

ABSTRACT

PT. Berkah Alam Semesta Independent exploration to determine the presence of iron ore in the mining license held. The method can provide a illustrated of the location of the dispersion availability of iron ore that is indirectly using geophysical methods. Iron ore is a metal object that has magnetic properties and one geophysical method that can be used to determine the dispersion of the iron ore deposits are geomagnetic. Survey by using geomagnetic useful to determine the presence of magnetic objects below the earth's surface by capturing the total magnetic intensity. The purpose of this study is to get a magnetic anomaly data from any measurement points, so it can be assumed dispersion of iron ore in the area.

Geomagnetic data retrieval using a magnetometer G-816 and GEM SYSTEM 19-T is equipped with a sensor to capture the magnetic intensity at each point of measurement, measurement or data collection process is done using intervals of every point with a distance of 50m this depends on the presence of outcrop or geological information. Then correction and data processing using the program *SURFER 10* obtained the highest value of magnetic anomalies 1800nT and magnetic anomalies lowest -1800nT and *MAGPICK* programs such as upward continuation map with the highest magnetic anomalies 828nT and lowest magnetic anomalies 48nT and also obtained a map of reduction to the pole with anomalous magnetic values highest 1329nT and magnetic anomalies lowest -660nT.

Having done retrieval, processing and interpretation of data by using multiple programs geomagnetic, Then do the making incisions in the location considered the prospect of using the *MAG2DC* program and obtained in the from of length and depth information of iron ore and the approximate shape of the ore body. It can be seen that the location is a prospect for further survey by the geoelectric method that is located in the western part of the study site is located in the Bulusirua village and northern part of the study sites located in the Bana village. Then do the making incisions in the location that is a prospect and obtained in the form of length and depth information of the iron ore and the approximate shape of the ore body. Estimation results while iron ore is located at a depth of 40-50m with a ore body length of about 800-2500m stretches from the north to south, formed of two intrusion.