

**STUDI ALTERASI HIDROTERMAL DAN MINERALISASI  
ENDAPAN PORFIRI Cu-Au BERDASARKAN ANALISIS  
DATA CORE PADA SECTION 040 DAERAH TAMBANG  
TERBUKA BATU HIJAU, KABUPATEN SUMBAWA BARAT,  
NUSA TENGGARA BARAT**

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**SARI**

Daerah penelitian berada di Batu Hijau, yang merupakan salah satu lokasi tambang terbuka yang di kelola oleh PT. Amman Mineral Nusa Tenggara. Secara administratif Batu Hijau berada di Kecamatan Sekongkang, Kabupaten Sumbawa Barat, NTB. Tujuan dari penelitian ini yaitu untuk mengetahui kondisi geologi, penyebaran zona alterasi, zona mineralisasi dan korelasi hubungannya dengan persebaran kadar Cu-Au pada *Section 040* (timurlaut-baratdaya) tambang terbuka Batu Hijau. Penelitian dilakukan menggunakan data pemboran inti batuan dari 10 sumur bor yaitu, SBD293, SBD654, SBD257, SBD229, SBD183, SBD566, SBD002, SBD270, SBD009, dan SBD467. Metode penelitian yang dilakukan berupa *detail core logging*, analisa petrografi, analisa mineragrafi, dan melakukan analisis statistik untuk mengetahui hubungannya dengan sebaran *grade* Cu-Au. Stratigrafi pada daerah penelitian terdiri atas 4 satuan berurutan dari tua ke muda, antara lain, Satuan breksi vulkanik; intrusi diorit kuarsa; intrusi tonalit porfir 1; dan intrusi tonalit porfir 2. Alterasi pada daerah penelitian di bagi menjadi 4 zona alterasi yaitu, zona biotit + magnetit + k-feldspar (tipe potasik); zona biotit + k-feldspar + klorit (tipe potasik); zona klorit + epidot + kuarsa (tipe propilitik); dan zona serisit + klorit + kuarsa (tipe filik). Sedangkan zona mineralisasi dibagi berdasarkan banyaknya kandungan mineral sulfida dominan antara lain, zona bornit (bornit ± kalkopirit ± pirit); zona kalkopirit (kalkopirit ± bornit ± pirit); zona pirit (pirit ± kalkopirit ± bornit). Berdasarkan analisis statistik diagram *Boxplot* sebaran kadar Cu-Au dibagi menjadi 3 zonasi yaitu, zona *low grade*;, zona *medium grade*; dan zona *high grade*. Hasil analisis menunjukkan zona alterasi dan mineralisasi di daerah penelitian dikontrol oleh kemunculan intrusi tonalit porfir 1. Zona *low grade* Cu (0,01-0,5%) berasosiasi dengan semua zona alterasi, mineralisasi zona kalkopirit dan pirit. *Medium grade* Cu (0,5-1%) berasosiasi dengan zona alterasi biotit+magnetit dan zona serisit+klorit, mineralisasi zona bornit dan zona kalkopirit. *High grade* Cu (>1%) berasosiasi dengan zona alterasi biotit+magnetit, mineralisasi zona bornit dan zona kalkopirit. *Low grade* Au (0,00-0,5g/t) berasosiasi dengan semua zona alterasi, mineralisasi zona kalkopirit dan zona pirit. *Medium grade* Au (0,5-1g/t); zona alterasi biotit+magnetit, zona alterasi serisit+klorit, mineralisasi zona bornit dan zona kalkopirit. *High grade* Au (>1g/t); zona biotit+magnetit, mineralisasi zona bornit dan zona kalkopirit.

**Kata Kunci :** Alterasi, Mineralisasi, Zonasi *Grade* Cu-Au, *Section 040*.

**STUDY OF HYDROTHERMAL ALTERATION AND  
MINERALIZATION PORPHYRY Cu-Au DEPOSIT BASE ON  
ANALYSIS CORE DATA ON SECTION 040 OPEN PIT BATU  
HIJAU AREA, WEST SUMBAWA REGENCY, WEST NUSA  
TENGGARA**

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**ABSTRACT**

The research area is in Batu Hijau, which is one of the open pit locations managed by PT. Amman Mineral Nusa Tenggara. Administratively Batu Hijau is located in Sekongkang District, West Sumbawa Regency, NTB. The purpose of this study is to determine the geological conditions, the spread of alteration zones, the zone of mineralization and the correlation between the distribution of Cu-Au levels in Section 040 (northeast-southwest) of the Batu Hijau open pit. Research are conducted using core data from 10 diamond drill hole, which are, SBD293, SBD654, SBD257, SBD229, SBD183, SBD566, SBD002, SBD270, SBD009, and SBD467. The research methods are core logging detail, petrography analysis, mineragraphy analysis, and conducted a statistical analysis to determine the relationship with the distribution of Cu-Au grades. Stratigraphy in the study area consists of 4 units, ordered from oldest to youngest, volcanic breccia; quartz diorite intrusion; tonalite porfir 1 intrusion; and tonalite porfir 2 intrusion. Alteration in the study area is divided into 4 alteration zones, biotit + magnetit + k-feldspar zone (potassic type); biotit + k-feldspar + klorit zone (potassic type); klorit + epidot + kuarsa zone (propylitic type); and serisit + klorit + kuarsa zone (phyllic type). Whereas the mineralization zones is divided based on the number of dominant sulfide minerals among others, bornite zone (bornite ± chalcopyrite ± pyrite); chalcopyrite zone (chalcopyrite ± bornite ± pyrite); pyrite zone(pyrite ± chalcopyrite ± bornite). Based on statistic analysis the Boxplot diagram of the distribution of Cu-Au levels is divided into 3 zones, low grade zone; medium grade zone; and high grade zone. The results of the analysis show that alteration and mineralization zones in the study area are controlled by tonalite porfir 1 intrusion. Low grade Cu zone (0,01-0,5%) associated with all alteration zones, mineralization chalcopyrite and pyrite zones. Medium grade Cu (0,5-1%) associated with biotit+magnetit zone and serisit+klorit zone, mineralization bornite dan chalcopyrite zones. High grade Cu (>1%) associated with alterasi biotit+magnetit zone, mineralization bornite and chalcopyrite zones. Low grade Au (0,00-0,5g/t) associated with All alterations, mineralization chalcopyrite and pyrite zones. Medium grade Au (0,5-1g/t); alteration biotit+magnetit zone and serisit+klorit zone, mineralization bornite and chalcopyrite zones. High grade Au (>1g/t); biotit+magnetit zone, mineralization bornite and chalcopyrite zones.

**Keywords :** Alterations, Mineralizations, Cu-Au Grades, Section 040.

