

## **ABSTRACT**

*PT. Sinar Asia Fortuna is a mine company that works for PT. Tjiwi Kimia located in Tahunan Village, Sale Sub-district, Rembang Region, Central Java. PT. Sinar Asia Fortuna planned to open the new quarry at WIUP 45 Ha. Therefore, the mine planning and design are needed based on production target 660.000 tons/year with the amount of reserves about 9.699.843,76 tons. According to the production target and its reserves, the quarry can be mined for 14 years. Quarry method used with side hill type on 400 masl until 340 masl. And then, continued with pit type until 325 masl.*

*To achieve the production target 660.000 tons/year, PT. Sinar Asia Fortuna using machines for its mining. The machines are important to accelerate the work and make it easier. Drilling and blasting to excavated the materials and assisted by air compressor to make the blast hole, Hitachi ZX350H Excavator in 1,8 m<sup>3</sup> to loaded the materials, and Hino FM 260 Dump Truck in 6,36 m<sup>3</sup> to dumped the materials.*

*Bench geometry determined by the maximum width of dumping machines and the geotechnical recommendations are 5 meters bench height, 10 meters bench width, 45° single slope angle, and 19° overall slope angle.*

*Haulroads geometry determined by the maximum width of dumping machines and used lane. Hino FM 260 Dump Truck are used for dumping in 2,45 meters width and there are two lanes of traffics in one direction that used to the pit and out of the pit. The haulroad width for straight section are 10 meters, the haulroad width for curve section are 13 meters, and the grade are 10%.*