SARI

Lokasi penelitian secara administratif berada di Bakan, Kecamatan Lolayan, Kabupaten Bolaang Mongondow Selatan, Sulawesi Utara dalam sistem UTM zona 51N. Penelitian bertujuan untuk mengetahui kondisi geologi meliputi geomorfologi, stratigrafi, struktur geologi, alterasi, mineralisasi, tipe endapan, karakteristik breksi, potensi geologi, serta sejarah geologi daerah penelitian. Dibantu dengan data pemetaan geologi, *relloging,* interpretasi *drone mapping,* dan analisis laboratorium seperti analisis ASD, *fire assay* dengan AAS, analisis petrografi, analisis stereografis, dan analisis mineragrafi. Geomorfologi daerah penelitian terdiri dari bentukasal struktural (lereng struktural), bentukasal denudasional (lereng denudasional), bentukasal fluvial (tubuh sungai) dan bentukasal antropogenik (*pit,* jalur angkut tambang, dan timbunan). Stratigrafi daerah penelitian terdiri dari satuan tuf Bakan, dengan 3 satuan litodemik yaitu dari tua ke muda breksi freatik monomiktik Bakan, breksi freatik polimiktik Bakan, dan breksi hidrotermal Bakan, semua satuan terbentuk saat Pliosen – Pleistosen, satuan endapan aluvial Bakan dan satuan material timbunan Bakan pada Resen. Terdapat dua tegasan utama pada daerah penelitian yaitu berarah barat laut – tenggara dan selatan barat daya – utara timur laut yang mengontrol jalur mineralisasi dan alterasi daerah penelitian. Zonasi alterasi yang berkembang juga dikontrol oleh struktur yaitu zona alterasi silisik (kuarsa + alunit) semakin menjauh terbentuk, zona alterasi argilik lanjut (kuarsa + alunit ± kaolinit ± dikit), zona alterasi argilik (ilit ± monmorilonit ± kuarsa), dan zona alterasi propilitik (kuarsa + klorit ± mineral lempung?). Mineralisasi daerah penelitian ditemukan keterdapatan mineral lempung, mineral oksida (hematit, gutit, dan jarosit) dan mineral bijih berupa enargit, kalkopirit, kovelit, kalkosit, pirit dengan tekstur mineralisasi diseminasi, pengisian rongga, penggantian, dan tumbuh bersama. Tipe endapan daerah penelitian termasuk epitermal sulfidasi tinggi diamati dari aspek geologi yang ditemukan. Dari data karakteristik breksi hidrotermal dapat diketahui keberadaan kandungan emas tinggi yang berguna dalam eksplorasi di daerah penelitian.

Kata Kunci: Alterasi, Breksi, Mineralisasi, Struktur, Sulfidasi Tinggi

ABSTRACT

The research location is administratively in Bakan, Lolayan District, South Bolaang Mongondow Regency, North Sulawesi in the UTM zone 51N system. The research aims to determine geological conditions including stratigraphic, geomorphology, geological structure, alteration, mineralization, deposit types, breccia characteristics, geological potential, as well as the geological history of the research area. Assisted with geological mapping data, rellogging, drone mapping interpretation, and laboratory analysis such as ASD analysis, fire assay with AAS, petrographic analysis, stereographic analysis, and mineragraphic analysis. The geomorphology of the research area consists of structural origin forms (structural slopes), denudational origin forms (denudational slopes), original form fluvial (river body) and forms of anthropogenic origin (Pit, hauling road, and disposal). The stratigraphy of the research area consists of the Bakan tuff unit, with 3 lithodemic units, namely from old to young the Bakan polimictıc phreatic breccia, the Bakan monomıctıc phreatic breccia, and the Bakan hydrothermal breccia, all units were formed during the Pleistocene – Pleistocene, the Bakan alluvial deposit unit and the Bakan hoarded material unit in the Recent. There are two main thrusts in the research area, namely the north west - south east direction and the south west - north north east direction which control the mineralization and alteration route in the research area. The alteration zones that develop are also controlled by the structure, namely the silicic alteration zone (quartz + alunite) which is increasingly forming, the advanced argillic alteration zone (quartz + alunite ± dickite ± kaolinite), the argillic alteration zone (illite ± montmorillonite ± quartz), and the prophylitic alteration zone (chlorite + quartz ± clay minerals). Mineralization of the research area was found to contain clay minerals, mineral oksidas (hematite, goethite, and jarosite) and ore minerals in the form of enargite, chalcopyrite, covellite, chalcocite, pyrite with disseminated, open space infilling, replacement, dan *intergrowth. Types of deposits in the research area include epithermal high sulfidation observed from geological aspects. From the hydrothermal breccia characteristics data, it can be seen that there is a high gold content which is useful in exploration in the research area.*

Keywords: Alteration, Breccia, High Sulfidation, Mineralization, Structure