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5/24/2017



**FACULTY OF ENGINEERING  
DEPARTMENT OF MINING AND WATER  
RESOURCES ENGINEERING**

**FINAL YEAR PROJECT**

**OPTIMISATION OF BLASTING PARAMETERS TO MINIMISE ON THE  
FINES GENERATED**

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FINAL YEAR RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF A BSc DEGREE IN MINING ENGINEERING

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**DECLARATION**

I, **Olweny Aldo** do declare that this research project report is my original work and has never been presented to any university for the award of a bachelor's degree in mining engineering.

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Date: 31/05/2017 .....

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**DEDICATION**

I dedicate this project proposal to my dear sister Jane Pachoryema and all other relatives for all the financial support they have always offered to me during my education carrier.

May the heavenly father bless them abundantly.



## **ACKNOWLEDGEMENT**

First and foremost, I would like to thank Almighty God for His protection and guidance up to this stage in my life and the Department of Mining and Water Resources Engineering Busitema University for their academic and professional guidance given to me.

In the same spirit I would like to thank my supervisors for their support toward a successful project.



**APPROVAL**

This project report has been submitted for examination with approval from the following supervisor:

Signature: .....

Date: .....

Mr. Wangi Mario



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## **ABSTRACT**

The main objective of the project was to optimize blasting to minimize the fine materials generated. The optimization of the blast an effort to eliminate excessively fine materials or to minimize the amount of big fragments in the ore stock pile. Nevertheless, to optimize the whole production system, it is better to use blasting layout that would produce the material fragmentation required by the remaining part of the production process. This has been used to evaluate blast design options and reduce the amount of trial blasting to produce the required blast fragment size.

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**LIST OF ABBREVIATIONS**

ANFO	Ammonium nitrate
GSI	Geological strength index
GPS	Global positioning system
Kg/T	kilogram per tone
PPE	Personal protective equipment
VOD	Velocity of detonation
%	Percentage
Wt.	weight
UCS	uniaxial compressive strength



## CHAPTER ONE: INTRODUCTION

### 1.0 Background

Mining is the extraction of valuable minerals or other geological materials from the earth from an orebody, lode, vein, seam, reef or placer deposits. These deposits form a mineralized package that is of economic interest to the miner.

Mining of stones and metal has been a human activity since pre-historic times. Modern mining processes involve prospecting for ore bodies, analysis of the profit potential of a proposed mine, extraction of the desired materials, and final reclamation of the land after the mine is closed (Madigan, 1981)

Mining techniques can be divided into two common excavation types: surface mining and subsurface mining. Targets are divided into two general categories of materials: *placer deposits*, consisting of valuable minerals contained within river gravels, beach sands, and other unconsolidated materials; and *lode deposits*, where valuable minerals are found in veins, in layers, or in mineral grains generally distributed throughout a mass of actual rock. Both types of ore deposit, placer or lode, are mined by both surface and underground methods.

Sub-surface mining consists of digging tunnels or shafts into the earth to reach buried ore deposits. Ore, for processing, and waste rock, for disposal, are brought to the surface through the tunnels and shafts. Sub-surface mining can be classified by the type of access shafts used, the extraction method or the technique used to reach the mineral deposit.

Underground mining involves the excavation of tunnels and rooms beneath earth's surface compared to surface mining, underground mining is expensive and dangerous.

Therefore, it is used primarily in situations where high value ores such as gold are concentrated in narrow veins or other usually rich deposits.





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