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Potential of Rare Earth Elements (REE's) in Sediments of Labuan Island, Malaysia

SITI SYAZA AIMAN SEH WALI*, SURONO MARTOSUWITO, NOR SHAHIDA SHAFIEE & HAFZAN EVA MANSOR

Geoscience Programme, Faculty of Earth Science, Universiti Malaysia Kelantan, UMK Jeli Campus, Locked Bag No. 100, 17600 Jeli, Kelantan
*Corresponding author: syazaaiman.sehwali@yahoo.com

Labuan is one of the three Federal Territories in Malaysia located 10km from Borneo Island coast which is in the west coast area. Consisting of five lithological units; Crocker Formation, Temburong Formation, Setap Shale, Belait Formation and Quaternary alluvium, Labuan Island become one of the important sources to study the sedimentary strata of the island. The main objective of this study is to distinguish the distribution of rare earth elements at five localities named BH1, BH2, BH3, BH4 and BH5 within the area 97km^2. As the demand for rare earth elements (REEs) continues to increase, many efforts have been made to reestablish mining and production of REEs. Results from Inductive Coupled Plasma Mass Spectrometry (ICP-MS) analysis which have been carried out to find the concentration of lanthanum and terbium showed that concentration of REEs in BH1 is 1265.7 ppb, BH2 1590.8 ppb, BH3 2124.8 ppb, BH4 1259.4 ppb, and BH5 1934.0 ppb. Highest concentration of REEs was recorded at BH3 followed by BH5, BH2, BH1 and lowest concentration of REE's was at BH4. This study revealed that enrichment of REEs occurred at area which near to Crocker Formation and Belait Formation.

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