

Who Will Use a Global Mineral Resource Assessment? An Industry Perspective¹

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An assessment of the global mineral endowment, what is known and could remain undiscovered, would be a valuable tool for mineral users, mineral explorers, land planners, international governments, and environmental protectors alike. The mineral industry does not use mineral assessments directly to discover new ore deposits, but an assessment can be a tool that, in concert with other measures of Earth's resources, might provide a logic-based forum for long-term land use planning, coordinating environmental issues, and assisting in related legal issues. As a result, the assessment could help us provide for the sustainable resource needs of the planet's inhabitants. Perhaps such a forum will find the common ground necessary to ensure that the needs of all are equally addressed with logic, planning, and facts. A global mineral assessment, however, can be useful only if the planners, governments, protectors, and all mineral users clearly understand the potentially serious limitations inherent in a mineral assessment.

The first danger we face is that we do not have the data necessary to complete a global mineral assessment. Regardless of the explosion of earth science data and sophistication of assessment techniques, the basic data are incomplete. Large areas are poorly understood; some remain unstudied because of political or social issues. I have yet to see a map or assessment that clearly acknowledges regions and domains where the data are insufficient to assess mineral potential. The recognition that real information is lacking may well be the driver for acquiring meaningful data.

Statistical assessments may provide some measure of the likelihood that we will find new deposits, but some land use planners, government lawmakers, and other users may believe the specific numbers rather than understand the concept of mineral discovery potential and the inherent limitations of discovery. Cold statistics from incomplete data used by people not personally familiar with a region result in an assessment, but I prefer relying on the gut feelings of innovative people who have spent time in the field thinking and mapping and questioning paradigms.

The second danger we face is that assessments often are expressed in numbers of deposits or monetary units and then compared with other competing land uses on the basis of preserved value—a tradeoff approach. While we can use and misuse mineral assessment reports from various sources, we should not just accept the cold numbers. Instead, we should understand the limitations of the data we use and, if that information is not enough, get better data. It is the data, not the assessment, that are most valuable to the mineral discovery industry.

A third perilous flaw in any assessment process is dependence on the existing deposit models. By definition, descriptive ore deposit models, genetic models, and the resulting search models are based on what is known. The deposit is known first, and then the model is developed. Even when a description is detailed in every way, when we have a perfect understanding of how a deposit formed and when the unique geologic domain is globally well documented, a mineral assessment can fall short.

The fewer mineral deposit types we know about, the fewer deposits an assessment can estimate. Any user of a mineral assessment should consider not only the numbers but also new deposit types, new products or commodities not yet considered important, new technology that could render poor-quality deposits economically feasible, and a possible lack of relevant data for identifying a domain permissive for the occurrence of new undiscovered mineral deposits. Mineral assessment is not a static process.

A paradigm worth breaking is the misconception that modern, well-managed mineral production and a healthy environment are mutually exclusive concepts. The producing community is taking a proactive role to change this mind set. A history of poor stewardship is not a valid indicator of the future stewardship of the Earth. Every year offers more examples of visionary, well-managed enterprises for extracting minerals in ways that protect the environment. Mining companies protect large areas of the Amazon, for example, from clearcutting, farming, and burning. Times have changed, and the industry is eager to partner sustainable environment practices with sustainable resource development.

The assessment process, like the discovery process, is dynamic. Today's estimates will change tomorrow, but a global mineral resource assessment is long overdue. It may not

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lead directly to new discoveries, but it can be a useful forum to coordinate what are now fragmented, conflicting efforts to manage sustainable growth and environmental stewardship. I

urge that we are cautious and that we remember that the process is not perfect and needs to change as we learn more. This inherent imperfection, however, is no reason not to start.