OMEGA Geo-Consulting Pty Ltd

A COMPREHENSIVE QA-QC FRAMEWORK

A project was conducted to design a QA-QC framework that enables the close monitoring of data quality throughout all the stages of a drilling campaign.

The view was taken that a drilling campaign can be broken down into 6 linked processes P1 to P6. A process delivers an “output” that becomes the “input” into the next process (Figure 1).

Design of the QA-QC framework

The six processes were mapped (Figure 2) following a detailed review of the practices in place. Quality assurance (QA) standards were then developed and included the definition of measurable critical-to-quality (CTQ) characteristics closely connected to the geologist’s quality goals.

Operation of the QA-QC framework

A check sheet is used to collect the quality control (QC) data (see Table 1). Each process has a specific check sheet targeting inputs, outputs and control factors (methods / personnel / equipment / materials) relevant to the process CTQ’s. The field technician records their observations into the check sheet by means of an easy-to-use 1 - 2 - 3 scoring system closely related to the QA standards (see Table 2).

A rating on the scale of 1-to-10 is computed based on the actual scores. The rating serves to show how the process performs relative to agreed thresholds and to make the best possible decision regarding the process output(s). On the example of P2: accept the hole as drilled or get it re-drilled.

Control charts assist in detecting any suspicious variations or trends in process performance, which is an added benefit of the methodology e.g. Figure 3 plots the P2 rating as the campaign progresses.