

## ABSTRACT

PT. Bukit Makmur Mandiri Utama is a company that engages in mining and is one of the mining coal company contractors of Berau Coal, which has operations in the Village Binungan, District Sambaliung, Berau, the Province of East Kalimantan. Mining system that is used by PT. Bukit Makmur Mandiri Utama is a system of surface mining by open pit methods.

Over burden demolition by PT. Bukit Makmur Mandiri Utama performed by drilling and blasting method. The hole diameter shoot is 7 7/8 inch and desain of gemetry blasting is space 9.5 m, burden 8.5 m, stemming 4.5 m, subdrilling 0.5 m, length of field 4,5 m, depth of the drill hole is 9 m, High levels is around 8.5 m. Explosive is 170.1 kg per hole, powder factor is 0.25 kg/m<sup>3</sup> and explosives that are used are Emulsion Blend made by PT. DNX with a composition of 70% Emulsion and 30% AN.

Blasting pattern is applied to the box cut a row between holes and rows by using a 450 ms delay in the hole and surface delay detonator 17 ms, 25 ms, 42 ms and 65 ms. Blasting method used is non-electrically.

Target fragmentation boulder that expected is <15%. Level of fragmentation of rock blasting results in the field to the size of > 120 cm (boulder) based on the theoretical calculation the percentage of boulder of 24.27% and the actual is 25%. Factor contributing to the blocks because it has not exactly blasting the application of geometry.

By considering the characteristics of rocks, characteristics of explosives and methods of blasting, blasting it into the design (Konya, 1990) produce a detonation geometry of burden 7,1 m, space 7,3 m, stemming 6,4 m, deep shoot holes 10,6 m, high level of 8,5 m, subdrilling 2.1 m, long field 4.2 m, explosive per hole is 158.76 kg, powder factor 0.35 kg/m<sup>3</sup> and equal volume of 42.04 m<sup>3</sup>/m. Boulder fragmentation generated by using a design of blasting (Konya, 1990) is 14.87% and a real boulder in the field is 13.95%.