

ABSTRACT

PT. Kaltim Batu Manunggal is an coal mining companies in Kutai Kartanegara, East Kalimantan province. Mining activity use a slopes. The slopes were not based on geotechnical studies, so the slope geometry was made the same. Geometry without geotechnical studi, have not enough confidence of slope stability.

The research was conducted to classify the rock mass with the system rock mass rating (RMR) and geological strenght index (GSI). The research was considered on two rocks in two different locations, claystone in Loop 2 and sandstone in Loop 5.

RMR values in Loop 2 = 63 and Loop 5 = 52. GSI value use GSI Saptono, 2012, so GSI in Loop 2 is 55 and Loop 5 is 44. To get the cohesion (c) and friction angle (ϕ) in the rock mass at PT. KBM used Hoek & Brown failure criterion (2002). Cohesion (c) and the friction angle (ϕ) at Loop 2 = 35 kN/m², 26,99° and Loop 5 = 42 kN/m², 37,76°.

The results of the rock analysis sandstone and claystone is GSI Saptono (2012), recommendation for a single slope for loop 2 is 6 m, slope angle 35° and single slope for loop 5 is 6 m, slope angle 40°. For the overall slope loop 2 is 42 m, angle slope 25° and overall slope loop 5 is 42 m, angle slope 28°. Activities to maintain the stability slopes in the study area is the monitoring system.