

**THE SOUTH AFRICAN CODE FOR THE
REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES
AND MINERAL RESERVES**

(THE SAMREC CODE)

2007 EDITION

Prepared By

**The South African Mineral Resource Committee (SAMREC)
Working Group under the Joint Auspices of the
Southern African Institute of Mining and Metallurgy and the
Geological Society of South Africa**

GLOSSARY OF TERMS

The terms set out below shall, unless the context otherwise indicates, apply in relation to this Code.

The Companies Act	The Companies Act No 61 of the Republic of South Africa of 1973, as amended or any law that may replace it wholly or in part from time to time.
Dilution and or Contamination	Waste material that is mined during the course of mining operations and which thereby forms part of the Reserve
Discard and Reject Coal	Discard and Reject Coal are coal and/or carbonaceous material resulting from mining operations or coal processing operations with coal quality parameters that fall outside the current saleable product range
Economically Mineable	Extraction of the Mineral Reserve has been demonstrated to be viable and justifiable under a defined set of realistically assumed modifying factors.
Feasibility Study	A comprehensive design and costing study of the selected option for the development of a mineral project in which appropriate assessments have been made of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable) and the factors reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The overall confidence of the study should be stated.
Life of Mine Plan	A design and costing study of an existing operation in which appropriate assessments have been made of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified.
License, Permit, Lease or other similar entitlement	Any form of license, permit, lease, including new or old order rights or other entitlement granted by the relevant Government in accordance with its mining legislation that confers on the holder certain rights to explore for and/or extract minerals that might be contained in the designated area. Alternatively, any form of ownership title that may prove ownership of the minerals.
Mineable	Those parts of the ore body, both economic and uneconomic, that are extracted during the normal course of mining.
Mine Design	A framework of mining components and processes taking into account such aspects as mining methods used, access to the ore body, personnel and material handling, ventilation, water, power, and other technical requirements, such that mine planning can be undertaken.
Mine Planning	Production planning and scheduling, within the Mine Design, can be undertaken, taking into account such aspects as geological structures and mineralization and associated infrastructure and constraints.

NOTE: Code is in normal typeface, **definitions are in bold and form part of the Code**, *guidelines are in italics*

Modifying Factors	"Modifying Factors" includes mining, metallurgical, economic, marketing, legal, environmental, social and governmental considerations.
Ore Reserves	Although the term Mineral Reserve is used throughout this Code, it is recognised that the term Ore Reserve is still in general use. For the purposes of reporting under the SAMREC Code, these terms are considered to be synonymous.
Pre-Feasibility Study	A comprehensive study of a range of options for the viability of a mineral project that has advanced to a stage where the preferred mining method, in the case of underground mining or the pit configuration in the case of an open pit has been established and where an effective method of mineral processing has been determined. It includes a financial analysis based on realistically assumed assumptions of technical, engineering, operating, economic factors and the evaluation of other relevant factors which are sufficient for a Competent Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve. The overall confidence of the study should be stated. A Pre-feasibility Study is at a lower confidence level than a Feasibility Study.
ROPO	A Recognised Overseas Professional Organisation. The criteria for a ROPO are that the organisation must: <ol style="list-style-type: none"> 1. Be a self-regulatory organisation covering professionals in the mining and/or exploration industry; 2. Admit members primarily on the basis of their academic qualifications and experience; 3. Require compliance with the professional standards of competence and ethics established by the organisation; and 4. Have disciplinary powers, including the power to suspend or expel a member. 5. Have been accepted by SAMREC as a ROPO
SAMREC	The South African Mineral Resource Committee
SAMVAL	The South African Mineral Asset Valuation Committee
SSC Committee	The SAMREC/SAMVAL Committee

FOREWORD

1. The SOUTH AFRICAN CODE FOR THE REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES (the SAMREC Code or the Code) sets out minimum standards, recommendations and guidelines for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves in South Africa. It has been drawn up by the Working Group of the SSC Committee under the joint auspices of the Southern African Institute of Mining and Metallurgy (SAIMM) and the Geological Society of South Africa (GSSA). The SSC consists of representatives of the SAIMM, the GSSA, the South African Council for Natural Scientific Professions (SACNASP), the Geostatistical Association of South Africa (GASA), the South African Council for Professional Land Surveyors and Technical Surveyors (PLATO), the Association of Law Societies of South Africa, the General Council of the Bar of South Africa, the Department of Minerals and Energy (DME), the JSE Limited (JSE), the Council for Geoscience,

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the South African Council of Banks, the Minerals Bureau, the Chamber of Mines of South Africa (COM), and the University of the Witwatersrand.

The first version of the SAMREC Code was issued in March 2000 and adopted by the JSE in their Listings Requirements later that same year. The Code has been adopted by the SAIMM, the GSSA, SACNASP, ESSA and PLATO, and is binding on members of these organisations. For background information and the history of the development of the Code please refer to the SAMREC Code, March 2000. This 2007 edition supersedes the first edition.

Concurrently with the evolution of the SAMREC Code, the Committee for Mineral Reserves International Reporting Standards (CRIRSCO), initially a committee of the Council of Mining and Metallurgical Institutions (CMMI), has, since 1994, been working to create a set of standard international definitions for the reporting of Mineral Resources and Mineral Reserves.

As a result of the CRIRSCO/CMMI initiative, considerable progress has been made towards widespread adoption of globally consistent reporting standards. These are embodied in similar Codes, guidelines and standards published and adopted by the relevant professional bodies around the world.

The definitions in this edition of the SAMREC Code are either identical to, or not materially different from, those existing international definitions.

INTRODUCTION

2. The Code is applicable to the reporting of all styles of solid mineralisation or economic deposit. Certain commodities, namely Coal and Diamonds, have specific additional reporting requirements and these are dealt with from Clause 41 onwards. The Code does not apply to Oil, Gas or Water.

In this second edition of the SAMREC Code, the Code is predominantly presented in normal typeface. **Definitions are highlighted in bold text, and also form part of the Code.** *Guidelines are in italics and are placed after the respective Code clauses to provide assistance and guidance to readers when interpreting the Code.*

The SSC recognises that further reviews and revisions of the Code may be required. Additional information, rules, lists and best practice guidelines will be published on the SAMREC website from time to time, after due process has been followed.

SCOPE

3. The Code sets out a required minimum standard for the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves. References in the Code to Public Report or Public Reporting pertains to those reports detailing Exploration Results, Mineral Resources and Mineral Reserves prepared for the purpose of informing investors or potential investors and their advisers.

Although the Code is a required minimum standard for Public Reporting, the SSC committee recommends its adoption as a minimum standard for other reporting.

Public Reports are all reports prepared for the purpose of informing investors or potential investors and their advisers and include but are not limited to: company annual reports,

quarterly reports and other reports included in JSE circulars, or as required by the Companies Act. The Code also applies to the following reports if they have been prepared for the purposes described in Clause 3: environmental statements; information memoranda; expert reports; technical papers; website postings; and public presentations.

For companies issuing annual reports, or other summary reports, the inclusion of all material information relating to Exploration Results, Mineral Resources and Mineral Reserves is recommended. In cases where summary information is presented it should be clearly stated that it is a summary, with a reference attached giving the location of the Code-compliant Public Reports or Public Reporting on which the summary is based. Companies and other entities are encouraged to provide information, which is as comprehensive as possible, in their Public Reports.

It is recognised that companies may be required to issue reports for more than one regulatory jurisdiction, with differing compliance standards as contained in this Code. It is recommended that such reports include a statement alerting the reader to this.

Reference in the Code to 'documentation' pertains to internal company documents prepared as a basis for, or in support of, a Public Report.

It is recognised that situations may arise where such supporting documentation, prepared by Competent Persons for internal company or similar non-public purposes, may not specifically be compliant with the Code. In such situations, it is recommended that the documentation includes a prominent statement to this effect.

Users of the Code, and those compiling reports which comply with the Code, should be guided by its intent, which is to provide a minimum standard for Public Reporting, and to ensure that such reporting contains all relevant information which investors and their professional advisers would expect to find in the report, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources and Mineral Reserves being reported on.

4. The Code takes into account issues of a global nature whilst addressing certain circumstances unique to South Africa. The following principles should be considered in the application of the Code:

Materiality: A Public Report contains all the relevant information which investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources and Mineral Reserves being reported on.

Transparency: The reader of a Public Report must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled.

Competency: The Public Report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable Professional Code of Ethics.

The author of the Public Report should be satisfied that his work has not been unduly influenced by the organisation, company or person commissioning a report or any report that may be deemed a Public Report, that all assumptions are documented, and that adequate disclosure is made of all material aspects that the informed reader may require, to make a reasonable and balanced judgement thereof.

5. The Code is applicable to all solid minerals for which Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves is required. Minerals are defined as any substance occurring naturally in or on the earth, in or under water or in tailings or dumps, and having been formed by or subjected to a geological process and includes sand, stone, rock, gravel, clay, soil and any mineral occurring in stockpiles or in residue deposits, but excludes water, oil and gas.
6. Table 1 provides a list of the main criteria which should be considered and reported upon, if relevant, when reporting on Exploration Results, Mineral Resources and Mineral Reserves.

COMPETENCE AND RESPONSIBILITY

7. Documentation detailing Exploration Results, Mineral Resources and Mineral Reserves from which a Public Report is prepared, must be prepared by, or under the direction of, and signed by a Competent Person.
8. A Public Report concerning a company's Exploration Results, Mineral Resources and Mineral Reserves is the responsibility of the company acting through its Board of Directors. Any such report must be based on, and fairly reflect, the Exploration Results, Mineral Resources and Mineral Reserves report(s) and supporting documentation prepared by a Competent Person. A Public Report shall disclose the name of the Competent Person(s), his/her qualifications, professional affiliations and relevant experience. The Competent Person's written approval is required for his contribution to the report.

Where any specific documentation is referred to in a Public Report, the written approval of the author must be obtained as to the form, content and context in which that documentation is to be included in the Public Report.

9. **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). A complete list of recognised organisations will be promulgated by the SSC from time to time. The Competent Person must comply with the provisions of the relevant promulgated Acts.**
10. A Competent Person must have a minimum of 5 (five) years experience relevant to the style of mineralisation and type of deposit or class of deposit under consideration and to the activity which that person is undertaking. 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, evaluation and assessment of the economic extraction of Mineral Reserves. Persons being 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.

The key qualifier in the definition of a Competent Person is the word 'relevant'. Determination of what constitutes relevant experience can be difficult and common sense should be exercised. For example, in estimating vein gold mineralisation, experience in a high-nugget, vein-type mineralisation such as tin, uranium etc. will probably be relevant, whereas experience in massive-type deposits may not be. Furthermore, a person, considered competent in evaluating and reporting on alluvial gold

deposits, should have considerable experience in this type of mineralisation, because of the characteristics of gold in alluvial systems, the particle sizing of the host sediment, and the low grades being quantified. Experience with placer deposits containing minerals other than gold may not necessarily provide relevant experience.

The key word 'relevant' could also mean that it is not always necessary for a person to have five years experience in each and every type of deposit in order to act as a Competent Person if that person has relevant experience in other deposit types. For example, a person with twenty years experience in Mineral Resource evaluation in a variety of metalliferous hard-rock deposit types may not require five years specific experience in porphyry copper deposits in order to act as a Competent Person. Relevant experience in the other deposit types would count towards the required experience in relation to porphyry copper deposits.

In addition to experience in the style of mineralisation, a Competent Person reporting Mineral Resources should have sufficient knowledge of sampling and assaying techniques relevant to the deposit under consideration and to be aware of problems which could affect the reliability of the data. Some appreciation of extraction and processing techniques applicable to that deposit type would also be important.

It is important that the Lead Competent Person(s) accepting overall responsibility for a Mineral Resource or Mineral Reserve report which has been prepared in whole or in part by others is satisfied that the work of the other contributors is acceptable and that the constituent parts of the report have been signed off by such contributors.

The Lead Competent Person undertaking Mineral Resource or Mineral Reserve reporting should accept full responsibility for the report and should not treat the procedure merely as a 'rubber-stamping' exercise.

Estimation of Mineral Resources may be a team effort (i.e. involving one person or a team collecting the data and another person or team preparing the Mineral Resource estimate). Estimation of Mineral Reserves is commonly a team effort involving a number of technical disciplines. It is recommended that, where there is a clear division of responsibilities within a team, each person should accept responsibility for, his or her particular contribution. For example, one person could accept responsibility for the collection of Resource data, another for the Resource estimation process, another for the mining study and the Lead Competent Person(s) acting as project leader(s) should accept responsibility for the overall report.

11. Complaints made in respect of the Public Report of a Competent Person will be dealt with under the disciplinary procedures of SSC, or under the relevant ROPO agreement.

REPORTING TERMINOLOGY

12. Public Reports dealing with Exploration Results, Mineral Resources and Mineral Reserves must use one the terms Proved or Probable Mineral Reserves, Measured, Indicated and Inferred Mineral Resources and Exploration Results as set out in Figure 1.

Figure 1 sets out the framework for classifying tonnage and grade estimates so as to reflect different levels of geoscientific confidence and different degrees of technical and economic evaluation. Mineral Resources can be estimated on the basis of geoscientific information with

some input from other relevant disciplines. Mineral Reserves, which are modified Indicated and Measured Mineral Resources (shown within the dashed outline in Figure 1), require consideration of the Modifying Factors affecting extraction.

Measured Mineral Resources may convert to either Proved Mineral Reserves, or may convert to Probable Mineral Reserves if there are uncertainties associated with modifying factors which are taken into account in the conversion from Mineral Resources to Mineral Reserves. This relationship is demonstrated by the broken arrow in Figure 1. Although the trend of the broken arrow includes a vertical component, it does not, in this instance, imply a reduction in the level of geoscientific knowledge or confidence. In such a situation these modifying factors should be fully explained.

The term 'Modifying Factors' is defined to include mining, metallurgical, economic, marketing, legal, environmental, social and governmental considerations.

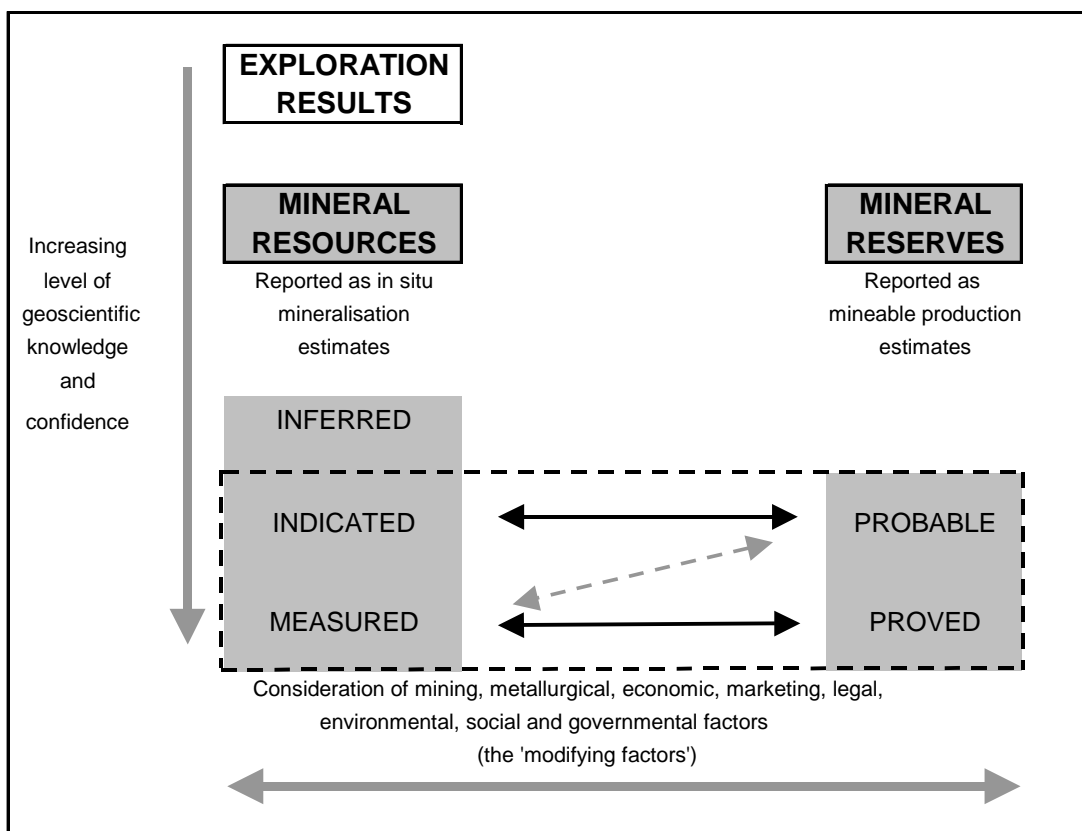


Figure 1 Relationship between Exploration Results, Mineral Resources and Mineral Reserves

REPORTING GENERAL

13. Public Reporting concerning a company's Exploration Results, Mineral Resources and Mineral Reserves must include a description of the style and nature of mineralisation.
14. A company must disclose relevant information concerning the status and characteristics of a mineral deposit which could materially influence the economic value of that deposit, and promptly report any material changes in its Exploration Results, Mineral Resources and Mineral Reserves.
15. When reporting on commodity-specific requirements for Coal Resources and Coal Reserves, use must be made of Clauses 41 to 53, which contain amendments and additions, and such will take precedence over all common clauses.
16. When reporting on commodity-specific requirements for Diamond Resources and Diamond Reserves, use must be made Clauses 54 to 62 which contain amendments and additions, and such will take precedence over all common clauses.
17. Throughout the Code, where appropriate, 'quality' may be substituted for 'grade', 'volume' may be substituted for 'tonnage'. In this Code any reference to the singular shall include a reference to the plural, where appropriate.

REPORTING OF EXPLORATION RESULTS

18. Exploration Results include data and information generated by exploration programmes that may be of use to investors. The Exploration Results may or may not be part of a formal declaration of Mineral Resources or Mineral Reserves.
19. In Public Reports, that part of Exploration Results' data and information relating to mineralisation not classified as a Mineral Resource or Mineral Reserve must be described as a deposit and must contain sufficient information to allow a considered and balanced judgement of the significance of the results. This must include all relevant exploration information, including the location of the deposit. Such reporting must not be presented so as to unreasonably imply that potentially economic mineralisation has been discovered.

Reporting of selected information such as isolated assays, isolated drill holes, assays of panned concentrates or supergene enriched soils or surface samples, without placing them in perspective, is unacceptable.

Where assay and analytical results are reported, this must be done using one of the following methods, selected as the most appropriate by the Competent Person: by listing all results, along with sample intervals (or size, in the case of bulk samples), or by reporting weighted average grades of mineralised zones, indicating clearly how the grades were calculated.

Exploration information should include the interpretation of geological continuity, sampling results, locations etc. Table 1, at the end of this Code, is a checklist guideline for those preparing reports on Exploration Results, Mineral Resources and Mineral Reserves and should be used as a reference. The checklist is not prescriptive and, as always, relevance and materiality are overriding principles that determine what information should be publicly reported.

20. It is recognised that it is common practice for a company to comment on and discuss its exploration in terms of target size and type. Any such information relating to exploration targets must not be expressed or misrepresented as an estimate of Mineral Resources or Mineral Reserves. The term Resource(s) or Reserves(s) must not be used in this context. Any statement referring to potential quantity and grade of the target must be expressed as ranges and must include a detailed explanation of the basis for the statement, and a proximate statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

REPORTING OF MINERAL RESOURCES

21. **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.**

A deposit is a concentration [or occurrence] of material of possible economic interest in or on the earth’s crust, that may include mineralised material that cannot be estimated with sufficient confidence to be classified in the Inferred category. Portions of a deposit that do not have reasonable and realistic prospects for eventual economic extraction are not included in a Mineral Resource.

For each category of Mineral Resource the basis of classification must be disclosed (refer to Table 1).

The term Mineral Resource covers in situ mineralisation as well as dumps or tailings, which have been identified and estimated through exploration/assessment and sampling from which Mineral Reserves may be derived by the application of modifying factors.

Any material assumptions made in determining the ‘reasonable and realistic prospects for eventual economic extraction’ should be clearly stated in the Public Report.

The term ‘reasonable and realistic prospects for eventual economic extraction’ implies a judgement (albeit preliminary) by the Competent Person(s) in respect of technical and economic factors likely to influence the prospect of economic extraction, including the approximate mining parameters. In other words, a Mineral Resource is not an inventory of all mineralisation drilled or sampled, regardless of cut-off grades, likely mining dimensions, location or continuity. It is a realistic inventory of mineralisation which, at the time of reporting and under assumed and justifiable technical and economic conditions, might become economically extractable.

Portions of a mineral deposit that do not have reasonable and realistic prospects for eventual economic extraction must not be included in a Mineral Resource.

Interpretation of the word 'eventual' in this context may vary depending on the commodity, mineral involved or legal tenure. For example, for many coal, iron ore, bauxite and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However for other deposits, application of the concept would normally be restricted to perhaps 20 to 30 years and frequently to much shorter periods of time.

Certain reports (e.g. exploration reports to government and other similar reports not intended primarily for providing information for investment purposes) may require full disclosure of all mineralisation including some material that does not have reasonable and realistic prospects for eventual economic extraction. Estimates of these portions of the mineral deposit that do not qualify as Mineral Resources must not be described as such.

Any adjustment made to the data for the purpose of making the Mineral Resource estimate, for example by cutting or factoring grades, or any other relevant assumptions, should be clearly stated and described in the Public Report.

Where considered appropriate by the Competent Person(s) Mineral Resource estimates may include mineralisation below the selected cut-off grade to ensure that the Mineral Resource comprises bodies of mineralisation of adequate size and continuity to properly consider the most appropriate approach to mining, including any dilution or contamination resulting from the requirements of any minimum mining width. Documentation of Mineral Resource estimates should clearly define any such inclusions and Public Reports should include commentary on the matter if considered material.

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

Where Inferred Mineral Resources are extrapolated beyond data points, the proportion extrapolated must be described and disclosed.

This category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data is insufficient to allow the geological and/or grade continuity to be confidently interpreted. Due to the uncertainty which may be attached to some Inferred Mineral Resources, it cannot be assumed that all or part of an Inferred Mineral Resource will necessarily be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration.

23. It is accepted that mine design and mine planning may include a proportion of Inferred Mineral Resources. If this category is considered in mine design, planning and/or economic studies, the results of which are publicly reported, full disclosure and the effect on the results of the studies must be stated. Inferred Mineral Resources may only be included in mine design, mine planning, and/or economic studies provided that there exists a mine plan and a statement of Mineral Reserves, which states that Inferred Mineral Resources have been used. Where a material

amount of mining in the mine plan includes Inferred Mineral Resources. a comparison of the results with and without these Inferred Mineral Resources must be shown, and the rationale behind their inclusion must be explained.

Modifying factors and assumptions that were applied to the Indicated and Measured Mineral Resources to determine the Mineral Reserves must be equally applied to the Inferred Mineral Resources.

Inferred Mineral Resources cannot be converted to Mineral Reserves, and must not be stated as part of the Mineral Reserve.

24. **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.**

The Indicated Mineral Resource has sufficient confidence for mine design, mine planning, and/or economic studies.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource, but has a higher level of confidence than that applying to an Inferred Mineral Resource.

Confidence in the estimate is sufficient to allow the appropriate application of technical and economic parameters and to enable an evaluation of economic viability.

25. 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 Measured Mineral Resource has sufficient confidence for mine design, mine planning, production planning, and/or detailed economic studies.

A Measured Mineral Resource requires that the nature, quality, amount and distribution of data are such as to leave no reasonable doubt in the opinion of the Competent Person(s), that the tonnage and grade of the mineralisation can be estimated to within close limits and that any variation within these limits would not materially affect potential economic viability.

This category requires a high level of confidence in, and understanding of, the geology and the controls on mineralisation.

26. The Competent Person(s) responsible for the Resource estimate must determine the appropriate Mineral Resource category based upon the quantity, distribution and quality of data available and the level of confidence attached to the data with reference to Table 1. The method of determining these confidence levels must be disclosed. Resource classification guidelines are included in Table 1.

27. The Mineral Resource statement is a summary report of the Resource estimates, with key assumptions used in their derivation as per the guidelines in Table 1.
28. Public Reports of Mineral Resources must specify one or more of the categories of 'Inferred', 'Indicated' or 'Measured'. Reports must not contain Mineral Resource figures combining two or more of the categories unless figures for the individual categories are also provided.
29. A Mineral Resource must not be reported in terms of contained mineral content unless corresponding tonnage and grade figures are also reported.
30. The words 'Ore' and 'Reserves' must not be used in stating Mineral Resource estimates as these terms imply a level of technical feasibility and economic viability and are only appropriate when all relevant modifying factors have been applied.
31. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information about the location, shape and continuity of the occurrence and on the available sampling results.

Rounding off must convey the uncertainties in estimation.

In order to emphasise the imprecise nature of a Mineral Resource estimate it is recommended that the final results always be referred to as an estimate not a calculation, and in the case of Inferred Mineral Resources, by qualification with terms such as 'approximately'.

REPORTING OF MINERAL RESERVES

32. **A 'Mineral Reserve' is the economically mineable material derived from a Measured and/or Indicated Mineral Resource. 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 Life of Mine 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 (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 without treatment. To avoid confusion in reporting Mineral Reserves the definition of treatment is taken to include any beneficiation of the raw product that might take place prior to, or during, the metallurgical process. For clarity, saleable product tonnages and grades may be reported in addition for certain commodities with clear descriptions indicating such.

Commodity prices and exchange rates used for Mineral Reserve estimation should be disclosed.

Commodities traded on metal exchanges should use reasonable forward looking prices based upon historic full-cycle price averages and should be disclosed. However, for commodities not traded in a metal exchange, it is recognized that disclosure of a specific price may put a company at a competitive disadvantage, and this must be stated.

When commodity prices are disclosed, disclosure can be as a single price estimate equal to that used for reserve determination, or as a range of prices within which no material change in reserves would occur. Whether or not the commodity prices used to estimate reserves are published, the overall methodology used to determine those prices should be disclosed. Such disclosure should be in a manner which helps investors determine whether, in their own opinion, prices used represent reasonable views of future prices.

Mineral Reserves are sub-divided in order of increasing confidence into Probable and Proved Mineral Reserves. For each category of Mineral Reserve the confidence levels in the modifying factors should be disclosed.

The term 'economically mineable' implies that extraction of the Mineral Reserve has been demonstrated to be viable and justifiable under a defined set of realistically assumed modifying factors. What constitutes the term 'realistically assumed' will vary with the type of the deposit, the level of study that has been carried out and the financial criteria of the reporting entity. Deriving a Mineral Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Any adjustment made to the data for the purpose of making the Mineral Reserve estimate, for example by cutting or factoring grades, or any other modifying factor, should be clearly stated and described in the Public Report.

It should be noted that the Code does not imply that an economic operation must have Proved Mineral Reserves. Situations may arise where Probable Mineral Reserves alone may be sufficient to justify extraction, as for example with some alluvial tin, diamonds or gold deposits. This is a matter for judgement by the Competent Person(s).

33. **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 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 Life of Mine 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. Such modifying factors must be disclosed.**
34. **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 Life of Mine 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. Such modifying factors must be disclosed.**
35. **The choice of the appropriate category of Mineral Reserve is determined by the relevant level of confidence of the Mineral Resource and the modifying factors and must be made by the Competent Person.**

The Code provides for a direct relationship between the criteria applied to Indicated Mineral Resources and Probable Mineral Reserves and between the criteria applied to Measured Mineral Resources and Proved Mineral Reserves. In other words, the level of geoscientific confidence for Probable Mineral Reserves is similar to that required for the determination of Indicated Mineral Resources. The level of geoscientific confidence for Proved Mineral Reserves is similar to that required for the determination of Measured Mineral Resources. Inferred Mineral Resources are always additional to Mineral Reserves and should be quoted as such.

The Code also provides for a relationship between Measured Mineral Resources and Probable Mineral Reserves. This is to cover the situation where uncertainties associated with any of the modifying factors considered when converting Mineral Resources to Mineral Reserves may result in there being a lower degree of confidence in the Mineral Reserves than in the corresponding Mineral Resources. Such a conversion would not imply a reduction in the level of geoscientific knowledge or confidence.

A Probable Mineral Reserve derived from a Measured Mineral Resource may be converted to a Proved Mineral Reserve if the uncertainties in the Modifying Factors are reduced. No amount of confidence in the modifying factors for conversion of a Mineral Resource into a Mineral Reserve can override the upper level of confidence that exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted directly to a Proved Mineral Reserve (see Figure 1).

Application of the category of Proved Mineral Reserves implies the highest degree of confidence in the estimate, with consequent expectations in the minds of the readers of the report. These expectations must be borne in mind when categorising a Mineral Resource as measured.

36. Mineral Reserve estimates are not precise calculations and tonnage and grade figures in reports must be expressed so as to convey the order of accuracy of the estimates by rounding off to appropriately significant figures.

Rounding off must convey the uncertainties in estimation.

In order to emphasise the imprecise nature of a Mineral Reserve estimate, it is recommended that the final results always be referred to as an estimate and not as a calculation.

37. Public Reports of Mineral Reserves must not contain combined Proved and Probable Mineral Reserve figures unless the relevant figures for each of the categories are also provided. Reports must not present mineral content figures unless corresponding tonnage and grade figures are also given.

Mineral Reserves may incorporate diluting and contaminating uneconomic and waste material, which are not part of the original Mineral Resource. It is essential that this fundamental difference between Mineral Resources and Mineral Reserves is borne in mind and caution exercised if attempting to draw conclusions from a comparison of the two.

Public Reporting of tonnage and grade outside the categories as covered by the Code is not permitted, although they may be useful estimates for a company in its internal calculations and evaluation processes.

38. When revised Mineral Resource and Mineral Reserve statements are publicly reported they must be accompanied by a reconciliation with previous statements. A detailed account of differences between the figures is not essential, but sufficient comment should be made to enable significant variances to be understood by the reader.
39. In situations where figures for both Mineral Resources and Mineral Reserves are reported, a clarifying statement must be included in the report which clearly indicates whether the Mineral Resources are inclusive of, or additional to those Mineral Resources which have been modified to produce Mineral Reserves.

There are reasons for, in some situations, reporting Mineral Resources inclusive of Mineral Reserves and, in other situations, reporting Mineral Resources additional to Mineral Reserves. It must be made clear which form of reporting has been adopted. Appropriate forms of clarifying statements may be:

'The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves' or 'The Measured and Indicated Mineral Resources are additional to Mineral Reserves'.

In the former case, if any Mineral Resources have not been modified to produce Mineral Reserves for economic or other reasons, the relevant details of these unmodified Mineral Resources should be included in the report. This is to assist the reader of the report in making a judgement of the likelihood of the unmodified Measured and Indicated Mineral Resources eventually being converted to Mineral Reserves.

For reasons stated in the first guideline of Clause 37 and in this paragraph, the reported Mineral Reserve figures cannot be added to the reported Mineral Resource figures. The resulting total is misleading and is capable of being misunderstood or, more seriously, of being misused to give a false impression of a company's prospects.

When reporting Mineral Reserves, a sensitivity analysis should be conducted. The disclosure of commodity price and other financial assumptions used for this analysis is recommended.

40. The above clauses apply equally to low-grade mineralisation, often intended for stockpiling and treatment towards the end of mine life.

If some portion of stope-fill or remnant, etc. is currently sub-economic, but there is a reasonable expectation that it will become economic, then this material may be classified as a Mineral Resource. If technical and economic studies have demonstrated that economic extraction could be reasonably justified under realistically assumed conditions, then the material may be classified as a Mineral Reserve.

If there are no reasonable prospects for the economic extraction of a particular portion of the stope-fill or stockpile, dumps, remnants, pillars and tailings then this material cannot be classified as either Mineral Resources or Mineral Reserves. Mineralised remnants, shaft pillars and mining pillars that are not potentially mineable must not be included in Mineral Resource and Mineral Reserve statements.

For clarity of understanding, the tonnage and grade estimates of such material must be itemised separately in Public Reports as Mineral Resources or Mineral Reserves, although they may be aggregated in total Mineral Resource and Mineral Reserve figures.

REPORTING OF COAL EXPLORATION RESULTS, COAL RESOURCES AND COAL RESERVES

41. This part of the Code addresses matters specific to the Public Reporting of Coal Resources and Coal Reserves. Clauses 1 to 40 of this Code also apply to the Public Reporting of Coal Resources and Coal Reserves, unless otherwise stated in this part of the Code. However, the term 'Coal' should replace the terms 'Mineral' and 'Ore', 'coal deposit' should replace 'mineralisation', 'coal quality' should replace 'grade and mineral content' wherever applicable, including the guidelines. In the case of Coal Reserves, all references to 'metallurgical' modifying factors should be replaced by 'coal processing' modifying factors.

42. Amendment to Clause 6.

The South African Guide to the Systematic Evaluation of Coal Resources and Coal Reserves (SANS 10320:2004) provides the main criteria that should be considered when preparing reports on Coal Resources and Coal Reserves. The reader is referred to the South African Guide to the Systematic Evaluation of Coal Resources and Coal Reserves for the definition of the relevant terms and for the methodology for evaluating coal deposits. Any reference to Table 1 in the Code should be substituted by a reference to the Guide, mentioned above. The evaluation criteria need not be discussed in a Public Report unless they materially affect estimation or classification of the Coal Resources and Coal Reserves. However, changes in economic or political factors alone may be the basis for significant changes in Coal Reserves and should be reported accordingly.

43. Replacement of Figure 1

Public Reports for Stock Exchange Reporting purposes dealing with Coal Resources and/or Coal Reserves must only use the terms set out in Figure 2. Any reference to 'Figure 1' in the Code must be substituted by a reference to 'Figure 2'.

44. Amendment to Clause 22

An 'Inferred Coal Resource' is that part of a Coal Resource for which volume and/or tonnage and coal quality can be estimated with a low level of confidence. It is inferred from geological evidence and sampling and assumed but not verified physical continuity with or without coal quality continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill-holes which is limited or of uncertain quality and reliability.

The level of confidence is usually not sufficient to allow a Pre-feasibility Study to be carried out.

45. Amendment to Clause 24

An 'Indicated Coal Resource' is that part of a Coal Resource for which tonnage, densities, shape, physical characteristics and coal quality can be estimated with a moderate 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 appropriate to confirm physical continuity, while the locations are too widely or inappropriately spaced to confirm coal quality continuity.

However, such locations are spaced closely enough for coal quality continuity to be assumed.

The level of confidence should be sufficient for deciding whether a Pre-feasibility Study or Feasibility Study is warranted.

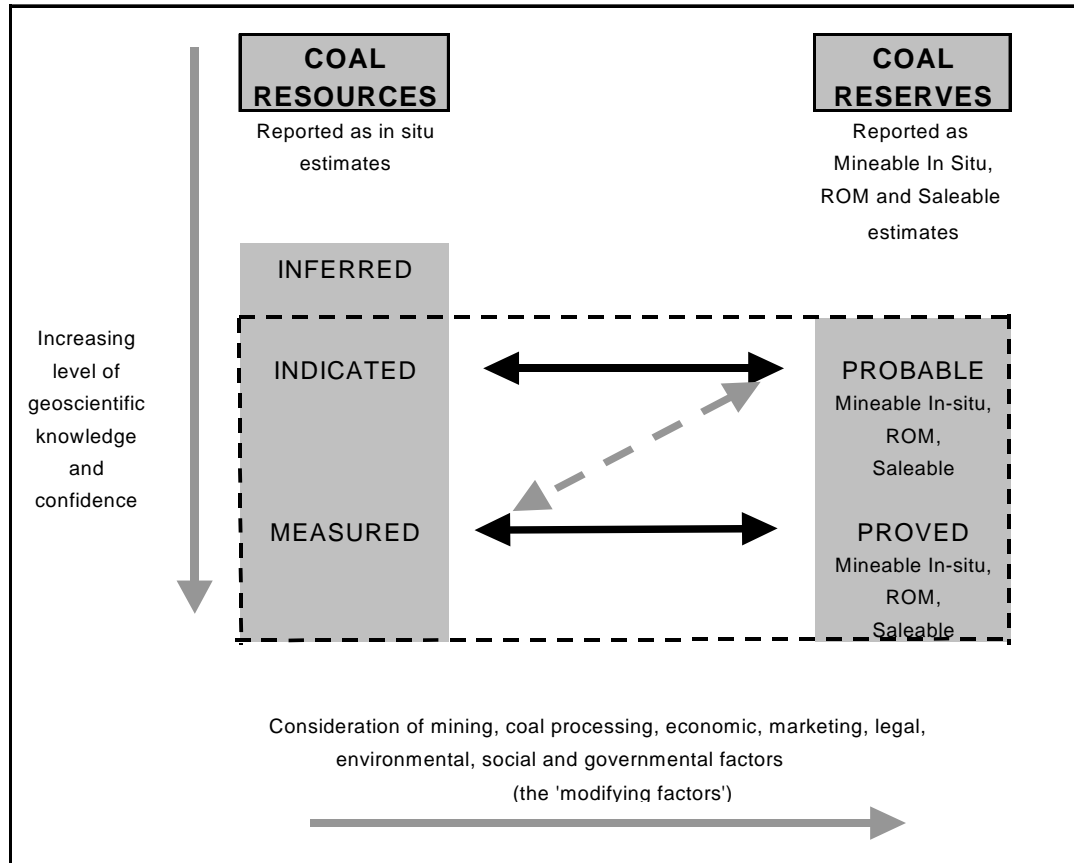


Figure 2 Relationship between Coal Resources and Coal Reserves

46. Amendment to Clause 25

A 'Measured Coal Resource' is that part of a Coal Resource for which tonnage, densities, shape, physical characteristics and coal quality 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 physical and coal quality continuity.

47. Addition to Clause 33.

A Probable Coal Reserve may be demonstrated to be economically mineable by a Pre-Feasibility Study.

48. Addition to Clause 34

A Proved Coal Reserve may be demonstrated to be economically mineable by a Feasibility Study or actual mining activity.

49. A 'Mineable In Situ Coal Reserve' is the tonnage and coal quality, at specified moisture content, contained in coal seams, or sections of seams, which are proposed to be mined, with the application of the geological loss factors. Sufficient information must be available to enable conceptual or detailed mine planning, and such mine planning must have been undertaken.

The assessments must demonstrate that at the time of reporting, extraction is reasonably justified. Mineable In Situ Coal Reserve estimates must be quoted separately for surface and underground extraction and an outline of the proposed mining method must be provided. Mineable In Situ Coal Reserves are subdivided in order of increasing confidence into Probable Mineable In Situ Coal Reserve and Proved Mineable In Situ Coal Reserve categories.

50. A 'Run of Mine' (ROM) Coal Reserve is the tonnage and coal quality of Mineable In Situ Coal Reserves that are expected to be recovered after all geological losses, mining losses, mining dilution, contamination and moisture content factors have been applied.

The assessments must demonstrate that at the time of reporting extraction is reasonably justified. The ROM Coal Reserves are subdivided in order of increasing confidence into Probable ROM Coal Reserves and Proved ROM Coal Reserves. The ROM Coal Reserves must be reported.

51. **A 'Saleable Coal Reserve' is the tonnage and coal quality that will be available for sale, either in the raw ROM state at a specified moisture content, or after beneficiation resulting from coal processing operations of the ROM Coal Reserves to produce a product or products at a specified coal quality, moisture content and size range.**

The assessment must demonstrate that at the time of reporting, the marketing of products is reasonably justified. The basis of the predicted yield to achieve the Saleable Coal Reserve must be stated. In the case of raw ROM products the practical product yield is typically 100%.

Saleable Reserves are subdivided in order of increasing confidence into Probable Saleable Coal Reserve and Proved Saleable Coal Reserve categories. The Saleable Coal Reserves must be reported.

52. The appropriate coal quality must be reported for all Coal Resource and Coal Reserve categories. The basis of reporting of the coal quality parameters must be reported, as for example on an air-dry basis, dry basis, etc. Where applicable Saleable Coal Reserves should be subdivided into the relevant coal product types.

The quality of the coal should be expressed according to parameters relevant to specific applications e.g. steam coal, types of metallurgical coal, etc. The selection of parameters is the responsibility of the Competent Person and would include quality parameters such as ash, volatile matter, sulphur, coking properties, calorific value, etc.

Refer to the South African Guide to the Systematic Evaluation of Coal Resources and Coal Reserves for additional guidelines.

53. Amendment to Clause 40:

The Code applies to the reporting of all potentially economic coal deposits including coal in pillars and remnants, discard and reject coal presently contained in stockpiles, dumps and tailings where there are reasonable and realistic prospects for eventual economic extraction in the case of Coal Resources and where economic extraction is justified in the case of Coal Reserves.

Unless otherwise specified, Clauses 1 to 40 of the Code (including Figure 2 and SANS 10320:2004 guideline) apply.

Discard and Reject Coal produced as part of future production from a coal processing plant, or from mining operations, may be reported as an additional product in the Saleable Coal Reserve category, only if economic extraction is justified.

REPORTING OF DIAMOND EXPLORATION RESULTS, DIAMOND RESOURCES AND DIAMOND RESERVES

54. This part of the Code addresses matters specific to the Public Reporting of Diamond Exploration Results, Diamond Resources and Diamond Reserves. Clauses 1 to 40 of this Code also apply to the Public Reporting of Diamond Exploration Results, Diamond Resources and Diamond Reserves, unless otherwise stated in this part of the Code. The term 'Diamond' should replace the term 'Mineral' and 'grade and average diamond value' should replace 'grade and mineral content', wherever applicable.
55. The following characteristics of diamond deposits are different to those of typical metalliferous and coal deposits, and emphasize the need for a Diamond specific Code.
- The low diamond content of primary and placer diamond deposits and their variability
 - The particulate nature of diamonds
 - The specialised field of Diamond valuation
 - The relationship between average diamond value and the underlying diamond size distribution
 - The widely differing nature of diamondiferous deposits and their associated forms of mineralization and the estimation relevant to these.
56. Amendment to Clause 6
- Table 1 provides a list of the main criteria which should be considered and reported upon, if relevant, when reporting on Diamond Exploration Results, Diamond Resources and Diamond Reserves. As a general guide for the evaluation of diamondiferous deposits the reader is referred to Table 1 which contains a set of definitions and guidelines to be used in Public Reports on Diamond Resources and Diamond Reserves.
57. Amendment to Clause 17
- In the case of diamonds the terms 'quality' must not be used to substitute for 'grade' to avoid confusion with diamond quality.
58. Amendment to Clause 21
- A diamond exploration target is a concentration (or occurrence) of diamond mineralisation of possible economic interest in or on the Earth's crust.
- Portions of a diamond exploration target that do not have reasonable and realistic prospects for eventual economic extraction must not be included in a Diamond Resource.

Estimates of quantity based on limited information and analogies with known deposits of similar geological character may be possible but are inadequate for classification as Inferred Mineral Resources.

59. Amendment to Clause 22

An 'Inferred Diamond Resource' is that part of a Diamond Resource for which tonnage or volume, grade and average diamond value can be estimated with a low level of confidence. It is inferred from geological evidence and assumed, but not verified geological and grade continuity and a sufficiently large diamond parcel is not available to ensure a reasonable representation of the diamond assortment. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that may be limited or of uncertain quality and reliability.

60 Amendment to Clause 24

An 'Indicated Diamond Resource' is that part of a Diamond Resource for which tonnage and volume, densities, shape, physical characteristics, grade and average diamond value 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 drillholes. The locations are too widely or inappropriately spaced to confirm geological and grade continuity but are spaced closely enough for continuity to be assumed and sufficient diamonds have been recovered to allow a reasonable estimate of average diamond value.

61 Amendment to Clause 25

A 'Measured Diamond Resource' is that part of a Diamond Resource for which tonnage and volume, densities, shape, physical characteristics, grade and average diamond value 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 drillholes. The locations are spaced closely enough to confirm geological and grade continuity and sufficient diamonds have been recovered to allow a confident estimate of average diamond value.

62 Amendment to Clause 28

The average diamond grade and value must not be reported without specifying the anticipated Bottom Cut-off Screen Size.

NOTE: Code is in normal typeface, **definitions are in bold and form part of the Code**, *guidelines are in italics*