

Geostatistical modeling and drilling pattern optimization at Iduapriem mine, Tarkwa, Ghana.

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Geostatistical modeling of the lognormal distribution of gold grades of blasthole samples has been used to determine whether changes to existing sampling and reserve estimation techniques are necessary.

Variogram modeling of the gold distribution pattern has established certain characteristics about the sample relationship within the deposit. Sample range influence indicates that sampling in the past has been too dense. The current grid sample spacing can be doubled with probably little effects on ore grade control. Thus drilling and sampling cost may be significantly reduced by expanding drilling distances.

The study also show that sampling practise has to be redefined if the advantages gained from the application of geostatistical methods of ore grade control analysis are to be obtained. Analysis of the quality of samples collected show that about one quarter of the data was obtained from barren areas. This problem may be eliminated from subsequent geostatistical studies if geologic information is provided in subsequent sample data files.