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

From: Nigel Fung P. Eng. (PEO #100173276)

Date: July 13, 2022

My apologies that I did not have time to respond to all questions by the cut-off time/date.

For what it is worth, please find my responses to selected consultation questions in red below.

Consultation Questions

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.

1. 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.

It is difficult to provide information or context necessary to protect investors and fully inform investment decisions because there is a high level of uncertainty and high level of risk. At this stage there is no way to fully inform an investment decision.

2. 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?

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

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

I don't believe we require greater alignment with others at the moment. I believe the NI 43-101 system provides greater transparency and protection of the public.

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

4. 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.

45 Days in my experience has been adequate but still tight enough to make a shorter time period difficult to pull all required pieces, certificates, and consent forms.

a) 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?

I believe a physical visit is still required. No matter how good the technology, deficiencies are easily hidden when a physical visit is not required.

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?

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.

- 6. 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".

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.

7. 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?

8. Given that the current personal inspection is integral to the data verification, should we consider integrating

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.

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

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

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.

11. 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?

There should be clarity on the level of support for the cost estimates and/or assumptions in a PEA. At present my understanding is that PEA cost support may simply be assumptions supported by benchmarks .

12. 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?

I believe a PEA Study Technical Report cover page should be required to state: "a PEA study cannot and does not validate nor establish the economic viability of any portion of a resource"

13. 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?

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.

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

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.

15. 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.

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.

16. 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.

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.

17. 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?

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.

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

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.
19. Should directors and officers

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

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.

21. 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?

22. 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?

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

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

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.

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.
25. 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.

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.
26. a) 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?

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?

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

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.
28. 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?

29. 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?

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

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.

31. 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?

Each community might have an agency that signs off (as does a QP) on the social engagement compliance component to attest that the issuer has met requirements of the community up to that stage of the technical report.

32. 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?

The community agency could comment in this section the consequence of the issuer not respecting terms of the Indigenous Peoples on whose traditional territory the mineral project lies?

33. 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.

The qualified person or other expert independently verifying the information must be from the the first nation community and/or given authority from the community agency.

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.

Capital and operating costs

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

The timing of the quote and or reference to the time period when the major ticket costs were initially included , calculated or benchmarked should be noted in a table. Quite often the cost are built up over time and there is a dogs breakfast of timeframes for costig estimates . A table with "timestaps" on cost van help the author track and readers update specific line items after the publication date should there be dramatic cost changes (example: a sudden increase in fuel, lumber, iron or labour costs).

35. 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?

36. Is the disclosure requirement for risks specific to the capital and operating cost assumptions adequate? If not, how could it be improved?

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.

37. 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?

L. Other

38. 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?

Please address your submission to all of the CSA as follows:
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

Deliver your comments only to the addresses below. Your comments will be distributed to the other participating CSA.

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We cannot keep submissions confidential because securities legislation in certain provinces requires publication of the written comments received during the comment period. All comments received will be posted on the websites of each of the Alberta Securities Commission at www.albertasecurities.com, the Autorité des marchés financiers at www.lautorite.qc.ca and the Ontario Securities Commission at www.osc.gov.on.ca. Therefore, you should not include personal information directly in comments to be published. It is important that you state on whose behalf you are making the submission.