

THE 1999 JORC CODE AND THE MINING PROFESSIONAL

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Introduction

By now, all members of The AusIMM should be aware that a revised and improved edition of the JORC Code was released during 1999 (a copy was included in the June 1999 edition of The AusIMM Bulletin). The new Code took effect on the 1st of September 1999 when it was appended in full to an updated edition of the ASX listing rules released on that date. A description of the 1999 Code and the major differences between the 1996 and 1999 editions appeared on pages 32 and 33 of the June 1999 AusIMM Bulletin.

This article examines the Code and ASX listing rules from the perspective of the mining professional. It is a condensed and modified version of a paper prepared for the 4th International Mining Geologists Conference, to be held in Coolumb, Queensland, in May 2000.

For those mining professionals involved in Resource/Reserve estimation, the role and importance of the JORC Code is **fundamental** to their activities. It is a key regulatory standard, through its incorporation into stock exchange listing rules, and it therefore has legal ramifications. The Corporations Law requires a listed company to comply with the ASX listing rules, thereby indirectly giving these rules and the JORC Code the force of law. The JORC Code is also the mining industry's accepted standard in this field, having been adopted as a Code by The AusIMM and AIG and accepted as a contribution to best practice by other key organisations. It is therefore of vital importance to mining professionals that they are thoroughly familiar with its content and implications.

If AusIMM members involved in these fields have not already read the 1999 JORC Code, they are urged to do so. It takes less than an hour to read the document from front to back, a worthwhile investment of time given the ten person-years that went into the latest revision, and its importance to the industry and to professionals practising in the industry.

The main aspects of the 1999 JORC Code relevant to mining professionals are as follows:

- it establishes minimum standards for the public reporting of Mineral Resources and Ore Reserves which are binding on members of The AusIMM and AIG and on companies listed on the ASX and NZSE;
- it establishes a framework for the classification of Resources and Reserves;
- it requires that public reports are based on documentation prepared by a Competent Person, and defines the qualifications required for a Competent Person;
- it empowers Competent Persons to influence the content of public reports based on their documentation by requiring companies to obtain their written approval prior to releasing such reports;
- if followed with diligence and honesty, it provides a measure of due diligence protection to the Competent Person and company in the event of litigation arising from such public reports (a point often not appreciated);

- it provides a comprehensive check list and guidance notes to assist the Competent Person in preparing and reporting exploration results and Resource/Reserve estimates.

In short, the JORC Code is a mixture of minimum standards, mandatory provisions, empowerment, protection and guidance. And all in 16 pages!

Minimum standards for public reporting

The whole of the Code is the minimum standard for public reporting of exploration results, Mineral Resources and Ore Reserves in Australasia. To the extent that a mining professional's activities result in, or affect, a public report on these matters, it is therefore essential that he or she is thoroughly familiar with the Code and with the relevant ASX or NZSE listing rules. Modified extracts from the current (September 1999) ASX listing rules which relate specifically to mining and exploration activities are attached as Appendix 1.

Company Directors, not Competent Persons, take responsibility for public releases of information. However, it may be necessary under ASX listing rules and Clause 8 of the JORC Code for listed companies to obtain the approval of Competent Persons in respect of public releases based on their Resource/Reserve estimates (discussed later). Competent Persons should, therefore, be aware of those specific requirements of the Code covering such public releases.

In addition, ASX listing rules require the Competent Person(s), on whose work the public report of Mineral Resources or Ore Reserves is based, to be named in the report. The report or attached statement must say that the person consents to the inclusion in the report of the matters based on their information in the form and context in which it appears, and must include the name of the person's firm or employer if that person is not a full-time employee of the reporting entity.

Framework for classification of Mineral Resources and Ore Reserves

Figure 1 of the Code depicts graphically the terms and categories used in the Code and the inter-relationship between these categories. It is important to appreciate that a Mineral Resource is not *"an inventory of all mineralisation drilled or sampled, regardless of cut-off grade, likely mining dimensions, location or continuity"*, to quote from the guideline to Clause 20. It is a *"realistic inventory of mineralisation which, under assumed and justifiable technical and economic conditions, might, in whole or in part, become economically extractable"*. The reason for applying preliminary economic criteria at the Resource stage is that the JORC Code is primarily a document which specifies standards for reporting to the public. The public, when presented with an estimate of tonnes and grade, must have confidence that the figures represent material which has either been shown to be economically extractable (Ore Reserves) or which may reasonably be expected to become economically extractable (Mineral Resources). While a company may, for its own internal purposes, prepare estimates based on cut-off grades or minimum mining dimensions below any likely to apply in practice, the public release of such estimates could be misleading in terms of potential economic viability.

Prior to a company acquiring sufficient data on a deposit, or having sufficient confidence in geological and/or grade continuity to classify any tonnage/grade estimates as at least Inferred Resources, information may only be publicly reported under "exploration results" (Clauses 17 to 19). At this stage, reporting of tonnage/grade estimates are prohibited, although this does not restrict

a company from providing indications of its exploration targets or exploration potential. However, any tonnage/grade figures mentioned in this context 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 (Clause 17).

Requirement that public reports are based on documentation prepared by a Competent Person

The concept of the Competent Person has been a core principle of JORC documents since 1972. The requirement for professional experience and competence in Resource/Reserve estimation, combined with accountability and a clear separation of responsibilities between professionals and company directors, gives the Code the flexibility to be applicable to a wide range of commodities and situations without the need to become unreasonably prescriptive.

The reasoning behind the Competent Person concept is that the public must have confidence that tonnage/grade estimates presented to them have been professionally compiled and represent mineralisation that either has been shown, or has a reasonable prospect of being shown, to be economically exploitable. Directors take responsibility for any such public statements, but, as most mining professionals would know, Resource/Reserve estimation requires a combination of knowledge, experience, science and art. Hence the requirement for the involvement of Competent Persons and for the Competent Person to have *“a minimum of five years experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which that person is undertaking”* (Clause 10).

One of the improvements made in the 1999 revision of the Code was to amend the definition of a Competent Person (Clause 10) to refer to Ore Reserves as well as to Mineral Resources. In addition, the guidelines to Clause 10 state that Ore Reserve estimation is almost always a team effort, with mining engineers usually occupying the pivotal role. This is an important clarification for geologists, as it has been common practice in the past (and perhaps still is) for geologists to be expected to sign off Ore Reserve estimates as well as Mineral Resource estimates, even though the conversion from Resources to Reserves involves mainly mining-related decisions. Given the serious responsibilities attached to acting as Competent Persons, geologists should be careful to ensure that they have the required qualifications and experience to accept liability for Ore Reserves estimates. If in doubt, they should decline to sign and should encourage those with the requisite experience, usually mining engineers, to accept responsibility.

The Corporations Law requires a listed company to comply with the ASX listing rules (which incorporate the JORC Code), and failure to comply can have legal consequences. Any internal company reports which support public reports may become part of court evidence in the event of litigation. It therefore behoves mining professionals preparing internal Resource/Reserve reports to ensure that such documentation is prepared to the highest standards. It can be an unnerving experience for a professional to have to defend his or her actions in the witness box, and this experience can be extremely demoralising if the work they are having to defend is sub-standard or sloppy. Regardless of the outcome of the litigation, any such public questioning of a Competent Person's competence or professionalism can have damaging consequences for that person's reputation and employability.

In any event, since a mining company's Mineral Resources and Ore Reserves are usually its fundamental asset, it should simply be standard practice that internal documentation is prepared to high standards with a full audit trail.

Competent Person accountability

The Code gives Competent Persons freedom to use their experience to decide appropriate estimation and classification approaches, and provides extensive guidance. This system is likely to be effective only if the Competent Persons can be made to account for their actions. In Australasia, obligatory membership of either The AusIMM or AIG provides the mechanism by which Competent Persons can be brought to account, since both organisations are national professional bodies which have effective and enforced codes of ethics, and which have adopted the JORC Code.

Overseas, various national Ore Reserve committees have introduced, or are looking at introducing, similar accountability provisions for qualified professionals. Although the means of enforcing this accountability may vary from country to country due to different regulatory and professional regimes, the principle is accepted as fundamental to effective reporting codes. International negotiations in the challenging area of reciprocal recognition of Competent Persons across international boundaries have been underway for some time, and encouraging progress is being made. The introduction of the "recognised mining professional" by the ASX in its 1999 listing rules will assist some companies with overseas deposits to report more easily in Australia, while maintaining the strict qualification and ethical requirements which apply to Competent Persons.

The rights and responsibilities of Competent Persons to influence the content of public reports based on their documentation

Rule 5.13 of the 1999 ASX listing rules requires a reporting company to obtain the written approval of the Competent Person to the release of a public report which includes information based on the Competent Person's work. Prior to 1999, this was required only if the Competent Person was not a company employee. Clause 8 of the 1999 JORC Code reflects this listing rule provision.

This change is a significant strengthening of Competent Persons' rights. They are now **empowered** to materially influence public reports based on documentation prepared or supervised by them, and to ensure that such public reports do not misrepresent their work. Although the onus is on the company to seek the Competent Person's written approval, mining professionals who act as Competent Persons should ensure that their companies are aware of this listing rule provision and should exercise their right to review public reports based on their work.

The role of the JORC Code in providing due diligence protection

It is often not appreciated that the JORC Code is an invaluable tool for a due diligence defence, as is the VALMIN Code with respect to the assessment and valuation of mining and exploration properties. The JORC Code represents industry best practice in Australasia in the field of public reporting of exploration results, Mineral Resources and Ore Reserves. If professionals/Competent Persons involved in these fields diligently and honestly comply with the JORC Code and ASX (or NZSE) listing rules to the best of their ability when preparing documentation which will form the basis of a public report, they will have provided themselves with a strong due diligence defence in the unfortunate event that litigation arises or is threatened as a result of the public report.

The JORC Code as a guide to good practice

Although the JORC Code does not constrain Competent Persons in terms of the technical procedures and practices involved in the preparation of Mineral Resource and Ore Reserve estimates, it is not silent on this issue. Throughout the Code, but particularly in Table 1, extensive guidance is provided on matters which should be taken into account in the reporting of exploration results, Mineral Resources and Ore Reserves, and in the estimation of Resources and Reserves.

Table 1 in the 1999 Code is a major expansion of the same table in previous versions of the Code. It provides an invaluable list of criteria for the mining professional and others involved in the relevant fields to use when preparing and reporting exploration results, Mineral Resources and Ore Reserves.

All definitions and key clauses in the Code have accompanying guidance notes to assist in their interpretation. These are important and should be read by all those involved in Resource/Reserve estimation.

CONCLUSION

The importance of the JORC Code for all mining professionals, but particularly for professionals involved in Mineral Resource and/or Ore Reserve estimation, cannot be overstated. It is a document which sets out minimum standards to be followed in the public reporting of exploration results, Mineral Resources and Ore Reserves in Australasia, and which is being increasingly used as a template for similar reporting regimes in other countries. AusIMM members involved in these fields are urged to read the 1999 Code (all of it, not merely selected clauses) and relevant stock exchange listing rules carefully, and to ensure that they, their colleagues and companies are fully aware of, and comply with, all requirements.

The JORC Code is not simply a list of mandatory provisions. It also provides extensive guidance and may assist in providing a measure of due diligence protection if followed with care and honesty. Thus, apart from it being necessary to comply with the Code from a regulatory and ethical standpoint, a thorough familiarity with the Code will help mining professionals to improve their technical proficiency and to enhance their professional credibility.

APPENDIX 1

MODIFIED EXTRACTS FROM AUSTRALIAN STOCK EXCHANGE LISTING RULES AS PUBLISHED 1st SEPTEMBER 1999¹

Chapter 5

Additional reporting on mining and exploration activities

Requirements for reports

Reports to comply with Appendix 5A

5.6 A report prepared by a +mining entity, or an entity which has or whose +child entity has an interest in a +mining tenement, must be prepared in accordance with Appendix 5A if the report includes a statement relating to any of the following.

- Exploration results.
- +Mineral resources or +ore reserves.

5.6.1 However, an entity need not comply with Appendix 5A to the extent that if rule 5.10 allows a report to be based on information compiled by a +recognised mining professional, the report need not be prepared by or under the direction of and signed by a +competent person. The requirements of Appendix 5A applying to a +competent person apply to the +recognised mining professional.

Content of reports

5.7 During the exploration stage, a report in the field of mineral exploration must include the following information.

- The type and method of sampling.
- The distribution, dimensions, assay results and relative location of all relevant samples.

Cross reference: paragraph 15 of Appendix 5A.

- Any other relevant basic data.

5.7.1 If true dimensions (particularly width of mineralisation) are not stated in the report, an appropriate qualification must be included.

¹ Notes by P R Stephenson. Appendix 5A is the 1999 JORC Code. Listing rules relating specifically to oil and gas have not been included in these extracts, nor have all accompanying notes. Interested readers are urged to obtain a full copy of the 1999 ASX listing rules and should not rely on the accuracy of these extracts. Note that the superscript “+” denotes a term defined in Chapter 19 of the listing rules.

5.8 Assay results must be reported using one of the following methods. The method used must be the most suitable according to the entity's geologist or mining engineer and must be stated.

Method 1 All assay results, with sample widths or size in the case of bulk samples.

Method 2 The weighted average grade of the mineralised zone, indicating clearly how the grade was calculated. When high values are recorded, they must be given in context, with full supporting data.

Competent person or recognised mining professional to compile information about minerals

5.10 A report relating to an entity's +mineral resources or +ore reserves, must be based on information compiled by a +competent person. However, if the resource or reserve is not located in Australia, the report may be based on information compiled by a +recognised mining professional.

5.10.1 The report must either state that it is based on the information, or be accompanied by a statement to that effect signed in the same manner as the report.

5.10.2 If the report is based on information compiled by a +recognised mining professional, it must include each of the following statements.

(a) A statement by the +recognised mining professional that the report complies with Appendix 5A (except paragraph 9).

(b) A statement by the entity that the person is a +recognised mining professional and the basis on which each of the requirements for a +recognised mining professional are met.

Person compiling information to be identified

5.12 If the person referred to in rules 5.10 and 5.11 who compiles the information is a full-time employee of the entity, the report or attached statement must say so and name the person.

5.13 The person referred to in rules 5.10 and 5.11 who compiles the information must consent in writing to the inclusion in the report of the matters based on the information in the form and context in which it appears. The report or attached statement must state that the person consents, contain the name of the person and, if the person is not a full-time employee of the entity, the name of the person's firm or company.

Extract from Chapter 19 of 1999 ASX listing rules

Interpretation and definitions

Definition of a “recognised mining professional”

recognised mining professional

a person who has each of the following.

- a degree or an overseas equivalent in geology, mining engineering or a related discipline relevant to the estimation of the type of mineral resource or ore reserve referred to in the report.
- at least five years experience in the estimation, assessment and evaluation of the type of mineral resource or ore reserve referred to in the report.
- membership of a recognised overseas professional body that has agreed to sanction the person if the person does not comply with Appendix 5A.