ABSTRACT

Refers to Permen No.18 Year 2008 on Reclamation and Mine Closure, Mine closure of PT Adaro Indonesia planned in 2022, with programs to support the implementation of the mine closure in the document of Mine Closure Plan (RPT) in 2010.

In the implementation of the of those programs, slope stability is one of important factor to be considered carefully with long-term plan pattern, therefore study on long-term slope stability based on the framework of the mine closure plan should be applied.

Geometry slopes simulation were analyzed using the final design of the plan of PT Adaro Indonesia, which has been referred to the geotechnical recommendations in previous studies and economic optimalization plan. Based on the final design plans made 48 sections in represent areas that for analysis.

Long-term slope stability analysis using limit equilibrium method with Slide v.6.0 software. The final result obtained is factor of safety (Fos), theoretically Fk> 1 declared stable, more accurate level of safety factor for the data on the disposal is FK> 1.3 and the pit area Fk> 1.2.

Analysis was conducted on two conditions : water-saturated condition and the load with water saturated condition.

Based on slope stability analysis obtained the final result is:

a. There are critical and unstable slopes at 4 sections in the area of the mine closure plan with Fk< 1.2

b. Recommendations are review geometry final design PT.Adaro Indonesia with additional bench in 50 m height and 100-150 m widht with single slope 30° into the calculation of slope stability factor > 1.2

c. The potential for groundwater aquifers research areas is low category (0.9628 ltr / sec at Pit Tutupan & Paringin and 0.02794 ltr/sec at Pit Wara).

d. Movement material monitoring data with Robotic Total Station (RTS) in last two years show creep movement curve by time with progressive movement with limit value < 2% and the result is not give significant impact for longterm projection.

Key Word : *Longterm slope stability, factor of safety, ground water, slope movement monitoring, creep movement.*