

IPJ gangue rejection and pre-concentration plant results match CGR lab work

Full scale installations of the InLine Pressure Jig (IPJ) continuous gravity recovery (CGR) circuits at Pirquitas (Silver Standard Resources) and Kloof (Gold Fields) provide further evidence of the strong correlation of Gekko's CGR laboratory test work protocol and plant results. In both instances, the preliminary test work was undertaken in Gekko's metallurgical laboratory, utilising Viking Cone and tabling test work where appropriate.

Both circuits have substantially different flow sheets with IPJs operating in different particle size ranges. In the case of Pirquitas the IPJs treat particle sizes in the 2-12mm size range and perform a critical gangue rejection function.

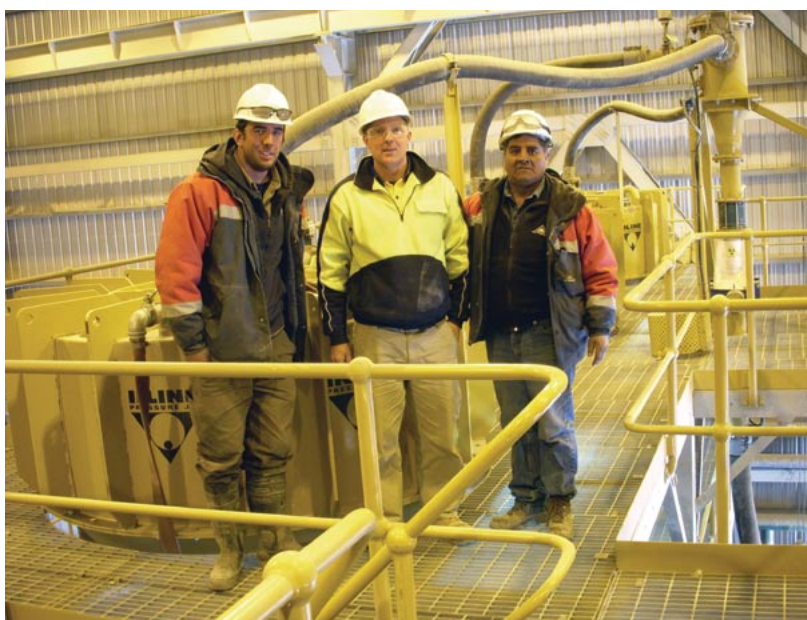
Testwork

Extensive gravity characterisation test work was conducted at Gekko's laboratory in Ballarat, the University of Technology at Oruro, Bolivia, and Gekko's Peruvian agent, Futuritech. The results indicated that the ore contained at

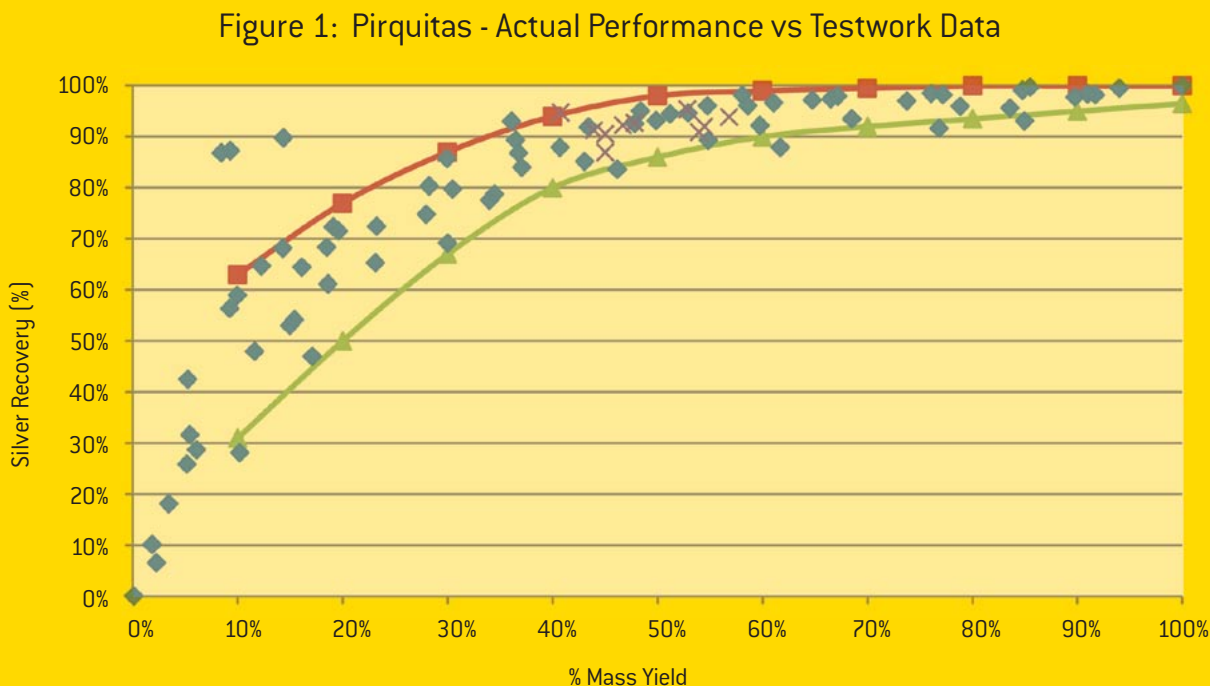
the Pirquitas mine site could be separated at a crush size of 12mm into 50% of the mass with less than 5% silver loss. Key tests conducted during the program include size distribution analyses, single pass tabling tests and dense media 'Gekko Viking Cone' testing.

The Viking test is particularly suited to determining the recovery and mass yield that can be obtained using the IPJ at coarse sizes.

OVERALL PLANT RESULTS		JIG RESULTS	
Silver Recovery:	93-95%	Silver Recovery:	85%
Current Mass Yield:	65-70%	Current Mass Yield:	48%



Michael Braaksma, Gekko's Technical Team Leader (centre), oversees commissioning at Pirquitas in Argentina with Brennan Mallory and Gustavo Choque from Silver Standard



Plant Design

Based on the testwork, Gekko Systems designed a plant to treat the ore at an efficient operating cost and optimum recovery. The plant design included the following features:

- 214tph throughput
- 6 x IPJ2400s in two stages of three parallel trains
- Rougher-scavenger Jig circuit to allow for high mass pull to concentrate
- The IPJ2400 was de-rated from a nominal 100tph to 75tph each due to the high mass pull to concentrate required
- A water recovery and recycle system recovers water from the IPJ heavies and lights and the water is reinjected

to feed the Jig circuit. The water recovery system enhances the low environmental footprint of the plant.

Plant Performance

Figure 1 highlights the strong correlation between test and actual plant results. The plant data follows the main trend and stays within the variances seen in the Gekko test work results, which are also plotted in the graph above.

Trevor Yeomans, Director of Metallurgy at Silver Standard, commented that, "The commissioning process has gone exceptionally well and the performance of the plant has exceeded the initial lab testwork recoveries".

The higher grade produced by the IPJ circuit resulted in increased silver flotation recovery at a higher concentrate grade in the downstream milling and flotation circuit.



Two stage modular IPJ parallel circuit at Pirquitas, operated at 4000m in the Andes