

ABSTRACT

PT. Pipit Mutiara Raya (PMR) is a private company engaged in coal mining located in Srinanti Village and Tabur Lestari Village Sei Menggaris District and Pembeliangan Village Sebuku District, Nunukan Regency, North Kalimantan Province. Mining activities at PT. PMR uses an open pit system with the open pit method. The Pit 600 excavation and loading process uses 1 unit of Doosan DX700LC Excavator and the transport process uses 4 Terex 50 Rigid Dump Trucks. The transport distance from the loading point to the dumping location is 1,200 meters.

At this time PT. Pipit Mutiara Raya has a production target of 360 BCM / hour overburden material stripping and is now a problem at this time regarding the production targets that have not been achieved. The current actual production of the excavator is 256 BCM / hour and for conveyances is 248 BCM / hour. The current production target has not been reached because of the not yet optimal circulation time and effective working time at this time, as well as the incomplete match factor.

The results of research in the field of circuits that affect the achievement of production can be increased by improving the circulation time. After repairs to this circulation time, it is able to increase the production of mechanical equipment from their current achievements. Production of excavator makes 363 BCM / hour and production of conveyances equipment becomes 281 BCM / hour.

After repairing the circulation time but the production target is still not achieved, therefore repairs are made regarding the effective working time used. The current work efficiency for the Doosan DX700LC Excavator is 74%, while for the Terex 50 Rigid Dump Truck is 72%. By improving the effective working time, the work efficiency of the Doosan DX700LC Excavator is 80% and the Terex 50 Rigid Dump Truck is 80%. After the improvement of this effective working time so as to improve the work efficiency of the mechanical equipment, the production of excavator makes 393 BCM / hour and the production of conveyances equipment becomes 312 BCM / hour.

Although improvements have been made to the circulation time and effective working time, production has still not been achieved. So it is necessary to add 1 unit of Terex 50 Rigid Dump Truck conveyances equipment. After the addition of this transportation unit, the production of conveyances equipment becomes 389 BCM / hour and the production of excavator is 393 BCM / hour. Thus the production target of overburden stripping of 360 BCM / hour can be met.