

## **ABSTRACT**

*PT. Gorontalo Sejahtera Mining (GSM) is gold-mining company located at Gunung Pani, Buntulia district, Pohuwatu regency, Gorontalo Province. In the planning step of gold-sediment mining, a material characterization related to structure geology (discontinuities), physical and mechanic characteristic of local rock is needed to be done. One of the important uses of mess characterization of rocks is to know whether the rocks is easy or not to be break rock, also known as rock rippability. Rock breakage can be done using explosive method for stronger material or free-mining for the weaker one. For a little-bit-strong material, an usual rippability can be applied*

*PT GSM did a mine geotechnic investigation by making 4 geotechnic mine's drill hole: GT 07, GT 08, GT 10, GT 11. From each of the drill hole, rock samples are taken in order to determine orientation of discontinuities and to know the RQD. In the laboratory, physical and mechanic characteristic test done to the rock is uniaxial compressive strength, point load, ultimate tensile strength, and ultrasonic velocity. Parameters from fracture measurements and laboratory outcome will be used to determine hoe to break the stone. In this research, rippability analysis is done with clasification and chart method. Clasification rippability is done by using Weaver (1975) & Singh (1986) while chart method uses Franklin graphic (1971) and ultrasonic velocity chart of Caterpillar and Komatsu*

*The result of fracture measurements taken from fracture orientation direction on GT 07 is 36/145 & 85/163, on GT 08 is 25/175 & 72/164, on GT 10 is 29/164, 68/198. 83/151 & 41/245, on GT 11 is 37/192 & 54/204. On the other hand, the test result done in Rock Mechanic laboratory of Mining Techniques Major of UPN "Veteran" Yogyakarta including uniaxial compressive strength test, resulting 21,42 MPa in the average UCS grade. Point load test resulting average grade of 1,3 MPa. ultimate tensile strength test got average grade of 2,06 MPa while ultrasonic velocity test got 2898,12 m/s average grade.*

*Break of rocks can be done using rippability method, however, PT GSM was advised to do blasting first in order to make the rock digging easier.*