

# How to Formulate an Effective Ore Comminution Characterization Program

*S. Morrell*

Managing Director, SMC Testing Pty Ltd, Brisbane, Australia, [steve@smccx.com](mailto:steve@smccx.com)

## **ABSTRACT**

Whether it is for the purposes of the design of new comminution circuit, a brownfield expansion or a geometallurgical program, one of the principal keys to success is to “know your orebody”. To do so requires the formulation and execution of a drill core sampling campaign followed by a laboratory program where ore samples are subjected to appropriate comminution tests. When contemplating such programs three of the most often-asked questions are: and “*What laboratory comminution test(s) should be carried out?*”, “*How many samples will be required?*” and “*Where should the samples be taken from?*”. This paper provides guidance to help answer these questions and in the course of doing so reviews some of the more popular comminution tests currently available, how effective they are and the extent to which comminution characteristics may vary throughout orebodies. The degree to which comminution characteristics vary is illustrated using statistics from a data base of 50,000 test results covering over 1,800 orebodies. These results are used to provide guidelines to help decide on the requisite number of samples required to ensure that an orebody is appropriately characterized from a comminution perspective.