PSE **MEMORANDUM** **CN_2021-0056**

THE PHILIPPINE STOCK EXCHANGE, INC.

☐ Trading
☐ Disclosure
☐ Listing
☐ Public Advisory
☐ Administrative/Technology Matters
☑ Others: **Effectivity of the 2020 PMRC**

TO : **THE INVESTING PUBLIC AND MARKET PARTICIPANTS**

SUBJECT : **EFFECTIVITY OF THE 2020 PHILIPPINE MINERAL REPORTING CODE (2020 PMRC)**

DATE : **November 4, 2021**

Please be informed that in a letter dated September 13, 2021, the Securities and Exchange Commission ("SEC") informed the Exchange that on September 2, 2021, the SEC En Banc approved the 2020 Philippine Mineral Reporting Code ("2020 PMRC"), subject to compliance with certain requirements.

In view of the Exchange's compliance with SEC's requirements on September 20, 2021, the 2020 PMRC shall take effect immediately. However, listed companies are given a two (2) -year transitory period from September 20, 2021, during which they shall have the option to continue abiding by the 2007 PMRC standards or shifting to the 2020 PMRC. Please be advised that the use of both 2007 PMRC and 2020 PMRC standards is not allowed. If, at any point during the transitory period, a company adopts the 2020 PMRC standards, it can no longer revert to the use of the 2007 PMRC standards.

The 2020 PMRC, which was modelled substantially after the 2019 International Reporting Template of the Committee for Mineral Reserves International Reporting Standards ("CRIRSCO") and the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves of the Australasian Joint Ore Reserves Committee ("JORC"), aligns the 2007 PMRC with current international reporting standards.

A copy of the 2020 PMRC is attached hereto as Annex "A".

Also attached as Annex "B" is a colored copy of the 2020 PMRC, showing the revisions made from the 2007 PMRC.

For your information and guidance.

(Original Signed)
Ramon S. Monzon
President and CEO

CMDD	FD	IRD	MOD	TD	HRD / RISK / SU	CCD / FMD / AD	OGC	COO

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Annex “A”

Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources, and Mineral Reserves

The PMRC

2020 Edition

Prepared by the PMRC Committee composed of the Philippine Society of Mining Engineers, Geological Society of the Philippines, Society of Metallurgical Engineers of the Philippines, The Philippine Stock Exchange, Inc., Chamber of Mines of the Philippines, Philippine Mining and Exploration Association, the Philippines-Australia Business Council, and Philippine Chamber of Coal Mines, and supported by the Mines and Geosciences Bureau

CONTENTS

Foreword

1. The Philippine Mineral Reporting Code (PMRC), or the "Code" sets out minimum standards, recommendations, and guidelines for Public Reporting in the Philippines of Exploration Results, Mineral Resources, and Mineral Reserves. The Code was formulated to set minimum standards for Public Reporting that are compatible with global standards.

   The PMRC 2020 Edition is an upgrade of the PMRC 2007 Edition and modeled substantially after the International Reporting Template (2019) of the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) and the Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code) 2012 of the Australasian Joint Ore Reserves Committee (JORC). In adopting the CRIRSCO Template 2019's sixteen (16) Standard Definitions, the PMRC 2020 Edition is compatible with the international reporting codes of the CRIRSCO's members which are National Reporting Organizations (NROs) such as the Australasia (JORC), Canada (CIM), Chile (National Committee), Europe (PERC), South Africa (SAMCODES), and USA (SME). The Standard Definitions in this Code are:

   The PMRC 2020 Edition is an initiative of the Philippine Mineral Reporting Code Committee (PMRCC) established on November 22, 2018 by the professional representative organizations of the minerals industry which are the Philippine

Society of Mining Engineers (PSEM), the Geological Society of the Philippines (GSP), and the Society of Metallurgical Engineers of the Philippines (SMEP) together with minerals industry-related organizations and bodies such as The Philippine Stock Exchange, Inc. (PSE), the Chamber of Mines of the Philippines (COMP), the Philippine Mining and Exploration Association (PMEA), the Philippines-Australia Business Council (PABC), and the Philippine Chamber of Coal Mines (PHILCOAL). The formulation of the technical provisions of the Code was undertaken by PSEM, GSP, and SMEP. The formulation of the Code was also supported by the Mines and Geosciences Bureau (MGB) of the Department of Environment and Natural Resources (DENR).

I. Introduction

2. In this PMRC 2020 Edition, important terms and their definitions are provided as numbered clauses in **bold** typeface. The definitions are a core element of the Code. Other mandatory elements of the Code, in normal typeface and as numbered clauses, are similarly identified, both in the Code and its Appendices. The guidelines and further interpretation of the definitions and mandatory clauses are placed after the respective Code Clauses in indented *italic* typeface and clearly identified. Guidelines are not part of the Code, but are intended to provide assistance and guidance to readers and should be considered persuasive when interpreting the Code. Indented italics are also used in the Appendices and Tables to make it clear that they are also part of the guidelines.

3. The PMRC has been adopted by the PSEM, GSP and SMEP and is therefore binding on members of these professional organizations. It is endorsed by the Securities and Exchange Commission (SEC), MGB, COMP, PMEA, PABC, and PHILCOAL as a standard that promotes ethical conduct in Public Reporting in the minerals industry. The Code has also been adopted by and included in the PSE's Consolidated Listing and Disclosure Rules since 2008, and as part of the regulatory and reportorial requirements of MGB since 2010.

   Under the PSE's Consolidated Listing and Disclosure Rules, a Public Report must be prepared in accordance with the Code if it includes a statement on Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves. The incorporation of the Code imposes certain specific requirements on mining or exploration companies reporting to the PSE. However, a number of other issues may remain outside the PMRC associated with Public Reports that are addressed specifically within the PSE's Consolidated Listing and Disclosure Rules.

   As such, it is strongly recommended that users of the Code familiarize themselves with the PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and the regulatory and reportorial requirements of the MGB that relate to the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves.

II. Scope

4. The PMRC 2020 Edition applies to all solid mineral raw materials for which Public Reporting of Exploration Results, Mineral Resources, and Mineral Reserves is required by any relevant regulatory authority.

A Mineral is any substance, extracted for value, occurring naturally in or on the Earth, in or under water or in tailings, residues or stockpiles, having been formed by or subjected to a geological process but excludes water, oil and gas.

The definition of Mineral is broad, and therefore the Code is applicable to a diverse range of commodities for which Public Reporting of Exploration Results, Mineral Resources, and Mineral Reserves is required by a relevant regulatory authority, including but not limited to:

- metalliferous minerals,
- mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings (remnant materials) (Appendix 5),
- coal (Appendix 6),
- industrial minerals, cement feed materials, and construction raw materials (Appendix 7),
- dimension stone, ornamental and decorative stone (Appendix 8), and
- other mineral raw materials.

5. The principles governing the operation and application of the PMRC are Transparency, Materiality, and Competence

   - **Transparency requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled by this information or by omission of material information that is known to the Accredited Competent Person (ACP).**

   - **Materiality requires that a Public Report contains all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgment regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported. Where relevant information is not supplied, an explanation must be provided to justify its exclusion.**

   - **Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics (the ACP).**

   Transparency and Materiality are guiding principles of the Code, and the ACP must provide explanatory commentary on the material assumptions underlying the declaration of Exploration Results, Mineral Resources or Mineral Reserves.

   In particular, the ACP must consider that the benchmark of Materiality is that which includes all aspects relating to the Exploration Results, Mineral Resources or Mineral Reserves that investors or their advisers would reasonably expect to see explicit comment on from the ACP. The ACP must not remain silent on any material aspect for which the presence or absence of comment could affect the public perception or value of the mineral occurrence.

6. **Public Reports are reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Mineral Reserves. These include but are not limited to annual and quarterly company reports, media releases, information memoranda,**

technical papers, website postings, public presentations, and corporate disclosures required to be submitted to both the SEC and PSE, including disclosures of any material fact or event that occurs which would reasonably be expected to affect investors' or potential investors' decision in relation to the company's securities.

These Public Reports shall be submitted to both the SEC and PSE in accordance with SEC rules and PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and pursuant to the basic principles of full, fair, timely and accurate disclosure of material information, or other regulatory authorities as required by law.

The Code is a required minimum standard for Public Reporting. PMRC also recommends its adoption as a minimum standard for other reporting. Companies are encouraged to provide information in their Public Reports that is as comprehensive as possible.

The Code applies to other publicly-released company information in the form of postings on company websites and briefings for shareholders, stockbrokers, and investment analysts. The Code also applies to the following reports if they have been prepared for the purposes described in this Clause: including but not limited to environmental statements, information memoranda, expert reports, and technical papers referring to Exploration Results, Mineral Resources or Mineral Reserves.

For companies issuing annual reports, or other periodic summary reports, all material information relating to Exploration Results, Mineral Resources, and Mineral Reserves should be included. The annual report, or other relevant report, should disclose, among others, any change or deviation in the estimation of the Mineral Resources and/or Mineral Reserves, or explicitly warrant and confirm that no material change in such estimates occurred during mineral exploration and/or mining, as the case may be.

In cases where summary information is presented, the Public Report must clearly state that the information is a summary, and a reference must be provided, giving the source and location of the Code-compliant Public Reports or Public Reporting on which the summary is based.

The Public Report must include sufficient context and cautionary language to allow a reasonable investor to understand the nature, importance, and limitations of the data, interpretations, and conclusions summarized in the report.

It is recognized that companies can be required to issue reports in more than one regulatory jurisdiction, with compliance standards that may differ from this Code. It is recommended that such reports include a statement alerting the reader to this situation. Where members of PSEM, GSP, and SMEP are required to report in other jurisdictions, they are obliged to comply with the requirements of those jurisdictions.

Reference in the Code to 'documentation' includes internal company documents prepared as a basis for, or to support, a Public Report.

It is recognized that situations may arise where documentation prepared by an ACP for internal company or similar non-public purposes does not comply with the PMRC. In such situations, it is recommended that the documentation includes a prominent statement to this effect. This will make it less likely that

non-complying documentation will be used to compile Public Reports, since Clause 10 requires Public Reports to fairly reflect Exploration Results, Mineral Resource, and/or Mineral Reserve estimates, and supporting documentation, prepared by an ACP.

While every effort has been made within the Code and Guidelines (including Table 1) to cover most situations likely to be encountered in Public Reporting, there may be occasions when doubt exists as to the appropriate form of disclosure. On such occasions, users of the Code and those compiling reports to comply with the Code should be guided by its intent, which is to provide a minimum standard for Public Reporting, and to ensure that such reporting contains all information which investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of arriving at a reasoned and balanced judgment regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported.

Estimation of Mineral Resources and Mineral Reserves is inherently subject to some level of uncertainty and inaccuracy. Considerable skill and experience may be needed to interpret pieces of information, such as geological maps and analytical results based on samples that commonly only represent a small part of a mineral deposit. The uncertainty in the estimates should be discussed in the documentation and, where material, in Public Reports, and reflected in the appropriate choice of Mineral Resource and Mineral Reserve categories.

A Public Report should be adequately supported by legible text, figures, tables, sections, and maps to demonstrate competence by conveying material information in a transparent manner. Figures of any type should contain appropriate explanatory information in the form of titles and/or captions, and legends.

The PMRC is a Code for Public Reporting, not a Code that regulates the manner in which an ACP estimates Mineral Resources or Mineral Reserves. The term 'PMRC compliant' therefore refers to the manner of reporting, not to the estimates. Use of the words 'PMRC compliant' should be interpreted to mean: 'Reported in accordance with PMRC and estimated (or based on documentation prepared) by an ACP as defined by PMRC.

7. Table 1 provides, in a summary form, a list of the criteria which must be considered by the ACP when preparing a Public Report on Exploration Results, Mineral Resources or Mineral Reserves.

   In the context of complying with the principles of the Code, comments relating to the items in the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the ACP's documentation. Additionally, comment related to the relevant sections of Table 1 must be complied on an 'if not, why not' basis within Public Reporting for projects material to the company when reporting Exploration Results, Mineral Resources or Mineral Reserves for the first time. Table 1 also applies to instances where these items have materially changed from when these were last Publicly Reported. Reporting on an 'if not, why not' basis ensures that it is clear to an investor whether items have been considered and deemed of low consequence or are not yet addressed or resolved.

   For the purpose of the PMRC, the phrase 'if not, why not' means that each item in the relevant section of Table 1 of the Code must be discussed and if it is not discussed, then the ACP must explain why it has been omitted from the documentation.

8. The Code does not cover valuation or appraisal from a business perspective. It provides for the description of Exploration Results and estimates of Mineral Resources and Mineral Reserves that may be used by others to prepare subsequent valuations or appraisals.

9. PMRC recognizes that further review of the Code and Guidelines will be required from time to time.

III. Competence and Responsibility

10. A Public Report concerning a company's Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves is the responsibility of the company acting through its Board of Directors. Any such report must be based on, and fairly reflect the information and supporting documentation prepared by or under the direction of and signed by an ACP or ACPs. A company issuing a Public Report shall disclose all relevant information, including any updates on prior Public Reports, to the ACP(s) on an 'if not, why not' basis as required under this PMRC 2020 Edition. Furthermore, the company shall disclose the name(s) of the ACP(s), state whether the ACP is a full-time employee of the company, and, if not, name the ACP's employer. The report shall be issued with the prior written consent of the ACP as to the form and context in which it appears and should be duly signed by the ACP for it to be a valid report or disclosure.

    The company shall promptly and accurately communicate to the ACP any material information concerning the company or the company's Exploration Targets, Exploration Results, Mineral Resources, Mineral Reserves, and other matters covered by the PMRC 2020 Edition. Based on the material information received, the ACP shall assess whether there is a need to update or amend any Public Report previously made, and update or amend such Public Report as may be necessary.

    Any potential for a conflict of interest by the ACP or a related party of the ACP must be disclosed in accordance with the Transparency principle. Any other relationship of the ACP with the company making the report must also be disclosed in the Public Report. The report must be issued with the prior written consent of the ACP as to the form and context in which it appears.

    Where a company is re-issuing information previously issued with the written consent of the ACP, it must state the original report name, the name(s) of the ACP(s) responsible for the original report, and state the date, reference, and the location of the original public report for public access. In these circumstances, the company is not required to obtain the ACP's prior written consent as to the form and context in which the information appears, provided:

    - The company confirms in the subsequent public presentation that it is not aware of any new information or data that materially affects the information included in the relevant market announcement. In the case of estimates of Mineral Resources or Mineral Reserves, the company confirms that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

    - The company confirms that the form and context in which the ACP's findings

are presented have not been materially modified. Note that for the subsequent public presentation, it is the responsibility of the company acting through its Board of Directors to ensure the form and context have not been materially altered.

The relaxation of the requirement to obtain the ACP's prior written consent does not apply to the requirements for annual reporting of Mineral Resources and Mineral Reserves contained in Clause 18.

All such public disclosures should be specifically reviewed by the company to ensure that the form and context in which the ACP's findings are presented have not been materially modified, and to ensure that the previously issued Exploration Results, Mineral Resources or Mineral Reserves remain valid in the light of any more recently-acquired data.

Examples of appropriate forms of compliance statements are provided in Appendix 3.

In order to assist ACP(s) and companies to comply with these requirements, an ACP's Consent Form has been devised that incorporates the requirements of the Code. The ACP's Consent Form is provided in Appendix 4.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior consent has been obtained.

The ACP's Consent Form(s), or other evidence of the ACP's prior written consent, should be retained by the company and the ACP to ensure that the written consent can be promptly provided, if required.

11. Documentation detailing Exploration Results, Mineral Resource, and Mineral Reserve estimates, on which a Public Report on Exploration Results, Mineral Resources, and Mineral Reserves is based, must be prepared by, or under the direction of, and signed by an ACP or ACPs. The documentation must provide a fair representation of the Exploration Results, Mineral Resources or Mineral Reserves being reported.

12. **An 'Accredited Competent Person' (ACP) is a minerals industry professional who is a Member or Fellow of PSEM, GSP and/or SMEP, duly accredited as an ACP by the professional organization to which he/she belongs, or of a 'Recognized Professional Organization' (RPO), as included in a list promulgated by PSEM, GSP, and SMEP through the PMRCC, as the need arises, subject to applicable laws and regulations. These professional organizations have enforceable disciplinary processes including the powers to suspend or expel a member**.

An ACP must have a minimum of five years relevant experience in the style of mineralization or type of mineral deposit under consideration and to the activity which that person is undertaking.

If the ACP is preparing a report on Exploration Results, the relevant experience must be in mineral exploration. If the ACP is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment, and evaluation of Mineral Resources. If the ACP is estimating or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment,

evaluation, and economic extraction of Mineral Reserves.

The key qualifier in the definition of an ACP is the word `relevant'. Determination of what constitutes relevant experience can be a difficult area and common sense has to be exercised. For example, in estimating Mineral Resources for vein gold mineralization, experience in a high-nugget, vein-type mineralization such as tin, uranium, etc. will probably be relevant whereas experience in (say) massive base metal deposits may not be. As a second example, to qualify as an ACP in the estimation of Mineral Reserves for alluvial gold deposits, considerable (probably at least five years) experience in the evaluation and economic extraction of this type of mineralization would be needed. This is due to the characteristics of gold in alluvial systems, the particle sizing of the host sediment, and the low grades involved. Experience with placer deposits containing minerals other than gold may not necessarily provide appropriate relevant experience.

The key word 'relevant' also means that it is not always necessary for a person to have five years experience in each and every type of mineral deposit in order to act as an ACP if that person has relevant experience in other mineral deposit types. For example, a person with (say) 20 years experience in estimating Mineral Resources for a variety of metalliferous hard-rock deposit types may not require five years specific experience in (say) porphyry copper deposits in order to act as an ACP. Relevant experience in the other mineral deposit types could count towards the required experience in relation to porphyry copper deposits.

In addition to experience in the style of mineralization, an ACP taking responsibility for the compilation of Exploration Results and/or Mineral Resource estimates should have sufficient experience in the sampling and analytical techniques relevant to the mineral deposit under consideration to be aware of problems which could affect the reliability of data. Some appreciation of extraction and processing techniques applicable to that mineral deposit type may also be important.

13. The ACP(s) must provide explanatory comment on the material assumptions underlying the declaration of Exploration Results, Mineral Resources or Mineral Reserves. In particular, the ACP(s), when considering Materiality as defined in Clause 5, must include explicit comments on all aspects that an investor or their advisers would reasonably expect to be provided. This would include, but not be limited to, any aspect that would influence the public perception or value of the subject matter. The ACP(s) must be satisfied that:

- their work has not been unduly influenced by the organization, company or person commissioning the report or a report that may become a Public Report,
- all assumptions are documented, and
- adequate disclosure is made of all material aspects that an informed reader may require to make a reasonable and balanced judgment thereof.

As a general guide, persons being called upon to act as ACPs should be clearly satisfied in their minds that they could face their peers and demonstrate competence in the commodity, type of mineral deposit, and situation under consideration. If doubt exists, the person should either seek opinions from appropriately experienced colleagues or should decline to act as an ACP.

Estimation of Mineral Resources may be a team effort (for example, involving one person or team collecting the data and another person or team preparing

the estimate). Estimation of Mineral Reserves is very commonly a team effort involving several technical disciplines. It is recommended that, where there is clear division of responsibility within a team, each ACP and his or her contribution should be identified, and responsibility accepted for that particular contribution. If only one ACP signs the Mineral Resource or Mineral Reserve documentation, that person is responsible and accountable for the whole of the documentation under the Code. It is important in this situation that the ACP accepting overall responsibility for a Mineral Resource or Mineral Reserve estimate and supporting documentation prepared in whole or in part by others, is satisfied that the work of the other contributors is acceptable.

Complaints made with respect to the professional work of an ACP will be dealt with under the disciplinary procedures of the professional representative organization or RPO to which the ACP belongs, and if necessary, elevated to the Professional Regulation Commission (PRC).

When a PSE-listed company with overseas interests wishes to report overseas Exploration Results, Mineral Resource or Mineral Reserve estimates prepared by a person who is not a member of PSEM, GSP, SMEP, or a RPO, it is necessary for the company to nominate an ACP(s) to take responsibility for the Exploration Results, Mineral Resource or Mineral Reserve estimate. The ACP(s) undertaking this activity should appreciate that they are accepting full responsibility for the estimate and supporting documentation under the PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and should not treat the procedure merely as a 'rubber-stamping' exercise.

IV. Reporting Terminology

14. Public Reports dealing with Exploration Results, Mineral Resources or Mineral Reserves must only use the terms set out in Figure 1.

Figure 1. General relationship between Exploration Results, Mineral Resources, and Mineral Reserves

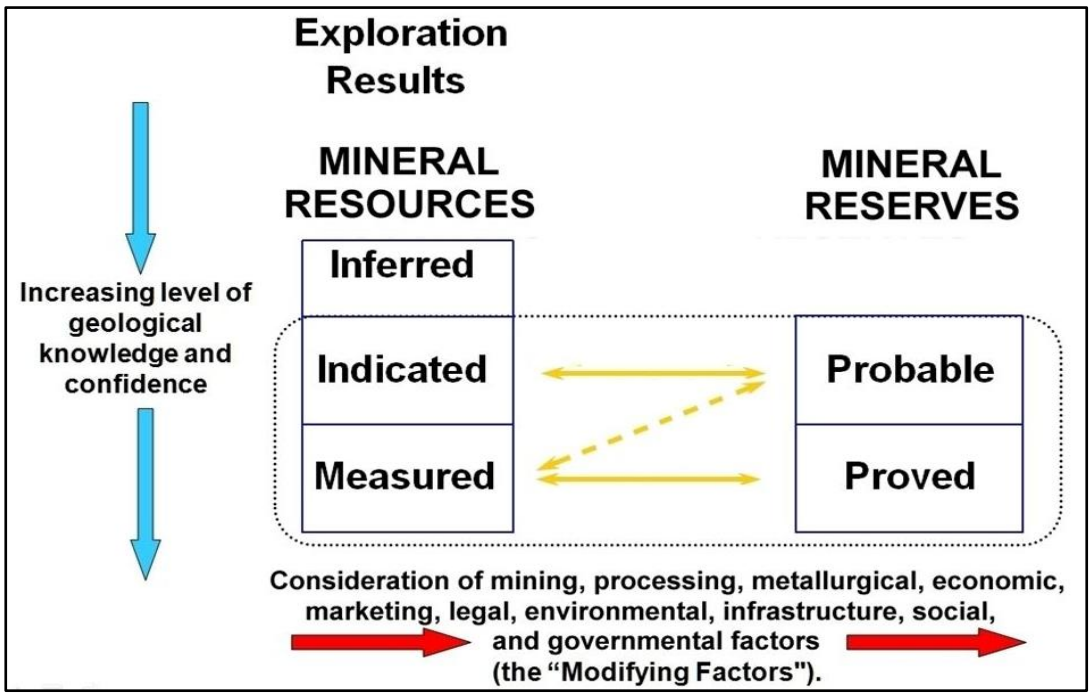

Figure 1 sets out the framework for classifying tonnage (or volume) and grade (or quality) estimates to reflect different levels of geological confidence and different degrees of technical and economic evaluation. Mineral Resources can be estimated mainly by a geologist on the basis of geoscientific information with some input from other disciplines. Mineral Reserves, which are a modified sub-set of the Indicated and Measured Mineral Resources (shown within the dashed outline in Figure 1), require consideration of the Modifying Factors affecting extraction, and should in most instances be estimated with input from a range of disciplines.

15. '**Modifying Factors' are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.**

    Measured Mineral Resources may be converted to either Proved Mineral Reserves or Probable Mineral Reserves. The ACP may convert Measured Mineral Resources to Probable Mineral Reserves because of uncertainties associated with some or all of the Modifying Factors which are taken into account in the conversion from Mineral Resources to Mineral Reserves. This relationship is shown by the broken arrow in Figure 1. Although the trend of the broken arrow includes a vertical component, it does not, in this instance, imply a reduction in the level of geological knowledge or confidence. In such a situation these Modifying Factors should be fully explained.

    Refer also to the guidelines to Clause 35.

V. Reporting General

16. Public Reports concerning a company's Exploration Results, Mineral Resources or Mineral Reserves should include a description of the style and nature of the mineralization.

17. A company must disclose any relevant information concerning Exploration Results, Mineral Resources or Mineral Reserves that could materially influence the economic value of those Exploration Results, Mineral Resources or Mineral Reserves to the company. A company must promptly report any material changes in its Mineral Resources or Mineral Reserves.

18. Companies must review and publicly report on their Mineral Resources and Mineral Reserves annually. The annual review date must be nominated by the company in its Public Reports of Mineral Resources and Mineral Reserves and the effective date of each Mineral Resource and Mineral Reserve statement must be shown. The company must discuss any material changes to previously-reported Mineral Resources and Mineral Reserves at the time of publishing updated Mineral Resources and Mineral Reserves.

19. Throughout the Code, if appropriate, 'quality' may be substituted for 'grade' and 'volume' may be substituted for 'tonnage'. (Refer to Appendix 1 – Generic Terms and Equivalents).

VI. Reporting of Exploration Targets

20. An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnage and a range of grade (or quality), relates to mineralization for which there has been insufficient exploration to estimate a Mineral Resource.

It is recognized that it is a common practice for a company to comment on and discuss its exploration strategy in terms of target size and type. Any such information relating to an Exploration Target must not be expressed in a way that could be confused as an estimate of Mineral Resources or Mineral Reserves. The terms Mineral Resource or Mineral Reserve must not be used in this context. In any statement referring to potential quantity and grade of the Exploration Target, these must both be expressed as ranges and must include:

- a detailed explanation of the basis for the statement of an Exploration Target, must specifically discuss the geological setting, the exploration strategy, and exploration activity already completed and the presence of or lack of the following attributes:
    - mineralized outcrops and assays,
    - surface geochemical sampling results,
    - surface and subsurface geophysical survey results, and
    - drill holes, test pits, and underground workings.
- a clarification statement within the same paragraph as the first reference of the Exploration Target in the Public Report, stating that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration data to estimate a Mineral Resource and that it is uncertain if further exploration work will result in the estimation of a Mineral Resource.

Given the level of uncertainty surrounding the supporting data, an Exploration Target tonnage and grade must not be reported as a 'headline statement' in a Public Report.

If a Public Report includes an Exploration Target, the proposed exploration activities designed to test the validity of the Exploration Target must be detailed and the timeframe within which those activities are expected to be completed must be specified.

If an Exploration Target is shown pictorially (for instance, as cross section or maps) or with a graph, it must be accompanied by text that meets the requirements above.

A Public Report that includes an Exploration Target must be accompanied by an ACP's statement taking responsibility for the form and context in which the Exploration Target appears.

All disclosures of an Exploration Target must clarify whether the Exploration Target is based on actual Exploration Results or on proposed exploration programs. Where the Exploration Target statement includes information relating to ranges of tonnages and grades, these must be represented as approximations. The explanatory text must include a description of the process used to determine

the grade and tonnage ranges used to describe the Exploration Target.

For an Exploration Target based on Exploration Results, a summary of the relevant exploration data available and the nature of the results should also be stated, including a disclosure of the current drill hole or sampling spacing and relevant plans or sections. In any subsequent upgraded or modified statements on the Exploration Targets, the ACP should discuss any material changes to potential scale or quality arising from completed exploration activities.

VII. Reporting of Exploration Results

21. Exploration Results include data and information generated by mineral exploration programs that might be of use to investors, but which do not form part of a declaration of Mineral Resources or Mineral Reserves.

The reporting of such information is common in the early stages of exploration when the quantity of data available is generally not sufficient to allow any reasonable estimates of Mineral Resources.

If a company reports Exploration Results in relation to mineralization not classified as a Mineral Resource or a Mineral Reserve, then estimates of tonnages and average grade must not be assigned to the mineralization unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

Examples of Exploration Results include results of outcrop sampling, assays of drill hole intercepts, geochemical results, and geophysical survey results.

22. Public Reports of Exploration Results must contain sufficient information to allow a considered and balanced judgment of their significance. Reports must include relevant information such as exploration context, type, and method of sampling, sampling intervals and methods, relevant sample locations, distribution, dimensions, and relative location of all relevant assay data, methods of analysis, data aggregation methods, land tenure status plus information on any of the other criteria listed in Table 1 which are material to an assessment.

Public Reports of Exploration Results must not be presented so as to unreasonably imply that potentially economic mineralization has been discovered. If true widths of mineralization are not reported, an appropriate qualification must be included in the Public Report.

Where assay and analytical results are reported, they must be reported using one of the following methods, selected as the most appropriate by the ACP:

- either by listing all results, along with sample intervals (or size, in the case of bulk samples), or
- by reporting weighted average grades of mineralized zones, indicating clearly how the grades were calculated.

Clear diagrams and maps designed to represent the geological context must be included in the report. These must include, but not be limited to, a plan view of drill hole collar locations and appropriate sectional views.

Reporting of selected information such as isolated assays, isolated drill holes, assays of panned concentrates or supergene enriched soils or surface samples, without placing them in proper context, is unacceptable.

While it is not necessary to report all assays or drill holes, it is a requirement that sufficient information about the omitted data is provided so that a considered and balanced judgment can be made by the reader of the report. Where reports of Exploration Results do not include all drill holes or all intersections of drill holes, the ACP must provide an explanation of why this information is not considered relevant or why it has not been provided.

As required under Clause 7, the ACP must not 'remain silent' on any issue for which the presence or absence of comment could impact the public perception or value of the mineral occurrence. For projects material to the company, the reporting of all criteria in Sections 1 and 2 of Table 1 on an 'if not, why not' basis is required, preferably as an appendix to the Public Report.

Additional disclosure is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results; for example, poor sample recovery, poor repeatability of assay or laboratory results, etc.

VIII. Reporting of Mineral Resources

23. A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity, and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence, including sampling. Mineral Resources are subdivided, in order of increasing geological confidence, into Inferred, Indicated, and Measured categories.

All reports of Mineral Resources must satisfy the requirement that there are reasonable prospects for eventual economic extraction (i.e., more likely than not), regardless of the classification of the Mineral Resource.

Portions of a mineral deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource. The basis for the reasonable prospects assumption is always a material matter, and must be explicitly disclosed and discussed by the ACP in the Public Report using the criteria listed in Table 1 for guidance. The reasonable prospects disclosure must also include a discussion of the technical and economic support for the cut-off assumptions applied.

When untested practices are applied in the determination of reasonable prospects, the use of the proposed practices for reporting of the Mineral Resource must be justified by the ACP in the Public Report.

Geological evidence and knowledge required for the estimation of Mineral Resources must include sampling data of a type, and at spacings, appropriate to the geological, chemical, physical, and mineralogical complexity of the mineral deposit, for all classifications of Inferred, Indicated, and Measured Mineral

Resources. A Mineral Resource cannot be estimated in the absence of sampling information.

Clause 23 including its guidelines takes precedence over those for the Inferred, Indicated, and Measured categories, in that estimates must first satisfy the criteria required for definition as a Mineral Resource before consideration is given to the criteria applicable to each category of Mineral Resource.

The term 'Mineral Resource' covers mineralization, including dumps and tailings, which has been identified and estimated through exploration and sampling and within which Mineral Reserves may be defined by the consideration and application of the Modifying Factors.

The term 'reasonable prospects for eventual economic extraction' implies a judgment (albeit preliminary) by the ACP in respect to all matters likely to influence the prospect of economic extraction, including the approximate mining parameters. In other words, a Mineral Resource is not an inventory of all mineralization drilled or sampled, regardless of cut-off grade, likely mining dimensions, location or continuity. It is a realistic inventory of mineralization which, under assumed and justifiable technical and economic conditions, might, in whole or in part, become economically extractable.

Where considered appropriate by the ACP, Mineral Resource estimates may include material below the selected cut-off grade to ensure that the Mineral Resources comprise bodies of mineralization of adequate size and continuity to properly consider the most appropriate approach to mining. Documentation of Mineral Resource estimates should clearly identify any diluting material included, and Public Reports should include commentary on the matter if considered material.

Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction' should be clearly stated, discussed, and justified in the Public Report.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. In all cases, the considered time frame of eventual economic extraction should be disclosed and discussed by the ACP.

Any adjustment made to the data for the purpose of making the Mineral Resource estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Certain reports (e.g., coal inventory reports, exploration reports to government, and other similar reports not intended primarily for providing information for investment purposes) may require full disclosure of all mineralization, including some material that does not have reasonable prospects for eventual economic extraction. Such estimates of mineralization would not qualify as Mineral Resources or Mineral Reserves in terms of the PMRC (refer also to the guidelines to Clause 6 and Appendix 6).

24. An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Where the Mineral Resource being reported is predominantly an Inferred Mineral Resource, sufficient supporting information must be provided to enable the reader to evaluate and assess the risk associated with the reported Mineral Resource.

In circumstances where the estimation of the Inferred Mineral Resource is presented on the basis of extrapolation beyond the nominal sampling, and taking into account the style of mineralization, the report must contain sufficient information to inform the reader of:

- the maximum distance that the resource is extrapolated beyond the sampling points,
- the proportion of the resource that is based on extrapolated data,
- the basis on which the resource is extrapolated to these limits, and
- a diagrammatic representation of the Inferred Mineral Resource, showing clearly the extrapolated part of the estimated resource.

The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data quantity and quality are insufficient to allow the geological and grade continuity to be confidently interpreted. While it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.

Inferred Mineral Resources must not be converted to Mineral Reserves and must not be stated as part of the Mineral Reserve.

Confidence in the estimate of Inferred Mineral Resources is usually not sufficient to allow the results of the application of Modifying Factors to be used for detailed planning in Pre-Feasibility (Clause 44) or Feasibility (Clause 45) Studies. For this reason, there is no direct link from an Inferred Mineral Resource to any category of Mineral Reserves (see Figure 1).

Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (Clause 43).

25. An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the mineral deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Mineralization may be classified as an Indicated Mineral Resource when the nature, quality, amount, and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralization.

Confidence in the estimate is sufficient to allow the application of Modifying Factors in Technical Studies as defined in Clauses 42 to 45.

26. A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the mineral deposit.

Geological evidence is derived from detailed and reliable exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes and is sufficient to confirm geological and grade or (quality) continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to an Indicated Mineral Resource. It may be converted to a Proved Mineral Reserve or under certain circumstances to a Probable Mineral Reserve.

A Measured Mineral Resource requires an understanding of the geology, mineralogy, mineability, and amenability to processing of the mineral deposit.

Mineralization may be classified as a Measured Mineral Resource when the nature, quality, amount, and distribution of data are such as to leave no reasonable doubt, in the opinion of the ACP determining the Mineral Resource, that the tonnage and grade of the mineralization can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

This category requires a high level of confidence in, and understanding of, the geology and the controls of the mineral deposit.

Confidence in the estimate is sufficient to allow the application of Modifying Factors in Technical Studies as defined in Clauses 42 to 45 with a high level of confidence.

27. The choice of the appropriate category of Mineral Resource depends upon the quantity, distribution, and quality of data available and the level of confidence that attaches to those data. The appropriate Mineral Resource category must be determined by an ACP.

Mineral Resource classification is a matter for skilled judgment and an ACP should take into account those items in Table 1 which relate to confidence in Mineral Resource estimation.

In deciding between Indicated Mineral Resources and Measured Mineral

Resources, ACP(s) may find it useful to consider, in addition to the phrases in the two definitions relating to geological and grade continuity in Clauses 25 and 26, the phrase in the guideline to the definition for Measured Mineral Resources: '.... any variation from the estimate would be unlikely to significantly affect potential economic viability'.

In deciding between Inferred Mineral Resources and Indicated Mineral Resources, an ACP may wish to take into account, in addition to the phrases in the two definitions in Clauses 24 and 25 relating to geological and grade continuity, that part of the definition for Indicated Mineral Resources: 'Confidence sufficient to allow the application of Modifying Factors to support mine planning and evaluation of the economic viability of the mineral deposit', which contrasts with the guideline in the definition for Inferred Mineral Resources: 'Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of Modifying Factors to be used for detailed planning in Pre-Feasibility (Clause 44) or Feasibility (Clause 45) Studies.' and 'Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Clause 43)'.

The ACP should take into consideration issues regarding the style of mineralization and cut-off grade when assessing geological and grade continuity for the purposes of classifying the Mineral Resource.

Cut-off grades chosen for the estimation should be realistic in relation to the style of mineralization and the anticipated mining and processing development options.

28. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures and, in the case of Inferred Mineral Resources, by qualification with terms such as 'approximately' and to emphasize the imprecise nature of a Mineral Resource, the final result should always be referred to as an estimate, not a calculation.

    In most situations, rounding to the second significant figure should be sufficient. For example, 10,863,000 tonnes at 8.23 percent should be stated as 11 million tonnes at 8.2 percent. There will be occasions, however, where rounding to the first significant figure may be necessary in order to convey properly the uncertainties in estimation. This would usually be the case with Inferred Mineral Resources.

    ACPs are encouraged, where appropriate, to discuss the relative accuracy and confidence of the Mineral Resource estimates with consideration of at least sampling, analytical, and estimation errors. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage. Where a statement on the relative accuracy and confidence is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1).

29. Public Reports of Mineral Resources must specify one or more of the categories of 'Inferred', 'Indicated', and 'Measured'. Tonnage and grade (or quality) of categories of Mineral Resources must not be reported in a combined form unless details for the individual categories are also provided. Also, Mineral Resources must not be reported in terms of contained metal or mineral content unless

corresponding tonnages and grades are also presented. Inferred Mineral Resource cannot be reported in a combined form with the Indicated and/or Measured Mineral Resource categories since the former category cannot be converted to Mineral Reserve while the other two (2) categories are convertible.

Mineral Resources must not be aggregated with Mineral Reserves.

Public Reporting of tonnages and grades outside the categories covered by the Code is not permitted unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports is not permitted.

30. In a Public Report of a Mineral Resource for a project material to the company, when reporting for the first time, or when those estimates have materially changed from when these were last reported, a brief summary of the information in relevant sections of Table 1 must be provided. Alternatively, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

    For a project material to the company, when Mineral Resource estimates are first Publicly Reported or when a material change occurs (including classification changes), there is an increased need for transparent discussion of the basis for the new Mineral Resource estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 5 and 7, the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the ACP, thus the reporting of all relevant criteria in Table 1 on an 'if not, why not' basis is required.

    The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against Section 4 on the presumption that matters related to Section 3 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case, then these sections are also relevant and should be included in the Public Report.

    The technical summary based on Table 1 criteria should be presented as an appendix to the Public Report.

    Where there are as yet unresolved issues potentially impacting the reliability of, or confidence in, a statement of Mineral Resources (for example, poor sample recovery, poor repeatability of assay or laboratory results, limited information on bulk densities, etc.), those issues should also be reported.
    If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

    Uncertainties in any of the criteria listed in Table 1 that could lead to under- or overstatement of Mineral Resource estimates should be disclosed.

    Mineral Resource estimates are sometimes reported after adjustment based on reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Mineral Resources and the nature of the adjustment or modification described.

31. The words ‘ore’ and ‘reserves’ must not be used in describing Mineral Resource estimates as the terms imply technical feasibility and economic viability and are only appropriate when all relevant Modifying Factors have been considered. Reports and statements should continue to refer to the appropriate category or categories of Mineral Resources until technical feasibility and economic viability have been established.

IX. Reporting of Mineral Reserves

32. A ‘Mineral Reserve’ is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

The key underlying assumptions and outcomes of the Pre-Feasibility or Feasibility Study must be disclosed at the time of reporting of a new or materially changed Mineral Reserve.

Pre-Feasibility and Feasibility Studies are defined in Clauses 44 and 45 below.

Mineral Reserves are subdivided in order of increasing confidence into Probable Mineral Reserves and Proved Mineral Reserves.

In reporting Mineral Reserves, information on all Modifying Factors must be included in Public Reports. Consideration of the confidence level of the Modifying Factors is important in conversion of Mineral Resources to Mineral Reserves.

Mineral Reserves are those portions of Mineral Resources which, after the application of the Modifying Factors, result in an estimated tonnage and grade which, in the opinion of the ACP making the estimates, can be the basis of a technically and economically viable project. Deriving a Mineral Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable.

Mineral Reserves are reported as inclusive of marginally economic material and diluting material delivered for treatment or dispatched from the mine without treatment. The term 'economically mineable’ implies that extraction of the Mineral Reserve has been demonstrated to be viable under reasonable financial assumptions. This will vary with the type of mineral deposit, the level of study that has been carried out and the financial criteria of the individual company. For this reason, there can be no fixed definition for the term ‘economically mineable’. However, it is expected that the company will attempt to achieve an acceptable return on capital invested, and that returns to investors in the project will be competitive with alternative investments of comparable risk.

In order to achieve the required level of confidence in the Modifying Factors,

appropriate Pre-Feasibility or Feasibility level studies will have been carried out prior to determination of the Mineral Reserves. The studies will have determined a mine plan and a production schedule that is technically achievable and economically viable and from which the Mineral Reserves can be derived.

The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative, or that all necessary approvals or sales contracts have been received. It does signify that there are reasonable expectations of such approvals or contracts will eventuate within the anticipated time frame required by the mine plans. There must be reasonable grounds to expect that all necessary Government approvals will be received. The ACP should report any material unresolved matter that is dependent on a third party on which extraction is contingent.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Any adjustment made to the data for the purpose of making the Mineral Reserve estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Where companies prefer to use the term 'Ore Reserves' in their Public Reports, e.g., for reporting under PMRC 2007 Edition during the Transitory Period defined in Clauses 62 and 63, and in some jurisdictions outside the Philippines, they should state clearly that this is being used with the same meaning as 'Mineral Reserves'.

PMRC 2020 Edition prefers the term 'Mineral Reserves' because it is the term used in the CRIRSCO International Reporting Template 2019 and more appropriate as a generic term for all mineral deposits while 'Ore Reserve' is more apt to metalliferous deposits.

33. **A 'Probable Mineral Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.**

    A Probable Mineral Reserve has a lower level of confidence than a Proved Mineral Reserve but is of sufficient quality to serve as the basis for a decision on the development of the mineral deposit.

34. **A 'Proved Mineral Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.**

    A Proved Mineral Reserve represents the highest confidence category of reserve estimate.

    The style of mineralization or other factors could mean that Proved Mineral Reserves are not achievable in some mineral deposits.

    ACPs should be aware of the consequences of declaring material of the highest confidence category before satisfying themselves that all of the relevant resource parameters and Modifying Factors have been established at a similarly high level of confidence.

35. The choice of the appropriate category of Mineral Reserve is determined primarily by the relevant level of confidence in the Mineral Resource and after considering any uncertainties in the Modifying Factors. Allocation of the appropriate category must be made by an ACP.

    The Code provides for a direct two-way relationship between Indicated Mineral Resources and Probable Mineral Reserves, and between Measured Mineral Resources and Proved Mineral Reserves. In other words, the level of geological confidence for Probable Mineral Reserves is similar to that required for the determination of Indicated Mineral Resources, and the level of geological confidence for Proved Mineral Reserves is similar to that required for the determination of Measured Mineral Resources.

    The Code also provides for a two-way relationship between Measured Mineral Resources and Probable Mineral Reserves. This is to cover a situation where uncertainties associated with any of the Modifying Factors considered when converting Mineral Resources to Mineral Reserves may result in there being a lower degree of confidence in the Mineral Reserves than in the corresponding Mineral Resources. Such a conversion would not imply a reduction in the level of geological knowledge or confidence.

    A Probable Mineral Reserve derived from a Measured Mineral Resource may be converted to a Proved Mineral Reserve if the uncertainties in the Modifying Factors are removed. No amount of confidence in the Modifying Factors for conversion of a Mineral Resource to a Mineral Reserve can override the upper level of confidence that exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted directly to a Proved Mineral Reserve (see Figure 1).

    Application of the category of Proved Mineral Reserve implies the highest degree of geological, technical, and economic confidence in the estimate at the level of production increments used to support mine planning and production scheduling, with consequent expectations in the minds of the readers of the report. These expectations should be borne in mind when categorizing a Mineral Resource as Measured.

    Refer also to the guidelines in Clause 27 regarding classification of Mineral Resources.

36. Mineral Reserve estimates are not precise calculations. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures. Refer also to Clause 28.

    To emphasize the imprecise nature of a Mineral Reserve, the final result should always be referred to as an estimate, not a calculation.

    ACPs should, where appropriate, discuss the relative accuracy and/or confidence of the Mineral Reserve estimates with consideration of both underlying estimation and Modifying Factor uncertainties. The statement should specify whether it relates to global (whole of reserve) or local estimates (a subset of the reserve for which the accuracy and/or confidence might differ from the whole of the reserve), and, if local, state the relevant tonnage or volume. Where a statement of the relative accuracy and/or confidence is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1, Table 2, and to Clauses 25 and 26).

37. Public Reports of Mineral Reserves must specify one or the other or both of the categories of 'Proved' and 'Probable.' Categories must not be reported in a combined form unless details for each of the categories are also provided.

    Mineral Reserves must not be presented in terms of contained metal or mineral content unless corresponding tonnage and grade figures are also presented. Mineral Reserves should not be aggregated with Mineral Resources.

    Public Reporting of tonnage and grade outside the categories covered by the Code is not permitted unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

    Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports could cause confusion, thus, is not permitted.

    Mineral Reserves may incorporate material (dilution) which is not part of the original Mineral Resource. It is essential that this fundamental difference between Mineral Resources and Mineral Reserves is considered and caution exercised if attempting to draw conclusions from a comparison of the two.

    When revised Mineral Reserve and Mineral Resource statements are Publicly Reported, the Company must discuss any material changes from the previous estimate, and supply sufficient comment to enable the basis for significant changes to be understood by the reader.

38. In a Public Report of a Mineral Reserve for a project material to the company, when reporting for the first time, or when those estimates have materially changed from when they were last reported, a brief summary of the information in relevant sections of Table 1 must be provided. Alternatively, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

    For a project material to the company, when Mineral Reserve estimates are first Publicly Reported or when a material change occurs (including classification change), there is an increased need for transparent discussion of the basis for the new Mineral Reserve estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 5 and 7, the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the ACP, thus the reporting of all criteria in Table 1 on an 'if not, why not' basis is required.

    The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against Section 6 on the presumption that matters related to Sections 3, 4 and 5 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case, then other sections are also relevant and should be included in the Public Report.

    The technical summary based against Table 1 criteria should be presented as an appendix to the Public Report.

    Where there are yet unresolved issues potentially impacting the reliability of, or confidence in a statement of Mineral Reserves (for example, limited

geotechnical information, complex orebody metallurgy, uncertainty in the permitting process, etc.), those unresolved issues should also be reported.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Uncertainties in any of the criteria listed in Table 1 that could lead to under- or overstatement of Mineral Reserves should be disclosed.

Mineral Reserve estimates are sometimes reported after adjustment from reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Mineral Reserves and the nature of the adjustment or modification described.

39. In situations where estimates for both Mineral Resources and Mineral Reserves are reported, a statement must be included in the report which clearly indicates whether the Mineral Resources are inclusive of, or additional to, the Mineral Reserves.

    Mineral Reserve estimates must not be aggregated with Mineral Resource estimates to report a single combined figure.

    In some situations, there are reasons for reporting Mineral Resources inclusive of Mineral Reserves, and in other situations for reporting Mineral Resources additional to Mineral Reserves. It must be made clear which form of reporting has been adopted. Appropriate forms of clarifying statements may be:

    - *'The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Mineral Reserves.' Or*

    - *The Measured and Indicated Mineral Resources are additional to the Mineral Reserves.'*

    In the former case, if any Measured and Indicated Mineral Resources have not been modified to produce Mineral Reserves for economic or other reasons, the relevant details of these unmodified Mineral Resources should be included in the report. This is to assist the reader of the report in making a judgment on the likelihood of the unmodified Measured and Indicated Mineral Resources eventually being converted to Mineral Reserves.

    Inferred Mineral Resources are by definition always additional to Mineral Reserves except where included as dilution in the Mineral Reserves.

    For reasons stated in the guidelines to Clause 37 and in this paragraph, the reported Mineral Reserve figures must not be aggregated with the reported Mineral Resource figures. The resulting total is misleading and is capable of being misunderstood or of being misused to give a false impression of a company's prospects.

40. If re-evaluation indicates that the Mineral Reserves are no longer viable, the Mineral Reserves must be reclassified as Mineral Resources or removed from Mineral Resource/Mineral Reserve statements.

    It is not intended that re-classification from Mineral Reserves to Mineral Resources or vice versa should be applied as a result of changes expected to be of a short term or temporary nature, or where company management has

made a deliberate decision to operate on a non-economic basis. Examples of such situations might be commodity price fluctuations expected to be of short duration, mine emergency of a non-permanent nature, transport strike, etc.

41. It is accepted that a proportion of Inferred Mineral Resources may be inside the bounds of the mine design and the Life-of-Mine Plan (LoMP). Inferred Mineral Resources should not be considered in the assessment of economic viability, rendering its presence inside the mine design and the LoMP as purely incidental and without influence on the declaration of Mineral Reserves.

    A mine design and a LoMP must be economically viable without inclusion of Inferred Mineral Resources in the estimation of Mineral Reserves.

X. Technical Studies

42. Public Reports may include, but not be limited to, information included in or supported by:

    - Scoping Study
    - Pre-Feasibility Study
    - Feasibility Study

    Scoping Study has been included because of the common usage of the term in Public Reports. However, attention is drawn to the requirement for a Pre-Feasibility Study or a Feasibility Study to have been completed for the Public Reporting of a Mineral Reserve in Clause 32. A Mineral Reserve must not be reported based on the completion of a Scoping Study.

    The guidelines and the checklist on the requirements for a Scoping, Pre-Feasibility and a Feasibility Study are included in Table 2 and Section 5 in Table 1, respectively.

43. **A Scoping Study is an order-of-magnitude technical and economic study of the potential viability of Mineral Resources which 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.**

    A Scoping Study must not be used as the basis for estimation of Mineral Reserves.

    If the outcome of a Scoping Study is partially supported by Inferred Mineral Resources and/or an Exploration Target, the Public Report must state both the proportion and relative sequencing of the Inferred Mineral Resources and/or Exploration Target within the Scoping Study.

    For a Scoping Study, the company must include a cautionary statement in the same paragraph as, or immediately following, the disclosure of the Scoping Study.

    An example cautionary statement follows:

    'The Scoping Study referred to in this report is based on low-level technical

and economic assessments, and is insufficient to support estimation of Mineral Reserves or to provide assurance of an economic development case at this stage, or to provide some level of confidence that the conclusions of the Scoping Study will be realized;'

In discussing 'reasonable prospects for eventual economic extraction' in Clause 23, the Code requires an assessment (albeit preliminary) in respect of all matters likely to influence the prospect of economic extraction including the approximate Modifying Factors by the ACP. While a Scoping Study may provide the basis for that assessment, the Code does not require a Scoping Study to have been completed to report a Mineral Resource.

Scoping Studies are commonly the first economic evaluation of a project undertaken and may be based on a combination of directly gathered project data together with assumptions borrowed from similar mineral deposits or mining operations to the case envisaged. They are also commonly used internally by companies for comparative and planning purposes. Reporting the general results of a Scoping Study needs to be undertaken with care to ensure there is no implication that Mineral Reserves have been established or that economic development is assured. In this regard, it may be appropriate to indicate the Mineral Resource inputs to the Scoping Study and the processes applied, but it is not appropriate to report the diluted tonnage and grade as if they were Mineral Reserves.

While initial mining and processing cases may have been developed during a Scoping Study, it must not be used to allow a Mineral Reserve to be developed.

44. **A Pre-Feasibility Study is 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, underground or surface, has been established and an effective method of mineral processing has been determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for an ACP, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study has a lower confidence level than a Feasibility Study.**

As required in Clause 32, formal assessment of all Modifying Factors is required in order to determine how much available Measured and Indicated Mineral Resources can be converted to Mineral Reserves.

A Pre-Feasibility Study will consider the application and description of all Modifying Factors (as outlined in Table 1, Section 6) to demonstrate economic viability and to support a Mineral Reserve in a Public Report. The Pre-Feasibility Study will identify the preferred mining, processing, and infrastructure requirements and capacities, but will not yet have finalized these matters. Detailed assessments of environmental and socio-economic impacts and requirements will also be well advanced. The Pre-Feasibility Study will highlight areas that require further refinement during the Feasibility Study stage.

45. **A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes**

appropriately detailed assessment 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.

The Code does not require that a Feasibility Study has been undertaken to convert Mineral Resources to Mineral Reserves, but it does require that at least a Pre-Feasibility Study will have been carried out that will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.

Terms such as 'Bankable Feasibility Study' and "Definitive Feasibility Study" are noted as being equivalent to a Feasibility Study as defined in this Clause.

A Feasibility Study has a higher level of confidence than a Pre-Feasibility Study and would normally contain mining, infrastructure and process designs completed with sufficient rigor to serve as the basis for an investment or to support project financing. Social, environmental, and governmental approvals, and permits and agreements will be in place, or will be approaching finalization within the expected development timeframe. The Feasibility Study will contain the application and description of all Modifying Factors (as outlined in Table 1, Section 6) in a more detailed form than in the Pre-Feasibility Study, and may address implementation issues such as detailed mining schedules, construction ramp-up, and project execution plans.

XI. Reporting of Metal Equivalents

46. The reporting of Exploration Results, Mineral Resources or Mineral Reserves for polymetallic deposits in terms of metal equivalents (a single equivalent grade of one major metal) must show details of all material factors contributing to the net value derived from each constituent.

    The following minimum information must accompany any Public Report that includes reference to metal equivalents, in order to conform to the principles of Transparency, Materiality, and Competence, as set out in Clause 5:

    - individual grades for all metals included in the metal equivalent calculation,
    - assumed commodity prices for all metals. The prices used for calculating the metal equivalent should be stated and the basis on which these have been chosen should be explained However, where the actual prices used are commercially sensitive, sufficient information must be disclosed, perhaps in narrative rather than numerical form, for investors to understand the methodology used to determine these prices,
    - assumed metallurgical recoveries for all metals and discussion of the basis on which the assumed recoveries are derived (metallurgical test work, detailed mineralogy, similar mineral deposits, etc.),
    - A clear statement that it is the ACP's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be

recovered and sold, and
- the calculation formula used.

In most circumstances, the metal chosen for reporting on an equivalent basis should be the one that contributes most to the metal equivalent calculation. If this is not the case, a clear explanation of the logic of choosing another metal must be included in the report.

Estimates of metallurgical recoveries for each metal must be used to calculate meaningful metal equivalents.

Reporting on the basis of metal equivalents is not appropriate if metallurgical recovery information is not available or cannot be estimated with reasonable confidence.

For many projects at the Exploration Results stage, metallurgical recovery information may not be available or cannot be estimated with reasonable confidence. In such cases, reporting of metal equivalents may be misleading.

XII. Reporting of *In Situ* or In Ground Valuations

47. The publication of *in situ* or 'in ground' financial valuations breaches the principles of the Code (as set out in Clause 5) as the use of these terms is not transparent and lacks material information. It is also contrary to the intent of Clause 31 of the Code. Such *in situ* or in ground financial valuations must not be reported by companies in relation to Exploration Results, Mineral Resources or mineral deposit size.

The use of such financial valuations has little or no relationship to economic viability, value or potential returns to investors.

These financial valuations can imply economic viability without the apparent consideration of the application of the Modifying Factors (Clause 15 and Clauses 32 to 41), in particular, the mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.

In determining project viability, it is necessary to include all reasonable Modifying Factors (Clauses 32 to 41) to determine the economic value that can be extracted from the mineralization.

Many mineral deposits with large in ground values are never developed because they have a negative Net Present Value when all reasonable Modifying Factors are considered.

By reporting such financial valuations as a component of Exploration Results, Exploration Target(s) or when evaluating mineral deposits that commonly include large portions of Inferred Mineral Resources, companies are not necessarily representing the economic value that can be extracted from the mineralization,

XIII. Commodity Pricing and Marketing

48. Commodity prices and sales volume expectations used for the determination of Mineral Resources and Mineral Reserves must be based on forward-looking reasonable estimates reflecting the company's short- and long-term expectations as supported by available evidence, which may include consensus forecasts, three-year trailing averages, sales contracts, or other price analyses (see Clauses 51 and 52 below for cases where public disclosure is not appropriate).

    The basis for the selected prices and sales volumes should be supported by appropriate documentation.

    The ACP should ascertain that these prices and volumes are consistent with sales agreements and marketing determinations or forecasts.

    Under certain circumstances, it may be appropriate to use different prices for estimating Mineral Resources and Mineral Reserves.

    For current mining operations, the price and volume profile used for Mineral Resources and Mineral Reserves estimation may reflect current market conditions for short-term forecasts, while trending with time upward or downward toward the long-term price and volume estimates based on the company's expectations.

    For Mineral Reserves that are expected to be produced beyond the validity of short-term forecasts, the company should use long-term price and volume expectations.

    For Mineral Reserves for which production would extend beyond the quantities specified in existing contracts, reasonable and supportable assumptions should be made to determine the likelihood of contract renewal and prices applicable for the estimation and reporting of these Mineral Resources and Mineral Reserves.

49. To demonstrate the economic feasibility of a Mineral Reserve, the estimated prices, combined with Modifying Factors, must be applied to only Measured and Indicated Mineral Resources.

    Mineral Reserves are the economically mineable part of a Measured or Indicated Mineral Resource; hence, appropriate assessments should demonstrate at the time of reporting that extraction is reasonably justified. This requires that assumptions are made concerning the price of the commodity or product that will be sold when the mine is in production.

    Mineral Reserves are estimated and published to supply information concerning the value of the mineral deposit and the risk which may be associated with its development.

    Mineral Reserves are used by a company, in conjunction with Mineral Resources, for short-term, tactical, and strategic planning. They play a critical role in raising capital, corporate financing, price hedging, long-term sales contracts, and accounting, among others, including impairment review of capitalized cost such as fixed assets, deferred exploration and development costs, fair value accounting, calculation of depreciation,

depletion, and accumulated retirement obligation provision rates.

To supply information consistent with the company's plans and financial reporting, commodity prices used for the determination of Mineral Reserves should be based on forward-looking estimates reflecting the company's reasonable expectations as supported by all available evidence.

Most commodities, whether sold using publicly quoted prices (e.g., base metals and precious metals) or under long-term contract (e.g., coal and iron ore), experience long-term price cycles. Price expectations should reflect current prices as well as long-term trends. Overly optimistic or pessimistic price and volumes expectations could result in significant over- or underestimation of Mineral Reserves. It is the responsibility of the company and the ACP to determine whether the prices used for Mineral Reserve estimation are reasonable and supportable, given all available information.

During periods of low prices, a company may choose to temporarily curtail operations and conserve the mineral asset until prices recover. When such actions are taken, Public Reports should be updated to reflect the new information. In such circumstances, previously published Mineral Reserves may not have to be reclassified, provided that, in the opinion of the company and the ACP, higher future prices can be reasonably and supportably assumed, and it can reasonably be expected that operations will resume.

The documentation supporting the company's expectations should include comparison of prices with historical and current prices and forward curves, contracts and market considerations, currency exchange rates where applicable, third-party sources, and supplemental information.

50. Disclosure in Public Reports of the commodity prices and sometimes also the costs (including other Modifying Factors) used for Mineral Reserves estimation is generally required.

51. In the absence of applicable securities or other laws to disclose prices, there may be cases, such as when a product is sold under long-term contract, the terms of which are confidential, where there are valid commercial reasons for non-disclosure of prices.

52. Similarly, where disclosure of the long-term price and/or cost assumptions used in the estimation would be detrimental to the company's business, such as when bidding for sales contracts or mineral property acquisitions or negotiating agreements with third parties, non-disclosure may be justifiable.

XIV. Permitting and Legal Requirements

53. For the declaration of Mineral Reserves, there must be no known material obstacles to mining, arising from the failure to obtain material permits and consents under applicable laws and regulations.

54. There must be a reasonable expectation by the ACP, often through reliance on legal and permitting experts, that all permits, consents, ancillary rights (including water or other mineral property rights) and authorizations required for mining, and to the extent applicable, processing and marketing, can be

obtained in a timely fashion, and maintained for ongoing operations.

55. The company must complete a review of all legal and permitting requirements and document the findings. Local environmental laws and processes must be taken into account.

56. To demonstrate reasonable expectation that all permits, consents, ancillary rights, and authorizations can be obtained, the company must show understanding of the procedures to be followed to obtain such permits, consents, ancillary rights, and authorizations. Demonstrating earlier success in obtaining the necessary permits and consents can be used to document the likelihood of future success.

57. If permits and consents are required, but there is no defined procedure to obtain such permits and consents, reasonable expectation of success may be difficult to support. Information that materially increases or decreases the risk that the necessary legal rights or permits will be obtained must be disclosed.

58. It is recognized that the legal and permitting environment may change over time and that such changes could have an impact on Mineral Reserve estimation. If it is determined that obstacles have arisen or have been eliminated, the Mineral Reserve estimates must be adjusted accordingly.

    It is recognized that some permits and/or consents cannot be obtained until after a Mineral Reserve has been declared. There might be sound business reasons why obtaining some permits and/or consents should be postponed.

    It is also recognized that waiting for all permits and/or consents to be on hand could result in critical information not being released to the investors in a timely fashion, and therefore it is recommended that disclosure of material information occur prior to obtaining permits and/or consents as appropriate.

    Documentation should include a brief description of the tenurial instrument, permit, agreement with government, title, claim, lease or option under which the company has the right to hold or operate the mineral property, indicating any conditions that the company must meet to obtain or retain the mineral property.

    If held by tenurial instruments, permits, agreements with the government, leases or options, the expiry dates of such tenurial instruments, permits, agreements with government, leases or options should be stated. If extension of the foregoing will be needed to mine the Mineral Reserves, there should be reasonable expectation that such extension will be granted.

59. Royalty terms, streaming agreements, and clawback rights of former claim/land holders must be disclosed.

60. Information relating to the review of legal and permitting issues must be documented either in full or by reference. The information may remain confidential to the company. However, when required, it may be released to regulators or auditors on a confidential basis.

XV. Sustainability Considerations

61. Public Reports should discuss environmental, social, and health and safety impacts that are expected during development, operation, and after closure, and the mitigation and remediation plans to address such impacts. These impacts will affect employees, contractors, neighboring communities, and customers.

    Historical performance by the company should be used to engage all stakeholders and to plan for continued benefits for all parties concerned.

    In the minerals industry, health and safety have traditionally received the most attention, with incident statistics reflecting these improvements.

    Sustainability can refer to three principal themes: the ability of the environment to maintain itself with minimum impact to the local flora and fauna, the ability of the surrounding community to continue its traditional economic and cultural activities, and the ability of newly-created economic inputs to continue beyond the mine life.

    Social issues and the social license to operate (SLO) are a measure of the communication transparency and level of trust with communities and society at large. Programs to create positive impacts on the environment, safety, and sustainability all contribute to winning the trust needed for the SLO.

    The ACP should ensure the report discusses reasonably available information on environmental permitting and social or community factors related to the project.

    The discussions should include, where relevant:

    - *a summary of the results of any environmental studies and a discussion of any known environmental issues that could materially impact the company's ability to extract the Mineral Resources or Mineral Reserves,*
    - *requirements and plans for waste and tailings disposal, site monitoring, and water management both during operations and post-mine closure,*
    - *project permitting requirements, the status of any permit applications, and any known requirements to post-performance or reclamation bonds,*
    - *a discussion of any potential social or community-related requirements and plans for the project and the status of any negotiations or agreements with local communities,*
    - *a discussion of mine closure (remediation and reclamation) requirements and costs,*
    - *special capital or operating requirements for handling hazardous minerals or reagents, as well as other health and industrial hygiene risks,*
    - *any savings in energy usage or other reduction of consumption reflecting directly in the economic outcome of the project, and*
    - *Mineral Reserve estimates should acknowledge the likely environmental and social impact of development and ensure that appropriate allowances are made for mitigation and remediation.*

XVI. Transitory Provisions

62. To provide for a smooth transition from the PMRC 2007 Edition, the full implementation of the PMRC 2020 Edition takes effect two (2) years from the date that the Securities and Exchange Commission (SEC) approves this Edition of the Code (Transitory Period).

63. Companies shall comply with PMRC 2007 Edition during the Transitory Period. Companies can opt to have their disclosures fully compliant with PMRC 2020 Edition during the Transitory Period. If a company opts to have its disclosures comply with the PMRC 2020 Edition during the Transitory Period, it shall expressly state the same and use the same exclusively in its disclosures. The use of the standards set by both PMRC 2007 and PMRC 2020 Editions in the same disclosure is not allowed. If at any point during the Transitory Period, a company adopts the PMRC 2020 Edition, it shall continue to use the same during the rest of the Transitory Period.

64. During the Transitory Period, the terms “Accredited Competent Person” (“ACP”) and “Mineral Reserves” must be used instead of “Competent Person” (“CP”) and “Ore Reserves”, respectively. In addition, the ACP’s Consent Form (Appendix 3) and Compliance Statements (Appendix 4) shall be used during the Transitory Period, provided that, if the PMRC 2007 Edition is being complied, the ACP Consent Form and Consent Statement shall be revised as follows: (i) “Pursuant to the requirements under the prevailing PSE’s Consolidated Listing and Disclosure Rules and Clause ~~10~~ **8** of the PMRC ~~2020~~ **2007** Edition (“Consent Statement”)”; (ii) “I have read and understood the requirements of the ~~2020~~ **2007** Edition of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and ~~Mineral~~ **Ore** Reserves (PMRC ~~2020~~ **2007** Edition)”; (iii) “I certify that this Report has been prepared in accordance with PMRC ~~2020~~ **2007** Edition”; and (iv) “I am an Accredited Competent Person as defined by the ~~PMRC~~ 2020 Edition **of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves**, having a minimum of five years relevant experience in style of mineralization and type of mineral deposit described in the Report, and to the activity for which I am accepting responsibility”.

Table 1 - Checklist of Assessment and Reporting Criteria

Table 1 is a checklist or reference for use by the ACP(s) preparing Public Reports on Exploration Results, Mineral Resources, and Mineral Reserves.

In the context of complying with the principles of Transparency, Materiality, and Competence (see Clause 5), comment on the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the ACP's documentation and must be provided where required according to the specific requirements of Clauses 22, 30 and 38 for projects material to the company in the Public Report. This is to ensure that it is clear to the investor whether items have been considered and deemed of low consequence or have yet to be addressed or resolved.

As always, relevance and Materiality are overriding principles that determine what information should be Publicly Reported and the ACP must provide sufficient comment on all matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources or Mineral Reserves.

The order and grouping of criteria in Table 1 reflect the normal systematic approach to exploration and estimation of Mineral Resources and Mineral Reserves. The table should be approached from left to right, and from top to bottom. In other words, criteria in the first column, Exploration Results, should be considered to apply also when reporting Mineral Resources and Mineral Reserves. Similarly, additional criteria in the Mineral Resources column apply also to Mineral Reserves reporting.

When compiling a Public Report dealing with coal; industrial minerals, cement feed materials, and construction materials; and dimension stone, ornamental and decorative stone; there are specific matters that must be considered. Appendices 6 to 8 of the Code address these specific commodities. Sections 10-12 of Table 1 include also items that may be specific to those commodities and therefore have been placed within Appendices 6 to 8 where relevant.

TABLE 1 – CHECK LIST OF ASSESSMENT AND REPORTING CRITERIA					
			Exploration Results	***Mineral Resources***	***Mineral Reserves***
Introduction					
Introduction	***General***	*(i)*	*The scope of work or terms of reference.*		
		(ii)	*The Accredited Competent Person's relationship to the issuer of the Public Report, if any.*		
		(iii)	*A statement for whom the Public Report was prepared; whether it was intended as a full or partial evaluation or other purpose, work conducted, effective date of Public Report, and remaining work.*		
		(iv)	*Sources of information and data contained in the Public Report or used in its preparation, with citations if applicable, and a list of references.*		
		(v)	*A title page and a table of contents that includes figures and tables.*		
		(vi)	*An Executive Summary, which briefly summarizes important information in the Public Report, including mineral property description and ownership, geology and mineralization, the status of exploration, development and operations, Mineral Resource and/or Mineral Reserve estimates, and the Accredited Competent Person's conclusions and recommendations.* *If Inferred Mineral Resources are used, a summary valuation with and if practical without inclusion of such Inferred Mineral Resources. The Executive Summary should have sufficient detail to allow the reader to understand the essentials of the project.*		
		(vii)	*A declaration from the Accredited Competent Person, stating whether 'the declaration has been made in terms of the guidelines of the PMRC 2020 Edition.* *If a reporting code other than the PMRC having jurisdiction has been used, an explanation of the differences.*		
		(viii)	*Diagrams, maps, plans, sections, and illustrations, which are dated, legible, and prepared at an appropriate scale to distinguish important features. Maps including a legend, author or information source, coordinate system and datum, a scale in bar or grid form, and an arrow indicating north.* *Reference to a location or index map and more detailed maps showing all important features described in the text, including all relevant cadastral and other infrastructure features.*		
		(ix)	*The units of measure, currency and relevant exchange rates*		
		(x)	*The details of the personal inspection on the mineral property by each Accredited Competent Person or, if applicable, the reason why a personal inspection has not been completed.*		
		(xi)	*If the Accredited Competent Person is relying on a report, opinion or statement of another expert who is not an Accredited Competent Person, then a disclosure of the date, title, and author of the report, opinion, or statement, the qualifications of the other expert, the reason for the Accredited Competent Person to rely on the other expert, any significant risks, and any steps the Accredited Competent Person took to verify the information provided.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 1: Project Outline					
1.1	***Location***	*1.1.1*	*Description of location and map (country, province, and closest town/city, coordinate systems and ranges, etc.).*		
		1.1.2	*Country Profile, with a description of information relating to the project host country that is pertinent to the project, including relevant applicable legislation, environmental and social context etc. An assessment, at a high level, of relevant technical, environmental, social, economic, political, and other key risks.*		
		1.1.3	*A general topo-cadastral map.*	*Topo-cadastral map in sufficient detail to support the assessment of eventual economics.*	*Detailed topo-cadastral map, with applicable aerial surveys checked with ground controls and surveys, particularly in areas of rugged terrain, dense vegetation or high altitude.*
1.2	***Mineral Property Description***	*1.2.1*	*Brief description of the scope of project (i.e., whether in preliminary sampling, advanced exploration, Scoping, Pre-Feasibility, or Feasibility Study, Life-of-Mine plan for an ongoing mining operation or closure).*		
		1.2.2	*Description of topography, elevation, drainage and vegetation, the means and ease of access to the mineral property, the proximity of the mineral property to a population center, and the nature of transport, the climate, known associated climatic and seismic risks and the length of the operating season and to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations including the availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites (noting any conditions that may affect possible exploration/mining activities).*		
1.3	***Adjacent properties***	*1.3.1*	*Details of relevant adjacent properties. The inclusion on the maps of the location of common structures, whether related to mineralization or not, in adjacent or nearby properties having an important bearing on the Public Report. Reference to all information used from other sources.*		
1.4	***History***	*1.4.1*	*Historical background to the project and adjacent areas concerned, including known results of previous exploration and mining activities (type, amount, quantity, and development work), previous ownership and changes thereto.*		
		1.4.2		*Previous successes or failures referred to transparently with reasons why the project should now be considered potentially economic.*	
		1.4.3		*Known or existing historical Mineral Resource estimates and performance statistics from actual production in the past and in current operations.*	
		1.4.4			*Known or existing historical Mineral Reserve estimates and performance statistics from actual production in the past and in current operations.*
1.5	***Legal Aspects and Permitting***		*A statement from the Accredited Competent Person on the confirmation of the legal tenure, including a description of:*		
		1.5.1	*The nature of the issuer's rights (e.g., exploration and/or mining) and the right to use the surface of the properties to which these rights relate. The date of expiry and other relevant details.*		
		1.5.2	*The principal terms and conditions of all existing agreements, and details of those still to be obtained, (such as, but not limited to, concessions, partnerships, joint ventures, access rights, leases, historical and cultural sites, wilderness or national park and environmental settings, royalties, consents, permission, permits or authorizations).*		
		1.5.3	*The security of the tenure held at the time of reporting or that is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area.* *Details of applications that have been made. See Clause 32 for declaration of a Mineral Reserve.*		
		1.5.4	*A statement of any legal proceedings, for example: adverse/competing claims, or land claims that may have an influence on the rights to prospect or mine for minerals, or claims that the tenurial instrument is defective, or an appropriate negative statement.*		
		1.5.5	*A statement relating to governmental/statutory requirements permits, and consents as may be required, have been applied for, approved or can be reasonably be expected to be obtained.* *A review of risks that permits will not be received as expected and impact of delays to the project*		
1.6	***Royalties***	*1.6.1*	*The royalties or streaming agreements that are payable in respect of each mineral property.*		
1.7	***Liabilities***	*1.7.1*	*Any liabilities, including rehabilitation guarantees and decommissioning obligations that are pertinent to the project.* *A description of the rehabilitation liability and decommissioning obligation, including, but not limited to, legislative/administrative requirements, assumptions, and limitations.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 2: Geological Setting, Mineral Deposit, Mineralization					
2.1	***Geological Setting, Mineral Deposit, Mineralization***	*2.1.1*	*The regional geology.*		
		2.1.2	*The project geology including mineral deposit type, geological setting, and style of mineralization.*		
		2.1.3	*The geological model or concepts being applied in the investigation and on the basis of which the exploration program is planned, along with a description of the inferences and assumptions made from this model.*		
		2.1.4	*Data density, distribution, and reliability and whether the quality and quantity of information are sufficient to support statements, made or inferred, concerning the mineral deposit.*		
		2.1.5	*Significant minerals present in the mineral deposit, their frequency, size and other characteristics, including a discussion of minor and gangue minerals where these will have an effect on the processing steps and the variability of each important mineral within the mineral deposit.*		
		2.1.6	*Significant mineralized zones encountered on the mineral property, including a summary of the surrounding rock types, relevant geological controls, and the length, width, depth, and continuity of the mineralization, together with a description of the type, character, and distribution of the mineralization*		
		2.1.7	*The existence of reliable geological models and/or maps and cross sections that support interpretations.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data					
3.1	***Exploration***	*3.1.1*	*Data acquisition or exploration techniques and the nature, level of detail, and confidence in the geological data used (i.e., geological observations, remote sensing results, stratigraphy, lithology, structure, alteration, mineralization, hydrology, geophysical, geochemical, petrography, mineralogy, geochronology, bulk density, potential deleterious or contaminating substances, geotechnical and rock characteristics, moisture content, bulk samples, etc.).* *Data sets with all relevant metadata, such as unique sample number, sample mass, collection date, spatial location, etc.*		
		3.1.2	*The primary data elements (observations and measurements) used for the project and a description of the management and verification of these data or the database.* *Description of the following relevant processes: acquisition (capture or transfer), validation, integration, control, storage, retrieval, and backup processes.* *If data are not stored digitally, presentation of hand-printed tables with well-organized data and information.*		
		3.1.3	*Acknowledgment and appraisal of data from other parties, and reference to all data and information used from other sources.*		
		3.1.4	*Distinction between data / information from the mineral property under discussion and that derived from surrounding properties.*		
		3.1.5	*The methods for collar and down-hole survey, techniques, and expected accuracies of data as well as the grid system used.*		
		3.1.6	*Discussion on the sufficiency of the data spacing and distribution to establish the degree of geological and grade continuity appropriate for the estimation procedure(s) and classifications applied.*		
		3.1.7	*Presentation of representative models and/or maps and cross sections or other two or three-dimensional illustrations of results showing location of samples, accurate drill hole collar positions, down-hole surveys, exploration pits, underground workings, relevant geological data, etc.*		
		3.1.8	*The geometry of the mineralization with respect to the drill hole angle because of the importance of the relationships between mineralization widths and intercept lengths.* *Justification if only down-hole lengths are reported.*		
3.2	***Drilling Techniques***	*3.2.1*	*Type of drilling undertaken (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*		
		3.2.2	*The geological and geotechnical logging of core and chip samples relative to the level of detail required to support appropriate Mineral Resource estimation, mining studies, and metallurgical studies.*		
		3.2.3	*The nature of logging (qualitative or quantitative) and the use of core photography (or costean, channel, etc.).*		
		3.2.4	*The total length and percentage of the relevant intersections logged.*		
		3.2.5	*Results of any down-hole surveys of the drill hole.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data (continued)					
3.3	***Sample method, collection, capture, and storage***	*3.3.1*	*A description of the nature and quality of sampling (e.g., cut channels, random chips, or specific specialized industry standard measurement tools appropriate to the minerals under investigation, such as down-hole gamma sondes, or handheld or fixed-position XRF instruments, etc.), without these examples limiting the broad meaning of sampling.*		
		3.3.2	*A description of the sampling processes, including sub-sampling stages to maximize representativeness of samples, whether sample sizes are appropriate to the grain size of the material being sampled and any sample compositing.*		
		3.3.3	*A description of each data set (e.g., geology, grade, density, quality, geo-metallurgical characteristics, etc.), sample type, sample-size selection, and collection methods.*		
		3.3.4	*The nature of the geometry of the mineralization with respect to the drill hole angle (if known).* *The orientation of sampling to achieve unbiased sampling of possible structures, considering the mineral deposit type.* *The intersection angle.* *The down-hole lengths if the intersection angle is not known.*		
		3.3.5	*A description of retention policy and storage of physical samples (e.g., core, sample reject, etc.)*		
		3.3.6	*A description of the method of recording and assessing core and chip sample recoveries and the results assessed, measures taken to maximize sample recovery and ensure representative nature of the samples, whether a relationship exists between sample recovery and grade, and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*		
		3.3.7	*The cutting of a drill core sample, e.g., whether it was split or sawn and whether quarter, half or full core was submitted for analysis.* *Non-core sampling, e.g., whether the sample was riffled, tube sampled, rotary split, etc.; whether it was sampled wet or dry; the impact of water table or flow rates on recovery and introduction of sampling biases or contamination from above.* *The impact of variable hole diameters, e.g., by the use of a caliper tool.*		
3.4	***Sample Preparation and Analysis***	*3.4.1*	*The identity of the laboratory(s) and its accreditation status.* *The steps taken by the Accredited Competent Person to ensure the results from a non-accredited laboratory are of an acceptable quality.*		
		3.4.2	*The analytical method, its nature, the quality and appropriateness of the assaying and laboratory processes and procedures used, and whether the technique is considered partial or total.*		
		3.4.3	*A description of the process and method used for sample preparation, sub-sampling and size reduction, and the likelihood of inadequate or non-representative samples (i.e., improper size reduction, contamination, screen sizes, granulometry, mass balance, etc.).*		
3.5	***Sampling Governance***	*3.5.1*	*The governance of the sampling campaign and process, to ensure quality and representativeness of samples and data, such as sample recovery, high grading, selective losses or contamination, core/hole diameter, internal and external QA/QC, and any other factors that may have resulted in or identified sample bias.*		
		3.5.2	*The measures taken to ensure sample security and the Chain of Custody.*		
		3.5.3	*The validation procedures used to ensure the integrity of the data, e.g., transcription, input or other errors, between its initial collection and its future use for modeling (e.g., geology, grade, bulk density, etc.).*		
		3.5.4	*The audit process and frequency (including dates of these audits) and disclose any material risks identified.*		
3.6	***Quality Control/ Quality Assurance***	*3.6.1*	*The verification techniques (QA/QC) for field sampling process, e.g., the level of duplicates, blanks, reference material standards, process audits, analysis, etc.* *Indirect methods of measurement (e.g., geophysical methods), with attention given to the confidence of interpretation.* *Reference to measures taken to ensure sample representativeness and the appropriate calibration of any measurement tools or systems used.* *QA/QC procedures used to check databases augmented with 'new' data have not disturbed previous versions containing 'old' data.*		
3.7	***Bulk Density***	*3.7.1*	*The method of bulk density determination with reference to the frequency of measurements, the size, nature, and representativeness of the samples.*		
		3.7.2	*Preliminary estimates or basis of assumptions made for bulk density.*		
		3.7.3	*The representativeness of bulk density samples.*		
		3.7.4	*The measurement of bulk density for bulk material using methods that adequately account for void spaces (vugs, porosity etc.), moisture, and differences between rock and alteration zones within the mineral deposit.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data (continued)					
3.8	***Bulk Sampling and/or trial-mining***	*3.8.1*	*The location of individual samples (including map).*		
		3.8.2	*The size of samples, spacing/density of samples recovered, and whether sample sizes and distribution are appropriate to the grain size of the material being sampled.*		
		3.8.3	*The method of mining and treatment.*		
		3.8.4	*The degree to which the samples are representative of the various types and styles of mineralization and the mineral deposit as a whole.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 4: Estimation and Reporting of Exploration Results and Mineral Resources					
4.1	***Geological model and interpretation***	*4.1.1*	*The nature, detail, and reliability of geological information with which lithological, structural, mineralogical, alteration or other geological, geotechnical, and geo-metallurgical characteristics were recorded.*		
		4.1.2	*The geological model, construction technique, and assumptions that form the basis for the Exploration Results or Mineral Resource estimate.* *The sufficiency of data density to assure continuity of mineralization and geology, and provision of an adequate basis for the estimation and classification procedures applied.*		
		4.1.3	*Any obvious geological, mining, metallurgical, processing, environmental, social, infrastructural, legal, and economic factors that could have a significant effect on the prospects of any possible Exploration Target or mineral deposit.*		
		4.1.4		*Geological data that could materially influence the estimated quantity and quality of the Mineral Resource or Mineral Reserve.*	
		4.1.5		*Consideration given to alternative interpretations or models and their possible effect (or potential risk), if any, on the Mineral Resource estimate.*	
		4.1.6		*Geological discounts (e.g., magnitude, per reef, domain, etc.), applied in the model, whether applied to mineralized and/or unmineralized material (e.g., potholes, faults, dikes, etc.).*	
4.2	***Estimation and modeling techniques***	*4.2.1*	*A detailed description of the estimation techniques and assumptions used to determine the grade and tonnage ranges for Exploration Targets.*	*Histograms, statistical parameters, probability distributions of samples, and of block estimates. If geostatistics is done, must show variogram(s) and parameters (e.g., sill, range, nugget effect) depending on variogram type, sizes of estimation panels or blocks, assumed or known selective mining units.*	
		4.2.2		*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values (cutting or capping), compositing (including by length and/or density), domaining, sample spacing, estimation unit size (block size), selective mining units, interpolation parameters, and maximum distance of extrapolation from data points.*	
		4.2.3		*Assumptions and justification of correlations made between variables.*	
		4.2.4		*Any relevant specialized computer program (software) used (with the version number) together with the parameters used.*	
		4.2.5		*The processes of checking and validation, the comparison of model information to sample data and use of reconciliation data, and whether the Mineral Resource estimate takes account of such information.*	
		4.2.6		*The assumptions made regarding the estimation of any co-products, by-products or deleterious elements.*	

			Exploration Results	Mineral Resources	Mineral Reserves
Section 4: Estimation and Reporting of Exploration Results and Mineral Resources (continued)					
4.3	***Reasonable prospects for eventual economic extraction***	*4.3.1*		*The geological parameters, including (but not be limited to) volume / tonnage, grade and value / quality estimates, cut-off grades, strip ratios, upper- and lower- screen sizes.*	
		4.3.2		*The engineering parameters, including mining method, processing, geotechnical, hydrogeological, and metallurgical parameters, including assumptions made to mitigate the effect of deleterious elements.* *Dilution and mining recovery factors that might be applicable to convert in-situ Mineral Resources to Mineral Reserves.*	
		4.3.3		*The infrastructure including, but not limited to, power, water, and site access.*	
		4.3.4		*The legal, governmental, permitting, and statutory parameters.*	
		4.3.5		*The environmental and social (or community) parameters.*	
		4.3.6		*The marketing parameters.*	
		4.3.7		*The economic assumptions and parameters, including, but not limited to, commodity prices, sales volumes, and potential capital and operating costs.*	
		4.3.8		*Material risks, e.g., legal, environmental, climatic, etc.*	
		4.3.9		*The parameters used to support the concept of 'eventual' in the case of Mineral Resources.*	
4.4	***Classification Criteria***	*4.4.1*		*The criteria and methods used as the basis for the classification of the Mineral Resources into varying confidence categories.*	
4.5	***Discussion of relative accuracy/ confidence***	*4.5.1*		*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource or Mineral Reserve estimate using an approach or procedure deemed appropriate by the Accredited Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Mineral Resource or Mineral Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relative tonnages, which should be relevant to technical and economic evaluation. Documentation shall include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	
4.6	***Reporting***	*4.6.1*	*Specific grades / qualities and widths.*		
		4.6.2	*The reporting of low- and high-grade intersections and corresponding widths, together with their spatial location to avoid misleading reporting of Exploration Results.*		
		4.6.3	*A statement on whether grades are regional averages or if these are selected individual samples taken from the mineral property under discussion.*		
		4.6.4		*The detail of the surface or underground mine, residue stockpile, remnants, tailings, and existing pillars or other sources in a Mineral Resource statement*	
		4.6.5		*A comparison with the previous Mineral Resource estimates, with an explanation of the reason for material changes.* *A comment on any historical trends (e.g., global bias).*	
		4.6.6		*The basis for the estimate and if not 100%, the attributable percentage relevant to the entity commissioning the Public Report.*	
		4.6.7	*The basis of equivalent metal formulae, if relevant.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies					
5.1	***Introduction***	*5.1.1*	*Not applicable to Exploration Results or Exploration Targets*	*The level of study – Scoping, Pre-Feasibility, Feasibility or ongoing Life-of-Mine Plan.*	*The level of study – Pre-Feasibility, Feasibility or ongoing Life-of-Mine Plan.*
		5.1.2			*A summary table of the Modifying Factors used to convert the Mineral Resource to Mineral Reserve.*
5.2	***Mining Design***	*5.2.1*	*Not applicable to Exploration Results or Exploration Targets*	*Assumptions regarding mining methods and parameters when estimating Mineral Resources.*	
		5.2.2			*All Modifying Factors and assumptions made regarding mining methods, minimum mining dimensions (or pit shell) and internal and, if applicable, external planned and unplanned mining dilution and mining losses used for the techno-economic study and signed-off, such as mining method, mine design criteria, infrastructure, capacities, production schedule, mining efficiencies, grade control, geotechnical and hydrological considerations, closure plans, and personnel requirements.*
		5.2.3		*Mineral Resource models used in the study.*	
		5.2.4		*The basis of the cut-off grade(s).*	*The basis of (the adopted) cut-off grade(s) or quality parameters applied, including metal equivalents if relevant.*
		5.2.5			*The mining method(s) to be used.*
		5.2.6			*For open cut mines, a discussion of pit slopes, slope stability, and strip ratio.*
		5.2.7			*For underground mines, a discussion of mining method, geotechnical considerations, mine design characteristics, and ventilation/cooling requirements.*
		5.2.8			*Discussion of mining rate, equipment selected, grade control methods, geotechnical and hydrogeological considerations, health and safety of the workforce, staffing requirements, dilution, and recovery.*
		5.2.9			*Optimization methods and software used in planning, including a discussion of the constraints.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies (continued)					
5.3	***Metallurgical Testworks***	*5.3.1*	*Not applicable to Exploration Results or Exploration Targets*		*The source of the samples, the representativeness of the potential feed and the techniques used to obtain the samples, laboratory and metallurgical testing techniques.*
		5.3.2			*The basis for assumptions or predictions regarding metallurgical amenability and any preliminary mineralogical test work should already be carried out.*
		5.3.3		*The possible processing methods and any processing factors that could have a material effect on the likelihood of eventual economic extraction.* *The appropriateness of the processing methods to the style of mineralization.*	*The processing method(s), equipment, plant capacity, efficiencies, and personnel requirements.*
		5.3.4			*The nature, amount, and representativeness of metallurgical test works undertaken and the recovery factors used.* *A detailed flow sheet / diagram and a mass balance, especially for multi-product operations from which the saleable materials are priced for different chemical and physical characteristics.*
		5.3.5			*Assumptions or allowances made for deleterious elements and the existence of any bulk-sample or pilot-scale test work and the degree to which such samples are representative of the ore body as a whole.*
		5.3.6			*Disclosure of whether metallurgical process is well-tested technology or novel in nature and if novel, justification of its use in Mineral Reserve estimation.*
5.4	***Infrastructure***	*5.4.1*	*Not applicable to Exploration Results or Exploration Targets*	*Comment regarding the current state of infrastructure or the ease with which the infrastructure can be provided or accessed and its effect on reasonable prospects for eventual economic extraction*	
		5.4.2			*Demonstration that the necessary facilities have been allowed for (which may include, but not be limited to, processing plant, tailings dam, leaching facilities, waste dumps, road, pipeline, rail or port facilities, water and power supply, offices, housing, security, resource sterilization testing, etc.). Provision of detailed maps showing locations of facilities.*
		5.4.3			*Statement showing that all necessary logistics have been considered.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies (continued)					
5.5	***Environmental and social***	*5.5.1*	*Confirmation that the company holding the tenement has addressed the host country's environmental legal compliance requirements and any mandatory and/or voluntary standards or guidelines to which the company subscribes.*		
		5.5.2	*Identification of the necessary permits that will be required and their status, and where not yet obtained, and confirmation that there is a reasonable basis to believe that all permits required for the project will be obtained in a timely manner.*		
		5.5.3	*Any sensitive areas that may affect the project as well as any other environmental factors including Interested and Affected Party (I&AP) and/or studies that could have a material effect on the likelihood of eventual economic extraction.* *Possible means of mitigation.*		
		5.5.4	*Legislated social management programs that may be required and content and status of these.*		
		5.5.5	*Material socio-economic and cultural impacts that need to be managed, and where appropriate the associated costs.*		
5.6	***Market Studies and Economic criteria***	*5.6.1*	*Not applicable to Exploration Results or Exploration Targets*	*Technical and economic factors likely to influence the prospect of economic extraction. Refer to Clause 23.*	*Valuable and potentially valuable product(s) including suitability of products, co-products and by-products to market.*
		5.6.2			*Product to be sold, customer specifications, testing, and acceptance requirements.* *Existence of a ready market for the product and whether contracts for the sale of the product are in place or expected to be readily obtained.* *Price and volume forecasts and the basis for the forecast.*
		5.6.3			*Economic criteria used for the study, such as capital and operating costs, exchange rates, revenue / price curves, royalties, and streaming agreements, cut-off grades, reserve pay limits.*
		5.6.4			*Summary description, source, and confidence of method used to estimate the commodity price/value profiles used for cut-off grade calculation, economic analysis and project valuation, including applicable taxes, inflation indices, discount rate, and exchange rates.*
		5.6.5			*Assumptions made concerning production cost including transportation, treatment, penalties, exchange rates, marketing, and other costs. Allowances should be made for the content of deleterious elements and the cost of penalties.*
		5.6.6			*Allowances made for royalties and streaming agreements payable, both to Government and private entities.*
		5.6.7			*Ownership, type, extent, and condition of plant and equipment that is significant to the existing operation(s).*
		5.6.8			*Environmental, social, and labor costs.*
5.7	***Risk Analysis***	*5.7.1*	*An assessment of technical, environmental, social, economic, political, and other key risks to the project.* *Actions that will be taken to mitigate and/or manage the identified risks.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies (continued)					
5.8	***Economic Analysis***	*5.8.1*	*Not applicable to Exploration Results or Exploration Targets*	*The basis on which reasonable prospects for eventual economic extraction has been determined.* *Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction'.*	*The inclusion of any Inferred Mineral Resources is not allowed in the Pre-Feasibility and Feasibility Studies economic analysis.*
		5.8.2			*An economic analysis for the project that includes after tax Cash Flow forecast on an annual basis using Mineral Reserves or Mineral Resources or an annual production schedule for the life of the project, which has been used at the relevant level Pre-Feasibility or Feasibility Study.* *Accounting for royalties and streaming agreements.*
		5.8.3			*A discussion of net present value (NPV), internal rate of return (IRR) and payback period of capital.*
		5.8.4			*Sensitivity or other analysis using variants in commodity price, grade, capital and operating costs, or other significant parameters, as appropriate and discuss the impact of the results.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 6: Estimation and Reporting of Mineral Reserves					
6.1	***Estimation and modeling techniques***	*6.1.1*			*A description of the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve.*
		6.1.2			*A Mineral Reserve Statement in sufficient detail indicating if the mining is by surface or underground method plus the source and type of mineralization, domain or orebody, surface dumps, stockpiles, and all other sources.*
		6.1.3			*Reconciliation of historical reliability and reconciliation of the performance parameters, assumptions and modifying factors.* *A comparison with the previous Reserve quantity and qualities, if available.* *Where appropriate, any historical trends (e.g., global bias).*
		6.1.4			*Criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, which should be based on the Mineral Resource category, and include consideration of the confidence in all the Modifying Factors.*
6.2	***Classification Criteria***	*6.2.1*			*Criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, which should be based on the Mineral Resource category, and include consideration of the confidence in all the Modifying Factors.*
6.3	***Reporting***	*6.3.1*			*The proportion of Probable Mineral Reserves, which have been derived from Measured Mineral Resources (if any), including the reason(s) thereof.*
		6.3.2			*The inclusion in a Mineral Reserve statement of the detail of the surface or underground mine, residue stockpile, remnants, tailings, and existing pillars or other sources*
		6.3.3			*A comparison with the previous Mineral Reserve estimates.* *Any historical trends (e.g., global bias).*
		6.3.4			*The inclusion or exclusion of Mineral Resources in Mineral Reserves.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 7: Audits and Reviews					
7.1	***Audits and Reviews***	*7.1.1*	*Type of review/audit (e.g., independent, external), area (e.g., laboratory, drilling, data, environmental compliance, etc.), date and name of the reviewer(s) together with their recognized professional qualifications.* *The level of review/audit (desk-top, on-site comparison with standard procedures, or endorsement where auditor/reviewer has checked the work to the extent they stand behind it as if it were their own work).*		
		7.1.2	*The level and conclusions of relevant audits or reviews.* *Significant deficiencies and remedial actions required.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 8: Other Relevant information					
8.1	***Other relevant information***	*8.1.1*	*Other relevant and material information not discussed elsewhere.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 9: Accredited Competent Person					
9.1	***Qualification of Accredited Competent Person(s) and key technical staff***	*9.1.1*	*The full name of the Accredited Competent Person, profession, address, their PRC and Accredited Competent Person registration numbers and the name of the professional representative organization (or RPO), of which the Accredited Competent Person(s) is member.* *The relevant experience of the Accredited Competent Person(s) and other key technical staff who prepared and who are responsible for the Public Report.*		
	Relationship to the issuer	*9.1.2*	*The Accredited Competent Person's relationship to the issuer of the Public Report, if any.*		
		9.1.3	*The inclusion of the Accredited Competent Person's Consent Form (see Appendices 3 & 4). Such Consent Form should include the date of sign-off and the effective date of the Public Report.*		

Table 2 - Guideline for Technical Studies

This guideline for Technical Studies is provided as a guide to the compilation of the various studies relating to Mineral Resources and Mineral Reserves. It is designed to be read in conjunction with Table 1.

Scoping Studies, Pre-Feasibility Studies, Feasibility Studies (and on-going Life-of-Mine Plan (LoMP) studies) analyze and assess the same geological, engineering, and economic factors with increasing detail and precision. Therefore, the same criteria may be used as a framework for reporting the results of all three studies.

If considered appropriate, the ACP may use the Association for the Advancement of Cost Engineers (AACE) International Guide 47R-11 for the Mining and Mineral Processing Industries (as amended) or other internationally recognized and accepted guidelines.

TABLE 2 – GUIDELINE FOR TECHNICAL STUDIES			
Item	***Scoping Study***	***Pre-Feasibility Study***	***Feasibility Study***
Mineral Resource categories	*Mostly Inferred*	*Mostly Indicated*	*Measured and Indicated*
Mineral Reserve categories	*None*	*Mostly Probable*	*Proved and Probable*
Mining method and geotechnical constraints	*Conceptual*	*Preliminary Options*	*Detailed and Optimized*
Mine design	*None or high-level conceptual*	*Preliminary mine plan and schedule*	*Detailed mine plan and schedule*
Scheduling	*Annual approximation*	*3-monthly to annual*	*Monthly for much of payback period*
Mineral Processing / Extractive Metallurgy	*Metallurgical testwork – exploratory tests*	*Preliminary Options – bench/pilot-scale tests*	*Detailed and Optimized – optimization, testworks / pilot-scale tests*
Permitting - (water, power, mining, prospecting, and environmental)	*Required permitting listed*	*Preliminary applications submitted*	*Authorities engaged, and applications submitted*
Social license to operate	*Initial contact with local communities*	*Formal communication structures and engagement models in place*	*Contracts/agreements in place with local communities and municipalities (local government)*
Risk tolerance	*High*	*Medium*	*Low*

Item	Scoping Study	Pre-Feasibility Study	Feasibility Study
Basis of Capital Estimate			
Civil/structural, architectural, piping/heating, ventilation, and air conditioning (HVAC), electrical, instrumentation, construction labor, construction labor productivity, material volumes/amounts, material/equipment, pricing, and infrastructure	*Order-of-magnitude based on historical data or factoring. Engineering < 5% complete.*	*Estimated from historical factors or percentages and vendor quotes based on material volumes. Engineering at 5-25% complete.*	*Detailed from engineering at 20% to 50% complete, estimated material take-off quantities, and multiple vendor quotations*
Contractors	*Included in unit cost or as a percentage of total cost*	*Percentage of direct cost by area for contractors; historical for subcontractors*	*Written quotes from contractor and subcontractors*
Engineering, procurement, and construction management (EPCM)	*Percentage of estimated construction cost*	*Key parameters, Percentage of detailed construction cost*	*Detailed estimate*
Owner's costs	*Factored, benchmark, database or historical estimate*	*Budgeted quotes on key parameters and estimates from experience, factored from similar project*	*Detailed estimate*
Environmental compliance / Closure Cost	*Factored from historical estimate*	*Estimate from experience, factored from similar project*	*Estimate prepared from detailed zero-based budget for design engineering and specific permit requirements*
Escalation	*Not considered*	*Based on entity's current budget percentage*	*Based on cost area with risk*
Accuracy Range (Order of magnitude)	*± 25-50%*	*± 15-25%*	*± 10-15%*
Contingency Range (Allowance for items not specified in scope that will be needed)	*± 30%*	*15-30%*	*10% - 15% (actual to be determined based on risk analysis)*

Item	*Scoping Study*	Pre-Feasibility Study	Feasibility Study
Basis of Operating Costs			
Operating Costs	*Order-of-magnitude based on historical data or factoring.*	*Estimated from historical factors or percentages and vendor quotes based on material volumes.*	*Detailed estimate*
Operating quantities	*General*	*Specific estimates with some factoring*	*Detailed estimates*
Unit costs	*Based on historical data for factoring*	*Estimates for labor, power, and consumables, some factoring*	*Letter quotes from vendors; minimal factoring*
Accuracy Range	*± 25-50%*	*15% - 25%*	*10% - 15%*
Contingency Range (Allowance for items not specified in scope that will be needed)	*± 25%*	*± 15%*	*± 10% (actual to be determined based on risk analysis)*

Appendix 1 - Generic Terms and Equivalents

Throughout the PMRC 2020 Edition, certain words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, a non-exclusive list of generic terms is tabulated below together with other terms that may be regarded as synonymous for the purposes of this document.

Generic Term	Synonyms or similar terms	Intended generalized meaning
Accredited Competent Person	*Competent Person (Australasia) Qualified Person (Canada) Qualified Competent Person (Chile)*	*Refer to the Code Clause 12 for the definition of an Accredited Competent Person.*
Assumption	*Value judgments*	*The ACP in general makes value judgments when making assumptions regarding information not fully supported by test work*
Clawback rights		*A financial or other benefit that is given but is later taken back under defined circumstances.*
Cut-off grade	*Product specifications*	*The lowest grade, or quality, of mineralized material that qualifies as economically mineable and available in a given mineral deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product.*
Grade	*Quality, Assay, Analysis (Value)*	*Any physical or chemical measurement of the characteristics of the material of interest in samples or product. The units of measurement should be stated when figures are reported.*
Life-of-Mine Plan (LoMP)		*A design and financial/economic study of an existing operation in which appropriate assessments have been made of existing geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational, and all other Modifying Factors, which are considered in sufficient detail (to Pre-Feasibility level) to demonstrate that continued extraction is reasonably justified. Refer to Table 2 for guidance.*
Metallurgy	*Processing, Beneficiation, Concentration, Leaching, Smelting and Refining*	*Physical and/or chemical separation of constituents of interest from a larger mass of material. Methods employed to prepare a final marketable product from material as mined. Examples include screening, flotation, magnetic separation, leaching, washing, roasting, gravity concentration, smelting and refining, etc.*

Generic Term	Synonyms or similar terms	Intended generalized meaning
Mineralization	*Type of mineral deposit, orebody, style of mineralization*	*Any single mineral or combination of minerals occurring in a mass, or mineral deposit, of economic interest. The term is intended to cover all forms in which mineralization might occur, whether by class of mineral deposit, mode of occurrence, genesis or composition.*
Mineral Reserves	*Ore Reserves*	*'Mineral Reserves' is preferred under the PMRC 2020 Edition but 'Ore Reserves' is in use in the PMRC 2007 Edition and in other countries and is generally accepted. Other descriptors can be used to clarify the meaning, e.g., coal reserves, limestone reserves, etc.*
Mining	*Quarrying*	*All activities related to extraction of metals, minerals, and gemstones from the earth whether surface or underground, and by any method (e.g., quarries, open cast, open cut, solution mining, dredging etc.).*
Proved	*Proven*	*Represents the highest confidence category of Mineral Reserve estimate.*
Recovery	*Yield*	*The percentage of material of initial interest that is extracted during mining and/or processing. A measure of mining or processing efficiency.*
Tonnage	*Quantity, Volume*	*An expression of the amount of material of interest irrespective of the units of measurement (which should be stated when figures are reported).*

Appendix 2 – List of Acronyms

AACE	Association for the Advancement of Cost Engineers
ACP	Accredited Competent Person
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
COMP	Chamber of Mines of the Philippines, Inc.
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
DENR	Department of Environment and Natural Resources
GSP	Geological Society of the Philippines, Inc.
HVAC	Heating, Ventilation, and Air Conditioning
IRR	Internal Rate of Return
JORC	Joint Ore Reserves Committee (Australia)
JORC Code	Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
LoMP	Life of Mine Plan
MGB	Mines and Geosciences Bureau
NPV	Net Present Value
NRO	National Reporting Organization
PABC	Philippines-Australia Business Council, Inc.
PERC	Pan-European Reserves and Resources Reporting Committee
PHILCOAL	Philippine Chamber of Coal Mines, Inc.
PMEA	Philippine Mining and Exploration Association, Inc.
PMRC	Philippine Mineral Reporting Code
PMRCC	Philippine Mineral Reporting Code Committee
PSE	The Philippine Stock Exchange, Inc.
PSEM	Philippine Society of Mining Engineers, Inc.
RPO	Recognized Professional Organization
SAMCODES	South African Mineral Codes
SEC	Securities and Exchange Commission
SME	Society for Mining, Metallurgy & Exploration (USA)
SMEP	Society of Metallurgical Engineers of the Philippines, Inc.

Appendix 3 - Compliance Statements

Appropriate forms of compliance statements should be as follows:

For Public Reports of Exploration Targets, initial or materially changed reports of Exploration Results, Mineral Resources or Mineral Reserves or company annual reports:

- *If the required information is in the report:*

  'The information in this report that relates to Exploration Results, Mineral Resources or Mineral Reserves is based on information compiled by [insert name of Accredited Competent Person (ACP)], an Accredited Competent Person who is a Member (or Fellow) of the Philippine Society of Mining Engineers or the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, the Geological Society of the Philippines and the Society of Metallurgical Engineers of the Philippines through the Philippine Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations [select as appropriate and insert the name of the professional representative organization or RPO of which the ACP is a member and the ACP's grade of membership].'

- *If the required information is included in an attached statement:*

  'The information in the report to which this statement is attached that relates to Exploration Results, Mineral Resources or Mineral Reserves is based on information compiled by [insert name of ACP], an Accredited Competent Person who is a Member (or Fellow) of [insert name of the Philippine Society of Mining Engineers or, the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, the Geological Society of the Philippines and the Society of Metallurgical Engineers of the Philippines through the Philippine Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations [select as appropriate and insert the name of the professional representative organization or RPO of which the ACP is a member and the ACP's grade of membership].'

- *If the ACP is a full-time employee of the company:*

  '[Insert name of ACP] is a full-time employee of the company.'

- *If the ACP is not a full-time employee of the company:*

  '[Insert name of ACP] is employed by [insert name of ACP's employer].'

- *The full nature of the relationship between the ACP and the reporting company must be declared together with the ACP's details. This declaration must outline and clarify any issue that could be perceived by investors as a conflict of interest.*

- *For all reports:*

  [Insert name of ACP] has a minimum of five years relevant experience in the style of mineralization or type of mineral deposit under consideration and to the activity being undertaken to qualify as an Accredited Competent Person as defined in the 2020 Edition of the 'Philippine Mineral Reporting Code for Reporting Exploration Results, Mineral Resources and Mineral Reserves'. [Insert name of ACP] consents to the inclusion in the report of the matters based on his (or her) information in the form and context in which it

appears.

For any subsequent Public Report based on a previously issued Public Report that refers to those Exploration Results or estimates of Mineral Resources or Mineral Reserves:

Where an ACP has previously issued the prior written consent to the inclusion of their findings in a report, a company re-issuing that information to the Public, whether in the form of a presentation or a subsequent announcement, must state the report name, date and reference the location of the original source of the Public Report for public access.

- *'The information is extracted from the report entitled [name report] created on [date] and is available to view on [website name]. The company confirms that it is not aware of any new information or data that materially affect the information included in the original market announcement and, in the case of estimates of Mineral Resources or Mineral Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Accredited Competent Person's findings are presented have not been materially modified from the original market announcement.'*

Companies should be aware that this exemption does not apply to subsequent reporting of information in the company annual report.

Appendix 4 – Accredited Competent Person's Consent Form

Companies reporting Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves are reminded that while a Public Report is the responsibility of the company acting through its Board of Directors, Clause 10 of the Code requires that any such report 'must be based on, and fairly reflect the information and supporting documentation prepared by an Accredited Competent Person (ACP) or Persons. Clause 10 also requires that the 'report shall be issued with the prior written consent of the ACP(s) as to the form and context in which it appears'.

In order to assist ACP(s) and companies to comply with these requirements, and to emphasize the need for companies to obtain the prior written consent of each ACP for their material to be included in the form and context in which it appears in the Public Report, the PSE, together with PMRCC, have developed an ACP's Consent Form that incorporates the requirements of the PMRC 2020 Edition.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior written consent has been obtained.

Having the consent form witnessed by a peer professional representative organization-registered member is considered leading practice and is optional but strongly encouraged.

The ACP's Consent Form(s), or other evidence of the ACP's written consent, should be retained by the company and the ACP(s) to ensure that the written consent can be promptly provided if requested.

[Letterhead of Accredited Competent Person or Accredited Competent Person's employer]

Accredited Competent Person's Consent Form

Pursuant to the requirements under the prevailing PSE's Consolidated Listing and Disclosure Rules and Clause 10 of the PMRC 2020 Edition ("Consent Statement")

Report name

[Insert name or heading of Report to be publicly released)] ('Report')]

[Insert name of company releasing the Report]

[Insert name of mineral deposit to which the Report refers]

If there is insufficient space, complete the following sheet and sign it in the same manner as this original sheet.

_____

[Date of Report]

Consent Statement

I/We,

_____

[Insert full name(s)]

Confirm that I am the Accredited Competent Person for the Report, and:

- That I am a [insert profession, i.e., Geologist, Mining Engineer and/or Metallurgical Engineer] residing at [insert address].

- I have read and understood the requirements of the 2020 Edition of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (PMRC 2020 Edition).

- I certify that this Report has been prepared in accordance with PMRC 2020 Edition.

- I am an Accredited Competent Person as defined by the PMRC 2020 Edition, having a minimum of five years relevant experience in the style of mineralization and type of mineral deposit described in the Report, and to the activity for which for which I am accepting responsibility.

- I am a Member (or Fellow) of the Philippine Society of Mining Engineers or the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, Geological Society of the Philippines, and the Society of Metallurgical Engineers of the Philippines through the Philippines Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations.

- [State relationship of the ACP to the reporting company, e.g., consultant, whether independent or not independent, employee or holder of a corporate position, holder of shares, options and/or warrants, holder of tenement rights, has landlord-lessee relationship of land and/or infrastructure which has a bearing on the disclosure].

- I have reviewed the Report to which this Consent Statement applies.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issues that could be perceived by investors as a conflict of interest.

I verify that the Report is based on, and fairly and accurately reflect in the form and context in which it appears, the information in my supporting documentation relating to Exploration Results, Exploration Targets, Mineral Resources and/or Mineral Reserves *[select as appropriate].*

Consent

I consent to the release and public disclosure of the Report and this Consent Statement by the Board of Directors of:

_____

[Insert reporting company name]

[Signature]_____ _____
Accredited Competent Person Date

Professional Representative Organization / RPO Name of ACP

_____
PRC Registration No. / Valid Until [Date]

_____
ACP Registration No. / Valid Until [Date]

_____
Professional Tax Receipt No. / Date

[Signature]_____
Peer Witness' Name (*Optional)

Professional Representative Organization / RPO of Peer Witness

_____
PRC Registration No. / Valid Until [Date]

_____
ACP Registration No. / Valid Until [Date]

_____
Professional Tax Receipt No. / Date

Appendix 5 - Reporting of Mineralized Fill, Pillars, Low Grade Mineralization, Stockpiles, Dumps, and Tailings

A5-1 The Code applies to the reporting of all potentially economic mineralized material. This can include mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings (remnant materials) where there are reasonable prospects for eventual economic extraction in the case of Mineral Resources, and where extraction is reasonably justifiable in the case of Mineral Reserves. Unless otherwise stated, Clauses 1 to 61 of the Code (including Figure 1) apply.

A5-2 Table 1, as part of the Code, should be considered persuasive when reporting on mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings.

A5-3 Any mineralized material as described in this Appendix can be considered to be similar to in situ mineralization for the purposes of reporting Mineral Resources and Mineral Reserves. Judgments about the mineability of such mineralized material should be made by ACP(s) with relevant experience.

A5-4 If there are no reasonable prospects for the eventual economic extraction of all or part of the mineralized material as described in this Appendix, then this material cannot be classified as either Mineral Resources or Mineral Reserves. If some portion of the mineralized material is currently sub-economic, but there is a reasonable expectation that it will become economic, then this material may be classified as a Mineral Resource. If technical and economic studies to a minimum of a Pre-Feasibility Study have demonstrated that economic extraction could reasonably be justified under realistically assumed conditions, then the material may be classified as a Mineral Reserve.

The above Clauses apply equally to low grade in situ mineralization, sometimes referred to as 'mineralized waste' or 'marginal grade material', and often intended for stockpiling and treatment towards the end of mine life. For clarity of understanding, it is recommended that tonnage and grade estimates of such material be itemized separately in Public Reports, although they may be aggregated with total Mineral Resource and Mineral Reserve estimates.

Stockpiles are defined to include both surface and underground stockpiles, including broken ore in stopes, and can include ore currently in the ore storage system. Mineralized material in the course of being processed (including leaching), if reported, should be reported separately.

Appendix 6 - Reporting of Coal Exploration Results, Coal Resources, and Coal Reserves

A6-1 The Clauses in this Appendix address matters that relate specifically to the Public Reporting of Coal Exploration Results, Coal Resources, and Coal Reserves. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting on Coal Resources and Coal Reserves.

For purposes of Public Reporting, the requirements for coal are generally similar to those for other commodities with the replacement of terms such as 'mineral' by 'coal' and 'grade' by 'quality'.

Other industry guidelines on the estimation and reporting of Coal Resources and Coal Reserves may be useful but will under no circumstances override the provisions and intention of the Code for Public Reporting.

Because of its impact on planning and land use, governments may require estimates of coal inventory which are not constrained by short- to medium-term economic considerations. The PMRC does not cover such estimates. Refer also to the guidelines in Clauses 6 and 23.

A6-2 The terms 'Mineral Resource(s)' and 'Mineral Reserve(s)', and the subdivisions of these as defined above, apply also to coal reporting, but if preferred by the reporting company, the terms 'Coal Resource(s)' and 'Coal Reserve(s)' and the appropriate subdivisions may be substituted.

A6-3 'Marketable Coal Reserves', representing beneficiated or otherwise enhanced coal product where modifications due to mining, dilution and processing have been considered, may be Publicly Reported in conjunction with, but not instead of, reports of Coal Reserves. The basis of the predicted yield to achieve Marketable Coal Reserves must be stated.

A6-4 Reference to all coal products and properties must not be made until specific properties are demonstrated by analytical results for samples from the coal deposit.

TABLE 1 – SECTION 10			Exploration Results	Mineral Resources	Mineral Reserves
Section 10: Reporting for Coal Resources and Coal Reserves					
10.1	***Specific Reporting for Coal***	10.1.1	Appendix 6 of the Code provides additional criteria for reporting on coal deposits.		
		10.1.2	Guidance is available in relevant national standards for Coal Exploration Results, Coal Resources, and Coal Reserves reporting.		
10.2	***Geological Setting, Coal Deposit, Mineralization***	10.2.1	The project geology including coal deposit type, geological setting, and coal seams / zones present.		
		10.2.2	The structural complexity, physical continuity, coal rank, qualitative and quantitative properties of the significant coal seams or zones on the coal property.		
10.3	***Drilling Techniques***	10.3.1	Core recoveries and method of calculation. Core recoveries in cored boreholes should be in excess of 95% by length within the coal seam intersection.		
10.4	***Relative Density to replace Bulk Density***	10.4.1	The apparent relative density or true relative density of the coal seam(s) determined on coal samples from borehole cores using recognized standard laboratory methods or commonly used procedures. The moisture basis on which the relative density determination is based and the moisture basis on which the final density value is reported (in situ or air-dried basis), should be stated.		
10.5	***Bulk-Sampling and/or trial-mining***	10.5.1	The purpose or aim of the bulk sampling program, the size of samples, spacing/density of samples recovered. The applicability of bulk sampling or large diameter core samples to provide representative samples for tests. Comparison of results obtained from bulk sampling versus exploration sampling.		
10.6	***Reasonable prospects for eventual economic extraction***	10.6.1	The basis on which reasonable prospects for eventual economic extraction has been determined. Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction'.		
10.7	***Coal Resource and Coal Reserve Reporting***	10.7.1		The appropriate coal quality for all Coal Resource and Coal Reserve categories. The type of analysis (e.g., raw coal, washed coal at a specific cut-point density) and the basis of reporting of the coal quality parameters (e.g., air-dried basis, dry basis, etc.).	
		10.7.2		A Coal Resource only includes the coal seam(s) above the minimum thickness cut-off and the coal quality cut-off(s).	The Reserves may be reported as Run-of-Mine (ROM) tonnages and coal quality, and also as Saleable product/s tonnages and coal quality.
		10.7.3		The reporting basis with particular reference to moisture and relative density.	

Appendix 7 - Reporting of Exploration Results, Mineral Resources, and Mineral Reserves for Industrial Minerals, Cement Feed Materials, and Construction Raw Materials

A7-1 Clauses in this Appendix address matters that relate to the Public Reporting of industrial minerals, cement feed materials, and construction raw materials of all forms that are generally sold on the basis of their product specifications and market acceptance. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting Exploration Results, Mineral Resources, and Mineral Reserves for industrial minerals, cement feed materials, and construction raw materials.

A7-2 When reporting information and estimates for industrial minerals, cement feed materials and construction raw materials, all of the key principles and purpose of the Code apply. Chemical analyses may not always be relevant, and other quality criteria and performance characteristics may be more applicable and acceptable as the basis of the reporting.

A7-3 Some industrial minerals, cement feed materials, and construction raw material deposits may yield products suitable for more than one application and/or specification. If considered material by the Accredited Competent Person (ACP), such multiple products should be quantified either separately or as a percentage of the bulk deposit.

A7-4 Unless it is a specific aspect of their instructions to reflect the range of product mixes and target markets for the industrial minerals, cement feed materials or construction raw materials deposit, the ACP should normally report the Mineral Resources and Mineral Reserves within the framework of an existing mining plan or established set of product and market assumptions and objectives.

A7-5 If there is potential for ancillary products, or mining or process waste, to be sold off-site for subsidiary uses in addition to the planned sales of primary products (i.e., other uses for non-saleable quarry production, such as secondary aggregate or engineering or other fill) the ACP should reflect this in their report and comment on any significant implication (e.g., reductions in the amount of non-saleable material that could otherwise be used as a restoration material).

A7-6 The factors underpinning the estimation of Mineral Resources and Mineral Reserves for industrial minerals, cement feed materials, and construction raw materials are the same as those for other mineral deposit types covered by the Code. It may be necessary, prior to the reporting of a Mineral Resource or Mineral Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets, and general product marketability.

A7-7 For industrial minerals, cement feed materials, and construction raw materials, it is common practice to report the saleable (or useable) product rather than the ‘as mined’ product as it is recognized that commercial sensitivities may not permit the publication of Mineral Resources and Mineral Reserves in the latter format which is the preferred style of reporting within the Code. It is important that, in all situations where the saleable product is reported, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A7-8 Reports should make clear the “permitted” or “non-permitted” status of the Mineral Resources and Mineral Reserves, and, in addition, Mineral Reserves should only be quoted where the operator has legal control.

It should be noted that many of the Modifying Factors are more relevant to industrial

minerals, cement feed materials, and construction raw materials than to metalliferous minerals. Specifically, the legal control may be more important, as well as the permitting status, due to the local nature of the planning process for non-strategic and non-government owned minerals.

A7-9 Mineral Resources and Mineral Reserves of industrial minerals, cement feed materials, and construction raw materials serving localized or regional markets may be reported on an aggregated basis on an appropriately defined geographical basis to reflect the particular economic constraints of the industrial minerals, cement feed materials or construction raw materials deposits being reported without divulging commercially sensitive information.

A7-10 In certain cases, commercial sensitivity may prevent the publication of detailed information and data associated with Mineral Resources and Mineral Reserves of industrial minerals, cement feed materials, and construction raw materials, and in such cases, this should be clearly justified in the report (either prepared for an individual site or on an aggregated basis).

TABLE 1 – SECTION 11		Exploration Results	Mineral Resources	Mineral Reserves
Section 11: Reporting of Industrial Minerals, Cement Feed Materials, and Construction Raw Materials				
11.1	***Specific Reporting of Industrial Minerals, Cement Feed Materials, and Construction Raw Materials***	11.1.1	Appendix 7 of the Code provides additional criteria for reporting on Industrial Mineral, Cement Feed Materials, and Construction Raw Materials deposits.	
		11.1.2	The exploration or geologically specific specialized industry techniques appropriate to the minerals under investigation.	
		11.1.3	The nature and quality of sampling or specific specialized industry standard measurement tools appropriate to the minerals under investigation.	
		11.1.4	Appropriate saleable product qualities. The basis for reporting (physical or chemical parameters, air-dried basis, dry basis, etc.). Deleterious chemical elements or physical parameters.	
		11.1.5	Assumptions regarding particular extraction methods, infrastructure, processing, environmental, and social parameters. Where no mining-related assumptions have been made, this should be explained.	
		11.1.6	Marketing parameters, customer specifications, testing, and acceptance requirements.	
		11.1.7	The nature, amount and representativeness of metallurgical/processing studies completed which form the basis for the various saleable materials which may be priced for different chemical and physical characteristics.	
		11.1.8	Where the reference point is a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.	

Appendix 8 - Reporting of Exploration Results, Mineral Resources and Mineral Reserves for Dimension Stone, Ornamental and Decorative Stone

A8-1 Clauses in this Appendix addresses matters that relate to the Public Reporting of dimension stone, ornamental and decorative stone of all forms that are generally sold on the basis of their technical (geological/mining) product specifications, quality, and market acceptance. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting Exploration Results, Mineral Resources, and Mineral Reserves for dimension stone, ornamental and decorative stone.

> *'Dimension stone' is a technical/commercial term that includes all natural stones that can be quarried in blocks of different dimensions and processed by cutting or splitting, and that possess the technical and aesthetic properties required for their use in the building and construction industries.*
>
> *In both mining and fields of application, dimension stone is distinct from any other material derived from natural rocks (such as* in *aggregates, cement materials, crushed stone, etc.). While other materials are almost exclusively used for load-bearing and filling functions and are largely utilized in public works, dimension stone materials offer special qualitative features which mean they can be used for different purposes and they can perform both structural and decorative architectural functions.*
>
> *In general, dimension stone can be quarried in regular and/or unshaped blocks by using different mining methods (drilling and splitting, diamond wire and diamond chain-saw cutting) and processed (cut, polished, and subjected to other surface treatments) to produce semi-finished products (slabs) and finished products (tiles and cut-to-size products).*

A8-2 Chemical analyses may not always be relevant for material evaluation, at least during the exploration-evaluation phases. When necessary, chemical analysis is used to verify the presence of possible minerals and related alteration that could produce important quality defects on finished products. Chemical/compositional analysis may also identify mineral components and/or assemblages and is used to predict the future technical requirements of the quarrying-processing equipment and related tools.

A8.3 Qualitative and aesthetic qualities (color, grain, texture, and their regularity in distribution) and/or their structural performance characteristics (compression and flexural strength, abrasive resistance, porosity, ability to be polished, radioactivity content, etc.) may be more important for the market, and applicable and acceptable as the basis for reporting.

A8-4 Many dimension stone, and ornamental and decorative stone deposits may yield different products (different materials and/or different market grades within the same material), suitable for the production of more than one finished or semi-finished product, and for more than one final application and/or specification. These often are sold in the market with different prices.

A8-5 If considered material by the Accredited Competent Person (ACP), estimates for such multiple products should be included either separately or as percentages of the bulk of the dimension stone, and/or ornamental and decorative stone deposit.

A8-6 Unless it is a specific aspect of their instructions to reflect the range of product mixes and target markets for the dimension stone, and/or ornamental and decorative stone deposit, the ACP should normally report the Mineral Resources and Mineral Reserves within the

framework of an existing mining plan and/or Pre-Feasibility / Feasibility Study or established set of products and market assumptions and objectives.

A8-7 If there is potential for ancillary products or by-products, or for quarrying or processing waste to be re-utilized or to be sold off-site for subsidiary uses, in addition to the planned sales of the primary products as described above (e.g., aggregate, sand and powder as industrial mineral, building and paving stone, etc.), the ACP should reflect this in the report and comment on any significant implications (e.g., reduction in the amount of non-saleable material, minimization of waste and related lower waste management costs, and environmental impact).

The factors underpinning the estimation of Mineral Resources and Mineral Reserves for dimension stone, and ornamental and decorative stone *are often not the same as those for other mineral deposit types covered by the Code.*

It may be necessary, prior to the reporting of Mineral Resources and Mineral Reserves, to take particular account of certain particular key characteristics/features of the target material specific to dimension stone.

These may include final product specifications, proximity to markets, type, structure, and demand of the market (very different area by area), and excluding some very well-established materials, possible changes in market requirements, and general product marketability.

They may also depend mainly on the market quality of the target material (color, grain, texture, and their regularity in distribution). A correct professional evaluation of the Market Quality, made by the ACP in different ways, is the key to evaluating the final product marketability and is a key Modifying Factor in the definition of Mineral Reserves for dimension stone.

The ACP should explain in detail in the report, the method utilized for the Market Quality evaluation of the target dimension stone and/or ornamental and decorative stone, and in cases of the market, the references cited, together with documents referenced or used. Sometimes, otherwise non-saleable materials are sent off-site as mining waste or as other material of potential economic value.

Care should be taken to ensure that such materials are not "double-counted" by being included as Mineral Resources and Mineral Reserves at both the site of production and at the site of reception where they are considered as useable products (with or without further processing to make them marketable).

A8-8 In contrast to industrial minerals, cement feed materials, and construction raw materials (Appendix 7), for which it is common practice to report the saleable (or useable) product rather than the 'as mined' product, dimension stone, and ornamental and decorative stone are usually reported in all their forms, shapes and dimensions. There are also factors that drive the market and the success of a dimension stone project.

A8-9 The Public Report may contain either the geological or commercial names of target dimension stone, and/or ornamental and decorative stone. In any case, an explanation of these terms should be included in the report.

A8-10 Other industry guidelines on the estimation and reporting of dimension stone, and ornamental and decorative stone may be useful but will under no circumstances override the provisions and intention of the Code for Public Reporting.

A8-11 Many of the Modifying Factors are more relevant and specific to dimension stone, and

ornamental and decorative stone than to metalliferous materials. In particular, the legal control of Mineral Resources and Mineral Reserves may be very important, as well as the permitting or consenting status, due to the local nature and often simple structure of the planning process for non-strategic and non-government owned minerals.

Reports should make clear the 'permitted 'or 'non-permitted' status of the Mineral Resources, and in addition Mineral Reserves particularly should only be quoted where the operator has legal control.

A8-12 Mineral Reserves and Mineral Resources of dimension stone, or ornamental and decorative stone deposits with the same material and owned by the same company, potentially serving localized/domestic or regional markets, may be reported on an aggregated basis on an appropriately defined geographical basis to reflect the particular economic constraints of the dimension stone, or ornamental and decorative stone deposits being reported without divulging commercially sensitive information.

A8-13 In certain cases, commercial sensitivity may prevent the publication of detailed information and data associated with Mineral Resources and Mineral Reserves of dimension stone, and ornamental and decorative stone deposits, and in such cases, this should be clearly justified in the report (either prepared for an individual site or on an aggregated basis).

TABLE 1 – SECTION 12			Exploration Results	Mineral Resources	Mineral Reserves
Section 12: Reporting of Dimension Stone, Ornamental and Decorative Stone					
12.1	***Specific Reporting of Dimension Stone, Ornamental and Decorative Stone***	*12.1.1*	*Appendix 8 of the Code provides additional criteria for reporting on dimension stone, ornamental and decorative stone.*		
		12.1.2	*The exploration or geologically specific specialized industry techniques appropriate to the stone under investigation.*		
		12.1.3	*The nature and quality of sampling or specific specialized industry standard measurement tools appropriate to the stone under investigation.*		
		12.1.4	*The appropriate saleable product qualities reported, including color, grain, texture, and their regularity in distribution. The basis for reporting (physical or chemical parameters, compression and flexural strength, abrasion resistance, porosity, polishability, etc.) should be reported. Reporting of deleterious chemical elements, radioactivity or physical parameters is required.*		
		12.1.5	*State assumptions regarding in particular extraction methods, infrastructure, processing, environmental, and social parameters. Where no mining-related assumptions have been made, this should be explained.*		
		12.1.6	*Discuss and justify the marketing parameters, customer specifications, testing, and acceptance requirements.*		
		12.1.7	*Discuss the nature, amount and representativeness of processing studies completed which form the basis for the various saleable materials which may be priced for different chemical and physical characteristics.*		
		12.1.8	*Where the reference point is a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.*		

Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources, and Mineral Reserves

The PMRC

2020 Edition

Prepared by the PMRC Committee composed of the Philippine Society of Mining Engineers, Geological Society of the Philippines, Society of Metallurgical Engineers of the Philippines, The Philippine Stock Exchange, Inc., Chamber of Mines of the Philippines, Philippine Mining and Exploration Association, the Philippines-Australia Business Council, and Philippine Chamber of Coal Mines, and supported by the Mines and Geosciences Bureau

TEXT COLOR LEGEND:
Black – PMRC 2007
Blue – JORC 2012
Red – CRIRSCO International Reporting Template 2019
Purple – JORC 2012 & CRIRSCO 2019
Brown – Changes suggested by CRIRSCO Working Group
Green – PMRCC (current)
Pink – PSE

CONTENTS

Foreword

1. The Philippine Mineral Reporting Code (PMRC), or the "Code" sets out minimum standards, recommendations, and guidelines for Public Reporting in the Philippines of Exploration Results, Mineral Resources, and Mineral Reserves. The Code was formulated to set minimum standards for Public Reporting that are compatible with global standards.

   The PMRC 2020 Edition is an upgrade of the PMRC 2007 Edition and modeled substantially after the International Reporting Template (2019) of the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) and the Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code) 2012 of the Australasian Joint Ore Reserves Committee (JORC). In adopting the CRIRSCO Template 2019's sixteen (16) Standard Definitions, the PMRC 2020 Edition is compatible with the international reporting codes of the CRIRSCO's members which are National Reporting Organizations (NROs) such as the Australasia (JORC), Canada (CIM), Chile (National Committee), Europe (PERC), South Africa (SAMCODES), and USA (SME). The Standard Definitions in this Code are:

   The PMRC 2020 Edition is an initiative of the Philippine Mineral Reporting Code Committee (PMRCC) established on November 22, 2018 by the professional representative organizations of the minerals industry which are the Philippine

Society of Mining Engineers (PSEM), the Geological Society of the Philippines (GSP), and the Society of Metallurgical Engineers of the Philippines (SMEP) together with minerals industry-related organizations and bodies such as The Philippine Stock Exchange, Inc. (PSE), the Chamber of Mines of the Philippines (COMP), the Philippine Mining and Exploration Association (PMEA), the Philippines-Australia Business Council (PABC), and the Philippine Chamber of Coal Mines (PHILCOAL). The formulation of the technical provisions of the Code was undertaken by PSEM, GSP, and SMEP. The formulation of the Code was also supported by the Mines and Geosciences Bureau (MGB) of the Department of Environment and Natural Resources (DENR).

I. Introduction

2. In this PMRC 2020 Edition, important terms and their definitions are provided as numbered clauses in **bold** typeface. The definitions are a core element of the Code. Other mandatory elements of the Code, in normal typeface and as numbered clauses, are similarly identified, both in the Code and its Appendices. The guidelines and further interpretation of the definitions and mandatory clauses are placed after the respective Code Clauses in indented *italic* typeface and clearly identified. Guidelines are not part of the Code, but are intended to provide assistance and guidance to readers and should be considered persuasive when interpreting the Code. Indented italics are also used in the Appendices and Tables to make it clear that they are also part of the guidelines.

3. The PMRC has been adopted by the PSEM, GSP and SMEP and is therefore binding on members of these professional organizations. It is endorsed by the Securities and Exchange Commission (SEC), MGB, COMP, PMEA, PABC, and PHILCOAL as a standard that promotes ethical conduct in Public Reporting in the minerals industry. The Code has also been adopted by and included in the PSE's Consolidated Listing and Disclosure Rules since 2008, and as part of the regulatory and reportorial requirements of MGB since 2010.

   Under the PSE's Consolidated Listing and Disclosure Rules, a Public Report must be prepared in accordance with the Code if it includes a statement on Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves. The incorporation of the Code imposes certain specific requirements on mining or exploration companies reporting to the PSE. However, a number of other issues may remain outside the PMRC associated with Public Reports that are addressed specifically within the PSE's Consolidated Listing and Disclosure Rules.

   As such, it is strongly recommended that users of the Code familiarize themselves with the PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and the regulatory and reportorial requirements of the MGB that relate to the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves.

II. Scope

4. The PMRC 2020 Edition applies to all solid mineral raw materials for which Public Reporting of Exploration Results, Mineral Resources, and Mineral Reserves is required by any relevant regulatory authority.

A Mineral is any substance, extracted for value, occurring naturally in or on the Earth, in or under water or in tailings, residues or stockpiles, having been formed by or subjected to a geological process but excludes water, oil and gas.

The definition of Mineral is broad, and therefore the Code is applicable to a diverse range of commodities for which Public Reporting of Exploration Results, Mineral Resources, and Mineral Reserves is required by a relevant regulatory authority, including but not limited to:

- metalliferous minerals,
- mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings (remnant materials) (Appendix 5),
- coal (Appendix 6),
- industrial minerals, cement feed materials, and construction raw materials (Appendix 7),
- dimension stone, ornamental and decorative stone (Appendix 8), and
- other mineral raw materials.

5. The principles governing the operation and application of the PMRC are Transparency, Materiality, and Competence

   - **Transparency requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled by this information or by omission of material information that is known to the Accredited Competent Person (ACP).**

   - **Materiality requires that a Public Report contains all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgment regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported. Where relevant information is not supplied, an explanation must be provided to justify its exclusion.**

   - **Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics (the ACP).**

   Transparency and Materiality are guiding principles of the Code, and the ACP must provide explanatory commentary on the material assumptions underlying the declaration of Exploration Results, Mineral Resources or Mineral Reserves.

   In particular, the ACP must consider that the benchmark of Materiality is that which includes all aspects relating to the Exploration Results, Mineral Resources or Mineral Reserves that investors or their advisers would reasonably expect to see explicit comment on from the ACP. The ACP must not remain silent on any material aspect for which the presence or absence of comment could affect the public perception or value of the mineral occurrence.

6. **Public Reports are reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Mineral Reserves. These include but are not limited to annual and quarterly company reports, media releases, information memoranda,**

technical papers, website postings, public presentations, and corporate disclosures required to be submitted to both the SEC and PSE, including disclosures of any material fact or event that occurs which would reasonably be expected to affect investors' or potential investors' decision in relation to the company's securities.

These Public Reports shall be submitted to both the SEC and PSE in accordance with SEC rules and PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and pursuant to the basic principles of full, fair, timely and accurate disclosure of material information, or other regulatory authorities as required by law.

The Code is a required minimum standard for Public Reporting. PMRC also recommends its adoption as a minimum standard for other reporting. Companies are encouraged to provide information in their Public Reports that is as comprehensive as possible.

The Code applies to other publicly-released company information in the form of postings on company websites and briefings for shareholders, stockbrokers, and investment analysts. The Code also applies to the following reports if they have been prepared for the purposes described in this Clause: including but not limited to environmental statements, information memoranda, expert reports, and technical papers referring to Exploration Results, Mineral Resources or Mineral Reserves.

For companies issuing annual reports, or other periodic summary reports, all material information relating to Exploration Results, Mineral Resources, and Mineral Reserves should be included. The annual report, or other relevant report, should disclose, among others, any change or deviation in the estimation of the Mineral Resources and/or Mineral Reserves, or explicitly warrant and confirm that no material change in such estimates occurred during mineral exploration and/or mining, as the case may be.

In cases where summary information is presented, the Public Report must clearly state that the information is a summary, and a reference must be provided, giving the source and location of the Code-compliant Public Reports or Public Reporting on which the summary is based.

The Public Report must include sufficient context and cautionary language to allow a reasonable investor to understand the nature, importance, and limitations of the data, interpretations, and conclusions summarized in the report.

It is recognized that companies can be required to issue reports in more than one regulatory jurisdiction, with compliance standards that may differ from this Code. It is recommended that such reports include a statement alerting the reader to this situation. Where members of PSEM, GSP, and SMEP are required to report in other jurisdictions, they are obliged to comply with the requirements of those jurisdictions.

Reference in the Code to 'documentation' includes internal company documents prepared as a basis for, or to support, a Public Report.

It is recognized that situations may arise where documentation prepared by an ACP for internal company or similar non-public purposes does not comply with the PMRC. In such situations, it is recommended that the documentation includes a prominent statement to this effect. This will make it less likely that

non-complying documentation will be used to compile Public Reports, since Clause 10 requires Public Reports to fairly reflect Exploration Results, Mineral Resource, and/or Mineral Reserve estimates, and supporting documentation, prepared by an ACP.

While every effort has been made within the Code and Guidelines (including Table 1) to cover most situations likely to be encountered in Public Reporting, there may be occasions when doubt exists as to the appropriate form of disclosure. On such occasions, users of the Code and those compiling reports to comply with the Code should be guided by its intent, which is to provide a minimum standard for Public Reporting, and to ensure that such reporting contains all information which investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of arriving at a reasoned and balanced judgment regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported.

Estimation of Mineral Resources and Mineral Reserves is inherently subject to some level of uncertainty and inaccuracy. Considerable skill and experience may be needed to interpret pieces of information, such as geological maps and analytical results based on samples that commonly only represent a small part of a mineral deposit. The uncertainty in the estimates should be discussed in the documentation and, where material, in Public Reports, and reflected in the appropriate choice of Mineral Resource and Mineral Reserve categories.

A Public Report should be adequately supported by legible text, figures, tables, sections, and maps to demonstrate competence by conveying material information in a transparent manner. Figures of any type should contain appropriate explanatory information in the form of titles and/or captions, and legends.

The PMRC is a Code for Public Reporting, not a Code that regulates the manner in which an ACP estimates Mineral Resources or Mineral Reserves. The term 'PMRC compliant' therefore refers to the manner of reporting, not to the estimates. Use of the words 'PMRC compliant' should be interpreted to mean: 'Reported in accordance with PMRC and estimated (or based on documentation prepared) by an ACP as defined by PMRC.

7. Table 1 provides, in a summary form, a list of the criteria which must be considered by the ACP when preparing a Public Report on Exploration Results, Mineral Resources or Mineral Reserves.

   In the context of complying with the principles of the Code, comments relating to the items in the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the ACP's documentation. Additionally, comment related to the relevant sections of Table 1 must be complied on an 'if not, why not' basis within Public Reporting for projects material to the company when reporting Exploration Results, Mineral Resources or Mineral Reserves for the first time. Table 1 also applies to instances where these items have materially changed from when these were last Publicly Reported. Reporting on an 'if not, why not' basis ensures that it is clear to an investor whether items have been considered and deemed of low consequence or are not yet addressed or resolved.

   For the purpose of the PMRC, the phrase 'if not, why not' means that each item in the relevant section of Table 1 of the Code must be discussed and if it is not discussed, then the ACP must explain why it has been omitted from the documentation.

8. The Code does not cover valuation or appraisal from a business perspective. It provides for the description of Exploration Results and estimates of Mineral Resources and Mineral Reserves that may be used by others to prepare subsequent valuations or appraisals.

9. PMRC recognizes that further review of the Code and Guidelines will be required from time to time.

III. Competence and Responsibility

10. A Public Report concerning a company's Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves is the responsibility of the company acting through its Board of Directors. Any such report must be based on, and fairly reflect the information and supporting documentation prepared by or under the direction of and signed by an ACP or ACPs. A company issuing a Public Report shall disclose all relevant information, including any updates on prior Public Reports, to the ACP(s) on an 'if not, why not' basis as required under this PMRC 2020 Edition. Furthermore, the company shall disclose the name(s) of the ACP(s), state whether the ACP is a full-time employee of the company, and, if not, name the ACP's employer. The report shall be issued with the prior written consent of the ACP as to the form and context in which it appears and should be duly signed by the ACP for it to be a valid report or disclosure.

    The company shall promptly and accurately communicate to the ACP any material information concerning the company or the company's Exploration Targets, Exploration Results, Mineral Resources, Mineral Reserves, and other matters covered by the PMRC 2020 Edition. Based on the material information received, the ACP shall assess whether there is a need to update or amend any Public Report previously made, and update or amend such Public Report as may be necessary.

    Any potential for a conflict of interest by the ACP or a related party of the ACP must be disclosed in accordance with the Transparency principle. Any other relationship of the ACP with the company making the report must also be disclosed in the Public Report. The report must be issued with the prior written consent of the ACP as to the form and context in which it appears.

    Where a company is re-issuing information previously issued with the written consent of the ACP, it must state the original report name, the name(s) of the ACP(s) responsible for the original report, and state the date, reference, and the location of the original public report for public access. In these circumstances, the company is not required to obtain the ACP's prior written consent as to the form and context in which the information appears, provided:

    - The company confirms in the subsequent public presentation that it is not aware of any new information or data that materially affects the information included in the relevant market announcement. In the case of estimates of Mineral Resources or Mineral Reserves, the company confirms that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

    - The company confirms that the form and context in which the ACP's findings

are presented have not been materially modified. Note that for the subsequent public presentation, it is the responsibility of the company acting through its Board of Directors to ensure the form and context have not been materially altered.

The relaxation of the requirement to obtain the ACP's prior written consent does not apply to the requirements for annual reporting of Mineral Resources and Mineral Reserves contained in Clause 18.

All such public disclosures should be specifically reviewed by the company to ensure that the form and context in which the ACP's findings are presented have not been materially modified, and to ensure that the previously issued Exploration Results, Mineral Resources or Mineral Reserves remain valid in the light of any more recently-acquired data.

Examples of appropriate forms of compliance statements are provided in Appendix 3.

In order to assist ACP(s) and companies to comply with these requirements, an ACP's Consent Form has been devised that incorporates the requirements of the Code. The ACP's Consent Form is provided in Appendix 4.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior consent has been obtained.

The ACP's Consent Form(s), or other evidence of the ACP's prior written consent, should be retained by the company and the ACP to ensure that the written consent can be promptly provided, if required.

11. Documentation detailing Exploration Results, Mineral Resource, and Mineral Reserve estimates, on which a Public Report on Exploration Results, Mineral Resources, and Mineral Reserves is based, must be prepared by, or under the direction of, and signed by an ACP or ACPs. The documentation must provide a fair representation of the Exploration Results, Mineral Resources or Mineral Reserves being reported.

12. **An 'Accredited Competent Person' (ACP) is a minerals industry professional who is a Member or Fellow of PSEM, GSP and/or SMEP, duly accredited as an ACP by the professional organization to which he/she belongs, or of a 'Recognized Professional Organization' (RPO), as included in a list promulgated by PSEM, GSP, and SMEP through the PMRCC, as the need arises, subject to applicable laws and regulations. These professional organizations have enforceable disciplinary processes including the powers to suspend or expel a member.**

An ACP must have a minimum of five years relevant experience in the style of mineralization or type of mineral deposit under consideration and to the activity which that person is undertaking.

If the ACP is preparing a report on Exploration Results, the relevant experience must be in mineral exploration. If the ACP is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment, and evaluation of Mineral Resources. If the ACP is estimating or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment,

evaluation, and economic extraction of Mineral Reserves.

The key qualifier in the definition of an ACP is the word `relevant'. Determination of what constitutes relevant experience can be a difficult area and common sense has to be exercised. For example, in estimating Mineral Resources for vein gold mineralization, experience in a high-nugget, vein-type mineralization such as tin, uranium, etc. will probably be relevant whereas experience in (say) massive base metal deposits may not be. As a second example, to qualify as an ACP in the estimation of Mineral Reserves for alluvial gold deposits, considerable (probably at least five years) experience in the evaluation and economic extraction of this type of mineralization would be needed. This is due to the characteristics of gold in alluvial systems, the particle sizing of the host sediment, and the low grades involved. Experience with placer deposits containing minerals other than gold may not necessarily provide appropriate relevant experience.

The key word 'relevant' also means that it is not always necessary for a person to have five years experience in each and every type of mineral deposit in order to act as an ACP if that person has relevant experience in other mineral deposit types. For example, a person with (say) 20 years experience in estimating Mineral Resources for a variety of metalliferous hard-rock deposit types may not require five years specific experience in (say) porphyry copper deposits in order to act as an ACP. Relevant experience in the other mineral deposit types could count towards the required experience in relation to porphyry copper deposits.

In addition to experience in the style of mineralization, an ACP taking responsibility for the compilation of Exploration Results and/or Mineral Resource estimates should have sufficient experience in the sampling and analytical techniques relevant to the mineral deposit under consideration to be aware of problems which could affect the reliability of data. Some appreciation of extraction and processing techniques applicable to that mineral deposit type may also be important.

13. The ACP(s) must provide explanatory comment on the material assumptions underlying the declaration of Exploration Results, Mineral Resources or Mineral Reserves. In particular, the ACP(s), when considering Materiality as defined in Clause 5, must include explicit comments on all aspects that an investor or their advisers would reasonably expect to be provided. This would include, but not be limited to, any aspect that would influence the public perception or value of the subject matter. The ACP(s) must be satisfied that:

- their work has not been unduly influenced by the organization, company or person commissioning the report or a report that may become a Public Report,
- all assumptions are documented, and
- adequate disclosure is made of all material aspects that an informed reader may require to make a reasonable and balanced judgment thereof.

As a general guide, persons being called upon to act as ACPs should be clearly satisfied in their minds that they could face their peers and demonstrate competence in the commodity, type of mineral deposit, and situation under consideration. If doubt exists, the person should either seek opinions from appropriately experienced colleagues or should decline to act as an ACP.

Estimation of Mineral Resources may be a team effort (for example, involving one person or team collecting the data and another person or team preparing

the estimate). Estimation of Mineral Reserves is very commonly a team effort involving several technical disciplines. It is recommended that, where there is clear division of responsibility within a team, each ACP and his or her contribution should be identified, and responsibility accepted for that particular contribution. If only one ACP signs the Mineral Resource or Mineral Reserve documentation, that person is responsible and accountable for the whole of the documentation under the Code. It is important in this situation that the ACP accepting overall responsibility for a Mineral Resource or Mineral Reserve estimate and supporting documentation prepared in whole or in part by others, is satisfied that the work of the other contributors is acceptable.

Complaints made with respect to the professional work of an ACP will be dealt with under the disciplinary procedures of the professional representative organization or RPO to which the ACP belongs, and if necessary, elevated to the Professional Regulation Commission (PRC).

When a PSE-listed company with overseas interests wishes to report overseas Exploration Results, Mineral Resource or Mineral Reserve estimates prepared by a person who is not a member of PSEM, GSP, SMEP, or a RPO, it is necessary for the company to nominate an ACP(s) to take responsibility for the Exploration Results, Mineral Resource or Mineral Reserve estimate. The ACP(s) undertaking this activity should appreciate that they are accepting full responsibility for the estimate and supporting documentation under the PSE's Consolidated Listing and Disclosure Rules, as may be amended or supplemented, and should not treat the procedure merely as a 'rubber-stamping' exercise.

IV. Reporting Terminology

14. Public Reports dealing with Exploration Results, Mineral Resources or Mineral Reserves must only use the terms set out in Figure 1.

Figure 1. General relationship between Exploration Results, Mineral Resources, and Mineral Reserves

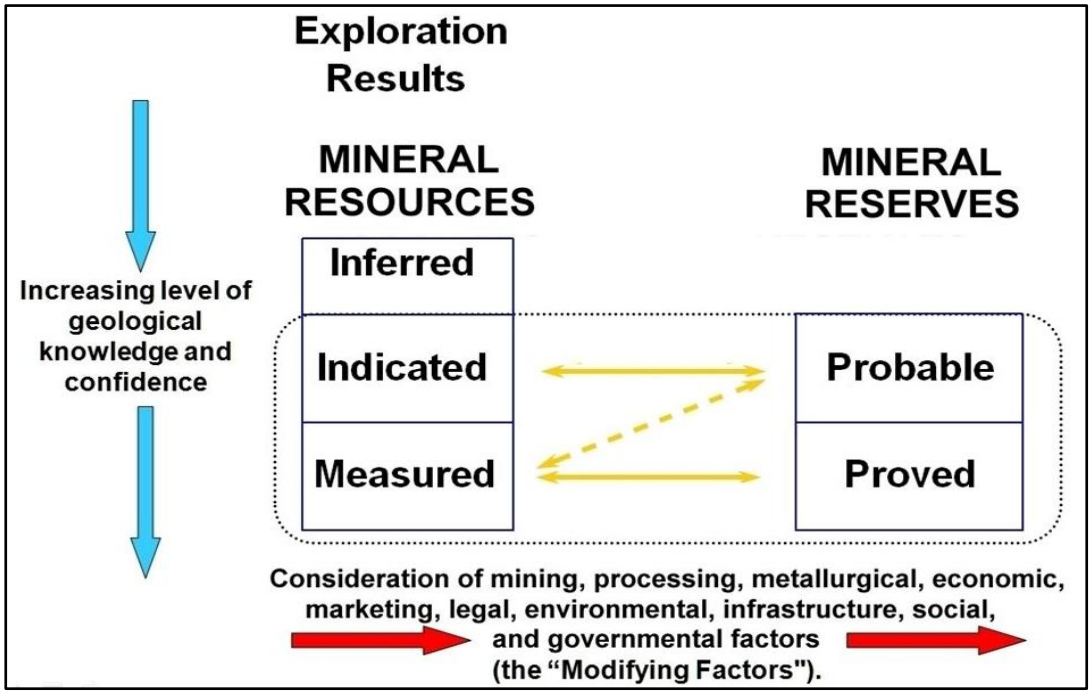

Figure 1 sets out the framework for classifying tonnage (or volume) and grade (or quality) estimates to reflect different levels of geological confidence and different degrees of technical and economic evaluation. Mineral Resources can be estimated mainly by a geologist on the basis of geoscientific information with some input from other disciplines. Mineral Reserves, which are a modified sub-set of the Indicated and Measured Mineral Resources (shown within the dashed outline in Figure 1), require consideration of the Modifying Factors affecting extraction, and should in most instances be estimated with input from a range of disciplines.

15. '**Modifying Factors' are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.**

    Measured Mineral Resources may be converted to either Proved Mineral Reserves or Probable Mineral Reserves. The ACP may convert Measured Mineral Resources to Probable Mineral Reserves because of uncertainties associated with some or all of the Modifying Factors which are taken into account in the conversion from Mineral Resources to Mineral Reserves. This relationship is shown by the broken arrow in Figure 1. Although the trend of the broken arrow includes a vertical component, it does not, in this instance, imply a reduction in the level of geological knowledge or confidence. In such a situation these Modifying Factors should be fully explained.

    Refer also to the guidelines to Clause 35.

V. Reporting General

16. Public Reports concerning a company's Exploration Results, Mineral Resources or Mineral Reserves should include a description of the style and nature of the mineralization.

17. A company must disclose any relevant information concerning Exploration Results, Mineral Resources or Mineral Reserves that could materially influence the economic value of those Exploration Results, Mineral Resources or Mineral Reserves to the company. A company must promptly report any material changes in its Mineral Resources or Mineral Reserves.

18. Companies must review and publicly report on their Mineral Resources and Mineral Reserves annually. The annual review date must be nominated by the company in its Public Reports of Mineral Resources and Mineral Reserves and the effective date of each Mineral Resource and Mineral Reserve statement must be shown. The company must discuss any material changes to previously-reported Mineral Resources and Mineral Reserves at the time of publishing updated Mineral Resources and Mineral Reserves.

19. Throughout the Code, if appropriate, 'quality' may be substituted for 'grade' and 'volume' may be substituted for 'tonnage'. (Refer to Appendix 1 – Generic Terms and Equivalents).

VI. Reporting of Exploration Targets

20. An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnage and a range of grade (or quality), relates to mineralization for which there has been insufficient exploration to estimate a Mineral Resource.

It is recognized that it is a common practice for a company to comment on and discuss its exploration strategy in terms of target size and type. Any such information relating to an Exploration Target must not be expressed in a way that could be confused as an estimate of Mineral Resources or Mineral Reserves. The terms Mineral Resource or Mineral Reserve must not be used in this context. In any statement referring to potential quantity and grade of the Exploration Target, these must both be expressed as ranges and must include:

- a detailed explanation of the basis for the statement of an Exploration Target, must specifically discuss the geological setting, the exploration strategy, and exploration activity already completed and the presence of or lack of the following attributes:
    - mineralized outcrops and assays,
    - surface geochemical sampling results,
    - surface and subsurface geophysical survey results, and
    - drill holes, test pits, and underground workings.
- a clarification statement within the same paragraph as the first reference of the Exploration Target in the Public Report, stating that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration data to estimate a Mineral Resource and that it is uncertain if further exploration work will result in the estimation of a Mineral Resource.

Given the level of uncertainty surrounding the supporting data, an Exploration Target tonnage and grade must not be reported as a 'headline statement' in a Public Report.

If a Public Report includes an Exploration Target, the proposed exploration activities designed to test the validity of the Exploration Target must be detailed and the timeframe within which those activities are expected to be completed must be specified.

If an Exploration Target is shown pictorially (for instance, as cross section or maps) or with a graph, it must be accompanied by text that meets the requirements above.

A Public Report that includes an Exploration Target must be accompanied by an ACP's statement taking responsibility for the form and context in which the Exploration Target appears.

All disclosures of an Exploration Target must clarify whether the Exploration Target is based on actual Exploration Results or on proposed exploration programs. Where the Exploration Target statement includes information relating to ranges of tonnages and grades, these must be represented as approximations. The explanatory text must include a description of the process used to determine

the grade and tonnage ranges used to describe the Exploration Target.

For an Exploration Target based on Exploration Results, a summary of the relevant exploration data available and the nature of the results should also be stated, including a disclosure of the current drill hole or sampling spacing and relevant plans or sections. In any subsequent upgraded or modified statements on the Exploration Targets, the ACP should discuss any material changes to potential scale or quality arising from completed exploration activities.

VII. Reporting of Exploration Results

21. Exploration Results include data and information generated by mineral exploration programs that might be of use to investors, but which do not form part of a declaration of Mineral Resources or Mineral Reserves.

The reporting of such information is common in the early stages of exploration when the quantity of data available is generally not sufficient to allow any reasonable estimates of Mineral Resources.

If a company reports Exploration Results in relation to mineralization not classified as a Mineral Resource or a Mineral Reserve, then estimates of tonnages and average grade must not be assigned to the mineralization unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

Examples of Exploration Results include results of outcrop sampling, assays of drill hole intercepts, geochemical results, and geophysical survey results.

22. Public Reports of Exploration Results must contain sufficient information to allow a considered and balanced judgment of their significance. Reports must include relevant information such as exploration context, type, and method of sampling, sampling intervals and methods, relevant sample locations, distribution, dimensions, and relative location of all relevant assay data, methods of analysis, data aggregation methods, land tenure status plus information on any of the other criteria listed in Table 1 which are material to an assessment.

Public Reports of Exploration Results must not be presented so as to unreasonably imply that potentially economic mineralization has been discovered. If true widths of mineralization are not reported, an appropriate qualification must be included in the Public Report.

Where assay and analytical results are reported, they must be reported using one of the following methods, selected as the most appropriate by the ACP:

- either by listing all results, along with sample intervals (or size, in the case of bulk samples), or
- by reporting weighted average grades of mineralized zones, indicating clearly how the grades were calculated.

Clear diagrams and maps designed to represent the geological context must be included in the report. These must include, but not be limited to, a plan view of drill hole collar locations and appropriate sectional views.

Reporting of selected information such as isolated assays, isolated drill holes, assays of panned concentrates or supergene enriched soils or surface samples, without placing them in proper context, is unacceptable.

While it is not necessary to report all assays or drill holes, it is a requirement that sufficient information about the omitted data is provided so that a considered and balanced judgment can be made by the reader of the report. Where reports of Exploration Results do not include all drill holes or all intersections of drill holes, the ACP must provide an explanation of why this information is not considered relevant or why it has not been provided.

As required under Clause 7, the ACP must not 'remain silent' on any issue for which the presence or absence of comment could impact the public perception or value of the mineral occurrence. For projects material to the company, the reporting of all criteria in Sections 1 and 2 of Table 1 on an 'if not, why not' basis is required, preferably as an appendix to the Public Report.

Additional disclosure is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results; for example, poor sample recovery, poor repeatability of assay or laboratory results, etc.

VIII. Reporting of Mineral Resources

23. A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity, and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence, including sampling. Mineral Resources are subdivided, in order of increasing geological confidence, into Inferred, Indicated, and Measured categories.

All reports of Mineral Resources must satisfy the requirement that there are reasonable prospects for eventual economic extraction (i.e., more likely than not), regardless of the classification of the Mineral Resource.

Portions of a mineral deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource. The basis for the reasonable prospects assumption is always a material matter, and must be explicitly disclosed and discussed by the ACP in the Public Report using the criteria listed in Table 1 for guidance. The reasonable prospects disclosure must also include a discussion of the technical and economic support for the cut-off assumptions applied.

When untested practices are applied in the determination of reasonable prospects, the use of the proposed practices for reporting of the Mineral Resource must be justified by the ACP in the Public Report.

Geological evidence and knowledge required for the estimation of Mineral Resources must include sampling data of a type, and at spacings, appropriate to the geological, chemical, physical, and mineralogical complexity of the mineral deposit, for all classifications of Inferred, Indicated, and Measured Mineral

Resources. A Mineral Resource cannot be estimated in the absence of sampling information.

Clause 23 including its guidelines takes precedence over those for the Inferred, Indicated, and Measured categories, in that estimates must first satisfy the criteria required for definition as a Mineral Resource before consideration is given to the criteria applicable to each category of Mineral Resource.

The term 'Mineral Resource' covers mineralization, including dumps and tailings, which has been identified and estimated through exploration and sampling and within which Mineral Reserves may be defined by the consideration and application of the Modifying Factors.

The term 'reasonable prospects for eventual economic extraction' implies a judgment (albeit preliminary) by the ACP in respect to all matters likely to influence the prospect of economic extraction, including the approximate mining parameters. In other words, a Mineral Resource is not an inventory of all mineralization drilled or sampled, regardless of cut-off grade, likely mining dimensions, location or continuity. It is a realistic inventory of mineralization which, under assumed and justifiable technical and economic conditions, might, in whole or in part, become economically extractable.

Where considered appropriate by the ACP, Mineral Resource estimates may include material below the selected cut-off grade to ensure that the Mineral Resources comprise bodies of mineralization of adequate size and continuity to properly consider the most appropriate approach to mining. Documentation of Mineral Resource estimates should clearly identify any diluting material included, and Public Reports should include commentary on the matter if considered material.

Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction' should be clearly stated, discussed, and justified in the Public Report.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. In all cases, the considered time frame of eventual economic extraction should be disclosed and discussed by the ACP.

Any adjustment made to the data for the purpose of making the Mineral Resource estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Certain reports (e.g., coal inventory reports, exploration reports to government, and other similar reports not intended primarily for providing information for investment purposes) may require full disclosure of all mineralization, including some material that does not have reasonable prospects for eventual economic extraction. Such estimates of mineralization would not qualify as Mineral Resources or Mineral Reserves in terms of the PMRC (refer also to the guidelines to Clause 6 and Appendix 6).

24. **An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes.**

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Where the Mineral Resource being reported is predominantly an Inferred Mineral Resource, sufficient supporting information must be provided to enable the reader to evaluate and assess the risk associated with the reported Mineral Resource.

In circumstances where the estimation of the Inferred Mineral Resource is presented on the basis of extrapolation beyond the nominal sampling, and taking into account the style of mineralization, the report must contain sufficient information to inform the reader of:

- the maximum distance that the resource is extrapolated beyond the sampling points,
- the proportion of the resource that is based on extrapolated data,
- the basis on which the resource is extrapolated to these limits, and
- a diagrammatic representation of the Inferred Mineral Resource, showing clearly the extrapolated part of the estimated resource.

The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data quantity and quality are insufficient to allow the geological and grade continuity to be confidently interpreted. While it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.

Inferred Mineral Resources must not be converted to Mineral Reserves and must not be stated as part of the Mineral Reserve.

Confidence in the estimate of Inferred Mineral Resources is usually not sufficient to allow the results of the application of Modifying Factors to be used for detailed planning in Pre-Feasibility (Clause 44) or Feasibility (Clause 45) Studies. For this reason, there is no direct link from an Inferred Mineral Resource to any category of Mineral Reserves (see Figure 1).

Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (Clause 43).

25. An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the mineral deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Mineralization may be classified as an Indicated Mineral Resource when the nature, quality, amount, and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralization.

Confidence in the estimate is sufficient to allow the application of Modifying Factors in Technical Studies as defined in Clauses 42 to 45.

26. **A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the mineral deposit.**

Geological evidence is derived from detailed and reliable exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes and is sufficient to confirm geological and grade or (quality) continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to an Indicated Mineral Resource. It may be converted to a Proved Mineral Reserve or under certain circumstances to a Probable Mineral Reserve.

A Measured Mineral Resource requires an understanding of the geology, mineralogy, mineability, and amenability to processing of the mineral deposit.

Mineralization may be classified as a Measured Mineral Resource when the nature, quality, amount, and distribution of data are such as to leave no reasonable doubt, in the opinion of the ACP determining the Mineral Resource, that the tonnage and grade of the mineralization can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

This category requires a high level of confidence in, and understanding of, the geology and the controls of the mineral deposit.

Confidence in the estimate is sufficient to allow the application of Modifying Factors in Technical Studies as defined in Clauses 42 to 45 with a high level of confidence.

27. The choice of the appropriate category of Mineral Resource depends upon the quantity, distribution, and quality of data available and the level of confidence that attaches to those data. The appropriate Mineral Resource category must be determined by an ACP.

Mineral Resource classification is a matter for skilled judgment and an ACP should take into account those items in Table 1 which relate to confidence in Mineral Resource estimation.

In deciding between Indicated Mineral Resources and Measured Mineral

Resources, ACP(s) may find it useful to consider, in addition to the phrases in the two definitions relating to geological and grade continuity in Clauses 25 and 26, the phrase in the guideline to the definition for Measured Mineral Resources: '.... any variation from the estimate would be unlikely to significantly affect potential economic viability'.

In deciding between Inferred Mineral Resources and Indicated Mineral Resources, an ACP may wish to take into account, in addition to the phrases in the two definitions in Clauses 24 and 25 relating to geological and grade continuity, that part of the definition for Indicated Mineral Resources: 'Confidence sufficient to allow the application of Modifying Factors to support mine planning and evaluation of the economic viability of the mineral deposit', which contrasts with the guideline in the definition for Inferred Mineral Resources: 'Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of Modifying Factors to be used for detailed planning in Pre-Feasibility (Clause 44) or Feasibility (Clause 45) Studies.' and 'Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Clause 43)'.

The ACP should take into consideration issues regarding the style of mineralization and cut-off grade when assessing geological and grade continuity for the purposes of classifying the Mineral Resource.

Cut-off grades chosen for the estimation should be realistic in relation to the style of mineralization and the anticipated mining and processing development options.

28. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures and, in the case of Inferred Mineral Resources, by qualification with terms such as 'approximately' and to emphasize the imprecise nature of a Mineral Resource, the final result should always be referred to as an estimate, not a calculation.

In most situations, rounding to the second significant figure should be sufficient. For example, 10,863,000 tonnes at 8.23 percent should be stated as 11 million tonnes at 8.2 percent. There will be occasions, however, where rounding to the first significant figure may be necessary in order to convey properly the uncertainties in estimation. This would usually be the case with Inferred Mineral Resources.

ACPs are encouraged, where appropriate, to discuss the relative accuracy and confidence of the Mineral Resource estimates with consideration of at least sampling, analytical, and estimation errors. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage. Where a statement on the relative accuracy and confidence is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1).

29. Public Reports of Mineral Resources must specify one or more of the categories of 'Inferred', 'Indicated', and 'Measured'. Tonnage and grade (or quality) of categories of Mineral Resources must not be reported in a combined form unless details for the individual categories are also provided. Also, Mineral Resources must not be reported in terms of contained metal or mineral content unless

corresponding tonnages and grades are also presented. Inferred Mineral Resource cannot be reported in a combined form with the Indicated and/or Measured Mineral Resource categories since the former category cannot be converted to Mineral Reserve while the other two (2) categories are convertible.

Mineral Resources must not be aggregated with Mineral Reserves.

Public Reporting of tonnages and grades outside the categories covered by the Code is not permitted unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports is not permitted.

30. In a Public Report of a Mineral Resource for a project material to the company, when reporting for the first time, or when those estimates have materially changed from when these were last reported, a brief summary of the information in relevant sections of Table 1 must be provided. Alternatively, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

For a project material to the company, when Mineral Resource estimates are first Publicly Reported or when a material change occurs (including classification changes), there is an increased need for transparent discussion of the basis for the new Mineral Resource estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 5 and 7, the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the ACP, thus the reporting of all relevant criteria in Table 1 on an 'if not, why not' basis is required.

The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against Section 4 on the presumption that matters related to Section 3 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case, then these sections are also relevant and should be included in the Public Report.

The technical summary based on Table 1 criteria should be presented as an appendix to the Public Report.

Where there are as yet unresolved issues potentially impacting the reliability of, or confidence in, a statement of Mineral Resources (for example, poor sample recovery, poor repeatability of assay or laboratory results, limited information on bulk densities, etc.), those issues should also be reported.
If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Uncertainties in any of the criteria listed in Table 1 that could lead to under- or overstatement of Mineral Resource estimates should be disclosed.

Mineral Resource estimates are sometimes reported after adjustment based on reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Mineral Resources and the nature of the adjustment or modification described.

31. The words ‘ore’ and ‘reserves’ must not be used in describing Mineral Resource estimates as the terms imply technical feasibility and economic viability and are only appropriate when all relevant Modifying Factors have been considered. Reports and statements should continue to refer to the appropriate category or categories of Mineral Resources until technical feasibility and economic viability have been established.

IX. Reporting of Mineral Reserves

32. A ‘Mineral Reserve’ is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

The key underlying assumptions and outcomes of the Pre-Feasibility or Feasibility Study must be disclosed at the time of reporting of a new or materially changed Mineral Reserve.

Pre-Feasibility and Feasibility Studies are defined in Clauses 44 and 45 below.

Mineral Reserves are subdivided in order of increasing confidence into Probable Mineral Reserves and Proved Mineral Reserves.

In reporting Mineral Reserves, information on all Modifying Factors must be included in Public Reports. Consideration of the confidence level of the Modifying Factors is important in conversion of Mineral Resources to Mineral Reserves.

Mineral Reserves are those portions of Mineral Resources which, after the application of the Modifying Factors, result in an estimated tonnage and grade which, in the opinion of the ACP making the estimates, can be the basis of a technically and economically viable project. Deriving a Mineral Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable.

Mineral Reserves are reported as inclusive of marginally economic material and diluting material delivered for treatment or dispatched from the mine without treatment. The term 'economically mineable' implies that extraction of the Mineral Reserve has been demonstrated to be viable under reasonable financial assumptions. This will vary with the type of mineral deposit, the level of study that has been carried out and the financial criteria of the individual company. For this reason, there can be no fixed definition for the term 'economically mineable'. However, it is expected that the company will attempt to achieve an acceptable return on capital invested, and that returns to investors in the project will be competitive with alternative investments of comparable risk.

In order to achieve the required level of confidence in the Modifying Factors,

appropriate Pre-Feasibility or Feasibility level studies will have been carried out prior to determination of the Mineral Reserves. The studies will have determined a mine plan and a production schedule that is technically achievable and economically viable and from which the Mineral Reserves can be derived.

The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative, or that all necessary approvals or sales contracts have been received. It does signify that there are reasonable expectations of such approvals or contracts will eventuate within the anticipated time frame required by the mine plans. There must be reasonable grounds to expect that all necessary Government approvals will be received. The ACP should report any material unresolved matter that is dependent on a third party on which extraction is contingent.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Any adjustment made to the data for the purpose of making the Mineral Reserve estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Where companies prefer to use the term 'Ore Reserves' in their Public Reports, e.g., for reporting under PMRC 2007 Edition during the Transitory Period defined in Clauses 62 and 63, and in some jurisdictions outside the Philippines, they should state clearly that this is being used with the same meaning as 'Mineral Reserves'.

PMRC 2020 Edition prefers the term 'Mineral Reserves' because it is the term used in the CRIRSCO International Reporting Template 2019 and more appropriate as a generic term for all mineral deposits while 'Ore Reserve' is more apt to metalliferous deposits.

33. **A 'Probable Mineral Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.**

    A Probable Mineral Reserve has a lower level of confidence than a Proved Mineral Reserve but is of sufficient quality to serve as the basis for a decision on the development of the mineral deposit.

34. **A 'Proved Mineral Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.**

    A Proved Mineral Reserve represents the highest confidence category of reserve estimate.

    The style of mineralization or other factors could mean that Proved Mineral Reserves are not achievable in some mineral deposits.

    ACPs should be aware of the consequences of declaring material of the highest confidence category before satisfying themselves that all of the relevant resource parameters and Modifying Factors have been established at a similarly high level of confidence.

35. The choice of the appropriate category of Mineral Reserve is determined primarily by the relevant level of confidence in the Mineral Resource and after considering any uncertainties in the Modifying Factors. Allocation of the appropriate category must be made by an ACP.

    The Code provides for a direct two-way relationship between Indicated Mineral Resources and Probable Mineral Reserves, and between Measured Mineral Resources and Proved Mineral Reserves. In other words, the level of geological confidence for Probable Mineral Reserves is similar to that required for the determination of Indicated Mineral Resources, and the level of geological confidence for Proved Mineral Reserves is similar to that required for the determination of Measured Mineral Resources.

    The Code also provides for a two-way relationship between Measured Mineral Resources and Probable Mineral Reserves. This is to cover a situation where uncertainties associated with any of the Modifying Factors considered when converting Mineral Resources to Mineral Reserves may result in there being a lower degree of confidence in the Mineral Reserves than in the corresponding Mineral Resources. Such a conversion would not imply a reduction in the level of geological knowledge or confidence.

    A Probable Mineral Reserve derived from a Measured Mineral Resource may be converted to a Proved Mineral Reserve if the uncertainties in the Modifying Factors are removed. No amount of confidence in the Modifying Factors for conversion of a Mineral Resource to a Mineral Reserve can override the upper level of confidence that exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted directly to a Proved Mineral Reserve (see Figure 1).

    Application of the category of Proved Mineral Reserve implies the highest degree of geological, technical, and economic confidence in the estimate at the level of production increments used to support mine planning and production scheduling, with consequent expectations in the minds of the readers of the report. These expectations should be borne in mind when categorizing a Mineral Resource as Measured.

    Refer also to the guidelines in Clause 27 regarding classification of Mineral Resources.

36. Mineral Reserve estimates are not precise calculations. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures. Refer also to Clause 28.

    To emphasize the imprecise nature of a Mineral Reserve, the final result should always be referred to as an estimate, not a calculation.

    ACPs should, where appropriate, discuss the relative accuracy and/or confidence of the Mineral Reserve estimates with consideration of both underlying estimation and Modifying Factor uncertainties. The statement should specify whether it relates to global (whole of reserve) or local estimates (a subset of the reserve for which the accuracy and/or confidence might differ from the whole of the reserve), and, if local, state the relevant tonnage or volume. Where a statement of the relative accuracy and/or confidence is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1, Table 2, and to Clauses 25 and 26).

37. Public Reports of Mineral Reserves must specify one or the other or both of the categories of 'Proved' and 'Probable.' Categories must not be reported in a combined form unless details for each of the categories are also provided.

    Mineral Reserves must not be presented in terms of contained metal or mineral content unless corresponding tonnage and grade figures are also presented. Mineral Reserves should not be aggregated with Mineral Resources.

    Public Reporting of tonnage and grade outside the categories covered by the Code is not permitted unless the situation is covered by Clause 20, and then only in strict accordance with the requirements of that Clause.

    Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports could cause confusion, thus, is not permitted.

    Mineral Reserves may incorporate material (dilution) which is not part of the original Mineral Resource. It is essential that this fundamental difference between Mineral Resources and Mineral Reserves is considered and caution exercised if attempting to draw conclusions from a comparison of the two.

    When revised Mineral Reserve and Mineral Resource statements are Publicly Reported, the Company must discuss any material changes from the previous estimate, and supply sufficient comment to enable the basis for significant changes to be understood by the reader.

38. In a Public Report of a Mineral Reserve for a project material to the company, when reporting for the first time, or when those estimates have materially changed from when they were last reported, a brief summary of the information in relevant sections of Table 1 must be provided. Alternatively, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

    For a project material to the company, when Mineral Reserve estimates are first Publicly Reported or when a material change occurs (including classification change), there is an increased need for transparent discussion of the basis for the new Mineral Reserve estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 5 and 7, the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the ACP, thus the reporting of all criteria in Table 1 on an 'if not, why not' basis is required.

    The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against Section 6 on the presumption that matters related to Sections 3, 4 and 5 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case, then other sections are also relevant and should be included in the Public Report.

    The technical summary based against Table 1 criteria should be presented as an appendix to the Public Report.

    Where there are yet unresolved issues potentially impacting the reliability of, or confidence in a statement of Mineral Reserves (for example, limited

geotechnical information, complex orebody metallurgy, uncertainty in the permitting process, etc.), those unresolved issues should also be reported.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Uncertainties in any of the criteria listed in Table 1 that could lead to under- or overstatement of Mineral Reserves should be disclosed.

Mineral Reserve estimates are sometimes reported after adjustment from reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Mineral Reserves and the nature of the adjustment or modification described.

39. In situations where estimates for both Mineral Resources and Mineral Reserves are reported, a statement must be included in the report which clearly indicates whether the Mineral Resources are inclusive of, or additional to, the Mineral Reserves.

    Mineral Reserve estimates must not be aggregated with Mineral Resource estimates to report a single combined figure.

    In some situations, there are reasons for reporting Mineral Resources inclusive of Mineral Reserves, and in other situations for reporting Mineral Resources additional to Mineral Reserves. It must be made clear which form of reporting has been adopted. Appropriate forms of clarifying statements may be:

    - *'The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Mineral Reserves.' Or*
    - *The Measured and Indicated Mineral Resources are additional to the Mineral Reserves.'*

    In the former case, if any Measured and Indicated Mineral Resources have not been modified to produce Mineral Reserves for economic or other reasons, the relevant details of these unmodified Mineral Resources should be included in the report. This is to assist the reader of the report in making a judgment on the likelihood of the unmodified Measured and Indicated Mineral Resources eventually being converted to Mineral Reserves.

    Inferred Mineral Resources are by definition always additional to Mineral Reserves except where included as dilution in the Mineral Reserves.

    For reasons stated in the guidelines to Clause 37 and in this paragraph, the reported Mineral Reserve figures must not be aggregated with the reported Mineral Resource figures. The resulting total is misleading and is capable of being misunderstood or of being misused to give a false impression of a company's prospects.

40. If re-evaluation indicates that the Mineral Reserves are no longer viable, the Mineral Reserves must be reclassified as Mineral Resources or removed from Mineral Resource/Mineral Reserve statements.

    It is not intended that re-classification from Mineral Reserves to Mineral Resources or vice versa should be applied as a result of changes expected to be of a short term or temporary nature, or where company management has

made a deliberate decision to operate on a non-economic basis. Examples of such situations might be commodity price fluctuations expected to be of short duration, mine emergency of a non-permanent nature, transport strike, etc.

41. It is accepted that a proportion of Inferred Mineral Resources may be inside the bounds of the mine design and the Life-of-Mine Plan (LoMP). Inferred Mineral Resources should not be considered in the assessment of economic viability, rendering its presence inside the mine design and the LoMP as purely incidental and without influence on the declaration of Mineral Reserves.

    A mine design and a LoMP must be economically viable without inclusion of Inferred Mineral Resources in the estimation of Mineral Reserves.

X. Technical Studies

42. Public Reports may include, but not be limited to, information included in or supported by:

    - Scoping Study
    - Pre-Feasibility Study
    - Feasibility Study

    Scoping Study has been included because of the common usage of the term in Public Reports. However, attention is drawn to the requirement for a Pre-Feasibility Study or a Feasibility Study to have been completed for the Public Reporting of a Mineral Reserve in Clause 32. A Mineral Reserve must not be reported based on the completion of a Scoping Study.

    The guidelines and the checklist on the requirements for a Scoping, Pre-Feasibility and a Feasibility Study are included in Table 2 and Section 5 in Table 1, respectively.

43. **A Scoping Study is an order-of-magnitude technical and economic study of the potential viability of Mineral Resources which 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.**

    A Scoping Study must not be used as the basis for estimation of Mineral Reserves.

    If the outcome of a Scoping Study is partially supported by Inferred Mineral Resources and/or an Exploration Target, the Public Report must state both the proportion and relative sequencing of the Inferred Mineral Resources and/or Exploration Target within the Scoping Study.

    For a Scoping Study, the company must include a cautionary statement in the same paragraph as, or immediately following, the disclosure of the Scoping Study.

    An example cautionary statement follows:

    'The Scoping Study referred to in this report is based on low-level technical

and economic assessments, and is insufficient to support estimation of Mineral Reserves or to provide assurance of an economic development case at this stage, or to provide some level of confidence that the conclusions of the Scoping Study will be realized;'

In discussing 'reasonable prospects for eventual economic extraction' in Clause 23, the Code requires an assessment (albeit preliminary) in respect of all matters likely to influence the prospect of economic extraction including the approximate Modifying Factors by the ACP. While a Scoping Study may provide the basis for that assessment, the Code does not require a Scoping Study to have been completed to report a Mineral Resource.

Scoping Studies are commonly the first economic evaluation of a project undertaken and may be based on a combination of directly gathered project data together with assumptions borrowed from similar mineral deposits or mining operations to the case envisaged. They are also commonly used internally by companies for comparative and planning purposes. Reporting the general results of a Scoping Study needs to be undertaken with care to ensure there is no implication that Mineral Reserves have been established or that economic development is assured. In this regard, it may be appropriate to indicate the Mineral Resource inputs to the Scoping Study and the processes applied, but it is not appropriate to report the diluted tonnage and grade as if they were Mineral Reserves.

While initial mining and processing cases may have been developed during a Scoping Study, it must not be used to allow a Mineral Reserve to be developed.

44. **A Pre-Feasibility Study is 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, underground or surface, has been established and an effective method of mineral processing has been determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for an ACP, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study has a lower confidence level than a Feasibility Study.**

As required in Clause 32, formal assessment of all Modifying Factors is required in order to determine how much available Measured and Indicated Mineral Resources can be converted to Mineral Reserves.

A Pre-Feasibility Study will consider the application and description of all Modifying Factors (as outlined in Table 1, Section 6) to demonstrate economic viability and to support a Mineral Reserve in a Public Report. The Pre-Feasibility Study will identify the preferred mining, processing, and infrastructure requirements and capacities, but will not yet have finalized these matters. Detailed assessments of environmental and socio-economic impacts and requirements will also be well advanced. The Pre-Feasibility Study will highlight areas that require further refinement during the Feasibility Study stage.

45. **A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes**

appropriately detailed assessment 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.

The Code does not require that a Feasibility Study has been undertaken to convert Mineral Resources to Mineral Reserves, but it does require that at least a Pre-Feasibility Study will have been carried out that will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.

Terms such as 'Bankable Feasibility Study' and "Definitive Feasibility Study" are noted as being equivalent to a Feasibility Study as defined in this Clause.

A Feasibility Study has a higher level of confidence than a Pre-Feasibility Study and would normally contain mining, infrastructure and process designs completed with sufficient rigor to serve as the basis for an investment or to support project financing. Social, environmental, and governmental approvals, and permits and agreements will be in place, or will be approaching finalization within the expected development timeframe. The Feasibility Study will contain the application and description of all Modifying Factors (as outlined in Table 1, Section 6) in a more detailed form than in the Pre-Feasibility Study, and may address implementation issues such as detailed mining schedules, construction ramp-up, and project execution plans.

XI. Reporting of Metal Equivalents

46. The reporting of Exploration Results, Mineral Resources or Mineral Reserves for polymetallic deposits in terms of metal equivalents (a single equivalent grade of one major metal) must show details of all material factors contributing to the net value derived from each constituent.

    The following minimum information must accompany any Public Report that includes reference to metal equivalents, in order to conform to the principles of Transparency, Materiality, and Competence, as set out in Clause 5:

    - individual grades for all metals included in the metal equivalent calculation,
    - assumed commodity prices for all metals. The prices used for calculating the metal equivalent should be stated and the basis on which these have been chosen should be explained However, where the actual prices used are commercially sensitive, sufficient information must be disclosed, perhaps in narrative rather than numerical form, for investors to understand the methodology used to determine these prices,
    - assumed metallurgical recoveries for all metals and discussion of the basis on which the assumed recoveries are derived (metallurgical test work, detailed mineralogy, similar mineral deposits, etc.),
    - A clear statement that it is the ACP's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be

recovered and sold, and
- the calculation formula used.

In most circumstances, the metal chosen for reporting on an equivalent basis should be the one that contributes most to the metal equivalent calculation. If this is not the case, a clear explanation of the logic of choosing another metal must be included in the report.

Estimates of metallurgical recoveries for each metal must be used to calculate meaningful metal equivalents.

Reporting on the basis of metal equivalents is not appropriate if metallurgical recovery information is not available or cannot be estimated with reasonable confidence.

For many projects at the Exploration Results stage, metallurgical recovery information may not be available or cannot be estimated with reasonable confidence. In such cases, reporting of metal equivalents may be misleading.

XII. Reporting of *In Situ* or In Ground Valuations

47. The publication of *in situ* or 'in ground' financial valuations breaches the principles of the Code (as set out in Clause 5) as the use of these terms is not transparent and lacks material information. It is also contrary to the intent of Clause 31 of the Code. Such *in situ* or in ground financial valuations must not be reported by companies in relation to Exploration Results, Mineral Resources or mineral deposit size.

The use of such financial valuations has little or no relationship to economic viability, value or potential returns to investors.

These financial valuations can imply economic viability without the apparent consideration of the application of the Modifying Factors (Clause 15 and Clauses 32 to 41), in particular, the mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.

In determining project viability, it is necessary to include all reasonable Modifying Factors (Clauses 32 to 41) to determine the economic value that can be extracted from the mineralization.

Many mineral deposits with large in ground values are never developed because they have a negative Net Present Value when all reasonable Modifying Factors are considered.

By reporting such financial valuations as a component of Exploration Results, Exploration Target(s) or when evaluating mineral deposits that commonly include large portions of Inferred Mineral Resources, companies are not necessarily representing the economic value that can be extracted from the mineralization,

XIII. Commodity Pricing and Marketing

48. Commodity prices and sales volume expectations used for the determination of Mineral Resources and Mineral Reserves must be based on forward-looking reasonable estimates reflecting the company's short- and long-term expectations as supported by available evidence, which may include consensus forecasts, three-year trailing averages, sales contracts, or other price analyses (see Clauses 51 and 52 below for cases where public disclosure is not appropriate).

    The basis for the selected prices and sales volumes should be supported by appropriate documentation.

    The ACP should ascertain that these prices and volumes are consistent with sales agreements and marketing determinations or forecasts.

    Under certain circumstances, it may be appropriate to use different prices for estimating Mineral Resources and Mineral Reserves.

    For current mining operations, the price and volume profile used for Mineral Resources and Mineral Reserves estimation may reflect current market conditions for short-term forecasts, while trending with time upward or downward toward the long-term price and volume estimates based on the company's expectations.

    For Mineral Reserves that are expected to be produced beyond the validity of short-term forecasts, the company should use long-term price and volume expectations.

    For Mineral Reserves for which production would extend beyond the quantities specified in existing contracts, reasonable and supportable assumptions should be made to determine the likelihood of contract renewal and prices applicable for the estimation and reporting of these Mineral Resources and Mineral Reserves.

49. To demonstrate the economic feasibility of a Mineral Reserve, the estimated prices, combined with Modifying Factors, must be applied to only Measured and Indicated Mineral Resources.

    Mineral Reserves are the economically mineable part of a Measured or Indicated Mineral Resource; hence, appropriate assessments should demonstrate at the time of reporting that extraction is reasonably justified. This requires that assumptions are made concerning the price of the commodity or product that will be sold when the mine is in production.

    Mineral Reserves are estimated and published to supply information concerning the value of the mineral deposit and the risk which may be associated with its development.

    Mineral Reserves are used by a company, in conjunction with Mineral Resources, for short-term, tactical, and strategic planning. They play a critical role in raising capital, corporate financing, price hedging, long-term sales contracts, and accounting, among others, including impairment review of capitalized cost such as fixed assets, deferred exploration and development costs, fair value accounting, calculation of depreciation,

depletion, and accumulated retirement obligation provision rates.

To supply information consistent with the company's plans and financial reporting, commodity prices used for the determination of Mineral Reserves should be based on forward-looking estimates reflecting the company's reasonable expectations as supported by all available evidence.

Most commodities, whether sold using publicly quoted prices (e.g., base metals and precious metals) or under long-term contract (e.g., coal and iron ore), experience long-term price cycles. Price expectations should reflect current prices as well as long-term trends. Overly optimistic or pessimistic price and volumes expectations could result in significant over- or underestimation of Mineral Reserves. It is the responsibility of the company and the ACP to determine whether the prices used for Mineral Reserve estimation are reasonable and supportable, given all available information.

During periods of low prices, a company may choose to temporarily curtail operations and conserve the mineral asset until prices recover. When such actions are taken, Public Reports should be updated to reflect the new information. In such circumstances, previously published Mineral Reserves may not have to be reclassified, provided that, in the opinion of the company and the ACP, higher future prices can be reasonably and supportably assumed, and it can reasonably be expected that operations will resume.

The documentation supporting the company's expectations should include comparison of prices with historical and current prices and forward curves, contracts and market considerations, currency exchange rates where applicable, third-party sources, and supplemental information.

50. Disclosure in Public Reports of the commodity prices and sometimes also the costs (including other Modifying Factors) used for Mineral Reserves estimation is generally required.

51. In the absence of applicable securities or other laws to disclose prices, there may be cases, such as when a product is sold under long-term contract, the terms of which are confidential, where there are valid commercial reasons for non-disclosure of prices.

52. Similarly, where disclosure of the long-term price and/or cost assumptions used in the estimation would be detrimental to the company's business, such as when bidding for sales contracts or mineral property acquisitions or negotiating agreements with third parties, non-disclosure may be justifiable.

XIV. Permitting and Legal Requirements

53. For the declaration of Mineral Reserves, there must be no known material obstacles to mining, arising from the failure to obtain material permits and consents under applicable laws and regulations.

54. There must be a reasonable expectation by the ACP, often through reliance on legal and permitting experts, that all permits, consents, ancillary rights (including water or other mineral property rights) and authorizations required for mining, and to the extent applicable, processing and marketing, can be

obtained in a timely fashion, and maintained for ongoing operations.

55. The company must complete a review of all legal and permitting requirements and document the findings. Local environmental laws and processes must be taken into account.

56. To demonstrate reasonable expectation that all permits, consents, ancillary rights, and authorizations can be obtained, the company must show understanding of the procedures to be followed to obtain such permits, consents, ancillary rights, and authorizations. Demonstrating earlier success in obtaining the necessary permits and consents can be used to document the likelihood of future success.

57. If permits and consents are required, but there is no defined procedure to obtain such permits and consents, reasonable expectation of success may be difficult to support. Information that materially increases or decreases the risk that the necessary legal rights or permits will be obtained must be disclosed.

58. It is recognized that the legal and permitting environment may change over time and that such changes could have an impact on Mineral Reserve estimation. If it is determined that obstacles have arisen or have been eliminated, the Mineral Reserve estimates must be adjusted accordingly.

    It is recognized that some permits and/or consents cannot be obtained until after a Mineral Reserve has been declared. There might be sound business reasons why obtaining some permits and/or consents should be postponed.

    It is also recognized that waiting for all permits and/or consents to be on hand could result in critical information not being released to the investors in a timely fashion, and therefore it is recommended that disclosure of material information occur prior to obtaining permits and/or consents as appropriate.

    Documentation should include a brief description of the tenurial instrument, permit, agreement with government, title, claim, lease or option under which the company has the right to hold or operate the mineral property, indicating any conditions that the company must meet to obtain or retain the mineral property.

    If held by tenurial instruments, permits, agreements with the government, leases or options, the expiry dates of such tenurial instruments, permits, agreements with government, leases or options should be stated. If extension of the foregoing will be needed to mine the Mineral Reserves, there should be reasonable expectation that such extension will be granted.

59. Royalty terms, streaming agreements, and clawback rights of former claim/land holders must be disclosed.

60. Information relating to the review of legal and permitting issues must be documented either in full or by reference. The information may remain confidential to the company. However, when required, it may be released to regulators or auditors on a confidential basis.

XV. Sustainability Considerations

61. Public Reports should discuss environmental, social, and health and safety impacts that are expected during development, operation, and after closure, and the mitigation and remediation plans to address such impacts. These impacts will affect employees, contractors, neighboring communities, and customers.

Historical performance by the company should be used to engage all stakeholders and to plan for continued benefits for all parties concerned.

In the minerals industry, health and safety have traditionally received the most attention, with incident statistics reflecting these improvements.

Sustainability can refer to three principal themes: the ability of the environment to maintain itself with minimum impact to the local flora and fauna, the ability of the surrounding community to continue its traditional economic and cultural activities, and the ability of newly-created economic inputs to continue beyond the mine life.

Social issues and the social license to operate (SLO) are a measure of the communication transparency and level of trust with communities and society at large. Programs to create positive impacts on the environment, safety, and sustainability all contribute to winning the trust needed for the SLO.

The ACP should ensure the report discusses reasonably available information on environmental permitting and social or community factors related to the project.

The discussions should include, where relevant:

- *a summary of the results of any environmental studies and a discussion of any known environmental issues that could materially impact the company's ability to extract the Mineral Resources or Mineral Reserves,*
- *requirements and plans for waste and tailings disposal, site monitoring, and water management both during operations and post-mine closure,*
- *project permitting requirements, the status of any permit applications, and any known requirements to post-performance or reclamation bonds,*
- *a discussion of any potential social or community-related requirements and plans for the project and the status of any negotiations or agreements with local communities,*
- *a discussion of mine closure (remediation and reclamation) requirements and costs,*
- *special capital or operating requirements for handling hazardous minerals or reagents, as well as other health and industrial hygiene risks,*
- *any savings in energy usage or other reduction of consumption reflecting directly in the economic outcome of the project, and*
- *Mineral Reserve estimates should acknowledge the likely environmental and social impact of development and ensure that appropriate allowances are made for mitigation and remediation.*

XVI. Transitory Provisions

62. To provide for a smooth transition from the PMRC 2007 Edition, the full implementation of the PMRC 2020 Edition takes effect two (2) years from the date that the Securities and Exchange Commission (SEC) approves this Edition of the Code (Transitory Period).

63. Companies shall comply with PMRC 2007 Edition during the Transitory Period. Companies can opt to have their disclosures fully compliant with PMRC 2020 Edition during the Transitory Period. If a company opts to have its disclosures comply with the PMRC 2020 Edition during the Transitory Period, it shall expressly state the same and use the same exclusively in its disclosures. The use of the standards set by both PMRC 2007 and PMRC 2020 Editions in the same disclosure is not allowed. If at any point during the Transitory Period, a company adopts the PMRC 2020 Edition, it shall continue to use the same during the rest of the Transitory Period.

64. During the Transitory Period, the terms "Accredited Competent Person" ("ACP") and "Mineral Reserves" must be used instead of "Competent Person" ("CP") and "Ore Reserves", respectively. In addition, the ACP's Consent Form (Appendix 3) and Compliance Statements (Appendix 4) shall be used during the Transitory Period, provided that, if the PMRC 2007 Edition is being complied, the ACP Consent Form and Consent Statement shall be revised as follows: (i) "Pursuant to the requirements under the prevailing PSE's Consolidated Listing and Disclosure Rules and Clause ~~10~~ **8** of the PMRC ~~2020~~ **2007** Edition ("Consent Statement")"; (ii) "I have read and understood the requirements of the ~~2020~~ **2007** Edition of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and ~~Mineral~~ **Ore** Reserves (PMRC ~~2020~~ **2007** Edition)"; (iii) "I certify that this Report has been prepared in accordance with PMRC ~~2020~~ **2007** Edition"; and (iv) "I am an Accredited Competent Person as defined by the ~~PMRC~~ 2020 Edition **of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves**, having a minimum of five years relevant experience in style of mineralization and type of mineral deposit described in the Report, and to the activity for which I am accepting responsibility".

Table 1 - Checklist of Assessment and Reporting Criteria

Table 1 is a checklist or reference for use by the ACP(s) preparing Public Reports on Exploration Results, Mineral Resources, and Mineral Reserves.

In the context of complying with the principles of Transparency, Materiality, and Competence (see Clause 5), comment on the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the ACP's documentation and must be provided where required according to the specific requirements of Clauses 22, 30 and 38 for projects material to the company in the Public Report. This is to ensure that it is clear to the investor whether items have been considered and deemed of low consequence or have yet to be addressed or resolved.

As always, relevance and Materiality are overriding principles that determine what information should be Publicly Reported and the ACP must provide sufficient comment on all matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources or Mineral Reserves.

The order and grouping of criteria in Table 1 reflect the normal systematic approach to exploration and estimation of Mineral Resources and Mineral Reserves. The table should be approached from left to right, and from top to bottom. In other words, criteria in the first column, Exploration Results, should be considered to apply also when reporting Mineral Resources and Mineral Reserves. Similarly, additional criteria in the Mineral Resources column apply also to Mineral Reserves reporting.

When compiling a Public Report dealing with coal; industrial minerals, cement feed materials, and construction materials; and dimension stone, ornamental and decorative stone; there are specific matters that must be considered. Appendices 6 to 8 of the Code address these specific commodities. Sections 10-12 of Table 1 include also items that may be specific to those commodities and therefore have been placed within Appendices 6 to 8 where relevant.

TABLE 1 – CHECK LIST OF ASSESSMENT AND REPORTING CRITERIA					
			Exploration Results	***Mineral Resources***	***Mineral Reserves***
Introduction					
Introduction	***General***	*(i)*	*The scope of work or terms of reference.*		
		(ii)	*The Accredited Competent Person's relationship to the issuer of the Public Report, if any.*		
		(iii)	*A statement for whom the Public Report was prepared; whether it was intended as a full or partial evaluation or other purpose, work conducted, effective date of Public Report, and remaining work.*		
		(iv)	*Sources of information and data contained in the Public Report or used in its preparation, with citations if applicable, and a list of references.*		
		(v)	*A title page and a table of contents that includes figures and tables.*		
		(vi)	*An Executive Summary, which briefly summarizes important information in the Public Report, including mineral property description and ownership, geology and mineralization, the status of exploration, development and operations, Mineral Resource and/or Mineral Reserve estimates, and the Accredited Competent Person's conclusions and recommendations.* *If Inferred Mineral Resources are used, a summary valuation with and if practical without inclusion of such Inferred Mineral Resources. The Executive Summary should have sufficient detail to allow the reader to understand the essentials of the project.*		
		(vii)	*A declaration from the Accredited Competent Person, stating whether 'the declaration has been made in terms of the guidelines of the PMRC 2020 Edition.* *If a reporting code other than the PMRC having jurisdiction has been used, an explanation of the differences.*		
		(viii)	*Diagrams, maps, plans, sections, and illustrations, which are dated, legible, and prepared at an appropriate scale to distinguish important features. Maps including a legend, author or information source, coordinate system and datum, a scale in bar or grid form, and an arrow indicating north.* *Reference to a location or index map and more detailed maps showing all important features described in the text, including all relevant cadastral and other infrastructure features.*		
		(ix)	*The units of measure, currency and relevant exchange rates*		
		(x)	*The details of the personal inspection on the mineral property by each Accredited Competent Person or, if applicable, the reason why a personal inspection has not been completed.*		
		(xi)	*If the Accredited Competent Person is relying on a report, opinion or statement of another expert who is not an Accredited Competent Person, then a disclosure of the date, title, and author of the report, opinion, or statement, the qualifications of the other expert, the reason for the Accredited Competent Person to rely on the other expert, any significant risks, and any steps the Accredited Competent Person took to verify the information provided.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 1: Project Outline					
1.1	**Location**	1.1.1	*Description of location and map (country, province, and closest town/city, coordinate systems and ranges, etc.).*		
		1.1.2	*Country Profile, with a description of information relating to the project host country that is pertinent to the project, including relevant applicable legislation, environmental and social context etc. An assessment, at a high level, of relevant technical, environmental, social, economic, political, and other key risks.*		
		1.1.3	*A general topo-cadastral map.*	*Topo-cadastral map in sufficient detail to support the assessment of eventual economics.*	*Detailed topo-cadastral map, with applicable aerial surveys checked with ground controls and surveys, particularly in areas of rugged terrain, dense vegetation or high altitude.*
1.2	**Mineral Property Description**	1.2.1	*Brief description of the scope of project (i.e., whether in preliminary sampling, advanced exploration, Scoping, Pre-Feasibility, or Feasibility Study, Life-of-Mine plan for an ongoing mining operation or closure).*		
		1.2.2	*Description of topography, elevation, drainage and vegetation, the means and ease of access to the mineral property, the proximity of the mineral property to a population center, and the nature of transport, the climate, known associated climatic and seismic risks and the length of the operating season and to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations including the availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites (noting any conditions that may affect possible exploration/mining activities).*		
1.3	**Adjacent properties**	1.3.1	*Details of relevant adjacent properties. The inclusion on the maps of the location of common structures, whether related to mineralization or not, in adjacent or nearby properties having an important bearing on the Public Report. Reference to all information used from other sources.*		
1.4	**History**	1.4.1	*Historical background to the project and adjacent areas concerned, including known results of previous exploration and mining activities (type, amount, quantity, and development work), previous ownership and changes thereto.*		
		1.4.2		*Previous successes or failures referred to transparently with reasons why the project should now be considered potentially economic.*	
		1.4.3		*Known or existing historical Mineral Resource estimates and performance statistics from actual production in the past and in current operations.*	
		1.4.4			*Known or existing historical Mineral Reserve estimates and performance statistics from actual production in the past and in current operations.*
1.5	**Legal Aspects and Permitting**		*A statement from the Accredited Competent Person on the confirmation of the legal tenure, including a description of:*		
		1.5.1	*The nature of the issuer's rights (e.g., exploration and/or mining) and the right to use the surface of the properties to which these rights relate. The date of expiry and other relevant details.*		
		1.5.2	*The principal terms and conditions of all existing agreements, and details of those still to be obtained, (such as, but not limited to, concessions, partnerships, joint ventures, access rights, leases, historical and cultural sites, wilderness or national park and environmental settings, royalties, consents, permission, permits or authorizations).*		
		1.5.3	*The security of the tenure held at the time of reporting or that is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area.* *Details of applications that have been made. See Clause 32 for declaration of a Mineral Reserve.*		
		1.5.4	*A statement of any legal proceedings, for example: adverse/competing claims, or land claims that may have an influence on the rights to prospect or mine for minerals, or claims that the tenurial instrument is defective, or an appropriate negative statement.*		
		1.5.5	*A statement relating to governmental/statutory requirements permits, and consents as may be required, have been applied for, approved or can be reasonably be expected to be obtained.* *A review of risks that permits will not be received as expected and impact of delays to the project*		
1.6	**Royalties**	1.6.1	*The royalties or streaming agreements that are payable in respect of each mineral property.*		
1.7	**Liabilities**	1.7.1	*Any liabilities, including rehabilitation guarantees and decommissioning obligations that are pertinent to the project.* *A description of the rehabilitation liability and decommissioning obligation, including, but not limited to, legislative/administrative requirements, assumptions, and limitations.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 2: Geological Setting, Mineral Deposit, Mineralization					
2.1	**Geological Setting, Mineral Deposit, Mineralization**	2.1.1	*The regional geology.*		
		2.1.2	*The project geology including mineral deposit type, geological setting, and style of mineralization.*		
		2.1.3	*The geological model or concepts being applied in the investigation and on the basis of which the exploration program is planned, along with a description of the inferences and assumptions made from this model.*		
		2.1.4	*Data density, distribution, and reliability and whether the quality and quantity of information are sufficient to support statements, made or inferred, concerning the mineral deposit.*		
		2.1.5	*Significant minerals present in the mineral deposit, their frequency, size and other characteristics, including a discussion of minor and gangue minerals where these will have an effect on the processing steps and the variability of each important mineral within the mineral deposit.*		
		2.1.6	*Significant mineralized zones encountered on the mineral property, including a summary of the surrounding rock types, relevant geological controls, and the length, width, depth, and continuity of the mineralization, together with a description of the type, character, and distribution of the mineralization*		
		2.1.7	*The existence of reliable geological models and/or maps and cross sections that support interpretations.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data					
3.1	**Exploration**	3.1.1	Data acquisition or exploration techniques and the nature, level of detail, and confidence in the geological data used (i.e., geological observations, remote sensing results, stratigraphy, lithology, structure, alteration, mineralization, hydrology, geophysical, geochemical, petrography, mineralogy, geochronology, bulk density, potential deleterious or contaminating substances, geotechnical and rock characteristics, moisture content, bulk samples, etc.). Data sets with all relevant metadata, such as unique sample number, sample mass, collection date, spatial location, etc.		
		3.1.2	The primary data elements (observations and measurements) used for the project and a description of the management and verification of these data or the database. Description of the following relevant processes: acquisition (capture or transfer), validation, integration, control, storage, retrieval, and backup processes. If data are not stored digitally, presentation of hand-printed tables with well-organized data and information.		
		3.1.3	Acknowledgment and appraisal of data from other parties, and reference to all data and information used from other sources.		
		3.1.4	Distinction between data / information from the mineral property under discussion and that derived from surrounding properties.		
		3.1.5	The methods for collar and down-hole survey, techniques, and expected accuracies of data as well as the grid system used.		
		3.1.6	Discussion on the sufficiency of the data spacing and distribution to establish the degree of geological and grade continuity appropriate for the estimation procedure(s) and classifications applied.		
		3.1.7	Presentation of representative models and/or maps and cross sections or other two or three-dimensional illustrations of results showing location of samples, accurate drill hole collar positions, down-hole surveys, exploration pits, underground workings, relevant geological data, etc.		
		3.1.8	The geometry of the mineralization with respect to the drill hole angle because of the importance of the relationships between mineralization widths and intercept lengths. Justification if only down-hole lengths are reported.		
3.2	**Drilling Techniques**	3.2.1	Type of drilling undertaken (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).		
		3.2.2	The geological and geotechnical logging of core and chip samples relative to the level of detail required to support appropriate Mineral Resource estimation, mining studies, and metallurgical studies.		
		3.2.3	The nature of logging (qualitative or quantitative) and the use of core photography (or costean, channel, etc.).		
		3.2.4	The total length and percentage of the relevant intersections logged.		
		3.2.5	Results of any down-hole surveys of the drill hole.		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data (continued)					
3.3	**Sample method, collection, capture, and storage**	3.3.1	*A description of the nature and quality of sampling (e.g., cut channels, random chips, or specific specialized industry standard measurement tools appropriate to the minerals under investigation, such as down-hole gamma sondes, or handheld or fixed-position XRF instruments, etc.), without these examples limiting the broad meaning of sampling.*		
		3.3.2	*A description of the sampling processes, including sub-sampling stages to maximize representativeness of samples, whether sample sizes are appropriate to the grain size of the material being sampled and any sample compositing.*		
		3.3.3	*A description of each data set (e.g., geology, grade, density, quality, geo-metallurgical characteristics, etc.), sample type, sample-size selection, and collection methods.*		
		3.3.4	*The nature of the geometry of the mineralization with respect to the drill hole angle (if known).* *The orientation of sampling to achieve unbiased sampling of possible structures, considering the mineral deposit type.* *The intersection angle.* *The down-hole lengths if the intersection angle is not known.*		
		3.3.5	*A description of retention policy and storage of physical samples (e.g., core, sample reject, etc.)*		
		3.3.6	*A description of the method of recording and assessing core and chip sample recoveries and the results assessed, measures taken to maximize sample recovery and ensure representative nature of the samples, whether a relationship exists between sample recovery and grade, and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*		
		3.3.7	*The cutting of a drill core sample, e.g., whether it was split or sawn and whether quarter, half or full core was submitted for analysis.* *Non-core sampling, e.g., whether the sample was riffled, tube sampled, rotary split, etc.; whether it was sampled wet or dry; the impact of water table or flow rates on recovery and introduction of sampling biases or contamination from above.* *The impact of variable hole diameters, e.g., by the use of a caliper tool.*		
3.4	**Sample Preparation and Analysis**	3.4.1	*The identity of the laboratory(s) and its accreditation status.* *The steps taken by the Accredited Competent Person to ensure the results from a non-accredited laboratory are of an acceptable quality.*		
		3.4.2	*The analytical method, its nature, the quality and appropriateness of the assaying and laboratory processes and procedures used, and whether the technique is considered partial or total.*		
		3.4.3	*A description of the process and method used for sample preparation, sub-sampling and size reduction, and the likelihood of inadequate or non-representative samples (i.e., improper size reduction, contamination, screen sizes, granulometry, mass balance, etc.).*		
3.5	**Sampling Governance**	3.5.1	*The governance of the sampling campaign and process, to ensure quality and representativeness of samples and data, such as sample recovery, high grading, selective losses or contamination, core/hole diameter, internal and external QA/QC, and any other factors that may have resulted in or identified sample bias.*		
		3.5.2	*The measures taken to ensure sample security and the Chain of Custody.*		
		3.5.3	*The validation procedures used to ensure the integrity of the data, e.g., transcription, input or other errors, between its initial collection and its future use for modeling (e.g., geology, grade, bulk density, etc.).*		
		3.5.4	*The audit process and frequency (including dates of these audits) and disclose any material risks identified.*		
3.6	**Quality Control/ Quality Assurance**	3.6.1	*The verification techniques (QA/QC) for field sampling process, e.g., the level of duplicates, blanks, reference material standards, process audits, analysis, etc.* *Indirect methods of measurement (e.g., geophysical methods), with attention given to the confidence of interpretation.* *Reference to measures taken to ensure sample representativeness and the appropriate calibration of any measurement tools or systems used.* *QA/QC procedures used to check databases augmented with 'new' data have not disturbed previous versions containing 'old' data.*		
3.7	**Bulk Density**	3.7.1	*The method of bulk density determination with reference to the frequency of measurements, the size, nature, and representativeness of the samples.*		
		3.7.2	*Preliminary estimates or basis of assumptions made for bulk density.*		
		3.7.3	*The representativeness of bulk density samples.*		
		3.7.4	*The measurement of bulk density for bulk material using methods that adequately account for void spaces (vugs, porosity etc.), moisture, and differences between rock and alteration zones within the mineral deposit.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 3: Exploration and Drilling, Sampling Techniques, and Data (continued)					
3.8	***Bulk Sampling and/or trial-mining***	*3.8.1*	*The location of individual samples (including map).*		
		3.8.2	*The size of samples, spacing/density of samples recovered, and whether sample sizes and distribution are appropriate to the grain size of the material being sampled.*		
		3.8.3	*The method of mining and treatment.*		
		3.8.4	*The degree to which the samples are representative of the various types and styles of mineralization and the mineral deposit as a whole.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 4: Estimation and Reporting of Exploration Results and Mineral Resources					
4.1	**Geological model and interpretation**	4.1.1	*The nature, detail, and reliability of geological information with which lithological, structural, mineralogical, alteration or other geological, geotechnical, and geo-metallurgical characteristics were recorded.*		
		4.1.2	*The geological model, construction technique, and assumptions that form the basis for the Exploration Results or Mineral Resource estimate.* *The sufficiency of data density to assure continuity of mineralization and geology, and provision of an adequate basis for the estimation and classification procedures applied.*		
		4.1.3	*Any obvious geological, mining, metallurgical, processing, environmental, social, infrastructural, legal, and economic factors that could have a significant effect on the prospects of any possible Exploration Target or mineral deposit.*		
		4.1.4		*Geological data that could materially influence the estimated quantity and quality of the Mineral Resource or Mineral Reserve.*	
		4.1.5		*Consideration given to alternative interpretations or models and their possible effect (or potential risk), if any, on the Mineral Resource estimate.*	
		4.1.6		*Geological discounts (e.g., magnitude, per reef, domain, etc.), applied in the model, whether applied to mineralized and/or unmineralized material (e.g., potholes, faults, dikes, etc.).*	
4.2	**Estimation and modeling techniques**	4.2.1	*A detailed description of the estimation techniques and assumptions used to determine the grade and tonnage ranges for Exploration Targets.*	*Histograms, statistical parameters, probability distributions of samples, and of block estimates. If geostatistics is done, must show variogram(s) and parameters (e.g., sill, range, nugget effect) depending on variogram type, sizes of estimation panels or blocks, assumed or known selective mining units.*	
		4.2.2		*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values (cutting or capping), compositing (including by length and/or density), domaining, sample spacing, estimation unit size (block size), selective mining units, interpolation parameters, and maximum distance of extrapolation from data points.*	
		4.2.3		*Assumptions and justification of correlations made between variables.*	
		4.2.4		*Any relevant specialized computer program (software) used (with the version number) together with the parameters used.*	
		4.2.5		*The processes of checking and validation, the comparison of model information to sample data and use of reconciliation data, and whether the Mineral Resource estimate takes account of such information.*	
		4.2.6		*The assumptions made regarding the estimation of any co-products, by-products or deleterious elements.*	

			Exploration Results	Mineral Resources	Mineral Reserves
Section 4: Estimation and Reporting of Exploration Results and Mineral Resources (continued)					
4.3	**Reasonable prospects for eventual economic extraction**	4.3.1		*The geological parameters, including (but not be limited to) volume / tonnage, grade and value / quality estimates, cut-off grades, strip ratios, upper- and lower- screen sizes.*	
		4.3.2		*The engineering parameters, including mining method, processing, geotechnical, hydrogeological, and metallurgical parameters, including assumptions made to mitigate the effect of deleterious elements.* *Dilution and mining recovery factors that might be applicable to convert in-situ Mineral Resources to Mineral Reserves.*	
		4.3.3		*The infrastructure including, but not limited to, power, water, and site access.*	
		4.3.4		*The legal, governmental, permitting, and statutory parameters.*	
		4.3.5		*The environmental and social (or community) parameters.*	
		4.3.6		*The marketing parameters.*	
		4.3.7		*The economic assumptions and parameters, including, but not limited to, commodity prices, sales volumes, and potential capital and operating costs.*	
		4.3.8		*Material risks, e.g., legal, environmental, climatic, etc.*	
		4.3.9		*The parameters used to support the concept of 'eventual' in the case of Mineral Resources.*	
4.4	**Classification Criteria**	4.4.1		*The criteria and methods used as the basis for the classification of the Mineral Resources into varying confidence categories.*	
4.5	**Discussion of relative accuracy/ confidence**	4.5.1		*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource or Mineral Reserve estimate using an approach or procedure deemed appropriate by the Accredited Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Mineral Resource or Mineral Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relative tonnages, which should be relevant to technical and economic evaluation. Documentation shall include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	
4.6	**Reporting**	4.6.1	*Specific grades / qualities and widths.*		
		4.6.2	*The reporting of low- and high-grade intersections and corresponding widths, together with their spatial location to avoid misleading reporting of Exploration Results.*		
		4.6.3	*A statement on whether grades are regional averages or if these are selected individual samples taken from the mineral property under discussion.*		
		4.6.4		*The detail of the surface or underground mine, residue stockpile, remnants, tailings, and existing pillars or other sources in a Mineral Resource statement*	
		4.6.5		*A comparison with the previous Mineral Resource estimates, with an explanation of the reason for material changes.* *A comment on any historical trends (e.g., global bias).*	
		4.6.6		*The basis for the estimate and if not 100%, the attributable percentage relevant to the entity commissioning the Public Report.*	
		4.6.7	*The basis of equivalent metal formulae, if relevant.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies					
5.1	**Introduction**	5.1.1	Not applicable to Exploration Results or Exploration Targets	*The level of study – Scoping, Pre-Feasibility, Feasibility or ongoing Life-of-Mine Plan.*	*The level of study – Pre-Feasibility, Feasibility or ongoing Life-of-Mine Plan.*
		5.1.2			*A summary table of the Modifying Factors used to convert the Mineral Resource to Mineral Reserve.*
5.2	**Mining Design**	5.2.1	Not applicable to Exploration Results or Exploration Targets	*Assumptions regarding mining methods and parameters when estimating Mineral Resources.*	
		5.2.2			*All Modifying Factors and assumptions made regarding mining methods, minimum mining dimensions (or pit shell) and internal and, if applicable, external planned and unplanned mining dilution and mining losses used for the techno-economic study and signed-off, such as mining method, mine design criteria, infrastructure, capacities, production schedule, mining efficiencies, grade control, geotechnical and hydrological considerations, closure plans, and personnel requirements.*
		5.2.3		*Mineral Resource models used in the study.*	
		5.2.4		*The basis of the cut-off grade(s).*	*The basis of (the adopted) cut-off grade(s) or quality parameters applied, including metal equivalents if relevant.*
		5.2.5			*The mining method(s) to be used.*
		5.2.6			*For open cut mines, a discussion of pit slopes, slope stability, and strip ratio.*
		5.2.7			*For underground mines, a discussion of mining method, geotechnical considerations, mine design characteristics, and ventilation/cooling requirements.*
		5.2.8			*Discussion of mining rate, equipment selected, grade control methods, geotechnical and hydrogeological considerations, health and safety of the workforce, staffing requirements, dilution, and recovery.*
		5.2.9			*Optimization methods and software used in planning, including a discussion of the constraints.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies *(continued)*					
5.3	***Metallurgical Testworks***	*5.3.1*	*Not applicable to Exploration Results or Exploration Targets*		*The source of the samples, the representativeness of the potential feed and the techniques used to obtain the samples, laboratory and metallurgical testing techniques.*
		5.3.2			*The basis for assumptions or predictions regarding metallurgical amenability and any preliminary mineralogical test work should already be carried out.*
		5.3.3		*The possible processing methods and any processing factors that could have a material effect on the likelihood of eventual economic extraction.* *The appropriateness of the processing methods to the style of mineralization.*	*The processing method(s), equipment, plant capacity, efficiencies, and personnel requirements.*
		5.3.4			*The nature, amount, and representativeness of metallurgical test works undertaken and the recovery factors used.* *A detailed flow sheet / diagram and a mass balance, especially for multi-product operations from which the saleable materials are priced for different chemical and physical characteristics.*
		5.3.5			*Assumptions or allowances made for deleterious elements and the existence of any bulk-sample or pilot-scale test work and the degree to which such samples are representative of the ore body as a whole.*
		5.3.6			*Disclosure of whether metallurgical process is well-tested technology or novel in nature and if novel, justification of its use in Mineral Reserve estimation.*
5.4	***Infrastructure***	*5.4.1*	*Not applicable to Exploration Results or Exploration Targets*	*Comment regarding the current state of infrastructure or the ease with which the infrastructure can be provided or accessed and its effect on reasonable prospects for eventual economic extraction*	
		5.4.2			*Demonstration that the necessary facilities have been allowed for (which may include, but not be limited to, processing plant, tailings dam, leaching facilities, waste dumps, road, pipeline, rail or port facilities, water and power supply, offices, housing, security, resource sterilization testing, etc.). Provision of detailed maps showing locations of facilities.*
		5.4.3			*Statement showing that all necessary logistics have been considered.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies (continued)					
5.5	**Environmental and social**	5.5.1	*Confirmation that the company holding the tenement has addressed the host country's environmental legal compliance requirements and any mandatory and/or voluntary standards or guidelines to which the company subscribes.*		
		5.5.2	*Identification of the necessary permits that will be required and their status, and where not yet obtained, and confirmation that there is a reasonable basis to believe that all permits required for the project will be obtained in a timely manner.*		
		5.5.3	*Any sensitive areas that may affect the project as well as any other environmental factors including Interested and Affected Party (I&AP) and/or studies that could have a material effect on the likelihood of eventual economic extraction.* *Possible means of mitigation.*		
		5.5.4	*Legislated social management programs that may be required and content and status of these.*		
		5.5.5	*Material socio-economic and cultural impacts that need to be managed, and where appropriate the associated costs.*		
5.6	**Market Studies and Economic criteria**	5.6.1	*Not applicable to Exploration Results or Exploration Targets*	*Technical and economic factors likely to influence the prospect of economic extraction. Refer to Clause 23.*	*Valuable and potentially valuable product(s) including suitability of products, co-products and by-products to market.*
		5.6.2			*Product to be sold, customer specifications, testing, and acceptance requirements.* *Existence of a ready market for the product and whether contracts for the sale of the product are in place or expected to be readily obtained.* *Price and volume forecasts and the basis for the forecast.*
		5.6.3			*Economic criteria used for the study, such as capital and operating costs, exchange rates, revenue / price curves, royalties, and streaming agreements, cut-off grades, reserve pay limits.*
		5.6.4			*Summary description, source, and confidence of method used to estimate the commodity price/value profiles used for cut-off grade calculation, economic analysis and project valuation, including applicable taxes, inflation indices, discount rate, and exchange rates.*
		5.6.5			*Assumptions made concerning production cost including transportation, treatment, penalties, exchange rates, marketing, and other costs. Allowances should be made for the content of deleterious elements and the cost of penalties.*
		5.6.6			*Allowances made for royalties and streaming agreements payable, both to Government and private entities.*
		5.6.7			*Ownership, type, extent, and condition of plant and equipment that is significant to the existing operation(s).*
		5.6.8			*Environmental, social, and labor costs.*
5.7	**Risk Analysis**	5.7.1	*An assessment of technical, environmental, social, economic, political, and other key risks to the project.* *Actions that will be taken to mitigate and/or manage the identified risks.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 5: Technical Studies (continued)					
5.8	***Economic Analysis***	*5.8.1*	*Not applicable to Exploration Results or Exploration Targets*	*The basis on which reasonable prospects for eventual economic extraction has been determined.* *Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction'.*	*The inclusion of any Inferred Mineral Resources is not allowed in the Pre-Feasibility and Feasibility Studies economic analysis.*
		5.8.2			*An economic analysis for the project that includes after tax Cash Flow forecast on an annual basis using Mineral Reserves or Mineral Resources or an annual production schedule for the life of the project, which has been used at the relevant level Pre-Feasibility or Feasibility Study.* *Accounting for royalties and streaming agreements.*
		5.8.3			*A discussion of net present value (NPV), internal rate of return (IRR) and payback period of capital.*
		5.8.4			*Sensitivity or other analysis using variants in commodity price, grade, capital and operating costs, or other significant parameters, as appropriate and discuss the impact of the results.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 6: Estimation and Reporting of Mineral Reserves					
6.1	**Estimation and modeling techniques**	6.1.1			*A description of the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve.*
		6.1.2			*A Mineral Reserve Statement in sufficient detail indicating if the mining is by surface or underground method plus the source and type of mineralization, domain or orebody, surface dumps, stockpiles, and all other sources.*
		6.1.3			*Reconciliation of historical reliability and reconciliation of the performance parameters, assumptions and modifying factors.* *A comparison with the previous Reserve quantity and qualities, if available.* *Where appropriate, any historical trends (e.g., global bias).*
		6.1.4			*Criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, which should be based on the Mineral Resource category, and include consideration of the confidence in all the Modifying Factors.*
6.2	**Classification Criteria**	6.2.1			*Criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, which should be based on the Mineral Resource category, and include consideration of the confidence in all the Modifying Factors.*
6.3	**Reporting**	6.3.1			*The proportion of Probable Mineral Reserves, which have been derived from Measured Mineral Resources (if any), including the reason(s) thereof.*
		6.3.2			*The inclusion in a Mineral Reserve statement of the detail of the surface or underground mine, residue stockpile, remnants, tailings, and existing pillars or other sources*
		6.3.3			*A comparison with the previous Mineral Reserve estimates.* *Any historical trends (e.g., global bias).*
		6.3.4			*The inclusion or exclusion of Mineral Resources in Mineral Reserves.*

			Exploration Results	Mineral Resources	Mineral Reserves
Section 7: Audits and Reviews					
7.1	**Audits and Reviews**	7.1.1	*Type of review/audit (e.g., independent, external), area (e.g., laboratory, drilling, data, environmental compliance, etc.), date and name of the reviewer(s) together with their recognized professional qualifications.* *The level of review/audit (desk-top, on-site comparison with standard procedures, or endorsement where auditor/reviewer has checked the work to the extent they stand behind it as if it were their own work).*		
		7.1.2	*The level and conclusions of relevant audits or reviews.* *Significant deficiencies and remedial actions required.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 8: Other Relevant information					
8.1	**Other relevant information**	8.1.1	*Other relevant and material information not discussed elsewhere.*		

			Exploration Results	Mineral Resources	Mineral Reserves
Section 9: Accredited Competent Person					
9.1	**Qualification of Accredited Competent Person(s) and key technical staff**	9.1.1	*The full name of the Accredited Competent Person, profession, address, their PRC and Accredited Competent Person registration numbers and the name of the professional representative organization (or RPO), of which the Accredited Competent Person(s) is member.* *The relevant experience of the Accredited Competent Person(s) and other key technical staff who prepared and who are responsible for the Public Report.*		
	Relationship to the issuer	9.1.2	*The Accredited Competent Person's relationship to the issuer of the Public Report, if any.*		
		9.1.3	*The inclusion of the Accredited Competent Person's Consent Form (see Appendices 3 & 4). Such Consent Form should include the date of sign-off and the effective date of the Public Report.*		

Table 2 - Guideline for Technical Studies

This guideline for Technical Studies is provided as a guide to the compilation of the various studies relating to Mineral Resources and Mineral Reserves. It is designed to be read in conjunction with Table 1.

Scoping Studies, Pre-Feasibility Studies, Feasibility Studies (and on-going Life-of-Mine Plan (LoMP) studies) analyze and assess the same geological, engineering, and economic factors with increasing detail and precision. Therefore, the same criteria may be used as a framework for reporting the results of all three studies.

If considered appropriate, the ACP may use the Association for the Advancement of Cost Engineers (AACE) International Guide 47R-11 for the Mining and Mineral Processing Industries (as amended) or other internationally recognized and accepted guidelines.

TABLE 2 – GUIDELINE FOR TECHNICAL STUDIES			
Item	***Scoping Study***	***Pre-Feasibility Study***	***Feasibility Study***
***Mineral* Resource categories**	*Mostly Inferred*	*Mostly Indicated*	*Measured and Indicated*
***Mineral* Reserve categories**	*None*	*Mostly Probable*	*Proved and Probable*
Mining method and geotechnical constraints	*Conceptual*	*Preliminary Options*	*Detailed and Optimized*
Mine design	*None or high-level conceptual*	*Preliminary mine plan and schedule*	*Detailed mine plan and schedule*
Scheduling	*Annual approximation*	*3-monthly to annual*	*Monthly for much of payback period*
Mineral Processing / Extractive Metallurgy	*Metallurgical testwork – exploratory tests*	*Preliminary Options – bench/pilot-scale tests*	*Detailed and Optimized – optimization, testworks / pilot-scale tests*
Permitting - (water, power, mining, prospecting, and environmental)	*Required permitting listed*	*Preliminary applications submitted*	*Authorities engaged, and applications submitted*
Social license to operate	*Initial contact with local communities*	*Formal communication structures and engagement models in place*	*Contracts/agreements in place with local communities and municipalities (local government)*
Risk tolerance	*High*	*Medium*	*Low*

Item	Scoping Study	Pre-Feasibility Study	Feasibility Study
Basis of Capital Estimate			
Civil/structural, architectural, piping/heating, ventilation, and air conditioning (HVAC), electrical, instrumentation, construction labor, construction labor productivity, material volumes/amounts, material/equipment, pricing, and infrastructure	*Order-of-magnitude based on historical data or factoring. Engineering < 5% complete.*	*Estimated from historical factors or percentages and vendor quotes based on material volumes. Engineering at 5-25% complete.*	*Detailed from engineering at 20% to 50% complete, estimated material take-off quantities, and multiple vendor quotations*
Contractors	*Included in unit cost or as a percentage of total cost*	*Percentage of direct cost by area for contractors; historical for subcontractors*	*Written quotes from contractor and subcontractors*
Engineering, procurement, and construction management (EPCM)	*Percentage of estimated construction cost*	*Key parameters, Percentage of detailed construction cost*	*Detailed estimate*
Owner's costs	*Factored, benchmark, database or historical estimate*	*Budgeted quotes on key parameters and estimates from experience, factored from similar project*	*Detailed estimate*
Environmental compliance / Closure Cost	*Factored from historical estimate*	*Estimate from experience, factored from similar project*	*Estimate prepared from detailed zero-based budget for design engineering and specific permit requirements*
Escalation	*Not considered*	*Based on entity's current budget percentage*	*Based on cost area with risk*
Accuracy Range (Order of magnitude)	*± 25-50%*	*± 15-25%*	*± 10-15%*
Contingency Range (Allowance for items not specified in scope that will be needed)	*± 30%*	*15-30%*	*10% - 15% (actual to be determined based on risk analysis)*

Item	*Scoping Study*	Pre-Feasibility Study	Feasibility Study
Basis of Operating Costs			
Operating Costs	*Order-of-magnitude based on historical data or factoring.*	*Estimated from historical factors or percentages and vendor quotes based on material volumes.*	*Detailed estimate*
Operating quantities	*General*	*Specific estimates with some factoring*	*Detailed estimates*
Unit costs	*Based on historical data for factoring*	*Estimates for labor, power, and consumables, some factoring*	*Letter quotes from vendors; minimal factoring*
Accuracy Range	*± 25-50%*	*15% - 25%*	*10% - 15%*
Contingency Range (Allowance for items not specified in scope that will be needed)	*± 25%*	*± 15%*	*± 10% (actual to be determined based on risk analysis)*

Appendix 1 - Generic Terms and Equivalents

Throughout the PMRC 2020 Edition, certain words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, a non-exclusive list of generic terms is tabulated below together with other terms that may be regarded as synonymous for the purposes of this document.

Generic Term	Synonyms or similar terms	Intended generalized meaning
Accredited Competent Person	*Competent Person (Australasia) Qualified Person (Canada) Qualified Competent Person (Chile)*	*Refer to the Code Clause 12 for the definition of an Accredited Competent Person.*
Assumption	*Value judgments*	*The ACP in general makes value judgments when making assumptions regarding information not fully supported by test work*
Clawback rights		*A financial or other benefit that is given but is later taken back under defined circumstances.*
Cut-off grade	*Product specifications*	*The lowest grade, or quality, of mineralized material that qualifies as economically mineable and available in a given mineral deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product.*
Grade	*Quality, Assay, Analysis (Value)*	*Any physical or chemical measurement of the characteristics of the material of interest in samples or product. The units of measurement should be stated when figures are reported.*
Life-of-Mine Plan (LoMP)		*A design and financial/economic study of an existing operation in which appropriate assessments have been made of existing geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational, and all other Modifying Factors, which are considered in sufficient detail (to Pre-Feasibility level) to demonstrate that continued extraction is reasonably justified. Refer to Table 2 for guidance.*
Metallurgy	*Processing, Beneficiation, Concentration, Leaching, Smelting and Refining*	*Physical and/or chemical separation of constituents of interest from a larger mass of material. Methods employed to prepare a final marketable product from material as mined. Examples include screening, flotation, magnetic separation, leaching, washing, roasting, gravity concentration, smelting and refining, etc.*

Generic Term	Synonyms or similar terms	Intended generalized meaning
Mineralization	*Type of mineral deposit, orebody, style of mineralization*	*Any single mineral or combination of minerals occurring in a mass, or mineral deposit, of economic interest. The term is intended to cover all forms in which mineralization might occur, whether by class of mineral deposit, mode of occurrence, genesis or composition.*
Mineral Reserves	*Ore Reserves*	*'Mineral Reserves' is preferred under the PMRC 2020 Edition but 'Ore Reserves' is in use in the PMRC 2007 Edition and in other countries and is generally accepted. Other descriptors can be used to clarify the meaning, e.g., coal reserves, limestone reserves, etc.*
Mining	*Quarrying*	*All activities related to extraction of metals, minerals, and gemstones from the earth whether surface or underground, and by any method (e.g., quarries, open cast, open cut, solution mining, dredging etc.).*
Proved	*Proven*	*Represents the highest confidence category of Mineral Reserve estimate.*
Recovery	*Yield*	*The percentage of material of initial interest that is extracted during mining and/or processing. A measure of mining or processing efficiency.*
Tonnage	*Quantity, Volume*	*An expression of the amount of material of interest irrespective of the units of measurement (which should be stated when figures are reported).*

Appendix 2 – List of Acronyms

AACE	Association for the Advancement of Cost Engineers
ACP	Accredited Competent Person
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
COMP	Chamber of Mines of the Philippines, Inc.
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
DENR	Department of Environment and Natural Resources
GSP	Geological Society of the Philippines, Inc.
HVAC	Heating, Ventilation, and Air Conditioning
IRR	Internal Rate of Return
JORC	Joint Ore Reserves Committee (Australia)
JORC Code	Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
LoMP	Life of Mine Plan
MGB	Mines and Geosciences Bureau
NPV	Net Present Value
NRO	National Reporting Organization
PABC	Philippines-Australia Business Council, Inc.
PERC	Pan-European Reserves and Resources Reporting Committee
PHILCOAL	Philippine Chamber of Coal Mines, Inc.
PMEA	Philippine Mining and Exploration Association, Inc.
PMRC	Philippine Mineral Reporting Code
PMRCC	Philippine Mineral Reporting Code Committee
PSE	The Philippine Stock Exchange, Inc.
PSEM	Philippine Society of Mining Engineers, Inc.
RPO	Recognized Professional Organization
SAMCODES	South African Mineral Codes
SEC	Securities and Exchange Commission
SME	Society for Mining, Metallurgy & Exploration (USA)
SMEP	Society of Metallurgical Engineers of the Philippines, Inc.

Appendix 3 - Compliance Statements

Appropriate forms of compliance statements should be as follows:

For Public Reports of Exploration Targets, initial or materially changed reports of Exploration Results, Mineral Resources or Mineral Reserves or company annual reports:

- *If the required information is in the report:*

  'The information in this report that relates to Exploration Results, Mineral Resources or Mineral Reserves is based on information compiled by [insert name of Accredited Competent Person (ACP)], an Accredited Competent Person who is a Member (or Fellow) of the Philippine Society of Mining Engineers or the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, the Geological Society of the Philippines and the Society of Metallurgical Engineers of the Philippines through the Philippine Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations [select as appropriate and insert the name of the professional representative organization or RPO of which the ACP is a member and the ACP's grade of membership].'

- *If the required information is included in an attached statement:*

  'The information in the report to which this statement is attached that relates to Exploration Results, Mineral Resources or Mineral Reserves is based on information compiled by [insert name of ACP], an Accredited Competent Person who is a Member (or Fellow) of [insert name of the Philippine Society of Mining Engineers or, the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, the Geological Society of the Philippines and the Society of Metallurgical Engineers of the Philippines through the Philippine Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations [select as appropriate and insert the name of the professional representative organization or RPO of which the ACP is a member and the ACP's grade of membership].'

- *If the ACP is a full-time employee of the company:*

  '[Insert name of ACP] is a full-time employee of the company.'

- *If the ACP is not a full-time employee of the company:*

  '[Insert name of ACP] is employed by [insert name of ACP's employer].'

- *The full nature of the relationship between the ACP and the reporting company must be declared together with the ACP's details. This declaration must outline and clarify any issue that could be perceived by investors as a conflict of interest.*

- *For all reports:*

  [Insert name of ACP] has a minimum of five years relevant experience in the style of mineralization or type of mineral deposit under consideration and to the activity being undertaken to qualify as an Accredited Competent Person as defined in the 2020 Edition of the 'Philippine Mineral Reporting Code for Reporting Exploration Results, Mineral Resources and Mineral Reserves'. [Insert name of ACP] consents to the inclusion in the report of the matters based on his (or her) information in the form and context in which it

appears.

For any subsequent Public Report based on a previously issued Public Report that refers to those Exploration Results or estimates of Mineral Resources or Mineral Reserves:

Where an ACP has previously issued the prior written consent to the inclusion of their findings in a report, a company re-issuing that information to the Public, whether in the form of a presentation or a subsequent announcement, must state the report name, date and reference the location of the original source of the Public Report for public access.

- *'The information is extracted from the report entitled [name report] created on [date] and is available to view on [website name]. The company confirms that it is not aware of any new information or data that materially affect the information included in the original market announcement and, in the case of estimates of Mineral Resources or Mineral Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Accredited Competent Person's findings are presented have not been materially modified from the original market announcement.'*

Companies should be aware that this exemption does not apply to subsequent reporting of information in the company annual report.

Appendix 4 – Accredited Competent Person's Consent Form

Companies reporting Exploration Results, Exploration Targets, Mineral Resources or Mineral Reserves are reminded that while a Public Report is the responsibility of the company acting through its Board of Directors, Clause 10 of the Code requires that any such report 'must be based on, and fairly reflect the information and supporting documentation prepared by an Accredited Competent Person (ACP) or Persons. Clause 10 also requires that the 'report shall be issued with the prior written consent of the ACP(s) as to the form and context in which it appears'.

In order to assist ACP(s) and companies to comply with these requirements, and to emphasize the need for companies to obtain the prior written consent of each ACP for their material to be included in the form and context in which it appears in the Public Report, the PSE, together with PMRCC, have developed an ACP's Consent Form that incorporates the requirements of the PMRC 2020 Edition.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior written consent has been obtained.

Having the consent form witnessed by a peer professional representative organization-registered member is considered leading practice and is optional but strongly encouraged.

The ACP's Consent Form(s), or other evidence of the ACP's written consent, should be retained by the company and the ACP(s) to ensure that the written consent can be promptly provided if requested.

[Letterhead of Accredited Competent Person or Accredited Competent Person's employer]

Accredited Competent Person's Consent Form

Pursuant to the requirements under the prevailing PSE's Consolidated Listing and Disclosure Rules and Clause 10 of the PMRC 2020 Edition ("Consent Statement")

Report name

[Insert name or heading of Report to be publicly released)] ('Report')]

[Insert name of company releasing the Report]

[Insert name of mineral deposit to which the Report refers]

If there is insufficient space, complete the following sheet and sign it in the same manner as this original sheet.

_____

[Date of Report]

Consent Statement

I/We,

_____

[Insert full name(s)]

Confirm that I am the Accredited Competent Person for the Report, and:

- That I am a [insert profession, i.e., Geologist, Mining Engineer and/or Metallurgical Engineer] residing at [insert address].
- I have read and understood the requirements of the 2020 Edition of the Philippine Mineral Reporting Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (PMRC 2020 Edition).
- I certify that this Report has been prepared in accordance with PMRC 2020 Edition.
- I am an Accredited Competent Person as defined by the PMRC 2020 Edition, having a minimum of five years relevant experience in the style of mineralization and type of mineral deposit described in the Report, and to the activity for which for which I am accepting responsibility.
- I am a Member (or Fellow) of the Philippine Society of Mining Engineers or the Geological Society of the Philippines or the Society of Metallurgical Engineers of the Philippines or a 'Recognized Professional Organization' (RPO) included in a list promulgated from time to time by the Philippine Society of Mining Engineers, Geological Society of the Philippines, and the Society of Metallurgical Engineers of the Philippines through the Philippines Mineral Reporting Code Committee (PMRCC), subject to applicable laws and regulations.
- [State relationship of the ACP to the reporting company, e.g., consultant, whether independent or not independent, employee or holder of a corporate position, holder of shares, options and/or warrants, holder of tenement rights, has landlord-lessee relationship of land and/or infrastructure which has a bearing on the disclosure].
- I have reviewed the Report to which this Consent Statement applies.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issues that could be perceived by investors as a conflict of interest.

I verify that the Report is based on, and fairly and accurately reflect in the form and context in which it appears, the information in my supporting documentation relating to Exploration Results, Exploration Targets, Mineral Resources and/or Mineral Reserves *[select as appropriate].*

Consent

I consent to the release and public disclosure of the Report and this Consent Statement by the Board of Directors of:

[Insert reporting company name]

[Signature]_____
Accredited Competent Person

_____
Date

Professional Representative Organization / RPO Name of ACP

_____
PRC Registration No. / Valid Until [Date]

_____
ACP Registration No. / Valid Until [Date]

_____
Professional Tax Receipt No. / Date

[Signature]_____
Peer Witness' Name (*Optional)

Professional Representative Organization / RPO of Peer Witness

_____
PRC Registration No. / Valid Until [Date]

_____
ACP Registration No. / Valid Until [Date]

_____
Professional Tax Receipt No. / Date

Appendix 5 - Reporting of Mineralized Fill, Pillars, Low Grade Mineralization, Stockpiles, Dumps, and Tailings

A5-1 The Code applies to the reporting of all potentially economic mineralized material. This can include mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings (remnant materials) where there are reasonable prospects for eventual economic extraction in the case of Mineral Resources, and where extraction is reasonably justifiable in the case of Mineral Reserves. Unless otherwise stated, Clauses 1 to 61 of the Code (including Figure 1) apply.

A5-2 Table 1, as part of the Code, should be considered persuasive when reporting on mineralized fill, remnants, pillars, low grade mineralization, stockpiles, dumps, and tailings.

A5-3 Any mineralized material as described in this Appendix can be considered to be similar to in situ mineralization for the purposes of reporting Mineral Resources and Mineral Reserves. Judgments about the mineability of such mineralized material should be made by ACP(s) with relevant experience.

A5-4 If there are no reasonable prospects for the eventual economic extraction of all or part of the mineralized material as described in this Appendix, then this material cannot be classified as either Mineral Resources or Mineral Reserves. If some portion of the mineralized material is currently sub-economic, but there is a reasonable expectation that it will become economic, then this material may be classified as a Mineral Resource. If technical and economic studies to a minimum of a Pre-Feasibility Study have demonstrated that economic extraction could reasonably be justified under realistically assumed conditions, then the material may be classified as a Mineral Reserve.

The above Clauses apply equally to low grade in situ mineralization, sometimes referred to as 'mineralized waste' or 'marginal grade material', and often intended for stockpiling and treatment towards the end of mine life. For clarity of understanding, it is recommended that tonnage and grade estimates of such material be itemized separately in Public Reports, although they may be aggregated with total Mineral Resource and Mineral Reserve estimates.

Stockpiles are defined to include both surface and underground stockpiles, including broken ore in stopes, and can include ore currently in the ore storage system. Mineralized material in the course of being processed (including leaching), if reported, should be reported separately.

Appendix 6 - Reporting of Coal Exploration Results, Coal Resources, and Coal Reserves

A6-1 The Clauses in this Appendix address matters that relate specifically to the Public Reporting of Coal Exploration Results, Coal Resources, and Coal Reserves. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting on Coal Resources and Coal Reserves.

For purposes of Public Reporting, the requirements for coal are generally similar to those for other commodities with the replacement of terms such as 'mineral' by 'coal' and 'grade' by 'quality'.

Other industry guidelines on the estimation and reporting of Coal Resources and Coal Reserves may be useful but will under no circumstances override the provisions and intention of the Code for Public Reporting.

Because of its impact on planning and land use, governments may require estimates of coal inventory which are not constrained by short- to medium-term economic considerations. The PMRC does not cover such estimates. Refer also to the guidelines in Clauses 6 and 23.

A6-2 The terms 'Mineral Resource(s)' and 'Mineral Reserve(s)', and the subdivisions of these as defined above, apply also to coal reporting, but if preferred by the reporting company, the terms 'Coal Resource(s)' and 'Coal Reserve(s)' and the appropriate subdivisions may be substituted.

A6-3 'Marketable Coal Reserves', representing beneficiated or otherwise enhanced coal product where modifications due to mining, dilution and processing have been considered, may be Publicly Reported in conjunction with, but not instead of, reports of Coal Reserves. The basis of the predicted yield to achieve Marketable Coal Reserves must be stated.

A6-4 Reference to all coal products and properties must not be made until specific properties are demonstrated by analytical results for samples from the coal deposit.

TABLE 1 – SECTION 10			Exploration Results	Mineral Resources	Mineral Reserves
Section 10: Reporting for Coal Resources and Coal Reserves					
10.1	***Specific Reporting for Coal***	10.1.1	Appendix 6 of the Code provides additional criteria for reporting on coal deposits.		
		10.1.2	Guidance is available in relevant national standards for Coal Exploration Results, Coal Resources, and Coal Reserves reporting.		
10.2	***Geological Setting, Coal Deposit, Mineralization***	10.2.1	The project geology including coal deposit type, geological setting, and coal seams / zones present.		
		10.2.2	The structural complexity, physical continuity, coal rank, qualitative and quantitative properties of the significant coal seams or zones on the coal property.		
10.3	***Drilling Techniques***	10.3.1	Core recoveries and method of calculation. Core recoveries in cored boreholes should be in excess of 95% by length within the coal seam intersection.		
10.4	***Relative Density to replace Bulk Density***	10.4.1	The apparent relative density or true relative density of the coal seam(s) determined on coal samples from borehole cores using recognized standard laboratory methods or commonly used procedures. The moisture basis on which the relative density determination is based and the moisture basis on which the final density value is reported (in situ or air-dried basis), should be stated.		
10.5	***Bulk-Sampling and/or trial-mining***	10.5.1	The purpose or aim of the bulk sampling program, the size of samples, spacing/density of samples recovered. The applicability of bulk sampling or large diameter core samples to provide representative samples for tests. Comparison of results obtained from bulk sampling versus exploration sampling.		
10.6	***Reasonable prospects for eventual economic extraction***	10.6.1	The basis on which reasonable prospects for eventual economic extraction has been determined. Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction'.		
10.7	***Coal Resource and Coal Reserve Reporting***	10.7.1		The appropriate coal quality for all Coal Resource and Coal Reserve categories. The type of analysis (e.g., raw coal, washed coal at a specific cut-point density) and the basis of reporting of the coal quality parameters (e.g., air-dried basis, dry basis, etc.).	
		10.7.2		A Coal Resource only includes the coal seam(s) above the minimum thickness cut-off and the coal quality cut-off(s).	The Reserves may be reported as Run-of-Mine (ROM) tonnages and coal quality, and also as Saleable product/s tonnages and coal quality.
		10.7.3		The reporting basis with particular reference to moisture and relative density.	

Appendix 7 - Reporting of Exploration Results, Mineral Resources, and Mineral Reserves for Industrial Minerals, Cement Feed Materials, and Construction Raw Materials

A7-1 Clauses in this Appendix address matters that relate to the Public Reporting of industrial minerals, cement feed materials, and construction raw materials of all forms that are generally sold on the basis of their product specifications and market acceptance. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting Exploration Results, Mineral Resources, and Mineral Reserves for industrial minerals, cement feed materials, and construction raw materials.

A7-2 When reporting information and estimates for industrial minerals, cement feed materials and construction raw materials, all of the key principles and purpose of the Code apply. Chemical analyses may not always be relevant, and other quality criteria and performance characteristics may be more applicable and acceptable as the basis of the reporting.

A7-3 Some industrial minerals, cement feed materials, and construction raw material deposits may yield products suitable for more than one application and/or specification. If considered material by the Accredited Competent Person (ACP), such multiple products should be quantified either separately or as a percentage of the bulk deposit.

A7-4 Unless it is a specific aspect of their instructions to reflect the range of product mixes and target markets for the industrial minerals, cement feed materials or construction raw materials deposit, the ACP should normally report the Mineral Resources and Mineral Reserves within the framework of an existing mining plan or established set of product and market assumptions and objectives.

A7-5 If there is potential for ancillary products, or mining or process waste, to be sold off-site for subsidiary uses in addition to the planned sales of primary products (i.e., other uses for non-saleable quarry production, such as secondary aggregate or engineering or other fill) the ACP should reflect this in their report and comment on any significant implication (e.g., reductions in the amount of non-saleable material that could otherwise be used as a restoration material).

A7-6 The factors underpinning the estimation of Mineral Resources and Mineral Reserves for industrial minerals, cement feed materials, and construction raw materials are the same as those for other mineral deposit types covered by the Code. It may be necessary, prior to the reporting of a Mineral Resource or Mineral Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets, and general product marketability.

A7-7 For industrial minerals, cement feed materials, and construction raw materials, it is common practice to report the saleable (or useable) product rather than the 'as mined' product as it is recognized that commercial sensitivities may not permit the publication of Mineral Resources and Mineral Reserves in the latter format which is the preferred style of reporting within the Code. It is important that, in all situations where the saleable product is reported, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

A7-8 Reports should make clear the "permitted" or "non-permitted" status of the Mineral Resources and Mineral Reserves, and, in addition, Mineral Reserves should only be quoted where the operator has legal control.

It should be noted that many of the Modifying Factors are more relevant to industrial

minerals, cement feed materials, and construction raw materials than to metalliferous minerals. Specifically, the legal control may be more important, as well as the permitting status, due to the local nature of the planning process for non-strategic and non-government owned minerals.

A7-9 Mineral Resources and Mineral Reserves of industrial minerals, cement feed materials, and construction raw materials serving localized or regional markets may be reported on an aggregated basis on an appropriately defined geographical basis to reflect the particular economic constraints of the industrial minerals, cement feed materials or construction raw materials deposits being reported without divulging commercially sensitive information.

A7-10 In certain cases, commercial sensitivity may prevent the publication of detailed information and data associated with Mineral Resources and Mineral Reserves of industrial minerals, cement feed materials, and construction raw materials, and in such cases, this should be clearly justified in the report (either prepared for an individual site or on an aggregated basis).

TABLE 1 – SECTION 11			Exploration Results	Mineral Resources	Mineral Reserves
Section 11: Reporting of Industrial Minerals, Cement Feed Materials, and Construction Raw Materials					
11.1	***Specific Reporting of Industrial Minerals, Cement Feed Materials, and Construction Raw Materials***	11.1.1	Appendix 7 of the Code provides additional criteria for reporting on Industrial Mineral, Cement Feed Materials, and Construction Raw Materials deposits.		
		11.1.2	The exploration or geologically specific specialized industry techniques appropriate to the minerals under investigation.		
		11.1.3	The nature and quality of sampling or specific specialized industry standard measurement tools appropriate to the minerals under investigation.		
		11.1.4	Appropriate saleable product qualities. The basis for reporting (physical or chemical parameters, air-dried basis, dry basis, etc.). Deleterious chemical elements or physical parameters.		
		11.1.5	Assumptions regarding particular extraction methods, infrastructure, processing, environmental, and social parameters. Where no mining-related assumptions have been made, this should be explained.		
		11.1.6	Marketing parameters, customer specifications, testing, and acceptance requirements.		
		11.1.7	The nature, amount and representativeness of metallurgical/processing studies completed which form the basis for the various saleable materials which may be priced for different chemical and physical characteristics.		
		11.1.8	Where the reference point is a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.		

Appendix 8 - Reporting of Exploration Results, Mineral Resources and Mineral Reserves for Dimension Stone, Ornamental and Decorative Stone

A8-1 Clauses in this Appendix addresses matters that relate to the Public Reporting of dimension stone, ornamental and decorative stone of all forms that are generally sold on the basis of their technical (geological/mining) product specifications, quality, and market acceptance. Unless otherwise stated, Clauses 1 to 61 of the PMRC 2020 Edition (including Figure 1) apply. Table 1, as part of the Code, should be considered persuasive when reporting Exploration Results, Mineral Resources, and Mineral Reserves for dimension stone, ornamental and decorative stone.

> *'Dimension stone' is a technical/commercial term that includes all natural stones that can be quarried in blocks of different dimensions and processed by cutting or splitting, and that possess the technical and aesthetic properties required for their use in the building and construction industries.*
>
> *In both mining and fields of application, dimension stone is distinct from any other material derived from natural rocks (such as in aggregates, cement materials, crushed stone, etc.). While other materials are almost exclusively used for load-bearing and filling functions and are largely utilized in public works, dimension stone materials offer special qualitative features which mean they can be used for different purposes and they can perform both structural and decorative architectural functions.*
>
> *In general, dimension stone can be quarried in regular and/or unshaped blocks by using different mining methods (drilling and splitting, diamond wire and diamond chain-saw cutting) and processed (cut, polished, and subjected to other surface treatments) to produce semi-finished products (slabs) and finished products (tiles and cut-to-size products).*

A8-2 Chemical analyses may not always be relevant for material evaluation, at least during the exploration-evaluation phases. When necessary, chemical analysis is used to verify the presence of possible minerals and related alteration that could produce important quality defects on finished products. Chemical/compositional analysis may also identify mineral components and/or assemblages and is used to predict the future technical requirements of the quarrying-processing equipment and related tools.

A8.3 Qualitative and aesthetic qualities (color, grain, texture, and their regularity in distribution) and/or their structural performance characteristics (compression and flexural strength, abrasive resistance, porosity, ability to be polished, radioactivity content, etc.) may be more important for the market, and applicable and acceptable as the basis for reporting.

A8-4 Many dimension stone, and ornamental and decorative stone deposits may yield different products (different materials and/or different market grades within the same material), suitable for the production of more than one finished or semi-finished product, and for more than one final application and/or specification. These often are sold in the market with different prices.

A8-5 If considered material by the Accredited Competent Person (ACP), estimates for such multiple products should be included either separately or as percentages of the bulk of the dimension stone, and/or ornamental and decorative stone deposit.

A8-6 Unless it is a specific aspect of their instructions to reflect the range of product mixes and target markets for the dimension stone, and/or ornamental and decorative stone deposit, the ACP should normally report the Mineral Resources and Mineral Reserves within the

framework of an existing mining plan and/or Pre-Feasibility / Feasibility Study or established set of products and market assumptions and objectives.

A8-7 If there is potential for ancillary products or by-products, or for quarrying or processing waste to be re-utilized or to be sold off-site for subsidiary uses, in addition to the planned sales of the primary products as described above (e.g., aggregate, sand and powder as industrial mineral, building and paving stone, etc.), the ACP should reflect this in the report and comment on any significant implications (e.g., reduction in the amount of non-saleable material, minimization of waste and related lower waste management costs, and environmental impact).

The factors underpinning the estimation of Mineral Resources and Mineral Reserves for dimension stone, and ornamental and decorative stone *are often not the same as those for other mineral deposit types covered by the Code.*

It may be necessary, prior to the reporting of Mineral Resources and Mineral Reserves, to take particular account of certain particular key characteristics/features of the target material specific to dimension stone.

These may include final product specifications, proximity to markets, type, structure, and demand of the market (very different area by area), and excluding some very well-established materials, possible changes in market requirements, and general product marketability.

They may also depend mainly on the market quality of the target material (color, grain, texture, and their regularity in distribution). A correct professional evaluation of the Market Quality, made by the ACP in different ways, is the key to evaluating the final product marketability and is a key Modifying Factor in the definition of Mineral Reserves for dimension stone.

The ACP should explain in detail in the report, the method utilized for the Market Quality evaluation of the target dimension stone and/or ornamental and decorative stone, and in cases of the market, the references cited, together with documents referenced or used. Sometimes, otherwise non-saleable materials are sent off-site as mining waste or as other material of potential economic value.

Care should be taken to ensure that such materials are not "double-counted" by being included as Mineral Resources and Mineral Reserves at both the site of production and at the site of reception where they are considered as useable products (with or without further processing to make them marketable).

A8-8 In contrast to industrial minerals, cement feed materials, and construction raw materials (Appendix 7), for which it is common practice to report the saleable (or useable) product rather than the 'as mined' product, dimension stone, and ornamental and decorative stone are usually reported in all their forms, shapes and dimensions. There are also factors that drive the market and the success of a dimension stone project.

A8-9 The Public Report may contain either the geological or commercial names of target dimension stone, and/or ornamental and decorative stone. In any case, an explanation of these terms should be included in the report.

A8-10 Other industry guidelines on the estimation and reporting of dimension stone, and ornamental and decorative stone may be useful but will under no circumstances override the provisions and intention of the Code for Public Reporting.

A8-11 Many of the Modifying Factors are more relevant and specific to dimension stone, and

ornamental and decorative stone than to metalliferous materials. In particular, the legal control of Mineral Resources and Mineral Reserves may be very important, as well as the permitting or consenting status, due to the local nature and often simple structure of the planning process for non-strategic and non-government owned minerals.

Reports should make clear the 'permitted 'or 'non-permitted' status of the Mineral Resources, and in addition Mineral Reserves particularly should only be quoted where the operator has legal control.

A8-12 Mineral Reserves and Mineral Resources of dimension stone, or ornamental and decorative stone deposits with the same material and owned by the same company, potentially serving localized/domestic or regional markets, may be reported on an aggregated basis on an appropriately defined geographical basis to reflect the particular economic constraints of the dimension stone, or ornamental and decorative stone deposits being reported without divulging commercially sensitive information.

A8-13 In certain cases, commercial sensitivity may prevent the publication of detailed information and data associated with Mineral Resources and Mineral Reserves of dimension stone, and ornamental and decorative stone deposits, and in such cases, this should be clearly justified in the report (either prepared for an individual site or on an aggregated basis).

TABLE 1 – SECTION 12			Exploration Results	Mineral Resources	Mineral Reserves
Section 12: Reporting of Dimension Stone, Ornamental and Decorative Stone					
12.1	**Specific Reporting of Dimension Stone, Ornamental and Decorative Stone**	12.1.1	*Appendix 8 of the Code provides additional criteria for reporting on dimension stone, ornamental and decorative stone.*		
		12.1.2	*The exploration or geologically specific specialized industry techniques appropriate to the stone under investigation.*		
		12.1.3	*The nature and quality of sampling or specific specialized industry standard measurement tools appropriate to the stone under investigation.*		
		12.1.4	*The appropriate saleable product qualities reported, including color, grain, texture, and their regularity in distribution. The basis for reporting (physical or chemical parameters, compression and flexural strength, abrasion resistance, porosity, polishability, etc.) should be reported. Reporting of deleterious chemical elements, radioactivity or physical parameters is required.*		
		12.1.5	*State assumptions regarding in particular extraction methods, infrastructure, processing, environmental, and social parameters. Where no mining-related assumptions have been made, this should be explained.*		
		12.1.6	*Discuss and justify the marketing parameters, customer specifications, testing, and acceptance requirements.*		
		12.1.7	*Discuss the nature, amount and representativeness of processing studies completed which form the basis for the various saleable materials which may be priced for different chemical and physical characteristics.*		
		12.1.8	*Where the reference point is a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.*		