



## SCOPE OF WORK

The first phase enabled an increase in existing plant throughput of 35%, involving a regrind mill fed with primary SAG mill oversize. Operating in closed circuit with two classification cyclones, the overflow product reports to two pre-conditioning tanks, and on to a single air agitated rougher flotation column (92 m<sup>3</sup>), followed by two scavenger columns (58 m<sup>3</sup>), configured in series. Results indicate 90% gold recovery and 80% sulphides recovery.



**SYAMA GOLD MINE**

MALI

**FLOTATION**



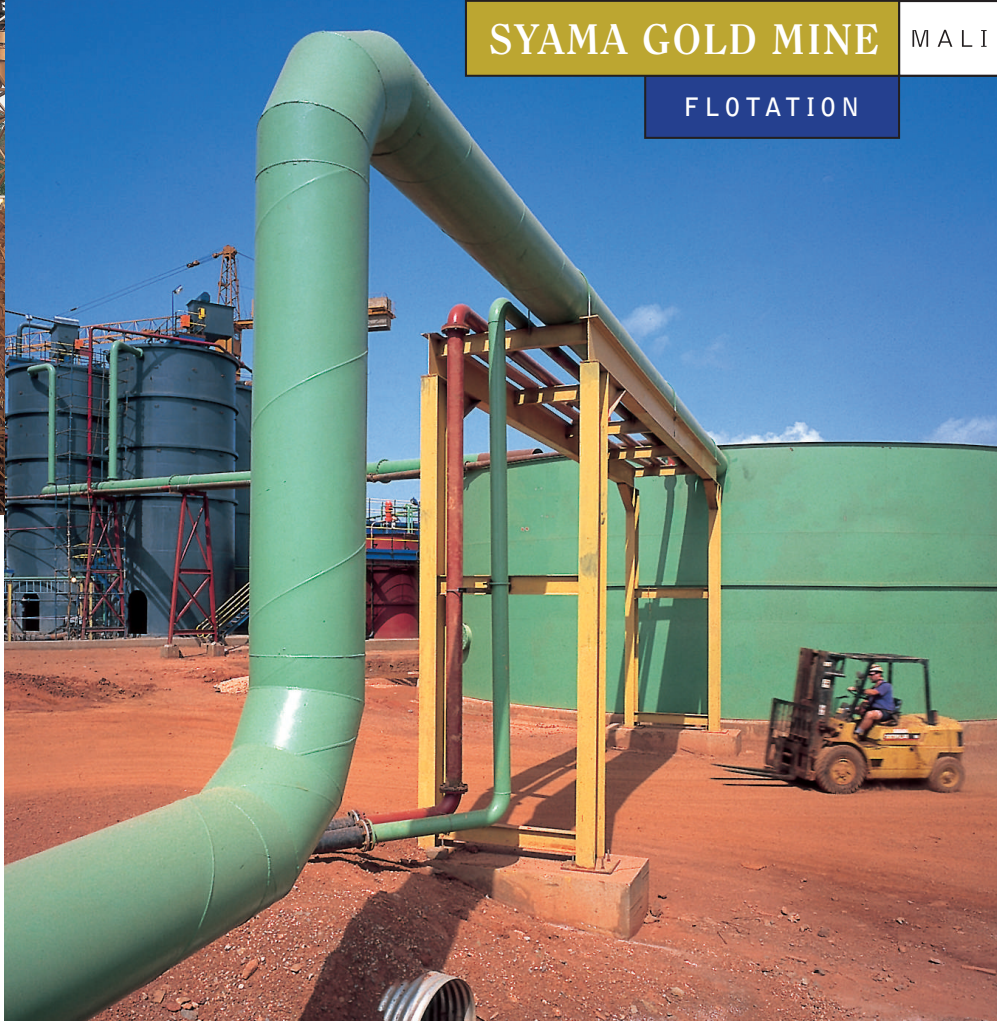




## SYAMA GOLD MINE

MALI

### FLOTATION



Concentrate is thickened to 60% in a 6m diameter Bateman's Ultrasep high rate thickener and pumped to a filter press plant. The concentrate filter cake is then conveyed to the SAG mill inlet, where the fuel content (as sulphide and organic carbon) supplements fuel addition to the existing whole ore roaster. This process considerably reduces fuel costs. Tailings are thickened similarly prior to being pumped to the slimes dam. Water recovered from the thickeners is recycled to a 1500 m<sup>3</sup> mill return water tank.

Automatic samplers installed at the feed and discharge ends of the plant facilitate mine accounting systems.

An Atlas Copco rotary screw compressor was installed for air supply at 6 bar and 2100 m<sup>3</sup>/hr to the flotation columns. A PLC system controls airflow to the flotation columns, column slurry level, thickener flocculent addition and thickener underflow density.

The use of column flotation technology and high rate thickening resulted in an economical plant in terms of lower capital cost of equipment and minimised area required for the installation, when compared to conventional processes.

Roaster fuel consumption decreased by more than 50%.  
Throughput: 120 tph per stream  
Completion: 11 months following confirmatory testwork  
Total Cost: \$8m US

