

ABSTRACT

This research area is located in Muara Bakah village, Luwe Hilir, Hurung Enep and Juju Baru, Lahei district, Barito Utara regency, Mid Borneo province. It has potential coal reserves that is worth to be mined, but it doesn't have push back design yet, so it is necessary to make its push back progression, in order to ease the mining activity, apply the right and proper mining system by paying a close attention to technical mining activity aspects with the result that give optimal advantages to the company and achieving production planning target as well.

Mine plan design is an important step in mining operation. The material which is going to be mined could be an economic material (coal), and non-economic material (overburden). Some parts that need more attention in making open mine design are production target, life of mine, geometric mine design, production schedule, push back design, auxiliary equipment, mining equipment, hauling road design and stockpile design.

Based on coal reserve model, the total of proved coal reserves at research area is 37.770.336 Ton and overburden volume is 397.72.600 BCM with overall stripping ratio 10,53:1. Coal mining production target is 2.221.000 Ton each year, until 17 years life of mine is over.

Push back design at research area divided into 3 periods :

- a. Push back design in first period, overburden volume which moved into waste dump is 8.056.200 ton with the yearly average of coal mining production is 1.611.240 ton. The yearly average of stripping ratio is 9,3:1.*
- b. Push back design in second period, overburden volume which moved into waste dump is 16.898.536 ton with the yearly average of coal mining production is 3.379.707 ton. The yearly average of stripping ratio is 10,4:1.*
- c. Push back design in third period, overburden volume which moved into waste dump is 12.865.600 ton with the yearly average of coal mining production is 1.837.942 ton. The yearly average of stripping ratio is 11,03:1.*

The utility of roadway in mining is vital, so the right roadway will support mining activities. The width of roadway will be made in two ways with 20 m in straight road, and 27,5 m in bend road. Cross slope is 30 mm/m, the radius of the bend is 23 m, superelevation is 1,1 m, and max grade is $\leq 10\%$.