

## AUSTRALASIAN REPORTING OF DIAMOND EXPLORATION RESULTS, IDENTIFIED MINERAL RESOURCES AND ORE RESERVES

(October 1993)

### INTRODUCTION

This document forms an Appendix to the *Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves* (September 1992), ("the 1992 Ore Reserves Code") and has been drafted by a Sub-Committee of the Joint Ore Reserves Committee comprising representatives from major diamond mining and exploration companies and independent consultants operating in the Australian diamond exploration industry.

It seeks to address aspects of the exploration and mining industry which relate specifically to public reporting of diamond exploration results, Identified Mineral Resources and Ore Reserves.

The necessity for this Appendix arises from the following characteristics specific to diamond exploration and mining:

- The diamond content of most commercial ore deposits is extremely low, usually in the range 0.05-2.0 carats/tonne (equivalent to 0.01-0.4ppm). The highest grade diamond ore deposit in the world, Argyle, has a grade of 6 carats/tonne (1.2ppm).
- Of equal or greater importance to grade is diamond value which reflects the overall quality, including size distribution, of the contained diamonds in the deposit. This value can range from a few cents to thousands of dollars per carat.
- Diamond valuation is a highly specialised process and is only possible on parcels containing appropriate numbers of Macrodiamonds. Traditionally valuations have only been considered reliable on parcels of at least 2000 carats of diamonds from a single deposit. The reliability of valuations of parcels smaller than 2000 carats decreases as the size of the parcels decrease to the point where valuations placed on a small number of diamonds from exploration samples become meaningless and are likely to be misleading.
- The low diamond content of Ore Reserves and Mineral Resources and the fact that the mineral is of a particulate nature complicates the sampling, assaying and valuation techniques used by the industry and in turn complicates the assessment and interpretation of results. The presence of a few large diamonds can have a more extreme effect on the evaluation of diamond deposits than does the presence of a few coarse gold particles on the evaluation of gold deposits.
- The durability of diamonds in nature has led to residual quantities of this mineral persisting at "background" levels in surficial deposits and stream sediments throughout Australia. This is an added complication to an objective interpretation of exploration results.

### COMPETENCE AND RESPONSIBILITY

The requirements for and definition of Competence and Responsibility as described in the 1992 Ore Reserves Code apply fully to reports dealing with diamond mineralisation with the addition that, if a

valuation of a parcel of diamonds is reported, the person(s) or organisations valuing the parcel must be named in the report and their professional valuation experience, competency and independence stated.

## REPORTING OF EXPLORATION RESULTS AND PRE-RESOURCE MINERALISATION

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

By definition Pre-Resource Mineralisation must be considered to be mineralisation of significance. The occurrence of individual diamonds or Microdiamonds in surficial deposits or from inadequately sized samples from a primary or secondary rock source would not usually qualify as Pre-Resource Mineralisation.

The requirements for reporting of Pre-Resource Mineralisation as described in the 1992 Ore Reserves Code apply fully to public reports dealing with diamonds with the following additions:

- Reports of diamonds recovered from sampling programmes must specify the number and total

weight (in carats) of diamonds recovered. Details of the type and size of samples which produced the diamonds must also be specified including lower cut-off sieve size used in the recovery.

- The weight of diamonds recovered may only be omitted from the report when the diamonds are less than 0.4mm in size (i.e. when the diamonds recovered are Microdiamonds).
- Any release of information in a report containing a company's diamond Pre-Resource Mineralisation should state the pertinent data and assumptions on which the report is based and contain a qualification drawing attention to any assessment criteria from Table 1 in the 1992 Ore Reserves Code and Table 2 in this Appendix for which inadequate data are available.

## REPORTING OF IDENTIFIED MINERAL RESOURCES

The requirements for reporting of Identified Mineral Resources as described in the 1992 Ore Reserves Code apply fully when reporting Identified Diamond Mineral Resources with the following additions:

- Any release of information in a report containing a company's Identified Mineral Resources should state the pertinent data and assumptions on which the report is based and contain a qualification

drawing attention to any assessment criteria from Table 1 in the 1992 Ore Reserves Code and Table 2 in this Appendix for which inadequate data are available.

- Where Resource grade figures are based on the correlation of Macrodiamond grade with the grade of Microdiamonds, this must be stated and its reliability explained.

## REPORTING OF ORE RESERVES

The requirements for reporting of Ore Reserves as described in the 1992 Ore Reserves Code apply fully when reporting diamond Ore Reserves with the following additions:

- Any release of information in a report containing a company's Ore Reserves should state the pertinent data and assumptions on which the report is based and contain a qualification drawing attention to any assessment criteria from Table 1 in the 1992 Ore Reserves Code and Table 2 in this Appendix for which inadequate data are available.

- Where Reserve grade figures have been estimated in part on the basis of the correlation of Macrodiamond grade with the grade of Microdiamonds, this must be stated and its reliability explained.
- If a valuation of a parcel of diamonds is reported, the weight in carats and size range of the contained diamonds must be stated and the value of the diamonds must be given in US dollars per carat.

Table 2

## DEFINITIONS AND ASSESSMENT CRITERIA

<b>Primary Rock Source</b>	Primary sources of diamonds in nature are variable and complex. Accordingly, information relating to primary sources should contain details of the nature of the rock type together with its form, shape and size.
<b>Secondary Rock Source</b>	Secondary sources of diamonds in nature are variable and complex. Accordingly, information relating to secondary sources should contain details of the nature of the rock type, together with its form, age, and size.
<b>Sampling Parameters</b>	Reported recoveries of diamonds or Indicator Minerals from all samples must be accompanied by details of the sampling parameters used. Type of sample (stream sediment, soil, bulk, rock etc.) as well as sample size, sample frequency, and screening parameters are required.
<b>Microdiamonds</b>	Current practice in Australia defines Microdiamonds as diamonds which will pass through a screen with 0.4mm apertures, i.e. diamonds weighing less than 0.001 carats. Reports of Microdiamond recoveries should specify both the number of stones recovered and the top and bottom screen or crushing sizes used in the recovery process.
<b>Macrodiamonds</b>	Macrodiamonds are defined as diamonds larger than 0.4mm in size. Reports of Macrodiamond recoveries should specify both the number of stones and the total carat weight recovered above a specified screen size.
<b>Indicator Minerals</b>	Conventional Indicator Minerals include garnet, ilmenite, chrome spinel and chrome diopsides having the requisite chemical and physical attributes that distinguish them from otherwise similar minerals found in non-diamond associated rock types. Reports of Indicator Minerals should be prepared by a suitably qualified person.
<b>Diamond Value</b>	Diamond valuation is a highly specialised process and is only possible on parcels containing appropriate numbers of Macrodiamonds. It is not possible to evaluate diamond quality from Microdiamonds. Classification of diamonds as, for example, gem, near gem and industrial, should be made by recognised experts, who should be identified in the valuation report and their independence stated.  The number of stones, the total carat weight and size range for the parcel valued should be stated.
<b>Previous work</b>	Referrals to previous work by other parties should be adequately referenced in the normal fashion.
<b>Cut-off Grades</b>	Assumptions regarding cut-off grades should specify minimum screen size.
<b>Carat</b>	One fifth of a gram (often defined as a metric carat or MC).
<b>Grades</b>	Internationally diamond grades for primary deposits are stated both in carats per tonne and carats per 100 tonnes. The Joint Ore Reserves Committee recommends the use of carats per tonne. In the case of alluvial deposits industry practice is to quote grades in carats per tonne or carats per cubic metre.