**Alluvium assessment of Gold-Bearing Layer** in Buried Old River Channel by **using Electrical Resistivity Method at Batu Melintang, Jeli, Kelantan**

Mohd Syakir Sulaiman1\*, Wani Sofia Udin1, Arham Muchtar Achmad Bahar1, Mohamad Fatihi2 and Ahmad Fikri2

1 Department of Geoscience, Faculty of Earth Science, Universiti Malaysia Kelantan Jeli Campus, 17600 Jeli, Kelantan, Malaysia

2 Ferrogeo Services, 1-4, Arked MARA Jeli, Bandar Baru Jeli, 17600 Jeli, Kelantan, Malaysia

\*E-mail: syakirsulaiman123@gmail.com

Abstract

The electrical resistivity imaging (ERI) survey was conducted to delineate the distribution of sediment in the gold-bearing layer and the nature of bedrock within the study area at Batu Melintang. The study area is known as a highly potential zone of gold mineralization due to its location within the Bentong-Raub suture zone. Miners are having difficulties to have a proper mining activities plan as the alluvium distribution is not well understood. The objectives of this study are to identify the sediment in the subsurface of the mining area and to locate the high potential deposit containing gold. ERI survey concerns with resistivity (ohm.m) value of rocks in the subsurface. This research was conducted by using the Schlumberger array with the total number of survey lines are four. All the survey line were done in 200m with 2.5m electrode spacing except for survey line 3 which was done at 100m with 1.5m electrode spacing. All the data obtained is processed in RES2DINV software. The results show variable resistivity ranging from 1-4000ohm.m with a depth of investigation is approximately 35m for 200m length of survey line and depth of 16m for 100m length of survey line. Low resistivity zones of 10-800ohm.m show the values for alluvium present in the area while high resistivity zones of 2000-4000ohm.m indicate values for bedrock. Alluvium layer is identified located around 15m depth, whereas the depth of bedrock is about 20m. This survey gives the general idea of the alluvium distribution, old river channel and the depth of bedrock that can be used for volume estimation and facilitates to create a proper sustainable mining plan in the future. The electrical resistivity imaging (ERI) survey was conducted to delineate the distribution of sediment in the gold-bearing layer and the nature of bedrock within the study area at Batu Melintang.

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