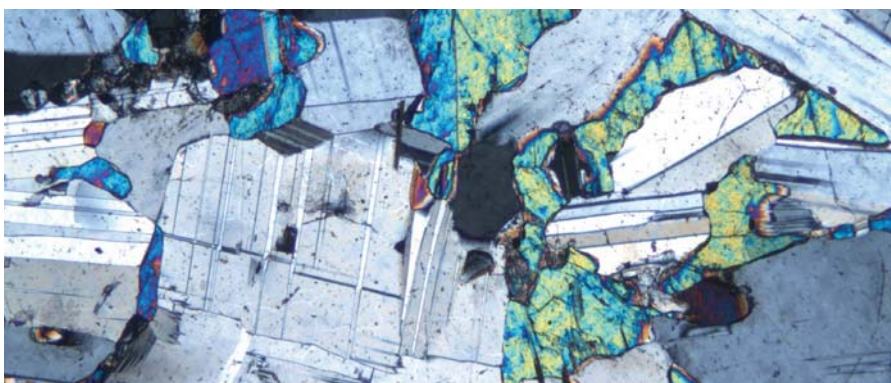




Mineral resource and mineral reserve statement **2015**  
Supplement to the integrated annual report 30 June 2015





**Impala Platinum Holdings Limited (Implats) is one of the world's foremost producers of platinum and associated platinum group metals (PGMs). Implats is structured around five main operations with a total of 24 underground shafts. Our operations are located on the Bushveld Complex in South Africa and the Great Dyke in Zimbabwe, the two most significant PGM-bearing ore bodies in the world.**

Implats has its listing on the JSE Limited (JSE) in South Africa, and a level 1 American Depository Receipt programme in the United States of America. Our headquarters are in Johannesburg and the five main operations are Impala, Zimplats, Marula, Mimosa and Two Rivers. The structure of our operating framework allows for each of our operations to establish and maintain close relationships with their stakeholders while operating within a Group-wide approach to managing the economic, social and environmental aspects of sustainability.



## Welcome to our 2015 mineral resource and mineral reserve report

### Feedback

We welcome your feedback to make sure we are covering the things that matter to you. Go to [www.implats.co.za](http://www.implats.co.za) or email [investor@implats.co.za](mailto:investor@implats.co.za) for the feedback form, or scan the code on the right with your smartphone.



**“The most significant PGM deposits in the world are the Bushveld Complex in South Africa and the Great Dyke in Zimbabwe. These PGM deposits contribute around three-quarters of global platinum output.**



Additional information regarding Implats is provided in the following reports, all of which are available at [www.implats.co.za](http://www.implats.co.za)

### Integrated report



- Strategy, risks, resource allocation, business model and materiality
- Operational information
- Summarised reserves and resources

### Sustainable development report



- Detail on material economic, social and environmental performance
- GRI G4 core compliance
- Internal reporting guidelines in line with the UN Global Compacts
- Independent assurance report

### Annual financial statements



- Audited group and company annual financial statements

### Online



- Direct access to all our reports
- Our website has detailed investor, sustainability and business information

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## Our report



**“The report provides transparent and compliant details relating to the mineral resources and mineral reserves**



### Our vision

Our vision is to be the world’s best platinum-producing company, delivering superior returns to stakeholders relative to our peers.

### Our mission

To safely mine, process, refine, recycle and market our products at the best possible cost ensuring sustainable value creation for all our stakeholders.

### Our values

#### We respect

- all our stakeholders, including:
  - shareholders
  - employees and their representative bodies
  - communities within which we operate
  - regulatory bodies
  - suppliers and customers
  - directors and management
  - all other interested and affected parties
- the principles of the UN Global Compact
- the laws of the countries within which we operate
- the company policies and procedures
- our place and way of work
- open and honest communication
- diversity of all our stakeholders
- risk management, and continuous improvement philosophies

#### We care

- for the health and safety of all our stakeholders
- for the preservation of natural resources
- for the environment in which we operate
- for the socio-economic well-being of the communities within which we operate

#### We strive to deliver

- positive returns to our stakeholders through an operational excellence model
- a safe, productive and conducive working environment
- on our capital projects
- a fair working environment through equitable and competitive human capital practices
- on the development of our employees
- on our commitments to all stakeholders
- quality products that meet or exceed our customers’ expectations

### The report

This report relates to the mineral resource and mineral reserve statement, compiled for Impala Platinum Holdings Limited (Implats) and its subsidiaries. The report provides the status as at 30 June 2015 and an abridged version is included in the Implats integrated annual report for 2015 which is published annually and available at [www.implats.co.za](http://www.implats.co.za).

The report seeks to provide transparent and compliant details relating to the mineral resources and reserves that are considered to be material to stakeholders.

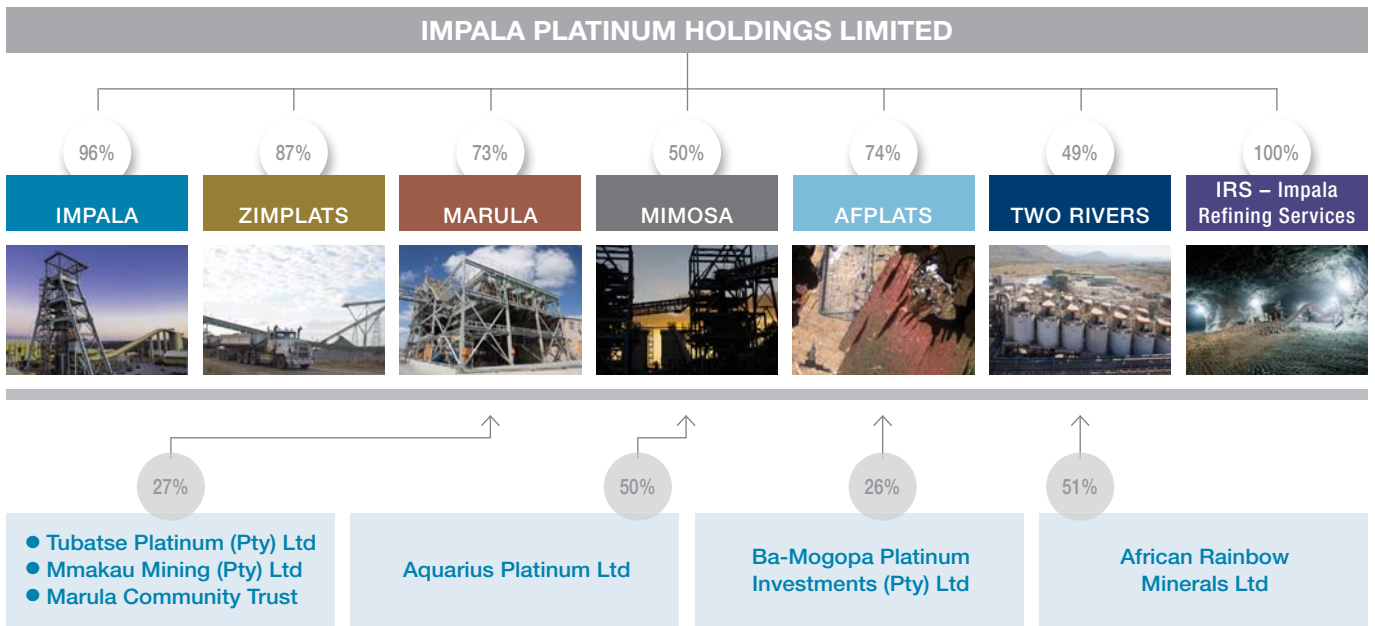
### Forward looking statements

This report contains certain forward looking statements and forecasts which involve risk and uncertainty because they relate to events and depend on circumstances that occur in the future. There are a number of factors that could cause actual results or developments to differ materially from those expressed or implied by these forward looking statements.

### Structure

The Implats structure remained unchanged during the past year with operations at Impala in the Rustenburg area of the North West province, the Marula Mine in the Limpopo province, Zimplats and Mimosa mines operating in Zimbabwe, the Two Rivers Mine near Burgersfort in Limpopo and the Afplats project near Brits in the North West province.

## Group structure



## Implats' mineral resource and mineral reserve key features

The main features relating to Implats' mineral resources as at 30 June 2015 relative to 30 June 2014 are:

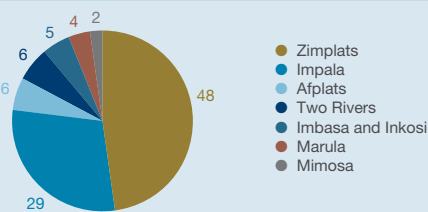
- Estimated total attributable mineral resources decreased by 7% (28Moz 4E) to 367Moz; the total attributable platinum ounces decreased by 8% (16Moz Pt) to 196Moz
- The year-on-year comparative decrease can mainly be ascribed to the transfer of the Tamboti mineral rights to Two Rivers. This resulted in a gain in the Two Rivers attributable mineral resources
- Effectively the 100% ownership of Tamboti converted to 49% attributable at the Two Rivers level
- The attributable platinum mineral resources remain dominated by Zimplats and Impala; the Zimplats mineral resources make up the bulk of these (48%)

The main features relating to Implats' mineral reserves as at 30 June 2015 relative to 30 June 2014 are:

- Total attributable mineral reserves decreased by 8% (4Moz 4E) to 46Moz; the attributable platinum ounces decreased by 7% (2Moz) to 26Moz
- The main contributor to the decrease in mineral reserves is Zimplats due to the exclusion of Portal 5 (1.7 million ounces platinum) and the impact of the revised pillar design
- There are gains in mineral reserves at Two Rivers, Mimosa and Marula due to the inclusion of additional areas
- Some 73% of the total attributable mineral reserves are located at Impala

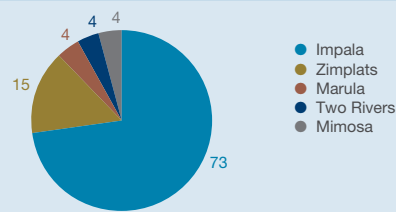
**Attributable mineral resources of 196Moz Pt (%)**

as at 30 June 2015

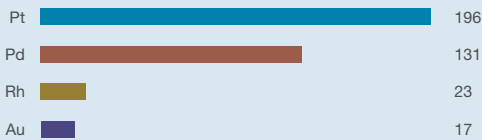


**Attributable mineral reserves of 26.4Moz Pt (%)**

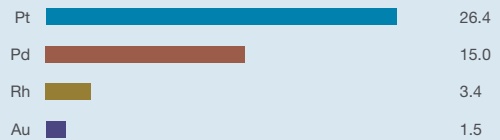
as at 30 June 2015



**Attributable mineral resources (Moz)**



**Attributable mineral reserves (Moz)**





## Implats' mineral resource and mineral reserve key features



**“We believe that metal prices could remain lower for longer”**



### 2015 strategic review

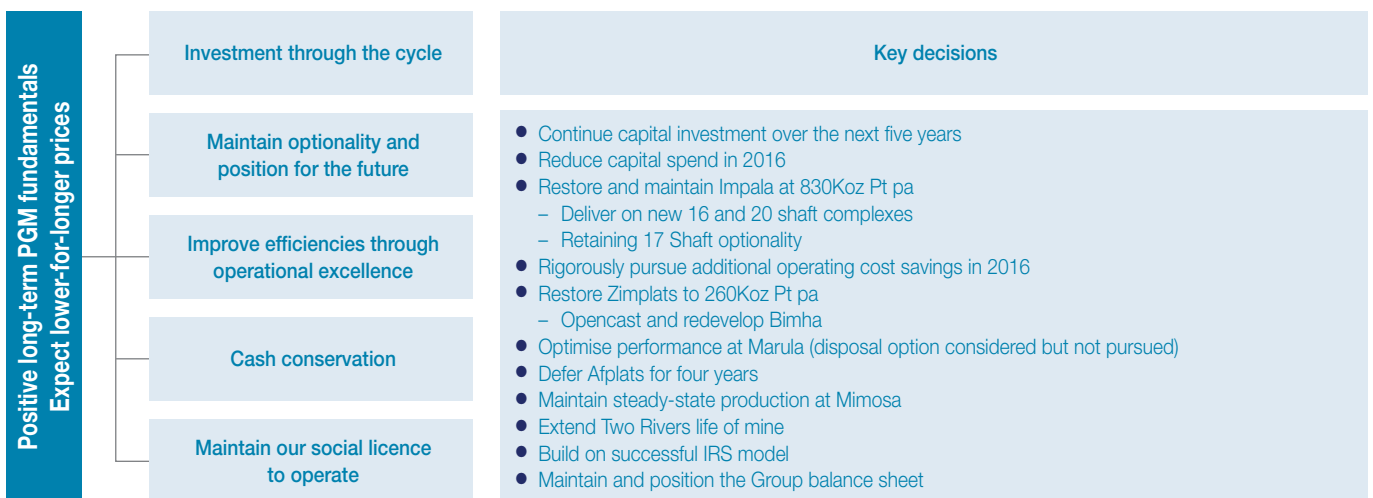
During the past year Implats undertook a strategic review. We continue to be prudent in our strategic assumptions and believe that metal prices could remain lower for longer, but that we should retain flexibility to be in a position to take advantage of any sustainable improvement in demand and PGM prices in the longer term. Within this context, the Group is positioning itself strategically to conserve cash, while at the same time restoring and optimising operational performances and profitability. The Group has implemented stringent capital allocation and cash preservation measures based on a lower-for-longer metal price risk mitigation strategy. In doing so, management has endeavoured to maintain strategic optionality to safeguard the long-term value potential of its assets in an environment where metal prices are expected to recover.

The overarching strategic outcome targets five key focus areas:

- Maintaining prudent investment through the cycle
- Maintaining strategic optionality and positioning the Group for the future
- Improving efficiencies/profitability through operational excellence and safe production
- Conserving cash, especially while metal prices remain depressed
- Maintaining our social licence to operate.

The market conditions continue to dominate the platinum industry climate and Implats will adapt the strategy as the need arises. Post year-end a further review was undertaken in response to the low metal prices, in particular to address cash preservation through cost cutting and capex deferral. This will again be adjusted should the outlook change.

### Strategy to ensure shareholder value



## Integrated mineral resource management

Implats embraces an integrated mineral resources management (MRM) function. To this end, systems, procedures and practices are aligned and are continuously being improved to achieve this objective. MRM includes exploration, geology, geostatistical modelling, mine survey, sampling, mine planning, ore accounting and reconciliation and the MRM information systems. The MRM function is the custodian of the mineral assets and specifically strives to grow these assets in terms of both resources and reserves, and to unlock value through a constant search for optimal extraction plans which yield returns in line with the corporate and business objectives.

The main objective of the MRM function is to support the strategic intent and add value to the organisation, through:

- Ensuring that safe production is the first principle underpinning all mineral reserve estimates
- Appropriate investigation, study and understanding of the orebodies
- Accurate and reconcilable mineral resource and mineral reserve estimates
- Integrated and credible short, medium and long-term plans
- Measured and managed outputs
- Technically appropriate and proven management information systems

Continuous improvement has been embedded in the MRM function. Specific focus is given to standardisation, development, review and improvement of protocols to govern MRM. Implats accordingly remains committed to the following:

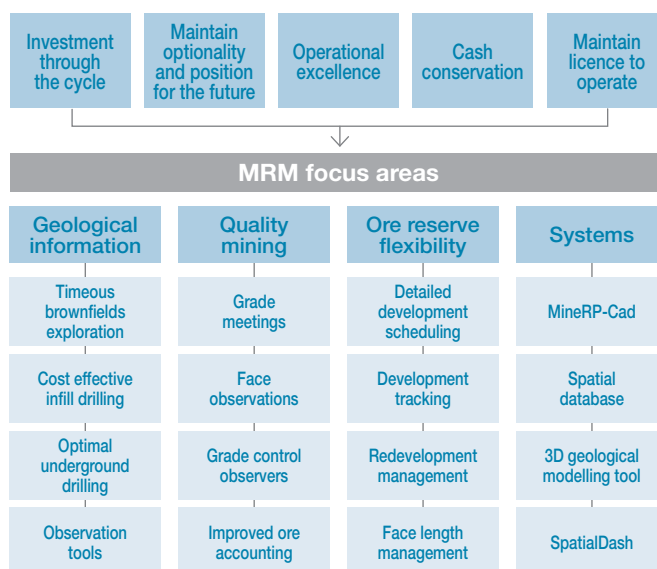
- Continuously improving the management of mineral resources and related processes, while addressing skills development and retention
- Optimal exploitation of current assets, together with growth of the mineral resource base by leveraging and optimising existing Implats properties, exploration and acquisitions, including alliances and equity interests with third parties
- The legislative regime that governs mineral rights ownership
- The transparent, responsible and compliant disclosure of mineral resources and mineral reserves in line with the relevant prescribed codes, SAMREC and JORC, giving due cognisance to materiality and competency

Present focus areas include:

- Improving the MRM information systems in cooperation with third-party vendors
- Improved ore reserve flexibility
- Improvement in the quality of mining

To this end Impala has completed the first year of a four-year project to migrate to a fully geospatial systems environment, namely MineRP Enterprise, in conjunction with our mining technical systems partner MineRP. This geospatial environment allows for integration with multiple systems, including 3D geological modelling and other technical services software. Since all the data will be stored as attributed points, lines and polygons, inside SpatialDB, the core component of MineRP Enterprise, it will be possible to query, review and visualise information spatially, across all levels of the organisation from a single source system. MineRP-CAD, the CAD tool in the enterprise system, has already been deployed to replace older CAD technology.

### Group strategy: positive long-term fundamentals, expect lower-for-longer prices





## Mine planning

The main objectives of the Implats integrated planning cycle have remained as follows:

- To utilise the full available time per year for quality planning
- To allow integration of the different levels of planning
- To ensure the planning levels are done in the correct sequence
- To populate the cycle with appropriate review processes
- To link the planning cycle to business reporting periods
- To provide continuity of plans and cycles
- To place emphasis on risk and value
- To identify departmental inputs and ensure full participation
- To ensure changes in the business environment are continuously incorporated
- To ensure top-down goals flow through to operational planning and vice versa
- To ensure optimisation of plans
- To enhance compliance with standards, consolidation and delivery of results

The new planning cycle is now embedded to give due consideration to the sequence of planning, the duration of the business planning period and the embedding of long-term strategic planning. In particular the approach to commence the planning cycle with the updating of the life-of-mine (LoM) planning process and followed by a detailed five-year development and two-year stoping scheduling phase has been adopted. The main benefits of this approach is conducting the detailed planning phase as late as possible in the cycle to ensure proper alignment with the delivery phase of the plan and also allocating more time to the LoM planning phase.

Implats has defined three levels of LoM planning, these being classified as Levels III, II and I, shown adjacent, which also illustrates a broad alignment with resource and reserve categories. The three levels are linked to increasing levels of confidence and the conversion of mineral resources to mineral reserves.

**LoM Level III** includes “Blue Sky” and scoping studies, and therefore focuses mainly on inferred resources and exploration results. It also includes contiguous areas and opportunities outside existing lease boundaries and ownership. Valuation of these resources can only be done internally, for the purpose of justifying expenditure for the upgrading of the inferred resources.

**LoM Level II** includes planned but as yet unapproved projects, which have a reasonable chance of future board approval.

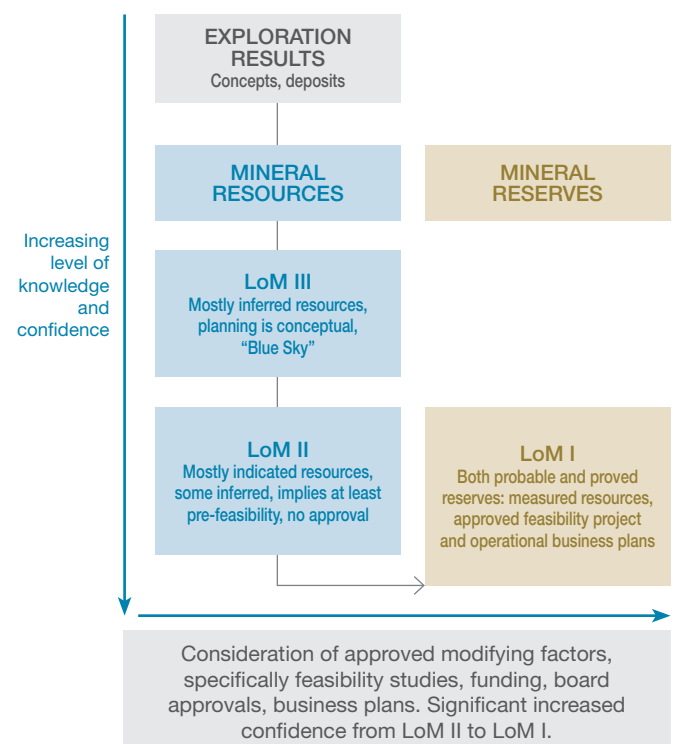
**LoM Level I** includes operational shafts and approved capital projects where a portion of mineral resources is converted to mineral reserves and sufficient confidence exists for the declaration of mineral reserves in a public report.

Estimation of grade block models is facilitated by geostatistical packages such as Isatis™ and Datamine™ and is based on a fit-for-purpose principle. Mine design and scheduling utilise 3D planning tools; the output of which supports the mineral reserve estimates. Grade and tonnage modifying factors are stored in

electronic databases. The planning process involves the conversion of resources to reserves through the allocation of modifying factors to the *in situ* resource through detail design and scheduling. Factors used include densities per rock type and dimensions appropriate to the mining method deployed. In some cases the mineralised channel is narrower than the minimum safe mining width and so additional waste material has to be included in the mining cut. Historical dilution factors are incorporated into the plan taking into account anticipated future conditions and improvements where possible. Dilution factors used include overbreaks, underbreaks and off-reef mining. Cognisance is taken of the practicalities of hard rock mining and the limitations of the tools used. At Impala and Marula this is allocated on a half level basis which allows the varying conditions across the lease area to be recognised and integrated into the LoM plan. Where there is no history, factors from similar operations are used as a guideline. Planning parameters are informed in part by historic and anticipated future constraints, orebody permitting.

At Impala, the mine managers and general managers oversee the compilation and approve their respective shafts’ production profiles. These profiles are further endorsed by the executive: mining and the Group planning manager. In addition, graphical plans depicting the planned layouts, design and sequence of mining are interrogated and approved by the mine manager, mine planner, geologist, surveyor, rock engineer and ventilation officer of each shaft. Minor variations of this approval protocol are used at other Group operations but work is in progress to standardise the procedure across the Group.

### High-level classification of life-of-mine plans



## Compliance

The reporting of mineral resources and mineral reserves for Implats' South African operations is undertaken in accordance with the principles and guidelines of the *South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves* (SAMREC Code). SAMREC was established in 1998 and modelled its code on the *Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (JORC Code). The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE Limited (JSE) in its Listings Requirements later in the same year; this was similarly the basis for the JSE Ongoing Reporting Requirements which were promulgated in 2005. The SAMREC Code has been under review since 2004 and was updated in the 2007 edition and again amended in July 2009; the JSE subsequently incorporated this new version into its Listings and Reporting Requirements. Zimplats, as an Australian Securities Exchange (ASX) listed company, reports its mineral resources and ore reserves in accordance with the 2012 JORC Code. Mimosa Investments Limited, a Mauritius-based company, does not fall under any regulatory reporting code but has adopted the SAMREC Code for its reporting.

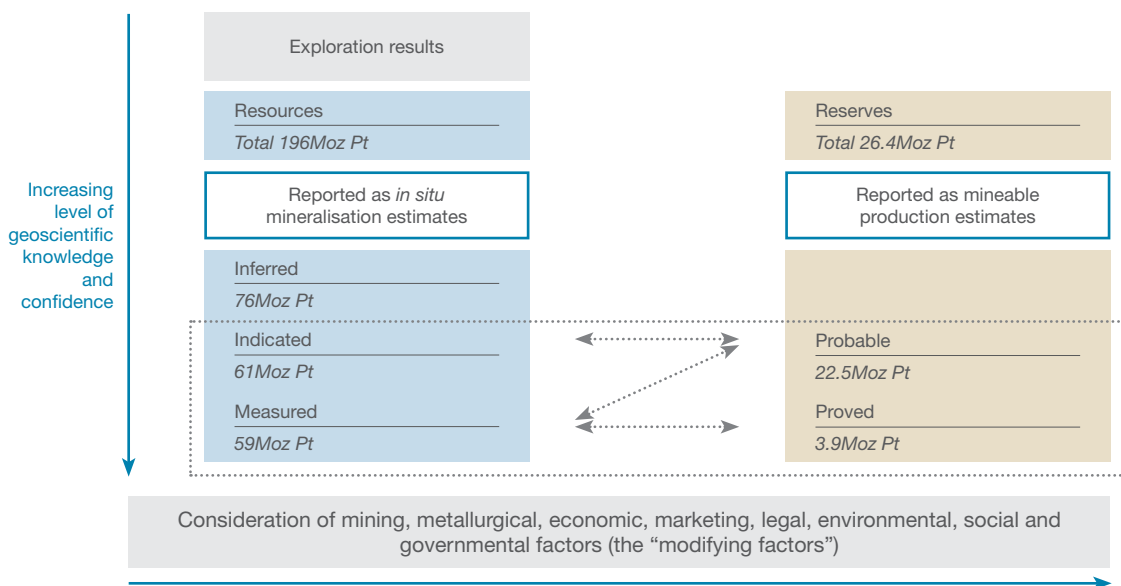
The definitions contained in the SAMREC Code are either identical to, or not materially different from, international definitions. International definitions for mineral resources and the inferred, indicated and measured mineral resource sub-categories, and the definitions for mineral reserves and the probable and proved mineral reserve sub-categories, are the same as those found in the SAMREC and JORC codes. The relationships between mineral resources and mineral reserves are depicted below in the standard SAMREC classification diagram.

The Implats Group's attributable platinum ounces are reflected in the illustration. Various Competent Persons, as defined by the SAMREC and JORC codes, have contributed to the estimation and summary of the mineral resource and mineral reserve figures quoted in this report. As such, these statements reflect the estimates as compiled by teams of professional practitioners from the various operations, shafts and projects. Gerhard Potgieter, Group executive: growth projects, and consulting mining engineer, PrEng, ECSA Registration No 20030236, a full-time employee of Implats, takes full responsibility for the mineral reserve estimates for the Group. The Competent Person has 30 years' relevant mining experience. The Group executive: mineral resource management, Seef Vermaak, PrSciNat SACNASP Registration No 400015/88, a full-time employee of Implats, assumes responsibility for the mineral resource estimates for the Implats Group. He also assumes responsibility for the collation of the combined mineral resource and mineral reserve statement for the Group. The Competent Person has 29 years' experience in the exploitation of PGM-bearing deposits.

The address for ECSA is:  
Engineering Council of South Africa (ECSA), Private Bag X691, Bruma, 2026, Gauteng Province, South Africa.

The address for SACNASP is:  
South African Council for Natural Scientific Professions (SACNASP), Private Bag X540, Silverton, 0127, Gauteng Province, South Africa.

### Relationship between exploration results, mineral resources and mineral reserves showing Implats' attributable resources and reserves as at 30 June 2015



## Compliance

Competent Person's (CP) name	Appointment	Registration
Bennie Cilliers	Lead CP exploration	SACNASP, GSSA
Louise Fouché	Lead CP geostatistics and databases	SACNASP, SAIMM, GSSA
Johannes du Plessis	Lead CP audits, reconciliation	SACNASP, GSSA
Emmanuel Acheampong	Lead CP mine planning	ECSA, SAIMM
Coenie Pretorius	Lead CP survey and ore accounting	PLATO

Unit/Project	CP mineral resources	Registration	CP ore reserves	Registration
Afplats/Imbasa/Inkosi	Jacolene de Klerk	SACNASP	n/a	
Marula	Sifiso Mthethwa	SACNASP	Gerrie le Roux	PLATO
Zimplats	Steven Duma	SACNASP	Caston Muthevhe	ECSA
Impala Operations	David Sharpe	SACNASP	Emmanuel Acheampong	ECSA
Impala Exploration	Bennie Cilliers	SACNASP	n/a	
Two Rivers	Shepherd Kadzviti	SACNASP	Mike Cowell	SACNASP
Mimosa	Dumisayi Mapundu	SACNASP	Dumisayi Mapundu	SACNASP

*Two Rivers, Mimosa and Zimplats CPs are appointed by their respective CEOs.*

In addition to the CPs listed above, the mineral reserve statements are fully supported by an experienced team of general managers, who sign off their respective business plans and take full responsibility for their mineral reserve statements. The general managers are:

Name	Area of responsibility	Years' relevant experience
Bonginkosi Ngqulunga	General manager Impala 1 Shaft	18
André Fryer	General manager Impala 9 and 10 Shafts	16
Riaan Swanepoel	General manager Impala EF, 4 and 11 Shafts	25
Zirk Fourie	General manager Impala 7, 8, 12 and 20 Shafts	28
Schalk Engelbrecht	General manager Impala 6, 7A and 14 Shafts	23
Jacey Kruger	General manager Impala Brownfields and Projects	25
Hans Fourie	General manager Impala 16 and 17 Shafts	27
Terence Cowley	Mining manager Marula Mine	32
Alex Mushonhiwa	General manager Mimosa Mine	22
Simbarashe Goto	General manager Ngezi Mine	17
JJ Joubert	General manager Two Rivers Mine	24

In accordance with the Implats standard a signature page by the two Lead Competent Persons is not included in this report stating the written confirmation that the information disclosed in terms of these paragraphs is compliant with the SAMREC Code and where applicable, the relevant section 12 and Table 1 requirements, and that it may be published in the form and context in which it was intended. In accordance with the Implats standard such signed statements are available from the Implats Company Secretary and is forwarded separately to the JSE when the integrated annual report is submitted.



## Mineral rights status

The Mineral and Petroleum Resources Development Act, No 28 of 2002 (MPRDA), governing mineral legislation in South Africa, came into effect on 1 May 2004. The MPRDA, with its associated broad-based socio-economic empowerment charter for the mining industry and its attendant scorecard, as revised and amended from time to time, has played a significant role in the transformation of the South African mining industry. The Act effectively transferred ownership of privately held mineral rights to the State to enable any third party to apply to the Department of Mineral Resources (DMR) for new-order prospecting rights or mining rights over these previously privately held mineral rights. Implats continues to embrace the principles of transformation as a moral and strategic imperative to reinforce its position as a leading southern African mining company, making the best possible use of available mineral resources.

Regular compliance audits are conducted by the DMR in respect of the Implats Group's mining and prospecting rights and findings are resolved through dedicated action plans in cooperation with the Regulator. In March 2015 the DMR commenced with a Mining Charter review by all holders of mining rights. The review relates to Mining Charter data for calendar years 2012, 2013 and 2014, which data has been submitted to DMR by the relevant Implats Group entities. It is not known when the review process will be finalised. According to our submissions all three South African mining operations within the Implats Group comply or exceed the 26% BEE ownership requirement.

The DMR's online application and reporting system, SAMRAD, continues to face system functionality challenges. However, DMR accepts manual applications where SAMRAD fails to accept online applications due to system failures. To mitigate the risk of third-party applications being accepted by the DMR regional offices, Implats continues to monitor the various regional DMR notice boards for possible acceptance of third-party applications that are in conflict with Implats' rights or pending applications. If conflicting applications are identified, Implats lodges the required appeals in terms of the MPRDA against these applications to prevent third-party conflicting rights being granted.

Continued delays are still being experienced with the approval and execution of prospecting right renewal applications which have been lodged by entities within the Implats Group over

the last few years. All of the renewals have been recommended for approval. During the 2015 financial year, one of Inkosi Platinum (Pty) Ltd's (portions of Hartbeestpoort B 410 JQ) prospecting rights was renewed on 12 February 2015. Notwithstanding the delays in the finalisation of prospecting right renewal applications, exploration activities continue as the renewal applications were submitted within the required legislative timeframe. The processing of a new prospecting right application in the Mpumalanga province that was accepted by DMR during 2012 is still pending. Also of note is that closure applications of prospecting rights that have been submitted to DMR over the last few years are also not being processed to finalisation by the DMR. During June 2013 Implats submitted several section 11 transfer and section 102 extension of existing mining right applications, relating to existing prospecting rights adjacent to the Impala Rustenburg operation, the Afplats Leeuwkop operation and the Two Rivers operation. Furthermore, Marula also submitted a section 102 application to include the mining of the UG2 Reef into the existing Marula converted mining right in respect of a small part of Driekop, which is currently limited to the mining of the Merensky Reef only. The said section 11 and section 102 applications relating to the Two Rivers operation and to the Marula operation have respectively been executed on 6 February 2015 and 16 July 2014. However, the section 11 transfer and section 102 applications in relation to the Impala Rustenburg operation and the Afplats Leeuwkop operation are still pending.

Following discussions with DMR, Afplats is currently preparing a section 102 amendment application of its mine work programme, as well as a section 52 notice in terms of the MPRDA in respect of the deferment of the Afplats Leeuwkop mining project for four years.

In 2011, Impala reached agreement with the Royal Bafokeng Platinum (RBPlat) to access certain of its mining areas at Bafokeng Rasimone Platinum Mine (BRPM) from 6, 8 and 20 shafts. This is essentially a royalty agreement which will provide mining flexibility to these shafts. The mineral resources and reserves involved are not reflected in this report as the ownership has not been transferred.

Fully permitted mining tenements are not specified by SAMREC as a prerequisite for the conversion of mineral resources to mineral reserves. However, Implats is cognisant that a reasonable expectation must exist that such mining rights will be obtained. Implats remains committed to South African legislative requirements to convert applicable prospecting rights to mining rights.

## Mineral rights status

There are still certain sections of the MPRDA Amendment Act, No 49 of 2008 (that was enacted into law on 7 June 2013) that has not come into effect due to critical concerns raised by the mining industry in respect thereof. One concern was the amendment of section 102 that did not allow for the extension of existing mining or prospecting right areas. However, as this amendment did not come into effect, the mentioned section 102 applications may continue to be processed. These sections are being revisited by the MPRDA Amendment Act, 2014 (formerly the MPRDA Amendment Bill (B15-2013)). However, media reports confirmed early in 2015, that President Zuma has sent the proposed MPRDA Amendment Act, 2014 back to the National Assembly to be reworked as the President is concerned that some of the new provisions (ie “beneficiation”, “consent of land holders to access land”) “would not pass constitutional muster” in its current form. Mineral resources minister, Ngoako Ramatlhodi, is also advocating a separate legal framework for oil and gas companies (currently regulated in the MPRDA) to assist with new investment into oil and gas ventures.

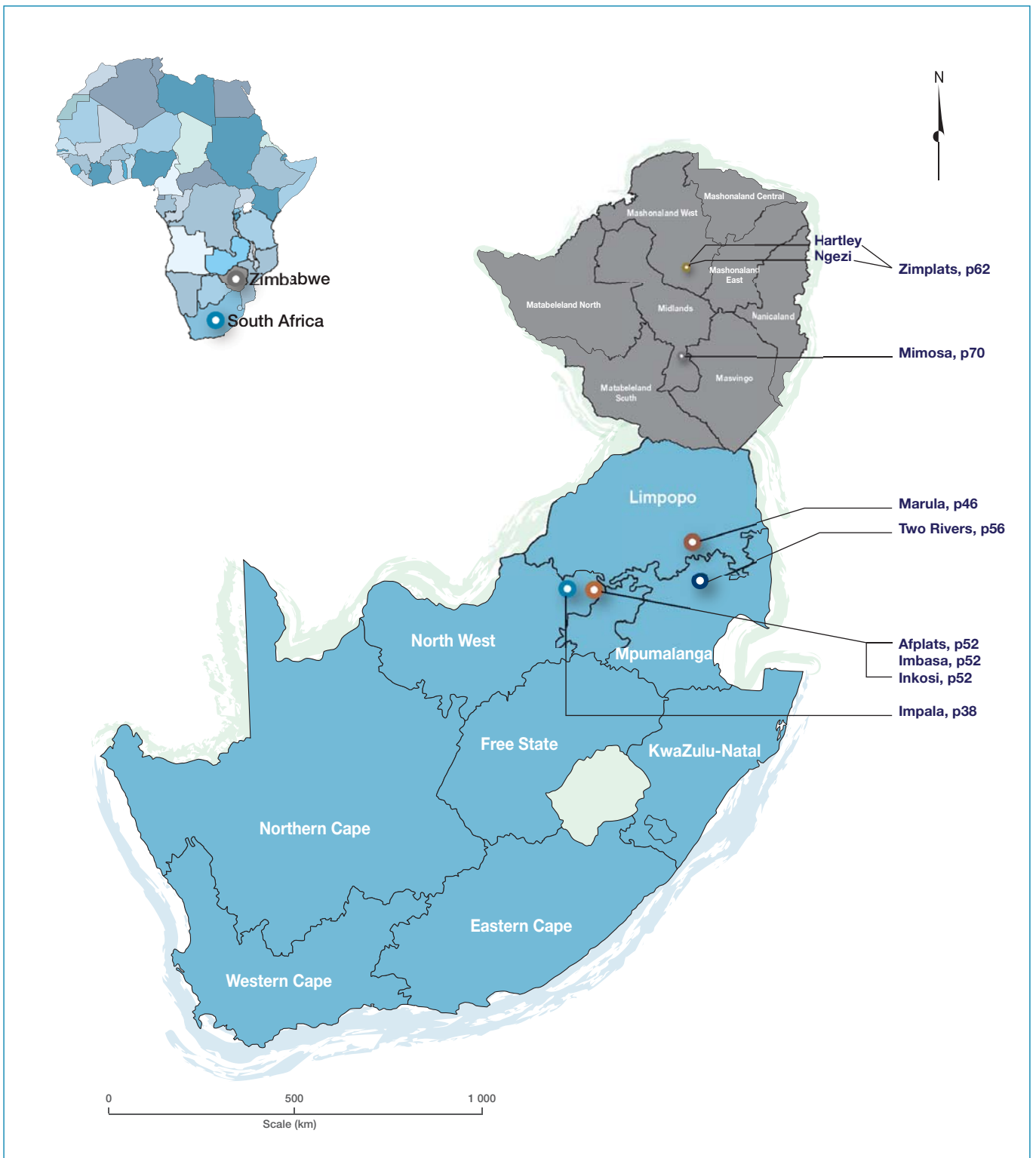
In Zimbabwe, the previously submitted indigenisation plans for both Zimplats and Mimosa were rejected by the government. Implats continues to engage with the Government of Zimbabwe on an indigenisation implementation plan. As at 30 June 2015 no indigenisation transaction has been concluded and the mineral resources and ore reserves continue to be reported as per the existing ownership. During 2013, the Zimbabwean Government gazetted its intention to compulsorily acquire a large tract of ground in the northern portion of the Zimplats mineral lease containing 54.6Moz Pt; Zimplats subsequently submitted an objection to this notice and lodged a claim for compensation under Zimbabwean law. The map in the Zimplats section shows the ground previously gazetted for acquisition.

South Africa	Mining right (ha)	Prospecting right (ha)	Implats' interest (%)
Impala	29 773		96
Impala RBR JV*		3 789	49
Afplats	4 602	1 065	74
Imbasa		1 673	60
Inkosi		2 584	49
Marula	5 494	223	73
Two Rivers	10 675		49

\* Prospecting joint venture with Royal Bafokeng Resources.

Zimbabwe	Mining leases (ha)	Implats' interest (%)
Zimplats	48 535	87
Mimosa	6 591	50

## Regional geological settings





## Regional geological settings

Implats exploits platinumiferous horizons within the Bushveld Complex in South Africa and the Great Dyke in Zimbabwe. These two layered intrusions are unique in terms of size and geological continuity. Mining mostly takes place as underground operations focusing on relatively narrow mineralised horizons with specific mining methods adapted to suit the local geology and morphology of the mineralised horizons.

### The Bushveld Complex

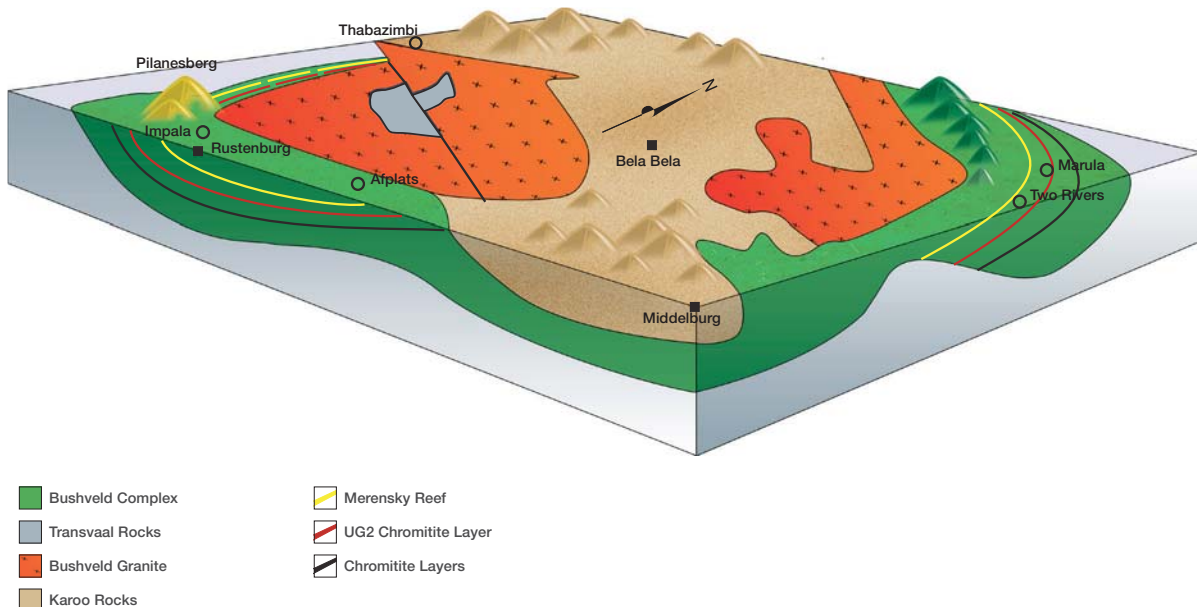
The Bushveld Complex is an extremely large (66 000km<sup>2</sup>), two billion year-old layered igneous intrusion occurring in the northern part of South Africa. Rock types range in composition from ultramafic to felsic. The complex is not only unique in size, but also in the range and economic significance of its contained mineral wealth. In addition to the platinum group metals (PGMs) and associated base metals, vast quantities of chromium, vanadium and dimension stone are also produced.

The schematic diagram below shows the extent of the Bushveld Complex. The layered sequence, the Rustenburg

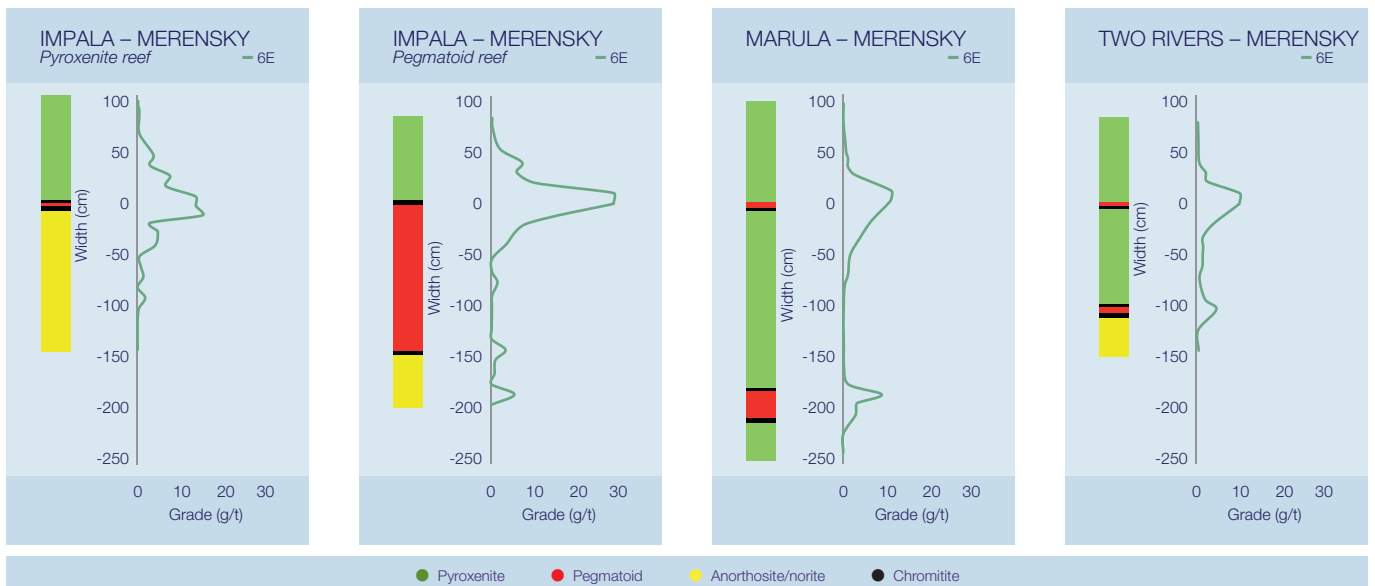
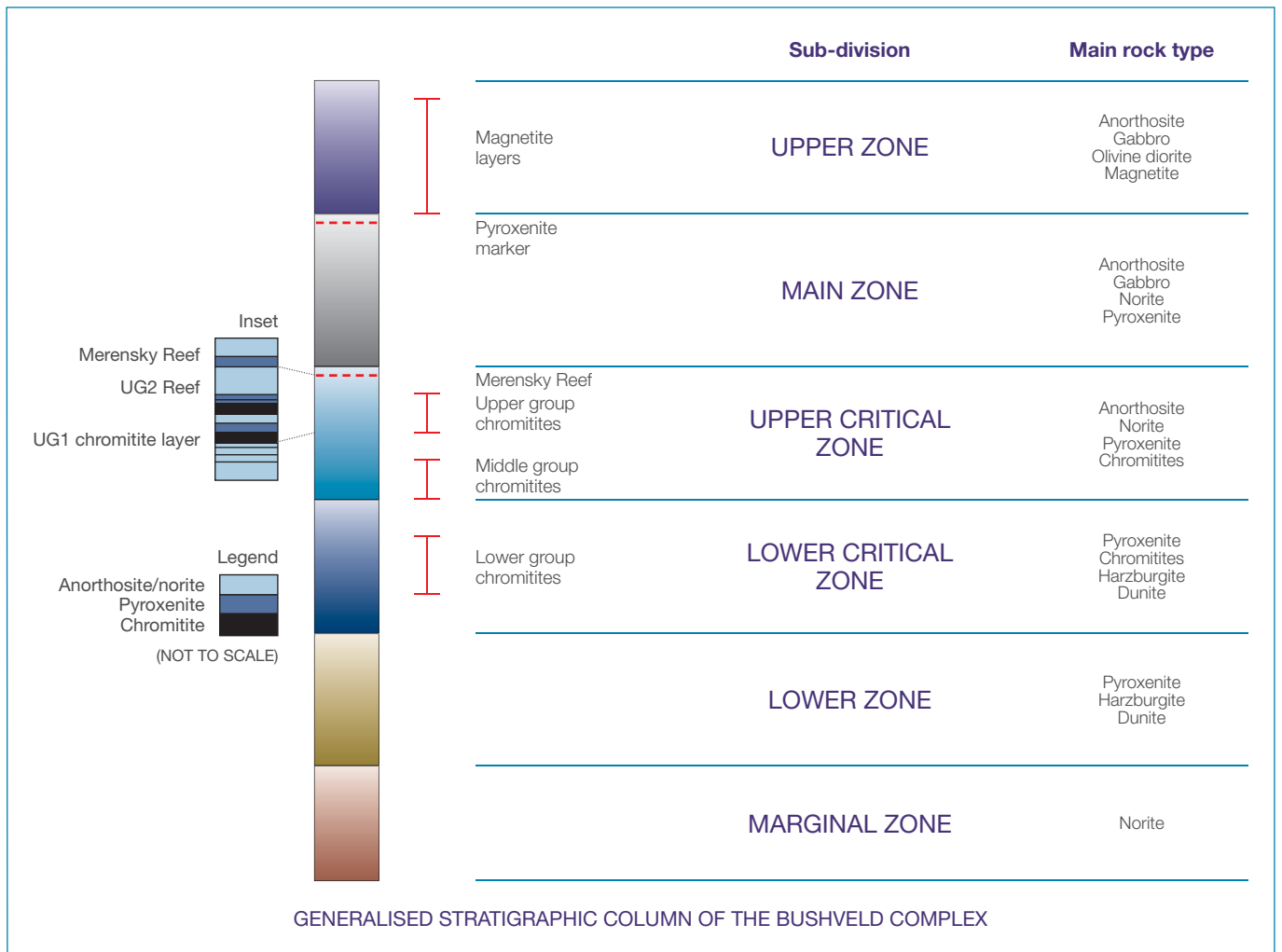
Layered Suite, comprises five major subdivisions, ie these are, from the bottom upwards, the Marginal, Lower, Critical, Main and Upper zones. Two horizons within the Critical Zone, namely the Merensky Reef and the Upper Group 2 (UG2) Reef, host economically exploitable quantities of PGMs. These two horizons, along with other layers which can be traced for hundreds of kilometres around the complex, are the focus of Implats' operations. The PGMs – platinum, palladium, rhodium, ruthenium and iridium – as well as the associated gold, copper, nickel, cobalt, chromium and other minor metals and compounds, are mined concurrently, but recovered by different processes.

Chromitite layers present below the UG2 contain little to no PGM mineralisation and are mined by other operators for their chromium content only. Implats' operations on the Bushveld Complex comprise Impala Mine north of Rustenburg, Marula Mine north-west of Burgersfort and the Two Rivers Mine, a joint venture between Implats and African Rainbow Minerals Limited (ARM) situated south-west of Steelpoort.

The Bushveld Complex (simplified)



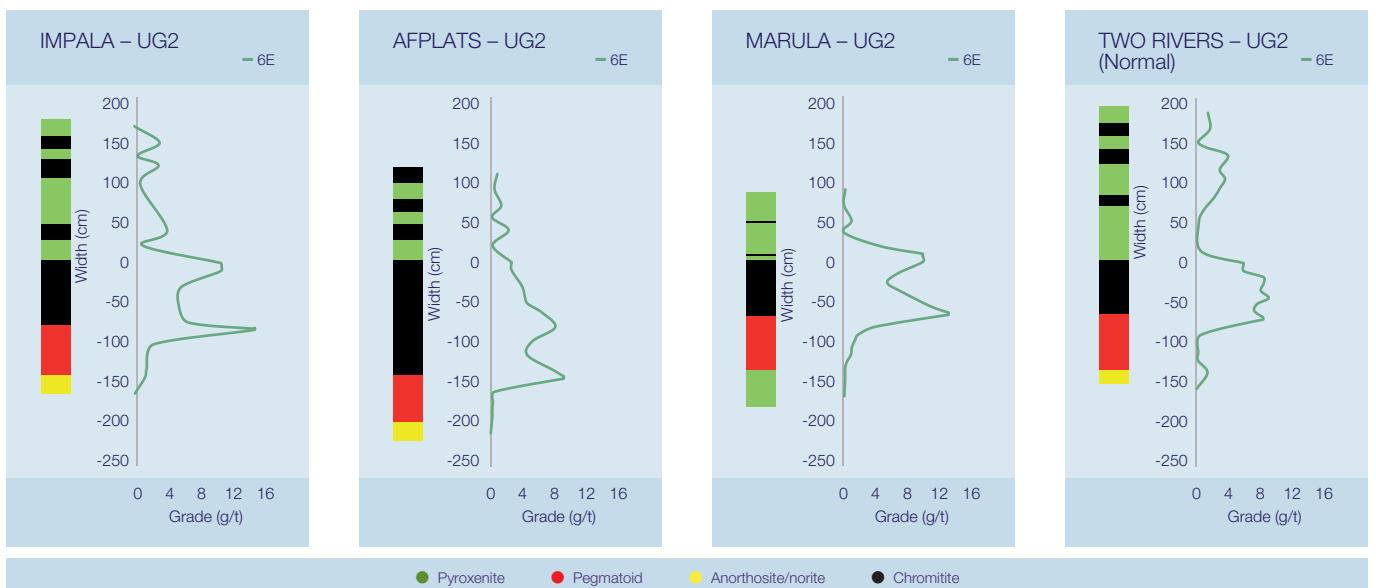
# Regional geological settings



## Regional geological settings

A detailed geological description of the various reef types is provided in the relevant operational sections. Examples of different Merensky Reef vertical grade profiles are shown on the previous page. It is clear that the grade distribution varies materially from area to area.

The UG2 Reef morphology and associated vertical grade distribution also differs significantly between regions (see below), specifically in terms of the width of the main platinum bearing chromitite layer and in the number of layers. In general the grade increases if the chromitite layer width becomes thinner.





## Regional geological settings

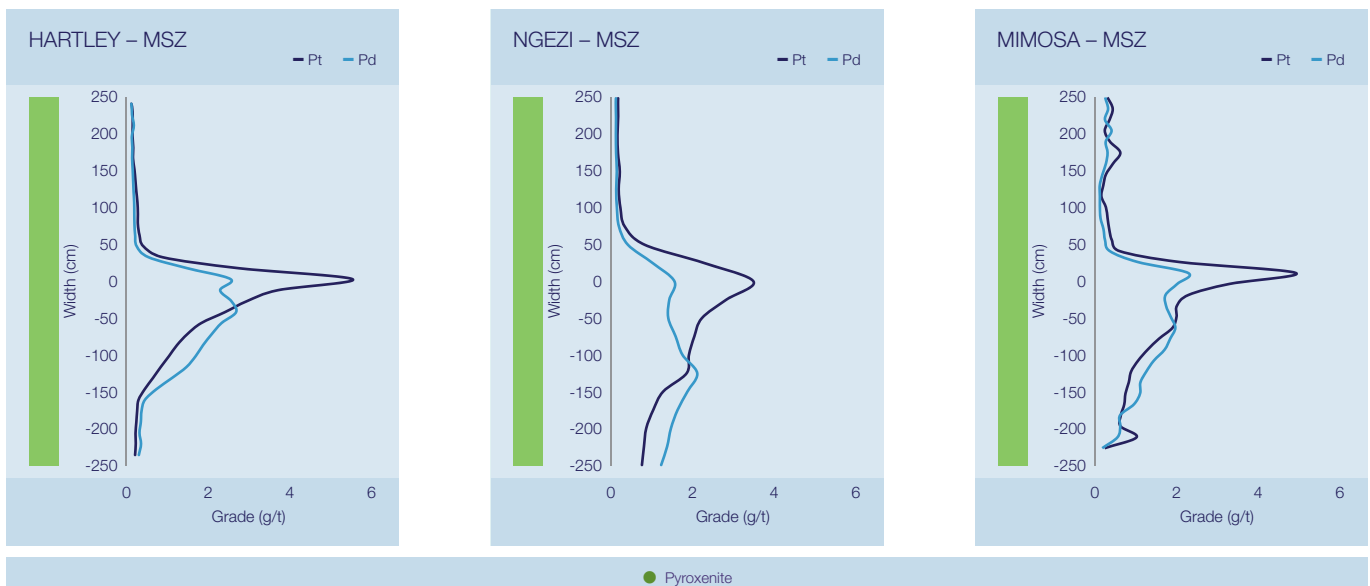
### The Great Dyke

The Great Dyke is a 2.5 billion year-old layered mafic-ultramafic body intruded into Archaean granites and greenstone belts. It is highly elongated, slightly sinuous, 550km long, north-northeast trending with a maximum width of 12km and bisects Zimbabwe in a north-northeasterly trend and is divided vertically into a lower ultramafic sequence, comprising cyclic repetitions of pyroxenite, harzburgite, dunite and chromitite, and an upper mafic sequence consisting mainly of norite, gabbro and olivine gabbro. A diagrammatic section is shown opposite. It is U-shaped in section with layers dipping and flattening towards the axis of the intrusion. Much of the mafic sequence has been removed by erosion and at the present plane of erosion the Dyke is exposed as a series of narrow, contiguous layered complexes or chambers. These are, from north to south, Musengezi, Hartley (comprising the Darwendele and Sebakwe sub-chambers) and a southern chamber comprising the Selukwe and Wedza sub-chambers.

The Main Sulphide Zone (MSZ), host to economically exploitable PGMs and associated base metal mineralisation, is located 10m to 50m below the ultramafic/mafic contact in the P1 pyroxenite. The PGMs, along with gold, copper and nickel, occur in the MSZ. A detailed description of the MSZ and the

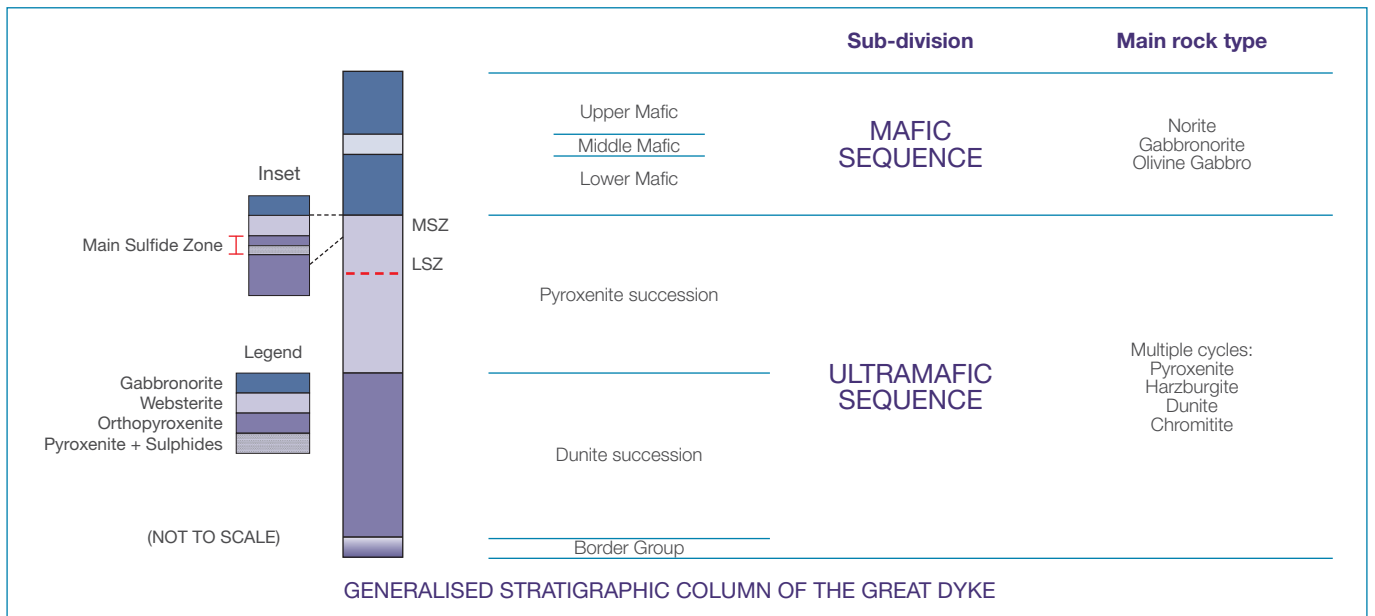
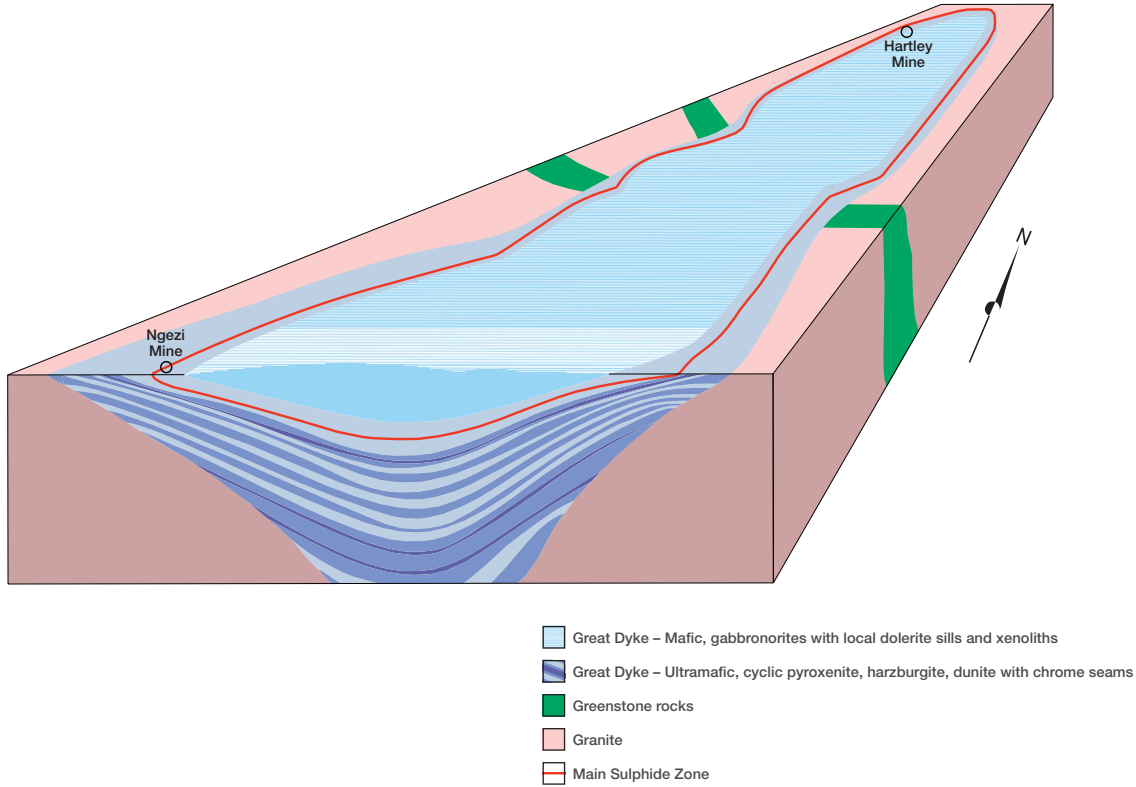
value distributions is provided in the relevant operations sections. The examples below comparing different areas indicate that the grade profiles vary between areas and that the platinum and palladium peaks are somewhat offset. Typically, the MSZ consists of a 2m to 10m-thick zone containing 2% to 8% of iron-nickel-copper sulphides disseminated in pyroxenite. The base of this nickel-copper-rich layer is straddled by a 1m to 5m-thick zone of elevated precious metals (Pt, Pd, Rh and Au). The base metal zone contains up to 5% sulphides, while the sulphide content of the PGM zone is less than 0.5%. This change in sulphide content is related to the metal distribution in a consistent manner and is used as a mining marker. It can normally be located visually in borehole core and with careful observation it can also be located underground, therefore careful monitoring supported by channel sampling is required to guide mining.

Chromitite layers present below the MSZ contain little to no PGM mineralisation and are mined by other operators for their chromium content only. Implats' operations on the Great Dyke comprise Zimplats' Ngezi Mine south-west of Harare and the Mimosa Mine, a joint venture between Implats and Aquarius Platinum Limited (Aquarius) situated east of Bulawayo.



## Regional geological settings

### The Great Dyke (simplified)



## Exploration review

Given the Group's present constrained economic situation, exploration focus is being limited to current operations and one continuing offshore project where positive results warranted follow-up.

### Bushveld Complex in South Africa

Exploration on and around the Impala mining area focused on infill drilling at 20 Shaft and at least one borehole was drilled on each of the RBR JV prospecting areas, comprising portions of the farms Doornspruit and Roodekraalspruit, and the farms Diepkuil and Klipgatkop. Drilling in support of ongoing mining operations was conducted at 11C Shaft, 14 Decline Shaft and 16 Shaft. Elsewhere limited drilling was conducted at Afplats on the Kareepoort/Wolvekraal extension area. At the Tamboti Project two boreholes were drilled on Portions 4 and 5 of Kalkfontein and two boreholes on Tweefontein in conjunction with Two Rivers and in fulfilment of prospecting right obligations.

### Great Dyke in Zimbabwe

At Implats exploration drilling at the proposed Portal 5 boxcut and decline position was completed during the 2015 financial year and the focus on the interpretation of geotechnical and geological data around Portal 5, Bimha and Mupfuti Mine footprint continued throughout the year. The extent and influence of the Mutambara shear and Manzanyma fault were the prime objective of the 3D structural mapping and logging exercises that were undertaken following the failure of mine pillars at Bimha Mine. Regional structures were mapped in greater detail using various methods, including interpretation of existing aeromagnetic surveys and additional wireline down-hole geophysical applications were employed. Improved understanding of the ground has been achieved to date and it is anticipated that further studies will be conducted in the coming year in order to improve the prediction of reef and ground conditions ahead of mining.

The assay results for surface holes drilled during the Portal 7 – 10 drilling campaign of 2012 were received and incorporated into new block models and this resulted in the upgrading of some portions of the mineral resource from an "inferred" category to the "indicated" category.

At Mimosa exploration work involved the geological studies based on the drilling that was carried out during the previous year on the western limb of the South Hill ore body to investigate perceived low grades in the area as well as drilling for fault investigation on the northern section of the mine close to the ore body limit. Similarly the results of the earlier exploration drilling at the Far South Hill ore body were used to re-assess the mineral resource estimates.

### Offshore projects

Implats' main geographic focus offshore was Canada where it is exploring PGM mineralisation in the Sunday Lake intrusion 25 kilometres north of Thunder Bay, Ontario. The programme, a joint venture owned 75% by Implats and 25% by Transition Metals Corp., was initiated last year and discovered PGM mineralisation with high Pt:Pd ratios, typically >1:1. The Sunday Lake PGM-Cu-Ni property covers a 3.5km diameter circular reversely-polarised magnetic anomaly associated with a large buried Proterozoic-aged mafic-ultramafic intrusion related to the Midcontinental Rift of North America, a feature known to host several significant nickel-copper-PGM deposits.

Exploration commencing last year culminated in exploration drilling that intersected significant PGM mineralisation in the northern margin of the intrusion and in dykes extending to the north. Results reported last year included 20.2 metres grading 3.22 g/t combined PGMs, a 15 metre interval containing 2.84g/t PGMs and a 5.0 metre interval averaging 5.0g/t PGMs. A small additional drill programme in the latest year confirmed the presence of an extensive PGM mineralised horizon within the northern part of the intrusion. Two holes encountered 10.9m of 2.3g/t PGMs including 3.29g/t PGMs over 4.9m and 17.8m of 1.95g/t PGMs including 3.30g/t PGMs over 7.0m. The third hole failed to intersect the target horizon before it exited the intrusion. To date, only the northern portion of the intrusive complex has been tested by drilling. A more extensive drill programme to explore the untested southern part of the intrusion is envisaged for the 2016 financial year.

Elsewhere Implats continues to monitor exploration developments worldwide and review numerous exploration and potential mining opportunities.





## Auditing and risk

Implats is committed to independent third-party reviews of mineral resource and mineral reserve estimates. Such reviews not only provide assurance but also assist with the principle of continuous improvement and are undertaken on a two-year cycle. The next Group-wide review is due in 2017. The following work was undertaken during the 2015 financial year:

An independent mineral resource management process audit was undertaken at Impala, Afplats and Marula by The Mineral Corporation. In addition a detailed technical review was completed for Marula during 2015 by The Mineral Corporation. The outcome of the audits showed compliance to the Implats code of practice (COP). Minor inconsistencies were noted but these were not material. The independent review by The Mineral Corporation at Marula concluded that they did not identify any fatal flaws in geological data collection and processing as well as mineral resources estimation. Likewise, no fatal flaws have been identified in the approaches and processes adopted for the conversion of mineral resources to mineral reserves and in the modifying factors utilised for the conversion.

A material change in the ore reserves at Bimha occurred as a result of the low angle shearing reported in the previous period. A completely new pillar design resulted in a lower extraction rate. The updated mineral resource and ore reserve estimates were compiled and signed-off by the Competent Persons from Zimplats and independently reviewed by The Mineral Corporation. They completed an independent audit of the mineral resource and ore reserve estimates in December 2014 and concluded that there were no material issues identified with respect to the mineral resources or ore reserve estimates and assisted with the compilation of a JORC compliant Table 1 report.

At Mimosa SRK conducted an independent audit of the mineral resource estimates. They concluded that the estimates derived by Mimosa are representative of the orebody. SRK did not identify any material issues.

The Group's reported mineral reserves represent its estimate of quantities of PGMs that have the ability, and its reported mineral resources represent its estimate of quantities of PGMs that have the potential, to be economically mined and refined under anticipated geological and economic conditions. There are numerous uncertainties inherent in estimating quantities of mineral resources and mineral reserves and in projecting potential future rates of mineral production, including many factors beyond the Group's control. The accuracy of any mineral resources and mineral reserves estimate is a function of a number of factors, including the quality of the methodologies employed, the quality and quantity of available data and geological interpretation and judgement, and is also dependent on economic conditions and market prices being generally in line with estimates.

Furthermore, estimates of different geologists and mining engineers may vary, and results of the Group's mining and

production subsequent to the date of an estimate may lead to revision of estimates due to, for example, fluctuations in the market price of ores and metals, reduced recovery rates or increased production costs due to inflation or other factors which may render mineral resources and mineral reserves containing lower grades of mineralisation uneconomic to exploit and may ultimately result in a restatement of mineral resources and/or mineral reserves and may adversely impact future cash flows. Further, mineral estimates are based on limited sampling and, consequently, are uncertain as the samples may not be representative of the entire ore body and mineral resource. As a better understanding of the ore body is obtained, the estimates may change significantly. In addition, the reserves the Group ultimately exploits may not conform to geological, metallurgical or other expectations and the volume and grade of ore recovered may be below the estimated levels. Mineral resources and mineral reserves data is not indicative of future production. To mitigate this risk, the Group appoints independent third parties to review the Group mineral resources and reserves at least on a two-year cycle. Similarly all mining project feasibility studies are subject to independent reviews prior to applying for capital approval by the board.

Substantial capital expenditure is required to identify and delineate mineral resources and mineral reserves through geological mapping and drilling, to identify geological features that may prevent or restrict the extraction of ore, to determine the metallurgical processes to extract the metals from the ore and, in the case of new properties, to construct mining and processing facilities.

There can be no assurance that the Group will be able to identify additional mineral resources and mineral reserves or continue to extend the mine life of its existing operations. Without such additional sources, any increase in the level of annual production would therefore shorten the life of the Group's existing operations. Any failure by the Group to identify, delineate and realise mineral resources and mineral reserves in the future could have a material adverse effect on the Group's business, financial condition and results of operations.

The mineral resources department subscribes to a formal risk management system and endeavours to systematically reduce all risks relevant to the mineral resources and reserves. Presently no area of risk is considered significant post the current controls. It is recognised by Implats that mineral resource and mineral reserve estimations are based on projections which may vary as new information becomes available or specifically if assumptions, modifying factors and market conditions change materially. This approach is consistent with Group definitions of risk as per ISO 31000:2009, "The effect of uncertainty on objectives". The assumptions, modifying factors and market conditions therefore represent areas of potential risk. In addition, security of mineral right tenure or corporate activity could have a material impact on the future mineral asset inventory.

## Relevant assessment and reporting criteria

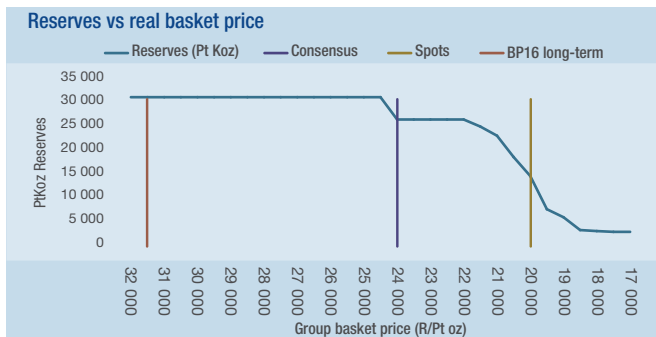
The following key assumptions and parameters, unless otherwise stated, were used in the compilation of the estimates in this declaration:

- Implats developed a Group-wide protocol for the estimation, classification and reporting of mineral resources and mineral reserves in 2010 to enhance standardisation and to facilitate consistency in auditing. This protocol is updated annually with the aim to improve and specifically guide the classification of mineral resources and to ensure compliance with the SAMREC Code
- Implats introduced a depth cut-off in 2010 whereby mineralisation below a certain depth is excluded from the mineral resource estimate. This depth cut-off is applicable to the Bushveld Complex setting and is reviewed annually considering a range of assumptions, specifically the virgin rock temperature (VRT), cooling requirements, available technology, support design and other cost, prices and mining depth limits presently in the platinum industry. It is recognised that while the actual depth cut-off could vary from area to area and over time as conditions vary. The depth cut-off of 2 350m was applied from the 2013 Implats mineral resource estimates and equated approximately to a VRT of 73° C. A depth cut-off of 2 000m below surface was introduced in 2014, additional to the depth cut-off areas various mineral resource blocks are considered on a case-by-case basis and this has resulted in areas where the eventual economic extraction is in doubt. These mineral resources will be reported as exploration results and are excluded from the summation of total mineral resources per area and the attributable mineral resources
- Mineral resource tonnage and grades are estimated *in situ*. The mineral resources for the Merensky Reef are estimated at a minimum mining width, and may therefore include mineralisation below the selected cut-off grade. Mineral resource estimates for the UG2 Reef reflect the main UG2 chromitite layer widths only and do not include any dilution. Implats prefers to estimate the UG2 chromitite layer separately from the low-grade or barren hangingwall and footwall units as this approach supports improved grade control and ore accounting practices. This practice to report the UG2 chromitite layer as the mineral resource estimate and disclosing the actual estimated layer width is most transparent and compliant with the SAMREC Code
- Note that the main UG2 chromitite layer widths in the case of Impala and Marula are narrower than a practical minimum mining width. For further clarity a comparative summary is listed in these sections where the standard estimates are compared with estimates that include dilution up to a minimum mining width
- Mineral resource estimates for the Main Sulphide Zone are based on optimal mining widths. Such mining widths are reviewed from time to time given varying economic and operational considerations
- Mineral resource estimates are reported inclusive of mineral reserves, unless otherwise stated
- Mineral resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining, except where these pillars will never be extracted, such as legal, boundary and shaft pillars
- Mineral reserve estimates include allowances for mining dilution and are reported as tonnage and grade delivered to the mill
- Rounding-off of figures in the accompanying summary estimates may result in minor computational discrepancies. Where this occurs it is not deemed significant
- It is important to note that the mineral resource statements in principle remain imprecise estimates and cannot be referred to as calculations. All inferred mineral resources should be read as “approximations”
- Exploration samples are mainly assayed for all PGEs and Au, using the nickel sulphide fire assay collection method and determining the elements with an inductively coupled plasma mass spectrometer (ICP-MS). Base metal content is determined by an atomic absorption (AA) spectrometer using partial digestion in order to state metal in sulphide that is amenable to recovery by flotation processes. All these analyses are undertaken by Intertek Genalysis in Perth
- Underground samples are mainly assayed for Pt, Pd, Rh and Au using the lead collection method by the in-house laboratories at the respective mines. A partial digestion at the in-house laboratories is used to determine the base metal content of samples using AA
- All references to tonnage are to the metric unit
- All references to ounces (oz) are troy with the factor used being 31.10348 metric grams per ounce
- The mineral resources and mineral reserves reported for the individual operations and projects are reflected as the total estimate (100%). The corresponding estimates relating to attributable mineral resources and mineral reserves are only given as combined summary tabulations
- Mineral reserves are that portion of the mineral resource which technical and economic studies have demonstrated can justify extraction at the time of disclosure. Historically, Implats has only converted mineral resources to mineral reserves on completion of a full feasibility study for a project and LoM I for an operating mine (as per SAMREC). The exception to this in the past has been at Zimplats where the basis of a pre-feasibility study was applied, as permitted by the JORC Code 2012. This practice is in line with the SAMREC 2009 clarification that only a pre-feasibility study is required for such conversions. The conversion of mineral resources to ore reserves for Zimplats has now been aligned to the Implats standard
- No inferred mineral resources have been converted into mineral reserves
- There are only limited changes in the estimation principles and reporting style as at 30 June 2015 relative to the previous report. The key change is:
  - The mineral resources previously reported as “mineral resources under review” and “areas excluded from mineral resources” will now be reported separately from the individual operations where applicable
  - additional details on nickel and copper are disclosed in the tables
  - a summary section on chromium is included
- The term ore reserve is interchangeable with the term mineral reserve
- Implats uses a discounted cash flow model that embodies economic, financial and production estimates in the valuation of mineral assets. Forecasts of key inputs are:
  - Relative rates of inflation in South Africa and the United States
  - Capital expenditure
  - Operating expenditure
  - Production profile
  - Rand/dollar exchange rate
  - Metal recoveries
  - Metal prices
- The outputs are net present value, the internal rate of return, annual free cash flow, project payback period and funding requirements. Metal price and exchange rate forecasts are regularly updated by the marketing department of Implats.

## Relevant assessment and reporting criteria

As at 30 June 2015, a **real long-term forecast** for revenue per platinum ounce sold of R31 246 was used. Specific **real long-term forecasts** include:

- Platinum US\$1 568/oz
  - Palladium US\$1 066/oz
  - Rhodium US\$1 540/oz
  - Ruthenium US\$59/oz
  - Iridium US\$571/oz
  - Gold US\$1 237/oz
  - Nickel US\$19 851/t
  - Copper US\$6 940/t
  - Exchange rate R11.30/US\$
- The spot basket price calculated for Implats as at 30 June 2015 was R19 981 and the equivalent real long-term consensus basket price is R23 889 per ounce
  - Rigorous profitability tests are conducted to test the viability of the mineral reserves, references to this are listed in the sections per operation and highlight the spot price scenarios. A summary graph showing the price sensitivity of the total Group mineral reserves is depicted below.



A mineral resources by definition is “a concentration or occurrence of material of economic interest in or on the earth’s crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction”. The interpretation of such “eventual economics” varies significantly, however, it implies some form of high-level view in terms of either “yard-stick comparisons” or high-level scenario models. On this basis Implats has excluded significant mineralisation (a) initially below 2 350m below surface, (b) then 2 000m below surface, (c) selected areas based on geology and potential infrastructure (see section “Areas excluded from mineral resource estimates” in this document). In total some 58Moz Pt has been excluded from current statements on this basis. However, under a present price regime and outlook the bulk of the Implats’ South African mineral resources are marginal at best and require long-term metal prices higher than current estimates. Work is underway to identify opportunities on a scenario scale to optimise such areas in terms of potential output, production costs and future capital expenses. Notably the Zimbabwean mineral resources are reasonably robust in terms of “eventual economic extraction” and require long-term prices in the order of US\$1 500 per Pt oz and the deeper Rustenburg mineral resources require prices around US\$2 000 per Pt oz.

### Environment

Our activities associated with the exploration, extraction and processing of mineral resources result in the unavoidable disturbance of land, the consumption of resources, and the generation of waste and atmospheric and water pollutants. Growing regulatory and social pressure, increasing demands for limited natural resources, and the changing costs of energy and water all highlight the business imperative of responsible environmental management, particularly as our underground operations become deeper and consume greater amounts of energy and water. This involves taking measures not only to

address security of resource supply (for example through efficiency, recycling and fuel-switching), but also to actively minimise our impacts on natural resources and on the communities around our operations. Taking such measures has direct benefits in terms of reduced costs and liabilities, enhanced resource security and improved security of our licence to operate.

Implats has an environmental policy that commits the company to running our exploration, mining, processing and refining operations in an environmentally responsible manner and to ensure the well-being of our stakeholders. The policy also commits to integrating environmental management into all aspects of the business with the aim of achieving world-class environmental performance in a sustainable manner.

Our management of the environmental impacts of our operations and processes involves the following focus areas:

- Promoting responsible water stewardship by minimising water use and water pollution
- Minimising our negative impacts on air quality
- Responding to climate change risks and opportunities and promoting responsible energy management
- Managing our waste streams
- Promoting responsible land management and biodiversity practices

All our operations are ISO 14001 certified. In line with our environmental management system expectations, all operations are required to identify and report on environmental incidents. Systems are in place to investigate and determine the direct and root causes of high-severity incidents, and to address and close out these incidents.

To ensure continued assurance of legal compliance to all authorisation requirements and conditions, legal, geology and environmental departments are implementing the best practice land management software FlexiCadastre®, for the management of mineral rights and contractual commitments.

Further details regarding the materiality of environmental aspects, management processes, performance and commitments are reported in the 2015 Implats sustainability report and also summarised in the 2015 Implats integrated report (refer in particular to the notes in the annual financial statements). These reports will be published at [www.implats.co.za](http://www.implats.co.za) at the end of September 2015. The financial provisions for the rehabilitation can be summarised as follows:

Name	Current cost estimates R million*	Financial provision R million**
Impala	(766.5)	(458.6)
Springs	(70.7)	(35.7)
Marula	(100.7)	(49.1)
Afplats	(16.4)	(8.2)
Zimplats	(412.8)	(236.4)
<b>Totals</b>	<b>(1 367.1)</b>	<b>(788.0)</b>

\* The current expected cost to restore the environment disturbances as estimated by third party experts excluding VAT, P’s & G’s and contingencies  
 \*\* Future value of the current cost estimate discounted to current balance sheet date as provided in the annual financial statements of the Group



## Attributable mineral resources and mineral reserves



“For clarity, attributable mineral resources inclusive of mineral reserves and attributable mineral resources exclusive of mineral reserves are shown separately in this section”

Implats reports a summary of total attributable platinum ounces as sourced from all categories of mineral resources of the Implats Group of companies and its other strategic interests on a percentage equity interest basis. The tabulation below reflects estimates for platinum, palladium, rhodium and gold (4E), based on the percentage equity interest. For clarity, both attributable

mineral resources, inclusive of mineral reserves, and attributable mineral resources exclusive of mineral reserves are shown separately. Note that these are not in addition to each other. These are summary estimates and inaccuracy is derived from rounding of numbers. Where this happens it is not deemed significant.

### Attributable mineral resources inclusive of mineral reserves

As at 30 June 2015

	Mineral resources inclusive of reserves					Implats' share %	Attributable ounces				
	Orebody	Category	Tonnes Mt	4E grade g/t	6E grade g/t		Moz				
						Pt	Pd	Rh	Au	4E	
<b>Impala</b>	Merensky	Measured	143.0	6.27	7.01	96	18.1	8.0	1.58	1.04	28.7
		Indicated	67.4	6.42	7.16	96	8.7	3.9	0.76	0.50	13.9
		Inferred	21.7	6.35	7.10	96	2.8	1.2	0.24	0.16	4.4
	UG2	Measured	123.9	7.32	8.78	96	16.9	8.9	3.08	0.26	29.2
		Indicated	47.3	7.37	8.84	96	6.5	3.4	1.18	0.10	11.2
		Inferred	14.3	7.22	8.66	96	1.9	1.0	0.35	0.03	3.3
<b>Total Impala</b>		<b>417.6</b>	<b>6.77</b>	<b>7.83</b>		<b>55.0</b>	<b>26.5</b>	<b>7.19</b>	<b>2.10</b>	<b>90.8</b>	
<b>Impala/RBR JV</b>	Merensky	Measured	2.6	6.72	7.50	49	0.3	0.2	0.03	0.02	0.6
		Indicated	2.6	7.12	7.95	49	0.4	0.2	0.03	0.02	0.6
		Inferred	2.4	6.69	7.48	49	0.3	0.1	0.03	0.02	0.5
	UG2	Measured	0.7	7.47	8.97	49	0.1	0.1	0.02	0.00	0.2
		Indicated	1.2	7.95	9.54	49	0.2	0.1	0.03	0.00	0.3
		Inferred	1.0	7.26	8.71	49	0.1	0.1	0.02	0.00	0.2
<b>Total Impala/RBR JV</b>		<b>10.6</b>	<b>7.06</b>	<b>8.06</b>		<b>1.5</b>	<b>0.7</b>	<b>0.17</b>	<b>0.07</b>	<b>2.4</b>	
<b>Total Impala and Impala/RBR JV</b>		<b>428.2</b>	<b>6.78</b>	<b>7.83</b>		<b>56.4</b>	<b>27.2</b>	<b>7.36</b>	<b>2.16</b>	<b>93.1</b>	

## Attributable mineral resources and mineral reserves

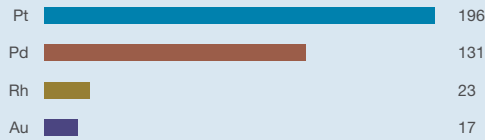
### Attributable mineral resources inclusive of mineral reserves continued

As at 30 June 2015

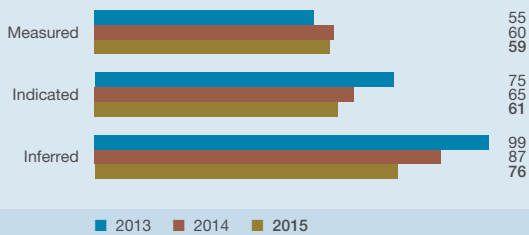
	Mineral resources inclusive of reserves					Implats' share %	Attributable ounces				
	Orebody	Category	Tonnes Mt	4E grade g/t	6E grade g/t		Moz				
							Pt	Pd	Rh	Au	4E
<b>Marula</b>	Merensky	Measured	25.0	4.24	4.55	73	2.0	1.1	0.10	0.26	3.4
		Indicated	5.6	4.26	4.54	73	0.4	0.2	0.02	0.06	0.8
		Inferred	7.2	4.16	4.46	73	0.6	0.3	0.03	0.07	1.0
	UG2	Measured	24.8	8.75	10.17	73	3.1	3.1	0.66	0.08	6.9
		Indicated	10.4	8.92	10.38	73	1.3	1.3	0.28	0.03	3.0
		Inferred	5.6	9.09	10.61	73	0.7	0.7	0.15	0.02	1.6
<b>Total</b>		<b>78.6</b>	<b>6.62</b>	<b>7.51</b>		<b>8.1</b>	<b>6.8</b>	<b>1.24</b>	<b>0.53</b>	<b>16.7</b>	
<b>Afplats</b>	UG2	Measured	72.8	5.19	6.47	74	7.4	3.3	1.39	0.06	12.1
		Indicated	8.0	5.11	6.36	74	0.8	0.4	0.15	0.01	1.3
		Inferred	41.3	5.06	6.25	74	4.1	1.8	0.77	0.03	6.7
	<b>Total</b>		<b>122.2</b>	<b>5.14</b>	<b>6.39</b>		<b>12.3</b>	<b>5.5</b>	<b>2.31</b>	<b>0.09</b>	<b>20.1</b>
<b>Imbasa</b>	UG2	Indicated	16.9	4.59	5.74	60	1.5	0.7	0.29	0.01	2.5
		Inferred	24.1	4.53	5.70	60	2.2	1.0	0.41	0.02	3.6
<b>Inkosi</b>	UG2	Indicated	33.2	4.87	6.14	49	3.2	1.4	0.60	0.02	5.3
		Inferred	18.8	4.64	5.88	49	1.7	0.8	0.33	0.01	2.9
<b>Imbasa and Inkosi</b>	<b>Total</b>		<b>93.1</b>	<b>4.69</b>	<b>5.90</b>		<b>8.6</b>	<b>3.9</b>	<b>1.63</b>	<b>0.07</b>	<b>14.2</b>
<b>Two Rivers</b>	Merensky	Indicated	29.7	2.85	3.11	49	1.6	0.9	0.09	0.18	2.7
		Inferred	48.6	3.61	3.92	49	3.3	1.8	0.20	0.38	5.6
	UG2	Measured	7.6	4.62	5.61	49	0.6	0.4	0.11	0.01	1.2
		Indicated	29.1	4.18	5.04	49	2.1	1.4	0.39	0.04	4.0
		Inferred	57.7	4.86	5.75	49	4.77	3.20	0.88	0.10	8.96
<b>Total</b>		<b>172.7</b>	<b>4.04</b>	<b>4.65</b>		<b>12.4</b>	<b>7.7</b>	<b>1.68</b>	<b>0.73</b>	<b>22.4</b>	
<b>Zimplats</b>	MSZ	Measured	154.2	3.53	3.72	87	8.7	6.9	0.74	1.17	17.5
		Indicated	595.3	3.49	3.69	87	33.0	26.3	2.84	4.47	66.9
		Inferred	1 043.0	3.26	3.53	87	52.6	44.1	4.76	7.48	109.2
	<b>Total</b>		<b>1 792.6</b>	<b>3.36</b>	<b>3.60</b>		<b>94.2</b>	<b>77.3</b>	<b>8.34</b>	<b>13.11</b>	<b>193.6</b>
<b>Mimosa</b>	MSZ	Measured	34.6	3.70	3.91	50	2.0	1.6	0.17	0.30	4.1
		Indicated	15.6	3.57	3.79	50	0.9	0.7	0.08	0.14	1.8
		Inferred	13.6	3.46	3.66	50	0.8	0.6	0.06	0.11	1.5
	<b>Total</b>		<b>63.8</b>	<b>3.62</b>	<b>3.83</b>		<b>3.7</b>	<b>2.9</b>	<b>0.31</b>	<b>0.55</b>	<b>7.4</b>
<b>All</b>	<b>Total</b>		<b>2 751</b>	<b>4.16</b>	<b>4.64</b>		<b>196</b>	<b>131</b>	<b>23</b>	<b>17</b>	<b>368</b>

## Attributable mineral resources and mineral reserves

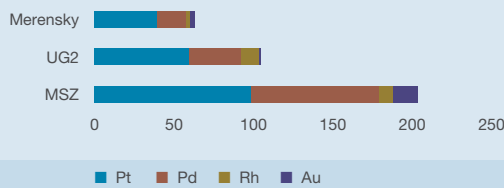
### Attributable mineral resources (Moz)



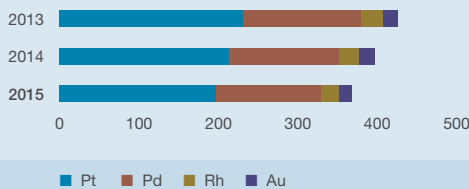
### Attributable mineral resources (Moz Pt)



### Attributable mineral resources per reef inclusive of mineral reserves (Moz)

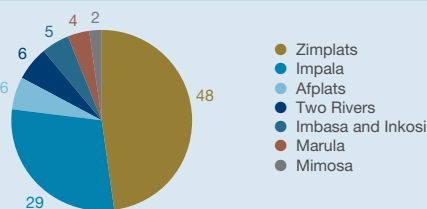


### Attributable mineral resources inclusive of mineral reserves (Moz)

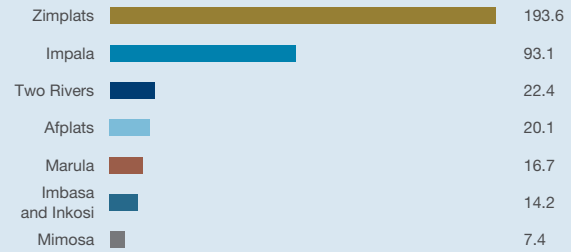


### Attributable mineral resources of 196Moz Pt (%)

as at 30 June 2015



### Implats attributable mineral resources (Moz 4E) contribution by area



### Notes

- Mineral resources are quoted inclusive of mineral reserves
- Mineral resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining
- In addition to the depth cut-off for the reporting of mineral resources as previously reported, various mineral resource blocks are considered on a case-by-case basis and this has resulted in areas where the eventual economic extraction is in doubt. These mineral resources will be reported as exploration results and are excluded from the summation of total mineral resources per area and the attributable mineral resources. The areas involved occur at Impala, Afplats and Two Rivers
- Implats has chosen not to publish Merensky Reef mineral resource estimates for Afplats, Imbasa and Inkosi as the eventual economic extraction is presently in doubt and under review
- An agreement has been concluded whereby the Tamboti mineral resources have been transferred to Two Rivers during the past year. This has resulted among others in an increase of the Implats shareholding from 45% to 49% in Two Rivers
- The Zimbabwean Government has been pursuing the greater participation in the mining sector by indigenous Zimbabweans. Implats is continuing to engage with the Government of Zimbabwe with respect to agreeing plans for the indigenisation of Zimplats and Mimosa

## Attributable mineral resources and mineral reserves

- The current position with regards to the implementation of the Government of Zimbabwe's indigenisation plans is not clear and depending on what position is ultimately taken by the Government of Zimbabwe, Implats' attributable mineral resources and mineral reserves may be significantly reduced. During 2013, the Government of Zimbabwe gazetted its intention to compulsorily acquire a large tract of ground in the northern portion of the Zimplats lease containing 54.6Moz Pt; Zimplats subsequently submitted an objection under Zimbabwean law. These mineral resources are included in the estimates and statements shown in this report.
- 4E refers to the summation of platinum, palladium, rhodium and gold
- 6E refers to the summation of platinum, palladium, rhodium, ruthenium, iridium and gold
- Rounding of numbers may result in minor computational discrepancies; mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations

In comparison with the previous annual mineral resource statement there have been changes in the attributable mineral resources. The total declared at 30 June 2015 is 8% lower at 196Moz Pt compared with 212Moz Pt in 2014. This can mainly be ascribed to the mineral right transaction involving the

transfer of the Tamboti area into Two Rivers. The grouping of the platinum ounces per reef shows that some 50% of the attributable Implats mineral resources is hosted by the Great Dyke. The Zimplats mineral resources make up the bulk of these (48% of the total Implats' inventory). Various small movements in mineral resource estimates are reflected at each operation due to additional work, newly acquired data, depletion and updated estimations.

### Summary of attributable mineral resources

	Moz Pt			
	2012	2013	2014	2015
Impala	68.9	70.3	57.6	55.0
RBR JV	3.2	3.5	1.5	1.5
Marula	7.6	7.5	7.4	8.1
Afplats	14.5	14.3	11.9	12.3
Imbasa and Inkosi	8.1	8.5	8.5	8.6
Two Rivers	3.0	2.9	2.9	12.4
Tamboti	27.1	23.2	23.2	
Zimplats	93.4	95.5	95.1	94.2
Mimosa	3.9	3.9	3.7	3.7
<b>Total</b>	<b>229.8</b>	<b>229.7</b>	<b>211.8</b>	<b>195.7</b>





## Attributable mineral resources and mineral reserves

### Attributable mineral reserves

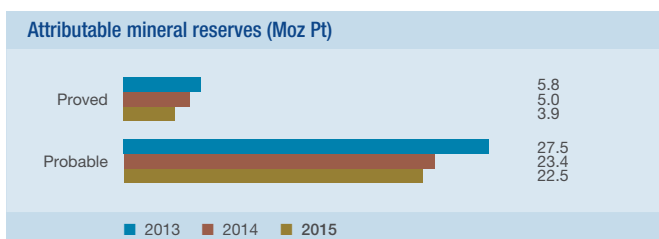
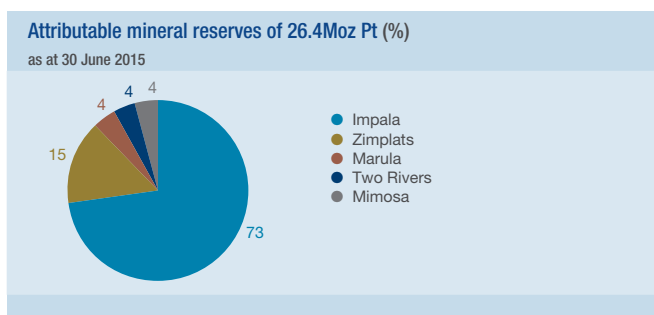
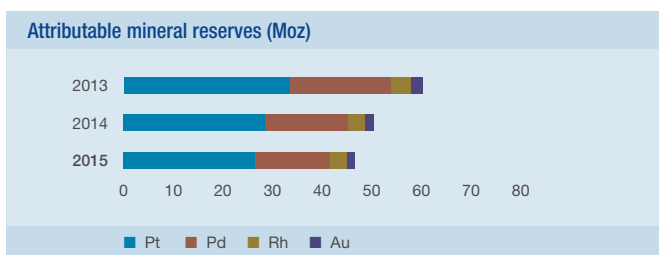
As at 30 June 2015

	Mineral reserves					Implats' share %	Attributable ounces				
	Orebody	Category	Tonnes Mt	4E grade g/t	6E grade g/t		Moz				
							Pt	Pd	Rh	Au	4E
<b>Impala</b>	Merensky	Proved	8.8	3.86	4.31	96	0.7	0.3	0.06	0.04	1.1
		Probable	106.7	4.34	4.85	96	9.4	4.1	0.82	0.54	14.8
	UG2	Proved	15.2	3.83	4.60	96	1.1	0.6	0.20	0.02	1.9
		Probable	114.9	3.76	4.51	96	8.1	4.3	1.47	0.13	13.9
	<b>Total</b>		<b>245.6</b>	<b>4.02</b>	<b>4.66</b>	<b>96</b>	<b>19.2</b>	<b>9.3</b>	<b>2.54</b>	<b>0.72</b>	<b>31.7</b>
<b>Marula</b>	UG2	Proved	2.2	4.02	4.67	73	0.1	0.1	0.03	0.00	0.3
		Probable	19.7	3.85	4.47	73	1.1	1.1	0.23	0.03	2.4
	<b>Total</b>		<b>21.9</b>	<b>3.87</b>	<b>4.49</b>	<b>73</b>	<b>1.2</b>	<b>1.2</b>	<b>0.26</b>	<b>0.03</b>	<b>2.7</b>
<b>Two Rivers</b>	UG2	Proved	5.9	3.18	3.87	49	0.3	0.2	0.06	0.01	0.6
		Probable	14.6	2.94	3.56	49	0.8	0.4	0.15	0.01	1.4
	<b>Total</b>		<b>20.5</b>	<b>3.01</b>	<b>3.65</b>	<b>49</b>	<b>1.1</b>	<b>0.6</b>	<b>0.21</b>	<b>0.02</b>	<b>2.0</b>
<b>Zimplats</b>	MSZ	Proved	18.3	3.31	3.50	87	1.0	0.8	0.08	0.13	1.9
		Probable	54.5	3.37	3.56	87	2.9	2.3	0.25	0.39	5.9
	<b>Total</b>		<b>72.8</b>	<b>3.36</b>	<b>3.54</b>	<b>87</b>	<b>3.9</b>	<b>3.1</b>	<b>0.33</b>	<b>0.52</b>	<b>7.9</b>
<b>Mimosa</b>	MSZ	Proved	11.4	3.55	3.79	50	0.6	0.5	0.05	0.10	1.3
		Probable	5.5	3.68	3.96	50	0.3	0.3	0.03	0.05	0.7
	<b>Total</b>		<b>16.9</b>	<b>3.59</b>	<b>3.84</b>	<b>50</b>	<b>1.0</b>	<b>0.8</b>	<b>0.08</b>	<b>0.16</b>	<b>2.0</b>
<b>All</b>	<b>Total</b>		<b>377.8</b>	<b>3.81</b>	<b>4.34</b>		<b>26.4</b>	<b>15.0</b>	<b>3.42</b>	<b>1.45</b>	<b>46.2</b>

### Summary of attributable mineral reserves

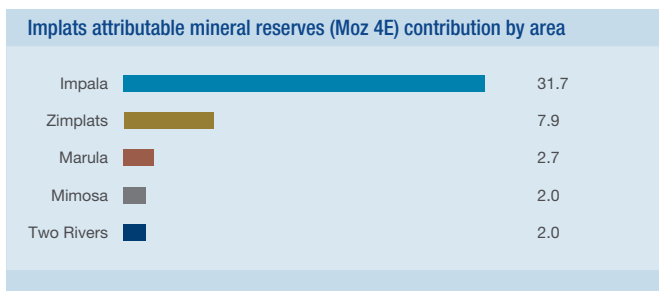
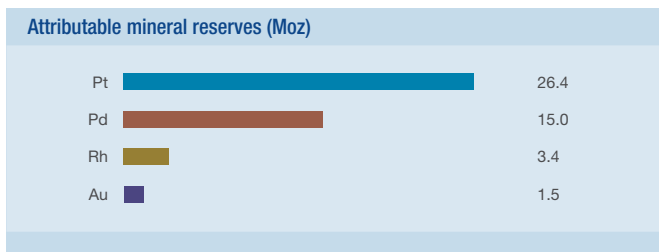
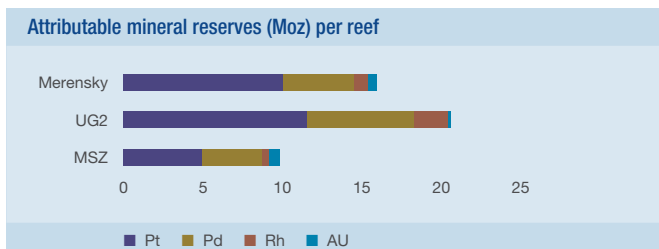
	Moz Pt			
	2012	2013	2014	2015
Impala	20.8	19.8	19.8	19.2
Marula	1.1	1.1	1.1	1.2
Two Rivers	0.8	0.9	0.8	1.1
Zimplats	10.5	10.8	6.2	3.9
Mimosa	0.8	0.7	0.6	1.0
<b>Total</b>	<b>34.1</b>	<b>33.3</b>	<b>28.4</b>	<b>26.4</b>

## Attributable mineral resources and mineral reserves



### Notes

- The modifying factors used to convert a mineral resource to a mineral reserve are derived from historical performance while taking future anticipated conditions into account
- Mineral reserves quoted reflect the grade delivered to the mill
- At Zimplats it was reported that a low angle shear at the Bimha Mine has a deleterious effect on pillar strength and has resulted in the failure of mine pillars and the decision to temporarily close the Bimha Mine to ensure the safety of our employees. A new mine design resulted and work is under way to re-establish the mine. The impact of the pillar design was reported as part of the December 2014 half-year report. The Zimplats ore reserves reduced materially as Portal 5 has been excluded from the reserve inventory and the increased pillars impacted the overall extraction
- There has been increases in the mineral reserves at Mimoso, Marula and Two Rivers as additional areas have now been converted into the mineral reserve category
- 4E refers to the summation of platinum, palladium, rhodium and gold
- 6E refers to the summation of platinum, palladium, rhodium, ruthenium, iridium and gold
- Rounding of numbers may result in minor computational discrepancies; the results tabulated in this report must be read as estimates and not as calculations



Implats reported attributable mineral reserves of some 26.4Moz Pt at 30 June 2015 compared to 28.4Moz Pt in 2014. The decrease can mostly be ascribed to changes in the Zimplats statement and depletion, however, this is offset to some extent by increases at Mimoso, Marula and Two Rivers. The attendant graphs compare the last few reporting periods and indicate an overall decrease in attributable mineral reserves in line with depletion and the aforementioned changes. The quantum of proved Merensky Reef mineral reserves at Impala remains lower than the same for the UG2 Reef.

The Government of Zimbabwe has been pursuing the greater participation in the mining sector by indigenous Zimbabweans. Implats is continuing to engage with the Government of Zimbabwe with respect to agreeing plans for the indigenisation of Zimplats and Mimoso. The current position with regards to the implementation of the Government of Zimbabwe's indigenisation plans is not clear and depending on what position is ultimately taken by the Government of Zimbabwe, Implats' attributable mineral resources and mineral reserves may be significantly reduced.

## Mineral resource summary, exclusive of mineral reserves

Both inclusive and exclusive methods of reporting mineral resources are permitted by various international reporting codes. Implats has adopted the inclusive reporting for consistency purposes and to be aligned with its strategic partners. A collation of the mineral resource estimates exclusive of mineral reserves is presented below as it allows for additional transparency. Note that this format is not adhered to by Implats' strategic partners and the corresponding estimates have been derived from details provided to Implats.

### Summary of mineral resource estimate, exclusive of mineral reserves

As at 30 June 2015

	Orebody	Remarks	Category	Total estimate					Implats' share %	Attributable estimate			
				Tonnes Mt	4E grade g/t	6E grade g/t	4E Moz	Pt Moz		Tonnes Mt	4E Moz	Pt Moz	
IMPALA	Merensky		Measured	36.1	5.60	6.26	6.5	4.1	96	34.7	6.2	3.9	
			Indicated	67.4	6.35	7.09	13.8	8.6	96	64.7	13.2	8.3	
			Inferred	22.6	6.35	7.10	4.6	2.9	96	21.7	4.4	2.8	
	UG2		Measured	35.0	7.22	8.67	8.1	4.7	96	33.6	7.8	4.5	
			Indicated	48.6	7.38	8.85	11.5	6.7	96	46.7	11.1	6.4	
			Inferred	14.9	7.22	8.66	3.5	2.0	96	14.3	3.3	1.9	
	Merensky	Impala/RBR JV	Measured	5.3	6.72	7.50	1.1	0.7	49	2.6	0.6	0.3	
			Indicated	5.4	7.12	7.95	1.2	0.8	49	2.6	0.6	0.4	
			Inferred	5.0	6.69	7.48	1.1	0.7	49	2.4	0.5	0.3	
	UG2		Measured	1.5	7.47	8.97	0.4	0.2	49	0.7	0.2	0.1	
			Indicated	2.5	7.95	9.54	0.6	0.4	49	1.2	0.3	0.2	
			Inferred	2.0	7.26	8.71	0.5	0.3	49	1.0	0.2	0.1	
<b>Total Impala</b>				<b>246.2</b>	<b>6.68</b>	<b>7.44</b>	<b>52.9</b>	<b>32.0</b>		<b>226.2</b>	<b>48.5</b>	<b>29.4</b>	
MARULA	Merensky		Measured	34.3	4.24	4.55	4.7	2.7	73	25.0	3.4	2.0	
			Indicated	7.7	4.26	4.54	1.1	0.6	73	5.6	0.8	0.4	
			Inferred	9.9	4.16	4.46	1.3	0.8	73	7.2	1.0	0.6	
	UG2		Measured	18.6	8.73	10.17	5.2	2.3	73	13.6	3.8	1.7	
			Indicated	14.2	8.92	10.38	4.1	1.8	73	10.4	3.0	1.3	
			Inferred	7.6	9.09	10.61	2.2	1.0	73	5.6	1.6	0.7	
	<b>Total Marula</b>				<b>92.4</b>	<b>6.26</b>	<b>7.07</b>	<b>18.6</b>	<b>9.2</b>		<b>67.4</b>	<b>13.6</b>	<b>6.7</b>
AFPLATS, IMBASA AND INKOSI	UG2	Afplats	Measured	98.4	5.19	6.47	16.4	10.0	74	72.8	12.1	7.4	
			Indicated	10.8	5.11	6.36	1.8	1.1	74	8.0	1.3	0.8	
			Inferred	55.9	5.06	6.25	9.1	5.5	74	41.3	6.7	4.1	
	<b>Total Afplats</b>				<b>165.1</b>	<b>5.14</b>	<b>6.39</b>	<b>27.3</b>	<b>16.6</b>		<b>122.2</b>	<b>20.1</b>	<b>12.3</b>
	Imbasa		Indicated	28.2	4.59	5.74	4.2	2.6	60	16.9	2.5	1.5	
			Inferred	40.2	4.53	5.70	5.9	3.6	60	24.1	3.5	2.2	
	Inkosi		Indicated	67.9	4.87	6.14	10.6	6.6	49	33.2	5.2	3.2	
			Inferred	38.4	4.64	5.88	5.7	3.6	49	18.8	2.8	1.7	
	<b>Total Imbasa/Inkosi</b>				<b>174.7</b>	<b>4.70</b>	<b>5.92</b>	<b>26.4</b>	<b>16.3</b>		<b>93.1</b>	<b>14.0</b>	<b>8.6</b>

## Mineral resource summary, exclusive of mineral reserves

### Summary of mineral resource estimate, exclusive of mineral reserves continued

As at 30 June 2015

	Orebody	Remarks	Category	Total estimate					Implats' share %	Attributable estimate		
				Tonnes Mt	4E grade g/t	6E grade g/t	4E Moz	Pt Moz		Tonnes Mt	4E Moz	Pt Moz
TWO RIVERS	Merensky		Indicated	60.6	2.85	3.11	5.5	3.3	49	29.7	2.7	1.6
			Inferred	99.2	3.61	3.92	11.5	6.7	49	48.6	5.6	3.3
	UG2		Measured	2.9	4.67	5.64	0.4	0.3	49	1.4	0.2	0.1
			Indicated	26.4	4.49	5.39	3.8	2.1	49	12.9	1.9	1.0
			Inferred	117.8	4.86	5.75	18.4	9.5	49	57.7	9.0	4.7
	<b>Total Two Rivers</b>			<b>306.9</b>	<b>4.03</b>	<b>4.60</b>	<b>39.7</b>	<b>21.9</b>		<b>150.4</b>	<b>19.4</b>	<b>10.7</b>
ZIMPLATS	MSZ		Measured	123.7	3.55	3.75	14.1	6.9	87	107.6	12.3	6.0
			Indicated	634.1	3.50	3.70	71.3	35.1	87	551.7	62.0	30.6
			Inferred	1 198.9	3.26	3.53	125.6	60.4	87	1 043.0	109.2	52.6
		<b>Total Zimplats</b>			<b>1 956.7</b>	<b>3.35</b>	<b>3.60</b>	<b>211.0</b>	<b>102.5</b>		<b>1 702.3</b>	<b>183.6</b>
MIMOSA	MSZ		Measured	26.1	3.56	3.83	3.0	1.5	50	13.0	1.5	0.7
			Indicated	28.9	3.57	3.80	3.3	1.6	50	14.5	1.7	0.8
			Inferred	27.1	3.46	3.66	3.0	1.5	50	13.6	1.5	0.8
		<b>Total Mimosa</b>			<b>82.1</b>	<b>3.53</b>	<b>3.76</b>	<b>9.3</b>	<b>4.6</b>		<b>41.1</b>	<b>4.7</b>
<b>All mineral resources exclusive of mineral reserves</b>			Measured	382	4.88	5.09	60	33		305	48	27
			Indicated	1 003	4.12	4.58	133	71		798	106	57
			Inferred	1 639	3.65	4.07	192	98		1 299	150	76
			<b>Total</b>	<b>3 024</b>	<b>3.96</b>	<b>4.36</b>	<b>385</b>	<b>203</b>		<b>2 403</b>	<b>304</b>	<b>159</b>





## Mineral resource summary, exclusive of mineral reserves

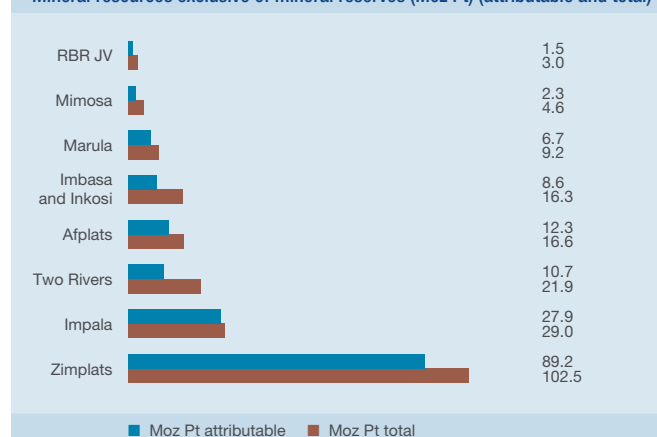
### Notes

- The figures in the accompanying table reflect those mineral resources that have not been converted to mineral reserves, ie these are the mineral resources exclusive of mineral reserves
- The tabulation should be read in conjunction with the mineral reserve statements in the preceding sections
- A direct comparison of tonnes and grade is not possible between inclusive and exclusive reporting, owing to the mixing of mineral resource figures with production estimates
- Mineral resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining
- Note that similar to previous reports, certain areas have been excluded from the mineral resource estimates and are now reported separately as exploration results in a standalone section at the end of this report
- Implats has chosen not to publish Merensky Reef mineral resource estimates for Afplats, Imbasa and Inkosi as the eventual economic extraction is presently in doubt
- The year-on-year decrease in exclusive mineral resources is a result of the transfer of the mineral rights at Tamboti into Two Rivers as well as the conversion of additional mineral resources at Mimosa, Marula and Two Rivers into the mineral reserve category
- 4E refers to the summation of platinum, palladium, rhodium and gold
- 6E refers to the summation of platinum, palladium, rhodium, ruthenium, iridium and gold
- Rounding of numbers may result in minor computational discrepancies; mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations

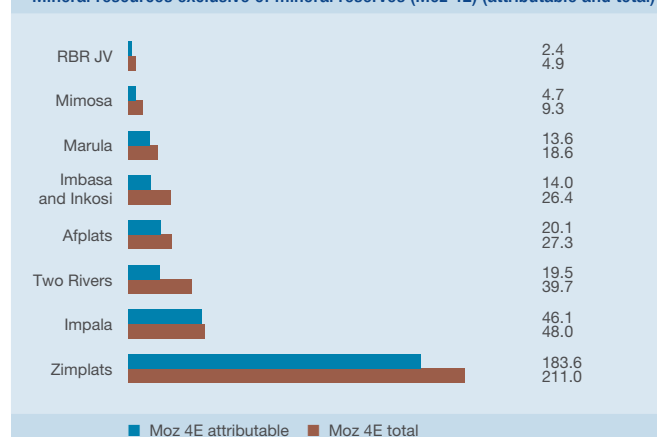
### Summary of attributable mineral resources exclusive of mineral reserves

	Moz Pt			
	2012	2013	2014	2015
Impala	38.7	40.7	28.4	27.9
RBR JV	3.2	3.5	1.5	1.5
Marula	6.2	6.3	6.3	6.7
Afplats	14.5	14.3	11.9	12.3
Imbasa and Inkosi	8.1	8.5	8.5	8.6
Two Rivers	1.6	1.7	1.7	10.7
Tamboti	27.1	23.2	23.2	
Zimplats	79.2	81.5	87.3	89.2
Mimosa	2.8	2.9	2.9	2.3
<b>Total</b>	<b>181.4</b>	<b>182.6</b>	<b>171.7</b>	<b>159.2</b>

#### Mineral resources exclusive of mineral reserves (Moz Pt) (attributable and total)



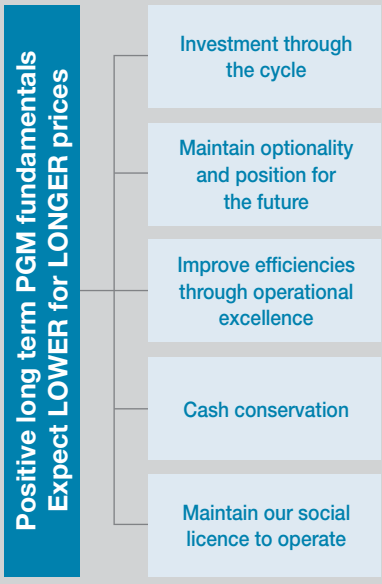
#### Mineral resources exclusive of mineral reserves (Moz 4E) (attributable and total)



## Mineral resource summary, exclusive of mineral reserves



Implats' strategic review provides the framework for this report with five key focus areas:



## Reconciliation

The consolidated high-level reconciliation of total mineral resources and mineral reserves for the Implats Group of companies is shown below. These high-level variances are relatively small. Particulars of these variances in addition to depletions are illustrated in more detail in the sections by operation. Rounding of numbers may result in computational discrepancies, specifically in these high-level comparisons.

### Total mineral resources tonnes (million), inclusive of mineral reserves

	2012	2013	2014	2015	Variance	Attributable 2015
<b>Impala*</b>	592	592	458	<b>457</b>	(2)	428
<b>Marula</b>	103	102	100	<b>108</b>	7	79
<b>Afplats</b>	193	193	160	<b>165</b>	5	122
<b>Imbasa/Inkosi</b>	159	173	173	<b>175</b>	2	93
<b>Two Rivers</b>	106	108	105	<b>353</b>	247	173
<b>Tamboi</b>	319	337	337	<b>0</b>	(337)	
<b>Zimplats</b>	1 904	2 070	2 066	<b>2 060</b>	(6)	1 793
<b>Mimosa</b>	135	133	129	<b>128</b>	(2)	64
<b>Totals</b>	<b>3 510</b>	<b>3 709</b>	<b>3 530</b>	<b>3 445</b>	<b>(86)</b>	<b>2 751</b>

\* Includes RBR JV.

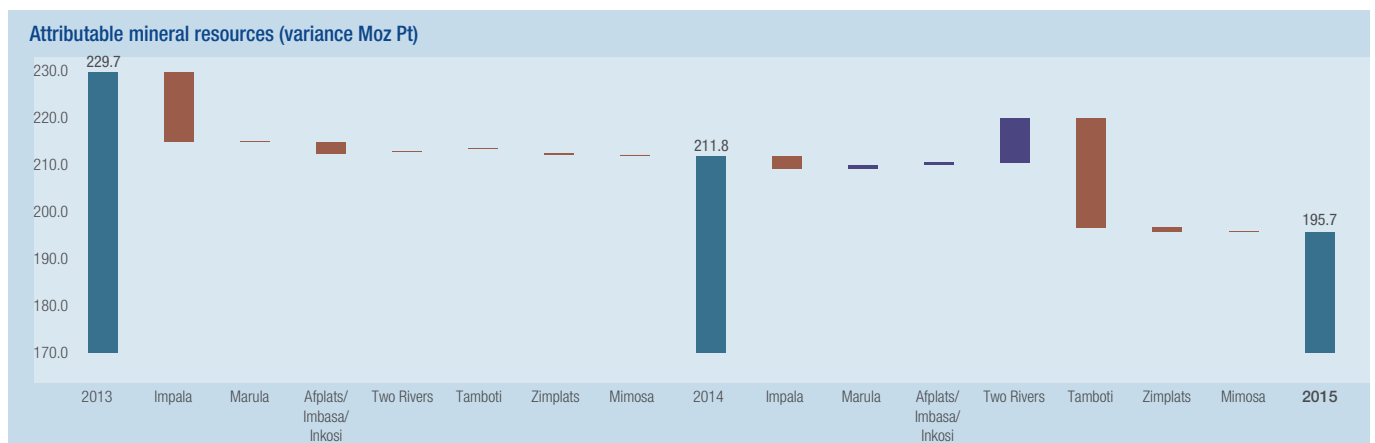
### Total mineral resources (Moz Pt), inclusive of mineral reserves

	2012	2013	2014	Depletion	Gains and other changes	2015	Attributable 2015
<b>Impala*</b>	75.5	77.5	60.5	(0.8)	0.5	<b>60.3</b>	56.4
<b>Marula</b>	10.3	10.3	10.1	(0.1)	1.0	<b>11.1</b>	8.1
<b>Afplats</b>	19.6	19.3	16.1	–	0.5	<b>16.6</b>	12.3
<b>Imbasa/Inkosi</b>	15.2	16.0	16.1	–	0.2	<b>16.3</b>	8.6
<b>Two Rivers</b>	6.6	6.5	6.5	(0.2)	19.0	<b>25.2</b>	2.9
<b>Tamboi</b>	27.1	23.2	23.2	–	(23.2)		
<b>Zimplats</b>	107.4	109.8	109.3	(0.3)	(0.7)	<b>108.3</b>	94.2
<b>Mimosa</b>	7.9	7.7	7.5	(0.2)	0.1	<b>7.4</b>	3.7
<b>Totals</b>	<b>269.6</b>	<b>270.3</b>	<b>249.3</b>	<b>(1.5)</b>	<b>(2.6)</b>	<b>245.1</b>	<b>195.7</b>

\* Includes RBR JV.

## Notes

- The Impala estimate in the above table includes the contiguous Impala/RBR JV estimate
- Depletion was adjusted by global concentrator and mine call factors
- Potential impact of pillar factors was taken into account
- The larger variances can be attributed to the transfer of the Tamboti mineral rights into Two Rivers
- The Marula estimate includes the addition of UG2 mineral rights in terms of an agreement with Modikwa
- Smaller variances are mostly due to depletion and updates to the estimation models



## Reconciliation

### Total mineral reserves tonnes (million)

	2012	2013	2014	Depletion	Gains and other changes	2015	Attributable 2015
<b>Impala</b>	263	252	257	(9.1)	7.8	<b>256</b>	246
<b>Marula</b>	26	26	25	(1.6)	6.6	<b>30</b>	22
<b>Two Rivers</b>	30	35	30	(3.4)	14.8	<b>42</b>	21
<b>Zimplats</b>	227	238	133	(5.1)	(44.0)	<b>84</b>	73
<b>Mimosa</b>	29	27	23	(2.6)	13.8	<b>34</b>	17
<b>Totals</b>	<b>581</b>	<b>578</b>	<b>468</b>	<b>(21.9)</b>	<b>(1.0)</b>	<b>445</b>	<b>378</b>

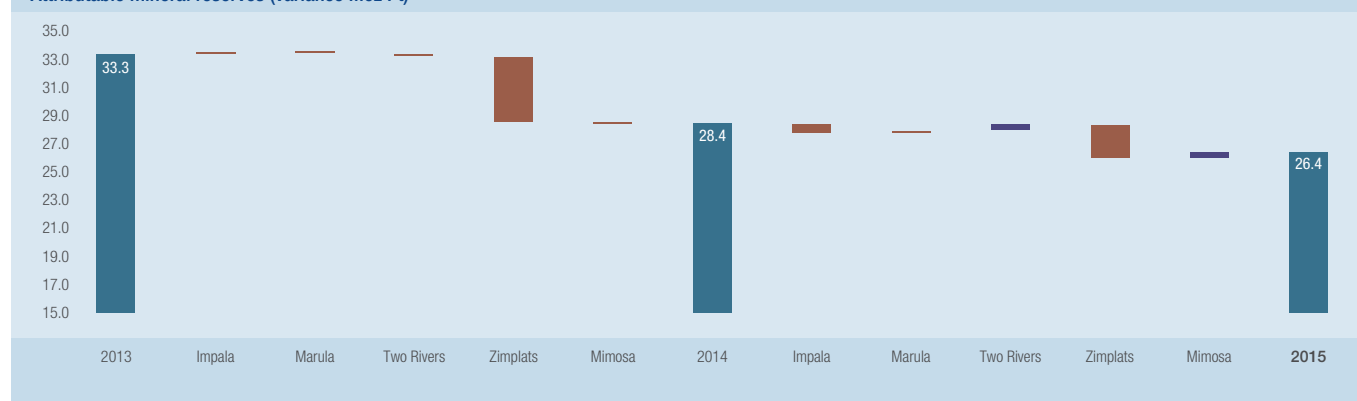
### Total mineral reserves (Moz Pt)

	2012	2013	2014	Depletion	Gains and other changes	2015	Attributable 2015
<b>Impala</b>	20.8	19.8	19.8	(0.69)	0.9	<b>20.0</b>	19.2
<b>Marula</b>	1.5	1.5	1.5	(0.08)	0.3	<b>1.6</b>	1.2
<b>Two Rivers</b>	1.9	1.9	1.7	(0.22)	0.8	<b>2.3</b>	1.1
<b>Zimplats</b>	12.1	12.5	7.1	(0.21)	(2.4)	<b>4.5</b>	3.9
<b>Mimosa</b>	1.7	1.5	1.2	(0.15)	0.8	<b>1.9</b>	1.0
<b>Totals</b>	<b>37.9</b>	<b>37.1</b>	<b>31.3</b>	<b>(1.36)</b>	<b>0.4</b>	<b>30.3</b>	<b>26.4</b>

### Notes

- Depletion was adjusted by global concentrator factors
- The main change is the impact of the updated Zimplats statement that now excludes Portal 5S and allows for the increased pillar design
- The mineral reserves increased at Mimosa, Marula and Two Rivers due to the inclusion of additional areas into the mineral reserve inventory. For clarity note that previous statements did not include mineral reserves for Tamboti, however, part of the area transferred from Tamboti to Two Rivers has been converted to mineral reserves
- The attributable portion of the Impala mineral reserves is now at 96% following the recent employee share issue (ESOP) of 4%
- Smaller changes over the past few years are mostly related to depletion

### Attributable mineral reserves (variance Moz Pt)



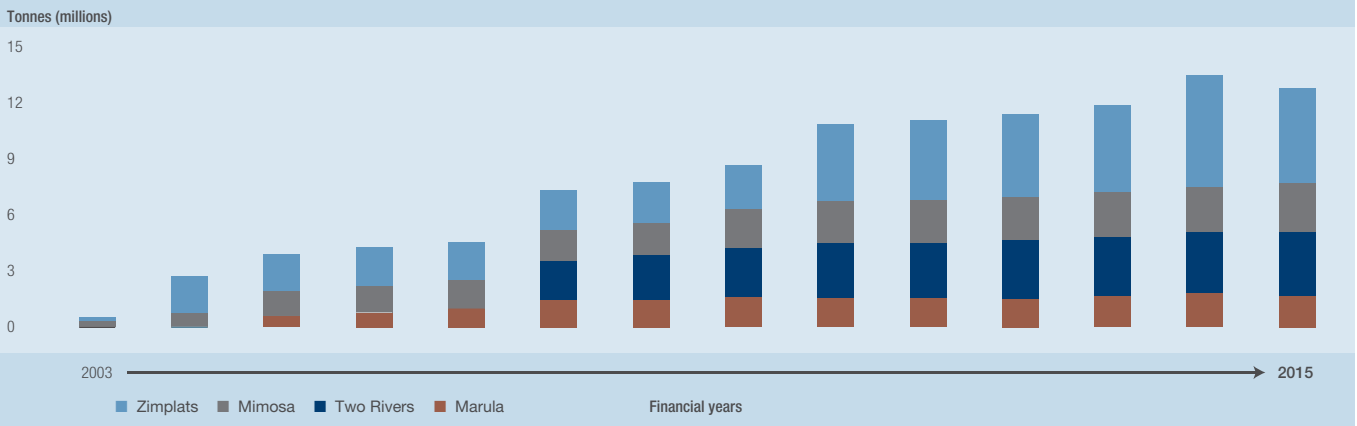


## Historic production

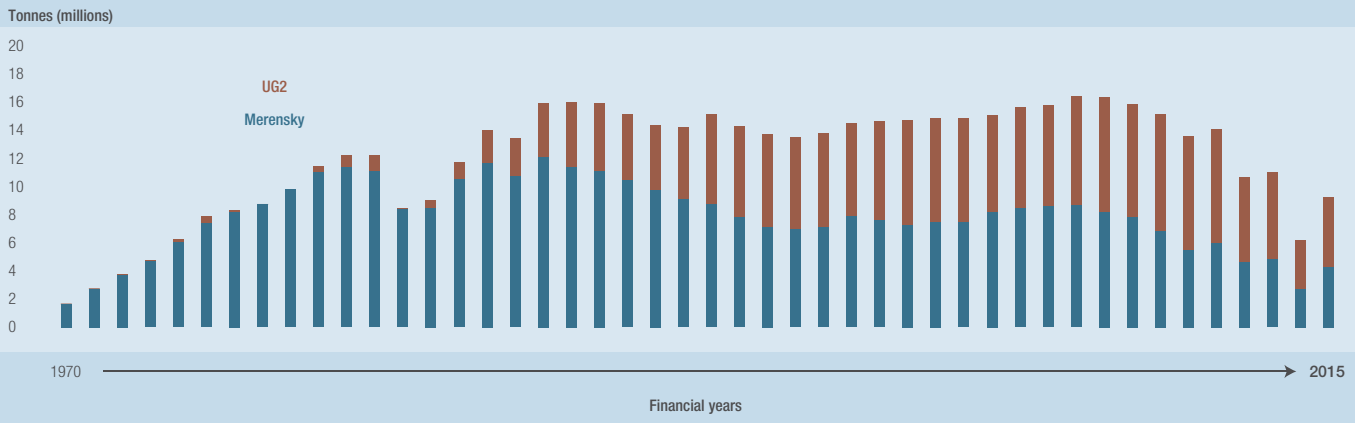
Since mining commenced in 1969 at Impala, Implats has grown the mineral resource portfolio and related platinum production. The production performance for the 2015 financial year at Impala was severely impacted by the unprecedented protracted industrial action and a resultant slower start-up as well as higher than normal safety stoppages, however, the annual production met the forecast. Summary production statistics are provided below as an overall perspective of the company performance.

The total production in terms of tonnage and platinum ounces is depicted in the accompanying graphs. Notably the tonnage mined at the other operations, excluding Impala, continues to grow on the back of the expansion at Zimplats and the improved performances at the other operations. The annual production at Zimplats was negatively impacted by the temporary closure of the Bimha Mine.

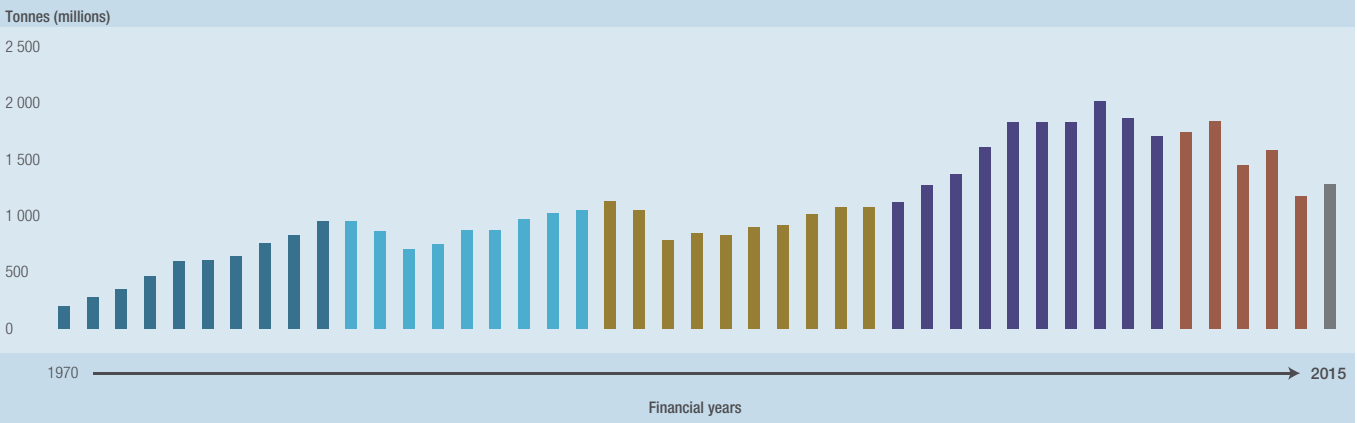
Historic annual production at Marula, Two Rivers, Mimosa and Zimplats



Historic annual production at Impala



Gross Implats Pt production



## Historic production

### Summary production statistics

	Units	2015	2014	2013	2012
<b>Tonnes milled</b>					
Impala	Kt	<b>9 199</b>	6 183	10 897	10 654
Marula	Kt	<b>1 662</b>	1 794	1 628	1 579
Two Rivers	Kt	<b>3 362</b>	3 279	3 172	3 103
Zimplats	Kt	<b>5 164</b>	5 939	4 683	4 393
Mimosa	Kt	<b>2 586</b>	2 453	2 381	2 324
<b>Mill head grade</b>					
Impala	g/t 6E	<b>4.19</b>	4.34	4.32	4.38
Marula	g/t 6E	<b>4.19</b>	4.19	4.19	4.18
Two Rivers	g/t 6E	<b>3.98</b>	4.01	4.02	3.86
Zimplats	g/t 6E	<b>3.47</b>	3.47	3.53	3.53
Mimosa	g/t 6E	<b>3.92</b>	3.92	3.95	3.93
<b>Production ex Impala Mine</b>					
Platinum refined	Koz	<b>575.2</b>	411.0	709.2	750.1
Palladium refined	Koz	<b>280.7</b>	197.4	350.5	408.6
Rhodium refined	Koz	<b>76.7</b>	50.2	101.3	98.9
Nickel refined	t	<b>3 598</b>	1 976	4 035	4 757
PGM refined production	Koz	<b>1 137.3</b>	765.9	1 377.9	1 487.8
<b>Production ex Marula Mine*</b>					
Platinum in concentrate	Koz	<b>73.6</b>	78.5	71.7	69.1
Palladium in concentrate	Koz	<b>75.5</b>	80.5	73.5	71.2
Rhodium concentrate	Koz	<b>15.5</b>	16.7	15.2	14.8
Nickel in concentrate	t	<b>253</b>	279	245	238
PGM in concentrate	Koz	<b>193.3</b>	206.4	188.3	182.2
<b>Production ex Two Rivers Mine*</b>					
Platinum in concentrate	Koz	<b>173.5</b>	175.1	162.2	149.9
Palladium in concentrate	Koz	<b>102.0</b>	102.7	98.6	89.5
Rhodium concentrate	Koz	<b>30.6</b>	31.0	28.7	25.5
Nickel in concentrate	t	<b>584</b>	566	555	595
PGM in concentrate	Koz	<b>372.6</b>	374.7	350.4	320.1
<b>Production ex Zimplats Mine*</b>					
Platinum in matte	Koz	<b>190.0</b>	239.7	198.1	187.1
Palladium in matte	Koz	<b>154.8</b>	197.6	157.1	149.2
Rhodium matte	Koz	<b>17.4</b>	22.3	17.0	16.9
Nickel in matte	t	<b>3 887</b>	4 830	3 909	3 787
PGM in matte	Koz	<b>406.0</b>	515.8	416.2	396.4
<b>Production ex Mimosa Mine*</b>					
Platinum in concentrate	Koz	<b>117.4</b>	110.2	100.3	106.0
Palladium in concentrate	Koz	<b>92.7</b>	87.0	79.5	82.3
Rhodium concentrate	Koz	<b>10.2</b>	9.3	8.7	8.5
Nickel in concentrate	t	<b>3 470</b>	3 329	3 161	3 046
PGM in concentrate	Koz	<b>250.1</b>	234.6	214.8	222.8
<b>Gross margin</b>					
Impala	%	<b>(10.9)</b>	(18.4)	14.4	22.2
Marula	%	<b>(13.4)</b>	(0.7)	(15.4)	(6.7)
Two Rivers	%	<b>27.7</b>	29.5	22.1	21.8
Zimplats	%	<b>10.3</b>	34.1	34.9	43.4
Mimosa	%	<b>22.9</b>	19.3	24.2	37.7
<b>Gross Implats refined production**</b>					
Platinum	Koz	<b>1 276</b>	1 178	1 582	1 448
Palladium	Koz	<b>792</b>	710	1 020	950
Rhodium	Koz	<b>172</b>	157	220	210
Nickel	t	<b>15 918</b>	13 915	16 018	15 339

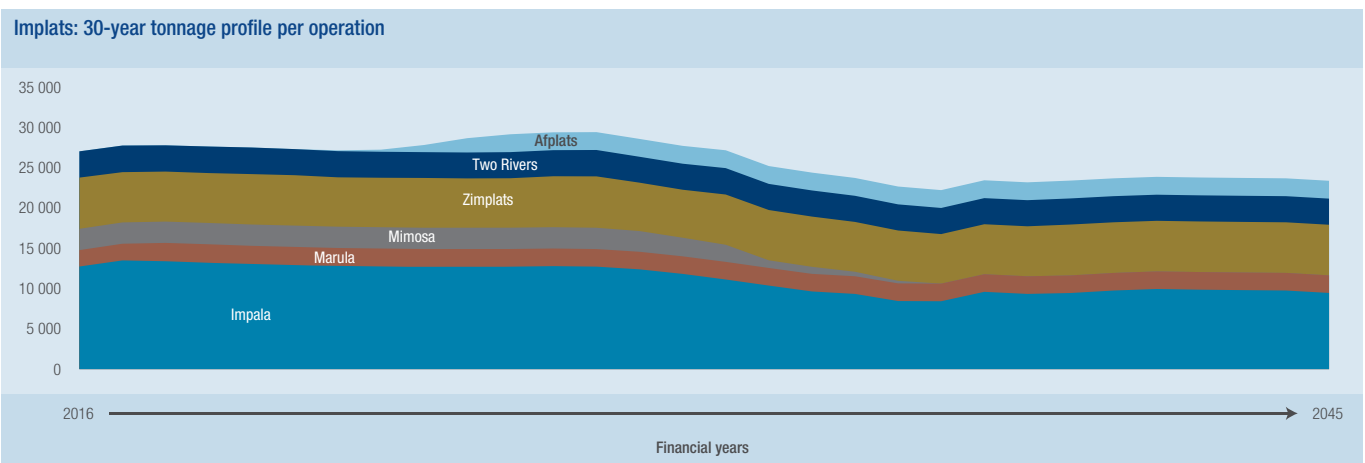
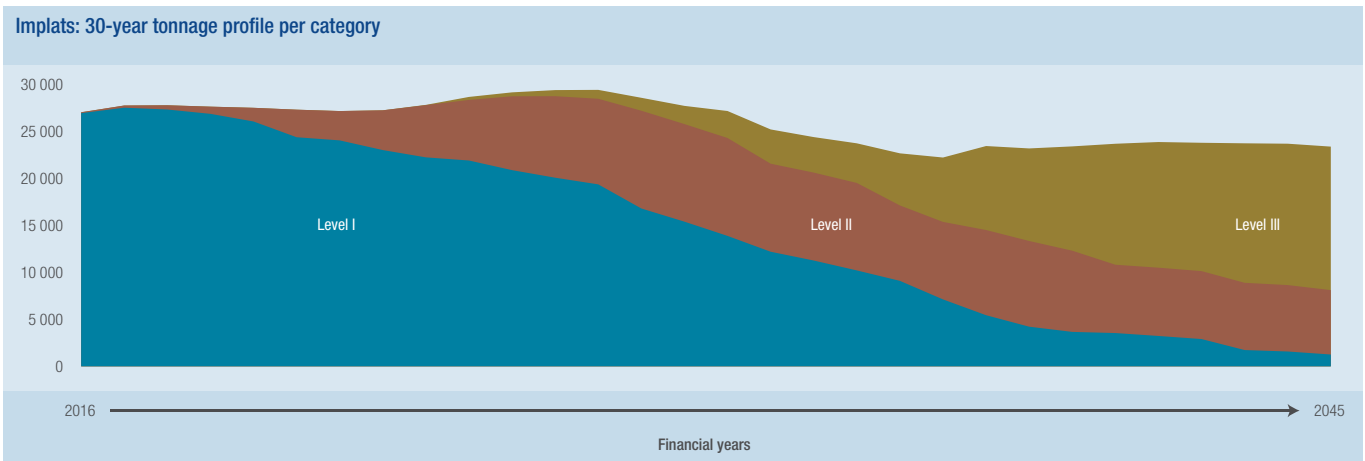
\* Numbers reflect 100% of production and not the portion attributable to Implats.

\*\*Includes IRS production from other sources.

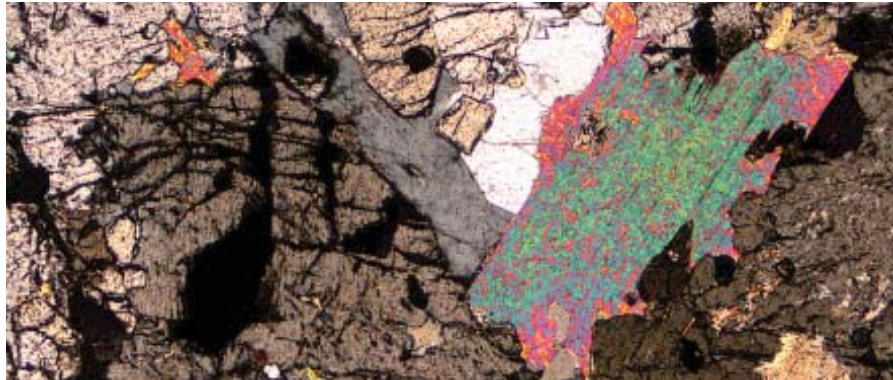
## Life-of-mine production

The high-level LoM (30-year) plan is depicted in the detailed sections per operation describing each operation in terms of planning Levels I, II and III. These graphs reflect 100% of the annual production forecasts and not the portion attributable to Implats. These do not include all the “blue sky” opportunities as this is often in the scoping or pre-feasibility stage of planning; some of this potential is specifically excluded at this early stage. Caution should be taken when considering the LoM plans as these may vary if assumptions, modifying factors, exchange rates or metals prices change materially. These LoM profiles should be read in conjunction with mineral resource estimates to determine the long-term potential. The graphs below show the consolidated high-level LoM plans collated from the

individual profiles per operation. The pictorial 30-year profiles are shown as a combination of Levels I, II and III and also the contribution by operation. Only LoM I is based on mineral reserves while LoM II and III have not been converted to mineral reserves. Note that Afplats is the only non-producing operation included in these combined profiles to illustrate the potential impact on the Group profile. Shaft sinking operations at Afplats have been deferred for four years in terms of the strategic review during 2014. It is clear from a combined view that a large proportion of the 30-year plan is still in Levels II and III and would require further studies, funding and approval. The profiles below illustrate the total tonnage; the volumes attributable to Implats will be lower.



## Life-of-mine production

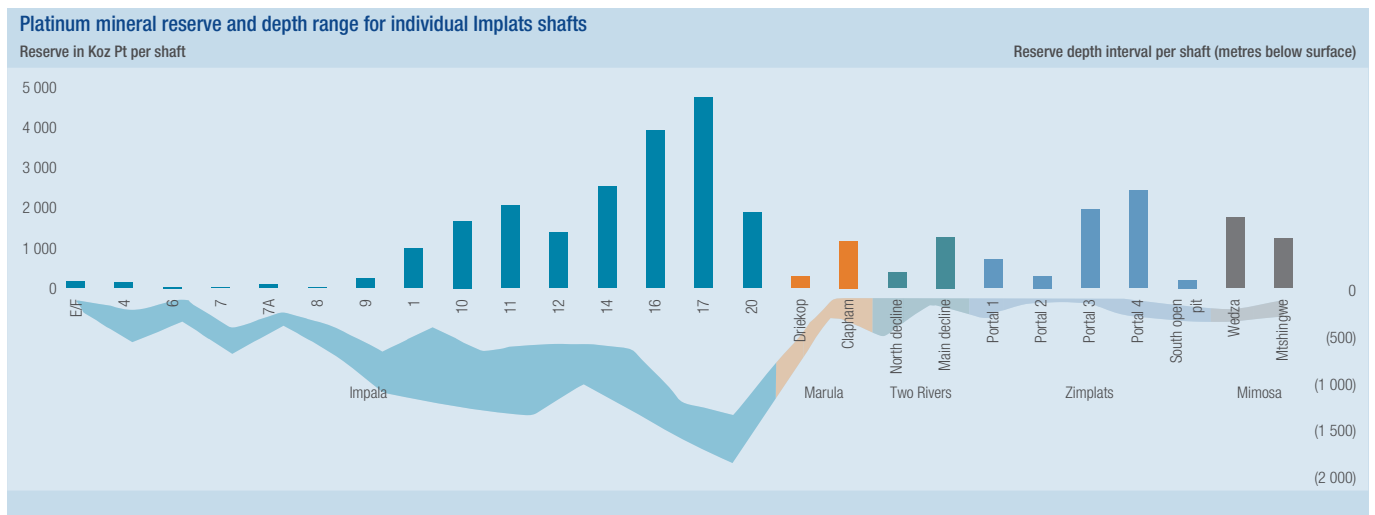


**“Operational excellence is key to our success: low metal prices demand focus on productivity improvements and cost management”**



### Implats' mineral reserves at a glance

The updated allocation of Implats' mineral reserves per shaft infrastructure as at 30 June 2015 is depicted in the accompanying graphic illustration. The range below surface and quantum related to the infrastructure is shown and depicts among others the advantage at Zimplats in this regard. These graphs also give an indication of the potential impact of a possible shaft closure in future should prices demand this.



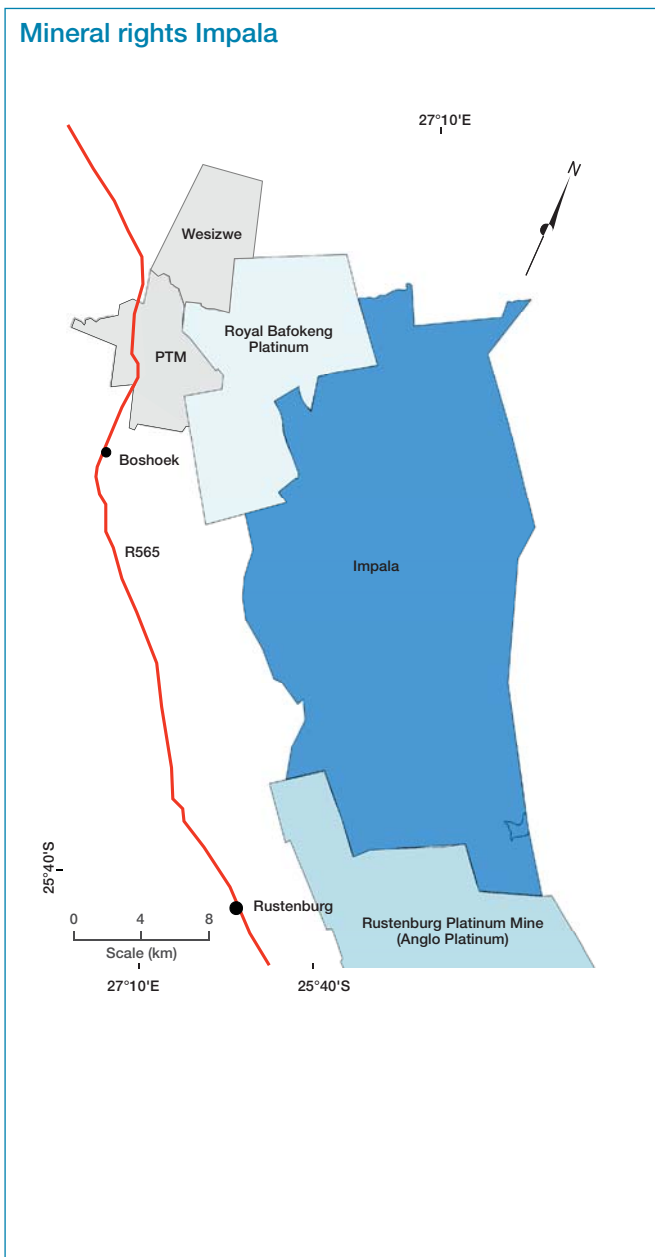


# Impala

“The mineral resource and mineral reserve estimates quoted in this report reflect the status and assumptions as at 30 June 2015. These estimates may need to be adjusted should market and other conditions change”



Mineral rights Impala



Impala locality map

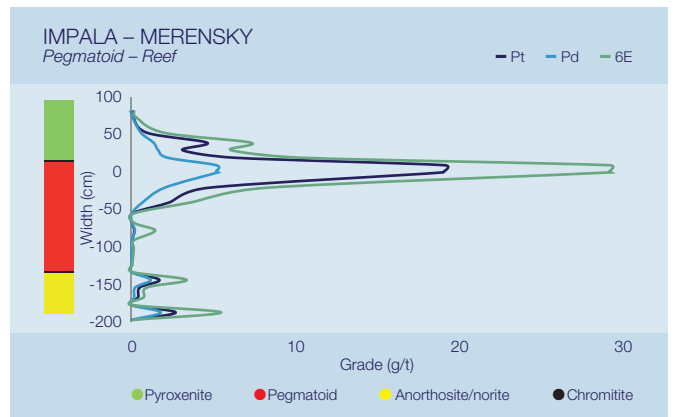
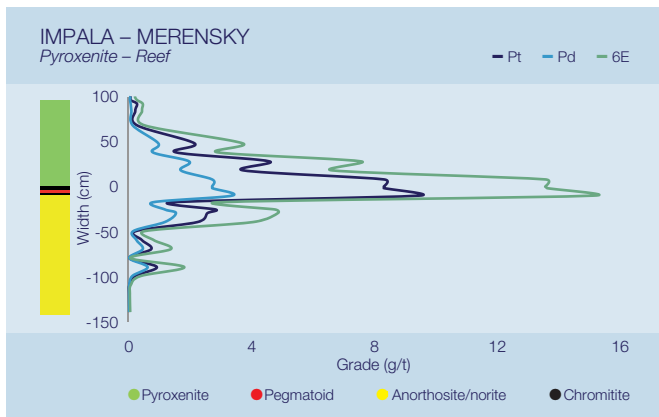
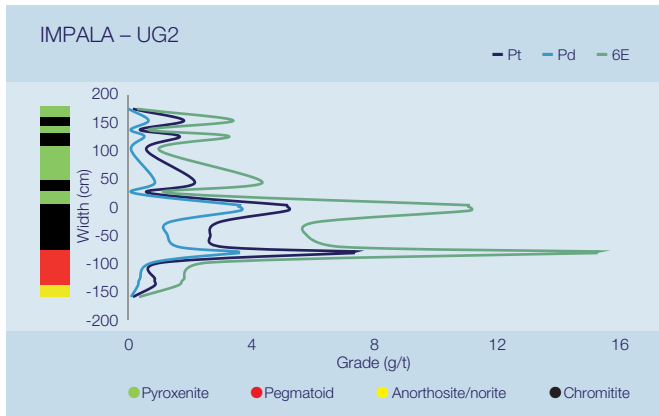
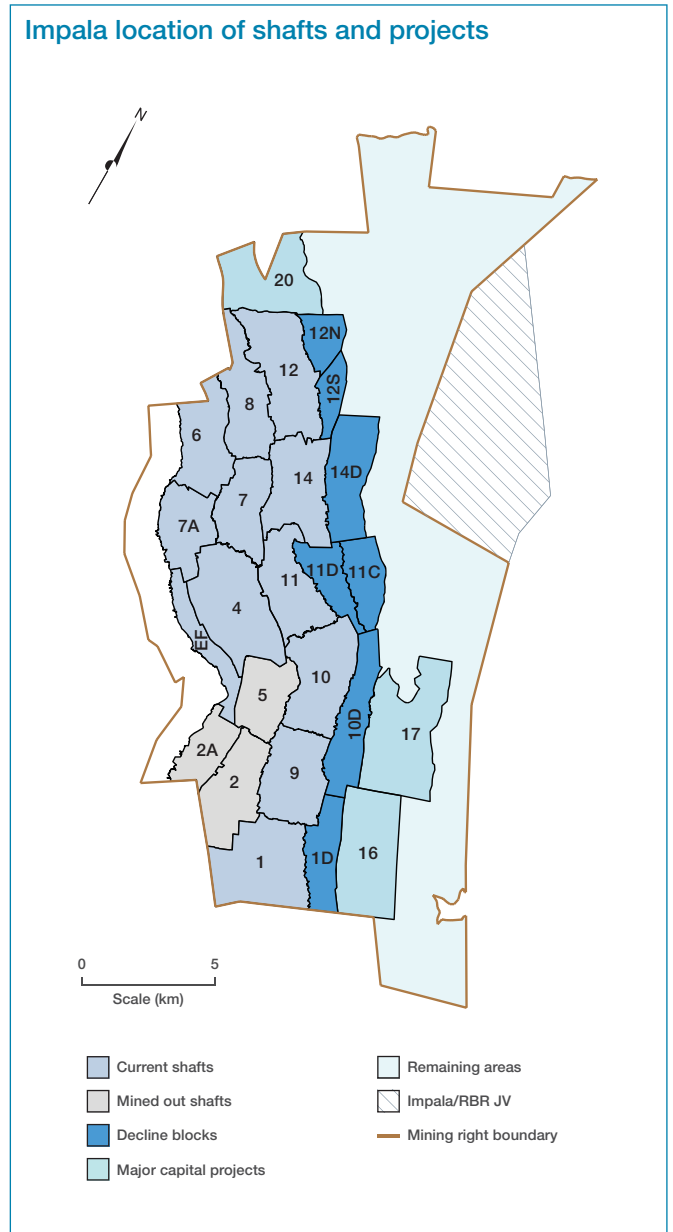


# Impala

The Impala mining operation is located just to the north of Rustenburg on the western limb of the Bushveld Complex. The location of the Impala operation showing the adjacent mines is shown in the accompanying locality map.

Hans Merensky first discovered platinum in the Merensky Reef of the Bushveld Complex in 1924. Impala was created in the mid-1960s to house Union Corporation's platinum interests. At that time a prospecting permit was acquired and initial production commenced in 1969 after a mining lease over land predominantly owned by the then Bafokeng Tribe (now the Royal Bafokeng Nation (RBN)) was originally granted in 1968. Initially Impala mined the Merensky Reef and mining of the UG2 chromitite layer only began in the early 1980s as the technology to smelt chrome ore at a higher temperature was by then developed. By the early 1990s, Impala was producing in the region of one million platinum ounces per annum. A landmark agreement securing Impala's access to these mineral rights for a period of 40 years was signed with the RBN in February 1999. In terms of this agreement, the RBN was entitled to royalties from metals mined in areas over which they held mineral rights. A new agreement, finalised in early March 2007, resulted in the royalty being converted into equity, making the RBN the Group's largest shareholder with board representation

Impala location of shafts and projects



## Impala

at the time. Impala meets the ownership requirements of the Mining Charter for 2015. In terms of the March 2007 agreement, Impala agreed to pay RBN all royalties due to them from 1 July 2007 onwards. This amounted to R12.5 billion. Effectively through this transaction, Impala discharged its future obligation to pay royalties to the RBN. The RBN through Royal Bafokeng Holdings Limited (RBH) used the R12.5 billion to subscribe for 75.1 million Implats shares giving them a 13.2% share in the holding company. During the past year 4% of the Impala shares were issued to employees (ESOP transaction), this leaves Implats with a 96% attributable interest in Impala.

Impala, together with an area where a joint venture with the Royal Bafokeng Resources (RBR) is in place, holds contiguous mining and prospecting rights over a total area of 33 562ha across 20 farms or portions of farms.

Both the Merensky and UG2 Reefs are exploited. The Merensky Reef is generally composed of an upper feldspathic pyroxenite, overlying a thin basal chromitite stringer, followed by an anorthosite to norite footwall. Locally this is termed a "pyroxenite reef". Occasionally a pegmatoidal pyroxenite and a second chromitite stringer may be developed between the feldspathic pyroxenite and the footwall units. This is termed a "pegmatoid reef". As an aid to mining operations the Merensky Reef is further defined as being "A", "B" or "C" Reef where it rests on specific footwall units, ie locally called Footwall 1, 2 and 3 respectively.

The UG2 Reef is defined as a main chromitite layer, with most of the PGM and base metal mineralisation confined to this unit, followed by a poorly mineralised pegmatoidal pyroxenite footwall. The hangingwall to the main chromitite layer is a feldspathic pyroxenite containing up to four thin weakly mineralised chromitite layers.

Both mineralised horizons dip gently away from the sub-outcrop in a north-easterly direction at 10° to 12°. The vertical separation between the Merensky and UG2 Reefs varies from about 125m in the south to 45m in the north of the mining area. The reefs may be disrupted by minor and major faults, lamprophyre and dolerite dykes, late stage ultramafic replacement pegmatoid bodies and potholes. The latter features are generally circular in shape and represent "erosion" or "slumping" into the footwall units. They vary in size from a few metres to tens of metres across and up to tens of metres in depth. All the above mentioned features are accounted for in the mineral resource and mineral reserve statements as

geological losses and contribute to dilution or absence of the mineralised horizons when converted to reserves through the planning process.

The Merensky and UG2 Reefs are mined concurrently; the mining method is predominantly conventional breast mining. Stopping at the operations is carried out through conventional double-sided breast mining in accordance with Impala's best practice principles. The haulages are developed in opposite directions from cross-cuts connected to a central shaft position, following the two reef horizons on strike in the footwall and are defined as half levels. Footwall drives are developed at approximately 18m to 30m below the reef horizon with on-reef raise/winze connections being between 180m and 250m apart. Panel face lengths vary from 15m to 30m for both Merensky and UG2 Reefs, with panels being typically separated by 6 x 3m grid pillars with 2m ventilation holings. Stopping widths are approximately 1.3m and 1.1m for conventional Merensky and UG2 Reefs respectively, depending on the width of the economical reef horizon. Mechanised (trackless) bord and pillar mining occurs in selected Merensky Reef areas on two of the shafts (12 and 14 Shafts). The average stopping width of mechanised panels is about 1.9m.

Mine design and scheduling of operational shafts is undertaken utilising CadsMine™ software, while the mine design and scheduling for project shafts are done using Mine 2-4D™ software. Geological models/ore blocks are updated and validated using G-Blocks and boundaries in the MRM information system. Grade block models are developed utilising Isatis™ software. The mine design for the first two years is monthly per crew. This is extended on an annual basis for the remaining period of the LoM. Key modifying factors such as overbreak, underbreak, off-reef mining, development dimensions, sweepings and mine call factors are applied to the mining area (centare profile) to generate tonnage and grade profiles. The planning sequence allows for a cycle that commences with a comprehensive review of the LoM plan followed by the detailed scheduling of a five-year development schedule and a two-year detailed month-by-month stopping schedule.

The shafts at Impala are locally divided into three groupings, the so-called Old Men (4, 6, 7, 7A, 8, 9 and E/F), the Big 5 (1, 10, 11, 12 and 14) and the Triple Build-up (16, 17 and 20). The distribution of the reserves is depicted in the accompanying graph; it is clear that the bulk of the reserves (53%) are located in the Triple Build-up project shafts.

## Impala

The 30-year LoM profile for Impala is depicted in the graph on page 42. LoM I comprises the profiles of 14 operating vertical shafts, five associated with declines and three approved project shafts (16, 17 and 20) under construction and/or ramp-up. The 20 Shaft and 12 South Decline UG2 Reefs and the extension of 20 Shaft Merensky Reef to 26 and 27 Levels constitute LoM II. LoM III is made up of potential future shaft blocks currently in different stages of project studies. This profile is based on current assumptions and may change in future. Medium-term production plans show a build-up back to around 830koz Pt per annum by 2020.

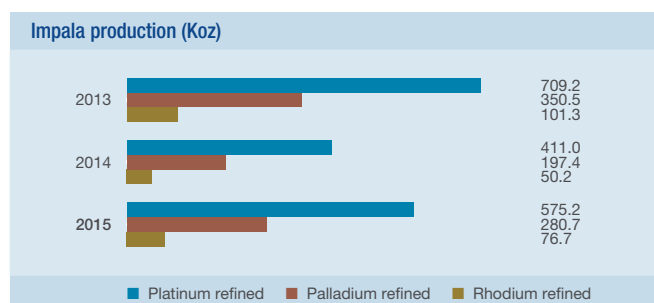
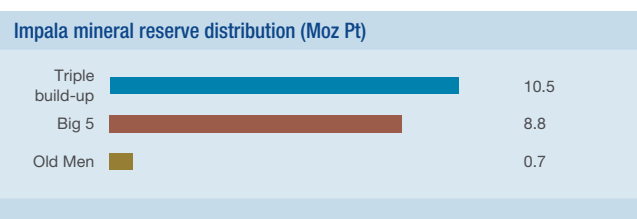
Mineral processes houses the concentrator and smelter operations and is located on the mine property in Rustenburg. Current smelting capacity is 2.6 million ounces of platinum. The refineries, located in Springs, comprise a base metal refinery (BMR) and a precious metal refinery (PMR). Current refining capacity is 2.3 million ounces of platinum at the PMR.

Operating statistics for the combined Impala operations are given below:

### Key operating statistics

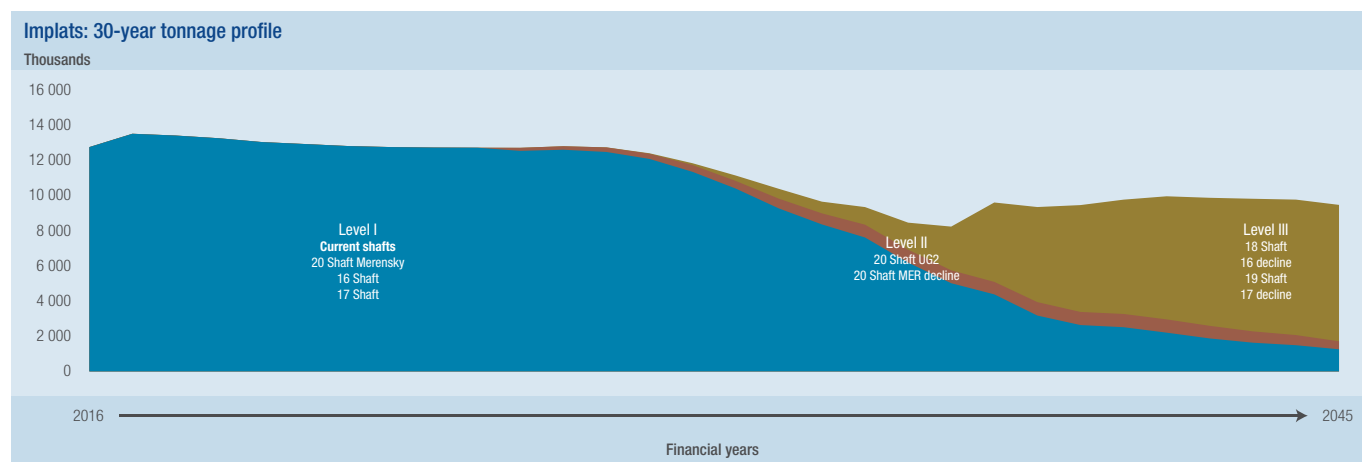
		2015	2014	2013	2012	2011
<b>Production</b>						
Tonnes milled ex mine*	(000t)	<b>9 199</b>	6 183	10 897	10 654	14 054
Head grade 6E	(g/t)	<b>4.19</b>	4.34	4.32	4.38	4.60
Platinum refined	(000 oz)	<b>575</b>	411	709	750	941
PGM refined	(000 oz)	<b>1 137</b>	766	1 378	1 488	1 854
<b>Breakdown of cash costs</b>						
On-mine operations	(Rm)	<b>(10 746)</b>	(6 914)	(9 329)	(7 733)	(7 679)
Processing operations	(Rm)	<b>(1 943)</b>	(1 308)	(1 959)	(1 782)	(1 673)
Refining operations	(Rm)	<b>(561)</b>	(430)	(542)	(505)	(459)
Selling and administration	(Rm)	<b>(488)</b>	(405)	(397)	(416)	(355)
<b>Total cost</b>	(Rm)	<b>13 738</b>	9 057	12 227	10 436	10 166
Per tonne milled*	(R/t)	<b>1 493</b>	1 465	1 122	980	723
	(\$/t)	<b>131</b>	141	127	127	103
Per Pt oz refined	(R/oz)	<b>23 884</b>	22 036	17 241	13 913	10 801
	(\$/oz)	<b>2 092</b>	2 125	1 955	1 797	1 536
<b>Financial ratios</b>						
Gross margin ex mine	(%)	<b>(10.9)</b>	(18.4)	14.4	22.2	38.6
<b>Capital expenditure</b>						
	(Rm)	<b>3 047</b>	2 848	4 411	5 205	4 279
	(\$m)	<b>267</b>	275	500	672	609

\* The mined tonnage and grade statistics above exclude the low-grade material from surface sources





## Impala


**Impala mineral resources and mineral reserves (100%; inclusive reporting)**

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
Merensky	Measured	148.9	125	6.27	7.01	0.16	0.09	30.0	33.5	18.8	150.1	121	6.37	7.11	30.7	19.4
	Indicated	70.2	110	6.42	7.16	0.18	0.09	14.5	16.2	9.1	68.5	112	6.28	7.02	13.8	8.8
	Inferred	22.6	106	6.35	7.10	0.17	0.09	4.6	5.1	2.9	23.6	110	6.00	6.70	4.6	2.9
UG2	Measured	129.1	63	7.32	8.78	0.02	0.01	30.4	36.5	17.6	132.1	63	7.29	8.74	31.0	18.0
	Indicated	49.3	62	7.37	8.84	0.03	0.01	11.7	14.0	6.8	47.5	62	7.38	8.86	11.3	6.5
	Inferred	14.9	64	7.22	8.66	0.03	0.01	3.5	4.1	2.0	14.7	63	7.18	8.61	3.4	2.0
<b>Total</b>		<b>435.0</b>		<b>6.77</b>	<b>7.83</b>	<b>0.10</b>	<b>0.05</b>	<b>94.7</b>	<b>109.5</b>	<b>57.3</b>	<b>436.7</b>		<b>6.75</b>	<b>7.81</b>	<b>94.8</b>	<b>57.6</b>

Mineral reserves		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz		
Merensky	Proved	9.1	138	3.86	4.31	1.1	1.3	0.7	9.5	130	3.77	4.21	1.2	0.7		
	Probable	111.2	137	4.34	4.85	15.5	17.3	9.7	110.4	126	4.28	4.78	15.2	9.6		
UG2	Proved	15.8	108	3.83	4.60	2.0	2.3	1.1	15.6	107	3.72	4.47	1.9	1.1		
	Probable	119.7	108	3.76	4.51	14.5	17.4	8.4	121.6	112	3.69	4.42	14.4	8.4		
<b>Total</b>		<b>255.9</b>		<b>4.02</b>	<b>4.66</b>	<b>33.1</b>	<b>38.3</b>	<b>20.0</b>	<b>257.1</b>		<b>3.95</b>	<b>4.57</b>	<b>32.6</b>	<b>19.8</b>		

Mineral resources		as at 30 June 2015			as at 30 June 2014		
Orebody	Category	Tonnes Mt	Pt grade g/t	Pt Moz	Tonnes Mt	Pt grade g/t	Pt Moz
1 & 2 Tailings Complex	Indicated	48.1	0.42	0.6	48.1	0.42	0.6

# Impala

## Comparison between mineral resource estimate for UG2 chromitite layer and the estimate for the UG2 minimum mining width

as at 30 June 2015

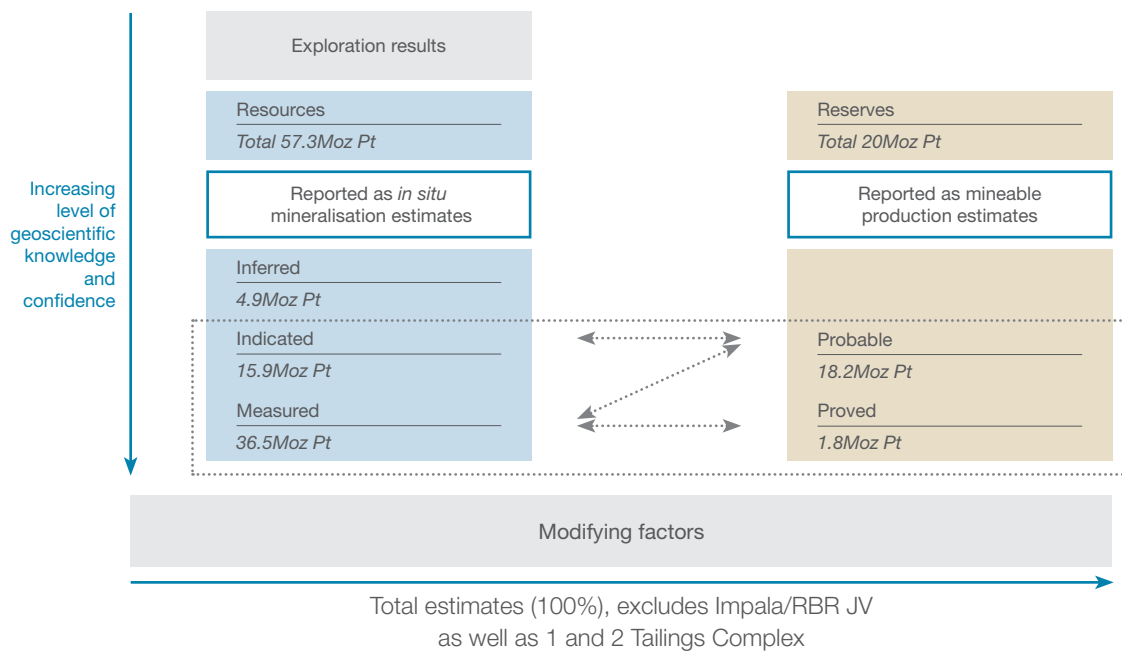
Mineral resources		Minimum mining width as at 30 June 2015									UG2 chromitite layer as at 30 June 2015						
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	6E Moz	Pt Moz
UG2	Measured	181.7	95.0	5.50	6.60	0.04	0.01	32.1	38.5	18.7	129.1	63.2	7.3	8.8	30.4	36.5	17.6
	Indicated	70.8	95.0	5.46	6.55	0.05	0.01	12.4	14.9	7.2	49.3	61.8	7.4	8.8	11.7	14.0	6.8
	Inferred	20.8	95.0	5.56	6.66	0.04	0.01	3.7	4.5	2.2	14.9	63.7	7.2	8.7	3.5	4.1	2.0
	<b>Total</b>	<b>273.3</b>		<b>5.50</b>	<b>6.59</b>	<b>0.04</b>	<b>0.01</b>	<b>48.3</b>	<b>57.9</b>	<b>28.0</b>	<b>193.3</b>		<b>7.33</b>	<b>8.79</b>	<b>45.5</b>	<b>54.6</b>	<b>26.4</b>

## Impala RBR JV mineral resources

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
Merensky	Measured	5.3	151	6.72	7.50	0.17	0.10	1.1	1.3	0.7	5.3	154	6.56	7.33	1.1	0.7
	Indicated	5.4	151	7.12	7.95	0.16	0.10	1.2	1.4	0.8	5.4	151	7.10	7.92	1.2	0.8
	Inferred	5.0	140	6.69	7.48	0.16	0.10	1.1	1.2	0.7	4.9	137	6.65	7.42	1.0	0.7
UG2	Measured	1.5	52	7.47	8.97	0.03	0.00	0.4	0.4	0.2	1.5	52	7.48	8.98	0.4	0.2
	Indicated	2.5	61	7.95	9.54	0.03	0.00	0.6	0.8	0.4	2.5	61	7.95	9.54	0.6	0.4
	Inferred	2.0	63	7.26	8.71	0.04	0.01	0.5	0.6	0.3	2.0	63	7.26	8.71	0.5	0.3
<b>Total</b>		<b>21.6</b>		<b>7.06</b>	<b>8.06</b>	<b>0.13</b>	<b>0.07</b>	<b>4.9</b>	<b>5.6</b>	<b>3.0</b>	<b>21.6</b>		<b>7.00</b>	<b>7.99</b>	<b>4.9</b>	<b>3.0</b>

## Relationship between exploration results, mineral resources and mineral reserves (100%)

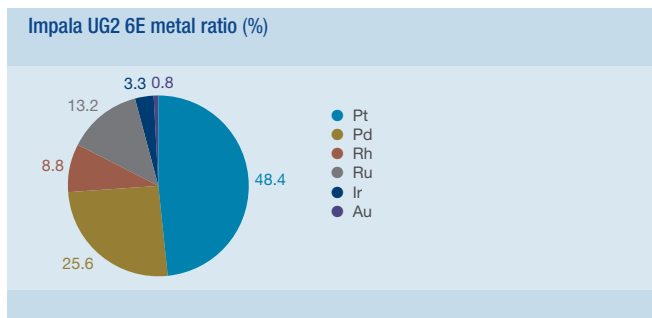
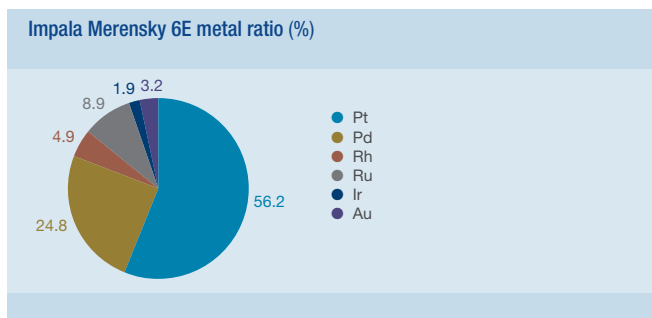
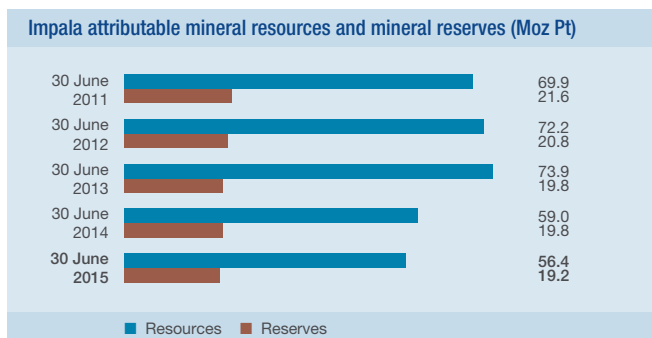
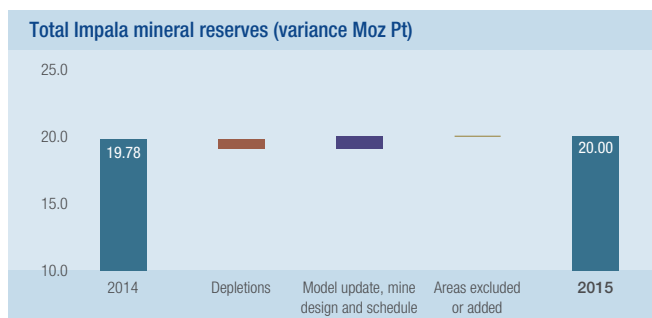
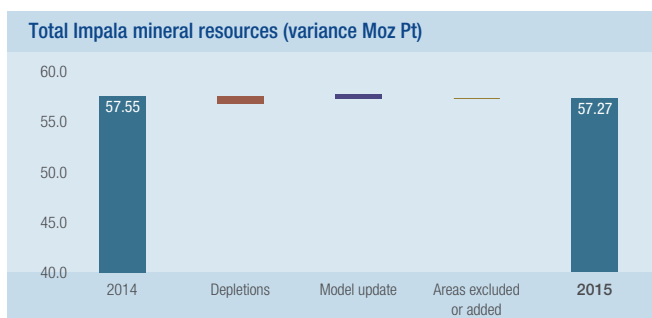


# Impala

## Notes (applicable to Impala and Impala RBR JV)

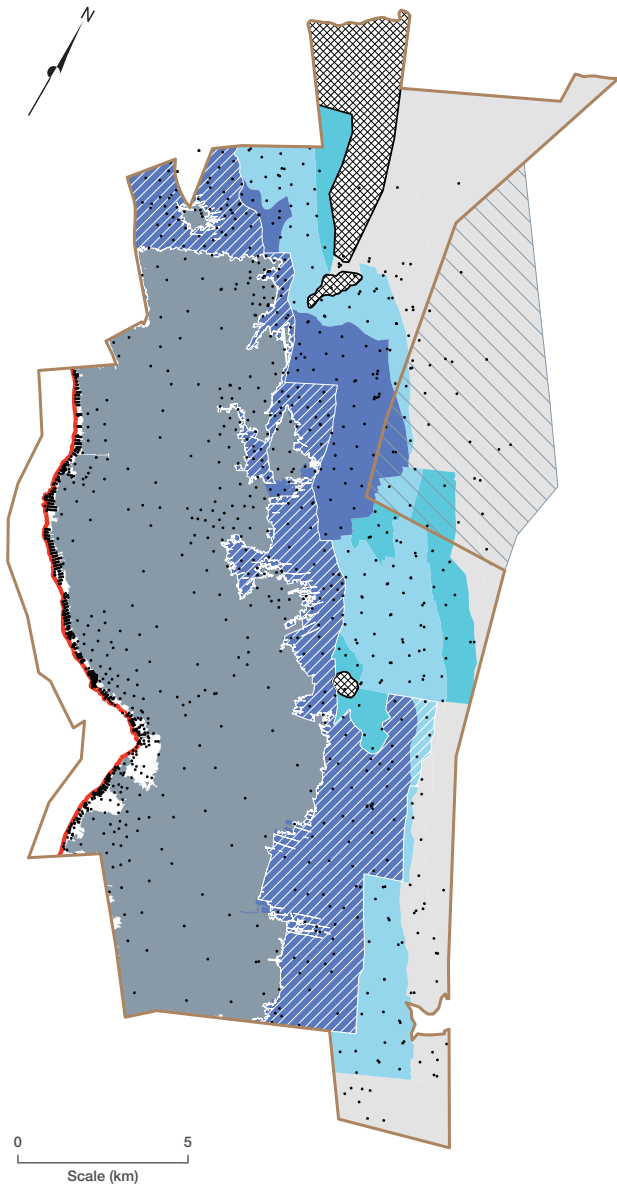
- Mineral resources are quoted inclusive of mineral reserves
- Mineral resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining
- The introduction of a depth cut-off was noted in previous reports. Effectively no mineral resources deeper than 2 000m below surface are reported. Additional to the depth cut-off areas various mineral resource blocks are considered on a case-by-case basis and this has resulted in areas where the eventual economic extraction is in doubt. These mineral resources will be reported as exploration results.
- The modifying factors used to convert a mineral resource to a mineral reserve are derived from historical performance while taking future anticipated conditions into account
- No inferred mineral resources have been converted into mineral reserves
- Mineral reserves quoted reflect the grade delivered to the mill
- The UG2 mineral resources estimate is compared with a minimum mining cut of 95cm. This illustrates significant dilution as very little metal is added by the increase to the mining width
- Mineral resources and mineral reserve grades are shown for both 4E and 6E.
- The mineral resources and mineral reserves involved with the royalty agreement with RBPlat are excluded in this report as the ownership vests with RBPlat. This refers to the agreement with RBPlat to access certain of its mining areas at BRPM from 6, 8 and 20 Shafts
- Rounding of numbers may result in minor computational discrepancies; mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations
- The economic viability of the Impala mineral reserves is tested by means of net present value calculations over the LoM of the reserve, determining the lowest real rand basket price which would still render the reserve viable. This is then tested against the internal Impala estimate of the real long-term basket price, the spot price as at 30 June 2015 and a consensus view from various financial institutions. These tests indicate that the Impala operation requires a real long-term basket price of between R19 000 and R20 000 to be economically viable. While the real spot basket price as at 30 June 2015 was R19 424, the Impala internal long-term real basket price is R25 886 and the equivalent calculated consensus price is R22 309. Some 32% of the Impala mineral reserves will not be viable at the 30 June 2015 spot prices.

The year-on-year reconciliation of the total Impala mineral resources and mineral reserves is depicted in the accompanying graphs.



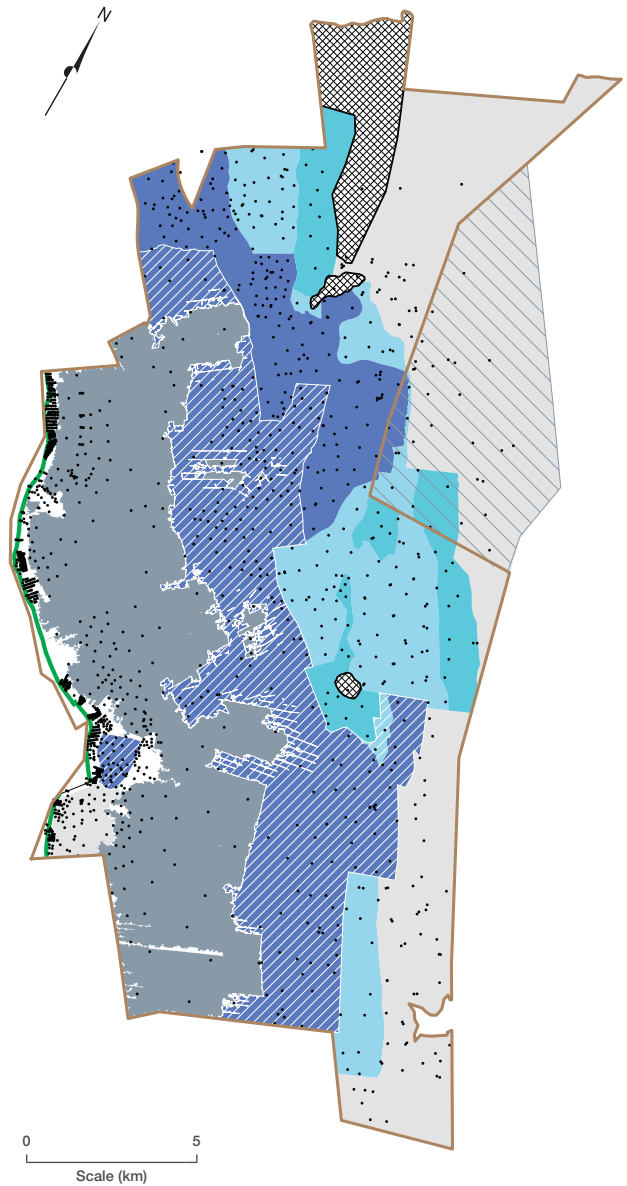
# Impala

**Impala Merensky mineral resources and mineral reserves**



- Boreholes
- Mined-out areas
- Measured mineral resource
- Indicated mineral resource
- Inferred mineral resource
- Excluded mineral resource
- Major geological features
- Mineral reserve
- Impala/RBR JV
- Merensky sub-outcrop
- Mining right boundary

**Impala UG2 mineral resources and mineral reserves**



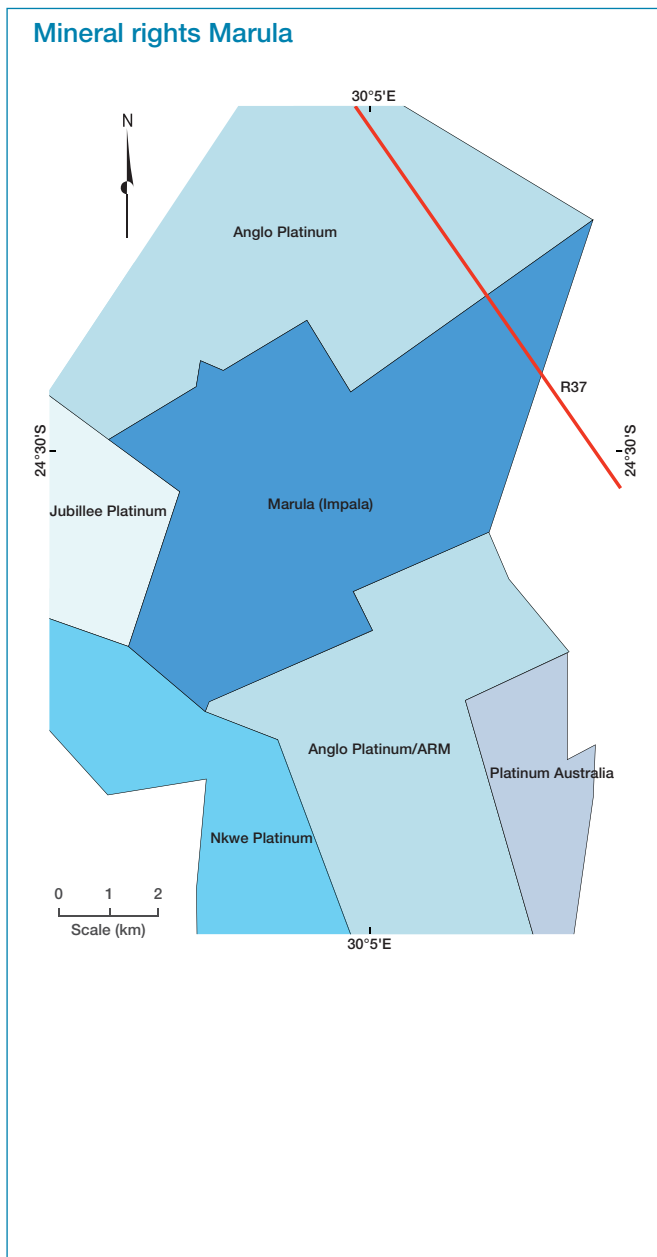
- Boreholes
- Mined-out areas
- Measured mineral resource
- Indicated mineral resource
- Inferred mineral resource
- Excluded mineral resource
- Major geological features
- Mineral reserve
- Impala/RBR JV
- UG2 sub-outcrop
- Mining right boundary



# Marula



“The Mineral Corporation completed a technical review of Marula, they did not identify any fatal flaws in geological data collection and processing as well as mineral resources estimation



## Marula

The Marula mining operation is located on the eastern limb of the Bushveld Complex, some 35km north-west of Burgersfort. The operation is located between the Modikwa Mine, which is an Anglo Platinum/ARM Joint Venture, and the Anglo Platinum Twickenham Mine.

Platinum was first discovered in the area by renowned explorer Hans Merensky on the nearby farm Maandagshoek (now part of Modikwa Platinum Mine) in the 1920s. In June 1998 Implats entered into an arrangement to acquire the Winnaarshoek property from Platexco, a Canadian-based company. The mineral rights to portions of the adjacent farms of Clapham and Forest Hill and a sub-lease to Driekop were subsequently acquired from Anglo Platinum in exchange for Hendriksplaats (now part of Modikwa) so consolidating the Marula Mine area. The exploration programme was then expanded and some 750 surface boreholes were drilled. The establishment and development of the mine, requiring considerable investment from Implats in both infrastructure and environmental protection measures, commenced in October 2002.

Marula holds two contiguous mining rights and a prospecting right covering 5 494ha across the farms Winnaarshoek and Clapham, and portions of the farms Driekop, Forest Hill and Hackney. Marula also has a royalty agreement with Modikwa which allows limited mining on an area adjacent to the Driekop Shaft. These mineral resources and mineral reserves have not been reflected in the current statement as ownership still rests with Modikwa. During the past year an additional portion of the UG2 mineral rights on a portion of the farm Driekop has been incorporated into the Marula mining rights. Implats has a 73% interest in Marula with each of the three empowerment groupings (Mmakau Mining, the Marula Community Trust and Tubatse Platinum) holding a 9% interest.

Both the Merensky and UG2 Reefs are present but only the UG2 is currently exploited. The geological succession is broadly similar to that of the western limb. The UG2 Reef is defined as a main chromitite layer, with most of the mineralisation confined to this unit, followed by a poorly mineralised pegmatoidal

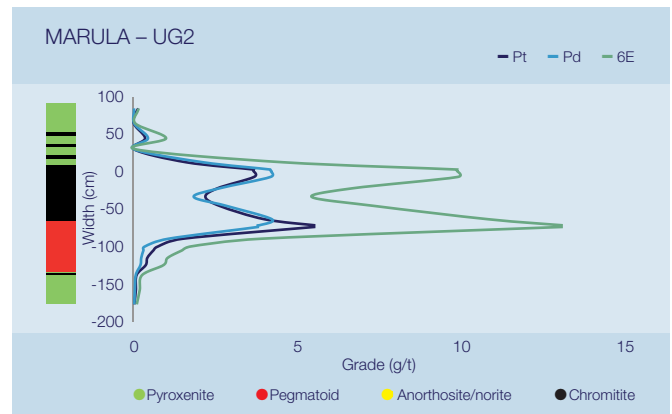
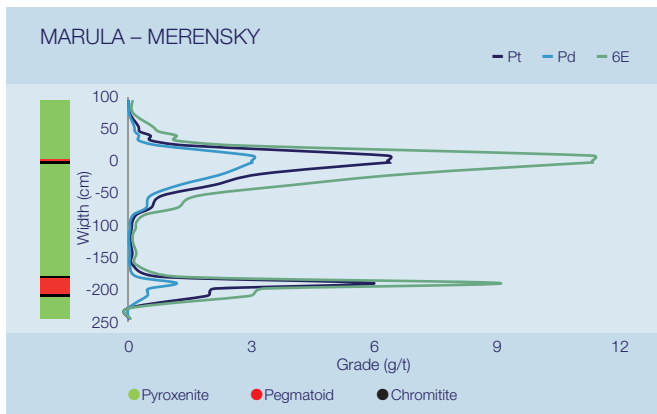
footwall. The Merensky Reef is the upper portion of a pyroxenite layer, with a chromitite stringer close to the hangingwall contact. Mineralisation peaks over the chromitite stringer and decreases into the hangingwall and footwall. Both mineralised horizons sub-outcrop on the Marula mining rights area and dip in a west-southwest direction at 12° to 14°. The vertical separation between the Merensky and UG2 Reefs averages 400m. The reefs are relatively undisturbed by faults and dykes with one major dyke traversing the mining area. Potholes represent the majority of the geological losses encountered underground, while a small dunite pipe also disrupts the reef horizons. These geological features are accounted for in the mineral resource and mineral reserve statements as geological losses.

Marula Mine has two decline shaft systems. Driekop Shaft is exploiting the UG2 Reef by means of a hybrid mining method, while at Clapham Shaft, both a hybrid and conventional mining method are currently being used to exploit the UG2 Reef. For the two hybrid sections, all main development is done on reef, and the stoping is carried out through conventional single-sided breast mining from a centre gully. Panel face lengths are approximately 16 to 24m, with panels being separated by 6m x 4m grid pillars with 2m ventilation holings. The stoping width averages 1.4m. For the conventional operation, the footwall drives are developed on strike approximately 25m below the reef horizon with cross-cut breakaways about 220m apart. This development is undertaken with drill rigs and dump trucks. Stope face drilling takes place with hand-held pneumatic rock drills with air legs.

Mine design and scheduling of the operational shafts is carried out utilising CadsMine™ software. Geological models and ore blocks are updated and validated using G-Blocks and

Marula mineral reserve distribution (Moz Pt)

Clapham decline	1.1
Clapham hybrid	0.2
Driekop hybrid	0.4



## Marula

boundaries in the MRM information system. Grade block models are developed utilising Isatis™ software. The planning process commences with the compilation of the LoM plan (August to October) followed by a detailed two-year budget plan (March to May).

The spread of mineral reserves over the three mining sections is depicted below. The majority of the mineral reserves (67%) is located in the Clapham decline section. The LoM I encompasses the UG2 Reef Clapham hybrid, Clapham up to 5 Level, Driekop hybrid and Driekop Extension areas. This will take the mine to a sustainable production level of over 2Mt per annum until 2024. Maintaining the profile after 2024 is the subject of ongoing studies and will require some capital

expenditure to optimise the LoM II and LoM III in the 30-year LoM profile. The comparison between the mineral resource statement and the 30-year LoM profile clearly illustrates its potential to expand operations in future if economically viable. Note that the indicative LoM profile is based on a range of assumptions which could change in future.

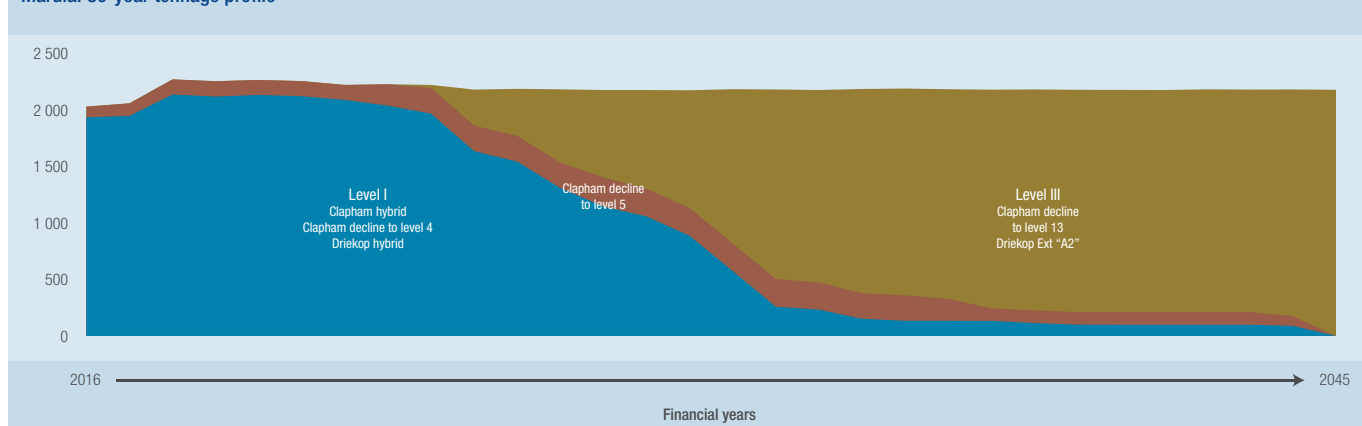
Marula has a concentrator plant where initial processing is conducted. Concentrate is transported by road to Impala's Mineral Processes in Rustenburg in terms of a LoM offtake agreement with Impala Refining Services (IRS).

The historic operating statistics for Marula are shown below:

### Key operating statistics

		2015	2014	2013	2012	2011
<b>Production</b>						
Tonnes milled ex mine	(000t)	1 662	1 794	1 628	1 579	1 542
Head grade 6E	(g/t)	4.19	4.19	4.19	4.18	4.39
Platinum in concentrate	(000 oz)	73.6	78.5	71.7	69.1	70.6
PGM in concentrate	(000 oz)	193.3	206.4	188.3	182.2	185.7
<b>Breakdown of cash costs</b>						
On-mine operations	(Rm)	(1 469)	(1 371)	(1 249)	(984)	(1 040)
Concentrating operations	(Rm)	(193)	(188)	(161)	(155)	(152)
<b>Total cost</b>	(Rm)	<b>1 662</b>	1 559	1 410	1 139	1 192
Per tonne milled	(R/t)	1 000	869	866	721	773
	(\$/t)	88	84	98	93	110
Per Pt oz in concentrate	(R/oz)	22 582	19 860	19 665	16 483	16 884
	(\$/oz)	1 978	1 915	2 230	2 129	2 401
<b>Financial ratios</b>						
Gross margin ex mine	(%)	(13.4)	(0.7)	(15.4)	(6.7)	(3.2)
<b>Capital expenditure</b>						
	(Rm)	145	161	127	212	251
	(\$m)	13	16	14	27	36

Marula: 30-year tonnage profile



# Marula

## Marula mineral resources and mineral reserves (100%; inclusive reporting)

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
Merensky	Measured	34.3	100	4.24	4.55	0.20	0.11	4.7	5.0	2.7	34.3	100	4.24	4.55	4.7	2.7
	Indicated	7.7	100	4.26	4.54	0.19	0.11	1.1	1.1	0.6	7.7	100	4.26	4.54	1.1	0.6
	Inferred	9.9	100	4.16	4.46	0.21	0.12	1.3	1.4	0.8	9.9	100	4.16	4.46	1.3	0.8
UG2	Measured	34.0	57	8.75	10.17	0.05	0.02	9.6	11.1	4.2	30.1	57	8.75	10.16	8.4	3.7
	Indicated	14.2	62	8.92	10.38	0.06	0.03	4.1	4.7	1.8	12.4	62	8.90	10.33	3.5	1.6
	Inferred	7.6	60	9.09	10.61	0.06	0.03	2.2	2.6	1.0	6.1	60	9.07	10.57	1.8	0.8
	<b>Total</b>	<b>107.7</b>		<b>6.62</b>	<b>7.51</b>	<b>0.13</b>	<b>0.07</b>	<b>22.9</b>	<b>26.0</b>	<b>11.1</b>	<b>100.4</b>		<b>6.45</b>	<b>7.30</b>	<b>20.8</b>	<b>10.1</b>

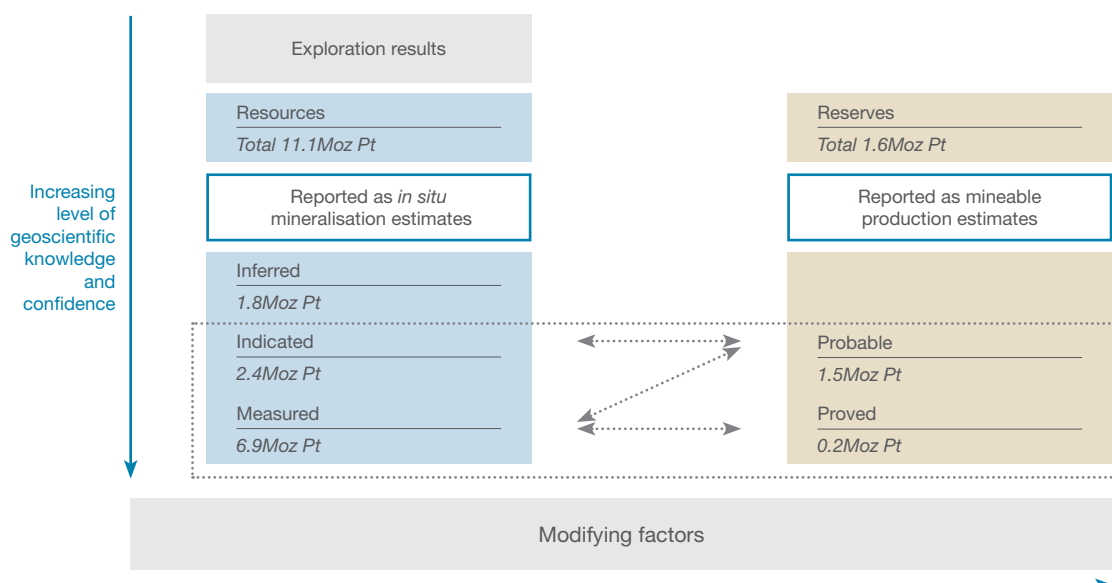
Mineral reserves		as at 30 June 2015							as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
UG2	Proved	3.0	136	4.02	4.67	0.4	0.4	0.2	3.1	136	4.04	4.69	0.4	0.2
	Probable	27.0	134	3.85	4.47	3.3	3.9	1.5	22.0	137	4.15	4.81	2.9	1.3
	<b>Total</b>	<b>30.0</b>		<b>3.87</b>	<b>4.49</b>	<b>3.7</b>	<b>4.3</b>	<b>1.6</b>	<b>25.1</b>		<b>4.14</b>	<b>4.80</b>	<b>3.3</b>	<b>1.5</b>

## Comparison between mineral resource estimate for UG2 chromitite layer and the estimate for the UG2 minimum mining width

as at 30 June 2015

Mineral resources		Minimum mining width as at 30 June 2015									UG2 chromitite layer as at 30 June 2015						
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	6E Moz	Pt Moz
UG2	Measured	53.2	96	6.19	7.18	0.04	0.02	10.6	12.3	4.6	34.0	57	8.75	10.17	9.6	11.1	4.2
	Indicated	22.0	102	6.25	7.25	0.05	0.02	4.4	5.1	1.9	14.2	62	8.92	10.38	4.1	4.7	1.8
	Inferred	11.8	99	6.48	7.51	0.05	0.02	2.5	2.9	1.1	7.6	60	9.09	10.61	2.2	2.6	1.0
	<b>Total</b>	<b>87.0</b>		<b>6.24</b>	<b>7.24</b>	<b>0.05</b>	<b>0.02</b>	<b>17.5</b>	<b>20.2</b>	<b>7.7</b>	<b>55.8</b>		<b>8.84</b>	<b>10.28</b>	<b>15.9</b>	<b>18.5</b>	<b>7.0</b>

## Relationship between exploration results, mineral resources and mineral reserves (100%)



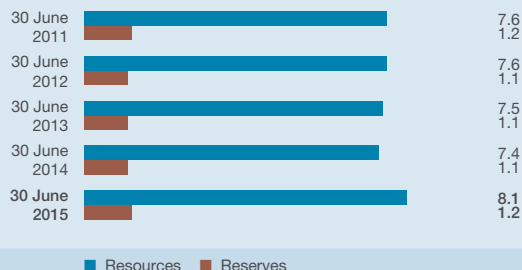


## Marula

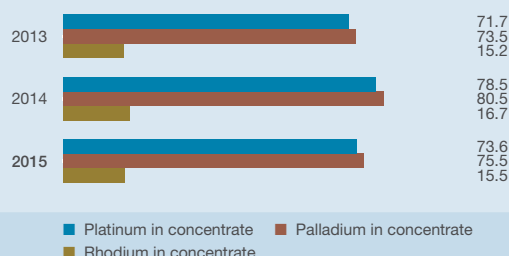
### Notes

- The statement reflects total estimates for Marula as at 30 June 2015; corresponding estimated attributable mineral resources and reserves are summarised elsewhere in this report
- Mineral resources are quoted inclusive of mineral reserves
- Mineral reserves quoted now reflect the stoping width, and not a total mine width
- Mineral reserves quoted reflect the grade delivered to the mill rather than the *in situ* channel grade quoted in respect of the mineral resources
- The modifying factors used in the UG2 mineral reserve calculation are based on the mine plan which envisages hybrid and conventional breast mining operations
- Estimated geological losses have been accounted for in the mineral resource calculation
- The UG2 mineral resource accounts for the main chromitite layer channel width only, without consideration of dilution. A separate table is included this year to reflect the comparative minimum mining width resource cut. Notably this shows a lower grade but with similar metal content
- Grade estimates were obtained by means of ordinary kriging of borehole intersections
- No additional work was done on the Merensky mineral resource estimation during the year and the same statement is reported as in the previous three years
- Changes in the UG2 mineral resource estimates since last year reflect an updated estimation using limited additional data
- No inferred mineral resources have been converted into mineral reserves
- The mineral resources and mineral reserves are reflected in both 4E and 6E formats
- Rounding of numbers may result in minor computational discrepancies. Mineral resource estimates are inherently imprecise in nature and the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations
- The average nickel and copper grades based on exploration samples are 0.202% Ni and 0.115% Cu for the Merensky Reef channel
- The average nickel and copper grades based on exploration samples are 0.056% Ni and 0.025% Cu for the UG2 Reef channel
- The economic viability of the Marula mineral reserves is tested by means of net present value calculations over the LoM of the reserve, determining the lowest real rand basket price which would still render the reserve viable. This is then tested against the internal Marula estimate of the real long-term basket price, the spot price as at 30 June 2015 and a consensus view from various financial institutions. These tests indicate that the Marula operation requires a real long-term basket price of between R23 500 to R24 500 to be economically viable. While the real spot basket price as at 30 June 2015 was R24 618, the Marula internal long-term real basket price is R33 436 and the equivalent calculated consensus price is R28 048

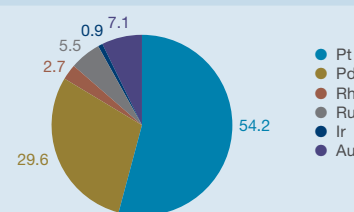
Marula attributable mineral resources and mineral reserves (Moz Pt)



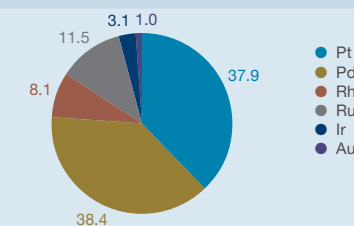
Marula production (Koz)



Marula Merensky 6E metal ratio (%)

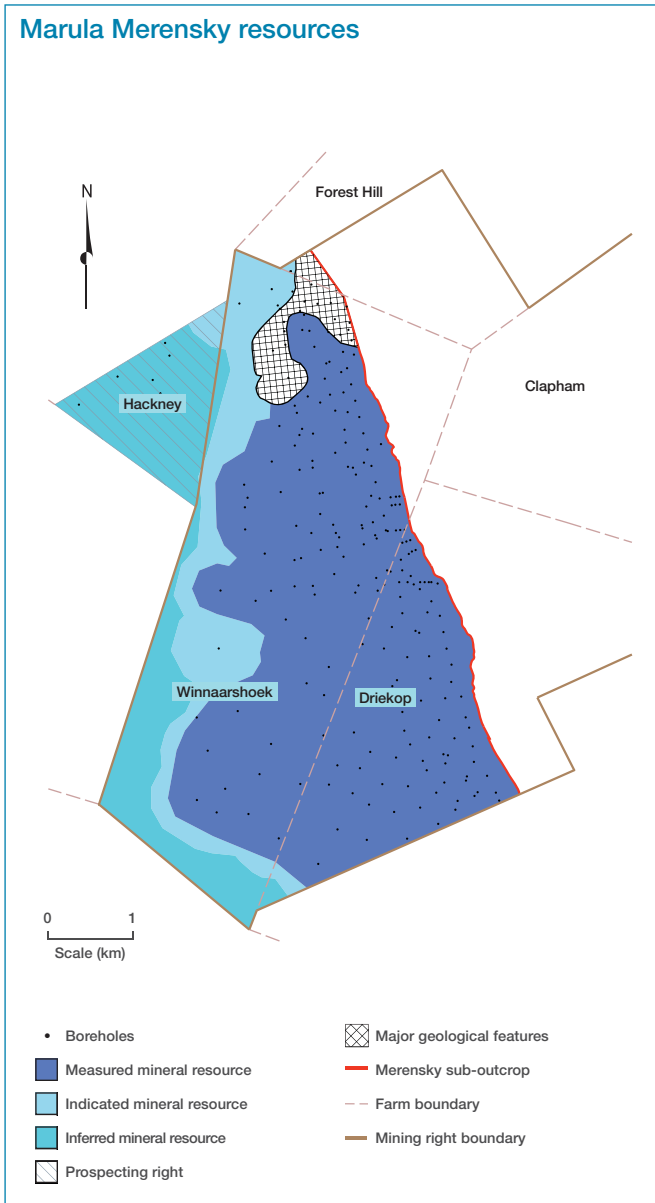


Marula UG2 6E metal ratio (%)

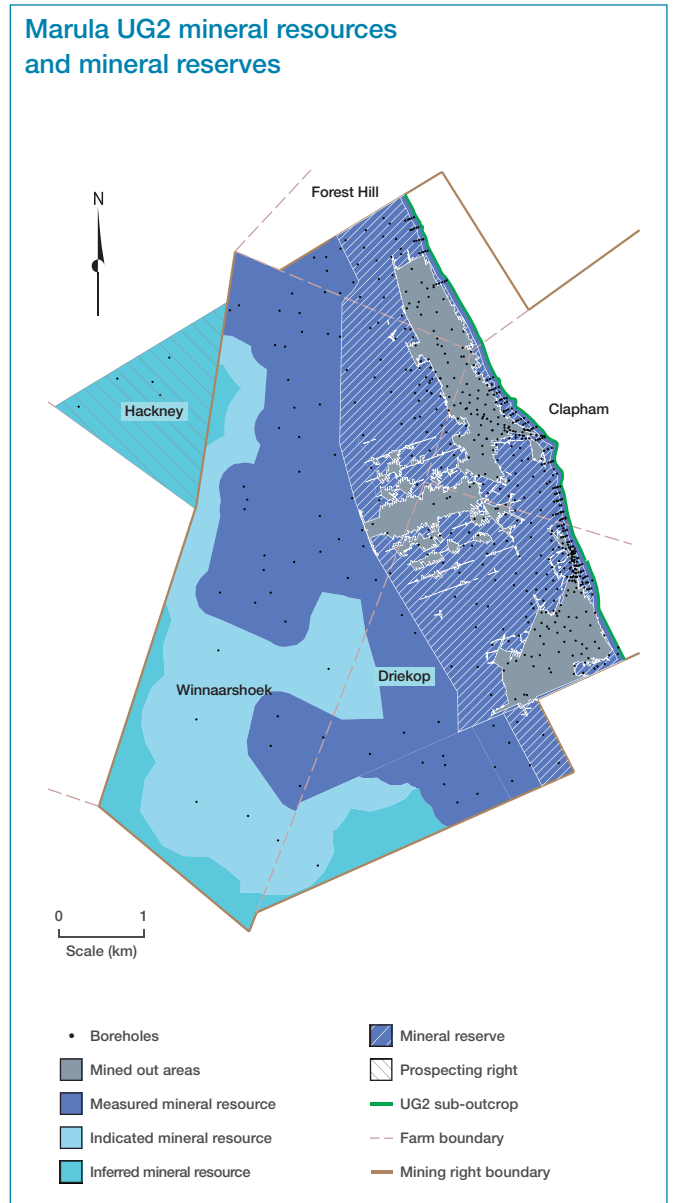


# Marula

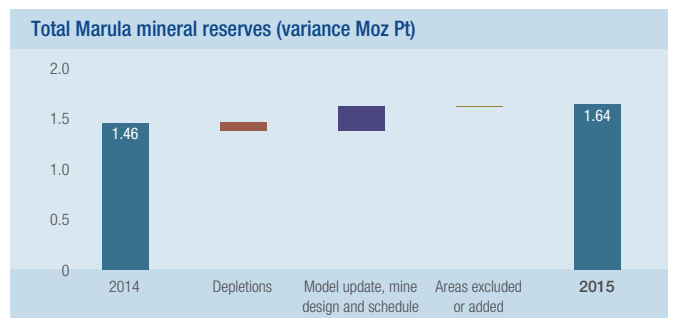
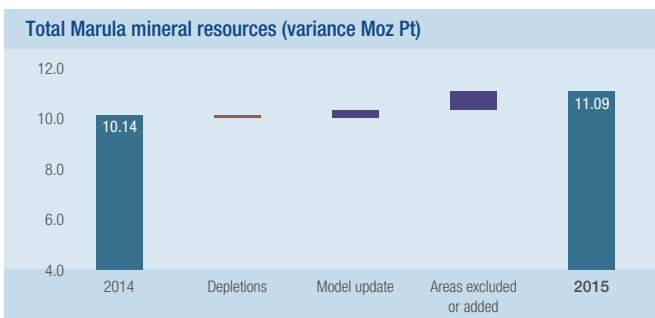
Marula Merensky resources



Marula UG2 mineral resources and mineral reserves



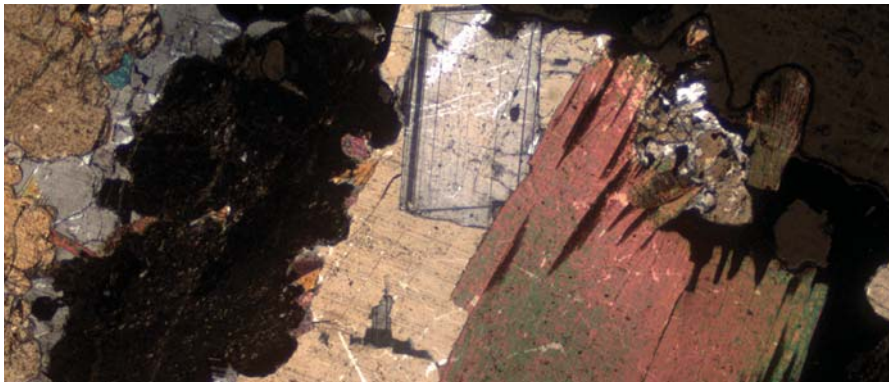
The year-on-year reconciliation of the total Marula mineral resources and mineral reserves is depicted in the accompanying graphs.



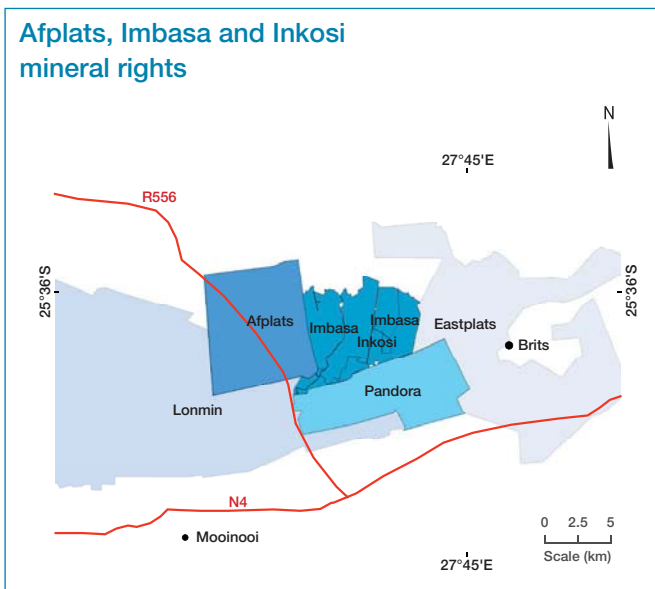
“Shaft sinking at the Afplats Leeuwkop project has been deferred for four years due to the prevailing depressed market outlook and associated cash constraints. During this period Afplats has undertaken to meet all Social and Labour Plan commitments



## Afplats, Imbasa and Inkosi



Afplats, Imbasa and Inkosi mineral rights



Locality map showing Afplats, Imbasa and Inkosi



Afplats' Leeuwkop Project and the adjacent prospecting right areas of Imbasa and Inkosi are located 10km west of Brits on the western limb of the Bushveld Complex as shown in the locality map adjacent.

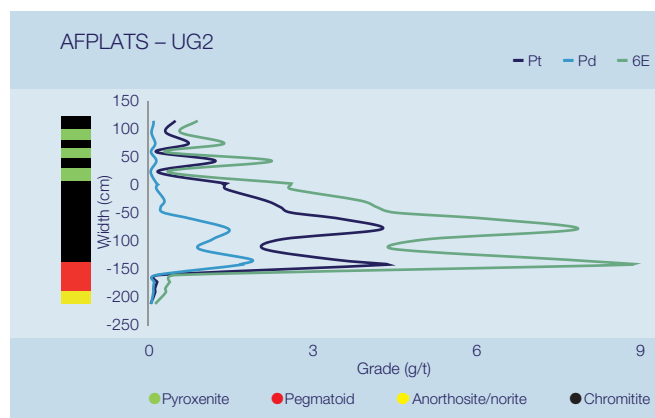
Implats acquired its interest in the Afplats, Imbasa and Inkosi mineral rights through the acquisition of African Platinum Plc in 2007. Since the dissolution of African Platinum Plc, the Afplats, Imbasa/Inkosi prospecting rights are held by Implats together with joint venture partners. The ownership of Afplats comprising the farms Leeuwkop, Kareepoort and Wolvekraal, is jointly owned by Implats (74%) and the Bakwena community (Ba-Mogopa Platinum Investments (Pty) Limited, 26%). The remainder of the Imbasa/Inkosi interest is held by our BEE partner Pfula Investments (Pty) Ltd. The mineral resources of the three areas are therefore reported separately to reflect this ownership. The extent of the different areas is listed on page 53 together with Implats' interest.

## Afplats, Imbasa and Inkosi

	Mining right (ha)	Prospecting right (ha)	Implats' interest (%)
Afplats	4 602	1 065	74
Imbasa		1 673	60
Inkosi		2 584	49

Both the Merensky and UG2 Reefs have been explored at Afplats, Imbasa and Inkosi, but only the UG2 Reef is currently considered to be economically exploitable. The UG2 Reef comprises a main and upper chromitite layer separated by narrow pyroxenite partings. This will be exploited as a single package. The Merensky Reef is the upper portion of the pyroxenite layer, with a very thin chromitite stringer close to the hangingwall contact. Mineralisation peaks over the chromitite stringer and decreases into the footwall. The UG2 Reef occurs about 1 050m below surface at the southern boundary of the farm Leeuwkop. The vertical separation between the Merensky and UG2 Reefs averages 200m and both reefs dip northwards at 9°.

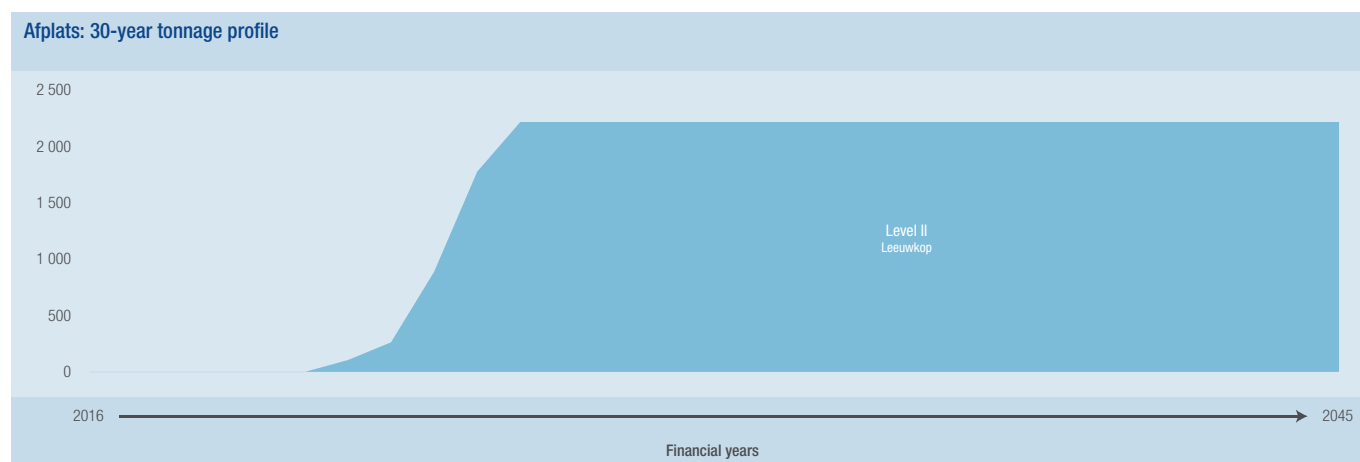
Mine development was previously deferred from 2009 until 2011. During 2011, shaft sinking operations were initiated at the Main Shaft only, given the prevailing market conditions at the time. The sinking activities were stopped during 2015 and



the project has been deferred for four years, given the present financial and cash constraints. The Main Shaft has progressed to a depth of 1 198m below surface above the planned shaft bottom position of 1 396m below surface. The mine plan is being revisited with the view to consider a mechanised bord and pillar design. The mineral resource has therefore not been reclassified to the mineral reserve category pending the full project approval and funding in accordance with Implats' practice.

The indicative LoM profile for the Leeuwkop Project is included. This is under review given the present cash constraints and the consideration of a mechanised mining layout.

### Afplats: 30-year tonnage profile





## Afplats, Imbasa and Inkosi

### Afplats, Imbasa and Inkosi mineral resources (100%)

as at 30 June 2015

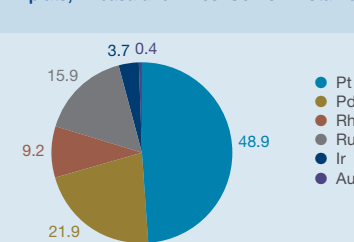
Mineral resources		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
Afplats UG2	Measured	98.4	133	5.19	6.47	0.03	0.01	16.4	20.5	10.0	94.3	133	5.16	6.43	15.6	9.5
	Indicated	10.8	136	5.11	6.36	0.03	0.01	1.8	2.2	1.1	10.6	136	5.08	6.31	1.7	1.1
	Inferred	55.9	129	5.06	6.25	0.03	0.01	9.1	11.2	5.5	55.3	129	5.05	6.30	9.0	5.5
<b>Total Afplats</b>		<b>165.1</b>		<b>5.14</b>	<b>6.39</b>	<b>0.03</b>	<b>0.01</b>	<b>27.3</b>	<b>33.9</b>	<b>16.6</b>	<b>160.3</b>		<b>5.11</b>	<b>6.37</b>	<b>26.4</b>	<b>16.1</b>
Imbasa UG2	Indicated	28.2	137	4.59	5.74	0.03	0.01	4.2	5.2	2.6	28.1	136	4.58	5.75	4.1	2.5
	Inferred	40.2	144	4.53	5.70	0.03	0.01	5.9	7.4	3.6	40.2	142	4.52	5.69	5.8	3.6
Inkosi UG2	Indicated	67.9	135	4.87	6.14	0.03	0.01	10.6	13.4	6.6	65.7	134	4.86	6.12	10.3	6.3
	Inferred	38.4	142	4.64	5.88	0.03	0.01	5.7	7.3	3.6	39.2	139	4.62	5.84	5.8	3.6
<b>Total Imbasa/Inkosi</b>		<b>174.7</b>		<b>4.70</b>	<b>5.92</b>	<b>0.03</b>	<b>0.01</b>	<b>26.4</b>	<b>33.2</b>	<b>16.3</b>	<b>173.2</b>		<b>4.68</b>	<b>5.90</b>	<b>26.1</b>	<b>16.1</b>
<b>Total (Afplats, Imbasa and Inkosi)</b>		<b>339.8</b>		<b>4.91</b>	<b>6.15</b>	<b>0.03</b>	<b>0.01</b>	<b>53.7</b>	<b>67.1</b>	<b>32.8</b>	<b>333.4</b>		<b>4.89</b>	<b>6.13</b>	<b>52.4</b>	<b>32.1</b>

### Notes

- The statement above reflects the total estimate for the Afplats, Imbasa and Inkosi areas; the attributable mineral resources are reported in the summary sections
- Implats has chosen not to publish Merensky Reef mineral resource estimates as the eventual economic extraction is presently in doubt
- The previous depth cut-off of 2 350m below surface for mineral resources was reviewed during 2014, and was updated to reflect a 2 000m below surface cut-off. The eventual economic extraction of certain mineral resources below current and planned infrastructure is in doubt. These are now excluded from the main mineral resource estimates. This impacted only on inferred mineral resources and the areas impacted are indicated in the accompanying map
- Since last year the results of only three boreholes were added to the estimation
- The estimate has been conducted using the Isatis™ software. A multi-pass search was used for the estimation, capping of extreme values was applied for UG2 Reef data
- During the past year a process audit was performed on the mineral resource by The Mineral Corporation for Afplats only
- Estimated losses have been accounted for in the mineral resource calculation varying from 22% to 27%
- There is no material change in the UG2 Reef mineral resource estimate since the previous statement. Minor increase in extraction rates increased the mineral resource estimate
- The mineral resources are reflected in both 4E and 6E formats

- Rounding of numbers may result in minor computational discrepancies; mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations
- The base metals grades are now reflected in the mineral resource table above

Afplats, Imbasa and Inkosi UG2 6E metal ratio (%)

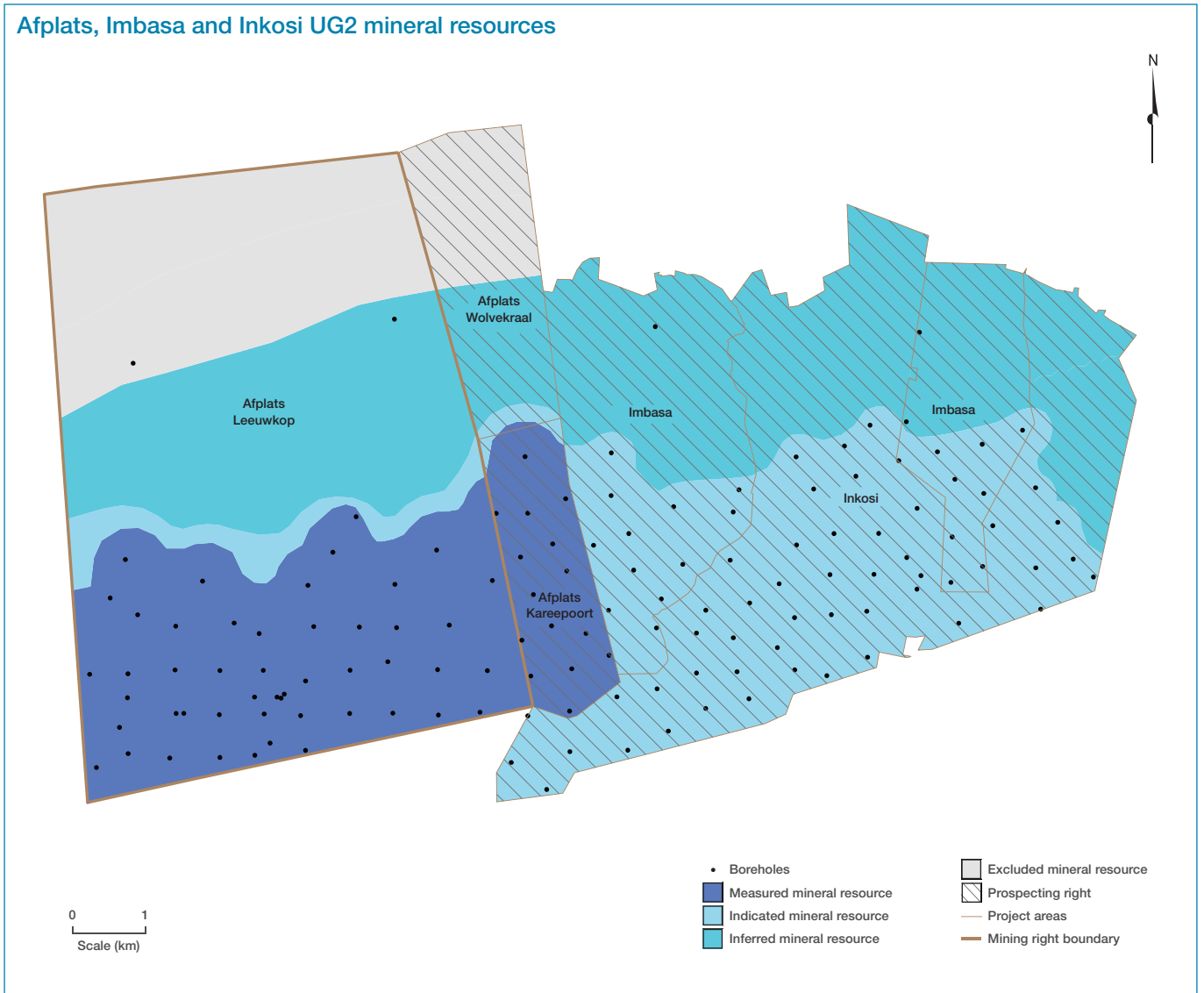


Afplats attributable mineral resources (Moz Pt)

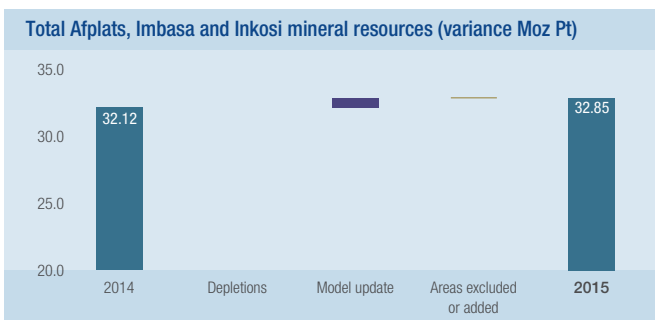
30 June 2011	22.3
30 June 2012	22.6
30 June 2013	22.8
30 June 2014	20.4
30 June 2015	20.9

## Afplats, Imbasa and Inkosi

### Afplats, Imbasa and Inkosi UG2 mineral resources



The year-on-year reconciliation of the total Afplats, Imbasa and Inkosi mineral resources is depicted in the accompanying graphs.



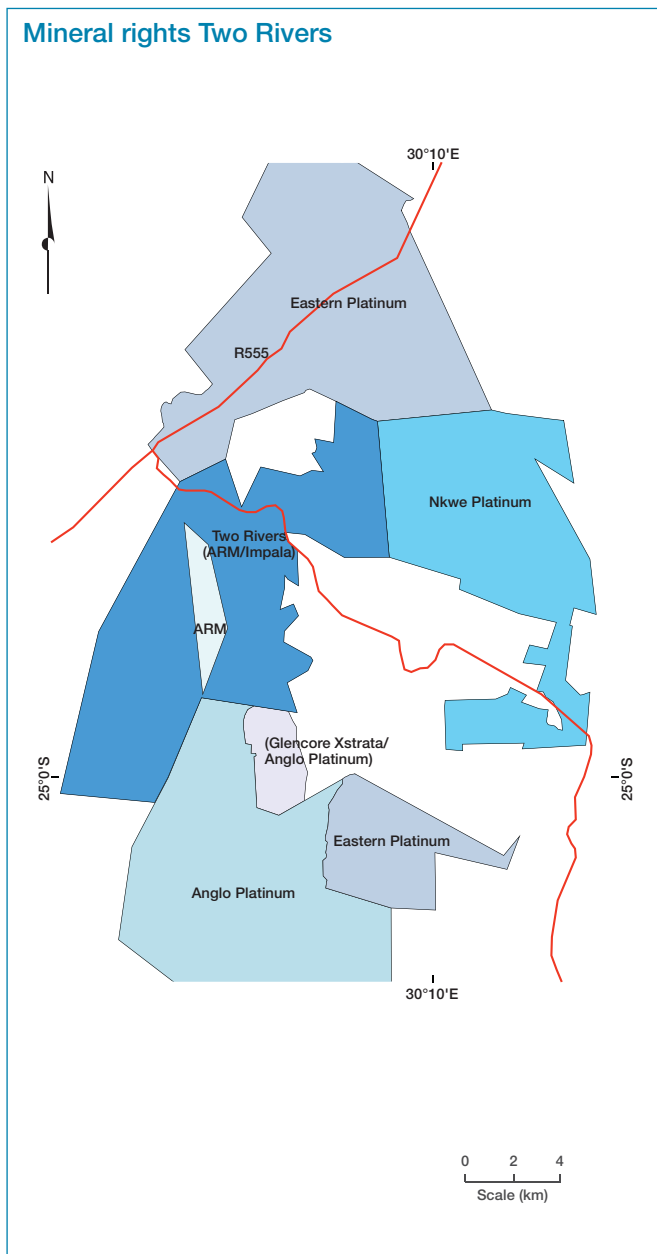
## Two Rivers



“The agreement which involves the transfer of the Implats-owned Tamboti mineral rights to Two Rivers has been concluded. As a result the Implats shareholding in Two Rivers has increased to 49% from the previous 45% interest



Mineral rights Two Rivers



Two Rivers locality map



## Two Rivers

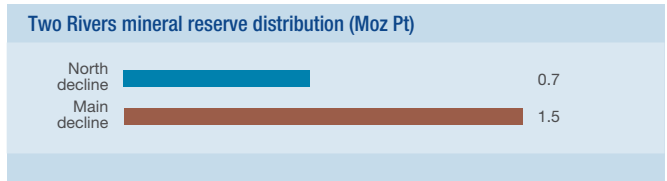
Two Rivers is located on the eastern limb of the Bushveld Complex, some 35km south-west of Burgersfort. The location is shown in the adjacent map.

During 2001, Assmang elected to dispose of its platinum interests at the Dwarsrivier Chrome Mine. Two Rivers, the incorporated joint venture between Avmin and Implats, secured the platinum rights in December of that year. Subsequent corporate activity involving Avmin, African Rainbow Minerals (ARM) and Harmony resulted in the transfer of Avmin’s share in Two Rivers to a new, empowered platinum entity, ARM Platinum, a division of ARM. The joint venture partners began development of the Two Rivers project in June 2005. The concentrator plant was commissioned early in 2007 and in 2008 the mine successfully made the transition from project to operation.

Two Rivers was granted a new-order mining right in 2013 over 2 140ha on a portion of the farm Dwarsrivier. In 2015 portions 4, 5 and 6 of the adjoining farm, Kalkfontein, as well as portions of the farm Tweefontein held by Impala was incorporated into the Two Rivers mining right. An agreement was also reached for the remaining Implats-owned mineral rights on portions of the farms Kalkfontein and Buffelshoek in exchange for a royalty payment. The operation is managed by ARM and Implats has a 49% stake in the joint venture.

Both the Merensky and UG2 Reefs are present but only the UG2 is currently exploited. However, no Merensky Reef is present on Tweefontein and the UG2 Reef only occurs on a small portion of this farm. The UG2 Reef outcrops in the Klein Dwarsrivier valley over a north-south strike of 7.5km and dips to the west at 7° to 10°. The vertical separation between the Merensky and UG2 Reefs is around 140m to 160m. Due to the extreme topography, the Merensky Reef outcrops further up the mountain slope.

The topography also means that the UG2 occurs at 935m below surface on the western boundary. The geological succession is broadly similar to other areas of the eastern limb

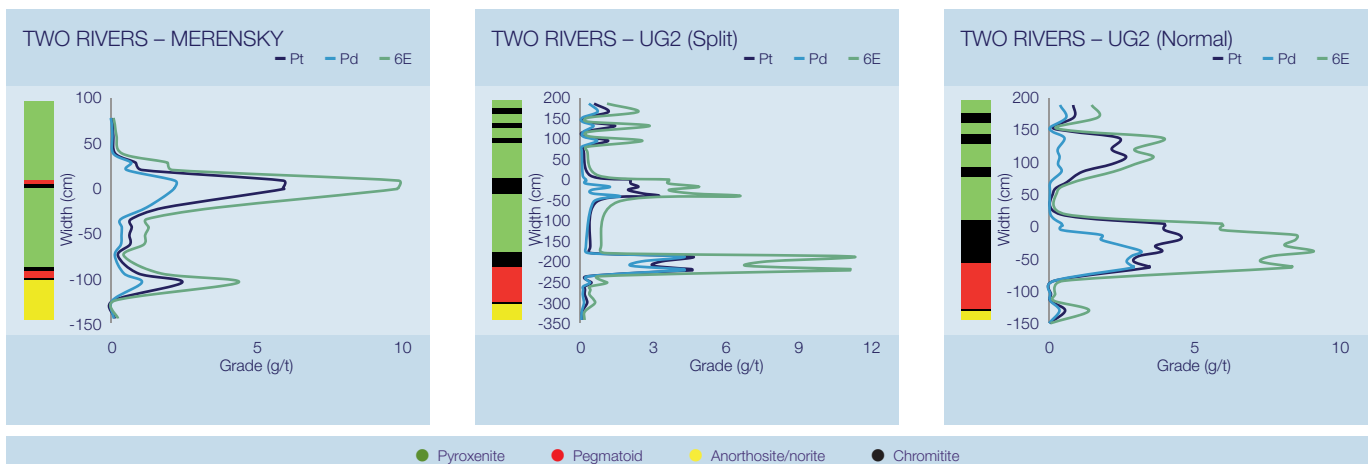


of the Bushveld Complex. An exception is the presence of the Steelpoortpark granite in the south-western part of the project which is unique to this area. Three distinct reef types have been defined for the UG2 Reef, namely the “normal” reef with a thick main chromitite layer; a “split” reef characterised by an internal pyroxenite/norite lens within the main chromitite layer; and a “multiple split” reef with numerous pyroxenite/norite lenses occurring within the main chromitite layer. The multiple split reef predominates in the southern portion of the mining area.

The Merensky Reef is a pyroxenite layer with a chromitite stringer close to the hangingwall contact and also at the basal contact. Mineralisation is primarily associated with the upper and lower chromitite stringers. The grade profiles at Two Rivers are generally similar to that at the adjoining Tamboti Project. The graphical illustration of the profiles is shown below.

The geological structure of the area is dominated by the regional north-northeast to south-southwest trending Kalkfontein fault which has an apparent vertical displacement of 1 200m down throw to the west. A series of sub-parallel faults occur to the south-east adjacent to the Kalkfontein fault which affect both the MR and UG2 Reefs. These faults exhibit variable apparent vertical displacements of between 20m and 300m which increase progressively to the south-west.

The UG2 orebody is accessed via two decline shaft systems situated 3km apart, namely the Main Decline and the North Decline. Reef production is through a fully mechanised bord and pillar stoping method. A mining section consists of eight 12m bords, with pillar sizes increasing with depth below surface. In the shallow areas up to 100m below surface,



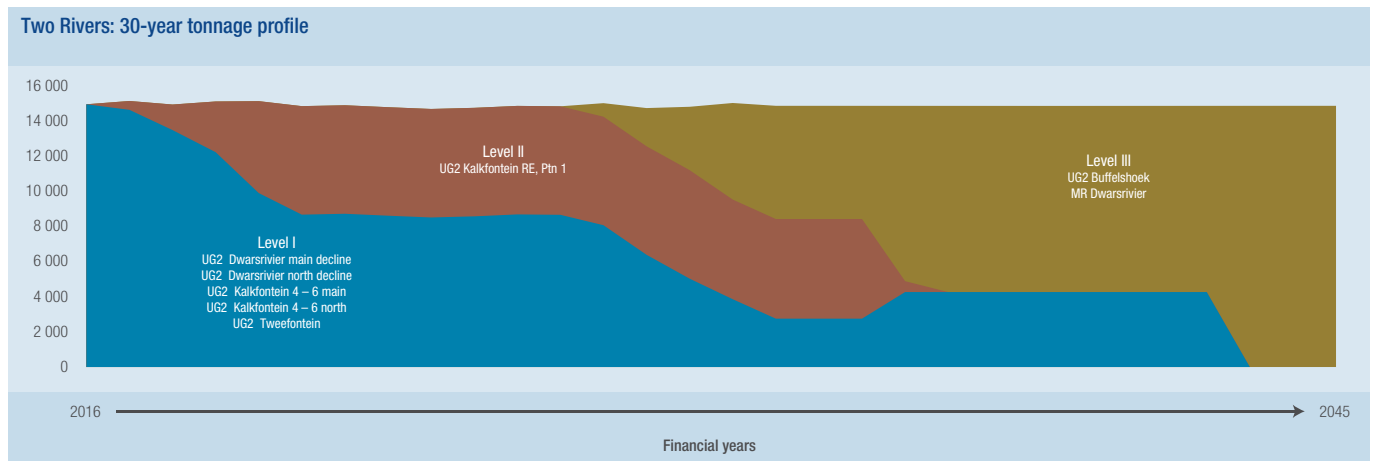
## Two Rivers

the pillars are 6m x 6m in size. The rooms are mined mainly on strike.

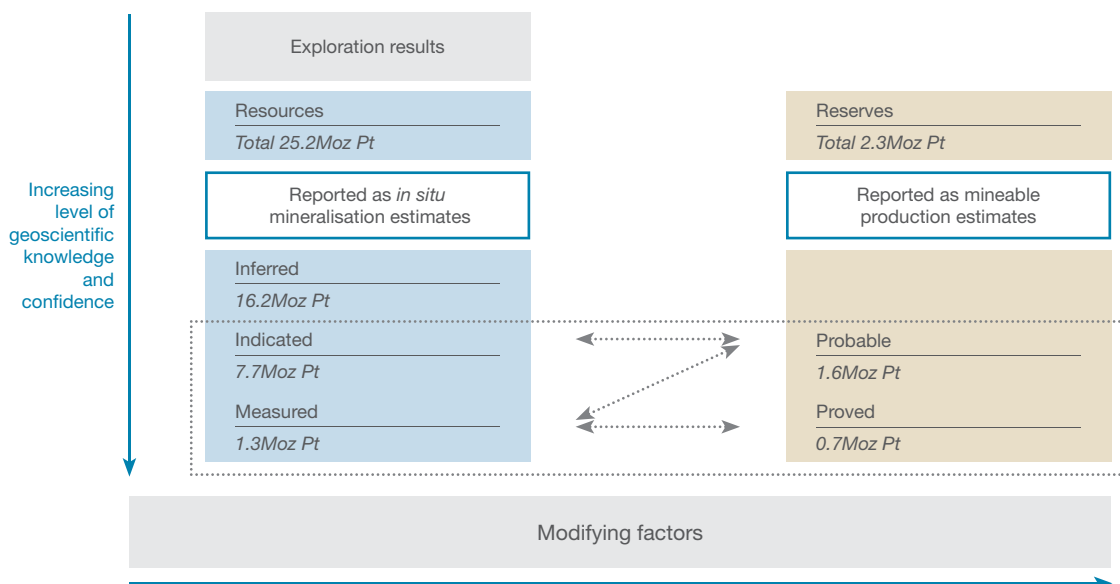
A 3D geological model with layer grades and widths per stratigraphic unit is utilised. The mine scheduling of the two declines is done in Mine 2-4D™. The schedule is evaluated against the grade and thickness block model. The three distinct reef types impact significantly on the mine plan.

Dilution calculations are based on the specific reef type and pay limits are applied to the final mining cut. Hangingwall and footwall overbreak, percentage off-reef, ore remaining (mining losses), geological losses (potholes, faults, dykes and replacement pegmatoid) and a shaft call factor are applied to the planned areas to generate the tonnage and grade profiles.

The larger portion of the mineral reserves (75%) is located in the Main Decline section. The 30-year profile of Two Rivers is shown. LoM I constitutes production from the Main and North Decline shafts. LoM II is an extension of the Main and North Decline infrastructure into the Kalkfontein and Tweefontein blocks. Various options are being considered for LoM III as depicted below. The profile is based on assumptions and may change in future. Limited trial mining was undertaken in 2012 on the Merensky Reef. This is on hold as full-scale mining of the Merensky Reef is not viable at present. Two Rivers has a concentrator plant on site where initial processing is done. It comprises a standard MF2 design as generally used in the industry. Concentrate is transported by road to Impala Platinum's Mineral Processes in Rustenburg where further processing takes place in terms of an agreement with IRS.



### Relationship between exploration results, mineral resources and mineral reserves (100%)





## Two Rivers

## Key operating statistics

		2015	2014	2013	2012	2011
<b>Production</b>						
Tonnes milled ex mine	(000t)	<b>3 362</b>	3 279	3 172	3 103	2 950
Head grade 6E	(g/t)	<b>3.98</b>	4.01	4.02	3.86	3.94
Platinum in concentrate	(000 oz)	<b>173.5</b>	175.1	162.2	149.9	145.3
PGM in concentrate	(000 oz)	<b>372.6</b>	374.7	350.4	320.1	307.2
<b>Breakdown of cash costs</b>						
On-mine operations	(Rm)	<b>(1 714)</b>	(1 657)	(1 581)	(1 357)	(1 172)
Concentrating operations	(Rm)	<b>(359)</b>	(345)	(314)	(264)	(225)
<b>Total cost</b>						
	(Rm)	<b>2 073</b>	2 002	1 895	1 621	1 397
Per tonne milled	(R/t)	<b>617</b>	611	597	522	474
	(\$/t)	<b>54</b>	59	68	67	67
Per Pt oz in concentrate	(R/oz)	<b>11 948</b>	11 433	11 683	10 814	9 615
	(\$/oz)	<b>1 047</b>	1 103	1 325	1 396	1 367
<b>Financial ratios</b>						
Gross margin ex mine	(%)	<b>27.7</b>	29.5	22.1	21.8	27.4
<b>Capital expenditure</b>						
	(Rm)	<b>275</b>	319	489	467	280
	(\$m)	<b>24</b>	31	55	60	40

## Two Rivers mineral resources and mineral reserves (100%; inclusive reporting)

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz
Merensky	Indicated	60.6	229	2.85	3.11	0.13	0.08	5.5	6.1	3.3	43.1	256	2.79	3.04	3.9	2.3
	Inferred	99.2	148	3.61	3.92	0.14	0.09	11.5	12.5	6.7	11.0	249	2.43	2.65	0.9	0.5
UG2	Measured	15.6	150	4.62	5.61	0.04	0.01	2.3	2.8	1.3	15.7	155	4.50	5.44	2.3	1.3
	Indicated	59.4	184	4.18	5.04	0.04	0.01	8.0	9.6	4.4	35.0	207	3.77	4.52	4.2	2.4
	Inferred	117.8	171	4.86	5.75	0.04	0.02	18.4	21.8	9.5	0.7	180	4.04	4.91	0.1	0.0
<b>Total</b>		<b>352.5</b>		<b>4.04</b>	<b>4.65</b>	<b>0.08</b>	<b>0.05</b>	<b>45.8</b>	<b>52.8</b>	<b>25.2</b>	<b>105.4</b>		<b>3.34</b>	<b>3.86</b>	<b>11.3</b>	<b>6.5</b>

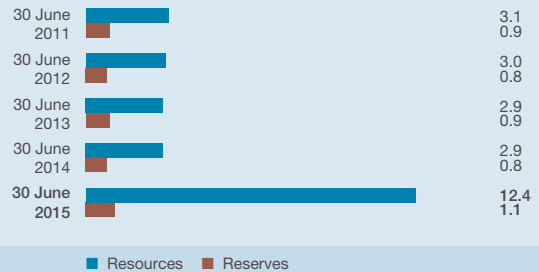
Mineral reserves		as at 30 June 2015									as at 30 June 2014					
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	4E Moz	Pt Moz		
UG2	Proved	12.0	233	3.18	3.87	1.2	1.5	0.7	10.8	236	3.21	3.88	1.1	0.6		
	Probable	29.9	266	2.94	3.56	2.8	3.4	1.6	19.7	279	2.98	3.59	1.9	1.1		
<b>Total</b>		<b>41.9</b>		<b>3.01</b>	<b>3.65</b>	<b>4.0</b>	<b>4.9</b>	<b>2.3</b>	<b>30.5</b>		<b>3.06</b>	<b>3.69</b>	<b>3.0</b>	<b>1.7</b>		

## Two Rivers

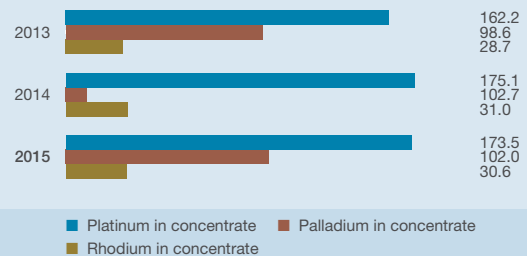
### Notes

- The statement on the previous page reflects total estimates for Two Rivers as at 31 December 2014; corresponding estimated attributable mineral resources and reserves are summarised elsewhere in this report
- The estimates now include the Tamboti mineral right areas that were transferred from Impala to Two Rivers
- Mineral resources are quoted inclusive of mineral reserves and estimated geological losses have been accounted for in the mineral resource calculation
- Grade estimates were obtained by means of ordinary kriging of UG2 and Merensky Reef borehole intersections
- The Merensky Reef model was not updated in the past year and the reported estimates are the same as at 30 June 2014
- The UG2 mineral resource model was remodelled during 2014 with the addition of two new surface boreholes and 21 underground sampling sections
- The total measured and indicated UG2 mineral resources decreased to 50.6Mt at 4.81g/t (6E) from 54.3Mt at 4.53g/t mainly due to mining depletion
- The mineral resource classification was updated and accompanying details reflect the status as at 30 June 2015
- Mineral reserves quoted reflect the width and grade delivered to the mill rather than an *in situ* channel grade quoted in respect of the mineral resources. The modifying factors used in the UG2 mineral reserve calculation are based on the mine plan which envisages a mechanised bord and pillar layout
- No inferred mineral resources have been converted into mineral reserves
- The mineral resources and mineral reserves are reflected in both 4E and 6E formats
- Rounding of numbers may result in minor computational discrepancies; mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations
- More details regarding the mineral resources and mineral reserves can be found in the 2015 ARM annual report
- The economic viability of the Two Rivers mineral reserves is tested by means of net present value calculations over the life of mine of the reserve, determining the lowest real rand basket price which would still render the reserve viable. This is then tested against the internal estimate of the real long-term basket price, the spot price as at 30 June 2015 and a consensus view from various financial institutions. These tests indicate that the Two Rivers operation requires a real long-term basket price of between R20 000 and R21 000 to be economically viable. While the real spot basket price as at 30 June 2015 was R20 822, the Two Rivers internal long-term real basket price is R27 700 and the equivalent calculated consensus price is R24 002.

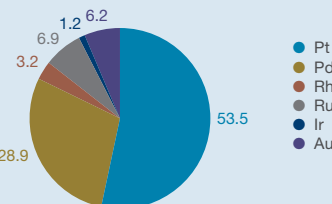
Two Rivers attributable mineral resources and mineral reserves (Moz Pt)



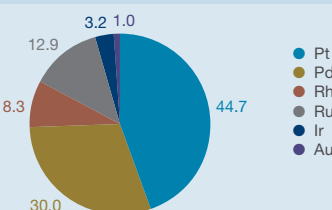
Two Rivers production (Koz)



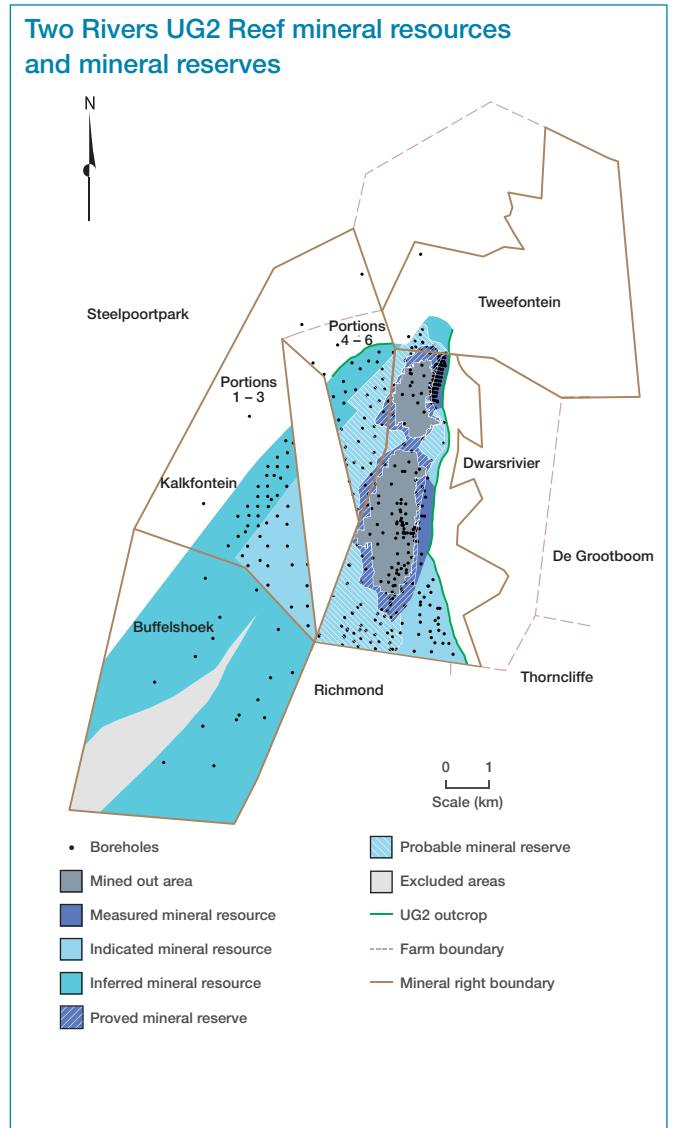
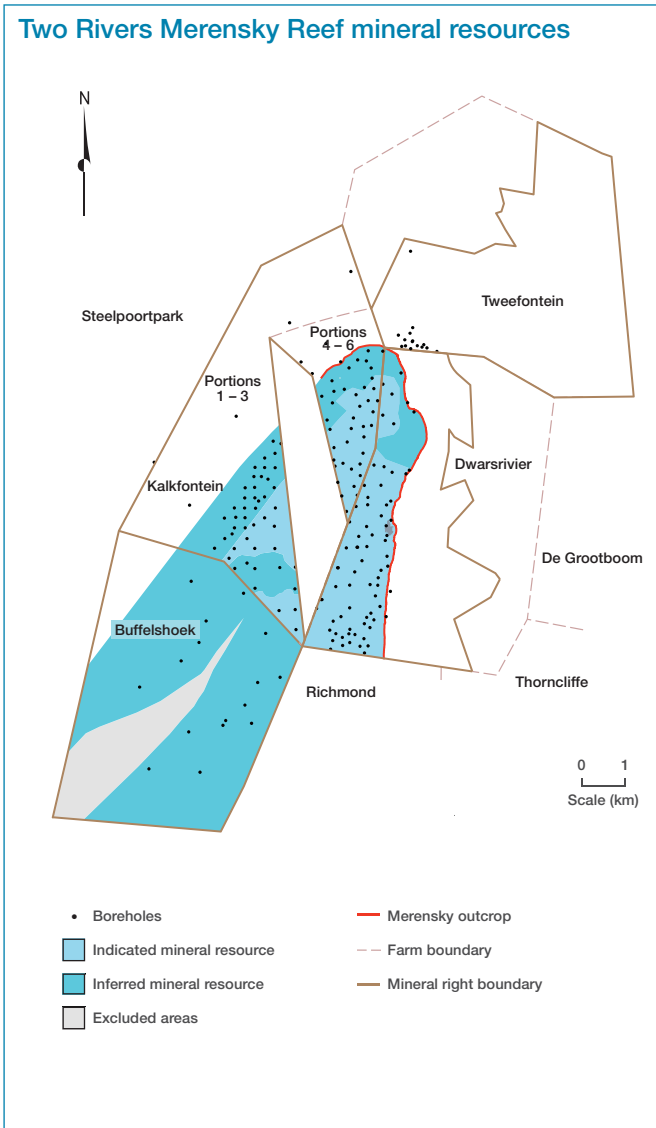
Two Rivers Merensky 6E metal ratio (%)



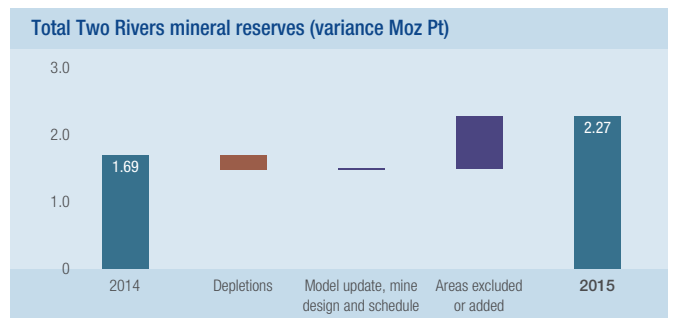
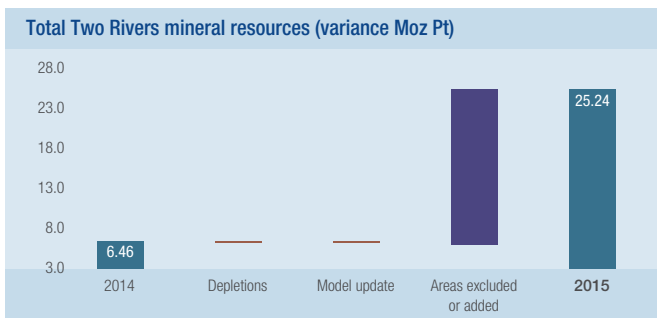
Two Rivers UG2 6E metal ratio (%)



## Two Rivers



The year-on-year reconciliation of the total Two Rivers mineral resources and mineral reserves is depicted in the accompanying graphs.



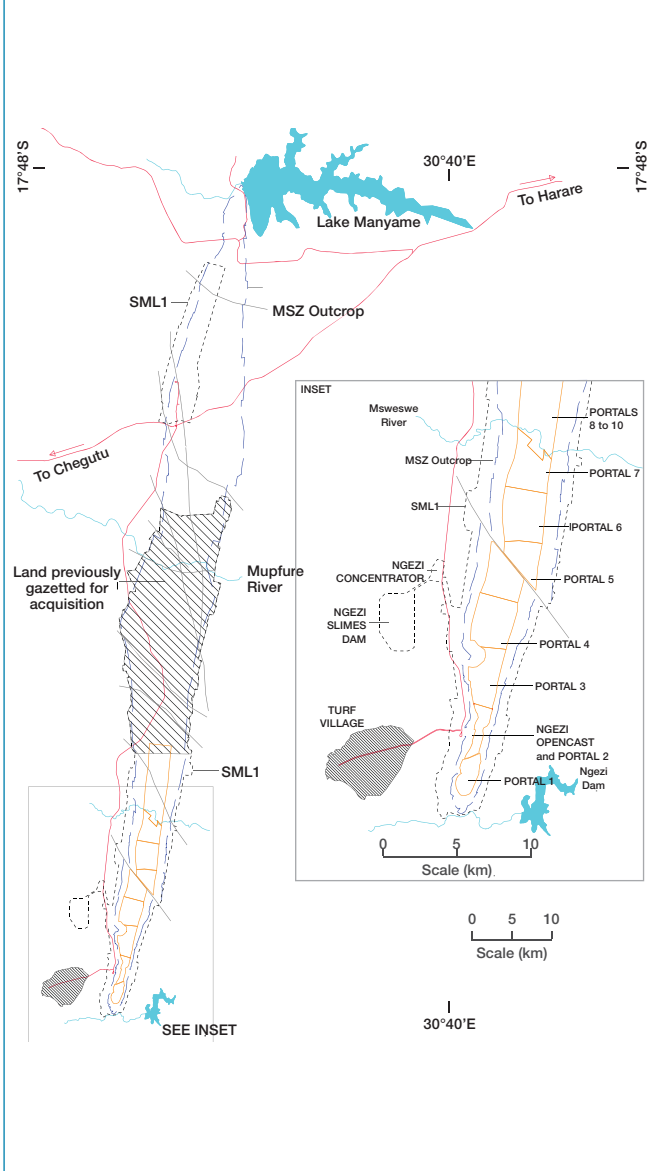
# Zimplats



“At Zimplats the new pillar design resulted in a lower extraction rate”



Locality map showing Zimplats special mining lease and portal positions



Locality map



## Zimplats

Zimplats' Ngezi mine is located approximately 150km south-west of Harare. The mine lies on a geological feature known as the Great Dyke, a sinuous, layered, mafic-ultramafic intrusion running 550 kilometres along practically the full north-south axis of Zimbabwe and ranging in width from four to 11 kilometres. The 100 kilometre long Hartley Complex is the largest and most important segment of the Great Dyke, containing approximately 80% of Zimbabwe's total PGM resources.

In 1986 Delta Gold Limited (Delta) acquired rights to its first platinum resources on the Great Dyke. Delta brought BHP into a joint venture. In 1990 the mining company BHP, in partnership with Delta Gold (2/3 BHP and 1/3 Delta), began to develop the Hartley Complex and established a mine, complete with smelter, at Selous in 1994. However, following a string of geological and metallurgical problems, the mine never achieved the production targets set by BHP to make it profitable and underground operations were suspended in June 1999, the mine was then put on care and maintenance. The dormant Hartley Mine and the Selous Metallurgical Complex (SMC) are located 77km north of the Ngezi Mine in the Darwendale sub-chamber.

In 1998, Delta demerged its platinum interests into a special purpose vehicle; Zimplats. In May 1999 the company purchased BHP's interests in Hartley Platinum and the Mhondoro Platinum Joint Ventures which included a concentrator and smelter and extended its cover to include interests in all the platinum resources of the Hartley Complex. In early 2001, Zimplats announced the development of Ngezi into a 2.2Mt/y open pit operation producing 208 000oz/y of PGMs, plus nickel, copper and cobalt, following the acquisition of a share of the project by Implats and the South African bank Absa. Zimplats commenced production at the Ngezi opencast mine in December 2001 and the first converter matte was exported in April 2002.

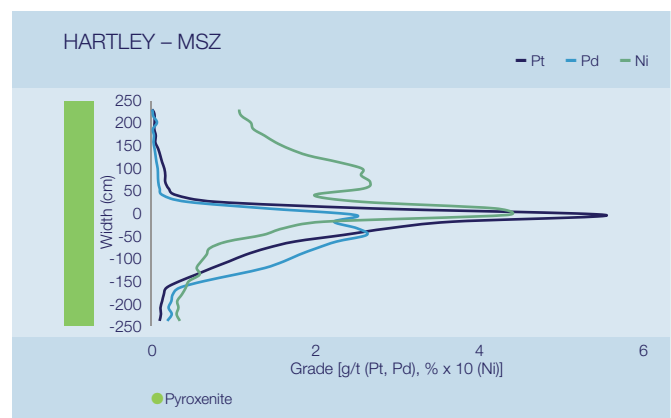
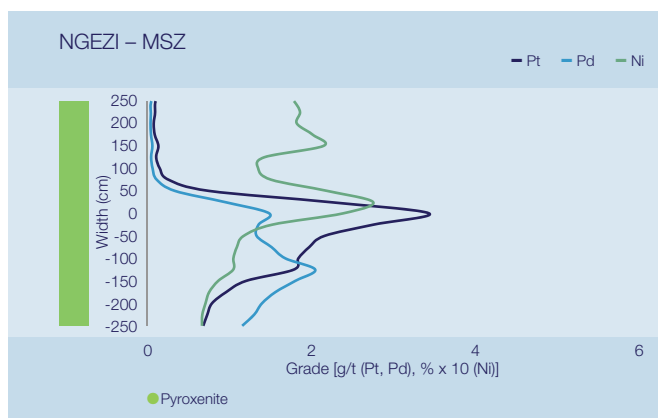
Over the next two years, Implats progressively increased its shareholding in Zimplats until 2003 when it made an

unconditional cash offer to minority shareholders in Zimplats. Implats currently holds 87% of Zimplats. Zimplats started to develop underground operations at Ngezi in 2003. These replaced the open pit production in 2008 and have been expanded to the current 6.2 million tonne per year operation with four portals, an open-pit and two new concentrator modules at Ngezi.

The Zimbabwean Government has been pursuing the greater participation in the mining sector by indigenous Zimbabweans. Implats is continuing to engage with the Government of Zimbabwe with respect to agreeing plans for the indigenisation of Zimplats. The current position with regards to the implementation of the Government of Zimbabwe's indigenisation plans is not clear and depending on what position is ultimately taken by the Government of Zimbabwe, Implats' attributable mineral resources and ore reserves may be significantly reduced. During 2013, the Government of Zimbabwe gazetted its intention to compulsorily acquire a large tract of ground in the northern portion of the Zimplats lease containing 54.6Moz Pt; Zimplats subsequently submitted an objection to this notice.

The platinum-bearing Main Sulphide Zone (MSZ) is located in the P1 pyroxenite some 10m to 50m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 10m thick, and forms an elongated basin. The zone strikes in a north-northeasterly trend and dips between 5° and 20° on the margins flattening towards the axis of the basin. Peak base metal and PGM values are offset vertically with palladium peaking at the base, platinum in the centre and nickel towards the top. Visual identification of the MSZ is difficult, therefore systematic monitoring supported by channel sampling is needed to guide mining.

Production is presently sourced from four decline shafts or portals and one open-pit. Boundaries between individual portals are usually based on major faults. Minor faults and other disrupted areas are present and are taken into account in the mineral resources and ore reserves statements as geological





## Zimplats

losses. No potholes, as found in the South African operations, have been identified.

Zimplats employs mechanised room and pillar mining to extract ore from stopes with a nominal width of 2.5m at dips of less than 9°. Each production team consists of 20 to 30 rooms and the total length is dependent on the sizes (widths) of the pillars and rooms. In general, the declines are centralised in each resource area and any asymmetry is accounted for in the mine production scheduling. This allows sufficient flexibility for the required grade control sampling and to negotiate faults and intrusions while still achieving the team’s production targets. Each production team deploys a single boom face rig for drilling, a roof bolter for support drilling, a 10t load and dump (LHD) and a 30t dump truck. The broken rock is trucked to surface at Portals 1 and 2 while, at Portals 3 and 4, the broken rock is trucked on the reef horizon by 30t dump trucks to a central ore-pass/crushing facility where it is crushed and conveyed to surface using the footwall decline conveyor.

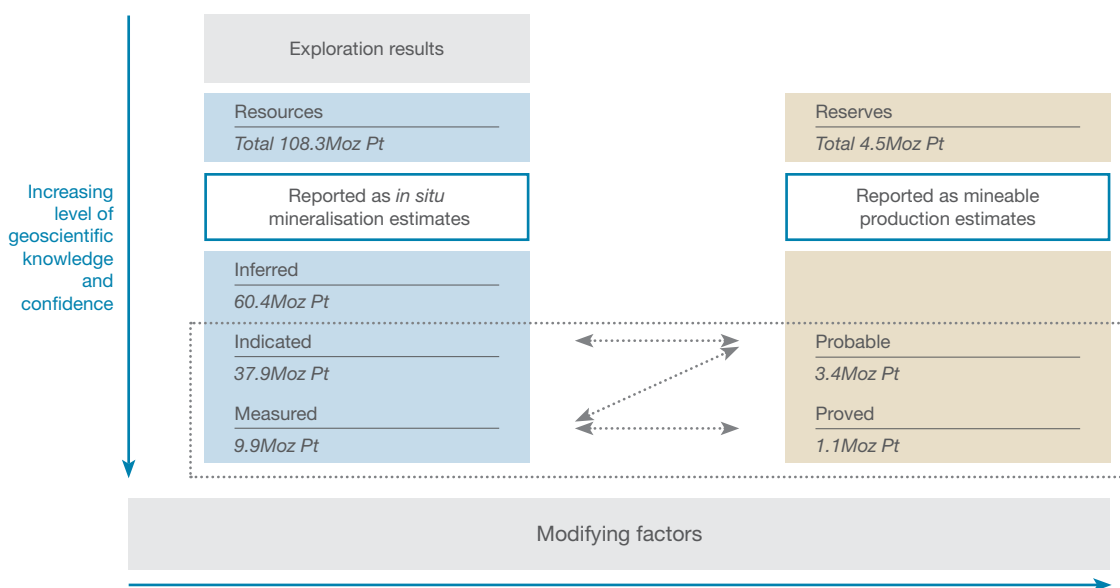
The production target for each fleet ranges from 17 500t to 20 000t of ore per month depending on the particular mine, mine design and the pillar layout. The default layout has 7m panels with 5m square pillars. However, spans may decrease and pillar dimensions may increase in bad ground and in deeper sections of the mine. A combination of roof bolts and tendons is integral to the support design.

During the year under review, there was a failure of a large proportion of the support pillars at Bimha Mine, which

necessitated a revision of the geotechnical and mine design parameters for the Bimha and Mupfuti Mines. A low angle shear in the deeper sections of Bimha Mine, which had a deleterious effect on pillar strength contributed to this collapse. Investigative and recovery work included revision of geotechnical parameters on the mine design and resulted in the modification of pillar layouts, revised mine designs and a reduction in extraction factors for these portals. A decision was made to temporarily close the Bimha Mine to ensure the safety of employees. As a result of the collapse and subsequent temporary precautionary closure of the mine, the affected production teams from Bimha were redeployed to the other three underground mines in an effort to regain lost production. Further reduction to loss of production was achieved by commencing mining operations at the Ngezi South Open-pit during the second quarter of the year. Production from the open pit and the redeployment of production teams, reduced the ore supply gap and managed to deliver the full monthly mill target by the fourth quarter.

A total combined production of 6.2Mt per annum will be sustainable at the operations from 2016 until at least 2042. Portals 1 to 4 including the open pit constitute LoM I and portals 5 to 7 LoM II. LoM III is made up of future mining from Portal 8. The potential growth beyond the 6.2Mt profile is dependent on a range of technical, economic and political considerations. The LoM profile shown below is based on assumptions and may change in future. The distribution of the ore reserves across the portals is depicted in the accompanying graph.

### Relationship between exploration results, mineral resources and ore reserves (100%; inclusive reporting)



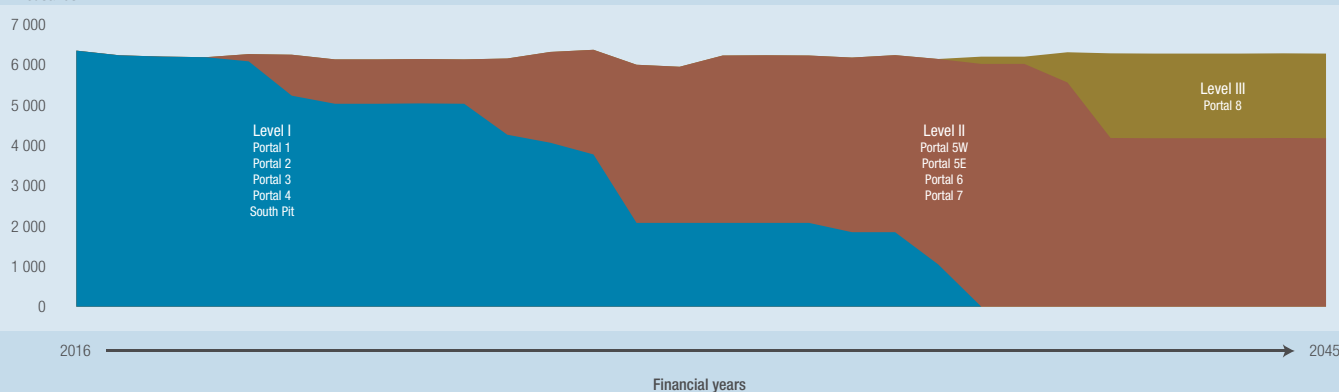
## Zimplats

### Key operating statistics

		2015	2014	2013	2012	2011
<b>Production</b>						
Tonnes milled ex mine	(000t)	<b>5 164</b>	5 939	4 683	4 393	4 223
Head grade 6E	(g/t)	<b>3.47</b>	3.47	3.53	3.53	3.56
Platinum in matte	(000 oz)	<b>190.0</b>	239.7	198.1	187.1	182.1
PGM in matte	(000 oz)	<b>406.0</b>	515.8	416.2	396.4	388.8
<b>Breakdown of cash costs</b>						
On-mine operations	(Rm)	<b>(2 196)</b>	(1 942)	(1 434)	(1 089)	(870)
Processing operations	(Rm)	<b>(1 107)</b>	(1 047)	(627)	(494)	(446)
Selling and administration	(Rm)	<b>(347)</b>	(219)	(222)	(212)	(183)
<b>Total cost</b>						
	(Rm)	<b>3 650</b>	3 208	2 283	1 795	1 499
Per tonne milled	(R/t)	<b>707</b>	540	487	409	355
	(\$/oz)	<b>62</b>	52	55	53	50
Per Pt oz in matte	(R/oz)	<b>19 211</b>	13 383	11 524	9 594	8 232
	(\$/oz)	<b>1 683</b>	1 291	1 307	1 239	1 171
<b>Financial ratios</b>						
Gross margin ex mine	(%)	<b>10.3</b>	34.1	34.9	43.4	52.0
<b>Capital expenditure</b>						
	(Rm)	<b>968</b>	1 166	1 381	2 104	839
	(\$m)	<b>85</b>	112	157	272	119

### Zimplats: 30-year tonnage profile

Thousands



## Zimplats

Zimplats built two concentrators at Ngezi which were commissioned in 2009 and 2013. Approximately one-third of the mine output is also transported by road trains to the concentrator at SMC. Concentrate from both Ngezi plants and SMC is then smelted in an arc furnace and converted to matte at SMC. The resulting matte is despatched to Impala's refinery in Springs (after blending in Rustenburg) under the terms of a LoM agreement with IRS.

## Zimplats mineral resources and ore reserves (100%; inclusive reporting)

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014							
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	Pt Moz
<b>Ngezi Portals - Advanced to reserve</b>																		
MSZ	Measured	53.6	250	3.46	3.64	0.10	0.07	6.0	6.3	3.0	63.9	250	3.46	3.65	0.10	0.08	7.1	3.5
	Indicated	50.1	250	3.43	3.61	0.10	0.08	5.5	5.8	2.8	96.0	250	3.54	3.74	0.10	0.08	10.9	5.5
	<b>Total</b>	<b>103.7</b>		<b>3.45</b>	<b>3.63</b>	<b>0.10</b>	<b>0.07</b>	<b>11.5</b>	<b>12.1</b>	<b>5.8</b>	<b>159.9</b>		<b>3.51</b>	<b>3.70</b>	<b>0.10</b>	<b>0.08</b>	<b>18.1</b>	<b>9.1</b>
<b>Ngezi Portals - Not advanced to reserve</b>																		
MSZ	Measured	95.4	250	3.27	3.45	0.11	0.08	10.0	10.6	4.9	80.8	250	3.29	3.47	0.10	0.08	8.5	4.2
	Indicated	404.8	239	3.34	3.52	0.11	0.08	43.5	45.9	21.6	341.9	234	3.41	3.59	0.12	0.09	37.4	18.4
	Inferred	72.3	200	3.25	3.41	0.12	0.08	7.5	7.9	4.1	99.6	200	3.42	3.61	0.12	0.08	10.9	5.7
<b>Total</b>	<b>572.4</b>		<b>3.32</b>	<b>3.50</b>	<b>0.11</b>	<b>0.08</b>	<b>61.1</b>	<b>64.4</b>	<b>30.5</b>	<b>522.3</b>		<b>3.39</b>	<b>3.58</b>	<b>0.12</b>	<b>0.08</b>	<b>57.0</b>	<b>28.4</b>	
<b>Mining lease north of Portal 10*</b>																		
MSZ	Indicated	70.0	192	3.44	3.70	0.20	0.18	7.7	8.3	3.4	70.0	192	3.44	3.70	0.20	0.18	7.7	3.4
	Inferred	1 021.0	239	3.22	3.50	0.12	0.09	105.7	114.9	50.2	1 021.0	239	3.22	3.50	0.12	0.09	105.7	50.2
	<b>Total</b>	<b>1 091.0</b>		<b>3.23</b>	<b>3.51</b>	<b>0.13</b>	<b>0.10</b>	<b>113.4</b>	<b>123.2</b>	<b>53.6</b>	<b>1 091.0</b>		<b>3.23</b>	<b>3.51</b>	<b>0.13</b>	<b>0.10</b>	<b>113.4</b>	<b>53.6</b>
<b>Hartley</b>																		
MSZ	Measured	28.3	158	4.53	4.78	0.14	0.12	4.1	4.3	2.0	28.3	158	4.53	4.78	0.14	0.12	4.1	2.0
	Indicated	143.1	189	3.97	4.19	0.13	0.11	18.3	19.3	9.3	143.1	189	3.97	4.19	0.13	0.11	18.3	9.3
	Inferred	46.3	191	3.89	4.10	0.13	0.10	5.8	6.1	3.0	46.3	191	3.89	4.10	0.13	0.10	5.8	3.0
<b>Total</b>	<b>217.7</b>		<b>4.03</b>	<b>4.25</b>	<b>0.13</b>	<b>0.11</b>	<b>28.2</b>	<b>29.7</b>	<b>14.2</b>	<b>217.7</b>		<b>4.03</b>	<b>4.25</b>	<b>0.13</b>	<b>0.11</b>	<b>28.2</b>	<b>14.2</b>	
<b>Oxides - all areas</b>																		
MSZ	Indicated	16.2	250	3.42	3.61	0.10	0.07	1.8	1.9	0.9	16.2	250	3.42	3.61	0.10	0.07	1.8	0.9
	Inferred	38.3	217	3.56	3.76	0.12	0.10	4.4	4.6	2.2	38.3	217	3.56	3.76	0.12	0.10	4.4	2.2
	Inferred north of Portal 10	21.0	239	3.17	3.44	0.12	0.10	2.1	2.3	1.0	21.0	239	3.17	3.44	0.12	0.10	2.1	1.0
<b>Total</b>	<b>75.6</b>		<b>3.42</b>	<b>3.64</b>	<b>0.11</b>	<b>0.09</b>	<b>8.3</b>	<b>8.8</b>	<b>4.1</b>	<b>75.6</b>		<b>3.42</b>	<b>3.64</b>	<b>0.11</b>	<b>0.09</b>	<b>8.3</b>	<b>4.1</b>	
<b>Overall</b>	<b>Total</b>	<b>2 060.4</b>		<b>3.36</b>	<b>3.60</b>	<b>0.12</b>	<b>0.09</b>	<b>222.5</b>	<b>238.3</b>	<b>108.3</b>	<b>2 066.4</b>		<b>3.39</b>	<b>3.63</b>	<b>0.12</b>	<b>0.09</b>	<b>224.9</b>	<b>109.3</b>
<b>Ore reserves</b>		as at 30 June 2015									as at 30 June 2014							
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	Pt Moz
MSZ	Proved	21.0	274	3.31	3.50	0.09	0.06	2.2	2.4	1.1	54.9	274	3.35	3.54	0.10	0.07	5.9	2.9
	Probable	62.6	275	3.37	3.56	0.10	0.07	6.8	7.2	3.4	77.9	273	3.39	3.58	0.10	0.07	8.5	4.2
<b>Total</b>		<b>83.7</b>		<b>3.36</b>	<b>3.54</b>	<b>0.10</b>	<b>0.07</b>	<b>9.0</b>	<b>9.5</b>	<b>4.5</b>	<b>132.8</b>		<b>3.37</b>	<b>3.56</b>	<b>0.10</b>	<b>0.07</b>	<b>14.4</b>	<b>7.1</b>

\* Mining lease north of Portal 10 essentially coincides with the area previously gazetted by the Zimbabwean government for compulsory acquisition.

## Zimplats

### Notes

- The statement on the previous page reflects the total mineral resource and ore reserve estimate for Zimplats as at 30 June 2015. Corresponding estimated mineral resources and ore reserves attributable to Implats are summarised elsewhere in this report
- Zimplats' standard is to report mineral resources inclusive of ore reserves
- The ore reserves figures are estimated based on the diluted grades delivered to the processing plants
- Day-to-day operations are monitored using in-house lead collector fire assays with AA finish. The mineral resources and ore reserves in this statement are based largely on Genalysis nickel sulphide collector fire assays with ICP-MS finish. The differences between the methods are incorporated within the modifying factors that have been applied, which mean that there may be slight distortions in recovery and other parameters
- Resources have been estimated using kriging techniques on data derived from surface exploration drill holes. Estimates are based on composite widths that vary depending on cut-off grades, which are based on appropriate economic conditions
- The boundaries of the ore envelope are gradational, particularly in the footwall, so the choice of mining cut is affected by economic factors. The price of the suite of metals that is produced from the MSZ has fluctuated considerably in the last few years. It is, however, believed that the choice of mining cut is robust under a wide range of pricing conditions
- Estimates are produced in accordance with Implats' group-wide protocol for the estimation, classification and reporting of mineral reserves and mineral resources. The objectives of the code are to improve standardisation, consistency and to facilitate auditing
- Although these estimates are reported according to JORC (2012) this is an annual update incorporating some new drilling, depletions and the current view on modifying factors, which are a development of previous estimates prepared under JORC (2004)
- The maximum depth of these resources is 1 250m and no part is more than 5km down dip from outcrop
- Zimplats' mineral resources are held under Special Mining Lease 1, the first 25-year period of which expires in 2019. The agreement allows for two extensions of 10 years each
- The mineral resources and ore reserves estimates tabulated in this report are estimates and not calculations. They are subject to a wide range of factors, some of which are outside the company's control, which include:
  - The quality and quantity of available data. Estimates are based on limited sampling and, consequently, there is uncertainty as the samples may not be representative of the entire ore body and mineral resources.
  - The quality of the methodologies employed.
  - Economic conditions and commodity prices.
- No inferred mineral resources have been converted into ore reserves
- Geological interpretation and the judgement of the individuals' involved. Changes in these factors along with developments in the understanding of the ore body and changes in recovery rates, production costs and other factors may ultimately result in a restatement of ore reserves and/or mineral resources and may adversely impact future cash flows
- To mitigate this risk the company appoints independent third parties to review the mineral resources and ore reserves estimates on a regular basis and mining project feasibility studies are subject to independent review prior to applying to the board for capital approval

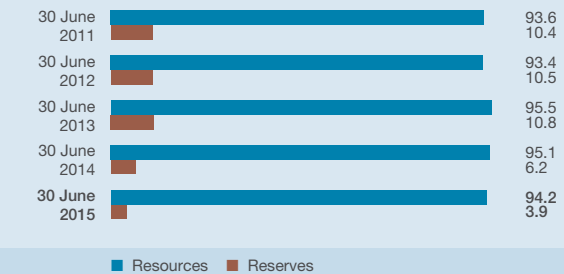


# Zimplats

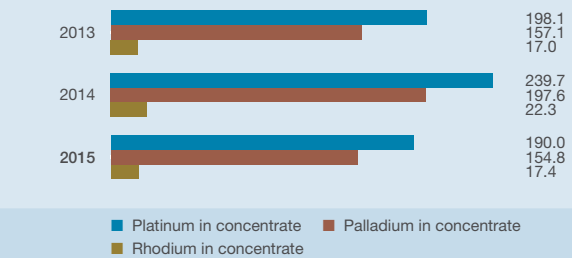
- The Mineral Corporation completed an audit of the current estimates and concluded that there were no key issues identified with respect to the mineral resources or ore reserves estimates
- Rounding-off of numbers may result in minor computational discrepancies
- The economic viability of the Zimplats ore reserves is tested by means of net present value calculations over the LoM of the reserve, determining the lowest real rand basket price which would still render the reserve viable. This is then tested against the internal Zimplats estimate of the real long-term basket price, the spot price as at 30 June 2015 and a consensus view from various financial institutions. These tests indicate that the Zimplats operation requires a real long-term basket price of between R22 000 to R23 000 to be economically viable. While the real spot basket price as at 30 June 2015 was R22 285, the Zimplats internal long-term real basket price is R29 066 and the equivalent calculated consensus price is R25 278.

The year-on-year reconciliation of the total Zimplats mineral resources and mineral reserves is depicted in the accompanying graphs.

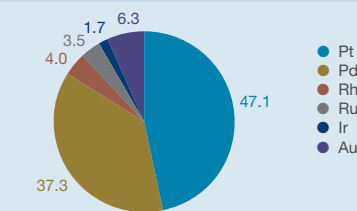
Zimplats attributable mineral resources and ore reserves (Moz Pt)



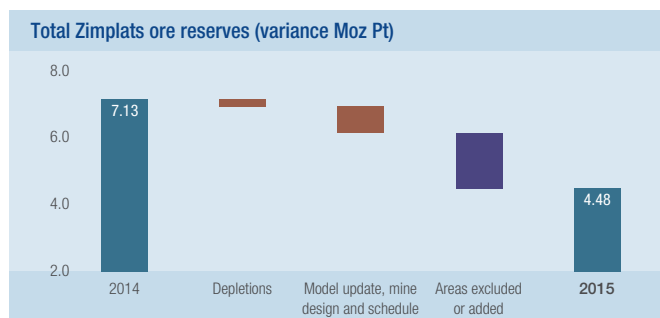
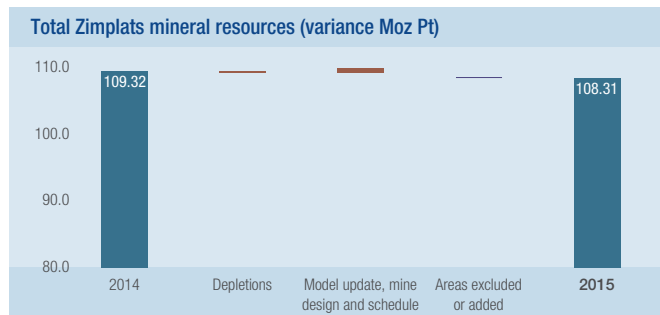
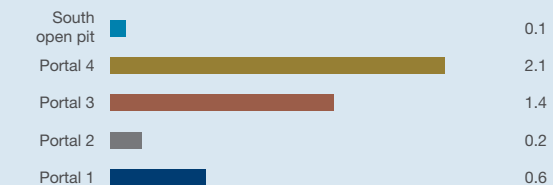
Zimplats production (Koz)



Zimplats MSZ 6E metal ratio (%)



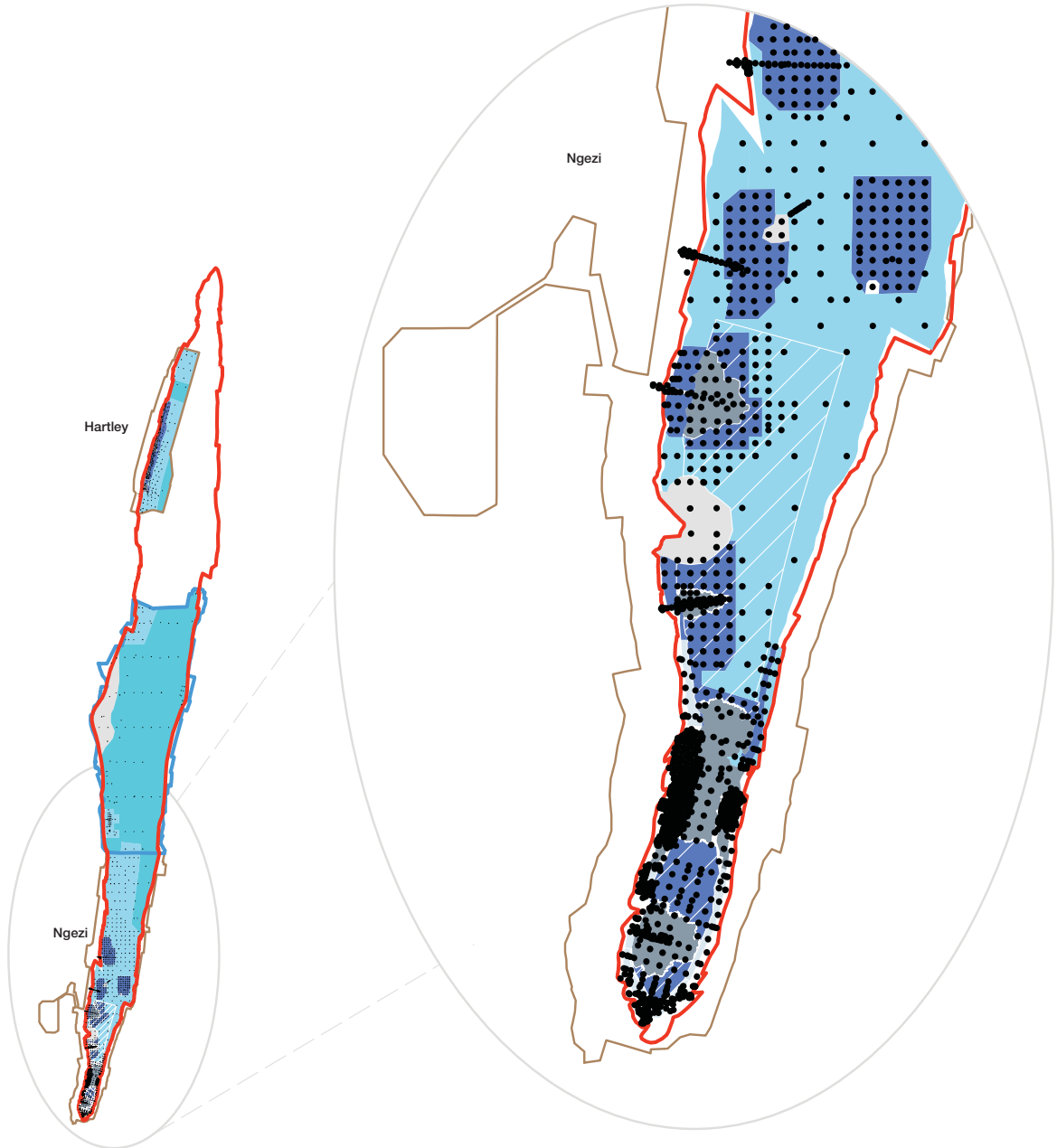
Zimplats ore reserves distribution (Moz Pt)





# Zimplats

## Zimplats MSZ mineral resources and ore reserves



0 10  
Scale (km)

0 5  
Scale (km)

- Boreholes
- Mined-out areas
- Measured mineral resource
- Indicated mineral resource
- Inferred mineral resource
- Open-pit resource
- Ore reserve
- Excluded mineral resource
- Ground previously gazetted for compulsory acquisition
- MSZ outcrop
- Mining right boundary

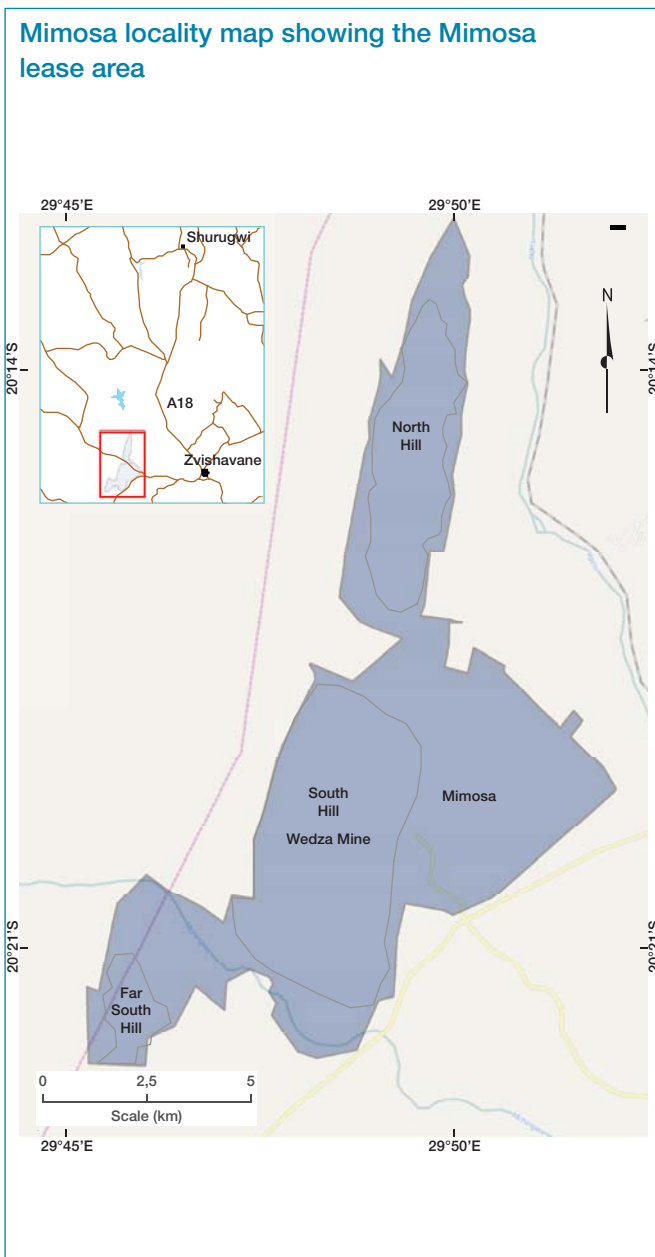
# Mimosa



“At Mimosa a large portion of the Mtshingwe mineral resource has now been included in the mineral reserve estimate”



Mimosa locality map showing the Mimosa lease area



Mimosa locality map



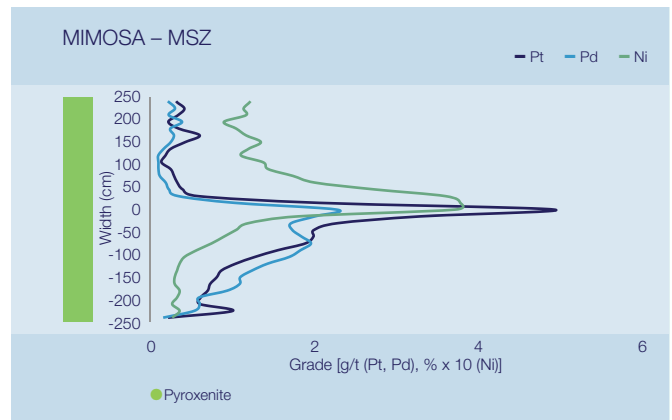
# Mimosa

Mimosa is located 20km west of the town of Zvishavane, 150km east of Bulawayo on the Wedza Complex of the Great Dyke in Zimbabwe. Mimosa was acquired by Zimasco from Union Carbide in 1993. Zimasco piloted platinum mining in Zimbabwe by resuscitating the operation and steadily increasing production to 1 000 tonnes per day achieved in 1998. In July 2001, Implats acquired a 35% stake in Mimosa and increased this stake to 50% with a further acquisition of 15% in August of the following year. Aquarius acquired a 50% stake in Mimosa during the same year. Mimosa is wholly owned by Mimosa Investments Limited, a Mauritius-based company jointly held by Implats and Aquarius in a 50:50 joint venture.

The Government of Zimbabwe has been pursuing the greater participation in the mining sector by indigenous Zimbabweans. Implats is continuing to engage with the Government of Zimbabwe with respect to agreeing plans for the indigenisation of Mimosa. The current position with regard to the implementation of the Government of Zimbabwe's indigenisation plans is not clear and depending on what position is ultimately taken by the Government of Zimbabwe, Implats' attributable mineral resources and mineral reserves may be significantly reduced.

PGM mineralisation at Mimosa is located in four erosionally isolated and fault-bounded blocks, consisting from north to south of the North Hill orebody, South Hill orebody, Mtshingwe Block orebody and Far South Hill orebody areas. Mimosa holds contiguous mining rights over the above mentioned areas totalling 6 591 ha. The indigenisation plan has not been completed and the reported attributable mineral resources and mineral reserves are still at the same attributable ownership level of 50%.

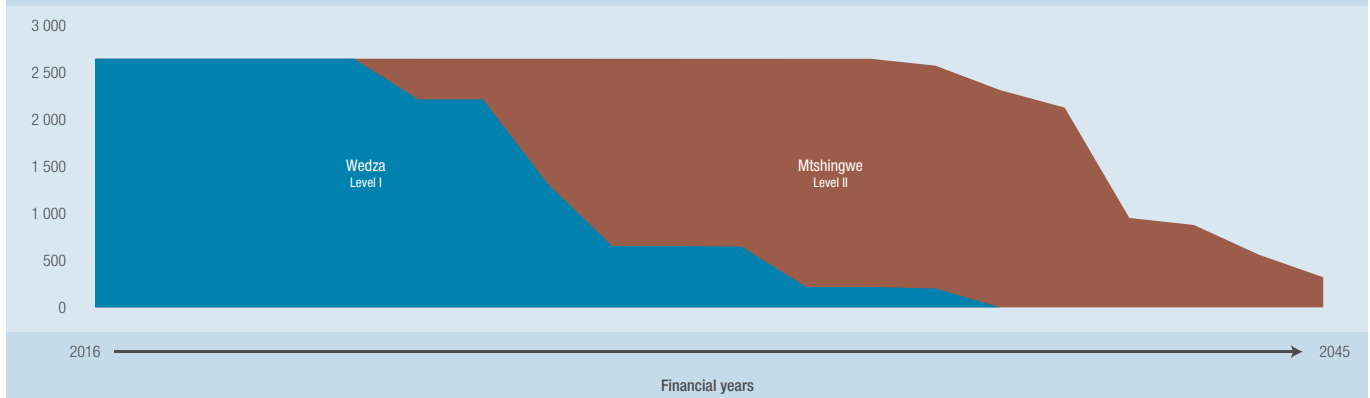
The platinum-bearing Main Sulphide Zone (MSZ) is located in the P1 pyroxenite some 10m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 3m thick, and forms an elongated basin. The zone strikes in a north-northeasterly trend and dips at about 10° on the margins flattening towards the axis of the basin. The MSZ at Mimosa has a well-defined grade profile where peak base metal and PGM values are offset vertically, with palladium dominant towards the base, platinum in the centre and nickel towards the



top. At Mimosa the MSZ is visually identified using pyroxene and sulphide mineralisation followed by confirmatory channel sampling unlike at Zimplats, where the MSZ is difficult to identify visually with no clear marker horizons, and systematic monitoring supported by channel sampling is required to guide mining. Minor faults and dykes are present at Mimosa. Although no potholes have been identified, low-grade areas and areas of no mineralisation or “washouts” have been intersected. These are all accounted for in the mineral resource and mineral reserve statement. Mimosa is a shallow underground mine accessed by the Blore Decline Shaft system. The bord and pillar mining method is employed and stoping widths average around 2m.

Mining bords advance along strike. The mining cycle involves mechanised support drilling and installation, mechanised face drilling, charging and blasting, and mechanised lashing onto a conveyor network to an underground bunker. From the bunker ore is conveyed out to a surface stockpile. Optimum stoping widths and mining cut selection are regularly reviewed given variation in metal prices and the non-linear distribution on the different metals. Mining models are defined relative to the platinum peak and recent work confirmed that a 2m slice is presently the optimum cut. The mineral resources and mineral reserves listed below are based on a slice that extends from 0.45m above the platinum peak datum to 1.55m below the

Mimosa: 20-year tonnage profile



## Mimosa

datum. The reported mined grade is based on inverse distance block modelling of borehole values using Surpac™.

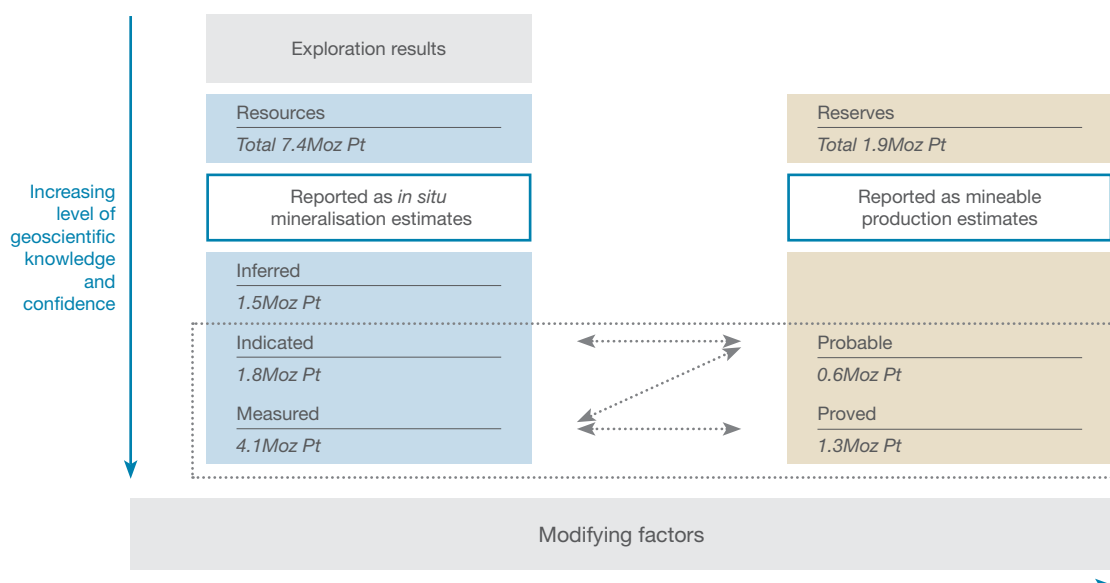
Mine design and scheduling is done utilising Surpac™. The mine plan is derived from a target milling throughput. Strategic stockpile levels are factored into the volumes to be hoisted. Losses due to mining and geology are applied to the planned tonnages and then consolidated into the LoM profile. The assured LoM of Mimosa is limited to the northern part of the

South Hill deposit known as the Wedza shaft area; however, the LoM depicted below now includes on-reef stoping from the Wedza shaft mineral reserve area into the southern part of the South Hill orebody known as the Mtshingwe area. Mimosa has a concentrator plant on site where initial processing is done. Concentrate is transported by road to Impala Platinum's Mineral Processes in Rustenburg in terms of an offtake agreement with IRS. An alternative option for local beneficiation is being pursued.

### Key operating statistics

		2015	2014	2013	2012	2011
<b>Production</b>						
Tonnes milled ex mine	(000t)	<b>2 586</b>	2 453	2 381	2 324	2 311
Head grade 6E	(g/t)	<b>3.92</b>	3.92	3.95	3.93	3.91
Platinum in concentrate	(000 oz)	<b>117.4</b>	110.2	100.3	106.0	104.9
PGM in concentrate	(000 oz)	<b>250.1</b>	234.6	214.8	222.8	219.7
<b>Breakdown of cash costs</b>						
On-mine operations	(Rm)	<b>(1 375)</b>	(1 425)	(1 110)	(813)	(730)
Concentrating operations	(Rm)	<b>(501)</b>	(375)	(311)	(242)	(196)
Selling and administration	(Rm)	<b>(167)</b>	(158)	(155)	(138)	(90)
<b>Total cost</b>						
	(Rm)	<b>2 043</b>	1 958	1 576	1 193	1 016
Per tonne milled*	(R/t)	<b>790</b>	798	662	513	440
	(\$/t)	<b>69</b>	77	75	66	63
Per Pt oz in concentrate	(R/oz)	<b>17 402</b>	17 768	15 713	11 255	9 685
	(\$/oz)	<b>1 525</b>	1 713	1 782	1 453	1 377
<b>Financial ratios</b>						
Gross margin ex mine	(%)	<b>22.9</b>	19.3	24.2	37.7	52.2
<b>Capital expenditure</b>						
	(Rm)	<b>343</b>	349	265	497	372
	(\$m)	<b>30</b>	34	30	64	53

### Relationship between exploration results, mineral resources and mineral reserves (100%)



## Mimosa

## Mimosa mineral resources and mineral reserves (100%; inclusive reporting)

as at 30 June 2015

Mineral resources		as at 30 June 2015									as at 30 June 2014							
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	Pt Moz
South Hill MSZ	Measured	46.6	200	3.78	4.00	0.14	0.11	5.7	6.0	2.8	35.2	200	3.86	4.12	0.13	0.11	4.4	2.1
	Indicated	13.4	200	3.47	3.69	0.14	0.11	1.5	1.6	0.7	26.9	200	3.57	3.82	0.14	0.12	3.1	1.5
	Inferred	7.0	200	3.60	3.79	0.15	0.11	0.8	0.9	0.4	7.0	200	3.67	3.93	0.14	0.11	0.8	0.4
	Inferred (Oxides)	4.4	200	3.16	3.30	0.12	0.12	0.4	0.5	0.2	4.6	200	3.17	3.39	0.12	0.12	0.5	0.2
	<b>Total</b>		<b>71.4</b>		<b>3.67</b>	<b>3.88</b>	<b>0.14</b>	<b>0.11</b>	<b>8.4</b>	<b>8.9</b>	<b>4.2</b>	<b>73.7</b>		<b>3.70</b>	<b>3.95</b>	<b>0.14</b>	<b>0.11</b>	<b>8.8</b>
North Hill MSZ	Measured	18.2	200	3.47	3.68	0.14	0.10	2.0	2.1	1.0	18.2	200	3.47	3.68	0.14	0.10	2.0	1.0
	Indicated	16.3	200	3.61	3.84	0.16	0.12	1.9	2.0	0.9	16.5	200	3.61	3.83	0.15	0.12	1.9	1.0
	Inferred	2.0	200	3.52	3.74	0.14	0.10	0.2	0.2	0.1	1.9	200	3.52	3.74	0.14	0.10	0.2	0.1
	Inferred (Oxides)	7.6	200	3.53	3.75	0.14	0.11	0.9	0.9	0.4	7.5	200	3.53	3.75	0.14	0.11	0.9	0.4
	<b>Total</b>		<b>44.0</b>		<b>3.54</b>	<b>3.75</b>	<b>0.15</b>	<b>0.11</b>	<b>5.0</b>	<b>5.3</b>	<b>2.5</b>	<b>44.2</b>		<b>3.54</b>	<b>3.75</b>	<b>0.15</b>	<b>0.11</b>	<b>5.0</b>
Far South Hill MSZ	Measured	4.4	200	3.70	3.94	0.14	0.11	0.53	0.56	0.3								
	Indicated	1.5	200	3.86	4.11	0.15	0.11	0.19	0.20	0.1								
	Inferred	0.05	200	3.94	4.19	0.16	0.11	0.01	0.01	0.0	11.3	200	3.78	4.03	0.14	0.11	1.4	0.7
	Inferred (Oxides)	6.0	200	3.40	3.63	0.13	0.10	0.66	0.70	0.3								
	<b>Total</b>		<b>12.1</b>		<b>3.57</b>	<b>3.81</b>	<b>0.14</b>	<b>0.11</b>	<b>1.4</b>	<b>1.5</b>	<b>0.7</b>	<b>11.3</b>		<b>3.78</b>	<b>4.03</b>	<b>0.14</b>	<b>0.11</b>	<b>1.4</b>
<b>Overall total</b>		<b>127.5</b>		<b>3.62</b>	<b>3.83</b>	<b>0.14</b>	<b>0.11</b>	<b>14.8</b>	<b>15.7</b>	<b>7.4</b>	<b>129.2</b>		<b>3.65</b>	<b>3.89</b>	<b>0.14</b>	<b>0.11</b>	<b>15.2</b>	<b>7.5</b>

Mineral reserves		as at 30 June 2015									as at 30 June 2014							
Orebody	Category	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	6E Moz	Pt Moz	Tonnes Mt	Width cm	4E grade g/t	6E grade g/t	Ni %	Cu %	4E Moz	Pt Moz
South Hill MSZ (Wedza)	Proved	18.7	200	3.47	3.71	0.16	0.12	2.1	2.2	1.0	10.5	200	3.49	3.72	0.14	0.11	1.2	0.6
	Probable	1.6	200	3.29	3.51	0.14	0.11	0.2	0.2	0.1	12.1	200	3.27	3.50	0.15	0.12	1.3	0.7
	<b>Total</b>		<b>20.3</b>		<b>3.46</b>	<b>3.69</b>	<b>0.15</b>	<b>0.11</b>	<b>2.3</b>	<b>2.4</b>	<b>1.1</b>	<b>22.6</b>		<b>3.37</b>	<b>3.60</b>	<b>0.15</b>	<b>0.12</b>	<b>2.5</b>
South Hill MSZ (Mtshingwe)	Proved	4.2	200	3.88	4.14	0.14	0.11	0.5	0.6	0.3								
	Probable	9.3	200	3.75	4.03	0.13	0.10	1.1	1.2	0.5								
	<b>Total</b>		<b>13.5</b>		<b>3.79</b>	<b>4.07</b>	<b>0.13</b>	<b>0.10</b>	<b>1.6</b>	<b>1.8</b>	<b>0.8</b>							
<b>Total South Hill mineral reserves</b>		<b>33.8</b>		<b>3.59</b>	<b>3.84</b>	<b>0.15</b>	<b>0.11</b>	<b>3.9</b>	<b>4.2</b>	<b>1.9</b>	<b>22.6</b>		<b>3.37</b>	<b>3.60</b>	<b>0.15</b>	<b>0.12</b>	<b>2.5</b>	<b>1.2</b>

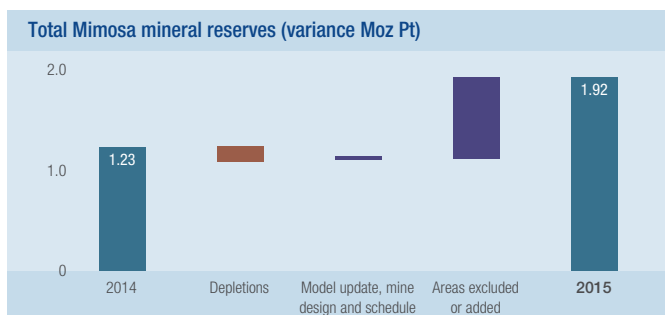
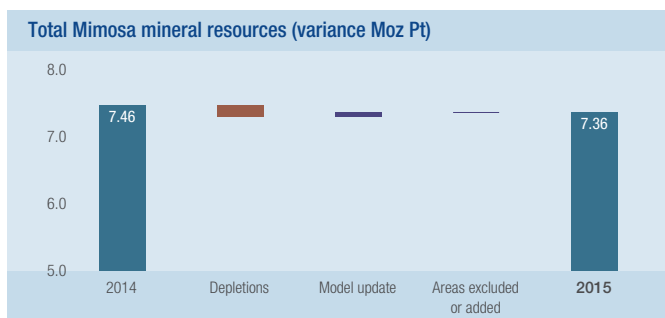
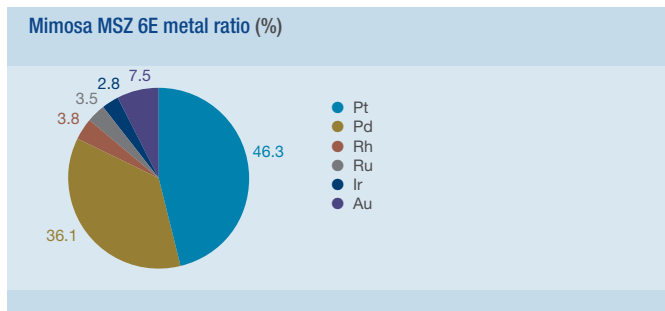
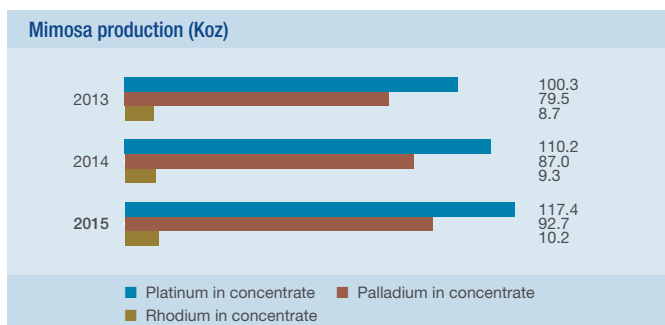
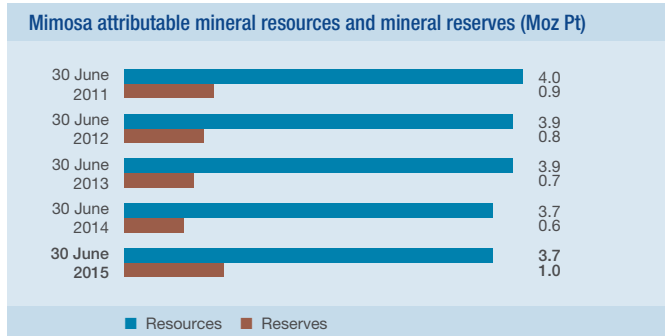


# Mimosa

## Notes

- The statement above reflects the total mineral resource and mineral reserve estimate for Mimosa as at 30 June 2015
- Mineral resources are quoted inclusive of mineral reserves
- Mineral resource estimates allow for estimated geological losses, while no allowance is made for anticipated support pillar losses during eventual mining
- Mineral resource grades are quoted *in situ* while mineral reserve grades are quoted after applying mine to mill modifying factors
- Mineral resource estimates have been done using Surpac™ software to apply inverse distance techniques
- Current mineral resource and reserve estimates have included latest assay results. Twenty-five additional new boreholes have been used for the South Hill grades estimations while 16 new boreholes were introduced for the Far South Hill. In both cases the new information impacted on the grade estimate and resulted in a slightly lower average grade
- The mineral reserves quoted reflect anticipated grades delivered to the mill
- The mineral reserves estimations are aligned to the business plan by estimating tonnes and grades at 2m mining width
- No inferred mineral resources have been converted into mineral reserves
- The mineral reserve statement as at 30 June 2015 includes a portion of the Mtshingwe block given the project approval and continued development into this area
- Rounding of numbers may result in minor computational discrepancies. Mineral resource estimates are inherently imprecise in nature; the results tabulated in this report must be read as estimates and not as calculations; inferred mineral resources in particular are qualified as approximations
- The economic viability of the Mimosa mineral reserves is tested by means of net present value calculations over the LoM of the reserve, determining the lowest real rand basket price which would still render the reserve viable. This is then tested against the internal Mimosa estimate of the real long-term basket price, the spot price as at 30 June 2015 and a consensus view from various financial institutions. These tests indicate that the Mimosa operation requires a real long-term basket price of between R22 000 to R23 000 to be economically viable. While the real spot basket price as at 30 June 2015 was R22 223, the Mimosa internal long-term real basket price is R29 138 and the equivalent calculated consensus price is R25 158.

The year-on-year reconciliation of the total Mimosa mineral resources and mineral reserves are depicted in the accompanying graphs.



Mimosa

Mimosa MSZ mineral resources and ore reserves



## Chromium ore at Implats



**“All our operations are ISO 14001 certified. Our environmental management system requires all operations to identify and report environmental incidents**



The world chromium ore production originates from the mineral chromite (a chromium-iron oxide) in the rock chromitite. The majority of the chromium ore resources of the world are to be found in the Bushveld Complex of South Africa and the Great Dyke of Zimbabwe, where it occurs as numerous thin stratiform chromitite layers. Although some of the chromitite layers have been known since 1865, limited mining only commenced in 1916 in the Bushveld Complex and in 1919 on the Great Dyke. The use and mining of chromium escalated only after the second world war.

Up to 11 chromitite layers are known in the Great Dyke, named from the top down as Seams 1 to 11. At Zimplats the uppermost chromitite layer (Seam 1) is about 220m below the MSZ. It can therefore not be mined from the existing infrastructure and is mined by other operators and artisanal miners close to surface for its chromium content only.

Twelve layers are known in the Bushveld Complex, which are further clustered into three groups, the Lower, Middle and Upper Groups of chromitite layers. Named from the bottom up, they are termed LG1 to LG7, MG1 to MG4, and the UG1 and UG2. In places, individual chromitite layers may comprise multiple layers of subsidiary chromitite units, separated by intercalated silicate units.

In the Bushveld Complex, only the LG6, MG1 and UG2 chromitite layers are amenable to underground mining. The uppermost chromitite layer (UG2) is between 50 and 400m below the Merensky Reef and hosts economically exploitable

quantities of PGMs within the chromitite. The UG2 chromitite layer is therefore mined at all the Implats operations, principally for the PGMs. Chromium can therefore be seen as a by-product of the UG2 Reef in South Africa. The LG6 and MG1, with an average  $\text{Cr}_2\text{O}_3$  grade of between 40 and 50%, is more than 250m below the UG2. They can therefore not be mined from the existing infrastructure at the Implats operations and are mined by other operators close to surface in opencast and underground mining operations for its chromium content only.

The UG2 Reef at Impala has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of about 33%, and a mined grade of about 16%. The mined ore from the UG2 Reef is milled and processed to recover the PGMs at the mine's two PGM concentrator plants. The tailings from the central concentrator is pumped directly to the tailings dams, as this is predominantly Merensky Reef tailings. Some of the tailings generated by the UG2 PGM recovery plant is reprocessed at two metallurgical plants to recover the chromite. Impala has an off-take agreement with Merafe Resources and sells 220kt of chromite concentrate recovered at one of the chromite recovery plants. The second chromite recovery plant which is owned by Impala Chrome was commissioned in 2010, and is operated by Chrome Traders (Pty) Ltd. Currently about 230kt per annum of chromite is reprocessed by Chrome Traders and the remainder is pumped to the tailings dams. The retrieved chromite from the UG2 tailings has an average  $\text{Cr}_2\text{O}_3$  grade of about 42%. The number 3 and number 4 tailings dams at Impala currently contain about 500Mt of milled and processed ore, with an average  $\text{Cr}_2\text{O}_3$  grade of less than 8%.

## Chromium ore at Implats

At the Marula mine, ore from the UG2 Reef is milled and processed to retrieve the PGMs at the PGM recovery plant of the mine. The Makgomo chrome recovery plant subsequently reprocesses the UG2 tailings generated by the PGM recovery plant to extract the chromitite. The plant has been operating since 2010. Owned by Makgomo Chrome (Pty) Limited, the plant is operated by Chrome Traders (Pty) Ltd, who have an off-take agreement whereby all of the chromite concentrate produced is purchased on a free carrier basis from the plant. Makgomo Chrome is owned 50% by the Marula Community Chrome (Pty) Ltd, 30% by Implats and 20% by Marula Platinum mine. Currently about 150kt of chromite concentrate is produced per annum and the remainder is pumped to the tailings dams. The *in situ* grade of the UG2 chromitite layer at Marula has not been determined, but the chromite concentrate has an average  $\text{Cr}_2\text{O}_3$  grade of about 42%. The tailings dam at Marula currently contains about 15.7 million tonnes of milled and processed UG2 ore at an average  $\text{Cr}_2\text{O}_3$  grade of about 12%.

At the Two Rivers Platinum Mine, ore from the UG2 Reef is milled and processed to recover the PGMs at the mine's

MF2 PGM concentrator. The chromite recovery plant then reprocesses the UG2 tailings generated by the concentrator to recover the chromite. The chromite recovery plant was commissioned in 2013. The plant is owned and operated by Two Rivers, which also has an off-take agreement with Chrome Traders whereby all of the concentrate produced is purchased on a free carrier basis from Two Rivers. Currently about 240kt per annum of chromite is produced at a  $\text{Cr}_2\text{O}_3$  grade of 41.5%, and a silica content of less than 3%, and the remainder is pumped to the tailings dams. The UG2 tailings at Two Rivers that have been reprocessed have an average  $\text{Cr}_2\text{O}_3$  grade of about 15%. The tailings dams at Two Rivers currently contain about 24 million tonnes of milled and processed ore with an average  $\text{Cr}_2\text{O}_3$  grade of about 17%.

No mining has taken place at Afplats, Imbasa and Inkosi. The UG2 Reef in this area has an average *in situ*  $\text{Cr}_2\text{O}_3$  grade of about 31%.

The available information is not sufficient to support a comprehensive mineral resource or mineral reserve statement at this stage.





## Areas excluded from mineral resource estimates



**“Effectively all mineralisation deeper than 2 000m below surface have now been excluded from the mineral resource statements, as well as other areas where the eventual economic extraction is in doubt**”

### Exploration results

Implats introduced a depth cut-off in 2010 whereby mineralisation below a certain depth is excluded from the mineral resource estimate. This depth cut-off is applicable to the Bushveld Complex setting and is reviewed annually considering a range of assumptions, specifically the virgin rock temperature (VRT), cooling requirements, available technology, support design and other cost, prices and mining depth limits presently in the platinum industry. It is recognised that while the actual depth cut-off could vary from area to area and over time as conditions vary; a constant depth is assumed for all operations at present. The depth cut-off of 2 350m was applied from the 2013 Implats mineral resource estimates and equated approximately to a VRT of 73° C. The depth cut-off was effectively set at 2 000m below surface in 2014. Additional to the depth cut-off areas various mineral resource blocks are considered on a case-by-case basis. Effectively all mineralisation deeper than 2 000m below surface have now been excluded from the mineral resource statements, as well as other areas where the eventual economic extraction is in doubt.

In order to avoid confusion, these areas are not reported with the mineral resources but separately in this section as exploration results. For further clarity note that these are excluded from the summation of total mineral resources per area and the attributable mineral resources. These areas are indicated as excluded mineral resources on the mineral resource maps per operation.

The indicative quantum of such exploration results are as follows:

- At Impala the estimate for the areas underlain by the Merensky and UG2 Reef that are excluded in the mineral resource estimates is in the order of some 27Moz Pt. More than 60% of these areas occurs at depths greater than 2 350m below surface
- At Afplats all of the Merensky Reef is excluded from the mineral resource estimates given the unlikely eventual economic extraction. In addition there are areas where the UG2 Reef occurs at depths deeper than 2 000m and these are excluded in the mineral resource estimates listed in the Afplats section. The indicative quantum of such exploration results is in the order of some 5Moz Pt for the UG2 Reef
- At Two Rivers an area west of the major fault on the farms Kalkfontein and Buffelshoek is excluded from the mineral resource estimate. The indicative quantum of such exploration results is in the order of some 9Moz Pt in total for the Merensky and UG2 Reefs
- At Zimplats areas which are excluded from the mineral resource estimates are indicated on the mineral resource maps. These are mostly low grade areas and the quantum of these is not material in comparison with the total estimate for Zimplats.



## Areas excluded from mineral resource estimates



## Glossary of terms

<b>4E (equivalent to 3PGE+Au)</b>	Refers to the sum of platinum, palladium, rhodium and gold content as determined by a nickel sulphide collection fire assay procedure; this is considered to be the most accurate assay procedure, and results can usually be compared between laboratories.
<b>6E (equivalent to 5PGE+Au)</b>	Refers to the sum of platinum, palladium, rhodium, ruthenium, iridium and gold content as determined by a nickel sulphide collection fire assay procedure; this is considered to be the most accurate assay procedure, and results can usually be compared between laboratories.
<b>AA</b>	Atomic absorption spectroscopy is an analytical technique which uses the absorption of light to measure the concentration of elements.
<b>Afplats</b>	Afplats Proprietary Limited.
<b>Anorthosite</b>	Igneous rock composed almost entirely of plagioclase feldspar.
<b>Aquarius</b>	Aquarius Platinum Limited.
<b>ARM</b>	African Rainbow Minerals Limited of which ARM Platinum is a subsidiary.
<b>ASX</b>	Australian Securities Exchange.
<b>AusIMM</b>	Australasian Institute of Mining and Metallurgy.
<b>BEE</b>	Black economic empowerment.
<b>Bord and pillar</b>	Underground mining method where ore is extracted from rectangular shaped rooms, leaving parts of the ore as pillars to support the roof. Pillars are usually rectangular and arranged in a regular pattern.
<b>Concentrating</b>	A process of splitting the milled ore in two fractions, the smaller fraction containing the valuable minerals, the rest waste.
<b>Chromitite</b>	A rock composed mainly of the mineral chromite.
<b>Decline</b>	A shallow dipping mining excavation used to access the orebody.
<b>Development</b>	Underground excavations for the purpose of accessing mineral reserves.
<b>DMR</b>	Department of Mineral Resources, formerly known as the Department of Minerals and Energy (DME).
<b>Diorite</b>	Igneous rock composed of amphibole, plagioclase feldspar, pyroxene and small amounts of quartz.
<b>Dunite</b>	Igneous rock consisting mainly of olivine.
<b>Dyke</b>	A wall-like body of igneous rock that intruded (usually vertically) into the surrounding rock in such a way that it cuts across the stratification (layering) of this rock.
<b>ECSA</b>	Engineering Council of South Africa: The Engineering Profession Act, 2000 (Act No 46 of 2000), was promulgated in 2000; the Act became effective in 2011. In terms of section 18(1), the Act empowers ECSA to register persons in certain prescribed Categories of Registration. Paragraph 9 of the SAMREC Code refers to ECSA: "A 'Competent Person' is a person who is registered with SACNASP, ECSA or PLATO, or is a Member or Fellow of the SAIMM, the GSSA or a Recognised Overseas Professional Organisation (ROPO)."
<b>Facies</b>	The appearance and characteristics of a rock unit, reflecting the conditions of its origin, and differentiating it from adjacent (lateral or vertical) or associated units due to a change in the depositional environment. The term facies must not be confused with reef types, which show some variation within the same environment.
<b>Felsic rock</b>	An igneous rock composed mainly of a light-coloured mineral, like feldspar (or plagioclase) and usually quartz, which are more than 60% by volume.

## Glossary of terms

<b>Gabbro</b>	Igneous rock composed mainly and approximately equally of plagioclase feldspar and clinopyroxene.
<b>g/t</b>	Grams per metric tonne. The unit of measurement of metal content or grade, equivalent to parts per million.
<b>GSSA</b>	Geological Society of South Africa.
<b>ha</b>	Abbreviation for hectare, unit of area measured equal to 10 000 square metres.
<b>Harzburgite</b>	Igneous rock composed mainly of olivine and pyroxene.
<b>HDSA</b>	Historically disadvantaged South Africans, being South African nationals who were, prior to 1994, disadvantaged whether by legislation or convention.
<b>ICP-MS</b>	Inductively coupled plasma mass spectrometry is a type of mass spectrometry which is capable of detecting metals at low levels. This is achieved by ionizing the sample with inductively coupled plasma and then using a mass spectrometer to separate and quantify those ions.
<b>In situ</b>	In its natural position or place.
<b>IRS</b>	Impala Refining Services Limited.
<b>JORC Code</b>	The 2004 Australasian Code for Reporting of Mineral Resources and Ore Reserves. This was updated and reissued as the JORC Code 2012.
<b>JSE</b>	JSE Limited, the South African securities exchange based in Johannesburg. Formerly the JSE Securities Exchange and prior to that the Johannesburg Stock Exchange.
<b>Kriging</b>	A geostatistical estimation method that gives the best-unbiased linear estimates of point values or of block averages.
<b>LoM</b>	Life of mine.
<b>Mafic</b>	An igneous rock composed mainly of dark ferromagnesium minerals, which are less than 90% by volume.
<b>Merensky Reef</b>	A horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM and associated base metals. The “Merensky Reef”, as it is generally used, refers to that part of the Merensky unit that is economically exploitable, regardless of the rock type.
<b>Mill grade</b>	The value, usually expressed in parts per million or gram per tonne, of the contained material delivered to the mill.
<b>Moz</b>	Million ounces. All references to ounces are troy ounces with the factor being 31.10348 metric grams per ounce.
<b>MPRDA</b>	Minerals and Petroleum Resources Development Act of South Africa.
<b>MSZ</b>	The Main Sulphide Zone (MSZ) is the PGM-bearing horizon hosted by the Great Dyke. In addition to the economically exploitable PGMs there is associated base metal mineralisation. The MSZ is located 10m to 50m below the ultramafic/mafic contact in the P1 pyroxenite.
<b>Mt</b>	Abbreviation for million metric tonnes.
<b>Norite</b>	Igneous rock composed mainly of plagioclase feldspar and orthopyroxenes in approximately equal proportions.

## Glossary of terms

<b>Pegmatoid</b>	An igneous rock that has the coarse-crystalline texture of a pegmatite but lacks graphic intergrowths.
<b>PGE</b>	Platinum group elements comprising the six elemental metals of the platinum group. The metals are platinum, palladium, rhodium, ruthenium, iridium and osmium.
<b>PGM</b>	Platinum group metals being the metals derived from PGE.
<b>PLATO</b>	The South African Council for Professional and Technical Surveyors.
<b>Pyroxenite</b>	Igneous rock composed mainly of pyroxene and minor feldspar.
<b>QAQC</b>	Quality Assurance and Quality Control.
<b>RBR</b>	Royal Bafokeng Resources.
<b>Reef</b>	A local term for a tabular metalliferous mineral deposit.
<b>ROPO</b>	Recognised Overseas Professional Organisation.
<b>SACNASP</b>	South African Council for Natural Scientific Professions: The Natural Sciences Profession Act, 2003 (Act No 27 of 2003), was approved in 2003. The Act empowers SACNASP to register persons in certain prescribed categories of registration. Paragraph 9 of the SAMREC Code refers to SACNASP: "A 'Competent Person' is a person who is registered with SACNASP, ECSA or PLATO, or is a Member or Fellow of the SAIMM, the GSSA or a Recognised Overseas Professional Organisation (ROPO)."
<b>SAIMM</b>	Southern African Institute of Mining and Metallurgy.
<b>SAMREC</b>	The South African Mineral Resource Committee.
<b>SAMREC Code</b>	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves.
<b>Seismic surveys</b>	A geophysical exploration method whereby rock layers can be mapped based on the time taken for wave energy reflected from these layers to return to surface.
<b>Smelting</b>	A pyrometallurgical process to further upgrade the fraction containing valuable minerals.
<b>SSC</b>	SAMREC/SAMVAL committee.
<b>Stoping</b>	Underground excavations to effect the removal of ore.
<b>UG2 Reef</b>	A distinct chromitite horizon in the Upper Critical Zone of the Bushveld Complex usually containing economic grades of PGE and limited associated base metals.
<b>Ultramafic rock</b>	An igneous rock composed mainly of dark ferromagnesium minerals, which are more than 90% by volume.
<b>Websterite</b>	Igneous rock composed almost entirely of clino- and orthopyroxene.



## Mineral resource and mineral reserve definitions

**SAMREC Code** – the South African Code for reporting of mineral resources and mineral reserves sets out minimum standards, recommendations and guidelines for public reporting of exploration results, mineral resources and mineral reserves in South Africa. SAMREC was established in 1998 and is modelled on the Australasian Code for reporting of mineral resources and ore reserves (JORC Code). The 2007 revision was amended in June 2009.

In terms of SAMREC, a “Competent Person” is one who is registered with the South African Council for Natural Scientific Professions (SACNASP), the Engineering Council of South Africa (ECSA) or the South African Council for Professional and Technical Surveyors (PLATO), or is a member of or fellow of the SAIMM, the GSSA or a recognised overseas professional organisation (ROPO). A complete list of such recognised organisations is promulgated by the SSC from time to time. The Competent Person must comply with the provisions of the relevant promulgated acts. A Competent Person must have a minimum of five years’ experience relevant to the style of mineralisation and type of deposit or class of deposit under consideration and to the activity they undertake. If the Competent Person is estimating or supervising the estimation of mineral resources, the relevant experience must be in the estimation, assessment and evaluation of mineral resources. Persons called upon to sign as a Competent Person must be clearly satisfied in their own minds that they are able to face their peers and demonstrate competence in the commodity, type of deposit and situation under consideration.

**A mineral resource** – is a concentration or occurrence of material of economic interest in or on the earth’s crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a mineral resource are known, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Mineral resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into inferred, indicated or measured categories.

**An inferred mineral resource** – is that part of a mineral resource for which volume or tonnage, grade and mineral content can be estimated with only a low level of confidence. It is inferred from geological evidence and sampling and assumed but not verified geologically or through analysis of grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that may be limited in scope or of uncertain quality and reliability. An inferred mineral resource has a lower level of confidence than that applying to an indicated mineral resource.

**An indicated mineral resource** – is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on information from exploration, sampling and testing of material gathered from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological or grade continuity but are spaced closely enough for continuity to be assumed. The indicated mineral resource has sufficient confidence for mine design, mine planning or economic studies.

**A measured mineral resource** – is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable information from exploration, sampling and testing of material from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity. A measured mineral resource provides sufficient confidence for mine design, mine planning, production planning and detailed economic studies to be undertaken.



## Mineral resource and mineral reserve definitions

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**A mineral reserve** – is the economically mineable material derived from a measured or indicated mineral resource or both. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of pre-feasibility study for a project and a LoM plan for an operation must have been completed, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and government factors (the modifying factors). Such modifying factors must be disclosed. Mineral reserves are reported as inclusive of diluting and contaminating uneconomic and waste material delivered for treatment or dispatched from the mine with treatment. Mineral reserves are sub-divided in order of increasing confidence into probable and proved mineral reserves.

**A probable mineral reserve** – is the economically mineable material derived from a measured or indicated mineral resource or both. It is estimated with a lower level of confidence than a proved mineral reserve. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of pre-feasibility study for a project or a LoM plan for an operation must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors.

**A proved mineral reserve** – is the economically mineable material derived from a measured mineral resource. It is estimated with a high level of confidence. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a pre-feasibility study for a project or a LoM plan for an operation must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors.

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