and a 100% recovery for all metals**

Note:
Au = gold **Cu** = copper **Ag** = silver **Mo** = molybdenum

For more information on Harmony's reporting code, our SAMREC compliance and the definitions used, refer to the section, Harmony standard for SAMREC compliant reporting.

Classification relationship between Exploration results, Mineral Resources and Mineral Reserves (SAMREC Code)



INDEPENDENT REVIEW

Individual mines are independently reviewed on a three-year rotational basis. This year, the Mineral Resources and Mineral Reserves at Kusasalethu and Joel as well as the group SAMREC statement were independently reviewed by The Mineral Corporation for compliance with SAMREC.

COMPETENT PERSONS' DECLARATION

The Mineral Resources and Mineral Reserves estimates in this report are based on information compiled by the two competent persons whose details are presented below. Both these full-time employees of Harmony Gold Mining Company Limited consent to the inclusion of the information in this report in the form and context in which it appears. They are:

MINERAL RESOURCES AND MINERAL RESERVES, SOUTH AFRICA:

Jaco Boshoff, BSc (Hons), MSc, MBA, has 25 years' relevant experience. He is registered with the South African Council for Natural Scientific Professions (SACNASP), and is a member of the South African Institute of Mining and Metallurgy (SAIMM) and the Geological Society of South Africa (GSSA).

Mr Boshoff is Harmony's Lead Competent Person.

Physical address:
Randfontein Office Park,
Corner Main Reef Road and Ward Avenue,
Randfontein,
South Africa

Postal address:
PO Box 2,
Randfontein 1760,
South Africa

MINERAL RESOURCES AND MINERAL RESERVES, PAPUA NEW GUINEA:

Gregory Job, BSc, MSc, has 32 years' relevant experience and is a member of the Australian Institute of Mining and Metallurgy (AusIMM).

Physical address:
Level 2, 189 Coronation Drive,
Milton, Queensland 4064,
Australia

Postal address:
PO Box 1562,
Milton, Queensland 4064,
Australia

In South Africa, Harmony employs an ore reserve manager at each of its operations who takes responsibility as competent person for the compilation and reporting of Mineral Resources and Mineral Reserves at their respective operation. In Papua New Guinea, competent persons are appointed for the Mineral Resources and Mineral Reserves for specific projects and operations. Details on these competent persons are presented in the respective operational Mineral Resource and Mineral Reserve statements in this report.

Administrative information for professional organisations

Australasian Institute of Mining and Metallurgy (AusIMM)
Postal address: PO Box 660, Carlton South, Vic 3053, Australia
Telephone: +61 3 9658 6100
Facsimile: +61 3 9662 3662
Website: *www.ausimm.com.au*

South African Council for Natural Scientific Professions (SACNASP)
Postal address: Private Bag X540, Silverton, 0127, Gauteng, South Africa
Telephone: +27 12 841 1075
Facsimile: +27 86 206 0427
Website: *www.sacnasp.org.za*

Southern African Institute of Mining and Metallurgy (SAIMM)
Postal address: PO Box 61127, Marshalltown, 2107, Gauteng, South Africa
Telephone: +27 11 834 1273/7
Facsimile: +27 11 838 5923/8156
Website: *www.saimm.co.za*

Geological Society of South Africa (GSSA)
CSIR Miningtek
Carlow and Rustenburg Roads
Melville, Johannesburg
South Africa
Website: *www.gssa.org.za*

Details of the professional registrations of our competent persons can be obtained from the company secretary at: *companysecretariat@harmony.co.za*

LEGAL ENTITLEMENT TO MINERALS REPORTED

Harmony's South African operations operate under new order mining rights in terms of the Mineral and Petroleum Resources Development Act (MPRDA) of 2002 (Act No. 28, of 2002).

In Papua New Guinea, Harmony operates under the Independent State of Papua New Guinea Mining Act 1992. All required operating permits have been obtained and are in good standing.

The legal tenure of each operation and project has been verified to the satisfaction of the accountable competent person.

ENVIRONMENTAL MANAGEMENT AND FUNDING

Harmony's environmental strategy aims to optimise our environmental performance by managing our environmental impacts, focusing on effective risk controls, reducing environmental liabilities, ensuring responsible stewardship of our products within our scope of influence, complying with environmental legislation and regulations.

For further information regarding Harmony's approach to sustainability and environmental performance refer to the Integrated Annual Report 2020, which is available at *www.har.co.za*.

Details relating to the provision for environmental rehabilitation and funding can be found in note 25 in Harmony's audited annual financial statements that are presented in a separate report, the Financial Report 2020. This is also available online at *www.har.co.za*.

COMPLIANCE AND SUMMARY CONTINUED

AS AT 30 JUNE 2020

MINERAL RESOURCES AND MINERAL RESERVES – SUMMARY

Harmony's total attributable gold and gold equivalent Mineral Resources are declared as 118.6Moz as at 30 June 2020, a 1.12% increase year on year from the 117.3Moz declared as at 30 June 2019. Total gold contained in the Mineral Resources at the South African operations represents 62% of Harmony's total, with the Papua New Guinea operations representing 38% of Harmony's total gold and gold equivalent Mineral Resources as at 30 June 2020.

Harmony's total attributable gold and gold equivalent Mineral Reserves amounted to 36.50Moz at 30 June 2020, a 0.1% increase on the 36.45Moz declared at 30 June 2019. Gold Mineral Reserve ounces in South Africa represent 48%, while the Papua New Guinea gold and gold equivalent ounces represent 52% of Harmony's total Mineral Reserves as at 30 June 2020.

SOUTH AFRICA

UNDERGROUND OPERATIONS

The company's Mineral Resources at the South African underground operations as at 30 June 2020 are 62.9Moz (214.8Mt at 9.10g/t), an increase of 3.7% year on year from the 60.6Moz (210.4Mt at 8.96/t) declared at 30 June 2019. This increase is due to additions at Tshepong operations, Moab Khotsong and Kusasalethu.

The company's Mineral Reserves at the South African underground operations as at 30 June 2020 are 10.8Moz (56.9Mt at 5.87g/t), an increase of 1.1% year on year from the 10.6Moz (56.7Mt at 5.83g/t) declared at 30 June 2019. The increase in ounces is due to the reserves added from Moab Khotsong, the Tshepong operations, Target and Masimong.


Tshepong

SURFACE OPERATIONS (INCLUDING KALGOLD)

Mineral Resources at the South African surface operations as at 30 June 2020 are 10.4Moz (1 092.8Mt at 0.30g/t). The 3.5% decrease was mainly due to depletion and the updated geological model at Kalgold which was based on new drilling information.

Mineral Reserves after normal depletion at the South African surface operations as at 30 June 2020 are 6.6Moz (801.1Mt at 0.26g/t), an increase of 0.1% due to the incorporation of Windmill South and Henry's pit into Kalgold's reserves.


Kalgold

PAPUA NEW GUINEA

OPERATIONS

Attributable gold and gold equivalent Mineral Resources at the Papua New Guinea operations as at 30 June 2020 are 45.4Moz, a decrease of 1% year on year from the 45.9Moz declared as at 30 June 2019. This decrease was mainly due to a new resource model at Hidden Valley (Kaveroi) and depletion. Gold and gold equivalent Mineral Reserves at the Papua New Guinea operations as at 30 June 2020 are 19.1Moz, a decrease of 0.4% year on year from the 19.2Moz declared at 30 June 2019. The decrease was mainly due to depletion that was mostly offset by the change in mine design at Hidden Valley that added additional ounces.


Hidden Valley

EXPLORATION RESULTS

Our exploration strategy is to predominantly pursue brownfields exploration targets close to existing infrastructure. This will drive short- to medium-term organic ore reserve replacement and growth to support our current strategy of increasing quality ounces and to mitigate the risk of a depleting ore reserve base.

Key work streams underpinning the FY20 exploration program include:

- Brownfield exploration at Hidden Valley and Kalgold to optimise existing open pit operations and extend mine life
- Brownfield exploration at our underground operations in South Africa
- Greenfield exploration at Target North

SOUTH AFRICA

TSHEPONG OPERATION – B REEF

High-grade B Reef areas identified at Tshepong have been included in the life of mine plan. B Reef exploration, begun at Phakisa in FY18, is planned to continue during FY21. An area of interest has been identified. Footwall development began here during FY20 and will be used as a drilling platform to confirm and delineate the anticipated B Reef channel.

Tshepong

KALGOLD

The brownfield drilling campaign focused on infill drilling at the Windmill Zone. Six holes totalling 1 929m were drilled during the year. Drilling results allowed an upgrade of the Windmill resource into indicated category resulting in the inclusion of the Windmill zone into Kalgold's life of mine plan.

The systematic soil sampling programme was carried out to test the numerous anomalies identified by an airborne electro-magnetic (AEM) survey. A total of 4 162 auger holes were drilled and 1 902 outcrop samples were obtained and analysed. Integration of the AEM data with regional magnetics and geochemical sampling results indicated potential targets which will be explored by reverse circulation drilling.

Kalgold

TARGET NORTH

The exploration drilling programme from surface progressed well and borehole MAL21 (original hole) was completed. The hole reached a depth of 3 022.77m and intersected the Ventersdorp Contact Reef package. Deflection drilling has begun and results from this borehole will be shared once all deflections have been completed.

Target North

PAPUA NEW GUINEA

HIDDEN VALLEY BROWNFIELD EXPLORATION – WEBIAK PROSPECT

The Webiak prospect is located approximately 7.5km north of Hidden Valley. A new geological model was developed for the area predicting the continuation of high-grade, low-sulphidation, epithermal gold-silver veins to the northwest of Edie Creek, concealed below younger volcanic cover sequences. Following a programme of extensive mapping and surface geochemical sampling, a helicopter portable drilling rig was mobilised to the Webiak prospect in the March quarter. Only one diamond drill hole was completed prior to the onset of the Covid-19 state of emergency in Papua New Guinea, at which time the drill rig was subsequently demobilised as part of response measures. A monitoring brief has been implemented while the situation in relation to the Covid-19 pandemic remains unclear.

Hidden Valley

INDEPENDENT AUDIT OPINION

THE MINERAL CORPORATION

Mr A J Boshoff
Executive: Mineral Resources and Reserves
Harmony Gold Mining Company Limited
Randfontein Office Park
Corner Main Reef Road and Ward Avenue
Randfontein

17 August 2020

Dear Mr Boshoff

INDEPENDENT AUDIT OF THE 2020 MINERAL RESOURCES AND MINERAL RESERVES

The Mineral Corporation has undertaken an Audit of Harmony Gold Mining Company Limited's (Harmony) Mineral Resources and Mineral Reserves statement as at 30 June 2020. Harmony's Mineral Resources and Mineral Reserves Statement for 2020 consolidates the Mineral Resource and Mineral Reserve estimates for the various gold operations within South Africa and Papua New Guinea. The gold operations audited include Kusasalethu, Joel, Tshepong, Bambanani, Masimong, Target, Doornkop, Moab Khotsong, Kalgold and the Tailings Retreatment Operations. The objectives of the Audit were to provide assurance that Harmony's policies and procedures guiding the preparation and reporting of Mineral Resources and Mineral Reserves were followed at the various operations and that the final estimates can be disclosed in terms of The SAMREC Code (2016).

The Audit was carried out by The Mineral Corporation's Competent Persons for Mineral Resources and Mineral Reserves following a risk-based audit methodology and the guidelines of The SAMREC Code (2016). The Kusasalethu and Joel Operations were selected as focus shafts for checking whether Harmony's policies and procedures were being followed for the preparation and reporting of the Mineral Resource and Mineral Reserve estimates, whilst other operations were subjected to high-level desktop reviews to identify any fatal flaws and material errors and/or omissions for remediation before the estimates were disclosed. The Mineral Corporation's Competent Persons carried out detailed desktop examinations of the geological input data and the geological modelling of the gold bearing reefs as well as estimation, classification and reporting of the Mineral Resource estimates reported. Similarly, The Mineral Corporation's Competent Persons carried out detailed desktop reviews of the mine planning input data and Modifying Factors as well as the mine planning, Life of Mine plans, economic viability testing of the plans and Mineral Reserve classification and reporting.

The Mineral Corporation is satisfied that Harmony's policies and procedures are well-established and were followed for the preparation and reporting of Mineral Resources and Mineral Reserve estimates as at 30 June 2020. Furthermore, the input data and the final estimates were subjected to scrutiny and validation before sign-off by Competent Persons and Technical Experts at the operations and the Harmony Corporate Office. The Modifying Factors and planning parameters employed to develop Life of Mine plans for the various operations align with historical performance. No fatal flaws or unmitigated material risks were identified in the input data, geological modelling, mine planning and the eventual geological models and Life of Mine plans for the operations. The production levels envisaged in the Life of Mine Plans for the various operations are realistic as they are aligned to actual production levels achieved previously. The Mineral Resource estimates satisfy The SAMREC Code (2016) requirements for reasonable prospects for eventual economic extraction while the Life of Mine plans and the Mineral Reserves were tested for economic viability using reasonable economic parameters and price forecasts.

Based on the foregoing, The Mineral Corporation concludes that the Mineral Resources and Mineral Reserve estimates for Harmony's South African Operations have been compiled following Harmony's policies and the guidelines of The SAMREC Code (2016). Accordingly, the Mineral Resources and Mineral Reserve estimates can be included in Harmony Gold Mining Company Limited's consolidated Mineral Resource and Mineral Reserve Statement for 2020 and disclosed according to The SAMREC Code (2016). We note that this opinion does not imply that The Mineral Corporation has accepted the role of Competent Person for the 2020 Mineral Resources and Mineral Reserves statement, such a role resides with the nominated personnel of Harmony Gold Mining Company Limited.

Yours faithfully

Darren Portela
Director
BSc (Honours), Pr.Sci.Nat. (400040/12)

RELATIONSHIP BETWEEN HARMONY'S MINERAL RESOURCES AND MINERAL RESERVES

SOUTH AFRICA – UNDERGROUND

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
214.8	9.10	1 955	62 853

Reported as *in situ* mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
56.9	5.87	334	10 750

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
73.9	9.25	684	21 986

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
70.5	9.31	656	21 092

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
17.0	5.92	101	3 242

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
70.3	8.74	615	19 775

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
39.9	5.85	234	7 508

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

SOUTH AFRICA – SURFACE (INCLUDING KALGOLD)

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
1 092.8	0.30	324	10 408

Reported as *in situ* mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
801.1	0.26	207	6 648

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
60.4	0.32	19	615

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
781.4	0.29	230	7 389

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
637.1	0.25	158	5 072

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
251.0	0.30	75	2 404

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
164.0	0.30	49	1 576

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

RELATIONSHIP BETWEEN HARMONY'S MINERAL RESOURCES AND MINERAL RESERVES CONTINUED

SOUTH AFRICA – TOTAL

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold	
Mt	000kg	000oz
1 307.5	2 279	73 261

Reported as *in situ* mineralisation estimates

Mineral Reserves (total)

Tonnes	Gold	
Mt	000kg	000oz
858.0	541	17 398

Reported as mineable production estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
134.3	703	22 601

Indicated

Tonnes	Gold	
Mt	000kg	000oz
851.9	886	28 481

Probable

Tonnes	Gold	
Mt	000kg	000oz
654.1	259	8 314

Measured

Tonnes	Gold	
Mt	000kg	000oz
321.4	690	22 179

Proved

Tonnes	Gold	
Mt	000kg	000oz
203.9	283	9 084

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

PAPUA NEW GUINEA – ATTRIBUTABLE GOLD

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
806.6	0.71	575	18 511

Reported as *in situ* mineralisation estimates

Mineral Reserves (total)

Tonnes		Gold	
Mt	g/t	000kg	000oz
216.8	0.91	198	6 347

Reported as mineable production estimates

Inferred

Tonnes		Gold	
Mt	g/t	000kg	000oz
348.4	0.41	144	4 561

Indicated

Tonnes		Gold	
Mt	g/t	000kg	000oz
460.9	0.93	429	13 852

Probable

Tonnes		Gold	
Mt	g/t	000kg	000oz
214.5	0.91	195	6 249

Measured

Tonnes		Gold	
Mt	g/t	000kg	000oz
2.3	1.32	3	98

Proved

Tonnes		Gold	
Mt	g/t	000kg	000oz
2.3	1.32	3	98

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

TOTAL ATTRIBUTABLE GOLD – HARMONY UNDERGROUND AND SURFACE

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold	
Mt	000kg	000oz
2 114.2	2 854	91 772

Reported as *in situ* mineralisation estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
482.7	847	27 162

Mineral Reserves (total)

Tonnes	Gold	
Mt	000kg	000oz
1 074.8	739	23 746

Reported as mineable production estimates

Indicated

Tonnes	Gold	
Mt	000kg	000oz
1 312.8	1 315	42 333

Measured

Tonnes	Gold	
Mt	000kg	000oz
323.7	693	22 277

Probable

Tonnes	Gold	
Mt	000kg	000oz
868.6	453	14 563

Proved

Tonnes	Gold	
Mt	000kg	000oz
206.2	286	9 182

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

TOTAL ATTRIBUTABLE GOLD AND GOLD EQUIVALENTS – HARMONY UNDERGROUND AND SURFACE

Increasing level of geoscientific knowledge and confidence

Mineral Resources (total)

Tonnes	Gold Equivalents	
Mt	000kg	000oz
2 114.2	3 690	118 649

Reported as *in situ* mineralisation estimates

Inferred

Tonnes	Gold	
Mt	000kg	000oz
482.7	1 069	34 297

Mineral Reserves (total)

Tonnes	Gold Equivalents	
Mt	000kg	000oz
1 074.8	1 136	36 497

Reported as mineable production estimates

Indicated

Tonnes	Gold Equivalents	
Mt	000kg	000oz
1 312.8	1 928	62 049

Measured

Tonnes	Gold Equivalents	
Mt	000kg	000oz
323.7	694	22 303

Probable

Tonnes	Gold Equivalents	
Mt	000kg	000oz
868.6	849	27 279

Proved

Tonnes	Gold Equivalents	
Mt	000kg	000oz
206.2	287	9 218

Considerations of mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (the modifying factors)

MINERAL RESOURCES STATEMENT (METRIC)

ESTIMATES AT 30 JUNE 2020

Operations	Measured			Indicated			Inferred			Total		
GOLD	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
SOUTH AFRICA UNDERGROUND												
Free State												
Tshepong operations	24.1	11.47	277	13.1	10.80	142	36.1	10.82	391	73.4	11.03	809
Bambanani	0.5	15.28	8	–	–	–	–	–	–	0.5	15.28	8
Joel	4.3	7.71	33	3.4	7.79	27	7.3	5.19	38	15.0	6.50	98
Masimong	2.6	8.65	23	0.2	7.02	1	0.02	6.62	0.2	2.9	8.51	24
Target 1	7.5	7.38	55	4.8	6.83	33	3.6	5.90	21	15.9	6.88	109
Target 3	0.6	9.19	6	2.9	10.17	30	1.2	8.66	11	4.8	9.66	46
Total	**39.6**	**10.12**	**401**	**24.5**	**9.50**	**233**	**48.3**	**9.54**	**461**	**112.5**	**9.74**	**1 095**
West Rand												
Doornkop South Reef	4.5	8.74	39	4.0	8.09	32	4.3	7.96	35	12.8	8.27	105
Doornkop Main Reef	0.1	5.38	0.4	0.05	5.51	0.3	0.02	5.32	0.1	0.1	5.41	1
Doornkop Kimberley Reef	18.1	3.36	61	12.1	3.15	38	10.1	3.28	33	40.3	3.28	132
Kusasalethu	3.9	11.18	43	15.8	8.91	141	3.7	9.05	33	23.4	9.31	218
Total	**26.5**	**5.41**	**144**	**32.0**	**6.62**	**212**	**18.1**	**5.57**	**101**	**76.6**	**5.95**	**456**
Klerksdorp goldfield												
Moab Khotsong	4.2	16.90	71	14.0	15.09	212	7.5	16.26	122	25.7	15.73	404
Total	**4.2**	**16.90**	**71**	**14.0**	**15.09**	**212**	**7.5**	**16.26**	**122**	**25.7**	**15.73**	**404**
SOUTH AFRICA UNDERGROUND – total	**70.3**	**8.74**	**615**	**70.5**	**9.31**	**656**	**73.9**	**9.25**	**684**	**214.8**	**9.10**	**1 955**
SOUTH AFRICA SURFACE												
Kraaipan Greenstone Belt												
Kalgold open pit	11.0	0.87	10	68.2	0.89	61	4.4	0.63	3	83.5	0.87	73
Kalgold tailings dam	–	–	–	–	–	–	23.8	0.26	6	23.8	0.26	6
Total	**11.0**	**0.87**	**10**	**68.2**	**0.89**	**61**	**28.2**	**0.32**	**9**	**107.3**	**0.74**	**79**
Free State surface												
Phoenix	48.7	0.28	14	–	–	–	–	–	–	48.7	0.28	14
St Helena	191.3	0.27	52	–	–	–	–	–	–	191.3	0.27	52
Central Plant	–	–	–	55.4	0.27	15	–	–	–	55.4	0.27	15
Other:												
– Waste rock dumps	–	–	–	3.5	0.50	2	16.7	0.43	7	20.2	0.44	9
– Tailings	–	–	–	565.1	0.22	126	15.5	0.19	3	580.5	0.22	129
Total	**240.1**	**0.27**	**65**	**623.9**	**0.23**	**143**	**32.2**	**0.31**	**10**	**896.2**	**0.24**	**218**
Klerksdorp goldfield												
Mispah	–	–	–	73.8	0.30	22	–	–	–	73.8	0.30	22
Kop Paydam	–	–	–	11.0	0.20	2	–	–	–	11.0	0.20	2
Moab MOD	–	–	–	4.5	0.44	2	–	–	–	4.5	0.44	2
Total	**–**	**–**	**–**	**89.3**	**0.30**	**26**	**–**	**–**	**–**	**89.3**	**0.30**	**26**
SOUTH AFRICA SURFACE – total	**251.0**	**0.30**	**75**	**781.4**	**0.29**	**230**	**60.4**	**0.32**	**19**	**1 092.8**	**0.30**	**324**
SOUTH AFRICA – total (underground and surface)	**321.4**		**690**	**851.9**		**886**	**134.3**		**703**	**1 307.5**		**2 279**
PAPUA NEW GUINEA												
Hidden Valley	2.3	1.32	3	60.0	1.52	91	1.3	1.02	1	63.6	1.50	96
Hamata	0.0003	2.64	0.001	1.9	1.89	4	0.2	1.50	0.3	2.1	1.86	4
Wafi [1]	–	–	–	54.0	1.65	89	20.0	1.28	26	74.0	1.54	114
Golpu [1]	–	–	–	340.0	0.71	245	68.0	0.63	44	410.0	0.70	289
Nambonga [1]	–	–	–	–	–	–	20.0	0.82	16	20.0	0.82	16
Kili Teke	–	–	–	–	–	–	237.0	0.24	56	237.0	0.24	56
PAPUA NEW GUINEA	**2.3**	**1.32**	**3**	**460.9**	**0.93**	**429**	**348.4**	**0.41**	**144**	**806.6**	**0.71**	**575**
HARMONY – TOTAL	**323.7**		**693**	**1 312.8**		**1 315**	**482.7**		**847**	**2 114.2**		**2 854**

Operations	Measured		Indicated		Inferred		Total	
GOLD EQUIVALENTS [2]	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)
Silver								
Hidden Valley	2.3	1	60.0	18	1.3	0.3	63.6	19
Copper								
Golpu [1]	–	–	340.0	596	68.0	92	410.0	688
Nambonga [1]	–	–	–	–	20.0	7	20.0	7
Kili Teke	–	–	–	–	237.0	122	237.0	122
Total	**–**	**–**	**340.0**	**596**	**327.0**	**222**	**667.0**	**818**
Silver and copper – total	**2.3**	**1**	**405.0**	**614**	**328.2**	**222**	**730.5**	**836**
GOLD AND GOLD EQUIVALENTS [2] – TOTAL								
PAPUA NEW GUINEA	**2.3**	**4**	**460.9**	**1 043**	**348.4**	**366**	**806.6**	**1 411**
HARMONY – TOTAL	**323.7**	**694**	**1 312.8**	**1 928**	**482.7**	**1 069**	**2 114.2**	**3 690**

OTHER METALS

PAPUA NEW GUINEA

Silver	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)
Hidden Valley	2.3	27.37	63	60.0	23.29	1 397	1.3	19.92	25	63.6	23.37	1 485
Golpu [1]	–	–	–	340.0	1.29	449	68.0	1.10	77	410.0	1.28	526
Total	**2.3**	**27.37**	**63**	**405.0**	**4.56**	**1 846**	**71.3**	**1.43**	**102**	**473.6**	**4.25**	**2 011**

Copper	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)
Golpu [1]	–	–	–	340.0	1.00	3 750	68.0	0.85	600	410.0	1.00	4 300
Nambonga [1]	–	–	–	–	–	–	20.0	0.20	40	20.0	0.20	40
Kili Teke	–	–	–	–	–	–	237.0	0.34	802	237.0	0.34	802
Total	**–**	**–**	**–**	**340.0**	**1.00**	**3 750**	**327.0**	**0.44**	**1 442**	**667.0**	**0.77**	**5 142**

Molybdenum	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)
Golpu [1]	–	–	–	340.0	94	33	68.0	72	5	410.0	90	37
Kili Teke	–	–	–	–	–	–	237.0	168	40	237.0	168	40
Total	**–**	**–**	**–**	**340.0**	**94**	**33**	**307.0**	**146**	**45**	**647.0**	**119**	**77**

SOUTH AFRICA

Uranium	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)
Free State surface	–	–	–	132.0	0.11	14	–	–	–	132.0	0.11	14
Klerksdorp goldfield surface	–	–	–	84.8	0.12	10	–	–	–	84.8	0.12	10
Moab Khotsong underground	–	–	–	18.2	0.61	11	7.5	0.61	5	25.7	0.61	16
Total	**–**	**–**	**–**	**235.0**	**0.15**	**35**	**7.5**	**0.61**	**5**	**242.5**	**0.16**	**40**

[1] *Harmony's 50% attributable portion*

[2] *Gold equivalent ounces are calculated assuming commodity prices of US$1 350/oz Au, US$3.00/lb Cu and US$17.00/oz Ag with 100% recovery for all metals*

Rounding of numbers may result in slight computational discrepancies

Note: 1 tonne = 1 000kg = 2 204lb

1 troy ounce = 31.10348 grams

MINERAL RESERVES STATEMENT (METRIC)

ESTIMATES AT 30 JUNE 2020

Operations	Proved			Probable			Total		
GOLD	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
SOUTH AFRICA UNDERGROUND									
Free State									
Tshepong operations	22.2	5.87	130	4.5	5.48	25	26.7	5.80	155
Bambanani	0.6	10.99	6	–	–	–	0.6	10.99	6
Joel	2.9	4.85	14	1.4	4.68	7	4.3	4.80	21
Masimong	0.8	4.26	3	0.02	2.95	0.1	0.8	4.23	3
Target 1	3.3	4.31	14	1.9	4.23	8	5.1	4.28	22
Total	**29.7**	**5.66**	**168**	**7.9**	**5.03**	**40**	**37.5**	**5.53**	**207**
West Rand									
Doornkop South Reef	5.2	5.33	28	4.6	5.03	23	9.8	5.19	51
Kusasalethu	1.8	6.92	13	1.3	7.68	10	3.1	7.24	23
Total	**7.1**	**5.75**	**41**	**5.9**	**5.61**	**33**	**13.0**	**5.68**	**74**
Klerksdorp goldfield									
Moab Khotsong	3.2	7.93	25	3.3	8.57	28	6.5	8.26	53
Total	**3.2**	**7.93**	**25**	**3.3**	**8.57**	**28**	**6.5**	**8.26**	**53**
SOUTH AFRICA UNDERGROUND – total	**39.9**	**5.85**	**234**	**17.0**	**5.92**	**101**	**56.9**	**5.87**	**334**
SOUTH AFRICA SURFACE									
Kraaipan Greenstone Belt									
Kalgold	6.7	0.93	6	13.2	1.14	15	19.9	1.07	21
Free State surface									
Phoenix	48.7	0.28	14	–	–	–	48.7	0.28	14
St Helena	108.6	0.27	29	–	–	–	108.6	0.27	29
Central Plant	–	–	–	55.4	0.27	15	55.4	0.27	15
Other:									
– Waste rock dumps	–	–	–	3.5	0.50	2	3.5	0.50	2
– Tailings	–	–	–	565.1	0.22	126	565.1	0.22	126
Free State surface	**157.3**	**0.27**	**43**	**623.9**	**0.23**	**143**	**781.2**	**0.24**	**186**
SOUTH AFRICA SURFACE – total	**164.0**	**0.30**	**49**	**637.1**	**0.25**	**158**	**801.1**	**0.26**	**207**
SOUTH AFRICA – total (underground and surface)	**203.9**		**283**	**654.1**		**259**	**858.0**		**541**
PAPUA NEW GUINEA									
Hidden Valley	2.3	1.32	3	14.2	1.61	23	16.5	1.57	26
Hamata	0.0003	2.64	0.001	0.3	1.65	0.5	0.3	1.65	0.5
Golpu [1]	–	–	–	200.0	0.86	171	200.0	0.86	171
PAPUA NEW GUINEA	**2.3**	**1.32**	**3**	**214.5**	**0.91**	**195**	**216.8**	**0.91**	**198**
HARMONY – TOTAL	**206.2**		**286**	**868.6**		**453**	**1 074.8**		**739**

Operations	Proved		Probable		Total	
GOLD EQUIVALENTS [2]	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)	Tonnes (Mt)	Au eq (000kg)
Silver						
Hidden Valley	2.3	1	14.2	6	16.5	7
Copper [1]						
Golpu	–	–	200.0	390	200.0	390
Silver and copper – total	**2.3**	**1**	**214.2**	**396**	**216.5**	**397**
GOLD AND GOLD EQUIVALENTS [2] – TOTAL						
PAPUA NEW GUINEA	**2.3**	**4**	**214.5**	**590**	**216.8**	**594**
HARMONY – TOTAL	**206.2**	**287**	**868.6**	**849**	**1 074.8**	**1 136**

OTHER METALS

PAPUA NEW GUINEA

Silver	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)	Tonnes (Mt)	Grade (g/t)	Ag (000kg)
Hidden Valley	2.3	27.37	63	14.2	24.83	352	16.5	25.18	415
Copper	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)	Tonnes (Mt)	Grade (%)	Cu (000t)
Golpu [1]	–	–	–	200.0	1.23	2 450	200.0	1.23	2 450

SOUTH AFRICA

Uranium	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)	Tonnes (Mt)	Grade (kg/t)	U_3O_8 (Mkg)
Moab Khotsong	–	–	–	6.5	0.23	1	6.5	0.23	1

[1] *Harmony's 50% attributable portion*

[2] *Gold equivalent ounces are calculated assuming commodity prices of US$1 350/oz Au, US$3.00/lb Cu and US$17.00/oz Ag with 100% recovery for all metals*

Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades
Metallurgical recovery factors have not been applied to the reserve figures

Rounding of numbers may result in slight computational discrepancies
Note: 1 tonne = 1 000kg = 2 204lb
1 troy ounce = 31.10348 grams

MINERAL RESOURCES STATEMENT (IMPERIAL)

ESTIMATES AT 30 JUNE 2020

Operations	Measured			Indicated			Inferred			Total		
GOLD	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
SOUTH AFRICA UNDERGROUND												
Free State												
Tshepong operations	26.6	0.335	8 895	14.5	0.315	4 564	39.8	0.316	12 565	80.9	0.322	26 024
Bambanani	0.6	0.446	248	–	–	–	–	–	–	0.6	0.446	248
Joel	4.7	0.225	1 058	3.8	0.227	863	8.1	0.151	1 223	16.6	0.190	3 144
Masimong	2.9	0.252	733	0.2	0.205	45	0.03	0.193	5	3.2	0.248	783
Target 1	8.3	0.215	1 782	5.3	0.199	1 050	4.0	0.172	685	17.5	0.201	3 517
Target 3	0.7	0.268	178	3.3	0.297	965	1.3	0.253	340	5.3	0.282	1 483
Total	**43.7**	**0.295**	**12 893**	**27.0**	**0.277**	**7 487**	**53.2**	**0.278**	**14 818**	**124.0**	**0.284**	**35 198**
West Rand												
Doornkop South Reef	4.9	0.255	1 253	4.4	0.236	1 028	4.8	0.232	1 111	14.1	0.241	3 391
Doornkop Main Reef	0.1	0.157	14	0.1	0.161	8	0.02	0.155	3	0.2	0.158	25
Doornkop Kimberley Reef	20.0	0.098	1 957	13.4	0.092	1 226	11.1	0.096	1 066	44.5	0.096	4 249
Kusasalethu	4.3	0.326	1 390	17.5	0.260	4 542	4.0	0.264	1 063	25.8	0.272	6 995
Total	**29.2**	**0.158**	**4 614**	**35.2**	**0.193**	**6 804**	**20.0**	**0.162**	**3 243**	**84.4**	**0.174**	**14 660**
Klerksdorp goldfield												
Moab Khotsong	4.6	0.493	2 268	15.4	0.440	6 801	8.3	0.474	3 925	28.3	0.459	12 994
SOUTH AFRICA UNDERGROUND – total	**77.5**	**0.255**	**19 775**	**77.7**	**0.271**	**21 092**	**81.5**	**0.270**	**21 986**	**236.7**	**0.266**	**62 853**
SOUTH AFRICA SURFACE												
Kraaipan Greenstone Belt												
Kalgold	12.1	0.025	306	75.1	0.026	1 950	4.8	0.018	89	92.0	0.025	2 345
Kalgold tailings dam	–	–	–	–	–	–	26.2	0.008	201	26.2	0.008	201
Total	**12.1**	**0.025**	**306**	**75.1**	**0.026**	**1 950**	**31.1**	**0.009**	**290**	**118.3**	**0.022**	**2 546**
Free State – surface												
Phoenix	53.7	0.008	442	–	–	–	–	–	–	53.7	0.008	442
St Helena	210.9	0.008	1 656	–	–	–	–	–	–	210.9	0.008	1 656
Central Plant	–	–	–	61.0	0.008	476	–	–	–	61.0	0.008	476
Other:												
– Waste rock dumps	–	–	–	3.8	0.015	56	18.4	0.013	231	22.2	0.013	287
– Tailings	–	–	–	622.9	0.007	4 058	17.0	0.006	94	639.9	0.006	4 152
Total	**264.6**	**0.008**	**2 098**	**687.7**	**0.007**	**4 590**	**35.5**	**0.009**	**325**	**987.8**	**0.007**	**7 013**
Klerksdorp goldfield surface												
Mispah	–	–	–	81.4	0.009	713	–	–	–	81.4	0.009	713
Kop Paydam	–	–	–	12.1	0.006	72	–	–	–	12.1	0.006	72
Moab MOD	–	–	–	5.0	0.013	64	–	–	–	5.0	0.013	64
Total	**–**	**–**	**–**	**98.5**	**0.009**	**849**	**–**	**–**	**–**	**98.5**	**0.009**	**849**
SOUTH AFRICA SURFACE – total	**276.7**	**0.009**	**2 404**	**861.3**	**0.009**	**7 389**	**66.5**	**0.009**	**615**	**1 204.6**	**0.009**	**10 408**
SOUTH AFRICA (underground and surface)	**354.2**		**22 179**	**939.0**		**28 481**	**148.0**		**22 601**	**1 441.3**		**73 261**
PAPUA NEW GUINEA												
Hidden Valley	2.5	0.039	98	66.1	0.044	2 935	1.4	0.030	41	70.1	0.044	3 074
Hamata	0.0004	0.077	0.03	2.1	0.055	117	0.2	0.044	9	2.3	0.054	127
Wafi [1]	–	–	–	59.5	0.047	2 800	22.0	0.036	800	81.6	0.044	3 600
Golpu [1]	–	–	–	374.7	0.021	8 000	75.0	0.018	1 400	451.9	0.021	9 300
Nambonga [1]	–	–	–	–	–	–	22.0	0.023	500	22.0	0.023	500
Kili Teke	–	–	–	–	–	–	261.2	0.007	1 810	261.2	0.007	1 810
PAPUA NEW GUINEA	**2.5**	**0.039**	**98**	**508.1**	**0.027**	**13 852**	**384.1**	**0.012**	**4 561**	**889.2**	**0.021**	**18 511**
HARMONY – TOTAL	**356.8**		**22 277**	**1 447.1**		**42 333**	**532.1**		**27 162**	**2 330.5**		**91 772**

Operations	Measured		Indicated		Inferred		Total	
GOLD EQUIVALENTS [2]	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)
Silver								
Hidden Valley	2.5	26	66.1	566	1.4	10	70.1	602
Copper								
Golpu [1]	–	–	374.8	19 150	75.0	2 960	451.9	22 110
Nambonga [1]	–	–	–	–	22.0	240	22.0	240
Kili Teke	–	–	–	–	261.2	3 926	261.2	3 926
Total	–	–	374.8	19 150	360.4	7 126	735.2	26 276
Silver and copper – total	2.5	26	446.4	19 716	361.8	7 136	805.3	26 877
GOLD AND GOLD EQUIVALENTS [2] – TOTAL								
PAPUA NEW GUINEA	2.5	124	508.1	33 568	384.1	11 696	889.2	45 389
HARMONY – TOTAL	**356.8**	**22 303**	**1 447.1**	**62 049**	**532.1**	**34 297**	**2 330.5**	**118 649**

OTHER METALS

PAPUA NEW GUINEA

Silver	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)
Hidden Valley	2.5	0.798	2 029	66.1	0.679	44 917	1.4	0.581	808	70.1	0.682	47 754
Golpu [1]	–	–	–	374.8	0.037	14 000	75.0	0.030	2 300	451.9	0.037	16 500
Total	**2.5**	**0.798**	**2 029**	**446.4**	**0.132**	**58 917**	**78.6**	**0.040**	**3 108**	**522.0**	**0.123**	**64 254**

Copper	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)	Tons (Mt)	Grade (%)	Cu (Mlb)
Golpu [1]	–	–	–	374.8	0.986	8 250	75.0	0.778	1 250	451.9	0.963	9 500
Nambonga [1]	–	–	–	–	–	–	22.0	0.181	88	22.0	0.181	88
Kili Teke	–	–	–	–	–	–	261.2	0.307	1 767	261.2	0.307	1 767
Total	**–**	**–**	**–**	**374.8**	**0.986**	**8 250**	**360.4**	**0.400**	**3 105**	**735.2**	**0.597**	**11 355**

Molybdenum	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)
Golpu [1]	–	–	–	374.8	0.189	72	75.0	0.143	11	451.9	0.184	83
Kili Teke	–	–	–	–	–	–	261.2	0.335	88	261.2	0.335	88
Total	**–**	**–**	**–**	**374.8**	**0.189**	**72**	**338.4**	**0.291**	**99**	**713.2**	**0.239**	**171**

SOUTH AFRICA

Uranium	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)
Free State surface	–	–	–	145.5	0.212	31	–	–	–	145.5	0.212	31
Klerksdorp goldfield surface	–	–	–	93.5	0.245	23	–	–	–	93.5	0.245	23
Moab Khotsong underground	–	–	–	20.0	1.212	24	8.3	1.213	10	28.3	1.212	34
Total	–	–	–	259.0	0.302	78	8.3	1.213	10	267.3	0.330	88

[1] *Harmony's 50% attributable portion*

[2] *Gold equivalent ounces are calculated assuming commodity prices of US$1 350/oz Au, US$3.00/lb Cu and US$17.00/oz Ag with 100% recovery for all metals*

Rounding of numbers may result in slight computational discrepancies

Note: 1 tonne = 907kg = 2 000lb

1 troy ounce = 31.10348 grams

MINERAL RESERVES STATEMENT (IMPERIAL)

ESTIMATES AT 30 JUNE 2020

Operations	Proved			Probable			Total		
GOLD	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
SOUTH AFRICA UNDERGROUND									
Free State									
Tshepong operations	24.4	0.171	4 180	5.0	0.160	800	29.4	0.169	4 980
Bambanani	0.6	0.320	207	–	–	–	0.6	0.320	207
Joel	3.2	0.142	447	1.6	0.137	214	4.7	0.140	661
Masimong	0.9	0.124	108	0.03	0.086	2	0.9	0.123	110
Target 1	3.6	0.126	452	2.1	0.123	255	5.7	0.125	707
Total	**32.7**	**0.165**	**5 394**	**8.7**	**0.147**	**1 271**	**41.4**	**0.161**	**6 664**
West Rand									
Doornkop South Reef	5.8	0.155	896	5.1	0.147	742	10.8	0.151	1 638
Kusasalethu	2.0	0.202	410	1.4	0.224	320	3.5	0.211	730
Total	**7.8**	**0.168**	**1 306**	**6.5**	**0.164**	**1 062**	**14.3**	**0.166**	**2 368**
Klerksdorp goldfield									
Moab Khotsong	3.5	0.231	808	3.6	0.250	909	7.1	0.241	1 718
Total	**3.5**	**0.231**	**808**	**3.6**	**0.250**	**909**	**7.1**	**0.241**	**1 718**
SOUTH AFRICA UNDERGROUND – total	**44.0**	**0.171**	**7 508**	**18.8**	**0.173**	**3 242**	**62.8**	**0.171**	**10 750**
SOUTH AFRICA SURFACE									
Kraaipan Greenstone Belt									
Kalgold	7.4	0.027	201	14.5	0.033	482	21.9	0.031	683
Free State – surface									
Phoenix	53.7	0.008	442	–	–	–	53.7	0.008	442
St Helena	119.7	0.008	933	–	–	–	119.7	0.008	933
Central Plant	–	–	–	61.0	0.008	476	61.0	0.008	476
Other:									
– Waste rock dumps	–	–	–	3.8	0.015	56	3.8	0.015	56
– Tailings	–	–	–	622.9	0.007	4 058	622.9	0.007	4 058
Total	**173.4**	**0.008**	**1 375**	**687.7**	**0.007**	**4 590**	**861.1**	**0.007**	**5 965**
SOUTH AFRICA SURFACE – total	**180.8**	**0.009**	**1 576**	**702.3**	**0.007**	**5 072**	**883.0**	**0.008**	**6 648**
SOUTH AFRICA – total (underground and surface)	**224.8**		**9 084**	**721.0**		**8 314**	**945.8**		**17 398**
PAPUA NEW GUINEA									
Hidden Valley	2.5	0.039	98	15.6	0.047	733	18.2	0.046	831
Hamata	0.0004	0.077	0.03	0.3	0.048	16	0.3	0.048	16
Golpu [1]	–	–	–	220.5	0.025	5 500	220.5	0.025	5 500
PAPUA NEW GUINEA	**2.5**	**0.039**	**98**	**236.4**	**0.026**	**6 249**	**239.0**	**0.027**	**6 347**
HARMONY – TOTAL	**227.3**		**9 182**	**957.5**		**14 563**	**1 184.8**		**23 746**

Operations	Proved		Probable		Total	
GOLD EQUIVALENTS [2]	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)	Tons (Mt)	Au eq (000oz)
Silver						
Hidden Valley	2.5	36	15.6	178	18.2	214
Copper						
Golpu [1]	–	–	220.5	12 538	220.5	12 538
Silver and copper – total as gold equivalents	**2.5**	**36**	**236.1**	**12 716**	**238.6**	**12 752**
GOLD AND GOLD EQUIVALENTS [2] – TOTAL						
PAPUA NEW GUINEA	**2.5**	**134**	**236.4**	**18 965**	**239.0**	**19 099**
HARMONY – TOTAL	**227.3**	**9 218**	**957.5**	**27 279**	**1 184.8**	**36 497**

OTHER METALS

PAPUA NEW GUINEA

Silver	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)	Tons (Mt)	Grade (oz/t)	Ag (000oz)
Hidden Valley	2.5	0.798	2 029	15.6	0.724	11 314	18.2	0.734	13 343
Copper	**Tons (Mt)**	**Grade (%)**	**Cu (Mlb)**	**Tons (Mt)**	**Grade (%)**	**Cu (Mlb)**	**Tons (Mt)**	**Grade (%)**	**Cu (Mlb)**
Golpu [1]	–	–	–	220.5	1.111	5 400	220.5	1.111	5 400

SOUTH AFRICA

Uranium	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)	Tons (Mt)	Grade (lb/t)	U_3O_8 (Mlb)
Moab Khotsong	–	–	–	7.1	0.456	3	7.1	0.456	3

[1] *Harmony's 50% attributable portion*

[2] *Gold equivalent ounces are calculated assuming commodity prices of US$1 350/oz Au, US$3.00/lb Cu and US$17.00/oz Ag with 100% recovery for all metals*

Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades
Metallurgical recovery factors have not been applied to the reserve figures

Rounding of numbers may result in slight computational discrepancies
Note: 1 tonne = 907kg = 2 000lb
1 troy ounce = 31.10348 grams

MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION

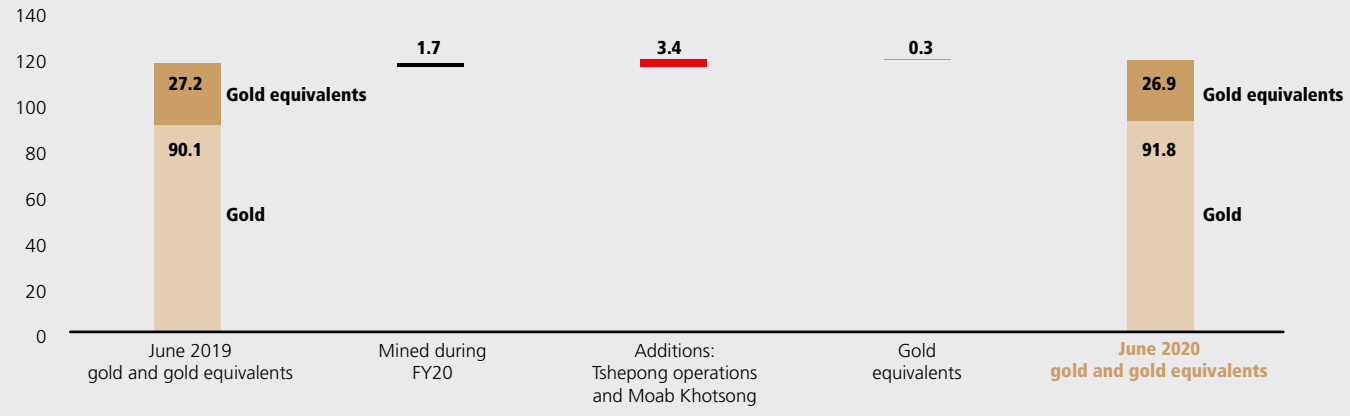
MINERAL RESOURCES

As at 30 June 2020, attributable gold equivalent Mineral Resources were 118.6Moz, down from 117.3Moz in June 2019. The following tables show the year on year reconciliation of the Mineral Resources.

Mineral Resource reconciliation – gold and gold equivalents

	kg (000)	Moz
June 2019 – Gold and gold equivalents	3 649	117.3
Changes during FY20:		
Mined	(54)	(1.7)
Additions at Tshepong operations and Moab Khotsong	106	3.4
Gold equivalents	(10)	(0.3)
June 2020 – Gold and gold equivalents	**3 691**	**118.6**

MINERAL RESOURCE RECONCILIATION: JUNE 2019 vs JUNE 2020 (Moz)



Moab Khotsong

Mineral Resource comparison by operation – FY19 vs FY20

GOLD	FY19 (Moz)	FY20 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion variance (%)	Comments
SOUTH AFRICA UNDERGROUND						
Free State						
Tshepong operations	24.749	**26.024**	0.353	1.628	6.6	Increase in the grade of the valuation model for both the Basal and B Reef horizons
Bambanani	0.318	**0.248**	0.087	0.017	5.3	Change in design of rock engineer remnant pillars
Unisel	0.209	**0**	0.053	(0.155)	(74.5)	Mine closure
Joel	3.249	**3.144**	0.060	(0.045)	(1.4)	Minor changes to geological structure model
Masimong	0.743	**0.783**	0.119	0.159	21.4	Increase in the grade of the valuation model
Target 1	3.592	**3.517**	0.077	0.003	0.1	
Target 3	1.483	**1.483**	0	0	0	
Free State – total	**34.342**	**35.198**	**0.750**	**1.606**	**4.7**	
West Rand						
Doornkop	7.647	**7.666**	0.150	0.168	2.2	Increase in the grade of the valuation model
Kusasalethu	6.467	**6.995**	0.145	0.673	10.4	Geological model changes resulting in an increase in grade in the east of the mine
West Rand – total	**14.113**	**14.660**	**0.295**	**0.842**	**6.0**	
Klerksdorp goldfield						
Moab Khotsong	12.134	**12.994**	0.335	1.194	9.8	Improved confidence classification as result of geological model upgrades
SOUTH AFRICA UNDERGROUND – total	**60.590**	**62.853**	**1.380**	**3.642**	**6.0**	
SOUTH AFRICA SURFACE						
Kraaipan Greenstone Belt						
Kalgold – pit	2.636	**2.345**	0.039	(0.252)	(9.5)	Model refinement from incorporation on new drilling data
Kalgold tailings dam	0.201	**0.201**	0	0	0	
Total	**2.837**	**2.546**	**0.039**	**(0.252)**	**(8.9)**	

MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION CONTINUED

Mineral Resource comparison by operation – FY19 vs FY20 continued

GOLD	FY19 (Moz)	FY20 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion variance (%)	Comments
Free State – Surface						
Phoenix	0.490	**0.442**	0.060	0.011	2.3	Depletion offset by a higher recovery factor
St Helena	1.656	**1.656**	0	0	0	
Central Plant	0.517	**0.476**	0.041	0.000	0.0	Depletion offset by a higher recovery factor
Waste rock dumps	0.299	**0.287**	0.013	0.000	0.1	Depletion
Tailings	4.126	**4.152**	0	0.026	0.6	Deposition from current operations
Total	**7.089**	**7.013**	**0.113**	**0.037**	**0.5**	
Klerksdorp goldfield – Surface						
Mispah	0.710	**0.713**	0	0.003	0.5	Deposition
Kop Paydam	0.072	**0.072**	0	0	0	
Moab MOD	0.077	**0.064**	0.017	0.004	5.0	Depletion offset by higher value
Total	**0.859**	**0.849**	**0.017**	**0.007**	**0.8**	
SOUTH AFRICA SURFACE – total	**10.784**	**10.408**	**0.169**	**(0.207)**	**(1.9)**	
SOUTH AFRICA – total (underground, surface, Kalgold)	**71.374**	**73.261**	**1.549**	**3.435**	**4.8**	
PAPUA NEW GUINEA						
Hidden Valley/Kaveroi	3.307	**3.074**	0.198	(0.034)	(1.0)	Depletion, new resource model
Hamata	0.133	**0.127**	0	(0.006)	(4.7)	Depletion
Wafi	3.600	**3.600**	0	0	0	No change
Golpu	9.400	**9.300**	0	0	0	No change
Nambonga	0.500	**0.500**	0	0	0	No change
Kili Teke	1.810	**1.810**	0	0	0.0	No change
PAPUA NEW GUINEA	**18.750**	**18.511**	**0.198**	**(0.041)**	**(0.2)**	
HARMONY – TOTAL	**90.124**	**91.772**	**1.747**	**3.395**	**3.8**	
GOLD EQUIVALENTS						
Silver – equivalent gold ounces						
Hidden Valley	0.753	**0.602**	0	(0.152)	(20.2)	Depletion and new resource model with change to fixed cut off
Copper – equivalent gold ounces						
Golpu	22.110	**22.110**	0	0	0	
Nambonga	0.240	**0.240**	0	0	0	
Kili Teke	4.108	**3.926**	0	(0.182)	(4.4)	Change in metal price assumptions
Copper gold equivalent – total	**26.458**	**26.276**	**0**	**(0.182)**	**(0.7)**	
PAPUA NEW GUINEA Total equivalent gold ounces	**27.211**	**26.877**	**0**	**(0.334)**	**(1.2)**	
Total gold and equivalent gold ounces	**45.961**	**45.389**	**0.198**	**(0.374)**	**(0.7)**	
HARMONY – TOTAL						
GOLD (excluding gold equivalents)	**90.124**	**91.772**	**1.747**	**(3.395)**	**3.8**	
GOLD AND GOLD EQUIVALENTS	**117.335**	**118.649**	**1.747**	**3.061**	**2.6**	

MINERAL RESERVES

As at 30 June 2020, Harmony's attributable gold equivalent Mineral Reserves were 36.50Moz, up from 36.45Moz. The year on year Mineral Reserve reconciliation is shown below.

Mineral Reserve reconciliation – gold and gold equivalents

	kg (000)	Moz
June 2019 – Gold and gold equivalents	1 134	36.45
Changes during FY20		
Mined	(40)	(1.3)
Additions at Tshepong, Moab Khotsong, Masimong, Kalgold, Target and Hidden Valley	41	1.3
Gold equivalents	0.4	0.01
June 2020 – Gold and gold equivalents	**1 135**	**36.50**

MINERAL RESERVES RECONCILIATION: JUNE 2019 vs JUNE 2020 (Moz)

Mineral Reserve comparison by operation – FY19 vs FY20

GOLD	FY19 (Moz)	FY20 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion variance (%)	Comments
SOUTH AFRICA UNDERGROUND						
Free State						
Tshepong operations	4.350	**4.980**	0.245	0.875	20.1	Increase in the grade and confidence classification for both the Basal and B Reef horizons, resulted in additional ounces above the mineral reserve cut-off grade
Bambanani	0.278	**0.207**	0.072	0.001	0.2	Change in design of rock engineer remnant pillars
Unisel	0.036	**0**	0.035	(0.001)	(3.1)	Mine closure
Joel	0.693	**0.661**	0.047	0.016	2.2	Additional ounces above the mineral reserve cut-off grade in the east of the mine
Masimong	0.093	**0.110**	0.067	0.085	91.9	Good development results increased the available ounces above the mineral reserve cut-off grade
Target 1	0.665	**0.707**	0.076	0.118	17.7	Additional blocks added to reserves
Free State – total	**6.114**	**6.664**	**0.542**	**1.093**	**17.9**	
West Rand						
Doornkop South Reef	1.718	**1.638**	0.100	0.020	1.1	Additional reserves brought in by development and exploration drilling in the high-grade areas west of the mine
Kusasalethu	0.972	**0.730**	0.104	(0.138)	(14.2)	Reduced m² profile planned as well as less ounces available above the mineral reserve cut-off grade
West Rand – total	**2.690**	**2.368**	**0.204**	**(0.119)**	**(4.4)**	

MINERAL RESOURCE AND MINERAL RESERVE RECONCILIATION CONTINUED

Mineral Reserve comparison by operation – FY19 vs FY20 continued

GOLD	FY19 (Moz)	FY20 (Moz)	Depletion (Moz)	Net of depletion variance (Moz)	Net of depletion variance (%)	Comments
Klerksdorp goldfield						
Moab Khotsong	1.832	**1.718**	0.219	0.105	5.7	Gain in mineable blocks in the Top Mine and gains in the Middle Mine due to structure, schedule and value changes
SOUTH AFRICA UNDERGROUND – total	**10.636**	**10.750**	**0.965**	**1.079**	**10.1**	
SOUTH AFRICA SURFACE						
Kraaipan Greenstone Belt						
Kalgold	0.605	**0.683**	0.039	0.118	19.5	Incorporation of the new Windmill South pit and Henry's pit into the life-of-mine plan
Free State Surface						
Phoenix	0.490	**0.442**	0.060	0.011	2.34	Depletion offset by increase in the mine recovery factor
St Helena	0.933	**0.933**	0	0	0	
Central Plant	0.517	**0.476**	0.041	0.000	0.0	Depletion
Waste rock dumps	0.064	**0.056**	0	(0.008)	(12.5)	Depletion
Tailings	4.032	**4.058**	0	0.026	0.6	Deposition
Total	**6.036**	**5.965**	**0.101**	**0.029**	**0.5**	
SOUTH AFRICA SURFACE – total	**6.641**	**6.648**	**0.140**	**0.147**	**2.2**	
SOUTH AFRICA	**17.277**	**17.398**	**1.105**	**1.226**	**7.1**	
PAPUA NEW GUINEA						
Hidden Valley/Kaveroi	0.918	**0.831**	0.178	0.091	9.9	Depletion and model changes offset by a change in mine design adding additional tonnes
Hamata	0.021	**0.016**	0	(0.005)	(23.7)	Depletion, metallurgical changes and change to prices and costs
Golpu	5.500	**5.500**	0	0	0	
PAPUA NEW GUINEA	**6.439**	**6.347**	**0.178**	**0.086**	**1.3**	
HARMONY – TOTAL	**23.716**	**23.746**	**1.283**	**1.312**	**5.5**	
GOLD EQUIVALENTS						
Silver						
Hidden Valley	0.199	**0.214**	0	0.014	7.2	Depletion and a change in mine design
Copper						
Golpu	12.538	**12.538**	0	0	0	
Equivalent gold ounces – total	**12.738**	**12.752**	**0**	**0.014**	**0.1**	
Papua New Guinea – total gold and equivalent gold ounces	**19.177**	**19.099**	**0**	**(0.078)**	**(0.4)**	
HARMONY – TOTAL						
GOLD (excluding gold equivalents)	**23.716**	**23.746**	**1.283**	**1.312**	**5.5**	
GOLD AND GOLD EQUIVALENTS	**36.454**	**36.497**	**1.283**	**1.326**	**3.6**	

Hidden Valley

LOCATION AND GEOLOGY OF OPERATIONS, PROJECTS AND EXPLORATION

HARMONY – SOUTH AFRICA

Harmony South Africa

1. West Rand operations
2. Free State operations
3. Klerksdorp goldfield
4. Kraaipan Greenstone Belt
- Towns/Cities

Projection: UTM Zone 36, Southern Hemisphere (WGS 84)

LEGEND

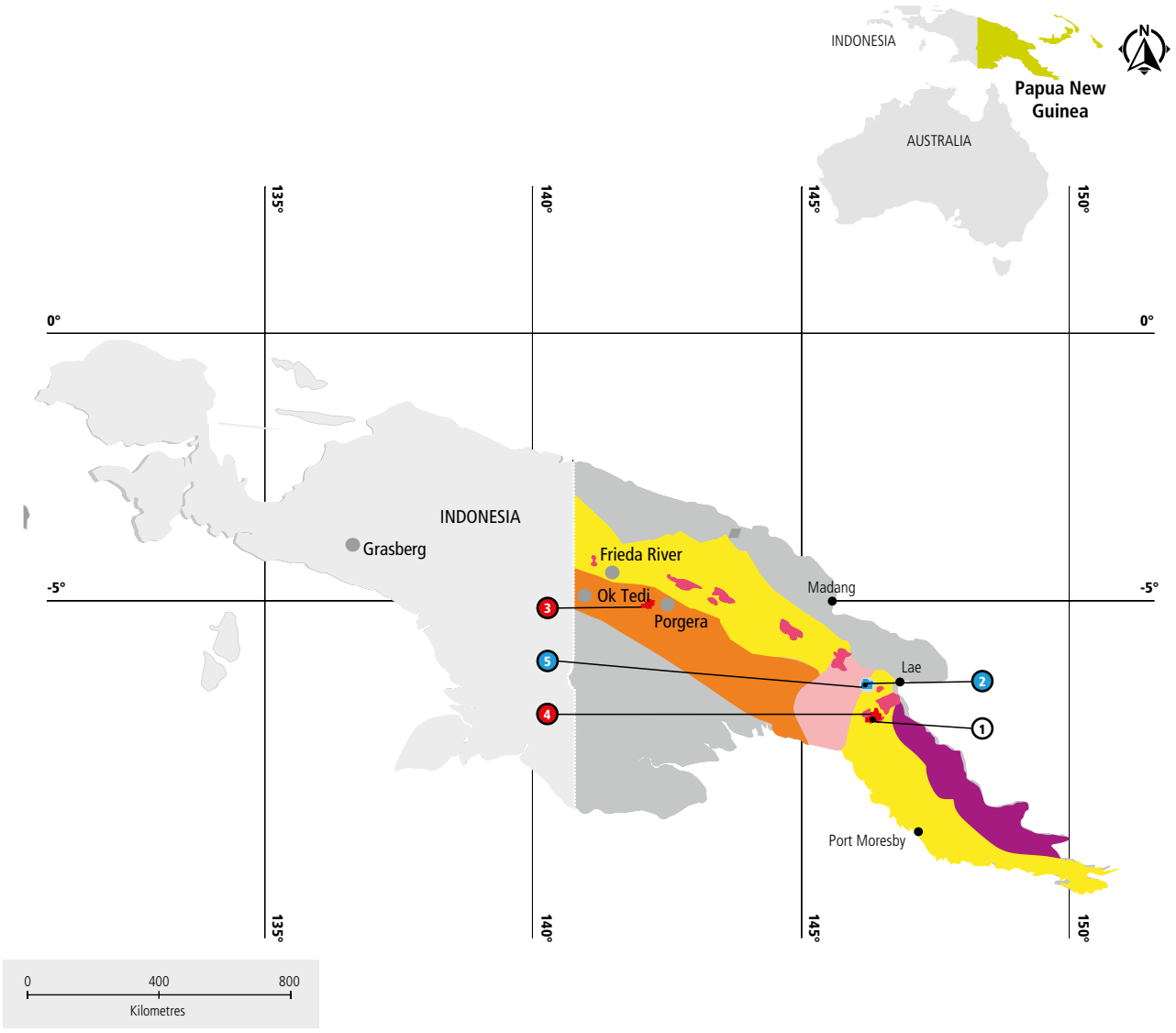
- Exposed Central Rand Group
- Covered Central Rand Group
- Exposed West Rand Group
- Covered West Rand Group
- Dominion Group
- Exposed Granitoid Basement
- Major faults

	Latitude	Longitude
West Rand operations		
1 Doornkop	26°13'03.36"S	27°47'26.55"E
2 Kusasalethu	26°27'16.23"S	27°21'32.91"E
Klerskdorp goldfield		
3 Moab Khotsong	26°59'12.7"S	26°48'03.3"E
Free State operations		
4 Target 1	27°45'42.59"S	26°38'24.92"E
5 Target 3*	27°49'42.93"S	26°38'29.27"E
6 Tshepong operations**	27°51'56.45"S	26°42'45.15"E
7 Bambanani	28°2'28.24"S	26°48'9.13"E
8 Masimong	27°58'23.93"S	26°52'39.41"E
9 Joel	28°16'17.19"S	26°48'57.97"E
Kraaipan Greenstone Belt		
10 Kalgold	26°10'12.85"S	25°14'02.70"E

* *Care and maintenance*

** *Tshepong Operations includes Tshepong and Phakisa sections combined*

HARMONY – PAPUA NEW GUINEA



Projection: UTM Zone 54, Southern Hemisphere (WGS 84)

Legend

- New Guinea Mobile Belt / Papuan Fold Belt } Niugini Mobile Belt
- Papuan Ultramafic Belt
- Aure Trough
- Other mining operations
- Towns/Cities

Operations and projects	Exploration
1 Hidden Valley	3 Kili Teki
2 Wafi-Golpu project (Harmony 50%)	4 Hidden Valley district
	5 Exploration Portfolio Joint Venture (Harmony 50%)

Harmony equity interest 100% unless otherwise indicated

EXPLORATION

Our exploration strategy is to pursue mostly brownfields exploration targets close to existing infrastructure. This will drive short- to medium-term organic Ore Reserve replacement and growth to support our current strategy of increasing quality ounces and to mitigate the risk of a depleting Ore Reserve base. Some greenfield exploration is also conducted.

Wafi-Golpu

Key work streams underpinning the FY20 exploration programme included:

- Brownfield exploration at Hidden Valley and Kalgold to optimise existing open pit operations and extend mine life
- Brownfield exploration at our underground operations in South Africa
- Greenfield exploration at Target North

PAPUA NEW GUINEA

Key geological features

Papua New Guinea is one of the world's most prospective yet under-explored terrains for porphyry copper-gold and epithermal gold mineralisation. The New Guinea Mobile Belt which spans the core of the Irian Jaya-Papua New Guinea mainland, is host to a number of world-class porphyry copper-gold and gold deposits including Golpu (Cu-Au), Ok Tedi (Cu-Au), Grasberg (Cu-Au), and Porgera (Au).

The central rock belt that makes up the highland spine of Papua New Guinea formed as a result of subduction related interaction between the Pacific plate (in the north), converging with the Australian plate (in the south). Deposits typical of subduction related arc settings include:

- Epithermal gold deposits which form at shallow depths, relatively close to the earth's surface, examples of which include Hidden Valley, Hamata, Kerimenge, Wau and Wafi
- Porphyry copper-gold systems which form at deeper levels in the crust are associated with the emplacement of intrusive stocks and dykes. These systems are among the largest sources of copper ore in the world, and can also contain significant amounts of gold, molybdenum and silver as by-products. Golpu is a high-grade porphyry copper-gold system

Key legal and regulatory features

Papua New Guinea has sophisticated legislative, regulatory and fiscal regimes.

Mining in Papua New Guinea is governed by the Mining Act of 1992. Minerals are owned by the State, which administers mining tenements through the offices of the Mineral Resources Authority. The types of tenements issued include: exploration licence; mining lease; special mining lease; alluvial mining lease; lease for mining purpose; and mining easement.

Exploration licences are issued for a term not exceeding two years and are renewable for further two-year terms subject to compliance with expenditure and other conditions. Each licence contains a condition conferring on the State the right, exercisable at any time prior to the start of mining, to make a single purchase of up to 30% equitable interest in any mineral discovery under the licence at a price pro rata to the accumulated exploration expenditure.

If (pursuant to a feasibility study approved by the board of directors) a decision is made to develop a mine on a resource, a permitting process must be followed, including:

- Applying to the Mineral Resources Authority for a mining lease (or, at the discretion of the Minister for Mines, a special mining lease). This includes our entering into a memorandum of agreement with local, provincial and national governments and landowners regarding the allocation to those parties of the royalties payable by the company

to the State, and, in the case of a special mining lease, a mining development contract with the State setting out the applicable project implementation, fiscal and other arrangements, including social performance obligations in respect of the proposed mining operation. Other relevant agreements include a Fiscal Stabilisation Agreement and a State Equity Acquisition Agreement

- Applying to the Conservation and Environmental Protection Authority for a Level 3 environmental permit. This includes undertaking an environmental impact study

The permitting process can be very time consuming (18-24 months, or longer in some cases).

Over the past three years, the state has been conducting a mining legislative and tax regime review. The subject of the review includes the Mining Act 1992, the Mining Safety Act 1997, the Income Tax Act 1959 and the Environment Act 2000, and applicable regulations. In addition, the review has addressed mineral policy generally, and mining-specific sector policies including offshore mining policy, sustainable development policy, involuntary relocation policy and mine closure policy. Mining companies currently pay royalties to the state based on production (currently 2%), and the quantum of this royalty has also been under review.

The review has also considered the provisions of the state purchase option reservation, including possible changes to the percentage interest "cap", the consideration payable for the interest and the allocation of ownership of the acquired interest between the state nominee, the relevant provincial government and affected landowners.

The Papua New Guinea Chamber of Mines and Petroleum, as the representative mining industry body, has engaged with the State in response to proposed legislative amendments, some of which industry considers to be adverse (such as an increased royalty rate; reduced state option strike price, prohibition of fly-in, fly-out, among others). Since 2017, when the Chamber tabled its position, there has been only limited engagement with the State.

Pursuant to the tax regime review and notwithstanding industry objections, certain adverse changes to the fiscal regime were introduced with effect from 1 January 2017. The main changes were the introduction of an additional profit tax, the cessation of the double deduction allowance for exploration expenditure, and an increase in the rates of interest withholding and dividend withholding taxes.

In May 2019, the Honourable James Marape was appointed Prime Minister following a vote of no confidence in the previous Government. He committed his Government to a review and restructuring of resource laws, signaling the possible introduction of a new Mining Act and associated mining and related policies.

In June 2020, a bill, entitled the Mining (Amendment) Bill 2020 and proposing various amendments to the Mining Act 1992 (Papua New Guinea), was passed by the National Parliament. The amendments are in two parts with the first part introducing additional reporting requirements. The second part expands the State's ability, via a holding company, to apply for tenement and other related permits and authorisations in respect of reserved land.

In July 2020, a proposed Organic Law on Ownership and Development of Hydrocarbons and Minerals and the Commercialization of State Businesses was gazetted. The Organic Law (if adopted) will materially alter the legislative and regulatory regime governing mining in Papua New Guinea, including the ownership of minerals by the Government and the transformation of the methodology of its participation in mining operations from a concessionary to a production sharing regime. Harmony's operations and projects in Papua New Guinea will potentially be adversely affected by the changes.

HARMONY IN PAPUA NEW GUINEA – A SUMMARY

Harmony began actively exploring in Papua New Guinea in 2003. Since then, we have developed a high-quality project portfolio, both in established mineral provinces and in emerging gold and copper districts. Harmony has advanced several gold and copper-gold prospects which are at various stages of exploration and evaluation across Harmony's lease areas.

In line with the company's strategy and growth targets, capital allocated to exploration projects for organic growth in FY20 focused on near-mine, brownfield targets. Although greenfield exploration activities have been scaled back, as part of a balanced approach, Harmony continued to maintain its greenfield tenement interests for exposure to major new gold and copper-gold discoveries in highly prospective underexplored terranes and mining districts throughout Papua New Guinea.

Exploration FY20

Key work streams underpinning the FY20 exploration programme included:

- The Wafi-Golpu copper-gold deposit permitting process and progressing the special mining lease application
- Near-mine exploration and projects in support of extending mine life at Hidden Valley
- Rationalisation of non-prospective tenure

In FY20, we spent R203 million (US$13 million) on exploration in Papua New Guinea, driven largely by activities related to the Wafi-Golpu project (FY19: R397 million; US$28 million). Exploration expenditure of R183 million (US$13 million) is planned for FY21.

The reduced FY20 work programme was impacted by the global Covid-19 pandemic, which was declared an international public health emergency by the World Health Organization on 30 January 2020. As the Covid-19 pandemic continues globally, in Papua New Guinea, the measures and other controls under the National Pandemic Act 2020 remain in place. As a result, we expect the proposed FY21 work programme to be subject to change as we comply with these measures and controls, which include, among others, travel constraints, physical distancing requirements and limits to group gatherings, which particularly affect our engagement with communities, the State, the province and other stakeholders. Compliance with these measures and control is essential to protect the health and safety of our workers and the local communities, which is paramount.

The country is highly prospective and under-explored and the case for exploration investment in Papua New Guinea will remain strong if the current or proposed legislative environment remains supportive.

Tenements held in joint venture:

Wafi-Golpu Joint Venture and Exploration Portfolio Joint Venture (Harmony 50%)

Harmony is in a 50:50 joint venture with Newcrest Mining over a number of tenements in the Morobe Province.

These tenements encompass the Wafi-Golpu project and span the Wafi Transfer zone and its strike extensions, and are prospective for epithermal gold and porphyry style copper-gold deposits. The exploration strategy is to discover bulk tonnage (~1Moz) or

EXPLORATION CONTINUED

high-margin gold or copper-gold deposits to provide new resource options that can leverage infrastructure or complement the Wafi-Golpu project.

In line with the greater focus on brownfields exploration, the regional joint venture tenure was reduced to several tenements contiguous with the Wafi-Golpu project. The aggregate tenement package in Morobe Province, held in the 50:50 joint venture between Newcrest and Harmony, now stands at 152.7km^2 (FY19: 182.3km^2).

During FY20, total Harmony expenditure (50%) on the joint venture tenements in Morobe Province was R3.0 million (US$0.19 million), compared to R3.3 million (US$0.23 million) in FY19. Generative work focused on establishing the geophysical footprint and developing near mine drill targets within the Wafi-Golpu project area is planned to continue in FY21.

Exclusively held tenements:

(Morobe Consolidated Goldfields Limited and Harmony Gold (PNG) Exploration Limited) (Harmony 100%)

Rationalisation of regional greenfield tenure within Harmony's 100%-owned tenement portfolio in Papua New Guinea continued. The tenement portfolio comprised 599.8 km^2 as at 30 June 2020, compared with FY19: 711.8km^2 (a 16% decrease year-on-year).

Work programme expenditure focused on the development of brownfield gold targets within a 10km radius of the Hamata processing plant at Hidden Valley. This includes study work on the depth extension of the Hidden Valley deposit.

The FY20 resource for Kili Teke remains at 782 000t of copper, and 1.8Moz of gold. The deposit is open at depth and along strike to the southeast. Drill spacing remains broad and potential to increase the resource base remains high. For further details on Kili Teke and its Mineral Resource, see pages 127-129.

Papua New Guinea – overview of joint venture exploration (Harmony 50%)

Objectives	Progress in FY20	Targets/plans for FY21
Exploration portfolio tenements (Wafi-Golpu district)		
Wafi transfer zone – grassroots exploration targeting discovery of additional resources to expand Wafi-Golpu into a mineral district	Technical work completed to advance orebody knowledge and understanding of the geophysical footprint of Golpu includes: • Integration of reprocessed ZTEM, AMT, IP and magnetic geophysical datasets with 3D deposit models (geology, surface and downhole geochemistry) • Mapping and surface sampling of targets developed from integrated model	Follow up mapping and surface sampling on ranked targets along the Wafi-Transfer structure.

Wafi-Golpu (photo taken before the outbreak of the Covid-19 pandemic)

Papua New Guinea – overview of brownfield exploration activity and greenfield tenement portfolio (Harmony 100%)

Objectives	Progress in FY20	Targets/plans for FY21
Kili Teke Project – EL2310		
Targeting copper-gold porphyry	Engagement with local communities and stakeholders continued during FY20 – fieldwork and a landholder identification survey completed on regional target prior to suspension due to COVID-19 restrictions	Work scheduled for FY21 includes: • Community engagement and social mapping • Airborne geophysics and processing to identify "blind" targets masked by limestone cover and to improve drill targeting at depth
Hidden Valley District Project – EL497, EL677, EL2313, ML151		
Brownfields exploration within a 10km radius of the Hidden Valley plant to develop replacement resources and support the mine-life extension	• Mining studies to investigate options to extend mine life on down dip extension of the Hidden Valley orebody continued • Exploration work focused on the Webiak Prospect located approximately 7.5km north of Hidden Valley • A new geological model predicting the continuation of Edie Creek LS epithermal Au-Ag veins to the northwest as a series of concealed targets under younger volcanic cover sequences progressed to drill testing phase. Preparations included construction of seven drill pads, a laydown and foot tracks and the upgrading of an access road. • A helicopter portable drilling rig was mobilised and a diamond drill hole was completed prior to the onset of the Covid-19 state of emergency. The drill rig was then demobilised in line with emergency response measures to the virus • The assay results have not yet been received	• Complete mining studies to prefeasibility level including mine optimisation, geometallurgical model, geotechnical studies, and tailings deposition • Data compilation and assessment of results from the Webiak drilling and programme planning

EXPLORATION CONTINUED

SOUTH AFRICA

All our underground mines are located within the Witwatersrand Supergroup. Most are situated in the south-western corner of the Witwatersrand Basin or Free State goldfields, and comprise sedimentary rocks extend laterally for hundreds of kilometres into the West Rand goldfields and East Rand Basin. Our mining assets include an open-pit operation on the Kraaipan Greenstone Belt to the north-west of the Witwatersrand Basin. Additional information on geology is provided per operation in this report.

Exploration FY20

In FY20, Harmony spent R56 million (US$4 million) on exploration in South Africa (FY19: R101 million; US$7 million). Expenditure of R96 million (US$7 million) planned for FY21 includes R10 million budgeted for the prefeasibility study for exploration related to the Kalgold Windmill extension and condemnation drilling.

Underground resource definition drilling

In all, 68 764 metres were drilled across Harmony's underground operations in South Africa (FY19: 73 118 metres).

Using a method known as continuous coring, underground exploration drilling is conducted as per required intervals from existing underground excavations (haulages and cross cuts). This drilling provides information to determine the elevation and grade of the targeted reef horizon as well as geological features in the immediate surrounding lithology. It assists in structural geological interpretation and evaluation of specific areas as well as compilation of regional structural geological and evaluation models. Mine geologists and planners use drilling information to determine a mine's development strategy and eventually its economic viability.

Kalgold brownfield exploration programme

The Kalgold operation is 100% owned by Harmony and located approximately 276km west of Johannesburg, in North West Province, South Africa. Harmony holds 448 square kilometers of highly prospective tenure over the Kraaipan Greenstone Belt, which includes the Kalahari Goldridge mining right (Kalgold), its associated open-pit gold mines and several adjacent prospecting rights. The titles provide an ideal mix of near-mine and new mine opportunities that can leverage existing infrastructure and can be fast-tracked into production with aggressive exploration.

The brownfield infill drill campaign carried out in FY20 focused on the main line of lode and potential satellite targets. Intercepts returned confirmed an expanded, robust mineralised system with over 2.1 kilometres of strike, extending more than 300 metres below surface (a full list of drill intercepts is included in the SAMREC Table 1 report available at *www.harmony.co.za*). The expanded resource base underpins the Kalgold expansion prefeasibility study that was completed this year.

South Africa – summary of brownfields exploration

Objectives	Progress in FY20	Targets/plans for FY21
Kalgold expansion		
Advance feasibility studies in support of an expansion of the Kalgold open-pit mining operation: • Additional resource growth to underpin expansion studies and improve operational flexibility • New high-grade satellite resources • Extensions to known deposits	Six holes totalling 1 929 metres were drilled. An updated Mineral Resource estimate[1] for Kalgold was completed in November 2019, comprising 86.4Mt at 0.86g/t Au for 2.401Moz of gold. Infill drilling resulted in an upgrade of the Windmill zone resource to the Indicated category.	A feasibility study is planned.
Kalgold prospecting rights		
Exploration aimed at improving understanding of the potential to develop the Kraaipan Greenstone Belt into a new mineralised province with multiple mining centers.	The mineralisation style encountered at Kalgold is extremely conductive, and amenable to detection under cover via geophysical survey techniques. The airborne electro-magnetic (AEM) survey identified numerous anomalies. The geochemical soil sampling program was carried out to test the potential mineralised zones. Total of 4 162 auger holes were drilled and 1 902 of outcrop samples were obtained and analyzed. Integration of the AEM data with regional magnetics and geochemical sampling results indicate potential targets which will be explored by reverse circulation drilling.	Planned regional exploration includes initial traverses of reverse circulation drilling over the potential targets and continuation of systematic, geological investigations/ground truthing of identified geophysical anomalies, including mapping and surface geochemistry.

[1] *Complete assay results and resource details are tabulated in the technical annexure available at www.harmony.co.za: SAMREC Table 1 Report – Kalgold operation, North West Province, Republic of South Africa*

South Africa – summary of brownfields exploration continued

Objectives	Progress in FY20	Targets/plans for FY21
Doornkop – South Reef		
Drilling of long-incline boreholes is being conducted to confirm the South Reef on levels 202, 207 and 212 and to build confidence in the geological model.	Drilling began in November 2019 after one identified drilling site had been equipped. Equipping of other sites continues in parallel with drilling at the equipped site.	The project targets drilling into identified areas to further increase geological confidence and grow the resource base.
Tshepong Operations: Tshepong section, B Reef		
Exploration continues to maintain current levels of B Reef mining. Drilling is being conducted to identify areas of economic value in projected extensions of the current B Reef channels being mined.	21 exploration holes were completed during the year. Drilling assisted in the testing of the current pay shoot model and in delineating more detailed channels that were extrapolated from existing pay shoots. The Mineral Resource model was updated with this new information.	Exploration drilling was completed by the end of June 2018. Results from the 21 exploration boreholes indicated and confirmed areas of high economic value in the east north area of the mine (50 level) as well as Sub 66 area (69 level). Both these areas are currently being developed.
Tshepong Operations: Phakisa section, B Reef		
Currently, there is no stoping of the B Reef at the Phakisa section, however, footwall development is in progress to access the EV10 payshoot area. Exploration drilling is underway to identify areas of economic value in the down-dip extensions of those channels being mined in the neighbouring Tshepong section. Significant potential may exist to mine the B Reef in the Phakisa section.	Drill results, combined with historic regional information, have improved understanding of the B Reef's boundaries. This has allowed enhanced definition of the EV10 pay shoot which is currently being explored by drill holes. The potential existence of the pay shoot is being extrapolated from current mining across the Dagbreek Fault as well as from two surface boreholes in the extrapolated pay shoot. Seven holes were drilled in FY20.	Planned capital exploration includes the drilling of two more holes. This will involve one machine drilling on the north side of the shaft. Development into this block (EV10) has started and will continue throughout FY21.

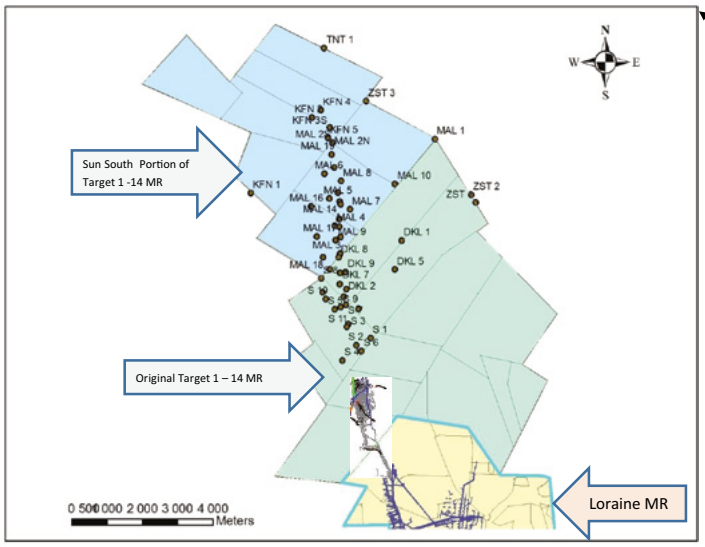
Target North – MAL 21 exploration borehole

EXPLORATION CONTINUED

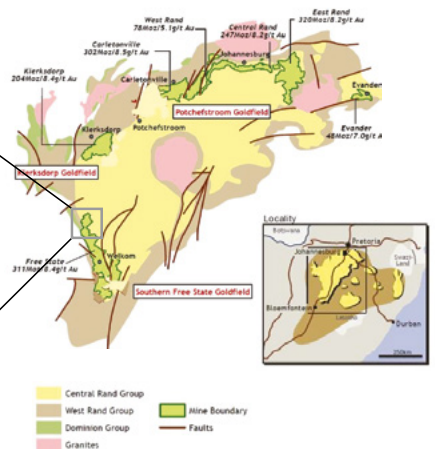
South Africa – summary of brownfields exploration continued

Objectives	Progress in FY20	Targets/plans for FY21
Target North		
The aim of the current exploration programme is to confirm the geological model, which was created on the completion of the Target North study work. The model defined a potential block of well-mineralised Ventersdorp Contact Reef where it overlies the alluvial fans of the upper Elsburg and Dreyerskuil reefs. Two fans have been interpreted in the Target North area of the Dreyerskuil and Mariasdal fans. Further resource definition drilling will be planned, pending the results of the current exploration programme.	The surface exploration drilling programme advanced and borehole MAL21 (original hole) was completed. The hole reached a depth of 3 022.77 metres and intersected well-developed reef (Ventersdorp Contact Reef). The sedimentological study of the Venterspost Formation has been completed and concluded that drilling at Mariasdal 497 identified all the characteristics of a major alluvial fan. Hole MAL21 has confirmed the model. Results from this borehole will be shared once all deflections have been completed.	Drilling of three long directional deflections is planned to test the postulated Mariasdal Fan Head. The sedimentological model will be updated once the deflection programme has been completed.

Target North Project Area showing historic boreholes



Witwatersrand Basin



Joel – high-grade Beatrix Reef extension (Klippan)		
Exploration is planned to upgrade the Mineral Resource to the Indicated level and determine the economic mining limit in the north and northeast areas originally classified as non-depositional zones. Opening up this area will greatly reduce the risks of the initial development-constrained mining areas in the 137 level project area.	Exploration, which began in November 2019, involves the drilling of three boreholes in this area.	Exploration is due to be completed by the end of December 2020.
Joel – 145 level exploration		
Exploration here is aimed at upgrading the current Mineral Resource to the Indicated level and to determine the economic mining limit to the north and northeast, below current mining infrastructure, to ensure the 145 level decline project remains economically viable.	Exploration drilling began in August 2019. Three long inclined boreholes will be drilled in all. The first hole is currently at 220m and we expect to intersect reef at 300m.	Once the first hole has been completed, drilling of two more holes will begin. Exploration drilling is due to be completed in December 2020.

PROJECTS

Harmony has several projects underway in Papua New Guinea and South Africa which are essential to the longevity of the business. The aim of these projects is to ensure a pipeline of exploitable, cost efficient Mineral Reserves.

Wau drilling valley

PAPUA NEW GUINEA

Harmony currently has two projects in Papua New Guinea:

- The **Wafi-Golpu project** is owned by the Wafi-Golpu Joint Venture, a 50:50 unincorporated joint venture between subsidiaries of Harmony and Newcrest Mining Limited respectively
- **Hidden Valley extension project** – a feasibility study is being conducted to assess the viability of exploiting the large Mineral Resource below the current life of mine pit. This project depends on finding a suitable location for a tailings storage facility

Wafi-Golpu project (Harmony 50%)

Key statistics:

- Greenfield copper-gold project, supports Harmony's commodity diversification strategy
- Resource contains 18.6Moz gold and 8.6Mt copper
- Estimated operating life of mine of more than 28 years (potential to extend to 40 years)
- Block cave mining method – multi-cave options
- Steady-state production estimated at 161 000t of copper, 266 000oz of gold (more than 1.4Moz of gold equivalent ounces annually)
- Above average grades:
  - Gold – 0.90g/t
  - Copper – 1.27%
- Costs of US$0.26/lb are in the lowest decile for copper production
- Expressed in terms of gold production, an all-in sustaining cost of minus US$2 128/oz is estimated
- Special mining lease (SML) and a proposal for development submitted to the Mineral Resources Authority in August 2016 (updated March 2018)
- Environment impact statement (EIS) submitted to the Conservation and Environment Protection Agency in July 2018

The Wafi-Golpu joint venture participants hold exploration licences EL440 and EL1105, which are located approximately 65km southwest of Lae, in Morobe Province. The joint venture has applied for a special mining lease (SML 10) to undertake the construction, operation and ultimately, closure of a greenfield block cave copper-gold mine.

The proposed mine site is situated at an elevation of approximately 400m above sea level in moderately hilly terrain. It is near the Watut River, approximately 30km upstream from its confluence with the Markham River. Lae, the second largest city in Papua New Guinea, will host the project's import and concentrate export facilities.

The 2018 feasibility study, which remains the basis for the business case, is based on block caving the Golpu resource.

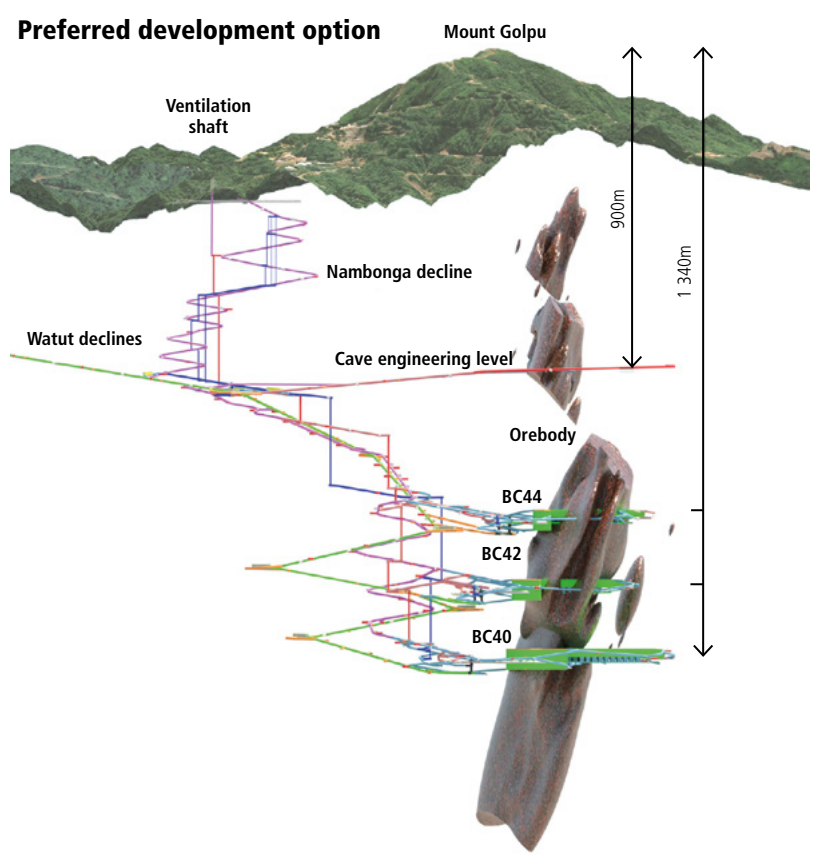
The project is a viable development of a high-quality resource, capitalising on the high-grade nature of the copper-gold Golpu orebody, an optimised capital expenditure profile and the ability to optimise the production rate and cash flow by preferentially (in time) targeting higher-grade sections of the Ore Reserve.

The primary project deliverable is the commissioning of a mining operation to produce at nameplate capacity of 16.84Mtpa a high-quality copper and gold concentrate with ore sourced from three block caves, namely BC44 and BC42 and BC40.

The special mining lease 10 (SML 10) application was submitted to the Papua New Guinea Mineral Resources Authority in August 2016 and was updated in March 2018, when an updated feasibility study was tabled, including deep sea tailings placement as the preferred tailings solution. The EIS was submitted in June 2018.

The joint venture participants entered into an MOU with the State in December 2018, targeting a grant date for the special mining lease by June 2019. However, delays in discussions with the State, and litigation between the State and the Morobe Province concerning the MOU prevented this target from being achieved. The permitting process may be further delayed owing to ongoing mining and fiscal regime reviews. This includes delays associated with discussions between the national government and the Morobe provincial government regarding the project.

PROJECTS CONTINUED



PREFERRED DEVELOPMENT OPTION FOR WAFI-GOLPU

The diagram alongside illustrates the preferred development option. Evaluation of this preferred development option in the feasibility study update is based on:

- Mining 155Mt (approximately 40%) of the current known Ore Reserve in two block cave levels being block cave 44 (BC44, 65Mt) at 4400mRL and block cave 42 (BC42, 90Mt) at 4200mRL, both at a feasibility level of confidence
- Mining and processing the remaining Ore Reserve (210Mt), currently at a prefeasibility level of confidence, in a third block cave level, block cave 40 (BC40) at 4000mRL
- Total ore mined of 376Mt over 28 years (26 years post commercial production), including 11Mt of development ore

Note that when development tonnages are allocated to the block caves levels, the volumes per cave are 68Mt (BC40), 93Mt (BC42) and 215Mt (BC44). The values (tonnages and durations) per block cave level refer to production from the drawpoints, not development.

The Wafi-Golpu project will progress to execution once:

- SML 10, the environmental impact statement and all other necessary tenements and permits required in support of project development have been granted
- All required agreements with the State and landowners have been signed
- All necessary approvals have been received from the boards of directors of the ultimate holding companies of the partners in the joint venture, namely Harmony and Newcrest

Initial activities post granting of the special mining lease will focus on development of site access roads and bridges, and the construction of the Nambonga and Watut declines.

For further details of the Mineral Resources and Mineral Reserves at Wafi-Golpu and Nambonga, see pages 121 to 126.

Hidden Valley extension

The current Hidden Valley mine plan and reserve are constrained by existing capacity in the Hamata tailings storage facility. This constraint limits the mine life to 2024 and defines the reported Mineral Reserve.

However, a large Mineral Resource remains below the life of mine pit which can be exploited if a suitable tailings storage facility can be located.

The Hamata open pit has been recognised as a viable option for the storage of tailings and could provide a facility with storage capacity of 10Mt. Hamata falls within mining lease ML151 and is easily accessible but requires the mining of Hamata 3 to be completed before the dam wall can be built

A feasibility study is currently being finalised, based on this new facility as well as on an updated resource model, open pit optimisations, the design for a further cut back on the Hidden Valley-Kaveroi pit, and an updated operating and capital cost profile.

Initial indications from the feasibility study confirm the technical and economic feasibility of the extension to the Hidden Valley operation providing:

- A 2.5-year mine life extension to FY26
- Additional gold production of ~450 000oz
- Additional silver production of ~8Moz
- Reduced cash flows in financial years FY21 – FY23
- Increased cash flows in FY24 – FY26

Although the current mine lease expires in 2025, a commitment to the extension is required by early calendar year 2021 as pre-strip mining for the cutback is scheduled to begin later that year. This requires significant financial investment and cannot be done without certainty of title and under clear conditions. An application to extend the mining lease was submitted in June 2020.

The technical and financial study is due for completion by December 2020 after which an investment decision may be made. Certainty on the mining lease will be a key component to this decision.

SOUTH AFRICA

In South Africa, projects are currently in progress at Kalgold, Doornkop, Joel and Moab Khotsong, all of which are aimed at extending the life of mine at these operations.

South Africa – summary of projects currently underway

Objectives	Progress in FY20	Targets/plans for FY21
Kalgold – expansion project		
The Kalgold plant currently treats approximately 130 000 tonnes a month. Following on from the current exploration drilling programme, the project is aimed at increasing production.	The business case trade-off to increase monthly plant throughput to either 170 000 tonnes or 210 000 tonnes using the Joel mills was completed. A prefeasibility study on a further expansion in monthly throughout to 275 000 (using the current plant) or 300 000 tonnes (by building a new plant) was completed.	A feasibility study for the expansion of Kalgold mine is planned. The feasibility study will evaluate building a new 300 000 tonne-a-month plant close to the mining pits while continuing to use the existing 130 000 tonne-a-month plant.
Doornkop – 207 and 212 levels project		
The project extends the mining of the orebody at depth. The levels need to be developed and the ventilation shaft needs to be adapted to be able to hoist rock and relieve the pressure on the main shaft. An ore handling system incorporating 215 level also needs to be put in place.	Only critical early works, including development on 207 level, widening (drilling and drop raising) of the 192 to 212 level ore passes as well as re-commissioning of the ventilation shaft rock hoisting and mid shaft loading arrangements, were executed in FY20. A feasibility study was initiated in September 2019 to firm up the project scope, costs and timelines to allow for a formalised decision-making process. The study was almost complete by year end. Additional exploration drilling is being implemented to expand and confirm the mine's reserves and resources.	Following approval of the feasibility study, the remainder of the implementation phase of the project will continue. A priority will be to access exploration drill sites in order to further expand the size of the reserve.

Moab Khotsong

PROJECTS CONTINUED

South Africa – summary of projects currently underway continued

Objectives	Progress in FY20	Targets/plans for FY21
Joel North		
To access the orebody from 137 level, two declines were developed at 12° from 129 level – a chairlift decline and a conveyor belt decline. Primary footwall development is currently taking place on 137 level to intersect the reef.	A permanent conveyor was commissioned. Construction of the box fronts on 137 level is ongoing. Work on the 137 level east haulage began. The 137 E5 crosscut and raise were completed.	The entire project, including all construction and equipping to access the reef horizon and to start stoping, will be completed.
Joel tailings reclamation		
Increase tailings reclamation capacity by using the Joel plant and tailings storage facility which have become available following the transfer of the Joel run-of-mine ore to Harmony One plant for processing.	The prefeasibility study was completed however the economics of the project did not allow it to proceed to feasibility.	Investigate possible collaboration with owners of other mining infrastructure in the area.
Moab Khotsong – Mispah tailings dam retreatment project		
The Mispah tailings reclamation project entails reclaiming gold from the Mispah 1 tailings storage facility. The tailings will be treated in existing plants and residue will be deposited on existing tailings storage facilities.	The prefeasibility study indicated an 11-year project life with the production of 7 922kg of gold from the reclamation of 66.3Mt of tailings at a monthly rate of 510 000 tonnes from the Mispah 1 tailings storage facility. The prefeasibility study identified certain outstanding issues regarding residue deposition.	Pending the acquisition of Mine Waste Solutions (MWS) from AngloGold Ashanti, a feasibility study will be done to investigate the use of their current infrastructure to circumvent the residue deposition issues identified in the Mispah prefeasibility study.
Moab Khotsong – Great Noligwa shaft pillar extraction		
This project was approved by the technical and investment committees for implementation in FY20. The chosen option is based on the partial extraction of reef blocks with a central stabilising pillar to maintain the integrity of both shaft barrels.	The implementation of the project progressed in FY20 and, by financial year-end, 428 metres had been developed. Refurbishment of the backfill plant was completed and the 73-76L transfer system commissioned. Owing to the national lockdown, the project is behind schedule and the capital budget is underspent. This is in addition to development metres being less than planned.	Increased development has been scheduled to access reef mining blocks by including a wide raise on 73 level. First gold is planned by of the beginning of FY23.
Moab Khotsong – Zaaiplaats project		
The Zaaiplaats project is to mine the orebody below the current Moab Khotsong middle mine. New infrastructure below 101 level will need to be developed to access the orebody.	A prefeasibility study was concluded and indicated that Zaaiplaats could contribute positive value through the application of a twin-decline system. A feasibility study was begun but its completion has been delayed due to Covid-19. This study is expected to be completed by end March 2021.	The feasibility will be concluded, after which the project will be evaluated for capital priority. Any opportunity for early capital development will be identified to expedite and enhance the project.

Target North – MAL 21 exploration borehole

SOUTH AFRICA

Harmony's South African operations include eight deep-level mines, an open pit mining operation and several surface retreatment facilities. Combined, these account for gold Mineral Resources of 73.26Moz and gold Mineral Reserves of 17.40Moz. These are equivalent to 62% and 48% respectively of total group Mineral Resources and Mineral Reserves.

Moab Khotsong

MINERAL RESOURCES AND RESERVES BY OPERATION

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42 West Rand
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68 Tshepong operations
74 Bambanani
80 Joel
86 Masimong
92 Target 1
98 Surface sources
100 Kalgold
106 Free State and Klerksdorp

SOUTH AFRICA

Doornkop

WEST RAND

Harmony has two underground mining operations on the West Rand – Doornkop and Kusasalethu. As at 30 June 2020, their combined Mineral Resource (inclusive) was 14.7Moz and the combined Mineral Reserve, 2.4Moz.

GOLD

Mineral Resources (inclusive)

14.7Moz

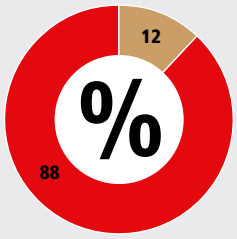
Mineral Reserves

2.4Moz

GOLD AND GOLD EQUIVALENTS

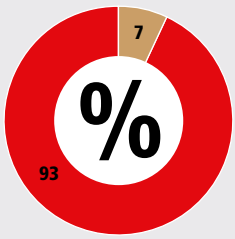
Contribution to Harmony

Mineral Resources 12%



Rest of Harmony **88%**

Mineral Reserves 7%



Rest of Harmony **93%**

LOCATION OF WEST RAND OPERATIONS

Harmony's West Rand operations are located on the north and north-western rim of the Witwatersrand Basin.

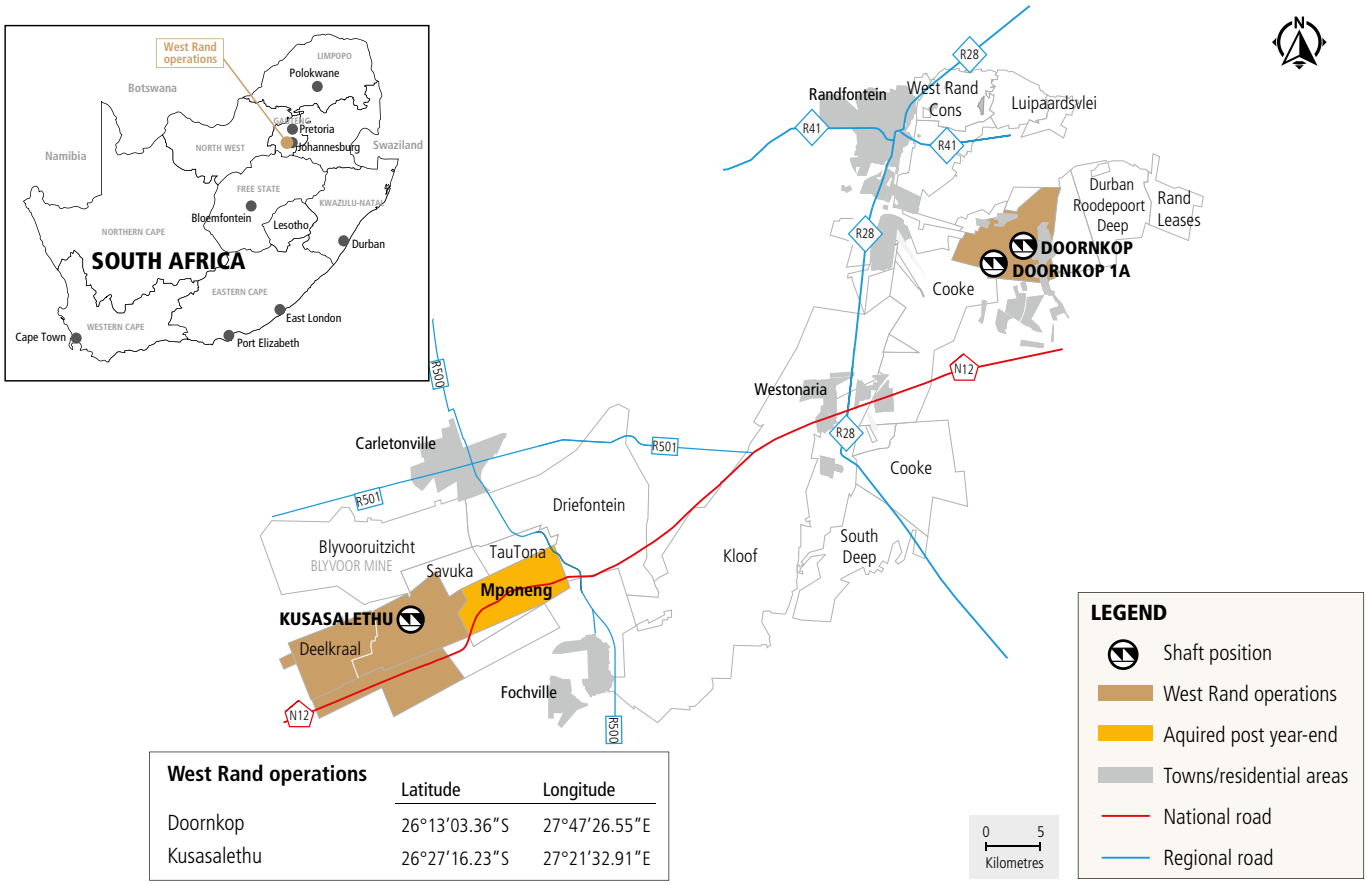
The **Doornkop** shaft complex is south of Krugersdorp, 30km west of Johannesburg, in the province of Gauteng. The property lies between Sibanye-Stillwater's Cooke 1 shaft and Durban Roodepoort Deep.

Kusasalethu is on the West Wits Line, adjacent to the Savuka and Mponeng mines (AngloGold Ashanti Limited) to the east and the dormant Deelkraal to the west. Kusasalethu is situated 14km south of Carletonville and 90km southwest of Johannesburg. Post year-end the acquisition from AngloGold Ashanti of Mponeng, as well as infrastructure related to TauTona and Savuka, was completed.

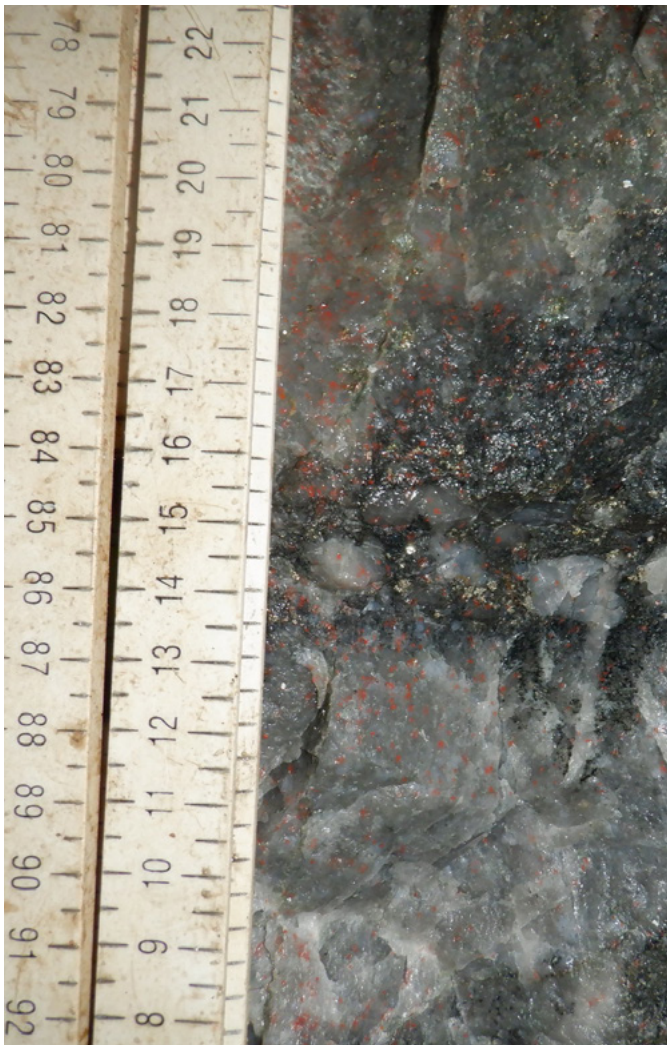
REGIONAL GEOLOGY

For a description of the geological characteristics of the West Rand, refer to the Geology section under each operation.

WEST RAND OPERATIONS – LOCALITY



West Rand operations	Latitude	Longitude
Doornkop	26°13'03.36"S	27°47'26.55"E
Kusasalethu	26°27'16.23"S	27°21'32.91"E

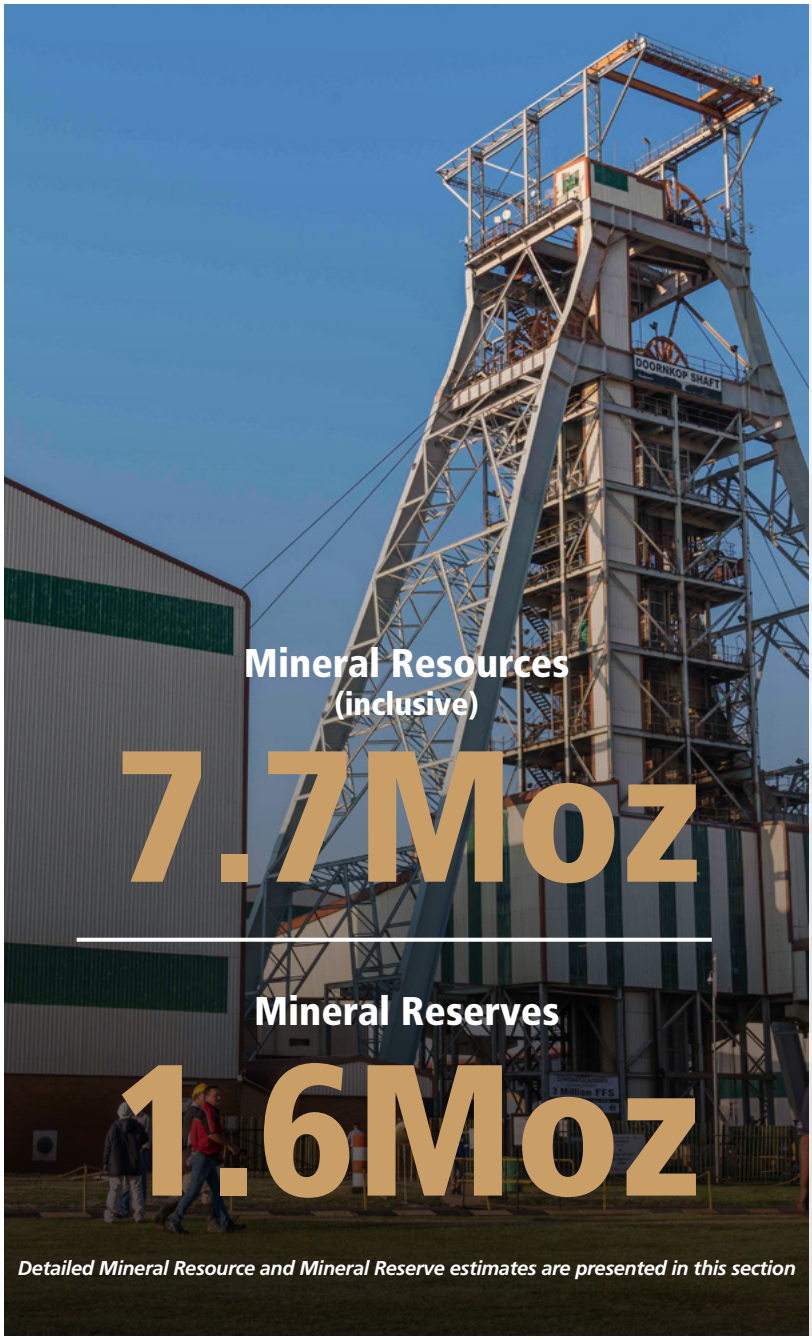


Doornkop – South Reef

WEST RAND STRATIGRAPHIC COLUMN

Group	Sub-group	Formation	Informal unit and reefs	Member
Klipriviersberg		Westonaria	Klipriviersberg/ Ventersdorp lava	
		Venterspost	Ventersdorp Contact Reef	
Central Rand Group	Turffontein	Mondeor	Elsburg massives and individuals	Modderfontein Waterpan
		Elsburg	Quartzites and conglomerates	Gemsbokfontein
				Planvlakte
				Gemspost
				Vlakfontein
		Kimberley	Shale	Kimberley Reefs
	Johannesburg	Booysens shale	Upper transitional Shale Lower transitional	Kimberley shale
		Krugersdorp	Bird amygdaliod Bird reefs White reef	Bird
			Luipaardsvlei quartzite	Luipaardsvlei
		Livingstone conglomerate	Livingstone Reef	Livingstone Reef
		Randfontein quartzite		
		Johnstone conglomerate	Johnstone Reef	Johnstone Reef
		Langlaagte quartzite		
		Main conglomerate	Leader Reef South Reef Main Reef	Langlaagte
West Rand Group	Jeppestown	Roodepoort		

DOORNKOP



Mineral Resources
(inclusive)
7.7Moz

Mineral Reserves
1.6Moz

Detailed Mineral Resource and Mineral Reserve estimates are presented in this section

History

Although exploration in the area started in the early 1930s, sinking of the main and ventilation shafts by JCI began in 1983. By 1989, steady state production had been achieved from mining of the Kimberley Reef, which is shallower than the South Reef that is currently being mined. The South Reef shaft extension was approved in October 1991 and the reef was intersected in October 1993. Stoping of the South Reef began in 1995. Shaft deepening continued with stoppages between November 1996 and May 1999. Harmony acquired Doornkop in January 2000. The South Reef project was relaunched in January 2003, resulting in the deepening of the mine to 1 980m below collar.

Nature of the operation

Doornkop is a single-shaft operation currently exploiting the South Reef to some 2 000m below surface. The narrow South Reef is exploited by means of conventional stoping. The ore mined at Doornkop is processed at the mine's carbon-in-pulp plant, which is directly beside the shaft. Mining of the Kimberley Reef was suspended during FY14 to focus on the build-up of production from the South Reef and to prevent losses as a result of the lower gold price. Mining of the Kimberley Reef may resume should economic circumstances improve sufficiently.

Geology

The Doornkop shaft lease area lies to the south-east of the major north-easterly striking Roodepoort fault, which dips to the south and constitutes the southern edge of the Witpoortjie horst block or gap.

This horst block comprises the stratigraphically older sediments of the West Rand Group, with the overlying Central Rand Group sediments having been removed by erosion. Doornkop is bounded by the Roodepoort fault and a number of other faults, including the Saxon fault, which constitute conspicuous structural breaks. Another major fault, the Doornkop fault, which trends in an east-west direction, occurs toward the southern portion of the lease area. This fault dips to the south and has an up-throw to the north.

As nearly the entire upper Witwatersrand section lies within the lease area, all major zones are present. However, given the distance of the area from the primary source of gold, the number of economic bands and their payability is limited. Eight of the well-known reefs are present in the area but only the South Reef and potentially the Kimberley Reef are considered viable at this stage.

The South Reef is between 7.5m and 60m above the Main Reef horizon. The hanging wall of the South Reef consists of siliceous quartzites with non-persistent bands of 'blue shot' grit and thin argillite partings. The South Reef footwall is a light coloured and fairly siliceous quartzite. Secondary conglomerate bands and stringers in the hanging wall and footwall of the South Reef may contain sporadic gold values. The general strike of the reef is east-west with a flat dip from 5 to 15 degrees.

Exploration drilling is set to continue in the coming financial year, and will target potential high-grade areas and those with limited geological information, to further increase geological confidence.

Mineral rights, legal aspects and tenure

The current mining right encompasses an area of 2 941.021 hectares and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 25 February 2009 under MPT 18/2009. The Department of Mineral Resources and Energy reference GP30/5/1/2/2/09MR is valid from 7 October 2008 to 6 October 2038.

Mining methods and mine planning

The mining method used is longwall mining with stability pillars on major geological structures. The flat dip, which results in the development of long cross cuts, presents challenges in terms of ore handling, especially for the bottom part of the raises, ventilation and in the long lead times between the start of cross cut development to completion of stoping per raise line.

Mineral processing

The carbon-in-pulp plant has a monthly milling capacity of 225 000 tonnes. Before Sibanye-Stillwater's Cooke shafts were placed on care and maintenance, this included toll treatment of approximately 120 000 tonnes a month of ore from these shafts.

Infrastructure

Doornkop's surface and underground infrastructure, including its power and water supplies, can cope with current planned peak production level requirements. Levels 192, 197 and 202 are track-bound while current development on levels 207 and 212 is trackless. Plans are in place to eventually make these levels track bound. Work continues on certain essential underground infrastructure on the South Reef, including the permanent tipping arrangements required to bring levels 207 and 212 to full production. Ore is hoisted through the main shaft.

Currently, the mine uses Sibanye-Stillwater's Cooke 1 shaft, which is 7km away, as a second escape way.

Mineral Resource Estimation

The Estimation method used for measured resources on the shaft is ordinary kriging. For indicated and inferred resources, it is simple macro kriging. Estimates are generally kriged into 30mx30m blocks for the measured resources from the point support data. Indicated resources are kriged into 60mx60m blocks, using the associated regularised variograms together with a macro kriging decluster. Similarly, inferred resources are estimated using the associated regularised variograms and kriging into 120mx120m blocks. Any unkriged areas in the inferred regions are then covered by global mean estimates. Geozones are based on grade distribution and structure to ensure correct grade estimates for the different areas. Inferred Resources are incorporated into the life-of-mine plan, based on the good track record of our ability to convert Inferred Mineral Resources into Indicated and Measured Mineral Resources through ongoing development and exploration work. For details of the Estimation process followed, see page 131.

Environmental impact

In line with the Mineral and Petroleum Resources Development Act (MPRDA), Doornkop has an approved environmental management plan report (EMPR), dated 2009, which was revised and updated in 2019 to reflect current mining activities and associated infrastructure. The new EMPR was revised in terms of the Environmental Impact Assessment regulations of 2014 and submitted to the Department of Mineral Resources and Energy (DMRE) for approval.

All environmental impacts emanating from mining, processing activities and associated infrastructures are documented in the EMPR and in the environmental aspect register, as required by both the MPRDA and the ISO 14001:2015 Environmental Management Standard.

Environmental compliance audits are conducted annually by the relevant government departments and independent environmental auditors to verify the mine's compliance status against all applicable environmental laws such as the Water Act, National Environmental Management Act, and Waste Management Act. EMPR audits also comply with regulation 55(3) of the MPRDA. The audit report is then submitted to the DMRE for further evaluation.

An online Doornkop environmental legal register, available at *www.drayer-legal.co.za*, is used to monitor compliance and to obtain relevant legal environmental updates for the operation to ensure compliance.

Bio-monitoring surveys are conducted on surface water streams (Klip River upstream and downstream) close to the operation. In particular, these surveys aim to:

- determine the ecological status of the Klip River by monitoring indices such as South African System Version 5 (SASS5), Integrated Hazard Awareness System (IHAS) and Association of Healthcare Internal Auditors (AHIA), and to determine the chemical water quality in the river during the wet and dry seasons
- provide baseline reference conditions for future studies in order to assist Doornkop management in identifying environmental liabilities, particularly the potential contamination of waterways, that might result from current mining activities
- determine the general habitat integrity and conditions for macro-invertebrates and aquatic macro-invertebrates

Doornkop has been ISO 14001-certified since 2010 and conforms with the related requirements. Doornkop has also been certified by the International Cyanide Management Institute and is audited annually to verify conformance with the Cyanide Management Code. In line with certification requirements, every effort is made to either eliminate or minimise the effects of mining activities on the environment and neighbouring communities.

SOUTH AFRICA – WEST RAND (DOORNKOP) CONTINUED

MATERIAL RISKS

Material risks that may impact Doornkop's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Unexpected geological features	• Gathered all possible historical geological information from surrounding mines and undertaken extensive exploration drilling from underground platforms and long-incline borehole drilling • 2D seismic survey completed

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

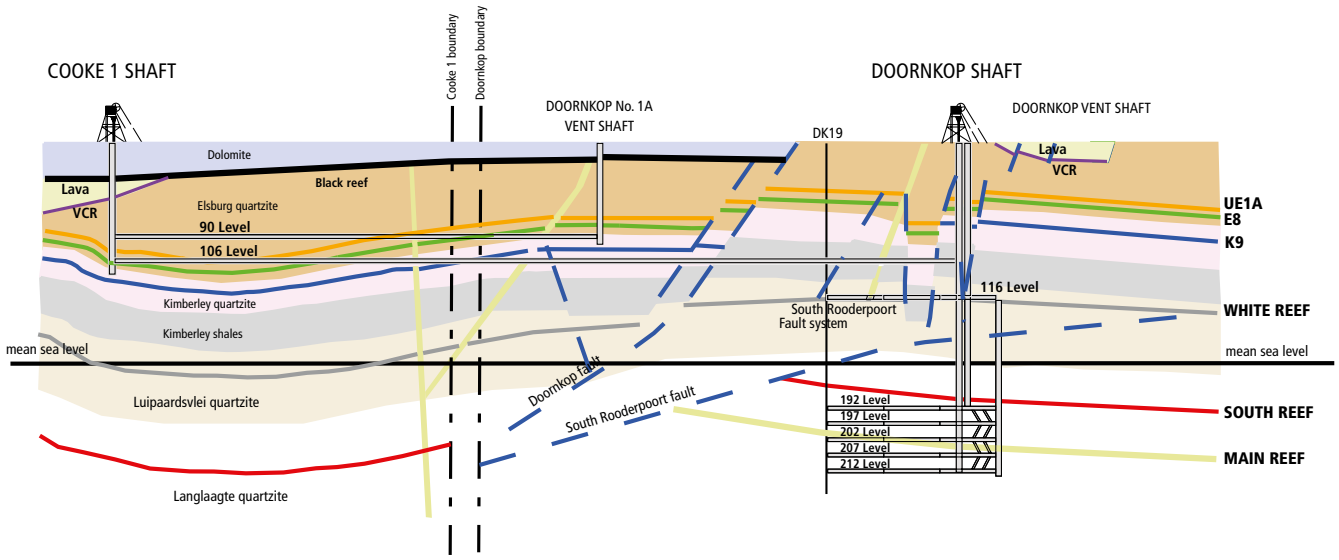
Ore Reserve Manager

Hilton Chirambadare

BSc (Geology, Mathematics), BSc Hons (Geology), GDE, MENG, SACNASP

18 years' experience in gold mining, 15 years on Witwatersrand gold deposits (underground) and three years on the Kraaipan Greenstone Belt (surface).

DOORNKOP – Geological section looking west (not to scale)



LEGEND

Dolomites	Elsburg quartzite	K9	Langlaagte quartzite	Dykes
Black reef	UE1A reef	Kimberley shales	South reef	Faults
Lava	E8 reef	Luipaardsvlei quartzite	Main reef	
VCR	Kimberley quartzite	White reef		

DOORNKOP

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
South Reef	4.5	8.74	39	1 253	4.0	8.09	32	1 028	4.3	7.96	35	1 111	12.8	8.27	105	3 391
Main Reef	0.1	5.38	0.4	14	0.05	5.51	0.3	8	0.02	5.32	0.1	3	0.1	5.41	1	25
Kimberley Reef	18.1	3.36	61	1 957	12.1	3.15	38	1 226	10.1	3.28	33	1 066	40.3	3.28	132	4 249
Total	**22.7**	**4.42**	**100**	**3 224**	**16.1**	**4.37**	**70**	**2 262**	**14.5**	**4.69**	**68**	**2 180**	**53.2**	**4.48**	**238**	**7 666**

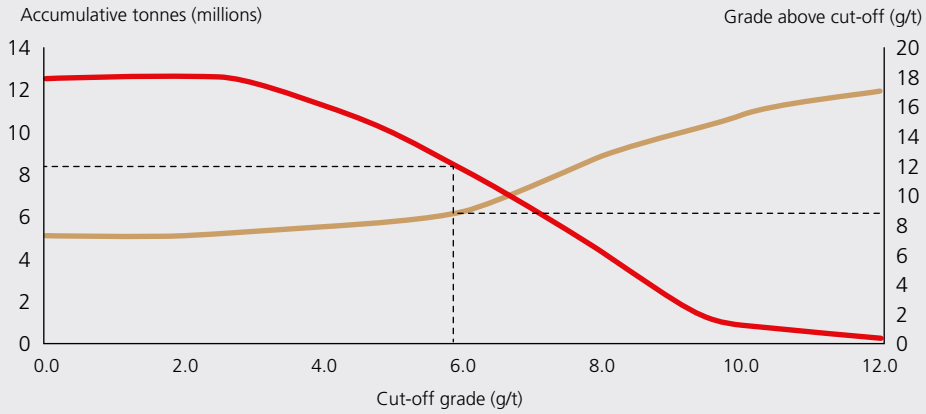
Modifying factors

South Reef	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	81	123	146	96	735
2020	80	123	146	96	800

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
South Reef	5.2	5.33	28	896	4.6	5.03	23	742	9.8	5.19	51	1 638

DOORNKOP:
SOUTH REEF
Measured and Indicated
Mineral Resource
grade-tonnage curve



Doornkop

SOUTH AFRICA – WEST RAND (DOORNKOP) CONTINUED

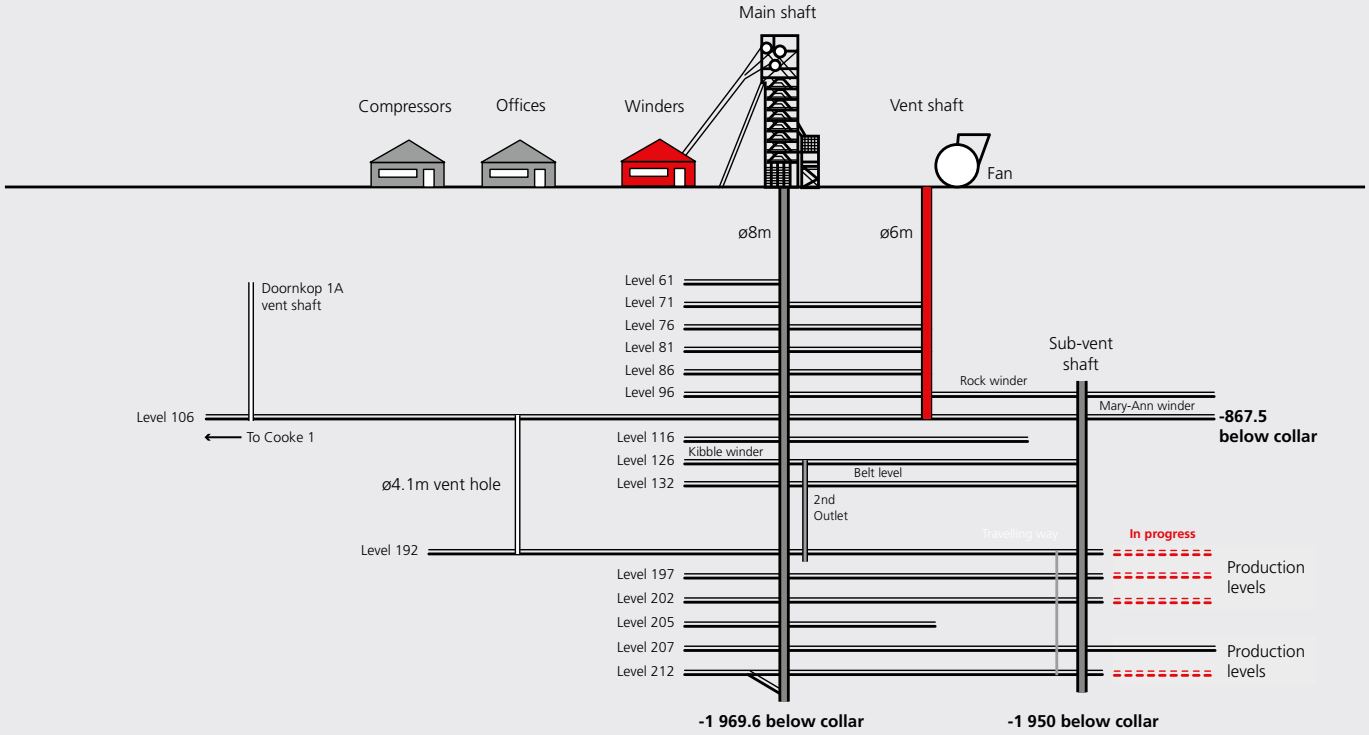
OPERATIONAL PERFORMANCE

Doornkop – key operating statistics

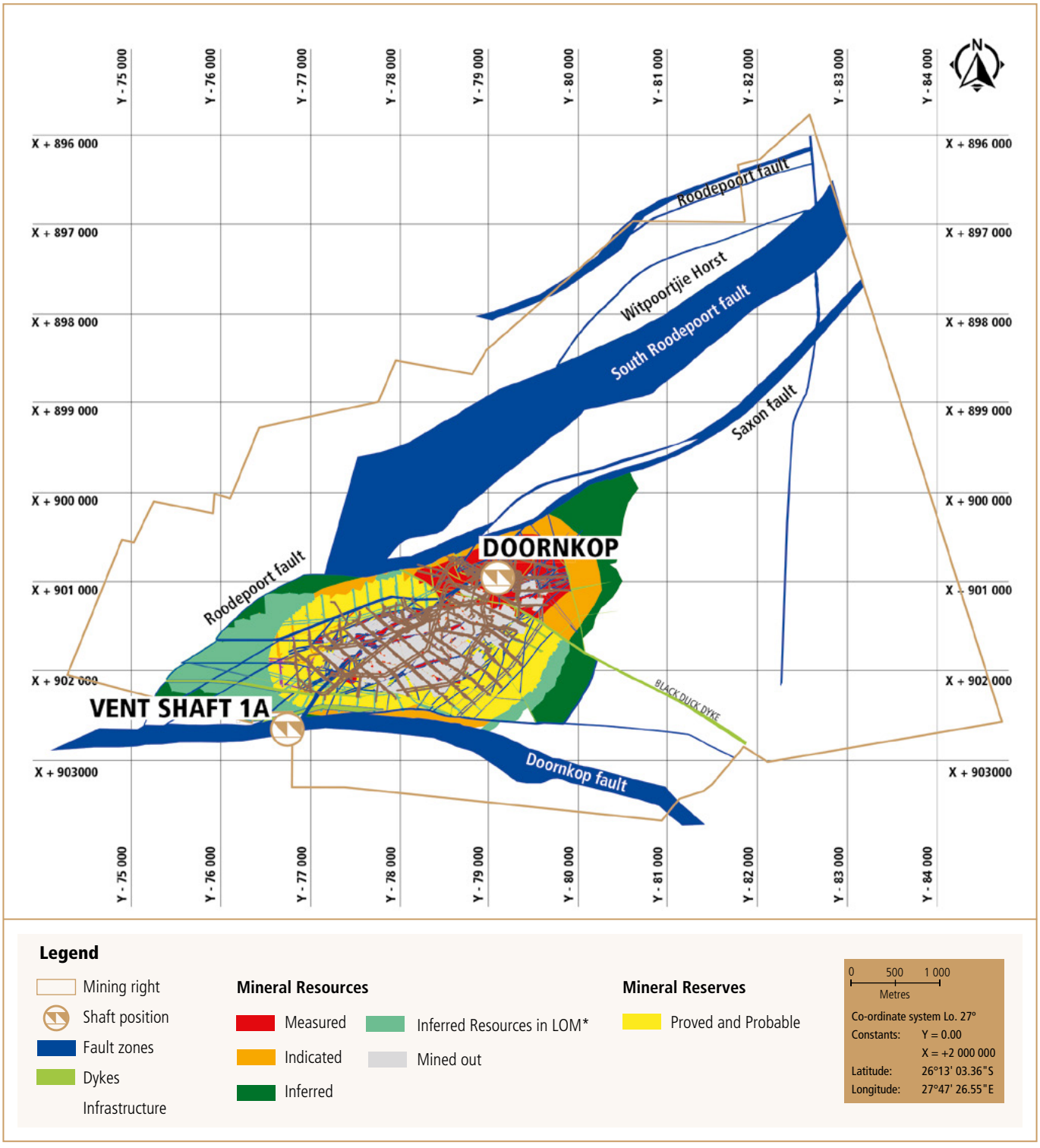
	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**681**	730	696	641	630
	000t (imperial)	**750**	805	767	706	695
Gold produced	kg	**2 994**	3 273	3 429	2 673	2 730
	oz	**96 259**	105 229	110 245	85 939	87 772
Grade	g/t	**4.40**	4.48	4.93	4.17	4.33
	oz/t	**0.128**	0.131	0.144	0.122	0.126
DEVELOPMENT						
Total metres (excl. capital metres)		**6 042**	8 337	9 595	9 961	7 766
Reef metres		**1 474**	1 621	1 478	1 337	1 688
Capital metres		**315**	497	806	1 316	0
FINANCIAL						
Average gold price received	R/kg	**747 282**	593 301	575 077	572 494	545 770
	US$/oz	**1 484**	1 302	1 392	1 310	1 171
Capital expenditure	Rm	**281**	308	274	243	208
	US$m	**18**	22	21	18	14
Cash operating cost	R/kg	**567 632**	486 795	413 586	457 752	387 585
	US$/oz	**1 127**	1 068	1 001	1 047	831
All-in sustaining cost	R/kg	**649 041**	572 132	508 065	562 907	473 562
	US$/oz	**1 289**				

Doornkop: Schematic of shaft and mining layout

Not to scale



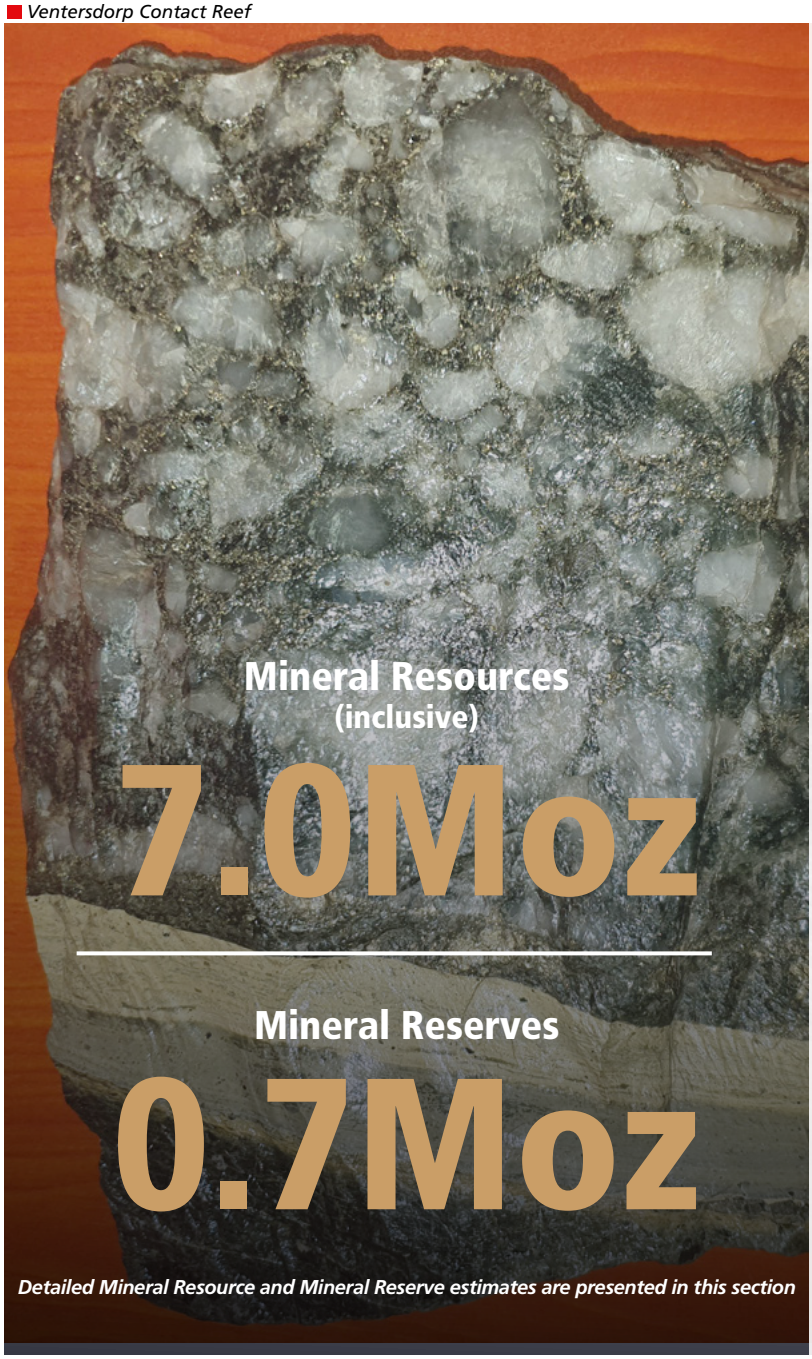
DOORNKOP – SOUTH REEF: MINERAL RESOURCES AND MINERAL RESERVES



** Inferred Resources are incorporated into the life-of-mine plan, based on the good track record of our ability to convert Inferred Mineral Resources into Indicated and Measured Mineral Resources through ongoing development and exploration work.*

KUSASALETHU

Ventersdorp Contact Reef



History

Harmony acquired the Elandsrand and Deelkraal mines from the then AngloGold Limited in 2001. Shaft sinking of twin vertical shafts at Elandsrand had begun in January 1975 and been completed in December 1978. First gold was produced in 1979. In February 2010, Elandsrand changed its name to Kusasalethu, which means "our future" in Zulu.

Nature of the operation

The 10m-diameter rock/ventilation shaft was initially sunk to 2 195m and the man/material shaft to 2 127m. By June 1984, a 10m-diameter sub-vertical rock/service shaft had been completed to a depth of 3 048m and a 7m-diameter sub-vertical ventilation shaft to a depth of 3 048m. Both shafts were deepened to a final depth below surface of 3 318m and 3 388m respectively as part of the deepening project to extract the higher-grade pay shoot towards the west of the mine. In December 2014, a decision was taken to suspend operations in the old portion of Kusasalethu and to restructure the mine. Subsequently, mining above 98 level ceased.

Kusasalethu employs sequential-grid mining, which is in essence an upside-down Christmas tree configuration. This method is used to direct seismic stresses away from current working areas into virgin rock areas.

Given the decrease in the Mineral Reserve at Kusasalethu in recent years, a result of normal depletion, a revised, shortened life-of-mine plan was implemented in FY15. This plan, which is still in place, aims to optimise the mine's cash flow at a higher

grade and create a stronger operating margin while providing the flexibility necessary to access the high-grade payshoot of the Ventersdorp Contact Reef below infrastructure should economic circumstances allow.

Geology

Kusasalethu is situated in the West Wits Basin with the Ventersdorp Contact Reef being mined as the main orebody.

Kusasalethu's Ventersdorp Contact Reef facies model is based on the paleotopographic or slope and terrace model. Nine facies types have been identified – eight sedimentological and one structural. Four of the facies are thick, high-grade, geologically distinct reef terraces, separated from one another by a thin low-grade slope reef. The sand-filled channel is a thick, low-grade facies.

The Sandy Terrace Complex is found on the same elevation as the Terrace Complex but is essentially a pebbly quartzite with no grade. The Mondeor conglomerates have been identified sub-cropping against the Ventersdorp Contact Reef in stopes in certain areas and have been delineated as separate facies in these areas.

The Elsburg conglomerates, found on the western side of Kusasalethu, form the footwall to the Ventersdorp Contact Reef and are part of the Turffontein Supergroup. It is a predominantly polymictic matrix-supported conglomerate of well-packed and moderately sorted, sub-rounded smoky (80%), black-grey (15%) quartz pebbles, chert (3%) and some elongated shale pebbles (2%). The matrix is pale yellow to light green and medium-grained and pyritic in places.

The Ventersdorp Contact Reef is overlain by the Ventersdorp Lava belonging to the Ventersdorp Supergroup. The reef is light to mid-grey in colour and fine crystalline, seldom containing phenocrysts. In places it is amygdaloidal with quartz and pyrite mineralisation. Flow structures are also present at the base of the lava. It breaks into very angular fragments due to weak jointing and flow banding – it would appear to be andesitic in composition.

Geological discontinuities observed at Kusasalethu include faults, dykes and sills. Sills may occur in the footwall, in areas adjacent to certain dykes. Flat bedding plane faulting also occurs and results in reef duplication, elimination and brecciation. Faults and dykes are classified according to their relative geologic ages as follows: Pre-Ventersdorp Contact Reef, or Ventersdorp, Platberg, Bushveld or Pilanesberg structures.

Kusasalethu mines in blocky ground created by structures in the form of dykes and faults. The dykes are fairly basic in composition and tend to strike north-north-east and south-south-west with a general dip of 75 degrees. The faults, however, have a strike mostly of east-south-east and west-north-west with a few exceptions. Generally, these are normal faults with the accompanying loss of ground with varying throws – from mere centimetres to a massive 60m (the Kittims and De Twem faults).

Mineral rights, legal aspects and tenure

The current mining right encompasses a total area of 7 000ha. Kusasalethu's mining right has been successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office (MPRTO). GP30/5/1/2/2/07MR is valid from 18 December 2007 to 17 December 2037. In terms of Section 102 of the Mineral and Petroleum Resources Development Act (MPRDA), the farms Buffelsdoorn and Deelkraal have been successfully included in Kusasalethu's mining right, increasing the extent of the original mining right from 51km² to 70km². These farms are contiguous to the south of the principal mining right.

Mining methods and mine planning

Mining is by means of sequential grids with regional dip stabilising pillars, backfill and pre-conditioning to offset the effects of mining at this depth. Mining is conducted over five levels from 98 level to 113 level. Large geological structures are stabilised by means of clamping pillars. Mine planning is done in two major phases, a life of mine plan is done annually and six-month mine plans are reviewed monthly to ensure ample time to react to changes in the dynamic mining environment. All planning is done in the digital environment by means of computer-assisted draughting.

Mineral processing

Ore mined is processed on site at the Kusasalethu gold plant. Gold is extracted by means of milling, cyanide leaching, carbon-in-pulp concentration and electrowinning to absorb the carbon to produce doré. No smelting is done on site and the gold doré is dispatched to Rand Refinery.

Infrastructure

Ore mined is transported by rail-bound equipment to the shaft's main ore pass system where it is gravity fed to 115 level. Ore is then hoisted via the sub-vertical shaft to above 73 level and then to surface. Given the depth of mining, major engineering infrastructure required includes refrigeration and cooling installations on surface and underground.

Mineral Resource Estimation

Data for valuation is obtained by means of chip sampling on the reef horizon in a 6m x 6m grid. Supplemental information is obtained from underground exploration drilling and existing surface exploration boreholes. All sampling done is subject to quality assurance/quality control, as prescribed by SAMREC, to ensure data quality and accuracy. Based on similarities in geology, the mining lease is divided into a total of eight geozones. Based on confidence levels for geostatistical data, valuation is by means of a computer-generated block model as follows:

- Measured blocks (30m x 30m grid)
- Indicated blocks (60m x 60m grid)
- Inferred blocks (120m x 120m grid)

The block model is then digitally transferred to the digital environment for valuation. For details of the Estimation process followed, see page 131.

Environmental impact

Kusasalethu's environmental aspects and impacts are managed according to the environmental management programme, as approved by the Department of Mineral Resources and Energy (DMRE), in terms of the Mineral and Petroleum Resources Development Act (MPRDA). All environmental aspects and impacts emanating from mining activities are documented in a dedicated report and in the environmental aspect register, as required by the MPRDA and the ISO 14001:2015 standard.

The approved environmental management programme was amended in 2014, in terms of section 102 of the MPRDA. This amendment allowed for the inclusion of the dimensions of the waste rock dumps, as well as the new height details and footprint of the tailings storage facility, reclamation of the rock dumps and the expansion of the existing underground workings for numerous portions of farm Deelkraal 142 IQ. The DMRE approved the amendments in 2018.

SOUTH AFRICA – WEST RAND (KUSASALETHU) CONTINUED

Annual performance monitoring audits are conducted by various departments, including the DMRE and the Department of Water and Sanitation to verify compliance with the following legislation:

- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- MPRDA

All environmental impacts arising from mining activities are managed in terms of the requirements of the approved environmental management programme, the water use licence, the waste permit and in line with the ISO 14001:2015 standards.

As required by relevant regulations, environmental audits or performance assessments to verify compliance with the approved environmental management programme are conducted every second year by independent environmental consultants and a report is submitted to the DMRE. External and internal environmental legal compliance audits are also conducted. An off-site legal environmental register is used to monitor compliance, and to obtain applicable and relevant environmental legal updates for the operation.

In line with Harmony's biodiversity and rehabilitation position statement, an alien invader plant eradication programme has been successfully implemented since 2016. To date, this programme has cleared invasive plant species from more than 3 500ha of 5 113ha of the surface mining right area.

Bio-monitoring surveys are also conducted on surface water resources, close to the operation, to safeguard the scarce resource and to ensure compliance with conditions of the water use licence issued in terms of National Water Act to:

- determine the condition of biological communities in the rivers and streams and to determine the chemical water quality in streams during the wet and dry seasons
- provide baseline reference conditions for future studies in order to assist Kusasalethu management in identifying environmental liabilities that might result from current mining activities regarding the potential contamination of surface streams

Full chemical analyses to monitor water quality include:

- monthly sampling of surface streams
- quarterly analysis of borehole water to monitor groundwater quality

Kusasalethu is ISO 14001:2015-certified and complies with the requirements of this standard for which it is audited annually by an independent certification body. The operation was initially certified in 2011, and most recently in 2018, under the new ISO 14001 standard (2015). In line with this accreditation, every effort is made to eliminate or minimise the negative effects of mining activities on the environment and adjacent communities.

The operation has also been accredited in terms of the Cyanide Management Code by the International Cyanide Management Institute. Independent third-party audits are conducted every three years to monitor compliance with the Cyanide Code.

MATERIAL RISKS

Material risks that may impact Kusasalethu's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Seismicity	• Extended production breaks scheduled over past three years to allow for infrastructure upgrades
• Water build-up at Deelkraal	• Control of mining sequence and appropriate support systems
• Backfill volumes	• Dewatering of the Deelkraal area to 98 level
• Major engineering infrastructure failure	• Use of waste rock dump on surface to supplement backfill volumes

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve Manager

Johann Ackermann

BSc Geology with distinction (UFS, 2005), SAIMM

26 years' hard rock, deep-level and ultra-deep level gold mining experience in the Witwatersrand Supergroup.

KUSASALETHU

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Ventersdorp Contact Reef	3.9	11.18	43	1 390	15.8	8.91	141	4 542	3.7	9.05	33	1 063	23.4	9.31	218	6 995

Modifying factors

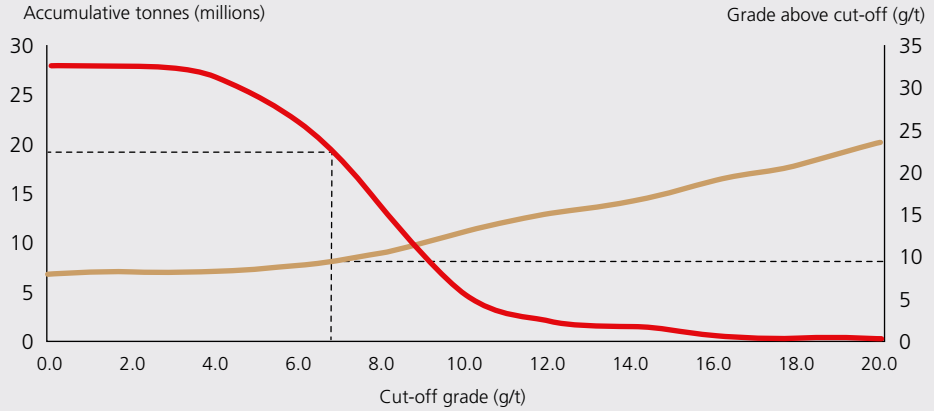
Ventersdorp Contact Reef	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	86	136	158	93	1 100
2020	85	136	164	93	1 100

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Ventersdorp Contact Reef	1.8	6.92	13	410	1.3	7.68	10	320	3.1	7.24	23	730

KUSASALETHU: VENTERSDORP CONTACT REEF

Measured and Indicated Mineral Resource grade-tonnage curve



Kusasalethu

SOUTH AFRICA – WEST RAND (KUSASALETHU) CONTINUED

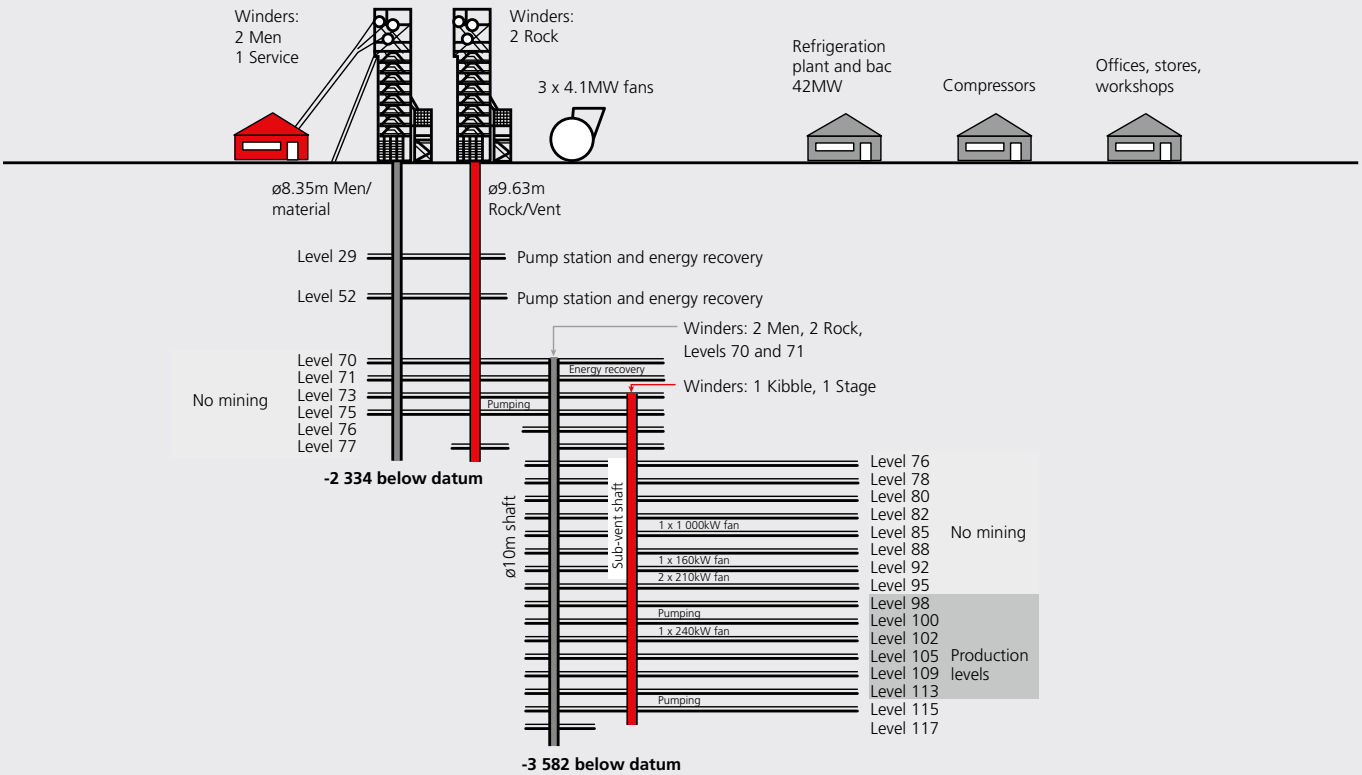
OPERATIONAL PERFORMANCE

Kusasalethu: Key operating statistics

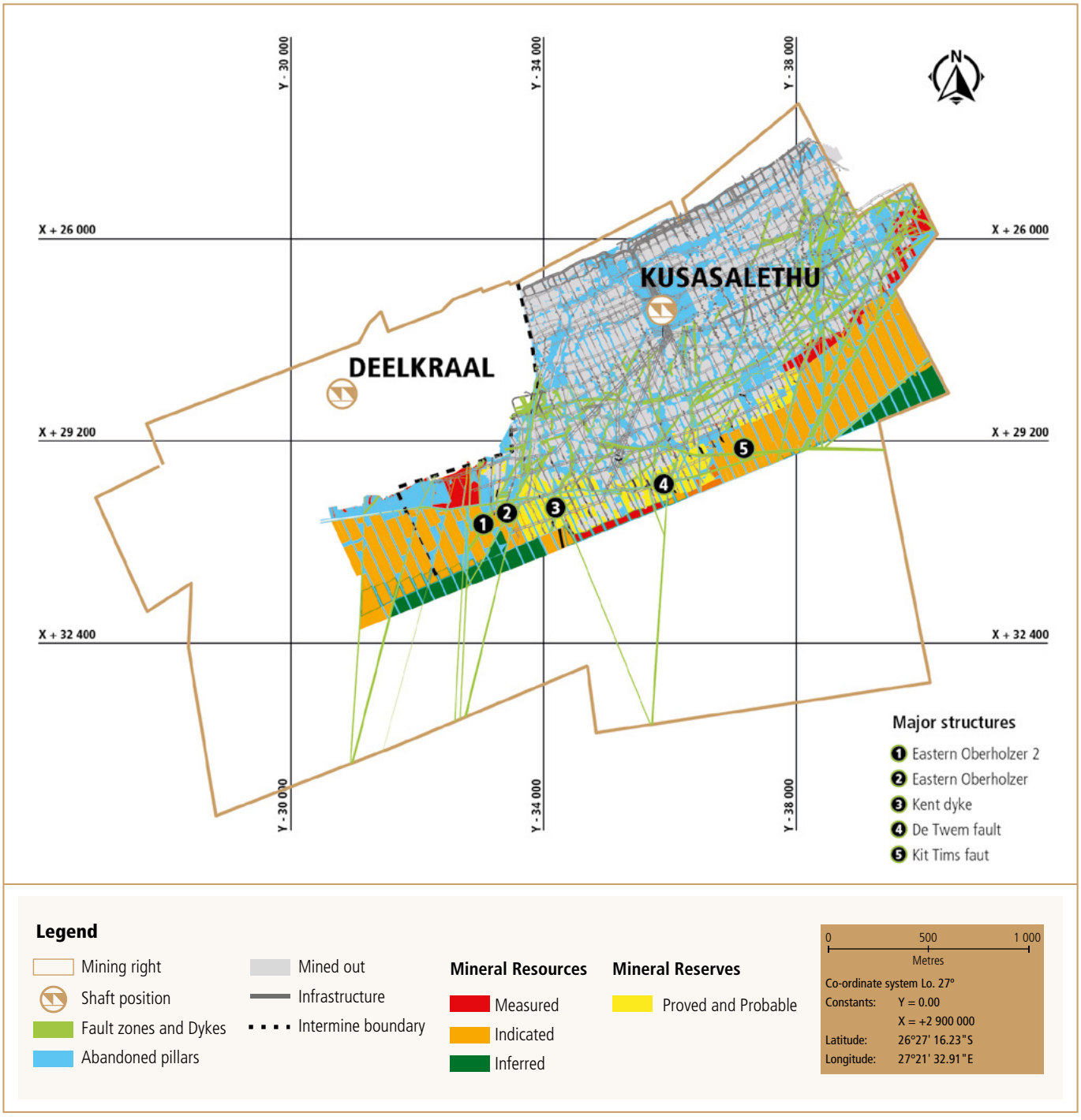
	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**615**	742	670	607	668
	000t (imperial)	**678**	817	738	670	736
Gold produced	kg	**3 015**	4 989	4 429	4 394	3 863
	oz	**96 934**	160 400	142 395	141 270	124 198
Grade	g/t	**4.90**	6.72	6.61	7.24	5.78
	oz/t	**0.143**	0.196	0.193	0.211	0.169
DEVELOPMENT						
Total metres (excl. capital metres)		**3 039**	5 437	4 016	5 101	7 183
Reef metres		**1 019**	1 217	776	1 185	1 517
Capital metres		**0**	0	0	0	0
FINANCIAL						
Average gold price received	R/kg	**743 153**	591 742	577 313	572 376	543 633
	US$/oz	**1 476**	1 298	1 397	1 309	1 166
Capital expenditure	Rm	**188**	316	289	289	360
	US$m	**12**	22	22	21	25
Cash operating cost	R/kg	**849 782**	476 417	472 177	459 422	478 277
	US$/oz	**1 687**	1 045	1 143	1 051	1 026
All-in sustaining cost	R/kg	**923 054**	556 621	554 302	541 247	584 498
	US$/oz	**1 833**	1 221	1 342	1 238	1 254

Kusasalethu: Schematic of shaft and mining layout

Not to scale



KUSASALETHU – VENTERSDORP CONTACT REEF: MINERAL RESOURCES AND MINERAL RESERVES



Kusasalethu

MINERAL RESOURCES AND RESERVES BY OPERATION

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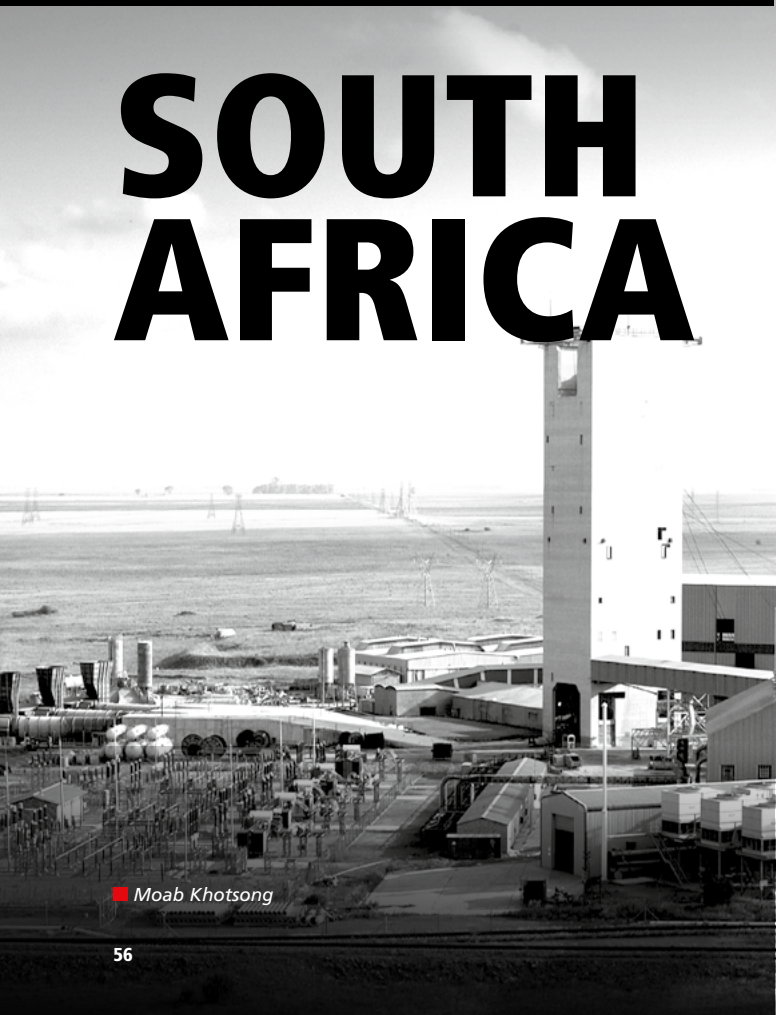
SOUTH AFRICA



Moab Khotsong

KLERKSDORP GOLDFIELD

Harmony has one underground mining operation in the Klerksdorp goldfield – Moab Khotsong. As at 30 June 2020, the estimated Mineral Resource (inclusive) was 13.0Moz and the estimated Mineral Reserve, 1.7Moz.

GOLD

Mineral Resources (inclusive)

13.0Moz

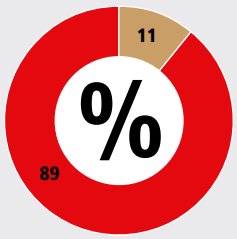
Mineral Reserves

1.7Moz

GOLD AND GOLD EQUIVALENTS

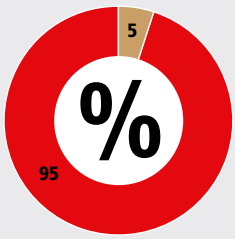
Contribution to Harmony

Mineral Resources
11%



Rest of Harmony **89%**

Mineral Reserves
5%



Rest of Harmony **95%**

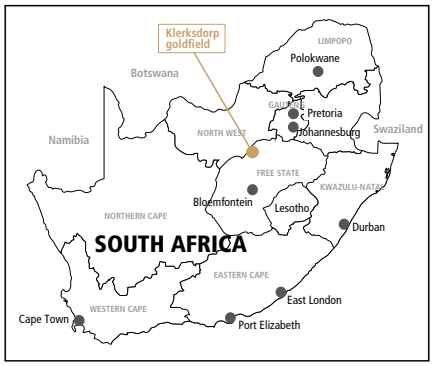
LOCATION OF OPERATION IN KLERKSDORP GOLDFIELD

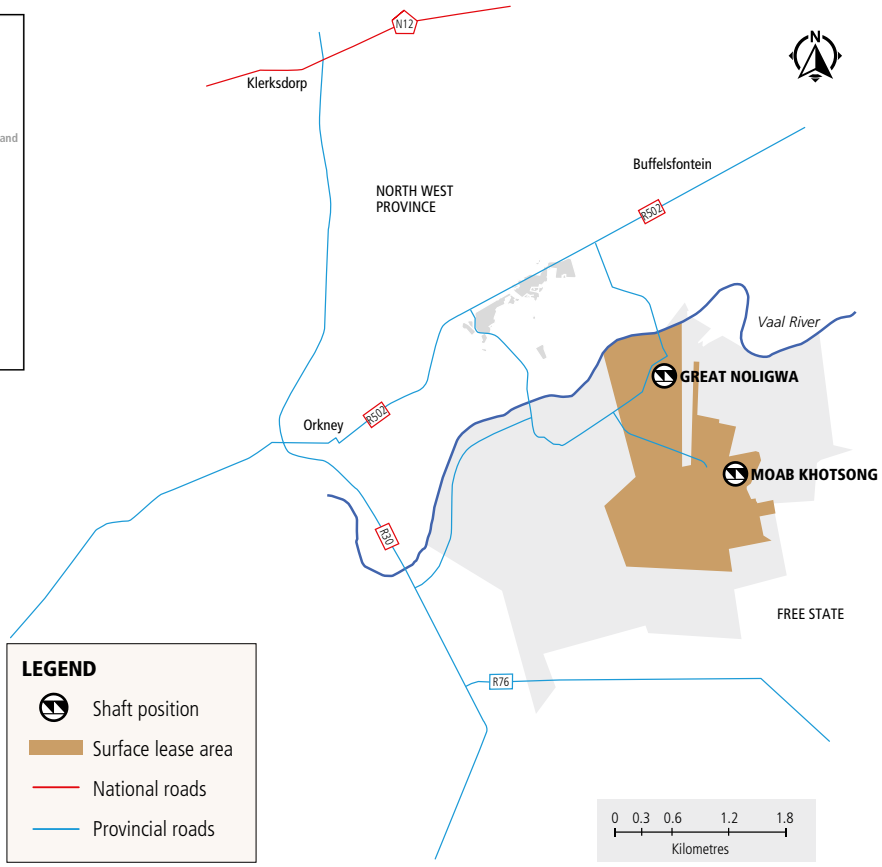
Moab Khotsong, which includes the mining and surface infrastructure of the adjacent Great Noligwa, is located in the Free State province, near the towns of Orkney and Klerksdorp, about 180km south-west of Johannesburg. The mining lease area lies just south of the Vaal River, which forms a natural boundary between South Africa's North West and Free State provinces.

REGIONAL GEOLOGY

For a description of the geological characteristics of the Klerksdorp goldfield, refer to the Geology section under Moab Khotsong.

KLERKSDORP GOLDFIELD OPERATIONS – LOCALITY



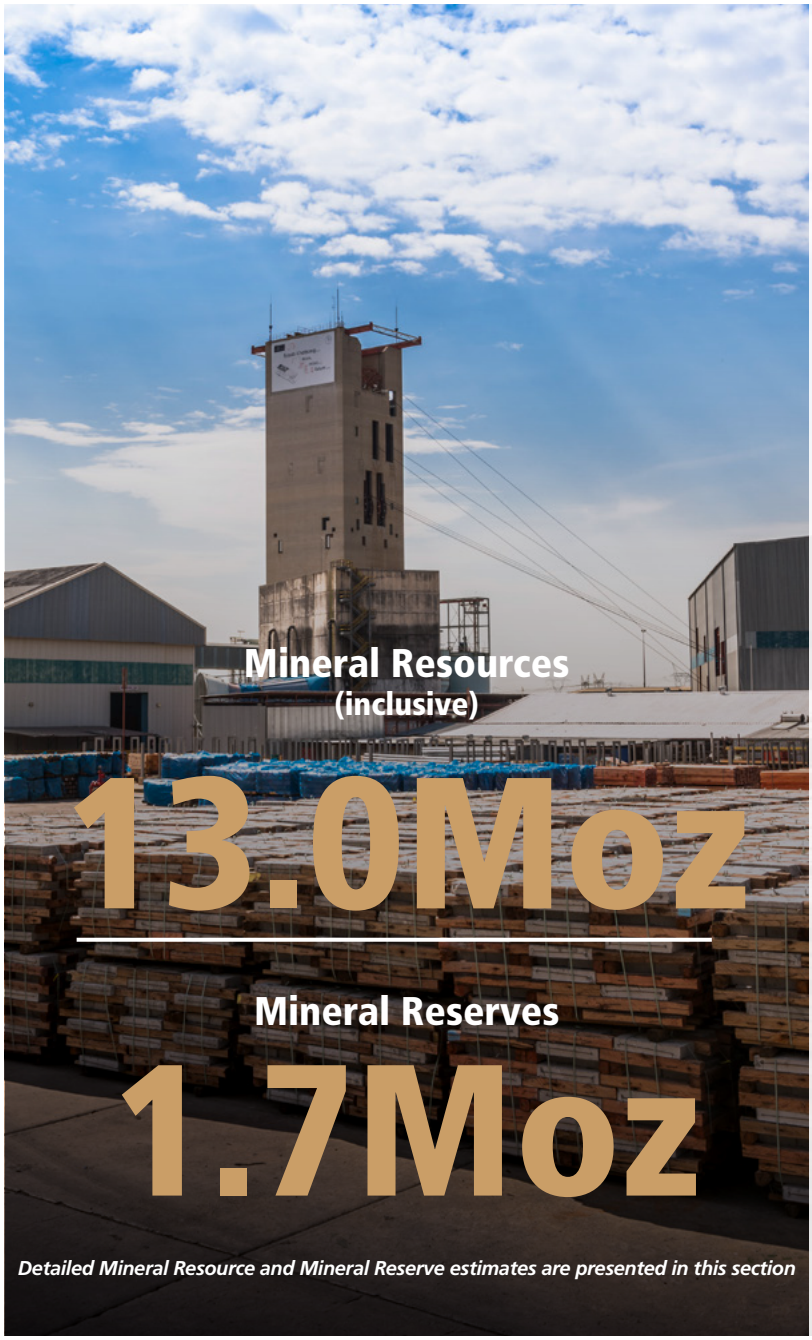


Multiple conglomerate layers of the Vaal Reef

KLERKSDORP GOLDFIELD STRATIGRAPHIC COLUMN

Group	Sub-group	Formation		Informal unit and fees	Member
Klipriviersberg		Alberton/Orkney		Lava beds	
		Ventersport		Ventersdorp Contact Reef	Ventersdorp Contact Reef
Central Rand Group	Turffontein	Mondeor		Elsburg massives and individuals	Modderfontein Waterpan
		Klerksdorp		Quartzites and conglomerates	Gold Estates Quartzite
					Dennys Reef
		Gold Estate			Kimberley Reefs
	Johannesburg	Crystalkop		C-Reef	C-Reef
		Strathmore		Zandpan marker Vaal Reef	Bird
		Stilfontein		Quartzite	Quartzites with minor interbedded conglomerates
				Millar Reef	Millar Reef
				Quartzites	
				Livingstone Reef	Livingstone Reef
		Commonage			Quartzite
				Commonage Reef Adda May Reef	
West Rand Group	Jeppestown	Roodepoort			

MOAB KHOTSONG



History

The Moab Khotsong mine began production in 2003 while Great Noligwa, which was merged with Moab Khotsong in 2014, began production in 1968. These mines are collectively referred to as Moab Khotsong. Harmony acquired Moab Khotsong from AngloGold Ashanti Limited in March 2018.

Nature of the operation

Moab Khotsong is the youngest of South Africa's deep-level gold mines with three vertical shaft systems maintained to service the mine. The orebody is divided into three distinguishable blocks through major faulting. These geographical areas are referred to as top mine (Great Noligwa), middle mine and lower mine (Zaaiplaats growth project).

Geology

The Vaal Reef is the primary economic horizon at Moab Khotsong. A secondary economic horizon, the C-Reef, contributes less than 5% of total mining volumes. Both reefs are narrow tabular deposits forming part of the Witwatersrand Supergroup and are stratigraphically located near the middle of the Central Rand Group. The Vaal Reef lies approximately 255m below the C-Reef.

The geology at Moab Khotsong is structurally complex with large fault-loss areas between the three mining areas (top mine, middle mine and Zaaiplaats). The geological setting is one of crustal extension, dominated by major south-dipping fault systems with north-dipping Zuiping faults wedged between the south-dipping faults.

The De Hoek and Buffels East faults are structural bounds for the reef blocks of the middle mine to the north-west and south-east respectively. The northern boundary of Moab Khotsong's middle mine is the north-dipping Zuiping fault. Moab Khotsong (particularly middle mine) requires a reduced drill spacing pattern of the order of 50mx50m, which allows for accurate delineation of the structurally bound mineable blocks so that accurate and efficient mine designs can be implemented to ensure optimal extraction and maximum orebody use.

The mineralisation model adopted for the deposit is that of gold precipitation in the conglomerates through the actions of hydrothermal fluids. The fluids precipitated gold and other elements through reactions that took place at elevated temperatures (300-350°C). Migrating liquid and gaseous hydrocarbons precipitated as solid hydrocarbon (carbon), which was then mesophased through metamorphism and structural deformation.

Carbon was preferentially precipitated in bedding-parallel fractures that most commonly followed the base of the Vaal Reef package (A-bottom sub-facies), however, gold and uranium mineralisation is also commonly observed within the A-middle and A-top sub-facies of the Vaal Reef. Gold was precipitated very soon after the carbon, giving the critical gold-carbon association that characterises many of the high-grade Vaal Reef localities.

A geological model is employed to delineate variations (either lateral or vertical) in characteristics of the Vaal Reef and C-Reef. The current geological model thus subdivides these two reefs into homogeneous zones based on geological and grade characteristics.

The Vaal Reef consists of a thin basal conglomerate (the C-facies) and a thicker sequence of upper conglomerates (A-facies). These two sedimentary facies are separated by the B-facies, which is a layer of barren orthoquartzite. The A-facies is the primary economic horizon at Moab Khotsong, however remnants of the C-facies are sporadically preserved below the A-facies. High gold values in the Vaal Reef are often located at the base of this unit and are associated with high uranium values and the presence of carbon. Uranium is an important by-product recovered from the Vaal Reef.

The C-Reef is mined on a limited scale in the central part of top mine where a high-grade, north-south trending sedimentary channel, containing two economic horizons, has been exposed. To the east and the west of this channel, the C-Reef is poorly developed with limited areas containing economic concentrations of gold and uranium. As with the Vaal Reef, high uranium values are also often associated with high gold values. A carbon seam, with a thickness of 5mm to 20mm, commonly occurs at the base of the conglomerate. To the north of the mine, the C-Reef sub-crops against the Gold Estates Conglomerate Formation and, in the extreme south of the mine, the C-Reef has been eliminated by a deep Kimberley erosion channel and the Jersey fault.

Mineral rights, legal aspects and tenure

Harmony holds the following mining rights, which have been successfully converted, executed and registered as new order mining rights at the Mineral and Petroleum Resources Titles Office.

- NW30/5/1/2/2/15MR, valid from 12 September 2007 to 11 September 2037
- NW30/5/1/1/2/16MR, valid from 20 August 2008 to 19 August 2038

These rights cover a total combined area of 10 991.13ha (1 372.47ha for 15MR and 9 618.66ha for 16MR)

Mining methods and mine planning

The tabular nature of the orebody, along with its depth and structural complexity, dictates the mining method employed at Moab Khotsong. Mining here is based on a scattered mining method together with an integrated backfill support system that incorporates bracket pillars. The economic reef horizons are exploited between depths of 1 791m and 3 052m below surface.

Mineral processing

Moab Khotsong's mineral processing is done through the Great Noligwa gold plant with design capacity exceeding the maximum planned production volume from the operation. The plant uses the reverse gold leach method which recovers gold and uranium through gold cyanide and acid uranium leaching.

Infrastructure

Moab Khotsong and Great Noligwa's surface and underground infrastructure, as well as the power and water services, are designed to fully meet planned life-of-mine production and service capacity requirements. The operation has a dedicated ore processing plant in close proximity to Moab Khotsong and tailings are pumped to existing tailings storage facilities. Most of the waste rock is separated from reef ore underground and accounted for separately. All waste and reef are delivered to the metallurgical plant.

Mineral Resource Estimation

The geostatistical estimation model is created per reef type and per geological zone.

Measured model: Point data and drill hole data, capped to the 99th percentile, uses the ordinary kriging method with experimental semi-variograms, search/estimation parameters, kriging efficiency and slope of regression. Commonly measured models are done on a 10 x 10 and 30 x 30 estimation block size.

Indicated model: Declustered data uses simple macro kriging (SMK) with experimental semi-variograms, search/estimation parameters. Commonly indicated models are done on a 60x60 estimation block size.

Inferred model: Declustered data uses SMK with experimental semi-variograms, search/estimation parameters. Commonly indicated models are done on a 120 x 120 estimation block size.

Inferred model beyond estimation confidence: Global arithmetic mean of the declustered data for all the areas to the lease boundary.

For details of the Estimation process followed, see page 131.

Environmental impact

Harmony, holder of the tenement, has addressed the requirements of the Department of Mineral Resources and Energy (DMRE). An Environmental Management Programme Assessment and Compliance Report were submitted to the DMRE during FY20 and an amended Environmental Management Programme Report will be submitted for approval to the DMRE by December 2020.

Moab Khotsong has applied for its own water use licence, which entails splitting the current approved licence between Harmony, Village Main Reef and AngloGold Ashanti. Moab Khotsong is now awaiting the issuing of the licence by the Department of Water and Sanitation.

SOUTH AFRICA – KLERKSDORP GOLDFIELD (MOAB KHOTSONG) CONTINUED

A provisional air emissions licence, AEL/FS/ MKO-HGM/14/10/2019, applicable to the uranium and gold plants, has been issued to Moab Khotsong. A waste management licence, NWP/DK2/WM/2018/04/01/02, has also been issued.

Moab Khotsong is ISO 14001 certified for its Environmental Management System. As part of its certification and compliance obligations, Moab Khotsong is committed to improving the processes and services in place to prevent pollution, minimise waste, increase carbon efficiency, use natural resources efficiently and protect the environment. There are no sensitive areas that may affect the project or any other environmental factors, including interested and affected parties and/or studies that could have a material effect on the likelihood of eventual economic extraction.

Regarding environmental rehabilitation liability, all costs associated with demolition and rehabilitation of the footprint after mining activities cease have been considered in the environmental rehabilitation liabilities. This liability covers all buildings, offices, water tanks, plants, tailings storage facilities, waste rock dumps and properties, among others. The liability is assessed annually and updated to include new infrastructure or demolition and all rates are updated (either escalated or revised) annually. These costs are then escalated to future values and discounted back to present value for inclusion in Harmony's current liability in the financial statements.

MATERIAL RISKS

Material risks that may impact Moab Khotsong's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Flooding from neighbouring mines	• Pumping
	• Mining industry occupational safety and health programme
• Seismicity	• Maintaining seismic network system
• Structural complexity	• Comprehensive risk mitigation drilling programme

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

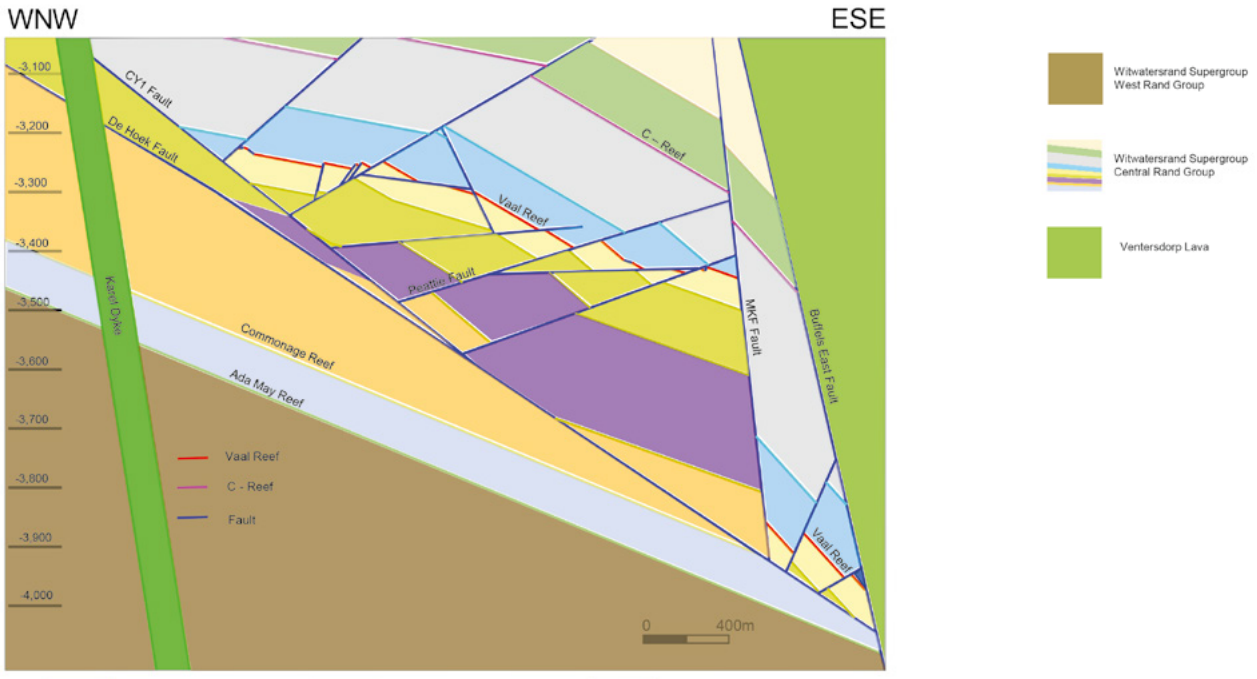
Ore Reserve Manager

Leanne Brenda Freese

BSc Geology, BSc Hons (Geology), GDE, SACNASP, GSSA

22 years' hard rock, deep level and ultra-deep level gold mining experience on the Witwatersrand Supergroup.

Geological cross-section through Moab Khotsong (west-north and east-south east) (not to scale)



MOAB KHOTSONG

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Moab Khotsong	4.2	16.90	71	2 268	14.0	15.09	212	6 801	7.5	16.26	122	3 925	25.7	15.73	404	12 994

Modifying factors

Moab Khotsong	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	74	173	223	97	1 727
2020	73	170	219	97	1 801

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Moab Khotsong	3.2	7.93	25	808	3.3	8.57	28	909	6.5	8.26	53	1 718

Uranium – Mineral Resource estimates at 30 June 2020

	Measured				Indicated				Inferred				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Total	–	–	–	–	18.2	0.61	11	24	7.5	0.61	5	10	25.7	0.61	16	34

Modifying factors

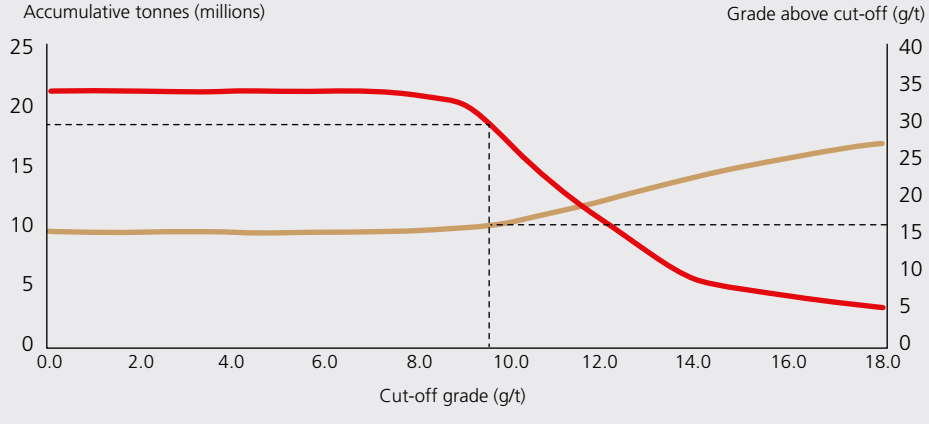
Moab Khotsong	MCF (%)	SW (cm)	MW (cm)	PRF (%)
2019	74	173	223	97
2020	69	170	219	97

Uranium – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Total	–	–	–	–	6.5	0.23	1	3	6.5	0.23	1	3

MOAB KHOTSONG: VAAL REEF

Measured and Indicated Mineral Resource grade-tonnage curve. Top, Middle and Lower Mines



SOUTH AFRICA – KLERKSDORP GOLDFIELD (MOAB KHOTSONG) CONTINUED

OPERATIONAL PERFORMANCE

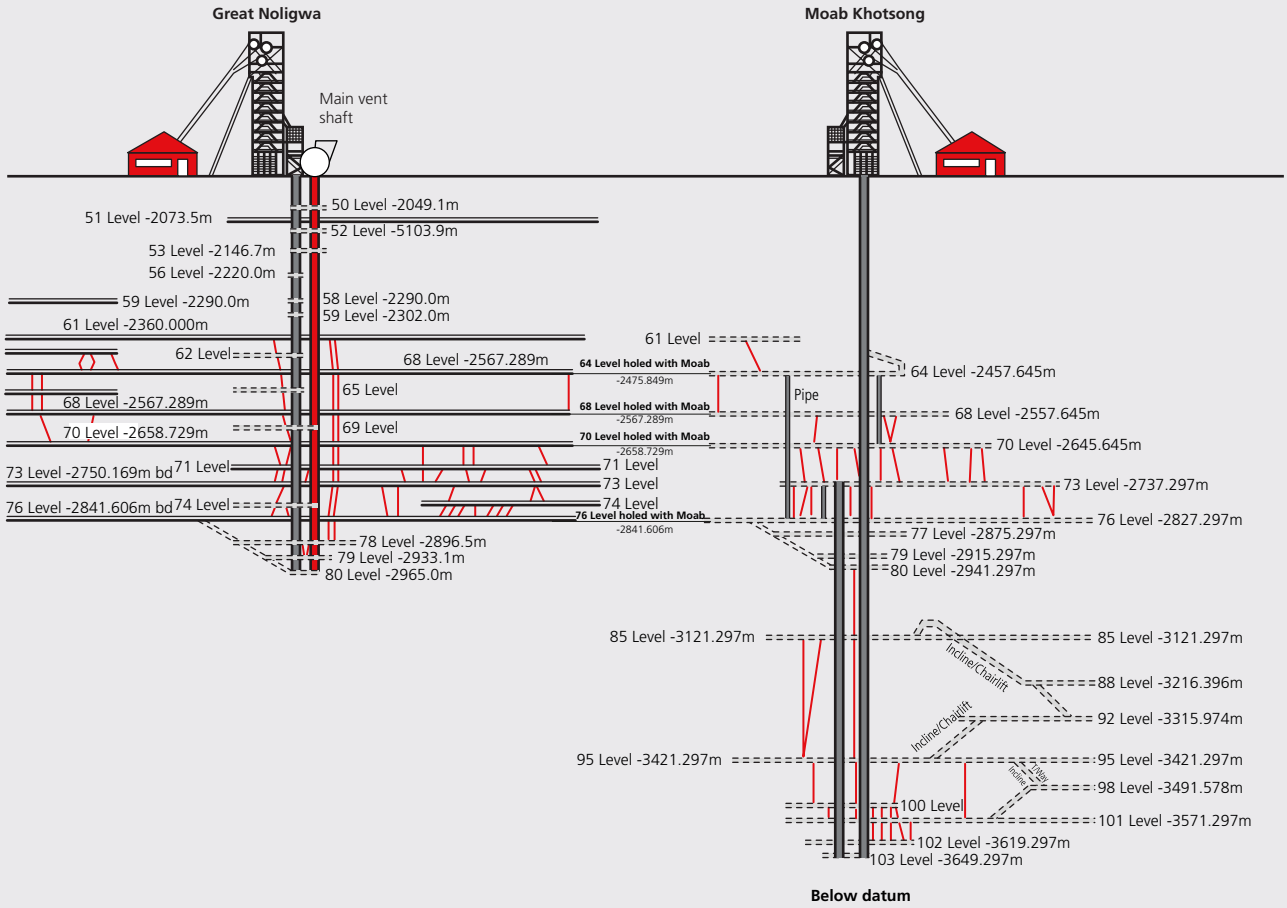
Moab Khotsong: Key operating statistics

	Unit	FY20	FY19	FY18*
OPERATION				
Volumes milled	000t (metric)	**746**	970	327
	000t (imperial)	**822**	1 069	360
Gold produced	kg	**6 592**	7 928	3 296
	oz	**211 938**	254 891	105 969
Grade	g/t	**8.84**	8.17	10.08
	oz/t	**0.258**	0.238	0.294
DEVELOPMENT				
Total metres (excl. capital metres)		**8 815**	10 472	9 527
Reef metres		**1 173**	1 202	1 328
Capital metres		**1 363**	1 432	380
FINANCIAL				
Average gold price received	R/kg	**736 533**	573 522	528 387
	US$/oz	**1 463**	1 258	1 279
Capital expenditure	Rm	**498**	559	173
	US$m	**32**	39	13
Cash operating cost	R/kg	**497 953**	399 414	314 526
	US$/oz	**989**	876	761
All-in sustaining cost	R/kg	**566 942**	477 581	420 286
	US$/oz	**1 126**	1 048	1 017

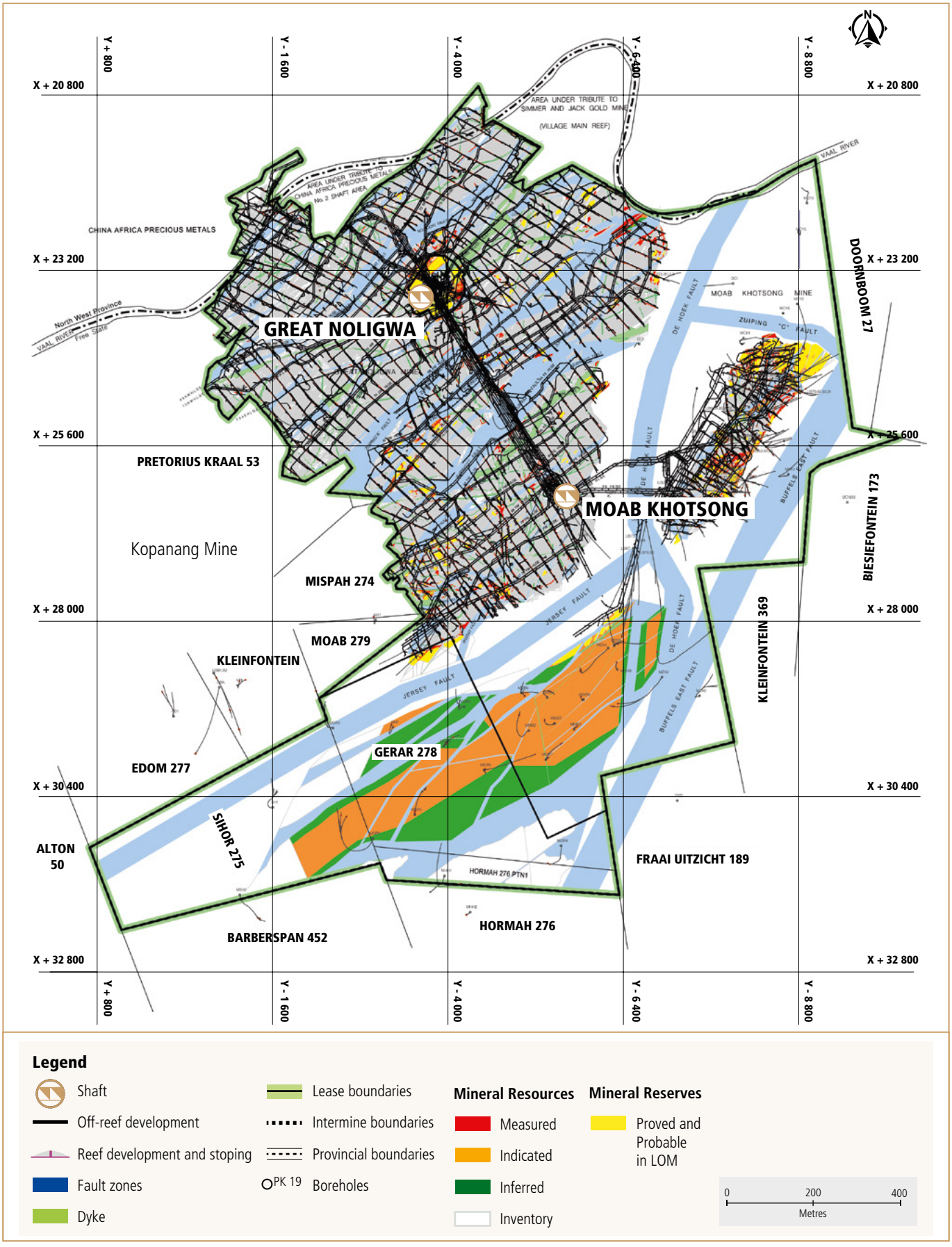
** Moab Khotsong was acquired on 1 March 2018. The FY18 data is for the four months from 1 March 2018 to end June 2018*

Moab Khotsong: Schematic of shaft and mining layout of the Moab Khotsong and Great Noligwa shafts

Not to scale



MOAB KHOTSONG AND GREAT NOLIGWA – VAAL REEF: MINERAL RESOURCES AND MINERAL RESERVES



Legend

- Shaft
- Off-reef development
- Reef development and stoping
- Fault zones
- Dyke
- Lease boundaries
- Intermine boundaries
- Provincial boundaries
- PK 19 Boreholes

Mineral Resources

- Measured
- Indicated
- Inferred
- Inventory

Mineral Reserves

- Proved and Probable in LOM

0 200 400 Metres

MINERAL RESOURCES AND RESERVES BY OPERATION

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80 Joel
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92 Target 1
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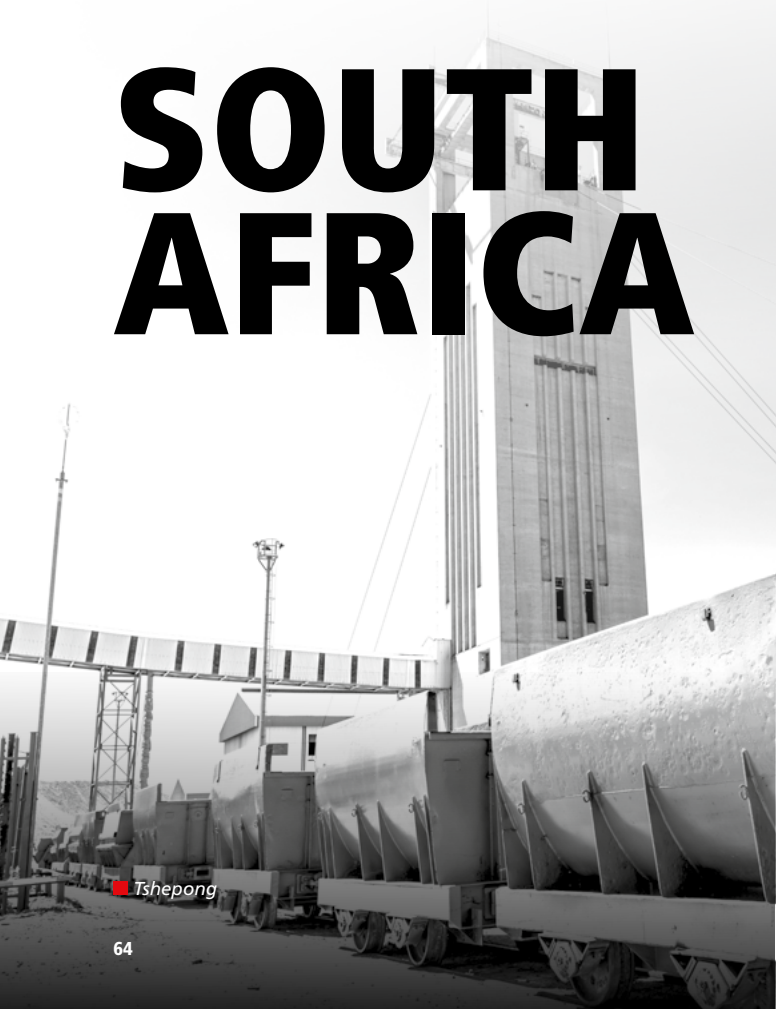
106 Free State and Klerksdorp

SOUTH AFRICA



Tshepong

FREE STATE

Harmony has six operating entities and seven operating underground shafts in the Free State. As at 30 June 2020, their combined estimated Mineral Resource (inclusive) was 35.2Moz and the combined estimated Mineral Reserve, 6.7Moz.

GOLD

Mineral Resources (inclusive)

35.2Moz

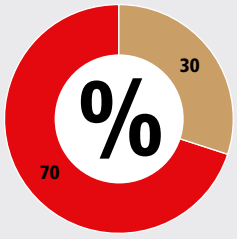
Mineral Reserves

6.7Moz

GOLD AND GOLD EQUIVALENTS

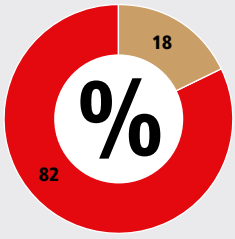
Contribution to Harmony

Mineral Resources
30%



Rest of Harmony **70%**

Mineral Reserves
18%



Rest of Harmony **82%**

LOCATION OF FREE STATE OPERATIONS

Harmony has six underground mining operations in the Free State located in the southwestern corner of the Witwatersrand Basin, between the towns of Allanridge, Welkom, Theunissen and Virginia. These operations are as follows:

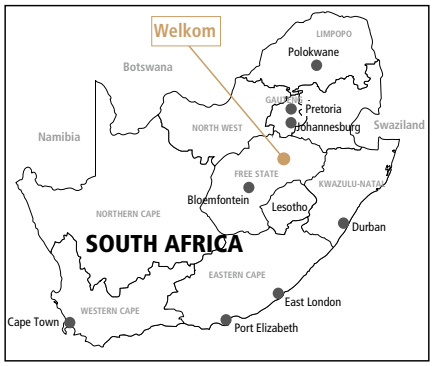
Joel, the most southerly of the gold mines in the Harmony stable, is situated some 40km south of Welkom, 30km southeast of Virginia and 20km north of Theunissen. The mine has a common boundary with Sibanye-Stillwater's Beatrix gold mine to the west.

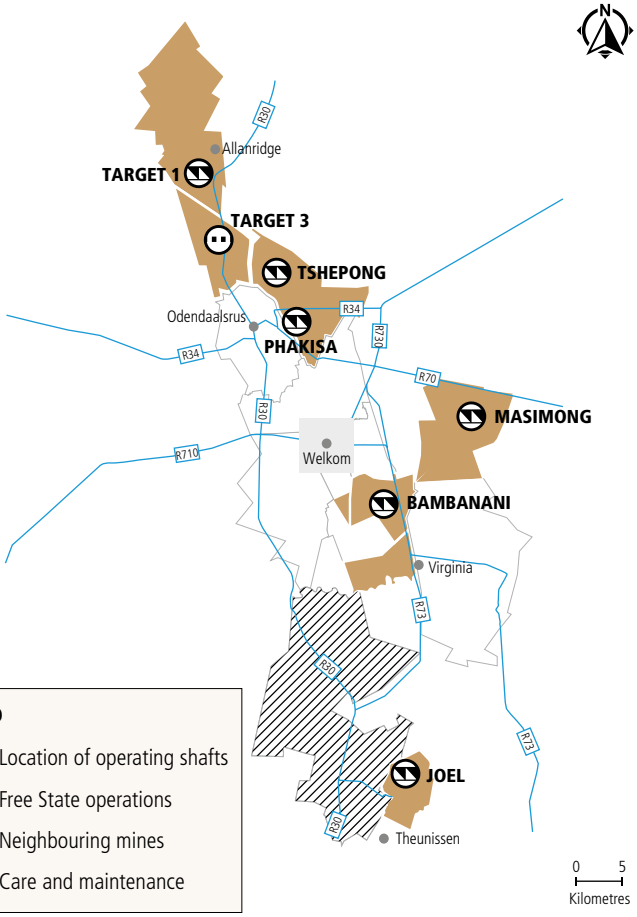
Unisel, located to the north of Joel, and to the southwest of Bambanani, has reached the end of its life of mine. Mining in the stopes has ceased, with closure activities underway including the successful, safe extraction of the shaft pillar.

Bambanani is 10km southeast of Welkom. The Bambanani East shaft is bound to the west by Bambanani West shaft, to the north by President Steyn 2 shaft and to the southeast by Unisel.

Masimong is located on the northeastern side of the De Bron Fault, approximately 12km east of Welkom and 10km north of Virginia. It is bounded to the south by Masimong 4 shaft and Saaiplaas 3 shaft.

FREE STATE OPERATIONS – LOCALITY





Free State operations	Latitude	Longitude
Target 1	27°45'42.59"S	26°38'24.92"E
Target 3	27°49'42.93"S	26°38'29.27"E
Tshepong	27°51'56.45"S	26°42'45.15"E
Phakisa	27°54'1.27"S	26°43'30.05"E
Masimong	27°58'23.93"S	26°52'39.41"E
Bambanani	28°2'28.24"S	26°48'9.13"E
Joel	28°16'17.19"S	26°48'57.97"E

LEGEND

- Location of operating shafts
- Free State operations
- Neighbouring mines
- Care and maintenance

Tshepong operations comprises:

- Phakisa section, which is located north west of Masimong 5 shaft, between the town of Odendaalsrus and the city of Welkom. It is some 13km north of Welkom and is bounded to the south by Eland shaft, to the west by Nyala shaft and to the north by Tshepong shaft.
- Tshepong section, to the north of Phakisa, is between the town of Odendaalsrus and the township of Kutloanong, some 20km north of Welkom. It is bounded to the north by the dormant Jeanette mine, to the south and east by the Phakisa shaft, and to the southwest by Nyala shaft.

Target 1, the most northerly of Harmony's mines in the Free State, is situated some 30km north of the town of Welkom. Target 3, to the south of Target 1, is on care and maintenance.

Processing plants in the Free State

Harmony has four gold processing plants in the Free State:

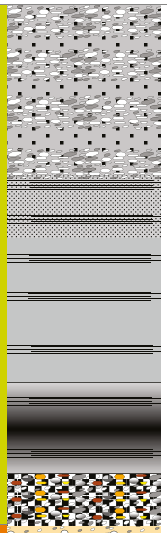
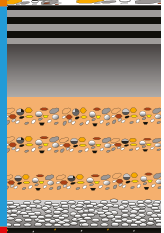
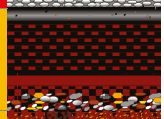
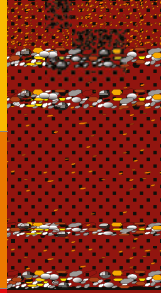
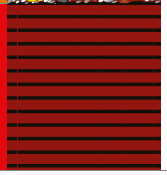
- Harmony One, which processes the ore mined at Tshepong operations, Bambanani, Masimong, Unisel and Joel. Harmony One plant is a carbon-in-leach (CIL) plant with a processing capacity of 390t a month.
- Target plant, which has a monthly capacity of 105 000t
- Central plant, which has capacity to retreat 300 000t of tailings a month
- Saaiplaas plant which retreats tailings for the Phoenix (Tswelopele beneficiation) operation has a monthly capacity of 500 000t

All of these plants, except Saaiplaas, have received their certification in terms of the International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold (Cyanide Code).

Tshepong

SOUTH AFRICA – FREE STATE CONTINUED

FREE STATE STRATIGRAPHIC COLUMN

Group	Sub-Group	Formation		Informal unit	Member
Central Rand Group	Turffontein	Eldorado		Dreyerskuil Zone	Uitkyk
				VS1	
				EA Zone	
				VS2	
				VS3	Van den heevers rust
				VS4	Rosedale
				VS5	
				Eldorado Basal Reef	
		Aandenk		EC1	Earls Court
				A Reef	
				Beatrix Reef	
				EC 2	
				Big Pebble Reef	
				EC 3/4	Spes Bona
				B Reef	
	Johannesburg	Dagbreek		ES 1	Upper shale marker
				ES 2/3	Leader Reef zone
				Leader Reef	Leader Reef
		Harmony		Grey glassy leader quartzite	Leader Quartzite
				EL1/2	
				Waxy brown leader quartzite	
				Middle Reef	
				Khaki Shale	
				Basal Reef	Basal Reef
		Welkom		UF1-UF3	Upper footwall
				UF4	Intermediate Reef
		St Helena		MF1 -MF4	Middle Footwall
		Virginia		LF1-LF6	Lower Footwall
				Commanage Reef	
				Ada May or Beisa Reef	Ada May / Beisa Reef
West Rand Group	Jeppestown	Roodepoort			Palmietkuil

REGIONAL GEOLOGY OF THE FREE STATE GOLDFIELD

The Witwatersrand Basin, situated on the Kaapvaal Craton, has been filled by a 6km thick succession of sedimentary rocks, which extends laterally for hundreds of kilometres. Our Free State mining operations exploit the Basal, B, Elsburg, Dreyerskuil and Beatrix reefs.

The Free State goldfield is divided into two sections, cut by the north-south striking De Bron Fault. This major structure has a downward vertical displacement to the west of about 1 500m in the region of Bambanani, as well as a dextral shift of 4km. This known lateral shift allows a reconstruction of the orebodies to the west and east of the De Bron Fault. Several other major faults, such as the Homestead fault, lie parallel to the De Bron Fault.

To the west of the De Bron fault, current operating mines are Target, Tshepong, Phakisa, Unisel, Bambanani and Joel. Dips of the reef are mostly towards the east, averaging 30 degrees but become steeper approaching the De Bron fault. To the east of the fault lies the Masimong mine. The reefs occurring here mostly dip towards the west at 20 degrees, although Masimong is structurally complex and dips of up to 40 degrees have been measured. Between these two blocks lies the uplifted Horst block of West Rand Group sediments with no reef preserved.

The western margin area is bound by synclines and reverse thrust faults and is structurally complex. Towards the south and east, reefs sub-crop against overlying strata, eventually cutting out against the Karoo to the east of the lease area.

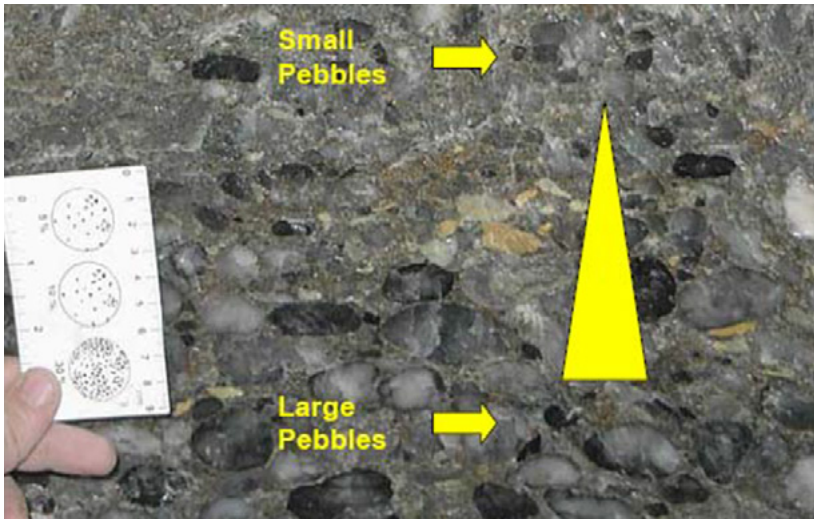
Most of the Mineral Resource tends to be concentrated in reef bands located on one or two distinct unconformities. A minor portion of the Mineral Resource is located on other unconformities. Mining is mostly deep-level underground mining, exploiting the narrow, generally shallow dipping tabular reefs.

The Basal Reef is the most common reef horizon and is mined at all shafts except Target 1 and Joel. It varies from a single pebble lag to channels of more than 2m thick. It is commonly overlain by shale, which thickens northwards. Tshepong section has resorted to undercutting in its mining panels to reduce the effect of shale dilution.

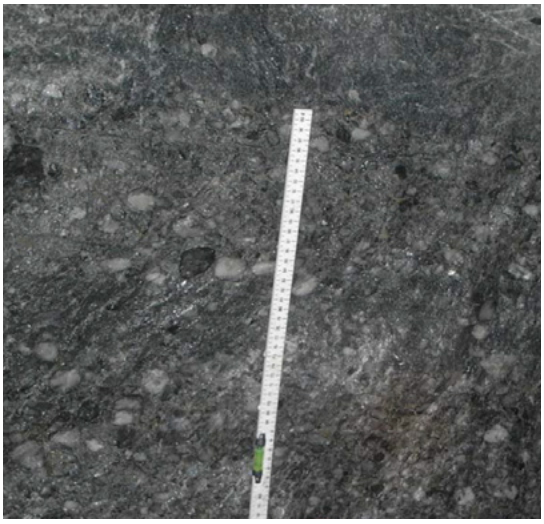
The B Reef is a highly channellised orebody located 140m stratigraphically above the Basal Reef. Because of its erratic nature, it has only been mined at Masimong, Tshepong, and the Target 2 and Target 3 shafts. Within the channels, grades are excellent, but this reduces to almost nothing outside the channels. Consequently, these shafts have undertaken extensive exploration to locate these pay channels.

Joel mine, 30km south of Welkom, is the only Harmony Free State operation to mine the Beatrix Reef.

The Target operation is at the northern extent of the Free State goldfields, some 20km north of Welkom. The reefs currently exploited here are the Elsburg-Dreyerskuil conglomerates, which form a wedge-shaped stacked package, comprising 35 separate reef horizons, often separated by quartzite beds. The Elsburg Reefs are truncated by an unconformity surface at the base of the overlying Dreyerskuil member. Below the sub-crop, the Elsburg Reefs dip steeply to the east, with dips becoming progressively shallower down dip. Close to the sub-outcrop, the thickness of the intervening quartzites reduces, resulting in the Elsburg Reefs coalescing to form composite reef packages that are exploited by massive mining techniques at Target. The Dreyerskuil Reefs also consists of stacked reefs dipping shallowly to the east. These reefs tend to be less numerous, but more laterally extensive than the underlying Elsburg Reefs.

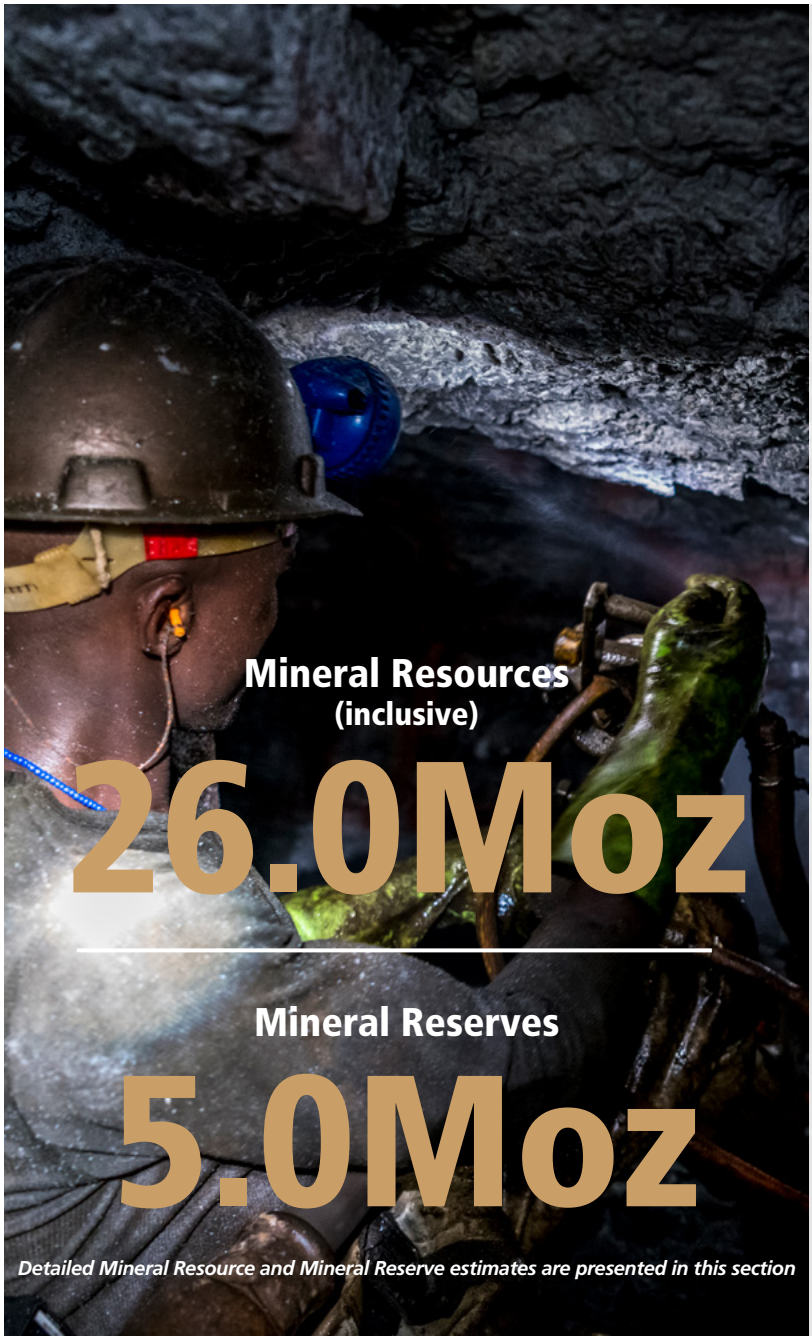


B3 conglomerate indicating the upward fining cycle



An oligomictic matrix-supported B1 facies conglomerate

TSHEPONG OPERATIONS



History

The feasibility study for the initial development of the Tshepong section was concluded in 1984. Work to establish the site started in September 1984 and, by 1986, shaft sinking was underway. Sinking and equipping of the shaft were completed in 1991, with the mine being commissioned in November 1991.

The Phakisa section began as a project in October 1993, with shaft sinking underway by February 1994. It was formerly known as Free State Geduld 4, Freddies 4 and Tshepong South. In 1995, shaft sinking was halted on 59 level due to the low gold price prevailing at that time. Operations resumed in September 1996, once the financial climate had improved. Shaft sinking was then completed to the station brow on 75 level. Low gold prices again resulted in the shaft being mothballed in the last quarter of 1999. In January 2002, Harmony acquired a stake in Phakisa as part of the Freegold acquisition from the then AngloGold Limited, following which the operation was acquired in full in September 2003. Sinking and equipping of the shaft to a depth of 2 427m was completed in 2006.

Following the successful conclusion of the study to investigate their integration, the Tshepong and Phakisa sections were consolidated as a single entity, the Tshepong operations, in FY17. The integration and consolidation of these two mines will enable Harmony to optimise existing synergies, reduce costs and make better use of the Tshepong section's underused infrastructure.

Nature of the operation

The Tshepong section is a mature underground operation mining at moderate depths of between 1 600m and 2 400m below surface. The bulk of mining currently takes place in the decline (Sub 66) and north-eastern portions of the lease area.

The Phakisa section is a moderate- to deep-level conventional underground operation, which together with the Tshepong section makes up the Tshepong Operations. Currently, mining activity takes place largely in the north and south of the mine lease area. However, over the next three years the focus will shift solely to the south of the lease area.

Geology

The principal gold-bearing orebody is the stratiform and strata-bound Basal Reef (known as the Basal Reef Zone or BRZ). This unit comprises a thin conglomerate at the base of this zone, overlain by clean 'placer' quartzites. The Basal Reef is underlain by a thick series of siliceous and argillaceous quartzites comprising the Welkom Formation and overlain by shales and quartzites of the Harmony Formation, both of the Johannesburg sub-Group of the Central Rand Group. Although not apparent within the mine lease area, the Basal Reef sits unconformably on the Welkom Formation.

In the Phakisa section, the reef dips towards the east at 25° in the north and up to 45° in the south. The Lower Cycle Black Chert facies predominates in the north with a north-west south-east value trend. The reef consists of an oligomictic small pebble matrix-supported conglomerate lag with fly-speck carbon contact. The rest of the reef package constitutes barren siliceous fine-grained reef quartzite. The entire reef package reaches up to 160cm thick and is overlain by 1cm to 30cm of lower Khaki Shale. This in turn is overlain by the approximately 3-4m thick Waxy Brown Leader Quartzite, above which lies the 3-4m thick Upper Khaki shale.

The Upper Cycle Black Chert facies Basal Reef prevails in the south of the lease area, and consists of a slightly polymictic (yellow shale specks present), matrix-supported medium-pebble conglomerate with a more gradational contact absent of carbon where mineralisation is associated with fine disseminated and buck-shot pyrite. The conglomerate is slightly thicker compared to the Lower Cycle, but is also overlain by barren reef quartzite, the entire package being characteristically up to only 40cm thick. The lower Khaki Shale is up to 1m thicker.

The Central Rand Group itself is overlain in turn by lavas and sediments of the Ventersdorp System and the more recent sediments of the Karoo Group.

The B Reef occurs approximately 150m stratigraphically (or approximately two production working levels) above the Basal Reef. Consequently, the B Reef is not normally intersected in either Basal Reef development or routine diamond drilling.

The lowest unit is a basal lag (Zone A), sitting on the underlying Doornkop Quartzite Formation. Where this unit is developed (or preserved), it may be highly mineralised oligomictic or polymictic conglomerate, with visible gold, buckshot pyrite and carbon mineralisation. This unit may carry gold values of many thousands of cmg/t and represents a potentially rewarding exploration target.

The unit overlying the Zone A may be either Zone B, which is comprised of a mildly erosive pebbly quartzite formation, and/or the stratigraphically younger Zone C, is a polymictic conglomerate with low values that is also erosional into the underlying A and B zones.

Mineral rights, legal aspects and tenure

The current mining right for the Tshepong operations encompasses an area of 10 798.74ha. The ARMgold/Harmony Freegold joint venture holds several mining rights in the Free State goldfields which have been successfully converted and executed as new order mining rights, some of which are still to be registered at the Mineral and Petroleum Resources Titles Office (MPRTO). The mining right for Tshepong operations, FS30/5/1/284MR, is valid from 11 December 2007 to 10 December 2029.

Mining method and mine planning

At the Tshepong section, the reef horizon is accessed via conventional grid development. The shaft's primary economic reef horizon, Basal Reef, is extracted by undercut mining, leaving a quartzite beam in the hangingwall to ensure the stability of the overlaying shale. Minor amounts of B Reef that do not exceed 18% of the on-reef area mined annually are extracted via open stoping mining. The B Reef is located approximately 140m stratigraphically above the Basal Reef, necessitating separate infrastructure (footwall development) from that for the Basal Reef. The presence of khaki shale approximately 6m thick above the Basal Reef strains the footwall development rates of the B Reef, requiring the installation of ring sets for the first 25m of development. The Tshepong section has significant Ore Reserves to maintain a long-term mine life, however, extraction of ore from pillars will become more important as the life of mine progresses, but volumetrically these reserves are not significant.

At the Phakisa section, the Basal Reef is mined conventionally from a single shaft barrel reaching a depth of 2 600m below collar. The reef horizon is accessed by means of conventional grid development and is extracted as an open mining operation to the south of the 69 raise line, but undercut mining has begun as mining progressed north. Phakisa reached full production in October 2016. Pillar mining crews are also planned as the life of mine progresses to ensure depletion of the pillar reserves within the life-of-mine time frame.

Infrastructure

The surface and underground infrastructure for Tshepong section as well as the power and water supplies available exceed planned peak production requirements. Broken rock handling above 66 level is track-bound, with the rock transferred to several inter-level sub-vertical transfer systems that are gravity fed to the main silos on 68 level. Broken rock handling below 66 level is track-bound, transferred to a decline belt system that feeds to the silos on 66 level from where the rock is transferred by track to the main inter-level sub-vertical transfer system on 66 level. The rock is hoisted to surface through the main shaft. From the shaft, the rock is transported to the processing plant by train.

At the Phakisa section, surface and underground infrastructure as well as the power and water services available exceed planned peak life of mine production requirements. Broken rock handling on all levels is track-bound. Several inter-level sub-vertical transfer systems feed the main silos on 77 level from where the rock is hoisted to 55 level. A rail-veyor system transports the rock from Phakisa to the Nyala shaft and from here the rock is hoisted to surface by means of the koepe winder, and then transported to the processing plant by train.

Mineral processing

Stoping ore and development rock from the Tshepong section are hoisted and processed separately above 66 level. Currently, below 66 level, stoping ore and development rock are hoisted and processed as one product. At the Phakisa section, stoping ore and development rock are hoisted and processed separately.

SOUTH AFRICA – FREE STATE (TSHEPONG OPERATIONS) CONTINUED

The reef, or stoping ore, from both sections is milled and processed at Harmony One plant where gold is recovered by means of gold cyanide leaching. Tshepong operations shares the Harmony One plant with three other Harmony mines (Bambanani, Masimong, Unisel and Joel) and four Harmony waste rock dumps. The plant's design capacity exceeds the maximum planned production from these sources.

Mineral Resource Estimation

The Datamine valuation model uses all the underground chip sampling data points and boreholes values drilled in the Phakisa lease area. Geozones are determined based on reef facies types and value trends. The Phakisa and Tshepong sections share 14 geozones in the Tshepong operations mega-mine. The geozones are capped at an optimal percentile using a system called the quantile process to avoid over-estimation due to high outlying values. Based on confidence levels for geostatistical data, valuation is by means of a computer-generated block model as follows:

- Measured blocks 30m x 30m grid
- Indicated blocks 60m x 60m grid
- Inferred blocks 120m x 120m grid

The block model is then digitally transferred to the digital environment for valuation. The entire lease area is blocked and cut against major structure, geozones and haloes. The blocks are evaluated by importing the valuation model from Datamine into CadsMine, and applying the kriging method in the valuation browser of CadsMine.

The Mineral Resource is estimated on the basis of geoscientific knowledge with input from the ore reserve manager, geologists and geostatistical staff. The mine's Mineral Resources are categorised, blocked-out and ascribed an estimated value. Computerised geostatistical estimation processes are used. For details of the Estimation process followed, see page 131.

Environmental impact

Tshepong operations strives to prevent pollution, or otherwise minimise, mitigate and remediate harmful effects of our operations on the environment and hence maintain its ISO 14001 certification. We are also committed to ensuring compliance with applicable environmental legislation. A key focus is the development of integrated water and waste management plans. These plans will be pivotal to the overall management of water and will indicate how we can better use and re-use our water. Another area of focus is promoting awareness and training around green environmental management in general.

There has been a notable improvement in terms of waste management and the storage of potential contaminants. However, construction of a surface receiving store is a possible solution to the management and control of chemical spills and housekeeping issues.

MATERIAL RISKS

Material risks that may impact the Tshepong operations' Mineral Resource and Mineral Reserve statements are:

SIGNIFICANT RISKS	REMEDIAL ACTION
Tshepong section:	
• Orebody complexity	• Extensive exploration drilling
• Ventilation of decline area	• Installation of booster fans on 75 level
Phakisa section:	
• Logistics	• Upgrade of Koepe rock winder and rail-veyor
• Ventilation	• Completion of Alimac hole and ice dam on 55 level and holing to the Tshepong section on 75 level
• Mining flexibility	• Increased development and more equipping crews in the south area of the mine

COMPETENT PERSONS (Mineral Resources and Mineral Reserves)

Tshepong operations

Theodorus Pieter van Dyk
BSc Hons (Geology), SACNASP
22 years' relevant experience.

Ore Reserve manager – Tshepong section

Andrew Murray Louw
BSc Hons (Geohydrology)
24 years' relevant experience.

Ore Reserve manager – Phakisa section

Bothepha Phetlhu
BTech (Geology), MEng, SACNASP
17 years' relevant experience.

TSHEPONG OPERATIONS

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Tshepong operations	24.1	11.47	277	8 895	13.1	10.80	142	4 564	36.1	10.82	391	12 565	73.4	11.03	809	26 024

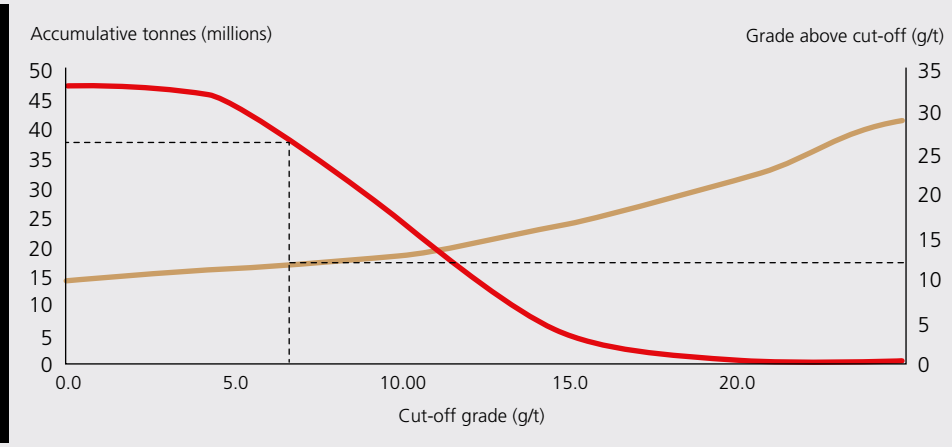
Modifying factors

Tshepong operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	74	111	131	96	676
2020	74	113	135	95	677

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Tshepong operations	22.2	5.87	130	4180	4.5	5.48	25	800	26.7	5.80	155	4 980

TSHEPONG:
BASAL REEF AND B REEF
Measured and Indicated
Mineral Resource
grade-tonnage curve



Tshepong

SOUTH AFRICA – FREE STATE (TSHEPONG OPERATIONS) CONTINUED

OPERATIONAL PERFORMANCE

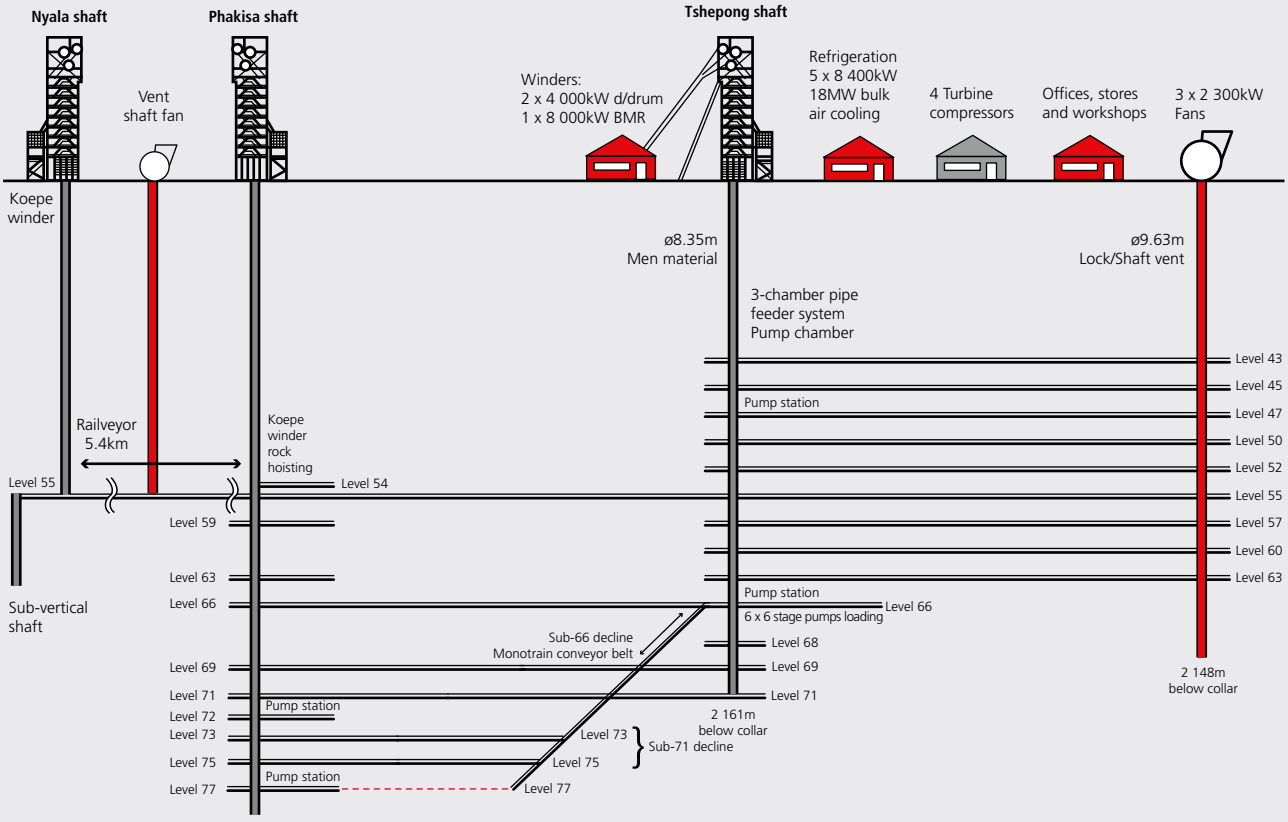
Tshepong operations: Key operating statistics

	Unit	FY20	FY19	FY18	FY17*	FY16*
OPERATION						
Volumes milled	000t (metric)	**1 417**	1 612	1 716	1 695	1 774
	000t (imperial)	**1 562**	1 777	1 893	1 869	1 956
Gold produced	kg	**7 293**	7 967	9 394	8 828	9 019
	oz	**234 475**	256 146	302 026	283 827	289 968
Grade	g/t	**5.15**	4.94	5.47	5.21	5.08
	oz/t	**0.150**	0.144	0.16	0.152	0.148
DEVELOPMENT						
Total metres (excl. capital metres)		**17 551**	22 450	23 089	19 462	23 099
Reef metres		**3 131**	3 323	3 159	3 028	3 530
Capital metres		**140**	809	588	599	0
FINANCIAL						
Average gold price received	R/kg	**736 863**	591 331	577 058	574 165	547 906
	US$/oz	**1 463**	1 297	1 397	1 314	1 175
Capital expenditure	Rm	**930**	1 130	1 008	717	630
	US$m	**59**	80	78	52	43
Cash operating cost	R/kg	**583 018**	503 033	407 575	416 493	357 345
	US$/oz	**1 411**	1 103	987	953	757
All-in sustaining cost	R/kg	**713 202**	636 281	514 537	507 368	437 550
	US$/oz	**1 416**	1 396	1 245	1 161	939

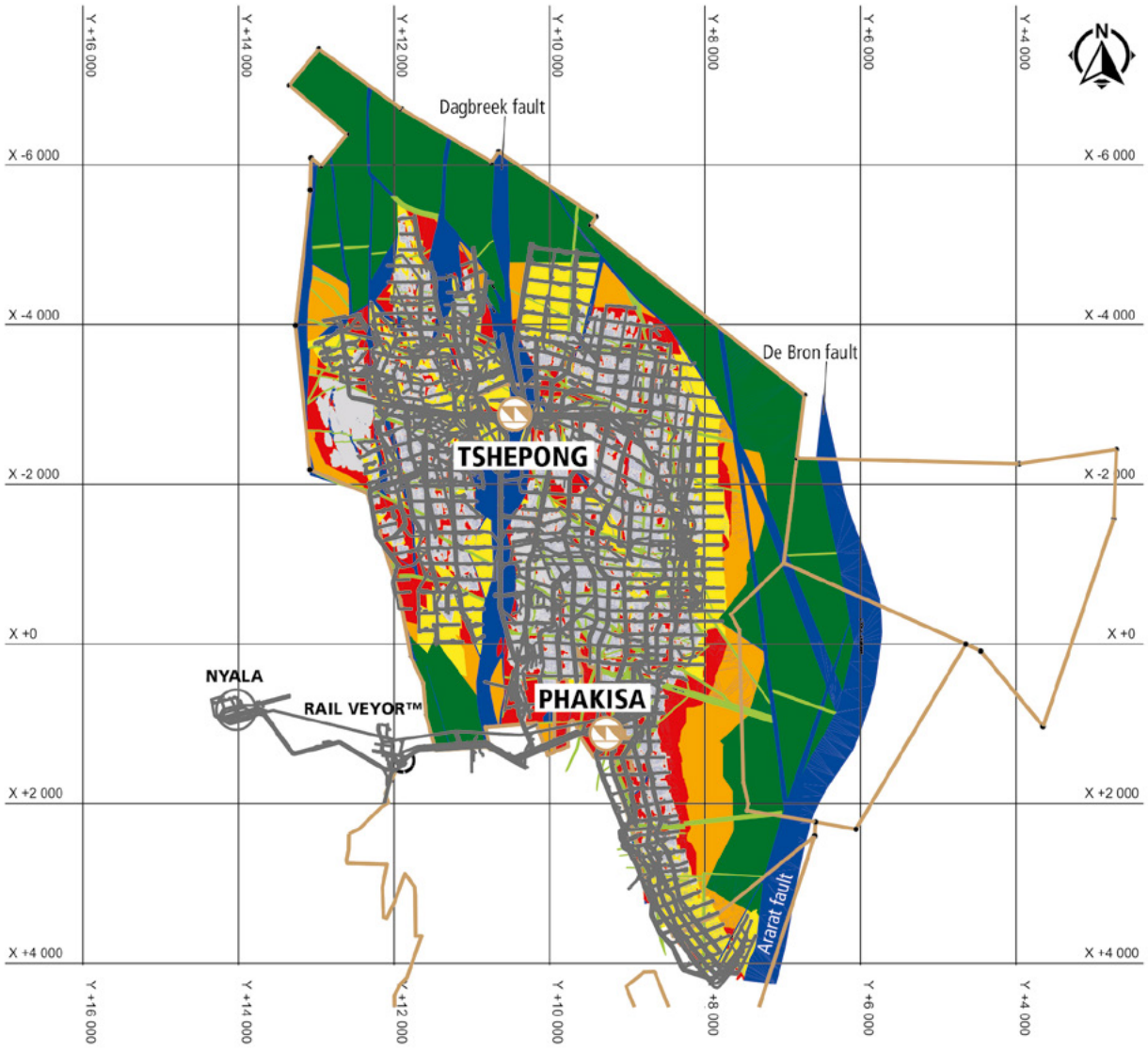
** Tshepong Operations, comprising the Phakisa and Tshepong sections, is reported as a single operating entity from FY18. As these were reported separately in previous years, the historic data for the years FY16 to FY17 has been combined*

Tshepong Operations: Schematic shaft and mining layout of the Nyala, Phakisa and Tshepong shafts

Not to scale



TSHEPONG OPERATIONS – BASAL REEF: MINERAL RESOURCES AND MINERAL RESERVES



Legend

- Mining right
- Shaft position
- Fault zones
- Dykes
- Infrastructure

Mineral Resources

- Measured
- Indicated
- Inferred

Mineral Reserves

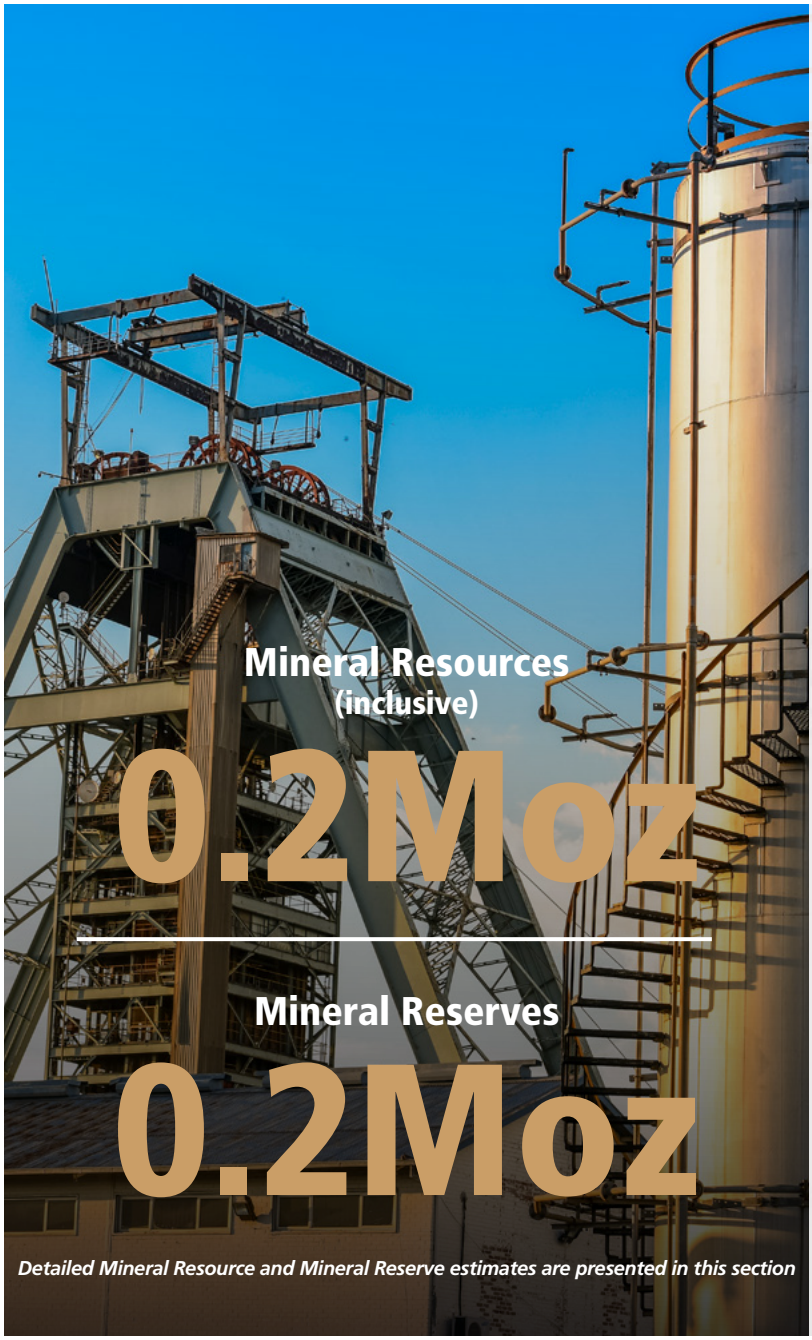
- Proved and Probable

0 1 000 2 000
Metres

Co-ordinate system Lo. 27°
Constants: Y = 0.00
X = +3 100 000.00

Tshepong:		**Phakisa:**	
Latitude:	27°51' 56.45"S	Latitude:	27°54' 1.27"S
Longitude:	26°42' 45.15"E	Longitude:	26°43' 30.0"E

BAMBANANI



History

Shaft-sinking operations (by the then Anglo American Corporation) began at President Steyn 4 shaft in February 1969 and were completed, to a final depth of 2 365m below surface, in September 1971. The Basal Reef was intersected at a depth of 2 075m, yielding 1 252cmg/t over 235.7cm. The sub-vertical shaft, sunk in the late 1970s to a depth of 3 328m below surface, came into production in 1982.

The shaft became known as Freegold 1 East in 1997 when President Steyn was closed. In October 1998, the shaft became part of the then AngloGold Limited and its name was changed again to Bambanani East. In January 2002, the shaft was sold to the Harmony/ARM consortium and, in October 2003, Harmony became the sole owner.

Nature of the operation

Bambanani is a single-shaft operation with ore hoisted via a decline shaft and cross-tramming to the West shaft for hoisting. The shaft pillar is focused on longwall mining, separated by safety pillars that have been left along with certain geological structures for stability.

Geology

The Basal Reef is the predominant gold-bearing reef at Bambanani. The Steyn facies of the Basal Reef cover approximately 90% of Bambanani's mining lease area and overlie, with a very slight angular sub-conformity, the UF1 quartzite of the Welkom Formation. It is in turn overlain by the khaki shale unit of the Harmony Formation in the north.

To the south, it is overlain by the younger waxy brown leader quartzite, which erodes the khaki shale. The presence and thickness of the khaki shale may influence decisions to undercut the Basal Reef. While the reef's thickness may vary from a few centimetres to more than 10m, it is typically between 1m and 3m thick.

The Stuurmanspan Fault in the west and the De Bron-Vermeulenskraal Fault system in the east are bound to the Basal Reef at Bambanani. Both are northward-striking dextral extensional faults with significant westerly downthrows. The reef dips easterly, varying from 25 degrees in the west to 45 degrees in the east but, in places, local deformation against a fault leads to vertical reefs. Smaller faults break up the reef but are generally sub-parallel to the main structures.

Mineral rights, legal aspects and tenure

The current mining right encompasses an area of 2 355.85ha and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 26 January 2008. The mining right FS30/5/1/2/2/83MR is valid from 11 December 2007 to 10 December 2029.

Mining methods and mine planning

As Bambanani is in the final stages of its life of mine, mining is limited to extraction of the shaft pillar. Mining of the shaft pillar is focused on mini longwalls on the north side and, at the centre of the pillar, it is separated by safety pillars that have been left along designated geological structures.

Most of the panels are mined on full width, leaving a reef beam of approximately 80cm in the hanging wall in order to build a beam to support the shale. The challenge remains to control the stoping width and the stability of the beam in a highly fractured and faulted environment with sill intrusions, and a weak waxy brown quartzite hangingwall above the shale that is complicated by ball and pillow formations.

Backfill has been successfully introduced in all panels. The quality of installation has improved drastically as the crew has acquired knowledge and understanding of its underground application. The focus is currently on improving the volume of backfill placed versus the square metres mined, as well as quality control, which includes regular testing of the backfill product.

The seismic system is operational and the data gathered is used and applied in the design of the mining sequence. Seismic responses are also monitored and correlated with monthly production data to establish the relationship between volumes mined and the seismic response.

Mineral processing

As Bambanani does not have its own mineral processing plant, the mine's ore is transported 7km by rail to the Harmony One plant for processing. This is a centrally located plant that is used by other Harmony mines in the Free State.

Infrastructure

Work on the shaft pillar continues at levels 66, 69, 71 and 73. Ore is transported via a decline system – from 58 to 75 levels – on the northern side of the shaft pillar, to Bambanani West, from where it is hoisted to surface. The shafts are linked by cross-tramming at 60 level.

Mineral Resource Estimation

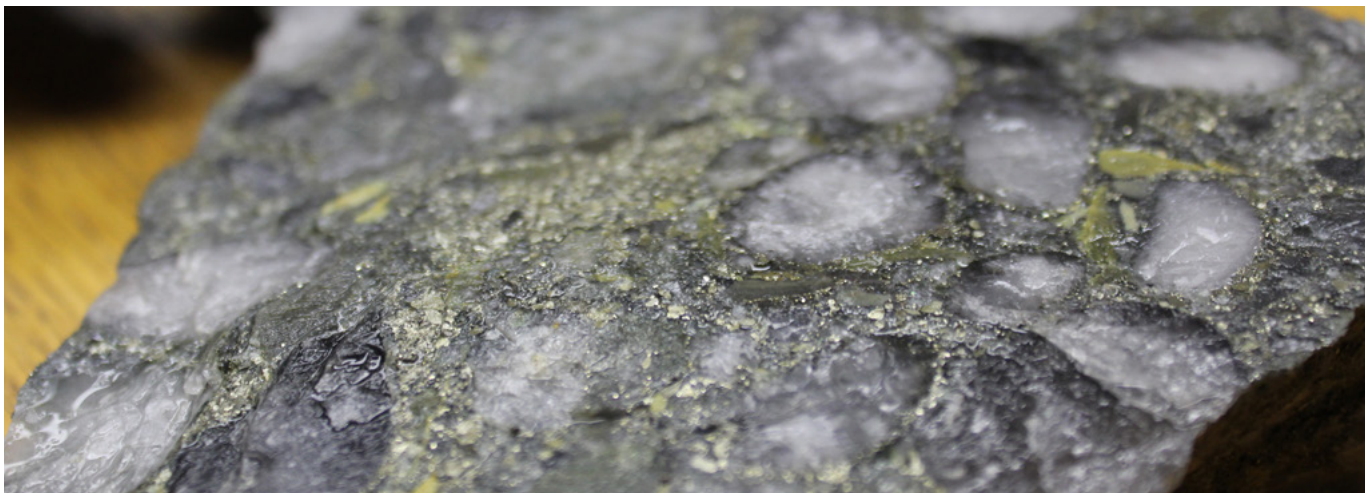
The estimation method used for local measured estimates at Bambanani is ordinary kriging and, for local indicated and inferred estimates, simple macro kriging. The orientations and ranges of each geozone's semi-variogram are used to determine the kriging search parameters, which are optimised. Estimates are generally kriged into 30m x 30m blocks for the Measured Mineral Resource from the point support data. For details of the Estimation process followed, see page 131.

Environmental impact

Bambanani's environmental aspects and impacts are managed according to its environmental management programme, as approved by the Department of Mineral Resources and Energy, in terms of the Mineral and Petroleum Resources Development Act (MPRDA). All environmental aspects and impacts emanating from mining activities are documented in the approved environmental management programme report and in the environmental aspect register, as required by the MPRDA and ISO 14001:2004 standard, and are managed accordingly.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources and Energy to verify compliance with the following legislation:

- Mine Health and Safety Act 29 of 1996
- National Water Act 36 of 1998
- National Environmental Management Act 107 of 1998
- Mineral and Petroleum Resources Development Act 28 of 2002



Bambanani – Basal Reef

SOUTH AFRICA – FREE STATE (BAMBANANI) CONTINUED

MATERIAL RISKS

Material risks that may impact Bambanani's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Seismicity	• Support design and monitoring system

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve Manager

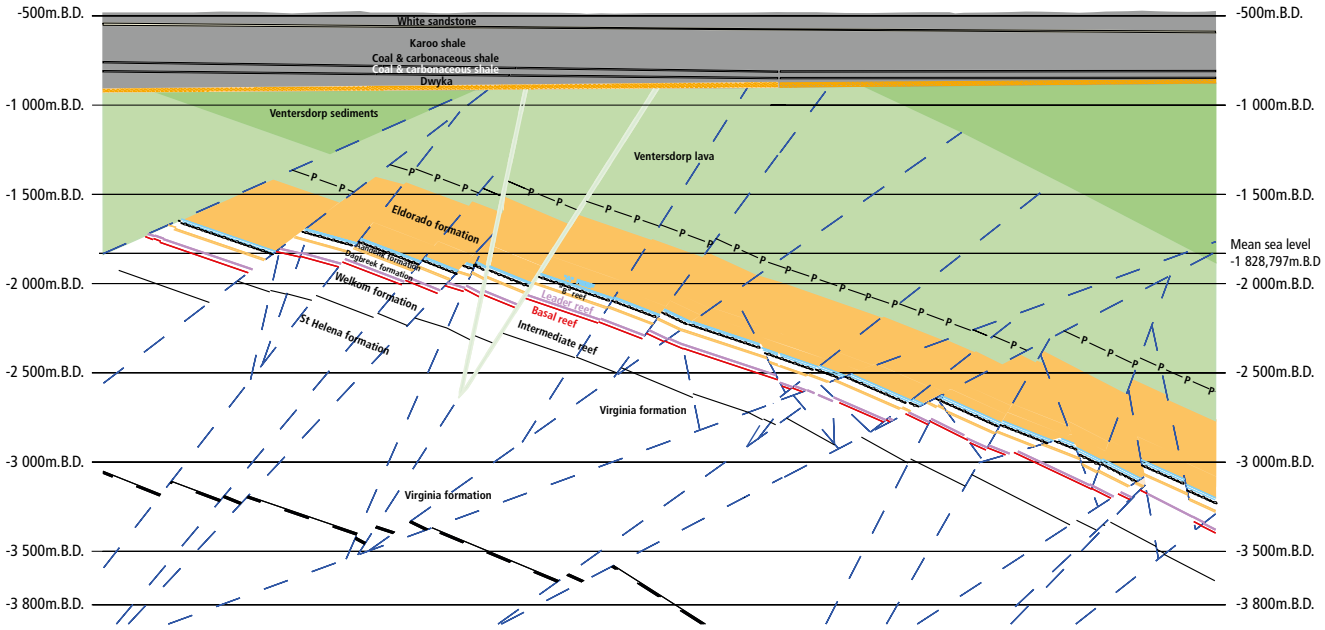
Fhulufhelo Olga Muthelo

BSc (Hons), Postgraduate Diploma in Engineering, SACNASP

13 years' experience in Witwatersrand gold mining.

Bambanani

BAMBANANI – Geological section looking north (not to scale)



LEGEND

Karoo shale	Ventersdorp lava	Aandenk formation	Leader reef	Welkom formation	Virginia formation
Dwyka	Eldorado formation	B reef	Harmony formation	Intermediate reef	
Ventersdorp sediments	A reef	Dagbreek formation	Basal reef	St Helena formation	

BAMBANANI

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Bambanani	0.5	15.28	8	248	–	–	–	–	–	–	–	–	0.5	15.28	8	248

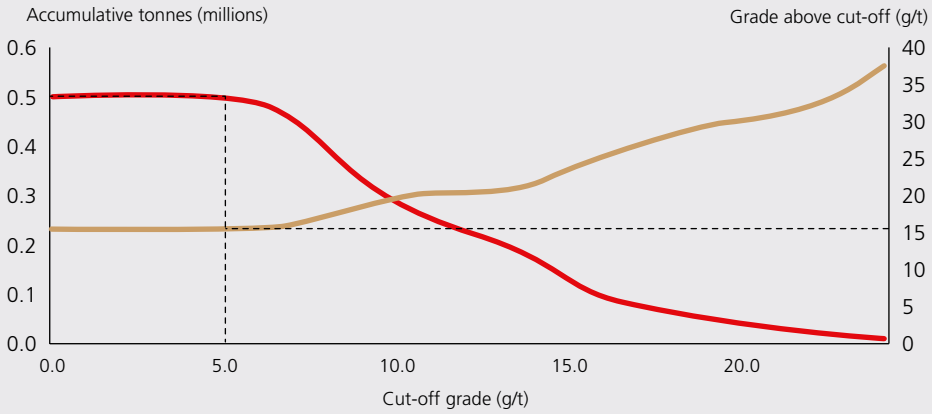
Modifying factors

Bambanani	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	96	202	232	96	2 019
2020	95	203	241	95	2 303

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Bambanani	0.6	10.99	6	207	–	–	–	–	0.6	10.99	6	207

BAMBANANI:
BASAL REEF
Measured and Indicated
Mineral Resource
grade-tonnage curve



Bambanani

SOUTH AFRICA – FREE STATE (BAMBANANI) CONTINUED

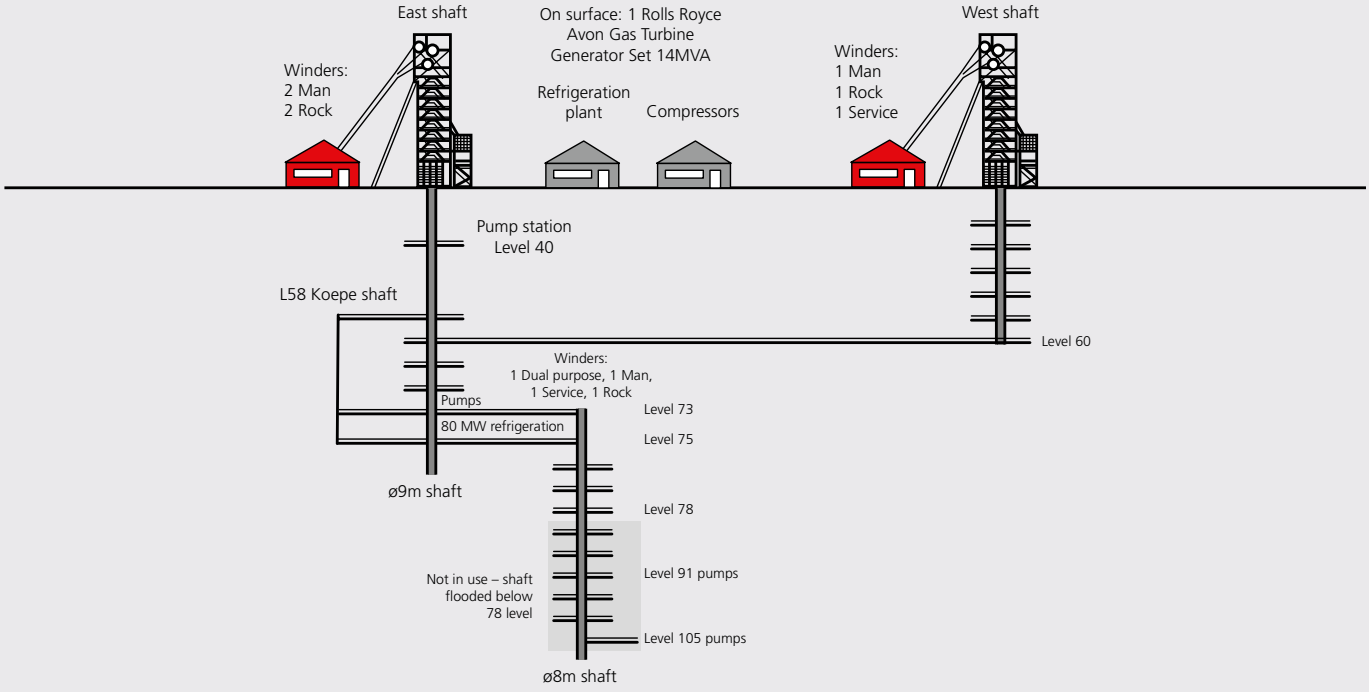
OPERATIONAL PERFORMANCE

Bambanani: Key operating statistics

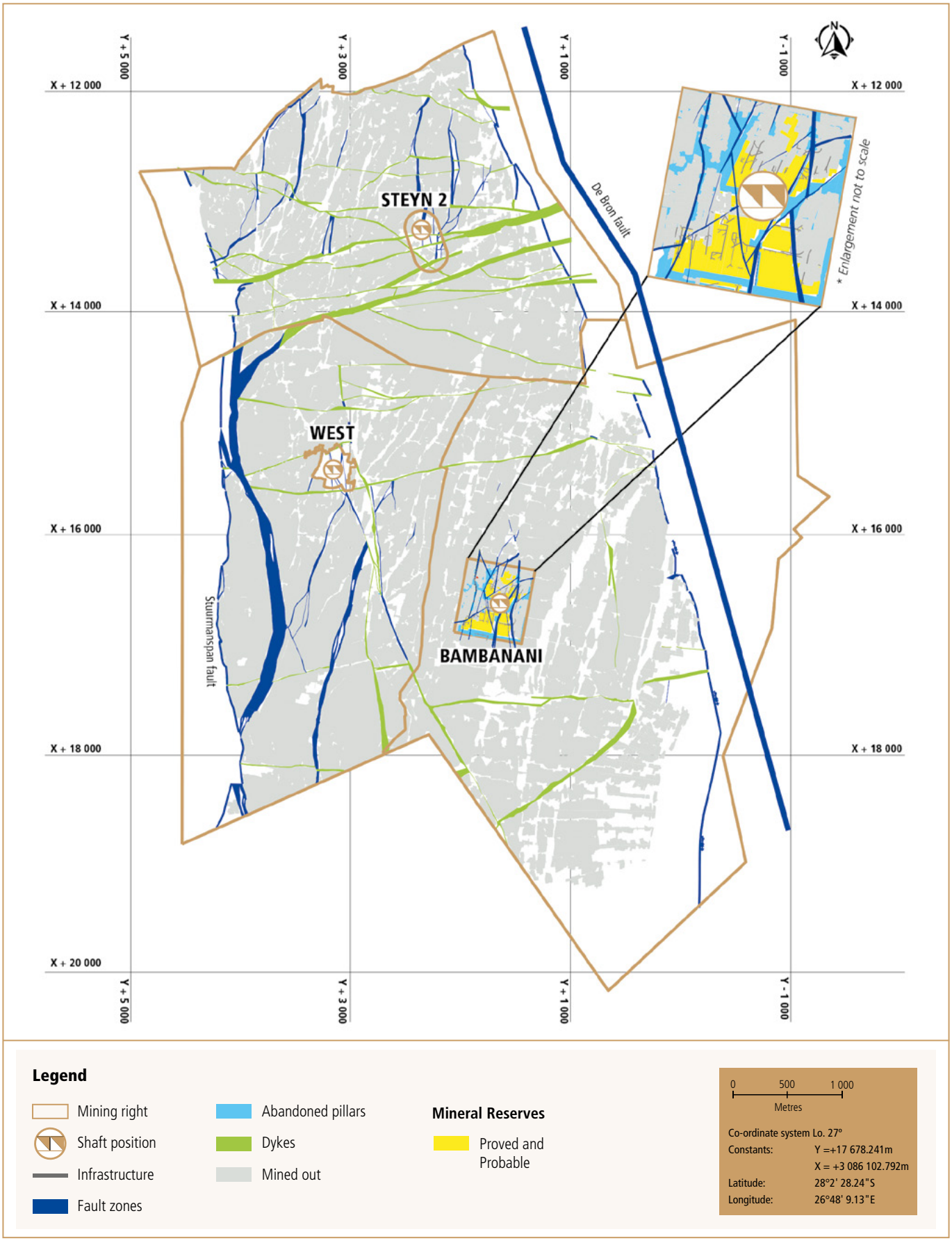
	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**200**	230	233	231	232
	000t (imperial)	**221**	245	257	254	256
Gold produced	kg	**2 132**	2 515	2 821	2 750	3 013
	oz	**68 545**	80 860	90 698	88 415	96 870
Grade	g/t	**10.66**	10.93	12.11	11.90	12.99
	oz/t	**0.310**	0.318	0.353	0.348	0.378
DEVELOPMENT						
Total metres (excl. capital metres)		**1 184**	1 173	1 495	1 591	1 743
Reef metres		**0**	0	0	130	105
Capital metres		**0**	0	0	0	0
FINANCIAL						
Average gold price received	R/kg	**735 972**	591 962	576 398	574 227	536 410
	US$/oz	**1 461**	1 299	1 395	1 314	1 151
Capital expenditure	Rm	**50**	61	64	77	106
	US$m	**3**	4	5	6	7
Cash operating cost	R/kg	**480 620**	391 550	320 724	317 833	268 305
	US$/oz	**954**	859	776	727	576
All-in sustaining cost	R/kg	**522 990**	441 226	360 462	357 025	304 634
	US$/oz	**1 039**	968	873	817	654

Bambanani: Schematic of shaft and mining layout

Not to scale



BAMBANANI – BASAL REEF: MINERAL RESERVES



JOEL

History

Active prospecting in the area began on the farms Leeuwbult 580 and Leeuwfontein 256 in 1981. Construction of the twin-shaft system began in September 1985 and was completed by December 1987. Joel South was designed to be a fully trackless mining operation. Previously known as HJ Joel, the mine's name changed to Joel in 1998 when the then AngloGold Ltd was established. The mine's name was later changed to Taung in 1999, reverting to Joel in January 2002 when the Freegold joint venture between Harmony and ARMgold assumed responsibility for the operation.

Nature of the operation

Joel consists of two interconnected shaft complexes: the south shaft complex and the north shaft complex.

The south shaft complex has two shafts, namely 3 shaft (men and material) and 4 shaft (ventilation). This shaft system was sunk beyond the reef sub-outcrop and is located on the southern extremity of the orebody. These two shafts go down to 1 050m below collar and cover four levels, namely 60 and 70 levels (which are mined-out trackless levels), 90 level, which is the main transfer level, and 95 level, which houses the pumping and loading facilities.

The north shaft complex is a single-shaft system, sunk and lined to 1 471m below collar, but not yet equipped to hoist people. Feasibility studies were conducted in 2005 to determine whether this shaft could assist in extending Joel's life of mine by opening up 129 level. This shaft was

upgraded in February 2006 to enable hoisting of ore through the north shaft barrel. Hoisting was halted in March 2007, owing to the deteriorating shaft infrastructure. The shaft has since been re-equipped to hoist ore and acts as a second outlet for the mine. A short one-compartment lift shaft from 110 level gives access to 121 level. The single drum winder at this level is used to transport men and material down to 121 level and for hopper hoisting of development and some stoping ore. The lift shaft has since been deepened to access 129 level. The lift shaft will service men and material only whereas the north shaft will be dedicated to hoisting ore.

The two shaft complexes (north and south) are connected via a triple decline system, spanning four levels and consisting of an approximately 1 600m belt decline (decommissioned), a chairlift decline to 110 level and two material declines in tandem down to 117 level. The decline levels are 98, 104, 110 and 117 with the last two connected to the north shaft. Although they share a boundary, there are no holing connections between Joel and Beatrix.

Joel currently has a life-of-mine expectancy of nine years. This includes mining up to 137 level and the Beatrix block swop.

To access the orebody from 137 level, two declines were developed at 12° from 129 level – a chairlift decline and a conveyor belt decline. Primary footwall development is currently underway on 137 level.

Geology

The main structures at Joel are associated with the Platberg Extension. These faults are north-south striking, steeply dipping and typically have downthrows to the east of 10m to 100m. These downthrows form a graben against the De Bron Fault, which has a 450m upthrow to the east. East of the De Bron Fault, the reef has been either truncated or eroded against the Karoo Supergroup.

Minor east-west striking faults are also present. However, displacements on these faults are generally less than 10m, which are believed to be Klipriviersberg in age. Low angle reverse faulting is also present. These structures trend north-south, have small displacements and dip towards the east. These structures may be related to the central Rand Contractional event.

The Klippan Formation has been preserved as an east-west trending erosional channel that has eroded deeply through the Witwatersrand sediments and has eliminated the Beatrix/VS5 horizon in the eastern portion of the mine and cut out a significant chunk in an east west direction through the middle of the lease area. Regionally the Klippan Formation is preserved in the north-south striking basin, known as the Virginia Basin in the Southern Free State, which parallels the De Bron Fault.

A deep erosional channel of Platberg Group volcano-sedimentary rock, known as the Klippan Channel, truncates the Beatrix Reef some 1.8km to the north of south shaft. This washout feature is wedge-shaped with its apex to the west and widening to the east. The estimated dimension from the apex to the eastern property boundary is approximately 1.8km. The reef has been shown to be continuous to the north of this feature.

Where unaffected by the Klippan Channel, the reef is bound to the east by the De Bron Fault, which strikes north-north-east. The CD Fault, which strikes north-east and is roughly halfway between the two shafts, has a 320m sinistral lateral displacement south of the fault towards the north-east.

The complex nature of the reef has resulted in a highly irregular distribution of gold throughout the mining area. There are broad low- and high-grade zones over hundreds of metres, which are considered likely to be repeated within the reef environment beyond the limits of the current development. However, the detailed grade distribution within these zones remains very unpredictable.

For the purposes of resource estimation, a detailed facies model is used and is based on detailed sedimentological observations.

Mineral rights, legal aspects and tenure

The current mining right, encompassing an area of 2 355.8ha, was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 6 August 2010 under 73/2010MR. The right was granted on 3 December 2007 for a period of 11 years, ending on 2 December 2018. The right has since been successfully renewed in terms of Section 24 (1) of the Mineral and Petroleum Resources Development Act for a further 11 years, ending on 14 February 2030.

Mining methods and mine planning

Joel operates at an intermediate mining depth and the mining method is tailor-made for the variable grades intersected as well as the associated rock-related hazards anticipated at this depth.

Given the variable grades and geological complexity, mining is conducted mainly in terms of a pre-developed scattered mining system. This system allows for unpay and geologically complex areas to be left unmined with some cognisance taken of the overall panel configuration and stability of footwall development. This allows for selective mining, based on the proven ore reserve during the development phase.

In addition, stoping panel stability in an intermediate stress environment may require additional stabilising pillars be left to support the immediate hangingwall. These take the form of inter-panel crush pillars between neighbouring mining panels. The major rock-related risk is the occurrence of unexpected panel collapses.

Minor falls of ground, due to geology, bedding, shale and jointing, do occur but are mostly addressed via a proven in-stope support system. As the largest portion of Joel's production is currently mined between 129 and 137 levels, production is focused mainly on four raise lines this year but the plan is to increase this to five raise lines before the end of next year.

In addition, as mining has advanced into more complex geological areas, dip- and strike-related structures are more commonly intersected. The change to a higher support resistance system, given the intersection of a more complex geological environment, has been largely successful and the occurrence of large geological "back breaks" and falls of ground are rare. Timber-based packs were installed along gullies and as breaker line support in panels to improve hangingwall stability. From a management perspective, it is of utmost importance that geological structures are reported, mapped and properly supported using high-support resistance pack units to ensure a stable stoping horizon.

With the marginal increase in depth and the more complex geological environment, the incidence of low magnitude (<1.5) seismic events has slowly increased. This activity has manifested mainly in reasonably low stress (45Mpa) strike-orientated dyke intersections with stoping excavations. The installation of a 10-station regional seismic network to highlight potentially unstable areas and structures prone to bursting was completed with the seismic data used to highlight potential problem areas. The seismic network is maintained, and its operational and health status are kept well above the 80% mark.

Mineral processing

Mined ore is transported by road for processing at the Harmony One carbon-in-pulp plant, which is situated some 40km from the shaft.

SOUTH AFRICA – FREE STATE (JOEL) CONTINUED

Infrastructure

Joel's upper mining levels are in the mature phase of operation. The decline project development, from 129 to 137 levels, which started in 2011, has been completed. Decline project engineering construction is planned to be completed by end April 2021. The 137 level E5 raise is holed and production is ongoing.

Mineral Resource Estimation

The method used to estimate local measurements on the shaft is ordinary kriging with simple macro kriging used for local indicated and inferred estimates. Estimates are generally kriged into 30m x 30m blocks for measured resources from the point support data. Indicated Mineral Resources are kriged into 60m x 60m blocks, using associated regularised variograms together with a macro kriging decluster.

Similarly, Inferred Mineral Resources are estimated using associated regularised variograms and kriging into 120m x 120m blocks. Any unkriged areas in the inferred regions are then covered by global mean estimates. Geozones are based on grade distribution to ensure correct grade estimates are conducted for each area. For details of the Estimation process followed, see page 131.

Environmental impact

Environmental aspects and impacts at Joel are managed in terms of an environmental management programme, as approved by Department of Mineral Resources and Energy, and in line with the Mineral and Petroleum Resources Development Act. All environmental aspects and impacts emanating from mining activities are documented in the associated environmental management programme report and the environmental aspect register as required by the Act and the ISO 14001:2004 standard.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources and Energy to verify compliance with the following legislation:

- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- Mineral and Petroleum Resources Development Act

All environmental impacts emanating from mining activities are managed in terms of the environmental management programme and ISO 14001:2004 requirements.

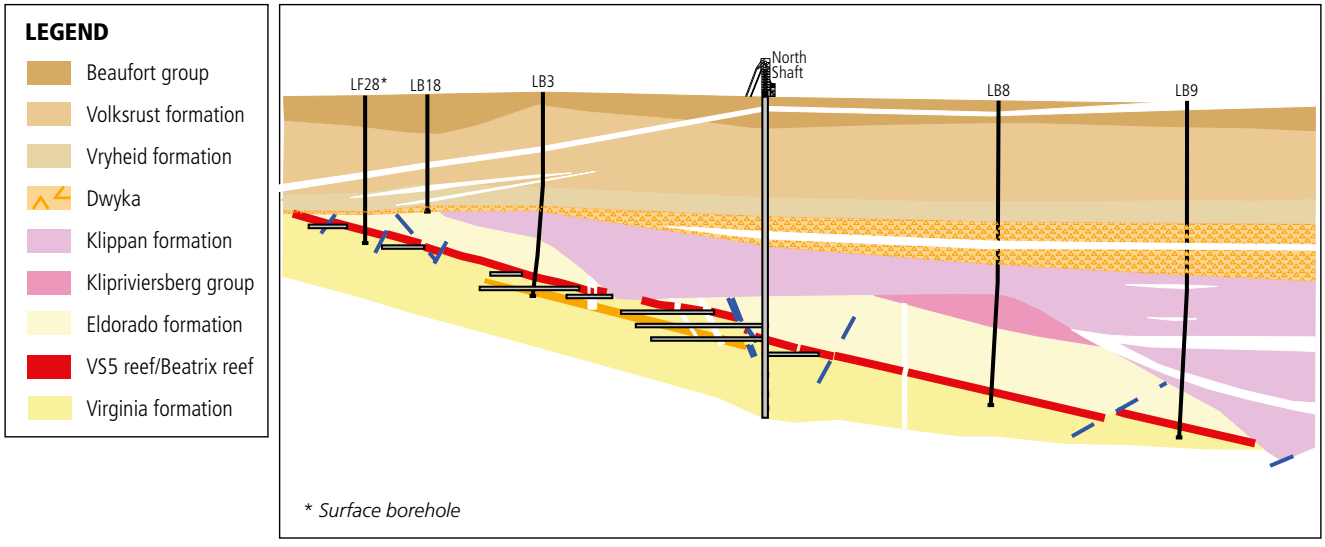
Environmental audits or performance assessments are conducted by independent environmental consultants every second year to verify compliance with Joel's approved environmental management programme, as required by Regulation 55 of the Mineral and Petroleum Resources Development Act, and the report is submitted to the Department of Mineral Resources and Energy. In addition, an internal environmental legal compliance audit is conducted to verify compliance. An online environmental legal register is maintained at *www.drayer-legal.co.za* to monitor compliance and to provide applicable and relevant environmental legal updates for the operation.

Bio-monitoring surveys are also conducted on surface water streams close to the operation in compliance with draft water use licence conditions and the National Water Act to:

- determine the condition of biological communities as well as the chemical water quality in rivers and streams during the wet seasons
- provide baseline reference conditions for future studies in order to assist Joel mine management in identifying environmental liabilities relating to the potential contamination of surface streams resulting from current mining activities

The operation is ISO 14001 accredited and conforms with the requirements of the ISO 14001: 2004 standard for which it is audited annually. Joel is also accredited in line with the International Cyanide Management Code, initially in 2010 and most recently on 1 February 2017. Joel is committed to eliminating and/or minimising the effects of mining activities on the environment and adjacent communities.

JOEL – Geological section looking west (not to scale)



MATERIAL RISKS

Material risks that may impact Joel's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Flooding of 145 level (shaft bottom)	• Installation of second submersible pump as a standby
• Lack of mining flexibility	• Clean up of dam on 145 level
	• Prioritising development to open Raise lines

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve Manager

Deon Lodder

Professional Mine Surveyor (PMS 0169 – PLATO), Business Management and Leadership Degree (UFS), Mine Surveyor's Certificate of Competency: National Higher Diploma – Mine Surveying, NTC 6 – Civil Engineering, Mine Manager's Certificate of Competency

34 years' experience in gold mining.

JOEL

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Joel	4.3	7.71	33	1 058	3.4	7.79	27	863	7.3	5.19	38	1 223	15.0	6.50	98	3 144

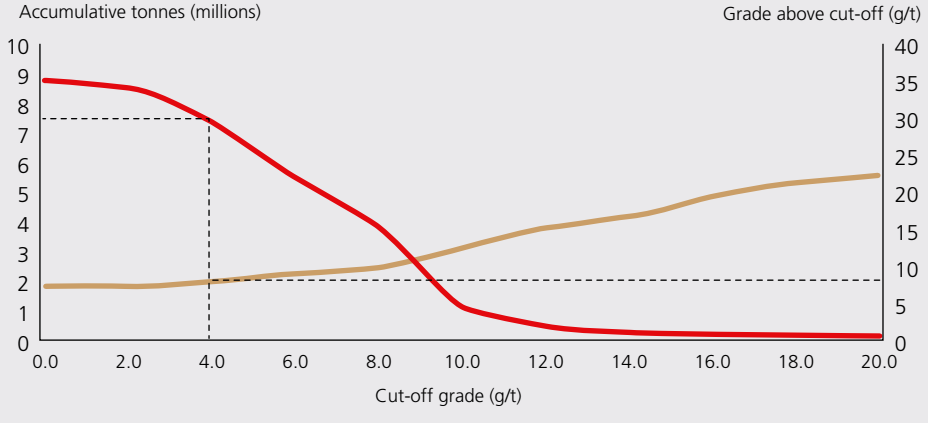
Modifying factors

Joel	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	84	170	191	96	803
2020	83	172	190	95	898

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Joel	2.9	4.85	14	447	1.4	4.68	7	214	4.3	4.80	21	661

JOEL:
BEATRIX REEF
Measured and Indicated
Mineral Resource
grade-tonnage curve



SOUTH AFRICA – FREE STATE (JOEL) CONTINUED

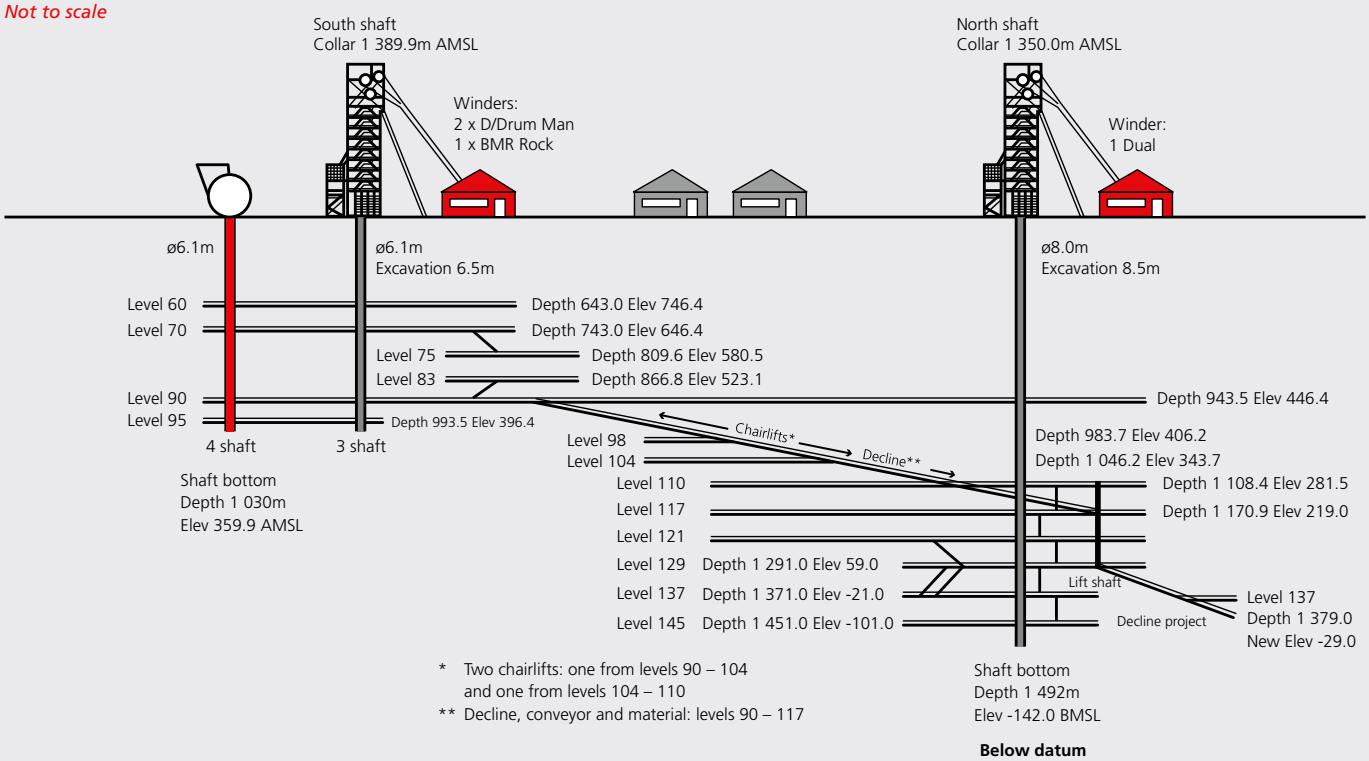
OPERATIONAL PERFORMANCE

Joel: Key operating statistics

	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**349**	429	454	514	542
	000t (imperial)	**384**	473	501	567	597
Gold produced	kg	**1 391**	1 567	1 635	2 246	2 278
	oz	**44 722**	50 379	52 566	72 211	73 239
Grade	g/t	**3.99**	3.65	3.60	4.37	4.20
	oz/t	**0.166**	0.107	0.105	0.127	0.123
DEVELOPMENT						
Total metres (excl. capital metres)		**2 734**	3 378	3 331	3 477	3 541
Reef metres		**832**	1 288	431	1 596	2 315
Capital metres		**0**	0	620	532	485
FINANCIAL						
Average gold price received	R/kg	**734 620**	593 531	576 023	573 986	543 442
	US$/oz	**1 459**	1 302	1 394	1 313	1 166
Capital expenditure	Rm	**151**	187	250	243	215
	US$m	**10**	13	19	18	15
Cash operating cost	R/kg	**718 024**	617 116	556 468	413 088	371 080
	US$/oz	**1 426**	1 354	1 347	945	796
All-in sustaining cost	R/kg	**826 970**	701 644	661 921	477 484	424 617
	US$/oz	**1 642**	1 539	1 602	1 092	911

Joel: Schematic of shaft and mining layout

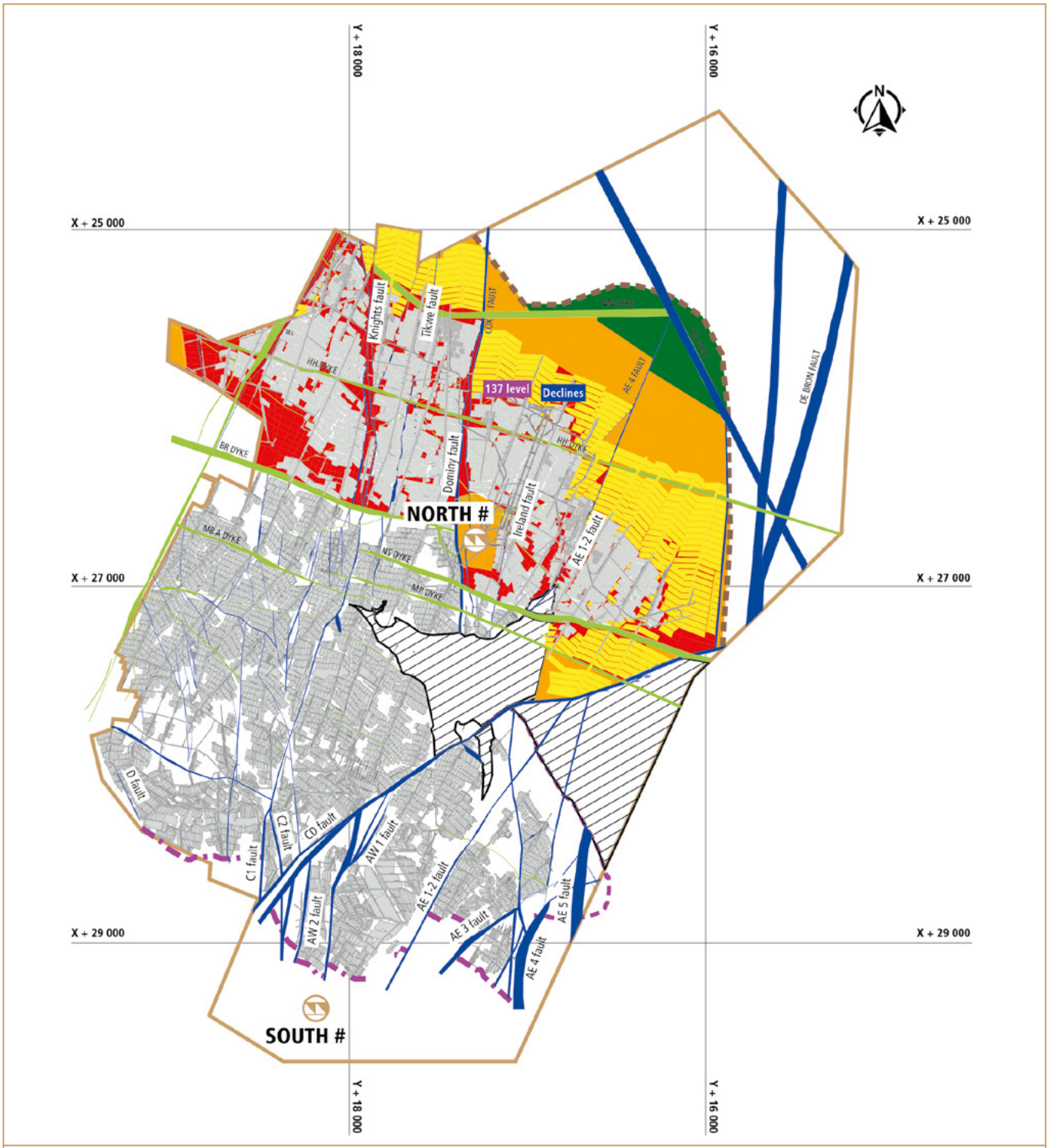
Not to scale



* Two chairlifts: one from levels 90 – 104 and one from levels 104 – 110

** Decline, conveyor and material: levels 90 – 117

JOEL – BEATRIX REEF: MINERAL RESOURCES AND MINERAL RESERVES



Legend

- Mining right
- Shaft position
- Klippan erosion channel
- Fault zones
- Dykes
- Beatrix sub-outcrop against Karoo supergroup
- Bearix sub-outcrop on VS5
- Mined out
- Infrastructure

Mineral Resources

- Measured
- Indicated
- Inferred

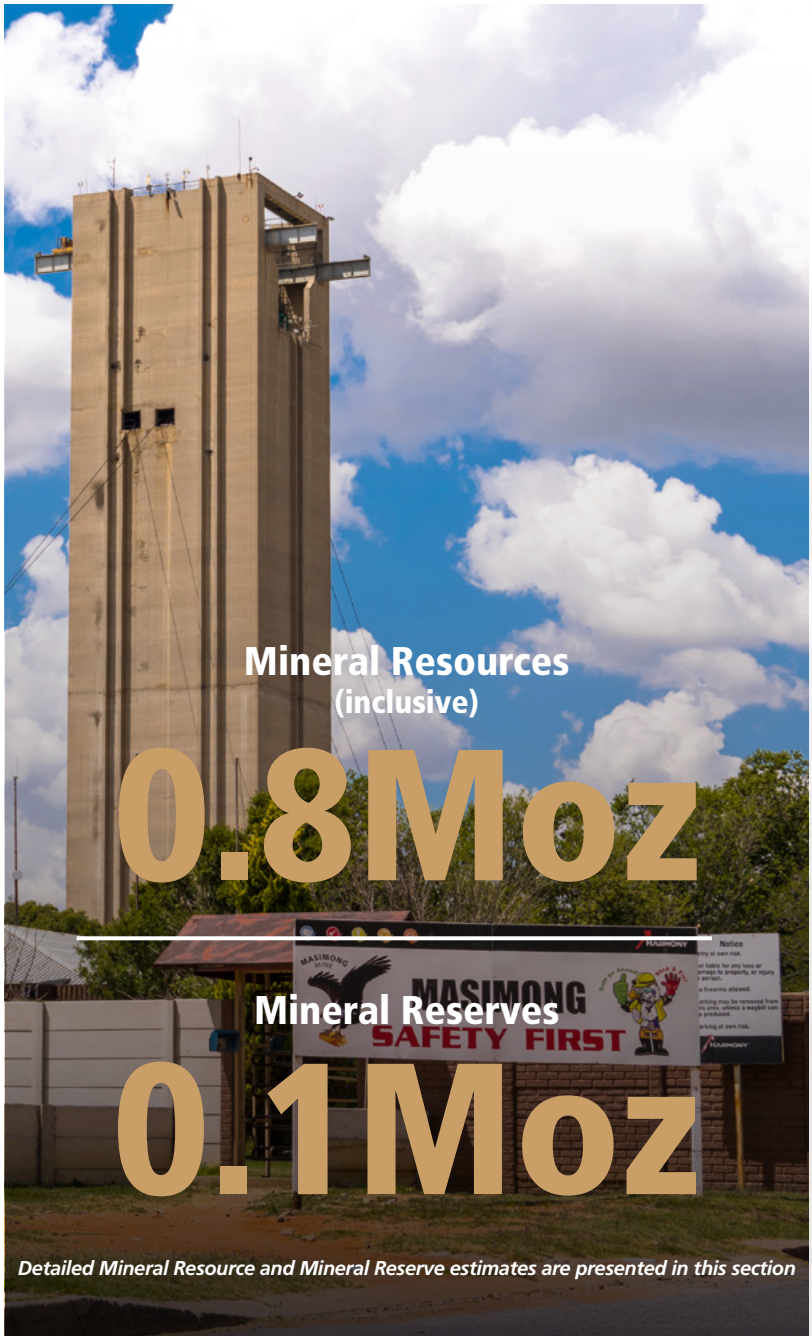
Mineral Reserves

- Proved and Probable

0 500 1 000
Metres

Co-ordinate system Lo. 27°
Constants: Y = 0.00
X = +3 100 000.00
Latitude: 28°16' 17.19"S
Longitude: 26°48' 57.97"E

MASIMONG



History

Masimong was originally known as Erfdeel when it was sunk by Anglo American's Gold and Uranium Division in 1985. Harmony purchased Saaiplaas 3 from Anglo American in March 1997 and the two Erfdeel shafts in September 1998, which were renamed Saaiplaas 4 and 5. After the closure of Saaiplaas 3 in early 1998, following the collapse of the gold price, an opportunity arose to re-open the entire shaft complex, comprising the Saaiplaas 4 and 5 shafts, in September 1998 when it was renamed Masimong.

Masimong 5 shaft (formerly Saaiplaas 5), the youngest of the shafts, was sunk in 1985. Reef and waste ore was transported via a twin haulage system to Masimong 4 (Saaiplaas 4) until September 2001, when equipping of the reef and waste-hoisting infrastructure was completed at 5 shaft. Mining operations at Masimong 4 and Saaiplaas 3, which had been sunk in 1981 and 1976 respectively, subsequently ceased as they were no longer economically viable. When hoisting operations began at Masimong 5 shaft, Masimong 4 was downscaled to a service and small-scale mining shaft in the quarter ended 30 June 2001.

By 30 June 2002, prevailing market conditions had improved and mining at Masimong 4 was once again economically viable. Additional personnel were redeployed to develop and access new areas of Masimong 4 to facilitate future production. Extraction of the Saaiplaas 3 shaft pillar was terminated due to technical difficulties. Subsequently, in June 2004, operations at Masimong 4 were also rationalised. The shaft is currently used solely for pumping.

During FY12, a bulkhead water plug was installed to seal off Saaiplaas 3 from the rest of the Masimong complex. The shaft was then abandoned due to flooding. Operations at Masimong 5 remain susceptible to changes in the gold price as it is one of the lowest average mining grade underground operations still in production on the Witwatersrand Basin.

Nature of the operation

Masimong is a single-shaft operation, which exploits two reef horizons, the Basal and B reefs at 1 650m to 2 010m below surface. These two reefs narrow tabular bodies are mined by means of conventional open stoping.

Mineral rights, legal aspects and tenure

The current mining right, encompassing an area of 22 582.99ha, was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Resources Titles Office on 11 December 2007 (Reference FS30/5/1/2/2/82MR valid from 11 December 2007 to 10 December 2029).

Geology

Mining takes place in a structurally complex zone between two major north-south trending faults: the De Bron/Homestead Fault in the west and the Saaiplaas Fault in the east. The orebody has been subjected to severe deformation and contains numerous folds (anticlines and synclines) as well as an abundance of smaller faults.

The dip of the reef bands is very variable – from 45 degrees to the east, adjacent to the western side of the lease, to less than two degrees in parts of the southern area.

Production is hosted within two quartz pebble conglomerate bodies, developed above unconformity surfaces, the Basal and the B reefs.

Mining methods and mine planning

Masimong mines at moderate depths of between 1 650m and 2 010m below surface. The reef horizon is accessed by means of conventional grid development. The Basal Reef, which accounts for approximately 80% of the on-reef production profile, is mined as by the open and undercut method, depending on whether the reef is overlain by shale. The B Reef, making up the remaining 20% of the on-reef production profile, is located approximately 120m stratigraphically above the Basal Reef, which necessitates separate infrastructure (footwall development).

The presence of the upper shale marker, approximately 20m thick below the B Reef, strains the development rates of the B Reef, requiring drop raising for holing on all boxholes. In addition, all on-reef development must be conducted by means of wide raising. Despite the marginality of the orebody and the current economic environment, current mine reserves give a life expectancy of three years, mainly due to the successful opening of known value trend extensions.

Mineral processing

The ore mined is transported by rail for processing at the Harmony One carbon-in-pulp plant, situated some 12km from the shaft.

Infrastructure

Surface infrastructure includes a well-established network of paved roads and railway lines as well as a water pipeline and electrical lines to supply and deliver the materials required and transport the ore hoisted to the Harmony One plant for treatment.

The underground infrastructure is that of a mature, low-cost mining operation approaching the end of its economic life. The only undeveloped area of any economic significance lies to the south and south-east of the shaft in ground formerly located within the Masimong 4 shaft area.

Mineral Resource Estimation

The estimation method used for local measured data on the shaft is ordinary kriging and, for local indicated and inferred estimates, simple macro kriging. Estimates are generally kriged into 30m x 30m blocks for measured resources from the point support data. Indicated resources are kriged into 60m x 60m blocks, using associated regularised variograms together with a macro kriging decluster. Similarly, Inferred Mineral Resources are estimated using the associated regularised variograms and kriging into 120m x 120m blocks. Geozones are based on grade and facies distribution to ensure correct grade estimates are calculated for each area. For details of the Estimation process followed, see page 131.

Environmental impact

Masimong's environmental aspects and impacts are managed according to the environmental management programme approved by the Department of Mineral Resources and Energy in terms of the Mineral and Petroleum Resources Development Act. All environmental aspects and impacts emanating from mining activities are documented in the approved environmental management programme and the environmental aspect register, as required by the Act and ISO 14001:2004 standard.

Annual performance monitoring and audits are conducted by the Department of Mineral Resources and Energy to verify compliance with the following legislation:

- Mine Health and Safety Act
- National Water Act
- National Environmental Management Act
- Mineral and Petroleum Resources Development Act

Environmental management programme and ISO 14001:2004 requirements

Environmental audits or performance assessments are conducted annually by independent environmental consultants to verify compliance with the approved environmental management programme, as required by Regulation 55 of the Mineral and Petroleum Resources Development Act, and the report is submitted to the Department of Mineral Resources and Energy. In addition, an internal environmental legal compliance audit is conducted to verify compliance. An online-based Masimong environmental legal register (at *www.dreyer-legal.co.za*) is used to monitor compliance, and to provide applicable and relevant environmental legal updates.

Bio-monitoring surveys are also conducted on surface water streams close to the operation, in compliance with the draft water use licence conditions and the National Water Act, in order to:

- determine the condition of the biological communities in rivers through indices such as SASS5, IHAS (Version 2.2) and IHIA, and to determine the chemical water quality in streams during the wet seasons
- provide baseline reference conditions for future studies in order to assist Masimong management in identifying environmental liabilities resulting from current mining activities in respect of the potential contamination of surface streams

The operation is ISO 14001-accredited and conforms with the requirements of the ISO 14001:2004 standard. It is audited annually as per ISO 14001 requirements. The operation was initially accredited in 2012 and remains committed to eliminating or minimising the effects of mining activities on the environment and adjacent communities.

SOUTH AFRICA – FREE STATE (MASIMONG) CONTINUED

MATERIAL RISKS

Material risks that may impact Masimong's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Adverse changes in the gold price	• Open up the high-grade Basal Reef area, pillars and B Reef value zones as replacement ground
• Unexpected geological features	
• Unexpected decline in value/grade	• Extensive exploration drilling to confirm grade trends ahead of extraction

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Evans Malaola

MSCC, NHD Mineral Resource Management, Plato PMS 0196

35 years' experience.

Ore Reserve Manager

Lana Cousin-Forster

BSc (Hons) Geology

18 years' relevant experience.

MASIMONG

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Masimong	2.6	8.65	23	733	0.2	7.02	1	45	0.02	6.62	0.2	5	2.9	8.51	24	783

Modifying factors

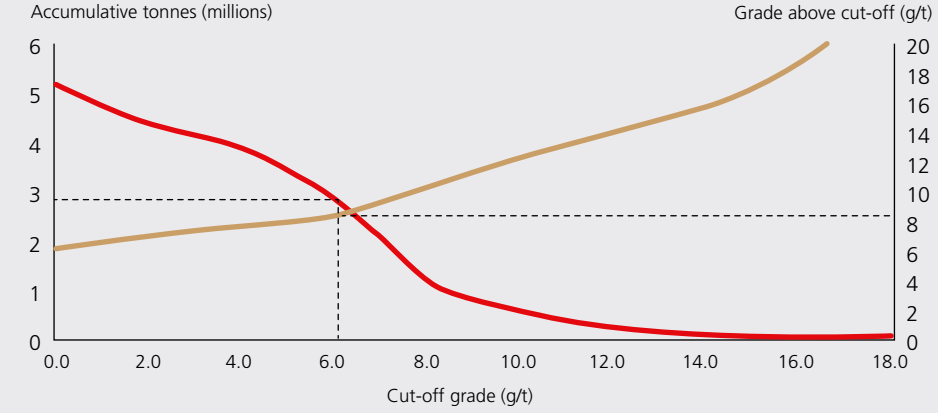
Masimong	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	61	140	152	96	973
2020	61	144	161	95	1 021

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Masimong	0.8	4.26	3	108	0.02	2.95	0.1	2	0.8	4.23	3	110

MASIMONG: BASAL REEF

Measured and Indicated Mineral Resource grade-tonnage curve



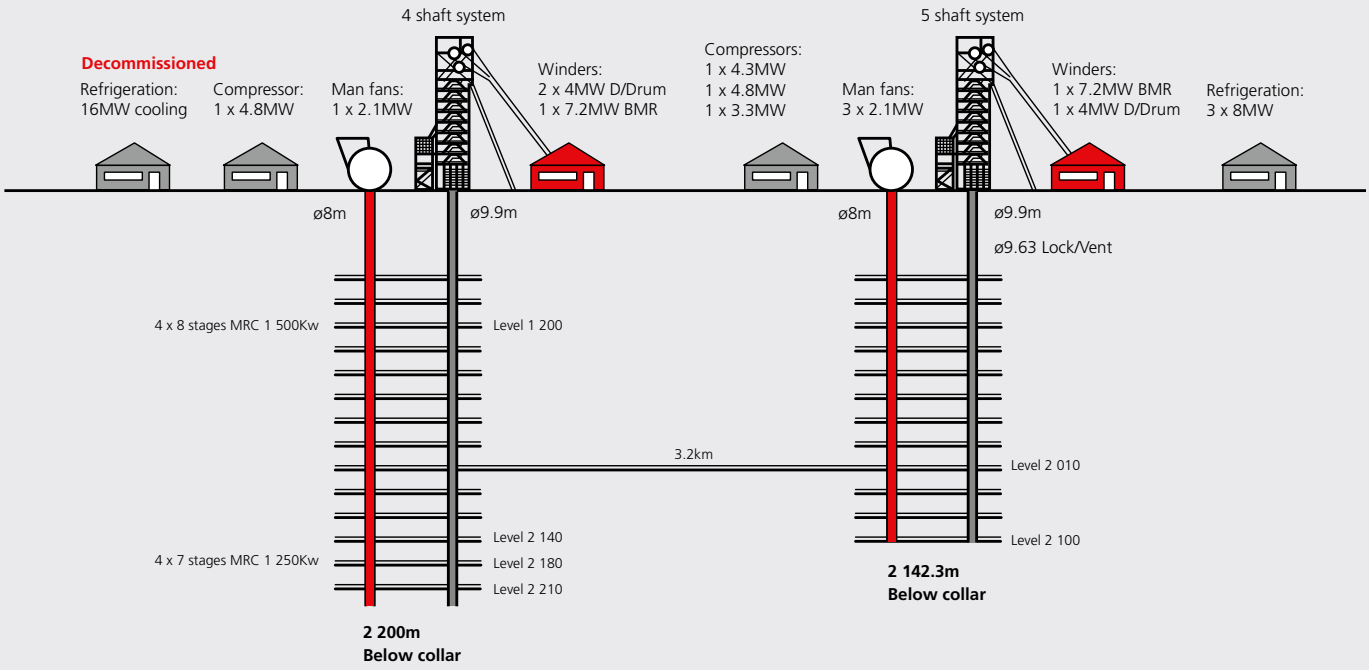
OPERATIONAL PERFORMANCE

Masimong: Key operating statistics

	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**489**	602	647	640	650
	000t (imperial)	**539**	664	714	706	716
Gold produced	kg	**1 999**	2 309	2 623	2 538	2 432
	oz	**64 269**	74 237	84 332	81 599	78 190
Grade	g/t	**4.09**	3.84	4.05	3.97	3.74
	oz/t	**0.119**	0.112	0.118	0.116	0.109
DEVELOPMENT						
Total metres (excl. capital metres)		**2 246**	3 167	5 287	4 754	4 755
Reef metres		**759**	765	2 067	1 054	1 549
FINANCIAL						
Average gold price received	R/kg	**691 282**	593 003	576 729	571 870	541 806
	US$/oz	**1 373**	1 301	1 396	1 308	1 162
Capital expenditure	Rm	**24**	109	129	119	110
	US$m	**2**	8	10	9	8
Cash operating cost	R/kg	**620 804**	525 703	442 586	439 457	426 904
	US$/oz	**1 233**	1 153	1 071	1 005	916
All-in sustaining cost	R/kg	**655 888**	593 408	513 197	500 938	493 527
	US$/oz	**1 302**	1 302	1 242	1 146	1 059

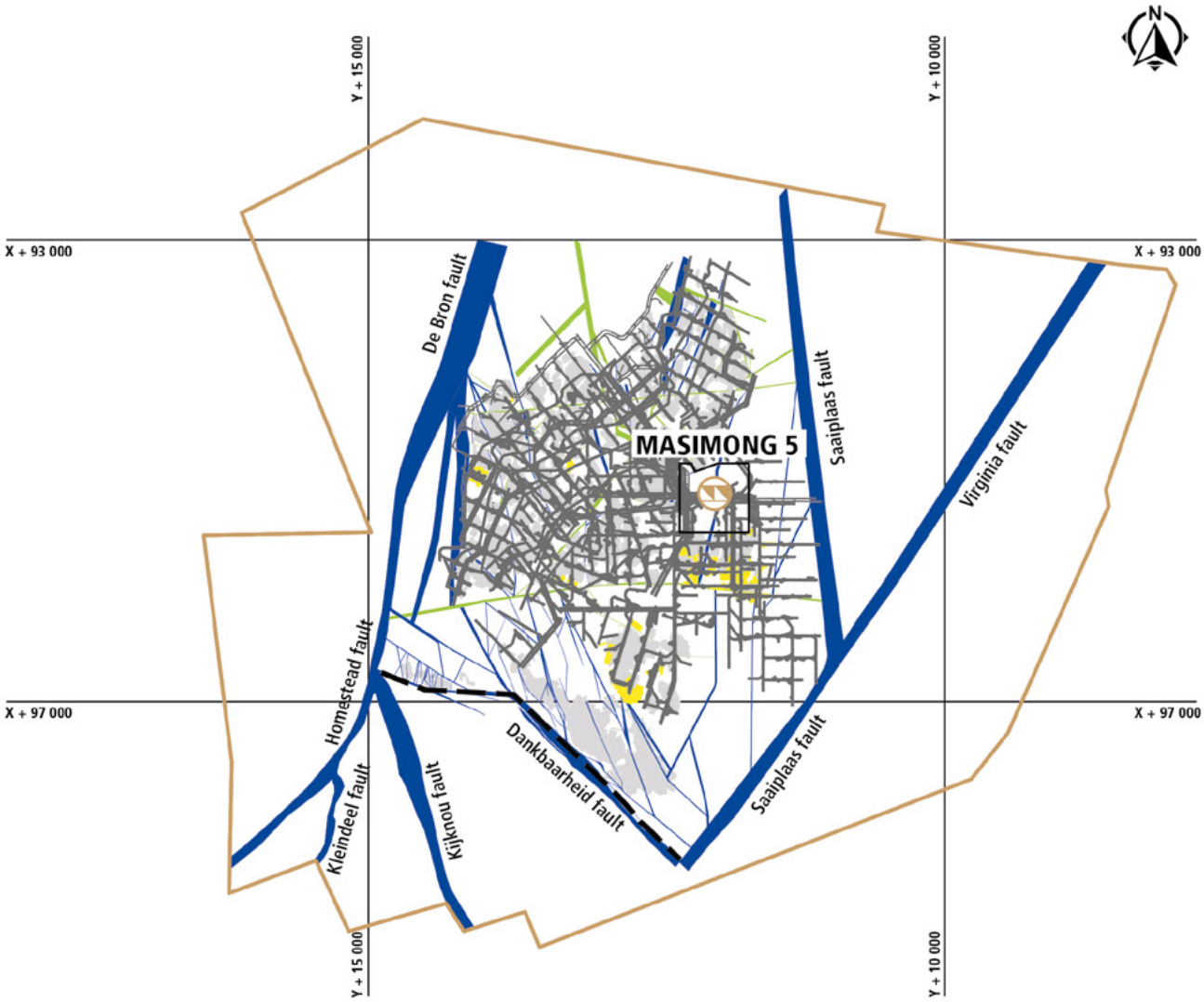
Masimong: Schematic of shaft and mining layout

Not to scale



SOUTH AFRICA – FREE STATE (MASIMONG) CONTINUED

MASIMONG – BASAL REEF: MINERAL RESERVES



Legend

- Mining right
- Shaft position
- Fault zones
- Dykes
- Mined out
- Infrastructure
- Basal Reef sub-outcrop on Leader Reef
- Intermine boundary

Mineral Reserves

- Proved and Probable

0 500 1 000
Metres

Co-ordinate system Lo. 27°
Constants: Y = 0.00
X = +3 000 000.00
Latitude: 27°58' 23.93"S
Longitude: 26°52' 39.41"E

Masimong

Masimong

TARGET 1

History

Outcropping on the Target 1 property (originally Loraine) is an inlier of the Ventersdorp conglomerates (the Bothaville Formation). The similarity of these conglomerates to those of the Witwatersrand Sequence focused interest in this area and led to the discovery of the Free State goldfield. Prospecting on these conglomerates was first undertaken around 1890 via a vertical and incline shaft. Mining has been conducted in the Free State goldfields for well over 60 years.

The initial model for exploration north of the Loraine gold mine, which at the time was managed by Anglovaal Ltd, was proposed by DW Boshoff (chief geologist) in 1978. The Loraine gold mine held the mineral rights immediately to the north of the mine. The Target Exploration Company Ltd, a company formed by Anglovaal specifically for the purpose of exploration, later acquired this area. Options to mineral rights north of Target were acquired by Sun Mining and Prospecting Company (Pty) Ltd. Feasibly studies centred on Sun Concept Mine South (CMS). The formation of Avgold Ltd in 1996 was intended to further the gold mining and exploration interests of Anglovaal. Harmony acquired Target in 2002.

Nature of the operation

The Target 1 operation includes a single underground mine constructed as an extension to the Loraine gold mine and uses 1 shaft as access. Target 2 shaft is currently on care and maintenance and serves as a second escape way for Target 1 while Target 5 serves as a ventilation shaft for Target 1 and is situated on the outskirts of Nyakallong township.

The mine has decline systems off the Target 1 shaft, extending 6km to the mining areas, some 2 300m below surface. The mine is essentially a trackless bulk mining operation using conventional labour-intensive methods.

The Target orebody is located some 5km to the north of the original Loraine 1 shaft and is accessed via a 6km-long 12-degree decline developed from level 203 of the vertical shaft system. Initially, the decline was developed to provide a drilling platform for the exploration and evaluation of the orebody but it was later used as the main access for all services, logistics, personnel and the extraction of ore.

The orebody is composed of some 67 individual conglomerates in the Uitkyk (Elsburg) and Van der Heeversrust (Dreyerskuil), members of the upper Eldorado (Elsburg) Formation. These reefs lend themselves to massive mining techniques where composited conglomerate units can be mined as one stope. These stopes are long-hole drilled and blasted, and tonnages are cleaned and transported by trackless machinery – some of which are operated remotely.

Massive mining is particularly relevant where the reefs become condensed and steeper in the western portion of the orebody. Mining of the massives contributes most of total tonnes stoped. Massive stopes have to be mined in a sequence, broadly from down-dip to up-dip. Mined stopes are backfilled for support, and to address environmental and safety concerns.

Conventional narrow-reef scattered mining makes up the remaining stope tonnes mined where individual reefs are extracted in places where massive mining is inappropriate or uneconomical. Mine planning allows for the mining of certain stopes in the stratigraphically highest gold-bearing units to provide over-stoping for massive stopes to be mined in the future.

Geology

Target is located on the western margin of the Achaean Witwatersrand Gold Basin, which is on the Kaapvaal Craton. The sediments of the Central Rand Group occur within an oval-shaped basin, which has a 160 kilometre-long axis through the Welkom area and Johannesburg, and a short axis of about 80 kilometres. The Central Rand Basin is superimposed on the West Rand Group or Lower Witwatersrand Basin, which has a much larger aerial extent at the centre of the Kaapvaal Craton.

A thrust fault system has resulted in the post-depositional folding of the strata into a synclinal shape. This "border feature" is the western limit of the graben structure, which is some 10 kilometres wide and hosts most of the Welkom gold mines. The eastern limit of this graben is the well-defined De Bron Fault. The Target 1 gold prospect is a northward continuation of the Free State goldfield.

The full potential of the Basal Reef, which produces 85% of the gold from this area, has yet to be established in the Target area because, given time constraints, initial drilling focused on the shallower Elsburg and Kimberley reefs. The reefs in the Aandenk (Kimberley) Formation include the B Reef at the base, the Big Pebble Reef and the A Reef.

The Eldorado (Elsburg) Formation is developed as a sequence of oligomictic auriferous conglomerates referred to as the EA Reefs, which have been mined extensively at the Loraine gold mine. The Elsburg reefs are overlain by a remnant of the diamictite facies of the south, termed the boulder beds at Lorraine. The reefs and associated quartzites represent alluvial sediment influx from a source area to the west. The distribution of gold mineralisation is clearly related to the sedimentology and this primary sedimentological control of gold distribution is understood. However, research has shown that some remobilisation of gold has taken place over small distances. This is not extensive enough to mask the sedimentary controls.

Mineral rights, legal aspects and tenure

The current mining rights encompasses an area of 7 952.78ha. Harmony holds several mining rights for the Target mine in the Free State Goldfields which have been successfully converted and executed as new order mining rights. Certain of these rights are still to be registered at the Mineral and Petroleum Resources Titles Office (MPRTO).

Those mining rights that have been registered as new order mining rights are FS30/5/1/2/2/14MR, which is valid from 30 November 2007 to 29 December 2025 and covers 4 237.00ha, and FS30/5/1/2/2/225MR which is valid from 12 December 2013 to 11 December 2026, covering 3 715.78ha.

Mining methods and mine planning

The stoping methods employed at Target are as follows:

Long-hole stoping methods	
Massive open	Narrow-reef conventional
Wide open	

Development methods	
Drift and fill	Cut and fill
Drift and pillar	Narrow-reef

Massive open stoping

Massive open stoping is based on the mining of a large volume of ore at a low working cost. The proximity of the reefs in the sub-outcrop area allows for several reefs to be mined simultaneously using this method. The main fan massive open stopes are critical in the first three years of operation. The same principles and methodology are applied to areas where similar geology allows for mining of a massive stope.

Wide open stoping

The main focus area in the wide open stopes is the main fan block where two stoping areas are to be mined. This stoping method involves an extraction process that can be applied to any block of similar dimensions (that is with reef widths in excess of 10m and a dip in excess of 200m). The mining method has been designed to use the benefits of long-hole stoping methods and backfill.

Narrow-reef mining

The schedule indicates that 8% of the initial monthly tonnage is to be mined from the Dreyerskuil (DK1A, DK4 and DK9) reefs by means of conventional narrow-reef mining, which is essential as it must provide a destressed environment for mechanised stoping. There is no practical and safer alternative to this method. The rate of overstoping must liberate sufficient levels of destressed reserves to enable the planned 62 000tpm production rate.

Mineral processing

At Target, ore and development rock are hoisted together, and milled and processed at the Target plant adjacent to the mine. Target shares its plant with a Harmony waste rock dump that is monitored and managed by Surface Sources. The plant's design capacity exceeds the maximum planned production from these sources. Gold is recovered through gold cyanide leaching.

SOUTH AFRICA – FREE STATE (TARGET 1) CONTINUED

Infrastructure

The general area of Target 1 (mining right FS30/5/1/2/2/14MR) is well developed in terms of access and mining-related infrastructure. Access to all three Target shafts (1, 2 and 5) is via a well-maintained paved road. The area also has well-established rail links and an airfield.

The Target 1 shaft is used to transport men, material and rock from surface to 203 level. A single decline, equipped with a conveyor belt, connects 203 level to 255 level some 2 050m below surface. The decline splits at 255 level into a conveyor decline and a vehicle decline descending to the extent of development, currently at 291 level which is 2 300m below surface.

Mineral Resource Estimation

Geological modelling, via wire frames of faults and lower surfaces of mineralised packages, is the primary control in the geostatistical evaluation. The estimation method used for local Measured, Indicated and Inferred estimates at Target is ordinary kriging. A total of 23 reef packages are estimated individually without data from adjacent reefs. Estimates are generally kriged into "parent cells" and then assigned to sub-cells, using associated variograms and estimation parameters.

Distinctions between the Mineral Resource categories, based on data density and spatial relationships of gold grades, are defined through variography. Where block grades are estimated by data and separated by distances greater than the maximum grade continuity ranges, they have been classified as an Inferred Mineral Resource. Blocks are therefore not informed by the first kriging run (where the search ellipse was matched to grade continuity ranges) and entirely inferred. Each reef model is then restored to its original wire-frame position and combined into a single 3D model. Geozones are based on the structure while the Mineral Resource classification is based on the slope of regression.

The Datamine mining software system is currently in use on this shaft. A macro system has been generated, linked to a customised scripting menu that allows for professional and easy management of the data and the building of geostatistical models. For details of the Estimation process followed, see page 131.

Environmental impact

Harmony has implemented a water management standard, which applies during the entire mining life cycle and covers prospecting, project design and commissioning, operation and closure. This standard has led to several positive outcomes and long-term targets include reducing the volume of water used for primary activities by 4.5% annually.

Target strives to prevent pollution or to otherwise minimise, mitigate and/or remediate the harmful effects of our operation on the environment and hence maintain its ISO 14001 certification.

A detailed environmental impact register has been developed to identify all potential environmental impacts of the operations. The main impacts are rated and mitigation measures proposed to minimise the environmental impact.

Target is situated in the Free State goldfields, a semi-arid region with an annual rainfall of between 400mm and 600mm. Local thunderstorms and showers are responsible for most of the precipitation during summer – from October to March with a peak in January. Hail is sometimes associated with thunderstorms and occurs mainly in early summer from October to January with its highest frequency in December.

The mine lease area is flat with an average height above sea level of around 1 320m. There is a gentle decrease in elevation to the west and north of Allanridge at a gradient of approximately 1:200. There are no prominent topographical landmarks in the area.

No significant topographical disturbances are expected. The topography has the potential to be affected where the slimes dams, waste rock dumps and solid waste disposal sites are situated. The area is very flat with an overall slope to the south-west.

MATERIAL RISKS

Material risks that may impact Target's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Grade dilution from waste/backfill in the massive stopes	• Reduce pillar mining between mined-out areas
• Trackless development production	• Weekly monitoring and tracking
• Solo reserve drilling	• Optimise and schedule planned maintenance on solo machines
• Ventilation constraints	• Optimise ventilation and cooling capability

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve Manager

Cindi Henderson

BSc Hons (Geology), SACNASP

18 years' relevant experience.

TARGET 1 AND 3

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Target 1	7.5	7.38	55	1 782	4.8	6.83	33	1 050	3.6	5.90	21	685	15.9	6.88	109	3 517
Target 3	0.6	9.19	6	178	2.9	10.17	30	965	1.2	8.66	11	340	4.8	9.66	46	1 483

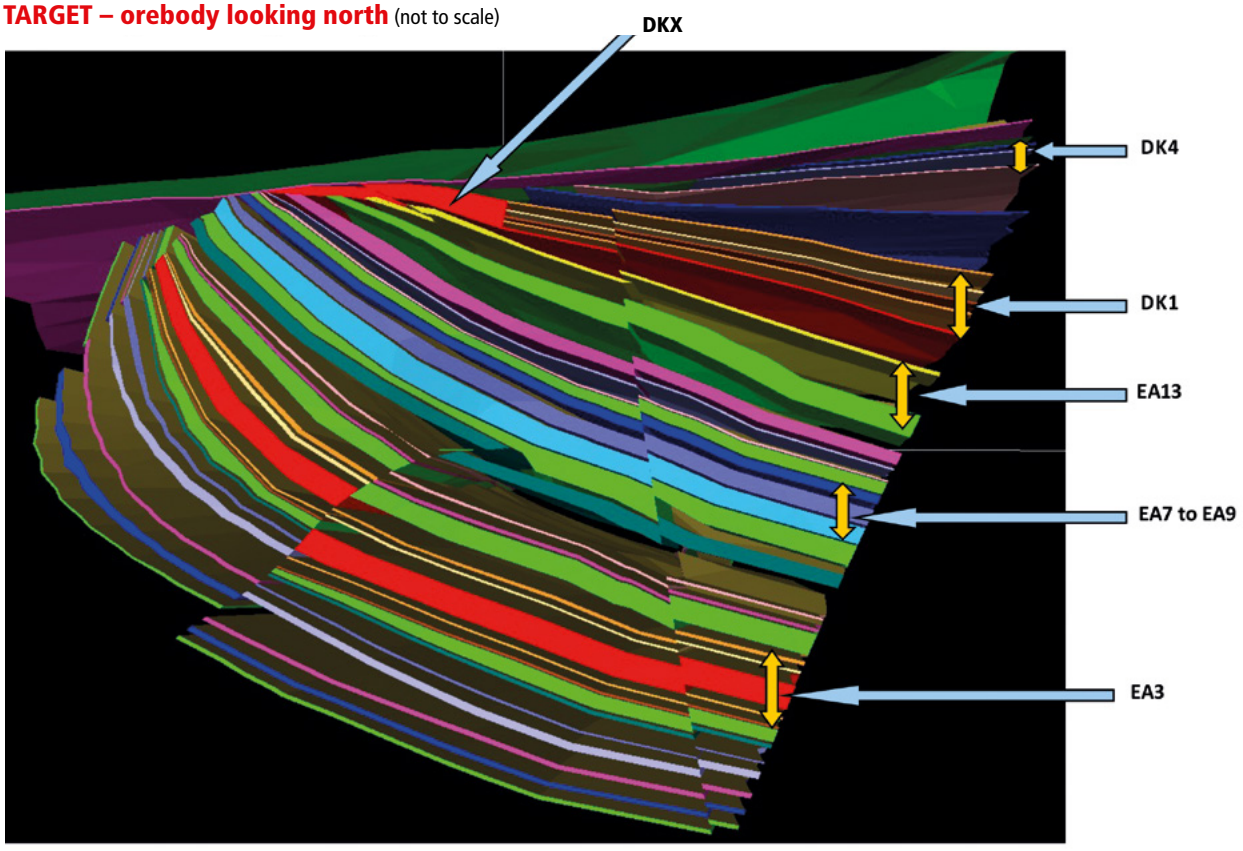
Modifying factors

Target 1	MCF (%)	SW (cm)	MW (cm)	PRF (%)	Cut-off (cmg/t)
2019	95	–	–	95	3.80
2020	95	–	–	95	3.80

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Target 1	3.3	4.31	14	452	1.9	4.23	8	255	5.1	4.28	22	707

TARGET – orebody looking north (not to scale)



SOUTH AFRICA – FREE STATE (TARGET 1) CONTINUED

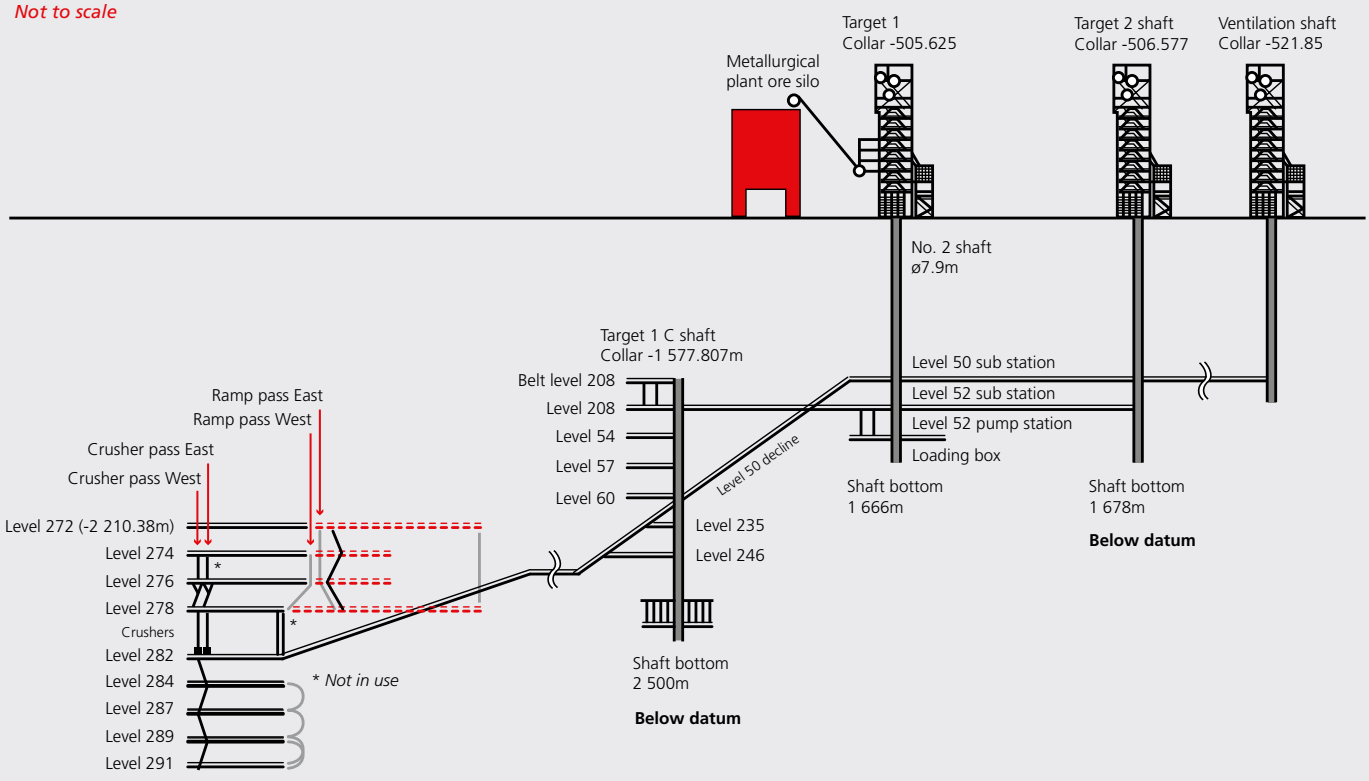
OPERATIONAL PERFORMANCE

Target 1: Key operating statistics

	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**543**	588	680	745	739
	000t (imperial)	**598**	650	749	822	814
Gold produced	kg	**2 244**	2 653	2 854	2 669	3 387
	oz	**72 146**	85 296	91 758	85 809	108 895
Grade	g/t	**4.13**	4.51	4.20	3.58	4.58
	oz/t	**0.121**	0.131	0.123	0.104	0.134
DEVELOPMENT						
Total metres (excl. capital metres)		**2 152**	3 378	3 883	3 656	3 459
Reef metres		**96**	118	431	104	182
Capital metres		**191**	179	620	0	0
FINANCIAL						
Average gold price received	R/kg	**681 388**	590 298	570 316	570 091	536 196
	US$/oz	**1 353**	1 295	1 395	1 304	1 150
Capital expenditure	Rm	**347**	297	309	324	322
	US$m	**22**	21	24	24	22
Cash operating cost	R/kg	**670 647**	557 264	467 271	508 082	366 814
	US$/oz	**1 332**	1 222	1 131	1 162	787
All-in sustaining cost	R/kg	**817 066**	662 816	582 200	651 833	471 876
	US$/oz	**1 623**	1 454	1 491	1 012	1 075

Target 1: Schematic of Target shafts and mining layout

Not to scale



TARGET 1


Y + 10 000
Y + 5 000
X - 5 000
X - 10 000
X - 15 000
TARGET 1
Ventilation shaft
TARGET 2
EA7 bottom contact reef*
* Not to scale – enlarged for illustrative purposes
N
Legend
Mining right
Shaft position
Dykes
Infrastructure
Mined out
Mineral Resources
Measured
Indicated
Inferred
Mineral Reserves
Proved and Probable
0 1 000 2 000
Metres
Co-ordinate system Lo. 27°
Constants: Y = +30 000.0
X = +306 0000

MINERAL RESOURCES AND RESERVES BY OPERATION

PAGES 42-111

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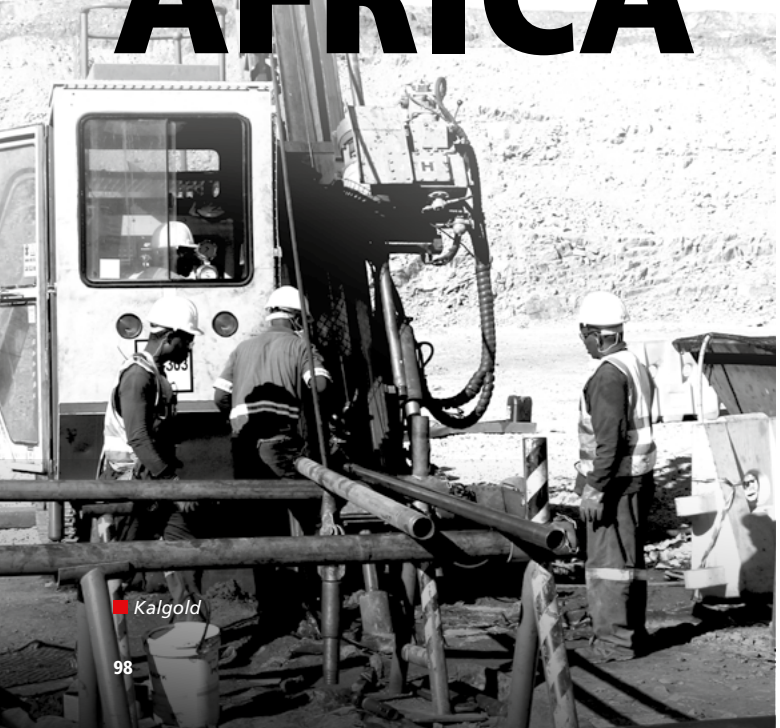
106 Free State and Klerksdorp

SOUTH AFRICA



Kalgold

SURFACE SOURCES

Harmony has one open pit mine and several surface retreatment facilities in South Africa. As at 30 June 2020, their combined estimated Mineral Resource (inclusive) was 10.4Moz and a combined estimated Mineral Reserve, 6.6Moz.

GOLD

Mineral Resources (inclusive)

10.4Moz

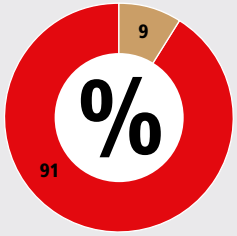
Mineral Reserves

6.6Moz

GOLD AND GOLD EQUIVALENTS

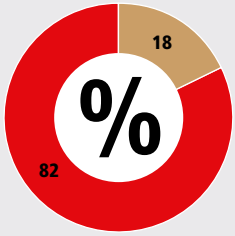
Contribution to Harmony

Mineral Resources
9%



Rest of Harmony **91%**

Mineral Reserves
18%



Rest of Harmony **82%**

Harmony's surface sources in South Africa include:

- **Kalgold**, an open pit mine located in North West Province on the Kraaipan Greenstone Belt
- **Various surface sources in the Free State** including several tailings retreatment operations and waste rock dumps, located largely in the vicinity of Welkom
- **Marginal ore rock dumps and tailings** (Mispah and the Kop paydam) associated with Moab Khotsong that are available for retreatment

LOCATION OF HARMONY'S SURFACE SOURCES IN SOUTH AFRICA

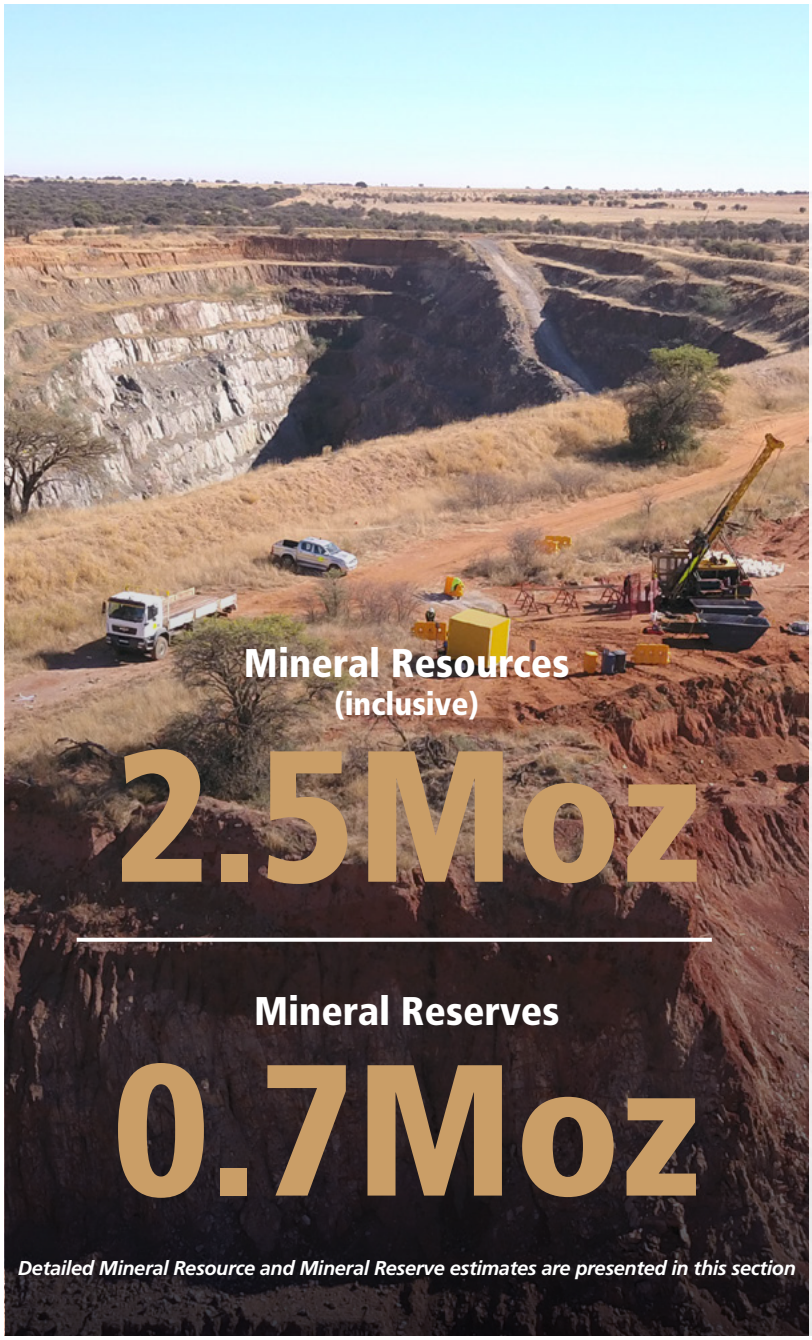
LEGEND

Surface operations

	Latitude	Longitude
Kalgold	26°10'12.85"S	25°14'02.70"E
Saaiplaas plant	28° 3'37.68"S	26°53'14.59"E
Central plant	28° 2'8.36"S	26°52'8.99"E

Free State Operation

KALGOLD



Location

Kalgold is located on the Kraaipan Greenstone Belt, 55km southwest of Mahikeng, between Mahikeng and Stella, along the Mahikeng-Vryburg road (N18) in North West Province, South Africa. The mine is surrounded by farmland. The closest community is at Kraaipan, approximately 15km to the south of the mine.

History

Exploration of the Kraaipan Greenstone belt by Shell Minerals Division, began in 1980. The D Zone one area was discovered in 1991 on the farm Goldridge. In 1994, West Rand Consolidated Exploration acquired the orebody and mining started in December 1995. Ore was treated by heap leaching until the installation of the first two mills in 1997. Harmony acquired the mine in 1999. In 2003, a third mill was added to increase treatment capacity. The D Zone pit was mined out in 2009.

Nature of operation

Kalgold is an open-pit mining operation with one active pit following the merger of the A Zone and Watertank pits. The D Zone, where mining began in 1995, has been mined out and is currently being used for tailings deposition. Kalgold's plant, which has a monthly capacity of 144 000t, is supported by three ball mills and a carbon-in-leach circuit for gold extraction.

Geology

The Kraaipan Greenstone Belt forms part of the Kaapvaal Craton and is overlain by late Archaean Ventersdorp lavas and tertiary sediments. The Kraaipan Group consists of three formations: the Khunwana, Ferndale and Gold Ridge formations. The Gold Ridge Formation is the oldest and contains banded iron formations, the host rock of gold mined in the Kalahari Goldridge deposits.

The Kalgold operation is located within the geological terrain of the Archaean Kraaipan Greenstone Belt. This greenstone environment is exposed in discontinuous outcrops of steeply dipping rocks, which define three narrow, sub-parallel belts that strike approximately north-south. The Goldridge deposits occur within the central belt, which comprises banded iron formations, magnetite quartzite, chert, greywacke, shale and schist. The greenstones are surrounded by intrusive granites and gneisses. These rocks have a complex history of deformation, which includes folding, faulting and shearing.

Younger cover rocks include isolated patches of lavas of the Ventersdorp Supergroup with much of the area blanketed by Aeolian Kalahari sands. Sparse outcrops of quartz porphyry belonging to the Makwasie Formation also occur. Several large dykes with a predominant east-west trend have intruded the region.

The geology of the lease area and its immediate vicinity is characterised by ferruginous chemical and clastic sediments inter-bedded with meta-lavas and non-ferruginous meta-sedimentary rocks. Outcrops in the area are sparse and generally restricted to ferruginous rock types, which are more resistant to erosion. Magnetite quartzite and clastic sediments form a low ridge to the west of the lease area.

Eastwards of this unit, the iron-rich rocks generally comprise chemical sediments represented by magnetite-rich banded iron formations, cherty banded iron formations and banded chert. These units are interbedded with mafic schist, greywacke and sparse black shale. Banded iron formations consist of rhythmically banded chemical sediments comprising alternating light and dark laminae, which vary from 10mm to 50mm in thickness.

The geology of the D Zone is used as a benchmark at Kalgold. The new pits are well established at the A Zone and Watertank areas, and the blast hole database is now significant. The geology consists of mafic schist, which forms the immediate footwall, a banded iron formation horizon as the main orebody and a succession of clastic sediments consisting of shale, greywacke and volcanic conglomerates as the hanging wall.

Gold mineralisation is hosted by steeply dipping banded iron formations, oxidised to a depth of about 40m to 60m below surface. Near surface the material is red and porous, composed of quartz, hematite and goethite with minor magnetite. At depth, the unaltered banded iron formation consists of quartz, siderite, pyrite, pyrrhotite and magnetite with minor chlorite, calcite and stilpnomelane. In general, gold mineralisation has an erratic and localised distribution. Individual gold grains are on average less than 10µm in diameter and occur in clusters. Gold is generally associated with goethite in the weathered rocks and with pyrite and pyrrhotite in the fresh material.

Geological modelling is completed using Datamine software. Drill holes and blast holes are surveyed and used to construct a series of west-east sections from north to south through the various pit areas. The A Zone and Watertank areas have been modelled as a single contiguous area as the geology and data are continuous and contiguous.

A continuous wireframe geological model has been constructed by linking individual sections, based on data provided by exploration borehole intersections, blast hole information and geological mapping within the pit. The construction of the sections includes outlines for the mineralised zones and waste zones. The definition of the mineralised zones is based primarily on the lithological contacts between the banded iron formations and waste material (volcanic/sedimentary schists).

Mineral rights, legal aspects and tenure

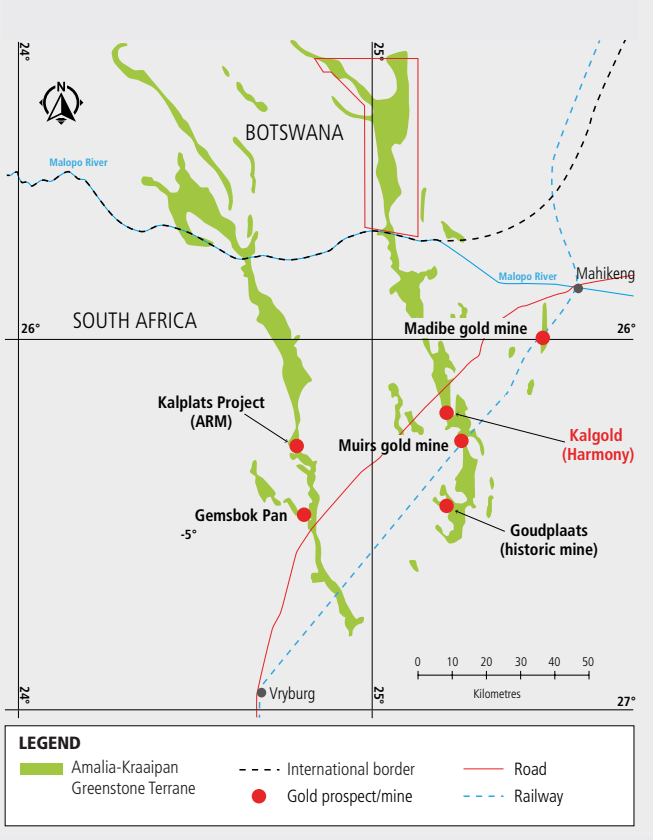
Kalgold's current mining right encompasses an area of 4 595.3ha and was successfully converted, executed and registered as a new order mining right at the Mineral and Petroleum Titles Registration Office on 9 November 2010 under the Mining Right Protocol 574/2008. The DMRE reference number NW30/5/1/2/2/77MR is valid for 30 years (from 28 August 2008 to 27 August 2038).

Mining methods and mine planning

Kalgold is an open-pit mining operation, applying a 10-metre benches mining strategy.

The A Zone and the Watertank pits have been merged to form one active pit situated to the north of the D Zone at a similar stratigraphic position. The A Zone-Watertank pit has an overall strike of ~2 000m and comprises two zones of mineralisation, which dip steeply towards the east. Reef widths range between 15 metres and 120 metres.

KRAAIPAN GREENSTONE BELT – locality



SOUTH AFRICA – SURFACE SOURCES (KALGOLD) CONTINUED

The latest pit optimisation and design resulted in the inclusion of the Henry and Windmill pits to the current A Zone-Watertank pit mining operation. The Windmill pit is separate towards the north of the mining right area, while Henry's pit forms a southern extension to the A Zone-Watertank pit.

The variable nature of the grade distribution in the orebody results in the mining of multiple categories of rock, from waste to high-grade ore in one mining pass. Mining is conducted by mining contractors with the operation being managed by Harmony. Current mining capacity is limited to approximately 900 000 tonnes a month. The low-grade ore and waste rock are transported to dedicated locations north of the N18 road, while the high-grade ore is transported to the processing plant, south of the N18 road.

Mineral processing

Ore reception

The Kalgold plant receives ore from the pit at a rate of approximately 129 000 tonnes a month. The ore has an average moisture content of approximately 1%.

Ore is transported from the pit by truck and tipped into the plant run-of-mine pad. It is then fed into the pre-primary crusher for the first stage of comminution. Pre-primary product reports to the primary crusher before going through the secondary and tertiary crushers. Tertiary crusher product is temporarily stored in the dome prior to milling.

Milling

Ore is fed from the dome to the A, B and C ball mills. The identical A and B mills are generally fed at 55 tonnes an hour. The C mill is the largest with throughput of 105 – 110 tonnes an hour. The mill product ranges from 75% to 80% passing 75 microns. The A and B mill cluster cyclone overflow gravitates into a vibrating screen for trash removal while the C mill uses a conventional linear screen. The cyclone overflow, which has a relatively low density, is pumped out to the thickeners for dewatering prior to leaching. Pebble lime is introduced in the system via the C14 conveyor belt for pH control.

Thickening

Lime and flocculant are the two main components of the thickening process. During thickening, lime acts as a coagulant and the flocculant binds the particles together to increase the settling rate of the particles. Lime addition generally ranges between 700g/t to 1 000g/t whereas flocculant addition usually ranges between 8g/t to 10g/t. The lime also maintains a protective level of alkalinity in the leach section to prevent the generation of poisonous cyanide gas in the process. The two thickeners are equipped with two variable-speed underflow pumps to control the density in the cyanidation process. The thickener overflow gravitates to the mill process tanks for re-use in the milling process.

Leaching

The thickener underflow, which normally ranges from 50% to 55%, reports into the pre-aeration tank for pre-conditioning prior to the addition of cyanide. Pre-conditioning is conducted to render the cyanocides less reactive to cyanide. Cyanide is automatically added to either Leach 2 or Leach 3, depending on the degree of the pre-aeration stage. Kalgold ore requires large amounts of cyanide to complete the leaching process. The addition of cyanide generally ranges from 0.6kg/t to 1.8kg/t. Oxygen is injected into the leach tanks to improve the gold dissolution process. The leaching retention time generally varies from 30 to 40 hours. Generally, 75% dissolution takes places in the two leaching tanks. The slurry then gravitates to the carbon-in-leach (CIL) tanks for further leaching and adsorption.

Carbon in leach

The dissolved gold, still in pulp, is transferred to the CIL circuit where activated carbon is added to adsorb the gold in solution. The CIL tanks are fitted with rotary screens to allow movement of the carbon in a counter-current manner with the slurry. There are seven stages in the CIL process. The slurry, with 85% of the gold extracted, is pumped through a cyanide destruction circuit into D Zone pit, which is currently the tailings storage facility. Once the carbon loading in the head tank reaches required gold loading, the carbon is pumped to the loaded make-up screen for the elution process.

Recovery process

The Kalgold plant employs the Zadra elution process for gold recovery. Carbon is treated with a hot caustic and cyanide solution. The pregnant solution is pumped into the electro-winning circuit for gold recovery. Eluted carbon then passes through the acid column to be treated with hydrochloric acid for the removal of inorganic material. Acid-treated carbon is rinsed with high-pH water to neutralise the acid. Acid-treated carbon is then transferred to the kiln for carbon regeneration. The regeneration process takes place at temperatures above 700 degrees in the absence of air to drive off the organic material.

The electro-winning cathodes are washed through the gold table and filtered through the press to retain the gold sludge, which is then dried, weighed and dispatched to Rand Refinery for refining.

Mineral Resource Estimation

Estimates are run using ordinary kriging. While the statistical analysis indicates that the estimate would benefit from a more local method such as macro indicated kriging, a lack of data prevents this. The grade distribution indicates that more advanced forms of estimation such as uniform conditioning or lognormal uniform conditioning would not be recommended for this deposit, leaving ordinary kriging as the only robust option. The statistical analysis does however indicate that the deposit is amenable to ordinary kriging and as this is the method that has been used in the past it is believed the same process should continue to be used until significantly more data has been obtained. For more details on the estimation process followed, see page 131.

Environmental impact

Kalgold's environmental aspects and impacts are managed in line with the amended 2014 environmental management programme (EMP), as approved by the DMRE in terms of the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) and the provincial Department of Rural, Environment and Agricultural Development, in terms of the National Environmental Management Act 107 of 1998. All environmental aspects and impacts emanating from mining activities are documented in the approved EMP and the environmental aspect register, as required by the MPRDA and ISO 14001:2015 standard.

Annual environmental performance monitoring and compliance audits are conducted by the DMRE and the national Department of Environmental Affairs to verify compliance with the following legislation:

- Mine Health and Safety Act, 29 of 1996
- National Water Act, 36 of 1998
- National Environmental Management Act ,107 of 1998
- MPRDA, 28 of 2002
- National Heritage Resources Act, 25 of 1999
- National Forests Act, 84 of 1998
- National Environmental Management: Air Quality Act, 39 of 2004

Environmental performance assessments are conducted annually as per the commitments stipulated in the approved EMP (as amended in 2014) and environmental authorisations in terms of Regulation 55 of the Mineral and Petroleum Resources Development Regulations. These assessments are conducted by an independent environmental consultant and the report is submitted to the DMRE. Environmental legal compliance audits are also conducted every two years to verify compliance with all relevant legal requirements. An online-based Kalgold environmental legal register (at *www.dreyer-legal.co.za*) is updated to include changes in applicable and relevant environmental legislation and associated regulations.

Bio-monitoring surveys are conducted annually to determine the status of surrounding surface water streams close to the operation. In terms of the National Water Act, the status quo of the water bodies is monitored for water quality in relation to guidelines within the water use licence conditions.

In addition to the bio-monitoring surveys, groundwater and dust monitoring programme are implemented monthly and quarterly to determine the status of groundwater quality and quantity, as well as levels of dust fallout in terms of the National Water Act and the National Environmental Management: Air Quality Act, and in compliance with the conditions stipulated in the water use and provisional atmospheric emissions licences.

Kalgold is ISO 14001 accredited and has been recertified in terms of the requirements of the ISO 14001:2015 standard. The operation attained its initial accreditation in 2010 and remains committed to eliminating or minimising the effects of mining activities on the environment and adjacent communities.

In September 2016, the mine received a water use licence from the Department of Water and Sanitation, and approval of the D Zone open-pit's closure plan from the DMRE.

In terms of the Cyanide Code, while the related certification work has not yet begun, some progress has been made to enhance performance. Metallurgical efficiency has been improved by increasing oxidation levels to reduce the presence of weak acid dissociable (WAD) cyanide in processing water.

MATERIAL RISKS

Material risks which may impact Kalgold's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Slope failure	• Pre-split blasting to protect high walls

COMPETENT PERSON
(Mineral Resources and Mineral Reserves)

Ore Reserve Manager

Rebaone Francis Gaelejwe

BSc Hons (Geology), EMBA, SACNASP

19 years' experience in gold mining.

Kalgold

SOUTH AFRICA – SURFACE SOURCES (KALGOLD) CONTINUED

KALGOLD

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Open pit	11.0	0.87	10	306	68.2	0.89	61	1 950	4.4	0.63	3	89	83.5	0.87	73	2 345
Tailings dam	–	–	–	–	–	–	–	–	23.8	0.26	6	201	23.8	0.26	6	201
Total	**11.0**	**0.87**	**10**	**306**	**68.2**	**0.89**	**61**	**1 950**	**28.2**	**0.32**	**9**	**290**	**107.3**	**0.74**	**79**	**2 546**

Modifying factors

Open pit	MCF (%)	Dilution (%)	PRF (%)	Cut-off (g/t)
2019	100	10	84	0.58
2020	100	7	84	0.58

Gold – Mineral Reserve estimates at 30 June 2020

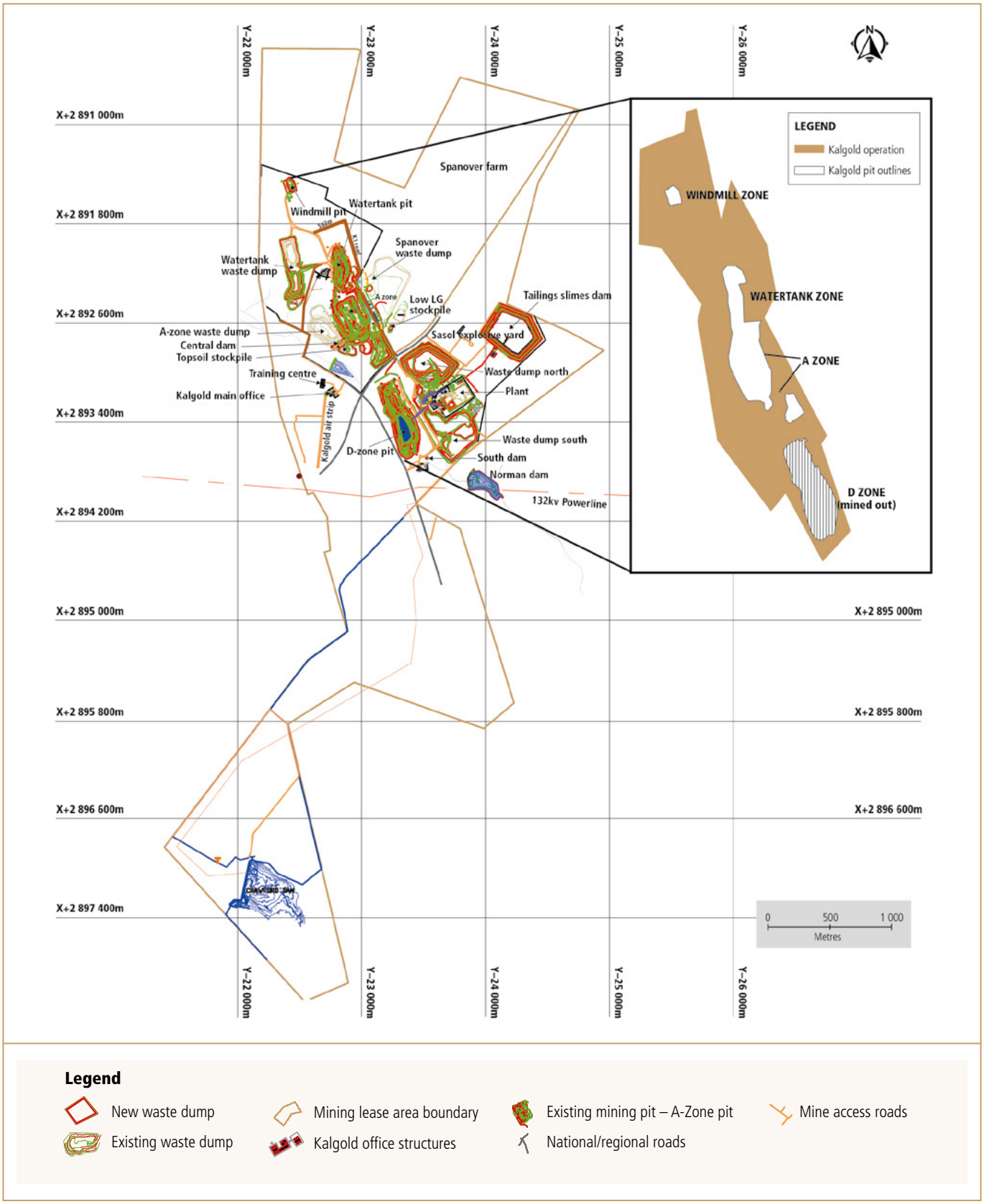
	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Open pit	6.7	0.93	6	201	13.2	1.14	15	482	19.9	1.07	21	683

OPERATIONAL PERFORMANCE

Kalgold: Key operating statistics

	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**1 541**	1 619	1 550	1 506	1 479
	000t (imperial)	**1 700**	1 785	1 709	1 660	1 630
Gold produced	kg	**1 153**	1 249	1 250	1 205	1 103
	oz	**37 070**	40 156	40 189	38 742	35 463
Grade	g/t	**0.75**	0.77	0.81	0.80	0.75
	oz/t	**0.022**	0.022	0.024	0.023	0.022
FINANCIAL						
Average gold price received	R/kg	**742 533**	593 482	576 630	573 010	548 072
	US$/oz	**1 474**	1 302	1 396	1 311	1 176
Capital expenditure	Rm	**99**	61	108	96	39
	US$m	**6**	4	8	7	3
Cash operating cost	R/kg	**584 218**	556 284	452 365	462 037	496 991
	US$/oz	**1 160**	1 220	1 095	1 057	1 066
All-in sustaining cost	R/kg	**690 239**	642 147	552 032	558 731	549 590
	US$/oz	**1 371**	1 369	1 336	1 278	1 179

KALGOLD – KRAAIPAN GREENSTONE BELT



Legend

- New waste dump
- Existing waste dump
- Mining lease area boundary
- Kalgold office structures
- Existing mining pit – A-Zone pit
- National/regional roads
- Mine access roads

FREE STATE AND KLERKSDORP

The Free State surface source operations comprise the following:

- **Phoenix (Tswelopele beneficiation) operation** – located adjacent to Harmony's current and historical operations in the Free State, retreats tailings from tailings storage facilities (TSFs) in the region to extract any residual gold. The Phoenix operation makes use of the Saaiplaas plant, located close to the historic Saaiplaas 2 shaft area and to Masimong 4 shaft. Phoenix began operating in 2007
- **Central Plant retreatment project** – tailings reclaimed from the FSS5 tailings storage facility are processed at Central Plant which was adapted for tailings retreatment. Plant commissioning began in June 2017 with ramp-up to a capacity of 300 000t a month achieved by the end of July 2017
- **St Helena** – although the project had a positive net present value in the feasibility study that was concluded in 2009, it was not implemented
- **Rock dumps** – around 3.5Mt of reserves are available in rock dumps in the vicinity of the Free State operations. A programme, run by Harmony's Metallurgical Services, to mill and process these dumps as and when there is spare plant capacity available, began in FY10
- **Tailings material** – 565.1Mt of tailings material is contained in tailings storage facilities in the Free State are estimated to contain around 4Moz of gold
- **Moab Khotsong surface sources** – include the Mispah tailings storage facilities, the Kop Paydam and the Moab marginal ore deposits (MOD)

PHOENIX

The Phoenix operation, or the Tswelopele Beneficiation Operation, is a low-cost, high profit-margin, low-grade tailings reprocessing operation.

Phoenix uses Harmony's Saaiplaas gold plant, which was built in 1954. The plant was expanded in 1980 with the addition of a run-of-mine milling section, additional pachucas and filters. While the old sections have been decommissioned and progressively demolished since the 1990s, the newer sections the thickeners and pachuca tanks remain in operation. The plant, with a design capacity of 330 000tpm, initially formed part of Anglo American's Free State gold mining operations.

The Saaiplaas plant originally processed ore from Saaiplaas 1, 2 and 3 shafts. Saaiplaas 1 closed around 1980, Saaiplaas 2 around 1996, and Saaiplaas 3 around 2000. The Saaiplaas plant once also processed ore from the Erfdeel (now Masimong) shafts. With the decline of mining in the area, the plant was relegated to processing unmilled surface source material (waste) at a rate of 110 000tpm until July 2007. As all material currently processed by the plant is recovered by hydro-mining from old, desiccated slimes dams in the area, crushing or milling is not required. The ore-receiving silos were demolished in July 2007 when milling ceased.

The original design life of the Phoenix slimes retreatment project was five years (to end 2011). The short operating life was due to the restricted deposition capacity for the residues generated at the planned processing rate of 500 000tpm. Given the stability concerns of the tailings storage facilities being deposited on at the time, this rate was reduced further to 424 000tpm from September 2011.

A major capital project was undertaken to build a replacement cyclone-deposition tailings storage facility at St Helena 1, 2 and 3 that would again allow the deposition of 500 000tpm, extending the operating life.

Nature of operations

Hydro-mining on two tailings storage facilities, Brand A and Dam 21, for the Phoenix operation and one tailings storage facility, FSS5, for the Central Plant retreatment project, is conducted under contract. Material is reclaimed using high-pressure water on the tailings storage facility, from where the material is pumped to the Saaiplaas plant in separate rubber-lined pipelines from Brand A and Dam 21, and to Central Plant from FSS5.

Two additional carbon-in-leach (CIL) tanks have been installed in the Saaiplaas plant to increase leach residence time to improve dissolution and reduce soluble loss.

Location

The Saaiplaas plant is located in the heart of the Free State goldfields near Welkom in the Free State province of South Africa, at latitude 28°02'00"S and longitude 26°52'18"E.

Description of hydro-mining and mineral processing operations

Production plans

The current planned processing rate for the Phoenix operation is 500 000t a month with residue disposal at the St Helena 1, 2 and 3 cyclone tailings storage facility. The current operating life has been extended to 2029.

The two surface sources currently being mined are:

- The Brand A tailings storage facility has had some 65% of its material removed already. It has a grade of 0.28g/t Au at 40% to 45% recovery
- The Dam 21 tailings storage facility (which replaced the Harmony 1 tailings storage facility as a source from end-2011) has a grade of 0.27g/t Au at 40% to 45% recovery

All the material from the Harmony 1 tailings storage facility has been reprocessed with only the clean-up remaining.

Residue deposition onto the FSS6, FSS4 and FSS1 tailings storage facilities replaced the old Saaiplaas deposition tailings storage facilities at the end 2011. Deposition onto these and the Brand D tailings storage facility stopped with the commissioning of the St Helena 1, 2 and 3 cyclone tailings storage facility which can accept the full monthly production of 500 000t from the Saaiplaas plant.

Saaiplaas plant began depositing material on the St Helena 1, 2 and 3 tailings storage facility in February/March 2013. This tailings storage facility is now the sole deposition site for the Saaiplaas plant. Commissioning of the St Helena 1, 2 and 3 tailings storage facility allowed the planned increase in plant throughput to the required 500 000t a month until 2029. As this facility was constructed on an existing deposition site, it did not require the environmental permitting that a new site would have needed.

Hydro-mining from the Brand A and Dam 21 tailings storage facilities currently reclaims slimes at an average in situ grade of 0.25g/t. The Saaiplaas plant recovers between 40% and 45% of the contained grade in the recovered pulped material received, yielding 65kg of gold a month (planned).

While the Central Plant Retreatment operation reclaims slimes at an average in situ grade of 0.255g/t with a recovery rate of around 55%, yielding 50kg a month. This represents around 1.5% of Harmony's total gold production.

The operating unit cost of the Phoenix operation is R60/t at 500 000t a month and for the Central Plant Retreatment operation it is R52/t at 300 000t a month. These reclamation projects are positioned as safe, profitable, low-risk, low-cost, low-grade tailings reprocessing operations.

Free State Surface Sources

SOUTH AFRICA – SURFACE SOURCES (FREE STATE AND KLERKSDORP)

CONTINUED

HYDRO-MINING

The hydro-mining (monitoring) process uses 100mm and 150mm diameter high-pressure water monitors (cannons) to re-pulp the consolidated slimes to a relative density of around 1.4. The re-pulped slime flows under gravity to an in-dam finger screen where large trash is removed and then to the sump from where a transfer pump delivers it to one of two vibrating screens for secondary screening to remove oversize and smaller trash material. The screen underflow falls into the transfer sump. A separate pump station at each reclamation tailing storage facility pumps the reclaimed screened pulp via rubber lined pipelines to the plant.

The transfer pumping of slimes to Saaiplaas and Central plants is done by Envirotech D-frame with three to five pumps in series (depending upon the distance to be pumped).

Oxygen is injected into the transfer pipeline at the reclamation site to neutralise cyanide consuming components which improves gold dissolution and reduces cyanide consumption in the plant.

The reclaimed tailings pulp is delivered to the thickener distribution tower at both the Saaiplaas and Central plants where hydrated lime is added to raise the pH to 10.5. The pulp is distributed to the thickeners where the relative density is increased to 1.45 prior to the addition of cyanide for the leaching process.

The thickened pulp is pumped to linear screens with 800µm apertures where any residual trash is removed prior to the addition of cyanide for the leach and adsorption stages in both plants.

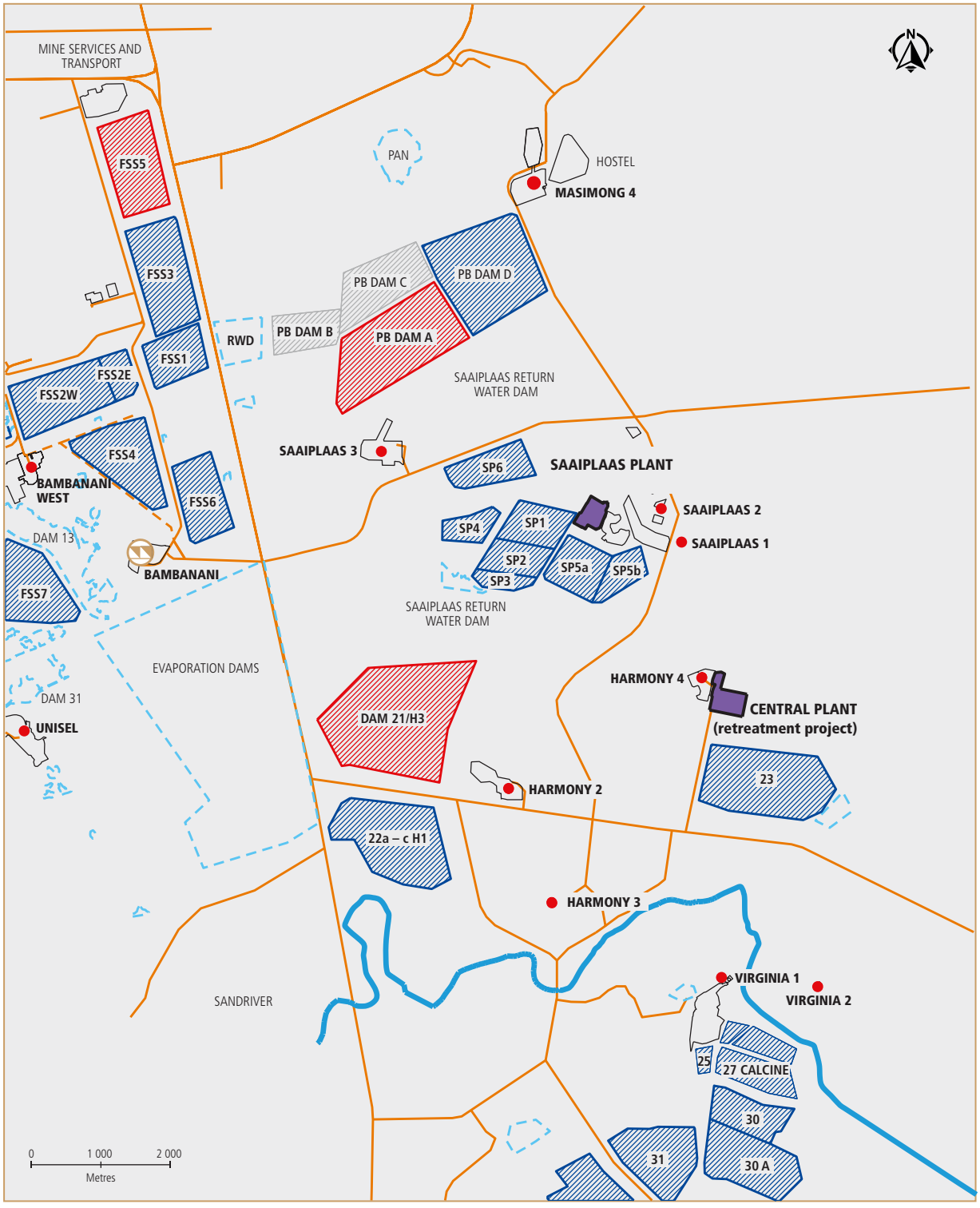
Central Plant uses six mechanically agitated leach tanks and eight mechanically agitated carbon-in-pulp tanks with cascade flow between the tanks, while the Saaiplaas plant has two parallel circuits with six air agitated pachuca tanks operated in carousel mode. Two tanks in each circuit are used for leaching and four for the carbon-in-leach process.

The final product of both the Saaiplaas and Central plants is loaded carbon.

Carbon elution for the recovery of gold is carried out at Central Plant for both the Central Plant retreatment and the Phoenix operations.

Saaiplaas re-mining

LOCATION OF HARMONY'S FREE STATE SURFACE OPERATIONS



LEGEND

- Shaft position
- Non-operating shafts
- Active tailing retreatment plants
- Slime dams (municipality)
- Slimes dams being mined
- Non-active slime dams
- Dams and pans
- Roads

SOUTH AFRICA – SURFACE SOURCES (FREE STATE AND KLERKSDORP)

CONTINUED

SURFACE SOURCES

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Phoenix	48.7	0.28	14	442	–	–	–	–	–	–	–	–	48.7	0.28	14	442
St Helena	191.3	0.27	52	1 656	–	–	–	–	–	–	–	–	191.3	0.27	52	1 656
Central Plant	–	–	–	–	55.4	0.27	15	476	–	–	–	–	55.4	0.27	15	476
Other:																
– Waste rock dumps	–	–	–	–	3.5	0.50	2	56	16.7	0.43	7	231	20.2	0.44	9	287
– Tailings	–	–	–	–	565.1	0.22	126	4 058	15.5	0.19	3	94	580.5	0.22	129	4 152
Mispah	–	–	–	–	73.8	0.30	22	713	–	–	–	–	73.8	0.30	22	713
Kop Paydam	–	–	–	–	11.0	0.20	2	72	–	–	–	–	11.0	0.20	2	72
Moab MOD	–	–	–	–	4.5	0.44	2	64	–	–	–	–	4.5	0.44	2	64
Grand total	**240.1**	**0.27**	**65**	**2 098**	**713.2**	**0.24**	**169**	**5 439**	**32.2**	**0.31**	**10**	**325**	**985.5**	**0.25**	**245**	**7 862**

Modifying factors

Surface Sources		MCF (%)	PRF (%)	Cut-off (g/t)
Phoenix	2019	100	45	0.27
	2020	100	45	0.28
St Helena	2019	100	45	0.27
	2020	100	45	0.27
Central Plant	2019	100	52	0.27
	2020	100	50	0.27
Other Tailings	2019	100	51	0.27
	2020	100	51	0.27
Other WRD	2019	100	84	0.23
	2020	100	84	0.21

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Phoenix	48.7	0.28	14	442	–	–	–	–	48.7	0.28	14	442
St Helena	108.6	0.27	29	933	–	–	–	–	108.6	0.27	29	933
Central Plant	–	–	–	–	55.4	0.27	15	476	55.4	0.27	15	476
Other:												
– Waste rock dumps	–	–	–	–	3.5	0.50	2	56	3.5	0.50	2	56
– Tailings	–	–	–	–	565.1	0.22	126	4 058	565.1	0.22	126	4 058
Total	**157.3**	**0.27**	**43**	**1 375**	**623.9**	**0.23**	**143**	**4 590**	**781.2**	**0.24**	**186**	**5 965**

Uranium – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8		Tonnes		U_3O_8	
	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)	(Mt)	(kg/t)	(Mkg)	(Mlb)
Free State																
Surface Sources	–	–	–	–	132.0	0.11	14	31	–	–	–	–	132.0	0.11	14	31
Klerksdorp Goldfield																
Surface sources	–	–	–	–	84.8	0.12	10	23	–	–	–	–	84.8	0.12	10	23
Total					**216.8**	**0.11**	**24**	**54**	**–**	**–**	**–**	**–**	**216.8**	**0.11**	**24**	**54**

MATERIAL RISKS

Material risks that may impact Surface Source's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Floor cleaning complications at the Brand A feed source, a result of severe vegetation and lumpy/sandy character	• Approval for and transfer to a replacement feed source for Brand A
• A drop in the St Helena 1,2,3 tailings dam's stability factor and toe seepage around the dam	• Urgent implementation of project for integrated longer-term tailings deposition strategy for all plants in the Free State

COMPETENT PERSON (Mineral Resources and Mineral Reserves)

Ore Reserve Manager – Surface Sources

Isak J Meyer

Mine Surveyor Certificate of Competency, NHD Mineral Resource Management, SAIMM

42 years' experience in the mining industry.

OPERATIONAL PERFORMANCE

Free State Surface Operations: Key operating statistics

	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**4 476**	4 307	2 821	2 810	3 041
	000t (imperial)	**4 936**	4 749	3 110	3 099	3 353
Gold produced	kg	**1 753**	1 515	1 081	1 055	1 065
	oz	**56 630**	48 708	34 755	33 918	34 241
Grade	g/t	**0.392**	0.352	0.383	0.375	0.350
	oz/t	**0.011**	0.010	0.011	0.011	0.010
FINANCIAL						
Average gold price received	R/kg	**779 835**	587 483	576 737	572 172	544 996
	US$/oz	**1 549**	1 289	1 374	1 309	1 169
Capital expenditure	Rm	**2**	8	3	7	18
	US$m	**–**	1	–	1	1
Cash operating cost	R/kg	**486 792**	456 473	415 993	434 715	401 033
	US$/oz	**967**	1 001	1 007	995	860
All-in sustaining cost	R/kg	**484 507**	462 178	417 462	445 451	442 205
	US$/oz	**962**	1 014	1 010	1 019	906

PAPUA NEW GUINEA

Harmony's Papua New Guinea assets include an open pit gold-silver mine, a 50% interest in the Wafi-Golpu project and several exploration prospects. Combined, these account for gold and gold equivalent Mineral Resources of 45.40Moz and Mineral Resources of 19.10Moz. These are equivalent to 38% and 52% respectively of total group gold and gold equivalent Mineral Resources and Mineral Reserves.

Hidden Valley

MINERAL RESOURCES AND RESERVES BY OPERATION

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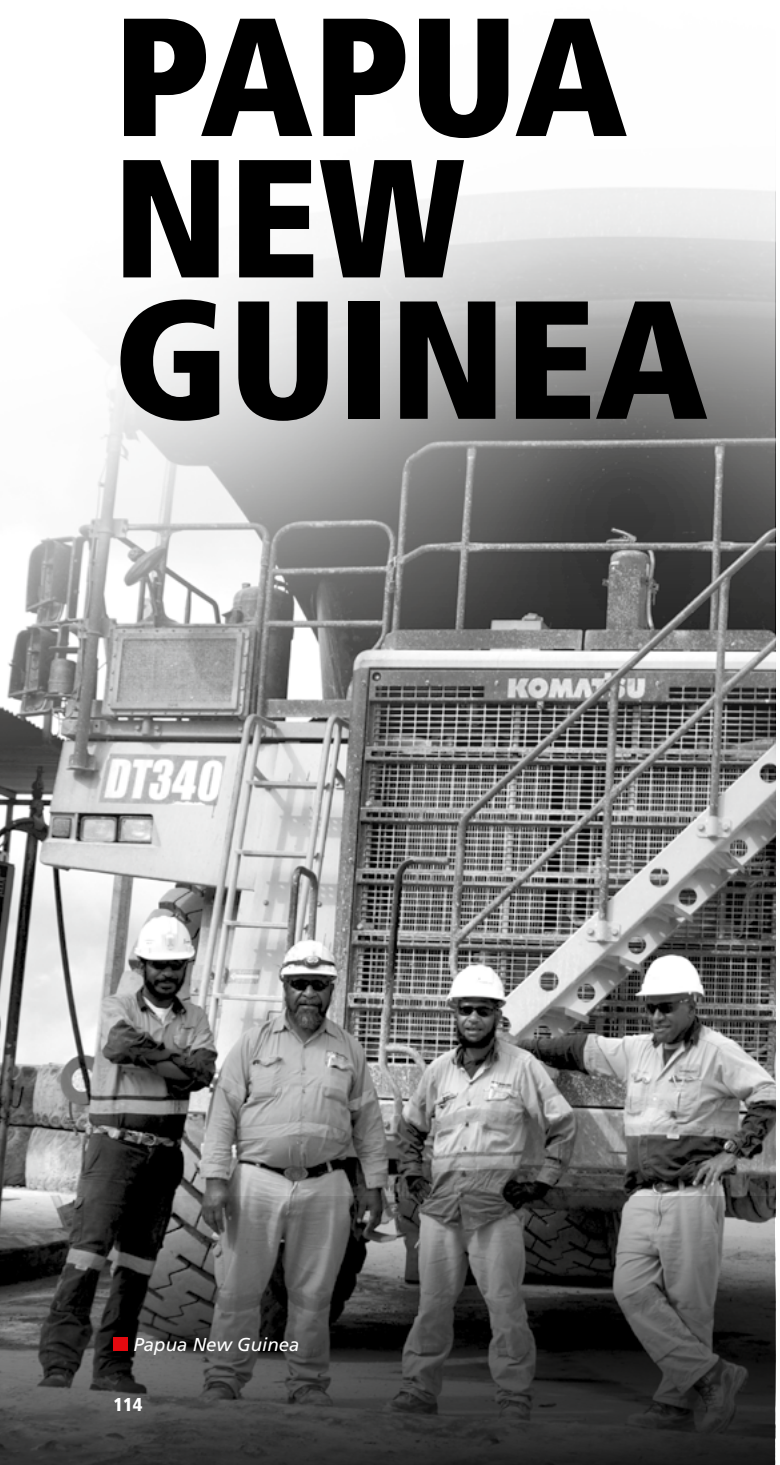
116 Hidden Valley

121 Wafi-Golpu project

127 Kili Teke

PAPUA NEW GUINEA



Papua New Guinea

PAPUA NEW GUINEA

In Papua New Guinea, Harmony has one wholly-owned open-pit, gold and silver mine – Hidden Valley – and a 50% interest in the Wafi-Golpu project, which encompasses the Golpu, Wafi and Nambonga deposits. Both the Hidden Valley mine and the Wafi-Golpu project are located in the Morobe Province. Kili Teke, an advanced stage exploration prospect that is on care and maintenance, lies further west in the Hela Province. As at 30 June 2020, our combined estimated gold and gold equivalent Mineral Resource (inclusive) in Papua New Guinea was 45.4Moz and the combined estimated Mineral Reserve, 19.1Moz.

GOLD AND GOLD EQUIVALENTS

Mineral Resources (inclusive)

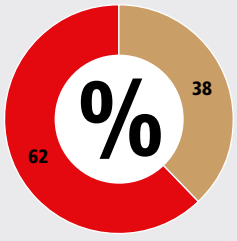
45.4Moz

Mineral Reserves

19.1Moz

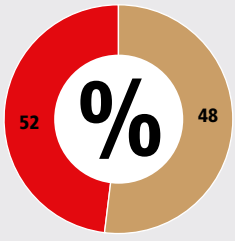
Contribution to Harmony

Mineral Resources
38%



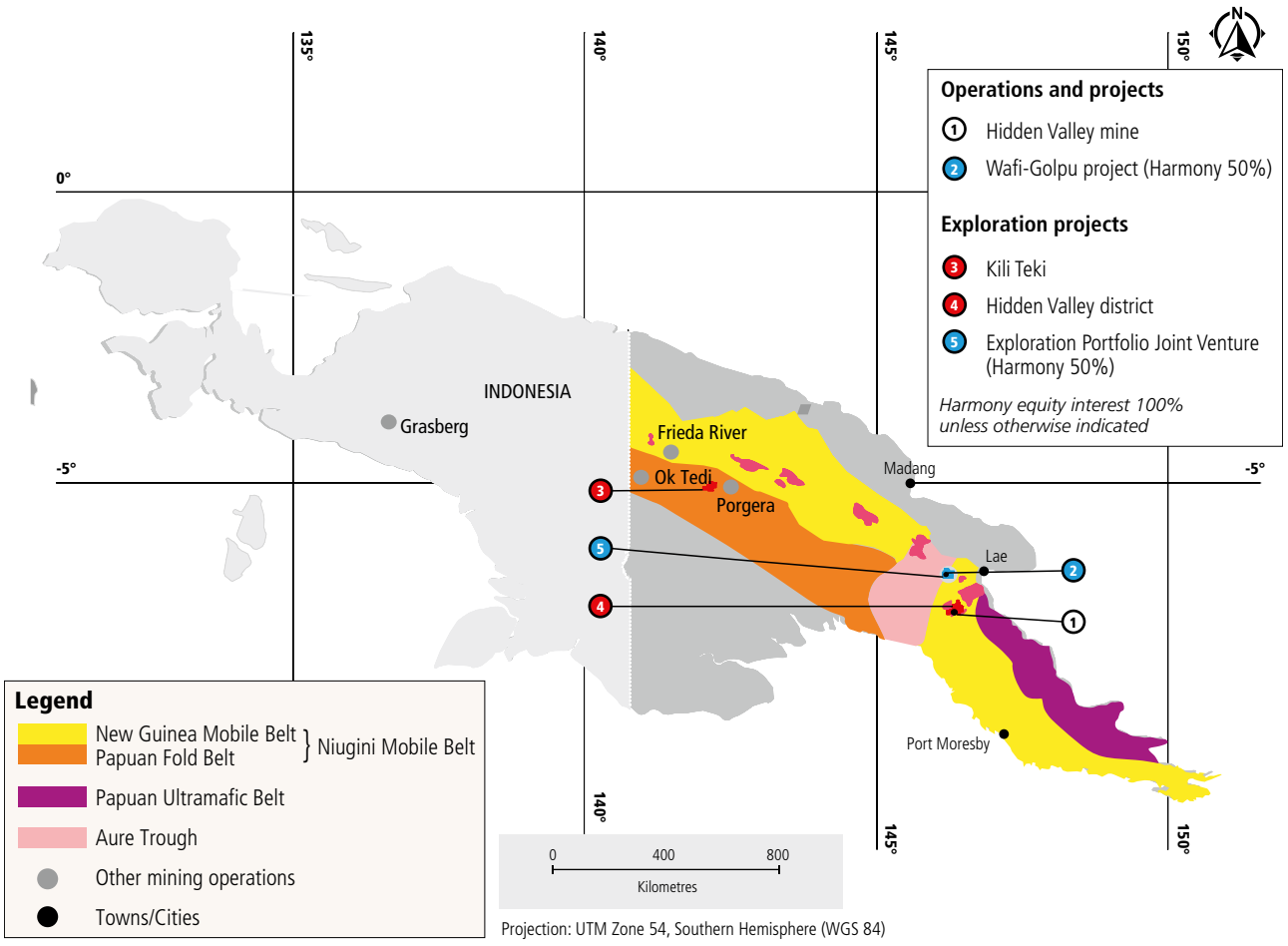
Rest of Harmony **62%**

Mineral Reserves
52%



Rest of Harmony **48%**

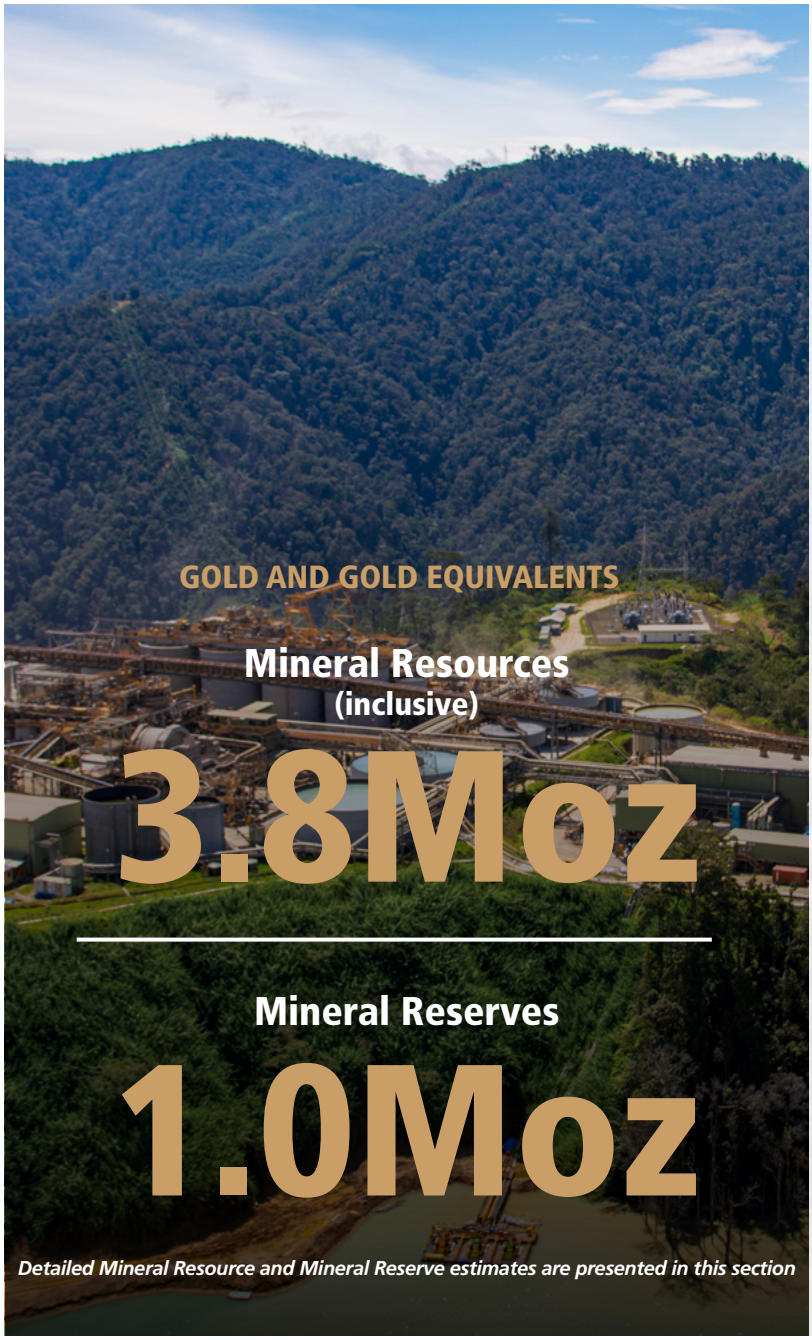
HARMONY – PAPUA NEW GUINEA



Projection: UTM Zone 54, Southern Hemisphere (WGS 84)

Wafi-Golpu

HIDDEN VALLEY



Description and location

The Hidden Valley mine is located at latitude 7°22"S and longitude 146°39"E, approximately 15km south-southeast of the township of Wau and approximately 90km south-southwest from Lae, the capital of Morobe Province in Papua New Guinea. The closest major towns to the project are Wau and Bulolo. Lae, the nearest maritime port in the region, is connected to Bulolo by a two-lane main road. The operation is now wholly owned by Harmony through Morobe Consolidated Goldfields.

The mine is located at elevations between 2 800m and 1 700m above sea level within steep mountainous and forested terrain that experiences approximately 3m of rainfall per year.

History

The Hidden Valley deposits were discovered by CRA Exploration and RGC Exploration in the 1980s. Over time the tenements that contained the deposits were consolidated into Morobe Consolidated Goldfields Limited which was subsequently acquired by Harmony in 2004.

Mine construction began in 2007 with the 40km road access from Bulolo to the mine site. First gold was poured in May 2009 with the mine being officially opened in September 2010.

Nature of operations

Hidden Valley is an operating open pit gold and silver mine. Two separate open pit mines feed a 4.1Mtpa processing plant. Silver and gold doré bars are produced. Current mine life is to 2024 with opportunities for extension.

Mineral rights and legal aspects and tenure

The deposits lie on mining lease ML151 which was granted in 2005. The mining lease has a tenure of 20 years taking its expiry to 2025. An application to extend the mining lease was lodged on 23 June 2020 for a five-year period to cover the proposed Hidden Valley Extension project. The application for this extension is not a commitment to proceed with the extension, which is subject to study finalisation and technical committee and board approvals (see projects section).

The mine is 100% owned and operated by Morobe Consolidated Goldfields, a Harmony subsidiary.

Geology

The deposit is a structurally controlled vein-stockwork gold-silver deposit located in the Morobe Granodiorite of the Wau Graben. Gold-silver mineralisation is contained in carbonate-adularia-quartz-sulphide vein-stockworks and in a few instances in hydrothermal breccias. Discrete zones of intense stockwork fracture and mineralised veining comprise individual lodes. At the Hidden Valley deposit, gold and silver are related to steeply to moderately dipping sheeted vein swarms associated with an underlying shallow thrust.

Mining methods and mine planning

Mining operations occur in two open pits 6km apart, Hidden Valley-Kaveroi and Hamata of which Hidden Valley-Kaveroi is the largest. Both mines employ conventional open pit mining techniques with back-hoe excavators and rigid dump trucks as the primary load and haul equipment. Front-end loaders are used for crusher feed and stockpile reclaim. A number of articulated smaller dump trucks are used for construction and to a lesser extent mining in Hamata.

Mining bench configuration generally consists of 18m inter-berm heights, blasted in 2m x 9m benches with 3m mining flitches.

Waste is disposed of in engineered valley fill waste dumps, with toes keyed in and buttressed using competent non-acid forming rock. Waste from the Hidden Valley-Kaveroi open pit is currently placed in the valley fill Western Sector and Niekywe waste dumps. A new dump, the Kaveroi Creek dump, will be built this year which, in combination with the current Western Sector dump, will provide full life of mine capacity for waste material, as well as capacity for potential extensions.

Mineral processing

A crushing facility is located near the Hidden Valley pit with the crushed ore conveyed via a 3.8km long overland pipe conveyor. Ore from the Hamata pit is trucked to the Hamata crushing station, located next to the ore processing plant.

The Hidden Valley process plant was designed to treat nominally 4.1Mtpa of gold/silver bearing ore. The process uses a two stage crushing circuit followed by a SAG mill, gravity, CCD/Merrill Crowe circuit for silver and a carbon-in-leach circuit for the gold. A silver/gold ore bar is produced and flown off site for refining and sale.

Tailings are disposed of in a terrestrial tailings storage facility located to the south-west of the process plant. Dam-wall construction of the tailings storage facility is ongoing and largely constitutes placement of suitable oxide and fresh competent material sourced from mining in the Hamata pit and nearby quarry. The processing inventory in this ore reserve estimate is constrained by the remaining storage capacity. The Hidden Valley Extension study contemplates construction of an additional facility, TSF2.

Infrastructure

Hidden Valley is a well-established mine serviced from the port of Lae by a partially sealed 100km road to Bulolo and then a well-maintained gravel road for the remaining 40km to site. All goods are transported to site via this route with some emergency goods flown to Bulolo.

There is an airstrip at Bulolo from where the fly-in and fly-out workers commute. However, the bulk of employees are from the Morobe Province and are bussed to and from their towns and villages. The mining camp on site houses all employees and provides messing, health and recreation facilities. Power is provided by the state-owned PNG Power and generated in part by renewable (predominantly hydro) power. A bank of diesel generators provides 100% contingency power back up.

Mineral Resource estimation

Both the Hidden Valley and Hamata estimation models are based on a localised multiple indicator Kriged method using a standard 12m x 12m x 3m mining unit (SMU) and constrained within broad three-dimensional wireframe domains based on gold and silver grades, alteration and structure. This method accommodates the large panels required for a robust estimate using a long-standing well-known estimation method, but also allows the estimation of localised SMU-sized blocks for mine planning purposes.

The Mineral Resource model for gold was updated in 2019 using new drill information. The silver model used was the same as the previous year, updated for depletion but with a 7.5% modifying factor applied to the gold grades to account for ore loss and dilution and which is based on historical reconciliations.

Pit optimisations that inform designs are run on Measured and Indicated Resource categories only. All Mineral Resource classifications are maintained and converted to Ore Reserve classifications inside pit designs. No measured material is classified in either pit. The Measured Resources reported comprise stockpile material only.

Hidden Valley

PAPUA NEW GUINEA (HIDDEN VALLEY) CONTINUED

Environmental impact

In accordance with the Environment Act 2002, an Environmental Impact Statement (EIS) was submitted to the then Department of Environment and Conservation (DEC) (now the Conservation and Environment Protection Authority – CEPA) in February 2004. The EIS was accepted by DEC in June 2004 and was referred to all stakeholders and advertised publicly for review according to regulatory process. In March 2005, waste discharge permit WD-L3(50) and water extraction permit WE-L3(38) were issued to Hidden Valley Services Limited as the operator of the mine. In October 2017, the waste discharge and water extraction permits were amalgamated as Environment Permit EP-L3(578) under which the mine now operates.

The Hidden Valley Environmental Management Plan (EMP) identifies potential environmental impacts associated with the operation of the mine and the accompanying management strategies to reduce these impacts. The EMP is updated every three years in accordance with requirements of the Environment Permit. The current plan (2018-2020) was approved by CEPA on 18 July 2019. The EMP describes Hidden Valley's approach to environmental management and outlines the standards, procedures and systems developed to meet the objectives set out in the mine's approvals and permits, as required under Papua New Guinea legislation. The EMP also details Hidden Valley's environmental monitoring requirements and reporting commitments to CEPA.

The environmental monitoring regime presented in the EMP includes surface water, groundwater, sediment and air quality monitoring, hydrological studies, land clearance assessment and aquatic biota studies. Water quality monitoring within the Watut River and its major tributaries forms a critical component of the programme to monitor the potential for impacts on the downstream environment as a result of the mining operation.

MATERIAL RISKS

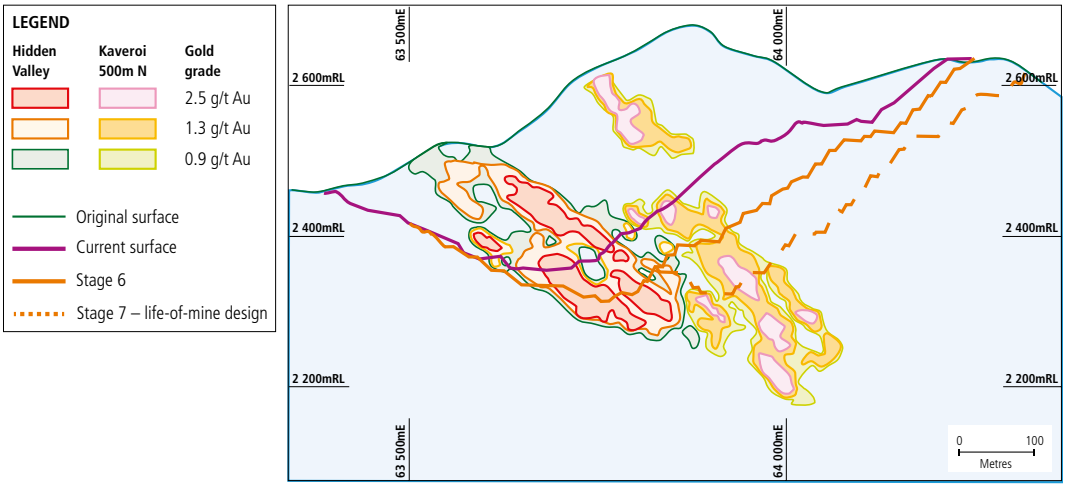
Material risks that may impact Hidden Valley's Mineral Resource and Mineral Reserve statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Over estimation of gold grade	• Application of 7.5% gold grade modifying factor • Advanced drilling programme
• Pit wall stability	• Softening of wall angles • Proactive geotechnical monitoring programme
• Availability of critical fixed plant in the crusher, conveyor and process plant	• Maintaining stocks on hand of critical spares • Planned maintenance schedule
• COVID-19 outbreak on site or in surrounding communities	• Strict COVID-19 protocols in place include screening and PCR testing before personnel arrive on site

COMPETENT PERSON

Mineral Resources – Group resource geologist, Harmony South-East Asia	Mineral Reserves – Executive General Manager: New Business and Technical Services, Harmony South-East Asia
Ronald Reid	**Greg Job**
Australian Institute of Geoscientists (AIG)	AusIMM
More than 20 years' experience.	More than 30 years' experience.

HIDDEN VALLEY – section 75 225mN



Hidden Valley

HIDDEN VALLEY AND HAMATA

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	2.3	1.32	3	98	60.0	1.52	91	2 935	1.3	1.02	1	41	63.6	1.50	96	3 074
Hamata	0.0003	2.64	0.001	0.03	1.9	1.89	4	117	0.2	1.50	0.3	9	2.1	1.86	4	127
Total	**2.3**	**1.32**	**3**	**98**	**61.9**	**1.53**	**95**	**3 052**	**1.5**	**1.08**	**2**	**50**	**65.7**	**1.52**	**100**	**3 201**

Modifying factors

	MCF	Dilution	PRF	Cut-off
Hidden Valley	(%)	(%)	(%)	(g/t)
2019	100	0	88	0.85
2020	100	0	88	0.85
Hamata				
2019	100	5	88	0.85
2020	100	5	88	0.85

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	2.3	1.32	3	98	14.2	1.61	23	733	16.5	1.57	26	831
Hamata	0.0003	2.64	0.001	0.03	0.3	1.65	0.5	16	0.3	1.65	0.5	16
Grand total	**2.3**	**1.32**	**3**	**98**	**14.5**	**1.61**	**23**	**749**	**16.8**	**1.57**	**26**	**847**

Silver – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	2.3	27.37	63	2 029	60.0	23.29	1 397	44 917	1.3	19.92	25	808	63.6	23.37	1 485	47 754

Silver – Mineral Resources as gold equivalent estimates at 30 June 2020 (inclusive)

	Measured	Indicated	Inferred	Total
	(000oz)	(000oz)	(000oz)	(000oz)
Hidden Valley	26	566	10	602

Modifying factors

	MCF	Dilution	PRF	Cut-off
Hidden Valley	(%)	(%)	(%)	(g/t)
2019	100	0	61	0.85
2020	100	0	61	0.85

Silver – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Hidden Valley	2.3	27.37	63	2 029	14.2	24.83	352	11 314	16.5	25.18	415	13 343

Silver – Mineral Reserves as gold equivalents estimates at 30 June 2020

	Proved	Probable	Total
	(000oz)	(000oz)	(000oz)
Hidden Valley	36	178	214

PAPUA NEW GUINEA (HIDDEN VALLEY) CONTINUED

OPERATIONAL PERFORMANCE

Hidden Valley: Key operating statistics

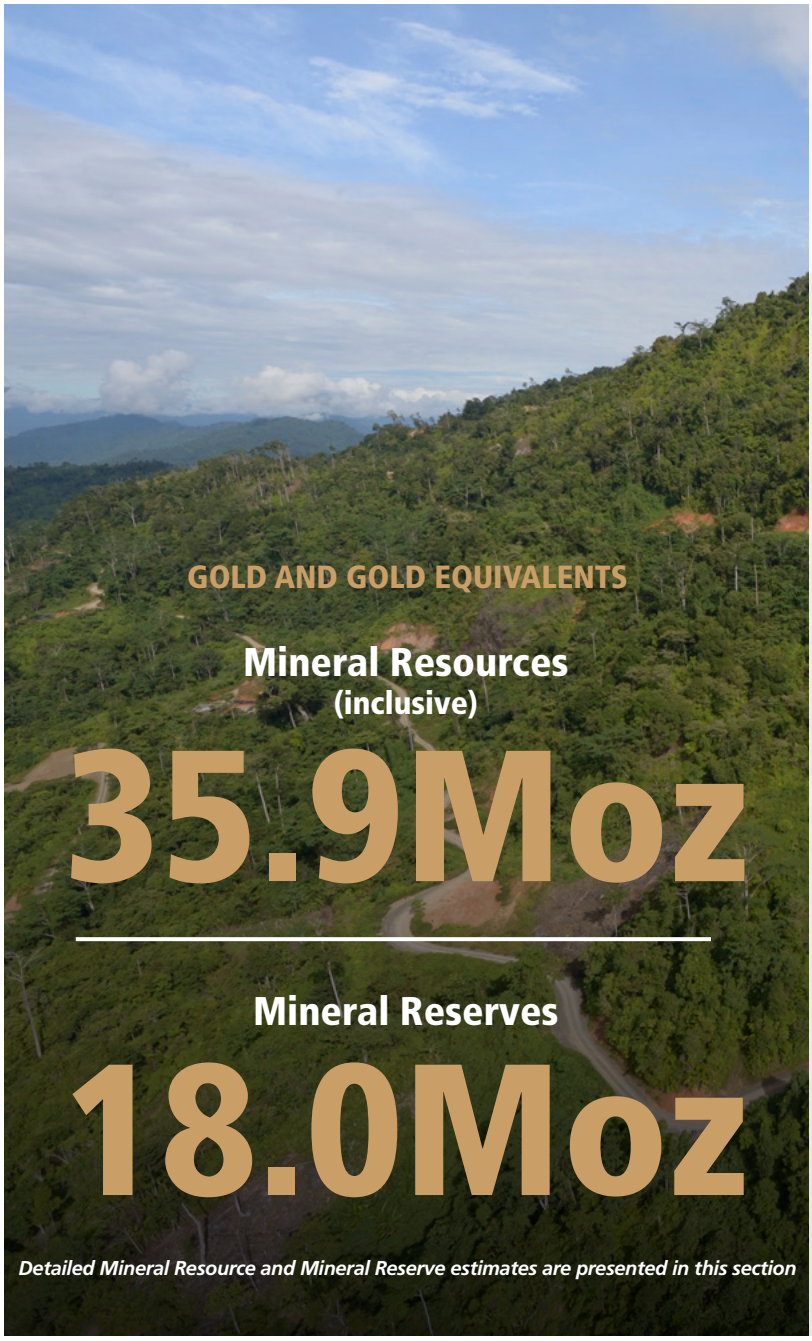
	Unit	FY20	FY19	FY18	FY17	FY16
OPERATION						
Volumes milled	000t (metric)	**3 906**	3 866	2 499	2 889	1 729
	000t (imperial)	**4 307**	4 285	2 757	3 186	1 906
Gold produced	kg	**4 872**	6 222	2 862	2 965	2 257
	oz	**156 639**	200 042	92 015	95 327	72 565
Grade	g/t	**1.25**	1.60	1.36	1.07	1.31
	oz/t	**0.036**	0.047	0.039	0.035	0.038
FINANCIAL						
Average gold price received	R/kg	**757 348**	579 902	550 956	544 442	546 272
	US$/oz	**1 504**	1 272	1 283	1 246	1 210
Capital expenditure	Rm	**959**	1 591	1 563	1 335	121
	US$m	**61**	112	122	98	8
Cash operating cost	R/kg	**348 054**	220 323	287 028	466 847	479 196
	US$/oz	**691**	483	669	1 068	1 028
All-in sustaining cost	R/kg	**562 648**	497 399	466 256	543 186	597 398
	US$/oz	**1 120**	1 090	1 094	1 241	1 282

Hidden Valley

PAPUA NEW GUINEA (WAFI-GOLPU PROJECT)

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

WAFI-GOLPU PROJECT



Property description and location

The Golpu, Wafi and Nambonga deposits are located in eastern Papua New Guinea, approximately 60km southwest of Lae in Morobe Province. Access to the Wafi-Golpu project site from Lae is via a combination of tarred and untarred roads with a travel time of four hours. The project is a 50:50 joint venture between Harmony (Wafi Mining Limited) and Newcrest Mining Limited (Newcrest PNG2 Limited).

History

The Wafi area mineralisation was first identified in 1979 by CRA Exploration with the discovery of the underlying Golpu porphyry by Elders Resources Limited in 1990. Since then, several companies have completed exploration and resource-definition drilling programmes with associated mine development studies.

Nature of operations

The Wafi-Golpu project is in the advanced exploration and feasibility definition phase. A feasibility study update has been completed and permit applications submitted to the relevant regulatory authorities for assessment. The Wafi-Golpu joint venture is awaiting regulatory feedback and the resumption of engagement with the State's negotiating team. There has been no mining activity in the project area.

Mineral rights and legal aspects and tenure

The deposits lie on exploration lease EL440 which is 50% owned by Wafi Mining Ltd, a Harmony subsidiary, and 50% by Newcrest Mining Ltd, through Newcrest PNG2 Limited.

It is a condition of the exploration lease that the State has the option to purchase an interest of up to a 30% in any mineral discovery for a consideration pro rata to the accumulated exploration expenditure.

PAPUA NEW GUINEA (WAFI-GOLPU PROJECT) CONTINUED

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

Geology

These three deposits fall within the New Guinea Mobile Belt of Papua New Guinea, one of the world's pre-eminent geological terrains for porphyry copper-gold and epithermal gold mineralisation.

The Wafi-Golpu project includes the Golpu copper-gold porphyry deposit (ranked as a world-class deposit in terms of its size and grade), the Nambonga copper-gold porphyry deposit, and the Wafi high-sulphidation epithermal gold deposit. Knowledge of the Wafi-Golpu system is limited by the extent of drilling and the deposit remains open for future expansion. Exploration activity is guided by strong indications that the Mineral Resource will continue to grow at depth as a better understanding is gained of the nature and extent of the mineralised systems.

GOLPU

Geology

The Golpu deposit is the largest of the deposits and found in a block of deformed Upper Mesozoic to Middle Miocene metasedimentary rocks cut by Miocene-Pliocene calc-alkaline dioritic intrusives. Copper and gold mineralisation results from a porphyry system with the upper portion overprinted by high sulphidation epithermal alteration. The deposit is also 60km north-northwest of the porphyry-related gold-silver-base metal Hidden Valley-Kaveroi mines and other related deposits in the Bulolo Graben (e.g. Edie Creek, Kerimenge, Upper Ridges).

The Golpu Mineral Resource is approximately 800m by 400m, elliptical in plan and extends from 200m below surface to a depth of more than 2,000m. The deposit remains open at depth.

The system consists of multiple, hornblende-bearing diorite porphyries intruded into host sediments. Intrusives range from small dykes to small stocks and apopheses. Hydrothermal alteration related to the porphyry copper-gold mineralisation forms a predictable zonal arrangement grading from potassic core to propylitic margins. A high sulphidation epithermal system is 'telescoped' over the upper portion of the porphyry system forming a central alunite-quartz (advanced argillic) core grading out to dickite-kaolinite (argillic) with an outer margin of sericite alteration. This results in either epithermal-dominant, interaction (mixed) or porphyry-only zones.

Drilling update

Drill evaluation of the Golpu deposit was completed in 2014. Between 2015 and 2020, limited and select drilling and testwork only was conducted associated with decline access, site geotechnical investigations and near-term geotechnical interpretation. The underlying geology and the grade model remain essentially unchanged from that used in the December 2014 Mineral Resource statement. The Golpu resource is constrained within a marginal breakeven shell using the Wafi-Golpu joint venture's 2015 gold and copper revenues and the estimated long-term cost structure developed in the 2016 Golpu stage 2 prefeasibility study.

Feasibility study update

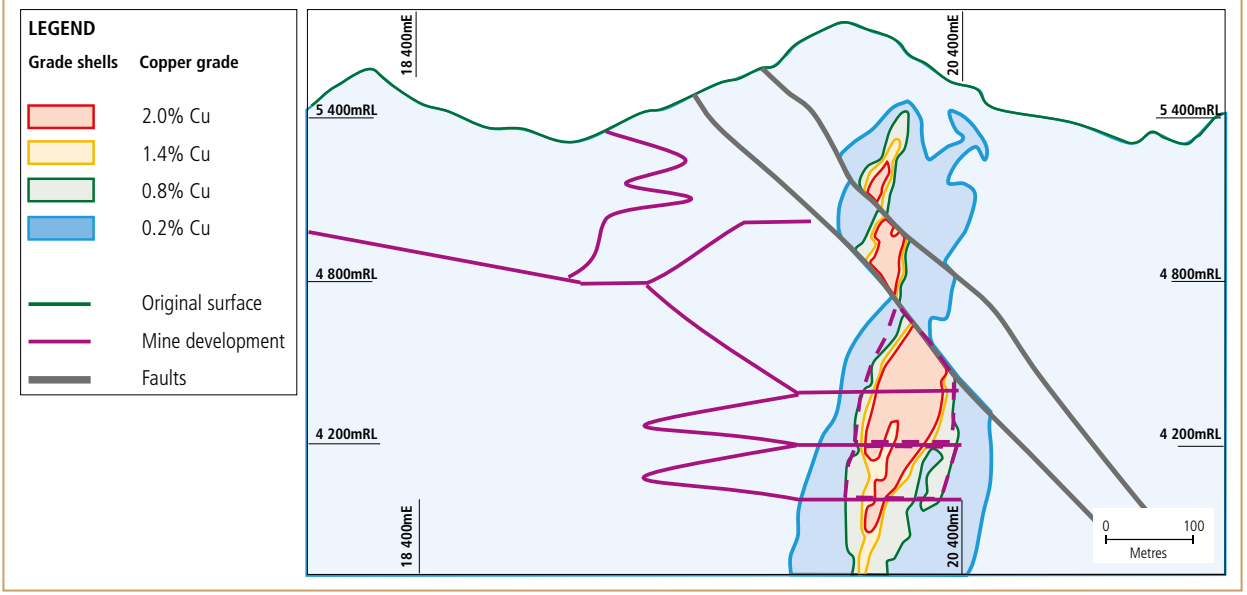
The Golpu Mineral Reserve was updated following the release of the feasibility study update in March 2018. This update informed the finalisation of the Environment Impact Statement submitted to the Conservation and Environment Protection Agency in July 2018 as well as the proposal for development in support of the Special Mining Lease application submitted to the Mineral Resource Authority in August 2016, and updated in March 2018.

Mining methods and mine planning

The feasibility study update proposed the following mining approach:

- Secondary/initial underground access via the Nambonga decline to provide earlier and quicker access to underground drill platforms, a second means of egress and ventilation
- Primary underground access via the Watut portal and the twin Watut declines to the underground block cave mine. The Watut declines will also form part of the primary ventilation circuit and materials handling system conveying ore to the Watut process plant
- A 'cave engineering level' to be established above the Reid Fault at 4870mRL for data gathering, further refinement of the rock mass, monitoring of the cave and potentially for dewatering
- Ore to be extracted via three block caves producing at a rate of 17Mtpa (design capacity)

GOLPU – section 721 060mN



Mineral processing

The proposed processing method is to be based on known technology that uses test work results gathered in the feasibility study update and previous studies. A copper and gold concentrate will be produced from a conventional crush, grind, float processing plant. Concentrate will be shipped from the port of Lae as final concentrate product. Gold will also be produced as doré for delivery to a precious metal refinery.

Infrastructure

No major infrastructure is currently located at the Wafi-Golpu project site besides the exploration camp and support services and infrastructure, and access roads. The feasibility study update completed in March of 2018 discusses:

- Site access
- Ventilation and refrigeration plants
- Processing plant (copper concentrator)
- Deep sea tailings placement system including a tailings pipeline from site to the discharge point near Lae
- Concentrate export pipeline plus associated dewatering and loading facilities at the existing port of Lae
- Accommodation facility
- Support services and infrastructure facilities
- On-site power station

Mineral Resource estimation

The Golpu Mineral Resource is estimated by ordinary kriging within alteration and lithological domains for gold, copper, silver, molybdenum and sulphur elements. The Mineral Resource is reported within a breakeven value shell that applies the 2016 stage 2 prefeasibility study block-cave mining, treatment and general and administration costs with metallurgical recovery models and associated non-site realisation costs (treatment and refining charges) of the copper concentrate product. Gold and copper revenues are the only economic elements included in the value estimate.

The Mineral Resource reports the contained metal content of silver and molybdenum but these revenues are not included in the estimation of the reporting cut-off. The prefeasibility study assumes no recovery of payable silver and molybdenum, however, both elements have been included in the Mineral Resource as there are reasonable prospects of eventual economic extraction with limited changes to the metallurgical flow-sheet and operational procedures.

Permitting

In August 2016, the Wafi-Golpu joint venture submitted an application for a Special Mining Lease (SML 10) and various other associated mining tenements. A feasibility study update and revised proposals for development were lodged with the Mineral Resources Authority (MRA) in March 2018 and, in June 2018, an Environment Impact Study was submitted to the Conservation and Protection Authority. The feasibility study update including deep sea tailings placement as the tailings management solution, and the construction of a modular designed power plant.

The Wafi-Golpu joint venture continues to engage with the Papua New Guinea Government to take forward the permitting and approvals process. In December 2018, the joint venture entered into a Memorandum of Understanding (MOU) with the State of Papua New Guinea, outlining a negotiation framework, but further engagement was delayed by an injunction arising from an application for judicial review of the MOU instituted by the Governor of the Morobe Province.

In January 2020, the Papua New Guinea Government withdrew from the MOU, and the judicial review proceedings brought by the Governor were dismissed and the injunction lifted.

In June 2020, the Prime Minister, the Minister for Mining and the Governor publicly announced their commitment to a recommenced permitting process, since which time the MRA has convened a development forum with representatives of the Morobe Provincial Government, landholders and local communities, but there has been no engagement with the Wafi-Golpu joint venture. As a result, the project permitting roadmap and timeline remain uncertain.

Since 2009, the mining regime in Papua New Guinea has been the subject of a comprehensive ongoing review. The legislation being reviewed includes the Papua New Guinea Mining Act 1992, Papua New Guinea Mining (Safety) Act 1977 and applicable regulations. Mineral policy and mining-specific sector policies have also been under review, including biodiversity offsets, offshore mining policy, sustainable development policy, involuntary relocation policy and mine closure policy.

Over that period, various draft revisions of the Mining Act have been circulated, most recently in 2018 and 2020. The most recent draft revisions envisage an increase in the royalty rate, changes to the terms of the Papua New Guinea Government's right to acquire an interest in a mine discovery, the introduction of a development levy and a waste fee, the introduction of an obligation to maintain production at minimum prescribed levels, a prohibition on non-local "fly-in, fly-out" employment practices, and the introduction of downstream processing obligations. If introduced, these changes will potentially affect Harmony's operations and projects in Papua New Guinea, in the form of additional restrictions, obligations, operational costs, taxes, levies, fees and royalty payments, and could have a material adverse effect on Harmony's business, operating results and financial condition.

On 26 June 2020 a Mining (Amendment) Act was enacted and on 16 July 2020 a proposed Organic Law on Ownership and Development of Hydrocarbons and Minerals and the Commercialization of State Businesses was gazetted. The Mining (Amendment) Act and the Organic Law (if adopted) will materially alter the legislative and regulatory regime governing mining in Papua New Guinea, including the ownership of minerals by the Government and the transformation of the methodology of its participation in mining operations from a concessionary to a production sharing regime. Harmony's operations and projects in Papua New Guinea will potentially be affected by the changes, in the same manner as described above, including additional capital expenditure costs.

The Papua New Guinea Chamber of Mines and Petroleum, as the representative industry body, has been collating information from industry participants and engaging with the Government as part of the industry's response to the review proposals. Harmony is a member of the Chamber and is represented on the sub-committee of the Chamber.

WAFI

The Wafi deposit is centred on high sulphidation epithermal mineralisation within a larger epithermal and porphyry-related complex in granted exploration licence EL440, approximately 60km southwest of Lae, Papua New Guinea. The Wafi deposit outcrops less than 1km to the south of the top of the Golpu porphyry deposit.

The 2019 Wafi Mineral Resource was estimated using an ordinary kriging method. Non-refractory gold (NRG) material is reported at a 0.4g/t cut-off where NRG is defined as greater than 70% cyanide-soluble gold as gold-cyanide assays within the database. Refractory

PAPUA NEW GUINEA (WAFI-GOLPU PROJECT) CONTINUED

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

material below the NRG surface and within the spatial constraining pit shell is reported at a cut-off of 0.9 g/t gold.

The Wafi mineralisation has been defined over a surface area of 1 100m x 800m and up to 600m below surface, with most of the material potentially exploitable by open pit mining methods. No Mineral Reserve is declared and no mining has been undertaken in the project area to date.

NAMBONGA

The Nambonga deposit is located 700m east of Golpu and hosted in a diorite porphyry stock, termed the Nambonga Porphyry. Chalcopyrite is the dominant copper mineral in the porphyry, which is associated with silicification, either pervasive or as veins. Gold is thought to be intergrown with the chalcopyrite or pyrite.

The approximate extents of the system are 500m (east-west), 400m (north-south) and 1 000m vertically.

The Nambonga Mineral Resource is an ordinary kriged estimate based on a domained geological model and is reported within a 0.5g/t grade shell to provide a broad consistent mineralised zone.

The Nambonga Mineral Resource contains estimates for gold, silver, copper, lead, zinc and sulphur. Estimation domains are based on a combination of lithology, alteration and mineralisation. No Mineral Reserve is declared and no mining has been undertaken in the project area to date.

Environmental impact

The projects are in exploration and feasibility study stage and so currently have only minor environmental impacts. Environmental aspects are regulated by the Conversation and Environmental Protection Agency (CEPA) to which Wafi-Golpu reports regularly. In addition, an environment impact assessment has been submitted to the CEPA as part of the permitting process.

MATERIAL RISKS

Material risks that may impact the Wafi, Golpu and Nambonga Mineral Resource and Mineral Reserves statements:

SIGNIFICANT RISKS	REMEDIAL ACTION
• Permitting delays which could impact the project's capital, operational cost and economic assumptions	• Negotiating team in place
• Changes to legislation, in particular the Mining Act, and the introduction of the Organic Law on Minerals	• Secure agreement with the State for the project to be permitted and grandfathered under the current mining and fiscal regime
• Geotechnical conditions impact production and/or total amount of ore recoverable	• Demonstrate to various stakeholders the economic benefits of project per current proposal for development. Detailed geotechnical studies and monitoring systems to be implemented including further drilling from underground drill platforms
• Objection to the proposed tailings management solution (deep sea tailing placement)	• Ongoing data collection on deep sea tailings placement and related modelling, demonstrating quality of scientific work and confidence in modelled outcomes, and communication and engagement with relevant stakeholders

COMPETENT PERSON

GOLPU – MINERAL RESOURCE	GOLPU – MINERAL RESERVE
Senior Resource Geologist, Exploration Targeting, Newcrest Mining Limited	**Group Manager Mining Studies, Newcrest Mining Limited**
David Finn	**Pasqualino Manca**
AusIMM	AusIMM
More than 15 years' experience.	More than 30 years' experience.

WAFI AND NAMBONGA – MINERAL RESOURCE

Executive General Manager: New Business and Technical Services, Harmony South-East Asia

Greg Job

AusIMM

More than 30 years' experience.

WAFI (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Wafi	–	–	–	–	54.0	1.65	89	2 800	20.0	1.28	26	800	74.0	1.55	114	3 600

GOLPU (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	340.0	0.71	245	8 000	68.0	0.63	44	1 400	410.0	0.70	289	9 300

Modifying factors

Golpu	MCF (%)	Dilution (%)	PRF (%)	Cut-off (% Cu)
2019	100	0	61	0.30
2020	100	0	61	0.30

Gold – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	200.0	0.86	171	5 500	200.0	0.86	171	5 500

Silver – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Ag		Tonnes		Ag		Tonnes		Ag		Tonnes		Ag	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Golpu	–	–	–	–	340.0	1.29	449	14 000	68.0	1.10	77	2 300	410.0	1.28	526	16 500

Copper – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)
Golpu	–	–	–	–	340.0	1.00	3 750	8 250	68.0	0.85	600	1 250	410.0	1.00	4 300	9 500

Copper – Mineral Resources as gold equivalents estimates at 30 June 2020 (inclusive)

	Measured (000oz)	Indicated (000oz)	Inferred (000oz)	Total (000oz)
Golpu	–	19 150	2 960	22 110

Modifying factors

Golpu	MCF (%)	Dilution (%)	PRF (%)	Cut-off (% Cu)
2019	100	0	92	0.30
2020	100	0	92	0.30

PAPUA NEW GUINEA (WAFI-GOLPU PROJECT) CONTINUED

INCLUDING THE GOLPU, WAFI AND NAMBONGA DEPOSITS

Copper – Mineral Reserve estimates at 30 June 2020

	Proved				Probable				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Golpu	–	–	–	–	200.0	1.23	2 450	5 400	200.0	1.23	2 450	5 400

Copper – Mineral Reserves as gold equivalents estimates at 30 June 2020

	Proved	Probable	Total
	Au	Au	Au
	(000oz)	(000oz)	(000oz)
Golpu	–	12 538	12 538

Molybdenum – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Mo		Tonnes		Mo		Tonnes		Mo		Tonnes		Mo	
	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)
Golpu	–	–	–	–	340.0	94	33	72	68.0	72	5	11	410.0	90	37	83

NAMBONGA (Harmony 50% portion)

Gold – Mineral Resource estimates at 30 June 2020 (inclusive)

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Nambonga	–	–	–	–	–	–	–	–	20.0	0.82	16	500	20.0	0.82	16	500

Copper – Mineral Resource estimates at 30 June 2020 (inclusive)

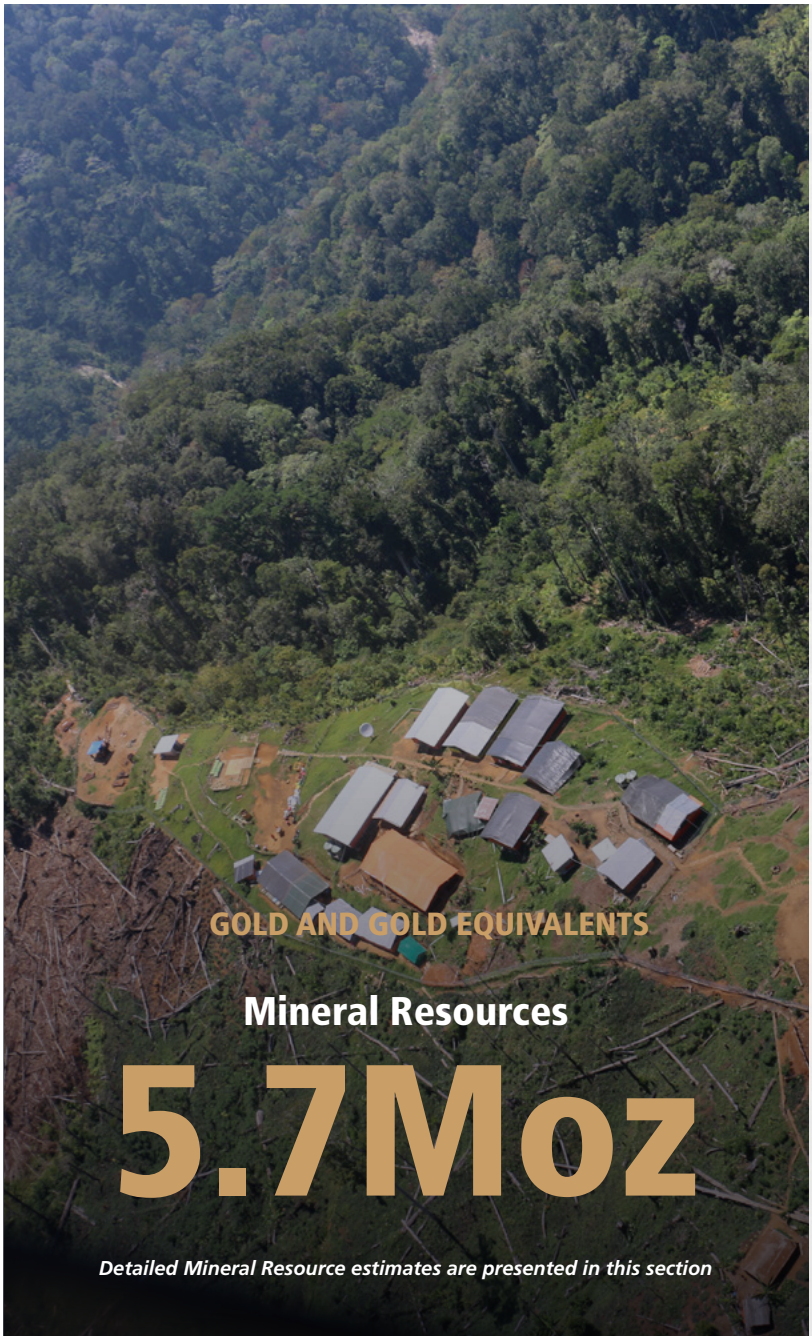
	Measured				Indicated				Inferred				Total			
	Tonnes		Copper		Tonnes		Copper		Tonnes		Copper		Tonnes		Copper	
	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)	(Mt)	(%)	(Mkg)	(Mlb)
Nambonga	–	–	–	–	–	–	–	–	20.0	0.20	40	88	20.0	0.20	40	88

Copper – Mineral Resources as gold equivalents estimates at 30 June 2020 (inclusive)

	Measured	Indicated	Inferred	Total
	(000oz)	(000oz)	(000oz)	(000oz)
Nambonga	–	–	240	240

Rounding of figures may cause some slight computational discrepancies in totals

KILI TEKE



Location

Kili Teke is located on EL2310, some 50km north-northwest of the Tari Township (which is the provincial capital of the Hela Province in the Highlands of Papua New Guinea) and approximately 40km west-northwest of Porgera.

History

Outcropping mineralised breccia and copper gold skarn mineralisation at Kili Teke was initially identified in historic reconnaissance work undertaken in the early 1990s. An exploration licence application over the area was granted in May 2014, and field work programmes by Harmony defined a broad (kilometre scale), copper-gold anomaly at Kili Teke, indicative of the zonal geochemical distribution and alteration footprint associated with a major mineralised porphyry copper-gold system.

Nature of operation

Kili Teke is at an advanced exploration stage and is currently on care and maintenance.

Legal aspects and tenure

The Kili Teke deposit is located on exploration licence EL2310 which is 100% owned by Harmony Gold Exploration. The tenement encompasses 252km^2.

The Papua New Guinea government issues and administers mining tenements under the Mining Act 1992, through the offices of the Mineral Resources Authority. Exploration licences are issued for a term not exceeding two years, and are renewable for further two-year terms, subject to compliance with expenditure and other conditions.

PAPUA NEW GUINEA (KILI TEKE) CONTINUED

Each licence contains a condition conferring on the Papua New Guinea government the right to make a single purchase of up to 30% equitable interest in any mineral discovery under the licence at a price pro rata to the accumulated exploration expenditure.

An application for an extension of term was submitted to the Mineral Resource Authority on 21 February 2020. Although the related Warden's hearing is yet to be scheduled, licence conditions and expenditure commitments for EL2310 have been fulfilled, and the tenement remains in good standing.

Geology

The Kili Teke deposit comprises porphyry style copper-gold mineralisation hosted in a multiphase calc-alkaline dioritic to monzonitic intrusive complex. Host rocks comprise interbedded siliciclastics and limestone of the Papuan Fold Belt.

Uranium-lead zircon age dating highlights Pliocene age dates in the range of 3.5 ± 0.04Ma (million years) to 3.59 ± 0.07Ma for emplacement of the mineralised porphyry phases. Late-mineral porphyry phases have been identified in the drilling and impact grade continuity within the deposit, where they intrude and stope out the earlier more mineralised phases.

Overall the geometry of the deposit reflects a relatively steeply plunging, pipe-like body, with mineralisation decreasing away from the central high-grade stockwork zones of copper-gold mineralisation. Intense marbleisation and copper-gold skarn mineralisation are developed around the peripheral contact with the host sequence, and variably developed skarn mineralisation also occurs along internal structural and contact zones within the complex.

Mining methods and mine planning

Kili Teke is at the concept study level of work. This work has confirmed technically-viable solutions exist for mining, processing, infrastructure and logistics at Kili Teke, and no fatal flaws have been identified.

Mining options consider open pit and bulk underground mining with open pit the preferred option to take to further studies. This would involve standard open pit mining with shovels and trucks. Preliminary waste dump locations have been identified as have terrestrial tailings storage facility locations.

Mineral processing

First pass rougher kinetic test work for metallurgical recovery shows that copper recovers extremely well (90%) and gold recovers well (65%) through a standard copper flotation process. An option for smelting was considered but the high capital cost has precluded this with a copper concentrate product the most likely option to be considered in further studies.

Mineral Resource estimation

The Kili Teke Mineral Resource, the same as that reported in 2019, was generated from more than 22 000m of drilling, along with detailed surface mapping, sampling and airborne geophysical survey data. The estimation was constrained by a 0.125% copper shell, which represents the approximate natural break to mineralisation from the surrounding host sequence and unmineralised intrusive phases.

Modelling is based on estimation by ordinary kriging of 4m composites using a three-pass search ellipse into a regular block model comprising 60m x 60m x 60m parent blocks and 20m x 20m x 20m sub-blocks.

An Inferred Mineral Resource has been reported from the resulting resource model and is based on a 0.2% copper cut-off along with sample support criteria. The resource estimate is constrained approximately 650m below surface at the 780mRL, although mineralisation remains open at depth.

Environmental impact

Kili Teke is in the exploration and concept study stage and so has only minor environmental impacts. The environment aspect is regulated by the CEPA (Conversational and Environmental Protection Agency) to which Kili Teke reports regularly.

Kili Teke

KILI TEKE

Gold – Mineral Resource estimates at 30 June 2020

	Measured				Indicated				Inferred				Total			
	Tonnes		Gold		Tonnes		Gold		Tonnes		Gold		Tonnes		Gold	
	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)	(Mt)	(g/t)	(000kg)	(000oz)
Kili Teke	–	–	–	–	–	–	–	–	237.0	0.24	56	1 810	237.0	0.24	56	1 810

Copper – Mineral Resource estimates at 30 June 2020

	Measured				Indicated				Inferred				Total			
	Tonnes		Cu		Tonnes		Cu		Tonnes		Cu		Tonnes		Cu	
	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)	(Mt)	%	(Mkg)	(Mlb)
Kili Teke	–	–	–	–	–	–	–	–	237.0	0.34	802	1 767	237.0	0.34	802	1 767

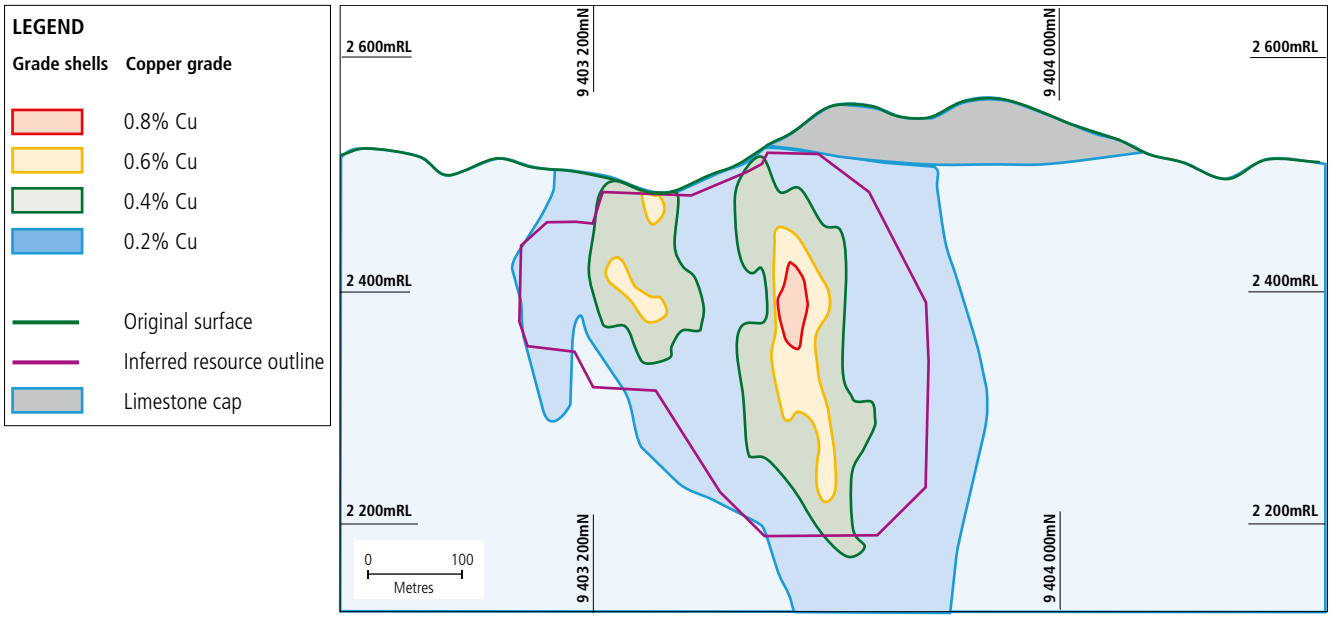
Copper – Mineral Resource estimates at 30 June 2020

As gold equivalents	Measured (000oz)	Indicated (000oz)	Inferred (000oz)	Total (000oz)
Kili Teke	–	–	3 926	3 926

Molybdenum – Mineral Resource estimates at 30 June 2020

	Measured				Indicated				Inferred				Total			
	Tonnes		Mo		Tonnes		Mo		Tonnes		Mo		Tonnes		Mo	
	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)	(Mt)	(ppm)	(Mkg)	(Mlb)
Kili Teke	–	–	–	–	–	–	–	–	237.0	168	40	88	237.0	168	40	88

KILI TEKE– section 688 790mE



HARMONY STANDARD

FOR SAMREC COMPLIANCE REPORTING

DEFINITIONS AS PER THE SAMREC CODE 2016

Exploration results include data and information generated by mineral exploration programmes that might be of use to investors but which do not form part of a declaration of Mineral Resources or Mineral Reserves.

An exploration target is a statement or estimate of the exploration potential of a Mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade or quality, relates to mineralisation for which there has been insufficient exploration to estimate Mineral Resources.

Mineral Resources

A **Mineral Resource** is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality are estimated based on limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of an Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of modifying factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated or an Inferred Mineral Resource. It may be converted to either a Proved Mineral Reserve or a Probable Mineral Reserve.

Mineral Reserves

Modifying factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

A **Mineral Reserve** is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at prefeasibility or feasibility level as appropriate that include application of modifying factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A **Probable Mineral Reserve** is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the modifying factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

A **Proved Mineral Reserve** is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the modifying factors.

A **Scoping Study** is an order of magnitude technical and economic study of the potential viability of Mineral Resources that includes appropriate assessments of realistically assumed modifying factors together with any other relevant operational factors that are necessary to demonstrate at the time of reporting that progress to a Prefeasibility Study can be reasonably justified.

A **Prefeasibility Study** is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined it includes a financial analysis based on reasonable assumptions on the modifying factors and the evaluation of any other relevant factors which are sufficient for a competent person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Prefeasibility Study is at a lower confidence level than a Feasibility Study.

A **Feasibility Study** is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable modifying factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Prefeasibility Study.

Hidden Valley

MINERAL RESOURCE ESTIMATION

To meet SAMREC's requirements that this solid material reported as a Mineral Resource should have 'reasonable and realistic prospects for eventual economic extraction', Harmony has determined an appropriate cut-off grade which has been applied to the quantified mineralised body according to a process incorporating a long-term view on future economic modifying factors. In applying this process, Harmony uses a gold price of R743 000/kg to derive a cut-off grade to determine the Mineral Resources at each of its South African underground operations.

The Estimation of Mineral Resources is based on geoscientific knowledge and borehole and sampling data (obtained by means of chip sampling on the reef horizon in a shaft-specific grid), with input from the company's ore reserve managers, geologists and geostatistical staff. All sampling done is subject to quality assurance and quality control, as prescribed by SAMREC, to ensure data quality and accuracy. Each mine's Mineral Resource is categorised – based on similarities in geology, facies, grade and structure, the orebody is divided into geozones. It is then blocked-out and ascribed an estimated value. A computerised geostatistical estimation process is used at all our mines.

To define that portion of a Measured and Indicated Mineral Resource that can be converted to a Proved and Probable Mineral Reserve, Harmony applies the concept of a cut-off grade. At our underground South African mines, this is done by defining the optimal cut-off as the lowest grade at which an orebody can be mined such that the total profits, under a specified set of mining parameters, are maximised.

The cut-off grade is determined using the company's Optimiser software, which requires the following as input:

- the database of Measured and Indicated Resource blocks (per shaft section)
- an assumed gold price which, for this Mineral Reserve statement, was taken as R630 000/kg
- planned production rates
- the mine recovery factor which is equivalent to the mine call factor multiplied by the plant recovery factor
- planned cash operating costs (rand per tonne)

Rand per tonne cash operating costs are historically based but take cognisance of distinct changes in the cost environment such as restructuring, right-sizing, and other cost-reduction initiatives and, for below-infrastructure ounces, an estimate of capital expenditure.

In Papua New Guinea, the block cave reserve at Golpu uses proprietary block cave optimisation software to define the optimal mine plan and sequencing. The open-pit reserve at Hidden Valley is determined using the Whittle optimisation programme to guide the most efficient mine design given the commodity prices and cost inputs assumed.

Mineral Reserves represent that portion of the Measured and Indicated Mineral Resources above the cut-off grade in the life-of-mine plan and are estimated after consideration of the factors affecting extraction, including mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors.

At our underground mines, the reported Mineral Reserves are accessible from existing infrastructure and/or infrastructure that is in the process of being developed.

A range of disciplines, including geology, survey, planning, mining engineering, rock engineering, metallurgy, financial management, human resources management and environmental management, are involved at each mine in the life-of-mine planning process and the conversion of Mineral Resources into Mineral Reserves.

The modifying factors related to the ore flow that are used to convert Mineral Resources to Mineral Reserves through the life-of-mine planning process are stated for each shaft. For these factors, historical information is used, except if there is a valid reason to do otherwise. As a result of the depth at which mining occurs and the resulting rock engineering requirements at our South African underground mines, some shafts include stope support pillars into the design of their mining layouts which accounts for discounts of 7% to 10%. A further 15% discount is applied as a life-of-mine factor to provide for unpay and off-reef mining. In general, life-of-mine plan extraction factors do not exceed 85% and are reflected in Mineral Reserves.

For further detail on the sampling procedures used by Harmony, see pages 132 and 133.

Papua New Guinea

APPENDIX

HARMONY SAMPLING STANDARD

FOR SAMREC COMPLIANCE REPORTING

The following standards, processes and procedures are followed and adhered to at all **underground mines in South Africa**.

SAMPLING STANDARD

A standard procedure for the sampling of stopes and development ends is used to ensure quality of sampling information and safety in its collection. All samplers and sampling crews are trained based on the rules of the sampling standard. The standard specifies all the steps and rules involved in the preparation of the face and the collection of samples, as well as all safety aspects of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of certified Standard Reference Materials, blanks and duplicates. Standard Reference Materials, blank samples and duplicate samples are added with the actual underground chip samples and drill-hole samples sent to the assay laboratory. For analysis of underground chip-samples, the total number of Standard Reference Materials, blank samples and duplicate samples to be added to the daily underground samples will equal approximately 5% of the total underground samples submitted for that day. Generally, this equates to approximately 2% of each type of QAQC sample. For analysis of underground/surface drill-holes, QAQC is required to be more stringent in terms of numbers of Standard Reference Materials, blank samples and duplicate samples submitted. One gold Standard Reference Materials, one uranium Standard Reference Materials, one duplicate and one blank is required for every 20 drill-hole samples assayed. In other words, QAQC material will equate to approximately 15% of the total drill-hole samples analysed. If the Standard Reference Materials or blank sample has been deemed to have failed, the entire batch of samples assayed with this failed QAQC sample must be identified. A request must then be sent to the laboratory requesting them to repeat the assay procedure on all samples within this batch. A second Standard Reference Materials or blank sample must be provided to the laboratory to be included with the batch of samples. Should the batch of samples fail the QAQC standards again, these samples will be excluded from the sampling database (not captured in the sampling system), and the sampling will be repeated if necessary.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentration of precious metals in ores and metallurgical products. Essentially, the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions which promote the separation of the precious metals from the gangue, with simultaneous collection, normally as a lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Harmony's assay laboratory performs various types of analysis, but the laboratory is only ISO 17025 accredited for the analysis of gold and uranium. Underground ore samples are received and prepared for fire assay gold, uranium and relative density analysis. Plant samples e.g. residues, head samples, carbons, and solutions are also analysed for gold. Determination of gold fines is determined on bullion samples and sludge. The laboratory undertakes precious metal determinations on SAPS (exhibits) and securities recovered samples.

Water samples are also analysed to determine the quality. Tests are conducted for the presence of cyanide and trace metals tests, as is bacteriological testing.

The laboratory is accredited to ISO/IEC 17025 for all gold analysis. This means that it is competent in meeting international and national laboratory standards and provides reliable testing services. In terms of the ISO/IEC 17025 laboratory systems accreditation, feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

Société Générale de Surveillance (SGS) – Performance Laboratories Randfontein is a fully equipped laboratory providing analytical services using fire assay, instrumental and classical techniques for precious and base metal ores. The laboratory provides services to the major mining houses, including Harmony, in South Africa as well as exploration companies currently active in Africa.

The laboratory is ISO 17025:2005 accredited for the analysis of gold, uranium and the platinum group metals. This international standard confirms that the laboratory operates a quality system, is technically competent and is able to generate valid results. The quality system is applied across the entire laboratory, irrespective of the accreditation status of the method. This is critical in providing results on which major decisions regarding mining and plant operations are based.

Sample preparation plant

To determine the grade of the ore hoisted at the mines, we make use of go-belt sampling.

A belt sample of up to 1 000kg is received at the plant from the shaft. The sample is first put through a 300mm screen prior to drying with infra-red heaters. Primary crushing to <70mm is then followed by a secondary crushing to <25mm, after which the sample is reduced. At the primary splitter 7/8 of the sample is discarded via a conveyor belt and 1/8 of the sample progress to final drying. Tertiary crushing to <6mm is then followed by secondary splitting. Again 7/8 of the sample is discarded and 1/8 of the sample is pulverised to 85% <106 micron. At the final splitting, all eight sub-samples are packaged and sent to the laboratory for analyses.

The sample ticket with the necessary information from the shaft, accompanies the sample throughout the process. Empty bins are hosed out, whilst cleaning continues as part of the procedure to avoid contamination. At regular intervals grading analyses are done at the assay laboratory. A quartz sample is done to monitor any possible contamination.

To ensure that a high standard of preparation is maintained at each step of the process, which includes the adherence to safety standards and is checked by a supervisor.

The following standards, processes and procedures are followed and adhered to at the **Kalgold open cast operation**.

SAMPLING STANDARD

A standard procedure for open pits drill sampling is used to ensure quality of sampling information and safety in its collection. Drill sampling adheres to the Harmony logging and sampling procedures developed and amended over time to ensure consistency across the group. The sampling practice varies from drill type to drill type however the practice conforms to best practice at all times. All geologists and sampling assistants are trained to observe the standard sampling procedures. The standard specifies all the steps and rules involved in the collection and preparation of the samples for the Reversed Circulation percussion drilling and Diamond Drilling as well as the safety aspect of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of Certified Standard Reference Materials, blanks and duplicates, Standard Reference Materials, blank samples and duplicates are added with the actual drill samples sent to the laboratory. For analysis of the drill samples the total number of Standard Reference Materials, blank samples and duplicate samples to be added equals the 10% of the total samples sent for analysis. If the Standard Reference Materials or blank sample has been deemed to have failed, the range of the samples with the failed QAQC sample is identified and a repeat analysis is done of that range of samples. A second Standard Reference Material or blank sample is provided to the laboratory to be included with that batch of samples. Should the re-assayed batch of samples fail the QAQC standards again, these samples are not used in the resource estimate.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentrations of precious metals in ores and metallurgical products. Essentially the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions, which promotes the separation of the precious metals from the gangue, with simultaneous collection, normally as lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Assaying of all drill samples for the recent drilling program at Kalgold (2017/2019) was completed at SGS Randfontein laboratory. This laboratory is accredited by the South African National Accreditation System (SANAS) and conforms to the requirements of ISO/IEC 17025 for specific tests. The facility accreditation number is T0265.The method used for gold assay is FAA303 (Au by lead fusion followed by AAS finish), it is an accredited method and conforms to ISO/IEC 17025. Feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

The following standards, processes and procedures are followed and adhered to at **Hidden Valley open cast operation**.

SAMPLING STANDARD

A standard procedure for open pits drill sampling is used to ensure quality of sampling information and safety in its collection. Drill sampling adheres to the Harmony logging and sampling procedures developed and amended over time to ensure consistency across the group. The sampling practice varies from drill type to drill type however the practice conforms to best practice at all times. All geologists and sampling assistants are trained to observe the standard sampling procedures. The standard specifies all the steps and rules involved in the collection and preparation of the samples for the Reversed Circulation percussion drilling and Diamond Drilling as well as the safety aspect of sampling. Particular attention is given to quality of information captured, and planned task observations are routinely carried out to ensure adherence to the standard.

Quality assurance and quality control (QAQC)

Assessment of assaying accuracy and precision is carried out through the use of Certified Standard Reference Materials, blanks and duplicates, Standard Reference Materials, blank samples and duplicates are added with the actual drill samples sent to the laboratory. For analysis of the drill samples the total number of Standard Reference Materials, blank samples and duplicate samples to be added equals the 8% of the total samples sent for analysis. If the Standard Reference Materials or blank sample has been deemed to have failed, the range of the samples with the failed QAQC sample is identified and a repeat analysis is done of that range of samples. A second Standard Reference Material or blank sample is provided to the laboratory to be included with that batch of samples. Should the re-assayed batch of samples fail the QAQC standards again, these samples are not used in the resource estimate.

Assay laboratory

Fire assay is the oldest and, in most circumstances, still the best method for determining the concentrations of precious metals in ores and metallurgical products. Essentially the method consists of two consecutive pyrochemical separations. The finely ground sample is fused with a suitable flux, under reducing conditions, which promotes the separation of the precious metals from the gangue, with simultaneous collection, normally as lead alloy. Subsequently, the lead is removed by oxidising fusion (cupellation) and the precious metals, thus isolated, are available for measurement.

Assaying of all drill samples for the recent drilling program at Hidden Valley (2017/2020) was completed at the ITS Hidden Valley / ITS Lae laboratories. This laboratory is accredited by the PNG National Institute of Standards and Industrial Technology and conforms to the requirements of ISO/IEC 17025 (2005) for specific tests. The facility accreditation number is 46. The method used for gold assay is FA25_AAS (Au by lead fusion followed by AAS finish) and the method used for silver assay is AR_AAS (Ag by Aqua Regia digest followed by AAS finish), these are accredited methods and conform to ISO/IEC 17025 (2005). Feedback is provided to the laboratory on whether it is conducting its work in accordance with international criteria for technical competence. This feedback assists the laboratory in continually improving its performance in terms of data quality and laboratory effectiveness.

GLOSSARY OF TERMS

Term	Definition
Acidic	Descriptor for silica rich igneous rocks (containing greater than 65% silica) such as rhyolite or granite.
AHIA	Association of Healthcare Internal Auditors
Alluvium	Relatively recent deposits of sedimentary material laid down in riverbeds, flood plains, lakes, or at the base of mountain slopes.
Alteration	Any physical or chemical change in a rock resulting from fluids moving through the rock.
Anticline	An arch or fold in layers of rock.
Assay	An analysis to determine the presence and concentration of one or more chemical components.
Basalt	An extrusive mafic volcanic rock.
Basic	Descriptor for silica poor igneous rocks such as basalt or gabbro.
Below infrastructure	That part of a company's mineral reserve that can only be accessed following certain capital expenditure which has yet to be approved.
BIF	Banded iron formation
Block caving	A mining method suited for large low-grade orebodies that are unsuitable for open cut mining. In development a series of evenly spaced crosscuts are made at the bottom of the ore block from which raises are driven up into the ore. The ore block is then undercut so that it begins to collapse (or cave) into the raises. The weight of the material above provides the force to fracture and crush the underlying ore which is drawn from the drawpoints on the crosscuts. As ore is withdrawn the cave progresses up through the orebody.
Bornite	A copper iron sulphide that commonly defines the core of porphyry copper-gold deposits.
Breccia	Fractured and broken rock that results from structural, volcanic or sedimentary processes.
Bulk mining	Any large-scale mechanised method of mining involving significant volumes of material being extracted on a daily basis.
Caldera	A large, basin shaped volcanic depression, more or less circular in form, that results from the collapse of the earth's surface into an exhausted magma chamber.
Chalcocite	A copper sulphide mineral common in zones of secondary enrichment.
Chalcopyrite	A copper iron sulphide that comprises the bulk of ore in many copper mines.
Concentrate	The product of the milling process that contains a high percentage of the valuable metals. The concentrate is commonly the final product produced on-site and is sent to a third party for separation or smelting.
Conglomerate	A sedimentary rock consisting of rounded, water worn pebbles or boulders cemented into a solid mass.
Contact	A geological term used to describe the line or plane along which two different rock types meet.
Contact metamorphism	Metamorphism of country rocks adjacent to an intrusion caused by heat and fluids from the intrusion.
Craton	A part of the earth's crust that has attained stability and has been little deformed for a long period of geological time.
Crosscut	An opening underground that is cut at right angles from the main level drive or shaft that generally links to and cuts the orebody, may also refer to a link between different drives.
Country rocks	The surrounding "host" rocks into which an igneous intrusion or orebody is emplaced.
Cut-off grade	The lowest grade of copper or gold ore that is considered economic to mine.
DatamineTM	Software
Decline	A tunnel below the horizontal that allows access to the orebody.
Deposit	A concentration of mineral matter, sedimentary or volcanic material, commonly refers to an accumulation of mineralised material that need not be economic to extract.

Diamond drilling	A method of obtaining samples of rock that uses a diamond encrusted drill bit to cut long cylindrical sticks of core.
Diatreme	A long vertical pipe or plug filled with volcanic breccia formed by explosive release of energy from a gas-charged magma.
Dilution	Unmineralised rock that is by necessity removed along with ore during the mining process that effectively lowers the overall grade of the ore.
Diorite	Plutonic or intrusive rocks of intermediate composition between acidic and basic.
Dip	The angle at which a bed, stratum, or vein is inclined from the horizontal, measured perpendicular to the strike and in the vertical plane.
Disseminated ore	Ore carrying small distributed particles or valuable minerals distributed more or less uniformly through the rock.
Drawpoint	An underground opening at the bottom of the stope through which broken ore is extracted.
Dyke	A long and relatively thin body of igneous rock that, while in the molten state, intruded a fissure in older rocks.
Enrichment	The process of upgrading the concentrations of various elements into more concentrated deposits.
Epithermal deposit	A mineral deposit consisting of veins and replacement bodies containing precious metals or, more rarely, base metals; that form close to the earth's surface at high levels in the crust.
Exploration	Prospecting, sampling, mapping, drilling and other work involved in the search for ore.
Fault	A break in the continuity of a body of rock. It is accompanied by a movement on one side of the break relative to the other so that what were once parts of one continuous rock stratum or vein are now separated. The amount of displacement of the parts may range from a few inches to thousands of feet. Various descriptive names have been given to different kinds of faults, including but not limited to; closed fault, dip fault, dip-slip fault, distributive fault, flaw fault, gravity fault, heave fault, hinge fault, horizontal fault, longitudinal fault, normal fault, oblique fault, oblique slip fault, open fault, overthrust fault, parallel displacement fault, pivotal fault, reverse fault, rotary fault, step fault, strike fault, strike-slip fault, thrust fault, transcurrent fault, translatory fault, underthrust, vertical fault.
Felsic	An igneous rock having abundant light-coloured minerals and enriched in lighter elements such as silica and aluminium.
Flotation	A milling process in which valuable particles are induced to become attached to bubbles and float where they are more easily separated.
Fold	A curve or bend of a planar structure such as rock strata, bedding planes, foliation, or cleavage. A fold is usually a product of deformation, although its definition is descriptive and not genetic and may include primary sedimentary structures.
Gabbro	A dark, coarse-grained mafic igneous rock.
Gangue	The commercially worthless material that surrounds, or is closely mixed with, the ore.
Gold equivalent ounces	In instances where individual deposits may contain multiple valuable commodities with a reasonable expectation of being recovered; for example gold + copper in the one deposit, Harmony computes a gold equivalent to more easily assess the value of the deposit against gold only mines. Harmony does this by calculating the value of each of the deposits commodities then divides the product by the price of gold. For example ((gold ounces* gold price per ounce) + (copper pounds* copper price per pound))/gold price per ounce; this will return the gold equivalent of a gold and copper deposit. All calculations are done using metal prices as stipulated in attached documentation. Harmony assumes a 100% metallurgical recovery in its calculations unless otherwise stated.
Graben	A block of rock bound by faults that has moved downward to form a depression between adjacent fault blocks.
Granite	A light coarse-grained felsic intrusive rock.
Granodiorite	A light coarse-grained intermediate intrusive rock.

GLOSSARY OF TERMS CONTINUED

Greenstone	A field term for any compact dark green altered or metamorphosed basic igneous rock that owes its colour to chlorite.
Head grade	The average grade of ore fed into the mill.
Horst	An elongate, relatively uplifted crustal unit or block that is bounded by faults, the opposite of a graben. It is a structural form and may or may not be expressed geomorphologically.
Hydrothermal	Relating to hot fluids circulating in the earth's crust; generally the source of metals found in mineral deposits
Igneous rock	Rocks formed by the solidification of molten material below the earth's crust.
IHAS	Integrated Hazard Awareness System
Intrusive	A body of igneous rock formed by the consolidation of magma intruded into country rock, in contrast to lava which is extruded onto the earth's surface.
Lava	A general name for the molten rock ejected by volcanoes.
Mafic	An igneous rock composed chiefly of dark, ferromagnesium minerals and enriched in heavier elements such as iron.
Magma	The molten material within the earth from which igneous rocks are formed.
Maramuni arc	A part of the New Guinea Mobile Belt, an arc across the island of Papua New Guinea within which a large portion of economic deposits are found.
Matrix	The finer-grained material between the larger particles of a rock or the material surrounding a fossil or mineral.
Metallurgy	The study of extracting metals from their ores.
Mesozoic	An era of geologic time, from the end of the Paleozoic to the beginning of the Cenozoic, or from about 225 million years to about 65 million years ago.
Mine call factor (MCF)	Is the ratio, expressed as a percentage, which the specific product accounted for in "recovery plus residue" bears to the corresponding product "called for" by the mine's measuring and valuation methods.
MW	Milling width is a calculated width expressing the relationship between the total reef area excavated and the total tonnes milled from underground sources.
Mobile belt	A belt of folded and mountainous terrain that defines the core of the island of Papua New Guinea, considered to define the leading edge of the Australian content where it is in collision with the pacific ocean plate.
Non-refractory	Gold or copper ore that is easily extracted using standard and well tested mill and plant technologies.
Ophiolite	A section of the earth's oceanic crust and the underlying mantle that has been uplifted and often emplaced (or obducted) onto the edge of a continental plate; commonly the product of subduction systems. The material comprises mafic and ultramafic rocks and minerals.
Ore	A mixture of minerals and gangue from which at least one of the minerals can be extracted at a profit.
Orogeny	A period of mountain building characterised by compression and folding within the earth's crust.
Oxidation	Generically refers to a chemical reaction of the rock when exposed to oxygen and surface water, resulting in oxide material in a mining environment.
Plunge	The inclination and orientation of a fold axis or other linear feature, measured in the vertical plane.
Porphyry	An igneous rock of any composition that contains conspicuous phenocrysts in a fine-grained groundmass that has intruded into the upper crust rapidly. A rock name descriptive of the groundmass composition usually precedes the term e.g. diorite porphyry.
Porphyry copper	A specific deposit type associated with the intrusion of multiple phases of porphyry. The heat and associated fluids commonly carry and precipitate metals such as gold, copper, molybdenum and silver.
PRF	Plant recovery factor is the ratio, expressed as a percentage, of the mass of the specific mineral product actually recovered from ore treated at the plant to its total specific mineral content before treatment.

Pyrite	Iron sulphide that usually occurs in veins, as magmatic segregation, as an accessory in igneous rocks, and in metamorphic rocks, in sedimentary rocks including coal seams; It is commonly associated with gold.
Quartzite	A very hard metamorphosed sandstone, consisting chiefly of quartz grains that are so completely cemented with secondary silica that the rock breaks across or through the grains rather than around them.
Raise	Any tunnel having an inclination above the horizontal in the direction of workings.
Recovery	The percentage of valuable metal in the ore that can be recovered by metallurgical treatment.
Refractory	Ore type that contains gold or copper that is 'locked up' and difficult to extract without specialised processing equipment.
Resource	The estimated amount of material in a mineral deposit, based on limited drilling but considered to be available for eventual economic extraction.
Rhyolite	A fine-grained extrusive igneous rock with the same chemical composition as granite.
SASS5	South African Scoring System Version 5
Schist	A foliated metamorphic rock that has undergone sufficient strain so as to align all the mineral components into a roughly parallel arrangement.
Shaft	A vertical or inclined excavation in rock for the purpose of accessing the orebody, usually equipped with a hoist and winder to move miners and materials between the surface and various levels underground.
Silica	Fine grained silicon dioxide (such as quartz).
Siliceous	An alteration type where a large portion of the original rock has been replaced by silica.
Skarn	Lime-bearing silicates of any geologic age derived from nearly pure limestone or dolomite with the introduction of large amounts of silica, aluminium, iron and magnesium.
Stockwork	A mineral deposit in the form of a network of veinlets diffused in the country rock.
Stope	An excavation in a mine from which ore is, or has been, removed.
Strike	The bearing from north of a geological structure such as a bed, fault or orebody, defined as a horizontal line measured across the surface perpendicular to the dip.
Strip	To remove the overburden and waste to reveal the ore underneath.
Stripping ratio	The ratio of tonne of waste removed to tonnes of ore recovered in an open pit mine.
Subduction	The process in plate tectonics whereby a portion of one of the earth's plates is drawn down below another.
Sub-level	A level in an underground mine between two main working levels.
Sub-outcrop	A rock stratum that unconformably underlies another rock stratum.
Syncline	Concave fold in stratified rock, in which strata dip down to meet in a trough.
Tailings	Material rejected from the milling process from which much of the economic material has been removed.
SW	Stoping width is the width of the excavation made during stoping operations.
TSF	Tailings storage facility (or tailings pond) – where the tailings are stored until the end of mining when the facility is capped and rehabilitated.
Unconformity	The structural relationship between rock strata in contact, characterised by a lack of continuity in deposition due to a period of non-deposition, weathering, or erosion prior to the deposition of the younger beds. An unconformity is often marked by absence of parallelism between the strata where the younger overlying stratum does not conform to the dip and strike of the older underlying rocks.
Volcanic	Derived from volcanoes.
Waste	Unmineralised or low-grade material that cannot be mined at a profit.
Winze	Any tunnel having an inclination below the horizontal in the direction of workings.

FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the safe harbor provided by Section 21E of the Exchange Act and Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), with respect to our financial condition, results of operations, business strategies, operating efficiencies, competitive positions, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters.

These forward-looking statements, including, among others, those relating to our future business prospects, revenues, and the potential benefit of acquisitions (including statements regarding growth and cost savings) wherever they may occur in this report and the exhibits to this report, are necessarily estimates reflecting the best judgment of our senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. As a consequence, these forward-looking statements should be considered in light of various important factors, including those set forth in this report. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation:

- Overall economic and business conditions in South Africa, Papua New Guinea, Australia and elsewhere (including as a result of the coronavirus disease ("Covid-19") pandemic)
- Estimates of future earnings, and the sensitivity of earnings to gold and other metals prices
- Estimates of future gold and other metals production and sales
- Estimates of future cash costs
- Estimates of future cash flows, and the sensitivity of cash flows to gold and other metals prices
- Estimates of provision for silicosis settlement and the spread of other contagious diseases, such as Covid-19
- Estimates of future tax liabilities under the Carbon Tax Act (South Africa)
- Statements regarding future debt repayments
- Estimates of future capital expenditures
- The success of our business strategy, exploration and development activities and other initiatives
- Future financial position, plans, strategies, objectives, capital expenditures, projected costs and anticipated cost savings and financing plans
- Estimates of reserves statements regarding future exploration results and the replacement of reserves
- The ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, as well as at existing operations
- Fluctuations in the market price of gold
- The occurrence of hazards associated with underground and surface gold mining
- The occurrence of labour disruptions related to industrial action or health and safety incidents
- Power cost increases as well as power stoppages, fluctuations and usage constraints
- Supply chain shortages and increases in the prices of production imports and the availability, terms and deployment of capital
- Our ability to hire and retain senior management, sufficiently technically-skilled employees, as well as our ability to achieve sufficient representation of historically disadvantaged persons in management positions
- Our ability to comply with requirements that we operate in a sustainable manner and provide benefits to affected communities
- Potential liabilities related to occupational health diseases
- Changes in government regulation and the political environment, particularly tax and royalties, mining rights, health, safety, environmental regulation and business ownership including any interpretation thereof; court decisions affecting the mining industry, including, without limitation, regarding the interpretation of mining rights
- Our ability to protect our information technology and communication systems and the personal data we retain
- Risks related to the failure of internal controls
- The outcome of pending or future litigation or regulatory proceedings
- Fluctuations in exchange rates and currency devaluations and other macroeconomic monetary policies
- The adequacy of the Group's insurance coverage
- Any further downgrade of South Africa's credit rating
- Socio-economic or political instability in South Africa, Papua New Guinea and other countries in which we operate

For a more detailed discussion of such risks and other factors (such as availability of credit or other sources of financing), see the Company's latest Integrated Report and Form 20-F which is on file with the Securities and Exchange Commission, as well as the Company's other Securities and Exchange Commission filings. The Company undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events, except as required by law. The foregoing factors and others described under "Risk Factors" should not be construed as exhaustive. The forward-looking financial information has not been reviewed and reported on by the Company's auditors.

COMPETENT PERSON'S STATEMENT

The information in this presentation that relates to Mineral Resources or Ore Reserves has been extracted from our Reserves and Resources statement published on 15 September 2020. Harmony confirms that it is not aware of any new information or data that materially affects the information included in the statement, in the case of Mineral Resources or Mineral Reserves, that all material assumptions and technical parameters underpinning the estimates in the original release continue to apply and have not materially changed. Harmony confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original release.

CONTACT DETAILS

HARMONY GOLD MINING COMPANY LIMITED

Harmony Gold Mining Company Limited was incorporated and registered as a public company in South Africa on 25 August 1950

Registration number: 1950/038232/06

Corporate office
Randfontein Office Park
PO Box 2, Randfontein 1760, South Africa
Corner Main Reef Road and Ward Avenue,
Randfontein, 1759, South Africa

Telephone: +27 11 411 2000

Website: *www.harmony.co.za*

DIRECTORS

Dr PT Motsepe* (chairman)

JM Motlaba* (deputy chairman)

M Msimang*^ (lead independent director)

PW Steenkamp** (chief executive officer)

BP Lekubo** (financial director)

HE Mashego** (executive director)

JA Chissano*#^

FFT De Buck*^

Dr DS Lushaba*^

HG Motau*^

KT Nondumo*^

VP Pillay*^

GR Sibiya*^

JL Wetton*^

AJ Wilkens*

** Non-executive*
*** Executive*
^ Independent
 # Mozambican

INVESTOR RELATIONS

E-mail: *HarmonyIR@harmony.co.za*

Telephone: +27 11 411 2314 or +27 82 759 1775

Website: *www.harmony.co.za*

GROUP COMPANY SECRETARY

Shela Mohatla
E-mail: companysecretariat@harmony.co.za

TRANSFER SECRETARIES

Link Market Services South Africa (Proprietary) Limited
(Registration number 2000/007239/07)
13th Floor, Rennie House, Ameshoff Street, Braamfontein
Johannesburg, South Africa

PO Box 4844, Johannesburg, 2000, South Africa

E-mail: info@linkmarketservices.co.za

Telephone: +27 861 546 572 (South Africa)
Fax: +27 86 674 2450

ADR* DEPOSITARY

Deutsche Bank Trust Company Americas
c/o American Stock Transfer and Trust Company
Operations Centre, 6201 15th Avenue, Brooklyn,
NY11219, United States

E-mail queries: db@astfinancial.com

Toll free (within US): +1-886-249-2593
Int: +1-718-921-8137
Fax: +1-718-921-8334

**ADR: American Depositary Receipts*

SPONSOR

JP Morgan Equities South Africa (Proprietary) Ltd
1 Fricker Road, corner Hurlingham Road, Illovo
Johannesburg, 2196, South Africa
Private Bag X9936, Sandton, 2146, South Africa

Telephone: +27 11 507 0300
Fax: +27 11 507 0503

TRADING SYMBOLS

JSE: HAR
NYSE: HMY
ISIN: 000015228

www.harmony.co.za