

# Glossary of terms

## General

**\$:** US Dollars

**Afplats:** African Platinum Limited

**Aquarius:** Aquarius Platinum Limited

**ARM:** African Rainbow Minerals Limited of which ARM Platinum is a subsidiary.

**BEE:** Black economic empowerment.

**Bord and pillar:** 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.

**BMR:** Base Metals Refinery.

**Concentrating:** A process of splitting the ground ore in two fractions, one containing the valuable minerals, the other waste.

**Cost per tonne/refined platinum ounce/refined PGM ounce:** The cash cost of mining, concentrating, smelting, refining, marketing and corporate office expressed per unit of measure.

**Decline:** A shallow dipping mining excavation used to access the orebody.

**Development:** Underground excavation for the purpose of accessing Mineral Reserves.

**DME:** Department of Minerals and Energy.

**DMR:** Department of Minerals Resources, previously known as the Department of Minerals and Energy (DME).

**FIFR:** A rate expressed per million man hours of any Impala employee, Contractor or Contractor employee or visitor who is involved in an incident whilst performing his duties at work and who sustains terminal injuries shall constitute a FATAL. Any road related fatal where the company is in full control of the vehicle, the driver and conditions related to the road injury of an employee shall constitute a fatal. A fatal injury may occur such that an employee is incapacitated for a period of time prior to expiration, thus requiring a revision of injury status from 'LTI' to 'Fatality'.

**GJ:** Gigajoule, a unit of energy consumption. 1GJ = one thousand million (109) joules.

**g/t:** grammes per tonne. The unit of measurement of grade, equivalent to parts per million.

**Group unit cost per refined platinum ounce/refined PGM ounce:** The cash cost of mining, concentrating and other operating expenses (marketing, corporate office) expressed per unit of mine-to-market measure, as well as the cost of smelting and refining expressed per gross unit of measure.

**GSSA:** Geological Society of South Africa

## Glossary of terms (continued)

**HDSA:** Historically disadvantaged South Africans, being South African nationals who were, prior to 1994, disadvantaged whether by legislation or convention.

**Head grade:** The value, usually expressed in parts per million or gram per tonne, of the contained mineralisation of economic interest in material delivered to the mill.

**In situ:** In its natural position or place.

**IRS:** Impala Refining Services Limited.

**JIBAR:** Johannesburg Interbank Acceptance Rate.

**JORC:** The Australasian Code for Reporting of Mineral Resources and Ore Reserves.

**JSE:** JSE Limited, the South African securities exchange based in Johannesburg. Formerly, the JSE Securities Exchange and prior to that the Johannesburg Stock Exchange.

**LIBOR:** London Interbank Offering Rate.

**LSE:** London Stock Exchange.

**LME:** London Metals Exchange.

**LHD:** Load-haul dumper vehicle.

**LTIFR:** A rate expressed per million man hours of a work-related injury resulting in the employee being unable to attend work, at his/her place of work, performing his/her assigned duties, on the next calendar day (whether a scheduled work day or not) after the day of the injury. If the appointed medical professional advises that the injured person is unable to attend work on the next calendar day after the injury, regardless of the injured person's next rostered shift, a lost-time injury is deemed to have occurred. Lost-time injuries (LTI) include reportable and fatal injuries.

**Merensky Reef:** A horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM. The term "Merensky Reef" as it is generally used refers to that part of the Merensky unit that is economically exploitable, regardless of the rock type.

**Milling:** Grinding of ore into the fine particles to expose the valuable minerals.

**MPRDA:** The Mineral and Petroleum Resources Development Act of 2002.

**NYSE:** New York Stock Exchange.

**OECD:** Organisation for Economic Co-operation and Development.

**3PGE+Au:** Refers to the sum of platinum, palladium, rhodium and gold as determined by a fire assay method (typically by a lead collection procedure); notably there are various methods in use at different laboratories and companies; these are not directly comparable. These fire assay methods typically under-measure the actual content of total platinum, palladium, rhodium and gold content.

**5PGE+Au:** Refers to the sum of platinum, palladium, rhodium, ruthenium, iridium and gold as determined by a NiS fire assay procedure; this is the most accurate assay procedure, the results of which can be compared between laboratories. It is however time consuming and expensive.

**PGE:** Platinum group elements comprising six elemental metals of the platinum group. The metals are platinum, palladium, rhodium, ruthenium, iridium and osmium.

**PGM:** Platinum group metals being the metals derived from PGE.

**PMR:** Precious Metals Refinery.

**Reef:** A local term for a metalliferous mineral deposit.

**SAIMM:** South African Institute of Mining and Metallurgy.

**SAMREC:** South African Mineral Resource Committee.

**SAMREC code:** The South African code for the reporting of exploration results, Mineral Resources and Mineral Reserves.

**SENS:** Stock Exchange News Service of the JSE.

**Seismic surveys:** A geophysical exploration method whereby rock layers can be mapped based on the time taken for energy reflected from these layers to return to surface.

**Smelting:** A smelting process to upgrade further the fraction containing the valuable minerals.

**Stopping:** Underground excavations to effect the removal of ore.

**UG2 Reef:** A distinct chromitite horizon in the Critical Zone of the Bushveld Complex often containing economic grades of PGM.

## Resource and 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). An updated version of SAMREC was published in 2007.

In terms of SAMREC, a Competent Person is one who is registered with the South African Council for National Scientific Professions (SACNASP), the Engineering Council of South Africa (ECSA) or the South African Council for Professional Land Surveyors 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. If the competent person is estimating or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment and evaluation of Mineral Reserves. 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

## Glossary of terms (continued)

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, estimated from specific geological evidence and knowledge, or interpreted from a well constrained and portrayed geological model. Mineral Resources are subdivided, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated and Measured categories.

An **Inferred Mineral Resource** is that part of a Mineral Resources for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or 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 or of uncertain quality and reliability.

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 exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.

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 exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

A **Mineral Reserve** is the economically mineable material derived from a Measured and/or Indicated Mineral Resource. It is inclusive of diluting materials and allows for losses that may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out, including consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and government factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified. Mineral Reserves are subdivided in order of increasing confidence into Probable Mineral Reserves and Proved Mineral Reserves.

A **Probable Mineral Reserve** is the economically mineable material derived from a Measured and/or Indicated Mineral Resource. It is estimated with a lower level of confidence than a Proved Mineral Reserve. It is inclusive of diluting materials and allows for losses that may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified.

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 is inclusive of diluting materials and allows for losses that may occur when the material is mined. Appropriate assessments, which may include feasibility studies, have been carried out, including consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction is reasonably justified.