



Specialist mineral resource consulting services for the global exploration, mining and investment communities

*Z\* can provide the applicable governance and assurance services tailored to each individual client's needs.*



Properly governed and assured mineral resources and reserves add significant value to a mining project and are increasingly important components of stock exchange regulations. "Our diligence is your peace of mind".

Z\* has extensive experience in all aspects of corporate governance related to mineral resource management and has participated in numerous initiatives aimed at improving governance on both an operational and corporate scale. This is achieved through the pro-active introduction of tailor-made MRM policies and procedures that are based on substantial practical experience and technical knowledge.

In addition, Z\* can provide assurance by way of independent review at a number of different levels. In the past reviews have been undertaken on the:

- Representivity of sampling optimisation studies;
- Sampling process and the integrity of data;
- Interpretation of geophysical data;
- Validity of geological models;
- Spatial representivity of sampling data;
- Compatibility of sampling data from various prospecting programmes;
- Applicability of estimation methodologies;
- Accuracy of mineral resource and reserve statements;
- Validity of mineral resource classifications;
- Calculation of mining coefficients and grade control problems; and
- Integrity of CP reports and listing documentation.

## REVIEWS AND AUDITS

Z\* considers routine independent reviews and audits to be an essential component of good mineral resource management and recommends that they are undertaken on a regular basis. Reviews and audits can be tailored to specific client requirements, but based on industry experience Z\* have identified three general levels that are routinely offered to clients:

**High Level Review:** Typically of five days duration, this review often (but not always) occurs remote to the client's operation and is based on reports and data provided by the client. The client typically has a particular document, issue or problem that requires independent analysis and the focus is directed at a high level to identify major errors or areas of risk. Z\* generally apply a team approach to this kind of review to ensure that all aspects are covered in the short time available. A summary report is provided to the client.

## GOVERNANCE AND ASSURANCE



**Comprehensive Review:** Typically of two to three weeks duration, this review generally includes a site visit and considerable interaction with operational personnel. These reviews typically involve assurance on mineral resource and reserve statements and will involve one or two dedicated Z\* personnel depending on the scope of the audit. The review is comprehensive and will cover the entire evaluation process from sampling to final mineral resource estimation. Specific areas deemed to be more critical will be targeted for more thorough investigation. This review culminates in a comprehensive report for the client.



**Detailed Audit:** Typically of two to three months duration, this type of audit is often undertaken on mineral resource estimates requiring significant capital funding. A considerable period of time is spent on the operation and a detailed on-site examination of geological and sampling data is undertaken. Generally 10% of the data are verified in detail and a comprehensive analysis of the applicability of the estimation methodology, the representivity and accuracy of the mineral resource estimates and the correctness of the mineral resource classification is undertaken. A detailed independent report will be provided for the client, highlighting issues and recommendations.

### RISK ANALYSIS

Z\* specialises in the application of conditional simulation techniques to quantify uncertainty associated with mineral resource estimation. We recommend that this quantitative analysis is undertaken in conjunction with a detailed practical review to ensure that all issues related to mineral resource risk are identified and incorporated in the classification. This technique is often used at the request of financial institutions and in due diligence studies and reviews to verify recommended resource classifications.

### DATA ROOMS

In terms of correct governance, Z\* have expertise in setting up mineral resource data rooms to ensure proper management and storage of vital exploration and evaluation data. Well planned data rooms that allow controlled but quick access to mineral resource data and information are paramount to instilling confidence in potential buyers undertaking due diligence audits.

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#### Services include:

- comprehensive geostatistical estimation service
- mineral asset valuation
- Competent or Qualified Persons Reports
- classification of mineral resources
- size frequency distribution modelling
- geostatistical simulation
- sample optimisation
- data validation
- geological modelling
- statistical analysis

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