

AUSTRALASIAN JOINT ORE RESERVES COMMITTEE (JORC)



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THE 2004 JORC CODE – COMPARISON WITH THE 1999 JORC CODE

After a three-year revision process, the ASX has incorporated the 2004 JORC Code into the ASX Listing Rules, from 17 December 2004 (see ASX Companies Update no 16/04) replacing the 1999 JORC Code as Appendix 5A. Appendix 5A can be accessed at <http://www.asx.com.au/ListingRules/appendices/App5a.doc>. The 2004 JORC Code is also available on the JORC web site www.jorc.org. This revision of the JORC Code follows a call for submission in December 2001 and the publication of several exposure drafts from late 2002.

Whilst there are differences between the 1999 Code and the 2004 Code, most of the changes are in the guidelines. The Code definitions, which are largely in accord with agreed international definitions, remain substantially unchanged. The two main changes in the 2004 Code are the requirement for a Competent Person to be responsible for the documentation supporting the reporting of Exploration Results, and the introduction of 'Recognised Overseas Professional Organisations' as overseas organisations to which Competent Persons may belong.

Other changes include:

- clarification of the reporting of exploration targets or potential;
- the rearrangement of the diamond reporting clauses;
- the introduction of guidelines for the reporting of Industrial Minerals;
- modification of the coal clauses and recognition of the new Coal Guidelines; and
- the introduction of a guideline encouraging the discussion of relative accuracy and confidence in resource/reserve estimates.

Other lesser changes to the Code include are listed and discussed briefly.

Differences in Mineral Resource and Ore Reserve definitions

The Code definitions for Mineral Resources, Ore Reserves and the resource/reserve categories remain unchanged with the exception of one minor modification to the definition of a Measured Resource, the removal of "or" after "and", correcting a previous typographical error, and the addition of the word "quality" in the definition of a Mineral Resource. These definitions are largely in accord with the "Denver Accord" international definitions.

Main Changes in the 2004 JORC Code

The two main changes in the 2004 Code are the requirement for a Competent Person to be responsible for the documentation relating to the reporting of Exploration Results, and the

incorporation into the Code of 'Recognised Overseas Professional Organisations' as overseas organisations to which Competent Persons may belong.

Involvement of a Competent Person in the Public Reporting of Exploration Results

Until now, the Code has not required the involvement of a Competent Person in the preparation of the documentation on which a company's Public Report of Exploration Results is based. Other overseas codes (the Reporting Code and the SAMREC Code) require the Competent Person, who prepared the documentation, on which the Public Report is based, to be named. In Canada, National Instrument NI 43-101 and the CIM Standards require the involvement and naming of a Qualified Person (effectively equivalent to a Competent Person). In Australia it has become increasingly common for companies reporting results of exploration to also report the name of the Competent Person who accepts responsibility for the preparation of the documentation on which the Public Report is based, and state that the report fairly reflects the work of the Competent Person. JORC believes it is now appropriate to formalise this reporting responsibility in the JORC Code.

Clause 8 of the Code, which defines the role of the Competent Person, has been amended to include Public Reports of Exploration Results, along with Mineral Resources and Ore Reserves. All these reports will be required to "be based on and fairly reflect the information and supporting documentation prepared by the Competent Person".

The term Exploration Results has been defined in Clause 16 as including "data and information generated by exploration programmes that may be of use to investors". The clause also states that "Exploration Results may or may not be part of a formal reporting of Mineral Resources or Ore Reserves", and additional guidance is included on when it is appropriate to report Exploration Results.

The definition of a Competent Person in Clause 10 has been amended slightly to cover this extension by including the words "If the Competent Person is preparing a report on Exploration Results, the relevant experience must be in exploration".

Inclusion of Recognised Overseas Professional Organisations

Since the first JORC Code in 1989, Competent Persons have had to belong to either The Australasian Institute of Mining and Metallurgy ("The AusIMM") or the Australian Institute of Geoscientists ("AIG"). These are the Australasian professional organisations that have adopted the JORC Code and that have codes of ethics to allow disciplining of Competent Persons for breaches of the JORC Code. With the globalisation of the mining industry, and the worldwide adoption of reporting standards based on the JORC Code, this requirement has been recognised as somewhat restrictive.

- During 2003, the ASX promulgated a list of Recognised Overseas Professional Organisations (ROPO's) to which Competent Persons may belong for the purpose of preparing reports on Exploration Results, Mineral Resources and Ore Reserves for submission to the ASX. The ROPO process applies in respect of reports prepared under the JORC Code. The published list, prepared on the advice of JORC and its parent organisations, is available on the ASX website, at <http://www.asx.com.au/about/pdf/JORC.pdf> and is updated periodically.

Each of these organisations has satisfied the following qualification criteria agreed between JORC, its parent organisations and the ASX:

- *is a self-regulatory organisation covering professionals in the mining and/or exploration industry;*
- *admits members primarily on the basis of their academic qualifications and experience;*
- *requires compliance with the professional standards of competence and ethics established by the organisation; and*
- *has disciplinary powers, including the power to suspend or expel a member.*

It will, of course, be a prerequisite that any members of ROPO's wishing to take advantage of this recognition must meet the requirement for relevant experience set out in the applicable clauses of the JORC Code.

This ROPO initiative will replace the current ASX listing rules provision for a "recognised mining professional", which was a strict and temporary solution to the globalisation issue. The ROPO initiative is complementary to a similar arrangement introduced in Canada in 2001. The Canadian Securities Administrators ("CSA") published a list of overseas professional organisations that it recognised as fulfilling the requirements for a "Professional Association" as defined in Canada's National Instrument NI 43-101, included in which were The AusIMM and the AIG.

Other Changes in the 2004 Code

Clarification of the reporting of exploration targets

In order for companies to clearly communicate the potential value of projects to investors and their advisors, there is a need for company boards to be able to discuss their exploration targets and possible outcomes of exploration programs. In the 1999 JORC Code there is an apparent contradiction between Clause 17 (1999 Code) which read as follows:

"A company may choose, or be required under stock exchange listing rules, to report exploration results. If a company reports exploration results in relation to mineralisation not classified as a Mineral Resource or an Ore Reserve, then estimates of tonnage and average grade must not be assigned to the mineralisation."

and its guideline, which read:

"Where descriptions of exploration targets or exploration potential are given in Public Reports, any tonnage/grade figures mentioned must be clearly order-of-magnitude and conceptual in nature and expressed so as not to misrepresent them as an estimate of Mineral Resources or Ore Reserves."

This section of the Code has been expanded and clarified in the 2004 Exposure Draft. The reporting of Exploration Results, which may not include estimates of tonnage and grade, is covered in Clauses 16 and 17. The reporting of exploration targets is covered in Clause 18 which permits the reporting of exploration target size and type with strict conditions, these being:

"Any such information relating to exploration targets must be expressed so that it cannot be misrepresented or misconstrued as an estimate of Mineral Resources or Ore Reserves. The terms Resource(s) or Reserve(s) must not be used in this context. Any statement referring to potential quantity and grade of the target must be expressed as ranges and must include (1) a detailed explanation of the basis for the statement, and (2) a proximate statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource on the property and that it is uncertain if further exploration will result in discovery of a Mineral Resource on the property."

The cautionary statement, (2) above, is similar to one contained in the Canadian National Instrument NI 43-101, and emphasises to investors and their advisors that such statements should not be confused with Mineral Resources or Ore Reserves.

Consolidation of information on reporting of Exploration Results

To report exploration results under the 1999 reporting conditions, it has been necessary to consult both the Code, including the guideline Table 1, and the ASX listing rules. Under the heading "Content of reports", the ASX listing rules 5.7 and 5.8, contain specific requirements for reporting of the results of mineral exploration, including the method of reporting assay results.

The 2004 JORC Code contains all this information instead of it being distributed between the Code and the ASX listing rules, as is currently the case.

The rearrangement of the diamond reporting clauses

A diamonds (and other gemstones) section was included in the 1996 JORC Code having been derived from a diamond appendix issued after the release of the 1992 JORC Code. During the preparation of the 1999 JORC Code, matters dealing with diamonds (and other gemstones) were integrated into the relevant clauses and guidelines of the Code. As a result there was an inconsistency in the treatment of diamonds and coal, which logically remained a separate section. Following a number of submissions from diamond specialists, and with recognition that a separate section on the reporting of Industrial Minerals was to be introduced into the 2004 JORC Code, the material relating specifically to diamonds has been aggregated into a group of clauses, Clauses 40 to 43. A complete review of the guideline material relating to diamonds in Table 1 has been undertaken, again with assistance from diamond specialists and with reference to the Canadian Guidelines for the Reporting of Diamond Exploration Results.

As with other commodities covered by specific sections of the Code, all the general sections of the Code are applicable.

Naming of the diamond valuer no longer required

In line with common practice and the position adopted by other overseas codes and the Canadian guidelines, the requirement for the valuer of diamonds to be named has been deleted from the Code and replaced with a requirement that "any reported valuation of a parcel of diamonds or gemstones be accompanied by a statement verifying the independence of the valuation. The valuation must be based on a report from a demonstrably reputable and qualified expert".

The introduction of guidelines for the reporting of Industrial Minerals

The JORC Code has always implicitly been applicable to the reporting of Industrial Minerals although it has not previously supplied specific guidance. JORC has conducted a process of industry consultation over several years, including approaches to The Institute of Quarrying Australia, and the presentation of a paper (Stephenson and Lee, 2003) at the AIG Industrial Minerals Conference in Brisbane during March 2003. At this conference a new section containing a single draft Industrial Minerals clause (Clause 44) and guideline was circulated, which has subsequently been included in the draft 2004 Code. The guidelines refer to the importance of matters not normally considered quite so material for other commodities, such as deleterious minerals or physical properties, likely product specifications, proximity to markets and general product marketability. Note that this clause and guideline does not

specifically refer to the extractive industries, however a dialogue on the appropriate manner to handle this industry sector has been established with Cement, Concrete & Aggregates Australia, the extractive industry association.

Modification of the coal clauses and recognition of the new Coal Guidelines

As a result of the revision of the Australian Coal Guidelines to coincide with the release of the 2004 JORC Code, a revised reference to these new guidelines, the “Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves, 2003 Edition” is included in the coal section of the Code. With the agreement of the Coal Guidelines Committee, the provision in the 1999 JORC Code permitting combined reporting of Proved and Probable Coal Reserves as Recoverable Reserves has been removed. Otherwise the coal specific sections of the Code remain unchanged in intent.

Guideline encouraging discussion of relative accuracy and confidence in estimates

The classification of Mineral Resources and Ore Reserves involves the Competent Person in expressing a view on the relative confidence that investors and their advisors should place on the resources or reserves. Increasingly it is common practice during mining project studies to attempt to quantify the confidence levels that are applicable to the resources or reserves being considered as the basis for the study.

During committee debate on the Code revision, there was considerable discussion on the manner in which any confidence levels, which may supplement those inherent in the classification, might be developed. This led to the realisation that it was inappropriate, at least at this point in time, to specify a single method of discussing confidence levels for resources and reserves. Instead, a guideline has been introduced which encourages, but does not require, the discussion of relative accuracy and confidence in resource/reserve estimates. It does not specify the manner in which that is done, leaving the selection of an appropriate method to the judgement of the Competent Person.

Naming of the Competent Person

The requirement for the Competent Person to be named, previously in section 5.12 of the ASX Listing Rules, has been moved to Clause 8 of the Code. The guidance previously included in Appendix 1 of the Code, which discussed the JORC Code and stock exchanges, has been moved to become a guideline to Clause 8.

Fair Representation

In Clause 9 of the 2004 revision a sentence has been added to the clause stating that the documentation must provide a “fair representation” of the material being reported. So there is now explicit recognition of the obligation for the Competent Person to provide balanced documentation and, in Clause 8, for the Public Report to fairly reflect that documentation.

What is a Public Report and Summary Reports

An updated guideline has been included with Clause 5 indicating more fully the nature and type of reports which are regarded for the purposes of the Code as Public Reports, the main additions being postings on company web sites and briefings for shareholders, stockbrokers and investment analysts.

The 2004 Code includes guidelines covering the issuing of concise reports or other summary reports. The guidelines to Clause 5 include advice that, for companies issuing concise annual reports or other summary reports, inclusion of all material information relating to Exploration

Results, Mineral Resources and Ore Reserves is recommended. In cases where summary information is presented, the guideline suggests that it should be clearly stated that it is a summary, and that a reference should be attached giving the location of the Code-compliant Public Reports or Public Reporting on which the summary is based.

Inclusion of Generic Terms Table

The new Appendix 1 in the 2004 JORC Code is a table of generic terms, modelled on a similar table in the Reporting Code. In the Code certain words are used in a general sense when particular commodity groups within the industry might attach a more specific meaning to them. In order to avoid unnecessary duplication, a non-exclusive list of generic terms has been prepared, together with other terms that may be regarded as synonymous for the purposes of the Code.

Guideline on level of study required for the reporting of an Ore Reserve

There is a variation in the level of studies required for the reporting of an Ore Reserve between a number of the overseas Codes. The United States Securities and Exchange Commission is also quite prescriptive on the acceptable inputs to a mandatory feasibility study for the declaration of Ore Reserves. The JORC Code has implicitly recognised that the level and timing of appropriate studies will vary according to circumstances. The definition of an Ore Reserve in the Code includes the following: "Appropriate assessments, which may include feasibility studies, have been carried out, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified."

The 2004 Code includes a guideline that expands on the intent of these sentences by stating that the studies will have determined a mine plan that is technically achievable and economically viable and from which the Ore Reserves can be derived. It further advises that it may not be necessary for these studies to be at the level of a final feasibility study.

In this matter, as in other areas, the JORC Code allows the decision as to what is an appropriate study to be made by the Competent Person.

Reference to the VALMIN Code And Valuations

There has been some confusion between certain terms used in the JORC Code and certain terms used and defined in the VALMIN Code. In order to clarify the situation, a guideline has been added to Clause 6 to emphasise that the terms 'technical and economic studies' and 'feasibility studies' in the JORC Code are not intended as references to "Technical Assessments" or "Valuations" as they are specifically defined in the VALMIN Code.

Definition of "Modifying Factors" added

For clarity a definition of the term modifying factors has been added in Clause 11 as follows: "The term 'Modifying Factors' is defined to include mining, metallurgical, economic, marketing, legal, environmental, social and governmental considerations".

Additions to guideline Table 1

Several additional topics have been included in Table 1 in the 2004 Exposure draft:

- Orientation of data in relation to geological structure, in the sampling section,
- Dimensions and moisture in the Mineral Resource section,

- Study status in the Ore Reserves section.

References:

Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves, 2003 Edition. Prepared by the Coalfields Geology Council of New South Wales and the Queensland Mining Council, 2003.

Australian Stock Exchange, Companies Update 6 December 2004, Update no 16/04.

Australian Stock Exchange, Appendix 5a Listing Rules.

Institution of Mining and Metallurgy Working Group on Resources and Reserves in conjunction with the European Federation of Geologists and The Institute of Geologists of Ireland. Code for Reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves (the Reporting Code) October 2001.

Joint Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia, 1999. Australasian Code for Reporting of Mineral Resources and Ore Reserves.

National Instrument NI 43 – 101 Standards of Disclosure for Mineral Projects, 02/01/2001.

South African Mineral Resource Committee (SAMREC) Under the Auspices of The South African Institute of Mining and Metallurgy. South African Code for Reporting of Mineral Resources and Mineral Reserves (the SAMREC Code), March 2000.

Stephenson, P R, and Lee, G, 2003. The Application of the JORC Code to the Public Reporting of Industrial Minerals, *Proceedings of the AIG Industrial Minerals Conference*, pp 61-64 (The Australian Institute of Geoscientists, Brisbane, March 2003).

The CIM Standing Committee On Reserve Definitions Adopted by CIM Council. CIM Standards on Mineral Resources and Reserves Definitions and Guidelines, August 2000.

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