

Additional Guidance - Reasonable prospects for economic extraction – December 15, 2009

In a letter dated June 17, 2009 to the CSA-CIM Working Committee, the British Columbia Securities Commission, on behalf of the CSA NI 43-101 Revision Committee, requested CIM to consider several issues associated with the reporting of Resources and Reserves. In particular, CSA asked CIM to consider providing additional guidance on how qualified persons should determine reasonable prospects of economic extraction for the purposes of establishing mineral resources. CSA made this request in response to industry feedback it received during its recent NI 43-101 consultation process. The CIM Reserve Definitions Committee (the Committee) has reviewed the request to provide additional guidance on the “reasonable prospects for economic extraction” clause in the CIM Definition Standards and has reported on our finding below. The two relevant paragraphs of the December 11, 2005 CIM Definition Standards have been included below for reference.

“A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth’s crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.”

“The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase ‘reasonable prospects for 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. A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. These assumptions must be presented explicitly in both public and technical reports.”

The above guidance indicates that when assessing ‘reasonable prospects for economic extraction’:

- It is the responsibility of the Qualified Person
- It requires judgment based on the Qualified Person’s experience
- The methods used and assumptions made to determine if the project has “reasonable prospects” must be presented explicitly in both public and technical reports.

Additional Guidance is provided in the CIM Best Practice Guidelines for the Estimation of Mineral Resources and Mineral Reserves under Section 4, Geological Interpretation and Modeling, Mining and Economic Requirements and Section 5, Mineral Resource Estimation. This guidance indicates that, when considering ‘reasonable prospects for economic extraction’:

- Factors significant to extraction including mining, processing, marketing, environmental, social, legal and economic aspects must be considered in both Mineral Resource and Mineral Reserve estimates
- For Mineral Resources, risk factors significant to the project economics should be clearly defined, current, reasonably developed and based on generally accepted industry practice and experience.
- For Mineral Reserves, parameters developed must be detailed with engineering complete to Preliminary Feasibility standards as defined in the CIM Standards for Mineral Resources and Reserves.
- Cut-off grade or cut-off net smelter return (NSR) used for (both) Mineral Resource and Mineral Reserve reporting are largely determined through the application of reasonable long term metal prices.

Additional Guidance

In regard to the statement above, that long term prices be used to determine cut-off grade, further guidance has been developed and included on the CIM website [see **‘Questions resulting from CSA-CIM Committee Meetings (April 14, 2008)’**]. In providing ‘additional guidance’ for the estimation of Mineral Resources, the Committee suggests that:

- The QP should be guided by his or her own experience with respect to the development of reasonably based geological, mining, processing, marketing, environmental, legal, social and economic parameters for the determination of gross scale project economics. If the QP’s experience is sufficiently broad, then an individual QP should be seen as capable of determining ‘reasonable prospects for economic extraction’ at the mineral resource estimation stage of a project. For example, a QP with sufficient experience to classify him or her self as an ‘economic geologist’ may consider his or her experience sufficiently broad whereas an exploration geologist might not. The QP should be satisfied the chosen parameters are reasonable and the resulting mineral resource estimate has “reasonable prospects for economic extraction”.
- If the QP does not have sufficiently broad experience to develop the requisite reasonably based parameters, then the QP should consult other QPs to augment his or her experience in determining ‘reasonable prospects for economic extraction’.

Since the assessment of ‘reasonable prospects for economic extraction’ is central to disclosing a mineral resource, the QP must outline the method adopted (NI 43-101, Section 3.4c) when providing written disclosure.

The Committee would like to reference an article written by Messrs. G. Gossan and L.B. Smith that was published in the CIM Magazine Volume 2, No. 8 pp 70-71 and entitled Reasonable Prospects for Economic Extraction, as providing additional relevant background for the QP in regard to deposits amenable to open pit extraction.

The Committee considers that the use of mine planning tools, such as open pit design algorithms, to limit the extent of mineralization is valid for advanced Mineral Resource statements and Mineral Reserves but it may not be appropriate, or required, for earlier stage Mineral Resource statements. For early stage assessments the QP may choose to demonstrate ‘reasonable prospects for economic extraction’ by comparing the deposit’s attributes to analogous mine operations.