IDENTIFICATION OF THE TYPE FAULT ANALYSIS METHOD USING GRAVITY, SVD (SECOND VERTICAL DERIVATIVE), MODELING IN THE NORTH MURIA MOUNTAINS AREA, PART OF THE CRETACEOUS REMBANG, CENTRAL JAVA

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ABSTRACT

Research on Northern limestone mountain is one of the limestone mountain that stretches from the North coast of the island of Java ranging from Pati, Central Java to Lamongan Jawa Timur research using the method of gravity by looking at the response of the surface gravity acceleration values based on the values of the density variations of rock below the surface of the bedrock for modeling data processing gravitation towards the value of reading gravitymeter to get the value of the Bouguer anomalies.

Anomalous patterns on a map of upward continuation 500 m with a map of upward continuation 1000 m. southern part of the area of research is dominated with high anomaly values range value of 30-60 mGal, the middle section has a low value with a range of 19 - 24 mGal.

Modeling on line 1 North – South direction which is assumed to be composed of 5 layers of rock, layers of alluvial (Qa) with the value of the density of 1.75 gr/cm³, the second layer is the rocks volcano Muria (Qvm) with the value of the density of 2 gr/cm³, the third layer is the formation of Paciran (Tpp) with the value of the density of 2.45 gr/cm³, the fourth layer is the formation of fur (Tmb) with the highest density of 2.54 gr/cm³, the fifth layer is Ngrayong Formation (Tmn) with the value of the density of 2.32 gr/cm³

Line 2 South-North direction which is assumed to consist of 11 layers of rock, layers of alluvial (Qa) with the value of the density of 1.75 gr/cm³, the second layer is the rocks volcano Muria (Qvm) with the value of the density of 2 gr/cm³, the third layer is the formation of the tongue (Qtpl) with the value of the density of 1.85 gr/cm³, the fourth layer Formation Paciran (Tpp) with the value of the density of 2.45 gr/cm³, a fifth layer is Selorejo Formation (Tps) with the value of the density of 2.49 gr/cm³ the sixth layer, is the formation of the Mundu (Tpm) with a value of density of 2.56 gr/cm³, the seventh layer Formation is Ledok (Tmpl) with the value of the density of the density 0.51 gr/cm³, ninth is the formation of fur (Tmb) with the value of the density of 2.54 gr/cm³, ten Formation is Ngrayong coating (Tmn) with the value of the density of the density of 2.32 gr/cm³.

Keywords: Second vertical derivative, Density, gravity, Upward Continuation, mGal, Bouger anomalies.