

August 4, 2016

VIA EMAIL (rule-comments@sec.gov)

Mr. Brent J. Fields
Secretary
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: File Number
Release Number 33-10098; File No. S7-10-16 (the "Release")
Modernization of Property Disclosures for Mining Registrants

Dear Mr. Fields:

The Society for Mining, Metallurgy and Exploration, Inc. ("SME") submits the following comments on the Securities and Exchange Commission's (the "Commission") proposed rules (the "Proposed Rules") to revise the property disclosure requirements for mining registrants and related guidance currently set forth in Item 2 of Regulation S-K under the Securities Act of 1933, as amended (the "Securities Act"), the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Industry Guide 7 ("Guide 7").

We appreciate the opportunity to provide these comments and would be pleased to discuss them further with the Commission or its staff. Any questions regarding our comments may be directed to John Hayden, Deputy Executive Director, [REDACTED] or [REDACTED].

Respectfully yours,



David L. Kanagy, CAE
Executive Director, SME

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1.0 EXECUTIVE SUMMARY

1.1 Appreciation of Work Done by the Commission

SME would first like to acknowledge its appreciation for the Commission's hard work on the Proposed Rules. SME supports all efforts to eliminate the existing Guide 7 disclosure guidelines, related precedent and informal guidance and to replace such standards with disclosure and technical standards that are consistent with the CRIRSCO Template.¹ SME believes the Proposed Rules provided by the Commission represent tremendous progress on this point and commends the Commission for tackling this rather daunting task.

1.2 Brief History of Mining Society Disclosure Codes and CRIRSCO²

At the 15th Council of Mining and Metallurgical Institutions (CMMI) Congress at Sun City, South Africa in 1994, the CMMI Mineral Definitions Working Group was formed, made up of representatives from:

- Australia [Australasian Institute of Mining and Metallurgy (AusIMM)];
- Canada [Canadian Institute of Mining, Metallurgy and Petroleum (CIM)];
- South Africa [South African Institute of Mining and Metallurgy (SAIMM)];
- UK [Institution of Mining and Metallurgy (IMM), now called the Institution of Mining, Metallurgy and Materials (IOM³)]; and
- United States [Society for Mining, Metallurgy and Exploration (SME)].

The primary objective of the group was to develop a set of international standard definitions for the reporting of mineral resources and mineral reserves. These pre-eminent mining professional organizations representing countries in which major mining-related capital markets are located, recognized the need for consistency between the mining exchanges and their regulators. The reporting standards that were developed by the Working Group were harmonized in the Denver Accord of 1997.

A successor committee, the Committee for Reserves International Reporting Standards was set up in 2002 ("CRIRSCO"). CRIRSCO's current members are the National or Regional Reporting Organizations from Australasia (JORC), Brazil (CBRR), Canada (CIM), Chile (CM), Europe (PERC), Kazakhstan (KAZRC Association), Mongolia (MPIGM), Russia (OERN), South Africa (SAMREC), and USA (SME). The growing need for harmonized international standards is evidenced by the addition of Russia, Mongolia, Brazil and Kazakhstan as members since 2011, and advanced discussions for membership with other countries such as India and China. Wide international consultation was conducted by SME to prepare its *2014 Guide for Reporting Exploration Results, Mineral Reserves and Mineral Resources* ("SME Guide").

¹ Request for Comment 1.

² Request for Comment 1.

In 2006 CRIRSCO issued a Template with the objective of containing common definitions for public reporting of exploration results, mineral resources and mineral reserves. This Template was incorporated in the United Nations Framework Classification as providing detailed definitions, rules and guidelines for potentially commercial and commercial mineral deposits.

In 2013 the definitions were revised, and all of CRIRSCO's members agreed to incorporate those definitions expressed in **Boldface** type into their national guides, codes and standards³. In addition, the Template contains guidance as to the implementation of the standards, as follows:

The main principles governing the operation and application of the Template are transparency, materiality and competence. *Transparency* requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled. *Materiality* requires that a Public Report contains all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in a Public Report, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported. *Competence* requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics and rules of conduct.

Since the text of Guide 7 was published in 1981, the mining industries' disclosure guides have become increasingly international in the location of registrants and their mineral properties. In addition, it has become increasingly common for companies to list on stock exchanges in multiple jurisdictions. The industry benefits from having its public reports accepted in multiple jurisdictions, and the CRIRSCO Template has facilitated this.

Canada's adoption of National Instrument 43-101 ("NI 43-101") which is CRIRSCO-compatible and incorporates by reference the CIM definition standards, demonstrates the benefits of implementing international standards. The increased listings of issuers on the Canadian stock exchanges versus the US exchanges during the last twenty years has resulted from the ability to report mineral resources to the investor, which growth in turn resulted in a well-developed trading market, even though much of the money invested came from US-based investors.

The benefit to the mining industry of the Proposed Rules will be directly proportional to their conformity to the CRIRSCO Template. Therefore, SME strongly advocates that the Commission more closely adhere to the international practices represented by the CRIRSCO Template. SME believes each material departure from the CRIRSCO-based standards undermines the Commission's stated objective to "modernize the Commission's disclosure requirements and

³ In this document the "CRIRSCO Template" refers to the Template per se; "CRIRSCO Template guides, codes and standards" refers to amplifications to definitions and guidance developed by the National and Regional Reporting organizations. In general, the language used in the codes, guides and standards is very similar.

policies for mining properties by aligning them with the current industry and global regulatory practices and standards.”

1.3 Effect of the Proposed Rule Changes on Registrants⁴

SME notes that Guide 7 and the Proposed Rules cover a wide range of mining companies, including companies mining precious and base metals, coal, industrial minerals, sand and gravel, aggregates, crushed rock and dimension stone, brines and geothermal energy etc. The proposed disclosure formats are in many cases overly prescriptive, and their implementation will result in preparation of expensive and burdensome documentation that may be misleading or immaterial to investors. Many of these prescriptive formats appear to stem from efforts to provide comparable disclosures in the mistaken view that all mining operations can be made to be comparable. Mining operations range from local sand and gravel pits to huge open-pit mines and deep underground mines producing an extremely wide variety of mineral products from a large range of geological environments. There is little comparability in the details within the broad range of these mining operations. SME believes that these attempts at comparability should be abandoned.

The largest problem with the Proposed Rules is the requirement that the prices used to estimate both mineral resources and mineral reserves are limited to less than or equal to the average spot price or contract price in effect over a 24-month period preceding the date of the estimate. The prescriptive use of a trailing average price precludes the use of experience in price forecasting. The CRIRSCO Template requires forward looking market forecasts and prices. This has been interpreted to require use of forward-looking price forecasts and marketing studies by multiple institutions to develop a “consensus price” that the qualified person and the registrant feel is reasonable. Usually the consensus price involves forecasts from multiple sources, and these forecasts in turn are used by multiple qualified persons. Thus the consensus price provides comparability across qualified persons and projects and reflects the investment community’s view of the long-term price. Consensus prices have been successfully used as credible sources for price disclosure in Canada for several years. Further, to capture the likelihood of reasonable prospects for eventual economic extraction, mineral resources are routinely estimated at a higher price than that used for mineral reserves. Thus companies subject to both the CRIRSCO Template (or a national or regional reporting code based on the Template) and the Commission’s rules, as proposed, could be required to prepare two sets of mineral resource and reserve estimates for companies listed on multiple exchanges, with mineral resource estimates prepared under the Proposed Rules likely to be materially lower. SME views this as an onerous, undesirable and potentially misleading burden.

The proposed definitions of mineral resources, mineral reserves and their modifiers should be identical to the CRIRSCO Template so that a single set of mineral resource and mineral reserve estimates could be made.

⁴ Request for Comments 1, 67 and 72.

SME objects to the format and content of the disclosure tables in the proposed disclosure framework, which require disclosures not required under CRIRSCO disclosure regimes, often require information not necessarily material to investors, and do not accommodate differences in mining operations. Statements of property descriptions, mineral resources and mineral reserves are customary, but tables of exploration results and detailed reconciliation are not required under CRIRSCO standards. It is apparent that the requested mineral resource and mineral reserve data presented in the Proposed Tables are intended to be supportive, but SME suggests that the concepts are not necessarily material, that the data are generally esoteric, and that much of them will create confusion in even sophisticated investors. Further, the proposed requirement to disclose exploration results raises substantial confidentiality and competitive concerns. There can be sound business reasons for keeping exploration results confidential, including joint venture agreements and retaining a competitive advantage where there are multiple parties performing exploration in the same district. However, material information must be disclosed in a timely manner⁵.

The potential personal liability of qualified persons is another area of concern. As proposed, a qualified person signs individually and has liability as such, while being precluded from relying on needed experts in fields for which he/she is not qualified such as legal, marketing, social, and governmental regulations and potentially many other specialties. SME suggests that limited disclaimers be allowed and that the liability of qualified persons be limited similarly to that afforded auditors.

SME is also concerned that the Proposed Rules do not allow economic value to be attributed to inferred mineral resources in an Initial Assessment. This is contrary to CRIRSCO standards which allow economic value from inferred resources to be included in an initial assessment. CRIRSCO standards exclude inferred resources from pre-feasibility and feasibility studies. Under the Proposed Rules, investors would be deprived of the company's opinions regarding the potential economic value of inferred resources for a project, and the inability to disclose such information would put US reporting companies at a significant disadvantage in the market. Under the Proposed Rules inferred resources would have to be converted to indicated or measured resources before their value could be disclosed; this could take years. For underground deposits with limited access for delineation drilling, conversion might only take place immediately before mining.

SME would like to highlight the impacts of the Proposed Rules on specific categories of registrants:

- Domestic registrants subject to the Proposed Rules would be subject to a much more prescriptive and burdensome disclosure system than that under which they currently operate, but now with the ability to report mineral resources. If the

⁵ See Securities and Exchange Commission v Texas Gulf Sulfur 401 F2d 833 (1968). Also see 2013 BCSC Citation 310: Canaco Resources Inc., Andrew Lee Smith, Randy Smallwood, David Parsons, and Brian Lock

Proposed Rules are not substantially reconciled with the CRIRSCO Template as recommended, US domestic issuers would still be reporting under a framework inconsistent with international practice and standards.

- Domestic registrants with a small number of properties would have to prepare a limited number of technical report summaries for their material properties. Many of the registrants are already preparing technical report summaries (called Competent Persons reports) as part of their Sarbanes Oxley 2002 (“SOX”) compliance framework. Because of the relatively small number of mines, the requirements for annual disclosure, if simplified as recommended herein, would not be onerous.
- Domestic registrants with a large number of mines, which generally include coal, industrial minerals (sand, gravel, aggregates, crushed rock, clays, ceramic minerals, limestone, abrasives, coatings and fillers, gem stones, etc.) operations, logically group their operations in order to form a “property” for reporting and materiality purposes. SME notes that some of these properties may be only periodically mined and that plants may only be moved onto the properties when required to supply customers (applies particularly to sand and gravel, aggregates, crushed stone, clays for bricks and ceramics, etc.). Therefore, the Proposed Rules need to be adapted to deal with this case. If sufficient aggregation of material assets is allowed, the burden of preparing technical report summaries would be mitigated.
- Domestic registrants that are exploration stage will be required to prepare technical report summaries for material properties that cover exploration results and mineral resource estimates, if any. This is not required in other jurisdictions. SME views the requirement to include exploration results in annual disclosure as potentially onerous and believes such results could be better communicated in the form of technical reports issued at appropriate project milestones.
- Canadian registrants qualifying for the Multi-Jurisdictional Disclosure System (“MJDS”) are not affected by the Proposed Rules and may continue to disclose their mineral resources and mineral reserves according to Canadian NI 43-101-standards. These standards incorporate by reference the CIM Definition Standards that are based on the CRIRSCO Template. They may continue to use their technical reports in the format specified by NI 43-101F1. Importantly they can continue to make preliminary economic assessments including assignment of value to inferred mineral resources available in technical reports.
- Canadian registrants not qualifying for MJDS will be subjected to the same rules as domestic registrants (see above), which is a significant departure from their current reporting requirements. This group also includes US registrants that are either Canadian issuers or dual listed in the US and Canada. Currently this group can make disclosures to the Commission using NI 43-101. In addition to addressing all the additional disclosure requirements in their annual report, these issuers would also have to reformat their NI 43-101 reports, which would be burdensome. Due to the fact that the Commission proposes not to accept

economic assessments based on inferred mineral resources, preliminary economic assessments that are commonly used in Canada could not be used in the US. They would not be able to file with the Commission technical reports containing preliminary economic assessments with value attributable to inferred mineral resources. They would have to file separate reports in the US, which is unduly burdensome.

- Foreign registrants, other than Canadian MJDS filers, that are subject to other CRIRSCO jurisdictions would also be subjected to the full brunt of the new rules and to dual and inconsistent reporting obligations.
- Brines and geothermal registrants have not been covered before. SME believes that brines and geothermal projects are significantly different from solid minerals and notes that there is no guidance contained in the Proposed Rules regarding this type of project.

The continuing special treatment for Canadian issuers, albeit now only for MJDS filers, when combined with the variations in the Proposed Rules from CRIRSCO standards and additional burdensome disclosure requirements, solidifies the attractiveness of the Canadian market for mining companies, even those listed in the US. The Commission should carefully consider the negative impacts of its proposed disparate treatment of Canadian issuers.

In summary, the Proposed Rules do not provide a “level playing field,” which was one of the Commission’s stated objectives. All registrants other than MJDS filers would be subject to a disclosure regime that is burdensome and inconsistent with CRIRSCO standards. US reporting companies will thus remain disadvantaged by application of Commission reporting standards unless significant changes are made to the Proposed Rules.

1.4 Recommendations for Disclosure

SME recommends that the Commission establish the following principles for disclosure:⁶

- The Commission should eliminate the trailing 24-month pricing requirement and allow mineral resource and reserves to be estimated at consensus market or contractual prices. The guidance used in the CRIRSCO Template should govern commodity prices used for mineral resource and mineral reserve estimation and reporting
- If the Commission feels a reserve test is necessary, the SME recommends the Commission keep its “reserve test” whereby a mine plan (excluding inferred resources) is shown to be economic at the average spot or contract price for the previous 36 months, (note this aligns with Item 46 of the SME Guide)
- The disclosure framework should follow the format of NI 43-101F1, and technical report summaries filed with the Commission should be viewed as interchangeable with

⁶ Requests for Comment 2, 12, 69, 70, 121, 122, 123 and 128.

technical reports prepared under NI 43-101⁷; since the Commission is not requiring a “full” technical report, SME recommends renaming technical report summary as “summary technical report”, or to avoid confusion follow Canadian practice, just use technical report.

- Initial assessments without cash flows should be considered for mineral resource studies, and the term “mineral resource study” should be included in the title of the technical report summary. This would avoid introduction of the new term “initial assessment” in the Proposed Rules.
- Initial assessments with cash flows should be considered scoping studies and subject to proximate disclaimers stating that the economic viability of the mineral resources has not been demonstrated. Value can be attributed to any combination of measured, indicated and inferred resources. In this manner, they will be similar in concept to a scoping study or preliminary economic assessment.
- Required annual disclosure tables should be limited to a list of material properties and statements of mineral resources and mineral reserves. Properties should be aggregated where necessary to provide material information to the investor.
- The disclosure framework should also apply to news releases, website postings, and investor presentations and any other public disclosures of exploration results, mineral resources and mineral reserves. This would align the Commission’s rules with the CRIRSCO Template.

1.5 Recommendations Related to the Qualified Person⁸

SME has compiled a list of recommendations related to qualified persons that are not contained in the Proposed Rules, but should be:

- The qualified person must have a university degree (bachelor’s or equivalent) in fields related in various ways with the discovery, extraction and utilization of minerals, metals and energy sources.
- The registrant should determine if an independent qualified person is required.
- The recognized professional organization to which the qualified person belongs must have jurisdiction to discipline the qualified person, no matter where the qualified person resides, practices or where the mineral deposit is located.
- Qualified persons should be able to include a limited disclaimer of responsibility when relying on experts in fields in which the qualified person could not be expected to have professional training such as legal and marketing (particularly gemstones), social and political matters.

⁷ This would have to be approved by both Canada and the US. The format of the reports and guidance may have to be conformed; the interchangeability of reports would be of large benefit to investors and registrants in both countries.

⁸ Requests for Comment 20, 21, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 39, 41, 73, 114 and 116

- Multiple qualified persons are allowed to the extent that all aspects of a technical report are covered by a responsible qualified person; for simple properties one qualified person may be sufficient. In all cases qualified persons should be named, the sections for which they are responsible identified, and their signatures attached in consent and certification statements.

1.6 Keeping Disclosure Requirements Current

The mining disclosure guides, such as SME Guide and NI 43-101, have been updated every few years, and similar updates are expected in the future. Provisions should be made to require the Commission's rules to be similarly updated on a regular basis. Similar to the recognition of the accounting profession's auditing standards (GAAP and GAAS), the mining industry's guides and standards⁹ should be incorporated by reference into the Commission's rules.

2.0 QUALIFIED PERSON

2.1 Need for Qualified Persons

SME supports the requirement that a qualified person, who is a member of a recognized professional organization, be involved in preparation and disclosure of exploration results, mineral resources and mineral reserves, and this is a significant step in aligning Commission Rules with international practice and the CRIRSCO Template. Specifically, SME strongly endorses:

- The requirement that disclosures of exploration results, mineral resources, and mineral reserves be based on a technical report summary prepared by one or more qualified person(s). Because technical report summaries prepared by (a) qualified person(s) will disclose and discuss the risks and opportunities of the project(s) that are the subject of the technical report summary, these disclosures and discussions should assist investors in their understanding of the project(s) regardless of their stage.
- The requirement that the registrant be responsible for determining that the qualified person(s) meet(s) the qualifications of a "qualified person" under the Proposed Rules, whether or not an independent qualified person is required, and the suitability of the nominated qualified person to be considered independent.
- Independence of the qualified person(s) should only be required in specified circumstances (initial disclosure, material change from previous disclosure, etc.), and where the author(s) of the technical report(s) are not independent, independent qualified person(s) should review and approve as acceptable the relevant technical reports filed in connection with the specified circumstances. An exception can be made where the registrant is a Production Stage company; in this case independent qualified persons should not be required. For exploration- or development-stage registrants, often the only

⁹ Requests for Comment 20, 21, 22, 25, 26, 27, 28, 38 and 49.

internal technical person(s) that meet the requirements for a qualified person are officers, directors or significant stockholders of the company, who are clearly conflicted; therefore, an independent qualified person is recommended in these cases.

- The requirement that the registrant obtain the written consent(s) of the qualified person(s) who prepared an identified technical report or technical report summary.
- Disclosure of qualified persons' status as employee(s) or affiliate(s), or that the qualified person(s) are independent of the registrant. The definition of independence should be the same as that used in Canada's NI 43-101 in order to promote international uniformity in mining disclosures. Material conflicts of interest should be disclosed, as is required by professional ethics codes.

SME believes that the definitions of a qualified person and of a recognized professional organization contained in the Proposed Rules are neither too restrictive nor costly. Most smaller mining companies retain professionals who meet the Canadian NI 43-101 qualified person requirements for their technical reports even when the firm is not listed on a Canadian or other stock exchange, because investors in such companies demand compliance with NI 43-101 for private offerings. Major mining companies have many professionals who meet the qualified person definitions and requirements on staff and regularly hire independent professionals who meet the qualified person definitions and requirements when having an independent report is viewed as desirable by the company, even where independence is not required for a particular disclosure or filing.

SME believes, and Item M of the SME Guide for Reporting Exploration Results, Mineral Resources, and Mineral Reserves (the "SME Guide") requires, the disclosure of the name and qualification of the qualified person preparing and reviewing the report or a section thereof, and whether the qualified person is independent with respect to the entity or project that is the subject of the report. Further, a description of the qualified person's relevant experience in the style of mineralization and type of deposit is also required.

2.2 Requirements for Qualified Persons¹⁰

SME supports the requirement that a qualified person be involved in preparation and disclosure of exploration results, mineral resources and mineral reserves and notes that this is a significant step in aligning Commission rules with international practice and CRIRSCO standards. SME supports allowing the registrant to self-determine whether a person is a qualified person and meets the requirements outlined in the proposed instruction regarding the assessment of a qualified person's qualifications. SME would like to suggest additional qualifications covered in these instructions, including the following:

¹⁰ Requests for Comment 27, 29, 30, 32, 34, 35, 39 and 41.

- The qualified person should have a university degree (bachelor's or equivalent) in fields related in various ways with the discovery, extraction and utilization of minerals, metals and energy sources.
- The qualified person should have a minimum of seven years of postgraduate experience in the mineral industry with at least three years in positions of responsibility (defined as requiring independent judgment) and have a minimum of five years of relevant experience in the style of mineralization and type of deposit under consideration and in the type of activity the person is performing.
- Qualified persons should be satisfied in their own mind that they can face their peers and demonstrate competence in the commodity, type of deposit, and situation under consideration.

SME also supports a requirement that the qualified person prepare a certificate that would be filed with the disclosure containing the following information:

- Name and employer
- Title of technical report summary or other disclosure
- Sections of technical report summary for which qualified person is responsible
- University degree(s) and dates of graduation
- Membership in and member class of Recognized Professional Organizations; statement membership is in good standing
- Discussion of independence or relation to the registrant
- Years of general experience and years in positions of responsibility requiring independent judgment
- Years of experience relevant to style of mineralization or activity being undertaken as a qualified person, including a list of relevant projects
- Dates of site visits
- Previous technical report summaries or disclosures (titles and dates) for the property to which the certificate pertains, where the qualified person was an (co)author

SME believes that a qualified person should be an individually named natural person in all cases. Experience in consulting firms has shown that when individual members of the firm are specifically identified as qualified persons, the work undertaken by the members of the firm in preparing or reviewing technical reports is more careful. However, even though individual members of a firm are named, the firm's liability insurance should be recognized as the liability insurance for the individual.

2.3 Method of Identifying Recognized Professional Organizations¹¹

SME believes that a “recognized professional organization” means a self-regulatory organization of geoscientists, engineers, or both geoscientists and engineers that:

- is given authority or recognition by statute in a jurisdiction of the United States or Canada, or is generally accepted within the international mining community as a reputable professional organization
- admits individuals on the basis of their academic qualifications, experience, and ethical fitness
- has one or more membership categories requiring attainment of a position of responsibility that requires the exercise of independent judgment and a favorable confidential peer evaluation of the individual’s character, professional judgment, experience, and ethical fitness
- requires compliance with the professional standards of competence and ethics established by the organization and which are compatible with industry-recognized standards
- requires or encourages continuing professional development
- has and applies disciplinary powers, including the power to suspend or expel a member regardless of where the member resides, practices or the mineral deposit is located

SME notes that continuing professional development (“CPD”) is encouraged but not required for all professional organizations currently recognized by Canada’s NI 43-101. Some of the recognized professional organizations do have required CPD programs, but the number of hours required and whether such activities as professional practice and professional ethics training hours are required is not uniform.¹² While there appears to be movement towards more standardized requirements for CPD within the mining industry, such uniformity does not currently exist. Therefore, SME recommends that at this time the Commission’s rules encourage but not require CPD as part of the requirements for a professional organization’s recognition.

Under the Proposed Rules, a qualified person must be a member in good standing of a recognized professional organization, and the organization must be either “recognized within the mining industry, or be a board authorized by US Federal, state or foreign statute.” Learned professional societies such as the Geological Society of America, Society of Economic Geologists and Geological Society of Canada do not qualify as recognized professional associations because they lack enforced codes of ethics. SME takes exception to the Proposed

¹¹ Requests for Comment 36 and 37.

¹² For example, SME currently requires 30 hours of CPD including 2 hours of professional ethics training over 2 years, British Columbia requires 240 CPD hours including adjusted professional practice hours but no professional ethics training hours for licensed engineers and geologists accrued over a 3-year period, Ontario’s licensed geologists have CPD requirements equaling British Columbia’s, while Ontario’s licensed engineers currently have no CPD requirement. The requirements of other internationally recognized professional organizations that have required CPD vary between SME and British Columbian requirements.

Rules regarding **not** requiring a qualified person to be a member of **an approved list** of Recognized Professional Organizations. The Proposed Rules leave it up to the registrant to determine what constitutes a “recognized professional organization.” As noted by the Commission, this differs from most CRIRSCO based codes which require a competent or qualified person to be a member of one or more “approved” organizations identified by regulators. SME believes that this approach may lead to “organization shopping” by some registrants for the least cost/easiest to persuade qualified person, who is perhaps a member of a professional organization that has lax enforcement of its discipline rules. This threatens the quality and oversight of qualified persons which undermines the investor’s ability to rely on their disclosures. CRIRSCO members maintain and periodically update lists of recognized professional organizations so that registrants can easily identify qualified persons are members of a recognized professional organization in good standing with the securities regulators. This process has proven itself for well over a decade now.

SME recommends that the Commission refer to the SME list of recognized professional organizations or the Appendix to NI 43-101 CP maintained by The Canadian Securities Administrators (CSA) so that the burden of maintaining and vetting various potential recognized professional organizations will not fall on the Commission staff, but on those organizations that are much more in tune with the CRIRSCO member actions regarding current membership requirements of various recognized professional organizations. For example, Canada deleted US geological licensing boards from its list of recognized professional organizations because these boards would not or were unable to discipline licensees whose alleged misconduct involved properties outside the boundaries of the particular state. Canada also deleted the Australasian Institute of Mining and Metallurgy’s (AusIMM) Member category while retaining recognition of AusIMM Fellows because of differing degree requirements for these two membership grades. The Australasian JORC rejected professional engineers in Manitoba because its board would not discipline licensees whose alleged misconduct involved properties outside the boundaries of Manitoba.

There is little chance that CRIRSCO members will allow their lists to become outdated. In addition, the Commission will not have to promulgate rules each time a recognized professional organization list needs update.

2.4 Requirement to Sign Individually¹³

As proposed, qualified persons are required to sign individually. This is consistent with the practice under the CRIRSCO Template; however, liability concerns are more pronounced in the US. For larger companies that have qualified persons on staff, the requirement for a qualified person to sign individually puts that person in a position similar to that of a principal executive or financial officers signing certifications under the Sarbanes-Oxley Act of 2002 (“SOX”). Presumably the Commission would allow some kind of sub-certification procedure similar to

¹³ Requests for Comment 33 and 116.

that allowed under SOX, which would mitigate some of the concerns discussed below (Section 2.5) with respect to disclaimers; however, it is unclear from the Proposed Rules how the Commission plans to handle such matters. In no event should the potential liability imposed on a company qualified person be broader than that of the company's principal executive and financial officers.

For third-party entities (consulting firms) who serve as qualified persons, the imposition of individual liability on a qualified person would be incongruent with the treatment of auditors and engineering firms to date. When combined with the prohibition on disclaimers contained in the Proposed Rules, this would seem to greatly enhance the personal liability of individual employees of consulting firms employed by a mining company, which is likely to significantly impact the costs of their services. As the majority of smaller and midsize mining companies employ outside consulting firms for their reserve and resource estimates, these increased costs would likely impact those companies least able to absorb them. SME suggests that the Commission explore alternatives to imposing personal liability on third party qualified persons. The Public Company Accounting Oversight Board's (PCAOB) efforts with respect to engagement partners may provide alternative approaches to addressing accountability without imposing undue individual liability.

2.5 Disclaimers of Responsibility¹⁴

SME takes exception to the provisions in the Proposed Rules that do not permit a qualified person to include a disclaimer of responsibility if he or she relies on a report, opinion, or statement of another expert in preparing the technical report summary. The rules as proposed elevate the liability of the qualified person to that of company's (registrant's) officers and/or directors. The Commission's position is problematic in several respects.

The Proposed Rule exceeds established regulations. Under Section 11 of the Securities Act, "experts" such as accountants, engineers, appraisers, etc. are only responsible for work items prepared or certified by them. It appears that much of the basis for the proposed rule is based on Section II.2 (c) of the National Society of Professional Engineers ("NSPE") Code of Ethics. The Commission quotes in footnote 389: "Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment." SME's position is that the Commission is applying this narrowly constructed clause extremely broadly, whereas it has a very narrow application in engineering work. The NSPE Code of Ethics applies to engineers assuming responsibility for overall project work where other specialty engineers have signed their individual segments of the overall project first. Those individual engineers will still be held responsible for their portion of the work by the state technical licensing boards, along with the supervising engineer.

¹⁴ Request for Comment 114.

Also, this allowance in NSPE Section II.2 (c) does not apply to engineers accepting and assuming responsibility for legal opinions, sales and marketing studies, geological studies, and other areas outside of the field of engineering. In addition, while most state boards incorporate the NSPE Code of Ethics in their regulations, many state boards also have other specific regulations prohibiting engineers from certifying (sealing) work outside the engineer's area of competency/qualifications. For an engineer to do so would subject him or her to disciplinary action by the licensing board. Thus, in spite of NSPE Section 11.2 (c) many recognized professional organizations (*i.e.* US state engineering licensing boards) expressly prohibit members (example: professional engineers) from practicing outside their areas of competency (expertise). The same is true for licensing boards covering geologists. Ethics codes of other recognized professional organizations such as SME, the Mining and Metallurgical Society of America, the American Institute of Professional Geologists also prohibit work of their members outside their areas of competency.

NI 43-101 permits disclaimers for expert reports, opinions, or statements by non-engineering and non-geoscience work by persons that are not and cannot meet the qualified person definition. Examples of such experts would be lawyers giving legal opinions, experts on land tenure and title work, permit status, litigation actions, etc., or marketing experts providing market and sales/pricing forecasts. These recommended limited disclaimers in no way limit the liability of the qualified person for his or her own work product in his/her appropriate areas of expertise.

Should the Commission go forward with the rules as currently proposed, the qualified person would have liability exposure similar to that of a registrant's officers and directors, and this despite the fact that independent qualified persons typically have limited access to data and have no authority within the registrant's company. SME predicts that many otherwise highly qualified individuals will refuse to serve as qualified persons for US registrants.

It should be noted that other codes explicitly state and encourage multiple qualified persons to develop and be responsible for various sections (Items) of the technical report summary or other disclosure, as much of the supporting work required to establish mineral resources and particularly mineral reserves is too complex for one person to have the expertise required for the entire body of work.

Furthermore, the Proposed Rules state that the qualified person must take the necessary steps to verify any information provided by other experts that are included in the report. For an engineer or geoscientist to obtain the necessary legal, marketing, and other expertise to comply with this requirement is not reasonable.

In the final rules the Commission should provide that multiple qualified persons are permitted (and encouraged) to sign off on each of the sections or items to which they contributed. One qualified person should sign off on compilation of the overall report. The Commission should also recognize that some properties will be simple enough, and depending upon the nature of the technical report summary, only one qualified person would be sufficient to cover all sections of the report.

3.0 MATERIALITY

3.1 Comments on the Commission's Definition¹⁵

It should be clear that the Proposed Rules for estimation and reporting of exploration results, mineral resources and mineral reserves apply to all mineral properties, not just properties that are judged material.

Based on the Commission's proposed metric to measure materiality of a property - 10% of assets - it is possible that many of the mines at the larger mining companies would not meet the percentage of assets test. Specifically, the largest producing mine for an international mining company may not meet the materiality test for disclosure under the Proposed Rules, which is contrary to the Commission's objective of disclosures for mining operations that "are material to its business or financial condition". The materiality considerations under segment reporting more closely aligns with the above stated Commission objectives.

The US GAAP measure of materiality is defined in ASC 280/FASB Statement No. 131 - segment reporting. Paragraph 18 of Federal Accounting Standards Board (FASB) 131 mirrors paragraph 13 of International Financial Reporting Standard (IFRS) 8 and reads as follows:

18. An enterprise shall report separately information about an operating segment that meet any of the following quantitative thresholds:

a. Its reported revenue, including both sales to external customers and intersegment sales or transfers, is 10 percent or more of the combined revenue, internal and external, of all reported operating segments.

b. The absolute amount of its reported profit or loss is 10 percent or more of the greater, in absolute amount, of (1) the combined reported profit of all operating segments that did not report a loss or (2) the combined reported loss of all operating segments that did report a loss.

c. Its assets are 10 percent or more of the combined assets of all operating segments.

Information about operating segments that do not meet any of the quantitative thresholds may be considered reportable, and separately disclosed, if management believes that information about the segment would be useful to readers of the financial statements. [italics added]

¹⁵ Requests for Comment 3, 4, 5, 6, 7, 9, 11 and 12.

The SME recommends that the FASB 131 paragraph 18 quoted above is applicable, and in particular the italicized portion. It is SME's position that "bright-line" tests are not helpful and may result in incorrect identification of material properties.

3.2 Inclusion of Material Information in Disclosure¹⁶

The Proposed Rules do not offer instruction to the qualified person regarding materiality of information to be provided in disclosure, including technical report summaries. SME recommends the guidance listed below from the SME Guide.

"In particular, the Competent [*i.e.* Qualified] Person, ...must consider that the benchmark of Materiality is the inclusion of all aspects relating to the Exploration Results, Mineral Resources or Mineral Reserves on which investors or their advisers would reasonably expect to be provided explicit comments from the Competent Person. The Competent Person must discuss any material aspect for which the presence or absence of comment could affect the public perception or value of the mineral occurrence. Mineral Resources and Mineral Reserves are estimates with attendant uncertainty. The Competent Person should provide a balanced discussion of risks and opportunities accompanying statements of Mineral Resources and Mineral Reserves."

Material risks related to environment, infrastructure (transport, power, water), social license etc. should also be discussed.

4.0 DISCLOSURE FRAMEWORK¹⁷

4.1 Exploration, Development and Production Stages

In Topic 2 of the Proposed Rules, "Definitions of exploration, development, and production stage, the Commission notes that "Guide 7 applies these definitions to the registrant as a whole, however, and not on a property-by-property basis." This observation is correct and is the reason that the definitions were included in the text of what is now Guide 7 that was developed for use in Form S-18 (Securities Act Release 33-6299, March 18, 1981).¹⁸ Form S-18 was designed for smaller issuers, and the mining companies that used S-18 were almost all exploration-stage firms. This was the reason for *Instruction to paragraph (a) of Guide 7*. "1. Mining companies in the exploration stage should not refer to themselves as development stage companies in the financial statements, even though such companies should comply with FASB Statement No. 7, if

¹⁶ Requests for Comment 4 and 5.

¹⁷ Requests for Comment 4, 7, 10, 11, 12, 16, 17, 18 and 19.

¹⁸ Abbott, D.M., 2014, A historical review of recommendations for reporting exploration results, mineral resources, and mineral reserves: Mining Engineering, February 2014, p. 38-40.

applicable.” SME notes that the stage definitions are often cited in registrant’s filings (for example Form 10-K)¹⁹.

As is clear from the instruction, the focus was on the definitions as applied to companies and to the heading used in the financial statements. Under FASB Statement 7, these exploration-stage companies would have “Development Stage” as the heading in their financial statements, which would be misleading for exploration-stage companies. The definitions and the instructions should remain in the Commission’s mining disclosure rules for this reason. SME endorses the need to define the exploration, development, and production stages for the purposes of financial statement characterization only and to continue to require exploration-stage firms to use this term in their financial statements.

SME suggests that the definitions of exploration-stage and development-stage be applied to companies for accounting purposes only. These categories and other related (*e.g.* suspended production) terms are not necessarily useful for categorization and disclosure purposes on a property level.

4.2 CRIRSCO Framework for Disclosure²⁰

Table 1 of the CRIRSCO Template provides a checklist that should be considered in disclosure:

“Table 1 is a checklist and guideline that those preparing reports on Mineral Exploration Results Mineral Resources and Mineral Reserves should use as a reference. The checklist is not prescriptive and, as always, relevance and materiality are overriding principles that determine what information should be publicly reported. It is, however, important to report any matters that might materially affect a reader’s understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources and/or Mineral Reserves.”

Nearly all the CRIRSCO codes have versions of Table 1, and these tables have tended to become more extensive in their coverage over time. SME urges that the Commission require qualified persons to consult Table 1 of the Template or other codes and standards produced by national and regional (JORC, PERC) reporting organizations. This will ensure that material items are not inadvertently omitted from disclosure.

The Proposed Rules should apply to the preparation of exploration information, mineral resource and reserve estimates for all of a registrant’s properties, regardless of whether they are

¹⁹ Placer precious metal and tin miners, semi-precious gem producers, and small industrial minerals (*e.g.* aggregates) producers elect to commence mining operations based on minimal exploration information. In such cases, these registrants should disclose this election to commence mining and the related risks.

²⁰ Requests for Comment 1, 4, 70, 71, 118, 119, 120, 121, 122, 123, 128 and 129.

considered material or not. SME recommends the qualified person apply the CRIRSCO framework for disclosure (Table 1) for all properties.

4.3 Inconsistency of USGS circulars 831 and 891²¹

SME believes that the Commission should prohibit use of the definitions in Circulars 831 and 891, even for coal. The first two paragraphs of Circular 831 prove that this classification system used the same terms for a different purpose, thereby confusing the general public.

Through the years, geologists, mining engineers, and others operating in the minerals field have used various terms to describe and classify mineral resources. Some of these terms have gained wide use and acceptance, **although they are not always used with precisely the same meaning.**

Staff members of the US Bureau of Mines and the US Geological Survey collect information about the quantity and quality of all mineral resources, but **from different perspectives and with different purposes.** [Emphasis added.]

Geological surveys and bureaus of mines are often tasked to identify mineral occurrences that may be of economic interest in 25 or 50 years in the future. Circulars 831 and 891 were written to support this legitimate task. However, these mineral occurrences are not the same as the deposits containing mineral resources and mineral reserves as defined by the mining industry and the Commission today. Prohibiting the use of these definitions should eliminate much confusion and uncertainty.

4.4 Mineral Brines and Geothermal Require Special Treatment from Solid Minerals²²

SME firmly believes that mineral brines and geothermal energy projects should be excluded from a registrant's list of mining properties.²³ Extraction of these resources requires pumping of fluids rather than digging of solid materials, and to quote the Commission from their defense of the exclusion of gases and water on p. 63 of the Proposed Rules, "the scientific and engineering principles used to estimate these resources are substantially different from those used to estimate mineral resources." This statement also holds true for both mineral brines and geothermal energy. Thus, it seems inconsistent that this reason is given for excluding water but not mineral brines and geothermal energy, both of which use water as the "solvent." (A mineral brine consists of metal halides or sulfates dissolved in water, and power from geothermal energy is derived from heating of water to steam.) SME notes that the Los Alamos National Laboratory

²¹ Request for Comment 75.

²² Requests for Comment 2, 50, 51 and 52.

²³ Requests for Comment 6 and 64.

has proposed Hot Dry Rock power systems based on carbon dioxide²⁴, which is a gas is excluded by the Commission's Proposed Rules.

SME believes that defining resources for mineral brines and geothermal energy in a manner similar to those of solid deposits is not only unworkable but also potentially very misleading. The scientific and engineering principles' used to estimate geothermal energy resources are substantially different from those used to estimate mineral resources. These points are discussed in greater detail below.

In situ leach projects involving using leaching as a recovery method are not considered mineral brines because their resources are based on solid minerals.

4.4.1 Mineral Brines Described²⁵

Mineral brines are extracted for sodium, potassium, magnesium, lithium, and boron. They may be extracted from surface lakes as at the Great Salt Lake in Utah and Big Quill Lake in Saskatchewan or from saline subsurface aquifers as at Silver Peak in Nevada or Wendover in Utah. Brine lakes may disappear or be reduced significantly in size seasonally as at Sevier Lake in Utah or Lake Acigol in Turkey.

Extraction methods for subsurface brines vary depending on the depth below ground surface (bgs) of the piezometric surface of the brine. In some cases, production is from parallel trenches on surface with the brine seeping into the bottom and sides of the trenches. Significant issues in these cases are the rates of recharge and grade recovery of the brine aquifer. Both the extraction and recharge rates depend on the porosity and hydraulic properties of the host rock. Typically, the extraction rate significantly exceeds the recharge rate.

For deeper brines, extraction is through wells completed in a series of subsurface aquifers. Again, sustainability depends on the porosity and hydraulic properties (permeability and storativity) of the aquifers. Because of the potential for recharge no matter how slowly, the volume of the resource is not simply the volume of the pore space, as one would assume if the situation were truly parallel to solid minerals. In addition, when pumping out brines, as with any mineralized groundwater, the grade will drop with time but will rebound after a period without pumping. This phenomenon is well known but hard to predict. Thus the volume and life of a mineral brine resource are difficult to assess properly. The result is that resource statements could be very misleading to investors unfamiliar with such resources.

²⁴ Brown, D. W. (2000), "A Hot Dry Rock Geothermal Energy Concept utilizing Supercritical CO₂ instead of Water," Proc. 25th Workshop on Geothermal Reservoir Engineering, Stanford University, 6 p.

²⁵ Request for Comment 51.

4.4.2 Geothermal Energy Described²⁶

Although several reporting codes^{27,28,29} have been developed for geothermal energy resources, there is no internationally accepted standard protocol to estimate and report the potential for geothermal energy.³⁰ Important considerations in resource calculations are the thermal properties of the rock and fluid (both aqueous and steam), the at-depth and baseline temperatures of the rock and fluid, fluid densities (to calculate mass flows), thermodynamic properties especially enthalpies and the recovery factor. Recent articles have suggested that resources should be classified on the basis of the type of power plant.³¹ Geothermal energy should be included within energy-firm disclosure rules.

4.5 Coal and Industrial Minerals

Among the reasons for recommending that the Commission adopt the CRIRSCO Template or SME Guide (*i.e.* include them by reference as guidelines for the proposed rule), is the recognition in the Template and SME Guide of the contrast in reporting ascribed to coal and industrial minerals and those of base and precious metals. These differences are discussed in the SME Guide's sections titled *Exploration Results for Coal, Coal Resources, and Coal Reserves* (Sections 60 - 64) and *Exploration Results, Mineral Resources and Mineral Reserves for Industrial Minerals* (Sections 65 - 68). Salient features for coal and industrial minerals are provided below:

- The coal industry uses different terminology than the base metals and precious metals industry, and the Commission's Proposed Rules should allow these differences for clarity for the reporting registrants. Examples are:
 - “Mineral” becomes “coal,” “grade” becomes “quality.”
 - Coal reserves are not reported on “contained metal.”
- Coal reserves, by definition, are saleable product and include mining losses and dilution, and processing losses if any. The reserve is the saleable product, whether the coal is sold on a run-of-mine basis, or on a processed basis. Depending upon the markets, a property

²⁶ Request for Comment 51.

²⁷ Lawless, J. V. et al. (2010), “The Australian Code for Geothermal Reserves and Resources Reporting: Practical Experience,” *Proc. World Geothermal Congress*, Bali, Indonesia, 5 p.

²⁸ Canadian Geothermal Energy Association (2010), *The Canadian Geothermal Code for Public Reporting*, available at <http://www.cangea.ca>

²⁹ Harvey, C. et al. (2014), *Best Practices Guide for Geothermal Exploration*, IGA Service GmbH, Bochum, Germany, 196 p.

³⁰ Harvey, C. (2014), *op. cit.*

³¹ Fauzi, A. (2015), “Revision of Geothermal Resource Classification in Indonesia Based on Type of Potential Power Generation,” *Proc. World Geothermal Congress*, Melbourne, 5 p.

may sell both products. The reporting should make a clear distinction between the types of losses.

- In situ coal is by definition a coal resource, not a reserve. SME does not support the reporting of coal or industrial minerals reserves at points of reference other than the final, saleable product. To declare reserves on an in situ basis is inconsistent with other reporting codes and is potentially misleading, as there can be only one mineral reserve value for a property.
- Coal resources and coal reserves are normally reported on a tons and coal quality (rank) basis, with the physical and chemical qualities required dependent on the targeted market. Correct reporting of coal quantities should use in situ moisture as the reporting basis. At every stage of reporting coal quality, the registrant should clearly state the reporting basis of the raw data and coal qualities.
- Industrial minerals are sold as mineral products that must meet specific customer specifications and volume requirements. Sometimes the mineral product sold is a bulk product sold to firms that use these minerals in making their products; sometimes the mineral product is a finished consumer product, and sometimes the same mineral product is sold into both markets. For example, the bentonite mines in northeastern Wyoming and adjacent South Dakota sell kitty litter products as consumer-packaged products and as bulk product to firms making enhanced kitty litter products, such as by the addition of baking soda (another industrial mineral product). Establishing a viable market for an industrial mineral product is the first step in evaluating an industrial mineral property, and this step is far more important than the deposit's geology or other characteristics.
- Many industrial minerals resources and reserves are reported on a tons and grade/quality basis, not on a contained mineral basis.
- Reporting of deleterious materials or certain physical properties may be more important than the overall composition of the mineral itself, and thus should be reported when the need to do so is determined by the qualified person. Examples are the elemental contents of ash in coal, sulfur content, dioxins, asbestos-form minerals in vermiculite or erionite in zeolite deposits.
- The reporting of industrial minerals must clearly state whether the reporting is based on tons of ore at a cut-off grade or on a processed saleable product. Industrial minerals are reported differently based on common practice within the specific industrial minerals sector.
- For certain industrial minerals, the modifying factors may be significantly more critical than geoscientific knowledge of the deposit in determining mineral resources and mineral reserves.
- Due to the extreme sensitivity to pricing, industrial minerals may need to be exempt from certain price disclosure requirements when filing a technical report summary. Indeed, within some industrial minerals firms, different divisions within the same firm compete with each other using differing products derived from the same basic material source (for example kaolin and other clay products).

- The Proposed Rules require the qualified person to state the relative numerical accuracy of the mineral resources. This places an unnecessary burden on qualified persons and the industry and provides no meaningful information to the investing public. A large segment of the mining industry (e.g., coal, industrial minerals, aggregates) does not currently need to employ such geostatistical analysis to accurately model their resources. These deposits are typically geologically simple. The qualified person is able to comment on the uncertainty in a manner that is appropriate for the investing public.

4.6 Lack of Comparability³²

The mining industry is heterogeneous, and the Commission's prescriptive comparability provisions in Proposed Tables 2-8 will tend to make disclosure non material and confusing to the investor. The following factors demonstrate this lack of comparability:

- Commodity pricing: \$/troy ounce, \$/carat, \$/lb, \$/short ton, \$/long ton, \$/metric ton (tonne)
- Mining method: quarries, open-pit, underground, in-situ leaching and solution mining
 - Underground methods would include cut-and-fill, drift-and-fill, long-hole stoping, sublevel caving, block caving, long wall, room-and-pillar, augering
 - Open-pit methods would include surface mining, deep open pits, dragline and bucket wheel excavation
- Continuous operation versus campaign mining (particularly applicable to industrial minerals, sand, gravel, crushed stone etc.)
- Products include: direct-shipping ore, concentrates, precious metal doré, cathodes, wholesale product, packaged consumer product, thermal coal, metallurgical coal, chemical feedstock coal
- Reference point may be either delivered to the processing facility or after beneficiation at the processing facility

As the industry evolves, new technologies will be developed leading to new methods of extraction, processing and products.

Therefore SME recommends that the registrant determine the appropriate format for disclosure presentations.

³² Requests for Comment 4, 124, 125, 126, 127, 128 and 129.

4.7 Consideration of Climate, Environmental, Social Issues, Safety and Health³³

4.7.1 Climate, Environmental and Social Issues

The Commission is a securities regulator, and other government agencies are responsible for environmental and social impact. Currently the mining industry's operations are covered by multiple environmental regulatory agencies in the jurisdictions where the properties are located. Lending institutions require compliance with IFC Performance Standards and the Equator Principles III. Many companies are signatory to World Gold Council, Cyanide Code, International Council of Mining and Metals (ICMM), and other worldwide standards. SME feels strongly that an additional and overlapping layer of regulation in the Proposed Rules is not required and should not be adopted. Technical report summaries for operating properties should disclose the number of material environmental incidents/violations and corresponding mandatory and voluntary corrective actions taken during the prior three years and how these will impact future operations.

CRIRSCO member guides and codes are developed under the principles of Transparency, Materiality and Competence to ensure that sustainability and social acceptance are critical areas of mining projects that require careful study and management for public reporting of mineral resources and mineral reserves.

A requirement in the Proposed Rules to include "identification and detailed analysis of requirements or interests of agencies, NGOs, communities and other stakeholders" in prefeasibility and feasibility studies is burdensome, and a "detailed analysis" is outside of the expertise of most qualified persons³⁴.

The appropriate time for this analysis is during a public comment period, usually associated with the Environmental Impact Study (EIS), and the parties involved at that time are best equipped to make the analysis. If the EIS exists, it is appropriate for the qualified person to reference modifying factors from this public document.

The CRIRSCO Template's principles are important to the estimation and public reporting of mineral resources and mineral reserves. Technical and economic factors must be considered in assessing reasonable prospects for eventual extraction of mineral resources, and modifying factors to the convert mineral resources to mineral reserves, and these factors include environmental, social and sustainability considerations.

4.7.2 Safety and Health

SME is a strong proponent of consideration of safety and health in disclosure to the investor. SME Guide's Table 1 includes disclosure of safety issues in Item F.2. Staffing. However, SME

³³ Requests for Comment 8 and 110.

³⁴ See Instruction 1 to Subpart 1302 Proposed Table 1 (environmental compliance and permitting).

notes that existing SEC rules require detailed disclosure regarding mine safety issues for US mines operated by US registrants. SME would find a requirement to provide summary mine safety disclosures in technical report summaries to be acceptable, but is opposed to any requirement to provide duplicative and burdensome disclosures on topics otherwise covered in Commission disclosure requirements.

For planned or new operations, most mining companies would propose a program seen to be effective elsewhere for new or planned operations.

Health includes all concerns for all environmental conditions affecting the health of workers, customers, or community within a property's area of influence, or using materials from the plant and mine. SME supports summary disclosures on these topics to the extent they are material to investors.

4.8 Comment on Disclosure Framework for Foreign Registrants³⁵

The Proposed Rules would apply to foreign private registrants as well as domestic registrants. The Commission has proposed amendments to Form 20-F to reference the disclosure requirements of subpart 1300 of Regulation S-K. Canadian foreign private issuers filing under the Multijurisdictional Disclosure System (MJDS) will not be subject to the new rules and may continue to report under NI 43-101 as permitted under MJDS rules. Canadian registrants not eligible to file under MJDS will no longer be allowed to rely on the "foreign or state law" exception, which currently allows such issuers, whether filing on Form 10-K or Form 20-F, to report under NI 43-101 standards. The "foreign or state law" exemption would be eliminated for all filers on domestic forms and on non-MJDS forms.

These changes impose a particularly harsh burden on non-MJDS Canadian issuers, particularly if the Proposed Rules are not brought in line with CRIRSCO Template. Foreign private issuers (other than MJDS filers) that are subject to other CRIRSCO jurisdictions would also be subjected to the full brunt of the new rules and to dual and inconsistent reporting obligations.

The continuing special treatment for Canadian MJDS filers, when combined with the variations in the Proposed Rules from CRIRSCO and additional burdensome disclosure requirements solidifies the attractiveness of the Canadian market for mining companies, even those listed in the US. The Commission should carefully consider the impacts of its proposed disparate treatment of Canadian issuers in the Proposed Rules.

³⁵ Requests for Comment 125 and 129.

5.0 EXPLORATION RESULTS³⁶

5.1 Exploration Targets

Exploration targets are not discussed in the Proposed Rules. Exploration targets are a defined term in the CRIRSCO Template and related codes, and they are in common use under these disclosure frameworks. The definition contained in the CRIRSCO Template is as follows:

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

An example of guidance to the definition is contained in the SME Guide:

It is recognized that it is common practice for an entity to comment on and discuss its exploration strategy in terms of target size and type. Any such information relating to exploration target size must not be expressed in a way that could be confused as an estimate of Mineral Resources or Mineral Reserves. Any statement referring to potential quantity and grade of the target must be expressed as ranges and must include a detailed explanation of the basis for the assumptions made and procedures used to estimate ranges of tonnage and grade or quality, and extent. There must also be a proximate statement 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 determination of a Mineral Resource. The detailed explanation of the basis for the statement of a target must specifically discuss the geological setting and exploration strategy, exploration activity already completed and the presence of or lack of the following attributes:

- mineralized outcrops and assays,
- surface geochemical and physical sampling results,
- surface and subsurface geophysical survey results, and
- drill holes, test pits, and underground workings.

Proposed exploration activities designed to test the validity of an exploration target should be detailed and include the timeframe within which they are expected to be completed.

³⁶ Requests for Comment 7, 43 and 44.

SME believes discussion of exploration targets may be material to the investor and would normally be discussed in a technical report summary, particularly where the targets are in proximity to mineral resources and reserves. Therefore, the Proposed Rules should be modified to allow inclusion of exploration targets.

5.2 Disclosure of Exploration Results³⁷

The Commission has proposed to require the disclosure of material exploration results for material mining properties. Proposed Tables 4 and 5 are not useful as explained in Section 11.4.5. The disclosure of exploration results must be based on the analysis of a qualified person submitting a technical report summary that is filed as an exhibit with the Commission, with particular care taken to evaluate the veracity of historical information prior to disclosure. Under CRIRSCO Templates, the release of exploration results are optional, and an issuer is only required to provide full disclosure of exploration results when considered appropriate and material to the investor. The Proposed Rules could require companies to make disclosures at calendar-based intervals which may occur before exploration results could be considered material. Also, early disclosure may cause a company to lose a competitive advantage and may conflict with confidentiality agreements made with property owners or joint-venture partners.³⁸ SME recommends that the Commission adopt the CRIRSCO Template and allow exploration results to be reported as determined to be material by the registrant and in a format designed by the qualified person to be an effective way to inform the investor in a transparent manner.

US reporting companies currently disclose exploration information within their annual report (Form 10-K/Form 20-F), but this information is generally minimal in content and scope. SME suggests that disclosure of exploration results should be encouraged, and disclosure of the type of data that are used in preparation of mineral resources and mineral reserves should be consistent, aligning with other jurisdictional regulations (CRIRSCO). However, SME recommends care be taken to avoid excessive disclosure requirements (particularly with respect to data generated early in an exploration project) that could be used by competitor companies to gain an advantage through the use of a registrant's data at no cost to the competitor, resulting in potential harm to the registrant's shareholders.³⁹

³⁷ Requests for Comment 42 and 46.

³⁸ See *Securities and Exchange Commission v Texas Gulf Sulfur* 401 F2d 833 (1968) that approves the nondisclosure of material information provided that there is no trading or tipping.

³⁹ Request for Comment 8.

6.0 MINERAL RESOURCES⁴⁰

6.1 General Discussion

Under CRIRSCO reporting standards, mineral resources are reported separately from mineral reserves, and inferred resources are reported separately from measured and indicated resources. SME believes that these traditional presentation formats are helpful to investors in understanding the different risk levels and assumptions underlying the estimates of these categories.

Technical and economic factors are used in a conceptual analysis by a qualified person to determine that mineral resources have reasonable prospects for eventual economic extraction. Mineral resources should be declared on an in situ basis in terms of tonnage grade and contained metal or tonnage and quality for coal and industrial minerals. Resource statements should be accompanied with an explanation of the assumptions made with respect to the technical and economic factors. Grades should be interpolated or extrapolated into all blocks (units of estimation) that will report to reserves. Where mineral resources are declared exclusive of mineral reserves they should not include dilution incorporated in mineral reserves; also, mineral resources that are made inaccessible by extraction of mineral reserves should not be included in a resource estimate.

Statements of mineral resources as saleable product in Table 3 of the Proposed Rules are viewed as misleading in that the necessary pre-feasibility and feasibility studies will not have been completed at the time of disclosure.

The requirement for an Initial Assessment for first-time declaration of mineral resources and material changes (See Section 10.4.9) is endorsed by SME. It should be recognized that in the case of a declaration of inferred mineral resources, the qualified person should draw on his/her experience with analogue deposits in making assumptions as to the modifying factors, including cut-off criteria, dilution, mining recovery, metallurgical recovery and marketing (for example typical smelter contracts).

In establishing reasonable prospects for eventual economic extraction, the SME Guide has the following guidance:

The term “reasonable prospects” implies that Measured, Indicated, and Inferred Mineral Resources are constrained within pit shells for surface mining methods and constrained to coherent zones for underground extraction, both of which support mining, processing and future development cost estimates. A deposit model is required, which may be a computer-generated block model or a model based on maps, plans or sections. If necessary, viable beneficiation process(es) must be identified to meet the criteria for reasonable prospects. Economic criteria should be applied in like manner to all classes of Mineral Resources (Measured,

⁴⁰ Requests for Comment 7, 47, 56, 63, 70 and 71.

Indicated and Inferred). All material assumptions made in determining the reasonable prospects for eventual economic extraction must be documented and justified.

Interpretation of the word “eventual” in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron ore, bauxite and other bulk minerals or commodities, it may be reasonable to envisage eventual economic extraction as covering time periods in excess of 50 years. For many smaller deposits, application of the concept would normally be restricted to perhaps 10-15 years and frequently to much shorter periods of time. Interpretation and judgement of the word “eventual” is the responsibility of the Competent Person.

Commodity prices used in Mineral Resource reporting should be based on a reasonable and supportable range of commodity prices. If prices used for Mineral Resource estimation differ from those used for Mineral Reserve reporting, these differences should be documented and justified.

In assessing reasonable prospects for eventual economic extraction the qualified person should use his/her experience to test that the value of mineral resources (after deducting operating costs) to be declared could cover operating costs as well as initial and sustaining capital.

6.1.1 Comments on Prices to Be Used for Evaluation of Reasonable Prospects for Eventual Extraction⁴¹

Saleable production from resources could occur after the reserves are exhausted and in this case by that time, metal prices might typically be higher in real terms. Resources on undeveloped properties will normally take a significant amount of time to be converted to reserves and then permitted and developed to produce a saleable commodity⁴².

Thus saleable production from such resources will take much longer than that from reserves, and therefore global depletion of the commodity needs to be considered in defining the long-term price used in estimating the quantity of resources that have prospects for eventual economic extraction.

It is recommended that the Commission allow companies to use a mineral price for resource determinations that may be higher than the price used to define mineral reserves. In the past,

⁴¹ Request for Comment 69.

⁴² However, new technologies such as flotation, solvent extraction, heap leaching, etc. have had a tendency to increase supply, even though grades were lower, sometimes resulting in downward pressure on prices.

companies filing in the United States have used this approach to define and report “Other Mineralized Material” on their properties.⁴³

7.0 MINERAL RESERVES⁴⁴

7.1 Reporting of Mineral Reserves

The Commission has proposed to define mineral reserves as the “economically mineable part of a measured or indicated resource, net of allowances for diluting materials and for losses that may occur when the material is mined or extracted.” (See Rule 1301(d)(13)(i)) The Commission has proposed a net estimate, requiring disclosure at three points of reference: in-situ, mill feed and saleable product. The Commission acknowledges that this conflicts with the CRIRSCO definition of mineral reserves, which allows the inclusion of diluting materials in reserve estimates, but explains that the difference would be “relatively minor” and would not result in significant additional compliance burden.

SME does not find this deviation from CRIRSCO Templates to be minor; rather, SME finds the proposed construct to be burdensome and to result in disclosure of information not made under the CRIRSCO Template and derivative reporting standards. Mineral reserves must be reported as of a single point of reference. “In situ” is not a valid point of reference. “Plant/mill feed,” more commonly referred to as “run-of-mine,” is one option, and saleable product is another and mutually exclusive option.

7.1.1 In Situ

The “in situ” terminology is ambiguous and is not consistent with the CRIRSCO Template or current international practice, all of which require that modifying factors be applied to determine reserves. In situ quantities have been explicitly excluded from all modern international codes because of the misleading nature of such estimates and their use as a tool by unscrupulous promoters to overstate the quality of their mineralization. While it is understood what the concept intends, it opens the door to some of the worst industry practices with respect to the estimation and reporting of mineral reserves.

SME does not support the declaration of in situ reserves for several reasons, the first of which is there are companies that intentionally include a level of mining dilution in their block models. This is particularly true of operating properties where the block model can be “tuned” through reconciliation with production or by geostatistical methods to incorporate an allowance for internal dilution. Removing this dilution would not be an easy step, nor would it provide any useful information. On being a measure of processing efficiency, which the Commission describes as how well the registrant converts the resource into saleable products, dilution is more

⁴³ Request for Comment 69.

⁴⁴ Requests for Comment 7, 76, 77 and 81.

directly related to the Selective Mining Unit (SMU)⁴⁵ size and is tied to the size of equipment being used. Larger equipment typically means higher dilution, but this is offset by increased productivity and reduced cost. As for the efficiency of the process plant, this is best measured by the recovery method in conjunction with the throughput rate and the cost. SME believes declaration of in situ reserves will only increase confusion amongst investors without providing additional value. In situ reserves do not drive the production estimates that support the cash flows for the property and have no practical value.

7.1.2 Cut-off Grades Are Typically Set After Dilution is Applied⁴⁶

The minimum economic cut-off grade is the lowest ore grade of run-of-mine material received by the mill or other processing facility that will make a profit. Hence the cut-off grade must also include dilution and is not normally stated as an in-situ grade. Modern grade modeling methods include dilution since the objective of modeling open pit deposits and in ore control is to predict the grade as received at the processing plant.

In underground mining such as a block caving operation, the minimum grade of material taken from a drawpoint is the diluted material that will be transported to the processing plant, and hence it is not an in-situ grade. Software exists (PCBC) that will take an in situ model or mineral resource and associated waste rock, located usually on the sides or top of the draw column, and will mix waste and mineralized material during the production scheduling process. The draw columns are shutdown when a cut-off grade is reached (call the shut-off grade), and the reserve is estimated as the material drawn over the production schedule.

Guide 7 states, “It should be stated whether the reserve estimate is of in-place material or of recoverable material. Any in place estimate should be qualified to show the anticipated losses resulting from mining methods and beneficiation or preparation.” These losses should be shown for each material type and by metal/product.

7.1.3 Contained Quantities for Metals Mines

CRIRSCO and all other jurisdictions report mineral reserves for metals mines as contained quantities (prior to process recovery), rather than saleable quantities. Contained quantities were previously reported under Guide 7. This distinction could result in differences in total ounces of mineral reserves reported in the US versus in other jurisdictions, which again disadvantages US reporting companies from the perspective of consistency of reporting and administrative burden. However, as indicated in Section 7.1.4, the disclosure of contained mineral quantities must be accompanied by disclosure of the processing losses on a percentage basis.

⁴⁵ The selective mining unit is the smallest practical volume that can be selected to ore or waste.

⁴⁶ Request for Comment 77.

7.1.4 Plant/Mill Feed

SME feels that introduction of the new terminology “Plant/Mill Feed” for mineral reserves and resources creates unnecessary complications without any perceptible gain and should be eliminated. Plant feed is better known as “run-of-mine”. The existing definition of mineral reserves is already well defined at this reference point and is consistent across all modern international reporting codes, including Guide 7.

“Plant/mill feed” can be used in terms of material delivered to a dump or heap leach facility. For coal and some iron ore and industrial minerals, plant/mill feed could represent a loadout facility applicable to a direct-shipped ore.

7.1.5 Saleable Product

It is important to comment on whether the reserve tonnages and grades are reported on a dry basis or a natural or “as received” basis in which case the moisture content should be declared.

There can be only one type of reserve reported. There are two methods of reserve reporting in common use:

- Report on a run-of-mine or plant feed basis: Report tonnage, grade and where relevant contained metal; report recovery factors as applicable so that the investor can make an estimate of saleable product. This is in line with Guide 7⁴⁷. The income stream is based on contained metal/product less recovery losses.
- Report on a saleable product basis: Report tonnage, grade and where relevant contained metal, or mineral content. This is the reserve. Optionally run-of-mine or plant-feed tonnages and grades can be reported, but these are not reserves.

7.1.5.1 Report on a Run-of-Mine or Plant-feed Basis

This method is commonly used for metals mines and some coal and industrial minerals mines, particularly but not always, where ore is direct shipped with no beneficiation. The current Guide 7 reporting regime requires reporting of mineral reserves (tons, grade/quality, metal content) and process recoveries, allowing ready calculation of recoverable (saleable) quantities by investors as needed. Guide 7, like most international reporting codes, recognized convention differences in some commodity sectors and does not require registrants to state reserves as recoverable/saleable. Requiring US companies to report saleable products provides the opportunity for investor confusion and unequal comparisons to competitors in other jurisdictions. The requirement in Table 3 to present summary mineral reserves and resources on a saleable basis again creates a significant and material discrepancy from other reporting jurisdictions, with U.S. companies now reporting “recoverable reserves” versus “contained reserves”. This may

⁴⁷ Industry Guide 7: Instructions to paragraph (b)(5)(1).

lead investors to think that the reserves and resources at US based companies are materially less than those reported by foreign competitors. SME would support reserve reporting under CRIRSCO Templates, as outlined in the current SME Guide.

7.1.5.2 Report on a Saleable Product Basis

As explained in Section 4.5, for reserves for most coal and industrial minerals reserves should be stated in terms of saleable product. The CRIRSCO Template provides the following guidance, which is slightly different from the position expressed above:

For some industrial minerals, it is common practice to report the saleable product rather than the “as-mined” product, which is traditionally regarded as the Mineral Reserve. The preferred approach in the Template is that, if the saleable product is reported, it should be in conjunction with, not instead of, reporting of the Mineral Reserve. However, it is recognised that commercial sensitivities may not always permit this preferred style of reporting. It is important that, in all situations where the saleable product is reported, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

Saleable product can be reported as tonnage and grade; however, for some industrial minerals grade, quality or physical characteristics are not reported where a competitive advantage exists.

7.2 Cut-off Grades and Plant Recoveries

Many proposed projects and operations have multiple ore types. As such there can be multiple cut-off grades or feed quality specifications, plant recoveries and different product specifications for each ore type. Other registrants with poly-metallic deposits containing three or more saleable commodities use cutoffs based on a Net Smelter Return (NSR). Leach properties for copper and gold use cut-offs on acid and/or cyanide soluble copper and soluble gold, not total metal content. Others include high-acid consuming cut-offs in their determination of what is ore and what is waste. Hence, the reporting of one fixed cut-off grade used to define in situ or processed resources and reserves may not be useful to an investor and could be misleading since it may not be used in the calculation of the reported in situ or processed reserves/resources.

The qualified person should be permitted to present cut-off criteria and plant recoveries as ranges, and to make separate presentations of reserves where there are material differences in the processing methods, as for example mill versus heap leach for copper and precious metals.

On some properties the mixture of material types based on cut-off criteria applied to several variables is so complex that a transparent presentation to investors would be very difficult to prepare. In these cases, the Commission should not require the disclosure of the cut-offs used to determine resources and reserves.

8.0 COMMODITY PRICES⁴⁸

8.1 Introduction and Summary

As proposed by the Commission, the price used to calculate both mineral reserves and mineral resources could not be higher than the average spot price during the 24-month period prior to the end of the fiscal year covered by the study, calculated based on an unweighted average of the daily closing price for each trading day within such period, except in the cases where sales prices are determined by contractual agreement.

The CRIRSCO Template requires forward looking market forecasts and prices. This has been interpreted to require use of forward-looking price forecasts and marketing studies by multiple institutions to develop a “consensus price” that the qualified person and the registrant feel is reasonable. Usually the consensus price involves forecasts from multiple sources, and these forecasts in turn are used by multiple qualified persons. Thus the consensus price provides comparability across qualified persons and projects and reflect the invest community’s view of short- and long-term prices. Consensus prices have been successfully used as credible sources for price disclosure in Canada for several years.

The Proposed Rules represent a material departure from the CRIRSCO Template interpretations, which could result in material differences in reporting between registrants required to follow the Proposed Rules and those that do not (particularly MJDS filers). Under CRIRSCO Template derived standards, the qualified person is allowed to make judgments regarding the proper price to use in the calculation of mineral reserves and resources, and qualified persons routinely use different prices for the calculation of mineral reserves and resources, with mineral resources sometimes using a higher price than the price used for reserves. SME believes that a 24-month average price has more volatility than the existing 36-month average permitted by the Commission staff under Guide 7. Footnote 469 in the Proposed Rules states a 20% variance between the 24-month trailing average and the copper price for the following year; versus a lesser 16.6% variance using a 36-month trailing average. Because of its reduced variance, the 36-month trailing average appears to be the more accurate of these two “trailing average” alternatives.

Further, the requirement to use a lower price for mineral resources will result in lower mineral resource estimates under the US rules. Issuers reporting in multiple jurisdictions will have to decide whether to report mineral resources elsewhere based on the CRIRSCO standards or whether to report on a uniform basis under Commission standards. For these reasons, SME believes the Commission should instead adopt the CRIRSCO Template derived standards to determine prices to be used to support mineral reserve and resource estimates. The qualified person under the CRIRSCO Template would be required to provide justification for the prices used. (Request for Comments 67, 68 and 69).

⁴⁸ Requests for Comment 68 and 80.

8.2 Commodity Prices Under CRIRSCO⁴⁹

CRIRSCO-based codes allow the qualified person to use any reasonable and justifiable price, which is based on the qualified person's or management's view of long-term market trends; however, the qualified person must provide justification for the prices used.

8.3 Long-term Prices Are Used in Impairment and Purchase Price Allocation

With respect to the proposed price requirement for mineral reserves and resources, it is recommended that the Commission consider the use of current and estimated metal prices for its price requirement, consistent with certain financial reporting requirements for the mining industry under US GAAP and IAS 36. The current and estimated prices under US GAAP are estimated using similar procedures to those of the CRIRSCO codes. Specifically, US GAAP requires that estimated future cash flows from mineral properties be utilized in determining the value of mining assets in a purchase price allocation and in testing mining assets for impairment. The estimated future cash flows are based on management's projections using projected sales prices reflecting the current and future forecasted prices. The forecasted prices should be consistent with the length of the mine life. For example, spot and forward curves are more appropriate for a shorter mine life. When the forward price curve does not extend far enough into the future to cover the life-of-mine schedule, from a practical standpoint the price at the end of that forward curve is held constant. From an international viewpoint and to level the playing field, it is preferable to use long-term price outlooks and short-term price curves based on management's projections, provided the qualified person submits the basis and justification of the price used. Variable future prices based on projected curves means cut-off grades may change on an annual basis and are not fixed as specified by the proposed Rules. If the Proposed Rule on estimated prices is implemented, the lack of comparability between that price and the metals prices used in financial reporting under US GAAP would result in inconsistent and, potentially, misleading information being provided to the investor. SME urges adoption of the CRIRSCO Template's commodity marketing and pricing procedures.

8.4 Variable Cut-off Grades May Depend on Price Forecasts⁵⁰

It should be noted that the cut-off grades used in modern mining operations are dependent on a number of modifying factors including: mineral type, rock physical properties, acid consumption attributes, operating costs, process site and downstream recoveries (including transportation losses), process and G & A sustaining capital, by-product credits, quality of saleable product, etc. as well as foreign currency conversions and premiums/deducts. In addition, many metal mining companies use a variable cut-off grade approach (functions of discount rate and opportunity costs) that is designed to maximize the investor's rate of return.

⁴⁹ Request for Comment 80.

⁵⁰ Requests for Comment 65 and 66.

As currently proposed, Canadian MJDS registrants would be allowed to use management's short and long-term forecasts, but all others would be required to use a price at or below the 24-month trailing average. This is not consistent with the overall object of competitive and fair reporting standards, will not "level the playing field" and belies the statement by the Commission that "aligning US definitions with foreign mining code provisions would benefit registrants and investors by promoting uniformity in mining disclosure standards."

8.5 Comments on the Commission Proposed Rule for Price⁵¹

The Commission should provide further clarification as to the basis for the spot price they recommend for use in determining the proposed 24-month or 36-month trailing average since there are many metal exchanges, and these in turn can be impacted by different foreign exchange rates. Some listed metals have relatively small amounts of metals traded on exchanges, versus the total market volume that is driven by contractual agreements.

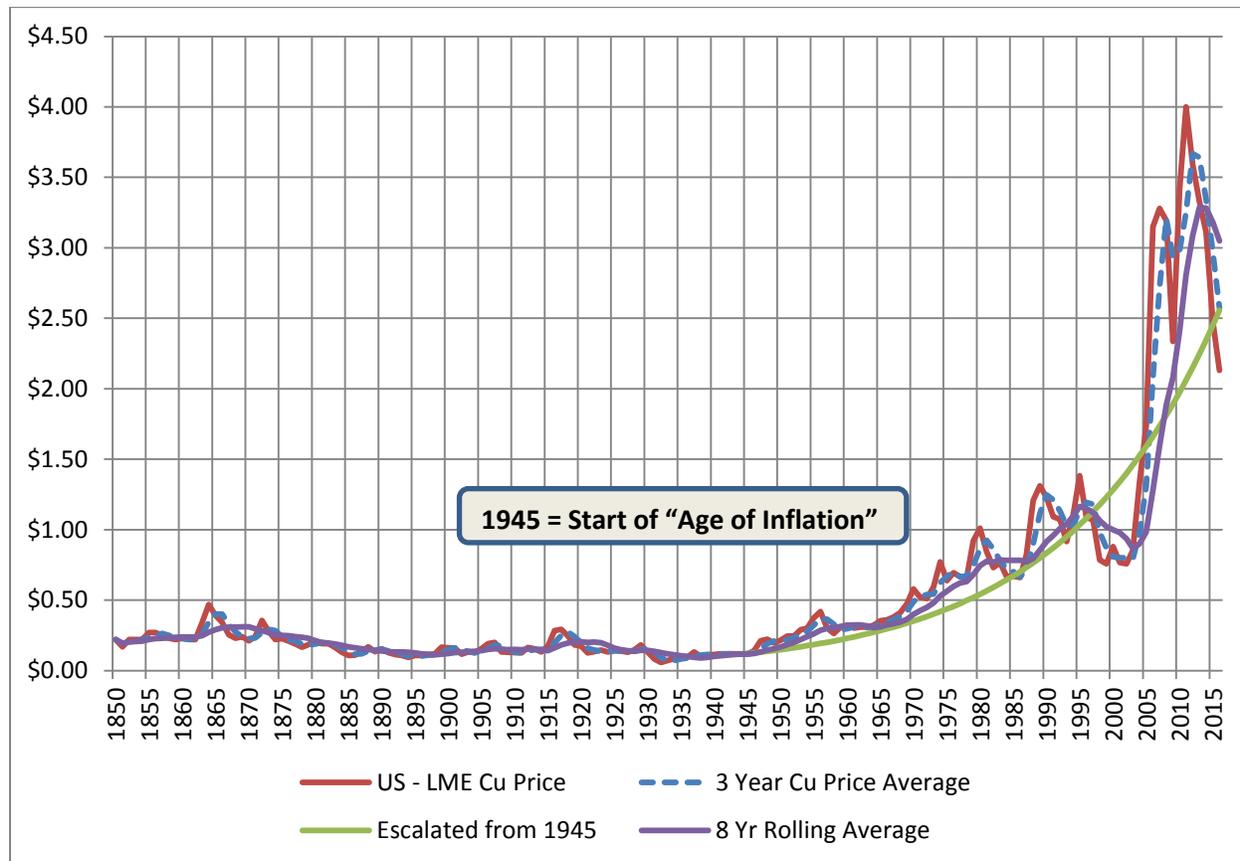
Fiscal periods for corporations can vary, and hence the objective of providing a common price for all reporting entities does not match reality, particularly if Canadian companies are allowed to use a different standard.

If the previous 36-month trailing average is changed to a shorter period, this may impact impairment value calculations and result in write-downs of past book values if prices are declining and management used higher prior prices in impairment calculations. Copper prices (see figure below) since 1945 (Start of the Age of Inflation) have continually increased over 11 price cycles. The average time between cycle peaks is 6.5 to 10 years with an 8-year average. Over the past 70 years, copper prices had an average annual escalation rate of 4.5%. Therefore, using a trailing average will typically under-estimate current and long-term copper prices. Like a broken watch that correctly tells the time twice a day, a trailing average intercepts price trends once on the way down and once on the way up over an 8-year cycle. Trailing averages do not take into consideration anticipated market supply and demand changes, whereas brokerage forecasts will include these modifiers in their projections. For example, the next copper price peak is likely to be by 2018 to 2020. Brokerage/financial houses can incorporate this potential impact into their short-term price curves and in their future long-term price forecasts.⁵²

⁵¹ Request for Comment 102.

⁵² Request for Comment 68.

FIGURE 1- Analysis of USGS & LME Cu Prices from 1850 to 2015, and Projected 2016



As shown in Figure 1, the 2-, 3-, or 8-year trailing averages are not good at forecasting long-term prices. Based on copper's 4.5% annual escalation rate, a two-year trailing average will underestimate current copper prices by an average of approximately 5% in real terms. Using a trailing average for long-term forecasts is equivalent to steering a car down a curving road by looking out the back window. Because resources and reserves will be mined in the future, price forecasts based on forward looking information should be more appropriate.

Applying management's short- and long-term price averages that can be based on independent brokerage forecasts in real dollars is a more appropriate approach to define and justify the long-term mineral prices used in determining resources and reserves. If the stated objective of changing the Commission rules is to level the playing field to attract capital investments and listings, then the mineral price guidance should be in alignment with the CRIRSCO codes as used by other foreign exchanges.

8.6 SME Recommendation⁵³

SME Recommends the Commission align its proposed pricing policy with the CRIRSCO Template and derivative foreign mining codes. CIM Best Practice Guidelines lists prices as a key assumption in determining resources and reserves and states, “if commodity prices used differ from current prices an explanation should be given, including the effect on the economics of the project if current prices were used. See BCSC’s 2012 Mining Report⁵⁴.

Management’s short- and long-term forecasted prices are typically based on consensus projections that are derived from an average of the short-term and an average of the long-term prices provided by numerous brokerage/financial houses that are independent of the entities that report resources and reserves. Consensus short- and long-term price averages are typically updated on a monthly or quarterly basis. A partial list of potential suppliers of short- and long-term prices are: Credit Suisse Group AG, Canaccord Genuity, Citigroup, Capital Economics, Econ Intelligence Unit, Investec, Oxford Economics, ANZ, China Int’l Capital Corp, Australia Dept. of Industry, RBC Capital Markets, Macquarie Research, CIMB, Cormark Securities, Barclays, Dundee Capital Markets, BMO Capital Markets, RBC Capital Markets, Numis Securities Ltd., UBS, Haywood Securities, TD Securities, Salman Partners, JP Morgan, National Bank Financial, HSBC Global Research, Desjardins Capital Markets, Raymond James, VTB Capital, Scotiabank, Morgan Stanley, CIBC World Markets, Deutsche Bank AG, Societe Generale SA, Roth Capital Partners, Edison Investment Research, Liberium Capital, and Nomura. Not all price forecasting sources provide both short- and long-term forecasts. A good source of consensus forecast information for 25 important commodities is the Minerals Monitor, published monthly by Consensus Economics Inc. London, UK, as derived from a survey of more than 40 energy and metals analysts.

Other sources of prices include reports filed on SEDAR and disclosure in annual reports of mining companies.

In the case of coal, industrial minerals, specialized metals, and diamonds, specialized firms will provide price forecasts, for example SNL, Integer Research, Todd Harris, Roskill, Commodities Research Unit, and WWW(diamonds).

SME believes there are sufficiently credible sources of price forecasts or capability to make forecasts such that a registrant in conjunction with qualified person should be able to use these to develop consensus forecasts for short- and long-term prices. These will be forward-looking, as will be the extraction of resources and reserves.

⁵³ Request for Comment 102.

⁵⁴ British Columbia Mining Commission, 2012, Mining report, 22 pp.

8.6.1 Disclosure of Pricing⁵⁵

It should also be recognized that the estimation of resources and reserves followed by the development of a technical report summary takes a significant effort. By enforcing the use of a metal price based on the 24- or 36-month trailing average, companies may find it onerous to produce an auditable plan and resource/reserve statement within the allotted time for filing 10-K reports. In order to avoid this crunch, they are forced to use a conservative approach and often under-estimate long-term prices (and reserves) based on prices that are less than the trailing averages. Using management's short- and long-term pricing forecasts, resources and mineable reserve schedules can be developed on the selected price in a timely manner to produce the reportable resources and reserves. The resources and reserves schedule generated using management's forecasts would be in alignment with the defined IAS 36 Impairment Test Standards and with Foreign Reporting Codes.

If desirable, a second resource and reserve "sensitivity" could be generated using a trailing average price to test the sensitivity of the resources and reserves to price changes. This would satisfy the principle of comparability. (However, each mining project's risk profile is unique, and hence the information may not be useful in comparing properties, as there are other material factors).

There is a significant difference between the timing of saleable commodity production from resources and reserves. Hence a trailing average price for reserves may be for a property that is in development or in production. Using the same price for resources and reserves means that the resource number will be very small or zero if the same modifying factors are used. This will result in an under-estimation of the resource potential in real terms (designated value beyond proven and probable or VBPP) for properties with reserves. Use of a higher price for mineral resource estimation tends to provide envelopes of resources within which the reserves are shown to occur after application of the modifying factors.

In conclusion, reporting entities should be required to disclose the mineral prices used in estimating mineral resources and mineral reserves, and to state that the reported reserves are economic at the stated prices, and that the resources defined have prospects for eventual economic extraction based on the prices disclosed. Estimates of mineral resources and mineral reserves are forward-looking information and the prices used for these estimates should be forward looking too. Exceptions should be allowed where publication could be viewed as anti-competitive.

⁵⁵ Requests for Comment 69 and 102.

9.0 RISK AND ACCURACY FOR MINERAL ESTIMATES⁵⁶

The Commission is correct in noting that the use of “confidence limits of relative accuracy” is considered “best practice” in the industry. This is a numerical assessment of ‘confidence interval’ for estimated mineral resources and reserves. Currently, some mining companies do provide such data, (primarily larger companies with the human resources to support such efforts), but most companies do not. The main reasons are:

- Training is limited to short-courses and undergraduate courses that stress geostatistical ore reserve estimation, but not development of confidence limits; further the software to determine confidence limits is not readily available from vendors. Although conditional simulations are used, the software to post process the results to obtain confidence limits must be scripted by the user. In summary, the required skill sets are limited to only few experts practicing in North America in this area.
- Computation of confidence limits of relative accuracy requires much higher levels of knowledge and experience in the fields of statistics and geostatistics that is not commonly practiced in mining industry today. For an example the qualified person would be required to know various types of variances in block grade estimation, impact of block size on estimated block variances, conditional (geostatistical) simulations and/or discrete Gaussian techniques which are performed at very high level geostatistics.
- For such investigations to have meaningful accuracy and precision, typically very large datasets are required, that sometimes can be far in excess of the data mining firms use to place a property into production.

A great deal of research and practice has been devoted to confidence limits on the grade, and a statement of relative accuracy of production increments within confidence limits is often used to support the classification of resources as inferred, indicated or measured.⁵⁷ However very little research and practice has been devoted to establishing the relative accuracy of interpreted orebody boundaries which may in turn depend on the accuracy of controlling lithological or structural information⁵⁸.

⁵⁶ Request for Comment 62.

⁵⁷ See for example: Verly, G, Postolski, T, Parker H.M., 2014, Assessing uncertainty with drill hole spacing studies – applications to mineral resources, Orebody Modelling and Strategic Mine Planning Symposium sponsored by AusIMM, Perth WA, 10pp.

⁵⁸ An example would be: Verly, G., Brisebois, K., Heart, W. 2008, Simulation of geological uncertainty, Resolution porphyry copper deposit, *in* Ortiz, J.M. and Emery, X Eds. Proceedings of 8th International Geostatistics Congress, Santiago, Chile, Volume 1, pp. 31 – 40.

Another example where thickness rather than grade was much more uncertain: Murphy, M, Parker, H. M., Ross, A. and Audet, M-A, 2004, Ore-thickness and nickel grade resource confidence at the Koniambo nickel laterite (a conditional simulation voyage of discovery), *in* Leuangthong, O. and Deutsch C.V.

Thus, the quantitative assessment of confidence limits of relative accuracy is a good practice, and should be declared where the analysis is available (See CRIRSCO Template). But it should be recognized such analysis frequently may not be available or, in the case of coal and industrial minerals, may not be required where the geological setting is simple, and qualitative assessment may be adequate. Thus quantitative assessment can be impractical for the above mentioned reasons. (Request for Comment 58). The Commission suggests use of a combined quantitative estimation of confidence intervals and qualitative measures to assess confidence levels for other risk factors such as reliability of drilling, sampling, or assaying techniques, and validity of modeling assumptions such as assumptions about geologic structures and domains. This is more complex than using just quantitative or, qualitative measures, and such a “scorecard” approach is being tested by some major mining companies, but it is not in common use.

For the present, at a minimum, the qualified person should indicate his/her assessment of risk by applying the definitions for inferred, indicated and measured resources. Persuasive in this regard are portions of the CRIRSCO Template definitions:

- Inferred Mineral Resources: “Geological evidence is sufficient to imply but not verify geological and grade or quality continuity... It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.”
- Indicated Mineral Resources: “Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.”
- Measured Mineral Resources: “Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.”

With respect to inferred mineral resources, the SME Guide also states:

“Inferred Mineral Resources should exclude material for which there are insufficient data to allow the inference of geological and grade continuity. Inferred Mineral Resources are intended to be sufficiently defined that their overall tonnages, grades and mineral contents can be estimated with a reasonable level of confidence.” Risk tends to connote an unfavorable outcome. In most prefeasibility and feasibility studies, favorable outcomes are covered under risk analysis and are often referred to as opportunities.

10.0 TECHNICAL REPORT SUMMARIES⁵⁹

10.1 Change of Name⁶⁰

The Commission proposal for Property Disclosure for Mining Registrants uses the term *technical report summaries*. This implies that a technical report would exist as backup. There is no requirement for such a report. The only requirement is that the technical report summary be based on information and supporting documentation prepared by a qualified person. For material properties, the Commission proposal does require the existence of an Initial Assessment in the case of first-time resource declaration and a Pre-feasibility or Feasibility Study to support first-time reserve declaration.

Current practice in the North American mining community is:

- For exploration results, disclosure is based largely on documentation, as for instance databases, quality assurance – quality control results, and sections and plans showing mineralized intercepts. Disclosure could be based on a technical report summary, but the existence of a “full” technical report is usually not available.
- For mineral resources, disclosure is based on documentation that would be compiled into a technical report summary. The existence of a “full” technical report is usually not available. Memoranda and backup exploratory data analysis, as for example variography, would exist. Resource models and files with composite grades would be archived.
- Mineral reserves that are being declared for the first time will be supported by a pre-feasibility or feasibility study, and in this case the technical report summary would be a true summary.
- Mineral Reserves that are updated as part of extensions of orebodies or satellite deposits would if material require a technical report summary. In these cases, documentation might consist of a life-of-mine plan that might consist of memoranda supported by maps and schedules.

In Canada, NI 43-101 specifies a Technical Report as a: “report prepared and filed in accordance with this Instrument and Form 43-101F1 Technical Report that includes, in summary form, all material scientific and technical information in respect of the subject property as of the effective date of the technical report.”

The Commission proposes preparation of a “a technical report summary by a qualified person that, for each material property, identifies and summarizes the scientific and technical information and conclusions reached concerning mineral exploration results, initial assessments used to support disclosure of mineral resources, and preliminary or final feasibility studies used to support disclosure of mineral reserves.”

⁵⁹ Requests for Comment 2, 121, 122, 123 and 128.

⁶⁰ Requests for Comment 83, 84 and 115

The two definitions are similar, and given the wide acceptance and usage of the term over 15 years, SME recommends that the Commission conform the contents of its technical report summary with Form NI 43-101F1 and then adopt the term “Technical Report” as defined in Canadian NI 43-101⁶¹.

For clarity, references below to *technical report summaries* relate to the Proposed Rules. *Technical Reports* relates to reports prepared under NI 43-101.

10.1.1 Comment⁶²

As a general matter, SME is supportive of the requirement to file technical report summaries for material properties; SME supports the disclosure of mineral resources, mineral reserves, or material exploration results for each material property. Requiring disclosure of the important scientific and technical information that forms the basis for disclosure of exploration results, mineral resources and mineral reserves in the Commission filings would benefit investors. SME believes that the format proposed for technical report summaries provides a reasonable disclosure framework for material information that would protect investors from intentional omissions by a registrant. The technical report summary should be filed when the registrant is disclosing mineral reserves, mineral resources or material exploration results for the first time or when there is a material change in the estimated mineral reserves, mineral resources from the last technical report summary filed for the property. To avoid burdensome disclosure, for active exploration stage properties, reviews for material changes should be conducted annually.⁶³

However, care should be taken not to make the technical report summary requirements overly burdensome or otherwise problematic. Confidentiality is an important concern here. A mining company’s competitive advantage could be compromised if a technical report summary for each material site is disclosed to the public. Mining companies have special partnerships, strategic alliances, supplier and customer agreements that are legally confidential. Mining companies work multiple years to develop proprietary information, processes and patents. Larger resource companies tend to be more conservative in making technical reports public. The primary reason for the recommendation is to not provide a competitor easy access to data that could compromise the mining company’s competitive advantage in land positioning, mineral rights, metallurgical processes, contractual agreements or providing information allowing competitors to back into how confidential figures or methods were derived. As noted above, SME believes that the required disclosure of some information is not in the best interest of the mining company or their investors, and the appropriate timing for disclosure must be considered.

⁶¹ Throughout this document SME has used technical report summary when the term in the Proposed Rules is discussed.

⁶² Requests for Comment 2, 4, 31, 64, 77 and 116.

⁶³ Request for Comment 24.

10.2 Technical Report Triggers⁶⁴

The Commission proposes that a registrant must file the technical report summary as an exhibit to its Securities Act registration statement or Exchange Act registration statement or report when disclosing for the first time mineral resources, mineral reserves or material exploration results for a material property or when there is a material change in the mineral resources, mineral reserves or exploration results from the last technical report summary filed for the property.

In the Proposed Rules, a material change is defined as:

- A change in exploration results that significantly alters the potential of the exploration target is considered material.
- An annual change in total resources or reserves of 10% or more, excluding production as reported in Tables 7 and 8 of this section, is presumed to be material.
- A cumulative change in total resources or reserves of 30% or more in absolute terms, excluding production as reported in Tables 7 and 8 of this section, from the current filed technical report summary is presumed to be material.

The Proposed Rules provide the following guidance:

- Whether a change in exploration results, mineral resources, or mineral reserves, is material is based on all facts and circumstances, both quantitative and qualitative.
- In assessing the presumption of materiality tests, the registrant should consider the change in total resources or reserves on the basis of total tonnage or volume of saleable product.
- (Instruction A registrants must also carefully consider whether the filed technical report summary is current with respect to all material assumptions and information, including assumptions relating to all modifying factors and scientific and technical information (e.g. sampling data, estimation assumptions and methods). To the extent that the registrant is not filing a technical report summary but instead is basing the required disclosure upon a previously filed report, that report must also be current in these material respects. If the previously filed report is not current in these material respects, the registrant must file a revised or new summary technical report from a qualified person, in compliance with Item 601(b)(96) of Regulation S-K, that supports the registrant's mining property disclosures.
- A report containing estimates of the quantity, grade, or metal or mineral content of a deposit or exploration results that a registrant has not verified as a current mineral resource, mineral reserve, or exploration results, and which was prepared before the registrant acquired, or entered into an agreement to acquire, an interest in the property that contains the deposit, is not considered current and cannot be filed in support of disclosure.

⁶⁴ Requests for Comment 10, 11, 22, 104 and 105.

SME makes the following observations:

- It appears that technical report summaries are required for all first-time disclosures of material properties
- The definitions of material changes would apply to annual filings for material individual properties
- A change of 10% in mineral resources or mineral reserves, excluding production, in one year would normally not be considered material. A change of 30% over three years could be considered material or not material based on the judgment of the qualified person and its impact on the registrant's cash flow or other relevant financial metric
- The technical report summary would be disclosed when filing reports with the Commission.

In Canada, news releases are considered disclosure documents, and where they contain disclosure of a material change that would trigger a technical report, that report must be filed within 45 days on SEDAR. It is up to the qualified person and the registrant to determine if a material change has occurred.

In conclusion, SME recommends:

- Technical reports should be filed within 45 days of news releases containing materially new information for mineral resources and mineral reserves.
- Technical reports should be updated when the qualified person appointed for a specific property considers a material change has occurred taking into account the Commission proposed guidance for a material change (relevance to the investor – see Section 3.1) and not the Proposed Rules listed above.

10.3 Comparison of Formats for NI 43-101 Technical Reports and the Commission's Proposed Technical Report Summaries⁶⁵

The Commission's proposed technical report summary format is by design very similar to that specified in NI 43-101 F1. This is important since it is possible registrants may wish to file the technical report summaries in lieu of a NI 43-10 Technical Report in Canada⁶⁶. There are differences between the Commission's Proposal and Form 43-101 F1:

10.3.1 Form 43-101 F1 Item 3 is missing from the Commission's Proposal

“Item 2: Reliance on Other Experts - A qualified person who prepares or supervises the preparation of all or part of a technical report may include a limited

⁶⁵ Request for Comment 109, 111, 116, 117, 118, 119, 120 and 128.

⁶⁶ This would require acceptance by Canadian Securities Authority

disclaimer of responsibility if: (a) The qualified person is relying on a report, opinion or statement of another expert who is not a qualified person, or on information provided by the issuer, concerning legal, political, environmental or tax matters relevant to the technical report, and the qualified person identifies (i) the source of the information relied upon, including the date, title, and author of 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.”

It is SME’s position that this section is needed (see discussion above in Section 2.5 on disclaimers)”

10.3.2 Hydrogeology and Geotechnical

Hydrogeology and geotechnical information are called for in Form NI 43-101 F1 Item 16, and as separate sections in the Commission’s proposed technical report summary (paragraph (b)(96)(iv)(B)(7) and paragraph (b)(96)(iv)(B)(8)).

SME agrees that hydrogeology and geotechnical can be important and could warrant their own sections.

10.3.3 Other Issues Within the Proposed the Commission Technical Report Summary

In general, the other sections track fairly well. SME notes that the Proposed Rules have far more “Instructions”, which may be considered required guidance. SME has the following comments and recommendations.

10.3.3.1 Exploration

Instruction 2 to paragraph (b)(96)(iv)(B)(9):

SME believes that provision of information on *all* samples or drill holes is onerous and unnecessary for a technical report summary. For example some deposits can contain thousands of drill holes and hundreds of thousands of samples. The technical report summary is after all supposed to be a summary. The qualified person should decide what sampling and drill-hole data are material and the format for presentation.

10.3.3.2 Mineral Resource Estimates⁶⁷

Instructions 3 and 4 to paragraph (b)(96)(iv)(B)(13):

These instructions are unduly prescriptive in the presentation of statements regarding uncertainty of resource estimates (see Section 6.1 above). SME suggests language contained in Table 1 of the 2012 JORC Code would be better:

- Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a quantitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.
- The statement should specify whether it relates to global or local estimates, and, if local state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and procedures used.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

Instruction 7 to paragraph (b)(96)(iv)(B)(13):

Resource estimates should only be expressed on an in situ basis. Modern practice is that mineral resource estimates may include internal dilution. Any tabulation of recoverable, marketable, saleable quantities is in disagreement with the CRIRSCO standards and could be misinterpreted to be reserves by investors. The qualified person may state assumed recovery and dilution conditions that were used to assess reasonable prospects for eventual economic extraction.

Instruction 8 to paragraph (b)(96)(iv)(B)(13):

SME has commented in Section 8.6 on the recommended use of credible consensus long-range price forecasts instead of a price capped at the 24-month average price

⁶⁷ Request for Comment 62.

Instruction 9 to paragraph (b)(96)(iv)(B)(13):

Alternative terminology to cut-off grades should be quality parameters including chemical and physical characteristics that are important for the deposit described, as for example percent brightness for kaolin deposits, and grade – thickness criteria, as for example 6 ft of 0.2% U₃O₈, or >95% CaCO₃ and no iron staining for a limestone.

10.3.3.3 Mineral Reserve Estimates

Instruction 4 to paragraph (b)(96)(iv)(B)(14):

Reserve statements may be of two mutually exclusive types for which ton and grade (quality) are stated:

1. Run-of-mine or plant/mill feed
2. Saleable Product

In the case of run-of-mine or plant/mill feed, the contained metal or product may be reported, and if so, plant recovery factors should be included in the report.

Instruction 5 to paragraph (b)(96)(iv)(B)(14):

SME has commented in Section 8.0 on use of consensus long-range price forecasts instead of a price capped at the 24-month average price. Where prices are set in contracts, they may be used; however the judgment of the qualified person as to the applicability of contract prices over the life-of-mine should be considered. The qualified person should be able to determine whether the prices should be confidential to preserve a competitive advantage.

10.3.3.4 Mining Methods⁶⁸

Instruction to paragraph (b)(96)(iv)(B)(15)

The mine plan should cover current the life-of-mine plan. The qualified person should determine the need for re-evaluation of cut-off grades and prices, if mining methods that have changed since the previous report.

10.3.3.5 Processing and Recovery Methods

Instructions 1 and 2 to paragraph (b)(96)(iv)(B)(16):

The instruction should be modified:

If the processing method, plant design or other parameters have never been used to successfully extract the valuable product from such mineralization and is still under development, then it is

⁶⁸ Request for Comment 78.

the responsibility of the qualified person to determine the level of study that can be supported by the available metallurgical data, including the scale and type of testing that has been completed, and whether or not mineral resources or mineral reserves can be disclosed. Justifications for the disclosures must be fully explained.

10.3.3.6 Economic Analysis⁶⁹

Section (b)(96)(iv)B(21)(i):

The section should be modified so that annual cash flow forecasts may be omitted for operating mines as publication may affect a competitive advantage in labor or customer negotiations. Indeed, within some industrial minerals firms such information is kept confidentially within particular business units as different business units may compete with each other. NI 43-101 permits exclusion of economic analysis for producing issuers unless a material expansion of existing production is planned. The Commission should allow the same exclusion in the Proposed Rules.

Under the Proposed Rules, an MDJS filer and other registrants could have materially different economic analyses due to the treatment of inferred resources and pricing differences.

10.4 Comments on Definitions to be Used in Disclosure

SME has compared the proposed definitions in Section 1301 with those in the CRIRSCO Template and the SME Guide. SME has the comments detailed below.

10.4.1 Public Reports

It appears that the Proposed Rules only cover reports that are filed with the Commission. The CRIRSCO codes govern all disclosures by a registrant, including but not limited to: “annual and quarterly company reports, press releases, information memoranda, technical papers, website postings and public presentations.”

The Commission should provide clarification on whether disclosures outside of Commission filings must follow the Proposed Rules. To avoid confusion, the Commission should adopt the broader spectrum of publication to which its proposal applies. This will bring alignment with other CRIRSCO Codes. However, this structure is only workable if the Commission adopts rules consistent with CRIRSCO standards.

⁶⁹ Requests for Comment 73 and 79.

10.4.2 CRIRSCO's Figure 1⁷⁰

The CRIRSCO Template and associated codes and standards adopted by National and Regional reporting organizations all contain Figure 1, which displays the relationships between exploration results, and categories of mineral resources and mineral reserves. CRIRSCO's Figure 1 displays in graphic form the relative risks between components of mineral resources and mineral reserves.

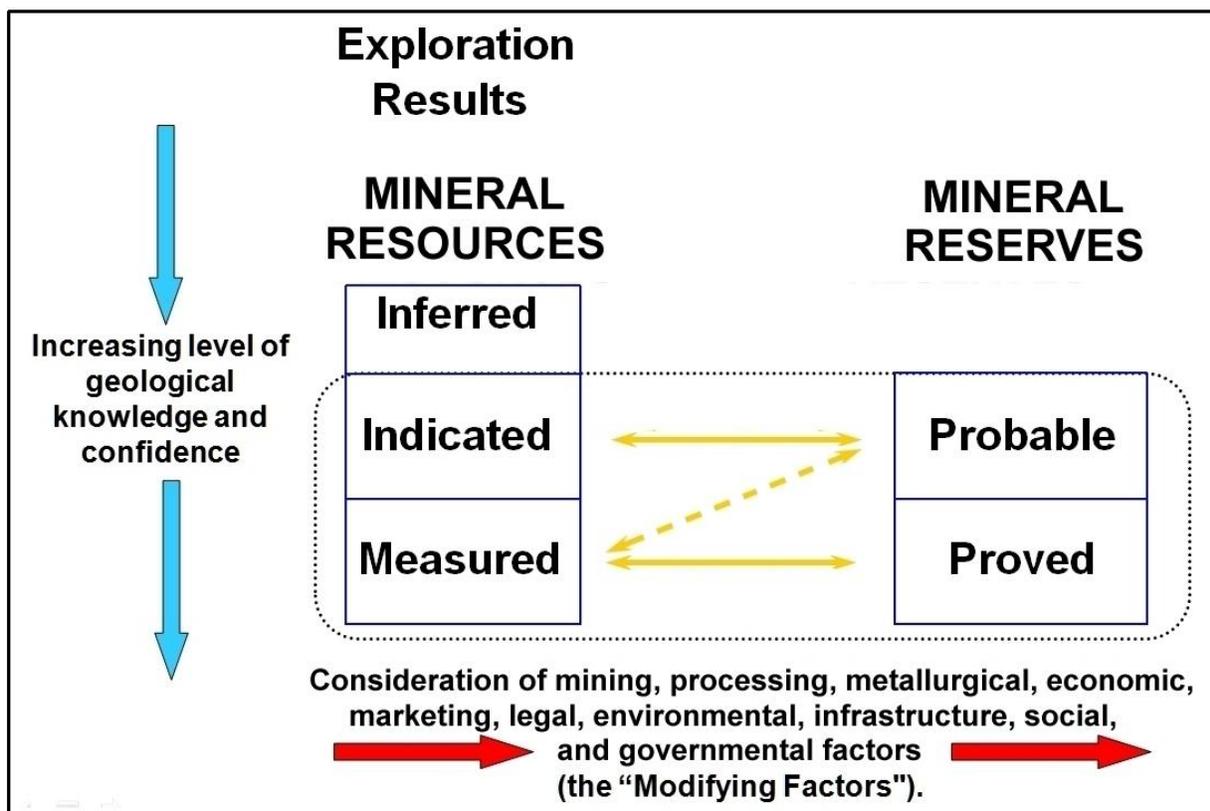


Figure 1 from the CRIRSCO Template

The Commission should add this figure to Section 1301. "Proved" should be changed to "Proven" following existing Guide 7 and NI 43-101 practice.

10.4.3 Qualified Person

See also discussion in Section 2.2. The Commission definition should be augmented to include:

⁷⁰ Request for Comment 54.

- Requirement for a university degree (bachelor's or equivalent) in fields related in various ways with the discovery, extraction and utilization of minerals, metals and energy sources.
- Requirement for a minimum of seven years professional (postgraduate) experience in the mineral industry, with at least three years in positions of responsibility requiring independent judgment. This is the requirement SME uses to admit registered members, who may serve as qualified persons. The Proposed Rules already cover five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking, and SME considers this to be a separate requirement.
- Requirement that the person should be able to defend his/her work before his/her peers

10.4.4 Exploration Target

The Commission proposal does not use this term which is commonly used in the mineral industry and is used in the CRIRSCO Template as “An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade or quality, relates to mineralisation for which there has been insufficient exploration to estimate Mineral Resources.”

The Commission should adopt this term. See Section 5.1 for additional commentary.

10.4.5 Mineral Resources for Brines and Geothermal Projects⁷¹

SME recommends that mineral brines and geothermal projects be excluded from the Proposed Rules as they are significantly different in their characteristics and methods of exploration, development and extraction from solid mineral deposits. Further, the technology and methods for estimating resources and reserves for mineral brines and geothermal projects is not well-developed or understood. The recommended exclusion is similar to the Commission's position with Reg. S-X, Rule 4-10 regarding coal-bed methane estimation when coal-bed methane extraction was a newly developing technology.

10.4.6 Inferred Mineral Resource⁷²

The Proposed Rules state: “As used in this subpart, the term limited geological evidence means evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. The level of geological uncertainty associated with an inferred mineral resource is too high to apply modifying factors, as defined in this section, in a manner useful for evaluation of economic viability.”

⁷¹ Request for Comment 51.

⁷² Requests for Comment 55 and 57.

The proposed definition is too vague and seems to preclude consideration of technical and economic factors required to establish reasonable prospects for eventual extraction that is required in an Initial Assessment. The CRIRSCO definition “An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.” The SME Guide adds guidance “Confidence in the estimate is sufficient to allow the application of assumed but not verified technical and economic parameters for conceptual planning. However, confidence is often not sufficient to allow the results of the application of these technical and economic parameters to be used for incremental planning and production scheduling.” SME recommends that the proposed definition use the CRIRSCO definition and the SME Guide’s added guidance.

10.4.7 Indicated Mineral Resource⁷³

The Proposed Rules state “An indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. As used in this subpart, the term adequate geological evidence means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty”.

There is no definition or guidance as to “reasonable certainty”.

The CRIRSCO Template is more explicit and contains “Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.” This language is more specific, and has been part of the CRIRSCO family of codes and coincidentally Guide 7 for many years. SME recommends that the Commission adopt the CRIRSCO definition of “indicated mineral resource.” Adoption of this definition promotes international uniformity.

10.4.8 Mineral Reserve⁷⁴

The Commission’s insistence on use of a price that is at or below the 24 month average spot price is at variance with the CRIRSCO Template, all the derivative national and derivative codes including NI 43-101, and the Commission’s recommended practice for over the past ten years. SME Guide presents clearly the general practice used in the mining industry:

Commodity prices and sales volume expectations used for the determination of Mineral Resources and Mineral Reserves should be based on forward-looking

⁷³ Requests for Comment 58 and 59.

⁷⁴ Request for Comment 67.

estimates reflecting management's reasonable and supportable short- and long-term expectations as supported by all available evidence, which may include consensus forecasts. The basis for the selected prices and sales volumes must be justified and supported by appropriate documentation. The Competent Person must ascertain that these prices and volumes are consistent with historical prices or with sales agreements and marketing determinations.

To present a balanced presentation, discussion accompanying reserve estimates should include opportunities as well as risks.

10.4.9 Initial Assessment⁷⁵

The Initial Assessment is a new term for early stage resource disclosure that would be contained in the format of a technical report summary. As defined by the Commission, the Initial Assessment "is a preliminary technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources. The initial assessment must be prepared by a qualified person and must include appropriate assessments of reasonably assumed modifying factors, as defined by this section, together with any other relevant operational factors that are necessary to demonstrate, at the time of reporting, that there are reasonable prospects for economic extraction".

Normal industry practice is to prepare a mineral resource report that would include a presentation of Sections 1 to 13 of the Commission's proposed technical report summary. This would include a discussion of applicable technical and economic factors and a conceptual analysis⁷⁶ that shows that there are reasonable prospects for eventual economic extraction of inferred, indicated and measured resources.

The Commission does provide the option of performing economic analysis and statements of cash flows based on indicated and measured resources, but inferred resources must be excluded. Such a report is uncommon, and for a property with predominately inferred resources could be misleading to the investor.

10.4.9.1 Scoping Study⁷⁷

The Proposed Rules do not include provision for a scoping study. Scoping studies are provided in the CRIRSCO Template and are defined as follows:

⁷⁵ Requests for Comment 63, 73, 112 and 113.

⁷⁶ The conceptual analysis would include nomination of cut-off criteria, assumptions as to mining, processing, G+A costs including factored sustaining capital. From this information and an estimated grade and tonnage above cut-off, the net value of the resource is calculated. The net value of the resource is tested to see if it exceeds an assumed capital cost for a typical operation. If the test is passed then the resource has reasonable prospects for eventual extraction.

⁷⁷ Requests for Comment 71, 72, 73 and 112.

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

Scoping studies are termed “Preliminary Economic Assessments” in NI 43-101 and are defined as follows: “A preliminary economic assessment might be based on measured, indicated, or inferred mineral resources, or a combination of any of these. We consider these types of economic analyses to include disclosure of forecast mine production rates that might contain capital costs to develop and sustain the mining operation, operating costs, and projected cash flows.”

SME suggests that the Commission:

- Restrict its definition of the initial assessment so that conceptual analysis of assumed technical and economic factors is included, but economic analysis including cash flows are excluded.
- Avoid introducing a new term and use “mineral resource report” in the title of a technical report summary that does not include economic analysis.
- Add a provision for a scoping study or preliminary economic assessment following NI 43-101 usage; this would allow assigning value to inferred resources with suitable warnings as to the viability of the reported resources not having been demonstrated.

This would enable registrants that are not MJDS issuers to prepare similar reports to those proposed to being afforded to MJDS issuers and would promote uniform disclosure.

10.4.10 Pre-Feasibility and Feasibility Studies⁷⁸

The Commission definitions of pre-feasibility and feasibility studies are aligned with CRIRSCO, and the Commission proposed Table 1 is aligned with Table 2 contained in SME Guide. Comments made in Section 8.0 on prices are applicable.⁷⁹

10.5 Technical Report Summaries for Royalty Companies⁸⁰

Consistent with prior staff guidance in situations where mining operations are declared by the registrant royalty company (or similar company with economic interest in mining operations) to be material to its business, the company should be required to provide applicable mining

⁷⁸ Requests for Comment 74, 85, 87, 88 and 127.

⁷⁹ Bullock, R.L., 2011, Accuracy of feasibility study evaluations would improve our accountability: Mining Engineering, April 2011, pp. 78-85.

⁸⁰ Requests for Comment 12, 13, 14 and 15.

disclosure in the form of a technical report summary. The following are common types of royalty streams.

- The value of most landholding royalty companies is derived from royalty payments received from producing properties.
- Advance royalty payments received from properties that are not yet in production.
- The estimated value of royalty payments that will be received from properties that are not yet in production.

The royalty payments, whether current or future, frequently are held on portions of a mineral deposit, and the amount of the royalty payment depends on which part(s) of the mineral deposit are being actively mined.

Royalty or other similar companies with declared material economic interest in another mining company's operations should file a technical report summary for the property. Depending on the particular circumstances, the lack of access to the operator's information should allow for a reduced scope of reporting in the royalty company's disclosure. In such cases, the royalty company should disclose the information that is available and prepare a statement regarding the risks related to the unavailable information.

11.0 DISCLOSURE⁸¹

11.1 Aggregation⁸²

In the coal, industrial minerals, and sand and gravel industries, a registrant may have hundreds of properties, none of which are individually material, and possibly all of the "top 20" properties would not be material. Hence, as they stand, the Proposed Rules do not address these types of registrants. In addition, providing a summary of individual properties could be onerous.

Where multiple properties exist, particularly where the mines and plants are inter-related, it is common to aggregate them into what is referred to as "units of account" for disclosure purposes. FASB Codification/Topic 820 defines the term "unit of account" as follows: "The level at which an asset or a liability is aggregated or disaggregated in a Topic for recognition." This concept, though not specific to the mining industry, is used by the mining industry for numerous types of property aggregations for disclosure and also for impairment testing purpose. For mining companies, a unit of account may be an area of interest representing an operating mine or a mine under construction and its adjacent exploration properties. An exploration area of interest represents a pool of exploration properties that are within a specific region that share geographic and possibly, geological similarities, which are managed by the entity's exploration group or division. The unit of account for exploration properties, by definition,

⁸¹ Requests for Comment 2, 12, 121, 122 and 123.

⁸² Requests for Comment 6, 10, 11, 90 and 91.

requires judgment. With respect to the use of the "unit of account" definition below for producing mines, it is more prescriptive under GAAP, in that it would likely apply to cash generating units or possibly a reporting unit.

From a disclosure viewpoint, the idea is to introduce granularity into the disclosure at a level that would be useful and material to the investor. Even when the mines and plants are not inter-related, they may be grouped by geographic region or commodity. In this way disclosure for the coal, industrial minerals and sand, gravel, crushed rock companies that have tens to hundreds of properties can be meaningful and not onerous to describe or compile.

11.2 Technical Report Summaries and Disclosure Tables

Technical report summaries are issued when triggered as discussed in Section 10.2.

In the case of coal and industrial minerals the properties should be grouped by the qualified person before ranking the 20 properties with the highest asset value.

11.3 Units of Measure

If metric or other non-US units of measure are used, the conversion to US units should be parenthetically disclosed. Similarly currency units should be US Dollars, and if other currency units are used, conversion to US Dollars should be parenthetically disclosed, with exchange rate as of the effective date of the disclosure.

11.4 Proposed Disclosure Tables⁸³

11.4.1 Use of eXtensible Business Reporting Language ("XBRL")

A requirement for disclosure tables to be prepared in XBRL is regarded as expensive and of little benefit. XBRL is best suited to groups of companies that have similar financial inputs and outputs. The diversity of the mining industry as reviewed in Section 4.6 precludes the ability of XBRL to provide comparable standard measures across companies. Therefore, SME believes each mining company and its qualified persons can best determine the optimal format to convey material information in table form.

11.4.2 Table 1. Summary description of modifying factors evaluated in technical studies

Proposed Table 1 is unnecessary and could be potentially misleading. The relative importance of individual modifying factors will vary with each material deposit. The relevant modifying factors should be discussed in the description of each material property.

⁸³ Request for Comment 82, 83, 93, 96, 97 and 106.

11.4.3 Table 2. Brief description of the 20 mining properties with the highest asset values⁸⁴

The proposed Table 2 applies to up to 20 properties with the largest asset value. These must be described as follows:

- i. the location of the property
- ii. the type and amount of ownership interest
- iii. the identity of the operator
- iv. (title, mineral rights, leases or options and acreage involved
- v. the stage of the property (exploration, development or production)
- vi. key permit conditions
- vii. mine type & mineralization style
- viii. processing plant and other available facilities.

Placing all of the requested information in the proposed Table 2 format would be difficult because of the complexity of information:

- Properties may have multiple and complex ownership interests.
- Title, mineral rights, leases, options and acreage may be complex.
- Key permit conditions may be different depending on location or state of development.

SME therefore suggests that the registrant only summarize items (i), (iii), (v), (vii), (viii) in Table 2. Items (ii), (iv), (vi), (viii) can be summarized in text.

Production for a three-year period should be presented in terms of tonnage, grade and contained metal or tonnage and grade or quality of marketable products. It should be stated whether the reserve estimate is of in-place material or of recoverable material. Any in-place estimate should be qualified to show the anticipated losses resulting from mining methods and beneficiation or preparation.

There is an instruction (Instruction 1 to paragraph (b)(2)) that permits aggregation of multiple mines with inter-related operations as on mining property. SME recognizes that in the sand, aggregates, stone and crushed rock sectors there may be hundreds of properties some not inter-related and some only intermittently operated. The instruction should be broadened to allow aggregation by geographic region.

⁸⁴ Request for Comment 93.

11.4.4 Table 3. Summary mineral resources and reserves for the fiscal year ending [date] based on [price]⁸⁵

Table 3 includes resources and reserves. The list of properties is related to those containing 10% or more of resources or 10% or more of reserves. Aggregation by geographic area is possible.

SME makes the following observations:

- It is appreciated that aggregation by geographic area is allowed.
- Separate tables should be provided for resources and reserves, to discourage adding resources and reserves together.
- Resources should be stated on an in situ basis and tonnage grade and contained metal should be shown, or in the case of industrial minerals tonnage and grade or quality.
- Reserves should be stated on a run-of-mine basis (tonnage, grade and contained metal), and expected plant recovery factors should be provided. Where customary for coal and industrial minerals, the tonnage and grade of the run-of-mine **or** saleable product should be shown depending on whether the reference point is the plant/mill feed or feed to a leach or loadout facility **or** a beneficiated product sold to a customer.
- The prices used should be based on a company's long term price forecasts.

11.4.5 Tables 4 and 5. Summary Exploration Activity and Results for the Fiscal Year End⁸⁶

The proposed section is onerous and requires disclosure of information on an annual basis that is in considerably in excess of that required by other jurisdictions. For example, Canadian annual information forms (equivalent to the Commission's 10-K) would tend to cover a high-level summary of the current technical report and to provide a table of resources and reserves, and a statement of production for the past year and a forecast for the following year.

Proposed Tables 4 and 5 suggest that drilling is the only form of exploration, which is not the case. Various geochemical survey, geophysical survey, and other forms of data collection and analysis are routinely used. In underground mines, sinking shafts or declines and driving laterals or drifts may be the primary exploration techniques. Collecting all the various exploration activity and collected data that could include thousands of datum points into a single table would be confusing to the investor, and would not yield useful disclosure. SME recommends a better method of disclosing material exploration activity and results would be to provide explanatory text, and to the extent the registrant wishes to or is obliged to disclose such results, perhaps accompanied by company-designed tables.

⁸⁵ Request for Comment 95.

⁸⁶ Request for Comment 101.

11.4.6 Table 6. Summary of [Commodity/Commodities] Mineral Reserves and Resources at the End of the Fiscal Year⁸⁷

SME points out that tables of estimated mineral resources and mineral reserves should never be combined in a single table to avoid misleadingly blurring the material distinction between mineral resources and mineral reserves. Further, tables of estimated mineral resources should be separate and not combine estimates of inferred mineral resources with indicated or measured mineral resources, again to avoid blurring important distinctions. While SME believes that year-end summary tables of estimated mineral resources and estimated mineral reserves are useful, registrants should be able to design and present these tables in ways that make sense to the registrant's business. Proposed Table 6 is misleading and suggests a comparability among mining firms that does not exist in the mining industry (see Section 4-6).

11.4.7 Tables 7 and 8. Reconciliations⁸⁸

Proposed Tables 7 and 8 suggest that the factors in reconciliation of estimated mineral resources and mineral reserves are very similar, which is not the case. Recognizing the industry has only been formalizing reconciliation reporting for the past 10 years,⁸⁹ and that principles are adapted on a property specific basis, SME recommends that as best practice reconciliation presentations should be prepared separately for estimated mineral resources and mineral reserves, and that the reconciliation disclosure should be prepared as part of technical report summaries in a format that makes sense for the properties in question. It may be that a graphical presentation of reconciliation (waterfall charts) would be more meaningful. Annual tabulations should be restricted to; 1) tonnage and grade for reserve depletions, 2) as delineated by ore control sampling, and 3) as received at the treatment plant.

Obtaining accurate reconciliation has heretofore been difficult for a variety of reasons (*e.g.* getting accurate measurements of stope outlines has been made difficult because of rockfall hazards). Because adoption of reconciliation practices is in progress within the industry, disclosure of reconciliation should be voluntary.

11.5 Other Disclosure Issues

The Release discusses the fact that Guide 7 disclosure standards do not extend to press releases, website and other documents not filed with the Commission. It notes that these disclosures “are not subject to the full range of regulations, including corresponding liability provisions, to which the Commission filings are subject..., are not subject to staff review and comment, and may not be reported using commonly recognized standards.” The Proposed Rules, however, do not appear to extend to documents not filed with the Commission, unlike CRIRSCO-based standards

⁸⁷ Requests for Comment 99 and 100.

⁸⁸ Request for Comment 103

⁸⁹ See Parker, H.M., 2014, Reconciliation Practices for the Mining Industry AusIMM Monograph 30, pp. 721-737.

which do apply to all public disclosures of mineral reserves and resources. The Commission has extended its regulatory reach in other areas such as Regulation G and certainly does review and comment on press releases, websites and presentations in certain instances. It is unclear to SME why the Commission has not sought to require consistent disclosure across all media.

To the extent that the Proposed Rules can be aligned with CRIRSCO Standards, SME believes that all public disclosure, including website postings, news releases, information memoranda, and investor presentations, by a registrant should be subject to the new requirements, including the requirement to obtain the requisite involvement or consent of appropriate qualified persons. This would instill a disclosure framework similar to that used in Canada and as included in the CRIRSCO Template.

In view of the extensive changes in disclosure requirements contemplated by the Proposed Rules as modified by the SME's comments and recommendations, SME recommends that the effective date for compliance with the new rules should be 24 months after the most recent Form 10-K filing by mining registrants.