

ABSTRACT

PT. Multi Tambangjaya Utama (PT. MUTU) is a subsidiary of PT. Indika Group is included in the third generation Coal Mining Concession Work Agreement (PKP2B) with business areas including, South Barito Regency, North Barito Regency, and East Barito Regency, Central Kalimantan Province. The mining system used at PT. MUTU is an open pit mine with an open pit method.

Coal mining activities in the Kananai 1 Pit Aster block are still running using the overall highwall (HW) slope geometry with a height of 89 m and a slope of 46° . PT. MUTU plans to enforce the HW slopes on the Kananai Pit Aster block to increase coal acquisition. To get the maximum overall slope geometry that is still stable and can reduce the potential for landslides on the mining slope, it is necessary to analyze the stability of the slope.

Before the analysis is carried out, it is necessary to conduct a geotechnical study to study the rock mass characteristics in the area. Based on consideration of topographic and geological conditions and adjusting coal mining plans, the geotechnical drilling for sampling is done at four drill hole points, namely KN1-GT-04, KN1-GT-05, KN1-GT-07, and KN1-GT-08 . The modeling is based on geotechnical drilling lithology data from the four drill holes.

Test data obtained from rock samples from drilling results are physical properties test, mechanical properties test (direct shear strength, and uniaxial compressive strength). From the results of the uniaxial compressive strength test, it is known that the material making up the slope is classified as weak rock, so that it is possible to have a potential arc landslide. The analysis used is the boundary equilibrium method with the Bishop method.

Based on the results of the analysis of the stability of the HW slope Kananai Pit Aster block that has been done, for a single slope geometry with a slope of no more than 75° and a bench height of 10 meters on all materials obtained the lowest safety factor (FK) value of 1.318. For the overall slope geometry with a bench width of 5 meters, a single slope of 70° , an overall slope height of 89 m, and an overall slope angle of 51° were obtained FK values of 1,228.