CDMS DESIGN
CONSULTING ENGINEERS

PROJECT PROFILE

Troy Resources Ltd

Karouni Gold Project

Detailed Design of Detox Tanks

CDMS were commissioned by Australian based gold producer Troy Resources Ltd (Troy) to provide civil, structural, and mechanical engineering design and detailing services for the cyanide detox tanks on the Karouni Gold Project in Guyana, South America. The project was undertaken by Troy within very tight budgetary constraints and short timelines, requiring the design and drafting to be done very efficiently, first time around.

OUTCOME

CDMS successfully completed the detail design of the Karouni detox tanks learning valuable engineering lessons along the way. The project has been both profitable and successful for Troy Resources in a new operating location. In addition, the project has created jobs, delivered royalties and brought new skills into an area where previously there was little current mining activity

BACKGROUND

The Karouni Gold Project lies approximately 180km south-southwest of Georgetown. The project covers an aggregate area of 113,581 hectares; comprising of small, medium and large scale tenements west of the Essequibo River.

PROJECT OBJECTIVES

The cyanide in the tailings needed to be destroyed so that the tailings dam was benign to fish, birds and other animals. The Inco Detox process was chosen based on laboratory testwork results and previous plant experience and know how.

Three tanks were designed with the third tank being redundant to allow for surges. The tanks had reagent controls and air sparging with alarms and shutdown if the cyanide exceeded a prescribed limit. The area was bunded to allow for spills.

OUR APPROACH

CDMS relied heavily on its core technical knowledge base and previous industry experience during the design of the plant infrastructure; which included the complete process, chemical, metallurgical, mechanical, structural, and civil design components.

Due to very tight budgetary constraints and timelines placed on the project by the end user, CDMS decided to use parametric 3D modeling software to streamline the design, minimising re-work when design changes took place. SolidWorks was used to link 3D models and 2D detail drawings to create shop fabrication drawings for construction.

Finite Element Analysis (FEA) stress analysis software was used to check the design of bins, chutes and storage hoppers, and Helix DeltaT6 was used to design the long run conveyors. Regular design development meetings were held between the client (Troy Resources), METS Engineering and CDMS personnel to facilitate a workable and improved plant design.

FOR MORE INFORMATION
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