

The USMinval Code

Seventh working draft, September 2003

CODE FOR TECHNICAL ASSESSMENT AND/OR VALUATION OF MINERAL PROPERTIES FOR
INDEPENDENT EXPERT REPORTS (THE USMinval CODE)

Changes made between drafts 6 and 7:

- ◆ In December 2002, the ValMin Code was restructured to combine the Code (C#) paragraphs and the Guidelines (G#) paragraphs into a single more logically organized and compact document that begins with discussions of Materiality, Competence, and Independence. The Definitions section (D#) was retained, although some definitions have been moved into the Code and are indicated with the appropriate D#. Although reorganized, the text of the provisions was not substantially altered. This 7th draft of the USMinval reflects a similar reorganization. The old paragraph numbers have been retained for reference to past drafts. Where paragraph numbers, C#s, do not have ValMin equivalents, they are not numbered although the C#s remain in parentheses for reference. The USMinval will be renumbered in the next draft.
- ◆ The term "Mineral Assets" has been changed to "Mineral Properties" and the term "mineral securities" has been deleted. This change focuses this Code on the areas of expertise of the Experts described in this Code.

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The USMinval Code was adopted by the Mining and Metallurgical Society of America and the International Mining Professionals Society, the Sponsoring Organizations (D33), on date and applies to all relevant reports.

Introduction

Codes and Guidelines for the valuation of mineral properties have been adopted in Australia and are being developed in Canada. The sponsors of the USMinval Code believe that a similar code is needed that addresses both the needs of the international mining community and the specific requirements of the United States. This effort is similar to and a logical extension of the international effort to develop a common set of definitions and guidelines for classification of reserves and resources.

This seventh draft was prepared by the Mining and Metallurgical Society of America's (MMSA) Mineral Valuation Committee and the International Mining Professionals Society (IMPS). The Committee, MMSA, and IMPS recognize that many professional organizations, mining companies, financial institutions, and others must contribute to and recognize this proposed Code before its usefulness is fully realized. However, the effort had to start someplace and MMSA and IMPS stepped forward. Other organizations are encouraged to review this draft and to join in the effort to modify it ways that will improve and allow other organizations to formally adopt or recognize the USMinval Code as incumbent on their members who prepare valuations of mineral properties.

The draft USMinval Code is based on the Australian ValMin Code and the Canadian CIMVal Code but some significant changes have been made. These include:

- ◆ deletion of all references to the valuation of petroleum assets, and
- ◆ references to general aspects of US federal and state securities replace references to Australian and Canadian law.

The USMinval Code is composed of two parts, the Code and Definitions. The constituent paragraphs of each part are numbered with Definition numbers being preceded by a D. Cross references are given

throughout the Code; for example, Expert (D7) refers to the definition of Expert in paragraph D7 of the definitions. As reflected in the December 2002 version of the ValMin Code, the former Code and Guidelines sections have been combined with the guidelines being included with the relevant Code provisions in *italics*.

Any such Code must be a living document subject to regular review and revision as needed. Those organizations adopting or formally recognizing the USMinval Code will be expected to contribute to the standing committee appointed to conduct this periodic review.

Preamble

This Code is designed to assist in the description and preparation of Independent Expert Reports related to mining companies and properties. Several problematic issues, most of them definitional, have been identified that should be addressed in an Independent Expert Report. These issues are discussed in this Preamble.

Other valuation standards: other valuation standards exist or are being proposed for use in the United States to meet a variety of needs. These include the Uniform Standards of Professional Appraisal Practice (USPAP), which is primarily used in real estate appraisal; the proposals of the International Valuation Standards Committee, which is working on internationally acceptable standards; and the Uniform Appraisal Standards for Federal Land Acquisition (UASFLA). Depending on the circumstances, one or more of these alternative standards may be or should be used in a report prepared by independent experts. Existence of these differing standards and methodologies means that those requesting and those preparing valuation reports should be quite clear (transparent) about the intended use(s) of the report and the procedures used in the report's preparation.

Differences between this Code and the SEC's Industry Guide 7: The mining disclosure regulations of the US Securities and Exchange Commission are contained in Industry Guide 7, a fairly brief document including specific definitions of "reserves" and its modifiers, instructions forbidding the use of the term "resources" absent a specific exception, and some other general instructions. Industry Guide 7 does not describe in any detail the types of information required to support a claim that reserves exist on a property. Although based on general industry practices, the SEC's staff interpretations of what is required have evolved over time, generally without any formal notice or requests for comments on changes. The biggest difference between Industry Guide 7 and current mining industry accepted definitions concerns the use of the term "resources" and its modifiers. However, other differences exist including the basis allowed for marketability of industrial minerals and the commodity prices that should be used in a valuation.

When is an Independent Expert Report Required? Australian and Canadian securities regulations require that Independent Expert Reports be obtained at various times. No such requirements currently exist in the US. Nevertheless, mining firms have voluntarily requested independent reports opining on reserve estimates, values, and related issues. This Code outlines a very comprehensive study, one that is more extensive than is often requested. For example, a company may seek independent reports on only geologic matters, or mineral processing issues, or environmental issues, etc. Such limited-scope, independent reports are common and may be used as parts of subsequent, more comprehensive reports. It is incumbent on those requesting independent reports and those preparing them that the scope, purpose, and intended use(s) of the report be clearly defined and disclosed in the report.

Objectives: the aim of the Code is provide investors with all relevant material information that they may reasonably require. The obligation is to aim for maximum rather than minimum compliance with the Code. The scope of work undertaken by the individual Experts/Specialists should be stated so that individual professional responsibility can be determined even when the report is completed by a corporate entity.

The Use of Professional Judgment: mineral deposits are heterogenous. Even within a specific type of deposit, for example, porphyry copper deposits, there are considerable variations between individual deposits. The consequence of this heterogeneity is that the use of any code, guideline, or standard be subject to modification based on the exercise of the judgment of professionals possessing the appropriate education, knowledge, and experience needed to address the particular issue at hand. Departures from any code, guideline, or standard must be clearly identified and the reasons why the “normal” or “best practice” procedure is inappropriate and the substituted procedure provides a more accurate measure or description clearly set out. Such departures from “normal” or “best practice” procedure, if clearly disclosed, described, and reasonably justified do not constitute professional malpractice. See paragraph C31.

The Code

ENABLING PROVISIONS

1. **(C1.)** Effective as from the effective date, the USMinval Code is binding upon members of the Sponsoring Organizations listed in paragraph (D33) when preparing public Independent Expert Reports (D15). The objective is to have this Code adopted by all entities (mining companies, professional organizations and mining associations) for use by their employees and/or members when performing mineral valuations.

APPLICATION, GENERAL PRINCIPLES AND TERMINOLOGY

2. **(C2.)** The USMinval Code sets standards for those preparing and those commissioning Independent Expert Reports concerning the assessment and/or Valuation (D39) of Mineral Properties or the Valuation of Mineral Properties. The application of the USMinval Code is mandatory for reports claiming to be complete USMinval Reports. Independent Expert Reports may or may not be complete USMinval Reports.

3. **(C3.)** The aim of an Independent Expert Report is to gather, interpret and summarise the Material (D16) information related to the Mineral Properties under consideration and to present clearly and accurately that information and the opinions of the Expert (D7) who prepares and is responsible for the Independent Expert Report and the Specialists (D32) who are retained by the Expert to contribute to the Independent Expert Report.

4. **(C4.)** The USMinval Code should be adhered to by those commissioning and those preparing USMinval Reports, regardless of the jurisdiction applicable to the Mineral Asset or Mineral Security and regardless of where or for whom the USMinval Reports are prepared, except where a relevant regulatory authority grants relief or requires a modified approach (for example, the US Securities and Exchange Commission’s Industry Guide 7). It represents a recommended but not mandatory code for all other assessments and Valuations of Mineral Properties and f regardless of where or for whom they are prepared, or of the location of the Mineral Properties under consideration.

5. **(C10.)** Definitions of key terms used in the Code are listed in the ‘Definition of Terms’ section of the USMival Code. In addition, the singular includes the plural and vice versa.

Materiality

6. **(D19) Material/Materiality** means, with respect to the contents and conclusions of a Report, and to any assessment, technical or otherwise, calculation or the like which contribute to these contents and conclusions and to data and information of such importance that the inclusion or omission of the data or

information concerned might result in a reader of the Report reaching a different conclusion than might otherwise be the case. In particular, Material data and information is that which would reasonably be required by a reasonable person (who is not a mining industry expert) in order to make an informed assessment of the subject of the Report. When questions concerning materiality arise, err on the side of caution and consult with securities counsel.

(C26.) Materiality (D16) refers to data and information which contribute to the determination of the mineral property value, such that the inclusion or omission of such data and information might result in the reader of a valuation report to come to a different conclusion as to the value of the mineral property. Material data and information are those which would reasonably be required to make an informed assessment of the value of the subject mineral property.

7. (C7.) Materiality (D16) is an overriding consideration in the application of the USMinval Code.

(C38.) Materiality is the overriding principle in determining whether or not information is used in a Valuation and/or is included in a Technical Assessment Report.

In cases where the Expert or Specialist suspects or knows of the existence of relevant information which is not included in the Expert's or Specialist's report, the Expert or Specialist will note why such information was not included and the relevance of such information to the Expert or Specialist's findings.

8. (C39) The requirements of the USMinval can only be departed from when the departures would not Materially impact the Expert's or Specialist's Technical Assessment or Valuation or due to the exercise of professional judgment. If a Material departure occurs due to the exercise of professional judgment, that departure and its justification must be fully explained in the Report.

9. (C8.) Objectives of the USMinval Code are that the Valuation process should be Transparent (D37), Independent (D14), be prepared by Experts or Specialists possessing required Competence (D5) and address all material matters. Where there are prior and different Valuations of the same asset, the Valuation should set out the reasons why a different conclusion has been reached. The valuation process should be as objective and rigorous as the data and other Material information available to the Expert and Specialists allow. The outcome of any Valuation will depend on the interaction of a number of assumptions which the Expert and Specialists inherently make, all of which should be reasonable and disclosed. These assumptions may involve such matters as the effects of the geological, metallurgical, or processing characteristics of the deposit; environmental and land access issues; trends in technologies; commodity prices; exchange rates; taxation and depreciation regimes; government policy; sovereign risk; competitor behaviour; inflation; cost structure; interest rates; and behaviour of the stock market. Furthermore, there are a number of valuation methods available from which the Expert makes a selection. This selection may also affect the outcome of the Valuation. Even though Experts and Specialists have been professionally objective and diligent in valuing a Mineral Asset (D18), it is acknowledged that the Commissioning Entity may have a different view as to the Mineral Asset's Value (D43).

10. (C6.) The Commissioning Entities (D4) and the Expert and Specialists who prepare and contribute to a Report should aim for maximum rather than minimum disclosure, and for substantive rather than mere technical compliance with the USMinval Code. They should ensure an Independent Expert Report or a USMinval Report is not Materially false or misleading, and does not omit Material matters.

COMPETENCE: EXPERTS AND SPECIALISTS

11. (D5)Competence means having relevant qualifications and experience. See definitions of Expert and Specialist and relevant paragraphs of the Code.

12. (C5.) The Valuation of Mineral Properties requires a high level of expertise in relevant technical and commercial disciplines. For example, geoscientific, engineering, environmental, financial, legal and commercial expertise may all be required, depending on the nature of the Valuation. Therefore, an Expert and any Specialists required, all suitably qualified and experienced, should be involved in the preparation of Valuations.

13. (C15.) A natural person (as opposed to a 'legal person' which is a legally constituted body) should take overall professional responsibility for the physical preparation and contents of an Independent Expert Report. In the USMinval Code, such a person is termed an 'Expert' (D7). In many cases, it is improbable that an Expert will be personally authoritative in all areas required by the Report. In such cases, and depending upon Materiality, it is the Expert's responsibility to ensure that persons with appropriate qualifications and technical or commercial Competence (D5), expertise and experience who, in the USMinval Code, are termed 'Specialists', are commissioned to provide and be responsible for specialist input to the Independent Expert Report. If a Specialist prepares a subsidiary report specifically for inclusion, either in whole or in part, in an Independent Expert Report, that Report should comply with the USMinval Code.

Note: some have urged that corporate entities such as consulting firms be allowed to assume responsibility for Independent Technical Reports. While recognizing that this is common consulting practice, the name(s) of the individuals in the consulting firm who are responsible for the whole or for parts of the report should be included in the report and these individuals assume individual professional responsibility for the reports.

(C9.) In accordance with federal and state securities laws within the United States of America (for example, Section 11 of the Securities Act of 1933, as amended) and/or other applicable legislation in the USA or other jurisdictions, Experts and Specialists may be subject to civil and criminal liability for including misleading statements in an Independent Expert Report or USMinval Report and for omitting Material information from it, as well as for conduct in relation to an Independent Expert Report or USMinval Report which is misleading or deceptive. In the event that legal action is taken against an Expert or Specialist in respect of a statement in an Independent Expert Report or USMinval Report, he or she may have grounds for defence if he or she is competent to make the statement concerned, has made reasonable enquiries and has reasonable grounds to believe that the statement was true and not misleading and that there were no Material omissions from the statement.

14. (D9) An **Expert** means a natural person who prepares and is responsible for a Report, who is Independent and is a professional having a minimum of **ten** years of expertise, competence, and experience in the Mining Industries (D27), and qualifications and reputation so as to give authority to a statement made in relation to a particular matter. Where professional licensing requirements are applicable, an appropriate license should be held.¹

In the case of the Technical Assessment of and Reports on Mineral Properties (C12), in order to ensure that the Report is authoritative, the Expert, should have had at least **ten** years of relevant General, Mining Industry Experience (D13) or use a Specialist (D34) who should be an appropriately qualified and experienced geologist, mining engineer, metallurgist, or other appropriate experienced technical professional and be a member of an appropriate, Recognised Professional Association having an enforceable code of ethics or conduct. See Definition D32 and Paragraphs C15 to C20

15. (D35) Specialists means natural persons who may be retained by the Expert to provide subsidiary reports or sections of Reports on matters on which the Expert is not personally expert. A Specialist should be Independent and be a professional having expertise, competence, experience in the Mining Industry, qualifications and reputation so as to give authority to a statement made in relation to a particular matter

¹ "Expert" as defined herein is not equivalent to an "expert" as in "expert witness" in the US legal system. Persons qualified in this Code and Guidelines may be qualified as expert witnesses under the law, but not persons qualified to testify as expert witnesses are experts in this Code and Guideline. Professional licensing is a matter of law. Experts and Specialists should be licensed if required by the local jurisdiction (state, provincial, national, etc.).

and thus be relevant to the subject matter of the section(s) of the Report to which he or she contributes. A Specialist should have had at least **five** years of suitable and preferably recent experience in the particular technical or commercial field on which he or she is to report.

In the case of the Technical Assessment of and Reports on Mineral Properties, a Specialist should be an appropriately qualified and experienced mining engineer, geologist, geophysicist, metallurgist, or other appropriate experienced technical professional and be a member at an appropriate grade of a relevant Recognized Professional Association having an enforceable code of ethics. Should a Specialist prepare a section of a Report for which he or she is personally responsible, as evidenced by his or her signing it off, he or she should be a member at an appropriate grade of a relevant Recognized Professional Association having an enforceable code of ethics. (See Paragraphs C15 to C20)

Where professional licensing requirements are applicable, an appropriate licence should be held.²

16. (G107.) Experts, Specialists and Commissioning Entities (where applicable) should understand that allegations against them in respect of a violation of the USMinval Code may be investigated by their recognized professional association's ethics or conduct committee and that, if substantiated, the results of that investigation may be published as is consistent with the recognized professional association's Bylaws or rules.

17. (C16 part) Experts and Specialists should be able to satisfy the Commissioning Entity and those entitled to receive an Independent Expert Report that they, by virtue of their appropriate relevant qualifications, expertise, experience, Competence and professional reputation are able to prepare and/or contribute to the Independent Expert Report as may be required.

18. (C16 part) Expert and Specialists should disclose in the Independent Expert Report(s) whether he or she is a member of an appropriate Recognised Professional Association. If so, he or she should state its name and his or her grade of membership. Professional license, certification, or similar numbers should be included in the disclosure.

If an Expert or Specialist has been subject to disciplinary sanction by a recognized professional body during the preceding five years and the grounds for the disciplinary action are relevant to the Independent Expert Report's use, the name of the sanctioning body and the nature of the sanction should be disclosed in the report.

19 (C17.) In the case of an Independent Expert Report having sections which deal with Mineral Properties, either the Expert or a Specialist should have had at least ten years of relevant General Mining Industry Experience (D12) and that person should co-ordinate, supervise and take overall responsibility for such sections of the Report.

20 (C18.) Only in exceptional circumstances may an Expert or Specialist, who lacks appropriate General Mining and Industry Experience (D12), carry out a Technical Assessment of Material Exploration Areas. The Valuation of such Exploration areas should not be undertaken without the involvement of an Expert or Specialist with appropriate geologic qualifications and General Mining and Industry Experience who should give written consent to the form and context in which the Technical Assessment is used in deriving the Valuation, which consent should be included in the Independent Expert Report.

Note: the person conducting the Technical Assessment of Material Exploration Areas need not be a geologist by title or degree but should have the necessary geologic knowledge and experience. Some, but by no means all, mining engineers may qualify. The geologic knowledge and experience required will depend on the type of valuable mineral contained in the exploration area.

² Professional licensing is a matter of law. Experts and Specialists should be licensed if required by the local jurisdiction (state, provincial, national, etc.).

21. (C19.) Experts and Specialists should be familiar with so much of the USMinval Code, the requirements of the Mineral Resource and Mineral/Ore Reserve Code (D21) that is applicable to the jurisdictions involved, and the applicable laws, regulations, and court decisions concerning Independent Expert Reports as is relevant to their work.

*Note: the US coal industry has expressed preference for the classification system set out in Principles of a resource/reserve classification system for minerals, US Geological Circular 831 (1981) (Circular 831). However, this classification system is not appropriate for reports prepared pursuant to USMinval. As Circular 831 states in its initial two paragraphs, "Through the years, geologists, mining engineers, and others operating in the minerals field have used various terms to describe and classify mineral resources, ... Some of these terms have gained wide use and acceptance, **although they are not always used with precisely the same meaning.** ... Staff members of the U.S. Bureau of Mines and the US Geological Survey collect information about the quantity and quality of all mineral resources, but **from different perspectives and with different purposes**" (emphasis added). The classification system set out in Circular 831 is designed for long-term, national future mineral resource estimation, a task assigned to the US Geological Survey. This is a legitimate task, but one that materially differs from objectives of the Independent Expert Reports described herein. The US Securities and Exchange Commission also does not recognize the Circular 831 classification as complying with Industry Guide 7.*

(22. This ValMin paragraph discusses an inapplicable requirement of Australia's Corporations Law. The number is retained for cross reference purposes in this draft of USMinval.)

(23. This ValMin paragraph is covered in paragraph 13, the old C9, and is not duplicated. As with paragraph 22, the number is retained in this draft for comparative purposes.)

INDEMNITIES

24. (G157.) Experts and Specialists should obtain an indemnity from the Commissioning Entity under which they are to be compensated for any liability:

- (a) that results from their reliance on information provided by the Commissioning Entity or to the Commissioning Entity not providing Material Information. (Such an indemnity does not absolve Experts and Specialists from critically examining the information provided); or
- (b) that relates to any consequential extension of work load through queries, questions or public hearings arising from the Report.

25. (G158.) A Report should disclose the nature and Material details of any indemnity provided by the Commissioning Entity or other person for the benefit of the Expert or Specialists.

26. (C20.) A Report will be an Independent Expert Report (D15) only when the reporting Expert and, if applicable, any Specialist, is Independent and perceived to be Independent and is acknowledged to be so by the Commissioning Entity.

(D16) Independent and Independence means, with respect to the relationship between an Expert or Specialist (as the case requires) and a Commissioning Entity, that :

- a) the Expert or Specialist has no relevant pecuniary or beneficial interest in the Commissioning Entity (if a body corporate);
- (b) the Commissioning Entity has no relevant pecuniary or beneficial interest in the Expert or Specialist (if a body corporate); and
- (c) neither the Expert nor Specialist nor the Commissioning Entity is employed by (or, in the case of bodies corporate, is an officer of) any one of the others, and that the principles enunciated in Paragraph C22 are adhered to.

In this definition, all references to Experts, Specialists and Commissioning Entities includes their respective Associates.

27. (C21.) The overriding principle of Independence (D14) is that the Expert and Specialists should have no Material present or contingent interest in or Association (D2) with the Commissioning Entity (D4) or with the owners or promoters (or parties associated with them) of any of the Mineral Properties (D18) (D26) being assessed or valued, other than professional fees and reimbursement of disbursements paid in connection with the assessment or Valuation concerned, and should have no beneficial interest in the outcome of the Technical Assessment (D34) or Valuation (D39).

Note: independent Experts and Specialists are entitled to use and rely on company (non-independent) data as described in the Independent Expert Report as long as they have no reason to believe the data are inadequate or misleading for the purposes for which the data are used. The fact that company data is used should be disclosed in the report.

28. (C22.) In order for the Commissioning Entity, or other interested parties such as the professional bodies of which the Expert or Specialists may be members, to assess whether or not they may be deemed to be Independent:

(a) Experts and Specialists should disclose any previous material association during the previous two years with the owners or promoters (or any party associated with them) of, any of the Mineral Properties being assessed or Valued; or the Commissioning Entity, or any party associated with it; or any of the Mineral Properties to be assessed or valued.

(b) Experts and Specialists should disclose, after making reasonable enquiries, whether or not they, the members of their immediate families, or their employer(s) or any Associate of their employer(s) hold or have an interest in the acquisition or disposal of part or all of the Mineral Properties which are the subject of the Independent Expert Report.

(c) Experts and Specialists should disclose particulars of any pecuniary or other interest that could reasonably be regarded as being capable of affecting their Independence. Such disclosures should be made as early as possible to the Commissioning Entity, should be included in the Independent Expert Report and do not absolve an Expert or Specialist from the requirement to be Independent.

29. (G108.) An Expert or Specialist will be considered as having a contingent interest in the outcome of an assessment or Valuation if any written or oral agreement has been made and not withdrawn in respect of the Mineral Properties under assessment or Valuation or in respect of any other Mineral Asset in which the owners or promoters or their Associates are interested, directly or indirectly, to the effect that the consideration, including fees, payable to the Expert or Specialist for undertaking the assessment or Valuation; or the provision of further work to the Expert or Specialist is in any way dependent or contingent upon:

- ◆ the outcome of the Technical Assessment or Valuation; or
- ◆ the success or failure of the transaction or proposal in connection with the Technical Assessment or Valuation being undertaken.

30. (G109.) Experts and Specialists should not assess or value any of their own Technical Assessment (as opposed to Valuation) work which has been undertaken previously and which relates to the Mineral Properties being assessed or valued, unless that work was prepared independently for a Report. A prior association because an Expert or Specialist has been previously engaged by the Commissioning Entity or a party associated with it to undertake a consulting or Valuation assignment will not necessarily be considered to impair their Independence, but be judged on the facts of the matter, which should be disclosed.

31. (G110.) The basis of the consideration (although not necessarily the specific amounts) such as time and expenses or fixed price contract payable by the Commissioning Entity to an Expert or Specialist in connection with the preparation of a Report should be disclosed in the Report. It should not be such as to compromise the Independence of the Expert or Specialists.

32. (G111.) The Expert and Specialists should avoid any communication with the Commissioning Entity which may compromise their Independence.

TRANSPARENCY

33. (D39) Transparent or Transparency as applied to a Valuation means, as in the *Concise Oxford Dictionary*, easily seen through, of motive, quality, etc. For the purposes of the USMinval Code, this applies to the factual information used, the assumptions made and the methodologies applied, all of which should be made plain in the Report.

34. (D17) Independent Expert Report (Report) is a Report concerning the Technical Assessment and/or Valuation of Mineral Properties prepared by an Expert who is Independent, usually with the assistance of a Specialist or Specialists, who are also Independent, depending on whether or not the Expert has expertise in all aspects of the Valuation, and on the magnitude of the task.

(C11.) A Report may be prepared for any one of a variety of purposes pursuant to provisions of applicable laws and regulations and for other purposes which directly or indirectly require Mineral Properties to be valued.

Purposes for which the application of the USMinval Code are mandatory include:

- (a) any prospectus, information memorandum or similar document;
- (b) compensation for compulsory acquisitions;
- (d) protection of the rights of certain classes of shareholders in transactions between associated companies;
- (e) assistance to receivers or managers in the disposal of assets;
- (f) valuations involving acquisitions agreed to by shareholders;
- (g) capital reductions or selective capital reductions, if a Report is provided; and
- (h) the valuation of a vendor's consideration in a public offering.

Other purposes for which the USMinval Code, in whole or in part, may be used are set out in Paragraph G101.

35. (C12.) Independent Expert Reports may be classified as follows:

Technical Reports (D33), that are directed to some aspects of a Technical Assessment of the actual or potential economic production from a Mineral Asset. Technical Reports include geological, mining engineering and metallurgical reports;

Valuation Reports (D41) which express an opinion as to the Value of a Mineral Security or its underlying Mineral Properties. These reports may take into account factors such as product prices, socio-political issues, environmental considerations and general economic conditions which may impact upon the Valuation of a Mineral Asset or Mineral Security; and,

Fairness or Fairness and Reasonableness Reports (D10), which are directed to an evaluation of the fairness and reasonableness of the transaction examined in the report. These include Vendor Consideration Opinions (D44).

36. (C13.) Fairness (D10) should be assessed by undertaking a comparison of the amount of the offer price or the cash equivalent of the consideration (as the case requires) with the Value of the Mineral Properties subject to the transaction without regard to the factors referred to in Paragraph C14.

37. (C14.) Reasonableness (D29) should be determined against the background of all other Material factors shareholders might consider prior to accepting a takeover offer (or making such other decision as may be required), after referring to the range of Values determined in the Expert's assessment of the fairness of the offer (or other transaction), such as:

- (a) the offeror's pre-existing holding or entitlement to shares in the target company;
- (b) advantages that might accrue to the offeror, due to access to the target company's cash flow, taxation losses, and other relevant matters;
- (c) other significant blocks of shareholdings in the company;
- (d) the liquidity of the market in the target company's shares, and the probability that an alternative offer might be made; and
- (e) any disadvantage the offeree might face if the offer is not accepted.

VALUATION PRINCIPLES

There is no equivalent section in the ValMin Code, but this is the logical place for these paragraphs.

(C23.) There are a number of valuation principles that are widely held and outlined in various valuation texts and papers. Some deal specifically with valuation of mineral properties. Other accepted principles and standards in the general field of valuation do not deal specifically with valuation of mineral properties, but many of these have applications to the valuation of mineral properties.

(C24.) One important concept is the effective date of the valuation. A value relates to a specific point in time. When assessing the reasonableness of a valuation, information post-dating the effective valuation date is inadmissible in reaching conclusions. Value relates to future expectations, and past results can be used only as a guide to future expectations.

(C25.) The USMinval Code recommends that the following basic principles be included in the Standards and Guidelines for Valuation of Mineral Properties:

- ◆ Materiality,
- ◆ Transparency.
- ◆ Independence,
- ◆ Competence, and
- ◆ Reasonableness.

(C27.) Transparency (D36) means that the data and information used in (or excluded from) the valuation of a mineral property, the assumptions, the valuation approach and methodology, and the valuation itself should be set out clearly in the valuation report, along with the rationale for the choices and conclusions of the valuator.

(C28.) Independence (D14) refers to the valuator and is discussed below under Qualifications of Valuators.

(C29.) Competence (D5) refers to the qualifications and experience of the Valuator (D40) and is also discussed below.

(C30.) Reasonableness (D29), in reference to the valuation of a mineral property, can be interpreted to mean that other appropriately qualified and experienced valuers would value the property at approximately the same level. A reasonableness test would serve to identify valuations which may be out of step with industry standards and industry norms. Where a determination turns on reasonableness, the test is an objective, rather than subjective one in that it turns on what a person acting reasonably would conclude. It is not sufficient for an officer of an issuer or an Expert or Specialist to determine that he or she personally believes the matter under consideration is or is not material; they should form an opinion as to what a reasonable person would believe in the circumstances.

(C31.) The USMinval Code does not specify prescriptive professional practice standards, which would be required to be used in geologic, mining, and processing practice. The USMinval Code considers that such prescriptive professional practice standards would be contrary to the public interest. The use of prescriptive standards discourages the recognition or consideration of the geologic, mining, and processing factors and circumstances which make each particular site or physical location unique. Unconsidered application of prescriptive standards may result in some unnecessary activities being done and other necessary activities being left undone. In addition, such prescriptive standards will prevent the use of new and improved methods for addressing the problem in question. While USMinval Code recognizes that various informal 'standards' exist and that such standards can be useful, these standards are necessarily incomplete guides due to the uniqueness of each site and thus require the exercise of professional judgement in their application. The USMinval Code strongly supports the right of each Expert and Specialist to exercise professional judgement as guided by his or her past training and relevant experience regarding the principles and methods most appropriate for the study or assessment of any particular site or physical location and the relationship of the site to its intended use or remediation. However, 'professional judgement' cannot ethically be used to ignore the fact that any study should be based on sound scientific principles, data, and reasoning. The USMinval Code notes that the basis for selecting a professional study's content should be well documented.

VALUATION METHODOLOGY

38. (C32.) The decision as to the valuation methodology or methodologies to be used and the content of the Report are solely the responsibility of the Expert or Specialist whose decisions should not be influenced by the Commissioning Entity. The Expert or Specialist should state the reasons for selecting each valuation methodology used in the Report over other commonly used valuation methodologies. Guideline 105 contains a number of commonly used valuation approaches and methods for mineral properties while Guideline 106 lists some methodologies that are problematic and may be unacceptable.

39. (G102.) The Expert or Specialist should make use of valuation methods suitable to the Mineral Properties under consideration. Selection of the appropriate valuation method will depend on, inter alia:

- (a) the purpose of the Valuation;
- (b) the development status of the Mineral Properties;
- (c) the amount and reliability of relevant information;
- (d) the risks involved in the venture; and
- (e) the relevant market conditions for commodities and/or shares.

40. (G103.) The Expert or Specialist should choose, discuss and disclose the selected valuation method(s) appropriate to the Mineral Properties under consideration, stating the reasons why the particular method(s) of valuation have been selected in relation to those factors set out in Paragraph G102 and to the adequacy of available data. It may also be desirable to discuss why a particular valuation method has not been used. The disclosure should give a sufficient account of the valuation method(s) used so that another Expert could understand the procedure used and assess the Valuation. Should

more than one valuation method be used, and different Valuations result, the Expert or Specialist should comment on the reason(s) for selecting the Value adopted.

(G105.) A number of commonly used valuation approaches and methods described are summarized in Table 1. Note that different methods are considered to be applicable to mineral properties at different stages of exploration and development.

TABLE 1. Valuation Approaches and Methods for Different Types of Mineral Properties				
Valuation Approach	Valuation Method	Exploration Properties	Marginal Development Properties	Development Properties
Income	Discounted Cash Flow	No	Maybe	Yes
	Option Pricing	No	Yes	Yes
	Monte Carlo Analysis	Less widely used but acceptance increasing		
	Probabilistic methods	Little used or accepted		
Cost	Appraised Value	Yes	Yes	No
	Multiple of Exploration Expenditure	Similar to Appraised Value method but includes multiplier value; more common in Australia		
	Geoscience Factor	Yes	Maybe	No
Market	Comparable Transactions	Yes	Yes	Yes
	Option Agreement Terms	Yes	Yes	Yes
	Gross "in situ" value	Not acceptable		
	Net Metal Value or value per unit of metal	Widely used rule of thumb, but not a primary valuation method		
	Value per unit area	Secondary method for large exploration holdings		
	Market capitalization	Secondary method most applicable to junior companies with only a single valuable property		

(G106.) The USMinval Code lists below several approaches and methods that may be unacceptable to many valuers as the primary means of valuation of mineral properties. Some are rules of thumb that may be appropriate for order of magnitude estimates of value or for checks on valuations by other methods. Over time, some of these methods may be modified to the point where they become more generally acceptable.

- (a) Probabilistic DCF method, whereby a discounted cash flow analysis is carried out on a hypothetical, expected, or inferred orebody, and the net present value is factored by an estimated probability of discovering the orebody.
- (b) Decision tree analysis, another probabilistic approach based on hypothetical exploration budgets and orebody values.
- (c) Gross in situ value of metal in the ground, based on resource and/or reserve estimates
- (d) Net in situ value of metal in the ground based on resource and/or reserve estimates
- (e) Value per unit area for exploration properties
- (f) Market capitalization of, typically, a junior company which holds the mineral property as its primary asset.

COMMISSIONING A REPORT

41. (C33.) The Commissioning Entity and the Expert or Specialist should enter into a written agreement (which may be by way of an exchange of letters) which specifies the terms governing the preparation of the Report.

- 42. (G112.)** The written agreement between the Commissioning Entity and the Expert should refer to such matters as
- (a) the scope and purpose of the Report;
 - (b) an acknowledgement of the Independence and Competence of the Expert and Specialists;
 - (c) the Valuation Date;
 - (d) the proposal and/or Mineral Properties to be assessed or Valued;
 - (e) the basis for the consideration to be provided to the Expert, which should relate to the nature and complexity of the Valuation and should not be contingent upon the success or failure of any proposal or transaction assessed in the Report or on the nature or size of the Mineral Properties which are the subject of the Report;
 - (f) the right of the Expert to refuse to provide an opinion or report where it is impossible or impractical to obtain sufficient accurate or reliable data or information;
 - (g) the Specialists to be engaged, the areas in which they are to contribute to the Report and their terms of engagement;
 - (h) the right and obligation of the Expert and Specialists to base findings on information within their own knowledge or acquired as a result of their own investigations, as well as on the information supplied by the Commissioning Entity; and
 - (i) a program for the completion of the Report, including the dates for completion of such intermediate activities as:
 - provide to and review by, the Expert and Specialist(s) of data and information;
 - issue to the Commissioning Entity of a draft report to assure the accuracy of the assumptions and statements made in the report;
 - the Commissioning Entity's review of the draft; and
 - the obligations of the Commissioning Entity as set out in the Code.

- 43. (G113.)** Prior to the preparation of this agreement, the Commissioning Entity should be advised of the qualifications and relevant experience of the Expert and the names, qualifications, relevant experience and proposed specialities of the Specialists and be provided with the undertakings set out in the USMinval Code.

OBLIGATIONS OF THE COMMISSIONING ENTITY

- 44. (C34.)** A Commissioning Entity should make reasonable enquiries to establish that the Expert is sufficiently competent in the fields in which he or she is to work and/or is sufficiently experienced in the type of Mineral Properties to be assessed or Valued to satisfy the purposes of the Report.
- 45. (C35.)** An Expert should not undertake the preparation of a Report unless the Commissioning Entity ensures and represents in writing to the Expert:
- (a) that, to the best of its knowledge and understanding, complete, accurate and true disclosure is made to the Expert and Specialist(s) of all Material information relevant to the Report;
 - (b) that the Expert and/or Specialist(s) have such access to the Commissioning Entity's personnel and records as, in the reasonable opinion of the Expert and/or Specialist(s), is necessary to enable a proper assessment or Valuation of the Mineral Properties which are the subject of the Report; and
 - (c) that the Independence of the Expert and Specialist(s) is respected at all times.
- 46. (C36.)** To the extent that it is based on information provided by the Commissioning Entity, the Report should state that the Commissioning Entity has represented in writing to the Expert and Specialist(s) that full disclosure has been made of all Material information and that, to the best of its knowledge and understanding, such information is complete, accurate and true.

47. (C37.) In that all information which a Commissioning Entity holds in respect of the subject matter of a Report falls into the categories of:

(a) information which may be divulged to the Expert or Specialist and which may be presented in a public version of the Report, all of which may be taken into account in a Technical Assessment or Valuation and

(b) information which may be divulged to the Expert or Specialist and is determined by the Commissioning Entity to be confidential which may not appear in a public version of a Report but which may be taken into account in a Technical Assessment or Valuation,

The Commissioning Entity should inform the Expert and Specialist(s) of which information falls into either category (a) or (b) above and the extent to which the Expert and/or Specialist(s) may disclose that information. The Commissioning Entity should obtain all necessary approvals and exemptions from its Associates and joint venture participants to permit confidential information to be released to the Expert or Specialist and to be either included in or excluded from the Report.

The Expert or Specialist should indicate in the Report (Paragraph G119 to G121) the extent to which the Technical Assessment or Valuation is attributable to information which the Commissioning Entity regards as confidential and which has been used by the Expert or Specialist, but is not disclosed in the Report. Where the Commissioning Entity is a listed entity, information may only be kept confidential where disclosure of the information would not be required

THE REPORT (OR INDEPENDENT EXPERT REPORT)

48. (C40.) The Expert or Specialist should state in the Report its purpose, and that of any included subsidiary report, its terms of reference, scope, and any limitation on its use for other purposes.

When the purpose of a Report is to assess technically and/or determine the Value (D43) of a Mineral Asset or Mineral Security, it may be different from the Technical Value (D36) of the Mineral Asset or Mineral Security and be subject to change with time. In most circumstances, it will be necessary to illustrate the effect of variation in basic assumptions by determining a range of such Values.

A Valuation Report should state clearly the nature of the Value determined and its Valuation Date (D40).

49. (C41.) A Report is likely to be of interest to readers having differing interests and depths of technical knowledge. For the sake of clarity, but recognising that the use of technical language is sometimes essential, in which case a glossary of terms would be helpful, the Report should be written in plain English and/or clearly written in the language relevant to the jurisdiction(s) where the report will be used and should contain:

(a) all information which investors and their professional advisers would reasonably require, and reasonably expect to find in the Independent Expert Report, for the purpose of making an informed decision in respect of the subject of the Independent Expert Report;

(b) a balanced, objective and concise statement of the Expert's review and conclusions so that an informed layman can have a clear understanding of the Mineral Properties concerned, their Value and the attendant risks;

(c) sufficient information to allow experienced investment analysts to understand how the Technical Assessment and/or Valuation was arrived at, including details, summarized if appropriate, of the relevant financial model as well as sensitivities to variation in the most important assumptions, and;

(d) sufficient information on the valuation method(s) used so that another Expert can understand the procedures used and assess the Valuation.

50. (C42.) The cost of an Independent Expert Report will normally reflect the complexity of the Technical Assessment or Valuation, the amount of data available for investigation and any specific assessment or valuation difficulties encountered. (Paragraphs G119 to G121)

Time and cost constraints should not be permitted to compromise fundamental compliance with the requirements of the Code. Any restrictions so caused to the depth of analysis or extent of detail in an Independent Expert Report should be recorded in the Report.

Note: Reports are not necessarily full USMinval Reports. As described in paragraph 35 (C12), they include Technical Reports “are directed to some aspects of a Technical Assessment” and other types of restricted scope reports.

51. (C43.) The Expert or Specialist should ensure that the assumptions with respect to Material technical and commercial parameters, the significant risks arising from those assumptions and the valuation methods used are clearly set out in the Independent Expert Report.

52. (C44.) The Expert or Specialist should state the source of all Material information and data used in preparing the Independent Expert Report and, subject to any confidentiality or regulatory requirements, give adequate reference to relevant published and unpublished reports and records used. All such sources and references should be listed in the Independent Expert Report. It may also be necessary to make mention of reports and records which were either available or known but which were not used, and the reasons for so doing.

The Expert or Specialist should not consent to reference being made to an Independent Expert Report, which has been prepared in accordance with the USMinval Code, to be included in any document filed pursuant to the federal and state securities laws and regulations, or other applicable laws and regulations, unless a copy of the Independent Expert Report is included in full in the submission to the appropriate regulatory entity.

Consents may be required to the quoting of information prepared by others, except as may be otherwise required by law, but no such consents are needed for published papers or documents in the public domain.

53. (C45.) The Commissioning Entity should be given a draft copy of an Independent Expert Report to determine and advise the Expert or Specialist as to any information not taken into account, the accuracy of the facts stated and the non-objection or otherwise to the assumptions made and to inform the Expert or Specialist of those parts of the Report which the Commissioning Entity regards as confidential.

54. (G114.) The Expert and Specialists should keep contemporaneous records of Material discussions with the Commissioning Entity. The Expert and Specialists should keep a list of all documents referred to in the Report and copies of all Material source documents.

55. (G115.) Detailed technical information should be included in the Report, particularly if its understanding is important to the Technical Assessment or Valuation. The use is encouraged of tables, maps, graphical presentations, a glossary of terms and explanations of unusual or new technical processes and activities which may be Material to the understanding of the Technical Assessment or Valuation.

56. (G116.) A Report should include a concise summary setting out the key data and important assumptions made, and the conclusions drawn by the Expert and/or Specialists which, if necessary, should be qualified according to the ‘insufficient or inadequate information’ where reliable or accurate data is unavailable. The summary should be structured to be easily comprehended by readers. No information should be included in the summary that is not also in the body of the Report.

57. (G117.) A Report should include a description of the Mineral Properties, including their location, plant, equipment and infrastructure, including their ownership. The Material history of the Mineral Properties should be discussed.

STATEMENT OF QUALIFICATIONS, LICENCES AND EXPERIENCE

58. (G118.) A Report should contain the names, qualifications, memberships of appropriate professional bodies, relevant experience and, where applicable, investment adviser's licence (or security dealer's licence) number, for the Expert and each Specialist, and should identify the nature and contribution of each of them to the Report.

SOURCES OF INFORMATION

59. (G119.) The Expert or Specialist should make written enquiries of the directors and/or management of the Commissioning Entity, and other reasonable enquiries as to the existence of prior relevant technical, valuation or similar assessment reports, particularly if the Expert or Specialist considers that such material has not been sufficiently provided by the Commissioning Entity (see Paragraph C27). Depending upon Materiality, the Expert and/or Specialist(s) should interview relevant personnel and review such reports, the Commissioning Entity's database, responses to enquiries and all other Material information and data relevant to the Report.

60. (G120.) The Expert or Specialist should state in his or her Report the extent of enquiries made, particularly of the Commissioning Entity or its Associates, and comment on the adequacy and reliability of information or data provided by the Commissioning Entity and the extent to which the Expert or Specialist has relied upon it. The Expert or Specialist should give details in the Report of sources of key information, including specific references to, and the conclusions of any relevant, prior, Material, Independent and other reports. If key or material information is believed to exist but was unavailable to the Expert or Specialist, the reasons for the unavailability of the information and the expected impact on the Report or Valuation should be disclosed.

61. (G121.) The Expert or Specialist should not rely uncritically on the information provided either by the Commissioning Entity or obtained otherwise. He or she should undertake whatever checks, enquiries, analyses and verification procedures are necessary to afford reasonable grounds for the contents of the Report and comment accordingly.

SITE VISITS

62. (C46.) Where observation of a Material Mineral Asset (D8) or Mineral Rights (D35) is likely to reveal information or data which is Material to a Report, the Expert, or, where relevant, the Specialist(s), should visit the site it. A decision whether or not to conduct such site visit should be made by the Expert or Specialist and not by the Commissioning Entity. In making this decision, the Expert or Specialist should have regard to the nature and purpose of the Report and the nature of the Mineral Asset or Mineral Rights. The site visit should be made after the occurrence of the latest significant activity in respect of the subject matter of the Report. Any workings or treatment facilities (mine, mill, etc) should also be visited. Where a Material Mineral Asset or Mineral Rights has not been visited, the Expert or Specialist should state in the Report the reason for not conducting the site visit and should be satisfied, and state why he or she is satisfied, that there is sufficient current information available to allow an informed appraisal to be made without a site visit.

MINERAL RIGHTS

63. (C47.) The status of Mineral Rights (D24) is Material (D16) and requires disclosure. Determination of their status is necessary and should be based on recent independent inquiry, either by the Expert or Specialist or on a recent report by a solicitor or Mineral Rights specialist who could qualify as a 'Specialist' as set out in Definition D31.

64. (C48.) The attribution of Value to Mineral Rights, especially those lacking mineral resources or mineral reserves, should be justified in detail.

65. (G122.) A Report should contain a schedule of all Mineral Rights Material to the Report, prepared by or on behalf of the Expert or Specialist, unless that information is provided in an accompanying report. The Mineral Rights schedule should list:

- (a) Mineral Rights type, reference name and/or number and area;
- (b) whether the title has been formally granted or not. If it has any impediments such as post granting approvals and permission attached, they should be described and, if not, whether an application or approval is pending and whether the application is subject to challenges should be noted;
- (c) whether the Mineral Rights document has been issued and if it is in the possession of the holder;
- (d) expiration and renewal dates;
- (e) past Mineral Rights expenditure, future expenditure commitments, rents and rates;
- (f) all other Material obligations to the government(s) or to any other person/entity;
- (g) ownership, including details of co-venturers and their interests;
- (h) details of any indirect interests such as overriding royalties;
- (i) details of liabilities, liens and encumbrances, including those relating to reclamation and rehabilitation;
- (j) if a mining lease, whether or not the Mineral Rights have been subject to a cadastral survey; and
- (k) any other Material information.

66. (G123.) A Report should also list by title and location related properties or Mineral Rights not considered Material, stating why they are not considered Material.

67. (G124.) The overall Value of a group of Mineral Rights may be different from the sum of the Values of the individual Mineral Rights. Where the Value of the aggregate is claimed to be higher or lower than the sum of the individual Values, the Expert or Specialist should state the Values, explain the difference and set out the supporting reasoning.

REVIEW OF DATA BASE, ASSESSMENT, VALUATION AND RISK FACTORS

The ValMin Code does not contain this section, but it logically belongs here.

(G125.) Depending upon the nature and status of the Mineral Properties under consideration and the adequacy of the information and data, the matters set out in Paragraphs G125 to G130 should be reviewed and included in the Report if Material to the Technical Assessment or Valuation. This list of matters is intended to be illustrative and should not be regarded as being exhaustive.

(G126.) Assessment criteria that may need to be reported on include geophysical and geochemical data, drillhole location, spacing, diameter, assay intervals, collar location and elevation, downhole survey method and data, sample numbers used to define assay intervals, drilling and sampling methods used,

accuracy of sampling points, drill-sample recoveries, tonnage factors, quality of geological sampling and assay data, the assay laboratories and the analytical techniques used, geotechnical and hydro-geological factors which may affect mining practices or the safety of tailings dams and structures, minor constituents of the ore likely to influence viable exploitation of the deposit because of metallurgical or environmental concerns and assumptions regarding cut-off grades, dilution, recovery and tonnage/grade estimation methods and parameters and process plant recovery.

(G127.) The Expert or Specialist should ensure that the review conducted of Material mineralization, mineral resources, and/or ore/mineral reserves identifies the principal estimation risks to be taken into account in assessing or valuing the Mineral Properties, *i.e.* resource and/or reserve grade, tonnage and metallurgical/mineralogical characteristics. These matters should be discussed in the Report.

(G128.) Where comparisons are made with geological situations at known mineral occurrences, all relevant factors should be presented. Where a causal relationship (*e.g.* continuity of geological structures) is claimed, the Expert or Specialist should clearly show how this is considered relevant to the assessment or Valuation of the Mineral Asset or Mineral Rights under consideration. Where a comparison is made and no causal relationship is claimed, the Expert or Specialist should clearly state there is no known causal relationship.

(G129.) The absence of known mineralization on adjoining or nearby properties may be as important as its presence. Therefore, to the extent made possible by the information available to the Expert or Specialist, either from the Commissioning Entity or that which is in the public domain, the Expert or Specialist should disclose and explain, as well as is reasonably possible, the presence or absence of known mineralization or exploration results, where such disclosure is Material to an objective Valuation of the Mineral Properties which are the subject of the Report.

(G130.) Wherever considered by the Expert or Specialist to be appropriate and Material to the Report and the mineralization being investigated:

- (a) inadequacies in the quality of sampling and assaying should be discussed;
- (b) assay results included in a Report, should be set out in one of the following forms considered most suitable by the Expert or Specialist:
 - ◆ all assay results, with sample widths or size in the case of bulk samples;
 - ◆ the weighted average assay of the mineralised zone, indicating clearly the way the average was calculated; or,
 - ◆ when high values are recorded, they should be given in context, with relevant supporting data;
- (c) samples used for assaying should be reliably identified as having been taken from specific locations and as having not been contaminated. If an Expert or Specialist has not personally taken the samples, the Report should state the efforts made to confirm the authenticity and representiveness of the samples, procedures and reports.

MINERALIZATION, MINERAL RESOURCES, AND ORE/MINERAL RESERVES

68. (C49.) All Material mineralization, Mineral Resources and Ore/Mineral Reserves within the boundaries of the Mineral Rights under consideration and any likely extensions thereto which are considered by the Expert or Specialist to be Material should be reviewed and reported on, together with their attendant Material risks, in accordance with the relevant Mineral Resource and Ore/Mineral Reserve Code (D21). If it is impractical to report in this way, the reasons for so doing should be indicated in the Independent Expert Report.

Note: the SEC doesn't permit disclosure of "resources." Should the title to this section and other parts of the USMinval be adjusted to eliminate references to reserves and substitute "mineralize material" along with a discussion of the conversion between JORC and SEC definitions and classification?

(69.) ValMin paragraph 69 relates to petroleum and is not applicable.

MINING AND ORE TREATMENT

70. (G140.) Actual or proposed mining and process plant practices should be reviewed to establish the technical and economic feasibility of the operation at the existing or proposed scale.

Specific matters to be reviewed, as may be relevant, include grade control, mining loss and dilution, ground conditions, mineralogical and metallurgical factors likely to affect process recovery, flowsheet design, variability of the ore body's physical and chemical properties, metallurgical recoveries, labor sources, requirements and productivity, operating practices, equipment availability, utilization and performance, the likely effects of hydrological and climatic factors on construction and operating costs and the technologies employed or to be employed.

For proposed operations, recent mining and ore treatment trial data and the anticipated time taken to achieve design capacity should be reviewed.

71. (G141.) A Report which deals with mining and ore treatment should include:

- (a) tonnage and grade of ore or other material mined or treated in appropriate time increments, both achieved and forecast, over the anticipated life of the operation;
- (b) tonnage and grade of ore or other material mined and contained metal, both achieved and forecast, reconciled with each category of the appropriate Mineral Resources and Ore Reserves Code;
- (c) mining and ore treatment methods, including a description of plant, technology and operating practice, together with actual or forecast process plant recoveries from mill feed to marketable products; and
- (d) comprehensive reasons to support any recommendation to reopen any facilities which are either on care and maintenance or have been abandoned.

PRIOR PRODUCTION PERFORMANCE

72. (G139.) Prior production performance in terms of cost, weights or volumes and mineral grade and quality, should be reconciled with proposed performance estimates. The results of the reconciliation should be stated in the Report.

SERVICES AND INFRASTRUCTURE

73. (C51.) The Expert or Specialist should review and report upon the availability of and obstacles to obtaining appropriate services and infrastructure in order to establish whether, and at what likely cost, services and infrastructure at the likely or necessary scale are or can be made available. Services and infrastructure include power, water, transport, housing and waste and tailings disposal facilities.

ENVIRONMENTAL AND LAND ACCESS MATTERS

74. (C52.) The Expert or Specialist should review and report upon environmental, land access, Native Title or rehabilitation matters which may impact on a Technical Assessment or Valuation Report. The identification of those factors which could lead to delays in project development, curtailment of operations,

and any resulting higher cost of debt or equity or compensation payments or which may otherwise have a significant cost are particularly important.

75. (G146.) A Report should disclose any Material obstacle (e.g. statutory, legal, technical, environmental, commercial or socio-political) to future exploration, development or production. General security and sovereign risk issues should also be addressed.

EMPLOYEE RELATIONS

76. (C53.) The Expert or Specialist should review and report upon any special factors relating to employee relations and/or work practices which may impact on a Technical Assessment or Valuation of the Mineral Properties under consideration.

CAPITAL AND OPERATING COSTS

77. (C54.) To the extent that it may affect a Technical Assessment or Valuation, the Expert or Specialist should review and report upon Material (D16) actual and forecast capital and operating costs for the effective estimated productive life of the Mineral Properties being valued.

78. (C55.) The basis for any cost escalation and exchange rates used should be stated in the Independent Expert Report.

79. (G142.) The review of capital costs, (including acquisition costs, working capital, sustaining capital, residual value, feasibility study costs and all contingencies) and operating costs, (including off-site administration, environmental, transportation, marketing and all charges by governments and contingencies) should be sufficiently detailed to allow an assessment as to whether they are realistic and achievable.

80. (G143.) Forecast capital and operating costs adopted for use in the Report should take into account changing physical parameters, such as increased haulage distances or changes in work practices and productivity.

81. (G144.) A Report should state the forecast capital and operating cost estimates adopted, with supporting data, including date references for all cost estimates. Capital and operating cost estimates should be compared with those of similar operations elsewhere, where available and relevant. Both capital and operating costs should be set out under broad functional headings, and in terms of some suitable unit such as per ounce of gold produced or per tonne of annual plant throughput, not just in total.

A Report should also give an estimate of the costs of removal of any mining plant or facility and of any site restoration which may be required.

COMPLETION AND COMMISSIONING

82. (C57.) The Expert or Specialist should review and report upon the likelihood and possible impact on a Technical Assessment and Valuation of delays in timing for completion or commissioning of major capital projects or major changes in operating practices and upon any other risks which may have a significant effect on the future technical or financial viability of the Mineral Properties under consideration.

RESIDUAL VALUE

83. (C56.) The Expert or Specialist should state if an estimate of the residual value of the Mineral Properties is included and, if so, how that value was determined.

PRODUCT PRICES, TREATMENT CHARGES, AND EXCHANGE RATES

84. (G145.) A Report should set out the basis for the Expert's and/or Specialist's price-related assumptions including those concerning:

- (a) forecast product prices, smelter treatment and refinery charges, having regard to long term historical experience, current and forecast market conditions and the likely quantity and quality of product;
- (b) penalty components in the product;
- (c) variation in product price;
- (d) size, nature and location of markets;
- (e) exchange rates;
- (f) hedging or forward sales contracts; and
- (g) relative rates of revenue and cost escalation.

MINERAL MARKETS

85. (C58.) An Independent Expert Report should include a reconciliation of proposed production volume and product quality with likely market opportunities and available resources and/or reserves. The Report should state product quality, forecast sales volumes and prices, and the escalation and exchange rates used.

MATERIAL AGREEMENTS AND STATUTORY/LEGAL REQUIREMENTS

86. (C59.) The Expert should ensure that any Material agreements and contracts, including development plans, sales contracts, joint venture agreements, project permits, environmental, access, and other legal or statutory requirements are thoroughly reviewed, preferably by an appropriate Specialist, and reported upon.

87. (G147.) A Report should consider and comment on the likely impact of planning controls, restrictive zoning, Native Title or other land rights, and other administrative matters.

TAXATION AND ROYALTIES

88. (C60.) The amount and timing of any taxes and royalties (both government and private) should be properly taken into account, together with the results of enquiries concerning past audits and announced government policies.

LIABILITIES, COMMITMENTS AND FINANCIAL EXPOSURES

89. (C61.) Depending upon the scope of the Report, the Expert or Specialist should review and report upon liabilities, actual and contingent commitments, and financial exposures.

90. (G148.) Depending upon the Expert's or Specialist's terms of reference, other matters relating to income tax and capital gains tax may need to be reviewed.

(G149.) The Expert or Specialist should state the nature and source of assumptions made in respect of taxation and royalties.

91. (G150.) Liabilities to be reported upon include creditors and provisions for superannuation and annual and long service leave entitlements. Commitments include expenditure commitments on exploration

Mineral Rights which, in some cases, could result in the overall value of an Exploration Area being negative.

Financial exposures include under-insurance or the cost of environmental rehabilitation if a property is to be abandoned and any requirements for the lodging of security deposits.

FINANCING

92. (G151.) The Expert and Specialist's Valuation may be affected by the likelihood of obtaining financing for a project. The Expert or Specialist should therefore review commitments made and the form of financing (for example, gold loans and commodity price hedging).

93. (G152) Depending upon the terms of reference of the Report, for some Mineral Properties, the Expert or Specialist may need to assume an appropriate financing structure. For Development Projects and Operating Mines, care should be exercised to ensure that debt which has been drawn down is taken into account in the Valuation.

SHAREMARKET AND ECONOMIC CONDITIONS

94. (G153.) General ~~stock market~~ and economic conditions may influence the value of Mineral Properties and, in particular, the assessment of premiums or discounts. Specific stock market data may provide evidence of the Value of Mineral Properties, although caution needs to be exercised because of the significant problem of possible lack of comparability between Mineral Properties.

The deletion of "sharemarket" and "stock market" are recommended.

95. (C63.) When determining any premium to be applied to a Technical Value, the Expert or Specialist should state whether and how stock market and economic conditions have been taken into account.

VENDOR CONSIDERATION

96. (C62.) The basis for and nature of any consideration or benefit payable to any vendor, promoter or provider of seed capital, and of any conditions attaching thereto, should be assessed and quantified in a Valuation.

OTHER MATTERS

97. (C64.) The Expert or Specialist should review and report upon all other matters which are Material to the Report in order to enable the reader to make an informed assessment of the Mineral Properties which are the subject of the Report.

REVIEW OF RISK & UNCERTAINTY FACTORS

98. Depending upon the nature and status of the Mineral Properties under consideration and the adequacy of the available information and data, the matters set out in Paragraphs 98 to 103 should be reviewed and included in the Report if Material to the Technical Assessment or Valuation. (The following list of matters is intended to be illustrative and should not be regarded as being exhaustive.)

99. Assessment criteria that may need to be reported on include geophysical and geochemical data, drillhole location, spacing, diameter, assay intervals, collar location and elevation, downhole survey method and data, number of samples used to define assay intervals, drilling and sampling methods used, drill-sample recoveries, tonnage factors, quality of geological sampling and assay data, the assay

laboratories and the analytical techniques used, geotechnical and hydro-geological factors which may affect mining practices or the safety of tailings dams and structures, minor constituents of the ore likely to influence viable exploitation of the deposit because of metallurgical or environmental concerns and assumptions made regarding mining cut-off grades, dilution, recovery, tonnage/grade estimation methods and parameters and process plant recovery.

100. The Expert or Specialist should ensure that the review conducted pursuant to Paragraph 67 identifies the principal estimation risks to be taken into account in assessing or valuing the Mineral Properties, i.e. resource and/or reserve grade, tonnage and metallurgical/mineralogical characteristics. These matters should be discussed in the Report.

101. Where comparisons are made with geological situations at known mineral occurrences, all relevant factors should be presented. Where a causal relationship (e.g. continuity of geological structures) is claimed, the Expert or Specialist should clearly show how this is considered relevant to the assessment or Valuation of the Mineral Asset or Mineral Right under consideration. Where a comparison is made and no causal relationship is claimed, the Expert or Specialist should clearly state there is no known causal relationship.

102. The absence of known mineralization on adjoining or nearby properties may be as important as its presence. Therefore, to the extent made possible by the information available to the Expert or Specialist, either from the Commissioning Entity or that in the public domain, the Expert or Specialist should disclose and explain, as well as is reasonably possible, the presence or absence of known mineralization or exploration results, where such disclosure is Material to an objective Valuation of the Mineral Properties which are the subject of the Report.

103. Wherever considered by the Expert or Specialist to be appropriate and Material to the Report and the mineralization being investigated:

(a) inadequacies in the quality of sampling and assaying should be discussed;

(b) assay results included in a Report, should be set out in one of the following forms considered most suitable by the Expert or Specialist:

- ◆ all assay results, with sample widths or size in the case of bulk samples;
- ◆ the weighted average assay of the mineralised zone(s), indicating clearly the method used to calculate the average; or;
- ◆ when high values are recorded, they should be given in context, with relevant supporting data;

(c) samples used for assaying should be reliably identified as having been taken from specific locations and as having not been contaminated. If an Expert or Specialist has not personally taken the samples, the Report should state the efforts made to confirm the authenticity of the samples, the adequacy of the sampling procedures used and the reliability of the relevant reports.

ILLUSTRATIONS

104. (C50.) Maps, plans or other graphic information should be provided which are sufficient, in the opinion of the Expert or Specialist, to illustrate the geology and other pertinent features, including the location of the Mineral Rights under consideration.

105. (G131.) A general location map or an inset map should indicate the geographical location of the map area in relation to a capital city or major town and, if possible, the map should include a grid in latitudes and longitudes or the public land survey, where appropriate.

106. (G132.) A Mineral Rights map should show local landmarks and the Mineral Rights' boundaries, its size and position relative to those nearby properties which have a significant bearing on the potential of the Mineral Rights.

107. (G133.) Where mineralization on a nearby property is noted in the Report, maps and/or sections should indicate the relationship of its geology to that within any Mineral Rights which is the subject of the Report.

108. (G134.) Each map should have a bar scale and a direction arrow pointing north, designated as either magnetic, true or grid north. The map should be based on a standard series map of a suitable scale, if such a map is published. Where exploration results are presented in graphical form, the scale should be such as to allow satisfactory assessment of sampling and other exploration procedures.

109. (G135.) Any map, plan or diagram should be dated, carry the name of the persons or companies originating or taking responsibility for its content and indicate the report to which it pertains. The source of data used should be disclosed.

110. (G136.) Maps should be readable and prepared so that no data is lost or obscured if the document is reproduced in black and white or reduced in size for printing.

111. (G137.) Graphs should have a bar scale which is sufficiently detailed for readings to be taken with adequate accuracy.

112. (G138.) Where the potential of a Mineral Right is predicated on the basis of geophysical or geochemical surveys, some form of graphical interpretation, maps or tables showing results of the surveys and the interpretations should be included.

CONCLUSIONS OF THE EXPERT

113. (C65.) To the extent that it may affect the Valuation and data available permits,

(a) a range (high/low) of values should be determined and stated, reflecting uncertainties in the data and the interaction of the various assumptions which have been applied. In all cases, the preferred Value should be identified, unless there are cogent reasons stated in the Report for not doing so; and

(b) the Independent Expert Report should include a sensitivity analysis showing the effects of changing the most Material assumptions. The data used should not be invalid due to the passage of time and its cut-off date, which should be disclosed in the Report, should be as close as practicable to the date of the Report or the Valuation Date, as may be appropriate.

114. (C66.) Where it is impossible or impracticable to obtain sufficient accurate or reliable data or information as the basis for a Technical Assessment or a Valuation, this should be stated by the Expert or Specialist. In this case, the Expert or Specialist is under no obligation to express an opinion.

115. (C67.) Where the Expert or Specialist considers that a Mineral Asset has no Value or a negative Value, (*i.e.* it is a liability) this should be stated.

116. (G104.) In addition to the Technical Value determined, in all cases an assessment should be shown of what the Technical Value of the assets would be on a 100 per cent pre-tax equity basis, in order to provide a common reference point.

117. (G154.) In times of high commodity prices and/or buoyant stock market conditions, the Expert may conclude that the Values (Fair Market Values (D9)) ascribed to Mineral Properties may be higher than their Technical Values. The reverse may occur in times of low commodity prices or depressed stock market conditions. A Report should take such factors into account, state the results of the principal valuation method(s) used and disclose the amount of and reasoning behind any difference between the Fair Market Values and the Technical Values. Since the Values of Mineral Properties are subject to

marked fluctuations over time, the Expert or Specialist should ensure that the opinion expressed or Valuation provided is consistent with the circumstances at the Valuation Date.

118. (G155.) Relevant legislation or regulations may require the Expert or Specialist to express other specific conclusions or opinions. The Expert or Specialist should comply with any such requirements.

DECLARATIONS AND MISCELLANEOUS REPORTING REQUIREMENTS

119. (C68.) The Expert or Specialists should declare in the Report that it has been prepared independently and in accordance with the USMinval Code. Where the Commissioning Entity has been granted relief from the requirements of the USMinval Code by any regulatory authority, that fact and the extent of any such relief should be stated.

120. (C69.) The Expert or Specialists should take care in summarizing or quoting from other reports to ensure that the summary is accurate and that the quotation is in the form and context that the original author intended. (See Paragraphs C43 and G119 through G121).

121. (C70.) Where a Report is prepared within a corporation or firm, the name, registered address of the corporation or firm should be stated or included in the letterhead. In addition, the name of the Expert responsible for the Report should be included and that Expert should personally sign the Report.

122. (G156.) A Report should not include a report or quotation which is the work of another person without the written (and not subsequently withdrawn) consent of that person, but, except as may otherwise be required by law, no such consents are required where the report or quotation is within the public domain. Published papers are excluded from this requirement. A Report should include a statement that such a report or quotation is an accurate reflection of that person's view and that that person has consented in writing to the inclusion of that report or quotation in the form and context in which it is included in the Report and, at the date of the Report, has not withdrawn that consent.

Part 2. Definition of Terms

The first or a particularly significant mention in the USMinval Code of a term which is a Defined Term is indicated by a number in parentheses, *i.e.* Valuation (D41) means that this term is defined in Definition Number D41. Capitalized terms that would normally not be capitalized are also defined terms. The preceding list contains the defined terms and their associated paragraph numbers for ease of reference.

D1. Advanced Exploration Areas and Pre-development Projects means properties where Mineral Resources have been identified and their extent estimated (possibly incompletely) but where a positive development decision has not been made. Properties at the early assessment stage, properties for which a development decision has been negative, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources are identified, even if no further Valuation, Technical Assessment, delineation or advanced exploration is being undertaken.

D2. Associate/Association refers to persons who would be classed as Associates or as acting in Association include those who:

- carry on business together, whether in partnership, as principals,
- shareholders in a private company or as principal unit holders in a trust;
- have some fiduciary relationship with each other;
- share common directorships; or
- have entered into or propose to enter into an agreement
 - (i) because of which one of the persons has or will have power (even if it is in any way qualified) to exercise control, directly or indirectly on, or to influence substantially the exercise of any voting power attached to shares in the Commissioning Entity or any other corporation with an interest in the Mineral Properties which are the subject of the Valuation; or
 - (ii) for the purposes of controlling or influencing the composition of the board or the conduct of affairs of the Commissioning Entity or any other corporation with an interest in the Mineral Properties which are the subject of the Valuation.

The latest ValMin draft definitions indicate that this definition will change. Do we need to keep it?

D3. Code, Code, and USMinval Code refers to the current version of the USMinval Code including all three parts, the Code, the Definitions, and the Guidelines; see paragraph C2.

D4. Commissioning Entity means the organization, company or person commissioning a Report.

D5. Competence means having relevant qualifications and experience. See definitions of Expert and Specialist and relevant paragraphs of the Code.

D6. Development Projects means properties which have been committed to production, but which are not yet commissioned or not operating at design levels.

D7. Discount Rate: a rate of return used to convert a monetary sum, payable or receivable in the future into a present value (from *International Valuation Standards 2000*).

D8. Effective Date: the date as of which the Valuer's opinion applies. Also referred to as the Valuation Date or As Of Date (from *International Valuation Standards 2000*).

D9. An Expert means a natural person who prepares and is responsible for a Report, who is Independent and is a professional having a minimum of **ten** years of expertise, competence, and experience in the Mining Industries (D27), and qualifications and reputation so as to give authority to a

statement made in relation to a particular matter. Where professional licensing requirements are applicable, an appropriate license should be held.³

In the case of the Technical Assessment of and Reports on Mineral Properties (C12), in order to ensure that the Report is authoritative, the Expert, should have had at least **ten** years of relevant General, Mining Industry Experience (D13) or use a Specialist (D34) who should be an appropriately qualified and experienced geologist, mining engineer, metallurgist, or other appropriate experienced technical professional and be a member of an appropriate, Recognised Professional Association having an enforceable code of ethics or conduct. See Definition D32 and Paragraphs C15 to C20

D10. Exploration Areas means properties where mineralization may or may not have been identified, but where a Mineral Resource has not been identified.

D11. Fair Market Value see the definition of "Value/Fair Market Value", D45.

D12. Fairness or Fairness and Reasonableness Report means a report as described in Paragraph C12 which involves a Valuation and expresses an opinion on the fairness, or fairness and/or reasonableness of the transaction that is the subject of the Report.

D13. Federal and State Securities Laws refer to the various federal and state laws and regulations promulgated pursuant to these laws. In the United States, the most important federal laws are the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended, and are administered by the US Securities and Exchange Commission. Each of the states has its own securities laws and regulations, which may be applicable. The advice of securities counsel should be sought regarding the application of these laws to the Valuation or Report in question.

D14. General Mining Industry Experience means:

(a) in relation to an Exploration Area, (See Definition D9) applied experience and competence in geology;

(b) in relation to other Mineral Properties, (See Definition D20) applied experience and competence in the technical discipline for which the Expert or Specialist is academically qualified, together with sufficient knowledge of other relevant technical disciplines to allow the Expert or Specialist to supervise the work of professionals in those disciplines;

with such experience having been gained in the Mining Industries as in Definition D27.

~~**D15. Guidelines**~~ *definition no longer needed as the former guidelines have been incorporated into the Code*

D16. Independent and Independence means, with respect to the relationship between an Expert or Specialist (as the case requires) and a Commissioning Entity, that :

b) the Expert or Specialist has no relevant pecuniary or beneficial interest in the Commissioning Entity (if a body corporate);

(b) the Commissioning Entity has no relevant pecuniary or beneficial interest in the Expert or Specialist (if a body corporate); and

(c) neither the Expert nor Specialist nor the Commissioning Entity is employed by (or, in the case of bodies corporate, is an officer of) any one of the others, and that the principles enunciated in Paragraph C22 are adhered to.

³ "Expert" as defined herein is not equivalent to an "expert" as in "expert witness" in the US legal system. Persons qualified in this Code and Guidelines may be qualified as expert witnesses under the law, but not persons qualified to testify as expert witnesses are experts in this Code and Guideline. Professional licensing is a matter of law. Experts and Specialists should be licensed if required by the local jurisdiction (state, provincial, national, etc.).

In this definition, all references to Experts, Specialists and Commissioning Entities includes their respective Associates.

D17. Independent Expert Report (Report) is a Report concerning the Technical Assessment and/or Valuation of Mineral Properties prepared by an Expert who is Independent, usually with the assistance of a Specialist or Specialists, who are also Independent, depending on whether or not the Expert has expertise in all aspects of the Valuation, and on the magnitude of the task. (The purposes for which such reports may be required are set out in Paragraph C11 and the types of reports in Paragraph C12).

D18. ~~Market Value~~ *deleted because the term is addressed in the definition of "value below."*

D19. ~~Material/Materiality~~ *deleted as this is addressed in the body of the report. Further, as a legally defined term, we need to trend carefully.*

D20. A **Mineral** is any naturally occurring material useful to and/or having a value placed on it by mankind which is found in or on the Earth's crust. For the purpose of this Code, the term specifically includes coal, shale and materials used in building and construction, tar sands and oil shales extracted by mining methods, but excludes fluid crude oil and natural gas.

D21. Mineral Properties means all property including but not limited to real property, intellectual property, mining and exploration Mineral Rights held or acquired in connection with the exploration, the development of and the production from those Mineral Rights together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals in connection with those Mineral Rights. Most Mineral Properties can be classified as either Exploration Areas D9, Advanced Exploration Areas D1, Pre-Development Projects D30, Development Projects D6 or Operating Mines D29.

D22. A **Mineral Resources** is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust (a deposit) in such form and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. Portions of a deposit that do not have reasonable prospects for eventual economic extraction should not be included in a Mineral Resource (from *A guide for reporting exploration information, mineral resources, and mineral reserves*: Society for Mining, Metallurgy, and Exploration, 1999).

D23. A **Mineral/Ore Reserves** is the economically mineable part of a Measured or Indicated Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined. 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 is reasonably justified. Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proved Mineral Reserves (from *A guide for reporting exploration information, mineral resources, and mineral reserves*: Society for Mining, Metallurgy, and Exploration, 1999).

D24. The **Mineral Resources and Ore/Mineral Reserves Code** refers to a Code promulgated by a member of the CRIRSCO (Common Mineral Reserves/ Resources International Standard Committee) formerly the Council of Mining and Metallurgy Institutes (CMMI), including the definitions of various categories of mineral resources and ore or mineral reserves defined in the Code. The CRIRSCO Codes have common, internationally agreed on definitions of terms and materially differ only in their references to the securities laws applicable to the home country of the institute issuing the Code. In the US, the current edition of the Society for Mining, Metallurgy, and Explorations (SME) *A Guide for Reporting Exploration Information, Mineral Resources, and Mineral Reserves* is the relevant Code. However, the US Securities and Exchange Commission's (SEC) Industry Guide 7 contains different definitions and

standards which those preparing reports that will be filed with the SEC should be familiar with and abide by.

D25. Mineralization generically refers to the anomalous occurrence (deposit) of one or more potentially valuable minerals. The term has no economic implications. The term may be modified to indicate the type of valuable mineral(s) of interest, for example, precious and base metal mineralization or ceramic clay deposit.

D26. Mineralized Material is a term used as a place holder by the mining engineering staff of the US Securities and Exchange Commission (SEC), who have informally issued the following definition: *“a mineralized body which has been delineated by appropriately spaced drilling and/or underground sampling to support a sufficient tonnage and average grade of metals. Such a deposit does not qualify as a reserve, until a comprehensive evaluation based upon unit cost, grade, recoveries, and other material factors conclude legal and economic feasibility.”* Note that ‘mineralized material’ does not include: 1) material reported as reserves, and 2) volumes and grades estimated by using geologic inference, which are sometimes classed as ‘inferred’ or ‘possible’ by some evaluators. Only mineralization that has been sufficiently sampled at close enough intervals to reasonably assume continuity between samples within the area of influence of the samples can be called ‘mineralized materials.’ Mineralized material should be reported as ‘in place’ grade and tonnage. Estimates of contained metal or total ounces in mineralized material should not be reported, as these can be confused with reserves. Note: the use of the phrase ‘mineral deposit’ as we use it refers to ‘mineralized materials.’ Any mineralized rock with a lower geologic certainty, such as ‘inferred’ or ‘possible’ material is just called ‘mineralization.’”

Both Mineralized Material (and Mineralization, as noted above) may be modified by using terms like “coal deposit” or “porphyry copper-molybdenum deposit” instead. The use of Mineralized Material as a place holder reflects SEC objections to the word “resources” as distinguished from the concept the mining industry means by “resources.”⁴

D27. Mineral Rights means any form of title or right such as a licence, permit or lease granted by the relevant Government in accordance with its mining legislation that confers on the holder certain rights to explore for and/or extract minerals that might be contained in the land. Mineral Rights has the same as “Tenement”, a term defined in the ValMin and other foreign Codes and Guidelines.

D28. Mining Industry means the business of exploring for, extracting, processing and marketing Minerals.

~~**D29. Mineral Securities** means those Securities issued by a body corporate or an unincorporated body whose business includes exploration for, development of, or extraction and processing of Minerals. (See also Definition D33)–This term has been deleted from the Code and definitions.~~

D30. Operating Mines means mineral properties, particularly mines and processing plants, which have been fully commissioned and are in production.

D31. Pre-Development Projects See Advanced Exploration Areas and Pre-development projects, Definition D1.

D32. Reasonableness in reference to the Valuation of a Mineral Property, means that other appropriately qualified and experienced valuers with access to the same information would value the property at approximately the same range. A Reasonableness test serves to identify Valuations which may be out of step with industry standards and industry norms. It is not sufficient for a Qualified Valuator to determine that he or she personally believes the value determined is appropriate without satisfying an objective standard of proof.

⁴ “Resources” and “reserves” are very similar words and their common meanings are the opposite of those used by the mining industry. In common English, “reserves” refers to that which is held back for the future or emergency use and “resources” are available for use today.

D33. Recognized Professional Association means licensing body or a self-regulatory organization of engineers, geoscientists, or other professionals that

- (a) admits members primarily on the basis of their academic qualifications and experience;
- (b) requires compliance with the professional standards of competence and ethics established by the organization; and
- (c) has disciplinary powers, including the power to suspend or expel a member; or

A professional licensing body operating pursuant to state or provincial law that has characteristics (a) through (c) listed for self-regulatory organizations.

~~**D34. Securities** means documents which are evidence of a loan or ownership, including:~~

- ~~(a) debentures, stocks or bonds;~~
- ~~(b) shares;~~
- ~~(c) units in a trust;~~
- ~~(d) loan securities, such as mortgages; and~~
- ~~(e) any right to participate, or any interest in; the profits, assets or realisation of any financial or business undertaking or scheme; a common enterprise in relation to which the holder of the right or interest is lead to expect profits; a contract, scheme or arrangement that, in substance and irrespective of its form, involves investment of money in or under such circumstances that the investor acquires or may acquire an interest in, or right in respect of, property that, under, or in accordance with, the terms of investment will, or may at the option of the investor, be used or employed in common with any interest in, or right in respect of, property; eg a joint venture.~~

~~In the US, the term "securities" is defined in the Federal and State Securities Laws and those definitions supersede the foregoing terms. Nevertheless, the foregoing list provides a useful guide into the types of instruments known as securities. Any questions concerning the applicable definitions should be taken to a securities attorney.~~

This term should be deleted from both the Code and the definitions; it's getting us out of the scope of our expertise.

D35. Specialists means natural persons who may be retained by the Expert to provide subsidiary reports or sections of Reports on matters on which the Expert is not personally expert. A Specialist should be Independent and be a professional having expertise, competence, experience in the Mining Industry, qualifications and reputation so as to give authority to a statement made in relation to a particular matter and thus be relevant to the subject matter of the section(s) of the Report to which he or she contributes. A Specialist should have had at least **five** years of suitable and preferably recent experience in the particular technical or commercial field on which he or she is to report.

In the case of the Technical Assessment of and Reports on Mineral Properties, a Specialist should be an appropriately qualified and experienced mining engineer, geologist, geophysicist, metallurgist, or other appropriate experienced technical professional and be a member at an appropriate grade of a relevant Recognized Professional Association having an enforceable code of ethics. Should a Specialist prepare a section of a Report for which he or she is personally responsible, as evidenced by his or her signing it off, he or she should be a member at an appropriate grade of a relevant Recognized Professional Association having an enforceable code of ethics. (See Paragraphs C15 to C20)

Where professional licensing requirements are applicable, an appropriate licence should be held.⁵

D36. Sponsoring Organizations: organizations that have formally adopted this Code and Guideline and its use is incumbent on their members when performing mineral valuations. The sponsoring organizations are: the Mining and Metallurgical Society of America (MMSA) and the International Mining Professionals Society (IMPS). These are professional associations of distinguished mining industry

⁵ Professional licensing is a matter of law. Experts and Specialists should be licensed if required by the local jurisdiction (state, provincial, national, etc.).

professionals within the United States having an enforced code of professional ethics. They meet the qualifications of a Recognized Professional Association (D32). The MMSA took the lead in developing the USMinval Code.

D37. Technical Assessment means an appraisal, prepared by an Expert or Specialist, of the technical aspects of a Mineral Asset and may involve a review of such matters as resource, metallurgical process or mining method and include the estimating of capital and operating costs. Technical Assessments will usually provide the basis of a Valuation and be the subjects of Technical Reports.

D38. Technical Report means a report as described in Paragraph C12 which deals with the Technical Assessment of Mineral Properties and does not address matters such as a Valuation Report, a Vendor Consideration Opinion on Securities or the fairness and reasonableness of a transaction relating to Mineral Properties.

D39. Transparent or Transparency as applied to a Valuation means, as in the *Concise Oxford Dictionary*, easily seen through, of motive, quality, etc. For the purposes of the USMinval Code, this applies to the factual information used, the assumptions made and the methodologies applied, all of which should be made plain in the Report.

D40. USMinval Report is a report identified as such in its title and or text and that claims to be fully in compliance with this Code. Other types of reports, including Independent Expert Reports need not comply all requirements of this Code, especially when the report is limited in scope.---

D41. Valuation is the process of determining the Value of a Mineral Asset or Mineral Security.

D42. Valuation Date means the reference date to which a Valuation applies which, depending on the circumstances, could be different to the date of completion or signing of the Report or the cut-off date of the available data.

D43. Valuation Report means a report, as described in Paragraph 12, which values Mineral Properties but is not a Vendor Consideration Opinion, or a Fairness, or a Fairness and Reasonableness Report in a Technical Assessment Report.

D44. Valuator a natural person engaged in the profession of making valuations of property, assets, etc.

D45. Value/Fair Market Value: The price most likely to be concluded by the buyers and sellers of a mineral property that is available for purchase. Value establishes the hypothetical or notional price that buyers and sellers are most likely to conclude for the mineral property. Value is not a fact, but an estimate of the likely price to be paid at a given time in accordance with a particular definition of value. Under the Fair Value Model, the fair value of an investment property is stated as usually being its *Market Value*. The best evidence of fair value is normally given by current prices for an active market for similar property in the same location and condition and subject to similar regulatory requirements and other relevant factors. An valuation takes care to identify any differences in the nature, location, or condition of the property or in the regulatory requirements or other relevant factors relating to the property. However, the Fair Market Value Model states that, in the absence of current prices in an active market, an valuation considers information from a variety of sources including:

- a. Current prices in an active market for properties of different nature, condition, or location, or subject to differing regulatory requirements and other relevant features;
- b. Recent prices in less active markets, with adjustments to reflect any changes in economic conditions since the date that occurred at those prices; and
- c. Discounted cash flow projections based on reliable estimates of future cash flows using discount rates that reflect current market assessments of the uncertainty in the amount and timing of the cash flows.

(From *International Valuation Standards 2000*.)

D46. Vendor Consideration Opinion means a report which involves a Valuation and expresses an opinion on the fairness of the consideration paid or benefit given to a vendor, promoter or provider of seed capital.