

# SAMREC Guideline Document for the Reporting of Diamond Exploration Results, Diamond Resources and Diamond Reserves (and other Gemstones, where Relevant)

## (“SAMREC Diamond Guidelines”)

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## 1 INTRODUCTION

This Guideline Document, as presented in the SAMCODE Companion Volume and as updated from time to time, provides the methodologies and definitions of the relevant terms that shall be considered in the preparation of reports on Diamond Exploration Targets, Diamond Resources and/or Diamond Reserves (SAMREC Clause 59). It is to be read in conjunction with the 2016 SAMREC Code where it provides further explanation of Clauses 59-79.

Clauses 1-46 of the Code and the requirements of Table 1 also apply to the reporting of Diamond Exploration Results, Diamond Resources and Diamond Reserves, unless otherwise stated in this document. Where applicable, the term ‘Diamond’ should replace the term ‘Mineral’ and ‘grade and average diamond value’ should replace ‘grade and mineral content’. In this document, references to diamonds may equally be applied to other gemstones, unless otherwise stated.

Public reporting of diamond projects is not restricted to documents compiled by/for listed companies in respect of on-going Stock Exchange requirements (Refer SAMREC Code Clause 3 for details). Public reports include any/all documents prepared for the purpose of informing investors, potential investors or other interested parties that may find their way into the public domain. Public reporting includes Competent Persons' Reports (CPR) and other geological/technical documents compiled for regulatory authorities, private companies or individuals, *even with respect to alluvial diamond deposits*. It is recognised that situations may arise in which supporting documentation, prepared by a Competent Person (CP) for company or other private use, may not specifically be prepared in terms of the Code – in such situations, the documentation shall include a prominent statement to this effect. It is, however, recommended by the SAMREC Working Group, that the principles and standards in the Code and this Guideline document should be adopted as a minimum standard for all diamond related documentation.

In this first edition of the Diamond Guideline Document, **all references to the SAMREC Code are presented in Arial 10pt typeface. Definitions from the Code are highlighted in bold Arial 10pt.** Policies, guidelines and explanations to assist in interpreting the Code as per this document are presented in Times New Roman 10pt font (normal and italics).

The word 'shall' is used where a provision is mandatory; 'should' is used where a provision is preferred; and 'may' is used where alternatives are equally acceptable. Any variance from the standards of the Code and Policy Document shall be motivated in a clear and transparent manner on an 'if not, why not' basis.

The following characteristics of diamond deposits are different from those of typical metalliferous and coal deposits, and they emphasise the need for a Diamond specific Code.

- The widely differing nature of diamondiferous deposits and their associated forms of mineralisation and the estimation relevant to these. Diamond deposits can be subdivided into (i) igneous-hosted deposits (ii) marine and alluvial placers (iii) tailings and stockpiles.
- The low diamond content of primary and placer diamond deposits and their variability
- The particulate nature of diamonds and individual physical characteristics, which have a significant impact on diamond value. These characteristics are size and assortment, the latter being comprised of model (shape or morphology), quality and colour.
- For diamond exploration programmes, Exploration Targets, Mineralisation, Resources and Reserves, the term 'quality' cannot be used as a substitute for 'grade'.
- The specialised field of diamond valuation.
- The relationship between average diamond value and the underlying diamond size distribution.

*As a result of the above characteristics, diamond deposits rarely achieve Measured status. This impacts significantly upon the classification of Proved Reserves (see also Clauses 69 and 71). The sampling and estimation of marine placer deposits is particularly difficult and expensive and thus even the assignment of Indicated status may prove difficult.*

In all public reporting of diamonds, please note that:

- A carat (diamond) is defined as one fifth of a gram (0.2g) – often described as a metric carat (ct). Any deviation from this standard shall be explained in detail.
- Sample grade is used in the context of carats per units of mass, area or volume above the specified bottom cut-off sieve size.
  - For primary deposits, the sample grade should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes (cpt or cpht).
  - For placer deposits, sample grades quoted in carats per tonne or carats per m<sup>3</sup> or carats per 100m<sup>3</sup> (ct/m<sup>3</sup> or ct/100m<sup>3</sup>) are equally acceptable, as are stones per unit area, volume or mass<sup>1</sup>.
  - In the marine placer environment, diamond sample grades are, typically, reconciled per m<sup>2</sup> (typically referred to as 'planar grades').
- Where carats per unit of mass is used, a discussion of volume to mass conversion shall be provided.

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<sup>1</sup> In the physical sciences, the terms 'mass' and 'weight' are rigidly defined as separate measures in order to enforce clarity and precision. In everyday use, however, given that all masses on Earth have weight and this relationship is usually highly proportional, the term 'weight' often serves to describe both properties, its meaning being dependent upon context. For example, the net weight of diamonds actually refers to mass and is properly expressed in carats; and the weight of kimberlite or gravel, refers to its mass and is expressed as kilograms or tonnes.

- All diamond values shall be reported in US\$/ct. If reference is made to local currencies then the prevailing exchange rate shall be noted, as well as the effective date of the exchange rate. The date of valuation shall be reported and should be based on diamond prices less than six months old.

## 2 DIAMOND EXPLORATION RESULTS

The principles of SAMREC Clause 20 also apply to the reporting of Exploration Results on diamond properties. These are summarised below for ease of reference.

### SAMREC Clause 20

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

Exploration Results include relevant data and information relating to the diamond project/property – both positive and negative, but shall not be presented in a way that is misleading. Exploration data and information may include (but not be limited to) survey, geological, geophysical, geochemical, sampling, drilling, pitting, trenching, analytical testing, mineralogical, metallurgical information, where available. The actual data/information shall be appropriately described and presented.

Historical data and information may also be included if, in the considered opinion of the CP, such is relevant and reliable, giving reasons for such conclusions.

The data and information may be derived from adjacent or nearby properties if the CP can provide justification of continuity for such an association. At least some physical evidence of assumed continuity of the mineralisation on the property of interest shall be presented by the CP (such evidence may include geophysical and/or remote sensing information).

### 2.1 Diamond Exploration Targets

#### SAMREC Clause 65

**A 'Diamond Exploration Target' is a statement, or estimate, of the exploration potential of a diamond deposit in a defined geological setting.**

It is accepted that companies must continuously assess long-term development opportunities in their exploration programmes. The main objectives of these programmes are to develop a thorough understanding of the mineral inventory so that the full mineral endowment potential can be considered under a variety of scenarios and then to make long-term investment decisions that optimise the development potential of the exploration provinces. These objectives require a consistent approach to evaluating the nature and extent of potentially economic mineralisation (Diamond Exploration Targets) in a rigorous approach.

A Diamond Exploration Target may refer, inter alia, to a kimberlite target, a particular river or stretch of river, a stratigraphically defined sedimentary unit or sequence, or an area of marine deposits, which is considered to have diamond potential. There must be a likelihood that this exploration target occurs in an area of geological prospectivity for that style of mineralisation. A Diamond Exploration Target, in its simplest form, need not represent any discovered mineralisation, nor does it imply that reasonable prospects for possible eventual economic extraction (RPEEE) have been demonstrated.

Geophysical and/or remote sensing anomalies may be identified as Diamond Exploration Targets. Estimates of potential grade and/or average diamond value may be based on very limited information and analogies with known deposits of similar geological character may be drawn. However, the reporting of analogous information,

preliminary exploration sampling or geophysical results must not be constructed so as to imply that potentially economic mineralisation has been discovered.

When discussing Diamond Exploration Targets, the CP shall clarify whether the target is based on proposed exploration programmes (conceptual Exploration Target) or on actual Exploration Results (Diamond Mineralisation – see section 3.2 below). In either case, the CP shall describe clearly the rationale for the selection of the target, including the geological model on which it is based, as well as justification for any statements of conceptual quantity, grade and average diamond value, as relevant. In addition, the intended exploration work programme to explore for the target shall be included, detailing the extent of the proposed exploration activities, the planned timeframe and the anticipated costs.

Public Reporting of a Diamond Exploration Target shall not be done unless supported by an exploration programme. Without an explicit concrete exploration work programme on a specific mineral property held by the Company, public reporting of a Diamond Exploration Target shall be regarded as being solely speculative.

### **2.1.1 Kimberlitic Indicator Mineral Chemistry**

#### **SAMREC Clause 60**

**Kimberlitic Indicator mineral chemistry does not provide direct grade or diamond value information, and shall not be used to infer these parameters for Diamond Resource estimation purposes.**

Major and trace element mineral chemistry of kimberlitic indicator minerals (in particular, pyrope and eclogitic garnets, ilmenite, chrome spinel and chrome diopside) provide indirect evidence for the potential occurrence of diamonds, and is useful in (early stage) diamond exploration for ranking exploration targets in terms of their diamond-bearing potential.

Reference to relevant peer-reviewed published research articles should be made when reporting the interpretation of mineral chemistry data for diamond exploration projects.

### **2.1.2 Diamond Mineralisation**

#### **SAMREC Clause 65**

**Diamond ‘Mineralisation’ as used in the Code, is defined as a concentration (or occurrence) of diamonds of possible economic interest, in or on the earth’s crust, for which quantity and quality cannot be estimated with sufficient confidence to be defined as a Diamond Resource. Portions of a Diamond Exploration Target or Diamond Mineralisation that have not demonstrated reasonable prospects for eventual economic extraction shall not be included in a Diamond Resource.**

Diamond Mineralisation<sup>2</sup> not classified as a Diamond Resource or Diamond Reserve can only be reported under Exploration Results. The data and information relating to it must be sufficient to allow a considered and balanced judgement of its significance.

Mineralisation refers to in situ mineralisation of significance. In other words, it is an Exploration Target that is based on actual Exploration Results, but where either the amount of data/information or the level of confidence in the data/information is insufficient to estimate Diamond Resources. It may also include situations where both the amount and level of confidence in the data/information is satisfactory, but where RPEEE have not yet been demonstrated. Note that the occurrence of individual diamonds or microdiamonds in surficial deposits would not, typically, qualify as Diamond Mineralisation.

Where the statement of Mineralisation includes information relating to volumes/tonnages, grades and values, these shall be represented as approximations. The conceptual nature of the statements shall reflect the lack of reliable data and should be expressed either through the use of ‘order of magnitude’, appropriate descriptive terms (such

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<sup>2</sup> *Diamond Mineralisation, in this context (written with a capital ‘M’), can be considered as similar to the term “deposit” as used in Clause 21 of the 2007/2009 SAMREC Code. It is a subset of Exploration Target and not a variety of Inferred Resource.*

as ‘approximately’, ‘in the order of’, etc.) or as ‘ranges’. The use of the term ‘ranges’ in this context has no statistical relevance and is defined simply as the variation between the lowest and highest relevant exploration results. The explanatory text shall also include a description of the process used to determine the grade, value and volume/tonnage ranges used to describe the Mineralisation.

Appropriate rounding shall be used to express the level of uncertainty of the estimates. By way of example, “approximately 10-20 million tonnes at a grade of 15-20 carats per hundred tonnes and an average diamond value of US\$100-200/ct” would be acceptable, but not  $10\pm 0.2$  million tonnes. When such potential assessments are presented, statements of mass/volume/area, grade and average diamond value should be provided. It is not permissible to discuss one without reference to the other two. Estimates of potential quantity should, preferably, be made in terms of volume (or area) and not tonnage. If, however, target tonnages are reported then the preliminary estimates of, or basis of assumptions made for dry bulk density shall be stated.

Public Reporting of a Diamond Exploration Target with identified Mineralisation shall not be done unless supported by an explicit exploration work programme on a specific mineral property held by the Company, detailing the extent of the proposed exploration activities, the planned timeframe and the anticipated costs.

### 3 DIAMOND RESOURCE ESTIMATION

#### 3.1 Diamond Resource Estimation Principles

The principles of SAMREC Clauses 23-33 also apply to the estimation of Diamond Resources, where relevant.

#### **SAMREC Clause 66 (Diamond Resource)**

**A ‘Diamond Resource’ is a concentration or occurrence of diamonds of economic interest in or on the earth’s crust in such form, quantity (volume/tonnage), grade and value that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, value, continuity and other geological characteristics of a Diamond Resource are known, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Diamond Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories.**

**Any Diamond Mineralisation that has not demonstrated reasonable prospects for eventual economic extraction shall not be included in a Diamond Resource.**

The principles of SAMREC Clauses 23-33 also apply to Diamond Resource estimation, where appropriate. It is particularly relevant to note the provisions of Clause 32, that the words ‘Ore’ and ‘Reserves’ shall not be used with reference to Diamond Resources. These terms imply a level of technical feasibility and economic viability and are appropriate only when all relevant Modifying Factors have been applied.

Where considered appropriate by the Competent Person, Mineral Resource estimates may include Mineralisation below the selected cut-off grade to ensure that the Mineral Resource consists of bodies of Mineralisation of adequate grade, 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 (in addition to cut-off grades, Mineral Resources can also be defined by geological constraints, which may include, but are not limited to, structure, stratigraphic boundaries, or geometallurgical/mineralogical constraints). Documentation of Mineral Resource estimates shall clearly define any such inclusions, and Public Reports shall include commentary on the matter, if considered material.

#### **SAMREC Clause 60 (Declaration of Bottom Cut-off Screen Size)**

**The average diamond grade and value shall not be reported without specifying the bottom cut-off screen size.**

The bottom cut-off screen size should be the same for both grade and value estimations. If they are different, then the CP shall include a full description of the difference and the reasons for such.

### **SAMREC Clause 23**

**A Mineral Resource shall not be estimated in the absence of sampling information.**

A Diamond Resource shall not be estimated in the absence of sampling information from the project property or geological unit.

- Volume shall not be based on remote sensing data (for example - satellite images and/or aerial photograph) or geophysics alone – corroborating drilling/pitting data must exist. Exceptions to this requirement may include the use of remote sensing (including aerial photography by drones) for surveying and volume estimation of Tailings Mineral Resources (TMR) and stockpiles. Any such concession, however, requires the justification of the specific situation and a description of the process in a clear and transparent manner.
- The extent to which Resource information has been extrapolated from existing data points shall be identified and justified.
- Grade and value, at Resource classification, shall not be based solely on production data from adjacent properties. Kimberlites in the same field, including satellite pipes and dykes usually do not have the same grade and value. Similarly, alluvial deposits on adjacent properties shall not be assumed to have the same grade/value characteristics unless sufficient geological evidence of deposit continuity is present.
- Resource estimates shall not be based on unverified or unverifiable historical<sup>3</sup> or artisanal results only.

If the project has no surveyed volumes, no recorded production data, or no (Kimberley Process compliant) sales/valuation data, then no Diamond Resource can be estimated.

### **SAMREC Clause 60**

**A Diamond Resource estimate must identify separate geological domains where applicable. For each geological domain, a size frequency distribution, grade and diamond value estimate should be established, and a bottom cut-off size must be stated. Reports of diamonds recovered from sampling programs must describe the nature of the sample, how the sample was taken and the method used to recover diamonds from the sample. The mass of diamonds recovered may only be omitted from the report when the diamonds are considered to be too small to be of commercial significance.**

When estimating an Inferred Diamond Resource, it is necessary to identify preliminary geological domains, each of which should have at least an initial indication of area (for planar secondary deposits) or volume, density (for primary deposits), stone size distribution, grade and average diamond value. Such information shall be obtained from bulk samples.

In order to progress to an Indicated Diamond Resource, and from there to a Probable Diamond Reserve, it is likely that much more extensive, representative bulk sampling (and/or trial mining<sup>4</sup>) would be needed to determine fully the stone size distribution and value. Commonly, such bulk samples would be obtained by opencast or underground development designed to obtain sufficient diamonds to enable a confident estimate of price or, in the marine environment, by deploying a vessel equipped for mining the deposit to undertake extended sampling. In the case of a marine placer (or certain alluvial deposits) where the assortment is well understood through mining or sampling and where it can be demonstrated that the average diamond mass is well correlated with average diamond value, knowledge of the average diamond mass may be sufficient to derive an average diamond value.

In complex deposits, however, it may be very difficult to ensure that the bulk samples taken are truly representative of the whole deposit. The CP shall provide an opinion on the representativeness of the bulk sampling and on the validity of the conclusions drawn from this information.

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<sup>3</sup> Historical data, in this context, refers to anything that has not been subject to a SAMREC/CRIRSCO compliant resource estimation exercise.

<sup>4</sup> See section 5.1 for a discussion on bulk-sampling vs. trial-mining



The stone size distribution and price of diamonds are critical components of the Resource and Reserve estimates. At an early exploration stage, reconnaissance, sampling and delineation drilling will not usually provide this information, which relies on bulk sampling through pitting, trenching, or large diameter drilling. In the case of Inferred Resources, it is expected that the available data will be limited, but sufficient to imply, but not to verify, geology, grade and value.

### **SAMREC Clause 64**

**For diamond exploration programmes, Exploration Targets, Mineralisation, Resources and Reserves, the term 'quality' must not be used as a substitute for 'grade.' The use of 'grade' and 'value' helps avoid confusion with diamond quality, which is only one aspect of the diamond assortment.**

All statements/tabulations of Diamond Resources and Diamond Reserves shall include quantity (volume/tonnage/area), grade, carats and diamond value. It is not permissible to report estimated contained carats unless corresponding estimated quantities (volume/tonnage/area) and grades are also reported in the same statement/tabulation. It is acknowledged that, under very specific situations, certain information regarding diamond revenue may be considered confidential. In these circumstances, the CP should outline what the confidentiality issues are and present as much information as possible within the available contractual/legal parameters. Listed companies are referred to the JSE Listing Requirements on how to deal with these situations with respect to their on-going reporting obligations.

When target ranges/approximations are provided for exploration programmes, Diamond Exploration Targets and Diamond Mineralisation, statements should also include information relating to quantity, grade and average diamond value. However, such statements shall not be included in statements/tabulations of Diamond Resources and Diamond Reserves.

### **3.2 Reasonable Prospects for Eventual Economic Extraction (RPEEE)**

RPEEE shall be demonstrated through the application of an appropriate level of consideration of the potential viability of Diamond Resources. Such a consideration shall include a reasoned assessment of the geological, engineering (including mining and processing parameters), metallurgical, legal, infrastructural, environmental, marketing, socio-political and economic assumptions which, in the opinion of the CP, are likely to influence the prospect of economic extraction. All of the issues listed in Table 1 (section 4.3), under 'Reasonable Prospects for Eventual Economic Extraction' shall be discussed *at the level appropriate for the specific investigation*.

For ease of reference, these are:

- (i) Discuss and justify the geological parameters. These would include, but not be limited to, grade, volume (and/or tonnage), diamond value, bulk densities, cut-off grades, strip ratios, top- and bottom- cut-off screen sizes.
- (ii) Discuss and justify the engineering parameters. These would include, but might not be limited to, mining method, processing, geotechnical, geo-hydraulic and metallurgical parameters.
- (iii) Discuss and justify aspects of infrastructure including, but not limited to, site accessibility, access to labour as well as the availability of power and water.
- (iv) Discuss and justify the legal, governmental, permitting and statutory parameters. For diamond projects, this would include compliance with Kimberley Process certification.
- (v) Discuss and justify the environmental and social (or community) parameters.
- (vi) Discuss and justify the marketing parameters.
- (vii) Discuss and justify the major economic assumptions and parameters. For diamond projects, these factors include, but are not limited to, possible capital and operating costs as well as diamond price forecasts, where relevant. It may also include a brief discussion of sensitivities related to the major factors influencing potential profitability.
- (viii) Discuss any material risks.
- (ix) Discuss the parameters used to support the concept of 'eventual'.

When addressing RPEEE, note that there is no definition of this phrase in the Code. Such assessment is the responsibility of the CP and requires judgement based on the CP's experience. However, both the Code and Table

I provide guidelines that should be considered by the CP in using judgment for this critical aspect of resource estimation and reporting.

The assessment shall be based on the principle of reasonableness, and shall be justifiable and defensible. The assumptions used to test for RPEEE shall be within known/assumed tolerances or have examples of precedence. They should be applied at an appropriate and practicable scale. The principle of reasonableness shall be applied together with the primary SAMREC Code principles of Materiality, Transparency and Competency.

Where untested practices are applied in the determination of RPEEE, the use of the proposed practices for reporting of the Diamond Resource shall be justified by the CP. Such untested practices refer to methods or practices which are outside of the ordinary, which may be considered novel, innovative, pioneering or which might not be understood by the non-specialist. Transparency with respect to untested practices is patent and should support the reasonableness in determining potential extraction.

In order to demonstrate that a Diamond Resource has RPEEE, some appreciation of the likely stone size distribution and value is necessary, however preliminary this estimate of size distribution and value may be. Further, spatial data distribution as well as geological and grade continuity must also be considered. It is, furthermore, critical that project economics risk factors shall be clearly defined, current, reasonably developed and based on generally accepted industry practice and experience. As an example, the potential capital cost may be relevant and should always be shown to be recoverable from project revenue.

While it is understood that some practitioners and companies may apply a variety of protocols for an assessment of RPEEE, the SAMREC Code provides for 'minimum standards, recommendations and guidelines' in this matter. Thus, while Company A may require 'an order-of-magnitude' engineering study to support RPEEE, minimum standards imply a less rigorous level of care or detail in establishing prospects. For an early stage exploration project, this less rigorous level of care may be acceptable and understandable as long as all the compliance requirements discussed here are fulfilled in a competent, material and transparent manner.

As an example of this aspect, in some public disclosure reporting domains, the application of a Lerchs-Grossman (LG) open pit model may be used to constrain the limits of Diamond Resources. This computational method incorporates the required criteria in mathematical form for the assessment and blocks captured are reported as meeting the requirement of reasonable prospects, with material outside the pit falling short of this threshold. *The use of this software-driven method may be appropriate for advanced projects but is not necessarily applicable to early stage Diamond Resource estimation (especially with respect to placer deposits).*

For early stage Diamond Resource estimation, a simple reference to all of the factors listed under section 4.3 of Table 1 may suffice. Other approaches may also be valid, depending on the specific circumstances. Irrespective of what approach is used, the methodology and assumptions made by the CP in determining whether the project has RPEEE must be presented explicitly and in sufficient detail so as to be transparent.

### **3.2.1 Eventual Economic Extraction**

Interpretation of the word 'eventual' in this context may vary depending on the commodity, mineral involved or legal tenure. For example, for many occurrences of coal, iron ore, bauxite and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering periods of 50 years or more. However, for other deposits, application of the concept may be restricted to much shorter periods. For diamond mineralisation (and especially with respect to alluvial deposits) it should always be understood that the timeline to development is short-term in comparison with many other commodities. The presence of the word 'eventual' in this context shall not be used to justify applying an unreasonably long time frame to the assessment of reasonable prospects.

The CP shall discuss the parameters used to support the concept of 'eventual' in the specific instance as it relates to the project at hand and not in terms of global generalisations. In this respect it may also be useful for the CP to consider a timeline for development of the project in discussing the concept of 'eventual economic extraction'.



### 3.3 Diamond Resource classification

#### SAMREC Clause 28

**For each category of Mineral Resource the basis of classification must be disclosed.**

The main section of the SAMREC Code is not prescriptive beyond this brief disclosure requirement. However, the implications are that for each category of Diamond Resource and/or Reserve, the CP shall disclose the classification criteria used. Section 11.5 of Table 1 provides a list of criteria that may be used as a basis for consideration. In addition, the CP is encouraged to research public disclosure documents for further guidance and to develop a wide-ranging list of classification criteria.

Such classification may be by way of a simple tabulation of key criteria and levels of confidence, a more comprehensive scorecard protocol or any other systematic methodology. Irrespective of what technique is selected by the CP, the logic behind the methodology shall be provided in sufficient detail so as to be understandable and transparent. Phrases such as ‘the author feels ...’, ‘the author believes ...’ or ‘the author sees no reason why it shouldn’t be classified as ...’ are *not* valid classification criteria.

#### SAMREC Clause 28

**The Competent Person 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.**

In estimating a Diamond Resource, the drilling grid as well as the number and size of samples will depend on the specific geology of the deposit. Different types of diamond deposits will require different (drilling/sampling) specifications for Resource classification. In all cases, the programme should be optimised appropriate to the geology. In complex deposits, it may be very difficult to ensure that the bulk samples taken are truly representative of the whole deposit. Diamond deposits, especially placer deposits, may require significant amounts of drilling and/or sampling before a meaningful Diamond Resource can be estimated. All of these issues shall be taken into consideration by the CP when deciding on the relevant Resource classification.

Other important issues that need to be considered by the CP when classifying Diamond Resources are:

- The CP should consider a range of relevant risk factors and their confidence levels – as a minimum, the effects of geology, grade, volume, density, average diamond value and the quality/integrity of data should be included. The weighting given to each of these (and other factors, as applicable) may vary, depending on whether the project covers an alluvial, a marine or a primary deposit. The determination of levels of confidence may be partially software-driven or simply experiential. More rigorous determination of levels of confidence may involve semi-quantitative scorecard protocols.
- The CP shall apply experience and discretion in considering the relative weighting to apply to confidence levels for the range of factors taken into account. The differences between average and specific estimates may be instructive for classification if they impact confidence for mine planning (i.e. differentiating between Inferred and Indicated classifications).
- Any relevant assumptions applied or manipulation of data during the estimation and classification process shall be clearly described.
- SAMREC Figure 3 stresses that Diamond Resource classification is dependent on both increasing geological knowledge *and* confidence in the geological data. Therefore, the amount of direct sampling, and the uncertainty in demonstrating spatial continuity of size, grade and price relationships should be persuasive in determining the appropriate resource category. It is incumbent on the CP to justify the classification in a transparent and professional manner.

The CP shall also offer commentary on Resource reconciliation. The objective of these observations is to demonstrate how well the Resource has been evaluated. Two areas should be considered; the most obvious is

how the Resource estimate compares with any subsequent production data<sup>5</sup> (i.e. actual recovered vs. expected recovered); the second area of consideration should reconcile Resource data as it progresses through the classification categories – for example, what was the estimate at Inferred classification and how (and why) it has changed as the Resource is upgraded to Indicated and Measured, if applicable. The information obtained through this exercise may assist the CP in refining appropriate Resource classification criteria for such deposits.

### 3.3.1 *Inferred Diamond Resource*

The principles of SAMREC Clauses 24-25 also apply to the estimation of Inferred Diamond Resources, where relevant.

#### **SAMREC Clause 67**

**An ‘Inferred Diamond Resource’ is that part of a Diamond Resource for which quantity, grade and average diamond value are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify, geological and grade continuity.**

**An Inferred Diamond Resource has a lower level of confidence than that applying to an Indicated Diamond Resource and must not be converted to a Diamond Reserve. It is reasonably expected that the majority of Inferred Diamond Resources could be upgraded to Indicated Diamond Resources with continued exploration.**

Although the confidence level of an Inferred Diamond Resource is defined as ‘Low’, it does not mean ‘no confidence’, nor is it a ‘guesstimate’. The confidence in the estimate must be higher than that required for Diamond Mineralisation. There is, further, an expectation that the majority of Inferred Diamond Resources will be able to be upgraded to Indicated Resources if additional drilling/sampling were carried out, although this cannot be guaranteed.

The Inferred Diamond Resource category is applicable when data locations may be too widely or inappropriately spaced to verify geological and grade continuity but spaced closely enough for continuity to be implied, and where the diamond parcel is only large enough for a low confidence estimate of average diamond value. Although too small to be fully representative, the diamond parcel (for value) must come from the property (and from the deposit being estimated) – it must not be a regional value nor extrapolated from adjacent/nearby operations, nor even from a satellite deposit.

Note that geological evidence of continuity of mineralisation in the form of outcrops, trenches, pits, workings and/or drill holes is required to estimate a Diamond Resource. Geophysical anomalies, remote sensing data, satellite image and/or aerial photograph evidence alone are insufficient. Estimates of quantity, grade or value based on limited information and analogies with known deposits of similar geological character are inadequate for classification as Inferred Diamond Resources.

Grade and value data that is not SAMREC compliant may not be used to estimate a Diamond Resource – purely historical<sup>6</sup> or anecdotal estimates are insufficient.

An Inferred Diamond Resource can be based on interpolation between widely spaced data where there is reason to expect geological continuity of Mineralisation. Where relevant, the extent of extrapolation outside of the nominal drilling or sampling grid spacing should be justified. The CP shall provide sufficient information to inform the reader of:

- The maximum distance that the Diamond Resource is extrapolated beyond the sample points.
- The proportion of the Diamond Resource that is based on extrapolated data.
- The basis on which the Diamond Resource is extrapolated to these limits.

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<sup>5</sup> Although the most obvious parameters for such reconciliation exercises are grade, average value and quantity (volume/mass), other factors may also be considered.

<sup>6</sup> Historical estimates, in this context, refer to anything that has not been subject to a SAMREC/CRIRSCO compliant resource estimation exercise.

A diagrammatic representation of the Inferred Diamond Resource showing clearly the extrapolated part of the estimated resource should also be provided.

Where the Diamond Resource being reported is predominantly an Inferred Diamond Resource, sufficient supporting information must be provided to enable the reader to evaluate and assess the risk associated with the reported Diamond Resource.

### **3.3.2 Indicated Diamond Resource**

The principles of SAMREC Clause 26 also apply to the estimation of Indicated Diamond Resources, where relevant.

#### **SAMREC Clause 68**

**An 'Indicated Diamond Resource' is that part of a Diamond Resource for which quantity, grade, value, density, shape and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.**

**Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade continuity between points of observation. An Indicated Diamond Resource has a lower level of confidence than that applying to a Measured Diamond Resource and may only be converted to a Probable Diamond Reserve.**

The Indicated Resource classification is appropriate when sampling and testing locations may be too widely, or inappropriately, spaced to confirm geological and grade continuity but are spaced closely enough for continuity to be assumed, *and* where sufficient diamonds have been recovered to allow a reasonable estimate of average diamond value.

The sampling and estimation of marine placer deposits is particularly difficult and expensive and, thus, even the assignment of Indicated status may prove difficult.

The level of confidence in an Indicated Diamond Resource shall be sufficient to convert to Probable Reserves and determine a life-of-mine plan, based on a trial mining and/or Prefeasibility/Feasibility Study (PFS/FS).

The CP shall refer to SAMREC Clause 62 (Section 3.4.1 below) for guidance on the selection of an appropriate diamond parcel size applicable to the estimation of Indicated Diamond Resource classification.

### **3.3.3 Measured Diamond Resource**

The principles of SAMREC Clause 27 also apply to the estimation of Measured Diamond Resources, where relevant.

#### **SAMREC Clause 69**

**A 'Measured Diamond Resource' is that part of a Diamond Resource for which quantity, grade, value, density, shape, and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors to support detailed mine planning and evaluation of the economic viability of the deposit.**

**Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade continuity between points of observation.**

**A Measured Diamond Resource has a higher level of confidence than that applying to either an Indicated Diamond Resource or an Inferred Diamond Resource. It may be converted to a Proved Diamond Reserve or to a Probable Diamond Reserve.**

The Measured Resource classification is applicable when sampling and testing locations are spaced closely enough to confirm geological and grade continuity *and* where sufficient diamonds have been recovered to allow a confident estimate of average diamond value. The CP shall refer to SAMREC Clause 62 (Section 3.4.1 below) for guidance on the selection of an appropriate diamond parcel size.

For most diamond operations, Resources fall short of making the Measured Diamond Resource category and special care has to be taken if Resources are reported in this category (*this provision is especially applicable to alluvial diamond deposits*).

### **3.4 Diamond Value (Revenue Estimate)**

#### **SAMREC Clause 60 (Average Diamond Value as a Component of the Diamond Resource)**

**A Diamond Resource or Diamond Reserve shall not be stated without an estimate of the average diamond value/revenue, which shall be based on a run-of-mine, or representative bulk sample, parcel of diamonds which has been recovered from the project property.**

The average value (or revenue estimate) of a diamond parcel is estimated from a knowledge of the assortment of the parcel and the size frequency distribution (SFD), resulting in US dollars per carat (US\$/ct) per sieve class or size. This revenue value (valuation) is limited to the specific parcel under discussion, for which the SFD and assortment<sup>7</sup> may not be representative of the diamond content above the bottom cut-off.

The value of a parcel of diamonds, as defined, in this Code, is a measure of the revenue (US\$/ct). The valuation or assessment of a revenue estimate may be based on the sale of a representative diamond parcel on the open market or it may be based on modelling of both diamond size class prices and the diamond SFD above a defined bottom cut-off. A revenue estimate is date specific, and linked to a value or price that should not be more than six months old.

In defining the value of a diamond parcel, the size of the parcel in carats and in number of stones shall be stated and the CP shall discuss and provide an opinion on the representivity of the parcel (cf. Clauses 61 and 62).

#### **SAMREC Clause 61 (Diamond Valuation Methodology)**

**Any valuation of a parcel of diamonds shall be based on a sales docket or a report from a demonstrably reputable and qualified expert whose qualifications, credentials, affiliations and independence/non-independence must be presented.**

It shall be clearly stated whether the reported value is based on sales, valuation (without sale) or modelled and, in the last case, an outline<sup>8</sup> of how the modelling was carried out and by whom. Reports of diamonds recovered from sampling programs shall provide material information relating to the basis on which the sample is taken and the method of recovery of the diamonds. The valuer should provide an indication of variability of quality and values within the parcel, and at least a qualitative level of confidence in the average value per carat estimate.

The valuation of diamonds shall state that the average diamond value includes all categories of diamonds recovered above a bottom cut-off (i.e. run-of-mine and not a selected parcel). The bottom cut-off should coincide with that used to disclose diamond grades. The mass in carats and the bottom cut-off size in mm of the contained diamonds shall be stated along with the dates of the valuation, revenue estimate and/or diamond prices. The value of the diamonds shall be given in US dollars per carat, along with any foreign exchange information where relevant and should be based on diamond prices that are not more than six months old.

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<sup>7</sup> Diamond assortment is defined as the model (shape or morphology), quality and colour.

<sup>8</sup> It is acknowledged that this process may involve confidential information, in which case, a high-level discussion is all that is required to fulfil this obligation.

### 3.4.1 Parcel Size and Representivity

#### **SAMREC Clause 62**

Where the valuation is used in the estimation of Diamond Resources or Diamond Reserves, the valuation shall be based on a parcel representative of the size distribution and assortment of the diamond populations in the deposit. The CP shall explain the rationale behind the parcel size that has been used in the estimation of value for the Diamond Resource or Diamond Reserve and the level of confidence in the estimate.

The minimum representative size of the valuation parcel depends on the characteristic stone distribution and quality of stones in the deposit. For all valuations (irrespective of Resource classification), associated diamond size frequency distributions shall be provided, along with a discussion of the relevant applicable parcel size.

Diamond value is deposit specific. The parcel size for diamond valuation at each resource category confidence level is also deposit specific. The planning of the recovery of diamonds for valuation purposes is an important activity that should attempt to predict the parcel size ahead of sampling in order that the level of confidence in this factor may not fall short of expectations for the stage of project progress. Under certain circumstances, the number of stones/carats required to estimate the diamond value to a low, reasonable or high confidence may need to be significantly different<sup>9</sup> from the numbers and thresholds given below for guidance. The SFD and assortment under study should be the determining factor for the specific numbers and threshold.

In all circumstances, the CP shall state the number of stones/carats selected and discuss the rationale behind the selection as well as the level of confidence that the CP has in the estimate.

Industry practice suggests that, although as few as 100 carats may be adequate to characterise a size frequency distribution in a diamond deposit, a minimum of 500 carats is generally recommended to achieve even a low confidence valuation (revenue estimation), and classification of an Inferred Diamond Resource.

For primary deposits with a low variability of stone sizes and assortment, some 2,000 carats may be sufficient to achieve a reasonable valuation (for Indicated Diamond Resource classification).

In all deposits with highly variable stone sizes and assortment, or deposits in which a small number of very high value stones have a large influence on the overall average stone value (such as low grade alluvial deposits), parcels in excess of 2,500 carats may be required for Indicated Diamond Resource classification. Under specific circumstances, parcels of more than 5,000 carats may be required and in extreme cases a confident parcel size may never be achieved during industry standard evaluation sampling or even trial mining.

In the marine environment, as few as 100 carats may be required for size frequency modelling and a minimum of 500 carats for an assortment estimate at an Inferred level of confidence. At least 1,000 carats may be needed for a revenue estimate at an Indicated level of confidence.

### 3.5 Microdiamonds

*For the avoidance of doubt, the use of microdiamonds is not relevant in the placer environment.*

A distinction between ‘micro’ and ‘macro’ diamond has been deliberately avoided in this document on the basis that there is no natural boundary in the continuum of diamond sizes present in a diamond bearing host rock. A complete set of sieve data using a standard progression of sieve sizes may provide superior data. The CP shall provide relevant details regarding definitions, specifications and sieve sizes used.

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<sup>9</sup> Generally higher, seldom lower

**SAMREC Clause 62 (Application of Total Liberation Methods)**

Diamond valuations should not be reported for samples of diamonds processed using total liberation methods which will be composed mainly of microdiamonds.

Total liberation generally refers to acidisation or caustic fusion of microdiamond samples, which is useful for estimating grade and determining SFD. However, microdiamonds have no commercial value and are not useful for estimating diamond value, other than providing an SFD which represents one component of diamond revenue.

There may be instances where valuation of macrodiamonds recovered from such processes may be useful to the CP and may have been used in the estimation of a modelled average diamond value. If such valuations were to be disclosed then this must be done in the correct context and qualified carefully so as not to be misleading.

**SAMREC Clause 63 (Correlation of Micro- and Macro- diamond Size Frequencies)**

Where Diamond Resource or Reserve grades are based on correlations between the frequency of occurrence of microdiamonds and of commercial size stones, this shall be stated, and the reliability of the procedure shall be discussed by the Competent Person.

Details of the laboratory facilities used for the processing of samples and the method for recovery of microdiamonds should also be disclosed and the cut-off sieve size for microdiamonds reported. In addition, it should be clearly stated whether selective sampling has removed any diluting material from samples prior to sample submission for processing, since this will have an impact on microdiamond-based grade estimates.

Diamond grade estimation using microdiamonds is not sufficient to declare a Diamond Resource unless sufficient macrodiamonds have also been recovered to enable an estimate of average diamond value.

However, in the case of a producing mine or development property, where Diamond Resources have been declared and sufficient macrodiamonds have been recovered for estimation of average diamond value, it is permissible to extrapolate diamond values if geological homogeneity and continuity can be demonstrated and a preliminary SFD can be modelled. The CP shall take a view on the adequacy of the quantity of recovered macrodiamonds to estimate average diamond value, and the confidence in the assumption or demonstration of geological homogeneity and continuity.

Key issues in the micro-macro diamond modelling approach are the use of appropriate sampling protocols to ensure that dilution in the sample is sufficiently understood. The relationship between the micro- and macro-diamond portions of the total content curve may be critically affected by country rock dilution and diamond liberation.

Other than total dissolution techniques in microdiamond sample processing, sampling in diamonds does not provide an assay as with other minerals or commodities. Conventional macrodiamond sample processing will not liberate or recover all the contained diamonds. The relative efficiencies of microdiamond sampling, macrodiamond sampling and full-scale treatment and recovery technologies should consider aspects such as granulometry and mineral dressing studies to derive appropriate Diamond Resource to Reserve Modifying Factors.

**4 TECHNICAL STUDIES****SAMREC Clause 43**

A mining project typically passes through exploration, resource definition and design phases; each of which involves rapidly escalating levels of investment. Each phase requires an increasing level of economic and technical assessment with increasing levels of confidence for the project design, scheduling, costs and risks to justify progression of the project to the next investment level.



SAMREC Clauses 44-46 and Table 2 provide guidance in terms of the level of Technical Studies. The CP shall consider these issues when considering any techno-economic assessment of a diamond project.

The Code does not require that a full FS has to be undertaken to convert Diamond Resources to Diamond Reserves. It does, however, require that at least a PFS or Life of Mine Plan will have been carried out to determine that the mine plan/production profile is technically achievable and economically viable, and that Modifying Factors have been considered to an appropriate level of confidence.

During early exploration, some level of financial analysis may be carried out by a company on exploration data which might not include Diamond Resource estimates to assess the potential for the project to proceed to the next phase of exploration. These analyses are considered to be a part of the exploration program planning and are *solely for internal company decision making purposes. They are not for public disclosure.*

Indicated or Measured Diamond Resources may be converted to Diamond Reserves through the application of PFS/FS. Inferred Diamond Resources shall not be converted to Reserves through the application of any Technical Study. This is not to be confused with the situation where Inferred Diamond Resources may be included in an initial assessment of value in a Scoping Study (the CP is referred to Clause 44 of the SAMREC Code for further guidance on the conditions under which Scoping Studies may be reported).

There are no differences in the *standard* of PFS or FS required for secondary or primary diamond deposits. PFS/FS on all diamond deposits are, typically, based on technical and economic data obtained from trial mining which grows seamlessly out of bulk sampling and need not, necessarily, be a separate exercise.

Since conventional macrodiamond processing techniques (for both primary and secondary diamond deposits) are not designed to liberate or recover all contained diamonds, there is no such thing as an *'in-situ'* grade – it is only a processed or recovered grade, which is dependent on the plant or process employed. Therefore, the relative efficiencies of sampling and subsequent mining technologies shall be addressed. In primary deposits any recovery factors based on microdiamond estimates should also be described. These recovery factors are given more confidence when the results of tailings and tracer audits for the recovery plant in use are presented and discussed.

Due to the discrete nature of diamond mineralisation and the (relatively) large average size of individual diamonds, many projects suffer from theft. Since such theft usually involves the larger and/or better stones, this can have a devastating effect on the project outcome, especially in very low grade settings. As a result, a discussion on 'risk' should include a high level discussion of general security arrangements in and around the diamond recovery plant and the protocols used in the final recovery section to prevent theft of the diamonds.

#### **4.1 Bulk sampling vs trial mining on alluvial<sup>10</sup> diamond deposits**

On alluvial deposits, bulk sampling programmes expand into trial mining, which, typically, moves seamlessly into full production mining once the techno-economic or Modifying Factors of the gravels are determined. In the interests of standardised terminology:

- *Bulk sampling* is taken to be the initial period of sampling during which Exploration Targets are investigated and Diamond Resources are identified.
- *Trial mining* is the period during which the relevant mining, processing and other economic factors (the Modifying Factors) are evaluated that may, ultimately, lead to the conversion of some or all of the Indicated Diamond Resources to Probable Diamond Reserves. Trial mining typically forms the basis of the PFS/FS. In certain circumstances (specifically marine projects), trial mining may not always be justifiable and Modifying Factors are, typically, projected from engineering design specifications and historical performance which are then used to estimate production with appropriate ranges which are imported into the financial and risk assessment models.

The methods of mining and processing used in the bulk sampling, trial mining and production mining phases of alluvial operation may be similar (but not necessarily so), except for the volumes processed. Full production is, typically, initiated once Diamond Reserves have been identified. Due to the nature of alluvial diamond deposits,

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<sup>10</sup> Although this section is specifically written for alluvial diamond deposits, many of the principles are applicable to primary and marine deposits as well. Where relevant, the CP should define the specific requirements of the project at hand.

it is often not possible to complete a single-stage PFS which converts all of the Indicated Resources to Probable Reserves. On-going production from Diamond Reserve blocks typically acts as a continuous trial mining (PFS/FS) programme for the adjacent Indicated Diamond Resource. As a result, as mining of existing Probable Diamond Reserves proceeds and as confidence in the geological and mining parameters is upheld (or increases), then surrounding Indicated Diamond Resources can be upgraded to Probable Diamond Reserves on a continual basis, without the need for a separate Technical Study. It is, generally, only in situations where new processing methodologies are introduced (or where any of the Modifying Factors change materially) that additional PFS/FS may need to be completed.

## 5 DIAMOND RESERVES

The principles of SAMREC Clauses 34-42 also apply to the estimation of Diamond Reserves<sup>11</sup>, where relevant. Especially important in the estimation of Diamond Reserves is the degree of confidence in the diamond revenue model. Note also the implications of SAMREC Clause 32 – if the Modifying Factors should change materially, then Diamond Reserves must be reclassified as Diamond Resources until technical feasibility and economic viability have been established.

A rider to this statement would also imply that a Diamond Reserve estimated on one processing technology may not be applicable to another plant type. With specific reference to alluvial diamond deposits, a Reserve estimated through the use of a DMS by Company A, for example, does not translate into a Reserve based on a rotary pan plant by Company B. Further, the Modifying Factors applicable to Company A are likely to be very different from those related to Company B, especially where the two companies are of vastly different size or operating capacity. Consequently, Modifying Factors shall be determined with the specific project and operator in mind – Modifying Factors and Diamond Reserves are not simply transferable from one operator to another.

It is accepted that mine design and planning may include a proportion of Inferred Diamond Resources. If this category is considered in mine design, planning or economic studies, the results of which are publicly reported, full disclosure shall be made and the effect on the results of the studies shall be stated. Inferred Diamond Resources may be included in mine design, mine planning and economic studies only if a mine plan exists and a statement of Diamond Reserves that states that Inferred Diamond Resources have been used<sup>12</sup>. Where a material amount of mining in the mine plan includes Inferred Diamond Resources, a comparison of the results with and without these Inferred Diamond Resources shall be shown, and the rationale behind their inclusion shall be explained.

Modifying Factors and assumptions that were applied to the Indicated and Measured Diamond Resources to determine the Diamond Reserves shall be equally applied to the Inferred Diamond Resources, if considered as part of the Life-of-Mine Plan.

Inferred Diamond Resources cannot be converted to Diamond Reserves and shall not be stated as part of the Diamond Reserve.

### 5.1 Probable Diamond Reserve

#### SAMREC Clause 70

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

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<sup>11</sup> Although the term Mineral Reserve is used throughout the SAMREC Code, it is recognised that the term Ore Reserve is still in general use. For the purposes of reporting on diamond deposits, however, the term Diamond Reserve is preferred.

<sup>12</sup> Locally, where Inferred Resources have factors applied and are used in mine planning and design, the term 'Scheduled Inferred Resources' has commonly been used. Note that this term is not SAMREC compliant and shall not be used in a statement or tabulation of Diamond Resources/Reserves.

A Probable Diamond Resource requires the application of at least a PFS, based on Indicated Diamond Resources. There shall be a reasonable degree of confidence in the diamond revenue model if a Probable Diamond Reserve is declared.

## 5.2 Proved Diamond Reserve

### SAMREC Clause 71 (Proved Diamond Reserve)

**A 'Proved Diamond Reserve' is the economically mineable part of a Measured Diamond Resource. A Proved Diamond Reserve implies a high degree of confidence in the Modifying Factors.**

There should be high degree of confidence in the diamond revenue model if a Proved Diamond Reserve is declared.

Since a Measured Diamond Resource is the basis for a Proved Diamond Reserve and, since this status is seldom achieved (cf. Clause 69), it follows that a Proved Diamond Reserve classification will rarely be attained.

## 6 MISCELLANEOUS

1. When referring to sieve sizes, the CP should define and discuss the sizing definition used – DTC, Rubin/Antwerp, Christensen, grainers, nominal square mesh, Tyler mesh, etc. This has important implications for revenue models that are often a mixture of size classes for the microdiamond and bulk-sample sample recoveries and the valuations on the same parcels. It can be even more significant where SFDs and total diamond count (TDC) models are being constructed – in these cases, the size class lower critical size and average size may be assumed as a generic average but are in reality deposit specific, depending on stone shapes.
2. With respect to Resource estimation of tailings (residue stockpiles/deposits), the measurement of bulk density is of critical importance. It is also important to differentiate between bulk density and any other measure used and its implication for grade and volume/tonnage estimation.
3. The principles of reporting of Diamond projects are applicable to other Gemstones as well. It is realised that certain clauses will have greater or lesser application to these deposits. It is expected that the CP will be able to adapt the specifics of the Code to the particular situation, while still adhering to the basic principles. Various industry specific recommendations exist outside of this forum for the classification of, *inter alia*, tanzanites, emeralds and rubies/sapphires. CPs are encouraged to familiarise themselves with these and refer to them, where appropriate.
4. Valuation of diamond and other precious stones projects shall only be done in accordance with the provisions of the SAMVAL Code and shall be based on a SAMREC/CRIRSCO-compliant Diamond Resource/Reserve estimate. There are no differences in the *standard* of valuations between diamond projects and any other commodities. It is significant, however, that transactions on alluvial diamond properties often occur very early on in the life of the mine, typically prior to the estimation of Diamond Resources. This does not mean that they have no value, but rather that such projects shall not be valued by Income Approach methodologies. Rather, Market and Cost Approaches are more applicable in the pre-Resource stages of these operations. It is notable that, for alluvial diamond properties, each of these approaches have specific peculiarities, which the Competent Valuer (CV) needs to be aware of.
  - Although Income-based valuation methods are by far the most satisfactory appraisals of value, they are not appropriate for properties without Diamond Resources. They are best applied after the conclusion of Scoping and PFS/FS Studies.

- The application of Discount Rates to alluvial diamond properties should be no different from that applied to commodities. However, special care has to be exercised in the matter of ‘Resource Risk’. The basis of the discounted cash flow (DCF) is the Diamond Resource/Reserve statement. A core issue with many alluvial diamond projects is the tendency for the CP to force as much as possible of the available volume, grade and value of the project into the Indicated Resource category. This is done so as to take advantage of the fact that Indicated Resources can be converted to Probable Reserves through a PFS and then valued by DCF. This is, fundamentally, a problem for the CP in the statement of the Resources/Reserve estimate. However, the CV should be aware that this situation is likely to occur in many circumstances and should, therefore, satisfy himself/herself that the Resource/Reserve estimation has been done with due cognisance of the issues peculiar to alluvial diamond deposits.
  - Notwithstanding, the DCF based on Indicated Diamond Resources converted to Probable Reserves through the application of PFS/FS, is the preferred method of valuation for an alluvial diamond project. Even where such can be constructed, however, the inherent complexities of alluvial diamond deposits coupled with an imperfect understanding of the resource estimation procedure could result in the application of incorrect discount rates.
  - The peculiarities of alluvial diamond Resource/Reserve estimations can also result in low NPV and IRR values that might not reflect the true value of the project.
5. It is recommended that the CP consider all of the papers presented in the Companion Volume for additional background and guidance – not only those in the Diamond Section.
  6. Supplementary industry guidelines on the estimation and reporting of Diamond Exploration Results, Diamond Resources and Diamond Reserves published in other jurisdictions may be useful and the CP is encouraged to consult them for further information. Such guidelines, however, will not, under any circumstances, override the provisions and intentions of the SAMREC Code and this Guideline Document.
  7. The CP is also referred to Appendix 1 of the SAMREC Code for guidance in compiling a table of contents for a CPR on a diamond project/property and must be read in conjunction with the SAMREC Code, Table 1 and this Guideline Document. The headings of the chapters are provided here for guidance only to ensure that all of the requirements of SAMREC Table 1 are incorporated. CPs may select to use their own headings and sub-headings, as relevant.

**APPENDIX 1****RECOMMENDED TABLE OF CONTENTS FOR COMPETENT PERSONS REPORT (CPR) FOR DIAMOND DEPOSITS**

*This table of contents is given only as a guide to the compilation of CPRs. It is designed to incorporate all of the requirements of Table 1. It must be read in conjunction with Table 1 and the Code.*

**Title Page**

*Include a title page setting out the title of the CPR, the general location of the diamond project, the name and professional designation of each CP, the effective date of the CPR and the date of signature.*

**Executive Summary**

*Briefly summarize important information in the CPR, including property description and ownership, geology and mineralisation, the status of exploration, development and operations, Diamond Resource and Diamond Reserve estimates, and the CP's conclusions and recommendations.*

**Table of Contents**

*Provide a table of contents listing the contents of the CPR, including figures and tables.*

**1 Introduction**

- Terms of reference and scope of work
- Sources of information (not to be confused with Reference list – see Chapter 13)
- Units and currency
- Site inspection or field involvement of CP(s)
- Limited disclaimers and reliance on other experts or third party information

**2 Project Outline**

- Property description
- Property location
- Country profile
- Legal aspects and permitting
- Royalties and liabilities

**3 Accessibility, Physiography, Climate, Local Resources and Infrastructure**

- Topography, elevation and fauna/flora
- Climate and weather
- Access
- Proximity to population centres
- General infrastructure

**4 Project History**

- Previous ownership
- Previous exploration and/or development
- Previous Diamond Resource Estimates
- Previous Diamond Reserve Estimates
- Previous Production

*Compliance or non-compliance with the SAMREC Code or other international reporting code must be included in the discussion on previous exploration, Resource and/or Reserve estimation. This section may also include a discussion of relevant historical estimates.*

**5 Geological Setting, Mineralisation and Deposit Types**

- Geological setting (regional and local)
- Nature of, and controls on, mineralisation
- Deposit type
- Geological models
- Nature of deposits on the property

## 6 Exploration Data/Information

- Remote Sensing data interpretation
- Geophysics
- Mapping
- Structural studies
- Drilling
- Sampling
- Indicator mineral studies
- Bulk sampling
- Trial mining
- Database management
- QA/QC analysis
- Survey data
- Data verification, audits and reviews

## 7 Diamond Resource Estimates

- Estimation and modelling techniques
- Diamond Resource classification criteria
- Reasonable prospects for eventual economic extraction
- Diamond Resource statement
- Diamond Resource reconciliation

## 8 Technical Studies

*Scoping Studies, Pre-Feasibility Studies, Feasibility Studies (and on-going life-of-mine studies) analyse and assess the same geological, engineering, and economic factors with increasing detail and precision. Therefore, the same criteria may be used as a framework for reporting the results of all three studies.*

*Scoping Studies shall not convert Inferred Diamond Resources to Diamond Reserves*

*Technical studies shall not include Diamond Exploration Targets or Diamond Mineralisation*

- Geotechnical and geohydrology
- Mine design and schedule
- Metallurgical
- Project infrastructure
- Market studies and contracts
- Environmental Studies
- Legal and permitting
- Taxation
- Social or community impact
- Mine closure
- Risk assessment
- Capital and operating costs
- Economic criteria
- Financial analysis

## 9 Diamond Reserve Estimates

- Estimation and modelling techniques
- Diamond Reserve classification criteria
- Diamond Reserve statement
- Diamond Reserve reconciliation

## 10 Other Relevant Data and Information

- Adjacent properties
- Risk assessments (including a high level discussion of issues surrounding diamond theft)

## 11 Interpretation and Conclusions

*Summarise the relevant results and interpretations of the information and analysis being reported on. Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in*



*the Exploration Results, Diamond Resource or Diamond Reserve estimates, or projected economic outcomes. Discuss any reasonably foreseeable impacts of these risks and uncertainties to the project's potential economic viability or continued viability. A CPR concerning exploration information must include the conclusions of the CP.*

## **12 Recommendations**

*Provide particulars of recommended work programs and a breakdown of costs for each phase. If successive phases of work are recommended, each phase must culminate in a decision point. The recommendations must not apply to more than two phases of work. The recommendations must state whether advancing to a subsequent phase is contingent on positive results in the previous phase. In some specific cases, the CP may not be in a position to make meaningful recommendations for further work. Generally, these situations will be limited to properties under development or in production where material exploration activities and engineering studies have largely concluded. In such cases, the CP should explain why they are not making further recommendations.*

## **13 References**

*Include a list of all references cited in the CPR.*

## **14 Appendices**

- Relevant supporting information
- Glossary of Terms
- Abbreviations
- Compliance statement and certificate of competence
- Consent form (if relevant)

## **Date and Signature Page**

*The CPR must have a signature page (at either the beginning or end of the CPR). The effective date of the CPR and date of signing must be on the signature page.*