Pemodelan 3 dimensi deposit uranium menggunakan metode geomagnet tahanan jenis dan polarisasi terinduksi di daerah Rabau Hulu, Kalan, Kalimantan Barat = Three dimensional modeling of uranium deposit using geomagnetic resistivity and induced polarization methods in Rabau Hulu Region, Kalan, West Kalimantan

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Abstrak

[ABSTRAK
Uranium merupakan salah satu bahan bakar PLTN. Eksplorasi uranium akan terus meningkat seiring dengan kebutuhan yang meningkat. Metode geomagnet, tahanan jenis dan polarisasi terinduksi dapat diterapkan dalam eksplorasi deposit uranium yang mineralisasinya berasosiasi dengan mineral sulfida. Pengolahan, analisis, dan interpretasi data geomagnet, tahanan jenis, dan polarisasi terinduksi dilakukan untuk dapat mengidentifikasi sebaran deposit uranium, litologi batuan, model geometri dalam 3 dimensi, serta memperkirakan sumber daya terunjuk di daerah Rabau Hulu, Kalan, Kalimantan Barat.
Deposit uranium di daerah Rabau Hulu pada umumnya berasosiasi dengan sulfida, turmalin dan terdapat dalam batuan favourable. Gejala mineralisasi uranium dijumpai dalam bentuk-bentuk tidak teratur dan tidak merata terdiri atas mineral uraninit, pirit, kalkopirit, pirhotit, molibdenit, dan ilmenit. Pengolahan data menghasilkan nilai anomali medan magnet total, tahanan jenis, dan faktor logam yang selanjutnya dibuat penampang 2 dimensi. Penentuan nilai tahanan jenis dan polarisasi terinduksi dilakukan dengan mengkorelasi data sumur bor dengan hasil pengolahan data. Tahanan jenis pada zona deposit uranium bernilai kurang dari 2.000 Ωm dan nilai faktor logamnya lebih besar dari 90 mho/m. Zona deposit uranium ini semakin meluas seiring dengan kedalaman. Model 3 dimensi menunjukkan bahwa distribusinya berarah Barat Daya?Timur Laut dan berbentuk lensa. Kadar rata-rata uranium pada zona deposit di daerah Rabau Hulu adalah 0,0085 %. Massa jenis deposit uranium yang digunakan untuk menghitung sumber daya terunjuk adalah 2,83 gr/cm3.
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ABSTRACT
Uranium is one of the nuclear fuel. Uranium exploration will continue to increase along with the increased of demand. Geomagnetic, resistivity and induced polarization methods can be applied in the uranium deposits exploration that mineralization is associated with sulphide minerals. Processing, analysis, and interpretation of geomagnetic, resistivity, and induced polarization data conducted in order to identify the distribution of uranium deposits, lithology, model geometry in 3 dimensions and indicated resource estimates in the area Rabau Hulu, Kalan, West Kalimantan.
Uranium deposits in the area Rabau Hulu is generally associated with sulphides, tourmaline and contained in favorable rocks. Symptoms of uranium mineralization encountered in other forms of irregular and uneven consists minerals of uraninite, pyrite, chalcopyrite, pyrrhotite, molybdenite, and ilmenite. Data processing generates a magnetic field total anomalous values, resistivity, and metal factor which further created two-dimensional cross-section. Determination of resistivity and induced polarization conducted by boreholes to correlate the data with the results of data processing. Resistivity in the uranium deposits zone worth less

than 2,000 Ωm and the value of metal factor greater than 90 mho/m. Uranium deposit zone is expanding along with the depth. Three dimensional modeling show that the distribution of deposits trending South West-North East and form lens. The average concentration of uranium in the deposit zone in the area Rabau Hulu is 0.0085%. The density of uranium deposits which are used to calculate the indicated resource is 2.83 g/cm3., Uranium is one of the nuclear fuel. Uranium exploration will continue to increase along with the increased of demand. Geomagnetic, resistivity and induced polarization methods can be applied in the uranium deposits exploration that mineralization is associated with sulphide minerals. Processing, analysis, and interpretation of geomagnetic, resistivity, and induced polarization data conducted in order to identify the distribution of uranium deposits, lithology, model geometry in 3 dimensions and indicated resource estimates in the area Rabau Hulu, Kalan, West Kalimantan.

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