AUSTRALASIAN CODE FOR PUBLIC REPORTING OF TECHNICAL ASSESSMENTS AND VALUATIONS OF MINERAL ASSETS

THE VALMIN CODE

2015 EDITION

AUSTRALIAN INSTITUTE OF GEOSCIENTISTS

Supporting Geoscientists

AusIMM

THE MINERALS INSTITUTE

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Mandatory for AusIMM and AIG members from 1 July 2016

Prepared by The VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists

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Preface

The Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (VALMIN Code) has been prepared by the VALMIN Committee, a joint committee of The Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG), with the participation of the Minerals Council of Australia (MCA) and other key stakeholder representatives.

There have been three previous versions of the VALMIN Code, the first applicable from 1 July, 1995, the second applicable from 1 April, 1998 and the third applicable from 29 April 2005. The Minerals Industry Consultants Association (MICA) was a member of the joint committee and a major contributor to earlier Codes.

The VALMIN Code provides a set of fundamental principles (Competence, Materiality and Transparency), mandatory requirements and supporting recommendations accepted as representing good professional practice to assist in the preparation of relevant Public Reports on any Technical Assessment or Valuation of Mineral Assets. It is a companion to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). The VALMIN Code provides guidance on matters that may be subject to Australian regulations, other provisions of law and the published policies and guidance of the Australian Securities and Investments Commission (ASIC) and the Listing Rules of the Australian Securities Exchange (ASX) or of other relevant securities exchanges.

The VALMIN Code is written from a Minerals perspective and uses terminology consistent with the JORC Code.

Terminology

Definitions of introductory terms are listed at the end of the VALMIN Code. Definitions that are associated with the VALMIN Code's fundamental principles and minimum requirements are incorporated in the text and are printed in **bold** text.

The word '**must**' denotes a VALMIN Code requirement that is mandatory.

The words 'should' and 'may' indicate that discretion can be used depending on the particular circumstances of a Public Report and providing that the VALMIN Code's fundamental principles are not transgressed.

Defined terms are capitalised.

Guidelines are in *italics*.

The singular includes the plural and vice versa.

Petroleum

The VALMIN Code is suggested as a guide to good practice for Public Reporting of technical assessments and valuations of Petroleum Assets. The reader is referred to Chapter 5 of the ASX Listing Rules for requirements on reporting of Petroleum assets in Australia.

Disclaimer

The VALMIN Code does not constitute legal advice and may not consider all matters relevant to the preparation of a Public Report. It is the responsibility of Practitioners to determine their legal obligations in relation to the preparation of a Public Report and to seek legal advice when necessary.

Contents

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

1. Introduction

1.1. Purpose

The purpose of the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (VALMIN Code) is to provide a set of fundamental principles, minimum requirements and supporting recommendations to assist in the preparation of relevant Public Reports on Mineral Assets. The VALMIN Code is based on international good practice as currently employed in the Mineral industry, but allows for professional judgement in certain instances.

The resulting Public Reports **must** be reliable and should be clear, concise, effective and include all the Material information required by investors and their advisers when making investment decisions.

Subject to provisions in paragraph 1.3, AIG and AusIMM Members **must** adhere to the VALMIN Code regardless of where or for whom the Public Reports are prepared or the location of the Mineral Assets under consideration.

1.2. Context

The VALMIN Code is designed to fit within the Australian regulatory framework comprising the Corporations Act, and various ASIC Regulatory Guidelines and ASX Listing Rules. It is a companion to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Any references to the JORC Code relate to the 2012 edition or the most recent subsequent edition.

> Refer to http://www.valmin.org for further information.

(a) Corporations Act

The Corporations Act 2001 (Cth) is the legislation that has the principal legal influence on the themes of the VALMIN Code. The Corporations Act sets out laws dealing with Australian companies and corporate activity in Australia.

> Refer to http://www.comlaw.gov.au for further information.

(b) ASIC Regulatory Guidelines

The ASIC Regulatory Guidelines (RG) and Information Sheets provide guidance to regulated entities by:

(i) explaining when and how ASIC will exercise specific powers under legislation (primarily the Corporations Act); (ii) explaining how ASIC interprets the law;

(iii) describing the principles underlying ASIC's approach; and

(iv) giving practical guidance.

> Practical guidance includes describing the steps of a process such as applying for an Australian Financial Services Licence (AFSL), or providing practical examples of how regulated entities may decide to meet their obligations.

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At the time of drafting the VALMIN Code, the key relevant guidelines for the preparation of Public Reports relating to Mineral Assets include, but are not limited to:

(i) RG 55 – Statements in Disclosure Documents and PDSs: Consent to Quote,

(ii) RG 111 – Content of Expert Reports,

(iii) RG 112 – Independence of Experts,

(iv) RG 170 – Prospective Financial Information,

(v) RG 228 – Prospectuses: Effective disclosure for retail investors,

(vi) RG 230 – Disclosing non-IFRS financial information,

(vii) ASIC Class Orders CO 07/428 and 429 – Consent to Quote, and

(viii) ASIC Information Sheet – Mining and resources – Forward-looking statements.

Refer to http://www.asic.gov.au for further information and recent updates.

(c) ASX Listing Rules

The ASX Listing Rules set out the requirements for corporations in order to be listed on the ASX. The ASX Listing Rules include:

(i) continuous disclosure obligations, which require companies to immediately notify the ASX of any information that may affect the share price of the company,

(ii) rules governing how new share issues **must** be carried out,

(iii) guidance as to how share registries and registration should be maintained, and

(iv) mining specific reporting requirements, under Chapter 5 which references the JORC Code.

In addition to the ASX Listing Rules, the ASX provides guidance through its regularly updated Guidance Notes and FAQs (frequently asked questions).

For further information refer to http://www.asx.com.au.

(d) JORC Code

The JORC Code sets out minimum standards, recommendations and guidelines for Public Reports in Australasia for Exploration Results, Mineral Resources and Ore Reserves.

The ASX incorporates the JORC Code into Chapter 5 of the Listing Rules to mandate that a Public Report concerning Exploration Results, Mineral Resources or Ore Reserves is prepared in accordance with the JORC Code.

The JORC Code is binding on any Member of the AIG or the AusIMM.

For further information refer to http://www.jorc.org.

(e) Petroleum Resources Management System

The SPE-PRMS is the petroleum industry's global standard for resource and reserve classification and reporting. SPE-PRMS is referenced in Chapter 5 of the ASX Listing Rules, and Public Reports concerning petroleum exploration, resources or reserves **must** be prepared in accordance with that system.

Refer to http://www.spe.org/industry/reserves.php for further information.

1.3. Scope

As of 1 July 2016, this version of the VALMIN Code is binding on Members of the AusIMM and AIG. Members of Recognised Professional Organisations may be bound by VALMIN or a compatible code.

The VALMIN Code applies in any particular circumstance only if, and to the extent that, it is not inconsistent with the Corporations Act or other provisions of Australian law, ASIC policy and guidance, the ASX Listing Rules and guidance or the requirements of the relevant recognised Securities exchange. Guidance on the VALMIN Code's applicability is presented in Figure 1.

The VALMIN Code is considered to be broadly consistent in terms of fundamental principles and general approach with relevant international codes, templates, standards and guidelines (eg SAMVAL – South African Code for the Reporting of Mineral Asset Valuation, CIMVal – Standards and Guidelines for Valuation of Mineral Properties, CRIRSCO – Committee for Mineral Reserves International Reporting Standards template and the IMVAL Template – International Mineral Valuation Standards template). VALMIN Practitioners preparing Public Reports in jurisdictions other than Australia should be aware of and take note of the specific content of relevant codes, templates, standards and guidelines other than VALMIN.

Refer to http://www.samcode.co.za, http://web.cim.org, http://www.ivsc.org and http://www.crirsco.com for further information.

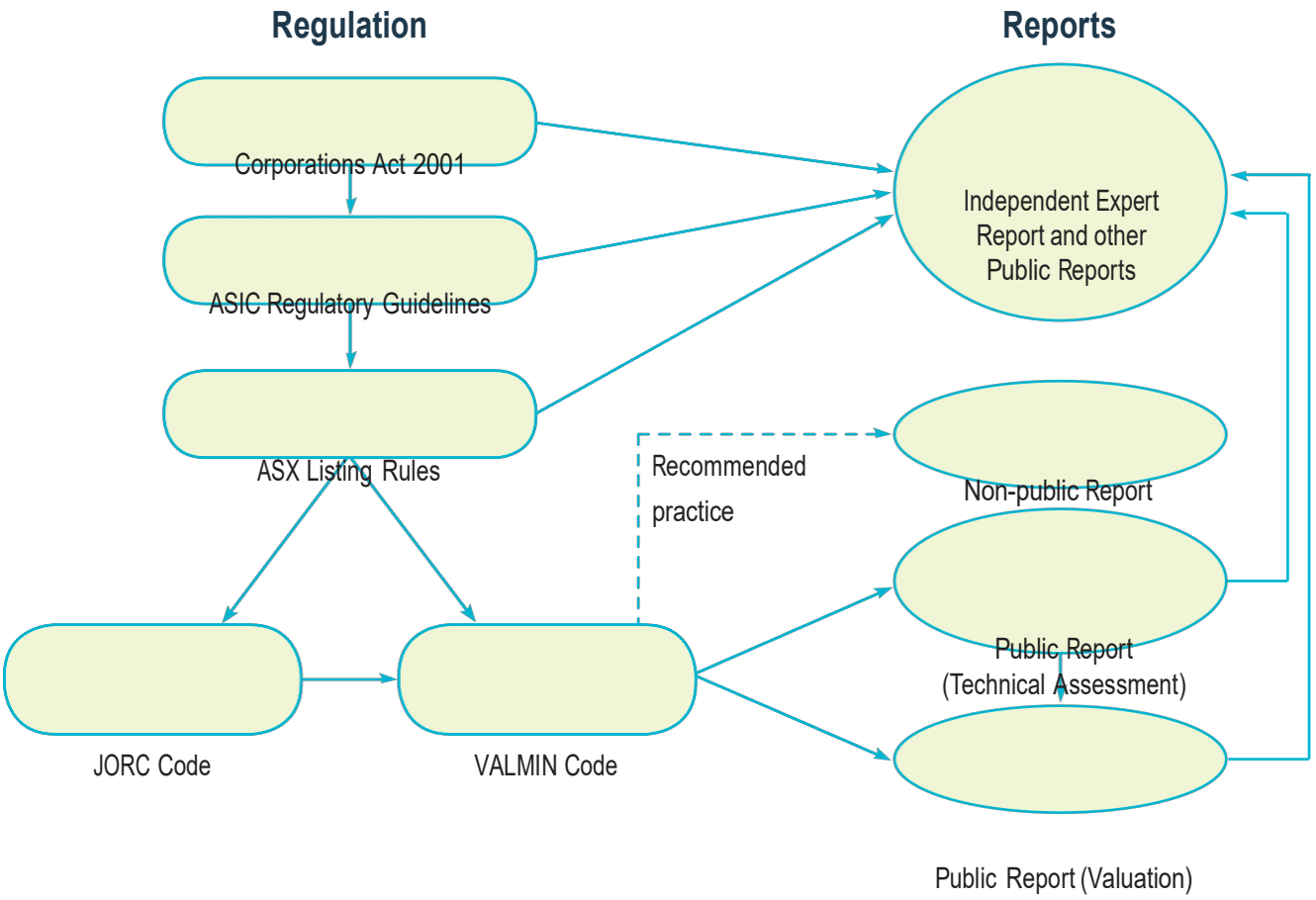

Figure 1 – General relationship between VALMIN, Public Reports and Regulations.

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2. VALMIN Practitioners

2.1. Who is a Practitioner?

A **Practitioner** is an Expert as defined in the Corporations Act, who prepares a Public Report on a Technical Assessment or Valuation Report for Mineral Assets or Securities. This collective term includes Specialists and Securities Experts. The

following categories of Expert are recognised and are broadly aligned with ASIC Regulatory Guide 112:

(a) **Specialists** are persons whose profession, reputation and relevant industry experience in a technical discipline (such as geology, mine engineering or metallurgy) provides them with the authority to assess or value Mineral Assets, and who prepare and accept responsibility for a Public Report.

(b) **Securities Experts** are persons whose profession, reputation or experience provides them with the authority to assess or value Securities, and who prepare and accept responsibility for a Public Report.

Where the relevant criteria in Clause 2.2 are met, the Securities Expert and Specialist may be the same person.

Where a Specialist is not personally Competent to prepare certain sections of Public Reports, they should retain suitably qualified professionals who are Competent regarding those matters.

Representative Specialists are persons who are the nominated representative(s) of a legally constituted body, and who supervise the preparation of a Public Report and accept responsibility for it on behalf of that body. Representative Specialists are Specialists.

The Code uses the term Practitioner for situations that refer to either a Securities Expert or a Specialist; for example, a Public Report:

(i) is prepared by a Practitioner;

(ii) regarding Mineral Asset Valuation is prepared by a Practitioner;

(iii) regarding Technical Assessment can only be undertaken by a Specialist; and

(iv) regarding Securities Valuation can only be undertaken by a Securities Expert.

2.2. Requirements of Practitioners

A Specialist **must**:

(a) be Competent in, and have had at least five years of recent and relevant industry experience in relation to, the specific Mineral Asset to be reported upon;

(b) have at least five years of recent and relevant experience in Technical Assessment, and where a Valuation is being prepared, have at least an additional five years (totalling a minimum of ten years) of recent and relevant experience in the valuation of Mineral Assets;

(c) be a member of a Professional Organisation with an enforceable professional Code of Ethics and understand that a violation of the VALMIN Code may result in an investigation in accordance with the rules of the Professional Organisation; and

(d) be familiar with the VALMIN Code, the JORC Code, the relevant requirements of the Corporations Act, the public policies of ASIC, the ASX or other recognised Securities exchanges, and court decisions that may be relevant to the Public Report being prepared.

If a Specialist is reporting on Mineral Assets that are entirely of an Early-Stage Exploration Project or Advanced Exploration Project status, the relevant experience **must** be in the Technical Assessment and Valuation of Mineral Assets of this status.

If one or more of the Mineral Assets are of Pre-Development or more advanced status, the relevant experience **must** be in the Technical Assessment and Valuation of Mineral Assets of at least this level of development.

The key qualifier in the requirements of a Specialist is the word 'relevant'. Determining what constitutes relevant experience can be difficult and common sense **must** be exercised. 'Relevant' also means that it is not necessary for a person to have five years' experience in each and every type of Mineral Asset under consideration in order to act as a Specialist. For example, where a Specialist has relevant experience in the mineral types that are Material to a Technical Assessment of Mineral Assets, then that Specialist may not need to have five years experience for the other Mineral Assets being assessed where they are not Material. Nevertheless, an understanding of key geological, mining, processing, social and marketing parameters and risks for the specific Mineral Asset under consideration is required.

As a general guide, a person being called upon to act as a Specialist should be clearly satisfied in their own mind that they could face their peers and demonstrate competence in the evaluation of the Mineral Asset under consideration. If doubt exists, the person should either seek opinions from appropriately experienced colleagues or decline to act as a Specialist.

Technical Assessments and Valuations of Mineral Assets may be a collaborative effort. Where there is a clear division of responsibilities, each person **must** accept responsibility for their own contribution.

If only one Specialist signs the Technical Assessment or Valuation, that person is responsible and accountable for the whole of the documentation under the VALMIN Code. It is important in this situation that the Specialist accepting overall responsibility for a Technical Assessment or Valuation and supporting documentation is satisfied that the work of the other contributors is acceptable.

Where a Securities Expert participates in a Valuation of, or is seen to be providing advice in relation to, Mineral Securities (as opposed to the valuation of the underlying related Mineral Assets) or provides a Vendor Consideration Opinion, they **must** hold appropriate financial licences. In Australia, this is an AFSL as required by Chapter 7 of the Corporations Act.

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3. Code Principles

The fundamental Principles of the VALMIN Code are Competence, Materiality and Transparency.

3.1. Competence

(a) Requirement

Competence or being **Competent** requires that the Public Report is based on work that is the responsibility of a suitably qualified and experienced person who is subject to an enforceable professional Code of Ethics.

(b) Responsibility

A Practitioner **must** be involved in the preparation of a Public Report and may be required to seek assistance from other relevant professionals.

All Practitioners must have Competence in the relevant technical and commercial disciplines. Depending on the nature of the Public Report involved, Competence in geosciences, engineering, metallurgy, environmental assessment, geopolitics, finance, tax, law, Tenure, valuation, commerce and the Modifying Factors may all be required.

Practitioners **must** be able to demonstrate to the Commissioning Entity and those entitled to receive a Public Report that they are sufficiently Competent to either prepare or contribute to a Public Report.

3.2. Materiality

(a) Requirement

Materiality or being **Material** requires that a Public Report contains all the relevant information that investors and their professional advisors would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgement regarding the Technical Assessment or Mineral Asset Valuation being reported.

(b) Responsibility

All assumptions **must** be set out clearly in the Public Report, including appropriate reference to confidential information that is not disclosed as described in Clause 6, regarding:

(i) Material, technical and commercial parameters;

(ii) the risks associated with those assumptions; and

(iii) the Valuation Approaches and Valuation Methods used.

Any departures from the VALMIN Code **must** not have a Material effect on the Technical Assessment or Valuation and **must** be disclosed and justified in the Public Report.

Where it is impossible or impracticable to obtain sufficiently accurate or reliable data, this **must** be stated in the Public Report.

> Additional detail on the Australian regulatory requirement can be found in ASIC Regulatory Guide (as at the date of this Code) RG 111.

(c) Determination

The determination of what is Material depends on both qualitative and quantitative factors. A parameter may be Material in the qualitative sense because of its nature (for example, country risk). Practitioners **must** ensure that all Material information is considered.

A general rule in determining if information is Material is:

- '… if its omission or misstatement could influence the economic decisions of users taken on the basis of the Public Report (International Accounting Standard Committee, 1989)

> Guidance for the determination of Materiality as a percentage variation can be found in the Australian Accounting and International Financial Reporting referencing standard:
>
> - an amount that is equal to or greater than 10% may be presumed to be Material unless there is evidence or a convincing argument to the contrary;
> - an amount that is equal to or less than 5% may be presumed to not be Material unless there is evidence or a convincing argument to the contrary.

Two tests should be used in determining whether an item is Material:

- a quantitative test (a percentage variation); this is an area that requires a degree of professional judgment to identify information that is relevant and to determine between information that is 'need to know' and that which is 'nice to know'; and
- a qualitative test; that is, the nature of the item and whether knowledge of it would influence the economic decisions of investors.

> Guidance on qualitative factors may be found in the ASX Listing Rules, (as at the date of this Code) Guidance Note 31.

3.3. Transparency

(a) Requirement

Transparency or being **Transparent** requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled by this information or by omission of Material information.

(b) Responsibility

Both the process and Public Report **must** be as Transparent, objective and rigorous as the data and other Material information available to the Practitioner will allow. The conclusion of a Public Report will depend on the key assumptions that the Practitioner **must** reasonably disclose and discuss.

This may include the assessment of:

(i) Mineral Resources, Ore Reserves, extraction, mining, processing, marketing, valuation, mine closure and Tenure issues,

(ii) Modifying Factors,

(iii) the approach adopted, and

(iv) the methodology or methodologies used, which **must** be clearly set out in the Public Report.

Where it is not possible to provide an appropriate description, the reason for not doing so should be presented on an 'if not, why not basis'.

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4. Additional requirements

Further to the Code Principles, additional requirements are Reasonableness and Independence.

4.1. Reasonableness

(a) Requirement

Reasonableness requires that an assessment that is impartial, rational, realistic and logical in its treatment of the inputs to a Valuation or Technical Assessment has been used, to the extent that another Practitioner with the same information would make a similar Technical Assessment or Valuation.

(b) Responsibility

A **Reasonableness Test** means the Practitioner **must**:

(i) perform an impartial assessment to determine if the overall Valuation Approach, Valuation Method and Valuation, or Technical Assessment used is reasonable. Such a test will serve to identify Technical Assessments and Valuations that may be out of line with industry standards and norms;

(ii) meet the Reasonable Grounds Requirement;

(iii) make a positive statement that the inputs, assumptions, Valuation Approaches, Valuation Methods and Technical Assessment or Valuation meet the Reasonable Grounds Requirement; and

(iv) not disclaim liability for the Valuation Approach, Valuation Method and Valuation, or Technical Assessment.

> Guidance on making positive statements and disclaimers can be gained from ASIC Regulatory Guides (as at the date of this Code) RG 111, RG 170 and the ASIC Information Sheet – Mining and resources –. Forward-looking statements.

(c) Determination

The test for whether reasonable grounds exist is objective.

Sections of the Corporations Act and sections of the Australian Securities and Investments Commission Act require statements about future matters to be based on reasonable grounds at the time of making the statement, or they will be taken to be misleading.

> The Reasonable Grounds Requirement can be found in the Corporations Act, (as at the date of this Code) Sections 670A(2), 728(2) and 769(C) and the Australian Securities and Investment Commission Act, (as at the date of this Code) Section 12BB and find guidance in the ASIC Information Sheet – Mining and resources –. Forward-looking statements.

The Reasonable Grounds Requirement extends to all existing or potential Mineralisation as well as the Modifying Factors. A Public Report **must** not be provided unless a suitably objective Reasonableness Test is applied.

4.2. Independence

(a) Requirement

Independence or being **Independent** requires that there is no present or contingent interest in the Mineral Asset(s), nor is there any association with the Commissioning Entity or related parties that is likely to lead to bias.

Where the legal definition of Independence or Independent differs from the above, the legal definition takes precedence.

(b) Responsibility

Independence is not a formal requirement under the VALMIN Code. However, Practitioners **must** familiarise themselves and **must** conform to the relevant statutory and regulatory definitions and requirements of independence in the relevant jurisdictions.

The Corporations Act and ASIC Regulatory Guidelines are to the effect that Practitioners **must** be, and **must** appear to be, Independent when preparing reports for certain transactions. In addition, an AFSL Licensee must comply with conflict management provisions.

> ASIC may determine whether an Expert is independent and whether disclosures in relation to this are adequate as per ASIC Regulatory Guide (as at the date of this Code) RG 112.

(c) Disclosure

In order to support a declaration of Independence or to enable Practitioners to assess whether or not they may be deemed to be Independent, they **must** disclose in the Public Report any interest that could be seen as compromising their Independence. Such disclosures **must**:

(i) be made as early as possible to the Commissioning Entity;

(ii) be prominently included in the Public Report;

(iii) include declaration of any previous reports that the Practitioner has prepared relating to the Mineral Assets being assessed or valued; and

(iv) not absolve the Practitioner from any legal requirement to be Independent.

> A Practitioner previously engaged by the Commissioning Entity or an associated party should not necessarily be considered to have their Independence impaired. Each circumstance should be assessed, taking into account the facts.

5. Public Report

5.1. Intent of a Public Report

The intent of a Public Report is to gather, summarise and interpret the Material information related to the Mineral Assets under consideration along with the opinions of the Practitioner, which are to be presented clearly, concisely and accurately.

The Practitioner **must** state in the Public Report its specific purpose (and that of any subsidiary reports), its terms of reference and if there are any limitations on its use for other purposes.

> Public Reports include, but are not limited to:
>
> (a) Technical Assessment Report,
>
> (b) Valuation Report,
>
> (c) Independent Expert Report,
>
> (d) corporate presentations, and
>
> (e) news releases relating to points (a), (b), (c) or (d).

5.2. Report content

(a) Clear, concise and effective

Public Reports should be worded and presented in a clear, concise and effective manner. This applies to both the wording of information (for example, choice of language) and the presentation (for example, choice of communication tools) of a Public Report.

Practitioners **must** be aware of the wording and presentation requirements of the relevant jurisdiction.

> In Australia, guidance on this matter may be obtained from documents including ASIC Regulatory Guide (as at the date of this Code) RG 228, which directly references the VALMIN Code.

Detailed technical information and data **must** be included in the Public Report if it is Material to the Technical Assessment or Valuation. Explanations of unusual or new technical processes and activities that may be Material to the understanding of the Technical Assessment or Valuation should be included.

> A Public Report is ultimately an opinion based on a reasonable assessment of the available factual data. Public Reports prepared by different Practitioners may result in different conclusions.
>
> The Public Report should include relevant tables, legible and appropriately scaled maps, graphical presentations and a glossary of terms and acronyms.

(b) Information

A Public Report **must** contain all the information that the Commissioning Entity (and others, including investors and their professional advisors) would reasonably require and expect to find to make an informed decision about the subject of the Public Report.

A Public Report should contain:

(i) an executive summary setting out the key data, important assumptions made and conclusions drawn by the Practitioner,

(ii) a summary of contributing authors to the report and areas of responsibility within the report, which should outline the names, qualifications and relevant experience of the Practitioner,

(iii) the effective date of the Public Report,

(iv) a statement specifying the relevant currency used in any Valuation,

(v) a description of the relevant Mineral Assets, including their location, plant, equipment, infrastructure and ownership,

(vi) an account of the Material history of the Mineral Assets,

(vii) a balanced, impartial statement of the Practitioner's review and conclusions so that an informed person can have a clear understanding of the merit of the Mineral Assets, their value (if applicable) and associated risks,

(viii) information regarding the sources of data used,

(ix) sufficient information to convey how the Public Report was prepared, including details of the approaches and methods employed, and sufficient information so that another Practitioner can understand and replicate the outcome,

(x) a review of any other matters that are Material to the Public Report,

(xi) advice on reliance on third party personnel and/or disclaimers, and

(xii) an outline of any areas within a report where there is non-conformance with the VALMIN Code and the impact of this on Materiality.

The Practitioner **must** be familiar with the content requirement of the relevant jurisdiction.

In Australia, guidance pertaining to a Public Report's content may be obtained from ASIC Regulatory Guide (as at the date of this Code) RG 111.

(c) Sources

The Practitioner **must** state the sources of all Material information and data used in preparing a Public Report. Subject to any confidentiality, regulatory requirements and consents, references to the relevant published and unpublished reports and records **must** be provided. It may also be necessary to cite reports, data and records that were either available or known to the Practitioner that were possibly Material but not used, and the reasons why they were not used.

Practitioners should ensure the accuracy of summaries of or extracts from existing reports prepared by others, with any quotations used being in the form and context intended by the original authors.

The Practitioner **must** be familiar with the consent requirements of the relevant jurisdiction.

In Australia, guidance on obtaining consent to quote other authors can be found in ASIC Regulatory Guide (as at the date of this Code) RG 55 and ASIC Class Orders CO 07/428 and 429.

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Practitioners **must** not rely uncritically on the data and information. They **must** undertake suitable checks, enquiries, analyses and verification procedures considered by the Practitioners as meeting the Reasonable Grounds Requirement for the soundness of the inputs that lead to the conclusions drawn in a Public Report.

The data and information **must** not have been rendered invalid due to the passage of time and circumstance at the date of the Technical Assessment or Valuation. Such changes may include capital and operating cost structures, exploration techniques, geological interpretation and mining and metallurgical technologies.

(d) Responsibility

The Specialist **must** accept responsibility for assessing the technical data and information, interpretations, discussions and conclusions, forecasts and parameters used in a Technical Assessment or Valuation of a Mineral Asset. For Mineral Asset Valuations undertaken by the Specialist, the Specialist **must** also accept responsibility for the Valuation Approach, Valuation Methods and Public Report conclusion.

Technical Assessments and Valuations of Mineral Assets may be a collaborative effort. Where there is a clear division of responsibilities, each person **must** accept responsibility for their own contribution.

The Practitioner **must** clearly state within the Public Report under what conditions the work of other third parties has been relied upon and identify such other persons.

(e) Figures, maps, diagrams and tables

Maps and plans displaying Mineral Assets should employ the standard co-ordinate system adopted in the jurisdiction in which the Mineral Asset is located.

A Public Report should include appropriate photographs, plans, diagrams, graphs and maps, including one showing the geographical location of the Mineral Asset in relation to a capital city or major town. Maps, plans or other graphic information should be sufficient to illustrate the geology and other pertinent features. In particular, a map should show local landmarks and boundaries, dimensions and location relative to nearby projects that may have a significant bearing on the Mineral Asset.

Maps and graphics in a Public Report should:

(i) be of a suitable scale and with a recognised co-ordinate system;

(ii) show a bar scale and a direction arrow pointing north, designated as either magnetic, true or grid north;

(iii) show key area infrastructure where appropriate (eg ports, roads, power and water supply);

(iv) be readable and prepared so that no data is lost or obscured if it has been reduced in size for printing;

(v) if showing Exploration Results, be of such a scale so as to assist in the assessment of sampling and other exploration procedures; and

(vi) use standard industry symbols.

Where the exploration potential of Tenure is based on the results of geophysical or geochemical surveys, some form of graphical interpretation showing the results and interpretations of the surveys should be included in the Public Report.

5.3. Technical Assessment Report

A **Technical Assessment Report** involves the Technical Assessment of elements that may affect the economic benefit of a Mineral Asset.

5.4. Valuation Report

A **Valuation Report** expresses an opinion as to monetary Value of a Mineral Asset but specifically excludes commentary on the value of any related corporate Securities.

5.5. Independent Expert Report/Specialist Report

An **Independent Expert Report** is a type of Public Report which may be required by the Corporations Act, the Listing Rules of the ASX or other security exchanges. A report will only be an Independent Expert Report when the Practitioners are Independent of the Commissioning Entity and are perceived and acknowledged to be so by the Commissioning Entity.

When an Independent Expert Report requires a Technical Assessment and/or Valuation of Mineral Assets (the Specialist Report), the Specialist Report **must** be prepared by a Specialist.

The purposes for which the Code may apply include, but are not limited to:

(a) compensation for compulsory acquisitions,

(b) protection of the rights of shareholders in transactions between associated parties,

(c) public floats,

(d) 'fairness and reasonableness' reports (RG111) relating to an expressed opinion on a proposed acquisition or disposal of an asset or Securities,

(e) the justification for raising debt or equity finance from an outside party,

(f) facilitating negotiations between partners,

(g) the assessment of Government charges and taxes,

(h) estate settlements,

(i) litigation,

(j) reports for receivers and administrators, or

(k) accounting and financial reporting.

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

6. Commissioning a Public Report

6.1. Written engagement

When a Practitioner is not an employee of the Commissioning Entity, they **must** enter into a written agreement with the Commissioning Entity. This may be by an exchange of letters or emails specifying the terms governing the preparation of a Public Report.

> This written agreement should include contractually binding terms of engagement from the Commissioning Entity that were agreed upon prior to the commencement of the report. The terms of engagement should specify the requested information required to complete the exercise in accordance with the VALMIN Code and the effective date of the Public Report.

In Australia, the Commissioning Entity has a statutory obligation to provide the Practitioner with all the information it is aware of about the subject of the Public Report in sufficient detail to enable the Practitioner to determine its relevance.

> Further guidance on the relationship between the Commissioning Entity and Practitioners may be found in Australian Corporations Act 2001 s648A(3) and s667B(2), ASIC RG 112.31–112.37.

6.2. Scope

The written agreement with the Commissioning Entity **must** cover the scope and purpose of the Public Report.

> The agreement should address, but is not limited to, such matters as:
>
> (a) the purpose of the Public Report;
>
> (b) name(s), qualifications and relevant experience of the Practitioner;
>
> (c) an acknowledgement of the Independence and Competence of the Practitioner;
>
> (d) the effective date as agreed by the Commissioning Entity and the Practitioner; (e) name(s) or title(s) of the subject of the Public Report and of the Mineral Assets;
>
> (f) the basis for the cost of the Public Report;
>
> (g) when the Practitioner may refuse to provide an opinion or report as it is impossible or impractical to obtain sufficient accurate or reliable data or information;
>
> (h) with respect to an Independent Expert Report, the Practitioner to be engaged, their terms of engagement and the areas in which they are to contribute to the Public Report;
>
> (i) the right and obligation of the Practitioner to base findings on information within their own knowledge or acquired as a result of their own investigations, as well as on the information provided by the Commissioning Entity;

(j) acknowledgement that the Practitioner is obliged to conform with the VALMIN Code;

(k) a program for the progress and completion of the Public Report; this may include the dates for the completion of intermediate activities, the provision of data and information by the Commissioning Entity, the review of data and information by the Practitioner and the issuing of a draft of the Public Report to the Commissioning Entity;

(l) notification that the Practitioner should keep records of discussions with the Commissioning Entity, a list of all documents to be referred to in the Public Report, copies of all Material source documents and due diligence notes; and

(m) the provision of draft reports is for the purpose of factual checking by the Commissioning Entity.

Further guidance on the provision of draft reports and keeping records may be found in ASIC Regulatory Guide (as at the date of this Code) RG 112.

6.3. Cost

The cost of a Public Report will normally reflect the complexity of the Technical Assessment or Valuation, the amount of and state of the data available and the specific assessment or valuation difficulties encountered. Fees or the provision of further work to the Practitioner **must** not be dependent on the:

(a) conclusions of the Technical Report; or

(b) success or failure of the reason for which the Public Report was commissioned.

Time and cost constraints **must not** compromise the fundamental principles and requirements of the VALMIN Code. Any restrictions negatively affecting the depth of analysis or the extent of detail required **must** be recorded in the Public Report.

The cost of providing the Public Report **must** be disclosed.

6.4. Provision of previous reports

The Practitioner **must** seek from the Commissioning Entity the results of any Public Report it commissioned with respect to the Technical Assessment or Valuation of the Mineral Assets in question that could reasonably be considered to be Material. This should include any reports previously commissioned and completed but not made public.

If any Material Public Report is not presented to a Practitioner, the Commissioning Entity **must** ensure that the Practitioner is aware of the omission. The Practitioner **must** ensure that any resultant reports are qualified accordingly.

A Practitioner should make written enquiries of the directors or management of the Commissioning Entity about any other prior relevant technical, valuation or similar assessment reports. The Practitioner should interview relevant personnel and review the Commissioning Entity's database, responses to enquiries, reports and all other information and data relevant to the Public Report.

6.5. Confidential information

Some of the information that a Commissioning Entity holds concerning the subject matter of a Public Report may be regarded as confidential (such as offtake agreements for mineral concentrates). Therefore, it may not appear in a Public Report, even though it may be taken into account in the Technical Assessment and/or Valuation. However, there is no express exemption in the Corporations Act for disclosure of confidential information in Public Reports and disclosure may be required.

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

A Practitioner **must** obtain written confirmation from the Commissioning Entity as to whether any information is confidential. The Practitioner **must** take reasonable steps to gain access to all relevant confidential information from the Commissioning Entity. The Practitioner **must** then inform any other involved professional of any confidential information requirements. The Practitioner **must** review what aspects of the information needs to be disclosed in the Public Report.

In cases where commercially sensitive information is excluded from a Public Report, the report should provide summary information and context for the purpose of informing investors or potential investors and their advisers.

> For example, explain the methodology used to determine economic assumptions where the numerical value of those assumptions are commercially sensitive.

7. Technical Assessment

A **Technical Assessment** is an evaluation prepared by a Specialist of the technical aspects of a Mineral Asset.

Depending on the development status of the Mineral Asset, a Technical Assessment may include any or all of:

(a) Tenure,

(b) regional and local geology,

(c) Mineralisation, hosting potential and prospectivity,

(d) exploration and production history,

(e) Mineral Resources, Ore Reserves, Exploration Results and Exploration Targets,

(f) extraction methods and design,

(g) processing methods, flowsheets and recoveries,

(h) infrastructure availability and requirements,

(i) estimated capital and operating costs,

(j) actual and projected, or forward estimate, production,

(k) environmental, social and heritage impacts,

(l) JORC Code Modifying Factors and other aspects that could reasonably be expected to impact on the economic potential, and

(m) product pricing and revenue factors.

7.1. Study terminology

The various levels of assessment commonly use a number of technical terms. The terminology used in a Public Report **must** be consistent with the Definitions and Glossary.

7.2. Tenure Status

The Status of Tenure is Material and requires disclosure. A determination of the Status of Tenure is necessary and **must** be based on a sufficiently recent inquiry to ensure that the information is accurate for the purposes of the Public Report in question. A Practitioner **must** determine whether this inquiry is to be conducted by a Specialist or another suitably qualified party, but Tenure that is Material **must** be or recently have been verified independently of the Commissioning Entity.

A Public Report **must** contain a list of all Material Tenure that is prepared by or on behalf of the Practitioner, unless that information is provided in an accompanying report.

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

A Tenure list should specify:

(a) Tenure area, expiry and renewal dates,

(b) expenditure commitments, rents and rates, security bonds or reclamation liability,

(c) obligations to any third party, including, but not limited to, joint venture or royalty agreements, and

(d) title and location of any contiguous and geologically related Tenure that, in the opinion of the Practitioner, may have a Material bearing on the value of the Tenure under consideration.

7.3. Mineralisation, Mineral Resources and Ore Reserves

(a) Definitions

Mineral Resources, **Ore Reserves** and **Exploration Targets** have the same meanings as in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

(b) Quality and Reasonableness

The Specialist **must** comment on the quality and Reasonableness of any Mineral Resource or Ore Reserve estimates. The extent to which they have been reported in accordance with applicable statutory requirements, applicable Listing Rules and the JORC Code **must** be presented.

Exploration Targets involve forward-looking statements, for which there **must** meet the Reasonable Grounds Requirement.

(c) Correlation and causation

Where Mineralisation on a nearby property is noted in the Public Report, maps or sections should indicate the relationship of its geology to that of any Tenure that is the subject of the Public Report.

Where comparisons are made with geological situations at known Mineral occurrences, all relevant factors should be presented. Where a causal relationship such as continuity of geological structures is claimed, a Specialist should clearly show how the claimed continuity is considered relevant to the Public Report. Where a comparison has been made and there is no causal relationship, this **must** be stated.

The absence of mineralisation on adjoining or nearby Tenure may be as important as its presence. When Material to a Public Report, the Specialist should disclose and explain the presence or absence of known mineralisation or Exploration Results.

7.4. Mineral Extraction

A Public Report that deals with current or proposed mining and processing **must** include:

(i) a description of mining or recovery methods with the relevant forecast and realised mining or recovery statistics;

(ii) a description of plant, technology and operating practices, together with actual or forecast process plant recoveries from mill feed to marketable products; and

(iii) if relevant, reasons to support any recommendation to reopen facilities that are either on care and maintenance or have been abandoned.

A **Production Target** is a projection or forecast of the amount of Mineral to be extracted from particular Tenure for a period that extends past the current year and the forthcoming year.

Production Targets involve forward-looking statements, for which there **must** meet the Reasonable Grounds Requirement.

In Australia, the ASX and ASIC regulate the reporting of Production Targets.

(a) Practices

Any existing or proposed operating, environmental and social practices **must** be reviewed to establish the technical, economic, environmental and social feasibility of the operation.

Matters to be reviewed for Mineral Assets may include, but are not limited to:

(i) mining and processing methods,
(ii) grade control, mining loss and dilution,
(iii) geotechnical, hydrological and climatic conditions,
(iv) mineralogical and metallurgical factors likely to affect process recovery,
(v) flow sheet design,
(vi) variability of the mineralised body's physical and chemical properties,
(vii) metallurgical recoveries and performance,
(viii) tailings and waste disposal,
(ix) quantity and quality of final and intermediate products and waste,
(x) labour sources, requirements and productivity,
(xi) operating practices and technologies employed or to be employed;
(xii) equipment availability, utilisation and performance,
(xiii) energy and water sources,
(xiv) recent trial mining and treatment data (for proposed operations),
(xv) construction and commissioning schedules,
(xvi) marketability of products, revenue factors, commodity prices and exchange rates,
(xvii) product transport and realisation issues,
(xviii) environmental, legal, statutory and social constraints and commitments, and
(xix) closure and post-closure activities and schedules.

(b) Performance estimates

Comparison of proposed performance estimates to relevant prior performance.

Such comparisons should include, but are not limited to:

(i) tonnage or volumes mined and, where applicable, processed,
(ii) reconciliation of past production to Ore Reserve estimates,
(iii) product quantity and quality, and
(iv) production cost.

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

(c) Other factors

A Public Report **must** disclose any Material existing or potential obstacles to exploring, developing or mining activity related to the Mineral Asset. This may include statutory, legal, technical, environmental, commercial, socio-political or other obstacles to future exploration, development or production.

7.5. Capital and Operating Costs

(a) Estimates

A Public Report should outline the range or assessed order of accuracy of forecast capital and operating cost estimates that have been adopted, together with supporting data and date reference.

The Specialist should review and describe the actual and forecast capital and operating costs for the estimated productive life of the Mineral Assets subject to the Public Report.

Where a Public Report includes information relating to projected costs, the Specialist **must** apply the Reasonableness Test to these costs and make any adjustments **if** necessary.

(b) Adequacy

The Specialist should report the adequacy of (and obstacles to) accessing appropriate services and infrastructure, and at what cost.

Capital and operating cost estimates should take into account any likely changes with time in factors such as work practices and productivity, and be sufficiently detailed to assess whether they are realistic and achievable.

Estimates of capital costs are likely to include, but are not be limited to:

(i) feasibility and associated studies costs,

(ii) acquisition cost,

(iii) construction, implementation and commissioning costs,

(iv) working capital,

(v) owner's cost,

(vi) sustaining capital,

(vii) decommissioning, rehabilitation and site restoration costs,

(viii) contingency allowance, and

(ix) a stated level of accuracy of cost estimates.

Estimates of operating costs are likely to include but are not limited to:

(i) workforce employment,

(ii) consumables and spare parts,

(iii) power, water and other services,

(iv) contract services,

(v) equipment lease and hire,

(vi) on-site and off-site administration,

(vii) environmental protection and monitoring, and non-capitalised rehabilitation,

(viii) transport and accommodation of workforce,

(ix) social and community programs,

(x) product marketing, transport and realisation,

(xi) taxes, royalties and other governmental charges,

(xii) contingency allowance, and

(xiii) a stated level of accuracy of cost estimates.

Services and infrastructure to be considered include power, water supply, transport, communications, security, workforce accommodation, housing, medical services and waste and tailings treatment and/ or disposal facilities. The Public Report should also review any access and terrain conditions that may affect the logistics of exploration and development.

(c) Comparison

Where the Practitioner considers it appropriate, capital and operating cost estimates should be compared to relevant similar operations.

Both capital and operating costs should be set out under broad functional headings and in terms of a suitable unit such as 'per ounce of gold produced' or 'per tonne of annual plant throughput', in addition to total capital and total annual operating costs.

7.6. Revenue

(a) Assumptions

A Public Report should assess the Mineral Asset's potential revenue stream over an appropriate period.

Where a Public Report includes information relating to forecast revenue, it **must** set out a reasonable basis for price-related assumptions applying to any product(s) derived from the Mineral Asset.

The price-related assumptions may include, but are not limited to:

(i) forecast product prices, smelter treatment and refinery charges, current and forecast market conditions and the likely quantity and quality of product,

(ii) penalty and premium components of the product,

(iii) variation in product price and basis and source of forecast product prices used,

(iv) size, nature and location of markets,

(v) commodity market imbalances and pricing discounts or premiums,

(vi) sales volumes,

(vii) price escalation,

(viii) exchange rates,

(ix) hedging or forward sales contracts, and

(x) residual value.

The potential revenue estimates should be clearly stated as being either in real or nominal currency terms.

Where by-product credits are a Material contributor to revenue, costs of production should be documented with and without by-product credits.

A Practitioner **must** apply the Reasonableness Test to revenue assumptions and make any adjustments if necessary.

(b) Market assessment

Consideration of the proposed production volume and product quality with likely market opportunities and available Mineral Resources and/or Ore Reserves should be incorporated into the Public Report.

8. Valuation

8.1 Basis of Value

A Public Report must disclose the basis of value. The basis of value is a statement of the fundamental measurement assumptions of a valuation. The VALMIN Code primarily uses the terms Market Value and Technical Value, although circumstance may require the use of alternative definitions.

Technical Value is an assessment of a Mineral Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by a Practitioner, excluding any premium or discount to account for market considerations.

> The term Technical Value has an intended meaning that is similar to the IVSC term Investment Value.

Market Value is the estimated amount (or the cash equivalent of some other consideration) for which the Mineral Asset should exchange on the date of Valuation between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing where the parties had each acted knowledgeably, prudently and without compulsion.

> The term Market Value has the same intended meaning and context as the IVSC term of the same name. This has the same meaning as Fair Value in RG111. In the 2005 edition of the VALMIN Code this was known as Fair Market Value.

Market Value may be higher or lower than Technical Value. A Public Report should take such factors into account, stating the results of the principal Valuation Method(s) used and disclosing the amount of and reasons for the difference between the Market Value and Technical Value.

A Valuation Report **must** state the nature of the Value(s) determined and their Valuation Date(s).

As the Values of Mineral Assets are likely to fluctuate over time, a Practitioner **must** ensure that the opinion expressed and the Valuation provided is consistent with circumstances as of the Valuation Date.

8.2. Common Valuation Approaches

The selection of the Valuation Approach and underlying Valuation Method used is the responsibility of a Practitioner and **must** not be influenced by the Commissioning Entity or other parties.

Within each Valuation Approach, there are Valuation Methods that share a common rationale or basis but differ in how they are calculated.

Three widely accepted Valuation Approaches are:

(a) **Market-based**, which is based primarily on the notion of substitution. In this Valuation Approach the Mineral Asset being valued is compared with the transaction value of similar Mineral Assets under similar time and circumstance on an open market.

> Valuation Methods include but are not limited to comparable sales transactions and joint venture terms.

(b) **Income-based**, which is based on the notion of cashflow generation. In this Valuation Approach the anticipated benefits of the potential income or cash flow of a Mineral Asset are analysed.

> Valuation Methods include but are not limited to discounted cashflow and multiples of earnings.

(c) **Cost-based**, which is based on the notion of cost contribution to Value. In this Valuation Approach the costs incurred on the Mineral Asset are the basis of analysis.

> Valuation Methods include but are not limited to sunk costs or current replacement costs.
>
> Guidance on Valuation Approaches and Valuation Methods may be obtained from International Financial Reporting Standard number 13.

8.3. Appropriate Valuation Approach

While each Valuation is time- and circumstance-specific, a general guide to the applicability of each Valuation Approach is outlined in Table 1.

TABLE 1

Valuation Approach	Exploration Projects	Pre-development Projects	Development Projects	Production Projects
Market	Yes	Yes	Yes	Yes
Income	No	In some cases	Yes	Yes
Cost	Yes	In some cases	No	No

> For papers on valuation in the minerals sector, refer to the OneMine Global Library on the AusIMM web site (http://www.ausimm.com.au) and the Publications section of the AIG web site (http://www.aig.org.au).

A Valuation Report should make use of at least two Valuation Approaches. Where more than one Valuation Approach is used, the Practitioner should comment on how the results compare and on the reasons for selecting the Value adopted. If it is impractical to use two Valuation Approaches, the Practitioner **must** clearly and unambiguously outline the reasons for not doing so.

A Practitioner **must** make use of Valuation Methods that are suitable for the Mineral Assets under consideration. Selection of an appropriate Valuation Method will depend on such factors as the:

(a) nature of the Valuation;

(b) development status of the Mineral Assets; and

(c) extent and reliability of available information.

The Practitioner **must** disclose and discuss in the Public Report the Valuation Method(s) used, having regard to each of these factors so that another Practitioner can understand the procedure and arrive at a similar conclusion within reasonable bounds. It may also be desirable to discuss why a particular Valuation Method has not been used.

8.4. In Situ Values

Consistent with the JORC Code, in ground (in situ) values **must** not be reported in a Public Report.

> For example, applying a $1,500 ounce gold price to a 100,000 ounce gold deposit and reporting an in situ value of $150,000,000 is not permissible as this approach ignores appropriate Modifying Factors such as metallurgical recovery and is a misleading statement.

8.5. Use of Ore Reserves and Mineral Resources

All Ore Reserves and Mineral Resources **must** be considered in a Technical Assessment or Valuation. When the Reasonable Grounds Requirement has been met for a Valuation, it is generally acceptable to use all Proved and Probable Ore Reserves in the Income Approach. It may sometimes be appropriate to include other classifications, but these **must**, subject to the Reasonableness Test:

(a) meet the minimum reporting requirements of the ASX Listing Rules and guidance, the ASIC Regulatory Guidelines and guidance, and the JORC Code;

(b) not include Exploration Targets that have not been converted to Production Targets;

(c) be scheduled for extraction behind Proved and Probable Ore Reserves, where practical to do so;

(d) include a statement by the Specialist that confirms the appropriateness of the Modifying Factors along with a description of their level of certainty relative to those of a Feasibility Study or Pre-Feasibility Study; and

(e) be discounted in a manner that is commensurate with the increased uncertainty.

8.6. Range

A range of values (high/most likely/low) **must** be determined and stated in a Public Report to reflect any uncertainties in the data and the interaction of the various assumptions made; however, the range should not be so wide as to render the conclusion of the Public Report meaningless.

A Public Report should also include a sensitivity analysis showing the effects of changing the most significant assumptions. In all cases, a most likely outcome should be identified. Any reasons for not doing so **must** be stated in the Public Report.

8.7. Market premium or discount

When a premium or discount is used in determining a Market Value, a Practitioner **must** state how these have been taken into account.

> For example, based on empirical evidence from relevant data points, a controlling stake (eg 51%) may have a Market Value that is other than 51% of the 100% equivalent transaction.

9. Financial Modelling

9.1. Taxation and royalties

The basis for using income tax and other taxes, royalties, cost escalation, inflation and exchange rates in a cash flow model for Valuation purposes **must** be stated in the Public Report.

For guidance regarding the structure and good practice for financial modelling, refer to the "Guidelines for Technical Economic Evaluation of Minerals Industry Projects", which is included in Appendix 1 of the AusIMM Mine Manager's Handbook – Monograph 26 or (as at the date of this Code) is available from http://www.ausimm.com.au/content/docs/guidelines_tech_economic_evaluation2012.pdf.

9.2. Financing

The conclusions of a Public Report may be affected by the nature of the financing arrangements for a project. A Practitioner should therefore review any such commitments made and the likelihood and form of financing.

Depending upon the terms of reference of the Public Report and subject to the Reasonable Grounds Requirement, the Practitioner may need to assume an appropriate standard financing structure and appropriate funding timeframe.

In Australia, guidance on financing factors to be taken into account may be obtained from documents in the ASIC Regulatory Guides.

9.3. Liabilities, commitments and financial exposures

Depending upon the scope of the Public Report, the Practitioner should report upon liabilities, commitments and financial exposures.

Such financial exposures may include, but are not limited to:

(a) creditors,

(b) expenditure and commitments on exploration Tenures,

(c) the cost of environmental regulatory requirements, rehabilitation and mine closure,

(d) security deposits, and

(e) material agreements and contracts, including development plans, sales contracts, joint venture agreements, royalty agreements, project permits and environmental and access requirements.

The nature and basis of any consideration or benefit payable to a vendor, promoter or provider of seed capital, and of any conditions involved, should be assessed and quantified in a Public Report.

9.4. Forecasts

Current and forecast future economic conditions and Securities markets may influence the economic viability and Value of Mineral Assets. A Public Report should contain a discussion of these conditions, along with supporting evidence.

Financial models use forecast assumptions. Such forecasts may be considered forward-looking statements and therefore the Practitioner **must** be familiar with the relevant requirements about such statements.

> In the Australian context, this may include the provisions of ASIC Regulatory Guide (as at the date of this Code) RG 170.

10. Risks and opportunities

A Public Report should include an evaluation of the risks likely to apply to the Mineral Assets under consideration. A risk evaluation includes an analysis of the uncertainties inherent in the assumptions made and the effects they may have on the outcome.

Risks may arise with respect to the availability, uncertainty and quality of data and other information, including, but not limited to:

(a) geological prospectivity and the possibility that further exploration may fail to demonstrate economic Mineralisation (in the case of projects without defined Ore Reserves),

(b) geology of the mineral deposits,

(c) estimation of Mineral Resources or Ore Reserves,

(d) operational aspects including the mining/extraction method, dilution and mining losses, equipment sizing and efficiencies, use of selective mining assumptions, waste management, meeting regulatory requirements and mine closure,

(e) mineral processing and the variability of metallurgical parameters and wellfield extraction such as recovery rates, process plant availability and the ability of new processes to be financed and perform as forecast,

(f) construction, including unforeseen physical conditions or weather or industrial disputes, which may affect both capital costs and completion date,

(g) provision and adequacy of infrastructure,

(h) commodity price, inflation and exchange rate forecasts,

(i) production of marketable commodities in terms of quality, price and cost of production, (j) sovereign risk involving social, political, environmental, cultural and security factors that cannot be controlled by project operators, and

(k) project funding.

A Practitioner should report upon the likelihood of deviating from base assumptions. These may include delays in completion or commissioning of projects; major changes in operating practices; or possible difficulties with new or scaled-up technologies, especially where such factors may have a significant effect on the technical or financial viability of the Mineral Assets. To indicate the risk profile of the subject of a Public Report, the monetary Value of a Mineral Asset should be expressed numerically as a range, together with the most likely figure.

Where opportunities are presented in a Public Report, they should be addressed separately to any discussion of risks.

11. Other

11.1. Site inspection

Where inspection of a Mineral Asset or Tenure is likely to reveal information or data that is Material to a Public Report, the Specialist should inspect it.

If an inspection is not made, the Specialist **must** be satisfied that there is sufficient current information available to allow an informed evaluation to be made without an inspection and **must** declare the reasons for not undertaking a site visit.

Any decision not to conduct an inspection **must** be made by the Specialist and not by the Commissioning Entity and the reason **must** be disclosed in the Public Report.

> Inspection of Early-stage Exploration Projects would not normally be required, except where the Specialist considers it to be Material to the Public Report.

11.2. Draft reports

A draft copy of a Public Report should be given to the Commissioning Entity so that it can advise the Practitioner of any Material omissions, comment on the factual accuracy, and assumptions made and advise on any included information that is confidential.

11.3. Records

A Practitioner **must** keep records for a minimum of seven years of all correspondence and discussions with the Commissioning Entity, a list of all documents referred to in the Public Report and, subject to confidentiality agreement provisions, copies of all Material source documents.

11.4. Indemnities

A Practitioner should obtain an indemnity from the Commissioning Entity under which they will be compensated for any liability:

(a) resulting from their reliance on information provided by the Commissioning Entity that is Materially inaccurate or incomplete; and

(b) relating to any consequential extension of workload through queries, questions or public hearings arising from the Public Report.

Such an indemnity does not absolve a Practitioner from critically examining the information provided. A

Public Report **must** disclose the nature and Material details of any such indemnity.

12. Declarations

12.1 Standard

A Practitioner **must** declare in a Public Report that the report has been prepared in accordance with the VALMIN Code or indicate those areas where the report is not and explain why this is so. The name of the Practitioner responsible for the Public Report **must** be included and the Practitioner **must** sign off on the Public Report.

Issuing of a Public Report concerning the Technical Assessment and Valuation of Mineral Assets is the responsibility of the Commissioning Entity. The Public Report **must** be based on and fairly reflect the information and supporting documentation prepared by a Practitioner. A Commissioning Entity issuing a Public Report shall disclose the name of the Practitioner, state whether the Practitioner is a permanent employee of the company and, if not, name the Practitioner's employer. The report shall be issued with the written consent of the Practitioner as to the form and context in which it appears.

Appropriate forms of compliance statements may be as follows (delete bullet points that do not apply):

(a) If the required information is in the report:

'The information in this report that relates to Technical Assessment and Valuation of Mineral Assets reflects information compiled and conclusions derived by (insert name of Practitioner), who is a (insert Member or Fellow) of (insert The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a Recognised Professional Organisation included in a list promulgated from time to time).'

(b) If the required information is included in an attached statement:

'The information in the attached report that relates to Technical Assessment and Valuation of Mineral Assets reflects information compiled and conclusions derived by (insert name of Practitioner), who is a (insert Member or Fellow) of (insert The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a Recognised Professional Organisation included in a list promulgated from time to time).'

(c) Whether the Practitioner is a permanent employee of the Commissioning Entity or not:

'(Insert name of Practitioner) is (not) a permanent employee of the company.'

(d) Plus, for all reports:

'(Insert name of Practitioner) has sufficient experience relevant to the Technical Assessment and Valuation of the Mineral Assets under consideration and to the activity which (he/she) is undertaking to qualify as a Practitioner as defined in the 2015 edition of the 'Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets'. (Insert name of Practitioner) consents to the inclusion in the report of the matters based on (his/her) information in the form and context in which it appears.'

Documentation detailing Technical Assessment and Valuation of Mineral Assets on which a Public Report on the Technical Assessment or Valuation is based **must** be prepared by, or under the direction of and signed by, a Practitioner. The documentation **must** provide a fair representation of Technical Assessment and/or Valuation being reported.

12.2. Professional Organisation

Where a Public Report is being produced, each of the Practitioners should declare to the Commissioning Entity the name of the Professional Organisation(s) to which they belong and the Codes to which they must comply.

12.3. Qualifications and Organisations

A Public Report **must** state a Practitioner's name, qualifications, memberships of Professional Organisations, relevant experience and any requisite licence details. Practitioners **must** identify the nature and contribution of each author to the Public Report.

12.4. Corporation and licences

Where a Public Report is prepared, the name, registered address and, if registered in Australia, Australian Business Number (ABN), Australian Registered Body Number (ARBN) or Australian Company Number (ACN) should be included. Where relevant, the Australian Financial Services Licence (AFSL) Number should be stated.

12.5. Sign-off

A Practitioner **must** not sign a Public Report unless the Commissioning Entity has confirmed in writing that:

(a) full, accurate and true disclosure of all Material information has been made to the Practitioner;

(b) all necessary access to the Commissioning Entity's personnel and records has been assured;

(c) whether any information from the Commissioning Entity is confidential; and

(d) the integrity of the Practitioner and the conclusion of the Public Report has not been compromised.

The Practitioner **must** be provided with a draft of the Public Report so that the Practitioner can consent in writing to the form and context in which the Practitioner's report will appear.

13. Acronyms

AASB	Australian Accounting Standards Board
ABN	Australian Business Number
ACN	Australian Company Number
AIG	Australian Institute of Geoscientists
ARBN	Australian Registered Body Number
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
AusIMM	the Australasian Institute of Mining and Metallurgy
CIMVAL	Standards and Guidelines for Valuation of Mineral Properties Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum on Valuation of Mineral Properties
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
IFRS	International Financial Reporting Standards
IMVAL	International Mineral Valuation Standards Committee
IVSC	International Valuation Standards Committee
JORC	Joint Ore Reserves Committee
JORC Code	the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
MICA	Mineral Industry Consultants Association
MCA	Minerals Council of Australia
PDS	Product Disclosure Statement (as used in ASIC Regulatory Guide RG55)
PRMS	Petroleum Resources Management System
SAMVAL	the South African Code for the Reporting of Mineral Asset Valuation
VALMIN Code	the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets

14. Definitions

Code Principles means the fundamental principles of the VALMIN Code, which are Competence, Materiality and Transparency.

Commissioning Entity is the organisation, company or person that commissions a Public Report.

Competence or being **Competent** requires that the Public Report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional Code of Ethics. Also see Clause 3.2 for guidance on Competence.

Effective Date means the date upon which the Technical Assessment or Valuation is considered to take effect. This may be different from the Valuation Date or the date upon which an event (such as preparation, transaction or site visit) actually occurred or is recorded.

Independence or being **Independent** requires that there is no present or contingent interest in the Assets, nor is there any association with the Commissioning Entity or related parties that is likely to lead to bias. Also see Clause 4.2 for guidance on Independence.

Independent Expert Report means a Public Report as may be required by the Corporations Act, the Listing Rules of the ASX or other security exchanges prepared by a Practitioner who is acknowledged as being independent of the Commissioning Entity. Also see ASIC Regulatory Guides RG 111 and RG 112 as well as Clause 5.5 of the VALMIN Code for guidance on Independent Expert Reports.

Market Value means the estimated amount of money (or the cash equivalent of some other consideration) for which the Mineral Asset should exchange on the date of Valuation between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing wherein the parties each acted knowledgeably, prudently and without compulsion. Also see Clause 8.1 for guidance on Market Value.

Materiality or being **Material** requires that a Public Report contains all the relevant information that investors and their professional advisors would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgement regarding the Technical Assessment or Mineral Asset Valuation being reported. Where relevant information is not supplied, an explanation must be provided to justify its exclusion. Also see Clause 3.2 for guidance on what is Material.

Mineral Asset means all property including (but not limited to) tangible property, intellectual property, mining and exploration Tenure and other rights held or acquired in connection with the exploration, development of and production from those Tenures. This may include the plant, equipment and infrastructure owned or acquired for the development, extraction and processing of Minerals in connection with that Tenure.

Most Mineral Assets can be classified as either:

(a) **Early-stage Exploration Projects** – Tenure holdings where Mineralisation may or may not have been identified, but where Mineral Resources have not been identified;

(b) **Advanced Exploration Projects** – Tenure holdings where considerable exploration has been undertaken and specific targets identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of Mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resources category;

(c) **Pre-Development Projects** – Tenure holdings where Mineral Resources have been identified and their extent estimated (possibly incompletely), but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources have been identified, even if no further work is being undertaken;

Note: Procedural and mandatory items are in normal typeface, with the word '**must**' in **bold**; guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

(d) **Development Projects** – Tenure holdings for which a decision has been made to proceed with construction or production or both, but which are not yet commissioned or operating at design levels. Economic viability of Development Projects will be proven by at least a Pre-Feasibility Study;

(e) **Production Projects** – Tenure holdings – particularly mines, wellfields and processing plants – that have been commissioned and are in production.

Practitioner is an Expert as defined in the Corporations Act, who prepares a Public Report on a Technical Assessment or Valuation Report for Mineral Assets. This collective term includes Specialists and Securities Experts. Also see Clause 2 for guidance on Practitioners.

Production Target means a projection or forecast of the amount of Minerals to be extracted from particular Tenure for a period that extends past the current year and the forthcoming year.

Public Report means a report prepared for the purpose of informing investors or potential investors and their advisers when making investment decisions, or to satisfy regulatory requirements. It includes, but is not limited to, Annual Reports, Quarterly Reports, press releases, Information Memoranda, Technical Assessment Reports, Valuation Reports, Independent Expert Reports, website postings and Public Presentations. Also see Clause 5 for guidance on Public Reports.

Reasonableness implies that an assessment which is impartial, rational, realistic and logical in its treatment of the inputs to a Valuation or Technical Assessment has been used, to the extent that another Practitioner with the same information would make a similar Technical Assessment or Valuation. Also see Clause 4.1 for guidance on Reasonableness and Reasonableness Test.

Reasonable Grounds Requirement has the meaning referred to in sections of the Corporations Act and sections of the Australian Securities and Investments Commission Act 2001 that require statements about future matters to be based on reasonable grounds (as of the date of making the statement) or else they will be taken to be misleading.

Reasonableness Test is defined in clause 4.1(b).

Recognised Professional Organisation means any professional organisation listed on the VALMIN website as a Recognised Professional Organisation (refer to www.valmin.org/competent.asp)

Representative Specialists are persons who are the nominated representative(s) of a legally constituted body, and who supervise the preparation of a Public Report and accept responsibility for it on behalf of that body. Representative Specialists are Specialists.

Securities has the meaning as defined in the Corporations Act.

Securities Expert are persons whose profession, reputation or experience provides them with the authority to assess or value Securities in compliance with the requirements of the Corporations Act, ASIC Regulatory Guides and ASX Listing Rules.

Specialist are persons whose profession, reputation and relevant industry experience in a technical discipline (such as geology, mine engineering or metallurgy) provides them with the authority to assess or value Mineral Assets.

Specialist Report is defined in Clause 5.5.

Technical Assessment is an evaluation prepared by a Specialist of the technical aspects of a Mineral Asset. Depending on the development status of the Mineral Asset, a Technical Assessment may include the review of geology, mining methods, metallurgical processes and recoveries, provision of infrastructure and environmental aspects.

Technical Assessment Report involves the Technical Assessment of elements that may affect the economic benefit of a Mineral Asset.

Technical Value is an assessment of a Mineral Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by a Practitioner, excluding any premium or discount to account for market considerations.

Tenure is any form of title, right, licence, permit or lease granted by the responsible government in accordance with its mining legislation that confers on the holder certain rights to explore for and/or extract agreed minerals that may be (or is known to be) contained. Tenure can include third-party ownership of the Minerals (for example, a royalty stream). Tenure and Title have the same connotation as Tenement.

Transparency or being **Transparent** requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled by this information or by omission of Material information that is known to the Practitioner.

Valuation is the process of determining the monetary Value of a Mineral Asset at a set Valuation Date.

Valuation Approach means a grouping of valuation methods for which there is a common underlying rationale or basis.

Valuation Date means the reference date on which the monetary amount of a Valuation in real (dollars of the day) terms is current. This date could be different from the dates of finalisation of the Public Report or the cut-off date of available data. The Valuation Date and date of finalisation of the Public Report **must** not be more than 12 months apart.

Valuation Methods means a subset of Valuation Approaches and may represent variations on a common rationale or basis.

Valuation Report expresses an opinion as to monetary Value of a Mineral Asset but specifically excludes commentary on the value of any related Securities.

Value means the Market Value of a Mineral Asset. See definition of Market Value.

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guideline items are in boxes and italics and those definitions incorporated in the text of the Code are in **bold**.

15. Glossary

Annual Report means a document published by public corporations on a yearly basis to provide shareholders, the public and the government with financial data, a summary of ownership and the accounting practices used to prepare the report.

Australasian means Australia, New Zealand, Papua New Guinea and their off-shore territories.

Code of Ethics means the Code of Ethics of the relevant Professional Organisation or Recognised Professional Organisations.

Corporations Act means the Australian Corporations Act 2001 (Cth).

Experts are persons defined in the Corporations Act whose profession or reputation gives authority to a statement made by him or her in relation to a matter. A Practitioner may be an Expert. Also see Clause 2.1.

Exploration Results is defined in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Refer to http://www.jorc.org for further information.

Feasibility Study means a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-feasibility Study.

Financial Reporting Standards means Australian statements of generally accepted accounting practice in the relevant jurisdiction in accordance with the Australian Accounting Standards Board (AASB) and the Corporations Act.

Information Memoranda means documents used in financing of projects detailing the project and financing arrangements.

Investment Value means the benefit of an asset to the owner or prospective owner for individual investment or operational objectives.

Life-of-Mine Plan means a design and costing study of an existing or proposed mining operation where all Modifying Factors have been considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified. Such a study should be inclusive of all development and mining activities proposed through to the effective closure of the existing or proposed mining operation.

Member means a person who has been accepted and entitled to the post-nominals associated with the AIG or the AusIMM or both. Alternatively, it may be a person who is a member of a Recognised Professional Organisation included in a list promulgated from time to time.

Mineable means those parts of the mineralised body, both economic and uneconomic, that are extracted or to be extracted during the normal course of mining.

Mine Design means a framework of mining components and processes taking into account mining methods, access to the Mineralisation, personnel, material handling, ventilation, water, power and other technical requirements spanning commissioning, operation and closure so that mine planning can be undertaken.

Mine Planning includes production planning, scheduling and economic studies within the Mine Design taking into account geological structures and mineralisation, associated infrastructure and constraints, and other relevant aspects that span commissioning, operation and closure.

Mineral means any naturally occurring material found in or on the Earth's crust that is either useful to or has a value placed on it by humankind, or both. This excludes hydrocarbons, which are classified as Petroleum.

Mineralisation means any single mineral or combination of minerals occurring in a mass, or deposit, of economic interest. The term is intended to cover all forms in which mineralisation might occur, whether by class of deposit, mode of occurrence, genesis or composition.

Mineral Project means any exploration, development or production activity, including a royalty or similar interest in these activities, in respect of Minerals.

Mineral Securities means those Securities issued by a body corporate or an unincorporated body whose business includes exploration, development or extraction and processing of Minerals.

Mineral Resources is defined in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Refer to http://www.jorc.org for further information.

Mining means all activities related to extraction of Minerals by any method (eg quarries, open cast, open cut, solution mining, dredging etc).

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

Modifying Factors is defined in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Refer to http://www.jorc.org for further information.

Ore Reserves is defined in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Refer to http://www.jorc.org for further information.

Petroleum means any naturally occurring hydrocarbon in a gaseous or liquid state, including coal-based methane, tar sands and oil-shale.

Petroleum Resource and **Petroleum Reserve** are defined in the current version of the Petroleum Resources Management System (PRMS) published by the Society of Petroleum Engineers, the American Association of Petroleum Geologists, the World Petroleum Council and the Society of Petroleum Evaluation Engineers. Refer to http://www.spe.org for further information.

Preliminary Feasibility Study (Pre-Feasibility Study) means a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors that are sufficient for a Competent Person, acting reasonably, to determine if all or part of the Mineral Resources may be converted to an Ore Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.

Professional Organisation means a self-regulating body, such as one of engineers or geoscientists or of both, that:

(a) admits members primarily on the basis of their academic qualifications and professional experience;

(b) requires compliance with professional standards of expertise and behaviour according to a Code of Ethics established by the organisation; and

(c) has enforceable disciplinary powers, including that of suspension or expulsion of a member, should its Code of Ethics be breached.

Public Presentation means the process of presenting a topic or project to a public audience. It may include, but not be limited to, a demonstration, lecture or speech meant to inform, persuade or build good will.

Quarterly Report means a document published by public corporations on a quarterly basis to provide shareholders, the public and the government with financial data, a summary of ownership and the accounting practices used to prepare the report.

Royalty or Royalty Interest means the amount of benefit accruing to the royalty owner from the royalty share of production.

Scoping Study means an order of magnitude technical and economic study of the potential viability of Mineral Resources. It includes appropriate assessments of realistically assumed Modifying Factors together with any other relevant operational factors that are necessary to demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified.

Status in relation to Tenure means an assessment of the security of title to the Tenure.

Vendor Consideration Opinion means a Public Report involving a Valuation and expressing an opinion on the fairness of the consideration paid or benefit given to a vendor, promoter or provider of seed capital.

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