TABLE OF CONTENTS

THE SOUTH AFRICAN CODE FOR THE REPORTING OF MINERAL ASSET VALUATION (THE SAMVAL CODE)

2008 EDITION

as amended July 2009

Prepared by:
The South African Mineral Asset Valuation (SAMVAL) Working Group

www.samcode.co.za

GLOSSARY OF TERMS

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

Commissioning Entity

The organization, company or person commissioning a Mineral Asset Valuation.

The Companies Act

The Companies Act No 61 of the Republic of South Africa of 1973, as amended or any law that may wholly or in part replace it from time to time.

Competent Person

Refer to clauses 9 and 10 of the SAMREC code.

Defunct Property

A Mineral Asset on which the Mineral Resources and Mineral Reserves have been exhausted and exploitation has ceased, and that may or may not have residual assets and liabilities.

Development Property

A Mineral Asset that is being prepared for mineral production and for which economic viability has been demonstrated by a Feasibility Study or Pre-feasibility Study and includes a Mineral Asset which may not be financed or under construction.

Dormant Property

A Mineral Asset that is not being actively explored or exploited, in which the Mineral Resources and Mineral Reserves have not been exhausted, and that may or may not be economically viable.

Exploration Property

A Mineral Asset that is being actively explored for mineral deposits but for which economic viability has not been demonstrated. Exploration Properties have asset values derived from their potential for the discovery of economically viable mineral deposits. Exploration property interests are bought and sold in the market. Many of these transactions involve partial-interest arrangements, such as farm-in, option or joint-venture arrangements.

Extractive Industries

Those industries involved in the location, extraction and associated processing of natural resources located on, in or near the earth's crust.

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.

Financial Reporting Standards

South African statements of generally accepted accounting practice as defined in the Companies Act.

License, Permit, Lease, Right or other similar entitlement

Any form of license, permit, lease or other entitlement granted by the relevant Government department in accordance with its mining legislation that confers on the holder certain rights to explore for or extract minerals (or both) that might be contained in the land, or ownership title that may prove ownership of the minerals.

Life of Mine Plan

A design and costing study of an existing mining 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 that are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justifiable.

Mineable

Those parts of the ore body, both economic and uneconomic, that are extracted during the normal course of mining.

Mineral Asset Valuation

The valuation of a Mineral Asset that has been completed in accordance with the SAMVAL Code and signed off by a Competent Valuator.

Mine Design

A framework of mining components and processes taking into account mining methods, access to the ore body, personnel, material handling, ventilation, water, power and other technical requirements such that mine planning can be undertaken.

Mine Planning

Production planning, scheduling and economic studies, within the Mine Design, can be undertaken, taking into account geological structures and mineralization, associated infrastructure and constraints, and other relevant aspects.

Mineral Asset(s)

Any right to explore or mine (or both) that has been granted or entity holding such property or the securities of such an entity including but not limited to all corporeal and incorporeal property, mineral rights, mining titles, mining leases, intellectual property, personal property (including plant equipment and infrastructure), mining and exploration tenure and titles or any other right held or acquired in connection with the finding and removing of minerals located in, on or near the earth's crust. Mineral Assets can be classified as Dormant Properties, Exploration Properties, Development Properties, Production Properties or Defunct Properties.

Mineral Reserve

The economically mineable material derived from a Measured or Indicated Mineral Resource or both. It includes diluting 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. Where the term 'Ore Reserve' is used, this is synonymous with the term 'Mineral Reserve.'

Mineral Resource

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 and Measured categories.

Minerals Industry

An industry involved in finding, removing, processing and subsequently marketing minerals located in, on or near the earth's crust.

Modifying Factor

Modifying factors include mining, metallurgical, economic, marketing, legal, environmental, social and governmental considerations. They are applied when converting Resources to Reserves.

Pre-feasibility Study

A comprehensive study of the viability of a range of options for a mineral project that has advanced to a stage at which 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 an effective method of mineral processing has been determined. It includes a financial analysis based on realistic assumptions of technical, engineering, operating, economic factors and the evaluation of other relevant factors that 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.

Production Property

A Mineral Asset that is in production.

ROPO

A Recognized Overseas Professional Organization. A ROPO must:

1. Be a self-regulatory organization covering professionals in mining or exploration or both;
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 organization;

4. Have disciplinary powers, including the power to suspend or expel a member; and
5. Have been accepted by SSC Committee as a ROPO on behalf of the JSE Limited

Royalty or Royalty Interest

The royalty or royalty interest is the amount of value accruing to the benefit of the royalty owner from the royalty share of production, in money or product, free of production costs. Royalty excludes marketing costs.

SAMREC Code

The South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves.

Solid Minerals

Solid 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. Solid minerals include sand, stone, rock, gravel, clay, soil and any mineral occurring in stockpiles or in residue deposits but exclude water, oil and gas.

SSC Committee

The SAMREC/SAMVAL Committee

Technical Expert

A person who is commissioned by the Competent Valuator or Commissioning Entity to provide and be responsible for technical contribution to the Mineral Asset valuation.

1. The SOUTH AFRICAN CODE FOR THE REPORTING OF MINERAL ASSET VALUATION (SAMVAL or the Code) sets out minimum standards and guidelines for Public Reporting of Mineral Asset Valuation in South Africa. It has been drawn up by the SAMVAL 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 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, the Banking Association of South Africa, the Minerals Bureau, the Chamber of Mines of South Africa (COM), and the University of the Witwatersrand.

   The process for establishing SAMVAL was initiated through an open meeting at a colloquium convened by the SAIMM in March 2002. Various papers and articles were published on the matter and the colloquium called for comment and mandates. Contact was also established with the Australasian Institute of Mining and Metallurgy (AusIMM), the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), the International Accounting Standards Board (IASB) and the International Valuation Standards Committee (IVSC).

INTRODUCTION

2. The Code is applicable to the reporting of all styles of solid mineralization or mineral asset. The Code does not apply to oil, gas or water.

   The guiding philosophy and intent of the Code is that Mineral Asset Valuation should be carried out by appropriately qualified persons and all relevant information is fully disclosed. The Code is based on best practices of the minerals industry and allows for professional judgment in certain instances.

   For purposes of clarification, 'valuation' in the Code is concerned with the value or worth of a Mineral Asset as opposed to 'evaluation' in which the key objective is an economic assessment or determination of the economic merit of an Asset.

   An important characteristic of the extractive industries that sets them aside from other industries or economic sectors is the depletion or wasting of natural resources that cannot be replaced in their original state once ex-

tracted. The agent of production is extraction from the earth. The ultimate quantity and quality of material of economic interest that might be extracted from a property is often not known at the date of valuation.

In this first edition of the SAMVAL Code, the Code is presented predominantly in normal typeface. **Definitions are highlighted in bold text and 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 recognizes that further reviews and revisions of the Code may be required. Additional information, rules, lists and best-practice guidelines will be published on the SSC 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 Mineral Asset Valuation.

Public Reports are all those reports prepared for the purpose of informing investors or potential investors and their advisers and include but are not limited to companies' 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 Mineral Asset Valuation is recommended (See Table 1). Where a summary 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 recognized that companies may be required to issue reports for more than one regulatory jurisdiction, with compliance standards other than those contained in the Code. It is recommended that such reports should 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 recognized that situations may arise in which such supporting documentation, prepared by Competent Valuators 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 should include a prominent statement to this effect.

For reports that are not intended for the public domain, such as analysts' reports, use of the Code is recommended but not required.

4. Reports purporting to be prepared in accordance with the Code must be described as such and signed by a Competent Valuator.

5. The Code takes into account issues of a global nature while 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 that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgment regarding the Mineral Asset Valuation.

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 organization, 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.

6. The Code is applicable to all solid minerals for which Public Reporting of Mineral Asset Valuations are required.

7. The Code is intended to form the basis of best practice in Mineral Asset Valuation and Reporting while allowing for flexibility through effective professional judgment and specific local provisions.

8. Although a review of other codes is beyond the scope of this Code, it should be noted that national Mineral Asset Valuation codes in other countries, and from Valuation and Accounting bodies such as the International Valuation Standards (IVS) and International Accounting Standards Board (IASB), differ from each other and from this Code. An attempt has been made to achieve conformity with other Codes and Guidelines.

COMPETENCE AND RESPONSIBILITY

9. A Competent Valuator is a person who is registered with ECSA, SACNASP, or PLATO or is a Member or Fellow of the SAIMM, the GSSA, SAICA, or a Recognized Overseas Professional Organization (ROPO) or other organizations recognized by the SSC on behalf of the JSE Limited.

The SSC is pursuing discussions with the Independent Regulatory Board for Auditors (IRBA), the CFA (Chartered Financial Analysts) Institute and the Investment Analysts Society of Southern Africa (IAS) to adopt the Code. A complete list of recognized organizations will be published by the SSC on its website from time to time.

10. A Competent Valuator is a person who possesses the necessary qualifications, ability and sufficient relevant experience in valuing mineral assets. A person being called upon to sign as a Competent Valuator must be clearly satisfied in his own mind that he is able to face his peers and demonstrate competence in the valuation undertaken.

Documentation detailing Mineral Asset Valuations from which a Public Report is prepared must be prepared by, or under the direction of, and signed by a Competent Valuator.

12. A Public Report concerning a company's Mineral Asset Valuation is the responsibility of the company acting through its Board of Directors. Any such report must be based on and fairly reflect the Mineral Asset Valuation report(s) and supporting documentation prepared by a Competent Valuator. A Public Report shall disclose the name of the Competent Valuator and his or her qualifications, professional affiliations and relevant experience. Table 1 is a high-level checklist of reporting and assessment criteria to be used as a reference by those preparing reports on Mineral Asset Valuations. The checklist is not prescriptive and, as always, relevance and materiality are the overriding principles that determine what information should be publicly reported.

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

As a general guide, any person who signs off as a Competent Valuator undertaking the Mineral Asset Valuation should accept full responsibility for the form and content thereof. The Competent Valuator is responsible for adhering to the principles of materiality, transparency, and competency in the valuation of the mineral asset.

The Competent Valuator accepting overall responsibility for the valuation that has been prepared in whole or in part by others is satisfied that the work of the other contributors is acceptable and the constituent parts of the report have been signed off by such contributors.

Mineral Asset Valuation may be a team effort. Where there is a clear division of responsibilities within a team, each person should accept responsibility for his or her own contribution.

The Competent Valuator is responsible for assessing the technical data and information, technical interpretations, technical conclusions, forecasts and parameters used in the valuation, valuation approach and valuation methods.

The Competent Valuator will clearly state under what circumstances other people's work has been relied on, and identify such other persons.

14. Where Mineral Asset Valuations depend on Exploration Results, Mineral Resources and Mineral Reserves, these must be compliant with the SAMREC Code.

15. Complaints made in respect of the Public Report of a Competent Valuator will be subject to the disciplinary procedures of the SSC.

16. A site visit to the mineral property being valued must be undertaken by the Competent Valuator or by a Competent Person or technical expert. If a site visit is not undertaken, the reasons should be given, which may include non-materiality.

17. The Valuation Date of the valuation must be given, because value relates to a specific time.

VALUATION FUNDAMENTALS, APPROACHES AND METHODS

18. Value relates to future expectations and is the present value (or economic worth) of all future benefits expected to be received.

19. The Competent Valuator is responsible for choosing approaches to and appropriate underlying methods of Mineral Asset Valuation.

20. The three generally accepted approaches to Mineral Asset Valuation are:

    Cash Flow Approach
    The Cash Flow Approach relies on the 'value-in-use' principle and requires determination of the present value of future cash flows over the useful life of the Mineral Asset.

    Market Approach
    The Market Approach relies on the principle of 'willing buyer, willing seller' and requires that the amount obtainable from the sale of the Mineral Asset is determined as if in an arm's-length transaction.

    Cost Approach
    The Cost Approach relies on historical and/or future amounts spent on the Mineral Asset.

21. The application of certain logic in Valuation, such as 'gross in-situ value' simply determined from the product of the estimate of mineral content and commodity price(s) without applying appropriate modifying or discounting factor(s), is unacceptable

22. The applicability of the valuation approaches is shown in Figure 1 below.

23. Valuation methods are, in general, subsets of Valuation approaches. For example, the Cash Flow Approach includes several methods. Certain Valuation methods are more widely used and may be more generally acceptable as industry practice than others, although this could change over time.

24. The Competent Valuator must apply at least two Valuation approaches.

25. The results from the Valuation approaches and methods employed must be weighed and reconciled into a concluding opinion of value. The reasons for giving a higher weighting to one method or approach over another must also be stated.

Valuation Approach	Exploration Properties	Development Properties	Production Properties	Dormant Properties		Defunct Properties
				Economically Viable	Not Viable	
Cash Flow	Not generally used	Widely used	Widely used	Widely used	Not generally used	Not generally used
Market	Widely used	Less widely used	Quite widely used	Quite widely used	Widely used	Widely used
Cost	Quite widely used	Not generally used	Not generally used	Not generally used	Less widely used	Quite widely used

Figure 1: **Relationship between stages of development and Valuation approaches for Mineral Properties**

26. For Valuation, it is accepted that mine design and mine planning may include a proportion of Inferred Mineral Resources. If this category of Mineral Resource is included in mine design, planning or economic studies for Public Reporting, full disclosure and the effect on the results of the studies must be stated. Inferred Mineral Resources may be included in mine design, mine planning, or economic studies only if there exists a mine plan and a statement of Mineral Reserves making clear 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 those 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.

    The reader is referred to the SAMREC Code for clarification of this point.

TABLE 2: MINERAL ASSET VALUATION: REPORTING AND ASSESSMENT CRITERIA

Table 2 is a high level checklist of reporting and assessment criteria to be used as a reference by those preparing reports on Mineral Asset Valuations. The checklist is not prescriptive and, as always, relevance and materiality are the overriding principles that determine what information should be publicly reported.

The valuation and reporting of mineral projects and forward-looking mine plans or statements from ongoing operations are expressions of judgment predicated on knowledge and experience. Such valuations and reports are more than arbitrary determinations; they seek to facilitate valuation as a consequence of method. The methods employed should be valid, tested, using accepted definitions of terms and procedures, and best suited to the valuation of the asset in question.

The Competent Valuator is responsible for considering all the criteria listed below and deciding which additional criteria should apply to the study of a particular asset. The relative importance of the criteria will vary from asset to asset and with the legal and economic conditions pertaining at the time of determination.

When information is publicly reported, it should be sufficient to enable an informed reader to make a reasonable and balanced assessment of the significance of this information. It is, however, important to report any matters that might materially affect a reader's understanding or interpretation of the valuations being reported. This is particularly important if inadequate or uncertain data would affect the reliability of, or confidence in, a Valuation statement.

T2.1
Executive Summary

An Executive Summary of the Mineral Asset Valuation (the Valuation) should be provided.

T2.2 Introduction and Scope

Introduction and scope, specifying commissioning instructions including reference to the Valuation, engagement letter, date, purpose and intended use of the Valuation. The Competent Valuator must fully disclose any interests in the Mineral Asset or commissioning entity.

Any restrictions on scope and special instructions followed by the Competent Valuator, and how these affect the reliability of the Valuation.

T2.3
Identity and Tenure

The identity, tenure and locations of the property interests, rights or securities to be valued (i.e. the physical, legal and economic characteristics of the property).

T2.4 History

History of activities, results and operations to date.

T2.5 Geological Setting

Geological setting and mineralization should be described.

T2.6 Mineral Resources and Mineral Reserves

Mineral Resource and Mineral Reserve statements should be provided. They must be signed off by a Competent Person in compliance with the SAMREC Code.

T2.7 Modifying Factors

A statement of modifying factors should be included, separately summarizing material issues relating to each applicable modifying factor.

T2.8 Valuation Approaches and Methods

The valuation approaches and methods used in the Valuation should be described and justified in full.

T2.9
Valuation Date

A statement detailing the Report Date and the Valuation Date, as defined in this Code, and whether any material changes have occurred between the Valuation Date and the Report Date.

T2.10 Valuation Summary and Conclusions

A summary of the valuation details, consolidated into single material line items. The Valuation must specify the key risks and forecasts used in the Valuation. A cautionary statement concerning all forward-looking or forecast statements should be included.

The valuation conclusions, illustrating a range of values, the best estimate value for each Valuation and whether the conclusions are qualified or subject to any restrictions imposed on the Competent Valuator.

T2.11
Sources of Information

The sources of all material information and data used in the report should be disclosed, as well as references to any published or unpublished technical papers used in the valuation, subject to confidentiality.

A reference should be made to any other report that has been compiled, for the purpose of providing information for the valuation including SAMREC compliant reports and any other contributions or reports from experts.

T2.12
Previous Valuations

The Valuation should refer to all available previous valuations of the Mineral Asset that have been performed in the previous two years and explain any material differences between then and the present valuation.

T2.13 Competent Persons and Other Experts

Names and qualifications of Competent Persons or other experts who have provided the reports on which the Valuation has relied. Written consent to use and rely on such reports should be obtained.

Significant contributions made by such experts should be highlighted individually.

T2.14 Competent Valuator

The Valuation should contain:

- The signature of the Competent Valuator.
- The Competent Valuator's qualifications and experience in valuing mineral properties, or relevant valuation experience.
- A statement that all facts presented in the report are correct to the best of the Competent Valuator's knowledge;
- A statement that the analyses and conclusions are limited only by the reported forecasts and conditions;
- A statement of the Competent Valuator's present or prospective interest in the subject property or asset;
- A statement that the Competent Valuator's compensation, employment or contractual relationship with the Commissioning Entity is not contingent on any aspect of the report;
- A statement that the Competent Valuator has no bias with respect to the assets that are the subject of the report, or to the parties involved with the assignment;
- A statement that the Competent Valuator has (or has not) made a personal inspection of the property; and
- A record of the Competent Persons and experts who have contributed to the Valuation.

T2.15
Range of Values

The valuation of a Mineral Asset must report the Competent Valuator's estimated value. A range of values must be provided, together with the estimated value.

T2.16 Identifiable Component Asset (ICA) Values

In some valuations, the Valuation should be broken down into Identifiable Component Asset Values (an ICA Valuation) equaling the Mineral Asset Value. This could be, for example, due to the requirements of other valuation rules and legislative practices including taxation (i.e. fixed property, plant and equipment relative to Mineral Asset Value allocations such as in recoupment or Capital Gains Tax calculations or where a commissioned Mineral Asset Valuation specifies a need for a breakdown of the Mineral Asset Valuation).

In such cases, the separate allocations of value must be made by taking account of the value of every separately identifiable component asset. Allocation of value to only some and not all identifiable component assets is not allowed. This requires a specialist appraisal of each identifiable component asset of property, plant and equipment, with the 'remaining' value of the Mineral Asset being attributed to the Mineral Resources and Reserves. Such valuations must be performed by suitably qualified experts, among whom may be the Competent Valuator.

If the Mineral Asset Valuation includes an ICA Valuation, the Competent Valuator must satisfy himself or herself that the ICA Valuation is reasonable before signing off the Mineral Asset Valuation.

T2.17
Historic Verification

A historic verification of the performance parameters on which the Mineral Asset Valuation is based should be presented.

T2.18
Market Assessment

A comprehensive market assessment should be presented.

T2.19
Audits or Reviews

The results of any audits or reviews of the Mineral Asset Valuation should be presented, together with a commentary on the findings.