

IMPLEMENTATION OF SELECTIVE OXIDATION AT LIHIR GOLD OPERATIONS PAPUA NEW GUINEA

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ABSTRACT

On 10 December 2014 Lihir Gold Operations changed from full oxidation of gold containing auriferous sulfides to selective oxidation.

Most of the gold at Lihir is contained in high-arsenic pyrite or arsenian pyrite and this pyrite is the target for preferential or selective oxidation. The installed and fixed cryogenic oxygen supply capacity is used to oxidise arsenian pyrite in preference to low-grade "barren" pyrite thereby maximising gold production.

This paper briefly describes the history of the Lihir process plant and the implementation of the selective oxidation process using the new operating strategy.

Specific lime, cyanide, and other reagent usage in the downstream Carbon-in-Leach gold recovery circuit has remained largely unchanged.

Other deposits of similar mineralogy may benefit from a selective oxidation approach.

Keywords: arsenian pyrite oxidation