



Compliments of the season to all SAIMM members, and may 2014 be a safe, prosperous, and productive year. I trust that you and your families had a well-deserved and enjoyable break.

Sampling and metal/metallurgical accounting is something I have been involved with ever since I started my career in the mining industry. Initially, in the production environment, it was about where do we need to sample, can we sample there, will the sample be manual or automatic, how often do we sample, and what should the sample size be.

Attention then turned to sample preparation – how do we filter the samples, how do we dry the samples, how do we reduce particle size when required, and how do we split the samples? After all this the samples still had to be assayed, which inevitably led to further headaches. When you throw in some weightometer data, then metal/metallurgical accounting starts to take shape. This then leads to the big debate between mining engineers and metallurgists regarding tons delivered to the plant versus tons processed by the plant and mine head grade versus plant head grade. Both sides will have their sampling and statistical arguments, but at the end of the day the actual physical amount of saleable product remains undisputed.

My next encounter with sampling was the marketing of samplers, which involved reviewing existing sampler installations and proposing new ones. This had its fair share of challenges, especially when the client was not sure about their sampling requirements. This logically led to being involved with the design of sampling and measurement facilities for new plants. This became very frustrating when clients would query the number of sampling points – their response was generally why not just sample feed and product and then estimate the rest? Clearly metal/metallurgical accounting and sampling for diagnosing process problems did not feature in their list of plant requirements. Then of course the client wants to reduce plant capital cost, and what's the first item to go? Sampling points, naturally.

I can, however, say that today sampling and metal/metallurgical accounting are taken seriously by most mining companies and are no longer regarded as merely 'nice to have'. The recent SAIMM conference on sampling is testimony to this view. I do believe, nevertheless, that we need to be careful about taking a 'one size fits all' approach to sampling in the mining industry. While some sampling concepts can be applied across all commodities, one must not lose sight of grade differences. One gram per ton in a gold or platinum mine is a far cry from 50 per cent iron in an iron ore mine.

The development of technology has supported the wider acceptance and application of sampling and metal/metallurgical accounting. For example, online sampling and analysis of many commodities has made plant control so much more effective and allows the rapid pinpointing of process problems.

Communication between geology, mining, and metallurgy as regards sampling and metal accounting has improved considerably in that alignment has been achieved. The requirements of the individual discipline are taken into account as well as the overall mine requirements. The relationships between run-of-mine ore grade and ore types and those of product recovery and grade are better understood and more effectively taken into account.

Therefore, I can conclude that sampling and metal/metallurgical accounting is alive and well in the South African mining industry. In addition, the SAIMM will continue to support ongoing development in these areas via conferences and journal papers.

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