9 September, 2022

To:

British Columbia Securities Commission
Alberta Securities Commission
Financial and Consumer Affairs Authority of Saskatchewan
Manitoba Securities Commission
Ontario Securities Commission
Autorité des marchés financiers
Financial and Consumer Services Commission, New Brunswick
Superintendent of Securities, Department of Justice and Public Safety, Prince Edward Island
Nova Scotia Securities Commission
Office of the Superintendent of Securities, Service NL
Northwest Territories Office of the Superintendent of Securities
Office of the Yukon Superintendent of Securities
Nunavut Securities Office

Re: CSA Consultation Paper 43-401 – Consultation on National Instrument 43-101 Standards of Disclosure for Mineral Projects

Introduction

Thank you for the opportunity to participate in this consultation process.

During the 1980s and 1990s I was a geologist working across much of Australasia and Africa, where the focus included early-stage exploration projects, major drill campaigns and sampling programs, data reviews, initial mineral resource estimates and updates to those estimates, looking for near-mine extensions of known deposit areas, and participating in mining studies, audits, and due diligence reviews. I also spent time in Australasia working with reports prepared in voluntary compliance with early iterations of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

During the 2000s and much of the 2010s, in Canada and the United States, a significant proportion of my time was spent working with reports prepared in regulatory compliance with NI 43-101, and working with teams completing mining studies, audits, due diligence, and specialist focus reviews. Now, in the 2020s, I am working with reports prepared in regulatory compliance with Regulation S–K 1300 (SK 1300) recently promulgated by the US Securities and Exchange

Commission (SEC), and still participating in mining studies, audits, due diligence, and specialist focus reviews.

I am a volunteer on a number of industry-based technical committees that discuss current practices such as data collection, data verification, Mineral Resource and Mineral Reserve estimation, and Qualified Person practice issues.

I have tried to give specific examples and feedback derived from this background in my comments.

Acknowledgement

In this response, I am using the designation “CSA staff” as an umbrella term to reflect all of the Canadian Securities Administrators and their mining regulatory staff. As a result, the denomination is necessarily a broad brush, and it does not always reflect the time and expertise that individual regulators have provided on issues raised with them. I wish to sincerely thank those individual regulators who have been willing to engage in constructive discussions and provide thoughtful feedback.

Background

In this response letter, I am using italic font to denote text and questions from the comment paper section entitled “Consultation Questions”, or to denote text copied from NI 43-101 (the Rule), Form 43-101 F1 (the Form) and Companion Policy 43-101CP (the Companion Policy) various Canadian Securities Administrators (CSA) staff notices, and various Canadian Institute for Mining, Metallurgy and Exploration (CIM) definition standards and guidelines. My responses are provided using indented plain font.

I am providing feedback on more than just the questions raised by the CSA staff; I am also commenting on wording used in the preambles and questions within the “Consultation Questions” as I believe that the concepts are not well understood, that a portion of the wording used in the preamble introducing the questions, or in the questions themselves, has been carefully selected to influence the responses that will be provided, to the point of causing selection bias by encouraging commentators to agree with a predetermined position by the CSA staff. Otherwise, in my view responses can only be provided that reflect the CSA staff’s framing of their own judgement calls and viewpoints on a particular issue. Many of the issues raised, and the textural and contextual preamble framework in which the issue is raised, are not necessarily in accordance with the overall industry’s established and common practices, or with current guidance provided by the industry’s learned societies and advisory bodies such as the Canadian Institute for Mining, Metallurgy and Exploration (CIM). It is unclear whether the CSA staff consider the issue raised is truly a point of concern for the overall industry, such that it is an industry-wide failing, or is being posed only because the issue has been seen amongst a small number of disclosures from a small number of issuers.

I am also concerned when a consultation paper states that there is "*substantial evidence*" for something but does not provide examples of the types of issues that are being identified together with the reasons as to why that example is considered to be problematic either for the industry, to the maintenance of a balanced capital market, or for reasons of investor protection. It would have been very helpful in formulating my responses if examples had been provided by CSA staff to review of their issues with the Qualified Person and with the circumstance the regulators are taking exception to. This is a common issue throughout the consultation paper. There are very strong claims being made to what is poor industry practice, but there is no explanation why the CSA staff think the issue is industry-wide and a major industry failing, or a major impact to the capital market if allowed to go unaddressed.

Subsection A: Improvement and Modernization of NI 43-101

The disclosure items in the Form have generally remained unchanged since NI 43-101 was adopted in 2001, with some reorganization for advanced stage properties in 2011.

Question A1

Do the disclosure requirements in the Form for a pre-mineral resource stage project provide information or context necessary to protect investors and fully inform investment decisions? Please explain.

Response:

I do not agree that Form 43-101F1 (the Form) provides "*information or context necessary to protect investors and fully inform investment decisions"* because in my experience, investors do not just rely on the Form. The statement that the Form alone is used by investors "*fully inform investment decisions"* is potentially misleading, to employ the CSA staff's preferred term, in that the CSA staff are explicitly contending that the Form (or rather the technical report prepared using the Form) is the only consideration used in an investment decision.

Investment decisions can be, and often are being, made on factors that have nothing to do with NI 43-101.

An example is when investors make their investment decision based on the track record of a mining entrepreneur to deliver returns to investors. In that instance, the driver for the investment decision is not what is written in a project's technical report, but the fact that the entrepreneur selected the project as a new investment vehicle and that the entrepreneur considers the project to be one worth pursuing.

A second example is the number of investors who follow a particular analyst's recommendation. The technical report based on the Form may factor into the analyst's recommendation, but will not be the only reason that an analyst provides a recommendation to their clients. Other factors such as the corporate management and recent exploration activities not contained in the technical report may be as

influential on the analyst as the information in the technical report prepared under the Form. In this instance, the investor decision is firmly tied to the analyst recommendation.

A third example of where the Form is not part of an investor decision is where the investor knowingly purchases a position in a small company that is clearly going to have to be taken over by its larger joint venture company at some stage in its corporate life due to a strategic ground holding.

A fourth example is where an investor decides to follow a particular commodity or focus on a particular geographical area.

These examples are sufficient to show that a portion of Question A1 is not realistically worded, because the Form (technical report) is not, and never has been, since introduction of the Rule in 2001 (or a geological report under the predecessor to NI 43-101, NP 2A) the only disclosure document metric by which an investor uses to fully inform themselves about an investment decision.

I am concerned that the CSA staff consultation paper introduces terms that are nowhere used in the Rule, Form or Companion Policy when requiring industry comment. There is no such term as "*pre-mineral resource stage project"* in any of the Rule, Form or Companion Policy. In my responses in this letter, I am assuming it is a property that meets both the definition of an "*early stage exploration property*":

> *"early stage exploration property" means a property for which the technical report being filed has*
>
> *(a) no current mineral resources or mineral reserves defined; and*
>
> *(b) no drilling or trenching proposed;*

and covers those properties where there is planned drilling and trenching but for which there is no current mineral resource or mineral reserve estimate. In my recollection the definition of an early-stage property was only brought into the Rule for the purpose of one of the conditions where a deferral of a site visit by the Qualified Person would be allowed.

I am of the opinion that the 2011 edition of the Form does not need any changes to the information required for properties that fall under the umbrella of a "*pre-mineral resource stage project".* The Form provides sufficient prompts for information requirements to allow a Qualified Person to use their judgment to provide a fair and balanced presentation of the scientific and technical information available on a "*pre-mineral resource stage project*".

The Form has always been significantly oriented toward the "*pre-mineral resource stage project"* in terms of required content from the first edition of NI 43-101 through to the current edition. This reflects the Canadian reality that a significant proportion of

the technical reports filed are in support of material mineral properties that are not sufficiently advanced to support completion of a Mineral Resource estimate.

Completion of a technical report based on the Form is the responsibility of a Qualified Person. This means that the summarized scientific and technical information presented is, in the Qualified Person's opinion, presented in a complete, clear, and unbiased manner that will support an investor making an informed investment decision. It is up to the Qualified Person to ensure that the Form content requirements are met; it is not up to the Form to ensure that every possible eventuality that may arise in reporting information on a "*pre-mineral resource stage project"* is prescriptively included in the instructions for content requirements.

Question A2(a)

Is there an alternate way to present relevant technical information that would be easier, clearer, and more accessible for investors to use than the Form? For example, would it be better to provide the necessary information in a condensed format in other continuous disclosure documents, such as a news release, annual information form or annual management's discussion and analysis, or, when required, in a prospectus?

Response:

The Canadian securities regulators spent a significant amount of time in the late 1990s examining corporate disclosures in the mining context as a result of a number of mining scandals, and deliberating as to what could best protect investors in terms of quality disclosure. At that time, consensus was that introducing a requirement for issuers to provide a technical report on a material property was a reasonable compromise that would provide investors with summarized scientific and technical disclosure that had been appropriately reviewed by a Qualified Person and still allow the issuer to meet its obligation to provide continuous disclosure.

Since 2001, the NI 43-101 "brand" has become well established, and a ringing endorsement of the regulations is the fact that the SEC, in their update to mining disclosure regulations, selected a formal written report format that borrowed significantly from the Form, as preferable to the Table 1-style presentation adopted by The Committee for Mineral Reserves International Reporting Standards (CRIRSCO) in the International Minerals Reporting Code Template (CRIRSCO Template), first put out in 2012 (although many concepts included had been in circulation and discussion since at least 1997), and most recently updated in 2019. The Table 1 format is derived from the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code), and first set out in that Code in 1999, with the most recent update in 2012.

Over the two decades since the introduction of NI 43-101, technical reports have become an industry standard, and these structured-format reports have become the preferred method used by companies in the mining sphere to provide information on

mineral projects. This is highlighted by the number of international companies not subject to NI 43-101 that prepare and disseminate information on their mineral projects using the general headings and content requirements of the Form, in preference to using a CRIRSCO Table 1-style summarization.

Investors now expect that material scientific and technical information will be available in technical report format as a snapshot in time, summarized view of a mineral project. They do not expect to have to go to numerous document filings where information is not consolidated; they now expect to see the scientific and technical information, supported by a Qualified Person's interpretations in the one document, the technical report. They also expect to see certain information, such as environmental and social, in detailed filings or presentations, but these are typically considered to be outside the technical report process. See also my responses to Questions I28–I30 and J31–J33.

For reporting issuers, technical reports prepared using the Form are completed in response to milestone events, either at the company or the project level. Those companies already use alternate periodic and continuous disclosure methods, such as websites, social media, investor days, investor presentations and securities filings such as news releases, and management discussion and analysis to disseminate information on ongoing aspects of affairs of the company or information on the mineral project. These continuous disclosures are timely and a good supplement to, but do not replace, the technical report.

Therefore, I do not support removing the requirement for an issuer to provide a technical report. I do not agree that provision of technical and scientific information only in the context of a "*news release, annual information form or annual management's discussion and analysis, or, when required, in a prospectus"* is in the best interests of either the investor or maintaining a well-informed and balanced capital market.

See also my response to Question A2(b).

Question A2(b)

If so, for which stages of mineral projects could this alternative be appropriate, and why?

Response:

There are no stages of a mineral project where submission of a technical report completed using the Form should be replaced by a "*news release, annual information form or annual management's discussion and analysis, or, when required, in a prospectus".*

One issue with this approach is that an investor could be required to review a number of disclosure documents and may miss the one document that contained the relevant information. I do note that in a prospectus filing, investors can be expected to review

a long list of documents that are incorporated by reference into the filling. This is already considered acceptable; however, I do not agree that it is optimal.

The second issue is with the types of disclosure that continuous versus technical report disclosures represent. I am not saying that continuous disclosures should be seen as a complete alternative to the technical report. Investors I believe do require the presentation provided by a Qualified Person in the structured format of a technical report, but continuous disclosure should allow for timely updates of the information without triggering the requirement to file a new technical report. There is a good example of this in the Short Form Prospectus rule. In this rule, the trigger for the update is a material change to the Mineral Resource or Mineral Reserve estimate, or the economic outcomes in a preliminary economic assessment (PEA). The Short Form Prospectus rule does not consider a change to other scientific and technical information to be the trigger for an updated technical report. I would suggest to CSA staff that consideration be given to including the Form Prospectus rule allowances into other types of disclosure, such as information circulars. I also think it would benefit the industry if the Rule was to clearly state this approach to what is and is not a report trigger applies to the Short Form Base Shelf Prospectus. In my view, it would be of great value to the industry if the CSA staff would allow more flexibility for the length of time an existing technical report on file can be relied on, and clarify when a new technical report is triggered.

Disclosures in news releases and management discussion and analysis presentations are supplements to technical report disclosures. Such documents have a necessary place in a company's disclosure record and are useful to investors, but do not replace the complete overview of a project that results from preparation of a technical report by, or under the supervision of, one or more Qualified Persons, using the content requirements and layout in the Form.

Question A3(a)

Should we consider greater alignment of NI 43-101 disclosure requirements with the disclosure requirements in other influential mining jurisdictions?

Response:

It would have been helpful to know which jurisdictions the CSA staff consider to be "*influential mining jurisdictions"* and their selection criteria for determining "*influential*", as my response would have been predicated on knowing the reporting requirements and regulatory oversight in those jurisdictions. Is an "*influential mining jurisdiction"* a jurisdiction that has a significant mineral endowment (e.g. Indonesia, Mongolia); one that has lively trading of mining securities on a stock exchange where that stock exchange requires the listed entity to follow its reporting rules (e.g. Australia, United Kingdom); one that uses a CRIRSCO-type code that sets out principles that must be followed when reporting mineral-related data (e.g. South Africa, Brazil); or a

jurisdiction that by force of law administers public reporting of mineral-related data (e.g. USA)?

I am assuming in my response to Question A3(a) that the question is referring to jurisdictions that have adopted a CRIRSCO-based reporting code or, as in the case of the USA, use a reporting code that has enshrined some of the terms (but not necessarily the same definitions) and principles of the CRIRSCO Template, to which mining entities are voluntarily complying or are required to comply by law.

In this context, the emphasis of the reporting codes on the concept of a Qualified or Competent Person, using similar definitions of common technical terms in the promulgated code, to use principles rather than prescriptive text, and to provide similar advice to industry through development of standards and guidelines that supplement the reporting code, but allow individual jurisdictions leeway to incorporate local distinctions. This has the net effect that any country that subscribes to CRIRSCO already is aligned in terms of the definitions, principles and guidelines used in mining disclosure.

Canada, through CIM/NI 43-101 for example, generally follows the definitions in the CRIRSCO Template, but has some local differences. One example is a different definition for early-stage mining studies, such that the definition of a scoping study in the CRIRSCO Template is not the same as the definition used in Canada for a preliminary economic assessment (PEA). A second example is the Canadian independence requirements for Qualified Persons in certain circumstances, which is not in the CRIRSCO Template. This type of local modification is contemplated, and allowed for, within the CRIRSCO Code.

Both the CRIRSCO Template, and the individual codes within the CRIRSCO family of codes periodically undergo reviews and updates to the codes, in response to industry changes, new definitions of concepts within the mining industry generally, and to changes made by individual jurisdictions in their codes. Such periodic checks support the aim of having an international consistency in approach between jurisdictions that use the CRIRSCO Template. It also allows the various country codes the ability to update their own codes to match the CRIRSCO Code and Template changes and remain broadly consistent globally.

Previous updates to CIM/NI 43-101, in particular the 2011 update, while focused on the Canadian experience and requirement for reporting, were also cognizant of changes made in the 2012 CRIRSCO Template and in codes within the CRIRSCO family of codes, in particular the drafts circulating of the proposed 2012 JORC Code update. Both regulators and commentators during the comment periods associated with the 2005 and 2011 updates made reference to international practices, citing CRIRSCO and JORC. Each of the updates incorporated some (not all) aspects of these codes, but also promulgated novel ideas that came out of the Canadian

experience of being, at the time, the only global jurisdiction within the CRIRSCO family of codes that had legally-enforced mining compliance.

In my view, this proposed update to NI 43-101 should continue with a similar approach. However, there are some caveats that I consider should be kept in mind when doing cross-code comparisons.

Only the USA, through SK1300, currently has a similar code that has the force of law. Codes within the CRIRSCO family are either enforced by professional associations or incorporated in stock exchange listing rules and therefore only applicable to the companies listed on that exchange. Unlike Canada and the USA, these codes are not laws that apply to mining disclosure, but are typically voluntarily complied with as a consequence of a stock exchange listing.

Many of the codes within the CRIRSCO family appear to be adopting, or are contemplating adopting, prescriptive language in their rules that will become difficult to enforce as the language used simply cannot apply to all commodities, all deposits, all mining methods, and all jurisdictional quirks, such as the type and nature of active non-governmental organizations and their influences on the regional political regime or what aspects of global issues are current community concerns (greenhouse gases, climate change, sustainability, diversity). This is not yet a real issue for those countries where a code is essentially subject to voluntary compliance, but will become an issue for a code that is enforced as law. Meaningful and open discussion by the CSA staff with the mining industry is required to determine what the principles are behind such language, and whether those principles are required to be included in any NI 43-101 update. The CSA staff should also clearly demonstrate to the industry why the CSA staff views the inclusion of any such new CRIRSCO family principles to be necessary in the context of NI 43-101, or in industry-accepted practices by Canadian-based mining companies.

NI 43-101 was a global ground-breaker in terms of establishing industry and investor confidence with the result that Canada quickly became the go-to jurisdiction for mining financing. The issue that many currently have with NI 43-101 is not an issue specifically with the Rule itself, or how harmonized the Rule is, or is not, with international standards, but with the way that enforcement of the Rule is being undertaken and guidance provided within the Companion Policy is being used as an extension to the Rule. Please see also my response under “Subsection L: Other”. If the CSA staff adopt some aspect of an international reporting practice, it has to be with industry consultation that will ensure that the adoption is meaningful to the industry not just to the regulators, and that the adoption can clearly be seen to add value to the capital markets.

Question A3(b)

If so, which jurisdictions and which aspects of the disclosure requirements in those jurisdictions should be aligned, and why?

Response:

My response focuses on aspects of disclosure requirements, and does not specifically address which jurisdictions may be doing it better than Canada.

Dual-Listed Issuers

The CSA staff should be reviewing, as a priority, what can be done to mitigate the compliance burden and costs for those minority of companies, which are not subject to the Multi-Jurisdictional Disclosure System (MJDS) but are dual-listed in the USA and Canada, that now have to prepare both a technical report summary under SK1300 and a technical report under NI 43-101 on their material properties.

I have anecdotally heard of a proposal that the one report may be able to be filed in both jurisdictions, though there is no concrete documentation of how such a report could be prepared to meet the content and disclosure requirements of each jurisdiction. A cursory examination of the differences between the allowances for reliance on the registrant under SK1300 and the allowances for reliance on another expert in the Form, for example, shows that such a universal report will be very hard to prepare to be compliant.

It is also hard to see, given industry's recent experience of enforcement and regulation by the CSA staff, that a light touch would be taken by regulatory staff when reviewing any such universal report (see also my response in "Subsection L: Other").

Multiple Technical Reports

The CSA staff has taken a stance on never allowing more than one current technical report on a property at one and the same time, a stance which has become more ever more rigidly enforced in recent years. However, this stance appears to be based on language in the Companion Policy under 4.2(8), and not on language specifically in the Rule. Section 4.2(8) is more concerned with explaining currency of reports, but does include (my bolded emphasis added):

> *(8) Technical Reports Must be Current and Complete – A "technical report" as defined in the Instrument must include in summary form all material scientific and technical information about the property. Any time an issuer is required to file a technical report, that report must be complete and current.* ***There should only be one current technical report on a property at any point in time.*** [my emphasis added] *When an issuer files a new technical report, it will replace any previously filed technical report as the current technical report on that property. This means the new*

technical report must include any material information documented in a previously filed technical report, to the extent that this information is still current and relevant.

Even the Companion Policy doesn't make it an outright restriction, the bolded sentence above uses the term "*should*". My major concern is that the CSA staff are taking text that is provided as industry guidance and applying that guidance as if it were law (see also my response to "Subsection L: Other").

This instance of misapplication of guidance as law has resulted in contortions for companies that wish to advise their investors that multiple development options are possible for a mineral project: either they run the very real risk of having a report disallowed by the CSA staff if they discuss multiple scenario options, or the investors are kept uninformed of the company's reviews of optionalities because regulatory enforcement is not allowing transparency of disclosure (see also my responses to "Subsection D: Preliminary Economic Assessments").

In contrast, the US, under SK1300, appears to be willing to allow multiple current stand-alone technical report summaries on a property presenting different development scenarios. This pragmatic US approach should allow a company to present multiple development options to its investors such as:

- What a project could look like as an open pit operation, as a combined open pit and underground operation, or as an underground-only operation;
- What a project could look like if a small company itself had to develop it using the financing available, versus what the project could look like if a major, with more financing ability, became a joint venture partner;
- Alternate development scenarios at various points in the mine life, such as installation of major new recovery circuits to a process plant that would support production of a new product.

Each option in the US case, would be the subject of its own technical report, and each technical report would present that option in its entirety.

I strongly disagree with the CSA staff position that there can be only one current technical report on a property at any time (see also my discussion in "Subsection L: Other". The US approach is actually far more in line with transparent disclosure and with study definitions. I note that the range of options for project development is understood by industry to be what a PEA does, that it explores and eliminates certain options, and identifies preferred options. Examination of a range of options is embedded in the definition of a PFS. There should be an expectation that these optionality considerations can be reported for investor use. The US better serves investors by explaining clearly where management see optionality in project development than does the current CSA staff approach.

Qualified Persons

A Qualified Person in Canada is restricted to those professionals that meet a very narrow definition:

> *(a) is an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining;*

The US has promulgated a much broader definition of a qualified person in SK1300, such that a qualified person is

> *"(1) A mineral industry professional with at least 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 on behalf of the registrant";*

The US approach is preferable for investors because a company can obtain the correct qualified person to provide data review and interpretation in their area of expertise. As examples, in the US context, the approach would allow:

- A professional working in the mining industry whose expertise is in port design to act as a qualified person for the ship-loading facility planned for the coast;
- A professional who holds an RP Bio designation to be the qualified person for the flora and fauna surveys that underpin the company's planned environmental approach;
- A professional whose background and skills are in negotiation and social consultation to act as the qualified person for information provided on stakeholder consultations and plans to accommodate stakeholder groups.

I acknowledge that the CSA staff have taken issue with Qualified Persons acting outside their area of expertise, matters that have gone as far as hearings and sanctions. However, I feel the current approach of excluding industry professionals who bring excellent skills to areas of information disclosure that can be critical to investors, can result in poorer disclosure (see also my response to Question E16 and Question E17). I also take issue with the CSA staff's current attempts to discount relevant experience based on the date that membership of a professional association was obtained (see response to Question E16 and Question E17).

I strongly recommend that the definition of a Qualified Person be revisited, and broadened to reflect that it is not just experts in geosciences and engineering who are critical to the success of a mining project; experts in fields other than geosciences and engineering are just as critical.

Question A4

Paragraph 4.2(5)(a) of NI 43-101 permits an issuer to delay up to 45 days the filing of a technical report to support the disclosure in circumstances outlined in paragraph 4.2(1)(j) of NI 43-101. Please explain whether this length of time is still necessary, or if we should consider reducing the 45-day period.

Response:

It would have been helpful when framing my response to know what the context, drivers, facts, and circumstances were that led to CSA staff considering a diminution in the 45-day filing period was something that industry were requesting or that the CSA staff considered necessary. Without this background, I do not feel that I can provide truly informed feedback to the question.

My experience is that industry regards the 45-day period as the minimum timeframe in which a quality technical report can be prepared. I have seen analysts and legal counsel argue for a shorter time-period, but in each case, neither proponent is in the position of the Qualified Person trying to assemble, verify and present information such that it is presented in plain language, meets content requirements in the Form (and includes appropriate consultation of associated guidelines where those exist), and presents a balanced viewpoint. There is a significant difference between the time taken to read or review a report and the time required to actually assemble that report to be a complete, reasonably error-free, and bias-free project summary.

The initial 2001 edition of NI 43-101 allowed a filing period of 30 days. Qualified Persons and companies at the time were constantly requesting a two-week extension from the company's prime regulator as the industry found that preparation of a quality report that had undergone appropriate reviews (e.g., peer review, client review, legal review) was not possible in the 30-day period that was then allowed. In my experience, extensions were routinely requested at two weeks; it was not common to see filings for additional 30- or 60-day periods. This may reflect legal advice at the time that two-week extensions were likely to be granted, but in my view was more reflective of the fact that 45 days is actually about the timeframe needed to prepare a technical report, remembering that it is 45 calendar days, not Monday to Friday work days.

When the 2005 update was in progress, the CSA staff at the time acknowledged the number of requests for extensions was such that the 30-day period should be extended to reflect the volume of two-week extensions being granted. As a result, the 45-day filing rule (reflecting the original 30-day allowance plus two weeks) became enshrined in the Instrument from the 2005 edition of NI 43-101 onwards.

It is my opinion that it would be a strongly retrogressive step to shorten the time period. Firstly, there will undoubtedly be a return to the old days of constant applications for extension of term. Secondly, there is a significant risk that the quality of the reports will be negatively affected for the same reasons as experienced in 2001–2005. There

is insufficient time in a 30-day period to complete the data compilation, interpretations, recommendations, and required peer reviews and checks to ensure the presentation of scientific and technical information in a technical report is suitable for public disclosure.

However, the absolutely critical issue with any suggestion of a shorter time period is a company will have to sit on the disclosure of material information until the technical report is complete. This is a completely non-optimal outcome for investors. At least with a disclosure document (e.g., news release) being issued with the key information, followed by a pre-set maximum timeframe for the report to be lodged in support of the news release, investors are not left uninformed of critical data and interpretations.

The current 45-day preparation period also allows sufficient time for any errors that may have been in the original news release, identified by report preparation, to be adequately addressed in the technical report. There are numerous instances of a second news release being issued with the filing of the technical report identifying omissions, mistakes, or typographic errors in the triggering news releases. These are a direct consequence of imposing time deadlines on the assembly, checking and presentation of complex, interwoven data and interpretations.

In addition, a shorter time period is likely to be an issue in that speculation and subsequent insider trading, are likely to increase. Investors abhor a vacuum and have been shown to fill the vacuum with speculation, unreasonable assumptions and simply wrong conclusions made by chat rooms acting on those. A 45-day trading moratorium or other impost on share trading while such a report is prepared is not optimal either, as it is inevitable that leaks will occur, and the risk of insider trading rises.

Hence my overall response is the 45-day period is the minimum duration needed, and any shortening of the maximum time period allocated to report preparation will have negative, not positive, impacts on investors.

As one who has regularly had to deal with the tightness of the 45-day preparation period, my personal preference would be to allow 60 days, as that is a comfortable margin for preparation.

Question A5(a)

In recent years, CSA staff have observed mining issuers making use of new technologies to conduct exploration on their properties, including the use of drones. During the COVID-19 pandemic, we received inquiries from qualified persons about the possible use of remote technologies to conduct the current personal inspection

Can the investor protection function of the current personal inspection requirement still be achieved through the application of innovative technologies without requiring the qualified person to conduct a physical visit to the project?

Response:

I do not subscribe to the CSA staff's view that site visits are a major type of quality control measure. I agree that site visits can be extremely useful, but I disagree that in and of itself, a site visit is always needed. Nor do I agree with the CSA staff's stance that site visits must be tied to a specific issuer and redone simply because the issuer changes (see also notes under "Subsection L: Other"). I do not agree that site visits to early-stage exploration properties that have no work done on them, or have only data from limited geochemical sampling or airborne geophysical surveys, for example, result in anything more meaningful as an outcome to the Qualified Person performing the site visit than a day out and another day of billable time.

The example given in the Companion Policy "*A current personal inspection is required even for properties with poor exposure. In such cases, it could be relevant for a qualified person to observe the depth and type of the overburden and cultural effects that could interfere with the results of the geophysics*" as a defence for requiring a site visit is threadbare. In this instance, an airborne photo or satellite image is likely to provide more information on survey-affecting cultural effects as those methods are aerial than a ground view will. I also could never follow how I was to observe the depth of overburden, or be fully informed of the types of overburden given the premise of "*poor exposure*" in the Companion Policy example. In my view, drone footage can be a much better use of a company's resources as it provides more data than can be obtained from the ground view. I consider that it is as equally valid to point out that ground inspection of an airborne geophysical anomaly is often not illuminating where the anomaly occurs in areas of heavy ground cover, alluvium, or covering rock. A visit to a Canadian Arctic mineral tenure that has been selected as a grassroots diamond exploration play doesn't tell the geologist anything about the potential presence of diamondiferous kimberlite, except that the presence of moraines, till, swamps, and black flies does support an interpretation of a summer Arctic location.

Even the common touting by CSA staff that a personal inspection (site visit) is necessary because at a minimum such a visit can tell the Qualified Person something about access is a stretch: there's very little new that a site visit tells the geologist Qualified Person that cannot already be ascertained from satellite images or aerial photography. Boots on the ground are not needed to show the geologist that exploration will need to be helicopter-supported rather than ground-supported as another example; this is clearly interpretable from existing technology.

I do agree that site visits to early-stage properties that have destructive testing (e.g., drilling, trenching, bulk sampling) in progress, and to properties that have operations should be undertaken as these visits can be provide some useful information to the Qualified Person. But not as much as is claimed by the wording "*the current personal inspection is integral to the data verification"* in Question B8.

Hence, I am of the opinion that drone technology providing drone footage over an early-stage exploration project can replace a site visit for that specific property stage. I do not believe that a site visit will provide in many cases any more data or insight than the drone flight will.

I am firmly of the view that drone footage is an excellent supplement to site visits for properties that have been subject to destructive testing, but the program is completed or historical in nature, and for properties that have operations. In the case of properties with completed drilling, a drone view can provide up to date, project-specific information on the location, status and rehabilitation of drill pads; presence and status of historical workings; information on artisanal mining activities; locations of fauna and village trails; information on seasonal changes in land use and artisanal mining activities and vegetative and hydrological patterns; and information on the routes of planned new access routes into the project area. Similar up-to-date, project-specific information can be obtained by drone for operating properties, with the Qualified Person able to visually inspect the drone footage, for example, areas of potential leakage from impoundments, the efficacy of management of zones protecting threatened habitats or species, and artisanal mining activities.

The CSA staff appear to consider the use of new technologies to be a poor to misguided approach by industry. However, the mining industry is particularly quick on seeing possibilities for use of innovative technologies, in particular to lower costs and improve safety. Examples include use of now-common technology such as hand-held spectrometers, automatic ore sorting, and autonomous vehicles, to currently cutting-edge technologies such as deployment of robotic instruments (e.g., Spot the Dog). Use of innovation in exploration should not be something that is subject to a regulator's approval.

Question A5(b)

If remote technologies are acceptable, what parameters need to be in place in order to maintain the integrity of the current personal inspection requirement?

Response:

It would have been helpful for the CSA staff to define what the reader should interpret from the phrase "*integrity of the current personal inspection requirement"*. I was unable to reconcile definitions of "*integrity*" with the type of activity typically undertaken by mining professionals during a site visit. Personal moral uprightness and rectitude are not going to help a geologist assess during the site visit whether the drill rig was properly set up on the drill pad, or the technician is respecting the cut lines drawn by the geologist when core cutting. If the term is referring to some kind of understanding of the accuracy, completeness, and consistency of data, then this level of understanding is also not the result of a site visit alone. That level of data integrity assessment is almost never able to be performed during the site visit phase due to the

typically short duration of the site visit versus the numerous hours required to adequately verify data.

If the phrase is intended to argue that site visits will always identify if malfeasance has occurred, the history of recent mining scandals where database manipulation not salting was the issue, shows that this is not the case. If it is intended to show that personal inspections will always identify environmental or social issues, particularly in the case of early-stage properties, this has also not been shown to be the case.

As in my response to Question A5(a), I do not consider site visits are always warranted, and that drone surveys can replace on-site inspections for early-stage properties. I also consider in that response that drone or other remote type surveys are an excellent supplement to personal inspections for more properties with destructive testing and those in operation.

The use of aerial equipment in support of mining activity is not novel to the industry, although the use of drones, being small aerial devices, rather than the larger devices used in heliborne or airborne surveys, has only become truly common over the last 15 years. However, it is misleading to imply that drones, and the use of drone technology, are somehow so novel that they must urgently have specialist criteria drafted by the CSA staff to allow their use; this is simply not the case. I do not consider that the CSA staff should be defining what is and is not acceptable for such surveys. It is also a concern that the regulators should be reacting so strongly to a particular innovation, one that in many jurisdictions has been used for over a decade, since the mining industry is in general a source of constant innovation, and thankfully so.

Quality control measures are already industry standards for satellite and air photo imagery, and for airborne surveys. Most such surveys are performed by specialist personnel using specialized equipment and in accordance with applicable governmental regulations. Such surveys usually provide reports that identify quality control steps such as geo-referencing performed, climate conditions at the time the survey was run, and information is provided as to coverage area, flight heights, line spacings, and instrumentation used. It is expected that reliable operators would provide similar information for drone surveys and this would be summarized where required in the technical report.

Subsection B: Data Verification Disclosure Requirements

*Mineral projects commonly pass through the hands of several property holders, each generating exploration and drilling data. Using data collected from former operators prior to the current issuer's involvement in the project (**legacy data**) may be legitimate, but this data needs to be carefully verified, and transparently documented in technical reports. CSA staff see inadequate data verification disclosure at every project stage, from early stage exploration properties to feasibility studies.*

Describing sample preparation, security, analytical procedures, and quality assurance/quality control (QA/QC) measures is critical to an understandable mineral resource estimate. Qualified persons must state their professional opinion on those processes, explain the steps they took to verify the integrity of the data, and state their professional opinion whether the data suits the purpose of the technical report. CSA staff emphasized these requirements in both CSA Staff Notice 43-309 Review of Website Investor Presentations by Mining Issuers and CSA Staff Notice 43-311 Review of Mineral Resource Estimates in Technical Reports (CSA Staff Notice 43-311).

Data verification as defined in section 1.1 and outlined in section 3.2 of NI 43-101 applies to all scientific and technical disclosure made by the issuer on material properties. For example, data verification:

• requires accurate transcription from the original source, such as an original assay certificate,

• is not adequate when limited to transcribing data from a previous technical report,

• is not limited to technical reports but also to other disclosure such as websites, news releases, corporate presentations, and other investor relations material, and

• is not limited to the drill hole database and must be completed for all data in a technical report.

Response:

The CSA staff have unfortunately used wording in the statement that "*Using data collected from former operators prior to the current issuer's involvement in the project (legacy data) may be legitimate"* that suggests that the use of legacy data is suspect. It **is** legitimate for a company to use those data, and there should not be a presumption that there is something intrinsically wrong with historically collected data as the use of the word "*may*" intimates. In fact, it would be remiss of company management to ignore data such as drill information, metallurgical testwork, mining studies, baseline studies, etc., collected by previous operators if those data are relevant to a contemplated approach. Such data collection can represent millions of dollars of previous expenditure and is a valuable resource in and of itself.

I am concerned with the statement that "*CSA staff see inadequate data verification disclosure at every project stage, from early stage exploration properties to feasibility studies"* because this is reflective of the CSA staff's current propensity to see industry performance on the whole as bad. I strongly disagree with this as being an industry-wide failing. I would like to see the CSA staff provide examples and a clear basis for this statement to support their position. As I discuss in "Subsection L: Other", there has been a major trend in the last five years for CSA staff to label what, in the previous 15 years, was a minor compliance issue as now constituting "*potentially misleading disclosure*".

What I see is that the CSA staff have a very specific viewpoint as to what they think are appropriate data verification procedures that should be undertaken, and this mindset then influences what staff interpret to be appropriate disclosure of procedures

completed. I am concerned that this statement is already predicating that the CSA staff's judgment call of what verification should have been done is somehow more valid than the Qualified Person's judgement call on what was done. I do not disagree that data verification procedures can be poorly presented in some reports, no matter what the project stage; I do take exception, however, to the implication that industry in general does not perform data verification, and that as a general rule, data verification is an industry-wide failing (see also response under "Subsection L: Other"), particularly given the lack of examples provided by the CSA staff to support their assertations in the preamble to the set of questions on data verification.

The preamble to Subsection B that states "*describing sample preparation, security, analytical procedures, and quality assurance/quality control (QA/QC) measures is critical to an understandable mineral resource estimate"* actually reinforces the stereotype that data verification applies only to information collected in the geological sphere, by the immediate focus on data verification to support Mineral Resource estimation. By doing this, the CSA staff's data verification preamble appears to emphasize that it's really only Mineral Resource estimation that counts in terms of verification, and serves to downplay the later text that asserts that verification is required on all data.

The references to data verification being required only for material properties (*Data verification as defined in section 1.1 and outlined in section 3.2 of NI 43-101 applies to all scientific and technical disclosure made by the issuer on material properties)* is actually one of the "*potentially misleading disclosure*" tenets that the CSA staff are concerned about. In my experience, the mining industry does not complete a different set of data verification procedures for material properties to those measures undertaken for non-material properties. It is unclear why the CSA staff assumes that material property data verification is unique.

When NI 43-101 was introduced, it reflected an industry coming out of the turmoil of a number of 1990s mining scandals, and, unfortunately, an acceptance of a less ethical issuer component on certain exchanges, best exemplified by the history of the Vancouver Stock Exchange. What was required of the Qualified Person in respect of verification though, was specifically a result of the fallout of the Bre-X scandal, and the wording in the first two editions of NI 43-101 reflected the industry's determination to never allow that level of fraud to re-occur. Wording in the 2001 and 2005 editions of NI 43-101 reflected the then expectation that fraud would consist of deliberate physical salting of actual samples to improve grades. However, fraud does not sleep, salting has moved onto digital manipulation of data, and the wording in the 2011 edition was revised to ensure that data verifiers were aware that there were known instances where data were manipulated post-sampling, in particular deliberate falsification of original data that had been uploaded into databases.

The instruction "*requires accurate transcription from the original source, such as an original assay certificate"* is unfortunate, in that emphasis is kept on data verification

being a geological discipline error. The specificity of the example does suggest that verification is only required for certain data types.

The instruction that data verification "*is not adequate when limited to transcribing data from a previous technical report"* is discussed under my responses to Questions B6 to B8.

I remain, and have been since 2011, puzzled by the instruction on data verification "*is not limited to technical reports but also to other disclosure such as websites, news releases, corporate presentations, and other investor relations material".* I have assumed that this is a requirement to have a Qualified Person prepare or approve the disclosure of scientific or technical information in those cited disclosure types. I am not aware of any specific instructions or guidance that the CSA staff provide as to what additional or different verification would be needed for *"other disclosure such as websites, news releases, corporate presentations, and other investor relations material".* If the CSA staff have different requirements for data verification for these types of disclosure, those need to be clearly communicated both to the industry, and more importantly to the Qualified Persons named as approving the disclosure. Key elements would be what is required and how is it to be documented?

If the instruction on data verification is an attempt to alert investor relations staff to the fact that they need to have a Qualified Person review and approve any investor relations-prepared documentation that contains scientific or technical information, then what is expected from industry for disclosure to be compliant needs to be better communicated by the CSA staff, using plain language, to those working in investor relations as well as clearly communicated to those who will act as the Qualified Person on the information.

Question B6

Is the current definition of data verification adequate, and are the disclosure requirements in section 3.2 of NI 43-101 sufficiently clear?

Item 12: Data Verification of the Form addresses a core principle of NI 43-101 and is a primary function of qualified persons. Mining Reviews demonstrate that disclosure in this item is often non-compliant. For example, we do not consider any of the following to be adequate data verification procedures by the qualified person:

• *QA/QC measures conducted by the issuer or laboratory;*

• *database cross-checking to ensure the functionality of mining software;*

• *reliance on data verification by the issuer or other qualified persons related to previously filed technical reports; and*

• *unqualified acceptance of legacy data, such as disclosing that former operators followed "industry standards".*

Response:

One of my biggest concerns is having common industry terms, such as data verification, being defined in Canadian statute. I do not agree that defining common industry terms within NI 43-101 is optimal for the industry. In my view, mining technical terms and study types should be defined by the CIM and promulgated in the CIM Definition Standards.

The primary reason for this is that the CIM can update and modify definitions as required, whereas any changes to definitions if the term is defined in NI 43-101 requires the industry to wait for regulatory bodies to agree that a rule update is needed, the rule to be written, and then adopted. As updates to NI 43-101 can be more than a decade apart as shown by the most recent adoption, having the definition only in the rule does not provide the industry with the benefit of rapid incorporation of changes that reflect changes in the industry's viewpoint. Allowing the CIM to be the source of the definition will also be of use to the industry as the CIM can provide proximal guidance to the defined term; the Instrument cannot, guidance can only be placed in a separate document, the Companion Policy.

CIM is recognized in Canada as the standards setter, and as a learned, not for profit society comprising technical professionals, and one which has been recognized within the editions of NI 43-101 as the source for certain defined terms within the CIM Definition Standards, is a better choice as the source of the definitions of key mining terms and study types. CIM also has access to a broad membership, representing numerous disciplines that have a wide-ranging experience with different commodities, deposit types, extraction methodologies, social consultation, environmental studies and permitting. It is preferable to have input from the collective industry into setting up robust definitions than have a narrow regulations-based perspective creating definitions that are unworkable for the industry.

The secondary reason is some of the definitions that the CSA staff have compiled are not true definitions, for example, currently in the 2011 edition, a PEA is actually defined by what it is not (see also my response to "Subsection D: Preliminary Economic Assessments"). A definition of what something is not, is, at best, unwieldy when it comes to interpretation by the industry and appropriate regulatory actions.

The third reason is that in my view, again using the PEA definition as the example, that the CSA staff have misunderstood what the study type is used for by industry, and by investors, and hence a definition that is based on a misunderstanding is not a workable definition.

By assigning definition of mining terms to the CIM, this ensures that industry defines the terms such that they do mean what industry expects them to mean, and some of the ambiguities currently experienced as to regulator interpretation may be mitigated.

I am now going to discuss the following statements made in the preamble to this subsection:

> *For example, we do not consider any of the following to be adequate data verification procedures by the qualified person:*
>
> • *QA/QC measures conducted by the issuer or laboratory;*
>
> • *database cross-checking to ensure the functionality of mining software;*
>
> • *reliance on data verification by the issuer or other qualified persons related to previously filed technical reports; and*
>
> • *unqualified acceptance of legacy data, such as disclosing that former operators followed "industry standards".*

I have an issue with each and every statement. I find, in each case, it difficult to believe that the items being touted are really a totally industry-wide issue of such proportions that they will cause an issue to the quality of the Canadian markets. My concern is that the CSA staff are seeing issues with some filings, and then tarring the entire industry with a broad brush claim of non-compliance. A further concern is that some of the statements read as judgement calls by the CSA staff and therefore are no different to judgement calls by Qualified Persons: they are both judgement calls.

"QA/QC measures conducted by the issuer or laboratory" are both critical components of and integral to proper QA/QC programs. It is unclear why the CSA staff would take the position that inspection of laboratory and internal corporate QA/QC programs and results are not be part and parcel of the data verification conducted by a Qualified Person and that a Qualified Person has done an inadequate job if such data are accepted.

A Qualified Person will never be able to individually perform and review every laboratory batch performance, and look at every QA/QC program conducted by an issuer, nor collect, log, sample, and assay each of the individual underlying samples. It suggests a profound misunderstanding by the CSA staff of the significant amount of teamwork that is now mandatory in a modern exploration program, where teams of personnel are responsible in each step of the data collection process for their small portion of the data collected, and for checking the validity of their section of the collection process. Teams of geologists and other skilled practitioners are involved in drill programs over time, collecting geological, geotechnical, hydrological, survey, geophysical and similar data. No one geologist is ever responsible for each and every step in a multi-year data collection program completed in multiple campaigns by a number of different companies. Other teams are responsible for upload into, and consolidation of the collected data into databases and review of the validity of those data inputs. Different teams again monitor the analytical results and results of QA/QC programs related to analyses.

The collection and verification protocols in use by the company, and the company's own QA/QC monitoring and reports are the very building blocks that a Qualified Person commences their review with, typically using the corporate QA/QC reports, protocols, and programs as the initial checking mechanism, and vectoring into laboratory QA/QC if a persistent issue is noted. A Qualified Person who does not include these in their data verification is not following industry accepted practice, and the data verification performed is likely to be flawed.

The statement that "*database cross-checking to ensure the functionality of mining software* [is not] *adequate data verification procedures by the qualified person"* assumes a stretch of faith in mining software that I do not share. Most software is buggy, and updates to software can be particularly so; in fact some qualified persons explicitly include software checks for this reason. Transfers from one type of mining software to another are also industry-recognized areas where errors can occur, as can migrating between databases. Moreover, humans are fallible, and it is easy to accidentally select a software setting that includes or excludes data that was intended to be excluded/included. Different software packages do not necessarily seamlessly transfer data. One example was where one system defined the composite neighbourhood using a rectangle and the other software system used a true ellipsoid. This resulted in different composites being selected during estimation searching, with resulting differences in tonnage and grade estimates. Without a check on the estimation approach used by the two software systems, the differences would not have been explainable; they were not an error, just differences in approach. Overall, therefore, a cross-check between the database values and the values that have been subset into the mining software should be conducted, and this is very much a valid and necessary data verification step.

"Reliance on data verification by the issuer or other qualified persons related to previously filed technical reports" is a legitimate tool. Many previous data verification programs were completed at the time the data were collected; the current Qualified Person may be removed from the exploration program in time, and the comments of those who were there on the ground may be far better for setting the context and usefulness of the data collected. Periodic audits done by external consultancies or internal corporate experts may represent far more detailed inspections of data than can be done by the Qualified Person in the timeframe typically allocated to a Qualified Person to do the data verification in support of a technical report. Reliance on other Qualified Persons is also an accepted practice: as I comment on QA/QC programs, use of the technical expertise of others is integral in modern exploration.

I consider that the statement "*unqualified acceptance of legacy data, such as disclosing that former operators followed "industry standards""* should have been accompanied by some substantiation for commentators to understand exactly what the issue(s) is. There are instances where it could be acceptable to state that the operators followed industry standard practices. One would be a junior company

acquiring a project from a major company that has just completed active exploration. The major has had internal controls, protocols and QA/QC programs in place, and has regular inspections and audits. In that instance stating industry standards were followed could be an acceptable statement from the junior company.

I also note that information being collected by a junior company should not automatically be viewed as suspect data. Many junior companies have very good internal controls in place, have QA/QC programs that are better than industry standard, and that it is reasonable to rely on their data.

I am concerned that the statement in and around "*followed "industry standards""* is meaning that the CSA staff do not agree that the industry has established common practices, does follow those practices (standards), and that the standards are reasonable. I am troubled that this is a direct critique of the CIM's well used guidelines on aspects of mining practices, which are incorporated by reference in the Companion Policy. Please also see my comments on the current regulatory use of CIM standards in "Subsection L: Other".

I also wish to point out that "*unqualified acceptance of legacy data"* actually is an industry practice. There are numerous instances where a company has to take the data available at face value, for example, using previous work by others to identify areas that may host a particular deposit style of interest, claim/ground staking, designs of initial exploration programs, and the methods to be employed in greenfields early-stage mining tenures are just some.

In response to the questions posed "*Is the current definition of data verification adequate, and are the disclosure requirements in section 3.2 of NI 43-101 sufficiently clear?"*, my view is the definition should be the responsibility of the CIM, and it is up to the CIM to determine if the definition currently in statute needs to be modified. My expectation is that the CIM would likely not change the definition, but would provide significant useful guidance to the industry as to how and what data verification, by discipline area, should be considered to be standard practices.

The disclosure requirements in section 3.2 of NI 43-101:

> *3.2 If an issuer discloses in writing scientific or technical information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure*
>
> *(a) a statement whether a qualified person has verified the data disclosed, including sampling, analytical, and test data underlying the information or opinions contained in the written disclosure;*
>
> *(b) a description of how the data was verified and any limitations on the verification process; and*
>
> *(c) an explanation of any failure to verify the data.*

is readily able to be followed when the subject data are geological point data. The wording in subsection 3.2 (a) has been interpreted by industry to apply to geological data, and the text supports that interpretation. As I note, however, in my response to Question B7, there are no current industry consensus guidelines for what constitutes data verification for data collected in disciplines other than geology. The CSA staff have made a judgment call that subsection 3.2 (a) also applies to data collected by other discipline areas, but there is no clearcut wording in any part of subsection 3.2 that this is a common industry understanding. In fact, most industry practitioners would argue that the location of data verification as an item after the geology, drilling, and assay sections, but before the metallurgy, resource and reserve estimation, mining and processing, infrastructure, environmental, cost estimation and economic analysis sections specifically means that the item refers only to the information presented in the prior sections, not to information presented in the sections to come.

Subsections 3.2(b) and 3.2(c) are not easy to interpret as there has never been guidance provided to industry as to what a failure to verify data would consist of. Nor is there clear-cut guidance on what would be considered by CSA staff to be a limitation on verification. As a result, industry does not have a clear understanding of what should be provided to address those subsections, and the CSA staff are using judgement calls that are not supported by any guidelines derived from industry practice.

Question B7

In addition, qualified persons frequently limit data verification procedures to the drill hole data set, resulting in a general failure to meet the disclosure requirements of Item 12 of the Form, which apply to all scientific and technical information in a technical report.

How can we improve the disclosure of data verification procedures in Item 12 of the Form to allow the investing public to better understand how the qualified person ascertained that the data was suitable for use in the technical report?

Response:

The Item on data verification was introduced in 2001 to address the perception that if a Qualified Person had been able to verify data, then some of the scams of the late 1990s could have been identified, and stopped before any impacts to the wider capital market had occurred.

The interpretation of the content to be addressed in the 2001 and 2005 edition by industry and regulators, kept this focus on Qualified Persons particularly focus on areas that had been problematic. The 2001 edition asked the Qualified Person: "*(b) whether the author has verified the data referred to or relied upon, referring to sampling and analytical data*", whereas the 2005 edition had become more focused on QA/QC: "*(a) a discussion of quality control measures and data verification procedures applied*".

The 2011 edition was simplified: "*(a) the data verification procedures applied by the qualified person*".

Industry's assumption that the focus of the content requirement to be that affecting the geological discipline was supported by the fact that all three editions of Form 43-101F1 placed data verification after the Form sections specifically devoted to that discipline (geological setting/mineralization, deposit type, exploration, drilling, sampling and analysis) and before any of the other disciplinary areas were required to be discussed in Form sections (e.g. metallurgy, Mineral Resource and Mineral Reserve estimation, mining, processing, infrastructure, marketing, environmental, permitting, social, capital and operating costs). Anecdotally, an argument has been made that the requirement for metallurgists to discuss variability in the Item 13 content is a form of data verification; however, this does not seem to be a common assumption within the majority of the industry.

For much of the last two decades the restriction of data verification to geological and assay data has not been an issue raised by the regulators. In the early 2010s, one of the presenters of well-known courses to industry and corporations on NI 43-101 began to include in their short-course teaching slide deck examples of issues that their consulting group had noted with data in other discipline areas, such as metallurgy. The slides did not, however, explain what QA/QC or data verification should be done specifically, just provided examples of where a verification step had shown issues with the data. Copies of this slide deck, as it was updated, were provided to the regulators as a courtesy over the course of the decade.

When the SEC formulated the content requirements in SK1300, it was clear that they considered QA/QC and data verification were important for certain data types, and the instructions to the technical report summary require the qualified person to comment specifically on these matters for geotechnical, hydrological and metallurgical data.

In the last couple of years then, it appears that the Canadian regulators started to take note of those types of examples and began to interpret both the definition of data verification [*"the process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source, and is suitable to be used"*] and the Item requirement in the 2011 edition for *(a) the data verification procedures applied by the qualified person*" to apply to all data, not just geological.

However, this shift in regulatory focus has been imperfectly communicated to industry, at best. During recent seminars I have given on NI 43-101 (and SK1300), most course participants had no idea that data verification was being required by regulators to cover all data and was no longer, as they assumed, to be focused on geology alone.

Broadening the focus of data verification comes with issues. My informal review of industry practices is that common, formal, protocols and procedures are in place, and have been for decades, for data collected in the geological discipline, as a reaction to the salting and data manipulation scams of the 1990s and 2000s and in response to

the bogus assay laboratories and poor internal control practices by certain laboratories. In disciplines such as metallurgy, geotechnical, hydrology, mine design, and infrastructure design, there are protocols and procedures that have been developed by, and are used by, individual companies and consultants, and a number of useful papers have been published, but no overarching general guideline that is accessible and agreed to as "*industry practice*" for QA/QC and data verification. Most in the industry appear to refer to the guidelines set forth, and updated from time to time, by a specialist cost estimation group, AACE International, as the source for cost estimation accuracies, contingencies and engineering levels of detail. However, as with the other non-geological disciplines, there are individualized protocols and procedures that are used by companies and consultants when soliciting, assembling and assessing cost estimates, and a number of useful papers, but no overarching general guideline that is accessible and agreed to as "*industry practice*" for QA/QC and data verification. Non-geological disciplines generally use peer review when verifying interpretations and conclusions and industry does seem to consider this to be an appropriate and acceptable level of data verification.

In the case of the environmental, social and permitting disciplines, I find the environmental areas maintain generally reasonable databases of studies completed, in either digital or physical form, and have strict protocols that are followed to collect the data supporting the studies. Environmental monitoring results and actions are typically stored and monitored using databases or spreadsheets. Permitting is tracked typically using spreadsheets, though the use of proper databases and specialist software is becoming more common. However, QA/QC and data verification as used in the geological disciplines are not part of the data process for the environmental, social and permitting disciplines. Indeed, in some areas, such as social, it is hard to see how opinion surveys could be subject to QA/QC and data verification; following strict protocols is likely the best that can be done. Nor do any of these areas other than environmental monitoring commonly collect point data based on destructive testing that can be readily twinned or duplicated in the same manner as do the geological, metallurgical, hydrological and geotechnical disciplines.

A second issue with the environmental, social and permitting disciplines is that in many jurisdictions, the learned societies and professional associations are only now grappling with drafting guidelines on environmental, social and governance (ESG) matters, Canada included. When industry does not yet have a broad consensus and no guidelines for the industry to follow, although individual companies may have draft or early consultation versions of these under development, it is not a simple matter for a Qualified Person to be sure that what is being disclosed is balanced. A further concern of mine is that not a single draft ESG guideline I have reviewed contemplates what QA/QC or data verification within the ESG discipline area should consist of, or how it can be conducted.

If the data verification requirements are to be broadened, as CSA staff are saying they require in this question, then there has to be an understanding that for many discipline areas, QA/QC and appropriate data verification steps are a work in progress; there is not yet industry consensus on what needs to be conducted as a minimum. The Qualified Person's judgement call is going to be the best available information, and there may actually not be any QA/QC and appropriate data verification steps the Qualified Person can perform, depending on the discipline area.

A separate concern with broadening the data verification requirement, which was highlighted by many when completing SK1300 technical report summaries, is that the QA/QC steps taken for granted in geology are not consistently part of hydrological, geotechnical and metallurgical data verification.

It is rare for an external laboratory not to hold some kind of accreditation for performing selected sample preparation and analytical techniques in the geological sphere, and it is becoming increasingly the norm that mine site laboratories are accredited. However, it is uncommon for hydrological and geotechnical laboratories to have accreditations for specific hydrological and geotechnical test methods though they may be accredited for some analytical techniques (e.g., water geochemistry), and even more rare for metallurgical laboratories to be specifically accredited for metallurgical tests (e.g., accredited for comminution testing, for flotation testing, for rheology testing), again though they may hold accreditations for specific analytical techniques.

There is no question within the industry in general that the commonly-used external hydrological, geotechnical and metallurgical laboratories are reputable and that their work is acceptable. The industry generally does not consider data collected by field sampling rather than laboratory testwork, or by internal metallurgical laboratories to be somehow suspect. This is usually because these data types have never been subject to the manipulation and fraud that occurred in geological sampling and analysis, so there has not been a need for these types of testwork to require accreditation. Mining is a pragmatic industry—resources are not spent if the only outcome is a piece of paper touting an accreditation that has no specific purpose. The SK1300 requirement to report accreditations therefore does not reflect current mining reality; there are no such accreditations nor has a need for such yet been demonstrated. This is also a reality in the Canadian context. There has to be an awareness that expectations as to accreditations disclosure that is an industry standard within the geological discipline will rarely apply to other disciplines. I strongly oppose introducing paperwork for paperwork's sake: if there have been no issues with falsification or manipulation of data outside the geological sphere, then there is no basis for imposing yet another compliance burden on the industry generally.

My view, then is that the CSA staff's continuance with the current approach requiring Qualified Persons provide data verification information that will "*apply to all scientific and technical information in a technical report"* has no robust basis, since for many

disciplines, there is currently no industry consensus approach to QA/QC and data verification.

In my opinion, the CSA staff should approach the CIM and request the following of the CIM:

- Request that CIM take over responsibility for certain defined terms, including that of data verification, and promulgate those definitions in the CIM Definition Standards;
- Ask CIM to establish industry guidelines as to what data verification should consist of for the major discipline areas that are not already covered by CIM guidelines;
- Invite the CIM to provide guidance as to the type of text that would be appropriate to explain data verification undertaken;
- Request the CIM provide guidance as to what CIM would consider to be a failure to verify data, and what would constitute limitations on data verification.

Overall, I am not in favour of making radical changes to the Form for the sake of change alone. There must be a strong and reasonable basis for any changes, and in my view, the extension of data verification to other disciplines as appears to be intimated in the CSA staff question, is not clearly demonstrated here to be of benefit to either investors or the industry.

If additional data verification requirements are contemplated, and these are demonstrated to have a reasonable basis, then it would seem to me that the most benefit would be to have the verification discussed proximal to the data that require verification, not in a section of the report removed from the information, or before, indeed, the subject even having to be raised.

Question B8

Given that the current personal inspection is integral to the data verification, should we consider integrating disclosure about the current personal inspection into Item 12 of the Form rather than Item 2(d) of the Form?

Response:

I do not agree with the CSA staff premise in the first clause of this question that "*the current personal inspection is integral to the data verification"* as I do not believe that site visits are an essential (integral) form of data verification using the definition of data verification currently in NI 43-101 in each and every circumstance. In addition, since the requirement is that at least one Qualified Person has been to site the argument doesn't hold water for those discipline areas where no Qualified Person went to site. A site visit is obviously not "*integral*" in many instances.

I also disagree with the implication by the CSA staff that site visits are compulsory for all types of data verification. As an example, I fail to see how a site visit does anything to verify capital and operating cost data for projects that are still within the study stage.

I do not agree that modifying the Form is required in this instance. Item 2(d) is a reasonable location to describe what the scope of the personal inspection was. In my view, it is much better for the information as to the scopes of personal inspection to be early in the technical report, in the introductory section, where there is a chance of the information being read by the investor. There is no need to modify the Form to incorporate site visits into Item 12.

Should the Qualified Person wish to provide more information on the scope of the site visit, this can already be done under the principles-based requirements in Item 2(d). It could also, at the election of the Qualified Person, be discussed in more detail in Item 12.

I do not endorse the Item 2(d) requirement being moved to Section 12.

Subsection C: Historical Estimate Disclosure Requirements

In spite of extensive guidance in the Companion Policy, CSA staff see significant non-compliant disclosure of historical estimates. We remind issuers that non-compliance with section 2.4 of NI 43-101 can trigger the requirement to file a technical report under subsection 4.2(2) of NI 43-101. Examples of non-compliance include:

• failure to review and refer to the original source of the historical estimate,

• failure to include the cautionary statements required by paragraph 2.4(g) of NI 43-101, or inappropriate modification of such statements,

• failure to include required disclosure of key assumptions, parameters and methods used to prepare the historical estimate, and

• inappropriate disclosure by an issuer of a previous estimate.

Response:

As I note in my response to “Subsection L: Other”, all mining term definitions should be provided by CIM, and not be defined in statute.

I want to make it clear that at least some of the non-compliant disclosure may be due to the wording in the Form:

Item 6: History - To the extent known, describe

(c) any significant historical mineral resource and mineral reserve estimates in accordance with section 2.4 of the Instrument;

The wording in the Item can be validly interpreted as requiring the Qualified Person to always disclose historical estimates. This isn't just an industry reading; I've had law clerks and junior lawyers from law firms reviewing my reports for compliance insistently claim that I have not prepared a compliant Item 6 because I did not include all of the historical estimates known.

In my experience, many Qualified Persons (and law clerks and junior lawyers from law firms) do not read any more than the Form content requirements, and do not cross-check the advice provided in 2.4(3) of the Companion Policy on suitability of the estimate for public disclosure:

> *Suitability for Public Disclosure – Under paragraph 2.4(b) of the Instrument, an issuer that discloses an historical estimate must comment on its relevance and reliability. In determining whether to disclose an historical estimate, an issuer should consider whether the historical estimate is suitable for public disclosure.*

In the case of the junior lawyers, even when the Companion Policy wording is pointed out, they have taken the stance that Item 6 is law and requires the disclosure; Companion Policy is guidance, and therefore is not the determining factor for disclosure. This alone would be reason to revise and clarify what is required in and around a "*historical estimate*".

In my view, definition of historical estimates does need to be modified such that the determination of suitability for public disclosure is integral to the definition (see response to Question C9).

A second issue is the use of the terms "*historical estimate*" and "*previous estimate*" in the preamble to Subsection C. Both terms incorporate an expectation of past events, or something occurring before the current time. While a historical estimate is a defined term, nowhere in NI 43-101 or the CIM definition standards is there a clear definition for a "*previous estimate*" with guidance as to how this differs from a historical estimate. Explaining how the CSA staff views the differences between the two terms by explicitly defining a "*previous estimate*" may help with compliant disclosure.

A third issue is that it is not clear what is required of part (d) of 2.4(d):

> *(d) states whether the historical estimate uses categories other than the ones set out in sections 1.2 and 1.3 and, if so, includes an explanation of the differences;*

Guidance needs to be provided that explains what 2.4(d) requires of the Qualified Person. An example: the disclosure being made is of a resource estimate prepared under NI 43-101, but an estimate prepared prior to the 2014 edition of the CIM Definition Standards. Neither legal counsel nor the Qualified Person grasp that

different editions of the Definition Standards may have different definitions of defined terms: an example being the change in the definition of Inferred Mineral Resources:

- *2005: An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes;*
- *2010: 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. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

The key point being that from 2010 onwards, the expectation when classifying Inferred Mineral Resources is that the majority can be upgraded to higher confidence categories with continued exploration. A Qualified Person (and legal counsel) should be ensuring that that example disclosure even if it was done under NI 43-101, still needs to reconcile differences between term definitions from different editions of the CIM Definition Standards. A similar example could be made of the changes to the same terms within a similar timeframe within the CRIRSCO family of codes, as generally update to a CRIRSCO term is followed by an update within reporting codes based on those terms.

Providing more explicit guidance around 2.4(d) may be helpful in more compliant disclosures. Again, provision of such guidance should be under the purview of the CIM, and incorporated with the definition then promulgated.

One of the areas that the CSA staff note as a major area of non-compliance is the:

> • *failure to include the cautionary statements required by paragraph 2.4(g) of NI 43-101, or inappropriate modification of such statements,*

My first comment is that without knowing what the CSA staff considers to be "*inappropriate modification*", I cannot provide an informed response. I am assuming that "*inappropriate modification*" is any modification that an issuer or Qualified Person may make to the specific exact text in 2.4(g)(i) and (ii).

> *(g) states with equal prominence that*

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

(ii) the issuer is not treating the historical estimate as current mineral resources or mineral reserves.

A problem with the use of standard cautionary statements is that over time, the statements become less and less meaningful due to familiarity, or worse, are never even read because they are boilerplate and considered to be part of the sea of legalese that follow most public disclosure documents. A second problem is a propensity for cautionary statements to have the opposite effect, i.e., that because information comes with cautionary language attached, it must be more reliable than other information provided, because the other information was not subject to similar caveat.

I do not necessarily consider that 2.4(g)(i) and (ii) in and of themselves as exact text provide all of the context related to uncertainties around a historical estimate presentation. In this instance, it would be helpful to revisit the current cautionary language requirements. However, I am not necessarily advocating that cautionary language is actually required. If the definition of a historical estimate is better clarified and quality guidance is provided to the Qualified Person by the CIM, a clear discussion of the uncertainties in conjunction with the information already required in under 2.4(b), 2.4(e) and 2.4(f):

(b) comments on the relevance and reliability of the historical estimate;

(e) includes any more recent estimates or data available to the issuer;

(f) comments on what work needs to be done to upgrade or verify the historical estimate as current mineral resources or mineral reserves;

may be all that is needed.

One of the areas that the CSA staff note as a major area of non-compliance is the:

• failure to include required disclosure of key assumptions, parameters and methods used to prepare the historical estimate

One of the issues here is understanding what the CSA staff are envisaging to be compliant disclosure (see also comments on “Subsection L: Other”). Where I have seen what I had assumed was compliant disclosure, the Qualified Persons are focusing what is being presented on this topic with what they would normally provide as key assumptions and parameters to the footnotes of a Mineral Resource table, when presenting a current Mineral Resource estimate. However, it’s never been clear to me if that is sufficient in the CSA staff’s view to be compliant disclosure. In my view, having the CIM as definition custodians provides more scope for guidance on what is needed to be incorporated within the definition.

One concern I have with historical estimate disclosure is that I often cannot distinguish what the estimate was really based on. Determining if the estimate is a quality estimate is one consideration, but if the supporting data are flawed, the estimate will already be imperfect. It is reasonably easy if a technical report was filed that supported the estimate; typically, even for those estimates reported under the 2001 edition, there is information on the geological knowledge of the deposit at the time, the nature and type of drilling, sampling/analysis, QA/QC and data verification. Even if imperfect, this can give a better sense of the information supporting the quality of the estimate. For estimates done prior to the introduction of NI 43-101, assessment of the estimate quality is significantly more variable because the information provided is normally not at the level of detail required of issuers post 2001. Having guidance provided as to what minimum disclosure is needed, and how to deal with the gaps inherent in pre NI 43-101 disclosure would be helpful. In my view, the best source of this guidance would be the CIM.

I recommend additional discussion with industry in and around the allowance to disclose historical estimates. One topic would be whether disclosure of an estimate prior to NI 43-101 is even warranted, given its now two decades since NI 43-101 was in place. A second topic would be disclosure of estimates that are done under other CRIRSCO-based reporting codes. A third topic would be if estimates that were completed prior to a specific date (such as pre-1990 prior to the general adoption of QA/QC programs by industry, given that the data that support the estimate are not supported by modern concepts of data verification), are actually suitable for public disclosure.

Question C9

Is the current definition of historical estimate sufficiently clear? If not, how could we modify the definition?

Response:

The definition of a historical estimate should be the responsibility of the CIM, and incorporated into the CIM Definition Standards; it should not be defined in the Instrument.

The historical estimate definition should clearly enshrine the concept in the Companion Policy that any historical estimate disclosure should be suitable for public disclosure. Any revision to the defined term should consider whether the term "*historical estimate*" is an appropriate name for the term. Would an alternate name that is more reflective of the concept help with Qualified Person understanding of when it is appropriate disclosure and what information should be provided with it?

Allowing the CIM to be the source of the definition will be of use to the industry as the CIM can provide proximal guidance to the defined term; the Instrument cannot,

guidance can only be placed in a separate document, the Companion Policy, where it commonly overlooked.

As noted in my commentary on the introduction to "Subsection C: Historical Estimate Disclosure Requirements", it would be useful to have a definition of the term that CSA staff uses in this subsection, "*previous estimate*", if this is to be a concept that is to be used for regulatory enforcement. It is not optimal to have terms being used that are not clearly defined. I am finding that, when presenting NI 43-101 short-courses, explaining my understanding of the CSA staff's concept of "*previous estimates*" as a "prior estimate" seems to help differentiate in the minds of the Qualified Persons on the courses between "*historical*" and "*previous*"; though the use of "prior" still conveys the idea of a past event. If my suggestion to have CIM as the source of definitions is accepted, then one aspect the CIM should review is if the shortened name of the terms is optimal (i.e., should it be called a historical estimate), or if the actual name should be revised, per the second paragraph of my answer to Question C9.

The requirements around presentation of a historical estimate, when fully addressed, are lengthy. One reason I think that they are so often not well presented is that Qualified Persons see an apparent dissonance between the specificity of the requirements in section 2.4, and therefore in Item 6(c), and the apparently far fewer specific requirements around disclosures of Mineral Resource estimates in Item 14 and think that there isn't a requirement for detail in Item 6 presentation if it's not similarly needed for Item 14. What the Qualified Persons do not seem to realize is that Item 14 is supported by numerous other sections of a technical report, and a historical estimate disclosure is not. If correctly addressed, historical estimates could provide significant information for a reasonably informed reader as to the estimate reliability; whether these are sufficient for an average investor to comprehend the usefulness is a different point.

Question C9 does not address if or when a prior estimate can be publicly disclosed. Currently, I understand that disclosure of prior estimates can be made, but this is in response to an exemption application being lodged with the relevant securities commission and that application being approved; i.e., that the CSA staff grant exemptions on a facts-and-circumstances basis.

I looked at some SEDAR-filed examples of where issuers and Qualified Persons are using prior estimate disclosure in technical report disclosures:

- Use of the estimates to show that despite a project having limited current Mineral Reserve estimates and therefore an apparent limited mine life, this has been the case throughout a long mine life; the prior estimates are then used to show that over decades, Mineral Reserves have not changed because tonnage estimates are reasonably similar, and depleted reserves have been continuously replaced, though the material incorporated in the current Mineral Reserves is in a different spatial location to those prior estimates;

- Use of the estimate to show prior Mineral Resource estimates when an issuer has a current operation that does not report Mineral Reserves for the same reasons as outlined for Mineral Reserves in the first bullet point;
- Use of the estimates to show how much a project's Mineral Resources and Mineral Reserves have grown over time, a measure being used by investor relations staff to promote confidence in the corporate management and exploration successes. (This is a common request during development of prospectus-related roadshows where investor relations staff want all of the information in the roadshow materials to be in the technical report. I have seen this get as detailed as lawyers requesting blurred stills from three-dimensional model fly-throughs to be included in the technical report).
- Presentation of the most recent previous year's tonnage and grade estimate against the current Mineral Resource and Mineral Reserve estimates. These examples were provided to show year-on-year conversion successes of Mineral Resources to Mineral Reserves, upgrades in the quantity of tonnes and grade estimates in the different confidence categories of Mineral Resources; and conversion of previously unestimated material to Mineral Resources;
- Presentation of the most recent year's tonnage and grade estimate against the current Mineral Resource and Mineral Reserve estimates to show annual reconciliation performance.

The first three bullet points appear to be accompanied, where used, by meeting most, but not all, of the 2.4 requirements. The examples I reviewed most commonly did not address 2.4(e) and 2.4(f). I assume because this could impact the investor relations roadshow story. The 2.4(e) content should be in the roadshow, since a more recent estimate should be noted to investors. The 2.4(f) is likely omitted because if there is a current estimate, then the issuer has already done what is needed to update the prior estimate. It would take up a lot of space in the investor presentation to address the detail required to meet 2.4(f). This becomes an issue because it may be reasonably easy to address in a technical report, but since the requirement pertains to any disclosure, it does become unreasonable to expect the discussion to be in each and every document mention of the estimate. The additional problem is that 2.4(f) disclosure doesn't apply only to material properties; it applies to all properties. The effect of 2.4(f) obligations then becomes onerous for any historical estimate disclosure and is a source of non-compliant disclosure. The CSA staff could consider limiting the obligations under 2.4(f) to material properties only. Another step that may help industry with compliance is to bring some of the guidance in the Companion Policy into the Form, to make it clear that disclosure of historical estimates is not compulsory, and that comparison between the current and previous estimates is also not a compliance requirement.

My concern is that the historical estimates have a set of requirements that are very difficult for the industry to comply with. There are a high number of obligations and requirements that must be met, whether the information is material or not.

In the case of the last two bullet points, the prior estimates are typically presented in table or text form, commonly as part of Item 14 content, not Item 6, and provide only the confidence category and the tonnage and grade estimate, and can be accompanied by a waterfall chart that shows the changes graphically. I did not see that the Qualified Persons recognized that prior estimates would need to meet part of 2.4 requirements, with these requirements not being addressed within Item 14 or elsewhere in these technical reports.

The presentations made me consider whether the presentation of a prior estimate is something that the CSA staff should contemplate in a rule update. However, in none of these cases could I see a compelling reason for prior estimates to be presented as part of ongoing disclosure. My view is that the current CSA staff's position of disclosure if an exemption application is approved remains appropriate.

Question C10

Do the disclosure requirements in section 2.4 of NI 43-101 sufficiently protect investors from misrepresentation of historical estimates? Please explain.

Response:

"Misrepresentation" is defined in section 1 (1) of the Ontario Securities Act as:

> *"An untrue statement of material fact. An omission to state a material fact that is required to be stated or that is necessary to make a statement not misleading in the light of the circumstances in which it was made".*

The CSA staff are using "misrepresentation" as a term in a number of instances where I do not agree there is an actual misrepresentation (see my response to "Subsection D: Preliminary Economic Assessments" as an example), given the above definition.

There has to be a materiality threshold, which likely does not occur in Section 2.4 on most historical estimates. This may be because the property is not material, or there is a current estimate on a material property which makes the current estimate material, but the historical estimate part of the history of the property. I do not agree with the CSA staff's characterisation of historical estimates as being misrepresentation because either the historical estimates are not misrepresentation, or, they cannot be. The CSA staff's framing of the question is making an issue of non-compliant disclosure of historical estimates, when in fact, such an issue does not generally exist. This reflects directly on the most appropriate use of regulator, issuer, and Qualified Person's time. All are better served addressing real, not artificial, issues.

I am assuming a misrepresentation could include one or more of the following: presenting an estimate without addressing all of Section 2.4, treating an estimate as current, or presenting a prior estimate.

My view is that the definition presentation could be improved. I believe that technical terms of this nature should not be defined in the Instrument, but should be the responsibility of the CIM, and be part of the CIM Definition Standards.

The biggest improvement for clarity around disclosure would be to have clear guidance as to what is expected under each subsection of Section 2.4. Rather than have a major update to the Companion Policy to cover such guidance, my suggestion is that this would be provided by the CIM if the CIM take ownership of defining the term. I also recommend that the CSA staff give more latitude to the Qualified Person when presenting a historical estimate and the context of that estimate. Qualified Persons have the responsibility for the information that they are presenting, the CSA staff need to allow the Qualified Persons the authority given to the Qualified Persons in NI 43-101 to decide what is included.

Subsection D: Preliminary Economic Assessments

The disclosure requirements for preliminary economic assessments were substantially modified in 2011, resulting in unintended consequences requiring additional guidance published in CSA Staff Notice 43-307 Mining Technical Reports – Preliminary Economic Assessments in August 2012.

Mining Reviews continue to show that preliminary economic assessment disclosure remains problematic for issuer compliance and, more importantly, is potentially harmful to investors. While the inclusion of inferred mineral resources is a recognized risk to the realization of the preliminary economic assessment, CSA staff's view is that the broad, undefined range of precision of a preliminary economic assessment also contributes to that risk. This range of precision is incongruent with one of the core principles of NI 43-101, which is that investors should be able to confidently compare the disclosure between different projects by the same or different issuers. In addition, CSA staff see evidence of modifications to cautionary language required by subsection 2.3(3) of NI 43-101 that render this provision less effective.

Response:

I would like to outline my many concerns with the statements in this preamble.

Firstly, I want to provide a summary of how, in my experience, industry, as opposed to the CSA staff, views and uses PEAs. I will start off by discussing the industry definition of a scoping study, which is the typical term, rather than the NI 43-101-defined term PEA, which is analogous, but not exactly the same.

Within the industry generally, a scoping study is a conceptual-level, first or initial stage, what-if study based on limited information that is used to assess what a project may

look like. A scoping study can be conducted at any stage of project development, and may be completed on a project that only has mineral resources up to a project that is operational with most infrastructure constructed. It is not the project stage that is critical to a scoping-level assessment, it is whatever the concept that the scoping study is evaluating for which there is a major discipline area (or multiple areas) that has only limited information available.

Industry uses scoping studies as means of refining options in support of a better project layout, better project outcomes, or enhancing project economics. Industry also uses these studies to allocate its limited exploration funds to those projects with the better chance of eventual success. What-ifs are critical to the business. This is as true of operating mines as it is to studies where a mine has not yet been constructed.

Industry knows that limited data are used in a scoping study. The study identifies what additional key data should be obtained to refine the concept examined in the scoping scenario, and sets out what work needs to be completed to obtain those data. Industry expects that there will be numerous scoping studies done as data are refined; it is never an expectation that a scoping study will immediately lead to a preliminary feasibility study (PFS).

The CRIRSCO definition of a scoping study includes as part of the definition that a scoping study will always be able to support progress to a PFS:

> *9.3: 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.*

That is simply not what one sees across the industry generally. My point is that even CRIRSCO has a poor definition for, and has misunderstood uses of, scoping studies/PEAs; this is not just restricted to CSA staff.

Many scoping studies do not immediately progress to a PFS. While a PFS can examine a range of options in more detail, the scoping study determines which, if any, of the options warrants additional examination at the PFS level. In many companies, it is common to see projects cycling between PFS and scoping. This is part of the reason why so many companies have introduced the concepts of check points, stage-gating or front-end loading that have defined criteria that a project must meet before moving to the next stage of evaluation. Examples such as these decision points are used by corporate management: the project does not meet current corporate criteria, is recommended for re-evaluation based on additional data collection, and using different premises and assumptions; it may be a good project to offer as a joint venture (JV); it may be a project that should be sold with a claw-back or other royalty-type

interest clause; or it may be a project that should simply be discarded as not meeting corporate investment hurdle criteria.

The CRIRSCO scoping study definition restricts the use of a scoping study to only evaluate Mineral Resources. There is no guidance given to explain what is meant by Mineral Resources, however, within the CRIRSCO Template. The CSA staff have taken a very prescriptive view in recent years as to what is meant by Mineral Resources. In their view, it's "*potentially misleading disclosure*" if a study is done that includes the Mineral Resources used in a parallel study that also uses some or all of the Mineral Resources that were converted to Mineral Reserves. However, no open consultation has been undertaken with industry to determine if industry concurs with that view. CSA staff have turned to using comment letters, which I want to emphasize are not public documents and therefore read by only a minority, to force companies to retract disclosure of results of mining studies that support Mineral Reserves in a technical report together with simultaneous disclosure of the results of PEAs that use some or all of those Mineral Resources converted to Mineral Reserves plus those Mineral Resources remaining that were not converted. I explain this point in more detail to my response to Question D13.

In practice, the mining industry does not restrict what-if scoping scenarios to only evaluation of a Mineral Resource estimate exclusive of Mineral Reserves, and only at one stage of evaluation. When running what-ifs, the analysis is done on the collective Mineral Resource estimate inclusive of those Mineral Resources that have been converted to Mineral Reserves, and is completed at all study stages and iteratively during operations. CSA staff may claim that such studies are an "*unintended consequence*" of the allowance to rescope a project provided in the 2011 edition; however, the issue is that they are not an unintended consequence. CSA staff did not then, and still do not, understand how the industry uses scoping studies. This appears to have been a consequence of the early 2000's stance by the CIM on the use of Inferred in mining studies, which was in turn primarily invoked because the SEC had, up until the introduction of SK1300, a prohibition on publicly reporting of any type of Mineral Resource estimate other than as mineralized material and a prohibition on the use of Mineral Resources in mining studies.

I challenge the statement that "*Mining Reviews continue to show that preliminary economic assessment disclosure remains problematic for issuer compliance",* because the compliance is an artefact of the CSA staff's approach in determining what is compliant disclosure. It is not an industry failing in my view.

The CSA staff's statement that PEA disclosure "*is potentially harmful to investors"* is made with no data or evidence provided to commentators to review as to the basis of the assertation. Throughout this consultation paper, the CSA staff unfortunately make statements that if the same statements were made by a Qualified Person or issuer, the CSA staff would take exception. If a debate is to be fair, transparent and unbiased, each side must present clear examples of the issues involved, using fact-and-

circumstance presentation such that the reasoning can be followed and is defensible to peers. I would argue that clear and transparent disclosure is better than only allowing very limited, circumscribed and prescriptive disclosure.

A second point is that, in fact, all disclosure is "*potentially harmful to investors".* Most disclosures actually are not harmful but helpful, but the potential to change an investor understanding is present with any disclosure. The harm of absence of disclosure, however, should always be more compelling in regulating than the potential harm that the CSA staff perceive from their interpretation of problematic disclosure.

The CSA staff define a PEA primarily as a study that is based on what it is not:

> "a preliminary economic assessment *means a study,* ***other than a pre-feasibility or feasibility study*** *that includes an economic analysis of the potential viability of mineral resources*".

It is a very poor definition. In fact, the definition should allow a PEA to be done in conjunction with an operating mine plan, as an operating mine plan is not part of the "*other than a pre-feasibility or feasibility study*" definition. The PEA definition does not describe what is meant by a Mineral Resource estimate, either. Restrictions on what can be considered to be a Mineral Resource within the bounds of a PEA study are a CSA staff construct. Their interpretation is not part of the definition, and is, based, as far as I can trace, on a link to a CIM document that states that there can only be one Mineral Resource estimate on a property at one time. I am very concerned that the CSA staff are currently making judgement calls, with no industry consultation, that a PEA can only be completed on a Mineral Resource estimate where the Mineral Resources have not been converted to Mineral Reserves. This is not how industry uses what-if analyses.

As best I can piece together the CSA staff's current views (based on CSA staff's public presentations, news releases that issuers have put out in response to comment letters, comment letters that issuers have shared with me, and verbal information conveyed by upset individuals within the industry who have received comment letters but did not wish to share the specifics of the actual letter contents), the arguments CSA staff have been making as to "*potentially misleading disclosure*" with respect to PEAs include:

- PEAs use optimistic assumptions. Capital and operating costs are not in line with what is eventually constructed. It takes much longer to obtain permits than the PEA envisaged. Actual construction timelines when the mine is under construction are much longer than envisaged in the PEA;
  - The project as finally in operation is completely different to that envisaged in the PEA;
  - The PFS does not directly follow on from what was envisaged in the PEA; some parameters and assumptions differ;
  - The FS does not include many of the assumptions made in the PEA;

- There is a risk that investors may not be able to differentiate between which resource blocks in a Mineral Resource that was converted to a Mineral Reserves in one mining study are also being reused in the PEA case;
- An issuer can never pursue both the mining study that supports the Mineral Reserves and a PEA based on Measured and Indicated at the same time, because to do so is incompatible with the Mineral Reserves—issuers cannot actually in practice mine the same resource block using two different mining methods;
- Where the Mineral Reserves scenario is based on an open pit, and the PEA on an underground there is an issue that for at least a portion of the underground development, then there is potential for underground development to be concurrent with open pit mining. There is a risk that some of the resource blocks currently in the open pit would actually be extracted by underground and vice versa. Hence the only non-misleading presentation of the PEA is to clearly have underground start after the complete cessation of open pit mining;
- In the scenario that an issuer has at a minimum a PFS that is based on two or more payable elements as the final product from a polymetallic deposit, there is a by-product metal that requires a significant capital expenditure to modify the mill to treat this by-product, and this scenario has only been tested and designed to a PEA level, the PEA may only be acceptable if the use of the by-product metal in the PEA study did not reuse any of the Measured and Indicated Mineral Resource blocks already used in the PFS.

With regard to the first point and its sub-bullets, these are simply unreal expectations by the CSA staff. Not only is every single mining study only representative of a snapshot in time, the technical and scientific information available at the time, and the assumptions made at that time, but all studies change and evolve over time, even life-of-mine (LOM) plans prepared once a mine is operational. When the project is robust, the project may grow. If the project is not robust, study work will be iterative until a solution to the major issues is found or the project is demonstrated to an issuer's management to be unsuitable for the issuer's purposes. There may also be major shifts in cost estimates and expectations of revenue, depending on where in the commodity cycle a mining study was completed. It is misleading of the CSA staff to assert that when the final designs and costs of a constructed mine are compared to PEA forecasts, the PEA is a "bad" document. As all too many in the industry are aware, many decisions are made during detailed engineering that were never part of the FS, let alone the PEA.

As previously noted, the industry concept of a PEA is that of a study done on limited data. As more and more data become available, trade-offs are completed, a better picture of what may be environmentally and socially acceptable in terms of mine layout and infrastructure is obtained, mitigation measures to manage risks within the mine plan are introduced, the assumptions in a PEA are refined, first at PFS, which still

explores a range of options, but in more detail than possible at the PEA stage, and then at FS, which examines a single option in greater detail. Industry, but not apparently the CSA staff, expects that models will commence as simplistic, and become more refined and complex over time. That is why time and effort are often spent on updates to PEAs, such that prior to the real detail undertaken in a PFS at a higher cost of study, the most cost effective, safe, and environmentally and socially permittable project designs that can be created on limited data have been completed.

With respect to the CSA staff statement:

> *While the inclusion of inferred mineral resources is a recognized risk to the realization of the preliminary economic assessment,*

a PEA could be regarded as the study equivalent (analogue) of an Inferred Mineral Resource. The CIM Definition Standards already have the concept that Inferred is the lowest confidence category of Mineral Resources, with the definition making it clear that though the majority of the estimated resources could reasonably be expected to be upgraded to Indicated, there will be a portion that will not. The industry view is that means >50% of the Inferred can be upgraded. Neither the industry nor the CSA staff expect that what was classified as Inferred will be completely one-to-one representative of what the whole deposit will be once it is eventually mined. The Inferred Mineral Resource category is not considered to be somehow tainted by the fact that it has inherent, well-recognized uncertainties; the CSA staff explicitly acknowledge that here. But that is exactly the stance the CSA staff are taking with PEAs; the studies are "bad" because they have imperfections.

The remaining bullet points in the bulleted list above are all variations on a theme; that in the CSA staff's view, somehow once a Mineral Resource block is converted to a Mineral Reserve, it is never, ever able to be reused in any other study. Again, that is not a concept shared by industry.

The statement that "*CSA staff's view is that the broad, undefined range of precision of a preliminary economic assessment also contributes to that risk*" reflects the same CSA staff's preoccupation with PEA studies as somehow "bad". PEA studies are based on limited data, should be understood by the CSA staff to be so, and be understood as a snapshot in time with a wide range of accuracy. This is how industry views the study type.

As noted in my response to Question A7, most in the industry appear to refer to the guidelines set forth, and updated from time to time, by a specialist cost estimation group, AACE International, as the source for cost estimation accuracies, contingencies and engineering levels of detail in mining studies. However, as with the other non-geological disciplines, there are individualized protocols and procedures that companies and consultants have developed when soliciting, assembling and assessing cost estimates, and a number of useful papers that can also form the basis of the estimate accuracy.

I completely disagree with the statement that cost estimates are "*undefined*", although I accept that they can be broad. The CSA staff have fallen into a fallacy that PEA studies will always be done to a particular estimate accuracy, without taking into consideration the practicalities facing the industry that ensure that this really is not possible. The main issue is that PEAs are usually simplistic studies, typically based on limited data and used as what-if analyses. A project located in Nevada, USA, could allow the company to have more accurate cost estimate forecasts with fewer contingencies than a forecast in West Africa or Greenland for example, because of the number of operating mines to which cost data can be benchmarked. This level of data is not generally available to a completely grassroots project in a country with limited and isolated infrastructure, known supply chain issues, and a political system that is unstable or subject to rapid inflationary pressures. Forcing a cost accuracy bound will not make the PEAs completed any more robust; they will always remain what they are, simplistic examinations based on limited data. What is likely to happen is that applying bounds will actually mislead investors as to the costs of a final project. Or worse, result in the study outcomes not being made available to investors.

A further concern I have with the CSA staff animus toward PEAs, is a puzzlement with who the investors are that the CSA staff interpret they are protecting? Companies are trying to present information that investors want to know, and information that is useful to investors in the PEA studies. If properly defined, the uncertainty around a PEA should be clear from the name of the study used. Even if an investor is given incomplete, partial information in a PEA compared to the data and knowledge available at FS or mining conclusion, it's at least information by knowledgeable individuals that can be assessed within the context of the study stage. In my view, not allowing any information on a project between Mineral Resource estimation and PFS is potentially more harmful. The worst case is that the market will go its own way. Innuendo, assumptions, gossip and speculation will replace science.

Returning to the "*CSA staff's view is that the broad, undefined range of precision of a preliminary economic assessment also contributes to that risk",* I also want to note that the same can be said of many PFS/FS and early stages of a mining operation and again any time a mine plan changes. There is a certain amount of imprecision in any forecast. Imprecision decreases with more data. Penalizing a cost estimate presentation in a PEA because it has limited and imperfect data is not optimal; the study should be understood and reviewed in the light of the fact that it is a simplistic evaluation based on limited data. There are some instances where even this limited data as a whole basis is not correct. More advanced projects, when re-scoped, may have significant portions of the study based on good and reliable data; but the actual alternative being explored may not have as high a confidence in all discipline areas.

I take issue with the statement that "*investors should be able to confidently compare the disclosure between different projects by the same or different issuers."* The CSA staff claims around "*confidently compare*" are unrealistic, and it's misleading to

investors that something based on estimation and limited data is being required to meet some subjective assessment of confidence. Both CSA staff and industry need to manage expectations: PEAs are not facts, they are the snapshot in time, conceptual, what-if, outcome of assumptions made on limited evidence. All PEAs are expected to change once more data are available, either such that the PEA is revised, or that more detailed data should be collected as part of a PFS. This is not a new expectation for a study. It is already built into the idea that when a PFS progresses to FS, based on the even more detailed information and involvement of many more specialist sub-disciplines in the study, the assumptions and outcomes of the PFS snapshot in time change when compared to the completed FS. The FS has more engineering inputs than did either the PEA or the PFS, and that is directly reflected in the lower contingencies applied at FS compared to a PEA. There has to be a clear understanding that PEAs examine a range of options, and eliminate a number of those options. They are not a tool that the CSA staff should be using to prematurely force selection of any one option.

PEAs should not be viewed as the study type that is the definitive answer to what the project will be if it goes to construction and operation. Benchmarking is a common industry practice to estimate costs and other aspects of a project, and is seen as a reasonable and cost-effective method for obtaining data because of the expense required to develop such data from a zero base. Where a jurisdiction has a long mining history, active mining operations using different methods and processing, the benchmarked data may be reasonably representative of what the operation envisaged in the PEA will incur. For greenfields projects, however, benchmarking can only be based on what data are available, and in general, this is a very limited database. It is not uncommon to find that the only useable benchmarks are from mines that are not even in the same jurisdiction. Hence, for PEAs, between project comparisons can never be "*confident*", the PEA outcomes should be understood on the fact and circumstances in each project. Artificially putting bounds that these studies need to be within creates an unrealistic expectation that may in fact, mislead an investor.

CSA staff have provided industry with guidance that PEAs can only have the following intended uses (source: Roundup short course presentation slide deck, 2018):

- Strategic planning;
- Establish scope for PFS or FS;
- To facilitate capital formation.

In general, industry would agree with the first and last bullets, but compared to CSA staff views, industry has a very different concept of what strategic planning consists of, and a markedly different idea of how the potential for capital formation can be enhanced. The middle point is most definitely not a point of agreement, as many PEAs are not assumed within the industry to immediately result in a PFS; most companies have hurdle rates and other criteria that must be met prior to advancement that sees multiple iterations of PEAs before such criteria are fully met. Companies often use

PEAs and PEA iterations to arrive at a project that will allow them to start the multi-year permit acquisition process. Remaining at a PEA level of evaluation keeps flexibility in the mine plan such that it can be readily amended based on feedback from permitting authorities or stakeholders. Unlike the CSA staff, industry generally would see moving from a PEA straight to an FS to be risky, non-optimal, and would not regard such a progression as a common industry practice.

The industry, however, has a fourth common use of PEAs. Scoping what-if scenarios are commonly used during mining operations to evaluate ways to improve mine economics, to provide better safety, and to deal with unforeseen circumstances such as unexpected geotechnical conditions or delineation of a completely new zone of mineralization. They are used to evaluate if a better process method may be available, e.g., moving from heap leach to a mill, or whether additional revenue could result if the plant was modified to produce a by-product. Or, if Mineral Resources are to be added to the mine plan, what is the effect on the infrastructure; is a new TSF required, what are the constraints as to locations, permitting, effects on capital and operating costs? Should the company proceed to use autonomous, rather than manually-driven, trucks, then what is the impact on the mine plan and assumed economics since sustaining capital will be changed to incorporate the need for wider ramps, and operating costs will change to accommodate changes such as expectations of higher tyre usage rates.

These scenarios start with the Mineral Reserve assumptions and the LOM plan and modify them by including Mineral Resources in the what-if. The inclusion can incorporate all of the Mineral Resources that were converted to Mineral Reserves in another study or only a portion of those Mineral Resources that were converted Mineral Reserves. The scenarios include some assumptions that are at a lower level of confidence than the assumptions used in the original Mineral Reserve estimate, but also include some aspects that are actually at a higher level of accuracy than used for the original Mineral Reserve estimate.

CSA staff should not be restricting these types of disclosures. They are valid, and can be of significant interest to an investor. Investors need to know if a company is considering revising the mining method to go underground from the current open pit method. One investor may be in support of such a move and buy additional shares in the company. Another may use the information to sell shares if they do not believe the company has adequate underground mining experience. The information is critical to a balanced market, and needs to be disclosed. A CSA staff-required artificial restriction on those Mineral Resources converted to Mineral Reserves being excluded from a PEA evaluation is not in an investor's best interests.

NI 43-101 currently requires the PEA to be compared to existing mining studies and any impacts on these studies be explained. This is another artefact of the CSA staff misunderstanding of what scoping studies are used for. They should not be compared to the existing mining study. They are not comparable studies; they are an alternatives option. Advising investors that a company is doing alternatives assessments should

be seen as good disclosure, not poor disclosure. If there is a serious concern that studies could be confused, the obvious option is to have each study in its own stand-alone technical report (see my response in "Subsection L: Other").

The really major issue for the industry is that the most recent CSA staff interpretations are a complete pivot from what the industry had been doing, and CSA staff appeared to acquiesce to. There were numerous studies put out in good faith prior to 2016 that were based on one or more of the assumptions that the CSA staff are no longer accepting. The problem is that the issuers only find out what is now called wrong at times that are seriously inconvenient for the issuer, such as the current CSA staff focus on reviewing technical reports during a prospectus or short-form filing. Companies I have spoken to who were caught in that vice do not agree the CSA staff had valid concerns, but because the financing was critical to usher through, changes were made to the reports to allow the prospectus receipt. This is not good governance on the part of the securities regulators.

In addition to these, I question whether some of the complaints levelled at industry in CSA Staff Notice 43-307 as misleading disclosure are still relevant a decade later. Many of the restrictions on the use of Inferred appeared to be a responsive gesture to the SEC, who in 2012 under the old Industry Guide 7, did not allow disclosure of mineral resource estimates using CRIRSCO Template terminology in SEC filings; only mineralized material, and did not allow disclosure of Inferred Mineral Resources as mineralized material. The promulgation of SK1300 in late 2018 removed many of those restrictions as the SEC consciously tried to provide their own interpretations based on the CRIRSCO Template terminology, and bring their expectations of industry reporting in line with current industry practices. Much of the commentary in CSA Staff Notice 43-307 is unlikely to reflect the new SEC position on the study type termed an "*initial assessment*" in SK1300, which is analogous to a PEA. A review of the issues noted in CSA Staff Notice 43-307 versus the SK1300 is warranted, as is examination of my contention that what a PEA actually is, has been misunderstood.

The CSA staff have recently added to the issue of compliance burdens and the understanding of what is or is not compliant disclosure by providing conflicting requirements of industry as to what will be a compliant technical report that has a PEA study after a PFS or FS. The Ontario Securities Commission provided early guidance that in that instance, the PEA study should be physically separated within the technical report from the study that supports Mineral Reserves:

- *Clearly separate the detailed mine design and economics (PFS or FS) supporting reserves (Items 15–22) from the conceptual mine design and economics (PEA) on resources (Item 24).*

Industry adopted the approach recommended by the OSC. However, a recent comment letter I was shown from the BCSC said that the report reviewed should have had the PEA information under the same Item headings as the existing study, which is completely contrary to the earlier OSC guidance. I cannot support the CSA staff

approach of using comment letters as methods of rule changes and enforcing novel CSA staff interpretations as being either in the public interest or one that supports a credible capital market (see also my response in “Subsection L: Other”). It is also outside the rule-making process.

The disclosure requirements for preliminary economic assessments were substantially modified in 2011, resulting in what the CSA staff viewed as unintended consequences requiring additional guidance, which was published in August 2012 as CSA Staff Notice 43-307 Mining Technical Reports – Preliminary Economic Assessments.

Unintended consequences do arise as a result of new, or updated/revised rules. The CSA staff view that because Staff Notice 43-307 had to be brought out within a year of the rule change, it was clear that there was something wrong with the rule change itself, is in itself, flawed. Many rules, both inside and outside the mining regulatory sphere, have consequential amendments, sometimes more than one, and additional guidance is often prepared to accompany such amendments. An amendment (or preparation of guidance to accompany a rule change) is not in, and of itself, evidence that something was wrong with the original wording of a rule.

CSA staff were seeing presentations by industry that were unexpected; however, as I note, the CSA staff did not understand what a PEA meant to industry, and even less understood how PEAs were used by industry, or comprehended how varied the circumstances were that PEAs were as a starting point for evaluations. My opinion is that the CSA staff had actually created more room for transparent disclosure of studies with the 2011 edition updates as interpreted by industry, and have unfortunately closed off that transparency avenue with their current enforcement actions.

Secondly my view is that the “*unexpected consequences*” interpretation is a CSA staff problem, not that of industry. I have tried to explain at length in my notes to the preamble to “Subsection D: Preliminary Economic Assessments”, that what is at issue is not industry interpretation and practice, but the CSA staff’s original PEA definition and the subsequent enforcement interpretations.

I am strongly of the opinion that the CSA staff’s approach to PEAs will continue to have a negative impact on the industry, and on the investing public. I do not concur with the CSA staff’s apparent interpretation that the industry is overall so bad that additional prescriptive rules are needed. I do think that there are outliers within the industry, and that these outliers, not the industry in general, could be an issue to maintaining credible capital markets. Prescriptive and poorly-defined rules are not a sensible solution to dealing with outlier issues. The CSA staff should, instead, be focused on, and have respect for, the professional practices of the Qualified Person(s) that prepared, approved or signed-off on the studies, and the professional attitudes of the reputable mining companies that prepare and disclose those studies. Legislation cannot stop bad actors, but encouraging the good actors does shift the playing field such that bad actors find it harder to be bad.

Due to the nature and types of concerns I have listed, I do not consider the Rule to be the correct place to define what a PEA is. The study type needs to be a CIM definition, not a 43-101, and the definition needs significant associated guidance to bring the term back to the purpose for which industry uses the study type.

Question D11

Should we consider modifying the definition of preliminary economic assessment to enhance the study's precision? If so, how? For example, should we introduce disclosure requirements related to cost estimation parameters or the amount of engineering completed?

Response:

The current PEA definition is unworkable. It consists mostly of an "*it is not*" definition, which is not a clear statement of what the study type should actually consist of. The definition is below:

> *""preliminary economic assessment" means a study, other than a pre-feasibility or feasibility study, that includes an economic analysis of the potential viability of mineral resources".*

There needs to be significant associated guidance generated to provide issuers and Qualified Persons that they can present the findings of a PEA, particularly a PEA presented in conjunction with a concurrent PFS, FS or LOM plan, without fear of that information being judged as non-compliant based on unwritten rules, unsupported interpretations, and a misunderstanding of how the study type actually is used in industry.

As with my note on the preamble, I do not consider the Rule to be the correct place to define what a PEA is. The study type needs to be a CIM definition, not a 43-101, and the definition needs significant associated guidance to bring the term back to the purpose for which industry uses the study type.

I do not agree that "*modifying the definition… to enhance the study's precision"* is in the best interests of either the investors or the public. PEAs should never be seen to be either accurate or precise because of the type of study they are. They are concept studies. It is misleading in my view to claim narrow precision ranges on a what-if study.

PEAs do have different levels of information available, albeit still limited. PEAs have to be able to be understood to range from studies that are truly conceptual, to, a study where the PEA has been updated, to a study that includes a basis that is not far from being able to support PFS evaluation. However, equating that to a level of engineering is a misconception. Levels of engineering should not be criteria when the entire intent of a study is to examine a concept or option.

PEAs are a cost-effective method of examining what-ifs. The authors should not be being asked to over-engineer something that everyone involved knows will change

significantly when more data are available; e.g., more information on geotechnical and hydrological conditions, metallurgical responses, and environmental and social settings. Even a new drill program that infills or steps out the drilling supporting the Mineral Resource estimate that is the basis of the PEA can generate sufficient additional data that a resource update will result in a significant shift in the PEA assumptions.

I want to make it clear that if an investor has to wait until a PFS is completed to obtain basic information such as the contemplated process and mining methods, expectations of recoverability and saleability of final product, and most importantly to many investors, a general idea of likely capital requirements, then there will be a lot of trading based on a vacuum of information, or worse, on bad assumptions. The first principle should be that an issuer is encouraged to provide information in the form of a cost-effective PEA.

Finally, I disagree with setting cost estimation parameters and engineering completion percentages as part of the PEA definition. I am assuming this question is asked for two reasons, one as a result of the initial assessment definition in SK1300 that requires estimates to be within certain parameters, and the second because the AACE International (AACE) guidelines, a common industry reference document, provides estimates of accuracy ranges, contingency accuracy ranges and engineering completion percentages for various studies.

Cost estimations should be the purview of the Qualified Person in consultation with the issuer, as they will be project-specific, study-specific, and fact-and-circumstance based. Many major mining houses have internal requirements that differ from both SK1300 and AACE assumptions, and such requirements should not be seen by CSA staff to be unacceptable in the PEA context. Cost estimates for PEAs where only a small percentage of the proposed mine plan includes Inferred Mineral Resources should be able to be clearly differentiated in terms of accuracy from PEAs where all of the proposed mine plan is based on Inferred Mineral Resources, since the very basis of the latter evaluation includes more assumptions than the former. Cost estimates for projects in a jurisdiction with well-developed infrastructure will have fewer unknowns than a project in a jurisdiction with poorly-developed infrastructure. Qualified Persons must be able to reflect these issues in their selected accuracy statement.

Cost estimate accuracies should not be defined in the Rule for any study stage. If an accuracy range is defined there, and is found by industry to be impractical for many projects (as is very likely in my view to be the case with the SK1300 accuracy provisions) then industry will be forced to provide information that it already knows is unworkable and potentially misleading. This is not an optimal outcome.

Question D12

Does the current cautionary statement disclosure required by subsection 2.3(3) of NI 43-101 adequately inform investors of the full extent of the risks associated with the disclosure of a preliminary economic assessment? Why or why not?

Response:

I disagree with the premise that cautionary language alone can provide information on "*the full extent of the risks".* Operating mines constantly review risks, at a minimum on an annual basis and these risks regularly change as mining operations continue. FS usually have a formal risk analysis process, which identifies numerous risks that were not recognized at the time the PEA was done.

When conducting a PEA, issuers and Qualified Persons are aware that there are numerous known unknowns, so the biggest overall risk is that the PEA is conceptual. The presence of known unknowns is a general risk. Specifics and details that may be associated with the known unknowns cannot be identified and cannot become known until more work is completed and more data are available.

A PEA, if properly defined, can never present a comprehensive list of the risks to a project. A PEA is a conceptual, early-stage study, used to examine and discard options, and is based on limited data. It is not a study that purports to know what risks will have become evident once the mine has operated and closed. The limited data available for use in the PEA cannot be used to identify, much less quantify, risks that will only become available as more study is done, more, and more reliable data are collected, and significant consultation is underway on a probable development option with permitting, environmental and social stakeholders in particular.

Secondly, as I noted for historical estimates (see my response to the preamble to "Subsection C: Historical Estimate Disclosure Requirements"), requiring an issuer and Qualified Person to copy-and-paste pre-set cautionary language does not necessarily serve as risk flag. As I noted then, a problem with the use of standard cautionary statements is that over time, the statements become less and less meaningful due to familiarity, or worse, are never even read because they are boilerplate and considered to be part of the typically extensive legal cautionary language that makes up the last part of most public disclosure documents. A second problem is a propensity for cautionary statements to have the opposite effect, i.e., that because the information comes with cautionary language attached, it must be more reliable than other information provided, since that other information was not subject to similar caveat.

I also do not necessarily see some of the cautionary language as a true caution. The statement that a PEA is preliminary is a clarification, not a caution. If the definition already had a clear definition, it is likely that some of the cautionary language could be removed.

It is better to have a good definition of a PEA, with quality guidance that clearly sets out the limitations of the study type, to ensure transparent disclosure than to rely on boilerplate caution statements and prescriptive disclosure requirements that are themselves reflective of judgements and interpretations, not of clearly-set out principles that can be readily understood and followed.

I maintain that the correct location for definitions of mining technical terms is with the CIM in the CIM Definition Standards, and not in the Rule.

Question D13

Subparagraph 5.3(1)(c)(ii) of NI 43-101 triggers an independence requirement that may not apply to significant changes to preliminary economic assessments. Should we introduce a specific independence requirement for significant changes to preliminary economic assessments that is unrelated to changes to the mineral resource estimate? If so, what would be a suitable significance threshold?

Response:

In my view, the requirement to have independent Qualified Persons should be removed from the Rule (see my responses in "Subsection E: Qualified Person Definition").

No other jurisdiction globally requires independence of the Qualified Persons at any stage. Even the SEC, when compiling SK1300 did not consider Qualified Person independence to be a requirement. This makes Canada the outlier globally when it comes to the use of Qualified Persons.

The best persons to write a technical report are the persons who understand the project, whether it be the geologist providing information on the deposit type, the cost estimator familiar with mining costs in the jurisdiction, or the environmental specialist engaged in daily consultation with regulators and local communities. Those persons are likely not independent. It makes no sense to have those experts excluded simply because a project milestone is reached that has an arbitrary requirement of independence. I cannot see how bringing in a Qualified Person with limited project familiarity, who will be on a budget and likely strict timeframe to complete the work will produce a better-quality result than the non-independent Qualified Persons.

I want to make it clear that there will be times when industry does choose to have independent Qualified Persons and some independent oversight will remain. Some examples include:

- Completion of a due diligence or audit review where one outcome is to have the Mineral Resources, Mineral Reserves, and financials endorsed by external third-party Qualified Persons;
- When the company does not have sufficient in-house expertise in an area, and has hired a third-party for that specific purpose. This is commonly seen for

tailings storage facility design and monitoring, for environmental monitoring, and for geotechnical designs and monitoring;

- The independent board requests that at a particular milestone, an independent report be prepared;
- The company does not have the discipline experts on staff to prepare such a report; e.g. the company has geologists, but no mineral process, mining, or environmental specialists;

Independent valuation reports will remain a requirement for many transactions, but this should not an NI 43-101 issue. A further point is that there is actually a limited pool of persons willing to act as Qualified Persons; putting yet another restriction on who can be a Qualified Person is not within the best interests of the industry or the investors.

The CSA staff emphasize the importance of relevant experience, which is often obtained by Qualified Persons working for the issuer, who therefore would not be independent. The right Qualified Person should not be excluded on the basis of independence if they have detailed relevant experience in a particular discipline.

Overall, therefore, I do not believe that prescriptively requiring independent Qualified Persons is an appropriate CSA staff requirement. I recommend that the CSA staff leaves it to industry to define when independence is needed, and remove all references to independence milestones and requirements for an independent Qualified Person from NI 43-101. The issuer is responsible for selecting the appropriate Qualified Person, and therefore it should be the issuer's responsibility to determine when and if independence is necessary, based on the intended use of the technical report.

As for PEA studies, since I do not consider independence to be a necessity, there are no instances or brightline tests as to changes in the information used in a PEA that I would propose as a trigger for an independent technical report.

Question D14

In 2011, we broadened the definition of preliminary economic assessment in NI 43-101 in response to industry concerns that issuers needed to be able to take a step back and re-scope advanced properties based on new information or alternative production scenarios. In this context, the revised definition was based on the premise that the issuer is contemplating a significant change in the existing or proposed operation that is materially different from the previous mining study.

CSA staff continue to see considerable evidence of preliminary economic assessment disclosure, subsequent to the disclosure of mineral reserves, which is potentially misleading and harmful to investors. In many cases, issuers continue to disclose an economic and technically viable mineral reserve case, while at the same time disclosing a conceptual alternative preliminary economic assessment with more optimistic assumptions and parameters. In many cases, the two are mutually exclusive options.

Should we preclude the disclosure of preliminary economic assessments on a mineral project if current mineral reserves have been established?

Response:

I believe the CSA staff took the correct response to industry concerns by broadening the definition in 2011. However, as the definition itself was flawed, this step was not as much help to industry as it could have been.

Poor disclosure in the mind of the regulators is as much that they appear to not understand how industry uses these studies. CSA staff enforcement of CSA staff judgement calls and interpretations has rendered this entire disclosure section a major uncertainty issue for industry over what will be interpreted as compliant.

Industry does not just employ PEAs as a method of rescoping a project, PEAs are constantly done on a going forward basis. Most companies have business plans, which form the basis of technical reports, but maintain numerous LOM plans that constantly are updated and reviewed with what-if scenarios. In other companies the nomenclature is switched, but the studies have the same purpose. These types of parallel studies on potential were done well before the introduction of NI 43-101.

CSA staff chose to interpret these types of evaluations as somehow poor practice, when in fact, I consider that they are a good practice and one any company conscious of investor returns will be undertaking. One of the roles of management of an issuer is to add value to the company and project, and this is often based on continuous evaluation of mine development options that may change with different assumptions and different circumstances. The company management determines which of these studies are shared with investors. Disclosure should not be viewed as a harmful practice. Investors are protected by disclosures that are transparent, prepared by

appropriate Qualified Persons, and the information is prepared and disclosed in a structured format.

If the study is understood to be an early-stage assessment of an option, it is immaterial whether mineral reserves have been established. It is poor practice to disallow discussion of scenarios because Mineral Reserves have been estimated. Even such basic common steps as evaluating pushbacks in an open pit scenario or changes to mining methods in an underground scenario can affect the Mineral Reserves.

The critical point is having a study type definition that allows an issuer to explain alternatives that are being contemplated, that some or all of the current extraction strategy is being reassessed, and there may be potential for better outcomes if what-if scenarios warrant additional work.

The fact that development alternatives may be mutually exclusive is not a reason to restrict an issuer from performing such evaluations or from disclosing the results of the outcomes. It is good practice by the industry, for example, to examine what an operation might look like using an open pit only scenario, and underground only scenario or a combined open pit and underground scenario. These should not be seen to be mutually exclusive because some or all of the same mineralization is used in each scenario analysis. They should be seen as responsible evaluations of a range of options that will result in winnowing out, given the available data, of some of the options. Claiming that, as CSA staff have, that reuse of blocks in separate studies is misleading is completely wrong. Again, it's a misunderstanding of how studies are really conducted and that in mining, all options are reviewed, re-reviewed and constantly reassessed. In my view, industry should be able to report these studies, and report the outcomes in the public domain irrespective of the studies that have been previously disclosed.

Having technical studies authored by Qualified Persons that present the pros and cons of certain alternatives provides the right level of support to issuer management when they make decisions as to what alternatives fit the issuer's needs. Different issuers have different assessments of the level of risks that they will accept in a project, as do investors.

I cannot emphasize too often that it is better to have full transparency for investors. The investing public should not be viewed as a homogenous entity. Each investor has their own specific interest in a project, and this may not be reflected in a single study. Investors are gold bugs, base metal bugs, battery metal bugs for example. Some analysts and investors can be more interested in selected development scenarios, for example the ability to produce by-product metals may be more favourable in response to changing market sentiments.

The CSA staff's interpretations of what are acceptable PEAs is restricting an issuer's management from showing where the value may be in a project. Value is a wide term, that can encompass risk, market interest in certain commodities, time to production,

capital efficiency, positioning of the project against competitor projects, and potential environmental and social implications of project development. The issuer needs to be able to not just step back and rescope a project, the issuer has to be able to explore all development options and communicate those to investors. I have a major concern with CSA staff appearing to insert their interpretations into matters that should be seen as the responsibility of a company's management and its board.

My other major concern is that restricting what can be presented as a PEA, or multiple PEA options simply restricts useful information to investors. This information almost always does eventually become available to a selective audience. The transparency principles within NI 43-101 of Qualified Persons being named and the information presented in a structured format is lost in this instance. I am concerned that NI 43-101 is being used as a means of suppressing disclosure rather than facilitating it. The official presentation by Qualified Persons acts as a check on the rumours and unsupported speculation that exist in such forums as blogs, chat rooms and bulletin boards.

One method of aiding disclosure of multiple mining studies is to follow the SEC lead where multiple current technical report summaries will be allowed. As I note in response to Question A3(b), this pragmatic US approach should allow a company to present multiple development options to its investors. Any revision of NI 43-101 should contemplate multiple current technical reports on the same project at the same time.

Question D15

In some cases, issuers are disclosing the results of a preliminary economic assessment that includes projected cash flows for by-product commodities that are not included in the mineral resource estimate. This situation can arise where there is insufficient data for the grades of the by-products to be reasonably estimated or estimated to the level of confidence of the mineral resource. We consider the inclusion of such by-product commodities in the preliminary economic assessment to be misleading.

Should NI 43-101 prohibit including by-products in cash flow models used for the economic analysis component of a preliminary economic assessment that have not been categorized as measured, indicated, or inferred mineral resources? Please explain.

Response:

I was interested to see the CSA staff claiming the ability to "*prohibit*" disclosure. As I remember, the use of the term "*prohibit*" was removed in the 2005 update after it had been pointed out that in Canada, you can restrict something but not prohibit it. The Rule changed from a subheading of Prohibited Disclosure to Restricted Disclosure back in 2005. Has there been a significant change in Canada that the CSA staff now have the authority to prohibit?

My concern with this question is the focus on PEAs alone. If by-product elements are not in the Mineral Reserve estimate for PFS, FS or the LOM plan, is this not equally as misleading as if they were not in the Mineral Resource estimate supporting the PEA? Why are PEAs again selectively singled out as being the only time this is an issue?

I do agree that by-product elements, if not in the Mineral Resource estimate, should not be in the economic analysis done for a PEA study. However, by-products, if not in the Mineral Reserves, should not be in the economic analysis for PFS, FS, or LOM plan either. This is an issue I see commonly in projects that have payable silver in the doré, but silver is not in either the Mineral Resource or Mineral Reserve estimate, but the company wants to add the extra 5% revenue for the silver seen in operations into the cashflow. I have also seen it with polymetallic projects where the concentrate contains either rare earth or platinum group elements that are generally not payable, but in times of commodity price highs, the amount in the concentrate is payable. Hence, I agree with the CSA staff's position on exclusion of by-product elements from economic analyses unless those elements are estimated in the Mineral Resource and Mineral Reserve estimates.

I think that CSA staff should request that CIM provide guidance in some areas, for example, some areas that could be considered:

- Disclosure of the potential to obtain upside from by-products can be presented as a project opportunity, as long as the presentation is qualitative, not quantitative;
- A mining operation that has a long history of obtaining by-product credits in concentrates, for example, can present the payability levels that they have historically obtained, and the Qualified Person could provide an opinion that based on the expectation of similar metallurgy in the LOM plan, similar payabilities are likely to be achieved. Again, the upside presentation would be qualitative, not quantitative.
- Qualitative presentations of upside benefits of by-product elements should be allowed.

Subsection E: Qualified Person Definition

CSA staff have substantial evidence that the current qualified person definition is not well understood, and have seen an increase in practitioners with less than 5 years of experience as professional engineers or geoscientists acting as qualified persons in technical reporting. CSA staff have directed many comments to issuers informing them that the qualified person does not meet the requirements of NI 43-101 in the circumstance under review.

Response:

I disagree with the current CSA staff's stance as exemplified in many of the assumptions in the preambles to questions in this consultation paper. Potentially imposing ever more prescriptive rules and contemplating extremely narrow allowances for a Qualified Person to be able to exercise judgement are not approaches that will stop bad actors. I see no evidence that Qualified Persons are, on an industry-wide basis, performing poorly. Rules should not be being introduced to penalize the majority for the sake of establishing protocols to deal with a small minority.

I have not seen an increase in the number of practitioners with less than five years of experience in reports I am working on or reviewing. I was shown a comment letter that I assume is reflective of the CSA staff's basis for stating that "*the qualified person does not meet the requirements of NI 43-101 in the circumstance under review".* In that letter the Qualified Person was considered to have insufficient experience because they did not have five years of relevant experience after obtaining their professional association accreditation. I have also seen a news release from an issuer where the company explains that they have had to use a new Qualified Person because the original Qualified Person was found by a regulator to not meet the definition of a Qualified Person because the Qualified Person had not obtained five years of experience after receiving a professional association designation.

Based on these two instances, I am assuming that the CSA staff position is that professional experience is only accrued post obtaining the professional association membership category as set out in the Companion Policy. The CSA staff appear to be treating professional experience and relevant experience as two different concepts. If I am correct, this potentially explains why the CSA staff consider numerous Qualified Persons not to be meeting the requirements. This is very much a recent, and major, change in interpretations by CSA staff of when five years professional experience is obtained, compared to what industry has for the last two decades assumed when determining a Qualified Person's relevant experience.

I assume the current CSA staff stance is based on an interpretation of the Qualified Person requirement in part (b) of the Qualified Person definition (emphasis added):

> *"(b) has at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any*

combination of these, ***that is relevant to his or her professional degree or area of practice****"*

such that the only way a Qualified Person can obtain professional experience in their area of practice is if they are registered with the appropriate professional association, hold the correct, Companion Policy-recognized category of membership within that association, and have five years of experience after achieving the appropriate membership category within that professional association.

It seems a major stretch to me to be hanging non-compliance and poor practice on a Qualified Person on the interpretation of "***relevant to his or her*** *professional degree* ***or area of practice****"* [my emphasis added] such that experience related to an "*area of practice*" is fully synonymous with an appropriate category of membership of a professional association.

It's a unique position for the CSA staff to be taking, since no jurisdiction globally requires that experience only starts to be counted once the Qualified Person has a professional association membership.

In the Canadian context, only certain categories of membership of a professional association are recognized as meeting Qualified Person requirements. This means that if a mining engineer was a 20-year member of the Australian Institute of Mining and Metallurgy (AusIMM), their experience as gained during those 20 years would not count. If they upgraded their membership to a fellow of the AusIMM, they still could not act as a Qualified Person until five years after the date of the fellowship award.

For issuers who count on their Qualified Persons meeting the requirements by using an Accepted Foreign Association registration, this imposes additional uncertainty around the selection of the Qualified Person signing on disclosure documents, and on the information released to the market signed by a Qualified Person that does not now meet the CSA staff requirements. It also brings into question how many of the Accepted Foreign Association designations now can actually be relied upon as acceptable when acting as a Qualified Person.

The CSA staff claim that relevant experience is obtained only post acquisition of professional association membership definitely has a bias against those professionals transferring into Canada or migrating into Canada from elsewhere. Such professionals will be unable to provide their usual professional expertise until five years after they have obtained Canadian PGeo or PEng accreditations in whichever Canadian jurisdiction they reside. In fact, the inability to provide expertise is likely to be much longer, as it is not a simple matter to obtain provincial registration—this is commonly a 12–18 month process for non-Canadians, and generally longer, and the application for a PGeo or PEng can only be made after obtaining a minimum of one year of Canadian experience.

I was advised by a client, who contacted one of the commissions with a question framed around exactly the example given above of a non-Canadian wishing to act as a Qualified Person, that because in that instance, the Qualified Person had decades of mining industry experience in senior technical roles with a major mining company prior to their professional registration in Canada, then there was no issue with that Qualified Person having less than five years of "professional experience". The client also contacted the relevant professional association and was told that their Qualified Person was acceptable. The professional association representative was puzzled as to why the query was even made. This highlights the confusion and lack of transparency and consistency between regulator comments and industry interpretation of relevant experience.

What is most concerning from this interaction is that application of such an interpretation by the CSA staff is arbitrary. While it is obvious that those most at risk of being ruled out by the CSA staff as Qualified Persons are newer graduates, it is not clear at what point the CSA staff "in" or "out" begins to apply in terms of what counts as an acceptable length of pre-professional association membership vs post-professional association membership. What is the magic number in the CSA staff's view to be "in"? Does a decade working in the industry post-graduation with one year of professional association membership meet the criteria? Does it make a difference if the experience pre-acquisition of professional association membership was gained working for junior companies rather than industry majors?

What was a clear-cut understanding by industry based on common sense of what a Qualified Person was, and was not, and the many discussions that arose out of the Bre-X scandal in particular, has been turned on its head by this CSA staff interpretation, and by the fact that the application of the interpretation by the CSA staff is clearly unpredictable. Sometimes the Qualified Person doesn't have to be forced to comply by the CSA staff, and the company can breathe a sigh of relief, other times the company has to wear the significant reputational burden of selecting the "wrong" Qualified Person, not to mention associated financial costs, with selecting what up until recently was never a point of compliance contention.

This is not an issue that will be fixed by enacting more prescriptive rules, because prescriptive rules will not address bad actors. The CSA staff should step back from narrowing the interpretation of what are acceptable qualifications to be a Qualified Person. It is not in the public interest, in my view, to reduce the pool of Qualified Persons available to issuers.

A point I also wish to raise is that having decades of professional/relevant experience is not a good measure of the suitability of a Qualified Person in understanding the specialist technical and scientific information on a project. Relevant experience in the type of practice is key, not the duration of the membership of a professional association. Having decades of professional membership should never be seen as a more valuable metric than decades of relevant experience.

It is not optimal to start enforcing actions based on interpretational changes on something as fundamental to issuers as the issuer being able to cite its Qualified Person on its disclosure documents. Doing this through comment letters, which in Canada are confidential, is poor practice. Those issuers that receive the comment letter will address the concern; those that have not received such a letter will never know that the assumptions they are making as to selection of CSA staff-approved Qualified Persons could be wrong. As I note in my response under "Subsection L: Other", fixing an issue raised by the regulators does not mean that the issuer agrees with the regulatory approach, it generally means that the regulators are using a critical corporate milestone, usually a financing circumstance, as a tool to force the issuer to do what the CSA staff want, or the issuer will not be able to proceed with the milestone, such as obtaining a receipt for a prospectus or financing.

This CSA staff interpretation has to be the subject of an open set of discussions as to the reasons why the CSA staff consider it is needed to maintain a credible capital market. My concerns are:

- Issuers: reputational risk; risk to disclosure schedules if site visits have to be redone; financial risk if the change of Qualified Person is then seen to be a legal issue such that an investor claims that they were misled by the company's management; and the overall uncertainty that any disclosure will be considered compliant;
- Qualified Person: reputational risk; ability to have a livelihood; impact the position of responsibility that they have achieved within a company and any future promotions within their current or future employer.

The cascade of impacts that challenging the Qualified Person selected by the issuer is significant. The CSA staff's interpretation is out of balance between cost of compliance and the benefit that compliance brings to the capital market.

I believe the CSA staff's interpretation is wrong. However, the industry should be provided with an explanation as to how the CSA staff came to their conclusion that professional experience only commences with grant of a professional designation and is not related to relevant experience obtained. In my view the CSA staff should explain to industry why they consider the impact on a public company of querying the experience of a Qualified Person based on duration of membership of a professional association is in the public interest. CSA staff should provide, as part of that discussion, information on the facts-and-circumstances that back up why their position was warranted and where the risk to investors lies, and why it is currently such a risk but that risk was not considered to be an issue previously. The CSA staff should also provide support as to why it is in the investors' and industry's best interests to narrow and limit the pool of available Qualified Persons.

I would also request that the CSA staff provide support for why independence is required of Qualified Persons in certain circumstances. In my view, if the concept of

a Qualified Person is honoured, there should be no perception of a conflict of interest when the Qualified Person is also an employee or director of a company (see also my response in Question E17).

I am also concerned with having the CSA staff as the source of a definition that in actuality is the purview of professional practice, not securities regulators. If there is an issue with a Qualified Person's professional practices or ethics, this should, in the first instance, be referred to the professional association. The definition of what is relevant and professional experience, and the critical supplementary guidance around the definition should be reviewed to determine where such a definition and its guidance are best located. I do not think the definition and guidance around the definition should be the responsibility of the CSA staff within the Rule.

Question E16

Is there anything missing or unclear in the current qualified person definition? If so, please explain what changes could be made to enhance the definition.

The biggest issue with the definition of a Qualified Person does not have to do with the definition itself. It appears to the CSA staff that their own definition includes "*missing or unclear"* elements because industry practice does not unequivocally support the recent CSA staff's interpretation of tying relevant experience to length of time after a professional designation is granted. The definition is not the issue; the interpretations that the CSA staff are making are at issue. Thus, no changes are needed to "*enhance*" the definition.

If any change needs to be made, it is that the definition should be broadened, see my response to Question E17.

I reiterate that I have concerns with having the CSA staff as the source of a definition that in actuality is the purview of professional practice, not securities regulators. If there is an issue with a Qualified Person's practices, this should be referred to the professional association.

In my view, it is not so much that the definition has information missing, it is that CSA staff are making judgement calls on what constitutes a Qualified Person, and these judgement calls are outliers when looking at global practices and industry's expectations as to what relevant experience is.

I am firmly of the opinion that definitions, such as that of the Qualified Person, are principles based, not based on prescriptions.

Question E17

Currently, the qualified person definition requires the individual to be an engineer or geoscientist with a university degree in an area of geoscience or engineering related to mineral exploration or mining.

Should paragraph (a) of the qualified person definition be broadened beyond engineers and geoscientists to include other professional disciplines? If so, what disciplines should be included and why?

Response:

The definition should be expanded. The principle should be that the right professionals prepare and present scientific and technical information.

The current restriction that only geoscientists and engineers can be Qualified Persons, was introduced in the 2011 edition; the 2001 and 2005 editions did not have this prescription. The net effect of the 2011 edition was to force geoscientists and engineers to take responsibility for information that was actually outside their areas of practice, for example mining engineers signing off on desalination plants, port, and power station designs.

The CSA staff proposal that the definition specifies which professional disciplines are acceptable (with its corollary that if a particular professional discipline is not named it is suspect) is counter to all ideas of principles-based definitions.

It was interesting that the SEC, who normally take a conservative approach when it comes to mining regulation, did not restrict the definition of a Qualified Person as the 2011 edition does, even though a lot of SK1300 is derived from NI 43-101. The SEC took position that professional associations are the right place to assess whether a Qualified Person has the right qualifications: ethics, degree, independent referees, and relevant experience, since all of these are assessed by the various admissions committees of the professional associations. They also took the position that the public interest was best served by allowing the industry access to the biggest possible pool of Qualified Persons. The SEC also did not require independence in any situation (see also my response to Question E18), which is in line with all other global jurisdictions.

I am concerned that because the Canadian experience is that all geoscientists and engineers must have either PGeo or PEng designations, and that the provincial professional associations have a monopoly on who is acceptable to be awarded those designations, that the professional associations will take the obvious step of blocking any attempt by the CSA staff to broaden the definition of a Qualified Person. While that attitude by the professional associations is understandable in their context of having a significant vested interest in maintaining the status quo, it does not serve either the investor or the capital markets. What is needed is the widest possible pool

of Qualified Persons, a pool from which expertise in every facet of project development can be drawn. I point out that many of the professional associations globally have a far more diverse membership than do the professional geoscientist and engineering associations in Canada. Examples include the South African Institute of Mining, the Australasian Institute of Mining and Metallurgy, and the Society for Mining, Metallurgy and Exploration in the US, all three of which allow, and even encourage, membership by experts in the fields of financial, environmental and social.

The question as phrased again suggests to me that the CSA staff being responsible for term and guidance is not the best location.

Question E18

Qualified person independence

The gatekeeping role of the qualified person is essential for the protection of the investing public. CSA staff see evidence of issuers and qualified persons failing to properly apply the objective test of independence set out in section 1.5 of NI 43-101. The Companion Policy provides certain examples of specific financial metrics to consider. This list is not exhaustive. There are multiple factors, beyond financial considerations, that must also be considered in determining objectivity, including the relationship of the qualified person to the issuer, the property vendor, and the mineral project itself.

Should the test for independence in section 1.5 of NI 43-101 be clarified? If so, what clarification would be helpful?

Response:

I am very uncomfortable with the CSA staff's use of the term "*gatekeeping*" when referring to the role of the Qualified Person. I think it is a misapplication of what the concept is and why industry agreed to the introduction of the term in the 2001 edition. Qualified Persons do not control access to information by the investing public:

> *"A gatekeeper is a person who controls access to something, for example via a city gate or bouncer, or more abstractly, controls who is granted access to a category or status" (Wikipedia definition).*

Qualified persons provide a check that the material scientific and technical information being supplied by an issuer to the investing public is suitable to be disclosed, is disclosed using balanced presentation, and is accompanied by appropriate discussion of risks and opportunities. There should be no implication that a Qualified Person actually controls what information is made available; I have never seen a Qualified Person omit material information from a disclosure document because it is bad news and as such should not be in the public domain. I would encourage the CSA staff to cease using the term "*gatekeeper*" for these reasons.

Qualified Persons control when their name can be used in disclosure documents as having either prepared or approved the information. It is the management of an issuer, however, who determines what information is provided to the public in disclosure documents.

I do not agree with the definitions of the "*objective test of independence"* as the financial metrics given are in my view brightline tests, not principles-based; therefore, cannot be objective. Brightline test are as imperfect as they are arbitrary.

A significant portion of the technical reports filed under NI 43-101 are not independent and are not required to be. Independence requirements are only tied to very specific milestones or specific instances. Unfortunately, all the independence requirements typically do is correlate, and link, non-independence with bias, and independence with non-bias, and can lead to the following inferences:

- Independent Qualified Persons: prepare reliable, unbiased and balanced disclosure, work is done to proper professional and ethical standards, and the Qualified Person will not be influenced by factors such as outcomes desired by corporate management;
- Non-independent Qualified Persons: are at risk of preparing unreliable, biased and unbalanced disclosure; work is likely to not observe and follow proper professional and ethical standards; and the Qualified Person will be unreasonably influenced by outcomes desired by corporate management.
- Independent technical report: reliable, unbiased and balanced disclosure, work is done to proper professional and ethical standards;
- Non-independent technical report: unreliable, biased and unbalanced disclosure; work is likely to not observe and follow proper professional and ethical standards.

I make the point that in some instances independent Qualified Persons may be under more pressure to provide a particular viewpoint in a technical report than a non-independent Qualified Person. The independent Qualified Person in that instance has to reflect not only the issuer's concerns with presentation of information or risk discussions, but insistence from their own employer for certain viewpoints to be presented to ensure awarding of future work.

The CSA staff appear to take the position that being not independent compromises the ability of a Qualified Person to give an unbiased opinion. And that some arbitrarily-defined point, being non-independent suddenly isn't an issue. For example, a company that makes $28 million in a year, but made $80 million over the previous three years, so does not meet the criteria to be a producing issuer, has reports that will at certain milestones require independent technical reports and the Qualified Persons will have to meet the objective test of independence. But if the company suddenly makes $30 million a year and $90 million over the previous three years, meeting the criteria to be a producing issuer, such a standard is no longer required.

In the first scenario, the Qualified Person is not considered to have the professional expertise or ethics to make judgement calls. But a slight increase in corporate revenue, and the Qualified Person's expertise and ethics are completely acceptable?

I do not see that a junior company that does not meet the definition of a producing issuer has somehow hired the wrong staff, that those staff are suspect because they work for a junior, and that their professional and ethical obligations will automatically be ignored because of their employer, is an appropriate interpretation by CSA staff. I am of the opinion that the apparent CSA staff premise that being an employee is a conflict of interest is incorrect.

It is perplexing that the CSA staff's view is that if those same staff were hired by a producing issuer, there is no concern. This is just not logical. There is as much incentive if one deliberately sets out to look for matters that could cause constraints on professional and ethical judgements by Qualified Persons directly employed by major companies as attributed to juniors, the annual bonus payments made to employees by some issuers being an example.

In a second example, the Companion Policy states that a Qualified Person is not independent if:

> *1.5(h) has received the majority of their income, either directly or indirectly, in the three years preceding the date of the technical report from the issuer or a related party of the issuer.*

Working the logic through, a Qualified Person is independent if 49% of their income was derived from an issuer in the last three years, but if they worked a fraction too long, and the income derived was 51% or more, they are not independent. In the first scenario, the Qualified Person is acceptable; they have the professional expertise or ethics to make judgement calls. But a slight increase in corporate revenue, and the Qualified Person's expertise and ethics is no longer acceptable?

And a third example to point out again that brightline tests are not a good measure. If a Qualified Person receives, over a three-year period 10% of their income from one issuer in year 1, 20% in year 2, and 20% in year three, they are considered independent on the metrics evaluation; i.e. the income from that issuer is not their majority income. But if they make 10% of their income from one issuer in year 1, 20% in year 2, and 21% in year 3, they are now not independent on the metrics evaluation because they have 51% of the three-year income from the one issuer. This slight increase in corporate revenue results in a Qualified Person's expertise and ethics being no longer acceptable?

There have been recent instances of consulting firms taking shares in a company as part or full payment for completing mining studies. This is not an uncommon occurrence elsewhere in the world, but is not a common occurrence in Canada. The consulting firms don't even get the dubious benefit of a brightline test. The Canadian

viewpoint appears to be that any consulting firm that takes this approach will be have the product (e.g. mining study) produced by that firm as tainted because the payment is in shares, shares being obviously a more suspect form of remuneration than straight cash for services rendered. I cannot see how the format that the consultants are paid in makes any difference to the fact that any work is a fiscal transaction.

There is a corollary that any Qualified Person employee of the consulting firm signing on the report produced must be even more untrustworthy than the consulting company itself. Any Qualified Person is compensated for their work, whether at the completion of a work contract as an independent consultant or directly on a regular basis as an employee of the issuer. Secondly, the consulting firm and the Qualified Person employee run major reputational risks. Each will equally be harmed if the mining study results are found to be biased and legal action ensues.

There is also a fallacy in the independence requirement thinking. It is built on the premise that a consultant, who typically has a limited time frame and limited budget to review work, is always a better choice for milestone project disclosure purposes than a corporate director or employee who has long familiarity with a project, has seen the project evolve over time, and frequently has more of a basis for understanding where the issues and uncertainties are likely to be. A non-independent QP in actuality will have generally had much more time with the project, interactions with personnel performing the data collection and interpretation, and interactions with the personnel designing and supervising work programs than the independent consultant.

I note that the SEC did not require independence of qualified persons in any situation in SK1300; they simply required the issuer (registrant) to state whether or not the qualified person was an employee of the registrant or had an interest in the property that was the subject of a technical report summary. The SEC considered that having no independence requirement would limit the cost burden to registrants, and provide a wider pool of qualified persons to registrants. The SEC also noted that the "*approach is consistent with most of the CRIRSCO-based codes, which permit a qualified person to be an employee or other affiliate of the registrant as long as the registrant discloses its relationship with the qualified person*". They also stated in the 2016 Rule Proposal, when discussing why independence was not a requirement, that "*we believe that other aspects of the recommended proposals, such as disclosure of the qualified person's credentials and his or her affiliated status with the registrant or another entity having an ownership or similar interest in the subject property… should provide adequate safeguards for investors*."

Based on all of these points I do not believe that the test for independence in Section 1.5 be clarified. There should be no independence requirements within NI 43-101. All a Qualified Person should simply be required to disclose is their relationship with the issuer and any type of property interest that is held.

In order to maintain industry support, the CSA staff should not be perceived to be doing the following:

- Giving the appearance that CSA staff's judgement, which is no less a judgement call, must always be seen as the right one;
- Undermining the responsibility and authority of the Qualified Person by questioning the positions taken by a Qualified Person;
- Undermining the authority and responsibility of an issuer's management for the type of disclosures made by assigning this to the Qualified Person;
- Creating a compliance system that is not transparent, is unpredictable, and subject to the regulatory staff judgement call.

On a personal note, there is an irony in the CSA staff claiming that Qualified Persons are "*gatekeepers*" and then every step of the way in this consultation paper presenting arguments and inferences that Qualified Persons cannot be trusted.

Question E19

Named executive officers as qualified persons

CSA staff are concerned that the gatekeeping role of the qualified person conflicts with the fiduciary duties of directors and officers. We have seen situations where the self-interest of such individuals in promoting an attractive outcome for the mineral project overrides their professional public interest obligation as a gatekeeper.

Should directors and officers be disqualified from authoring any technical reports, even in circumstances where independence is not required?

Response:

Making it difficult for bad actors to operate in the capital markets of the mining industry is one of the objectives of the CSA staff. The second obligation is to encourage a vibrant capital market. My concern with Question E19, is that the proposed solution would do the opposite.

As with Question E18, I do not agree with the CSA staff's designation of Qualified Persons as "*gatekeepers*", and this term should be discontinued from use as it is misleading. The concept of "*gatekeeping*" is not in NI 43-101, also not in the Companion Policy, nor is it in the guidance around CIM Definition Standards or the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. The CSA staff have inappropriately assigned a role that is not that of the Qualified Person, but is the purview of the management and board of the issuer. The role of the Qualified Person is to bring their professional experience and ethics to their area of practice, to prepare and approve information for public disclosure, and to agree to be named as having prepared or approved the technical disclosure. The responsibility for the disclosure remains with the issuer, and it is the issuer's management and board

that have the final say. As a result, I do not see that there is an inherent conflict as "*gatekeeping*" is not a Qualified Person role.

I would firstly like to comment on the sentence "*CSA staff are concerned that the gatekeeping role of the qualified person conflicts with the fiduciary duties of directors and officers".* As I understand it, the fiduciary duty of an issuer's officers and directors is to do what is right for the company and its shareholders and that is not a conflict with the role of a Qualified Person. In fact, I would say that the more officers and directors who are Qualified Persons, the better for the issuer and its shareholders. Acting as a Qualified Person when an officer or directors is not a conflict of interest with the Qualified Person role. Those roles are complementary, not misaligned.

I also point out that the CSA staff cannot prepare legislation that will stop bad actors. Preventing officers and directors from acting as Qualified Persons will not stop the behaviour. If an actor is bad, they will ignore securities regulations, practice guidelines and ethical obligations. New rules will be equally as ignored. The problem of bad actors will not be solved with such a step. In fact, the better outcome is to encourage officers and directors to be Qualified Persons because it encourages better scientific and technical disclosure, allows the Qualified Persons to apply their knowledge to the roles of officers and directors when deciding what is appropriate disclosure and when that disclosure can be made, and professional and ethical practices by virtue of their professional association membership.

My next comment is on the sentence: "*We have seen situations where the self-interest of such individuals in promoting an attractive outcome for the mineral project overrides their professional public interest obligation as a gatekeeper".* Promoting an attractive outcome for a mineral project is in fact one of the roles of an officer and director.

Companies do not hire, for example, pessimistic exploration geologists. Exploration is by its nature an optimistic profession; geologists know how much the odds are against a successful discovery during their working career, but still go into the field with an optimistic outlook. Discoveries are not made by pessimists. When it comes to mine development, the same optimistic outlook is required. Early studies of a project often do not lead to an economic outcome. The mine development staff believe that with additional work, such as collection of additional data, more social consultation, consolidation of land positions, capital efficiency, or more innovative mining or processing options, the project could become economic. The staff require an optimistic view to continue with the often difficult path of options evaluation.

When an issuer's management and board come to present the exploration and development activities, they are also required to be optimistic. "*Promoting an attractive outcome"* for a mineral project is simply the issuer's management communicating possible solutions to barriers to a successful project outcome. This is the fiduciary responsibility of the issuer's officers and directors, and it should be supported by the Qualified Person's technical knowledge, professional experience and ethical

obligations. Having the officers and directors also be the issuer's Qualified Person should be beneficial to investors, and should be encouraged, not prohibited. The behaviour of a few bad actors should not be the rationale for placing restrictions on the mining industry as a whole.

There are other ways of addressing the ever-present issue of small numbers of bad actors. The best way exemplified by the adage "daylight sanitizes most things". The CSA staff should encourage transparency, allow disclosure of ideas that management and Qualified Persons have for project development, for solving technical and scientific issues, and addressing barriers to finding value in mineral projects. The industry does read competitor and their own disclosures, and does call out unacceptable practices when they see them.

I am concerned with the statement that an officer and director who is also a Qualified Person has a "*professional public interest obligation as a gatekeeper"*. The CSA staff have a mission to protect and promote the public interest, for example the mission statement from the British Columbia Securities Commission states:

> *"The British Columbia Securities Commission's mission is to protect and promote the public interest by fostering a securities market that is fair and warrants public confidence, and a dynamic and competitive securities industry that provides investment opportunities and access to capital".*

The proposal to disallow an officer and director from acting as the Qualified Person may be in line with the first part of the British Columbia Securities Commission's statement that the public must be protected. However, the obligation on the CSA and the individual commissions; it is not an obligation that should be being outsourced to any Qualified Person, whether or not that Qualified Person is also an officer and director of an issuer. The proposal outcome is likely to be contrary to the objective. Having more Qualified Persons who are officers and directors should be seen as a solution, not a problem.

It would have been helpful for the CSA staff to have provided examples to support the statement "*We have seen situations where the self-interest of such individuals in promoting an attractive outcome for the mineral project overrides their professional public interest obligation as a gatekeeper".* The fact that CSA staff comment letters are not made public, in the manner in which the SEC makes their comment letters public, participants in the mining industry are unable to decide for themselves as to the seriousness of the issues the CSA staff are raising. I have seen examples in the comment letters that I have been shown where the issue being raised is actually a nuance in interpretation of a professional practice, or an interpretation of practice excerpts from practice guidelines that I would question whether the industry in general would agree with. Without seeing all of the comment letters, and the support for the statements in the preamble to Question E19, I cannot support the, to me, radical step of barring a Qualified Person from being an officer and a director as being justified.

In response to the question:

> *Should directors and officers be disqualified from authoring any technical reports, even in circumstances where independence is not required;*

as with Question E18, I do not agree with the current independence requirements within NI 43-101, and recommend these be removed from any proposed NI 43-101 update.

I do not believe that banning directors and officers from acting as Qualified Persons on technical reports is a reasonable premise.

Firstly, by the CSA staff's own wording, the requested restriction would only apply to technical reports. If the issues to the CSA staff are so major and so concerning, why are other disclosure types that a director/officer Qualified Person could prepare or approve of exempt—management discussion and analysis, investor presentations being examples? Are these not equally as important? Or is the issue that the CSA staff regard technical reports as better than other disclosure types, even though technical reports are snapshots in time, and time steadily wears away at the currency of the report: examples being the availability of better data; changes in interpretations; management personnel changes; changes in the preferred corporate direction; and regulatory or political changes?

Secondly, the CSA staff's comment request appears to be based on bias that because the staff are seeing bad players, that outlier population must be representative of the whole industry. I do not think that the activities of few bad actors justify restrictions on the mining industry as a whole, particularly when those restrictions will be contrary to fostering a dynamic and competitive securities industry.

Thirdly, the CSA staff appear to be reserving the rights to be judge, jury and executioner, whether the issue be something under statute or something that is actually not subject to securities legislation but is part of the purview of the professional association. Why is there such a reluctance by the CSA staff to refer issues to the relevant professional associations? Is the reluctance due to the professional associations not seeing the issue in the same manner as the CSA staff are and consider that no action is necessary? I can understand that the CSA staff may be frustrated if the referral by CSA staff to a professional association does not produce the outcome that the CSA staff desires. It may be that the issue was not, in fact, as significant to the industry as the CSA staff had perceived.

Subsection F: Current Personal Inspections

The current personal inspection requirement in section 6.2 of NI 43-101 is a foundational element of the qualified person's role as a gatekeeper for the investing public. It enables the qualified person to become familiar with conditions on the property, to observe the property geology and mineralization, and to verify the work done on the property. Additionally, it provides the only opportunity to assess less tangible elements of the property, such as artisanal mining or access issues, and to consider social licence and environmental concerns. The current personal inspection is distinctly different from conducting exploration work on the property; it is a critical contributor to the design or review, and recommendation to the issuer, of an appropriate exploration or development program for the property.

Response:

The assertion by the CSA staff in this preamble that a personal inspection is a "*foundational element*" is a strong statement. There can be circumstances where a personal inspection is not warranted, see my response to Question A5(a). Nor is it reasonable to be implying as the sentence "*The current personal inspection requirement… is a foundational element of the qualified person's role"* that all Qualified Persons must do a site visit. For example:

- In a deposit with no surface exposure, the Qualified Person may prefer to spend the majority of their time examining core in the core shed, which may not be at the actual project site;
- A process Qualified Person may prefer to visit the process laboratory performing the metallurgical testwork than to visit the project area;
- An infrastructure Qualified Person may prefer to use remote technologies such as drones to survey proposed locations for infrastructure as waste rock facilities and tailings storage facilities. The Qualified Person responsible for discussing future project access may consider that drone footage of the access alternatives is preferable to trying to walk, ride, or drive the access corridors (see also my response to Question A5(a);
- The Qualified Person is using information provided by experts that are not Qualified Persons who visited site, and the Qualified Person considers to be the most appropriate persons to provide information in that area. This might be feedback from those reviewing social consultation, technicians performing the geotechnical logging in an ongoing drill program, or the survey crew providing information on cut-and-fill requirements.

I am very uncomfortable with the CSA staff's frequent use of the term "*gatekeeping*" when referring to the role of the Qualified Person. As noted in my response to Question E18 and Question E19, there should be no implication that a Qualified Person is controlling what information is made available in public disclosure. The Qualified Person prepared or approved the information and allowed their name to be

associated with it. The role is a check, but does not elevate it to being that of a "*gatekeeper*".

I also have issues with the statement: *"it enables the qualified person to become familiar with conditions on the property, to observe the property geology and mineralization, and to verify the work done on the property".*

It is not correct that the only way a Qualified Person can become familiar with conditions on the property is to visit it. There are remote methods that can provide as much information, and sometimes better information using a birds-eye view, than the site visit does (see my response to Question A5(a).

It is also not correct that a site visit allows the Qualified Person to observe the property geology and mineralization. Long gone are the days when mineralized outcrops were the key to finding a deposit; those easy-find days are well behind the industry and many deposits are blind at surface. Nor is it axiomatic that there will be any relevant geology to view; many parts of the globe are covered by freshwater and dry salt lakes, or glacial, alluvial, lateritic, volcanic and other types of surficial cover. While the areas under this cover are prospective, there is nothing to view specific to understanding deposit geometry, controls and mineralization.

I have also wondered how the CSA staff will enforce a site visit to a sea floor deposit, such as a manganese nodule deposit, and what would be expected of a Qualified Person in that instance. What would constitute a reasonable personal inspection if such a visit is "foundational"?

In terms of verifying the work done, this is also problematic. Recent destructive testing sites may be visible, but that can be uncommon for historical work programs. Drill collars disappear, drill pads are remediated. Locations of regional-scale geochemical sampling sites or geophysical survey stations are rarely visible in the field. Much of the interpretative work is not visible in the field: sampling, assaying, metallurgical testwork, mine designs, geological interpretations, resource and reserve models.

I dispute that a site visit is the "*only*" opportunity to assess certain information as claimed in the sentence "*additionally, it provides the only opportunity to assess less tangible elements of the property, such as artisanal mining or access issues, and to consider social licence and environmental concerns".*

In terms of artisanal mining, this information can be as readily obtained by remote methods as physical inspection. It may not be safe to visit active artisanal mining areas. Nor may artisanal mining areas necessarily have anything to do with the commodity of deposit type of interest. The same can be said of historical mining areas. The locations of such can be determined by other methods, and usually are: a Qualified Person has to know where the sites are to visit them to start with. Historical workings for one commodity in a project area may not be relevant to the current commodity of interest.

Proposed access routes are often not the same as the access routes that are practicable for exploration since exploration-stage tracks cannot be used for full-scale mining activities. Evaluation of proposed access is very infrequently done by site inspection. More commonly, it is undertaken by helicopter, with drone footage becoming more widely used as drones are less expensive than the helicopter. This provides far more detail than a site visit can do.

Under the current Qualified Person definition, Qualified Persons should not be opining on aspects of social licence and environmental concerns; those are explicitly outside the Qualified Person's area of expertise. CSA staff can't have it both ways.

I also dispute the statement that personal inspections are critical contributors:

> "*The current personal inspection is distinctly different from conducting exploration work on the property; it is a critical contributor to the design or review, and recommendation to the issuer, of an appropriate exploration or development program for the property.*"

Site visits are not the critical component of the design of a work program, or of a review of that program; what is actually critical are the data and premises the program is based on, very few instances of which in my experience arise from the site visit. Program reviews are likewise not primarily based on observations from a site visit; they are completed on data reviews and on the interpretations that have been drawn from those data. I point out that numerous persons visited Busang, including experts in their fields, and many of those experts would meet the current requirements of a Qualified Person. None visually identified the major malfeasance that was occurring at the site.

As I note in my response to Question B(6), there are numerous instances where a company has to take the data available at face value. Designs of initial exploration programs and the methods to be employed in greenfields early-stage mining tenures are examples; these do not rely on a site visit as the critical aspect, they rely on the available data and interpretations. This again does not support the CSA staff's claim of "*critical contributor*".

Site visits are not necessarily required in all instances (see my responses to Question 5(a) and Question 5(b)). There is value in visiting a project site during early-stage destructive testing to examine in particular the sampling processes. There is similarly value in visiting site during twin hole or other confirmation drilling when the majority of data are sourced from historical activities. There may be limited value in visiting during late-stage exploration where the majority of infill drilling is complete or the drill program is being conducted for preliminary grade control purposes. Site visits may not be required for metallurgical purposes, instead the Qualified Person may prefer to visit the laboratory conducting the metallurgical tests. A site visit by a Qualified Person responsible for cost estimation or economic analysis may not be required since the information may be sourced from other parties and/or the Qualified Person is using

information provided by experts who do not meet the Qualified Person definition for some data. Even visits to operating mines may not be all that helpful. If the site is in support of the visit, there may be useful data obtained. If the site is not amenable, the visit can achieve no more than that of the geologist visiting a kimberlite tenure in the northern Slave craton in December. In the instance of operating mines, the non-independent Qualified Person may be able to obtain more information on data and interpretations than the independent consultant, by virtue of better acquaintance with the project and not being seen, as sometimes happens, as an outsider foisted on the site by head office.

There should be no expectation that each and every Qualified Person has been to site (see also response to Question F20). Nor should the Qualified Persons that did not conduct a personal inspection be forced to explain why they did not go to site.

If there are practical, cost-effective solutions whereby one Qualified Person can obtain the information for other Qualified Persons, this alternative should be available to the issuer and to the Qualified Persons. The days of Qualified Persons being isolated individual experts who can only speak to a single discipline based on a university accreditation is a myth, and a dangerous one. Over their careers Qualified Persons interact with many other disciplines, learn from other disciplines, and learn what constitutes critical information that should be flagged to Qualified Persons in those disciplines. They undertake continued professional development, attending courses, seminars, and conferences, and obtaining knowledge of issues that directly pertain to their areas of professional practice but generally have nothing to do with the coursework curricula as laid down in their original degrees. It is hard to understand why a 40-year old university degree is seen to be more compelling evidence of a Qualified Person's experience than 40 years post-graduation actual experience.

I do not agree with the CSA staff's claims that site visits are integral to a Qualified Person's understanding of a project. I do not see them as a primary verification tool, they are a supplementary tool that can be, in certain facts-and-circumstances, useful.

From the points laid out above, I feel that the current personal inspection is actually more of a practice definition, not a securities regulatory definition. The term definition, and the critical supplementary guidance around the term, and who is responsible for providing both should be discussed. The Rule may not be the appropriate place to have the definition, and the Companion Policy may not be the correct place to provide appropriate guidance.

My final comment on this topic is that I would like to see the CSA staff provide explanations for, and the basis of, why they are taking the line as to what is and is not a "*current site inspection*", and why that stance is required, with commentary as to how those interpretations are needed in the public interest and to maintain a credible capital market. I am concerned that there is an unwritten brightline test being used by the

CSA staff that a site visit is no longer considered current after a specific, and arbitrary, time period.

I note that other reporting codes do not mandate site visits, including the SEC, which modelled much of SK1300 on NI 43-101. The SEC concluded that site visits were good practice, but not a necessary practice.

As a final note, it appears that the CSA staff are considering that site visits are compulsory by all Qualified Persons, and are somehow critical to every aspect of the project that every Qualified Person will be involved with. Because the mining industry is diverse, the types of commodities, types of deposits, types of locations, and the types of locations that go on when developing a property, whether a site visit is required should be a judgement call of the Qualified Person. The currency of the site visit should be seen as an individual consideration by each Qualified Person as to whether it is current for their purposes.

Question F20

Should we consider adopting a definition for a "current personal inspection"? If so, what elements are necessary or important to incorporate?

Response:

It never used to be a concern to me that CSA staff were responsible for definition of terms; however, in the last five years, I have become increasingly concerned that CSA staff have claimed judge, jury and executioner privileges in this role. While the definitions of terms have not changed since the 2011 edition of NI 43-101 and the 2014 edition of the 2014 CIM Definition Standards, the CSA staff have become increasingly prone to using novel interpretations of 20-year old definitions, and the use, often out of context, of guidance and policy documents from CIM to say that something a Qualified Person was doing or stating was "*potentially misleading disclosure*" (see also my responses to the preamble and questions in "Subsection E: Qualified Person Definition", and in "Subsection L: Other").

My issues with where I see the CSA staff heading, though they are not explicitly setting out their suppositions and basis for those, is with the concept of a "*current personal inspection*".

In my view, any determination of what constitutes a "*current personal inspection*" has to be Qualified Person specific, discipline specific, be based on materiality considerations, and the Qualified Person's objective with doing the site visit. Qualified Persons should not be required to undertake an updated site visit if the information in their discipline area has not been subject to a material change. Only those Qualified Persons who have been to site and consider information available in their discipline area to have materially changed may consider performing an additional site visit.

However, I note that a material change may not necessarily be a reason for a revisit to the site; the site revisit is the decision of the Qualified Person.

There should be no expectation that each and every Qualified Person has been to site or has had a current site visit. This should be left up to the Qualified Persons and the issuer to decide in collaboration. There may be, at that project stage, no reason for certain Qualified Persons to perform a current site visit. There may be no material change in the information relevant to an individual Qualified Person that warrants an updated visit. There may be constraints on the issuer's ability to host the number of Qualified Persons—limited accommodation, constrictions on the number of available seats on aircraft, etc.

There is also the very real impact of the cost burden on issuers if the CSA staff impose a requirement that all Qualified Persons must visit, which appears to be the aim of the wording in the preamble to, and questions posed in, Question F21 and Question F22. There has to be a recognition when drafting laws such as NI 43-101 that every prescriptive requirement introduced has a significant associated time, paperwork, and monetary impact on an issuer. Requirements such as making a site visit compulsory for all Qualified Persons, requiring an updated site visit by all Qualified Persons if there is a material change to a property even if that change did not affect the Qualified Person's discipline area, and requiring site visits to be updated simply as a result in a change of ownership of a property are examples of the types of requirements that will result in limited benefit to investors, but significant increased burdens on issuers.

The 2005 edition of NI 43-101 introduced the concept that if a site visit by any Qualified Person had not been conducted by a Qualified Person, then an explanation should be provided. The wording was originally intended to cover those limited instances where no Qualified Person could get to site prior to the technical report filing. It was firstly intended to be read in the context of if no Qualified Person had been to site, not if one of the Qualified Persons did not go to site. The provision was to cover instances during the 2000s kimberlite rush, where due to on-ground conditions in the Canadian Arctic (snow, darkness), no realistic evaluation of the grass-roots mineral tenure could be undertaken. However, the interpretation of the wording of Item 4(d) in the Form

> *"(d) the details of the personal inspection on the property by each qualified person or, if applicable, the reason why a personal inspection has not been completed"*

by both legal counsel and later CSA staff became that each Qualified Person was to provide justifications for not performing a site visit. I would ask that the CSA staff revisit this concept. My concern with the "*the reason why a personal inspection has not been completed"* wording is the potential risk for each and every Qualified Person explaining their judgement call as to the non-necessity for a site visit. I do not believe that a Qualified Person needs to explain each and every judgement call they make during preparation of a technical report; whether or not to complete a site visit is one

judgement call amongst many. The risk to the Qualified Person in the requirement in my view lies in the potential misuse of the site visit explanation wording by legal counsel or CSA staff if project issues later arise. In many instances that I am aware of, these later project issues would not have been recognized with the data available to the Qualified Person or areas available for inspection at the time of the site visit. I do not see that explaining why a site visit by an individual Qualified Person and the reasons for this contribute significantly to an investor's understanding of the project. I outline why site visits may not be necessarily the most appropriate use of a Qualified Person's time in my notes to the preamble to this subsection (see Subsection F: "Current Personal Inspections".

I am aware of a hearing by the BCSC where one of the issues raised was that a site visit done for one issuer was not valid for a different issuer on the same property. I do not agree that this would be a material change that would affect the Qualified Person's interpretation of the information gained at site based purely on the change of owner. If the visit done for one issuer remains current for that Qualified Person on that discipline for all material information, then it should still be current for the issuer who then assumes ownership. I do not consider that a change of ownership automatically constitutes a material change in scientific or technical information.

I also consider that a current personal inspection is a practice definition, not a securities regulatory definition. I do not agree therefore, that NI 43-101 is the correct place to define a current site inspection or to provide guidance around the term. It should be the purview of the CIM to define a principles-based term and establish the most appropriate guidance around the term.

Question F21

CSA staff's view is that qualified persons must consider their expertise and relevant experience in determining whether they are suitable to conduct the current personal inspection. For example, geoscientists are generally not qualified to conduct elements of the current personal inspection related to potential mining methods or mineral processing. Similarly, engineers may not be qualified with respect to elements of the geoscience. In such cases, more than one qualified person may be required to conduct a current personal inspection, particularly for an advanced property.

Should the qualified person accepting responsibility for the mineral resource estimate in a technical report be required to conduct a current personal inspection, regardless of whether another report author conducts a personal inspection? Why or why not?

Response:

I strongly disagree with the preamble.

> "*For example, geoscientists are generally not qualified to conduct elements of the current personal inspection related to potential mining methods or mineral processing*".

Question F21 is being framed as a fact, that "*geoscientists are generally not qualified to conduct elements of the personal inspection*", when that is not my experience with the industry as a whole. The problem with the pre-supposed assumption is that it is driving commentators to agree with an incorrect premise provided with no support. The question, I feel, should have been reviewed by industry committees such as MTAC or CIM, to remove questions with pre-loaded biases. I am concerned that many responses to questions in this preamble will be influenced by the manner in which the question was posed.

An issue I have with the assertations that certain disciplines may not have the necessary expertise is that since the introduction of the 2011 edition, the Form has required, for more than a decade now, that Qualified Persons be required to comment on issues outside their purview:

- *Form 43-101F1 Item 14(d) include a general discussion on the extent to which the mineral resource estimates could be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors;*
- *Form 43-101F1 Item 15(d) discuss the extent to which the mineral reserve estimates could be materially affected by mining, metallurgical, infrastructure, permitting and other relevant factors;*
- *Form 43-101F1 Item 19(a) …confirm that the qualified person has reviewed these studies and analyses and that the results support the assumptions in the technical report.*

In fact, there are numerous circumstances where the geoscientist can be commenting on potential mining methods or mineral processing. Many geologists have experience in operating mines, and are well aware of the minimum requirements for mineability or metallurgical recovery. Examples include:

- Measurements of rock quality designation are frequently performed by geologists, although those measurement are often used by geotechnical experts to refine and derive specific mine design parameters. Geologists are as aware of geotechnical issues that could affect conceptual assumptions such as application of too steep a pit wall in certain lithologies or the presence of large-scale faulting that will result significant dilution such that the fault should be domained as waste, when assessing reasonable prospects of eventual economic extraction, as are the geotechnical experts;

- Construction of geological interpretations subsequently used to derive geometallurgical, geotechnical or hydrological domains. Often this modelling is done by the geologist, not the metallurgist/geotechnical or hydrological expert, but the models are then used by those disciplinary experts;
- Understanding of the typical depth at which open pit operations are no longer feasible and an underground mining method will be required;
- Understanding that underground mining methods typically have a minimum thickness that must be taken, such that reasonable prospects of eventual economic extraction must include that as a consideration;
- Understanding that different metallurgical recoveries occur depending on the depth of weathering, or that different metallurgical recoveries can occur as a result of chemical concentration processes;
- Identifying areas of mineralization that could clearly have mine design, metallurgical, environmental, or other impacts such as refractory pyrite (indicating that more specialist process flowsheets will be required), high sulphide contents (indicating that metals leaching, acid mine drainage will be a concern, as will water treatment), asbestiform minerals (human safety), elevated concentrations of certain elements (concentrate marketability, specialist disposal requirements, water treatment).

There are also instances where the mining engineer taking responsibility for the Mineral Reserve estimate and the application of the modifying factors requires a broad multidisciplinary understanding of how the individual modifying factors can affect the estimate:

- Understanding the impact of the hydrology of the mine as a modifying factor, e.g., the impact of groundwater on mining methods, pumping requirements, and general operations;
- Understanding the impact of deleterious elements, such as talc, on geotechnical designs, metallurgical processes, such that the mining engineer has to be aware of the impacts on other disciplines when considering modifying factors;
- Consideration of the terrain in which the mine will be situated, such as topography, surface drainage, existing mineral tenure, surface rights, flora and fauna, or historical/cultural elements that require preservation. All of these impact what can be sited where, and what types of infrastructure will be applicable to the setting.

In my view, as long as the Qualified Persons have had discussions, and have agreed as to what must be covered in the current site visit, then there are circumstances where one Qualified Person can adequately cover off aspects of another disciplinary area.

The fact that a Qualified Person going to site may be a mining engineer or geoscientist, but the site visit entails discussions with other experts in disciplines outside of mining

engineering or geoscience is a good industry practice, it should not be a practice that is discouraged.

I am uncomfortable also with a potential outcome that seems to be being contemplated by the CSA staff, that in fact all Qualified Persons need to go to site, or all Qualified Persons from all disciplines need to go to site. If this is a major concern for maintenance of the capital markets or in the public interest, there needs to be a clear explanation from the CSA staff as to why the extra imposts on issuers in time, paperwork, and costs is required on an industry-wide basis. They also need to provide a clear rationale as to why discipline areas such as property agreements, royalties, social, permitting, environmental, capital and operating costs, taxation, and economic analyses require, or are exempt from, the requirement to perform site visits. The CSA staff should provide industry with examples, on a facts-and-circumstances basis, where the lack of a site visit alone by a particular disciplinary specialist was the reason for a major compliance issue, whether that be from an error, omission, or malfeasance.

As a general comment on the industry, the days where Qualified Persons were in silos, separate and never communicating, are no longer a norm. Revisions to NI 43-101 need to keep in mind that although regulators and lawyers may remain very conservative in their viewpoints, the mining industry does not. In 2022, it is now more common than not to see multi-disciplinary, interactive teams used for tasks such as audits, reviews, due diligence and data verification. Such teams are now an industry accepted practice, if not yet a ubiquitous practice. The CSA staff commentary is an outmoded view that does not reflect the current integrated approach where Qualified Persons actively communicate between disciplines and actively incorporate information and interpretations from one or more disciplines into their own work. The CSA staff's premise over expertise and relevant experience does not reflect how the majority of the industry uses data, interpretations and insights from other disciplines.

In my experience, where the Mineral Resource or Mineral Reserve estimates or the mine plan had flaws, the issues had nothing to do with the lack of current site visits by Qualified Persons in different discipline areas. In almost all cases I can think of, the issues related primarily to the lack of availability of quality data in the detail necessarily to understand the deposit's complexity. I do not think that the deficiencies in interpretation would necessarily have been fixed by more site visits by more Qualified Persons.

I do agree that there are instances when having more than one Qualified Person go to site can be helpful when compiling a technical report; however, I feel that selecting when, and which Qualified Persons undertake a site visit should be the decision of the Qualified Persons, in discussion with the issuer. Site visits should not be mandated for all Qualified Persons in NI 43-101, they should only be presented as a guidance prompt for Qualified Persons to contemplate. As I consider current inspections to be a practice issue, not a regulatory definition, the details of any applicable guidance should be the purview of the CIM.

Should the qualified person accepting responsibility for the mineral resource estimate in a technical report be required to conduct a current personal inspection, regardless of whether another report author conducts a personal inspection? Why or why not?

The question is presupposing that the resource estimator Qualified Person has the same attitude that the CSA staff apparently does—one Qualified Person will not do a reasonable job unless another Qualified Person is critiquing over their shoulder. This is simply not how resource estimation works.

Estimation, like data verification, in the modern age is a team effort. Many geologists and specialist personnel may contribute to the data supporting the estimate, and many more to the geological, alteration, structural, geometallurgical, weathering and other interpretations used to construct geological, grade, structural, alteration, oxidation, geometallurgical, and other types of block model. The Qualified Person doing the resource estimate uses this collective input and bases their work on most recent output of a team effort. The Qualified Person generally does their own verification, but such steps commonly involve using software routines. This is another reason why I disagree with the CSA staff's assertation that "*database cross-checking to ensure the functionality of mining software"* (see my response to Question B6) is an invalid form of data verification. In the estimation phase, it is critical to have done very basic checks: overlapping from–to intervals, assay sampling lengths deeper than the drill hole depth; all of which are much faster to complete using software routines than done by hand.

Having reiterated that resource estimation is a team effort, there is no professional or ethical reason that a mineral resource Qualified Person should automatically discount information sourced from the site visit by a geological Qualified Person simply because the information came from someone other than the mineral resource Qualified Person.

A concern is that the CSA staff assume that modelling and estimation is always conducted at a project site. In the 1950–1990 period, this may have been a truism; however, it has more steadily become the norm that modelling and estimation are not done at the project site itself. For projects other than operating mines, modelling is more commonly done at a location that can support the electrical and internet requirements. Estimates are typically not completed using the time-honoured Faber-Castell/Derwent methods of interpretation on hand-drawn and coloured paper sections and plans; they require that the estimator has access to stable power and internet connections to allow the use of computation-intensive modelling and estimation software.

Even for operating mines, estimation may not be conducted at the minesite. Where there is more than one open pit or more than one zone of an orebody mined concurrently underground, it is common to have a team involved in estimation. One Qualified Person from the issuer may take responsibility for that team's efforts in

internal disclosure, but that may be different to the overall Qualified Person taking responsibility for the estimate in public disclosure. In this instance the issuer's responsible Qualified Person may not visit the actual operation on an annual basis, but will have been to site. However, personnel from the team involved in estimation have, in my experience, routinely visited the site such that there are current site visits by experienced personnel in the various discipline areas, and provided feedback to the issuer's responsible Qualified Person. It is also common for the Qualified Person to have discipline experts provide a peer review of the text relating to modifying factors in the technical report.

The industry is moving more and more toward a layered responsibility model, with checks and balances at each level of the corporate organization to provide sufficient internal controls that if an error exists with the estimates, this is caught prior to public disclosure. This was not a common practice when the 2001 edition was formulated, but mining does not stand still, and many changes have occurred in practices over two decades.

A major issue with the CSA staff is that they do not currently appear understand the role of teamwork and layered responsibility in estimation; their model is akin to the old movie paradigm that a single star carries the picture. Estimation may have been a one-man effort in the 1950s, but is no longer true, even down to the gender performing the estimate. This attitude by the CSA staff is in direct contradiction to the CIM which clearly states that estimation is a team exercise.

I observe that the question is contributing to the general industry uncertainty on whether a technical report will be considered to be compliant. Issuers and Qualified Persons both now will have to not just meet what industry-accepted practices consider to be appropriate site visits, but will have to try and second-guess if the selected Qualified Person, and the scope of the current site inspection, will be acceptable to CSA staff. Each time a narrow interpretation of compliance is promulgated by the CSA staff, it increases the uncertainty on whether an industry current practice will be acceptable. CSA staff's role should not be defaulting to judge, jury and executioner when it comes to what practices that industry expects will be acceptable to a regulator.

It also seems to me that CSA staff are considering a direct challenge to those companies who use a single Qualified Person for their reports. In these rare instances, the Qualified Person has a senior position within the company, has decades of experience in supervising multi-disciplinary teams, and is the sole named Qualified Person. The questions here around who is and is not "qualified" suggest that they want this option closed off.

Finally, my overall concern is that it appears the CSA staff are over-reacting to individual events by assuming that those instances are an industry-wide issue. As a result, I do not support the CSA staff prescriptively requiring a current site visit from the Mineral Resource estimator:

- I am seriously concerned that the CSA staff do not understand how estimation is practiced in reality; the assumptions seem to be at least five decades behind actual practice. There has to be better education on behalf of the CSA staff to understand modern estimation practices, not least that teamwork is a true cornerstone;
- There is no justification presented by the CSA staff as to why their stated approach is required: what instances are they seeing that specifically a site visit by the resource estimator would have resulted in a different outcome? What justification is there for imposing this as an added time, paperwork and cost burden on the issuer?

Whether or not a site visit is performed should be a fact-and-circumstances assessment done by the Qualified Person in discussion with the issuer. It should not be a prescriptive requirement introduced by the CSA staff.

The CSA staff should provide reasonings for and the basis of these proposed introductions of such prescriptive requirements, and explain how their prescriptions result in a more credible capital market or a major change in the public interest for the better.

The CSA staff should also explain to the industry what the industry-wide failing is that is requiring this level of proscription. It would be helpful to have case studies provided that explicitly demonstrate that a particular error, omission, or malfeasance would have been picked up if a current site visit by a Mineral Resource estimator had been done in support of a Mineral Resource estimate.

Question F22

In a technical report for an advanced property, should each qualified person accepting responsibility for Items 15-18 (inclusive) of the Form be required to conduct a current personal inspection? Why or why not?

Response:

For the same reasons that I have discussed in my notes to the preamble and in response to Question F20 and Question F21, there is no reasonable basis for the CSA staff to be prescriptively requiring site visits from the Qualified Persons responsible for scientific and technical content in Items 15–18. I do not support the CSA staff prescriptively requiring a site visit from all of those Qualified Persons.

Items 15–18 cover a significant range of discipline inputs: Mineral Reserve estimation; geotechnical; hydrology; ventilation; mine design; stockpiles, waste rock storage facilities, heap leach pads and tailings storage facilities; process facilities; laboratories; materials handling facilities; reagents; sources of water for process, potable and mine needs; contact and non-contact water management including diversion or other related structures; site access; transport methods; infrastructure such as pipelines,

desalination plants, borefields, ports; railway lines and stations; power stations, and power-related facilities including transmission lines and switching stations; employee and contractor accommodation; and built infrastructure such as warehouses, laydown areas, first aid posts, gatehouses, administrative facilities, tool and vehicle workshops, fuel stations, communications facilities and cables. This abbreviated list shows that if the CSA staff's requirement is enacted, there is a risk that tens of Qualified Persons could be required on technical reports for advanced properties, and will be required to perform site visits. This is a potentially large cost to the issuer with no real benefit to the investor.

The current industry practice is to often only have a limited number of Qualified Persons cover off the diversity of information included in Items 15–18. Often the mining Qualified Person will cover many aspects of infrastructure, often the process Qualified Person will cover aspects of waste management. They often use inputs from discipline experts who have been to the site. The Qualified Persons have to have the freedom to judge what is appropriate in terms of site visits in the context of the project setting, stage, proposed extraction methods, and mineralization style. This determination should be the purview of the Qualified Person, and not be pre-set using prescriptive regulatory requirements.

The CSA staff's proposal also does not take into account that the advanced property definition covers both early-stage mining studies at a PEA level of evaluation, more detailed studies (PFS, FS), and operating mines. Given the conceptual, what-if nature of what a PEA should be interpreted to be, and the fact that a PEA is based on limited data, it is hard to see how the CSA staff's proposal does anything other, for an early-stage study, than result in unnecessary expenditure, time and paperwork being expended by the issuer. The industry standard at present is to have the right persons, many of whom are not Qualified Persons, visit site where required, and provide their information on their area of expertise to the relevant Qualified Person. This is a pragmatic and cost-effective approach, and should be what is required, not a blanket prescription that may not provide any better data or better interpretations.

As noted with earlier comments, I do not agree with the CSA staff's claims that site visits are integral. I do not see them as a primary verification tool, they are a supplementary tool that can be, in certain facts-and-circumstances, useful. Again, I would like the CSA staff to provide information on why they consider a site visit to be integral, where a site visit alone would have resulted in discovery of an error, omission or malfeasance, and why they see the current practices to be an industry-wide failing.

I want to make the point that while the CSA staff are proposing doubling down on the engineers and geoscientists doing site visits (whether or not those are needed) they are not requiring site visits from specialists in environmental or social spheres in support of Item 20 content. In the preamble to Section F: Current Personal Inspections, CSA staff state that site visits are required "*to consider social licence and environmental concerns"*. If the requirement is so important that Qualified Persons will

be held responsible if they do not examine these areas as set out in the preamble, why are these same areas omitted from the proposed more prescriptive site visit requirements?

Whether or not a site visit is performed should be a fact-and-circumstances assessment done by the Qualified Person in discussion with the issuer. It should not be a prescriptive requirement introduced by the CSA staff. The CSA staff should not be inserting themselves as judge, jury, and executioner by questioning the Qualified Person's opinion.

I would like the CSA staff to provide reasonings for and the basis of these proposed introductions of such prescriptive requirements, and explain how their prescriptions result in a more credible capital market or a major change in the public interest for the better. They should also be educating the industry as to why there is such an industry-wide failing that prescriptive rather than principles-based requirements are needed in a future Rule update. It would be helpful to have case studies provided that explicitly demonstrate that a particular error, omission, or malfeasance would have been picked up if a site visit had been done in any of the list of discipline areas I note as being within the purview of Items 15–18.

Question F23

We expect issuers to consider the current personal inspection requirement in developing the timing and structure of their transactions and capital raising. Subsection 6.2(2) of NI 43-101 does allow an issuer to defer a current personal inspection in limited circumstances related to seasonal weather, provided that the issuer refiles a new technical report once the current personal inspection has been completed. However, this provision has been used infrequently since it was adopted in 2005. In rare circumstances where issuers do rely on this provision, CSA staff see significant non-compliance with the refiling requirement.

Do you have any concerns if we remove subsection 6.2(2) of NI 43-101? If so, please explain.

Response:

The comment by the regulators that "*We expect issuers to consider the current personal inspection requirement in developing the timing and structure of their transactions and capital raising"* is reflective of a perfect world assumption of how financing and capital raising work, and an unfortunately imperfect understanding of actual mining financing. Issuers are constantly talking to investment banks and financing institutions. When an opportunity arises for such an investment, the market windows open and close very rapidly, typically over a short period. Issuers do not have a crystal ball that tells them exactly when an institution or investor may have funds that they wish to place with an issuer. And that money is hot money, if one issuer isn't ready with all its ducks in a row such that CSA staff will not consider any element of their disclosures to be non-compliant, that they have a current visit, and the

Qualified Persons meet the CSA staff's interpretations as to experience, then the money will go elsewhere, and the issuer and its investors are out of luck.

The uncertainty by the issuer of whether their technical and scientific disclosure will be considered compliant and support a financing is a major threat to the Canadian capital markets. It is not in the capital market's interests for an issuer to only find out that a nuance of interpretation of practice is now being considered by the CSA staff as a non-compliance issue during a financing. It magnifies the impact of the uncertainty over compliant disclosure. Receiving a CSA staff comment letter that an issuer should make improvements in their technical disclosure is one thing. Presenting interpretative issues in a comment letter to be such material deficiencies that they will hold up a finance is a much higher level of impact on the issuer and its investors. Rather than take advantage of the more flexible rules around prospectus financing, the CSA staff approach is likely to have issuers focus on private placements that do not require CSA staff reviews. This simply reduces the pool of investors able to participate in a financing. In my view, this does not contribute to a vibrant capital market for the mining industry.

This CSA staff's position is again requiring undue expenditure, time, and paperwork from an issuer to simply ensure that at all times one of the Qualified Persons always has a current site visit. If the more onerous proposals by the CSA staff are implemented such that the Qualified Persons for any content in Items 14–18 need to maintain current site visits, the cost burden is considerable.

I would like to see the CSA staff provide explanations for, and the basis of, why they are taking the line as to what is and is not "*current*", and why that stance is required, with commentary as to how those interpretations are needed in the public interest and to maintain a credible capital market. I would like to see examples as to how a current personal inspection alone exposed an error, omission or malfeasance. And I would like the CSA staff to provide the basis for why such examples are representative of industry-wide failings rather than outlier issues.

I would also like to make a comment on the hardline stance that CSA staff took during the COVID-19 quarantine period. No exemptions were granted from site visits, in fact the CSA staff letters became rather aggressive in tone. One CSA staff letter I was shown was written with obvious animus: the company did not have a current independent site visit, NI 43-101 only grants exemptions for weather, there is no facility within NI 43-101 to grant exemptions for pandemics, the CSA staff author of the comment letter did not believe that anyone in the middle of a quarantine would do an independent site visit, so no leeway to remediate the deficiency was necessary, and the issuer concerned was immediately placed on the defaulting issuer's list.

I was anecdotally informed of other instances where an issuer was told that if they wanted to raise finance during a pandemic quarantine then that issuer had to also have a current site visit; otherwise, no financing would be allowed. Interpretations of

what the regulator considered to be current, versus what the issuer considered to be current, were not aligned, but the regulators again played both judge and jury: the CSA staff's interpretation was the only correct one and the issuer had to comply with the CSA staff demands or the issuer was not able to go forward with its financing.

These approaches by the CSA staff were particularly egregious. Companies still had to raise funds to continue work during a pandemic. However, site visits were not able to be undertaken either because of travel restrictions out of the control of the Qualified Person or company, or because the company recognized an ethical obligation to not put its staff and consultants at risk. The CSA staff prioritized a rule that was written with imperfect knowledge of future pandemics over the safety of personnel and a company's ability to continue working during challenging conditions. A key focus of the mining industry across the board is safety, and many man-hours and finances are devoted to trying to improve safety performance. Obviously, that is not a key concern of the CSA staff?

As a result, I see the concept behind the seasonal weather provision still having a role. The industry is cyclical, and the same issue will undoubtedly occur, that Qualified Persons cannot get to site to physically inspect the project area during an initial public offering filing or other filing circumstance. There are other issues that could cause a Qualified Person to be unable to visit site: ones I have seen include the unexpected passing of the Qualified Person on their way to do the visit or during the visit, the incompatible or non-availability of flights such that there is no physical way of getting to the site in the timeframe needed to do the filing, and localized disease outbreaks such as Ebola, cholera, typhoid, encephalitis, dengue, Zika, and others that have resulted in local authorities prohibiting any travel to and from the area. Therefore, I consider the concept is the key element to preserve, not the current climate conditions-only wording. What should be written into the rule is that if there is a temporary circumstance that precludes the Qualified Person doing a site visit, that should be explained, the technical report can still be filed, and the site visit will be done as soon as practicable.

However, I still do not advocate site visits as essential, I see them as adjuncts, not primary requirements.

Subsection G: Exploration Information

CSA staff continue to see significant non-compliant disclosure of exploration information, including inadequate disclosure of:

• the QA/QC measures applied during the execution of the work being reported on in the technical report,

• the summary description of the type of analytical or testing procedures utilized, and

• *the relevant analytical values, widths and true widths of the mineralized zone.*

Response:

I have concerns with the claims being made by the CSA staff over non-compliant disclosure being inadequate disclosure. Inadequate should not be being used as a direct synonym for non-compliant.

In my view, the CSA staff should be providing as part of their support for their statements in this consultation paper where they see issues:

- Why the disclosure is "*potentially misleading disclosure*";
- The basis for calling the disclosure "*potentially misleading disclosure*";
- Explanation as to how this really is a major industry-wide failing and not a reaction to outlier disclosures by a small minority of issuers, or would-be issuers;
- Are the issues identified by the CSA staff really only occurring in technical reports? It seems unusual to have technical reports non-compliant but other types of disclosures, such as websites, news releases and investor slide decks being compliant. If the issue is actually wider than the CSA staff are indicating here, then why was that not part of this industry comment request?

I have concerns that many of the instances of non-compliance identified by the CSA staff in relation to exploration data are actually a result of judgement calls being made on the basis of a misapplication or misinterpretation of the CIM guidelines.

Guidelines are not law; there are numerous instances in comment letters where the CSA staff appear to be using the CIM guidelines as if they are actually part of the Rule.

Guidance provided by the CIM for one aspect of industry practice is not restricted to that area of practice. A notable issue is that of the presentation of grade x thickness values. A value is numerical, it is not a valuation. Just because that particular item is only mentioned in the one CIM practice guideline, that does not exclude that particular practice from being used in a different project stage.

I want to point out that the CIM guidelines should be seen as explanations to industry and Qualified Persons of the typical workflows undertaken from exploration to resource estimation to reserve estimation. It is not as if there is only ever one chance to complete a grade x thickness analysis to better understand grade and geological continuity. This is an iterative process, is performed during all stages from exploration to resource estimation to reserve estimation, and is constantly updated.

Just because a guidance note is in one guideline and not in another does not mean that the guidance in one guideline is not equally as applicable to the other area of practice.

Question G24

Are the current requirements in section 3.3 of NI 43-101 sufficiently clear? If not, how could we improve them?

Response:

The Section 3.3. content requirements are quite lengthy:

> *3.3 (1) If an issuer discloses in writing exploration information about a mineral project on a property material to the issuer, the issuer must include in the written disclosure a summary of*
>
> *(a) the material results of surveys and investigations regarding the property;*
>
> *(b) the interpretation of the exploration information; and*
>
> *(c) the quality assurance program and quality control measures applied during the execution of the work being reported on.*
>
> *(2) If an issuer discloses in writing sample, analytical or testing results on a property material to the issuer, the issuer must include in the written disclosure, with respect to the results being disclosed,*
>
> *(a) the location and type of the samples;*
>
> *(b) the location, azimuth, and dip of the drill holes and the depth of the sample intervals;*
>
> *(c) a summary of the relevant analytical values, widths, and to the extent known, the true widths of the mineralized zone;*
>
> *(d) the results of any significantly higher grade intervals within a lower grade intersection;*
>
> *(e) any drilling, sampling, recovery, or other factors that could materially affect the accuracy or reliability of the data referred to in this subsection; and*
>
> *(f) a summary description of the type of analytical or testing procedures utilized, sample size, the name and location of each analytical or testing laboratory used, and any relationship of the laboratory to the issuer.*

The requirements I consider to be sufficiently clear. However, they are very broad. What is not clear is what level of detail the CSA staff will accept as meeting the content requirements. If a slight change is made to practices that have been reported, for example, in a technical report, during a new drill program, what will the CSA staff consider to be sufficient that the issuer cannot rely on the Section 3.5 exemption (see discussion later in this response to Question G24.

In my view, the improvement would be to allow the Qualified Person to have more leeway in presenting information. As a program evolves, so should the sampling procedures, methodologies, types of quality control evolve. I do not believe that the

level of detail required is applicable to each and every disclosure; it is better presented in context and summarized in the technical report. I also do not see that the information is material for each and every disclosure document, and that every change will result in a material change requiring immediate disclosure. The CSA staff are, in my view, creating an expectation around detail and changes to details that are beyond what most investors require. Too much irrelevant information around non-material issues can be as detrimental to investor understanding as insufficient information on a material issue. What should be disclosed should be left to the Qualified Person, and not be a prescriptive requirement set forth by the CSA staff.

I observe that the abuse of practices of phony laboratories using black-box “technology" for analytical procedures was an issue when the first, 2001, edition of NI 43-101 was promulgated. However, that issue has rightfully been driven out of the industry, and I have not seen an instance for a number of years. It is no longer an issue that requires the level of detail that the CSA staff appear to be requiring to meet Section 3.3 in a compliant manner. The other issue I note is that of sample security and sample tampering. Those few outlier events where this occurred would not have been exposed or prevented by Section 3.3 disclosure, as the instigators ignored all of the rules of professional and ethical conduct. I reiterate that legislation alone does not stop malfeasance.

Section 3.3 disclosure alone is not what investors require for assurance of proper practices. It is also not necessary to have Section 3.3 disclosure for each and every disclosure document, if there is an existing document that provides information on the range of practices that the issuer is using.

The first question I have is if significant non-compliance is being observed by the CSA staff, which disclosure documents are the main culprits? As noted in my response to the preamble to “Subsection G: Exploration Information”, it seems odd to have technical reports, which are prepared by Qualified Persons as the primary offenders, and not other types of disclosures such as websites, investor presentations and news releases. For example, there is a lot of information that is required to be provided under Section 3.3 that does not, and cannot, fit on a single slide within an investor presentation. My experience is contrary to the claim; most technical reports I find usually cover the Section 3.3 content requirements reasonably sufficiently that the information is in context and balanced. Is the issue then, with disclosure made by the outliers within the industry, and is in fact not representative of the overall industry?

The Section 3.5 provision within the Rule does allow some leeway on meeting Section 3.3 requirements:

> *3.5. Sections 3.2 and 3.3 and paragraphs (a), (c) and (d) of section 3.4 do not apply if the issuer includes in the written disclosure a reference to the title and date of a document previously filed by the issuer that complies with those requirements.*

For a company that has established an investor following, investors are acutely aware of the work being conducted, are constantly waiting on program updates, and are familiar with aspects such as the exploration activity being undertaken, sampling procedures, sample preparation and analyses together with the laboratories being used, and the QA/QC procedures the company employs. I had assumed that the reason I was not commonly seeing examples of the Section 3.5 provision during the last couple of years was that CSA staff had a new unwritten interpretation as to what constituted appropriate disclosure to meet Section 3.3. Based what I was seeing in other areas of CSA staff enforcement, I had assumed that it was no longer safe for an issuer to use the Section 3.5 allowance if the current exploration program had minor deviations from the practices described in the disclosure document, such as a technical report, and that is why the Section 3.5 allowance was not being more commonly used. The other explanation was that issuers no longer considered it a safe approach to use the Section 3.5 allowance, and be confident that their disclosure was compliant.

I note that over the last decade, the short courses and industry outreach activities that were common in the first decade after the introduction of NI 43-101 have become significantly fewer. Courses or presentations are typically one-day only, are often co-presented with other regulatory stakeholders, and are typically restricted to two major industry conferences annually, Roundup in Vancouver, and the Prospectors & Developers Association of Canada meeting in Toronto. This presentation frequency and the necessity for abbreviated presentation due to the course durations are insufficient to ensure that new players coming into the Canadian mining industry are aware of the requirements of, and allowances around, Section 3.3.

A final question I raise is that is whether Section 3.3 disclosure is necessary with each and every disclosure document. If a technical report has been filed, and the Section 3.3 disclosure is in that report, and the exploration programs substantially use the same methodology disclosed in the technical report, does each and every other disclosure on exploration information need to repeat the Section 3.3 content?

Subsection H: Mineral Resource/Mineral Reserve Estimation

In CSA Staff Notice 43-311 published in June 2020, a comprehensive review of disclosure in technical reports identified several areas of inadequate disclosure of mineral resource estimates

Response:

I appreciate the issue being raised in this consultation process, as I would like to take the opportunity to provide feedback on this particular staff notice, as CSA Staff Notice 43-311 has resulted in my having significant unease with the CSA staff regulatory processes and practices when it comes to Mineral Resource estimates. I do not agree that staff notices are, or should be used as, extensions of the Rule.

Per the introduction to CSA Staff Notice 43-311:

> *"Staff of the Canadian Securities Administrators (**Staff** or **we**) are publishing this notice to present the results of a disclosure review by the securities regulatory authorities in British Columbia, Ontario, Quebec, and Alberta. Staff evaluated 86 technical reports supporting MREs* [Mineral Resource Estimates] *to assess the quality, clarity, and compliance of disclosure".*

CSA Staff Notice 43-311 goes on to state:

> *"CSA staff had found non-compliant MRE disclosure in technical reports and taken note of recent MRE re-statements by mining issuers. This review, completed in late 2018, explored whether disclosure both complied with the disclosure standard and provided transparency into the qualified person's (QP) adherence to best estimation practices. Based on the review, ten technical reports were amended and refiled with six refilings related to inadequate disclosure and four refilings resulting in revisions to the MRE itself due to non-standard professional practice issues".*

Guidance notices provided by CIM are guidance. They are not rules, and they are not necessarily applicable to all practices in all areas. Nor are the guidelines to be treated in the manner of a recipe that must be followed exactly or the resulting product will be sub-par. Deposits differ, interpretations differ, and the most appropriate estimation methods differ depending on combinations of geological understanding, mineralization controls, the distribution of elements of interest and contaminant elements within the mineralization. For the CSA staff to claim that their review "provided transparency into the qualified person's (QP) adherence to best estimation practices", I think shows an insufficient understanding of estimation practices by CSA staff. Competent, and I stress the word competent, Qualified Persons do not have recipes that they follow when estimating; that formulaic approach is poor practice and results in suboptimal outcomes, and that poor practice is something that the resource estimation discipline as a whole has tried to eradicate from professional practices.

CSA Staff Notice 43-311 also stated that what the CSA staff had done was to:

> *"Compare estimation practice documented in the technical report against CIM Best Practices Guidelines including Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (**CIM BPG**, adopted by CIM Council November 23, 2003). Estimation practice has evolved since publication of CIM BPG, with sophisticated geological modeling, geostatistical, and mining optimization software now integral to the practice. Subsequent to the review, an updated version of CIM BPG was adopted by CIM Council on November 28, 2019".*

A resource estimator uses available guidance when performing estimation. Such guidance is not sourced from a single guideline published by a single learned society, because one guideline cannot cover all deposit types, estimation methods, and the infinite variation of mineral distributions encountered in nature. Qualified Persons routinely consult a number of guidelines, amongst which those promulgated by the CIM are amongst the better known, and are specifically referred to in the Companion Policy. However, publications by the SME, by the AusIMM, by fellow estimation practitioners, and by issuer experts or experts retained by the issuer are also used as sources of information and practice. There are instances where these other guidances are more relevant to a particular deposit or mineralization style, or are more reflective of current industry practices, than those put out by the CIM.

Qualified Persons performing resource estimation also typically have undergone specialist training in estimation practices, whether that be in-house in the mining organization, or by attending courses offered by academic institutions. CIM is not the only standard or source of estimation practice. It is beyond CIM guidance documents to capture all nuances of estimation practice, in all cases. To consider that it is a mandatory standard is to have missed the point of what the CIM were trying to achieve with their guidance documents.

A major concern of mine is that the regulators are questioning the judgement calls and decisions made by the Qualified Person as to which practices apply to which deposits, and this approach represents a narrow interpretation by CSA staff of what the CIM guidance documents are, and can be.

The methodology, assumptions and interpretations, and results are compiled in most cases into a stand-alone report, which is used as the documentation basis for the issuer's record. That report is not a public disclosure document, nor is it ever intended to be. What is put into the public disclosure is a summary of the report contents, with the Qualified Person providing only what information is considered to be material scientific and technical information. The publicly-disclosed information is not meant to be a compendium of what was done such that another Qualified Person can reconstruct the estimate from first principles. A checkbox list to determine compliancy is a poor method of checking whether an estimate is robust. The CSA staff have emphasized that the intended audience for a technical report is a reasonably-informed investor whose knowledge of specialized estimation practice issues is not sufficient to understand the steps undertaken by the Qualified Person. The CSA staff have, in fact, previously asked issuers to provide more summarized information for that target audience. It is unfair to ask the Qualified Persons to summarize information on one hand, and then critique the Qualified Person's presentation as not ticking all of the assumed boxes that the CSA staff consider should have been ticked.

The CSA staff have significant power over the industry and industry practices. That power must be respected and applied appropriately. CSA staff must recognize that when they tell a company that the company has done something wrong, and that the

company makes a change, that does not validate the CSA staff's position. Using a guidance document from CIM as if it were a regulation, is in my view, a misuse of that power. Stating that CSA staff have a consensus position on an issue is also not a validation that what CSA staff are doing is appropriate.

Question H25

Reasonable prospects for eventual economic extraction

CIM Definition Standards guidance states that a qualified person should clearly state the basis for determining the mineral resource estimate and that assumptions should include metallurgical recovery, smelter payments, commodity price or product value, mining and processing method, and mining, processing and general and administrative costs. Revisions to the CIM Definition Standards in 2014 and CIM Best Practices Guidelines in 2019 emphasized the requirement for the practitioner to clearly articulate these assumptions and how the estimate was developed.

Mining Reviews provide evidence of technical reports that lack adequate disclosure on metal recoveries, assumed mining and processing methods and costs, and constraints applied to prepare the mineral resource estimate to demonstrate that the mineralized material has reasonable prospects for eventual economic extraction.

Should Item 14: Mineral Resource Estimates of the Form require specific disclosure of reasonable prospects for eventual economic extraction? Why or why not? If so, please explain the critical elements that are necessary to be disclosed.

Response:

Guidance provided within the CIM Definition Standards, and within the CIM practice guidelines is just that, guidance. Such guidance cannot and must not be used as if it were part of the Rule. Nor should CIM practice guidelines be used as a yardstick against which a regulator judges whether or not a Qualified Person complies with disclosure of reasonable prospects of eventual economic extraction (RPEEE).

The guidance provided within the CIM Definition Standards does not, as claimed in Question H25, state that "*a qualified person should clearly state the basis for determining the mineral resource estimate".* The guidance provided explicitly refers to RPEEE: "*The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction*". A basis for a Mineral Resource estimate covers significantly more information than just the considerations of RPEEE.

Secondly, a key component of the CIM guidance is omitted, which is "*The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction*". This sentence comes before the statement that the Qualified Person "*should consider*" and makes it even more clear that information provided is at the discretion of the Qualified Person.

Thirdly, "*should consider*" is not an imperative "must-do" statement. The CSA staff are conflating what is done as part of a practice guideline with what should be disclosed in a technical report under disclosure rules. The CSA staff do not appear to have applied, at least in the explanations within CSA Staff Notice 43-311 as to what the materiality considerations were, when they were assessing Mineral Resource (Mineral Reserve) estimate disclosure.

The 2019 CIM Practice Guidelines on Mineral Resources and Mineral Reserves is a practice document. It is not a disclosure document. It provides prompts and consideration for a Qualified Person to contemplate when preparing a Mineral Resource or Mineral Reserve estimate. Typically, a Mineral Resource or Mineral Reserve is documented in a stand-alone internal (non-public) report that has significant detail as to what was done, how it was done, alternatives considered, and usually has numerous appendices of statistical and other evaluations supporting the methodology and reporting.

This internal report becomes one of the documents that is summarized into the technical report, but is not copied-and-pasted into the technical report. What is completed in the practice area is at a level of detail that is not, and should not be, considered to be commensurate with summary disclosure of material scientific and technical information in the technical report. A Qualified Person may have considered a particular information set or interpretation when estimating the Mineral Resources, but determined that particular dataset or interpretation was not material to an investor understanding how the estimate was performed, and so does not become part of the technical report disclosure. The Qualified Person may have completed a significant amount of geostatistical detail, such as exploratory data analysis, composite interval selection, evaluation of different grade caps, variograms, swath plots, and clearly articulated that in the internal report, but considers that providing this level of detail is not relevant to a summary, investor-level presentation in a technical report.

Despite the CSA staff's enforcement efforts, the CIM Practice Guidelines on Mineral Resources and Mineral Reserves are not seen by industry to be the sole source of guidance when performing Mineral Resource and Mineral Reserve estimates. Numerous publications from other learned societies are consulted when guidance is needed. Examples include the AusIMM's Monograph 30, Mineral Resource and Ore Reserve Estimation, The AusIMM Guide to Good Practice, dated but still on many bookshelves, and the SME's two-volume Mining Engineering Handbook. Other publications include those by fellow estimation practitioners in conference and short course volumes, and reports prepared by issuer experts or experts retained by the issuer on aspects of the estimation process.

The fact that the CIM Practice Guidelines on Mineral Resources and Mineral Reserves have numerous appendices that deal with specific commodities, such as diamonds, coal, potash, industrial minerals, lithium brines, and uranium is an indication that certain deposits require highly specialized practices that are beyond what is set out in

the general guidelines. Even those specialized practices are still generalized in most cases. I also note that many of those appendices are decades out of date, and do not reflect current practices.

Qualified Persons performing resource estimation also typically have undergone specialist training in estimation practices, whether that be in-house in the mining organization, or by attending courses offered by academic institutions. CIM is not the only standard or source of estimation practice. It is beyond CIM guidance documents to capture all nuances of estimation practice, in all cases. To consider that CIM guidance is a mandatory standard is to have missed the point of what the CIM were trying to achieve with their guidance documents.

Many issuers also have requirements over and above what is included in the CIM Practice Guidelines on Mineral Resources and Mineral Reserves, with modifications that reflect, for, example, the issuer's acceptance of certain estimation risks, or of internal guidelines for public disclosure meeting certain internal criteria, such as a particular drill spacing allocation for mineralization to be classified in a particular confidence category. These are included in the internal report, but, in my experience, are not necessarily included in the summarized disclosure in the technical report.

Depending on a prescriptive checklist, as was stated to be used in CSA Staff Notice 43-311, is a poor practice as in/out lists do not assess interpretations or the supporting data. Does checking the box in a pre-set list and finding some boxes are left unchecked, which was the approach taken in CSA Staff Notice 43-311, really help either inform the investor that the estimate was done reasonably, identify to the investor that the estimate was flawed, where the flaw occurred, and the impact of that flaw? Yes, the CSA staff considered that they had found non-compliance with their list. That checklist did not explain whether the CSA staff had cross-checked with the relevant issuer to see if the "error" was truly an error. Had the work been done but the Qualified Person used their judgement to omit the information from the technical report? Was the "error" truly a material omission, and how was that materiality determined? Did the CSA staff understand the limitations on the estimate, from the data available, to the geological interpretation, to the selection of RPEEE, to the available modelling software, to the geological interpretation when completing the checklist? How was that reflected in the checklist scoring?

I also point out that many steps are done in the earlier versions of a Mineral Resource estimate, reported in earlier technical reports on the deposit, and the Qualified Person therefore omitted the information in the current report. For example, exploratory data analysis or variography may not be reported in the current report, but that information was included in an earlier report. Did the "*comprehensive review of disclosure in technical reports"* look beyond the most recent technical report?

Checklists are inherently subjective. They are often used by inexperienced practitioners until such practitioners gain sufficient experience with the subject matter

to be able to make informed judgement calls. Commonly, a manager who wants to reduce a process to a checklist requires such an approach in the mistaken belief that a checklist will ensure continuity of succession for a given process. I would be very surprised if a panel of industry experts on Mineral Resource or Mineral Reserve estimation would have many of the line items the CSA staff used as issues as being reflective of where the industry experts see issues. In addition, such checklists can never be applicable to the diverse methods used within the industry. A checklist that uses polygonal estimation methods will never have the correct areas of checking that are needed for a multiple-indicator kriged estimate, let alone an estimate performed using conditional simulation. Any checklist will also be out of date as soon as a new interpolation or interpretation method or new method of software estimation is available. In addition, where I find estimation to be typically problematic is in and around fundamental interpretational issues on the mineralization style and controls, problems with which generally cannot be identified using a checklist.

The fallout from CSA Staff Notice 43-311 is that the industry is left with no clear-cut understanding of when the CSA staff will call a Mineral Resource estimate non-compliant, what the criteria are for non-compliance in the CSA staff's opinion, what the true deficiencies really are in terms of issuer disclosure, and why the CSA staff interpretations reflect an industry-wide failing that is so critical that the checklist will demonstrably identify the issue and provide fixes. The CSA staff do not address why their checklist is an appropriate method of rating compliance, or provide support as to why the CSA staff's judgement calls are to be preferred to the Qualified Person's own judgement and supporting disclosures in the technical report.

The CSA staff statement that "*Mining Reviews provide evidence of technical reports that lack adequate disclosure"* is flawed, in my view. The CSA have an unreasonable standard, as shown in CSA Staff Notice 43-311, as to what may be adequate disclosure, since the understanding of what guidance is, and is used for, is flawed. If information is generally provided in summary format, includes the material information, is adequate for a reasonably informed investor to follow, and was prepared or approved by a Qualified Person, in my view, that should be considered to be acceptable disclosure. I consider that this statement is again an example of the CSA staff inserting themselves into the role of the Qualified Person.

Item 14: Mineral Resource Estimates of the Form does not require specific disclosure of reasonable prospects for eventual economic extraction, and should not require such. The wording in the Item requiring the Qualified Person to:

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

together with the guidance provided in the CIM Definition Standards:

> *"The phrase 'reasonable prospects for eventual economic extraction' implies a* ***judgment by the Qualified Person*** [emphasis added] *in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing",*

makes it quite clear that public disclosure of RPEEE is expected as part of the Qualified Person's discussion of "*the key assumptions, parameters and methods".*

The CIM Definition Standards do not explicitly require the details of the RPEEE be provided that were used for the basis. If the Qualified Person simply follows the checklist set out in the CIM Definition Standards "*estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs"*, then in my experience most Qualified Persons do provide this information in technical reports. My question is, what beyond this list does the CSA staff consider to be relevant details that must be disclosed, and therefore that industry is not following?

The statement by the CSA staff in this consultation paper that:

> *"Mining Reviews provide evidence of technical reports that lack adequate disclosure on metal recoveries, assumed mining and processing methods and costs, and constraints applied to prepare the mineral resource estimate to demonstrate that the mineralized material has reasonable prospects for eventual economic extraction".*

does not indicate whether this issue is due to a few outliers, or it is an industry-wide failing. The CSA staff state that "

> *Based on the review, ten technical reports were amended and refiled with six refilings related to inadequate disclosure and four refilings resulting in revisions to the MRE itself due to non-standard professional practice issues".*

Of those 10 technical reports that required refiling in the CSA staff's view, there is no statement in CSA Staff Notice 43-311 that the issues were related to RPEEE disclosure. My experience is that RPEEE disclosure has actually improved over the decades since NI 43-101 came into effect. I also find that in general, RPEEE is reasonably well addressed. My concern is, is the RPEEE issue raised by the CSA staff a real issue that needs to be addressed? Is the intent to insert more prescriptive

language in the Form? As I noted earlier, I do not consider that checklists are a reasonable method of evaluation of the robustness of an estimate.

I also raise the point that 10 technical reports out of the 86 reviewed in CSA Staff Notice 43-311 having to be refiled represents a cost burden. Firstly, was the basis for those reports having to be refiled and amended, truly valid if the issue was related only to missing information on a CSA staff checklist? Even if the checklist had a missing check, was the issue real, or had the item been considered by the Qualified Person and determined to be not relevant? Was the omission material to the understanding of RPEEE? Was the omission material to the investor? Was the perceived benefit to the investor in balance with the cost of refiling an amended technical report?

Therefore, I do not support changing the wording in the Form.

I also do not support CSA staff generating a list of "*the critical elements that are necessary to be disclosed"*, firstly because prescriptive lists should not be part of disclosure rules, and secondly, because there are few critical elements that are common to each and every assessment of RPEEE for every deposit type.

Question H26(a)

Data verification

Disclosure of a mineral resource estimate is a significant milestone for an issuer. CSA Staff Notice 43-311 noted that disclosure of data verification procedures and results was one of the weakest areas in the mineral resource estimate review, stating that in technical reports reviewed by CSA staff, more than 20% had incomplete disclosure concerning the qualified person's data verification procedures and results.

Should the qualified person responsible for the mineral resource estimate be required to conduct data verification and accept responsibility for the information used to support the mineral resource estimate? Why or why not?

Response:

I take issue with the statement that "*Disclosure of a mineral resource estimate is a significant milestone for an issuer".* I understand that there is a clear distinction between material and non-material properties, and this statement does not do that. An initial Mineral Resource estimate may be a milestone for a junior company with a single material property, but subsequent disclosure of updates to that estimate are frequently not milestones, and nor are they treated as such in the issuer's disclosure. An initial resource estimate on a project by a major mining company may never be a milestone for that issuer if the project is not material. Very few initial Mineral Resource estimates are ever material for a major mining company. Nor are subsequent updates to that estimate milestones for that issuer.

I reiterate that I have concerns with the methodology and findings of CSA Staff Notice 43-311. In my view, the methodology used in that study should not form the basis of an assessment tool to determine whether or not adequate data verification was performed, or is performed, by the industry.

I also am concerned with the statement that *"more than 20% had incomplete disclosure",* because I have concerns that this is more likely to be an artifact of the technical report review process that was undertaken. The artifact is the assumption that the presence or absence of information on data verification in the technical report is a measure of the data verification that was actually conducted. I would have liked to have seen the CSA staff's definition of what constitutes complete disclosure. I still consider that the level of detail in the technical report is the purview of the Qualified Person in the context of the study being reported, and the deposit type in question.

The CSA staff have already implied in this consultation paper that data verification done by others is suspect, when, in fact, it may well have been done by Qualified Persons, done to acceptable industry standards, and be well documented. That data verification completed by other parties than the current Qualified Person should not be considered to be invalid. The incomplete disclosure that the CSA staff are noting may in fact, have been included in earlier technical reports, and the Qualified Person determined for summarization purposes that the information did not need to be repeated in the updated technical report.

The details of data verification, in my view, is beyond the level of understanding of the target audience. Summarization is encouraged in the Form.

Teamwork is a cornerstone concept within the modern mining industry. Resource estimators are not currently acting independently, they are part of a team that collectively examines, interprets, and models data. The team includes discipline specialists other than resource estimators and geologists to ensure that technical and economic factors are considered when evaluating reasonable prospects of eventual economic extraction. The CIM Practice Guidelines on Mineral Resources and Mineral Reserves explicitly recognizes resource estimation as a team effort. Neither the CIM, nor industry as a whole, expects that team to consist only of a single Qualified Person, or indeed only of Qualified Persons.

As part of that team effort, the resource estimator is typically provided with a subset extract of a validated database that has been independently verified by those acquiring the data and those uploading the data into the database. Resource estimators commonly perform their own software checks on that database, looking for, as examples, mismatching from–to intervals, odd assay values, and geological codes. They commonly look at geological interpretations on screen, again looking for issues, such as checking for potential alternate interpretations on mineralization controls, or whether grouping of lithologies into modelling domains is appropriate. Exploratory data analysis is typically performed, checking elemental distributions, correlations,

outliers, in support of selection of the most appropriate modelling method, and grade capping/outlier distribution evaluations. If appropriate, variograms are modelled, with numerous runs done to select optimum directions. These types of checks are usually very clearly documented in the not-for-public resource document report, but are typically not reported in disclosure documents because the disclosure is significantly summarized. My point is that data verification is very rarely not performed by a resource estimator, it's just considered to be a level of detail that is not warranted in a technical report. And indeed, regulators have required refiles of reports where the estimator put that level of detail in as appendices to a technical report because the level of detail was not commensurate with a summary document.

The CSA staff are assuming that just because a particular step in the resource estimation process is not discussed in a technical report, that is prima facie evidence that the step was not performed. As I note in my response to Question H25, the 2019 CIM Practice Guidelines on Mineral Resources and Mineral Reserves is a practice document. It is not a disclosure document. Just because a disclosure document does not explicitly detail each and every step suggested by the 2019 CIM Practice Guidelines on Mineral Resources and Mineral Reserves, does not mean that the Qualified Person did not consider, or perform, those steps. Or that the Qualified Person did not use judgement and expertise to consult other sources of common practices.

I also note that Item 14(a) requires only disclosure of the *"**key*** [emphasis added] *assumptions, parameters and methods"*. Using a prescriptive checklist against criteria set out in a guidance document as some measure of industry fallibility in disclosure is in direct contradiction to the instruction to disclose key information. Qualified Persons use their judgement and determine, for any individual estimate, what the material (key) assumptions, parameters and methods are.

CSA staff should not be prescriptively setting requirements as to what data verification must be done to be "complete". The critical piece of information for an investor is that the technical report states that data verification was completed. The CSA staff should not be making the determination that data verification performed by others throughout a project's history is suitable for a Qualified Person to rely on as part of their data verification process. I have the distinct impression, as set out in my responses, that the CSA staff do not accept that any portion of earlier verification can be relied upon, and must be redone by the current Qualified Person. I have difficulty seeing where the balance is achieved here between the cost of compliance and the value to investors of repeating data verification that was considered by the current Qualified Person to be already well done. The judgement call of the Qualified Person should be respected as it is a foundational element of the Rule.

I disagree with the CSA staff's apparent premise that data verification by a single individual is so much better than the teamwork approach, and is not supported by industry's general practices. The advantage of the team approach is to draw on the

expertise of the individual team members when performing data analysis; this includes data verification. As projects evolve, the skill set that then is employed by the individual team members reflects the changing nature of the type of information collected in numerous discipline areas, and the risks regarding it. Industry uses a combination of teamwork, layered responsibilities, and peer reviews to ensure the data and interpretations used are the best available at the snapshot in time the resource estimate reflects. It is too important to get it right to trust in the ability of a single person to verify all of the supporting data, interpretations, and assumptions.

With regards to the question "*accept responsibility for the information used to support the mineral resource estimate",* my view is that the Qualified Person is not in a position to meet this requirement. The Qualified Person should not be responsible for all of the data, the Qualified Person is responsible for conducting a reasonable investigation into the data used, determining what data can be used, and providing an opinion that the remaining data are suitable for use. By analogy, a financial auditor does not take responsibility for the financial statements, that financial auditor provides an opinion that the statements meet the accounting standards.

A Qualified Person can make a decision to limit the confidence category the data can support when reviewing RPEEE because they may see limitations on the reliability of certain aspects of the data. The data may have geological and grade continuity, but may not have sufficient information on certain of the technical or economic factors to support a confidence classification based on grade and geological continuity alone. The Qualified Person should not be made responsible for the data issues that caused the confidence category limitations.

In a third issue with the same question, I note that this contradicts the allowance, when dealing with certain of the technical and economic factors that can affect the Mineral Resource estimate with the allowance for Reliance on Other Experts in Item 3.

> *"Item 3: 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 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".

The question appears to be saying that the CSA staff are no longer going to allow a Qualified Person to use the Reliance on Other Experts provision for certain information when a Mineral Resource estimate is disclosed in a technical report.

As a result, no additional text regarding data verification should be required to be inserted in Item 14. The Qualified Person should not be required to be responsible for the information used in the Mineral Resource estimate, the provision should be that the Qualified Person provides an opinion on the suitability of the information for the purposes used.

Question H26(b)

Should the qualified person responsible for the mineral resource estimate be required to conduct data verification and accept responsibility for legacy data used to support the mineral resource estimate? Specifically, should this be required if the sampling, analytical, and QA/QC information is no longer available to the current operator. Why or why not?

Response:

Use of legacy data is typically undertaken by industry on a case-by-case basis. As I note in my response to "Subsection B: Data Verification Disclosure Requirements", it is legitimate for a company to use those data, and how to use those data. It is legitimate for a Qualified Person to have an opinion on how the data are used. There should not be a presumption by CSA staff that there is something intrinsically wrong with historically collected data. Such data collection often represents millions of dollars of previous expenditure, and is a valuable resource in and of itself.

Data verification is context specific for legacy data. A very different approach can be taken toward legacy data in the context of an operating mine with available reconciliation data than in the context of a greenfields exploration project. Data verification is different, depending on the commodity, for example data verification for a coal deposit or a potash deposit is significantly different to the data verification conducted for an orogenic gold deposit.

Adopting a prescriptive approach to verification, which appears to be the CSA staff preferred approach is not optimal. The CSA staff cannot prescribe sufficiently to encompass every eventuality and nuance of legacy data verification across numerous discipline areas, from destructive testwork-derived data to the intangibles associated with consideration of modifying factors such as social licence and governmental attitudes to mining. Rules should be principles-based, and the CSA staff should respect the decision of the Qualified Person, in the context of the subject deposit in question, as to how to meet those principles.

I am unclear as to why this specific issue "*sampling, analytical, and QA/QC information is no longer available to the current operator*" is only raised in the context of the resource estimate. It is just as pertinent to the discussions around the use of these data in "Subsection B: Data Verification Disclosure Requirements". The use of legacy data is not restricted to resource estimation, as if that were the only possible outcome of such data. Legacy data can inform exploration programs, locations of infill and step-out drill programs, selection of preferred metallurgical flowsheets, and geotechnical recommendations for mining in proximity to historical workings or pillar-robbing, amongst other examples.

It is also unclear to me why the Qualified Person for the resource estimate is the only person responsible for acceptance of legacy data. More typically in industry, those data have been examined by other experts, and either accepted as useable, or accepted with caveats such as restrictions on the confidence classifications that can be used. This is done by teamwork assessment and verification, not by the individual Qualified Person alone.

The CSA staff should abandon the position that a single individual is responsible for data verification. This is not the approach taken by industry. There are numerous studies that show a team approach to verification is better than an individual performing that step alone. Collective assessment is better at identifying gaps, errors, and omissions than singular assessment. Collective reviews are better at identifying the risks and uncertainties associated with the available data and interpretations. This is the primary reason why industry has moved toward teams, rather than individuals.

The industry has generally abandoned the CSA staff view that areas of practice are stand-alone silos whereby the narrow presentation of subject matter during one's original degree is the sole arbiter of any future expertise that may be obtained. Industry recognizes that learning is not static and restricted only to a small window in the Qualified Person's late teens and early twenties, that subject matter materials covered by degree coursework may contain ideas and concepts that have long since been abandoned by industry, that there is major overlap between areas of practice, and that relevant experience is a matter both of knowledge and judgement. Knowledge is gained by working with other experts in highly specialized fields that go beyond the Qualified Person's original degree discipline. Industry recognizes that the team brings more to the table than the individual alone.

Overall, the type and extent of data verification is a judgment call made by the Qualified Persons. Instead, the CSA staff have the apparent attitude that the Qualified Person concept exists, but the Qualified Persons cannot be trusted. It appears that the CSA staff must be everywhere at all times, to review Qualified Persons or the Qualified Person will make errors. I strongly question if that is an appropriate model for effective regulation of the mining industry. The CSA staff have to allow for Qualified Person judgement.

The CSA staff approach to data verification is emblematic of an overall issue that the CSA staff must seriously consider their actions on. In my view the CSA staff are seriously undermining the Qualified Person's judgement calls on areas on which the Qualified Person is providing an opinion.

I disagree with the statement that the Qualified Person "*accept responsibility for legacy data used"*. I take issue because the Qualified Person should only be asked to take responsibility for their opinion for how the legacy data should be used, and any limitations placed on legacy data useage.

In summary, the Qualified Person should not be made to accept responsibility for legacy data.

I am not clear with this part of the question as to the instances the CSA staff have in mind:

"*Specifically, should this be required if the sampling, analytical, and QA/QC information is no longer available to the current operator"*

I am assuming that this applies when there are no original documents, no core is available to resample, no documentation on QA/QC procedures is available (whether it was ever done, or is missing), or no documentation on metallurgical testwork supporting recovery assumptions remains.

I am also assuming that the CSA staff are asking the question because of instances when the Qualified Person puts a sentence in the technical report to the effect that if Company A did the work, that company used methods and procedures that were standard at the time, then that work is acceptable today.

The real issue for me, is what the CSA staff would consider to be acceptable support for use of data if the original documentation is missing. Is twin hole drilling the only acceptable replacement for missing QA/QC data, for example? In my view, twin hole drilling is the last resort, not the only. Whether a twin hole program is needed should be a Qualified Person's judgement call, not the purview of the CSA staff.

I do agree with the CSA staff that the Qualified Person should be able to defend their judgement call to their peers in the context of the other information available and the deposit type.

Question H27

Risk factors with mineral resources and mineral reserves

Paragraph 3.4(d) of NI 43-101 requires issuers to identify any known legal, political, environmental and other risks that could materially affect the potential development of the mineral resources or mineral reserves. In addition, Items 14(d) and 15(d) of the Form require the qualified person to provide a general discussion on the extent to which the mineral resource or mineral reserve estimate could be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors.

Many technical reports only provided boilerplate disclosure about potential risks and uncertainties that are general to the mining industry. Failure to set out meaningful known risks specific to the mineral project make mineral resource and mineral reserve disclosure potentially misleading.

How can we enhance project specific risk disclosure for mining projects and estimation of mineral resources and mineral reserves?

Response:

Investors do not rely only on the technical report for disclosure of risks. Issuers communicate risks through MDAs, news releases, AIF and other disclosure documents. Issuers and investors do not solely rely on risks being identified in the technical report, since the technical report is a snapshot in time view of a project, is only required at certain corporate or project milestones, and is only episodically updated. Risks to the project can change significantly between a technical report and its update. It would be more misleading, in my view, for the Qualified Persons in the technical reports to be the only source of identification of risks to the project, or the Mineral Resource or Mineral Reserve estimates. Unlike the technical report, the issuer's other disclosures to investors are done on a timely basis.

The section 3.4(d) requirements regarding "*legal, political, environmental… risks"* are in areas that are not within the purview of a Qualified Person. Indeed, these discipline areas are identified in Item 3 of the Form as areas that the Qualified Person can rely on, and claim a limited disclaimer of responsibility for. Disclosure of these risks in disclosure documents other than to meet the requirements within a technical report should be viewed as the responsibility of the issuer, not that of the individual Qualified Person.

The same comment can be made on the Form, where "*Items 14(d) and 15(d) of the Form require the qualified person to provide a general discussion"…*[on] *"any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors".* These are factors that are in areas that are not within the purview of a Qualified Person, and the Form allows the Qualified Person to rely on others for these statements.

In addition, the section 3.4(d) requirements entail a materiality assessment. Materiality requires an understanding of what information influences an investor's decision to trade shares in a particular issuer. It is unreasonable to expect Qualified Persons to have sufficient knowledge of the investor profile of a particular issuer, and what would motivate an investor to trade shares in that issuer. Management of the issuer is in the best position to make that assessment what motivates their particular investors.

There may be no specific risks known to the Qualified Person that meet a materiality threshold in the view of the Qualified Person. There may well be a number of general risks, and these are typically identified. Those risks are likely to be applicable to many deposit types and study stages.

Section 3.4(d) applies to all disclosure of Mineral Resource and Mineral Reserve estimates, not simply to disclosure of those estimates in a technical report. If the issuer is following this rule requirement, the issuer provides the investor with multiple instances of disclosure documents on a timely basis that address the risks to the estimates. These disclosures support and augment the summarized disclosure in the technical report, and should be viewed by CSA staff as mitigating "potentially misleading disclosure" regarding the risks set out in the technical report.

The requirement for a general discussion does not require specificity. The CSA staff's assertion that "*failure to set out meaningful known risks specific to the mineral project make mineral resource and mineral reserve disclosure potentially misleading*" explicitly contradicts the requirement for general discussion in the Rule.

Many technical reports only provide general disclosure about potential risks and uncertainties, simply because that is all that is known for that project stage. Many projects, even though they are for different commodities and different deposit types, also face exactly the same risks. Just because those risks may apply to all resource estimates doesn't mean that they are not real risks or uncertainties. Changes to commodity price assumptions used in the mineable shapes can as readily affect a gold estimate as a coal estimate. Changes to the inputs to the mineable shapes, such as application of a different mining method or different pit slope angles are as major a change to a uranium estimate as to a lithium pegmatite estimate.

A further point I want to emphasize is that just because a study is based on more detailed information does not necessarily mean that the risks facing the project have changed. Nor does completion of a particular project evaluation stage necessarily result in identification of any more specific risks than an earlier study stage.

In my opinion, the CSA staff needs to move away from requiring *"project specific risk disclosure for mining projects and estimation of mineral resources and mineral reserves"*. Projects are not linear. Risks are not always resolved through further study. In fact, some risks are not apparent at the time of decision making. The best industry can do is identify known unknowns, and these are, by nature, general statements at

best. Forecasting is an imprecise science, and forward-looking information such as risk identification is a type of forward-looking information forecast.

I also take issue with the CSA staff's focus on risks and uncertainties. Uncertainties are not necessarily intrinsically bad. The expectation of general discussions should not be assumed to only be a downside. There has to be an understanding that some uncertainties are actually opportunities that could be realized. In fact, risks for one issuer can be an opportunity for a different issuer. Disclosure should also be balanced; issuers should be requested to also provide upside as well as the downside.

I do not agree that the CSA staff need to revise NI 43-101 to require additional prescriptive risk disclosure. The current text regarding risk disclosure requirements within the Rule and the Form are adequate. In particular, the Item 25 content:

> *"Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes"*

explicitly requires the Qualified Persons to provide discussion around risks and uncertainties. If this requirement is not being met in technical reports the CSA staff are reviewing the answer is not more prescriptive requirements, it's education of the industry generally, and issuers and Qualified Persons in particular, that this is a significant content requirement that must be addressed.

Subsection I: Environmental and Social Disclosure

In recent years, CSA staff have seen an increase in public and investor awareness of environmental and social issues impacting mineral projects. Item 4: Property Description and Location and Item 20: Environmental Studies, Permitting and Social or Community Impact of the Form allow for disclosure of relevant environmental and social risk factors for the mineral project.

However, these disclosure requirements related to environmental and social issues have remained largely unchanged since NI 43-101 was adopted in 2001.

Response:

Information on environmental and social disclosure to the general public, not just investors in a particular issuer, are governed by other regulations that have specific content requirements, study types, and formats that must be addressed. NI 43-101 recognizes that issuers have other reporting obligations outside NI 43-101, when discussing what disclosure does and does not include:

> *"Disclosure…does not include written disclosure that is made available to the public only by reason of having been filed with a government or agency*

of government pursuant to a requirement of law other than securities legislation".

The technical report is no substitute for the detail that most governmental departments now require across most jurisdictions. Environmental impact assessments (EIAs) or similar study types, and their specialist supporting baseline studies, routinely fill dozens of volumes of information and interpretation. Companies commonly make these available on their websites, and many jurisdictions require the assessments to be filed as publicly-available documents on a government website. EIAs and similar study types must be seen to be the separate study set that they are, and understood to be not normally conducted as part of the mining study, although portions may be conducted in parallel with the mining study. Industry experience is typically that the mining study is completed first, and the results of the EIA feed back into later updates to the mining study. This is an expected progression because each supporting study of an EIA may trigger additional study requirements, and each step within the social consultation process may require further research or additional consultation steps, or additional studies.

I question the CSA staff premise that an investor solely relies on the information provided in the technical report for environmental and social information on a mineral project. A technical report is not the exclusive repository of all environmental and social information on a mineral project. Summarizing a massive EIA document with multiple authors covering multiple disciplines into the technical report requires significant interpretational and judgement calls by environmental and social experts, and by the Qualified Persons relying on that information. Claiming that this summarized information, in a few brief pages, is the only source of project evaluation by an investor is simplistic at best.

It is not a failing that "*disclosure requirements related to environmental and social issues have remained largely unchanged since NI 43-101 was adopted in 2001"*; the issues themselves have not changed for the industry. Every single mining project must pass scrutiny by regulators other than the CSA staff, and the court of public opinion as evidenced by stakeholder consultation programs and completion of project-specific environmental baseline and social studies. Whether in 2001 or 2022, disclosure of social and environmental information should still follow the same transparency principles. The fact that the disclosure requirements have not changed should be viewed that this is one area where principles-based, outcomes-based regulation is working. More restrictive and prescriptive requirements are not needed. Inserting such requirements into NI 43-101 obfuscates the point of the Rule, which is to administer disclosure of material scientific and technical information to a reasonable investor.

I also note that environmental and social information are not typically within the purview of a Qualified Person. These data types are collected by, and interpreted by experts, but experts who generally do not meet the narrow definition of a Qualified

Person in NI 43-101. By their nature, many matters relating to environmental, social and governance (ESG) deal with judgment and interpretation. Nor are the judgments and interpretations of experts in the ESG sphere necessarily clear-cut; they must deal with shades of grey because their basis is opinion. Early studies often deal with assumptions that are not yet supported by data collection from baseline studies, or consultation. Other studies are based on information collected but prior to full presentation of all information resulting from the mining study to public consultation.

Even specialists have difficulty with explanations and representations as to what was selected to be critical areas for baseline studies, or what was conducted in terms of social consultation and stakeholder identification. Requiring a Qualified Person to opine on risks in a discipline area where the Qualified Person is not an expert, and where such risks are the matter of expert opinion, is not optimal for understanding potential project risks and opportunities or fair to the Qualified Person. The correct source of such opinions are the issuer and its management, and the discipline experts they have retained who understand the context and impacts of disclosure on matters social and environmental.

A further concern is best illustrated by an analogy to taxation. When preparing a financial analysis on a mining project, the Qualified Person does not represent that they have complete mastery of a particular set of taxation codes. The Qualified Person and the issuer have an appropriate expert provide an opinion on which taxes are applicable to the project, and those taxes are used to show the economic outcomes. In the same manner as there are specific experts in taxation matters, the ESG spheres should be understood to be very complex discipline areas, with their own experts. These experts are the best source of information on their areas of expertise and should be seen to be the most appropriate authority on matters ESG, not the Qualified Person.

Technical reports are not a good repository for details on social and environmental information as technical reports are designed to be snapshot in time overviews of a project at a milestone reporting event. Assumptions based on environmental and social information in the technical report are forward-looking statements, and as such, should be clearly understood to be subject to change. Technical reports cannot provide the level of detail that is needed to inform investors of real-time and ongoing negotiations, discussions, and changes as the technical reports are only current as at their effective date, and can remain current for a number of years. Detailed disclosure on social and environmental information, and ongoing updates to the same, should be provided to the investor by the issuer, using avenues available through the issuer's continuous disclosure obligations, supplemented by information provided through social media, and the issuer's website.

I agree that the Qualified Person should provide a summary of the process that was undertaken when collecting ESG information, and what will be undertaken to navigate the permitting process. This information should be prepared by the relevant experts, with the Qualified Person able to rely on those experts. However, when it comes to

forecasting the ability to obtain permits, what timeframes will be needed to obtain the permits, and what conditions may be attached to permits as a result of environmental or social considerations, this judgement call should be left to the experts in those discipline areas. My concern is that CSA staff are requiring Qualified Persons to opine on complex and dynamic matters that are outside the purview of the Qualified Person, and then are critical when a Qualified person, in the CSA staff's view, does not get it "right".

A final note is that there is a constant assumption of risk running through many of the preambles and questions in this consultation paper. This negative viewpoint is not necessarily shared by industry. It needs to be remembered that one company's risk is another's opportunity. An early player in a new jurisdiction does run risks, but if the ESG sphere is handled well, and the deposit really can support a profitable mining operation, being an early player can also be a massive opportunity to the issuer.

Question I28

Do you think the current environmental disclosure requirements under Items 4 and 20 of the Form are adequate to allow investors to make informed investment decisions? Why or why not?

Response:

I question the premise that an investor will use the information in a technical report alone regarding environmental disclosure as the basis for an investment decision.

A technical report is not the sole repository of all environmental information on a mineral project. Investors are well aware of other sources of information regarding environmental aspects, and typically are very familiar with EIAs and similar documents required under regulations other than NI 43-101. If there is a concern with an environmental aspect, it is to these studies that the investor typically turns, not the technical report.

Qualified Persons are not typically experts in environmental matters. The Qualified Persons must rely on experts in that field, and on the professional judgement and interpretation of environmental matters by those experts. It is critical in my view that opinions, judgements and pronunciations on environmental matters be made by experts in their discipline areas. The technical report prepared using NI 43-101 should not be represented as the only information source on a mineral project. Better, more detailed, and most importantly, more current, information prepared under regulations other than NI 43-101 is likely to be available on environmental studies on other governmental websites and the issuer's own website. It will also be available in other filings by the issuer, including investor presentations, MDA, AIF and news releases.

I also note that ESG matters often deal with judgment and interpretation, those matters are not directly equivalent to the scientific and technical information used by Qualified Persons for other areas of mining project evaluation.

A confounding factor is that communities and local stakeholders typically have differing responses to exploration activities than they do to mine development activities. Many are aware that most exploration activities do not result in mine development, so allowing exploration-stage work can be beneficial to the community, since it can bring in income with little chance of major community disruption. However, that toleration may change significantly if economic mineralization is discovered, and a mining operation is more likely than not.

Community relations are dynamic. Relationships can change for a project not because of any activity by the issuer or its staff, but because of changes to community leadership, or political influence unrelated to the project development. A Qualified Person cannot be expected to provide an opinion in a technical report on such matters that will stand the test of time.

I do not consider that the requirements under Items 4 and 20 require revision and do not consider that the CSA staff devising more prescriptive requirements in these areas will somehow convert a technical report to being the sole document used for an investment decision. Nor do I see that any revisions made by the CSA staff to Items 4 and 20 will necessarily benefit the investor. Technical reports are not a good repository for social and environmental information as they are designed as snapshot in time overviews of a project at a milestone reporting event. They cannot provide the level of detail that is needed to inform investors of real-time and ongoing negotiations, discussions, and changes as they are only current as at their effective date, and can remain current for a number of years. Current disclosure on social and environmental information is an issuer obligation, using avenues available through its continuous disclosure obligations, supplemented by information provided through social media, and its website.

In addition, it is very unlikely that such revisions will benefit the industry as the expected prescriptive nature of CSA staff requirements will increase the time, paperwork and expense burden of technical report compilation on the industry.

I also consider that the current text regarding risk disclosure requirements within the Rule and the Form are adequate. In particular, the Item 25 content:

> *"Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes"*

explicitly requires the Qualified Persons to provide discussion around risks and uncertainties. If this requirement is not being adequately addressed in technical reports the CSA staff are reviewing, the answer is not more prescriptive requirements, it's education that this is a significant content requirement that must be addressed, and is not being well addressed.

A further concern is best illustrated by an analogy to taxation. When preparing a financial analysis on a mining project, the Qualified Person does not represent that they have complete mastery of a particular set of taxation codes. The Qualified Person and the issuer have an appropriate expert provide an opinion on which taxes are applicable to the project, and those taxes are used to show the economic outcomes. In the same manner as there are specific experts in taxation matters, the ESG spheres should be understood to be very complex discipline areas, with their own experts. These experts are the best source of information on their areas of expertise and should be seen to be the most appropriate authority on matters ESG, not the Qualified Person.

Question I29

Do you think the current social disclosure requirements under Items 4 and 20 of the Form are adequate to allow investors to make informed investment decisions? Why or why not?

Response:

I question the premise that an investor will use the information in a technical report alone regarding social disclosure for an investment decision.

A technical report is not the sole repository of all social information on a mineral project. Investors are well aware of other sources of information regarding environmental aspects, and typically are very familiar with EIAs and similar documents required under regulations other than NI 43-101. If there is a concern with a social aspect, it is to these studies that the investor turns, not the technical report.

More than any other area of disclosure, the social discipline is subject to shades of grey and interpretational differences, and is a moving target. Negotiations concluded with groups may reflect a majority view, but not individual views, which can cause animosity. The negotiations may reflect political realities, not local realities, such as differences in consultation between traditional leaders versus elected leaders. Stakeholders may have agendas that have an end-goal that has nothing to do with the mining project, but approval of (or opposition to) the project is seen to be a stepping-stone to obtaining that agenda. Many consultation processes are government funded, whereas the issuer has to self-fund its consultation attempts. This can lead to frustration and misalignment between those consulted with and those doing the consultation.

A regulatory rule that is in effect requiring an issuer to make statements of negotiation success or failure is a poor outcome. It either requires the issuer to claim a positive result before this is truly negotiated, or it requires the issuer to further muddy the waters by identifying social groups that opposed to some or all of the project area. Such disclosure requirements are more likely to solidify positions than allow the issuer to continue negotiations.

Consultation and negotiation can also be extremely sensitive, particularly before any agreement is finalized. The Qualified Person should not be required to provide opinions and interpretations on the expected results of a process that is in play, as that can, and has, been seen as evidence of poor faith that the consultation process undertaken by the issuer lacks substance.

Qualified Persons are not typically experts in social matters. The Qualified Persons must rely on experts in that field, and on the professional judgement and interpretation of environmental matters by those experts. It is critical in my view that opinions, judgements and pronunciations on social matters be made by experts in their discipline areas. The technical report prepared using NI 43-101 should not be represented as the only information source on a mineral project. Better, more detailed, and most importantly, current, information prepared under regulations other than NI 43-101 is likely to be available on social consultations and associated studies on other governmental websites and the issuer's own website.

I also note that ESG primarily deals with judgment and interpretation, those matters are not directly equivalent to the scientific and technical information used by Qualified Persons for other areas of mining project evaluation.

I do not consider that the requirements under Items 4 and 20 require revision and do not consider that the CSA staff devising more prescriptive requirements in these areas will somehow convert a technical report to being the magic sole document used for an investment decision. Technical reports are not a good repository for social and environmental information as they are designed as snapshot in time overviews of a project at a milestone reporting event. They cannot provide the level of detail that is needed to inform investors of real-time and ongoing negotiations, discussions, and changes as they are only current as at their effective date, and can remain current for a number of years. Current disclosure on social and environmental information is an issuer obligation, using avenues available through its continuous disclosure obligations, supplemented by information provided through social media, and its website.

It is very unlikely that such revisions will benefit the industry as the expected prescriptive nature of CSA staff requirements will increase the time, paperwork and expense burden of technical report compilation on the industry.

The current text regarding risk disclosure requirements within the Rule and the Form are adequate. In particular, the Item 25 content:

> *"Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes"*

explicitly requires the Qualified Persons to provide discussion around risks and uncertainties. If this requirement is not being adequately addressed in technical reports the CSA staff are reviewing, the answer is not more prescriptive requirements, it's education that this is a significant content requirement that must be addressed, and is not being well addressed.

Question I30

Should disclosure of community consultations be required in all stages of technical reports, including reports for early stage exploration properties?

Response:

This response is difficult to formulate without a clear understanding of what the CSA envisages "*disclosure of community consultations*" to encompass.

I am concerned that the CSA staff believe that a simple tallying of the number of consultations with a community is directly reflective of a true and honest consultation process resulting in free and informed consent by a set of stakeholders. Meaningful social consultation is not simply a numbers game.

I am also concerned that there is no understanding within the CSA staff commentary here that community consultation, in fact any social consultation, consists of constructing a delicate, fragile network of understanding and mutual obligations between communities and issuers, where both parties have to be able to express interests, frustrations, and concerns, and negotiate to a point where all parties are, if not completely satisfied, at least able to agree to work together under a mutually-agreed upon set of objectives and frameworks for achieving the objectives. Requiring disclosure of consultations as part of a securities rule could prejudice this process, as CSA staff thinking in Questions I28 and I29 appears to be leaning toward requiring that opinions be provided on matters which are nowhere near a point at which an opinion is warranted.

A regulatory rule that is in effect requiring an issuer to make statements of negotiation success or failure is a poor outcome. It either requires the issuer to claim a positive result before this is truly negotiated, or it requires the issuer to further muddy the waters by identifying social groups that opposed to some or all of the project area. Such disclosure requirements are more likely to solidify positions than allow the issuer to continue negotiations.

For early-stage exploration projects and those projects that only have a mineral resource estimate, I do not see that Item 4 of the Form requires revision to explicitly require details of community consultation. Any risks as a result of community views are already captured under the 4(h) requirements:

> *"(h) to the extent known, any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property".*

Item 20 is applicable to all development stage properties, and already requires:

> *"a discussion of any potential social or community related requirements and plans for the project and the status of any negotiations or agreements with local communities".*

Item 25 also requires:

> *"Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes".*

Item 25 explicitly requires the Qualified Persons to provide discussion around risks and uncertainties. If this requirement is not being adequately addressed in technical reports the CSA staff are reviewing, the answer is not more prescriptive requirements, it's education that this is a significant content requirement that must be addressed, and is not being well addressed and education to show issuers and Qualified Persons what the CSA staff expectations are.

I do not consider that a prescriptive requirement within the Form to address community consultation is needed.

Subsection J: Rights of Indigenous Peoples

We recognize Indigenous Peoples to include First Nations, Inuit and Métis Peoples in Canada. We also recognize that issuers have projects in jurisdictions outside of Canada, and those jurisdictions will have Indigenous Peoples.

The unique legal status of Indigenous Peoples has received national and international recognition. For many projects, the rights of Indigenous Peoples overlap with legal tenure, property rights and governance issues. We believe that disclosure of these rights, and the Indigenous Peoples that hold them, forms an essential part of an issuer's continuous disclosure obligations.

Item 4 of the Form requires disclosure of the nature and extent of surface rights, legal access, the obligations that must be met to retain the property, and a discussion of any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property. We are interested in hearing whether other disclosures should be included in the Form, or the issuer's other continuous disclosure documents, that relate to the relationship of the issuer with Indigenous Peoples whose traditional territories underlie the property.

Response:

NI 43-101 does require Qualified Persons to comment on *"legal tenure, property rights and governance issues".* However, all of these areas are outside the purview of the Qualified Person. Qualified Persons are not typically experts in any of these three areas. Currently, Qualified Persons must rely on experts in those fields, and on the

professional judgement and interpretation of legal tenure, property rights and governance issues provided by those experts. It is critical in my view that opinions, judgements and pronunciations on such matters be made by experts in their discipline areas.

Any commentary on assumptions based on environmental and social information in the technical report consists of forward-looking statements, and as such, should be clearly understood to be subject to change. However, I do not think the CSA staff should be considering a requirement for Qualified Persons to provide an forecast opinion on the matters that are clearly outside their discipline areas. A Qualified Person can state what process an issuer has in place, or plans to implement, and identify the stakeholders that the issuer is engaging with, or plans to engage with. However, the Qualified Person should not be forced into providing an opinion on the current status or likely success of such plans and processes.

In my responses to Question J31, J32, and J33, I make it clear that I do not consider that the Form needs to be amended or revised to specifically accommodate disclosure relating to Indigenous Peoples.

Question J31

What specific disclosures should be mandatory in a technical report in order for investors to fully understand and appreciate the risks and uncertainties that arise as a result of the rights of Indigenous Peoples with respect to a mineral project?

Response:

It is an unattainable goal to expect that a Qualified Person in a technical report disclosure can ever provide sufficient information such that the aspirational criteria of "*fully understand and appreciate the risks and uncertainties"* can be met. What is presented in a technical report on the rights of Indigenous Peoples is a snapshot in time view, is based on opinions and interpretation of experts in those fields, and is therefore imperfect. To ever claim that any technical report can present a full understanding and appreciation is to set an unachievable, and unenforceable standard. Worse, by assuming that this is achievable, the outcome is more likely to be a misled investor than one with a grasp of where the known unknowns lie in terms of the rights of Indigenous Peoples.

Prescriptive disclosure requirements will never be able to address the complexity surrounding project evaluation and development in areas of the rights of Indigenous Peoples. Nor will such requirements be able to address each individual circumstance across a wide variety of deposit types, mining and process methods, and infrastructure types and locations. Rights of Indigenous Peoples may be well understood in certain contexts, and are increasingly covered by at least drafts of rights documents. For example, it may be clear as to what consultation and rights are expected in the context of an early-stage exploration play, where no destructive testing is planned. It may also

be reasonably understood as to what consultation and rights are expected in the context of initial destructive testing. Work programs beyond that, however, may well require concerted and dedicated consultation and negotiation, which may be in the preliminary stages, or not yet have commenced.

As with my response to Question I30, I am concerned that there is no understanding within the CSA staff commentary provided in this subsection that social consultation, including consultation with Indigenous Peoples, consists of constructing a delicate, fragile network of understanding and mutual obligations between communities and issuers, where both parties have to be able to express interests, frustrations, and concerns, and negotiate to a point where all parties are, if not completely satisfied, at least able to agree to work together under a mutually-agreed upon set of objectives and frameworks for achieving the objectives. Technical reports are not a good repository for social and information as they are designed as snapshot in time overviews of a project at a milestone reporting event. They cannot provide the level of detail that is needed to inform investors of real-time and ongoing negotiations, discussions, and changes as they are only current as at their effective date, and can remain current for a number of years. Current disclosure on social information is an issuer obligation, using avenues available through its continuous disclosure obligations, supplemented by information provided through social media, and its website. Discussion of the rights of Indigenous Peoples falls within the same parameters, that maintaining updated and current disclosure on social information is an issuer obligation.

I also note that information on the rights of Indigenous Peoples is not typically within the purview of a Qualified Person. These data types are collected by, and interpreted by experts, but experts who generally do not meet the narrow definition of a Qualified Person in NI 43-101. By their nature, matters relating to Indigenous Peoples fall within ESG sphere, and focus on judgment and interpretation. They are not on the same basis as the scientific and technical information used by Qualified Persons for other areas of mining project evaluation.

I do not agree with the apparent premise that the CSA staff present in this consultation paper, that any interaction with Indigenous Peoples is automatically negative, with only risks and uncertainties as potential outcomes. This level of pessimism may reflect the CSA staff's view of the issuers they seek to regulate, but is not reflective of current industry approaches to discussions with Indigenous Peoples. There have been, and continue to be, examples of successful partnerships between industry and Indigenous Peoples.

Lastly, Indigenous Peoples are an important part of project considerations, but they should not be presented as a problem that needs specific disclosure requirements in a technical report.

Discussion of the rights of Indigenous Peoples is already covered by the principles-based disclosure required under Item 4(d), Item 4(e), and Item 4(g) for all mineral projects:

> *(d) the nature and extent of the issuer's title to, or interest in, the property including surface rights, legal access, the obligations that must be met to retain the property, and the expiration date of claims, licences or other property tenure rights;*
>
> *(e) to the extent known, the terms of any royalties, back-in rights, payments, or other agreements and encumbrances to which the property is subject;*
>
> *(g) to the extent known, the permits that must be acquired to conduct the work proposed for the property, and if the permits have been obtained;*

Item 4(h) already requires the Qualified Person to comment on risks to project title.

> *(h) to the extent known, any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.*

Item 20 requires that the Qualified Person provides:

> *(d) a discussion of any potential social or community related requirements and plans for the project and the status of any negotiations or agreements with local communities.*

Item 25 expects the Qualified Person to:

> *Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes.*

In my view, these principles-based requirements for disclosure within Items 4, 20, and 25 of the Form require discussion from the Qualified Persons that includes the rights of Indigenous Peoples where applicable, the currency of the surface rights if the land is subject to a claim or administered by Indigenous Peoples, any agreements reached with Indigenous Peoples, and the status of an agreements with, or negotiations with, Indigenous Peoples.

Item 25 specifically requires a risk commentary. I would prefer that Item 25 be reworded to also request that the Qualified Person comment on opportunities, such that disclosures are balanced, rather than only risk-focused.

Question J32

What specific disclosures should be mandatory in a technical report in order for investors to fully understand and appreciate all significant risks and uncertainties related to the relationship of the issuer with any Indigenous Peoples on whose traditional territory the mineral project lies?

Response:

As with my response to Question J31, "*fully understand and appreciate*" is an unrealistic objective to require of a Qualified Person. What is presented in a technical report on the issuer's relationship with Indigenous Peoples is a snapshot in time view, is based on opinions and interpretation, and is therefore imperfect. To ever claim that any technical report can present a full understanding and appreciation is to set an unachievable, and unenforceable standard. Worse, by assuming that this is achievable, the outcome is more likely to be a misled investor than one with a grasp of where the known unknowns lie in terms of the issuer's interactions with, and consultation of, Indigenous Peoples.

Prescriptive disclosure requirements will never be able to address the complexity surrounding project evaluation and development in areas where Indigenous Peoples and issuers need constant open communication. Nor will such requirements be able to address each individual circumstance across a wide variety of deposit types, mining and process methods, and infrastructure types and locations.

I am repeating a portion of my response to Question J31, as it is also relevant to Question J32. I note that information on the issuers' relationship with Indigenous Peoples is not typically within the purview of a Qualified Person, as the term "Qualified Person" is currently defined. By their nature, matters relating to consultation with Indigenous Peoples fall within ESG sphere, and focus on judgment and interpretation. They are not on the same basis as the scientific and technical information used by Qualified Persons for other areas of mining project evaluation. These data types are collected by, and interpreted by experts, but experts who generally do not meet the narrow definition of a Qualified Person in NI 43-101.

I do not agree with the premise that the CSA staff present in this consultation paper, that any interaction with Indigenous Peoples is automatically negative, with only risks and uncertainties as potential outcomes. This level of pessimism may reflect the CSA staff's view of the issuers they seek to regulate, but is not reflective of current industry approaches to discussions with Indigenous Peoples.

Lastly, Indigenous Peoples are an important part of project considerations, but they should not be presented as a problem, let alone a problem that needs specific disclosure requirements in a technical report.

Discussion consultation with Indigenous Peoples is already covered by the principles-based disclosure required under Item 4(d) Item 4(e), and Item 4(g) for all mineral projects:

> *(d) the nature and extent of the issuer's title to, or interest in, the property including surface rights, legal access, the obligations that must be met to retain the property, and the expiration date of claims, licences or other property tenure rights;*
>
> *(e) to the extent known, the terms of any royalties, back-in rights, payments, or other agreements and encumbrances to which the property is subject;*
>
> *(g) to the extent known, the permits that must be acquired to conduct the work proposed for the property, and if the permits have been obtained;*

Item 4(h) already requires the Qualified Person to comment on risks to project title.

> (h) to the extent known, any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

Item 20 requires that the Qualified Person provides:

> *(d) a discussion of any potential social or community related requirements and plans for the project and the status of any negotiations or agreements with local communities.*

Item 25 expects the Qualified Person to:

> *Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes.*

In my view, these principles-based requirements for disclosure within Items 4, 20, and 25 of the Form require discussion from the Qualified Persons that includes the rights of Indigenous Peoples where applicable, the currency of the surface rights if the land is subject to a claim or administered by Indigenous Peoples, any agreements reached with Indigenous Peoples, and the status of an agreements with, or negotiations with, Indigenous Peoples.

Item 25 specifically requires a risk commentary. I would prefer that Item 25 be reworded to also request that the Qualified Person comment on opportunities, such that disclosures are balanced, rather than only risk-focused.

Question J33

Should we require the qualified person or other expert to validate the issuer's disclosure of significant risks and uncertainties related to its existing relationship with Indigenous Peoples with respect to a project? If so, how can a qualified person or other expert independently verify this information? Please explain.

Response:

The framing of this question represents a basic misunderstanding of what social licence and consultation comprises. The discipline is necessarily based on opinions and interpretations. Data can be verified, opinions and interpretations cannot. A Qualified Person should never be required to validate relationships between an issuer and Indigenous Peoples.

Validation is a concept that normally assumes a parallel check on the information and interpretations, to come up with a similar result. An example in the Mineral Resource estimation sphere is to use a different interpolation method to check the outcomes of the preferred interpolation, such as a nearest-neighbour versus ordinary kriging estimate. Assuming my interpretation of validation is what the CSA staff are envisaging, I am at a loss as to how a Qualified Person would perform a parallel check on an "*issuer's disclosure of significant risks and uncertainties related to its existing relationship with Indigenous Peoples with respect to a project"*.

Which of the issuer's disclosure documents is the Qualified Person expected to validate? I find it ironic that the CSA staff second guess Qualified Persons' judgment on what are acceptable practices in their discipline areas, but here are creating unreasonable expectations of what a Qualified Person is capable of when the matter is outside their discipline area.

I note that information on the issuers' relationship with Indigenous Peoples is not typically within the purview of a Qualified Person. By their nature, matters relating to consultation with Indigenous Peoples fall within ESG sphere, and focus on judgment and interpretation. They are not on the same basis as the scientific and technical information used by Qualified Persons for other areas of mining project evaluation. These data types are collected by, and interpreted by experts, but experts who generally do not meet the narrow definition of a Qualified Person in NI 43-101. Qualified Persons cannot verify information that is outside their relevant area of expertise, nor can they verify opinions and interpretations.

I take exception to Indigenous Peoples automatically being assumed to be a problem, and classified as a risk or uncertainty. Indigenous Peoples are an important part of project considerations, but no Indigenous Peoples should be presented as a problem that needs specific disclosure requirements in a technical report.

In terms of the point regarding "*independent verification*", I refer to my response to Question B7. In the case of the environmental, social and permitting disciplines, I find the environmental areas maintain generally reasonable databases of studies completed, in either digital or physical form, and have strict protocols that are followed to collect the data supporting the studies. Environmental monitoring results and actions are typically stored and monitored using databases or spreadsheets. Permitting is tracked typically using spreadsheets, though databases are becoming more common. However, QA/QC and data verification as used in the geological disciplines are not part of the data process. Indeed, in some areas, such as social, it is hard to see how opinion surveys could be subject to QA/QC and data verification; following protocols that are specifically tailored to that project, project location, and commodity type, is likely the best that can be done. Nor do any of these areas other than environmental monitoring commonly collect point data based on destructive testing that can be readily twinned or duplicated in the same manner as do the geological, metallurgical, hydrological and geotechnical disciplines.

A second issue with the environmental, social and permitting disciplines is that in many jurisdictions, the learned societies and professional associations are only now grappling with drafting guidelines on ESG matters, Canada included. When industry does not yet have a broad consensus and there are no formally-established industry consensus guidelines for the industry to follow (although individual companies may have draft or early consultation versions of these under development), it is not a simple matter for a Qualified Person to be sure that what is being disclosed is balanced. A further concern of mine is that not a single draft ESG guideline I have reviewed contemplates what QA/QC or data verification within their sphere should consist of.

If data verification requirements are to be broadened, as CSA staff appear to be saying they are envisaging in this question, then there has to be an understanding that for many discipline areas, QA/QC and appropriate data verification steps are a work in progress; there is not yet industry consensus on what needs to be conducted as a minimum for many of the discipline areas that are summarized into a technical report. The Qualified Person's judgement call is going to be the best available information, and there may actually not be any QA/QC and appropriate data verification steps the Qualified Person can perform, depending on the discipline area.

Subsection K: Capital and Operating Costs, Economic Analysis

Capital and operating costs assumptions are integral to the financial and economic analysis of mineral projects. We see longstanding evidence, including industry-based case studies, of significant variance between disclosed cost estimates in technical reports and actual costs as projects are developed. This variance can have negative impacts on investors who rely on financial disclosure in technical reports.

Response:

I am concerned when a consultation paper states that there is long-standing evidence for something but does not provide examples of the types of issues that are being identified together with the reasons as to why that example is considered to be problematic. It would have been very helpful in formulating my responses if examples had been provided by CSA staff to review, of their issues with capital and operating cost estimates. This is a common issue throughout the consultation paper. There are very strong claims being made as to what is poor industry practice, but there is no support for, or explanation of, the reasoning that the CSA staff think the issues are industry-wide and a major industry failing, or that such issues can be resolved in a technical report.

I disagree with the premise that because there are differences between a project as envisaged in a particular mining study and the project as it was finally built, that the mining study was necessarily flawed. It is common to see significant changes between the what-if analysis in various iterations of PEAs, to the selected options analyses performed during PFS, and the single option examined in iterations of FS reports. It is a totally unrealistic stance to expect that what is envisaged in the mining study is what is constructed. The AACE International (AACE) guidelines set out in their document 47R-11 *Cost Estimate Classification System - As Applied in Engineering, Procurement, and Construction for the Mining and Mineral Processing Industries* (AACE guidelines) clearly show that even when submitting contract bids (Class 2 estimate), the level of definition engineering completed can be as low as 35%, which is lower than the upper end of definition suggested in the AACE guidelines for FS (40%).

In my view, a major issue with the flawed-study premise remains the linear model that the CSA staff continually employ. Project development in the real world is not linear. PEAs do not automatically lead to a PFS. A PFS does not automatically lead to a FS, and an FS does not represent exactly what changes will be undertaken during detailed engineering or construction. For each study type, industry expects that there will be multiple iterations and updates. Even a FS is not final, such a study can be, and often is, updated and revised as well. Cost estimates have to be seen in the same context.

Each cost estimate is reflective of the available information, and the premises used in the mining study that the cost estimate is being performed for.

Cost estimate accuracies must be seen as reflective of the assumptions described in the technical report. They are a snapshot in time, based on imperfect data, and judgement calls. Examples include:

- Additional drilling has located more mineralization that has the potential to extend the mine life. This is included in the next study update, and as there is more tonnage, more grade, the mine life is potentially longer, and capital and operating costs both increase. The original study was not incorrect, the updated study uses different assumptions;
- The selected location of TSF is found to be non-optimal, either because the site has previously unrecognized ground condition issues, or it will not store the relevant amounts of tailings expected in a longer-life operation. A new site is selected. The original study was not incorrect, the updated study uses different assumptions.

In my experience, the biggest known unknowns with any capital cost estimate are the civils and infrastructure areas. For example:

- Selected site locations for major infrastructure move around between studies, and even during a study. This could arise during consultation and permitting when certain sites found to be not acceptable on social/environmental grounds. Or it could arise because a site does not have favourable geotechnical characteristics to allow the facility to be constructed;
- Civil engineering assumptions and designs, such as cut-and-fill assumptions are shown to be unworkable. For example, the fill material may not be suitable for use in the tailings embankment, the quality of rock is not acceptable for construction, or the amount needed is in excess of the borrow sources envisaged.

Such changes affect both the estimate accuracies and the contingency allocations. However, the risks are well known unknowns. As more information is made available on a project, the number of unknowns can be reduced. Again, the original study was not incorrect, the updated study uses different assumptions.

Are differences between study outcomes in themselves a risk? In my view, they are not. What is required is additional understanding by the CSA staff, that estimates have inherent assumptions that if not met, will change the estimate. I note that for many projects, cost estimation risks are not project specific. Many technical reports only provide general disclosure about potential risks and uncertainties, simply because that is all that is known for that project stage. Many projects also face exactly the same risks, even if they are evaluating different commodities and different deposit types. Just because those risks may apply to many projects doesn’t mean that they are not

real risks or uncertainties. Risk analysis for a project is an on-going process, and different study iterations will reflect the mitigation steps contemplated.

Changes in the final cost estimate between study iterations may also not be a negative. Newly-identified mineralization may support a much longer mine life, or a higher throughput rate, lowering individual unit operating costs from the smaller operation initially envisaged. Changing the mining concept to a staged development option may defer certain expenditures such that the operation can start at a lower throughput on higher-grade material and build up to a much larger mine at defined intervals, reducing up-front capital costs. Such changes can make a large difference to the issuer financing and constructing a project. Yet again, the original study was not incorrect, the updated study uses different assumptions.

CSA staff should also understand that costs change over time; no costs are static. Costs in one mining study will not be representative of the costs encountered during operations due to the time change between the original study and the operations. In some instances, it can be shown that the relative cost increases in one estimate have been largely mirrored by increases in commodity prices; however, the point remains that even for those instances, costs between studies change. Even in an operating mine, cost estimates change over time, due to changes in consumables etc.

The preamble continues with the CSA staff negative presuppositions, in this instance that all variances will be downward, which is not reasonable. For example, if there are indeed significant cost increases, but the overall net present value (NPV) is much better, and the study has significantly mitigated selected risks of concern to stakeholders, is the cost increase then of significant impact to investors?

I want to make it clear that investors have their own risk tolerances and own investment strategies. Whether changes in a cost estimate are viewed as negative, positive, or even neutral, is an individual investor call. Capital and operating costs are not the only criteria on which such investor judgements are made.

Question K34

Capital and operating costs

Are the current disclosure requirements for capital and operating costs estimates in Item 21 of the Form adequate? Why or why not?

Response:

The current requirements for Item 21 are actually one of the best of the Item content requirement set-outs, because they are so clearly principles based and are not prescriptive. The requirements can be used for any type of mining study, any operation, on any deposit.

Rules should not be made more prescriptive in terms of accuracy and contingency ranges on different study types or an unfortunate outcome will be studies that purport to meet those ranges, but cannot. I am expecting to see exactly this issue arise with some of the studies reported under the SK1300 study requirements. Even the looming US civil liability threat is unlikely to deter presentation of some studies that are stated to meet, but in actuality do not meet, the US definitions when it comes to the unrealistically narrow cost estimate accuracy ranges and low contingency allocations set out in SK1300. This will be partly due to the critical omission in SK1300 of the consideration of the probability of the estimate being within the accuracy and contingency range, see my later points on this topic in the answer to this question. Probabilities are a key component of estimation, but are already a glaring omission from this consultation paper, and therefore, the understanding that CSA staff have of the estimation process.

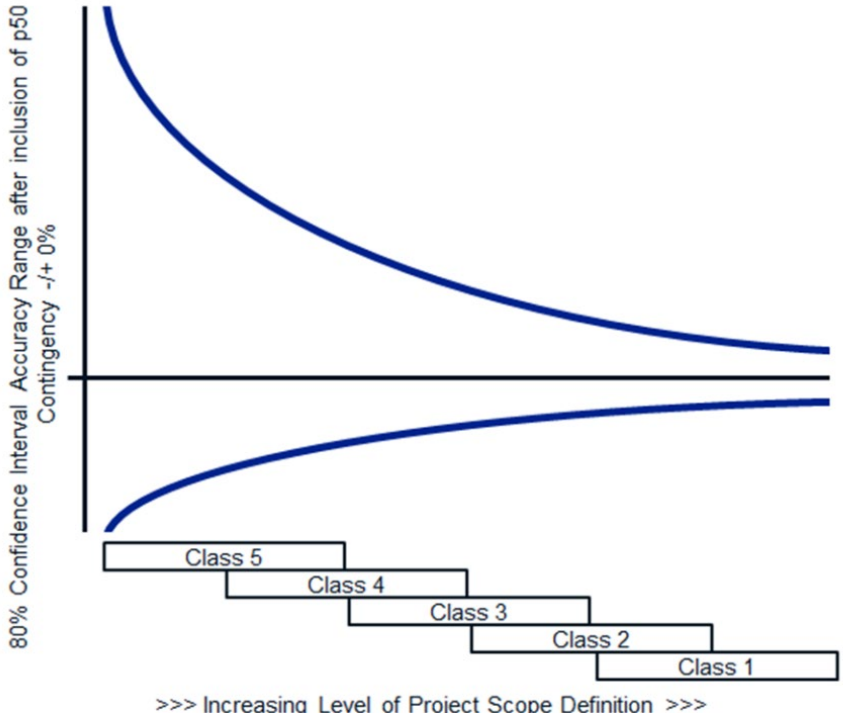
CSA staff need to bear in mind that not only is each study stage different, but the deposit type, mining method, process method, infrastructure requirements, jurisdictional legislation (e.g., environmental, social, closure, taxation, royalties, in-country processing, governmental ownership interest triggers) can lead to major variations in accuracy and contingency ranges, or both, between studies. Even the location of the project can result in variation, for example a brownfields conventional heap leach operation in Nevada will have a much better understanding of cost estimate accuracy and contingency than will a greenfields copper project in an area that lacks basic infrastructure.

Qualified Persons need to be allowed the flexibility to select the most appropriate accuracy and contingency range applicable to the project that is being reported on, and provide disclosure around the ranges selected. It is better for study types to have a range of accuracies and contingencies that are selected by the Qualified Person in discussion with the issuer, than for the CSA staff to impose artificial ranges that can't be met. Prescriptive requirements are no more likely to produce outcomes that meet the CSA staff linear thinking that estimated study cost outcomes should be the same as the actual costs incurred when constructing a mine.

I wish to also point out to the CSA staff that current industry practice is to provide ranges that fall within a particular probability. Often this is taken by industry as being a probability of the final capital costs being within a 50% probability (P50) of the estimate prepared for a as PEA, PFS or FS. For operating mines contemplating an expansion, the probability may be narrower; I have seen an 80% probability (P80) used for major expansions, and a 90% probability (P90) where limited capital expenditure is required. Often these probabilities are not reported in the technical report; however, they are a key component of what is used by the cost estimators when preparing a capital cost estimate.

I note that the AACE guideline does not just present a cost estimate accuracy range for certain study types, but includes the probability of a particular study type being

within that stated accuracy range. In the graph I have extracted from the AACE guideline to illustrate this point, (shown below) it is clear from the labelling on the Y-axis that probability is a major consideration for the estimate accuracies and contingencies contemplated. A P80 study has a 20% chance of being outside that range, a P50 study means a 50% chance of being outside the range. It takes significant project engineering and definition to achieve a P90 study.



Note: Source AACE 47R-11 Guideline, 2019.

If a study is outside the range, it does not necessarily mean that the estimate was wrong. By analogy, a metallurgist talking about the metallurgical recovery to a concentrate is not meaningful without an accompanying disclosure of the grade of the relevant metal in that concentrate. The recovery may be able to be increased, but that could come at the detriment of the concentrate grade. The study's accuracy range can be narrowed in the case of the cost estimate, but the likely consequence will be an increase in the likelihood of the estimate being outside the stated range. The only way to narrow the estimate accuracy range without decreasing the probability being within that range is to increase the project definition and engineering input. My point is that if the CSA staff enforce unreasonable estimate accuracies, the unintended real consequence will be having the actual costs outside that accuracy range.

The cost estimate range is not typically applied by the mining industry to each and every item in the estimate, nor is the contingency applied the same for each item. Industry does not, and never has, presented cost estimates as if each and every item has the same accuracy range and same contingency provision. Hence, again, the current principles-base disclosure is better than imposing prescriptive rules.

In my view, CSA staff should not be encouraging investors to think that some prescriptive estimate accuracy is bankable. There is a lack of recognition that there is a significant probability in all mining studies that certain key assumptions in the study will be outside the expected ranges. Statements used in previous questions, such as:

"adequate to allow investors to make informed investment decisions";

"fully understand and appreciate all significant risks and uncertainties".

contribute to creating unreasonable expectations around mining studies in general, and technical reports in particular. CSA staff should not be engendering expectations of perfection in an investor. In my view, both CSA staff and investors should be better informed about the uncertainties around mining studies, the capital and operating cost estimates, and predicted financial outcomes, and be better informed as to how and why studies evolve over time.

Question K35

Should the Form be more prescriptive with respect to the disclosure of the cost estimates, for example to require disclosure of the cost estimate classification system used, such as the classification system of the Association for the Advancement of Cost Engineering (AACE International)? Why or why not?

Response:

As I observe in Question K34, the current requirements for Item 21 are actually one of the best of the item content requirement set-outs, because they are so clearly principles based and are not prescriptive. The requirements can be used for any type of mining study, any operation, on any deposit.

Rules should not be made more prescriptive in terms of accuracy and contingency ranges on different study types or an unfortunate outcome will be studies that purport to meet those ranges, but cannot.

I do not agree that a "*cost estimate classification system*" is required to be disclosed. The AACE guidelines are an example of an estimation system that is commercially available, but not the only example. The SME Mining Engineering handbook provides another example of cost estimation guidelines that are much more restrictive than the AACE guidelines, as do website-available publications by some of the engineering consultancies. Many companies have internal criteria for study types such that certain internal hurdles must be met for a study to advance to the next stage. Internal

company documents are not public documents that could be called a "*cost estimate classification system*", but function in the same manner. In each case, however, I wish to clearly reiterate the word "guideline". All of the examples in this paragraph are guidelines, not rules. There is flexibility in most of these guidelines to allow for project exceptions and for the probability of achieving the expected result.

I also note that operating mines do not fit neatly into an AACE-type classification, which is restricted to study types. Operating mines generally have far better data available, based on real production and operating units. Again, if the current principles-based wording is retained, and a system such as AACE is not imposed as a requirement, there is not a disconnect for current operations providing information on their cost estimate accuracies and contingency ranges.

I further note that studies don't always narrow down in terms of contingency and accuracy ranges the way that AACE and SME shows them to. This is again an example of the linear development fallacy in study thinking. Studies do not automatically progress from one stage to another, nor does a more detailed study necessarily have reductions in accuracy and contingency ranges from an earlier study.

As I observe in the response to the preamble, CSA staff need to bear in mind that not only is each study stage different, but the deposit type, mining method, process method, infrastructure requirements, jurisdictional legislation (e.g., environmental, social, closure, taxation, royalties, in-country processing, governmental ownership interest triggers) can lead to major variations in accuracy and contingency ranges, or both, between studies. Even the location of the project can result in variation, for example a brownfields conventional heap leach operation in Nevada will have a much better understanding of cost estimate accuracy and contingency than will a greenfields copper project in an area that lacks basic infrastructure. Investors should never be led to a supposition that accuracies on a brownfields project are the same as those on a greenfields. There are many more known unknown costs in greenfield project development.

I also note that for many projects, cost estimation risks are not project specific. Many technical reports only provide general disclosure about potential risks and uncertainties, simply because that is all that is known for that project stage. Many projects also face exactly the same risks. Just because those risks may apply to many projects doesn't mean that they are not real risks or uncertainties.

Overall, I do not recommend any changes to the Form in relation to cost estimation requirements or the Form instructions.

However, if any improvement can be made to Item 21, it is to encourage, through Qualified Person and investor education, text to be included in the technical report around the probability expectations used when determining the estimate accuracy and contingency ranges.

Question K36

Is the disclosure requirement for risks specific to the capital and operating cost assumptions adequate? If not, how could it be improved?

Response:

Item 21 does not currently require risk statements. However, such statements are required in Item 15, where cost estimation would be considered as a relevant factor affecting the Mineral Reserve estimates:

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

They are also required in Item 25, where they would be considered to reasonably affect both the Mineral Reserve estimates and the projected economic outcomes of a project:

> *Discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates, or projected economic outcomes.*

I do not consider that more prescriptive requirements to discuss risks around cost estimates is required in Item 21. There are already two places in the Form where this discussion is required, and such disclosure should already be provided as part of a compliant technical report.

I also note that for many projects, cost estimation risks are not project specific. Many technical reports only provide general disclosure about potential risks and uncertainties, simply because that is all that is known for that project stage. Many projects also face exactly the same risks. Just because those risks may apply to many projects doesn't mean that they are not real risks or uncertainties.

Question K 37

Economic analysis

As stated above, a core principle of NI 43-101 is to require disclosure that will allow investors to be able to confidently compare the disclosure between different projects by the same or different issuers. Standardized disclosure is fundamental to this principle.

Are there better ways for Item 22 of the Form to require presentation of an economic analysis to facilitate this key requirement for the investing public? For example, should the Form require the disclosure of a range of standardized discount rates?

Response:

I disagree with the CSA staff assertion that an economic analysis is a "c*ore principle*" of NI 43-101, that "*standardized disclosure is fundamental to this principle*", and that an economic analysis is a "*key requirement*". None of a core principle, a fundamental of disclosure or a key element can apply when the Item 22 content provides a generous carve-out from compliance to selected issuers that meet a brightline economic test that is used to judge whether an issuer is allowed this exemption. Investors can never compare projects between those considered material by a producing issuer and those considered material by a junior because in the majority of instances, the producing issuer does not have to provide an economic analysis. The CSA staff claims as to comparability and core principals, key requirements and fundamental principles are false.

I also take exception to the wording "*confidently compare*". This is a very simplistic view taken by the CSA staff. Is the metric simply meant to be that an investor can compare the numbers cited as the project net present value, internal rate of return and mine life and that those three metrics are sufficient to provide a confident comparison between projects? CSA staff should not be assuming how an investor compares projects nor restricting the comparisons that may be made to a simplistic three-metric assessment. Those metrics are not confident comparisons, they are outcomes based on a series of assumptions and judgement calls that cannot be judged in isolation from a project background. What premises are effectively able to be compared outside the three metrics? CSA staff do not explain how different projects that have different geology, deposit types, economic minerals, physiography, climate, metallurgy, mining methods, extraction or processing methods, environmental, social and permitting obligations and constraints, taxation considerations, and discount rates based on jurisdictional risk perception amongst other differences are "*confidently compared*".

Different projects in different stages are also diverse, for example two PEAs, one on a project in a brownfields location, the second a greenfields project remote from established infrastructure are not really comparable because the inputs into the economic analysis on the brownfields location contain fewer known unknowns than the greenfields project.

This question is based on an incorrect premise on how technical reports are used by investors, and an incorrect assumption by CSA staff that technical reports are somehow accurate predictors of future events. The phrase "*confidently compare*" is not applicable to comparisons between mining projects or studies.

The current Form requirements to provide economic analyses on an annualized basis does not need revision or prescriptive requirements added.

I would like to see the CSA staff provide examples and a clear basis to support their position that CSA staff providing prescriptive discount rates is needed in the public interest and to maintain a credible capital market. I would also like to see commentary on how the selection of a particular discount rate resulted in an error, omission or

malfeasance. Given that a base case is required to be stated if a range of rates is presented, why is a range of discount rates now seen to be preferred disclosure over the single discount rate?

In my view, the selection of the most appropriate discount rate should remain the purview of the Qualified Person in discussion with the issuer. Discount rates that are prescriptive and applied to the industry as a whole run the risk of overstating the actual risk to projects in stable jurisdictions and minimizing the actual risk to projects in less stable jurisdictions.

Subsection L: Other

Question L38

Are there other disclosure requirements in NI 43-101 or the Form that we should consider removing or modifying because they do not assist investors in making decisions or serve to protect the integrity of the mining capital markets in Canada?

Response:

I was concerned when I read this question that the focus was narrowly on "*removing*" or "*modifying*" text within the Rule or Form. As a result, I have interpreted "*modifying*" to allow me to provide commentary on certain disclosure practices and suggestions for alternate practices. I do not agree that comments should only be restricted to the Rule and Form; the Companion Policy should not have been omitted.

As a result, I am interpreting the Question L38 text to allow me to comment on any rules and standards that apply to technical disclosure on mineral projects.

I have a number of comments and areas that I consider need to be part of any discussion in and around NI 43-101 updates. I have divided these between practice-related issues, and issues that are more specifically related to the CSA staff.

<u>CIM As the Source of Mining Term Definitions and Guidance</u>

One of my biggest concerns is having mining terms defined in Canadian statute. I do not agree that defining common industry terms within NI 43-101 is optimal for the industry. In my view, mining technical terms and study types should be defined by the CIM and promulgated in the CIM Definition Standards.

The primary reason for this is that the CIM can update and modify definitions as required, whereas any changes to definitions if the term is defined in NI 43-101 requires the industry to wait for regulatory bodies to agree that a rule update is needed. As updates to NI 43-101 can be more than a decade apart as shown by the most recent adoption, having the definition only in the rule does not provide the industry with the benefit of rapid incorporation of changes that reflect shifts in the industry's viewpoint.

Allowing the CIM to be the source of the definition will also be of use to the industry as the CIM can provide proximal guidance to the defined term; the Instrument cannot, guidance can only be placed in a separate document, the Companion Policy. I note the Companion Policy is a document that sets out how the CSA staff will interpret and apply a rule, as opposed to providing guidance around definitions and practice issues.

CIM is recognized in Canada as the standards setter, and as a learned, not for profit society comprising technical professionals, and one which has been recognized within the editions of NI 43-101 as the source for certain defined terms within the CIM Definition Standards, is a better choice as the source of the definitions of key mining terms and study types. CIM also has access to a broad membership, representing numerous disciplines that have a wide-ranging experience with different commodities, deposit types, extraction methodologies, social consultation, environmental studies, permitting, cost estimation and economic analyses. The membership base includes individuals, junior and major mining companies, mining consultancies, analysts, and investors. It is preferable, in my view, to have input from the collective industry into setting up robust definitions and guidance than have a narrow regulations-based perspective creating definitions that may be unworkable for the industry.

The second reason is some of the definitions that the CSA staff have compiled are not true definitions, for example, currently in the 2011 edition, a PEA is actually defined by what it is not (see also my response to “Subsection D: Preliminary Economic Assessments”). A definition of what something is not, is, at best, unwieldy when it comes to interpretation by the industry and appropriate regulatory actions.

The third reason is that in my view, again using the PEA definition as the example, that the CSA staff have misunderstood what the study type is used for by industry, and by investors, and hence a definition that is based on a misunderstanding is not a workable definition.

My fourth concern is that by having the definitions within NI 43-101, the definitions of certain terms are being used to narrow what can be included in disclosure. The excuse for the narrowing of the definitions is typically given as “investor protection”. In fact, it does not serve the investor. A better approach is to allow the Qualified Person and issuer to provide transparent disclosure using appropriate standards in a structured format, identify who prepared the information, and the basis of that information. In my view, that is a much better protection of investors.

Many of the questions asked in this consultation paper indicate a desire of the CSA staff to further limit the type of information that can be made available to investors.

By assigning definition of mining terms to the CIM, this ensures that industry defines the terms such that they mean what industry expects them to mean, and some of the ambiguities currently experienced as to regulator interpretation may be mitigated. This step I would hope would also address the CSA staff commentary that if disclosure

made is not what the CSA staff consider the disclosure should be, then it must be "potentially misleading disclosure".

I note that the CIM are the better source of guidance around defined terms, as industry practices are dynamic. Guidance has to be part of a "living document" set, meaning that it can be constantly reassessed and rapidly updated on an as-needs basis, to reflect changing practices.

Forward Looking Information

This issue does not require a revision to NI 43-101, but does require the CSA staff to step back from their recent position on the use of cautionary language regarding forward-looking information in technical reports.

I have seen recent comment letters where the CSA staff have identified "*potentially misleading disclosure*" because the technical report identifies forward-looking information cautionary language. The example comment letters I have seen from CSA staff claim that a Qualified Person can never use this type of cautionary language; it can only be used by an issuer. The CSA staff did not provide a basis for the interpretation in the letters I have seen, it's presented as a "must-fix-or-else" type issue. It is not clear to me why a technical report is being viewed as a type of disclosure that is made by a Qualified Person, and not an issuer. Even though a technical report is prepared by a Qualified Person, the issuer is responsible for selecting the appropriate Qualified Person, and the issuer is the entity that files the technical report as part of its disclosure record.

I point out that this is a novel interpretation of guidance in the Companion Policy:

> *"(3) Forward-Looking Information – Part 4 of National Instrument 51-102 Continuous Disclosure Obligations (NI 51-102) sets out the requirements for disclosing forward-looking information. Frequently, scientific and technical information about a mineral project includes or is based on forward-looking information. A mining issuer must comply with the requirements of Part 4A of NI 51-102, including identifying forward-looking information, stating material factors and assumptions used, and providing the required cautions. Examples of forward-looking information include metal price assumptions, cash flow forecasts, projected capital and operating costs, metal or mineral recoveries, mine life and production rates, and other assumptions used in preliminary economic assessments, pre-feasibility studies, and feasibility studies".*

The Companion Policy makes it clear that mining issuers must comply with the continuous disclosure obligations, including identifying information that is forward-looking. Technical reports are in fact issuer disclosure, they are not Qualified Person disclosures. They are very much part of the issuer's disclosure record, and contain forward-looking information of the type that investors should be alerted to, and are

alerted to in other issuer disclosures. Forward-looking information in technical reports often includes: Mineral Resource and Mineral Reserve estimates; forecast mine and process plans; assumptions as to the ability to obtain or maintain agreements, permits and social licence to operate; commodity price and exchange rate forecasts; for some commodities the ability to negotiate or renegotiate sales contracts on favourable terms or terms commensurate with the previous contract; capital cost assumptions, particularly during inflationary scenarios; operating costs during market conditions that see fluctuating or increasing material prices, increased competition for supplies or personnel; and the inputs to the economic analysis such as assumed royalty payments, and taxes.

This is another area over which the CSA staff should be communicating with issuers, Qualified Persons and investors as to the basis for their new enforcement of forward-looking information being "*potentially misleading disclosure*" in a technical report. Firstly, why is it "*potentially misleading disclosure*", secondly how is the interpretation that it is not issuer disclosure arrived at, and thirdly, how is stopping an issuer identifying forward-looking information to investors either in the public interest or supporting a credible capital market?

CSA staff should provide, as part of that discussion, information on the facts-and-circumstances that back up why their position was warranted and where the risk to investors lies, and why it is currently such a risk, but that risk was not previously considered to be an issue.

Multiple Technical Reports

If one item of NI 43-101 and regulatory approach is to be changed, in my view, it should be to allow multiple technical reports to be filed as current reports on the one mineral project.

The CSA staff have taken a stance on never allowing more than one current technical report on a property at one and the same time, a stance which has become more ever more rigidly enforced in recent years. However, this stance appears to be based on language in the Companion Policy under 4.2(8), and not on language specifically in the Rule. Even the Companion Policy doesn't make it an outright restriction, the guidance uses the term "*should*".

> (*8) Technical Reports Must be Current and Complete – A "technical report" as defined in the Instrument must include in summary form all material scientific and technical information about the property. Any time an issuer is required to file a technical report, that report must be complete and current.* ***There should only be one*** *current technical report on a property at any point in time. When an issuer - 14 - files a new technical report, it will replace any previously filed technical report as the current technical report on that property. This means the new technical report must include*

any material information documented in a previously filed technical report, to the extent that this information is still current and relevant.

My major concern isn't that the CSA staff now should rewrite in the proposed Rule change that "*should*" is substituted by "*must*", or pull that requirement into the Rule, what I want to point out is that the CSA staff are taking text that is provided as industry guidance and applying that guidance as if it were law.

This instance of misapplication of guidance as law has resulted in contortions for companies that wish to advise their investors that multiple development options are possible for a mineral project: either they run the very real risk of having a report disallowed by the CSA staff if they discuss multiple scenario options, or the investors are kept uninformed of the company's reviews of optionalities because regulatory enforcement is not allowing transparency of disclosure (see also my responses to "Subsection D: Preliminary Economic Assessments").

This is an example of CSA staff restricting disclosure rather than facilitating disclosure in a transparent manner and the structured format of a technical report. A technical report is the correct location for information prepared by appropriate experts that provides the information and the basis for that information for the alternatives being considered by an issuer. The unintended consequence is that disclosure will occur, but it will be to a limited audience, not made to all investors at the same time. Such disclosure will also not have the benefit of industry peer review. SEDAR is a massive venue for peer review: by virtue of being filed on SEDAR and being read by many in the mining industry, a technical report is subject to significant scrutiny other than that provided by CSA staff, who often have a very different idea of appropriate disclosure.

Because of a small minority of outliers and bad actors may be trying to take advantage of mining capital markets, CSA staff appear to consider the most appropriate response is to introduce very restrictive rules, or apply narrow interpretations of existing rules across the entire industry. The entire industry must then bear the cost of compliance, and investors have to suffer the limitations place on the information that they would reasonably expect to be provided to them.

I had hoped that the CSA staff would recognize that bad actors ignore all rules, and no number of new rules will address that situation. I do understand the frustration that CSA staff have in terms of shutting down outliers; however, more restrictions on the industry are not the solution.

In contrast, the US, under SK1300, appears to be willing to allow multiple current stand-alone technical report summaries on a property presenting different development scenarios. This pragmatic US approach should allow a company to present multiple development options to its investors such as:

- What a project could look like as an open pit operation, as a combined open pit and underground operation, or as an underground-only operation;

- What a project could look like if a small company itself had to develop it using the financing available, versus what the project could look like if a major, with more financing ability, became a joint venture partner;
- Alternate development scenarios at various points in the mine life, such as installation of major new recovery circuits to a process plant that would support production of a new product.

Each option in the US case, would be the subject of its own technical report, and each technical report would present that option in its entirety. Each option can use and reuse the same Mineral Resource estimates, including those Mineral Resources that have been converted to Mineral Reserves in an alternate scenario.

I strongly disagree with the CSA staff position that there can be only one current technical report on a project at any one time. The US approach is actually far more in line with transparent disclosure and better serves investors by explaining clearly where management see multiple options in project development.

I have heard CSA staff comment that it is hard enough to have issuers prepare one compliant technical report, that the concept of many reports does not provide them with confidence that more than one report on the property at the one time will be within an issuer's or Qualified Persons' ability to manage. In my view, the tools do exist for issuers and Qualified Persons to make it clear that there can be more than one development scenario on a mineral property at the same time. Options and alternates analysis are industry practices. Statements in Section 1 (Summary) and Section 2 (Introduction) can clarify that the project is being presented with alternatives, and those alternatives are in different technical reports. This provides much greater flexibility to issuers since they do not have to pick only one option for public disclosure.

Each option can use and reuse the same Mineral Resource estimates, including those Mineral Resources that have been converted to Mineral Reserves in an alternate scenario. I believe that the CSA staff's position on the reuse of Mineral Resources in alternate studies is flawed. It appears to be based on an instruction in the CIM's 2020 "*Guidance on Commodity Pricing and Other Issues related to Mineral Resource and Mineral Reserve Estimation and Reporting"*, under the discussion on presentation of sensitivity to cutoff for a particular Mineral Resource or Mineral Reserve estimate:

> *"QPs are reminded that the CIM Definition Standards and the CIM Best Practice Guidelines refer to one estimate of the Mineral Resources and Mineral Reserves of a deposit and industry practice is also to report one estimate of Mineral Resources or Mineral Reserves for the deposit".*

The guidance document, however, makes it clear what the issue is about:

> *"The CSA reports that many QPs are reporting estimates at multiple cut-off grades (including zero cut-off grades) but are not opining on which estimate*

should be disclosed in the company's Mineral Resource and Mineral Reserve statements".

That point is what the CIM were addressing in the guidance. However, the CSA staff are using the first extract I have shown to disallow using the same resource blocks in more than one development option. That is taking a CIM guidance statement regarding showing the need to show a base-case for a Mineral Resource estimate and twisting it into a restrictive rule into not being allowed to have resource blocks used in more than one mining scenario. That was never the intent of the CIM guidance. CIM guidance is not a rule within NI 43-101, but it is being used as such. This is rule-making outside of the rule-making process. It is not widely understood by industry that the CSA staff are making such determinations, and some of the issuers who are affected by the outside of the rule-making process decisions only find out during a CSA staff review during a prospectus filing

I recommend that the CSA staff consider allowing multiple current reports on the one project.

Qualified Person Definition

Although I had a detailed response to this in Subsection E: Qualified Person Definition, the novel interpretation by CSA staff as to Qualified Person professional and relevant experience is a significant issue to the industry.

Relevant experience should not be tied to the awarding of a professional association designation such that the only way a Qualified Person can obtain professional experience is if they are registered with the appropriate professional association and hold the correct category of membership within that designation:

- It's a unique position for the CSA staff to be taking, since no jurisdiction globally requires that experience only starts to be counted once the Qualified Person has a professional association membership;
- For issuers who count on their Qualified Persons meeting the requirements by using an Accepted Foreign Association registration, this imposes additional uncertainty around the selection of the Qualified Person signing on disclosure documents, and on the information released to the market signed by a Qualified Person that does not now meet the CSA staff requirements. It also brings into question how many of the Accepted Foreign Association designations now can actually be relied upon as acceptable when acting as a Qualified Person;
- The interpretation has a bias against those professionals transferring into Canada or migrating into Canada from elsewhere. They will be unable provide their usual professional expertise until five years after they have obtained Canadian PGeo or PEng accreditations in whichever Canadian jurisdiction

they reside; and, in fact, the inability to provide expertise is likely to be much longer, as it is not a simple matter to obtain provincial registration.

- I was advised by a client, who contacted one of the commissions with a question framed around exactly the example given above of a non-Canadian wishing to act as a Qualified Person, that because in that instance, the Qualified Person had decades of mining industry experience in senior technical roles with a major mining company prior to their professional registration in Canada, then there was no issue with that Qualified Person having less than five years of "*professional experience*". What is concerning from this interaction is that application of the interpretation is likely to be arbitrary.
- While it is obvious that those most at risk of being ruled out by the CSA staff as Qualified Persons are new graduates, it is not clear at what point the arbitrary "in" or "out" begins to apply in terms of what counts as pre-professional association membership vs post-professional association membership. What is the magic number in the CSA staff view to be "in"? Does a decade working in the industry post-graduation with one year of professional association membership meet the invisible criteria? Does it make a difference if the experience pre-acquisition of professional association membership was gained working for junior companies rather than industry majors or international mining consultancies?

It is a very expensive issue for an issuer to find out, after a site visit has been conducted, after a Qualified Person has reviewed the information and authored sections of the technical report, that the CSA staff do not accept the Qualified Person as having the relevant professional experience. What is the benefit of this novel interpretation on what constitutes professional experience? This in my view, is another example of the cost of compliance being completely out of balance with any perceived benefit to either the industry or investors.

The CSA staff's attempt, primarily through comment letters, to redefine industry-accepted understanding of what constitutes relevant experience is at best counterproductive, and destructive to both the industry and to individual Qualified Persons.

Non-transparent enforcement, such as by comment letters, leads to a breakdown in trust in those being regulated. The CSA staff are on the slippery slope of losing industry confidence, and these types of non-consultative, under-the-counter enforcement actions that are outside the rule-making process are a key reason why.

I point out that it makes the Canadian capital market for the mining industry a less attractive operating area. If an issuer cannot understand what compliance looks like, and whether they will be in compliance, those uncertainties will drive issuers to look at more favourable capital markets.

Arbitrary application and enforcement of this novel interpretation of relevant experience also serves to destabilise the pool of experts willing to act as Qualified Persons. It is already difficult for issuers to obtain Qualified Persons without the Qualified Persons being concerned that a regulator will agree that they have professional experience.

If any such arbitrary decisions are to be imposed on industry, it has to be done with consultation, not through comment letters. CSA staff should provide, as part of that discussion, information on the facts-and-circumstances that back up why their position was warranted, where the risk to investors lies, and why it is currently such a risk but that risk was not considered to be an issue previously.

Streaming Agreements

I would like to see CSA staff and CIM discuss and form a consensus on how streaming agreements are to be disclosed in technical reports. Currently, the companies whose business model is acquisition of streaming agreements are taking the position that streaming agreements are tied to the issuer and not to the project; hence streaming agreements do not need to appear in economic analyses in technical reports or in the Item 4 content requirements under agreements.

The discussion should include whether the streaming companies' interpretation that streaming agreements are associated with the issuer not the project is acceptable. Would it make a difference to what information would need to be in a technical report if the streaming agreement followed the project if the project was sold, for example? Is it material information that should be included in the technical report if the streaming payment always remains with the company?

Streaming agreements are based on future payments at a specified metal price that is typically considerably below that forecast in the issuer's economics, used in the issuer's mine planning, and in support of Mineral Resource and Mineral Reserve estimates. The cash upfront payment made when purchasing the stream is a sunk cost in economic analyses, and is not considered in those plans and estimates.

Guidance needs to be provided to issuers and Qualified Persons on how the streaming price should be used in determining reasonable prospects of eventual economic extraction (Mineral Resources), cut-off grades (Mineral Resources, Mineral Reserves), mine designs (Mineral Resources if a PEA, Mineral Reserves for all other study types and LOM planning).

I currently see many issuers including streaming agreements in the financial analysis for a project. What I do not see is that the same issuers considering the streaming price in the cut-off grades used for Mineral Resource and Mineral Reserve reporting and in mine planning. If Mineral Resource or Mineral Reserve blocks are only economic when the streaming price is not considered, then do the blocks meet reasonable prospects of eventual economic extraction (Mineral Resources) or

economic viability (Mineral Reserves) constraints? My concern is that ignoring these could result in a potentially misleading mine plan that is suggesting to investors that certain reserve and resource blocks meet their respective economic criteria, when in fact, they do not.

I have anecdotally heard of contracts regarding streaming agreements including a clause that says that the company cannot adjust the mine plan to include the percentage of the production subject to the streaming agreement price. In my view, if that is the case, that is material information that should be disclosed to an investor, to alert that investor that certain reserve and resource blocks may not meet their respective economic criteria.

I note in this respect, that the CIM provides the following guidance on commodity pricing

> *"3.4 Contract Pricing Long term contract prices may be used in some deposits, where appropriate contracts are in place. Again, these prices may be different from the current market prices but would reflect the company's individual Mineral Resource and Mineral Reserve position over the term of the contracts".*

I had assumed that streaming agreements were a type of contract price, and therefore that price should be used. An opinion from the CSA Staff and CIM clarifying this would be welcome.

Use of Inferred

The CSA staff and CIM should review the position taken on the use of Inferred Mineral Resources in operating mine plans.

In my experience, the current prohibition results in an unfortunate reality that many mines have operating mine plans that include a portion of Inferred Mineral Resources in the mine plan, but remove those Inferred Mineral Resources when making public disclosure of the mine plan and supporting cashflows. This results in the public disclosure that does not reflect the reality of the actual operation.

Inferred Mineral Resources, by definition, have an expectation that the majority of the resources can be upgraded to a higher confidence category. Mine planning in most operations recognizes that the confidence classification is very likely to be upgraded during grade control or delineation drilling in operations and that the assignment of Inferred is temporary because the confidence category is based on the wider-spaced exploration drilling than the drill spacing that will result from the grade control program. Reconciliation data from operations also typically supports that a significant portion amount of the Inferred Mineral Resources are upgraded, and operations generally upgrade more blocks than the 51% implied in the definition of Inferred: *"It is*

reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration".

Companies have to assess how much of the Inferred Mineral Resources can be upgraded such that they can be converted to Mineral Reserves in the medium to long-term. Mine plans need to be able to include this material as it can have a direct impact on throughput rates, leach pad capacities, grades to be sent to a process plant, equipment requirements, stockpile, waste rock and tailings storage facility capacities, operating cost estimates, and depletion of the Mineral Reserves. It does not make economic sense to only consider those impacts following completion of daily grade control programs that directly allow for confidence category upgrades; the Inferred Mineral Resources need to be incorporated in the mine planning from the start.

I note that there are well-established mining companies whose mine portfolios are based on narrow-vein operations, and these mines routinely report 30–40% of their annual production to be not in reserve material. In these instances, the companies only identify this material when they develop along the mineralized vein or structure. As a result, the company does not deplete the deposit as rapidly as their technical report or other disclosures indicate they will. This is not a poor practice, it is a direct reflection of not being able to drill the mineralization out with the required close spacing to allow higher confidence classification until underground development and accesses are available. The same issue can occur for block cave operations, where there has to be an expectation that the Inferred material will be upgraded to higher confidence categories once the level accesses are obtained.

Major capital commitments have to be made based on the expectation that Inferred Mineral Resources are converted to Mineral Reserves just prior to mining. The current rules restrict this information being made public to investors. In my view, this is another example of investors being "protected" by CSA rules that mandate withholding of material information.

Most companies have a strategic planning group whereby various mine plans are assessed at varying levels of technical, operational and financial risks to determine which options best suit short- and long-term corporate goals. These what-if scenarios incorporate the Inferred to provide a balanced presentation of the optionality, allow the company to assess which projects or options should be developed first, and provide guidance to management as to the best use of corporate dollars for the best economic returns. A further goal is to provide investors with a best approximation of what mine production will likely be.

In mine planning, it is not uncommon to find that there are some years in the LOM plan where the Mineral Reserves are insufficient to supply the process facility at the expected throughput rate. In these instances, planners use the Inferred Mineral Resources to even out the production plan to meet the required production rate. There

remains the expectation in this process that the Inferred Mineral Resources will be upgraded by the time the material is mined.

In my view, it is better to have transparent disclosure of what is the actual mine plan, than to have the equivalent of two sets of books, one expressly only for public disclosure, and one that is the actual operating plan.

In Australia, the pragmatic approach is to allow the use of Inferred Mineral Resources in the mine plan, together with the Mineral Reserves, in both the mine plan and the economic analysis, as long as the Inferred Mineral Resources do not make the difference between an economic and sub-economic or negative operation. Australia also recognizes that for a long-lived mine plan, drilling to the spacing/level that supports Indicated Mineral resources in areas that will be mined in 10–15 years does not make economic sense.

I would like to see the CSA staff and CIM allow inclusion of Inferred in operating mine plans. My suggestion, if this is adopted, is that the proportion of Inferred in any year of the mine plan is clearly stated, and that a production profile graphic must be included that shows for each year, the tonnage and the grade of the Proven and Probable Mineral Reserves, and the tonnage and grade of the Inferred Mineral Resources. Support for inclusion of Inferred in the mine plan could be provided by showing how much Inferred was converted to higher classes when more detailed data, such as grade control or other closely spaced development drilling was completed.

CSA versus Industry

The entire consultation presentation is an example of what is becoming a problematic relationship between the CSA staff and industry, and, I think, unfortunately reflective of a major issue the industry is facing with current CSA staff practices. Communications have devolved to the stage where it is very much an issue of CSA staff versus industry.

Industry Practices

Within the consultation paper, there are claims being made as to poor industry practice. Too often these types of claims are made in the consultation paper with no support, and it is at least possible that my responses would have changed if I could review examples of what the CSA staff considers to be problematic disclosure, the issues that the CSA staff are identifying, the basis for their concerns, and most importantly, how the concern is a total industry-wide failing.

Many of the preamble statements to the questions being raised in the consultation paper are not provided with context by the CSA staff for the statements in the preamble. If a debate is to be fair, transparent and unbiased, each side must present clear examples of the issues involved, using fact-and-circumstance presentation such that the reasoning can be followed and is defensible to peers. I would argue that clear

and transparent disclosure is better than enforcing limited, circumscribed, and prescriptive disclosure.

This presentation reflects a concerning position that I feel that the CSA staff have recently adopted that industry is bad, regulators are good, and moreover, regulators are always right. I want to break this attitude down into the main issues I see.

One concern is that the current CSA staff have a classic negativity bias, by which I mean "*the tendency of human beings not only to register negative stimuli more readily but also to dwell on these events*". It appears to me that the CSA staff are seeing some bad practices, then extrapolating that across the industry as a whole such that the industry is now somehow worse, and more lawless, than prior to the introduction of NI 43-101. Anecdotally, some CSA staff have made comments to the effect that if you could see what we see, you'd agree with us. In general, this is not my experience, and I question if the sentiment is applicable to the industry as a whole. I do not believe an attempt to deal with bad actors should be the driver for industry regulation as a whole. Bad actors do not care what rules are in place, will not care what any new rules are, and neither will cause them to change their bad practices.

In my view, the technical reports filed in the last decade are significantly better than the reports that were filed in the first decade of NI 43-101. I also think that the quality and practices within Mineral Resource estimation have also significantly improved. I see issuers taking compliance seriously, and they are trying to prepare credible, readable and useful reports. I do not see an ocean of bad actors.

Attitudes to Enforcement

A second issue with the CSA staff is an apparent inability by the regulators to understand that the industry may be viewing their compliance enforcement activities with dismay, at best. The practice of dismissing questioners from within industry because "this analysis is supported by regulators across the country" is a poor response. A blanket shutdown of constructive communications and debate because, in my view, the CSA staff have a confirmation bias that they are right is a recipe for losing industry support. It was so hard to get industry consensus on any major issue until Bre-X. The fallout from Bre-X was that industry did indeed agree that regulation of mining disclosure was needed, and the current mining disclosure system represented by NI 43-101 was introduced. CSA staff initially took a light touch to regulation, maintained respectful and constructive dialogue with industry, and provided significant opportunities for industry and Qualified Person education. I find that this approach has particularly eroded over the last five years, the CSA staff's preferred approach is now adversarial, the CSA staff reserve to themselves the right of judge, jury, and executioner, and has resulted, I would say, in a concomitant general loss of industry confidence in the regulators.

The CSA staff approach of "this analysis is supported by regulators across the country" unfortunately reflects a double handful of regulators in an echo chamber that appear

to have a very defensive attitude to any criticism. "This analysis is supported by regulators across the country" makes no allowance for the fact that industry may well have a point, and that the loudest voices within the CSA staff may be mistaken to outright wrong in their judgement calls. Unfortunately, by their nature, echo chambers cannot allow for reasoned debate or equitable discussions on points of serious concern.

Comment Letters

The CSA staff have developed an enforcement practice that revolves around sending comment letters to issuers. Such letters have been a part of regulatory practice since the introduction of NI 43-101. Comment letters are confidential, are between an issuer and the regulators, with, typically immediate involvement of legal counsel when drafting the reply. Occasionally, commentators, such as myself, will be asked to provide feedback to the issuer on certain interpretations of matters raised or on the proposed reply and will see the requests made by CSA staff.

In the last five years in particular there has been a consistent and clear trend for such letters to be sent out when a company attempts some kind of capital raising, in particular prospectus and bought-deal financings. Comment letters now routinely require technical report re-filings, and routinely use the threat of being placed on the defaulting issuers list. What is currently so different about these letters is the length, the number of individual issues raised, the specificity and detail of the issues raised, and the overall tone of the letters. What is also different is the number of times in these letters that something is claimed to be "*potentially misleading disclosure*". This used to be something so major, for example, that the CSA staff could not receipt a prospectus, and when a comment letter made that statement, lawyers and management both jumped to fix the issue. It was typically used to denote a single issue. Where a minor issue was noted, the approach was to ask the Qualified Person to consider addressing the issue on a going-forward basis in the next technical report update. In the early comment letters, in my experience, the regulators at the time separated out for issuers in the letter the concerns that they considered to be material from courtesy comments that were provided to the issuer as recommendations for disclosure going forwards, but did not have to be addressed to allow receipt of the prospectus.

The current comment letters that I have seen insert the phrase "*potentially misleading disclosure*" throughout the CSA staff letter, with numerous claims made as to disclosure that is potentially misleading. Many of those issues identified as "*potentially misleading disclosure*" are issues that until recently would not have been seen as problematic. Nor would so many items of minor detail have been flagged until recently as compliance issues that had to be fixed or prospectus receipt would not be forthcoming. Nor would calls that are clearly CSA staff judgment calls on grey areas of interpretation be used to withhold a prospectus receipt.

My concern is that claiming something is potentially misleading is becoming more and more a CSA staff default position. The wording reflects an opinion statement by the CSA staff, and denotes something CSA staff don't agree with. It is generally not what would have been considered to be misleading disclosure, as that was interpreted in the first decade and a half of NI 43-101 enforcement.

Comment letters are being used to enforce novel interpretations on industry. Examples are the supposed requirement that Qualified Persons only obtain relevant experience after a professional accreditation is obtained, that using forward-looking information cautionary language in a technical report is inappropriate as it applies to issuers not Qualified Persons, and that Mineral Resources converted to Mineral Reserves can never be used in any type of concurrent alternative mining study. These interpretations are not clearly communicated by CSA staff to industry; they make their way out into the general industry by word of mouth, typically as rumours. Enforcement by rumour causes industry anxiety as to what compliant disclosure looks like, and a fear of what CSA staff will next find as a novel interpretation of a particular industry practice.

Comment letters are also using industry guidance documents, in particular those prepared by the CIM, as if those documents were part of the Rule, and not guidance. Issuers are being forced to revise disclosure, including re-filing of technical reports, because a regulator has decided that insufficient information is shown in the technical report that demonstrate that a Qualified Person addressed steps set out in a guidance document. These CSA staff interpretations are unfortunately not clearly communicated to industry; they make their way out into industry discussions by word of mouth and rumour. This misuse of guidance documents is exemplified in the approach taken in CSA Staff Notice 43-411, which used a set of criteria based on CIM guidance to determine if Mineral Resource estimates were compliant.

Comment letters now have an adversarial tone that was generally previously absent. This sets up the issuer to know that reasoned debate or equitable discussions on points of serious concern are unlikely to be entertained. The CSA staff appear to deliberately shut off any avenue to questioning of responses by the tone and presentation of their perceived issues, particularly when the issues are those considered by the CSA staff to be addressed by "*potentially misleading disclosure*".

The problems with the comment letters from an industry perspective are numerous.

Firstly, they are often triggered by a financing. Bought-deal finance windows are short, generally closing in less than a two-week period. Changes made to receipt a prospectus do not mean that the changes requested by the CSA staff based on CSA staff judgement calls and interpretations were right. Issuers are acutely aware that if they don't immediately address issues raised by CSA staff in a comment letter such that a prospectus is quickly receipted, that financing window will close, and financing will go elsewhere. This sets up a complete power imbalance because issuers will

address all of the points in the comment letter to ensure the financing will go ahead, not because the points the CSA staff have raised have been agreed to by the issuer or the Qualified Person as problematic disclosure. Often, in fact, the issuer and its legal counsel don't agree but are in no position to take the time to argue their position with the CSA staff.

Secondly, comment letters are confidential. Regulatory interpretations that are available only to a select few (and their legal counsel) through confidential communications cannot be seen to be a balanced approach to the public interest and are a poor approach to the transparency of the regulatory process as a whole and maintaining industry trust in the regulations. The US realized that keeping comment letters confidential was not conducive to a level playing field, and SEC comments on mining disclosures have been public for over two decades. Comment letters and responses are made public after all correspondence has been completed and the SEC have closed the issue. This is one area that the CSA staff, in my view, should be compelled to follow the SEC precedent.

An issue with the comment letters is that the CSA staff can selectively target an industry practice of which they disapprove, enforce re-filings to remove that issue, and then claim that the industry practice is actually not a common one. No consultation with industry needed, the CSA staff-perceived "bad players" are weeded out with none of that contentious seeking of industry opinion.

The CSA staff have, in my view, particularly over the last five years, eroded industry confidence that the issuers and Qualified Persons know what constitutes a compliant technical report. I definitely no longer think that I can guide an issuer to submitting a technical report that meets minimum compliance, since I, too, do not know any longer what that looks like. As a result, I am finding that companies are becoming more concerned that they have to take a belt-and-suspenders approach to their technical reports to reduce the risk that a technical report will be queried during a financing such that the financing could be derailed. I question whether this additional expenditure on belt-and-suspenders is warranted. The CSA staff have almost always not demonstrated that the risks that they are perceiving and identifying in comment letters are real, or are representative of an industry-wide failing. And because the letters are not public, industry cannot debate whether any of the points raised in a comment letter are critical on an industry-wide basis, or project basis. There appears to be no consideration of what the compliance cost is to the issuer versus any perceived benefit to investors.

Compliant Reporting

The effect on industry of the confidential comment letters and novel interpretations of practices that industry had previously assumed to be compliant, is that it is difficult for any Qualified Person, issuer, or legal counsel to be certain as to what will be compliant

disclosure, and if the technical report contents will be considered to be compliant with the technical report requirements set out in the Form.

I no longer feel that I can advise clients that I can review their technical reports and say whether or not the presentation will be generally compliant; this is after spending the last two decades of my working life in matters of reporting code compliancy. I have seen peers specializing in compliance aspects take the same approach, and have been with legal counsel when they advised their clients that they cannot be completely sure of what will be considered compliant in certain situations. If those of us that work in this area on a daily basis are now unsure of compliance, how much worse off are the general run of issuers and Qualified Persons? This is now a serious problem facing industry, that compliance is not something that can be understood by simply reading the Rule, Form and Companion Policy, and preparing a technical report. There are too many unwritten rules and novel interpretations. What adds to the difficulty is that the unwritten rules and interpretations by CSA staff change over time.

Many of the issues raised, although labelled as "*potentially misleading disclosure*", do not appear to be the types of issues that were raised in the first decade and a half of NI 43-101. The issues are used to force re-filings, but are such re-filings, the costs to the issuer, and the damage caused to reputations of both issuers and Qualified Persons truly necessary? My concern is that many of the issues are not, in fact, either potentially misleading or serious, and could be addressed with a conversation with the issuer or Qualified Person or educational outreach. I cannot see that the current regulatory approach of heavy-handed enforcement over minor issues is an appropriate CSA staff response. I do not believe the current approach is in the public interest, or serves to maintain a credible, vibrant capital market.

The focus of many of the questions in this consultation paper is to establish more prescriptive requirements in a Rule change that Qualified Persons and issuers will need to address. Nowhere is it clearly explained as to why this approach will result in Qualified Persons and issuers better able to prepare compliant technical reports. In fact, it is likely to be even harder on issuers and Qualified Persons to provide compliant disclosure given the recent experience of novel interpretations of the Rule by CSA staff and the hidden enforcement embodied in the confidential comment letters.

Prescriptive Rule Change Requests

A final issue I want to raise is CSA staff's idea of best practice industry enforcement being the introduction of prescriptive rules to try to corral bad players, with, I think, an acceptance that if crippling the industry is a side effect, then so be it. Much of what is in the consultation paper that is the subject of this letter relates to more prescriptions and restrictions on disclosure. CSA staff provided no support for claims around "*long-standing evidence*" or "*substantive evidence*" that certain issues were industry-wide failings, that there were clear-cut evidence of impacts to investors, or that industry

approaches were clearly harming the overall Canadian market credibility, and/or were not in the public interest.

The CSA staff, unfortunately, do seem to need to be reminded that people cannot be stopped from committing acts of malfeasance by legislating against fraud. No amount of novel interpretation, application of guidance as rules, pitting of CSA staff judgment calls and opinions versus industry judgment calls and opinions, or the generation of prescriptive checkbox lists to be used as rules will stop malfeasance. The CSA staff's medicine isn't sufficient to control outlier bad players, but it certainly is strong enough to have a major negative impact on the industry.

Nowhere is there any intimation to the industry that the CSA staff have considered the cost impact of more restrictive disclosure requirements suggested in this consultation paper. The CSA staff must, in my view, provide their view of the benefit that will be derived given the costs that will be incurred since any industry acceptance of changes to the Rule will require consideration of likely cost burdens. I note that technical reports already have quite considerable costs associated with preparation and filing, irrespective of the additional burden imposed by novel CSA staff interpretations of the Rule that require refiling of technical reports. Introduction of prescriptive requirements will only increase that burden.

I point out too, that one of the costs that the CSA staff need to consider is the cost of losing industry support of the regulators. Regulators must have industry support to be effective. The adversarial approach I am seeing is not conducive to a vibrant industry or a vibrant capital market. I remind the CSA staff of their mission statements, as exemplified by this one from the British Columbia Securities Commission:

> *"The British Columbia Securities Commission's mission is to protect and* ***promote the public interest by fostering a securities market that is fair and warrants public confidence, and a dynamic and competitive securities industry that provides investment opportunities and access to capital****"* [my emphasis added].

I draw attention to the latter part of the statement, as I think the desire to "protect" has overwhelmed what is in actuality the majority of the mission. I think that the CSA staff are mistaken in seeing prescription and restriction in disclosure as the only means of protecting investors. I disagree, I think that investors are best protected by receiving more disclosure prepared by Qualified Persons using a structured reporting system. The CSA staff should recognize that they create the framework for disclosure, but go too far when they dictate the details of what the disclosure should be. More importantly, CSA staff should recognize that they are not a company's board, and should not be inserting themselves in board-type decisions.

The CSA must understand that mining money goes where it is wanted and fairly treated. If the CSA staff and local regulations, such as provincial registration requirements, are seen to be onerous, Qualified Persons will elect not to act as such,

the expert pool supporting quality disclosures decreases, and the overall jurisdiction becomes unattractive for mining. Money will move to a more attractive market. Metrics used by the TMX Group show that in recent years, the Australians, often looked down on by Canadians as the “cowboys”, are attracting a significant number of new listings and the equity capital raised in those financings in 2021 exceeded the financings in Canada by a small margin. Canada had always well exceeded other jurisdictions in the world for the amount of capital raised by the mining industry. The CSA should be alarmed at the surge in preference for Australian markets as this is likely a measure of the impact of the changes of perception by the mining industry to the Canadian capital market for mining issuers.

In my view, Canada should no longer automatically congratulate itself as being the preferred mining destination. Industry Guide 7 (IG7), which caused many companies with a North American base to prefer Canadian listings to access financings so as to be subject to NI 43-101 (and be able to report Mineral Resources and the results of economic evaluations of those Mineral Resources) is no more. SK1300, which replaced IG7, removed most of the prohibitions (stated under IG7 and unstated under SEC’s comment letter processes), is primarily based on NI 43-101, but also includes considerations and concepts from updates to the CRIRSCO Template, which post-date the most recent NI 43-101 edition.

The major current differences between Canada and the US are the US predilection for class action lawsuits as a method of industry/investor liaison, and the fact that the US has not been traditionally friendly to those registrants that are at the exploration or mining study stage. I expect that if the CSA staff continue to cause issuers to lose confidence in the regulators, compliance burdens become more onerous, and the cost of business increases as will undoubtedly happen with more prescriptive regulations, there is a strong likelihood that the US will develop a reputation as a more favourable jurisdiction than Canada. I point out that a significant proportion of the investors in the Canadian mining capital markets are US-based residents.

I am also concerned that the prescriptive nature of changes that the CSA staff appear to be contemplating will result in a check box, binary-type evaluation of what are actually very complex matters. After all, it’s easy to “confirm” if a regulator is doing a good job if the regulator can demonstrate that the set check list is or is not being followed by a company, and certainly is useful for end-of-year performance metric evaluations. However, in the real world of mining, check lists can never address competency, and it is competency that is the core principle of NI 43-101, enshrined in the Qualified Person concept. Competency lies in the education and experience of the Qualified Persons in their discipline area and in the deposit type in which they are operating. Competency and opinions are rooted in experience, and require judgement calls in complex areas that have many shades of grey. Competency is not meeting an arbitrarily designed check box list that can never cover all facts and circumstances

across the wide range of commodities and operations that constitute the modern mining industry.

Conclusions

I am a strong supporter of the need for regulation and the standards that Canada has established over the last two decades. They transformed the mining capital markets, not just in Canada, but globally. I acknowledge the importance of involving industry by allowing feedback to questions raised in this consultation paper. Although many of the points I raise are critical of the regulatory system, I am hopeful that the result of the consultation process will address issues that I have raised, change the current dynamics between regulators and industry, and maintain Canada's hard-earned credibility as a vibrant mining capital market.

Any contemplated Rule change should consider the likely cost of compliance to ensure that it is in balance with the perceived benefit to the capital market and investors. More transparent disclosure prepared by appropriate Qualified Persons and experts is the best protection of investors, not more prescriptions and restrictions being placed on disclosure. The expertise of Qualified Persons, their roles in making judgement calls in grey areas of interpretation and in complex areas of industry practices, must be respected by CSA staff.

A corollary is that the CSA staff should recognize their own limitations and deficiencies when making determinations on how the industry operates. CSA staff are inserting themselves into decisions that are the responsibility of the Board of an issuer (e.g., determining what information is material to that particular company's investors, and how the information is presented) and this should also be recognized as an inappropriate interference in a company's operation.

The CSA staff appear to be treating all issuers and all Qualified Persons as bad, untrustworthy, and likely malefactors. The impression is that CSA staff have a negative bias in that the industry as a whole is not willing to provide compliant disclosure and that malfeasance is rampant. To address this perception, which in my view is a purely CSA staff perception, not that of industry, CSA staff's preferred stance is to make it harder, and more expensive, for the industry as a whole to comply with NI 43-101. This is contrary to the entire idea of what regulation of the industry was meant to do, when all parties agreed in the late 1990s that some regulation was needed. Destroying this consensus, which was a seismic shift in Canada, is not in the public interest.

"signed"

Stella Searston

8705 Cherokee Ct

Parker, Colorado, 84134.