Drill hole spacing analysis for classification and cost optimisation: a critical review of techniques

I Glacken1, O Rondon2, J Levett3

1.Executive Consultant, Snowden Optiro, Perth WA 6000. ian.glacken@snowdenoptiro.com

2.Principal Geostatistician, Snowden Optiro, Perth WA 6000. [oscar.rondon@snowdenoptiro.com](mailto:oscar.rondon@snowdenoptiro.com)

3. Principal Consultant, Snowden Optiro, Perth WA 6000. jane.levett@snowdenoptiro.com

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# ABSTRACT

Reporting Codes are not prescriptive on methodologies to report or classify Mineral Resource Estimation results, but the assessment of risk and uncertainty is required, and is likely to be increasingly important in future Code updates. The 2012 JORC Code 2012 indicates that relative confidence in tonnage-grade estimations should be considered for classification, and that there should be a discussion of relative accuracy and confidence levels in the Mineral Resource Estimate. These considerations are also relevant to the drillhole spacing required for various classification categories, along with other geological and data quality criteria.

This paper summarises the theory, principles and current practice of various drill hole spacing analysis techniques for both achieving a desired level of resource categorisation and for optimising grade control or resource drill-out costs. The authors provide practitioners with a guide in their use to assess uncertainty and relative accuracy, as illustrated by a number of case studies.