

## REGULATION 43-101 RESPECTING STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS

Securities Act  
(R.S.Q., c. V-1.1, s. 331.1, par. (1), (3), (6), (8), (11) and (34))

### PART 1 DEFINITIONS AND INTERPRETATION

#### 1.1. Definitions

In this Regulation

“acceptable foreign code” means the JORC Code, the PERC Code, the SAMREC Code, SEC Industry Guide 7, the Certification Code, or any other code, generally accepted in a foreign jurisdiction, that defines mineral resources and mineral reserves in a manner that is consistent with mineral resource and mineral reserve definitions and categories set out in sections 1.2 and 1.3;

“adjacent property” means a property

- (a) in which the issuer does not have an interest;
- (b) that has a boundary reasonably proximate to the property being reported on; and
- (c) that has geological characteristics similar to those of the property being reported on;

“advanced property” means a property for which

(a) the potential economic viability of its mineral resources is supported by a preliminary economic assessment, or

(b) the economic viability of its mineral reserves is supported by a pre-feasibility study or a feasibility study;

“Certification Code” means the Certification Code for Exploration Prospects, Mineral Resources and Ore Reserves prepared by the Mineral Resources Committee of the Institution of Mining Engineers of Chile, and the Chilean Ministry of Mining, as amended;

“data verification” means the process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source and is suitable to be used;

“development property” means a property that is being prepared for mineral production or a material expansion of current production, and for which economic viability has been demonstrated by a pre-feasibility or feasibility study;

“disclosure” means any oral statement or written disclosure made by or on behalf of an issuer and intended to be, or reasonably likely to be, made available to the public in a jurisdiction of Canada, whether or not filed under securities legislation, but does not include written disclosure that is made available to the public only by reason of having been filed with a government or agency of government pursuant to a requirement of law other than securities legislation;

“early stage exploration property” means a property ~~that has~~ for which the technical report being filed has

- (a) no current mineral resources or mineral reserves defined; and
- (b) no drilling or trenching proposed;

~~in a technical report being filed in a local jurisdiction;~~

“effective date” means, with reference to a technical report, the date of the most recent scientific or technical information included in the technical report;

“exploration information” means geological, geophysical, geochemical, sampling, drilling, trenching, analytical testing, assaying, mineralogical, metallurgical, and other similar information concerning a particular property that is derived from activities undertaken to locate, investigate, define, or delineate a mineral prospect or mineral deposit;

“feasibility study” means a comprehensive study of a mineral deposit in which all geological, engineering, legal, operating, economic, social, environmental, and other relevant factors are considered in sufficient detail that it could reasonably serve as the basis for a final decision by a financial institution to finance the development of the deposit for mineral production;

~~“historical estimate” means an estimate of mineral resources or mineral reserves prepared prior to February 1, 2001; the quantity, grade, or metal or mineral content of a deposit that an issuer has not verified as a current mineral resource or mineral reserve, and which was prepared before the issuer acquiring, or entering into an agreement to acquire, an interest in the property that contains the deposit;~~

~~“IMMM Reporting Code” means the Code for Reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves that sets out a classification system and definitions of mineral resources and mineral reserves and is prepared by the Institute of Materials, Minerals, and Mining in the United Kingdom, as amended;~~

“JORC Code” means the Australasian Code for Reporting of Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia, as amended;

“mineral project” means any exploration, development or production activity, including a royalty interest ~~or similar interest~~ in these activities, in respect of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals;

“PERC Code” means the Reporting Code for Mineral Reserves and Mineral Resources prepared by the Pan-European Reserves and Resources Reporting Committee, as amended;

“preliminary economic assessment” means a study, other than a pre-feasibility or feasibility study, that includes an economic analysis of the potential viability of mineral resources ~~taken at an early stage of the project prior to the completion of a preliminary feasibility study;~~

“preliminary feasibility study” ~~means and~~ “pre-feasibility study” each mean a comprehensive study of the viability of a mineral project that has advanced to a stage where the mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, has been established and an effective method of mineral processing has been determined, and includes a financial analysis based on reasonable assumptions of technical, engineering, legal, operating, economic, social, and environmental factors and the evaluation of other relevant factors which are sufficient for a qualified person, acting reasonably, to determine if all or part of the mineral resource may be classified as a mineral reserve; ~~“preliminary feasibility study” also means a pre-feasibility study;~~

“producing issuer” means an issuer with annual audited financial statements that disclose

(a) gross revenues, derived from mining operations, of at least \$30 million Canadian for the issuer’s most recently completed financial year; and

(b) gross revenues, derived from mining operations, of at least \$90 million Canadian in the aggregate for the issuer's three most recently completed financial years;

“professional association” means a self-regulatory organization of engineers, geoscientists or both engineers and geoscientists that

(a) ~~(a)~~ is

(i) given authority or recognition by statute in a jurisdiction of Canada, or

(ii) a foreign association ~~listed in Appendix A;~~ that is generally accepted within the international mining community as a reputable professional association;

(b) admits individuals on the basis of their academic qualifications ~~and~~ experience, and ethical fitness;

(c) requires compliance with the professional standards of competence and ethics established by the organization; and

(d) has and applies disciplinary powers, including the power to suspend or expel a member; regardless of where the member practises or resides;

“qualified person” means an individual who

(a) is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice;

(b) ~~(b)~~ has experience relevant to the subject matter of the mineral project and the technical report; and

(c) ~~(c)~~ is in good standing with a professional association and, in the case of a ~~foreign association listed in Appendix A, has the corresponding designation in Appendix A;~~ professional association in a foreign jurisdiction, has a membership designation that

(i) requires a university degree or equivalent accreditation in an area of geoscience, or engineering, relating to mineral exploration or mining;

(ii) requires attainment of a position of responsibility in their profession that requires the exercise of independent judgment;

(iii) requires or encourages continuing professional development; and

(iv) requires

(A) a favourable confidential peer evaluation of the individual's character, professional judgement, experience, and ethical fitness; or

(B) a recommendation for membership by at least three peers, and at least ten years of post-degree practical experience or demonstrated prominence in the field of mineral exploration or mining;

“quantity” means either tonnage or volume, depending on which term is the standard in the mining industry for the type of mineral;

“SAMREC Code” means the South African Code for Reporting of Mineral Resources and Mineral Reserves prepared by the South African Mineral ~~Resource~~ Committee (SAMREC) under the auspices of the South African Institute of Mining and Metallurgy (SAIMM), as amended;

“SEC Industry Guide 7” means ~~guide 7 for~~ the mining industry guide entitled “Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations”

contained in the Securities Act Industry Guides published by the United States Securities and Exchange Commission, as amended;

“specified exchange” means the Australian Stock Exchange, the Johannesburg Stock Exchange, the London Stock Exchange Main Market, the Nasdaq Stock Market, the New York Stock Exchange, or the Hong Kong Stock Exchange;

“technical report” means a report prepared and filed in accordance with this Regulation and Form 43-101F1, ~~Technical Report, that does not omit any~~ that includes, in summary form, all material scientific and technical information in respect of the subject property as of the effective date of the ~~filing of the~~ technical report; and

“written disclosure” includes any writing, picture, map, or other printed representation whether produced, stored or disseminated on paper or electronically, including websites.

## 1.2. Mineral Resource

In this Regulation, the terms “mineral resource”, “inferred mineral resource”, “indicated mineral resource” and “measured mineral resource” have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, on December 11, 2005, as ~~those definitions may be~~ amended.

## 1.3. Mineral Reserve

In this Regulation, the terms “mineral reserve”, “probable mineral reserve” and “proven mineral reserve” have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, on December 11, 2005, as ~~those definitions may be~~ amended.

## 1.4. Independence

In this Regulation, a qualified person is independent of an issuer if there is no circumstance that ~~could~~, in the opinion of a reasonable person aware of all relevant facts, could interfere with the qualified person’s judgment regarding the preparation of the technical report.

# PART 2 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

## 2.1. Requirements Applicable to All Disclosure

All disclosure of scientific or technical information made by an issuer, including disclosure of a mineral resource or mineral reserve, concerning a mineral project on a property material to the issuer must be

(a) based upon information prepared by or under the supervision of a qualified person; or

(b) approved by a qualified person.

## 2.2. All Disclosure of Mineral Resources or Mineral Reserves

An issuer must not disclose any information about a mineral resource or mineral reserve unless the disclosure

(a) uses only the applicable mineral resource and mineral reserve categories set out in sections 1.2 and 1.3;

(b) reports each category of mineral resources and mineral reserves separately, and states the extent, if any, to which mineral reserves are included in total mineral resources;

(c) does not add inferred mineral resources to the other categories of mineral resources; and

(d) states the grade or quality and the quantity for each category of the mineral resources and mineral reserves if the quantity of contained metal or mineral is included in the disclosure.

### 2.3. ~~Prohibited~~Restricted Disclosure

(1) An issuer must not ~~make any disclosure of the~~disclose

(a) the quantity, grade, or metal or mineral content of a deposit that has not been categorized as an inferred mineral resource, an indicated mineral resource, a measured mineral resource, a probable mineral reserve, or a proven mineral reserve; ~~or~~

(b) the results of an economic analysis that includes or is based on inferred mineral resources or an estimate permitted under subsection 2.3(2) or section 2.4;

(c) the gross contained metal or mineral value of a deposit or a sampled interval or drill intersection; or

(d) a metal or mineral equivalent grade for a multiple commodity deposit, sampled interval, or drill intersection, unless it also discloses the grade of each metal or mineral used to establish the metal or mineral equivalent grade.

(2) Despite paragraph (1)(a), an issuer may disclose in writing the potential quantity and grade, expressed as ranges, of a ~~potential mineral deposit that is to be the~~ target ~~or~~for further exploration if the disclosure

(a) ~~includes a statement~~states with equal prominence that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource; and

(b) states the basis on which the disclosed potential quantity and grade has been determined.

(3) Despite paragraph (1)(b), an issuer may disclose a preliminary economic assessment that includes or is based on inferred mineral resources if

~~(a) the results of the preliminary assessment are a material change or a material fact with respect to the issuer; and (b)~~ the disclosure

~~(i) includes a statement~~(i) states with equal prominence that the preliminary economic assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized; ~~and~~

~~(ii)~~ states the basis for the preliminary economic assessment and any qualifications and assumptions made by the qualified person; ~~and~~

(c) describes the impact of the preliminary economic assessment on the results of any pre-feasibility or feasibility study in respect of the subject property.

(4) An issuer must not use the term preliminary feasibility study, pre-feasibility study, or feasibility study when referring to a study unless the study satisfies the criteria set out in the definition of the applicable term in section 1.1.

### 2.4. Disclosure of Historical Estimates

~~(1)~~ Despite section 2.2, an issuer may disclose an historical estimate, using the ~~historical~~original terminology, if the disclosure

- (a) identifies the source and date of the historical estimate; including any existing technical report;
- (b) comments on the relevance and reliability of the historical estimate;
- (c) to the extent known, provides the key assumptions, parameters, and methods used to prepare the historical estimate;
- (d) states whether the historical estimate uses categories other than the ones set out in sections 1.2 and 1.3 and, if so, includes an explanation of the differences; and
- (~~e~~) includes any more recent estimates or data available to the issuer; and
- (f) comments on what work needs to be done to upgrade or verify the historical estimate as current mineral resources or mineral reserves; and
- (g) states with equal prominence that
  - (i) a qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves; and
  - (ii) the issuer is not treating the historical estimate as current mineral resources or mineral reserves.

### **PART 3      ADDITIONAL REQUIREMENTS FOR WRITTEN DISCLOSURE**

#### **3.1.    Written Disclosure to Include Name of Qualified Person**

If an issuer discloses in writing scientific or technical information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure ~~(a) —~~ the name; and ~~(b) —~~ the relationship to the issuer of the qualified person who

- (a) prepared or supervised the preparation of the information that forms the basis for the written disclosure; or
- (b) approved the written disclosure.

#### **3.2.    Written Disclosure to Include Data Verification**

If an issuer discloses in writing scientific or technical information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure

- (a) a statement whether a qualified person has verified the data disclosed, including sampling, analytical, and test data underlying the information or opinions contained in the written disclosure;
- (b) a description of how the data was verified and any limitations on the verification process; and
- (c) an explanation of any failure to verify the data.

#### **3.3.    Requirements Applicable to Written Disclosure of Exploration Information**

(1) If an issuer discloses in writing exploration information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure ~~(a) the results, or~~ a summary of

- (a) the material results; of surveys and investigations regarding the property;
- (b) ~~a summary of~~ the interpretation of the exploration information; and

(c) ~~a description of~~ the quality assurance program and quality control measures applied during the execution of the work being reported on.

(2) If an issuer discloses in writing sample, or analytical or ~~test~~testing results on a property material to the issuer, the issuer must include in the written disclosure

~~(a) a summary description of the geology, mineral occurrences and nature of mineralization found;~~

(a) the location and type of the samples collected;

~~(b) a summary description of rock types, geological controls and dimensions of mineralized zones, and the identification~~(b) the location, azimuth, and dip of any drill holes and the depth of the sample intervals;

(c) a summary of the relevant analytical values, widths, and to the extent known, the true widths of the mineralized zone;

(d) the results of any significantly higher grade intervals within a lower grade intersection;

~~(e) the location, number, type, nature and spacing or density of the samples collected and the location and dimensions of the area sampled;~~(d) any drilling, sampling, recovery, or other factors that could materially affect the accuracy or reliability of the data referred to in this subsection; and

(e) a summary description of the type of analytical or testing procedures utilized, sample size, the name and location of each analytical or testing laboratory used, and any relationship of the laboratory to the issuer;~~(f) a summary of the relevant analytical values, widths and, to the extent known to the issuer, the true widths of the mineralized zone.~~

### 3.4. Requirements Applicable to Written Disclosure of Mineral Resources and Mineral Reserves

If an issuer discloses in writing mineral resources or mineral reserves on a property material to the issuer, the issuer must include in the written disclosure

(a) the effective date of each estimate of mineral resources and mineral reserves;

(b) ~~details of the~~ quantity and grade or quality of each category of mineral resources and mineral reserves;

(c) ~~details of~~ the key assumptions, parameters, and methods used to estimate the mineral resources and mineral reserves;

~~(d) a general discussion of the extent to which the estimate of~~(d) the identification of any known legal, political, environmental, or other risks that could materially affect the potential development of the mineral resources or mineral reserves ~~may be materially affected by any known environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues;~~ and

(e) if the disclosure includes the results of an economic analysis of mineral resources, an equally prominent statement that mineral resources that are not mineral reserves do not have demonstrated economic viability; ~~if the results of an economic analysis of mineral resources are included in the disclosure.~~

### 3.5. Exception for Written Disclosure Already Filed

Sections 3.2 and 3.3 and paragraphs ~~3.4~~(a), (c), and (d) of section 3.4 do not apply if the issuer includes in the written disclosure a reference to the title and date of a previously filed document that complies with those requirements.

## PART 4 OBLIGATION TO FILE A TECHNICAL REPORT

### 4.1. Obligation to File a Technical Report Upon Becoming a Reporting Issuer

(1) Upon becoming a reporting issuer, ~~in a jurisdiction of Canada~~ an issuer must file ~~in that jurisdiction~~ a technical report for ~~each~~ mineral ~~project on each~~ property material to the issuer.

(2) Subsection (1) does not apply if the issuer is a reporting issuer in a jurisdiction of Canada and subsequently becomes a reporting issuer in another jurisdiction of Canada.

(3) Subsection (1) does not apply if

(a) the issuer previously filed a technical report for the property;

(b) at the date the issuer becomes a reporting issuer, there is no new material scientific or technical information concerning the subject property not included in the previously filed technical report; and

(c) the previously filed technical report meets any independence requirements under section 5.3.

### 4.2. Obligation to File a Technical Report in Connection with Certain Written Disclosure ~~About~~about Mineral Projects on Material Properties

NOTE TO READER: The CSA is seeking comment on whether to keep or eliminate the short form prospectus trigger in (1)(b), therefore all references to the short form prospectus trigger in this draft Regulation are square-bracketed. Please see the discussion in the CSA Notice and Request for Comment dated April 23, 2010.

(1) An issuer must file a technical report to support scientific or technical information in any of the following documents filed or made available to the public in a jurisdiction of Canada ~~describing~~that describes a mineral project on a property material to the issuer, or in the case of paragraph (c) ~~below~~, the resulting issuer:

(a) a preliminary prospectus, other than a preliminary short form prospectus filed in accordance with Regulation 44-101 respecting Short Form Prospectus Distributions approved by Ministerial Order no. 2005-24 dated November 30, 2005;

(b) [a preliminary short form prospectus filed in accordance with Regulation 44-101 respecting Short Form Prospectus Distributions ~~that includes material scientific or technical information about a mineral project on a property material to the issuer but not contained in~~

~~(i) an annual information form, prospectus, or material change report filed before February 1, 2001; or (ii) a previously filed technical report];~~

(c) an information or proxy circular concerning a direct or indirect acquisition of a mineral property where the issuer or resulting issuer issues securities as consideration;

(d) an offering memorandum, other than an offering memorandum delivered solely to accredited investors as defined under securities legislation;

(e) for a reporting issuer, a rights offering circular;

(f) an annual information form ~~that includes material scientific or technical information about a mineral project on a property material to the issuer but not contained in;~~

~~(i) an annual information form, prospectus, or material change report filed before February 1, 2001; or~~

~~(ii) a previously filed technical report;~~

(g) a valuation required to be prepared and filed under securities legislation;



(h) an offering document that complies with and is filed in accordance with ~~TSX Venture Exchange Policy 4.6, 4.6 - Public Offering by Short Form Offering Document; and Exchange Form 4H - Short Form Offering Document, of the TSX Venture Exchange, as amended;~~

(i) a take-over bid circular that discloses a preliminary economic assessment ~~or~~ mineral resources, or mineral reserves on a property material to the offeror if securities of the offeror are being offered in exchange on the take-over bid; and

(j) ~~a news release or directors' circular that contains~~ (i) any written disclosure made by or on behalf of an issuer, other than in a document described in paragraphs (a) to (i), that discloses for the first time ~~disclosure of~~

(i) a preliminary economic assessment or mineral resources, or mineral reserves on a property material to the issuer that constitutes a material change in respect of the affairs of the issuer; or

(ii) a change in a preliminary economic assessment or in mineral resources, or mineral reserves from the most recently filed technical report that constitutes a material change in respect of the affairs of the issuer.

(2) Subsection (1) does not apply for disclosure of an historical estimate in a document referred to in paragraph (1)(j) ~~of that subsection~~ if the disclosure is made in accordance with subsection 2.4.

~~(a) is in accordance with section 2.4; and~~

~~(b) includes a statement that~~

~~(i) a qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves;~~

~~(ii) the issuer is not treating the historical estimate as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of this Regulation; and~~

~~(iii) the historical estimate should not be relied upon.~~

(3) If ~~there has been a material change to the information in the~~ technical report is filed under paragraph (1)(a) or (b) of subsection (1) [or (b)], and new material scientific or technical information concerning the subject property becomes available before the filing of the final version of ~~a~~ the prospectus [or short form prospectus], the issuer must file an updated technical report or an addendum to the technical report with the final version of the prospectus [or short form prospectus].

(4) The issuer must file the technical report referred to in subsection (1) ~~must be filed~~ not later than the time it files or makes available to the public the document listed in subsection (1) that ~~the technical report~~ supports ~~is filed or made available to the public~~.

(5) Despite subsection (4), ~~a technical report about mineral resources or mineral reserves that supports a news release must~~ an issuer must

(a) ~~be filed~~ file a technical report supporting disclosure under paragraph (1)(j) not later than 45 days after the news release; and date of the disclosure or, if the disclosure is in a directors' circular, by the earlier of 45 days after the date of the disclosure and 3 business days before expiry of the take-over bid; and

(b) ~~if there are~~ issue a news release at the time it files the technical report disclosing the filing of the technical report and reconciling any material differences in the preliminary economic assessment, mineral resources, or mineral reserves between the technical report filed and the news release, be accompanied by a news release that reconciles those differences and the issuer's disclosure under paragraph (1)(j).

(6) Despite subsection (4), if a property referred to in an annual information form first becomes material to the issuer less than 30 days before the filing deadline for the annual information form, the issuer must file the technical report within 45 days of the date that the property first became material to the issuer.

(7) Despite subsections (4) and (5), an issuer is not required to file a technical report within 45 days to support disclosure under subparagraph (1)(j)(i), if

(a) the preliminary economic assessment, mineral resources, or mineral reserves

(i) were prepared by or on behalf of another issuer who holds or previously held an interest in the property;

(ii) were disclosed by the other issuer in a document listed in subsection (1);  
and

(iii) are supported by a technical report filed by the other issuer;

(b) the issuer, in its disclosure under subparagraph (1)(j)(i),

(i) identifies the title and effective date of the previous technical report and the name of the other issuer that filed it;

(ii) names the qualified person who reviewed the technical report on behalf of the issuer; and

(iii) states with equal prominence that, to the best of the issuer's knowledge, information, and belief, there is no new material scientific or technical information that would make the disclosure of the preliminary economic assessment, mineral resources, or mineral reserves inaccurate or misleading;

(c) the issuer files a technical report supporting its disclosure of the preliminary economic assessment, mineral resources, or mineral reserves within 6 months of the date of its disclosure; and

~~(7) Despite subsection (4), a technical report that supports a directors' circular must be filed not less than 3 business days prior to the expiry of the take-over bid.~~

(d) the issuer issues a news release at the time it files the technical report disclosing the filing of the technical report and reconciling any material differences in the preliminary economic assessment, mineral resources, or mineral reserves between the technical report and the issuer's disclosure under subparagraph (1)(j)(i).

(8) Subsection (1) does not apply if

(a) the issuer ~~has previously filed~~ a technical report ~~that supports the scientific or technical information contained in the disclosure and there has been no material change in the~~ in the document;

(b) at the date of filing the document, there is no new material scientific and/or technical information concerning the subject property since the date of the filing of the technical report; and not included in the previously filed technical report; and

~~(b) the issuer files an updated certificate in accordance with subsection 8.1 and consent in accordance with subsection 8.3 of each qualified person who has been responsible for preparing or supervising the preparation of each portion of the technical report;~~

(c) the previously filed technical report meets any independence requirements under section 5.3.

#### **4.3. Required Form of Technical Report**

A technical report that is required to be filed under this Part must be prepared

(a) in English or French; and

(b) in accordance with Form 43-101F1, ~~Technical Report.1~~

## **PART 5 AUTHOR OF TECHNICAL REPORT**

### **5.1. Prepared by a Qualified Person**

A technical report must be prepared by or under the supervision of one or more qualified persons.

### **5.2. Execution of Technical Report**

A technical report must be dated, signed and, if the qualified person has a seal, sealed by

(a) each qualified person who is responsible for preparing or supervising the preparation of all or part of the report; or

(b) a person ~~or company~~ whose principal business is providing engineering or geoscientific services if each qualified person responsible for preparing or supervising the preparation of all or part of the report is an employee, officer, or director of that person ~~or company~~.

### **5.3. Independent Technical Report**

(1) A technical report required under any of the following provisions of this Regulation must be prepared by or under the supervision of one or more qualified ~~person~~ persons that ~~is~~ are, at the ~~date effective and filing dates~~ of the technical report, all independent of the issuer:

(a) section 4.1;

(b) paragraphs (a) and (g) of subsection 4.2(1); or

(c) paragraphs (b), (c), (d), (e), (f), (h), (i), and (j) of subsection 4.2(1), if the document discloses

(i) for the first time a preliminary economic assessment ~~of~~ mineral resources, or mineral reserves on a property material to the issuer, or

(ii) a 100 percent or greater change, ~~from the most recently filed technical report prepared by a qualified person who is independent of the issuer,~~ in the total mineral resources or total mineral reserves on a property material to the issuer, since the issuer's most recently filed independent technical report in respect of the property.

(2) Despite ~~paragraph (e) of~~ subsection (1), a technical report required to be filed by a producing issuer under paragraph ~~(e) of subsection (1)~~ (a) is not required to be prepared by or under the supervision of an independent qualified person if the securities of the issuer trade on a specified exchange.

(3) ~~A~~ Despite subsection (1), a technical report required to be filed by ~~an issuer that is or has contracted to become a joint venture participant,~~ a producing issuer under paragraph (1)(b) or (c) is not required to be prepared by or under the supervision of an independent qualified person.

(4) Despite subsection (1), a technical report required to be filed by an issuer concerning a property which is or will be the subject of ~~the~~ a joint venture's activities, with a producing issuer is not required to be prepared by or under the supervision of an independent qualified person, if the qualified person preparing or supervising the preparation of the report relies on scientific and technical information prepared by or under the supervision of a qualified person that is an employee or consultant of ~~a~~ the producing issuer ~~that is a participant in the joint venture.~~

## **PART 6 PREPARATION OF TECHNICAL REPORT**

### 6.1. The Technical Report

A technical report must be ~~prepared~~based ~~on the basis of~~ all available data relevant to the disclosure that it supports.

### 6.2. Current Personal Inspection

(1) Before an issuer files a technical report, the issuer must have at least one qualified person who is responsible for preparing or supervising the preparation of all or part of the technical report complete a current inspection on the property that is the subject of the technical report.

(2) Subsection (1) does not apply to an issuer provided that

(a) the property that is the subject of the technical report is an early stage exploration property;

(b) seasonal weather conditions prevent a qualified person from accessing any part of the property or obtaining beneficial information from it; and

(c) the issuer discloses in the technical report, and in the disclosure that the technical report supports, that a personal inspection by a qualified person was not conducted, the reasons why, and the intended time frame to complete the personal inspection.

(3) If an issuer relies on subsection (2), the issuer must

(a) as soon as practical, have at least one qualified person who is responsible for preparing or supervising the preparation of all or part of the technical report complete ~~the a current inspection referred to in subsection (1); and~~ on the property that is the subject of the technical report; and

(b) promptly file a technical report and the certificates and consents required under Part 8 of this Regulation.

### 6.3. Maintenance of Records

An issuer must keep for 7 years copies of assay and other analytical certificates, drill logs, and other information referenced in the technical report or used as a basis for the technical report.

### 6.4. Limitation on Disclaimers

(1) An issuer must not file a technical report that contains a disclaimer by any qualified person responsible for preparing or supervising the preparation of all or part of the report that

(a) disclaims responsibility for, or reliance ~~on, that portion~~ by another party on, any information in the part of the report the qualified person prepared or supervised the preparation of; or

(b) limits the use or publication of the report in a manner that interferes with the issuer's obligation to reproduce the report by filing it on SEDAR.

(2) Despite subsection (1), an issuer may file a technical report that includes a disclaimer in accordance with Item 3 of Form 43-101F1.

## PART 7 USE OF FOREIGN CODE

### 7.1. Use of Foreign Code

Despite section 2.2, an issuer ~~that may make disclosure and file a technical report that uses the mineral resource and mineral reserve categories of an acceptable foreign code, if the issuer~~

- (a) is incorporated or organized in a foreign jurisdiction; or
- (b) is incorporated or organized under the laws of Canada or a jurisdiction of Canada, for its properties located in a foreign jurisdiction; or

~~may make disclosure and file a technical report that utilizes the mineral resource and mineral reserve categories of the JORC Code, the SEC Industry Guide 7, the IMMM Reporting Code or the SAMREC Code if a reconciliation to the mineral resource and mineral reserve categories set out in sections 1.2 and 1.3 is disclosed in the technical report.~~

## PART 8 CERTIFICATES AND CONSENTS OF QUALIFIED PERSONS FOR TECHNICAL REPORTS

### 8.1. Certificates of Qualified Persons

(1) An issuer must, when filing a technical report, file a certificate that is dated, signed, and if the signatory has a seal, sealed, of each qualified person responsible for preparing or supervising the preparation of ~~each portion~~ all or part of the technical report ~~and the certificate must be dated, signed and, if the signatory has a seal, sealed.~~

(2) A certificate under subsection (1) must state

- (a) the name, address, and occupation of the qualified person;
- (b) the title and effective date of the technical report to which the certificate applies;
- (c) the qualified person's qualifications, including a brief summary of relevant experience, the name of all professional associations to which the qualified person belongs, and that the qualified person is a "qualified person" for purposes of this Regulation;
- (d) the date and duration of the qualified person's most recent personal inspection of each property, if applicable;
- (e) the item or items of the technical report for which the qualified person is responsible;
- (f) whether the qualified person is independent of the issuer as described in section 1.4;
- (g) what prior involvement, if any, the qualified person has had with the property that is the subject of the technical report;
- (h) that the qualified person has read this Regulation and the technical report, or part that the qualified person is responsible for, has been prepared in compliance with this Regulation; and
- (i) that, ~~as of~~ at the effective date of the ~~certificate~~ technical report, to the best of the qualified person's knowledge, information, and belief, the technical report, or part that the qualified person is responsible for, contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

### 8.2. Addressed to Issuer

All technical reports must be addressed to the issuer.

### 8.3. Consents of Qualified Persons

(1) An issuer must, when filing a technical report, file a statement of each qualified person responsible for preparing or supervising the preparation of ~~each portion~~ all or part of the technical report, ~~addressed to the securities regulatory authority~~, dated, and signed by the qualified person

(a) consenting to the public filing of the technical report ~~and~~;

(b) identifying the document that the technical report supports;

(c) consenting to the use of extracts from, or a summary of, the technical report in the ~~written disclosure being filed~~ document; and

(~~b~~d) confirming that the qualified person has read the ~~written disclosure being filed~~ document and that it fairly and accurately represents the information in the technical report ~~that supports the disclosure~~ or part that the qualified person is responsible for.

(2) Paragraphs (1)(b), (c), and (d) do not apply to a consent filed with a technical report filed under section 4.1.

(3) If an issuer relies on subsection (2), the issuer must file an updated consent that includes paragraphs (1)(b), (c), and (d) for any subsequent use of the technical report to support disclosure in a document filed under subsection 4.2(1).

## PART 9 EXEMPTIONS

### 9.1. Authority to Grant Exemptions

(1) The regulator or the securities regulatory authority may, on application, grant an exemption from this Regulation, in whole or in part, subject to such conditions or restrictions as may be imposed in the exemption in response to an application.

(2) Despite subsection (1), in Ontario, only the regulator may grant such an exemption.

(3) Except in Ontario, an exemption referred to in subsection (1) is granted under the statute referred to in Appendix B ~~of National Instrument~~ to Regulation 14-101 respecting Definitions, adopted ~~by the Commission des valeurs mobilières du Québec~~ pursuant to decision no. 2001-C-0274 dated June 12, 2001, opposite the name of the local jurisdiction.

### 9.2. ~~Limited Exemption~~ Exemptions for Royalty Interests ~~or Similar Interests~~

(1) An issuer ~~that has only a royalty interest or similar~~ whose interest in a mineral project ~~and is only a royalty interest is not~~ required to file a technical report ~~in accordance with section 4.3 to support disclosure in a document under subsection 4.2(1) if~~

(a) the operator of the mineral project is

(i) subject to the requirements of this Regulation, or

(ii) a producing issuer whose securities trade on a specified exchange and that discloses mineral resources and mineral reserves under an acceptable foreign code;

(b) the issuer identifies in its document under subsection 4.2(1) the source of the scientific and technical information; and

(c) the operator of the mineral project has disclosed the scientific and technical information.

(2) An issuer whose interest in a mineral project is only a royalty interest and that does not qualify to use the exemption in subsection (1) is not required to

- (a) comply with section 6.2; and
  - (b) complete those items under Form 43-101F1, ~~Technical Report, 1~~ that require data verification, inspection of documents, or personal inspection of the property to complete those items.
- (23) Paragraphs (42)(a) and (b) only apply if the issuer
- (a) has requested but has not received access to the necessary data from the operating company and is not able to obtain the necessary information from the public domain;
  - (b) under Item 3 of Form 43-101F1, ~~Technical Report,~~ states the issuer has requested but has not received access to the necessary data from the operating company and is not able to obtain the necessary information from the public domain and describes the content referred to under each item of ~~the~~ Form 43-101F1 that the issuer did not complete; and
  - (c) includes in all scientific and technical disclosure a statement that the issuer has an exemption from completing certain items under Form 43-101F1, ~~Technical Report, 1~~ in the technical report required to be filed and includes a reference to the title and effective date of that technical report.

### 9.3. Exemption for Certain Types of Filings

This Regulation does not apply if the only reason an issuer files written disclosure of scientific or technical information is to comply with the requirement under securities legislation to file a copy of a record or disclosure material that was filed with a securities commission, exchange, or regulatory authority in another jurisdiction.

## **PART 10 ~~REPLACEMENT OF FORMER REGULATION AND~~ EFFECTIVE DATE AND REPEAL**

### ~~10.1. Replacement of Former Regulation~~

#### 10.1. Effective Date

This Regulation ~~replaces Regulation 43-101 respecting Standards of Disclosure for Mineral Projects adopted by the Commission des valeurs mobilières du Québec pursuant to decision no. 2001-C-0199 dated May 22, 2001~~ comes into force on (insert date when this Regulation comes into force).

#### ~~10.2. Effective date~~Repeal

~~This Regulation comes 43-101 respecting Standards of Disclosure for Mineral Projects, which came into force on December 30, 2005; 31, 2005, is repealed.~~

**Appendix A****Recognized Foreign Associations and Designations**

<b>Foreign Association</b>	<b>Designation</b>
American Institute of Professional Geologists (AIPG)	Certified Professional Geologist
Any state in the United States of America	Licensed or certified as a professional engineer
Mining and Metallurgical Society of America (MMSA)	Qualified Professional
European Federation of Geologists (EFG)	European Geologist
Australasian Institute of Mining and Metallurgy (AusIMM)	Fellow or member
Institute of Materials, Minerals and Mining (IMMM)	Fellow or professional member
Australian Institute of Geoscientists (AIG)	Fellow or member
South African Institute of Mining and Metallurgy (SAIMM)	Fellow
South African Council for Natural Scientific Professions (SACNASP)	Professional Natural Scientist
Institute of Geologists of Ireland (IGI)	Professional Member
Geological Society of London (GSL)	Chartered Geologist
National Association of State Boards of Geology (ASBOG)	Licensed or certified in: Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, North Carolina, Oregon, Pennsylvania, Puerto Rico, South Carolina, Texas, Utah, Virginia, Washington, Wisconsin or Wyoming



## FORM 43-101F1 TECHNICAL REPORT

### INSTRUCTIONS

(1) The objective of the technical report is to provide a summary of material scientific and technical information concerning mineral exploration, development, and production activities on a mineral property that is material to an issuer. This Form sets out specific the requirements for the preparation and contents content of a technical report.

(2) Terms used in this Form that are defined or interpreted in ~~Regulation 43-101 respecting Standards of Disclosure for Mineral Projects (the “the Regulation”)~~ will ~~bear~~ have that definition or interpretation. In addition, a general definition regulation has been adopted as ~~National Instrument 14-101~~ Regulation 14-101 respecting Definitions that contains definitions of certain terms used in more than one regulation. Readers of this Form should review both ~~of~~ these regulations for defined terms.

(3) The qualified person preparing the technical report should keep in mind that the intended audience is the investing public and their advisors who, in most cases, will not be mining experts. Therefore, to the extent possible, technical reports should be simplified, summarized, and written in plain language. However, the technical report should 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 technical report.

(4) The qualified person preparing the technical report must use all of the headings of the items in this Form and may create sub-headings. If unique or infrequently used technical terms are required, clear and concise explanations must be included. ~~(4) No disclosure need be given in respect of inapplicable items and, unless otherwise required by this Form, negative answers to items may be omitted.~~ Items 1 to 14 and 23 to 27 in this Form and provide the information specified under each heading. For advanced properties, the qualified person must also use the headings of Items 15 to 22 and include the information required under each of these headings. The qualified person may create sub-headings. Disclosure included under one heading is not required to be repeated under another heading.

(5) ~~The~~ The qualified person preparing the technical report is not required may refer to include the information required in Items 6 through 11 of this Form to the extent that the required information has been previously filed in a technical report for the property being reported on, the previous technical report is referred to in the technical report and there has not been any material change in the information. information in a technical report previously filed by the issuer for the subject property if the information is still current and the technical report identifies the title, date and author of the previously filed technical report. However, the qualified person must still summarize or quote the referenced information in the current technical report and may not disclaim responsibility for the referenced information. Except as permitted by subsection 4.2(3) of the Regulation, an issuer may not update or revise a previously filed technical report by filing an addendum.

~~(6) The technical report for development properties and production properties may summarize the information required in the items of this Form, except for Item 25, provided that the summary includes the material information necessary to understand the project at its current stage of development or production.~~

(6) While the Form mandates the headings and general format of the technical report, the qualified person preparing the technical report is responsible for determining the level of detail required under each Item based on the qualified person's assessment of the relevance and significance of the information.

(7) *The technical report may only contain disclaimers that are in accordance with section 6.4 of the Regulation and Item ~~5 of this Form~~ 3 of this Form.*

(8) *Since a technical report is a summary document the inclusion and filing of comprehensive appendices is not generally necessary to comply with the requirements of the Form.*

(9) *The Regulation requires certificates and consents of qualified persons, prepared in accordance with sections 8.1 and 8.3 respectively, to be filed at the same time as the technical report. The Regulation does not specifically require the issuer to file the certificate of qualified person as a separate document. It is generally acceptable for the qualified person to include the certificate in the technical report and to use the certificate as the date and signature page.*

## CONTENTS OF THE TECHNICAL REPORT

### **~~Item 1~~ Title Page**

Include a title page setting out the title of the technical report, the general location of the mineral project, the name and professional designation of each qualified person, and the effective date of the technical report.

### **Date and Signature Page**

*The technical report must have a signature page, at either the beginning or end of the technical report, signed in accordance with section 5.2 of the Regulation. The effective date of the technical report and date of signing must be on the signature page.*

### **~~Item 2~~ Table of Contents**

Provide a table of contents listing the contents of the technical report, including figures and tables.

### **Illustrations**

*Technical reports must be illustrated by legible maps, plans and sections, all prepared at an appropriate scale to distinguish important features. Maps must be dated and include a legend, author or information source, a scale in bar or grid form, and an arrow indicating north. All technical reports must be accompanied by a location or index map and a compilation map outlining the general geology of the property. In addition, all technical reports must include more detailed maps showing all important features described in the text, relative to the property boundaries, including but not limited to*

(a) *for exploration projects, areas of previous or historical exploration, and the location of known mineralization, geochemical or geophysical anomalies, drilling, and mineral deposits;*

(b) *for advanced properties other than development and production properties, the location and surficial outline of mineral resources, mineral reserves, and, to the extent known, areas for potential access and infrastructure; and*

(c) *for development and production properties, the location of pit limits or underground development, plant sites, tailings storage areas, waste disposal areas, and all other significant infrastructure features.*

*If information is used from other sources in preparing maps, drawings, or diagrams, disclose the source of the information. If adjacent or nearby properties have an important bearing on the potential of the subject property, the location of the properties and any relevant mineralized structures discussed in the report must be shown in relationship to the subject property.*

### **INSTRUCTION**

*Summarize and simplify the illustrations so that they are legible and suitable for electronic filing. For ease of reference, consider inserting the illustration in the text of the report in relative proximity to the text they illustrate.*

## **REQUIREMENTS FOR ALL TECHNICAL REPORTS**

### **Item 31 Summary**

~~Provide a summary that briefly describes the~~Briefly summarize important information in the technical report, including property, ~~its location, description and~~ ownership, geology and mineralization, the ~~exploration concept, the~~ status of exploration, development and operations, mineral resource and mineral reserve estimates, and the qualified person's conclusions and recommendations.

### **Item 42 Introduction**

Include a description of

- (a) ~~who~~the issuer for whom the technical report is prepared ~~for~~;
- (b) the terms of reference and purpose for which the technical report was prepared;
- (c) the sources of information and data contained in the technical report or used in its preparation, with citations if applicable; and
- (d) the ~~scope~~details of the personal inspection on the property by each qualified person ~~and author~~ or, if applicable, the reason why a personal inspection has not been completed.

### **Item 53 Reliance on Other Experts**

~~If a~~A qualified person ~~preparing or supervising~~who prepares or supervises the preparation of all or ~~a portion~~part of ~~the~~a technical report may include a limited disclaimer of responsibility if:

(a) ~~The qualified person~~ is relying on a report, opinion, or statement of ~~a legal or other~~another expert; who is not a qualified person, ~~for or on~~ information provided by the issuer, concerning legal, political, environmental, ~~political or other issues and factors~~or tax matters relevant to the technical report, ~~the qualified person may include a disclaimer of responsibility in which~~and the qualified person identifies ~~the report, opinion or statement~~

(i) the source of the information relied upon, including the ~~maker~~date, title, and author of ~~that~~any report, opinion, or statement;

(ii) the extent of reliance; and

(iii) the portions of the technical report to which the disclaimer applies.

(b) The qualified person is relying on a report, opinion, or statement of another expert who is not a qualified person, concerning diamond or other gemstone valuations, or the pricing of commodities for which pricing is not publicly available, and the qualified person discloses

(i) the date, title, and author of the report, opinion, or statement;

(ii) the qualifications of the other expert and why it is reasonable for the qualified person to rely on the other expert;

(iii) any significant risks associated with the valuation or pricing; and

(iv) any steps the qualified person took to verify the information provided.

#### **Item 64 Property Description and Location**

To the extent applicable, ~~with respect to each property reported on,~~ describe

- (a) the area of the property in hectares or other appropriate units;
- (b) the location, reported by an easily recognizable geographic and grid location system;
- (c) the type of mineral tenure (~~eg.~~ claim, license, lease, etc.) and the identifying name or number of each;
- (d) the nature and extent of the issuer's title to, or interest in, the property including surface rights, legal access, the obligations that must be met to retain the property, and the expiration date of claims, licences, or other property tenure rights;
- (e) ~~how the property boundaries were located;~~
- ~~(f) the location of all known mineralized zones, mineral resources, mineral reserves and mine workings, existing tailing ponds, waste deposits and important natural features and improvements, relative to the outside property boundaries;~~ (g) to the extent known, the terms of any royalties, back-in rights, payments, or other agreements and encumbrances to which the property is subject;
- (~~h~~f) to the extent known, all environmental liabilities to which the property is subject; ~~and~~
- (~~g~~) to the extent known, the permits that must be acquired to conduct the work proposed for the property, and if the permits have been obtained; and
- (h) to the extent known, any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

#### **Item 75 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

~~With respect to each property reported on, describe~~  
Describe

- (a) topography, elevation, and vegetation;
- (b) the means of access to the property;
- (c) the proximity of the property to a population centre, and the nature of transport;
- (d) to the extent relevant to the mineral project, the climate and the length of the operating season; and
- (e) to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations, 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.

#### **Item 86 History**

To the extent known, ~~with respect to each property reported on,~~ describe

- (a) the prior ownership of the property and ownership changes;
- (b) the type, amount, quantity, and general results of exploration and development work undertaken by any previous owners or operators;
- (c) historical mineral resource and mineral reserve estimates in accordance with section 2.4 of the Regulation, ~~including the reliability of the historical estimates and whether the estimates are in accordance with the categories set out in sections 1.2 and 1.3 of the Regulation~~; and
- (d) any production from the property.

**Item ~~97~~ Geological Setting and Mineralization**

Describe

~~Include a concise description of (a) the regional, local, and property geology; and~~

(b) the significant mineralized zones encountered on the 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.

**Item ~~108~~ Deposit Types**

Describe the mineral deposit type(s) being investigated or being explored for and the geological model or concepts being applied in the investigation and on the basis of which the exploration program is planned.

~~Item 11 Mineralization~~

~~Describe the mineralized zones encountered on the property, the surrounding rock types and relevant geological controls, detailing length, width, depth and continuity, together with a description of the type, character and distribution of the mineralization.~~ **Item**

**~~12~~ Item 9 Exploration**

~~Describe~~ Briefly describe the nature and extent of all relevant exploration work other than drilling, conducted by, or on behalf of, the issuer ~~on each property being reported on~~, including

- (a) ~~results of surveys and investigations, and~~ the procedures and parameters relating to the surveys and investigations;
- (b) ~~and~~ the sampling methods and sample quality, including whether the samples are representative, and any factors that may have resulted in sample biases;
- (c) relevant information of location, number, type, nature, and spacing or density of samples collected, and the size of the area covered; and
- (d) the significant results and interpretation of the exploration information; ~~and (e) a statement as to whether the surveys and investigations have been carried out by the issuer or by a contractor and, if the latter, identifying the contractor.~~

**INSTRUCTION**

*If exploration results from previous operators are included, ~~the qualified person or author must~~ clearly identify the work conducted by, or on behalf of, the issuer.*

**Item ~~13~~ 10 Drilling**

Describe

(a) the type and extent of drilling including the procedures followed and a summary and interpretation of all relevant results.~~The;~~

(b) any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results;

(c) for a property other than an advanced property

(i) the location, azimuth, and dip of any drill hole, and the depth of the relevant sample intervals;

(ii) the relationship between the sample length and the true thickness of the mineralization~~must be stated~~, if known, and if the orientation of the mineralization is unknown, state this:

#### **~~Item 14~~ — Sampling Method and Approach**

~~Provide~~(a) ~~a brief description of sampling methods and relevant details of location, number, type, nature and spacing or density of samples collected, and the size of the area covered; and~~

(b) ~~a description of any drilling, sampling or recovery factors that could materially impact the accuracy and reliability of the results;~~

(c) ~~a discussion of the sample quality, including whether the samples are representative, and any factors that may have resulted in sample biases;~~(d) ~~a description of rock types, geological controls, widths of mineralized zones and other parameters used to establish the sampling interval and identification~~

(iii) the results of any significantly higher grade intervals within a lower grade intersection; ~~and;~~

(e) ~~a summary of relevant samples or sample composites with values and estimated true widths.~~

#### INSTRUCTION

*For properties with mineral resource estimates, the qualified person may meet the requirements under Item 10 (c) by providing a drill plan and representative examples of drill sections through the mineral deposit.*

#### **~~Item 15~~ Item 11 Sample Preparation, Analyses, and Security**

Describe

(a) sample preparation methods and quality control measures employed before dispatch of samples to an analytical or testing laboratory, the method or process of sample splitting and reduction, and the security measures taken to ensure the validity and integrity of samples taken.~~Include(a) a statement whether any aspect of the sample preparation was conducted by an employee, officer, director or associate of the issuer;~~

(b) ~~details~~relevant information regarding sample preparation, assaying and analytical procedures used, the name and location of the analytical or testing laboratories, the relationship of the laboratory to the issuer, and whether the laboratories are certified by any standards association and the particulars of any certification;

(c) a summary of the nature~~and~~, extent, and results of ~~all~~ quality control ~~measures employed and check assay and other check analytical and testing procedures utilized, including the results and corrective actions taken~~procedures employed and quality assurance actions taken or recommended to provide adequate confidence in the data collection and estimation process; and

(d) ~~a statement of~~ the author's opinion on the adequacy of sample preparation, security, and analytical procedures.

#### **Item 12 Data Verification**

~~Include~~

Describe the steps taken by the qualified person to verify the data being reported on, including

(a) ~~a discussion of quality control measures and~~ the data verification procedures applied; ~~(b) a statement as to whether by~~ the qualified person ~~has verified the data referred to or relied upon;~~

~~(c) a discussion of the nature of and~~

(b) any limitations on or failure to conduct such verification; and ~~(d)~~ the reasons for any such limitations or failure to verify the data; and

(c) the qualified person's opinion on the adequacy of the data for the purposes used in the technical report.

#### **Item 13 Mineral Processing and Metallurgical Testing**

If mineral processing or metallurgical testing analyses have been carried out, discuss

(a) the nature and extent of the testing and analytical procedures, and provide a summary of the relevant results;

(b) the basis for any assumptions or predictions regarding recovery estimates;

(c) to the extent known, the degree to which the test samples are representative of the various types and styles of mineralization and the mineral deposit as a whole; and

(d) to the extent known, any processing factors or deleterious elements that could have a significant effect on potential economic extraction.

#### **Item 14 Mineral Resource Estimates**

A technical report disclosing mineral resources must

(a) provide sufficient discussion of the key assumptions, parameters, and methods used to estimate the mineral resources, for a reasonably informed reader to understand the basis for the estimate and how it was generated;

(b) comply with all disclosure requirements for mineral resources set out in the Regulation, including sections 2.2, 2.3, and 3.4;

(c) when the grade for a multiple commodity mineral resource is reported as metal or mineral equivalent, report the individual grade of each metal or mineral and the metal prices, recoveries, and any other relevant conversion factors used to estimate the metal or mineral equivalent grade; and

(d) include a general discussion on the extent to which the mineral resource estimates could be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors.

#### **INSTRUCTIONS**

(1) A statement of quantity and grade or quality is an estimate and should be rounded to reflect the fact that it is an approximation.

*(2) Where multiple cut-off grade scenarios are presented, the qualified person must identify and highlight the base case, or preferred scenario. All mineral resources reported under the cut-off grade scenarios must meet the test of reasonable prospect of economic extraction.*

## **ADDITIONAL REQUIREMENTS FOR ADVANCED PROPERTY TECHNICAL REPORTS**

### **Item 15 Mineral Reserve Estimates**

A technical report disclosing mineral reserves must

(a) provide sufficient discussion and detail of the key assumptions, parameters, and methods used in the preliminary feasibility or feasibility study, for a reasonably informed reader to understand how the qualified person converted the mineral resources to mineral reserves;

(b) comply with all disclosure requirements for mineral reserves set out in the Regulation, including sections 2.2, 2.3, and 3.4;

(c) when the grade for a multiple commodity mineral reserve is reported as metal or mineral equivalent, report the individual grade of each metal or mineral and the metal prices, recoveries, and any other relevant conversion factors used to estimate the metal or mineral equivalent grade; and

(d) discuss the extent to which the mineral reserve estimates could be materially affected by mining, metallurgical, infrastructure, permitting, and other relevant factors.

### **Item 16 Mining Methods**

Discuss the current or proposed mining methods and provide a summary of the relevant information used to establish the amenability or potential amenability of the mineral resources or mineral reserves to the proposed mining methods. Consider and, where relevant, include

(a) geotechnical, hydrological, and other parameters relevant to mine or pit designs and plans;

(b) production rates, expected mine life, mining unit dimensions, and mining dilution factors used;

(c) requirements for stripping, underground development, and backfilling; and

(d) required mining fleet and machinery.

## **INSTRUCTION**

*Preliminary economic assessments, pre-feasibility studies, and feasibility studies generally analyse and assess the same geological, engineering, and economic factors with increasing detail and precision. Therefore, the criteria for Items 16 to 22 can be used as a framework for reporting the results of all three studies.*

### **Item 17 Recovery Methods**

Discuss reasonably available information on test or operating results relating to the recoverability of the valuable component or commodity and amenability of the mineralization to the proposed processing methods. Consider and, where relevant, include

(a) a description or flow sheet of any current or proposed process plant;

(b) plant design, equipment characteristics and specifications, as applicable; and

(c) current or projected requirements for energy, water, and process materials.



**Item 18 Infrastructure**

Provide a summary of infrastructure and logistic requirements for the project, which could include roads, rail, port facilities, dams, dumps and leach pads, tailings disposal, power and pipelines, as applicable.

**Item 19 Market Studies and Contracts**

(a) Provide a summary of reasonably available information concerning markets for the issuer's production, including the nature and material terms of any agency relationships and the results of any relevant market studies, commodity price projections, product valuation, market entry strategies, and product specification requirements.

(b) Identify any contracts material to the issuer that are required for property development, including mining, concentrating, smelting, refining, transportation, handling, sales and hedging, and forward sales contracts or arrangements. State which contracts are in place and which are still under negotiation. For contracts that are in place, discuss whether the terms, rates or charges are within industry norms.

**Item 20 Environmental Studies, Permitting, and Social or Community Impact**

Discuss reasonably available information on environmental, permitting, and social or community factors related to the project. Consider and, where relevant, include

(a) a summary of the results of any environmental studies and a discussion of any known environmental issues that could materially impact the issuer's ability to extract the mineral resources or mineral reserves;

(b) requirements and plans for waste and tailings disposal, site monitoring, and water management both during operations and post mine closure;

(c) project permitting requirements, the status of any permit applications, and any known requirements to post performance or reclamation bonds;

(d) 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; and

(e) a discussion of mine closure (remediation and reclamation) requirements and costs.

**Item 21 Capital and Operating Costs**

Provide a summary of capital and operating cost estimates, with the major components set out in tabular form. Explain and justify the basis for the cost estimates.

**Item 22 Economic Analysis**

Provide an economic analysis for the project that includes

(a) a clear statement of and justification for the principal assumptions;

(b) cash flow forecasts on an annual basis using mineral reserves or mineral resources and an annual production schedule for the life of project;

(c) a discussion of net present value (NPV), internal rate of return (IRR), and payback period of capital with imputed or actual interest;

(d) a summary of the taxes, royalties, and other government levies or interests applicable to the mineral project or to production, and to revenues or income from the mineral project; and

(e) 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.

#### INSTRUCTIONS

(1) Producing issuers may exclude the information required under Item 22 for technical reports on properties currently in production unless the technical report includes a material expansion of current production.

(2) The economic analysis in technical reports must comply with paragraphs 2.3(1)(b) and (c), subsections 2.3(3) and (4), and paragraph 3.4(e), of the Regulation, including any required cautionary language.

#### REQUIREMENTS FOR ALL TECHNICAL REPORTS

##### Item 23 **Adjacent Properties**

A technical report may include relevant information concerning an adjacent property if

- (a) such information was publicly disclosed by the owner or operator of the adjacent property;
- (b) the source of the information is identified;
- (c) the technical report states that its qualified person has been unable to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report;
- (d) the technical report clearly distinguishes between mineralization on the information from the adjacent property and mineralization on the information from the property being reported on that is the subject of the technical report; and
- (e) ~~if~~ any historical estimates of mineral resources or mineral reserves are ~~included in the technical report, they are~~ disclosed in accordance with section 2.4 of the Regulation.

##### ~~Item 18~~ **Mineral Processing and Metallurgical Testing**

~~If mineral processing or metallurgical testing analyses have been carried out, include the results of the testing, details of the testing and analytical procedures, and discuss whether the samples are representative.~~

##### ~~Item 19~~ **Mineral Resource and Mineral Reserve Estimates**

~~A technical report disclosing mineral resources or mineral reserves must~~

- ~~(a) use only the applicable mineral resource and mineral reserve categories set out in sections 1.2 and 1.3 of the Regulation;~~
- ~~(b) report each category of mineral resources and mineral reserves separately and if both mineral resources and mineral reserves are disclosed, state the extent, if any, to which mineral reserves are included in total mineral resources;~~
- ~~(c) not add inferred mineral resources to the other categories of mineral resources;~~

~~(d) — disclose the name, qualifications and relationship, if any, to the issuer of the qualified person who estimated mineral resources and mineral reserves;~~

~~(e) — include appropriate details of quantity and grade or quality for each category of mineral resources and mineral reserves;~~

~~(f) — include details of the key assumptions, parameters and methods used to estimate the mineral resources and mineral reserves;~~

~~(g) — include a general discussion on the extent to which the estimate of mineral resources and mineral reserves may be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues;~~

~~(h) — identify the extent to which the estimates of mineral resources and mineral reserves may be materially affected by mining, metallurgical, infrastructure and other relevant factors;~~

~~(i) — use only indicated mineral resources, measured mineral resources, probable mineral reserves and proven mineral reserves when referring to mineral resources or mineral reserves in an economic analysis that is used in a preliminary feasibility study or a feasibility study of a mineral project;~~

~~(j) — if inferred mineral resources are used in an economic analysis, state the required disclosure set out in subsection 2.3(3) of the Regulation;~~

~~(k) — when the results of an economic analysis of mineral resources are reported, state “mineral resources that are not mineral reserves do not have demonstrated economic viability”;~~

~~(l) — state the grade or quality, quantity and category of the mineral resources and mineral reserves if the quantity of contained metal or mineral is reported; and~~

~~(m) — when the grade for a polymetallic mineral resource or mineral reserve is reported as metal equivalent, report the individual grade of each metal, and consider and report the recoveries, refinery costs and all other relevant conversion factors in addition to metal prices and the date and sources of such prices.~~

#### **INSTRUCTION**

~~A statement of quantity and grade or quality is an estimate and should be rounded to reflect the fact that it is an approximation. **Item 20**~~

#### **Item 24 Other Relevant Data and Information**

Include any additional information or explanation necessary to make the technical report understandable and not misleading.

#### **Item 2125 Interpretation and Conclusions**

Summarize the relevant results and interpretations of ~~all field surveys, analytical and testing data and other relevant information. Discuss the adequacy of data density and the data reliability as well as any areas of uncertainty~~the information and analysis being reported on. Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes. Discuss any reasonably foreseeable impacts of these risks and uncertainties to the project's potential economic viability or continued viability. A technical report concerning exploration information must include the conclusions of the qualified person. ~~The qualified person must discuss whether the completed project met its original objectives.~~

#### **Item 2226 Recommendations**

Provide particulars of ~~the~~ recommended work programs and a breakdown of costs for each phase. If successive phases of work are recommended, each phase must culminate in a decision point. The recommendations must not apply to more than two phases of work. The recommendations must state whether advancing to a subsequent phase is contingent on positive results in the previous phase.

#### INSTRUCTION

In some specific cases, the qualified person may not be in a position to make meaningful recommendations for further work. Generally, these situations will be limited to producing or development properties where material exploration activities and engineering studies have largely concluded. In such cases, the qualified person should explain why they are not making further recommendations.

#### **Item ~~23~~27      References**

Include a detailed list of all references cited in the technical report.

#### **~~Item 24      Date and Signature Page~~**

~~The technical report must have a signature page at the end, signed in accordance with section 5.2 of the Regulation. The effective date of the technical report and date of signing must be on the signature page.~~

#### **~~Item 25      Additional Requirements for Technical Reports on Development Properties and Production Properties~~**

~~Technical reports on development properties and production properties must include~~

~~(a)      Mining Operations      information and assumptions concerning the mining method, metallurgical processes and production forecast;~~

~~(b)      Recoverability      information concerning all test and operating results relating to the recoverability of the valuable component or commodity and amenability of the mineralization to the proposed processing methods;~~

~~(c)      Markets      information concerning the markets for the issuer's production and the nature and material terms of any agency relationships;~~

~~(d)      Contracts      a discussion of whether the terms of mining, concentrating, smelting, refining, transportation, handling, sales and hedging and forward sales contracts or arrangements, rates or charges are within industry norms;~~

~~(e)      Environmental Considerations      a discussion of bond posting, remediation and reclamation;~~

~~(f)      Taxes      a description of the nature and rates of taxes, royalties and other government levies or interests applicable to the mineral project or to production, and to revenues or income from the mineral project;~~

~~(g)      Capital and Operating Cost Estimates      capital and operating cost estimates, with the major components being set out in tabular form;~~

~~(h)      Economic Analysis      an economic analysis with cash flow forecasts on an annual basis using proven mineral reserves and probable mineral reserves only, and sensitivity analyses with variants in metal prices, grade, capital and operating costs;~~

~~(i) Payback — a discussion of the payback period of capital with imputed or actual interest; and~~

~~(j) Mine Life — a discussion of the expected mine life and exploration potential.~~

#### ~~Item 26 — Illustrations~~

~~(a) Technical reports must be illustrated by legible maps, plans and sections, which may be located in the appropriate part of the report. All technical reports must be accompanied by a location or index map and more detailed maps showing all important features described in the text. In addition, technical reports must include a compilation map outlining the general geology of the property and areas of historical exploration. The location of all known mineralization, anomalies, deposits, pit limits, plant sites, tailings storage areas, waste disposal areas and all other significant features must be shown relative to property boundaries. If information is used, from other sources, in preparing maps, drawings, or diagrams, disclose the source of the information.~~

~~(b) If adjacent or nearby properties have an important bearing on the potential of the property under consideration, their location and any mineralized structures common to two or more such properties must be shown on the maps.~~

~~(c) If the potential merit of a property is predicated on geophysical or geochemical results, maps showing the results of surveys and their interpretations must be included in the technical report.~~

~~(d) Maps must include a scale in bar form and an arrow indicating north.~~

#### ~~INSTRUCTION~~

~~*Illustrations should be sufficiently summarized and simplified so that they are not oversized and are suitable for electronic filing.*~~