

ABSTRACT

PT. Deltamarga Adyatama is a company that works in road construction which has *asphalt mixing plant* (AMP) and andesite stone crusher to meet the demand of crushed stone with certain sizes according to the present standards.

The objective of this research is to study the arising problem technically and economically because the production capacity of crusher unit is still far below the expected capacity target, 200 ton/day. From the result of this study, it is found that the production outcome from crusher unit is 130.62 ton/day or 18.66 ton/hour, with the amount of size -19 + 12.5 mm is 11,55 ton/hour or 61,89%, the size -12.5 + 5 mm is 4,26 ton/hour or 22,83%, and the size -5 mm (stone ashes) is 2.85 ton/hour or 15.28%.

The evaluation result of condition in the research toward the value of *reduction ratio jaw crusher primer*, *Fine jaw crusher I*, dan *Fine jaw crusher II* is only 2.23, 1.90 and 2.66; the effectiveness of *jaw crusher primer* 103.95%, *fine jawcrusher I* 30.22% and *fine jaw crusher II* 102,66 %.

The improvement is done by adding *vibrating grizzly* before entering into *jaw crusher primer*, changing the setting of *jaw crusher primer* into 90 mm, changing the setting of *fine jaw crusher I* into 20 mm, and the product of *fine jaw crusher I* directly entering the *vibrating screen*.

After the improvement, the acquired production outcome of crusher unit is enhanced to 245 ton/day or 35 ton/hour, with the amount of product size -19 + 12.5 mm becomes 21,51 ton/hour or 61,45%, the fraction -12.5 + 5mm becomes 8.19 ton/hour or 23.41%, and the fraction -5 mm (stone ashes) is 5,30 ton/hour or 15,14%. Besides, the improvement is acquired in the *reduction ratio* value of *fine jaw crusher I* and *fine jaw crusher II* with the number of 4.25; the efficiency of crusher tool is enhanced, *jaw crusher primer* 90.97%, *fine jaw crusher I* 93.35%, and *fine jaw crusher II* 97.78 %.