

Project 85 – Improving Gold Recovery at the Syama Gold Mine

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ABSTRACT

Resolute Mining Limited owns and operates the Syama gold project located in southern Mali, West Africa. The circuit consists of conventional crushing, grinding and flotation circuits for a double refractory ore to produce a pyrite and gold rich concentrate which is suitable for roasting. Gold extraction from calcine is accomplished using standard carbon-in-pulp leaching followed by gold recovery to bullion using elution, electrowinning and smelting. Several process flow improvements under the umbrella of Project 85 have been implemented to lift overall plant gold recovery from about 78% to 85%. Such improvements include extraction of residual gold from flotation tails, enhancing cyanidation of roaster calcine by selective size reduction, detoxification of tailings return water to improve flotation performance and installation of additional flotation area process control. Project 85 represents an opportunity for Resolute to add significant value to the Syama gold operation.

This case study describes the various elements of Project 85 including design considerations, equipment selection, commissioning and operation of the new circuits.