

**DESIGNING AN IRON ORE PROCESSING PLANT FOR WANJALA MINE**

Otieno Ngoje Sammy EN293-0660/2013

Mercy Yego EN293-0656/2013

**ABSTRACT**

This project aimed at designing an Iron Ore Processing Plant for Wanjala Mining Company found in Kishushe area, Taita Taveta County. Kishushe area has rough roads and is generally sparsely populated with the youth, who make up a larger percentage of the population, being unemployed. Moreover, majority of the residents in this area have poor living standards. Wanjala Mining Company acquired its license and commenced operation in 2011. Taking photographs during fieldwork in addition to utilization of secondary sources were used to collect field data for analysis. The outcome of this work indicated that in certain areas, processes like hand picking, crushing and magnetic separation were not effective in separating the iron ore from the gangue, consequently leading to low recovery rate and production of low value iron ore. Wanjala Mining Company has to install a fully equipped iron ore processing plant with effective and efficient comminution and concentration systems. The main objective of this mineral processing plant was to add value to the iron ore and increase recovery rate thereby increasing the sales value of the company. The outcome of this project indicated that the comminution and concentration systems contributed immensely to the increase in the value of the final product of the plant by Ksh 208,108,000. The estimated total cost of the plant was Ksh. 197,807,700. In addition, if implemented it will promote development of infrastructure in Kishushe area, create more job opportunities for locals and ultimately improve the living standards of Kishushe locals.