

ABSTRACT

Nickel ore mining in wasile, east Halmahera cultivated by PT. Pertiwi Prosperity Mine. Nickel ore produced in the form of saprolite and limonite. The company requires technical design as guidelines nickel mining operations. The design is based on :

- a. Target nickel ore mining production is 1.000.000 tons/year
- b. The lowest level that can still be in the mine (cut of grade) in wasile is low grade (limonite) : Ni 1,2% - $\geq 2\%$, Fe $\geq 25\%$; high grade (saprolite): $\geq 2\%$ Ni, Fe $\leq 25\%$.

Nickel ore geological data modeling based on drilling data as much as 344 points from a total of 1.223 drill point. Based on modeling result, it is known that the distribution of nickel in ore grades Wasile uneven in each drill hole. With the help of software surpac model is made of nickel ore reserves that are blocked Rosse is 4.795.839,844 tons in volume 996.269,531 m³ of soil cover. Based on the amount of nickel ore tonnase, rosse blocks mined to be completed within 4,8 years with a target production of 1.000.000 tons/year.

Under condition of nickel ore and overburden conditions, mining method used is the open cut method. Dimensions bench adjusted specification tool (backhoe excavator Komatsu PC 400, Cat 330 BL, and dump truck Nissan CWB 520 HDNA) and geotechnical recommendations are the minimum working level width 22,5 meters, 6 meters high and tilt 40⁰. Dimensional ramp (street mine) application specific equipment used is 520 dump truck Nissan CWB HDNA. Dimensions obtained from the calculation of the ramp that is wide on the straight path : 8,72 \approx 9 meters and 14 meters wide on a corner while the ramp grade of 10%.