

The progress of research on REY-rich mud within the Minamitorishima EEZ

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Three years have passed since the amazingly fruitful research cruise KR13-02 resulted in a discovery of deep-sea mud extremely enriched in rare-earth elements and yttrium (REY) within the Japanese exclusive economic zone (EEZ) surrounding Minamitorishima Island. The mud with maximum total REY content of ~8,000 ppm strongly attracts our attention as an unconventional and highly promising deep-sea mineral resource. Subsequent six cruises, i.e., MR13-E02, KR14-02, MR14-E02, MR15-E01 Leg 2 and Leg 3, and MR15-02, have highlighted that the southern part of the Minamitorishima EEZ appears to be the unique area where the "extremely REY-rich mud" lies at very shallow depth (2 to 4 m) below the seafloor. In the presentation, we report a general overview of our latest findings from various approaches to REY-rich mud in the Minamitorishima EEZ including chemical, physical, statistical and engineering techniques.

Keywords: deep-sea mineral resource, REY-rich mud, Minamitorishima Island