

**KARAKTERISTIK MINERALOGI DAN GEOKIMIA ANORGANIK
BATUBARA YANG MENGALAMI INTRUSI DI DAERAH AIR LAYA,
TANJUNG ENIM, SUMATERA SELATAN**

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SARI

Intrusi yang tersingkap di beberapa daerah Air Laya mempengaruhi peringkat batubara secara lokal. Tujuan dari penelitian ini adalah untuk mengetahui karakteristik mineralogi dan geokimia anorganik dari beberapa sampel batubara yang terkena intrusi. Beberapa sampel batubara dan non-batubara diambil di tambang batubara Air Laya Bukit Asam untuk dilakukan analisis komposisi mineral dan geokimia anorganik. Pengambilan sampel batubara dilakukan secara vertikal terhadap intrusi *sill* pada seam B2 dan B1. Untuk mengetahui komposisi mineral dilakukan metode analisis petrografi dan *X-Ray Diffraction* (XRD) sedangkan untuk geokimia anorganik dilakukan metode *Inductively Coupled Plasma Emission Mass Spectrometry* (ICP-MS) dan *Inductively Coupled Plasma Atomic Emission Spectrometry* (ICP-AES). Berdasarkan pengamatan petrografi, mineral utama penyusun batubara yang terkena intrusi yaitu dolomit, kuarsa, dan mineral lempung. Berdasarkan hasil analisis XRD, mineral lempung yang teridentifikasi pada batubara yang mengalami intrusi yaitu *rectorite* dan *paragonit*. Dolomit, *rectorite*, dan *paragonit* merupakan mineral hasil metasomatism dari larutan hidrotermal. Mineralogi batubara lainnya seperti pirit dan jenis mineral lempung seperti kaolinit, illit, smektit, klorit, dan *halloysite*. Berdasarkan analisis geokimia anorganik menunjukkan bahwa senyawa oksida utama yang memiliki persentase tertinggi yaitu SiO_2 (48.9%), Al_2O_3 (19.01%), Fe_2O_3 (6.23%). Berdasarkan analisis ICP-MS unsur jejak pada batubara daerah penelitian termasuk ke dalam 4 kategori yaitu *enriched*, *sightly enriched*, normal, dan *depleted*, sedangkan REE pada batubara daerah penelitian tidak mengalami pengayaan meskipun adanya pengaruh intrusi dan hampir semua tipe pengayaan adalah HREY.

Kata kunci: Batubara, Mineralogi, Unsur Tanah Jarang, Bukit Asam, Tanjung Enim

**CHARACTERISTICS MINERALOGY AND INORGANIC
GEOCHEMISTRY OF INTRUSION AFFECTED COAL FROM AIR
LAYA AREA, TANJUNG ENIM, SOUTH SUMATERA**

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ABSTRACT

Intrusions were exposed in several parts of the Air Laya area have affected the coal rank in the adjacent area. This research is aimed to find the characteristics of mineralogy and inorganic geochemistry of several coal samples were exposed to the intrusion. Several samples are coal and non-coal have been collected from Air Laya Bukit Asam coalfield to analyze of mineralogy composition and inorganic geochemistry. Coal samples were collected towards intrusion sill vertically at seam B2 and seam B1. To determine mineralogy of coal used petrographic analysis and powder X-ray diffraction, meanwhile for inorganic geochemistry we used methods Inductively Coupled Plasma Emission Mass Spectrometry (ICP-MS) and Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES). Based on petrographic observation, the primary mineral constituent of coal that is exposed to the intrusion are dolomite, quartz, and clay minerals. Based on the results of XRD analysis, clay minerals were identified on intrusion affected coal are rectorite and paragonite. Dolomite, rectorite and paragonite are mineral of metasomatisme result the hydrothermal solution. The other mineralogy of coal such as pyrite and types of clay minerals such as kaolinite, illite, smectite, chlorite and halloysite. Based on inorganic geochemical analyzes indicate that the main oxide compounds which have the highest percentage of SiO_2 (48.9%), Al_2O_3 (19.01%), Fe_2O_3 (6.23%). Based on the analysis of ICP-MS, trace element of coal in research areas included into four categories that is enriched, slightly enriched, normal, and depleted, while REE in coal research areas did not experience any enrichment although effected of the intrusion and almost all types of enrichment is HREY.

Keywords: Coal, Mineralogy, Rare Earth Element, Bukit Asam, Tanjung Enim