

Towards 2000 – The AusIMM Mineral Resources and Ore Reserves Estimation Seminars and the JORC Reporting Code

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BACKGROUND

The Australasian Institute of Mining and Metallurgy (The AusIMM) has been one of the principal organisations behind the JORC Code, which has been adopted by the Australian Stock Exchange and the Australian Securities Commission as the standard for reporting mineral resources and ore reserves. This is now starting to be recognised as the international standard, with the UK, the USA and Canada all examining some form of the JORC Code for their resource and reserve reporting guidelines. The AusIMM has now further taken the initiative to produce a major volume covering *all aspects of world's best practice in Mineral Resource and Ore Reserves estimation*. This prestigious volume will be published in the year 2000.

BRANCH SEMINARS

As a lead-up to the production of the volume, the AusIMM is holding a number of seminars around Australia, each focusing on a different aspect of the entire resource and reserve estimation process. This will be organised by the individual area Branches of the AusIMM. The first such seminar, 'The Resource Database Towards 2000', organised by the Illawarra Branch, was held in Wollongong on 16 May 1997. The Melbourne Branch, hosted a seminar on non-geological reserve inputs and risk, on 9 September. Today's seminar 'The National Conference on Ironmaking Resources and Reserves Estimation', is the third in the series. As the title suggests, the seminar covers all aspects of plant practice and modern engineering techniques as they impact on iron-making resources and reserves.

Other seminars planned are from the Kalgoorlie Branch, to be held on 21 October 1997, on 'Gold and Nickel Ore Reserve Estimation Practice'; the Northwest Queensland Branch, which will focus on sampling practices; the Southern Queensland Branch, which will cover metallurgical testing and marketing aspects; the Sydney Branch, who are organising a one-day seminar on reserves and grade control in metalliferous mining project development (to be held at the end of the MINDEV conference, on 26 November), the Western Tasmanian Branch, which will organise a number of papers through the International Mine Geology Conference, to be held in Launceston from the 10 – 14 November; and the Gippsland Branch who are planning a seminar on reserve estimation in thick seam, low rank coal in early-December 1997.

THE SPECTRUM SERIES

The proceedings from each of the above seminars, including discussion and questions, will be published through The AusIMM's Spectrum Series. This is a series of mid-cost publications covering topics which are not monographs or conference proceedings.

THE TOWARDS 2000 VOLUME

The best of the papers from each of the Spectrum Series seminar proceedings, together with other contributions from world-renowned experts on various topics, will be selected. These will

be published in the Towards 2000 Resource and Reserve Estimation Monograph, which will uphold the high quality and landmark nature of the AusIMM's monograph series. This will feature chapters on the key aspects of resource and reserve estimation, including exploration data collection, geological interpretation, the resource database, resource estimation, metallurgical testing, reserve estimation, risk assessment, reporting, and bankable feasibility studies. The AusIMM hopes that this monograph will be viewed around the world as a manual of best practice, and will enhance the status of The AusIMM and the Australian minerals industry as world leaders. It is hoped that it will be adopted as a supplement to the JORC Code.

JORC INTERFACE WITH THE AUSTRALIAN INVESTMENT REGULATORY AUTHORITIES

The main investment regulatory authorities in Australia are the Australian Securities Commission (ASC), and the Australian Stock Exchange (ASX). Their respective areas of responsibility and contact with respect to the JORC Code have some overlap but in essence, the ASX has the most direct 'working face' involvement with it.

The ASX has a clear preference for the integrity of the financial markets for which it is responsible to be based on the premise of co-operative self-regulation, rather than by governmental legislation or regulation.

In pursuance of this policy from 1 July 1989 the ASX annexed the JORC Code and Guidelines (and subsequently the Diamond Appendix) as part of its Listing Rules – Appendix 5. The Code and Guidelines are the only inclusion of an externally sourced document in the ASX Listing Rules. Furthermore, Australia and New Zealand are the first countries to have their mineral resources and reserves reporting standards, as set by their mining institute, as an integral inclusion in their Stock Exchange Listing Rules.

In effect the Code, sponsored by The AusIMM, the Australian Institute of Geoscientists (AIG) and the Minerals Council of Australia (MCA), sets the standards for public reporting on mineral resources, reserves and exploration results, while the ASX is the vehicle under which such reports are monitored when submitted by stock exchange listed companies under Appendix 5.

NON-COMPLIANCE REPORTING

Instances where reports issued to the ASX do not comply with the JORC Code and the ASX Listing Rules include the following:

Lack of categorisation

The Code strongly discourages statements, which provide only total figures for Mineral Resources or Ore Reserves. In public reports, mineral resource estimates should be allocated to one or more of the defined categories of Measured, Indicated and Inferred and the tonnages/grades allocated should be stated. Likewise, ore reserves estimates of tonnage and grade should be allocated to Proved and Probable categories.

Use of incorrect terminology

Terms such as ‘Probable Resources’, ‘Geological Resources’, ‘*In Situ* Reserves’, ‘Mining Reserves’, ‘Possible Reserves’ and so on have no meaning under the Code and should not be used in public reports.

Reporting of only contained metal without also reporting tonnage’s and grade

The Guidelines state that such reporting ‘deprives the public of vital information’ and ‘is not in accordance with the Code’. It is very relevant to the potential investor to know whether a quoted quantity of contained metal is the product of a large tonnage of low-grade material or of a small tonnage of high-grade material. The practice of quoting contained metal without also quoting grades can, particularly for Mineral Resources, result in a potential investor inferring a value for the deposit which is totally at variance with its true realisable value.

A variation of this, though far from common, is for reports for polymetallic deposits to quote equivalent metal values without showing clearly the full data and assumptions (grades for individual metals and assumed metal prices) employed in the estimation/conversion to a single equivalent grade.

Lack of explanation as to the relationship between reported Mineral Resources and Ore Reserves

Reports often do not make it clear whether stated Mineral Resources are inclusive of, or additional to stated Ore Reserves. The relationship is important because readers of the report might otherwise add together tonnage/grade figures, which are not intended to be added together and so reach incorrect conclusions. The Guidelines provide recommended forms of clarifying statements.

Lack of reference, where necessary, to assessment criteria (Table 1 of the Code)

Any report of ‘exploration results’ must include details which bear on sampling of the mineralisation such as drilling/sampling density, drilling/sampling methodology, sample and assay quality and so on. Reports of Mineral Resources and/or Ore Reserves should state the nature of data on which the estimates are based and make mention of any assessment criteria for which inadequate or only poor quality data is available.

Inadequate and/or incorrect statements regarding the Competent Person

The ASX Listing Rules require that a statement be included in those public reports which contain information on Mineral Resources and Ore Reserves to the effect that the requirements of the Code with respect to the Competent Person have been met. The Guidelines (page 19) provide a recommended form of statement, which covers the requirement, and it (or minor variations of it) should be used in all relevant reports. In addition to the ASX Listing Rules effective 1 July 1995, the name of the Competent Person must be given.

Statements to the effect that Resources and/or Reserves figures have been ‘estimated’ (or even worse ‘calculated’) in accordance with the Code

The Code does not regulate estimation methodology. It establishes a system of Resources/Reserves classification and sets minimum standards for public reporting.

Lack of rounding of Resources/Reserves figures

If tonnage and grade are not rounded so as to reflect the uncertainty surrounding their estimation, then an unrealistic degree of accuracy is implied, and this could be potentially misleading to readers of the report.

While a JORC sub-committee assists the ASX, when requested, in monitoring compliance with the Code, over the last two years or so the ASX has broadened its skills and has become more familiar with the detailed requirements of Appendix 5. The ASX on occasions uses ‘please explain’ notices to companies whose reports apparently do not comply with the Code without calling on the advice of the JORC sub-committee. For more complex reporting situations, the ASX may use the services of an independent consultant for direct advice.

It should also be noted that the Listing Rules regarding continuous disclosure empowers the ASX to put questions to companies which may include matters which are not specifically covered in the code, eg details of exploration results.

WORKABILITY OF THE JORC CODE

The reasons for the workability of the JORC Code are varied but include the following:

- It is a co-operative self-regulatory approach between the stock exchange-listed companies, The AusIMM, AIG, MCA and the regulatory authorities ASC and ASX.
- The Code itself is user-friendly and in general meets the needs and expectations of the mining companies both large and small, mining industry consultants, company personnel and very importantly the readers of resources/reserves/exploration reports be they the proverbial informed layman investor, sophisticated institutional equity investors, or debt financiers.
- Recognition of the usefulness of the Code did not happen overnight and education of both compilers and users of reports has been an objective of JORC. Better the carrot than the stick!
- The incidence of peer group pressure amongst Competent Persons has encouraged their reports to comply with both the spirit and letter of the Code.
- Similarly, corporate competition amongst listed companies to catch the eye of the investor and to ensure the investor is fully informed has been a force making for better reporting. Since the introduction of the Code in 1989, many companies have taken pride in supplying resources/reserves information which is exemplary and which exceeds the Code’s minimum requirement by a large margin.
- The membership of the JORC Committee has been one of its strengths. Initially JORC comprised representatives from The AusIMM and the Australian Mining Industry Council (now Minerals Council of Australia). In recent years, six organisations have been represented on JORC – The AusIMM, MCA, AIG, Mineral Industry Consultants Association (MICA), ASX and the Securities Institute of Australia (SIA).
- No code can cover all conditions and times and the Code specifically states it will be reviewed from time to time as appropriate, to reflect changes in circumstances. Some changes have already been made since its introduction in 1989 and a review of the code is currently in progress.

THE INTERNATIONAL RESOURCES/RESERVES DEFINITIONS INITIATIVE

The Australasian Code has had a significant influence on international thinking on reporting of mineral resources and reserves. There has been considerable progress towards standard

international definitions for mineral resources and reserves, with the hope, indeed expectation, that such a standard will be achieved within the next few years.

Following recognition by other countries of the success of the JORC Code, there has been international recognition of Australia's role in the initiative by the council of Mining and Metallurgical Institutions (CMMI) to develop a universal set of reporting standards for resources and reserves which would be adopted or acceptable in the major mining countries including Australia, South Africa, United Kingdom, United States of America and Canada.

Also, the United Nations – Economic Commission for Europe (UN-ECE) sponsored group, covering largely Eastern Europe, including the former Soviet Block, is moving in a parallel fashion to the CMMI and has established a framework for

reporting Reserves and Resources from a wide disparity of reporting standards operating in the individual countries within that grouping.

Recognition of the Code's effectiveness has influenced a significant number of other mining countries to re-assess their reporting standards. Now, for the first time, a set of standard international definitions for reporting of mineral resources and reserves is a realistic possibility.

The JORC Code has become the model for developing international Resources and Reserves reporting standards.

Guidelines will have to be produced by each country or its mining institute to cover its specific conditions, laws and needs. This is because regional, legal, cultural, operating, economic, and regulatory authority conditions need to be recognised on an individual country basis.