

ABSTRACT

PT. SGP (Singlurus Pratama) is a private company mining coal, which is located in Argosari Village, Kutai Kertanegara Districts, Provincial of East Kalimantan. PT. SGP is planning to develop the Argosari Block so that it needs a single slope design and slope geometry optimal overall.

The data geotechnical properties taken from the results of laboratory testing of rock samples from drill hole locations of SGP-GT-AG-11-12, SGP-GT-AG-13, SGP-AG-GT-14, and SGP-GT-AG-15. Tests performed are a test of physical properties, Unconfined Compressive Strength Test, Direct Shear Test, point load and ultra sonic. The results of laboratory testing of material properties which are used as a dry density, saturated density, cohesion, and friction angle.

To analyze the stability of slopes used two variations of a single high and three angular variation is 6 m , and 10m , angle 50 ° , 60 ° and 70 ° . In the overall slope were analyzed following the parameters on borehole lithology . The design is done in stages with the overall slope height of 60 m , 70 m , and 80 m. Variasi angle used is 40 ° , 45 ° and 50 ° . Safety factor value (FK) on a single slope ≥ 1.2 FK recommended for slopes overall $FK \geq 1.3$. The recommendations will be added to the overall slope using 2 different load is 650 kN / m² and 1480 kN/m². The method used is the limit equilibrium method with the help of Slide 6.0 Software .

The analysis it can be concluded, that the potential for landslides occur is a landslide arc. Factors affecting slope instability is the slope geometry, the characteristics of rock and soil water level. Single slope recommendations for all types of material that is 10m high slope and slope angle of 60° with half saturated condition . Recommendation overall slope geometry with a high depth of excavation at 70 m and overall slope angle of 45 ° in half saturated condition. Recommendations for a maximum load of 650 kN/ m² in highwall slope.