ABSTRACT

Actual disposal slope in PT. Kayan Putra Utama Coal has reached elevation of 110 meters with single slope 30^o and safety width 40 meters. In the actual slope which formed has deformed, so it should be redesign the slope. Based on PT. Kayan Putra Utama Coal data, deformation is 0.006 – 6.93 m on 4 months monitoring. PT. Kayan Putra Utama Coal plan to develop the elevation of the disposal to elevation of 150 meters. Sampling done by core drilling, test pit, and sampling in large scale to be analyzed in the laboratory. First sampling done in actual condition of slope with the method is core drilling and test pit. Second sampling done with method in large scale (21 cm x 21 cm). Result of the analysis is cohesion and friction angle on the peak and residual condition in first sample and peak condition in second sample.

Analysis done in actual design with residual properties gets the factor of safety (FOS) 1.668 -3.939 and displacement 2.18 m, whereas in peak properties get FOS 3.939 – 4.384 m and displacement 3.27 m. Analysis in large scale (peak condition) gets FOS value 3.391 – 4.872 and displacement 1.10 – 1.30 m. Redesign done in overall slope angle 7^o, single slope height is 10 m and width of berm varies between 50 to 100 meters. Result of FOS and displacement analysis on new design gets FOS value 2.483 – 5.318 and displacement 0.15 – 0.90 m. Moreover, the analysis done in the new design on different saturation.

Position and condition of the sampling be very influential to the value of disposal material properties. The water condition is also being influential to the FOS value with in the analysis that more saturated in slope so the FOS will be smaller. There is difference of analysis in software and in the actual condition because software analysis use intact rock properties and in the actual condition is rock mass. So, in determining the slope should use the planning of large-scale shear test

Keywords: Disposal, slope, properties, Factor of Safety, displacement.