ABSTRACT

PT Vale Indonesia Tbk. is a foreign investor that obtains it is business license from the Indonesian government to carry on it is exploration, mining, processing and nickel ore production in Sorowako, South Sulawesi. Nickel ore mining by PT Vale Indonesia Tbk. uses open pit system, with mining method of Open Cast Mining.

In maintaining the mine road for a year (January – December 2012) PT Vale Indonesia Tbk. utilizes motor grader. The width of the permanent mine road and temporary mine road that would be maintained is divided into two locations which are Sorowako (West block), with the size of 336.748.262,50 m^2 and 5 units of motor grader Caterpillar, consisting of 16H type of 4 units and 24H type of 1 unit and Petea (East block) with the size of 142.389.287,50 m^2 and 3 units of motor grader Caterpillar, with 16H type of 2 units and 24H type of 1 unit.

Problem that is occurring currently is the amount of units that is less optimal, due to the fact that the tools available in the location are not able to meet the road treatment requirement hence causing less efficiency, the calculation of efficiency at Sorowako for 16H type is 28,89% and for 24H type is 41,60%, while the efficiency at Petea for 16H type is 31,60% and for 24H type is 45,853%.

Looking at the existing problems, there will be a technical review of efficiency calculation of motor grader application, so that the tool production capability can be used optimally and it will also have a high degree of efficiency. Efforts are made to optimize performance of the motor grader that is currently available by increasing the work efficiency so obstacles such as delayed operator, oil stocking and fuel change, operator utilities, waiting for reject and driving reject can be avoided.

After increasing the work efficiency, the result of efficiency calculation at Sorowako for 16H type becomes 38,77% and for 24H type is 50,85%, meanwhile for Petea there was no efficiency calculation because the units available can perform road maintenance.

From the effort calculation of mine road maintenance at Sorowako (West block) the 2 alternatives are: alternative I is the enhancement of effective working time that can be done by suppressing the time constraints that are avoidable and alternative II is the increasing of 16H type 1 unit from Petea (East block) to Sorowako (West block). With the correction of existing obstacles the productivity of motor grader increases and it can fulfill mine road maintenance requirements without having to increase the appliance unit and alternative recommendation that is used is alternative II.