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Subject: Consultation on National Instrument 43-101 Standards of Disclosure for Mineral Projects

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Manitoba Securities Commission
Ontario Securities Commission
Autorité des marchés financiers
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Dear Sir or Madam:

On behalf of BBA we are pleased to submit our feedback regarding the consultation on National Instrument 43-101. BBA is a privately owned Canadian consulting firm and has served mining clients since its inception in 1980. We regularly support mining projects throughout the development lifecycle, from exploration through post closure monitoring. The comments and recommendations put forward in the following sections are an amalgamation of the feedback received from a group of our senior mining industry professionals, many of whom regularly act as qualified persons ("QPs"). We believe that NI 43-101 is an important pillar both supporting the development of our mineral resources industry and ensuring the protection of the public through responsible disclosure of key project information, technical details and the risks associated with these elements.

We trust that the enclosed feedback will be useful for your review. Should you wish to discuss any aspects presented in greater detail, please do not hesitate to contact us.



1. Improvement and Modernization of NI 43-101

Regarding the disclosure requirements of pre-mineral resource stage projects, we believe that although quite clear and prescriptive, the current format may inhibit the ability for the proper disclosure of eventual project context. The ability to discuss potential future risks that may exist, based on the range of development options under consideration, would allow issuers to better inform investors.

The format of NI 43-101 reports has remained largely unchanged since 2011. Since then, nearly all our clients (the issuers) no longer request separate detailed study reports (typically containing many volumes of results and analysis) and a NI 43-101 technical report, but rather prefer to receive only the NI 43-101 report. This may explain why we have observed the depth of content and NI 43-101 report length increase significantly since 2011. Several of BBA's QPs have noted the obvious benefit to reducing report length with a more prescriptive form, such as the Table 1 from the JORC code. However, a prescriptive format may not ensure in all cases that the relevant project context and specific underlying fundamentals for that property have been adequately communicated to investors. Conversely, the length of most NI 43-101 reports carries a consequence that key details are sometimes diluted amongst many other less critical factors.

We question what proportion of the text presented in the average technical report is typically understandable and used for analysis by the average public investor without an engineering or geosciences background. We encourage the CSA to seek a middle ground between the often-minimalist stance allowed by a prescriptive disclosure versus overwhelming with too much information. A key consideration should be to require greater clarification as to the relevance of the information presented in disclosures, contextualized according to the properties' development stage.

On the topic of 45 days between a disclosure and filing of a technical report, this timeframe is often only just enough to assemble and finalize report chapters. However often of greater concern is the amount of last-minute technical adjustments and fine tuning that continues unnecessarily until filing. It is also unclear, especially for advanced development properties, what value really exists for issuers to be able to disclose results to the public, only to have a delay of up to 45 days for the supporting details behind said results to be disclosed. The CSA should consider if, for advanced properties, there would be greater value for the public to require technical reports to be filed at the same time as disclosure.

Regarding the use of technology to allow QP personal inspections to be conducted remotely, our QPs were again divided on the subject. Many preferred the current "on-site" requirement of the inspection. However, a technology augmented inspection could improve the quality and value-add of the activity. For example, using augmented reality wearables (such as the



Microsoft HoloLens) would make it possible for many experts to jointly participate in the visit without setting foot on site. This would allow a QP to consult colleagues who are not present for the personal inspection or allow several QPs to participate in an inspection where only a single QP is physically present on site. Aside from the reduction in Scope 3 carbon footprint for the equivalent amount of travel to the property, this method also allows for an actual audio-visual record of the inspection to be maintained by the QP. We suggest that the CSA consider the value that augmenting personal inspections with technology could bring in fulfilling their role, whilst maintaining adequate protecting the public.

2. Data Verification Disclosure Requirements

With respect to the current requirements for data verification and subsequent disclosure, our QPs do not have significant opinions or recommendations for proposed changes. We do, however, recommend that more clear language be used to explain that item 12 should consider all technical and scientific data used to complete the work. We agree with the CSA that omissions beyond geological data are often present in many technical reports. The CSA consider clarifying what constitutes “scientific or technical information about a mineral project or property...”. For example, in advanced stage projects, multidisciplinary teams rely on many different sources of information and scientific data to complete their work. Would the information supplied by a utility company regarding the capacity of a regional electric grid be subject to the data verification disclosure requirements? Perhaps a test of project materiality could be applied to require that only data and information with material consequences be subject to disclosure in item 12.

Regarding QP personal inspections we agree that there should be a requirement to disclose the outcome of this activity in item 12 of the technical report.

3. Historical Estimate Disclosure Requirements

We believe that allowing issuers to disclose historical estimates for information or reference purposes does not serve the interest of public protection. Despite the use of cautionary language, the potential for misleading disclosure is amplified especially if the quantity, quality, grades, etc. of the historical estimates vary significantly compared to current estimates.



4. Preliminary Economic Assessments

Our QPs agree with the CSA that since the minimum requirements for a Preliminary Economic Assessment (“PEA”) have not been well defined, this leads to expansive range of interpretations by issuers, QPs and professional firms that work on these studies as to what constitutes a PEA. As a minimum, we believe that issuers should disclose more specific details regarding the level of accuracy of cost estimates and the amount of engineering that was completed to support those estimates. Alternatively, the CSA could require PEAs to meet a set of minimum classification requirements, such as those outlined by the Association for the Advancement of Cost Engineering (AACE).

Regarding cautionary statements as to the preliminary nature of PEAs, the weight of such cautionary language is sometimes “overpowered” by the amount of detail presented in technical reports. Defining better constraints as to the quantity of detail presented may prove a more useful approach to reducing the chances that the public will be misled to believe that a PEA is somehow something more definitive. This is especially important in the case where the results of a PEA are based overwhelmingly on inferred mineral resources.

Rarely are mining projects evaluated and developed based on a single option. As such, the majority of our QPs believe that an issuer should be able to present alternate scenarios in the form of a PEA for projects that already have declared Mineral Resources. However, it may be in the public's interest to require issuers to better clarify the context around such changes. Furthermore, when the test of materiality is applied, more due consideration should be given to the inherently lower confidence surrounding PEA results. Explicitly requiring greater clarity and justification around this topic might reduce the number of PEAs that are disclosed. In other words, for projects that already have declared Mineral Reserves, the results of a PEA may, in fact, not represent a material change for the issuer, simply because insufficient work has yet been completed to outweigh the reserves that are supported by more robust and detailed results.

Lastly regarding the inclusion of by-products that have not been categorized as Measured, Indicated, or Inferred Mineral Resources in economic calculations, we believe that such practices should not be allowed. Communicating the even higher uncertainty for this subset of data only increases the chances of misleading the public.

5. Qualified Person Definition

Regarding the definition of a qualified person, BBA has recently experienced several instances of misalignment between the language in NI 43-101 and the companion policy, and the CSA's subsequent interpretation of these documents.



With respect to the minimum five years of experience, the definition of a qualified person states separately in item (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"* and in (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"*. The confusion stems from the CSA's recent interpretation that years of experience only count once the individual is a member of a professional order or RPO. We believe that most practitioners interpret the QP definition to require professional membership, and 5 years of relevant experience, but not 5 years of relevant experience as a member of a professional order. BBA agrees that the responsibility of a qualified person should not be taken lightly. However, the CSA must recognize the challenges that our industry currently faces, where many highly experienced professionals will retire in the coming decade. It is therefore imperative that we, as an industry, ensure to properly develop the next generation of qualified persons, specifically to ensure the ongoing protection of the public.

Regarding the expansion of the definition of qualified persons to other professionals or to professions with experience beyond mineral exploration and mining, we have several opinions. The complexity of mining project development has increased substantially in recent years and is expected only to continue. This complexity is in part due to the greater largely "non-technical" considerations that must be had regarding ESG implications. Such factors can often be as material to the establishment of reasonable prospects for eventual economic extraction or modifying factors that underpin the declaration of mineral resources and mineral reserves. Traditional mining industry professionals may not have the qualifications or experience to adequately assess the relevance of these topics. We recommend that the CSA consider expanding eligibility to additional professional fields such as biologists, environmental scientists, etc. Additional consultation may be required to fully outline the requirements. A second important trend that we have observed recently is the inclusion of downstream secondary transformation in the disclosure of mining projects. Such processes and facilities may often depart from those traditionally considered part of the mining industry. Other engineering practices, such as chemical or petroleum engineering may be better qualified to assess such facilities; and thus, better placed to ensure the protection of the public.

In the case of requiring independence for directors and officers to act as QPs, we do not believe that this is necessarily in the public's best interest. Especially in the case of producing issuers, company employees (including directors and officers) are typically best suited to author technical reports, since they are ultimately responsible for the performance and operation of these projects. If greater independence were to be required, a broader overhaul of NI 43-101 might be required to position the role of the QP and NI 43-101 similarly to the requirement for independently audited financial statements by 3rd party auditors. This would be a significant



change since in many cases, the QPs are directly responsible for completing the work subject to the disclosure.

6. Current Personal Inspections

In our opinion, clarifying the definition of a current personal inspection would be useful, however care must be taken to ensure that the definition would serve to increase the protection of the public, and not create impractical constraints. An opportunity could be to develop a set of best practice guidelines (similar to the CIM MRMR best practice guidelines) without necessarily constraining the personal inspection to a fixed set of constraints. It would not be possible, nor practical, to make such a set of constraints applicable for all circumstances observed across the range of mining projects.

We feel very strongly that the qualified person accepting responsibility for mineral resources should always complete a personal inspection, given the fundamental importance of geology and mineral resources to any project.

We also believe that for advanced stage projects and producing projects, there is a benefit to the QPs responsible for chapters 15 to 18 to also complete personal inspections, even though the scope and depth of their inspections would vary substantially depending on the stage of advancement of the project (pre-feasibility, feasibility, construction, producing). For greenfield projects, chapters 15 to 18 would benefit from additional guidance as to the reasonable expectations regarding personal inspections. We suggest that the question of using technology to complete the personal inspection be specifically considered in these instances.

BBA's QPs are not opposed to removing section 6.2(2).

7. Exploration Information

Except for a proposed amendment to item 9(d) in the form, we do not recommend any changes to the current requirements. Regarding item 9(d), we do not see the value that this information adds in the technical report since these details have likely already been reported in press releases.

8. Mineral Resource / Mineral Reserve Estimation

Regarding specific disclosure of the reasonable prospects for eventual economic extraction, we find that robust technical reports do indeed include discussion about, and disclosure of the



parameters used to arrive at the resource estimate. The fundamental ability for comparing mining projects depends on the transparency around these key parameters.

With respect to the relationship between data verification and mineral resource estimation, in our opinion, this work is best completed when carried out by a team of professionals who collaborate. An important element of ambiguity that must be clarified by the CSA is precisely the topic of interdependence between project elements and the reliance on work completed under the supervision of different QPs. Our approach is to always ensure that the inputs and data supplied by different QPs are, to the best of our knowledge, reasonable and appropriate for use. When these inputs and data are supplied by another firm, our practice is to require that these inputs and data sets be reviewed by one of our own professionals before using this data. However, we have observed that the same rigour is not necessarily applied by others. In our opinion, the two specific areas that require clarification with respect to reliance on other QPs are mineral resources and mineral reserves.

On the topic of project risks, it may be more useful to add a specific item to the form where project risks can be better identified, qualified (for example, using a likelihood – consequence matrix) and mitigations proposed, rather than requiring each QP to separately identify risks in each item of the form. Again, this is an element of project development that is best done collaboratively amongst a team of qualified persons. Like cost estimation guidance, the CSA should refer to established organizations and methodologies to identify a benchmark against which risk management can be aligned. A standard framework for risk reporting would also improve the ability of the public to compare projects in a more unbiased manner.

9. Environmental and Social Disclosure

On the topics of environmental and social disclosure, it is clear to us that NI 43-101 requires an overhaul. As many corporate boards have experienced firsthand in recent years, topics related to environment, social and governance are no longer just catch-phrases, but issues of real significance to investors and the public at large. We have seen examples from major mining companies whose internal project development guidelines have shifted from simply ensuring to include mention of these topics in project studies to making these central considerations in project design and development from the earliest exploration stages. We recommend that the CSA engage in specific consultation and reform on this topic to make NI 43-101 a showcase for best practice in the disclosure of ESG issues for the mining industry.

Regarding disclosure of community consultations, we believe that this should be a mandatory requirement. Once again, this will only serve in the public's best interest, ensuring that projects can be compared on a more level playing field.



10. Rights of Indigenous Peoples

Regarding the disclosure of risks and uncertainty that may arise because of the rights of indigenous peoples, as a minimum we propose several components. First, a comprehensive description outlining the rights of the indigenous peoples who are or would be impacted by the project. Second, a representative summary of recent challenges posed to other similar projects and an analysis of how the situations faced by those projects compare to the project that is the subject of the disclosure. Third, a description of what measures are to be put in place to mitigate the risks.

With respect to the relationship between the issuer and indigenous peoples, a comprehensive description of the consultation and agreements in place should be disclosed. In the case of projects managed by joint ventures, the relationship between the issuer and the project itself must also be clarified regarding any agreements.

Requiring the QP to validate the issuers disclosure of the above risks is, in our opinion, outside of the scope of competency for many qualified persons. If the CSA decided to include such a validation, it may require the QP to rely on the support of legal professionals, such as for the independent verification of mineral titles.

11. Capital and Operating Costs, Economic Analysis

We agree with the CSA that greater prescription with respect to the support and detail provided for capital and operating cost estimates is required. This information is paramount to ensure that different projects can be adequately compared by the public. Requirements for disclosure should include underlying cost drivers (labour, labour productivity, major consumables, energy, and fuel costs, etc.) and adequate benchmarking to demonstrate that these cost drivers are, in fact, reasonable. The conformity of cost estimates to standardized classifications systems and frameworks, such as that of the AACE is also a good recommendation. We have observed a significant variance over the years in what has been called a PEA, pre-feasibility study or feasibility study cost estimate. Without comparison to a standard reference point, the risk of misleading the public as to the actual level of detail completed is substantially increased. With respect to risk disclosure related to cost estimation, a more robust analysis should typically be carried out which directly impacts the amount of contingency included in the overall cost estimate. Again, creating a dedicated item in the technical report to properly address risk identification, classification and mitigation would help in this regard.

With respect to improvements to the presentation of economic analysis, we do agree that standardized frameworks would improve the ability for comparison of projects. Regarding



discount rates, this is one area that requires additional consideration. For all the effort required to describe the build-up of technical inputs, we have never observed a technical report that elaborated how the discount rate for an economic analysis was determined. Even if a range of results at varying discount rates is presented, the “base case” rate must be representative of the macroeconomic factors at play. This is especially critical for projects in jurisdictions where there are significant country or currency risks that could negatively impact the project. This is important, since demonstrated economic viability is required to disclose mineral reserves. However, this is work that typically falls in the domain of economists and not usually completed by technical professionals. Projects carried out by large multinational corporations often have teams whose primary function is to evaluate the range of economic conditions applicable to the project. Smaller exploration companies and junior miners may not have the same internal capabilities. Given the impact of this parameter to the overall project outcome, we recommend that the CSA establish requirements for discussion around how the discount rate was selected and why the selected value for the base case is appropriate for use.

12. Other

Item 19, “Market Studies and Contracts”, was not specifically addressed in this survey. We recommend that the CSA consider bonifying the requirements for discussion around metal pricing and market conditions as they relate to the project. There will continue to be an increased focus on industrial mineral commodities in the coming years and the complexities associated with such projects; the marketing and sales of their products can differ greatly compared with traditional metal mining. Rather than impose strict requirements for project requirements (for example, imposing the 3-year trailing average as the only acceptable method for determining the sales price) we recommend that mandatory discussion be required comparing the chosen values to a set of standard benchmarks. This would both ensure the necessary flexibility for adapting to a range of projects and provide the public with more consistent reporting for the purposes of comparing various projects.