

Identifikasi Struktur Pengontrol Zona Potensi Mineralisasi Emas Sistem Epitermal dengan Metode Multi Scale-SVD Magnetik Terintegrasi Data Time Domain Induced Polarization di Lapangan 'RD', Cibaliung = Structure Controller Identification for Gold Mineralization Zone in Epithermal System with Multi Scale-SVD Magnetic Method Integrated with Time Domain Induced Polarization Data in 'RD' Field, Cibaliung

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Abstrak

Proses magmatisme berkaitan dengan jalur tektonik ring of fire, yang menyebabkan proses mineralisasi hidrotermal sehingga membentuk potensi sumber daya mineral di Indonesia. Salah satu endapan hidrotermal yaitu endapan epitermal sulfidasi rendah yang berada di Lapangan "RD", Cibaliung. Struktur patahan menjadi pengontrol sistem epitermal sulfidasi rendah sebagai tempat terendapkannya mineral emas. Integrasi data geologi dengan geofisika diperlukan dalam menentukan struktur pengontrol dan zona potensi mineralisasi. Mineral bijih sulfida dapat dibedakan dari sifat kemagnetan dan kelistrikan dikarenakan mineral logam memiliki respon suseptibilitas, resistivitas dan chargeabilitas lebih tinggi dibandingkan dengan mineral non-logam. Zona potensi mineralisasi emas sulfidasi rendah berada pada zona struktur yang didominasi alterasi argilik dan kaya akan mineral sulfida pada alterasi argilik ilitik dengan nilai suseptibilitas menengah hingga tinggi kisaran $-83.7 \text{ nT} - 92.3 \text{ nT}$, resistivitas dengan nilai rendah hingga menengah $0 - 25 \text{ ohm.m}$ dan chargeabilitas dengan nilai menengah hingga tinggi $15 - >75 \text{ msec}$. Dari ketiga parameter tersebut, diduga zona mineralisasi berada pada zona struktur patahan berorientasi Baratlaut-Tenggara. Struktur pengontrol zona potensi mineralisasi tersebut berada di lintasan 3 yaitu patahan D dip 62° ke arah NE dan patahan E dip 83° ke arah NE. Lintasan 4 yaitu patahan D dip 79° ke arah NE, patahan E dip 77° ke arah NE dan patahan F dip 73° ke arah NE. Lintasan 7 yaitu patahan D dip 80° ke arah SW dan patahan E dip 75° ke arah NE. Lintasan 8 yaitu patahan D dip 84° ke arah NE dan patahan E dip 66° ke arah NE. Lintasan 9 yaitu patahan A dip 70° ke arah SW dan patahan B dip 81° ke arah NE.

.....The magmatism process is related to the Ring of Fire tectonic pathway, which causes a hydrothermal mineralization process to form potential mineral resources in Indonesia. One of the hydrothermal deposits is an epithermal low-sulfidation deposit in the "RD" Field, Cibaliung. The fault structure controls the epithermal low-sulfidation system as a place for gold mineral deposition. Integration of geological data with geophysical data is required in determining the controlling structure and potential mineralization zone. Sulfide ore minerals can be distinguished from their magnetic and electrical properties because metal minerals have a higher susceptibility, resistivity and chargeability response compared to non-metallic minerals. The potential zone of low sulfidation gold mineralization is located in the structure zone which is dominated by argillic alteration and rich in sulphide minerals in Illitic argillic alteration has medium to high susceptibility values ranging from $-83.7 \text{ nT} - 92.3 \text{ nT}$, resistivity with low to medium values $0 - 25 \text{ ohm.m}$ and chargeability with medium to high values of $15 - > 75 \text{ msec}$. From those three parameters, it is assumed that the mineralization zone is located in the NW-SE oriented fault structure zone. The controlling structure for the zone of mineralization potential is in line 3 is fault D with dip 62° to the NE and the E fault with dip 83° to the NE. Line 4 is fault D with dip 79° to the NE, fault E with dip 77° to the NE and fault F with dip

73° to the NE. Line 7, is fault D with dip 80 ° to the SW and the E fault dip 75° to the NE. Line 8 is fault D with dip 84° to the NE and fault E with dip 66 ° to the NE. Line 9 is fault A with dip 70° SW and fault B with dip 81° to NE.