RESERVES OR RESOURCES?

REPORTING STANDARDS NEEDED

Reliable information on mineral resources and ore reserves is essential to the financial community's decisions on investment and fund-raising, says a Securities Institute submission on new standards.

The joint committee of the Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Mining Industry Council (AMIC) has advanced a discussion draft on the reporting of identified mineral resources and ore reserves and has invited comment from interested parties. The committee will then recommend reporting standards to be incorporated in stock exchange listing requirements.

Most comment on the proposed standards has been contributed by those charged with the responsibility of preparing the reports — the mining engineers and geologists. The views of the investment community, the "users" of the information, have not been so well expressed.

The Securities Institute of Australia recognised this shortcoming and invited a submission to put a view from the investment community. The submission was prepared by Chris Buckle of Ord Minnett, Peter Chapman of Potts West Trumbull, Vince Pisani of BT Australia, Ray Soper of Lachlan Resources NL and Brian Warner of Capel Court Powell.

The group did not attempt to seek a consensus from the investment community. However, the group comprises experienced investment professionals and can be regarded as representative of the "users" of the information.

The importance of improved reporting standards is obvious. The financial community has a need for reliable and consistent reporting of mineral resource and ore reserve information to facilitate sound investment decision-making and to ensure that available funds are channelled to those activities most deserving of support. Mineral deposits are the most important assets of mining and exploration companies; often dramatically exceeding the value of financial and fixed assets, the basis for conventional financial reports.

The financial community relies in large measure on assessments of the value of these resource assets in deciding whether to support a new capital raising, a rights issue or an on-market share purchase. Analysts value resource assets by consideration of the earnings or cash flows expected to arise from a deposit. Such analyses cannot be made unless meaningful information is provided.

Detailed information is readily available to two of the three main sources of funds to a company. Directors making decisions about the investment of retained earnings naturally have access to full information. Likewise, lenders refuse to make debt funds available unless full information is provided. Why shouldn't the providers of high-risk equity funds, the investment institutions and the public, be given access to information necessary for them to make informed decisions?

This edited version of the Securities Institute submission to the AusIMM/AMIC joint committee on the reporting of identified mineral resources and ore reserves was prepared by Ray Soper of Lachlan Resources NL.

A MATTER OF MEANING WHAT THEY SAY

by NORMAN MISKELLY

The Australasian Institute of Mining and Metallurgy (AIMM)/Australian Mining Industry Council (AMIC) Joint Committee on Ore Reserves was established in 1971 to consider and make recommendations on stock exchange listing requirements appropriate to mining companies reporting on ore reserves.

This was a major advance in formulating guidelines and recommendations for reporting of ore reserves. The guidelines have been progressively clarified, tightened up and enlarged since 1971.

The joint committee in 1983 did not attempt to define or classify mineral resources (as distinct from reserves), but the present committee, of which I am the Australian stock exchange representative, believes it is now appropriate to link the reporting of mineral resources with the reporting of ore reserves, as shown in the accompanying diagram.

The committee has sought to define a mineral resource and then outline the process by which it can be upgraded to an ore reserve through analysis of technical and economic criteria, including mineability, metallurgy and marketability.

The committee also believes that if the investment community recognises that a mineral resources is the precursor of an ore reserve, then it will find it easier to distinguish mineral resource assessments based on geological and geophysical data from ore reserve assessments based on analysis of detailed technical and economic data going beyond basic resource data.

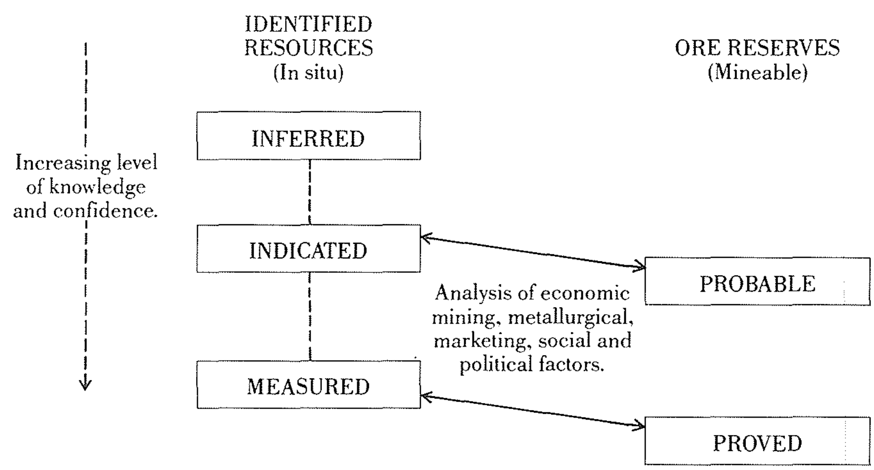
The committee believes that it has provided guidelines that will promote standardised nomenclature in company reporting. The guidelines have followed the committee's efforts to:

- define and distinguish mineral resources and ore reserves;
- subdivide indentified mineral resources into categories of "inferred", "indicated" and "measured";
- subdivide ore reserves into categories of "probable" and "proved";
- remove the alternatives of reporting "in situ" reserves and "possible ore".

The term "ore reserves" will be used only if a study of technical and economic criteria has been carried out.

It is expected that, following submissions from interested parties including the Securities Institute of Australia, revised recommendations, pehaps upgraded to a code, will be promulgated in the coming months. □

REPORTING TERMINOLOGY



Standardised reporting nomenclature is essential to the provision of useful information. However, in the absence of enforceable standards, a great variety of nomenclature is being used.

The joint committee of the AusIMM and AMIC has been working on the issue of reporting standards since 1971 but despite the publication of recommendations (which have been varied from time to time) enforceable requirements have yet to be imposed.

The main problem arising from the lack of enforceable reporting requirements is that many companies exploit the opportunity to convey overly-optimistic impressions of their resource assets. This may be done by simply stating that a particular deposit contains "one million tonnes of ore grading 4 g/t Au" without any indication of the status of the resource or whether it can be exploited profitably.

Companies reporting in such a manner often do not provide the additional information which could allow reasoned assessment. Often there is no attempt to describe the deposit within the categories recommended by AusIMM even though the report is necessarily prepared by a member of that organisation.

The values attributable to a resource can vary in several ways. The degree of confidence in the stated reserve is a function of the nature of the deposit and the intensity of drilling. The value of the deposit is a function of the costs likely to be incurred in exploiting it and the metal values which can be recovered. These factors can vary widely depending on overburden ratio, mineralogy, location and other influences. The value of a deposit is also a function of the status of its development. A successful operating mine has proven itself in relation to major risk factors and is clearly worth much more than a newly discovered resource which has yet to prove itself.

The net result of these factors is that our ore deposit quoted at "one million tonnes grading 4 g/t Au" can support a valuation ranging from zero, if the ore is refractory or the deposit is not mineable because of its depth or disposition, to a very substantial number if all the variables are supportive of profitable operation. For example, if the deposit has substantial widths and tonnages per vertical metre, has a low overburden ratio, is fully oxidised and easily treated, and is close to established infrastructure and services, it could be worth $40 million or more.

The need for high standards of reporting varies depending on the status of the company.

A major diversified miner with several mining operations, a strong cash flow and established earnings performance is clearly in a different situation from a junior company with a single undeveloped deposit and low cash flow.

The major company has access to funds from cash flow and debt. Its need for equity can be met by reference to its earnings record, earnings multiples and dividend yields. From the company's point of view, and also that of the market, the provision of detailed information in standard form for any one deposit is relatively unimportant. The main significance of such information to the investment community is that it provides background which can be used as a basis against which to compare other operations.

On the other hand, the junior company is much more dependent than the major on equity funds. It cannot point to a diversified earnings base, and an established earnings and dividend record, to justify a raising. And because the potential value of a single mineral resource is likely to be much larger compared with the market capitalisation of the company the information provided about a new discovery is much more price-sensitive.

These factors lead to the conclusion that standardised reporting is of much greater importance for junior companies than for majors. However, majors are no doubt mindful that they have a responsibility to provide a lead in setting high standards of reporting and are aware that they may, from time to time, need to go to the equity markets to raise large amounts.

It is notable, as Norman Miskelly points out in his recent paper, that a much higher standard of reporting is evident in prospectuses, when the company is seeking the initial support of the investment community, than in annual reports, where the company may not have an immediate need for equity funds. Stock exchange and CAC requirements for prospectus raisings are, of course, much more stringent than for annual reports.

Terminology

Despite the efforts over the years of the joint committee to encourage companies to report in accordance with its recommendations, many companies do not use the standard terminology. There are many reasons for this, some legitimate, some not.

A long-established company may have good reason to maintain its traditional reporting format as appropriate for its mines. A junior company may not wish to report in accordance with the joint committee recommendation at an early stage following discovery of a new deposit, but feels it has an obligation to keep its shareholders informed. Such a company might argue that a term such as "in situ resource" conveys accurately to shareholders the status of discovery.

A wide range of terms are used to describe mineral deposits. J.H. Lord and R.J. Morrison in 1979 identified more than 45 terms and it is likely that many more exist.

The problem is compounded when the meaning ascribed to a term differs from one situation to another. For example, the term "proved" ore means one thing in an underground mine at Kalgoorlie and something quite different at the Kidston open-pit mine.

The proliferation of terms with varying degrees of merit provides opportunities for less scrupulous companies to report in a misleading fashion. This has been especially evident with the appearance of many small gold mining companies in recent years.

There has been resistance on the part of some companies, both large and small, to the provision of information about resource assets. The reasons given, while in some cases legitimate, do not stand up to critical evaluation. The following reasons have been advanced.

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Provision of detailed information will lead to a takeover bid: The interests of shareholders transcend those of management. Shareholders benefit most from an informed market, in which takeovers are more difficult to mount.

Disclosure of information could threaten the securing of similar opportunities on adjacent ground: Usually the discovering company has important advantages over competitors, including lead time. In any case, failure to report can lead to the unauthorised release of information leading to insider trading.

Disclosure may trigger new discoveries by competitors thus damaging the profitability of a development: The original discoverer has important strategic advantages which should be exploited to maximise the position.

Detailed disclosure involves too much work: This is hardly likely, since any professionally managed organisation will have completed all the necessary work in any case.

It is difficult to fit the data into the recommended categories: To the extent that this is true the problem can usually be overcome by the provision of additional information.

There are many dishonest reasons for not disclosing information. Of course, none of these is acceptable.

Assessment of recommended reserve and resource categories

The issues concerning resource assessment, although complex, are well understood throughout the mining and investment industries and the professional standards relating to the preparation of information are generally high. The problems lie in the public reporting of the information.

The standard nomenclature recommended by the AusIMM-AMIC joint committee has been developed after years of discussion and deliberation by the mining industry.

So far as they go, the recommendations of the joint committee are excellent. Of particular merit is the distinction between *mineral resources* and *ore reserves* which accurately reflects the important differences between these categories.

The recommended system of categories gives a coherent, logical and workable framework which can be used by industry professionals, provided there is sufficient reason to do so.

Better systems may emerge in time, but it is our view that the recommendations of the joint committee should be implemented as they now are so that progress is made towards acceptable reporting standards.

The recommendations could however be improved by requiring that further relevant information be disclosed, and by introducing enforcement mechanisms.

Detail of information required

Information about ore reserves and drill results should not necessarily be presented at a level which can be understood by a layman. Rather, the emphasis should be on making available information of a standard that would enable an experienced analyst to assess the likely worth of a resource to within tolerable limits, consistent with the stage of assessment of development and funding requirements.

A company cannot be expected to divulge all of the detailed information that it takes into account in arriving at its resource and reserve estimates. However, certain basic information must obviously be provided.

The concept of materiality is useful here. A company should, we believe, be required to disclose certain basic information which would materially influence the value attributed by an analyst to a resource or reserve estimate compared with what might normally be expected for such a resource.

This information can influence the ascribed value either positively or negatively. Positive factors could include an oxidised gold ore not requiring grinding to achieve good recoveries, or high by-product values. Negative factors could include a refractory sulphide gold ore, need for fine grinding to achieve high recoveries or high rate of oxidation for a base metal sulphide ore, and high rates of water inflow or difficult ground conditions in an underground mine.

Introduction of the concept of materiality places the onus on the individual or company preparing a resource or reserve estimate to disclose important facts concerning the deposit which could significantly influence the attributed value.

Additional information required

Drill Results: A newly discovered mineral deposit passes through three stages of assessment as it approaches a feasibility study. Initially the only information available about a deposit will be in the form of drill results. Next a resource estimate is made as sufficient information is gathered to allow measurement of the volume and density of potentially economic mineralisation. Finally, when mining and metallurgical studies have been completed and a deposit shown to be able to support an economic operation, the mineralisation can be placed in the reserves category.

The joint committee recommendations recognise the latter two stages but make no allowance for controlling the standards of drill-hole reporting, the first important stage.

Significant value begins to be added to a deposit when favourable drill results are reported. Many analysts make their own rough resource estimates from initial drill results, accepting the uncertainties involved in premature assessment.

Despite the existence of widely accepted professional standards, many companies choose to report drill results in misleading ways. One of the worst such infractions is the selective reporting of good results. It is clearly necessary that *all* relevant drill holes must be reported if any holes are to be reported at all.

If a company chooses to report drill results, and this is clearly valid until a resource estimate is published, then it has an obligation to report in a professional manner. Companies are encouraged to provide cross sections and plans to assist the financial community to assess the significance of the reports.

Resource estimates: Resource estimates should include relevant and important data such as hole spacings, deposit type and conformation, drilling and assay techniques, core recoveries, specific gravity etc. Material economic factors need to be disclosed.

Reserve estimates: Reserve estimates should include important data such as overburden ratios, mining recovery and dilution, metallurgical performance, metal prices used and expected costs. Material economic factors should also be disclosed.

Implementation of enforceable standards

Enforcement of recommended standards is vital to the investment community. The SIA has considered ways in which the new standards can be effectively implemented.

Standard report formats: There are strong arguments for the introduction of standardised report formats for the three main stages of minerals reporting — drill results, resource estimates, and ore reserve estimates.

Advantages arising from the use of standardised report formats include:

- Companies are required to use the recommended categories. Failure to do so is readily apparent.
- Reports lodged in standardised formats can be readily compiled, filed and compared.
- Forms should be kept relatively simple, relying on the materiality concept to ensure that, beyond sensible basic details, important information is revealed.
- Report forms should be signed by the responsible person preparing the report.

Source and application of reserves: It has been suggested that there is a case for the introduction of an annual reconciliation of ore reserves for operating mines, similar to the source and application of funds statement now widely used to explain cash movements.

In our view the case is strong and should be given serious consideration. Realistically, however, we recognise that it is likely to be some time before such measures are introduced.

Enforcement: The main reason reporting standards are less than adequate in practice is that conforming is essentially voluntary. It is clearly necessary, as a matter of urgency, to introduce an enforcement mechanism to ensure that reporting standards

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are adhered to.

A number of different groups or entities have a potential role in introducing enforceable standards.

The primary enforcement mechanism must continue to be imposed by the regulatory authorities — the NCSC, the various state CACs and the Australian Stock Exchange — through regulations and listing requirements. However, the processes of change through these organisations are invariably slow since complex issues and divergent interests need to be reconciled.

AusIMM and AMIC have played an important leadership role in providing a forum for the discussion of the issues. Ultimately the AusIMM and AMIC will profoundly influence the regulatory changes to be introduced by the NCSC and the stock exchanges. However, these organisations have limited power to *impose* effective sanctions. They can only *persuade* their members to comply.

The SIA and the Shareholders' Association each provide an articulate voice for shareholders. These organisations are now taking an interest in resource reporting standards and can play an important role.

Media organisations could play a useful role, but they are generally dependent on other organisations to take the lead and provide the appropriate framework.

The banks, as providers of loan funds, have a profound interest in improved reporting standards but generally already receive the information they require. Whether they will show an active interest in supporting the introduction of new standards is not known. The banks, could, if they chose, play an important role.

It is the corporate need to ensure access to equity funds that provides the most powerful incentive for companies to comply with reporting standards. It therefore follows that underwriters, brokers and investment institutions are well-positioned to exert informal pressure for companies to comply with reporting standards.

The institutions probably have the greatest influence. They usually provide the means by which underwriters can provide funds through sub-underwriting and investment support. Even one or two of the major institutions could exert a major influence through letting it be known to brokers, underwriters and company promoters that equity funds will not be made available unless the company complies with the reporting standards.

Provided that the AusIMM/AMIC joint committee can agree on the required reporting standards, it is clear that the investment institutions, perhaps co-ordinated through the SIA, can achieve voluntary compliance with reporting standards very quickly by those companies likely to need equity funds.

Once this informal lead is given and the reporting standards are actually used and shown to be practicable, it is likely that the NCSC, CAC and the ASE will find it easier to introduce the necessary regulations.

Annual awards: It is suggested that an annual listing of companies, releasing, say, the 10 best and the 10 worst reports, published in *The Australian* or *The Australian Financial Review*, would have a very powerful impact.

The awards would probably need to be dependent on a nomination system. Perhaps members of the SIA could be invited to send in nominations in each category.

This task would obviously be much easier with the use of a standardised report format.

Audit: When the importance of resource assets to most mining companies is taken into account, an argument can be mounted for an audit of resource assets similar to that now carried out annually in relation to financial assets.

Such a move would involve considerable cost and would be likely to meet with real opposition from the mining industry. However, the threat of the introduction of an audit system could be useful in encouraging companies to comply with the standards.

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Recommendations

The recommendations of the AusIMM/AMIC joint committee should be accepted as a first step towards the implementation of acceptable reporting standards, and incorporated in stock exchange listing requirements.

The proposed reporting standards can be improved by the following additions:

- Introducing a requirement that companies disclose key data used in reaching resource and reserve estimates.
- Introducing a requirement that companies disclose information that would materially affect the value likely to be attributed by an experienced analyst to a particular deposit as described in a report.
- Introducing standards for the proper reporting of drill-hole results.

Implementation of the standards can be accelerated by the following measures:

- Introduction of standardised report formats for each of three stages of resource reporting likely to be price sensitive: drill-hole reporting, mineral resource estimates, and ore reserve estimates.
- Requiring that each standard report of drill results, and resource or reserve estimates, be signed by a member of the AusIMM or other accredited individual.
- Publication by the SIA (or other interested party) of an annual list of companies exceeding required standards and another list of companies falling far short of the standards.
- Encouragement by the SIA of important investment institutions to advise brokers, underwriters and company promoters that equity funds will not be made available to a company unless its reporting conforms to the reporting standards.

If a rapid improvement in reporting standards is not achieved, consideration should be given to introducing proper accounting for resources and reserves as part of statutory accounts, and the auditing of resource and reserve reports. □