ABSTRACT

PT. Cibaliung Sumberdaya is one of gold mining company in Indonesia which use underground mining system with cut and fill method.

In underground mining system, ground support system is necessary to keep the stability of the tunnel. Viewed from the chainage of mining activity which affect to the rock mass, continous evaluation should be conducted on the ground support system which has been applied, it comes from Geotechnical Unit, Dept. Quality Control, PT. Cibaliung Sumberdaya, by using classification of *Rock Mass Rating* (RMR). The evaluation of ground support is conducted by doing of rock mass quality based on the *Q-System* value and doing observation to the joint orientation to know the shape of wedge that might risk to collapse caused by the the changing of rock structure that produced from the digging of the tunnel activity.

Based on the Q-System classification, the rock mass in Cibitung Decline classified to class V *(bad rock)* with Q value 2.14; rock mass in Cibitung Ramp Up is classified to class IV *(fair rock)* with Q value 6.65. So, the recommendation of ground support system to Cibitung Decline is 7 pcs of 1.6 m splitset with 1.8 m space; shotcrete thickness 120 mm; the recommendation to Cibaliung Ramp up is 6pcs of 1.6 splitset with 2.2 m space; shotcrete thickness 100 mm.

The result of data processing shows that the classification based on *Q-System* more efficient to evaluate ground support system to the tunnel of underground mine. Furthermore, it is better to be applied because its calculate of a stress parameter in a rock mass.