ABSTRACT

BUILD A MODEL OF PLACER ALLUVIAL GOLD DEPOSITS BY USING GPR METHOD AND DRILL LOG FOR RESOURCE ESTIMATION IN THE AREA LAKAN BILEM, KUTAI WEST, EAST KALIMANTAN

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Alluvial placer gold exploration in the Lakan Bilem area, West Kutai, East Kalimantan has been carried out. Exploration was carried out using geophysical survey Ground Penetrating Radar (GPR) and drill logs and supported by topographic measurements. The use of the method Ground Penetrating Radar (GPR) to determine the lateral spread of alluvial deposits of gold carriers. Measurements were made using the GPR 500 MHz GSSI product. The study area is 2 x 2 km and there are 7 Line GPR divided into 42 East-West direction segments. In addition, a total of 21 drill logs were also performed to determine the differences in vertical detail lithology and gold content in alluvial deposits.

The GPR data processing is done by using software ReflexW, then correlated with drill log data to obtain a geological section showing the type of lithology and the shape of the wedge on alluvial deposits. GPR cross section results are grouped into 3 facies radars. Radar Fases 1 is interpreted as soil. Radar Fasies 2 is interpreted as alluvial deposits. While facies radar 3 is interpreted as a mudstone. From the data then analyzed to produce gold sediment model of placer alluvial research area. the model consists of shape, characteristics, source rock, and the relationship between grade and thickness. From GPR and drill results, alluvial deposits of gold carriers are deposited with grain size of sand-gravel. Alluvial sand-gravel deposits are found in 2 areas, namely the west and east. Both deposits have differences in both genetic and characteristic. In the alluvial sediment the west-gravel has a lower grade and thickness of the eastern part. That is because the two sediments have different source rocks and are transported and deposited through different Channel. From the results of the model built obtained total gold resources in the research area is 6.03 tons of gold (AU).

Keywords: Exploration, gold *Placer,* GPR, Log Drill, *software* ReflexW, resources