ABSTRACT

PT. Sahabat Mulia Sakti is one of cement factory with production planning 3,840,000 tons cement in first year until forth year, and increase to 7,680,000 tons in fifth year until the final year of mining activity. PT. Sahabat Mulia Sakti plans to mine 4,240,000 tons limestone as cement raw material in first year until fourth year, and increase to 8,500,000 tons in fifth year until the final year of mining activity on Kecamatan Tambakromo, Kabupaten Pati, Provinsi Jawa Tengah. Therefore, it is needed a mine planning to achieve that production planning.

Volume of limestone on Blok 1 and Blok 2 until elevation 70 masl is 10,522,233,84 BCM and so with limestone density is 2,6 ton/m³, limestone tonnage is 27,476,475,09 tons. Mining operation is done by surface mining system and quarry side hill type method with minimum mining front width is 31 m, single bench height is 10 m, single bench slope is 80°, maximum overall bench height is 120 m, and maximum overall slope is 45°. Minimum haul road width on straight section is 14 m and on curve section is 17 m, superelevation is 64mm/m, cross slope is 0.5in/ft, and maximum haul road grade is 10%.

Limestone production planning in the first year is 4,256,225.50 tons, in second year is 4,082,414.38 tons, in third year is 4,260,331.67 tons, in fourth year is 4,234,758.56 tons, in fifth year is 8,498,032.55 tons, and in the sixth year is 1,850,552.85 tons. It is required 1 unit Bulldozer Caterpillar D8R each year, 2 units Wheel Loader Caterpillar 988H in the first year until the fourth year and 3 units in the fifth year until the sixth year. Hauling equipment, which use Dump Truck Caterpillar 769D, is 4 units in the first year until the third year, 5 units in the fourth year, 10 units in the fifth year in the sixth year.