

ISSUES PAPER

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REPORTING OF INFERRED MINERAL RESOURCES

SAMCODE WORKING DRAFT

An Issues Paper for comment by the
SAMREC/SAMVAL Committee Working Group



Preface

There has been an important debate on the valuation of inferred mineral resources in the minerals industry. But it is uncertain whether these mineral resources have any value and, if they do, how they should be valued in the different phases of the mining life cycle.

The current guidelines in the SAMREC and SAMVAL Codes permit the competent valuator to use inferred mineral resources in discounted cash flow (DCF) valuations in specific circumstances. The following is a list of circumstances in which inferred mineral resources can be used in the valuation of mineral assets:-

mine design, planning and economic studies may include a proportion of inferred mineral resources, if a mine plan exists and a statement of mineral reserves clearly indicates that inferred mineral resources have been used in the planning, but have not been reported or included in the mineral reserve estimate (which, by definition, includes proved and/or probable categories and the associated measured and indicated resources) (SAMVAL 27);

where a significant amount of mining in the mining plan includes inferred mineral resources, a comparison of the results, with and without these inferred resources, MUST be disclosed. Inferred mineral resources should not be used to make a decision on the economic viability of the mineral asset;

where their use can be justified in a Valuation Report and treated appropriately for the substantially higher risk and uncertainty they incur (SAMVAL 27); and

where mineral reserves (which, by implication, are measured and indicated mineral resources) are mined ahead of inferred mineral resources, as occurs in the DCF model.

The Codes require that “modifying factors and assumptions that were applied to the Indicated and Measured Mineral Resources to determine the Mineral Reserves MUST be equally applied to the Inferred Mineral Resources” (SAMREC 23), resulting in “modified Inferred Mineral Resources”, which would then be included in a life-of-mine plan and, subsequently, in the mineral asset valuation, provided that the above circumstances are met.

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Invitation to Comment

The SAMREC/SAMVAL Inferred Resources Working Group welcomes comments on the debates set out in this paper, especially comments that:-

- explain the commentators views and solutions to the issues clearly; and
- provide supporting reasoning.

The SAMREC/SAMVAL Inferred Resources Working Group requests that a SAMREC/SAMVAL Committee Meeting is convened to discuss this paper.

Summary of SAMREC/SAMVAL Working Group Views

1. Inferred resources are important for Life of Mine (LoM) planning and assessing the intrinsic value of a company during transactions;
2. Preliminary economic studies are a common practice;
3. Positive geological results are a necessary, but not sufficient, criterion for describing a deposit as inferred. Other parameters that assist in determining whether a deposit should be described as inferred should be disclosed.
4. Inferred mineral resources are used in Net Present Value calculations, and these sometimes help to confirm whether a resource should be classed as inferred.

5. Clause 2.3 of the NI 43-101 Code should be removed because it prohibits an identified valuation method.
6. The current SAMREC/SAMVAL definition of an inferred resource is not specific or clear enough. It could be improved by introducing confidence limits (along the lines of the Oil and Gas Reporting Standards).
7. The team argued that metal prices used in calculations and underlying costs involved should be disclosed.

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Deliberations

At the meeting of the SAMREC/SAMVAL Inferred Resources Working Group on the 15th September 2009 the following issues were raised that have bearing on the matter:-

Debate 1

The project team deliberated on whether inferred resources have any value and why it is important to value inferred mineral resources in the minerals industry.

*SAMREC/SAMVAL Inferred Resources Working Group View: Inferred resources have value as part of Life of Mine (LoM) planning and are a necessary part of valuing a company during transactions not only in mergers and acquisition but for **all** companies to current known technology.*

The Working Group unanimously agreed that inferred mineral resources have value as part of the mineral asset, especially given that these mineral resources have the potential to be developed into higher mineral resources categories, with increased geological confidence. Depending on the stage in the mining life cycle of the mineral assets, inferred mineral resources are used in the future planning of the operation and have a value attached to them. Over time, inferred mineral resources should be upgraded into indicated and measured mineral resources categories during ongoing development efforts.

Valuation of inferred mineral resources is important in the minerals industry in mergers and acquisitions and in determining the intrinsic value of a mining company. Only that portion that has reasonable prospects of eventual economic extraction should be accounted for, as required by the definition of a mineral resource in the SAMREC Code.

Debate 2a

For a Competent Person to classify a mineral resource, reasonable prospects of eventual economic extraction need to have been considered. The Working Group was asked to deliberate on how this can be achieved without conducting preliminary economic studies (evaluation¹).

SAMREC/SAMVAL Inferred Resources Working Group View: Preliminary economic assessments are necessary for the evaluation of a mineral resource.

Adequate disclosure of materially important underlying assumptions that lead to the determination of prospects for reasonable, eventual economic extraction of a mineral resource.

1. In the SAMVAL Code, valuation and evaluation are differentiated as follows:- Valuation "is concerned with the value or worth of a Mineral Asset ,as opposed to „evaluation“, in which the key objective is an economic assessment or determination of the economic merit of an Asset."

The Working Group indicated that it is common practice that preliminary studies are conducted to establish the economic merits of a deposit, given commodity prices, recoveries, and available technology to recover the mineral of interest. However, this process is never disclosed or discussed if it was conducted.

Debate 2b

What aspects should be considered in determining whether a resource, and particularly an inferred resource, is likely to be extracted economically eventually?

SAMREC/SAMVAL Inferred Resources Working Group View: Positive geological results are a necessary, but not sufficient, criterion for describing a deposit as inferred. Other parameters that assist in determining whether a deposit should be described as inferred should be disclosed that modifying factors should be considered, at the resource level, such factors being social, environmental etc. (Those modifying factors which will impact an economic extraction and list the factors)

Before inferred mineral resources can be reported, the mineralised material usually starts as a deposit or exploration target. At this stage, the company would be speculating that there could be a mineral of interest in that area. With positive geological investigations, this material would be classified into the inferred category.

The Working Group suggested that the factors used in the evaluation of inferred mineral resources should be disclosed as well as the parameters that were used to classify these resources into the inferred category.

The Working Group suggested that, depending on the project lifecycle, mineral resources may be converted to

mineral reserves as a result of ongoing exploration. As a general rule, when a company is developing a new project, it would show that the mineral reserves and mineral resources justify the capital expenditure for a mine and that mining these will result in the required return in investment. During mining, mining companies would continue with ongoing exploration to find additional mineral resources. This would, subsequently, result in the constant addition to the mineral reserves over the LoM. However, if a mining operation is at the end of its life, then inferred mineral resources will never be mined.

Debate 3

The Working Group was asked to assess whether it was a common industry practice to use mineral resources, including inferred mineral resources, in Net Present Value (NPV) calculations to calculate the value of the mineralised material or to evaluate their potential.

SAMREC/SAMVAL Inferred Resources Working Group View: It is a common industry practise and these calculations sometimes help to confirm whether a resource should be classed as inferred.

The team believed that it was a common practice to include inferred mineral resources in NPV calculations. However, it recommended the following:-

- should the outcome of a Preliminary Economic Assessment, including inferred mineral resources, be a negative number, the Competent Person should retract that part of the resource that is not economical; and
- in cases in which the outcome is not a negative number, the Competent Person should justify why the asset is still described as a resource and state the modifying factors used to confirm the resource status.

Debate 4

The team discussed whether or not Competent Persons should use the same commodity price (spot price) for resource and reserve calculations and cut-off grades.

SAMREC/SAMVAL Inferred Resources Working Group View: There was no consensus view on this issue. The team argued that metal prices used in calculations and underlying costs involved should be disclosed.