

## ABSTRACT

PT. Cakrawala Semesta Perkasa is an andesite mining company located in the Sikasur Village, Belik Subdistrict, Pemalang District, Central Java Province. The andesite materials needed to replenish crushing plant feed, is provided by direct mining in the Sikasur Village, Belik Subdistrict, Pemalang District, Central Java Province

The process of andesite crushing at PT. Cakrawala Semesta Perkasa uses a jaw crusher PE 400 x 600 Shan-Bao. And on the secondary crushing, it uses vertical shaft fine impactor PLF-1250. The product is split stone with a size -30 + 10 mm, -10 + 5 mm and -5 mm.

There is problem in the crushing process that the crusher unit is unable to fulfill planned production target, which is 200 tons/day total number of products. The obtained total production in actual process is 144,88 tons/day and production targets at fraction -10 + 5 mm is 31,67 tons/day. Those output cannot fulfill market request because increased demand on that fractured size. Therefore, it is expected that the product of 10 + 5 mm can be increased and the product of -30 + 10 can be decreased.

The evaluation results of the value reduction ratio at 80% in the primary jaw crusher and secondary jaw crusher are 2,11 and 5,6, while the total feed is 22,04 tons/hour.

There are several improvements that can be implemented to optimize the effective working time from 82,7% to 83,75% by reducing the working problems in the production process crusher unit, adding of a feed up to 30 tons/hour, and switching the secondary jaw crusher installed closed setting of 19 mm, to 8 mm.

In summary, the result showed that 200 ton/day target production can be fulfilled. The production result is increased up to 201 ton/day. Fraction of -10 + 5 mm can be increased to 85,36 ton/day or 42,47%. Fraction of -30 + 10 mm can be decreased to 41,07 ton/day or 20,43%. It has fulfilled the total production target of every fraction expected. The total product can be reached in 8 hour of working time or 6,7 hour of effective working time.