Distribution of highly/extremely REY-rich mud layers in the southern part of the Minamitorishima EEZ: Insight from major and trace element geochemistry

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Since the discovery of highly/extremely REY-rich mud layer (more than 2000/6000 ppm ΣREY) within the Japanese Exclusive Economic Zone (EEZ) around the Minamitorishima Island [1], exploitation of REY-rich mud has attracted particular interest because of its high potential as a REY resource. Detailed investigation by subbottom profiling and piston coring conducted over the last three years has revealed the distribution of REY-rich mud (>400 ppm ΣREY) and overlying non-REY-rich sediments within the Minamitorishima EEZ [Nakamura et al., in revision]. However, both lateral and vertical distributions of the highly/extremely REY-rich mud layers are still uncertain. Here we examine major and trace element compositions of deep-sea sediments cored from the Minamitorishima EEZ. On the basis of geochemical characteristics, REY-rich mud can be subdivided into six types including highly/extremely REY-rich mud, and the highly/extremely REY-rich mud layer is the second top layer of the REY-rich mud succession. In the presentation, we discuss the distribution of each layer of the REY-rich mud and its paleoceanographic implication.

Keywords: highly/extremely REY-rich mud layers, Minamitorishima EEZ, geochemistry

