

## ABSTRACT

One of mining activity in PT. Saptaindra Sejati (PT. SIS) Job Site Adaro Indonesia is stripping overburden. This activity preceded by the breaking using drilling and blasting method. The effect from blasting activity is ground vibration. Blasting activity in Pit North make ground vibration getting risk for environment if does not control carefully.

PT. SIS decide limitation Peak Particle Velocity (PPV) less than 2 mm/s. After the measuring there are some ground vibration more than 2 mm/s. This condition make the value of Peak Particle Velocity (PPV) reach 2.02 mm/s to 3.06 mm/s.

Based on analysis that used U.S Bureau Of Mines formula and Giorgio Berta formula resulted the smallest relative error for U.S Bureau Of Mine formula is 15,24 %. U.S Bureau Of Mines formula for peak particle velocity and scaled distance is  $PPV = 29191 (Ds)^{-1,93}$ . With limitation value of PPV 2 mm/s, then the number of scaled distance is  $143,75 \text{ m/kg}^{0,5}$ . The formula is used to predict of ground vibration and define the maximum charge per delay. The safe distance for blasting activities is 1250 meter, for the maximum charge per delay is 75,615 kg with assuming the rocks in Pit North PT. Saptaindra Sejati Job Site Adaro Indonesia is homogeneous.

Because of that matter then make efforts to improve the factors that influence the ground vibration like control of explosive charge to not over charge, placement of initiation point (IP) at the location should be direction of the village, give limitation maximum 8 rows at amount rows in the box cut design and maximum 5 rows for echelon cut or corner cut, and use linedrill techniques can generate smaller number of Peak Particle Velocity (PPV).