PROJECT PROFILE



Commodity:	Copper
Client:	Palabora Mining Company
Location:	South Africa
Project Type:	EPCM
Scope:	33 500 tpd copper flotation plant
Duration:	28 months
Completed:	2018
Value:	USD 44 million

PALABORA COPPER CONCENTRATOR

Palabora Copper is a nominal 33 ktpd block cave mine operation that produces copper cathodes as a final product after refining and also produces magnetite that is used in coal processing as a secondary product. The feasibility of establishing a second block cave (Lift II) was investigated and the process team requires design improvements to be made to the existing concentrator plant.

In 2015 SGS Bateman, in JV with RSV, were awarded the EPCM contract to upgrade and modify the comminution circuit and construct a new flotation plant to process 33 500 tpd copper bearing ore from the Lift II mining level.

The plant improvements contribute to the business case of the project by making it possible to de-commission parts of the existing concentrator plant referred to as the "conventional circuit" and replacing parts of the plant with more efficient processes thus reducing operational cost and increasing copper recoveries.

The concentrator plant which comprised the "conventional" section and the "Auto mill" section, was initially designed to process open cast copper sulphide ore up to a throughput capacity of 80 000 tpd. The new concentrator plant aimed to improve the Auto mill stream throughput to handle an increased capacity of 33 500 tpd wet tonnage or 32 863 tpd dry tonnage of ore from the Lift II mining level.

The overall flow-sheet incorporates an existing Auto mill circuit comprising of two existing identical Autogenous mill streams in parallel, ore sorters, existing pebble milling, existing SMP, a new flotation plant and an existing concentrate handling facility.

The plant receives run of mine (ROM) ore from an underground mining facility at an average copper head grade of 0.63% and produce a final copper concentrate with a target grade of 30% Cu.