

## ABSTRACT

The gold mining in Paningkaban Village, District Gumelar, has lasted about 10 years ago, after the discovery of gold-bearing quartz veins in the village and surrounding Paningkaban by traditional gold miners from Tasikmalaya.

The main objective of this research is the assessment of cyanidation process so diperoleh metals Au, with cyanidation process variables on the amount of bait, reagents and time needs to stay as independent variables and the size of the mineral grains of gold, as well as the percent solid laturan pH of the pulp is still variable. Pyrometallurgy process variables consisted of temperature and time as the independent variable and the needs of borax, the size of the active carbon, carbon combustion time as a variable fixed.

From observations made during an experiment on cyanidation process, the amount of feed 2.4 tons with the needs of reagents consisting of  $\text{PbNO}_3 = 32\text{kg}$ ,  $\text{CaO} = 120\text{kg}$ ,  $160\text{kg}$  and  $\text{NaCN NaOH} = 40\text{kg}$  with a residence time of 38 hours the recovery of 67.23%. Then when experimental observations on pyrometallurgy process, the amount of bait 45,000gr at  $1200^\circ\text{C}$  melting temperature at the time of amalgamation 6 hours the recovery of 65% metal Au

Efforts to enhance the enjoyment of the cyanidation process is done by changing the independent variable after the change in the amount of bait 3 tons, reagent needs  $\text{PbNO}_3 = 60\text{kg}$ ,  $\text{CaO} = 200\text{kg}$ ,  $250\text{kg}$  and  $\text{NaCN NaOH} = 60\text{kg}$  with a residence time of 48 hours the recovery of 80%. After a change in pyrometallurgy, the temperature at the time of amalgamation in 1200 with a time of 3 hours smelting the recovery of 70% Au metal.

By looking at the recovery obtained, then the amount of bait, reagents and time needs to stay on the cyanidation process, which is ideal for use is 3 tons, reagent needs  $\text{PbNO}_3 = 60\text{kg}$ ,  $\text{CaO} = 200\text{kg}$ ,  $250\text{kg}$  and  $\text{NaCN NaOH} = 60\text{kg}$  with a residence time of 48 hours and the process pyrometallurgy ideal is the melting temperature of  $1200^\circ\text{C}$  and 3 times the recovery of 70% Au metal.

Keywords: Gold, cyanidation, pyrometallurgy and recovery.