

SARI

GEOLOGI DAN MODEL GEOLOGI BAHAN GALIAN INDUSTRI BERBASIS PENDEKATAN GEOMORFOLOGI DI DAERAH KARANGTENGAH DAN SEKITARNYA, KECAMATAN PANGGUL, KABUPATEN TRENGGALEK, PROVINSI JAWA TIMUR

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Daerah penelitian di daerah Karangtengah dan sekitarnya, Kecamatan Panggul, Kabupaten Trenggalek, Provinsi Jawa Timur. Metode penelitian yang digunakan yaitu akuisisi, analisis, dan sintesis. Pola pengaliran di daerah penelitian adalah sub-dendritik, *half radial*, multibasinal, dan sub-paralel. Bentuklahan di daerah penelitian yaitu perbukitan denudasional (D1), lereng denudasional (D2), perbukitan vulkanik (V1), tubuh sungai (F1), dataran aluvial (F2), dan perbukitan karst (K1). Stratigrafi daerah penelitian dari tua ke muda yaitu Satuan batupasir-Arjosari, Satuan breksi-Mandalika, Intrusi Andesit, Satuan batugamping-Wonosari, dan endapan aluvial. Struktur geologi di daerah penelitian yaitu kekar gerus berpasangan, sesar *right slip fault*, *left slip fault*, dan *reverse left slip fault*. Model eksplorasi bahan galian batugamping di daerah penelitian yaitu dilakukan di bagian barat daya daerah penelitian, lintasan *measuring section* tegak lurus terhadap *strike* lapisan (lintasan berarah timur laut-barat daya), dan pada daerah dekat sesar *lintasan measuring section* berarah timur-barat, batugamping dengan *spotting* kalsit dapat dijumpai di Satuan batugamping Wonosari bagian utara, melakukan uji geofisika dengan metode geolistrik untuk mengetahui penyebaran dan ketebalan bahan galian batugamping secara vertikal dengan lintasan berarah timur laut-barat daya pada daerah yang jauh dari sesar dan berarah timur-barat pada daerah dekat sesar, dan melakukan uji geokimia untuk mengetahui % kadar CaO, MgO, dan HCO₃. Model eksplorasi bahan galian andesit di daerah penelitian yaitu dilakukan di bagian barat daya daerah penelitian, lintasan *measuring section* berarah timur laut-barat daya yang memotong satuan batugamping Wonosari dan intrusi andesit, dan melakukan uji geofisika dengan metode geolistrik atau magnetik untuk mengetahui penyebaran dan kedalaman bahan galian andesit berupa tubuh intrusi secara vertikal dengan lintasan berarah timur laut-barat daya. Berdasarkan model eksplorasi bahan galian batugamping dan andesit daerah penelitian, dapat diturunkan petunjuk geologi bahan galian batugamping dan andesit daerah penelitian yaitu petunjuk pola pengaliran, geomorfologi, litologi, stratigrafi, struktur geologi, magmatogenik, proses geologi, dan hubungan sekitar.

Kata kunci: andesit, batugamping, *model geologi*, *model eksplorasi*, *petunjuk geologi*

ABSTRACT

GEOLOGY AND GEOLOGICAL MODELS OF INDUSTRIAL DEPOSITS BASED ON A GEOMORPHOLOGICAL APPROACH IN KARANGTENTAH AND SURROUNDING AREA, PANGGUL DISTRICT, TRENGGALEK REGENCY, EAST JAVA PROVINCE

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The research area is in Karangtengah and surrounding areas, Panggul District, Trenggalek Regency, East Java Province. The research methods used are acquisition, analysis, and synthesis. The drainage patterns in the study area are sub-dendritic, half radial, multibasal, and sub-parallel. The landforms in the research area are denudational hills (D1), denudational slopes (D2), volcanic hills (V1), river (F1), alluvial plains (F2), and karst hills (K1). The stratigraphy of the research area from oldest to youngest is Arjosari sandstone unit, Mandalika breccia unit, andesite intrusion, Wonosari limestone unit, and alluvial. The geological structures in the study area are shear joints, right slip fault, left slip fault, and reverse left slip fault. The limestone exploration model in the research area is carried out in the southwest part of the research area, the measuring section track is perpendicular to the strike direction (the track is northeast-southwest), and in the area near the fault, the measuring section track is east-west, limestone with spotting calcite can be found in the northern of Wonosari limestone unit, geophysical tests are conducting with the geoelectric method to determine the distribution and thickness of limestone vertically with a track direction is northeast-southwest in areas far from the fault and east-west in areas near the fault, and geochemical tests are conducting to determine the % content of CaO, MgO, and HCO₃. The andesite exploration model in the research area is carried out in the southwest part of the research area, the measuring section track is northeast-southwest which intersects the Wonosari limestone unit and andesite intrusion, and conduct geophysical tests with geoelectric or magnetic methods to determine the distribution and depth of andesite in the form of vertical intrusion bodies with a northeast-southwest track direction. Based on the exploration model for limestone and andesite in the research area, geological guides for the limestone and andesite in the study area can be derived, they are drainage patterns, geomorphology, lithology, stratigraphy, geological structures, magmatogenic, geological processes, and surrounding relationships.

Keywords: andesite, exploration model, geological guides, geological model, limestone