

REGULATION REPLACING REGULATION ENTITLED NATIONAL INSTRUMENT 43-101,
STANDARDS OF DISCLOSURE FOR MINERAL PROJECTS

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PART 1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Regulation

“adjacent property” means a property

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

“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 and for which economic viability has been demonstrated by a 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 Canadian jurisdiction, 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;

“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 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;

“grassroots exploration property” means a property that has had no drilling or trenching activity and no drilling or trenching is proposed for the property in a technical report filed with a securities regulatory authority or Canadian recognized exchange, as defined under provincial and territorial securities legislation;

“IMMM system” means the classification system and definitions for mineral resources and mineral reserves approved from time to time by The Institution of Materials, Minerals, and Mining in the United Kingdom as amended or supplemented;

“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 or supplemented;

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

“preliminary assessment” means an assessment that includes an economic evaluation of the potential viability of a mineral project taken at an early stage of the project prior to a preliminary feasibility study;

“preliminary feasibility study” 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 where an effective method of mineral processing has been determined, and includes a financial analysis based on reasonable assumptions of technical, engineering, legal, operating, economic 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;

“producing issuer” means an issuer whose annual audited financial statements disclose

- (a) gross revenues, derived from mining operations, of at least \$30 million for the issuer’s most recently completed financial year; and
- (b) gross revenues, derived from mining operations, of at least \$90 million 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) is either
 - (i) given authority or recognition by statute in a Canadian jurisdiction, or
 - (ii) accepted by the securities regulatory authority or regulator in a notice published for this purpose;
- (b) admits members primarily on the basis of their academic qualifications and experience;
- (c) requires compliance with the professional standards of competence and ethics established by the organization; and
- (d) has disciplinary powers, including the power to suspend or expel a member.

“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;

- (b) has experience relevant to the subject matter of the mineral project and the technical report; and
- (c) is a member or licensee in good standing of a professional association;

“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 Committee (SAMREC) under the auspices of the South African Institute of Mining and Metallurgy (SAIMM) as amended or supplemented;

“SEC Industry Guide 7” means the mining industry guide entitled “Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations” contained in Securities Act Industry Guides published by the United States Securities and Exchange Commission, as amended or supplemented; and

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

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 Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as those definitions may be amended from time to time by the Canadian Institute of Mining, Metallurgy and Petroleum.

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 Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as those definitions may be amended from time to time by the Canadian Institute of Mining, Metallurgy and Petroleum.

1.4 Independence

In this Regulation, a qualified person involved in the preparation of a technical report is not independent of the issuer if the qualified person has, or expects to have any agreement, arrangement, understanding, employment or other relationship with, or any interest in, any person or company, the mineral project, the property, or any adjacent property, that a reasonable person would consider an influence on the qualified person’s judgement.

PART 2 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

2.1 Requirements Applicable to All Disclosure

An issuer shall ensure that all disclosure of scientific or technical information made by or on behalf of an issuer, including disclosure of a mineral resource or mineral reserve,

concerning mineral projects on a property material to the issuer is based upon information prepared by or under the supervision of a qualified person.

2.2 All Disclosure of Mineral Resources or Mineral Reserves

An issuer shall ensure that any disclosure of a mineral resource or mineral reserve, including disclosure in a technical report filed by an issuer

- (a) utilizes 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 if both mineral resources and mineral reserves are disclosed, 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 reported.

2.3 Prohibited Disclosure

- (1) An issuer shall not make any disclosure of
 - (a) quantity or grade 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) results of an economic evaluation that includes inferred mineral resources.
- (2) Despite paragraph (1)(a), an issuer may disclose in writing the potential quantity and grade, expressed as ranges, of a possible mineral deposit that is to be the target of further exploration if the disclosure includes
 - (a) a proximate statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a mineral resource on the property and that it is uncertain if further exploration will result in the determination of a mineral resource on the property; and
 - (b) the basis on which the disclosed potential quantity and grade has been determined.
- (3) Despite paragraph (1)(b), an issuer may disclose a preliminary assessment that includes inferred mineral resources, if
 - (a) the preliminary assessment is a material change or a material fact with respect to the issuer;
 - (b) the disclosure includes

- (i) a proximate statement that the preliminary 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 assessment will be realized, and
 - (ii) the basis for the preliminary assessment and any qualifications and assumptions made by the qualified person.
- (4) An issuer shall not use the terms preliminary feasibility study, pre-feasibility study or feasibility study when referring to a study unless the study satisfies the criteria set out in the definitions of the applicable terms in section 1.1.

2.4 Disclosure of Historical Estimates

Despite section 2.2 an issuer may disclose an estimate of mineral resources or mineral reserves made before February 1, 2001 using the historical terminology if the disclosure

- (a) identifies the source of the historical estimate;
- (b) confirms that the historical estimate is relevant;
- (c) comments on the reliability of the historical estimate;
- (d) states whether the historical estimate uses categories other than the ones stipulated 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.

PART 3 ADDITIONAL REQUIREMENTS FOR WRITTEN DISCLOSURE

3.1 Written Disclosure to Include Name of Qualified Person

An issuer shall ensure that all written disclosure of scientific or technical information made by or on behalf of the issuer, about a mineral project on a property material to the issuer identifies and discloses the relationship to the issuer of the qualified person who prepared or supervised the preparation of the technical report or other information that forms the basis for the written disclosure.

3.2 Written Disclosure to Include Data Verification

Except as provided in section 3.5, an issuer shall ensure that all written disclosure of scientific or technical information made by or on behalf of the issuer about a mineral project on a property material to the issuer

- (a) states 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) describes how the data was verified and any limitations on the verification process performed on the data disclosed; and
- (c) explains any failure to verify the data disclosed.

3.3

Requirements Applicable to Written Disclosure of Exploration Information

- (1) Except as provided in section 3.5, an issuer shall ensure that all written disclosure of scientific or technical exploration information made by or on behalf of the issuer about a mineral project on a property material to the issuer includes
 - (a) the results, or a summary of 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) Except as provided in section 3.5, an issuer shall ensure that all written disclosure containing sample or analytical or testing results on a property material to the issuer includes
 - (a) a summary description of the geology, mineral occurrences and nature of mineralization found;
 - (b) a summary description of rock types, geological controls and widths of mineralized zones, and the identification of any significantly higher grade intervals within a lower grade intersection;
 - (c) 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;
 - (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, the certification of each laboratory, if known to the issuer, and any relationship of the laboratory to the issuer; and
 - (f) a listing of the lengths of individual samples or sample composites with 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

An issuer shall ensure that all written disclosure of mineral resources or mineral reserves on a property material to the issuer includes

- (a) the effective date of each estimate of mineral resources and mineral reserves;
- (b) details of 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 mineral resources and mineral reserves may be materially affected by any known environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues; and
- (e) in the circumstance where the results of an economic analysis of mineral resources are reported, a proximate statement that mineral resources that are not mineral reserves do not have demonstrated economic viability.

3.5 Exception for Written Disclosure Already Filed

The requirements of sections 3.2, 3.3 and 3.4 (a), (c) and (d) are satisfied by reference, in written disclosure, to 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 Canadian jurisdiction an issuer shall file in that Canadian jurisdiction a current technical report for each property material to the issuer.
- (2) An issuer may satisfy the requirement of subsection (1) by filing a notice stating that the issuer's current technical report has previously been filed in another Canadian jurisdiction in which it is a reporting issuer, provided there is no material change in the information contained in that technical report. The notice must also provide the name and date of the technical report, the name of the qualified person who prepared it, the jurisdiction in which it was previously filed, and a statement by the issuer certifying that there have been no material changes in the information contained in the technical report since the date of filing in the other Canadian jurisdiction.
- (3) An issuer may also satisfy the requirement of subsection (1) by filing a technical report that it previously filed in another Canadian jurisdiction in which it is a reporting issuer, revised to reflect material changes in the information contained in the technical report since the date of filing in the other Canadian jurisdiction.

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

- (1) An issuer shall file a current technical report to support information in the following documents filed or made available to the public in a Canadian jurisdiction describing a mineral project on a property material to the issuer, or in the case of paragraph 3 below, the resulting issuer:
 - 1. A preliminary prospectus, other than a preliminary short form prospectus filed in accordance with regulation entitled National Instrument 44-101, *Short form prospectus distribution* (the "Regulation 44-101").
 - 2. A preliminary short form prospectus filed in accordance with Regulation 44-101 that includes material information about a mineral project on a property material to the issuer not contained in

- (a) an annual information form, prospectus, or material change report filed before February 1, 2001; or
 - (b) a previously filed technical report.
 - 3. 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.
 - 4. An offering memorandum other than an offering memorandum delivered to an accredited investor as defined under provincial and territorial securities legislation.
 - 5. A rights offering circular of a reporting issuer.
 - 6. An annual information form, annual management's discussion and analysis, or annual report that includes material information about a mineral project on a property material to the issuer not contained in
 - (a) an annual information form, prospectus, or material change report filed before February 1, 2001; or
 - (b) a previously filed technical report.
 - 7. A valuation required to be prepared and filed under provincial and territorial securities legislation.
 - 8. A TSX Venture Exchange Short Form Offering Document required to be filed.
 - 9. A take-over bid circular that discloses a preliminary 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.
 - 10. A news release or directors' circular that contains either
 - (a) first time disclosure of a preliminary 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
 - (b) any change in a preliminary 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) If there has been a material change to the information in the technical report filed under paragraph 1 or 2 of subsection (1) before the filing of the final version of a prospectus or short form prospectus, the issuer shall file an updated technical report or an addendum to the technical report with the final version of the prospectus or short form prospectus.

- (3) Subject to subsections (4), (5), and (6), the technical report shall be filed not later than the time the document listed in subsection (1) that it supports is filed or made available to the public.
- (4) Despite subsection (3), a technical report about mineral resources or mineral reserves that supports a news release shall
 - (a) be filed not later than 30 days after the news release; and
 - (b) if there are any material differences in the mineral resources or mineral reserves between the technical report filed and the news release, be accompanied by a news release that reconciles those differences.
- (5) Despite subsection (3), if a property referred to in an annual information form or annual management's discussion and analysis first becomes material to the issuer less than 30 days before the filing deadline for the annual information form or annual management's discussion and analysis, the issuer shall file the technical report within 30 days of the date that the property first became material to the issuer.
- (6) Despite subsection (3), a technical report that supports a directors' circular shall be filed not less than 3 business days prior to the expiry of the take-over bid.
- (7) If the issuer triggers the requirement to file a technical report under subsection (1), it does not have to re-file a technical report that it has already filed if
 - (a) there is no material change to the information contained in the technical report; and
 - (b) the issuer files a qualified person's updated certificate and consent for use of the technical report in connection with the document.

4.3 Required Form of Technical Report

A technical report that is required to be filed under this Part shall be current in accordance with Form 43-101F1.

PART 5 AUTHOR OF TECHNICAL REPORT

5.1 Prepared by a Qualified Person

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

5.2 Execution of Technical Report

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

- (a) each qualified person who is primarily responsible for preparing it or supervising its preparation; or
- (b) by a person or company whose principal business is providing engineering or geoscientific services if each qualified person primarily responsible for preparing it or supervising its preparation is an employee, officer, or director of that person or company.

5.3 Independent Technical Report

- (1) Subject to subsection (2), any disclosure made and a technical report required under any of the following provisions of this Regulation shall be prepared by a qualified person that is, at the date of the disclosure, independent of the issuer:
 1. First Time Reporting Issuer – Subsection 4.1(1) only for the first time the issuer becomes a reporting issuer in any one Canadian jurisdiction;
 2. Long Form Prospectus, Valuation or TSX Venture Exchange Short Form Offering Document - Paragraphs 4.2(1)l, 7 and 8; or
 3. Other - Paragraphs 4.2(1) 2, 3, 4, 5, 6, 9 and 10 if the document discloses for the first time a preliminary assessment or mineral resources or mineral reserves on a property material to the issuer, or discloses 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 mineral resources or mineral reserves on a property material to the issuer.
- (2) A technical report required to be filed by a producing issuer under paragraph 3 of subsection (1) is not required to be prepared by an independent qualified person.
- (3) A technical report required to be filed by an issuer that is or has contracted to become a joint venture participant, concerning a property which is or will be the subject of the joint venture's activities, is not required to be prepared by an independent qualified person if the qualified person preparing the report relies on scientific and technical information provided by a qualified person that is an employee of a producing issuer that is a participant in the joint venture.

PART 6 PREPARATION OF TECHNICAL REPORT

6.1 The Technical Report

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

6.2 Current Personal Inspection

Unless exempted under section 9.2, at least one qualified person who is primarily responsible for preparing or supervising the preparation of the technical report shall have made a current inspection on the property that is the subject of the technical report.

6.3 Maintenance of Records

The issuer shall 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.

PART 7 USE OF FOREIGN CODE

7.1 Use of Foreign Code

- (1) Despite section 2.2, an issuer that is incorporated or organized in a foreign jurisdiction 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 system, 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.

- (2) Despite section 2.2, an issuer that is incorporated or organized under the laws of Canada or a province or territory of Canada 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 system, or the SAMREC Code for properties located in a foreign jurisdiction, 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 shall, when filing a technical report, also file a certificate of each qualified person who has been responsible for all or a portion of the technical report dated, signed and, if the signatory has a seal, sealed by the signatory.
- (2) The certificate shall state
 - (a) the name, address and occupation of the qualified person;
 - (b) the title and 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 applicable site or, if applicable, the reason why the issuer was exempted from the personal inspection requirement;
 - (e) the section or sections 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, and if not, the reasons why;
 - (g) what prior involvement, if any, the qualified person has had with the property that is the subject of the technical report; and
 - (h) that the qualified person has read this Regulation and the technical report has been prepared in compliance with this Regulation; and
 - (i) that, as of the date of the certificate, the technical report contains all of the information required under Form 43-101F1 in respect of the property that is the subject of the technical report.

8.2 Addressed to Issuer

All technical reports shall be addressed to the issuer.

8.3 Consents of Qualified Persons

An issuer shall, when filing a technical report, also file a statement of each qualified person who has been responsible for all or a portion of the technical report, addressed to the relevant securities regulatory authorities, dated, and signed by the qualified person

- (a) consenting to the filing of the technical report, which makes the technical report publicly available, and to extracts from or a summary of the technical report in the written disclosure being filed; and
- (b) confirming that the qualified person has read the written disclosure being filed and that it fairly and accurately represents the information in the technical report.

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

9.2 Exemption from Personal Inspection

- (1) Section 6.2 does not apply to an issuer provided that
 - (a) the property that is the subject of the technical report is a grassroots exploration property;
 - (b) extreme 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, the reasons why a personal inspection by a qualified person was not conducted.
- (2) Despite subsection (1), the issuer must file a current updated technical report and a qualified person's certificate and consent required under Part 8 as soon as practical after the qualified person can make a personal inspection of the property.

9.3 Exemption for Certain Foreign Issuers

- (1) This Regulation does not apply to an issuer
 - (a) that is incorporated or organized under the laws of a foreign jurisdiction;
 - (b) whose securities trade primarily or has applied for its securities to trade primarily on the New York Stock Exchange, Nasdaq National Market, London Stock Exchange, Australian Stock Exchange, or Johannesburg Stock Exchange and is in compliance with reporting requirements of each applicable exchange;
 - (c) that is subject to securities laws of the United States of America, United Kingdom, Australia, or South Africa and is in compliance with the continuous disclosure requirements of each applicable jurisdiction;
 - (d) that has less than 10 percent of its total number of equity securities, including underlying securities that are equity securities, owned directly or indirectly by residents of Canada, as calculated, on a fully diluted basis, reasonably proximate to the time the issuer discloses scientific and technical information about a mineral project on property material to the issuer; and
 - (e) that includes in any disclosure made in a Canadian jurisdiction under this exemption a statement that its disclosure does not comply with Regulation replacing regulation entitled National Instrument 43-101, *Standards of Disclosure for Mineral Projects* and that no Form 43-101F1 technical report will be filed to support the disclosure based upon an exemption provided to certain foreign issuers under that Regulation.

9.4 Exemption for Certain Type of Filing

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 provincial or territorial 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 EFFECTIVE DATE

10.1 Effective Date

This Regulation shall come into force on XXXXX, 200X.

FORM 43-101F1

TECHNICAL REPORT

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FORM 43-101F1

TECHNICAL REPORT

INSTRUCTIONS

- (1) *The objective of the technical report is to provide 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 requirements for the preparation and contents of a technical report.*
- (2) *Terms used in this Form that are defined or interpreted in Regulation replacing regulation entitled National Instrument 43-101, Standards of Disclosure for Mineral Projects (the "Regulation") shall bear that definition or interpretation. In addition, a general definition regulation has been adopted as regulation entitled National Instrument 14-101, Definitions that contains definitions of certain terms used in more than one regulation. Readers of this Form should review both these regulation for defined terms.*
- (3) *The qualified person preparing the technical report shall use 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 shall 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. Disclosure included under one heading is not required to be repeated under another heading.*
- (5) *The technical report is not required 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 report for the property being reported on, the previous report is referred to in the technical report and there has not been any material change in the information.*
- (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.*
- (7) *Except for a disclaimer that meets the limited purpose in Item 5 of this Form, a technical report must not contain any other disclaimers. For example, the types of disclaimers prohibited would include any disclaimer of responsibility for or reliability on all, or a portion of, the report that the qualified person prepared or any limitations on the use or publication of the report that would interfere with an issuer's obligation to reproduce the report by filing it on SEDAR.*

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.
- Item 2:** **Table of Contents** - Provide a table of contents listing the contents of the technical report, including figures and tables.
- Item 3:** **Summary** - Provide a summary that briefly describes the property, its location, ownership, geology and mineralization, the exploration concept, the status of exploration, development and operations and the author's conclusions and recommendations.

- Item 4: Introduction** - Include a description of
- (a) who the report is prepared for;
 - (b) the 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 extent of field involvement of each author.
- Item 5: Reliance on Other Experts** - If the author of all or a portion of the technical report has relied on a report, opinion or statement of legal or other experts who are not qualified persons for information concerning legal, environmental, political or other issues and factors relevant to the technical report, the author may include a disclaimer of responsibility in which the author identifies the report, opinion or statement relied upon, the maker of that report, opinion or statement, the extent of reliance and the portions of the technical report to which the disclaimer applies.
- Item 6: 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 claim numbers or equivalent, the claim type, and whether the claims are contiguous;
 - (d) the nature and extent of the issuer's title to, or interest in, the property including surface rights, the obligations that must be met to retain the property, and the expiration date of claims, licences or other property tenure rights;
 - (e) the survey system used to locate the property boundaries;
 - (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 by showing the same on a map;
 - (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) to the extent known, all environmental liabilities to which the property is subject; and
 - (i) 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.

Item 7: **Accessibility, Climate, Local Resources, Infrastructure and Physiography** - With respect to each property reported on, 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, 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 8: **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 results of exploration and/or development work undertaken by the owners and any previous owners;
- (c) historical mineral resource and mineral reserve estimates in accordance with 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.

INSTRUCTION

If a reporting system other than the one stipulated by the Regulation has been used, the qualified person shall include an explanation of the differences and reliability.

Item 9: **Geological Setting** - Include a concise description of the regional, local and property geology.

Item 10: **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: **Exploration** - Describe the nature and extent of all relevant exploration work conducted by, or on behalf of, the issuer on each property being reported on, including

- (a) results of surveys and investigations, and the procedures relating to the surveys and investigations;
- (b) an interpretation of the exploration information; and
- (c) 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.

Item 13: **Drilling** - Describe the type and extent of drilling including the procedures followed and a summary and interpretation of all results. 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** - Include

- (a) a 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;
- (b) identification 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 and of whether the samples are representative and of 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 of any significantly higher grade intervals within a lower grade intersection; and
- (e) a list of relevant samples or sample composites with values and estimated true widths.

Item 15: **Sample Preparation, Analyses and Security** - Describe sample preparation methods and quality control measures employed prior to 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, including

- (a) if any aspect of the sample preparation was conducted by an employee, officer, director or associate of the issuer;
- (b) details regarding sample preparation, assaying and analytical procedures used, the name and location of the analytical or testing laboratories and whether the laboratories are certified by any standards association and the particulars of any certification;
- (c) a summary of the nature and extent of all quality control measures employed and check assay and other check analytical and testing procedures utilized, including the results and corrective actions taken; and
- (d) a statement of the author's opinion on the adequacy of sampling, sample preparation, security and analytical procedures.

- Item 16: Data Verification** - Include a discussion of
- (a) quality control measures and data verification procedures applied;
 - (b) whether the author has verified the data referred to or relied upon, referring to sampling and analytical data;
 - (c) the nature of and any limitations on such verification; and
 - (d) the reasons for any failure to verify the data.
- Item 17: Adjacent Properties** - A technical report may include 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;
 - (c) the technical report states that its author has been unable to verify the information and, in bold face type, 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 adjacent property and mineralization on the property being reported on; and
 - (e) if any historical estimates of mineral resources and 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** - Where mineral processing and/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** - Each technical report on mineral resources and mineral reserves shall
- (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 evaluation 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 is 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.

INSTRUCTIONS

- (1) *The methods and procedures to be used in estimating mineral resources and mineral reserves are the responsibility of the qualified persons preparing the estimate.*
- (2) *A statement of quantity and grade or quality is an estimate and shall be rounded to reflect the fact that it is an approximation.*
- (3) *An issuer that is incorporated or organized in a foreign jurisdiction may file a technical report that utilizes the mineral resource and mineral reserve categories of the JORC Code, SEC Industry Guide 7, IMMM System, or SAMREC Code provided that a reconciliation to the mineral resource and mineral reserve categories referred to in sections 1.2 and 1.3 of the Regulation is filed with the technical report and certified by the qualified person.*

Item 20: **Other Relevant Data and Information** - Include any additional information or explanation necessary to make the technical report understandable and not misleading.

Item 21: **Interpretation and Conclusions** - Summarize the 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. A technical report concerning exploration information shall include the conclusions of the author. The author must discuss whether the completed project met its original objectives.

Item 22: **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 shall not apply to more than two phases of work. The recommendations shall state whether advancing to a subsequent phase is contingent on positive results in the previous phase. A technical report that contains recommendations for expenditures on exploration or development work on a property shall include a statement by a qualified person that, in the qualified person's opinion, the character of the property is of sufficient merit to justify the program recommended.

- Item 23: 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 title page at the beginning and a signature page at the end, signed in accordance with section 5.2 of the Regulation. The effective date of the technical report must be on both the title page and the signature page. The date of signing must also be included in the signature page.
- Item 25: Additional Requirements for Technical Reports on Development Properties and Production Properties** - Technical reports on development properties and production properties shall also include
- (a) Mining Operations - information and assumptions concerning the mining method, metallurgical processes and production forecast;
 - (b) Recoverability - information concerning results of 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;
 - (j) Mine Life - a discussion of the expected mine life and exploration potential.

Item 26: Illustrations

- (a) Technical reports shall be illustrated by legible maps, plans and sections. All technical reports shall be accompanied by a location or index map and more detailed maps showing all important features described in the text. In addition, technical reports shall 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 shall be shown relative to property boundaries. Maps, drawings and diagrams that have been created by the author, in whole or in part, and that are based on the work that the author has done or supervised, shall be signed and dated by the author. Where information from other sources, either government or private, is used in preparing these maps or diagrams the source of the information shall be named.
- (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 shall 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 shall be included in the technical report.
- (d) Maps shall include a scale in bar form and an arrow indicating North. Information taken from government maps or from drawings of other engineers or geoscientists shall be acknowledged on the map.

INSTRUCTION:

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