

Paper Number: 3415

A review of current Quality Assurance and Quality Control (QAQC) practices in the mining industry

¹Burnett, M.J

¹Snowden Mining Industry Consultants (Pty) Ltd, MBurnett@Snowden.co.za

A formalised, independent Quality Assurance and Quality Control (QAQC) program is required when compiling exploration, Mineral Resource and / or Mineral / Ore Reserve reports that are to be released in the public domain. Snowden reviewed 500 recent public domain technical reports, covering the major commodity groups, in order to determine the current state of industry practice and how compliant the industry is with regulatory reporting requirements. The study focused primarily on NI 43 - 101 technical documents, as these are the easiest to access and have a standard reporting format.

An earlier review of QAQA compliance, specifically related to sampling QAQC, was undertaken by AMEC [1], who observed that only 4 out of 26 projects reviewed by AMEC between 2003 and 2007 had established independent QAQC programs that would allow assay precision and accuracy to be quantitatively assessed and quantified. In addition, only half of the NI 43 - 101 technical reports reviewed provided relevant details as to how the QAQC programs were undertaken.

CIM Best Practice Guidelines [2] state: "QA/QC must be addressed during the collection, recording and storage of any of the data ultimately used in the MRMR estimation. This programme should be concerned with, but not limited to, data verification, drill sample recovery, sample size, sample preparation, analytical methods, the use of duplicates/blanks/standards, effects of multiple periods of data acquisition and consistency of interpretation in three dimensions. The results of the QA/QC programme form part of the database and must be recorded".

The CIM definition of QA is: "All of those planned or systematic actions necessary to provide adequate confidence in the data collection and estimation process".

QC comprises the analytical tools used to assess the quality of the analytical data, including the results for standards (Certified Reference Materials – CRM's), blanks, duplicates (field, reject and pulp) as well as the repeats of previously prepared pulps.

In general, the overall result from the literature review demonstrated that there has been an overall improvement in the transparency of the information contained in the NI 43 - 101's as well as disclosure of QAQC procedures and process in the technical reports as well as often being available on company web sites or as standalone information documents. Notwithstanding the publication of regulatory reporting codes and "Best Practice Guidelines" (CIM and AusIMM) [2, 3], a number of substandard practices still remain; these include, but are not limited to:

- Inappropriate selection of CRM's

- No/ limited disclosure of core and/ or RC chip recoveries
- No/ limited umpire laboratory participation
- Dependence on the laboratory to insert Blanks, Duplicates and CRM's into the sample stream

References:

[1] <http://www.cim.org/en/Publications-and-Technical-Resources/Publications/CIM-Magazine/September-October-2007/columns/Standards.aspx>

[2] <http://web.cim.org/standards/MenuPage.cfm?sections=177&menu=180>

[3] <https://www.ausimm.com.au/publications/publication.aspx?ID=15848>

