

AERODRI® 104 dewatering aid saves gold mill more than US\$30,000 through the reduction of moisture in gold concentrate

Situation

A Canadian gold producer wanted to reduce the moisture content of its concentrate in an effort to produce a higher quality end-product and lower its transportation costs. The mill had an existing filter press system in place but sought to enhance its effectiveness. They turned to Cytec for advice and assistance.

Approach & Outcomes

Based on an analysis of the mill's operations and desired results, Cytec personnel recommended the use of AERODRI 104 dewatering aid to augment the existing moisture reduction system. AERODRI 104 dewatering aid is a surfactant that reduces the surface tension of water in the solid concentrate, which allows for better water drainage during filtration. The customer agreed to undergo a full plant trial to test the product's efficacy.

The product was dosed into the customer's filter feed tank at a rate of nine cubic centimeters per minute (two drums per month). After a 40 day trial, results demonstrated that use of Cytec's AERODRI 104 dewatering aid reduced the moisture content in the gold concentrate by an average of two percent. After a 150-day evaluation, an average reduction of 1.14 percent was achieved. The product proved to be most effective with concentrates that were high in clay.

Although the mill reclaims its own process water, tests showed that use of the product caused no adverse effects on the flotation circuit.

Long-Term Results

Based on average throughput and the cost of the reagent, the mill has saved between US\$15,000 and US\$40,000 per year (based on moisture reduction of between one and two percent). The distribution of savings is 58 percent from shipping costs and 42 percent from excess smelter water penalty.

Since the reduction in concentrate moisture lowers product weight per unit of volume, the mill has been able to ship more metal per truck load, and their freight cost to product price ratio has decreased. As a result, not only have they been able to ship a higher quality concentrate, but over time they have made fewer shipments as well, which has contributed to their overall savings.

Your Cytec representative will be glad to evaluate your processing operation and suggest reagent formulations that solve production problems, increase yields, cut costs, and increase overall efficiency.

MCT-1091

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