

Collaboration Leads To Real Time Control Of Gold Leach Circuits

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The gold industry has long suffered the lack of instrumentation capable of measuring gold in “real time” and “on line” down to ppb levels. This lack of capability limits the operators to management of the process through historical data, for the most part, delivered after any chance of process strategy can be employed. Hence the plant chemistry is always run in a “rich” state in order to ensure there are no costly negative excursions. Despite the process being run in this “rich” state there are still too many excursions and significant gold losses to tail occur.

At the same time control of carbon concentrations in the leach circuit is ad-hoc at best with only manual sampling carried out sporadically during the shift. Likewise gold loadings on the carbon can only be seen through manual sampling and results are often returned after the optimum time for carbon transfer has passed.

Gekko has a collaboration agreement with Curtin University, CSIRO and Rockwell Automation for the Carbon Scout which continuously monitors all tanks for carbon concentrations, dissolved oxygen, pH, and soon to have gold concentrations on carbon. The OnLine Gold Analyser (OLGA) for continuous measurement of low grade gold down to ppb levels. This technology is more accurate than fire assay as it utilises a far larger sample across 100% of run time. Rockwell Automation are our partner in developing the Trinity Metal Tracker. All these technologies combined will provide the first real time automation for a gold CIL/CIP recovery circuit. For the first time a gold plant will be seen in real time and process control will run from feedback supplied by the system. A fully auditable metal tracker will give automated data as and when it becomes available as well as handling retrospective data back to the system. Sampling error will be highlighted with projected and actual results displayed in as close to real time as possible. Tracers in the ore will lead to automated auditable mine ore block and stockpile reconciliations.

The system will provide auditable control to enable real time process feedback for existing automation infrastructure.