

## **ABSTRACT**

*PT. Amman Mineral Nusa Tenggara (PT AMNT), formerly PT. Newmont Nusa Tenggara (PT NNT), is one of the companies engaged in the mining industry of copper ore and gold. Located in the Southwest of Sumbawa Island, in Sekongkang District, West Sumbawa Regency, West Nusa Tenggara Province (NTB). Mining activities in practice will result in waste. Specifically for liquid waste comes from contamination between water, oxygen and sulphide materials that produce acid mine water. To prevent the waste water in order not contaminate the flow of the river to the downstream, in PT. AMNT there is a Santong 3 dam that serves as a reservoir of runoff water from the mining area. Santong 3 dam is a type of embankment dam. The water level of the dam has once exceeded the maximum limit of the initial construction of the Santong 3 dam. Therefore, required stability analysis of the Santong 3 dam.*

*The maximum height of the reservoir water in the design document of the Santong 3 dam is 105 mRL (spillway height). Stability analysis carry out up to 103 mRL water level. On February 12<sup>th</sup>, 2017 the water level of the reservoir up to 106.4 mRL, which means over capacity of the initial construction, it could disturb the stability, therefore it is required to conduct stability analysis of the Santong 3 dam.*

*The analysis was carry out on the downstream and upstream dam using the Bishop-Simplified method with circular failure. Dam geometry modeling, physical and mechanical properties of dam materials based on preliminary dam construction data. Ground water level in the dam body based on the monitoring of the vibrating wire piezometer (VWP). The seismic coefficients used in the analysis were 0.15 g and 0.25 g. The dam is considered stable if the value of safety factor (FK)  $\geq 1.1$ .*

*Based on the stability analysis of Santong 3 dam for downstream and upstream until the reservoir water level of 104.9 mRL is in stable condition.*