

Lateral distribution of extremely REY-rich mud layer in the southern part of the Minamitorishima EEZ

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Recently, we discovered deep-sea sediment containing ~7,000 ppm of total rare-earth elements and yttrium (REY), which was termed ‘extremely REY-rich mud’ (Iijima et al., 2016), within the Japanese exclusive economic zone (EEZ) around Minamitorishima island. To clarify the mineralogical/chemical characteristics and distribution of REY-rich mud in the Minamitorishima EEZ, we conducted eight research cruises over the four years. In the MR15-02 cruise by R/V Mirai from June 22 to July 17, 2015, we focused on investigating the lateral continuity of the extremely REY-rich mud layer in the southern part of the Minamitorishima EEZ. During the cruise, we collected 16 sediment cores by piston coring from the southwestern to southeastern areas of the Minamitorishima EEZ. Here we report visual core descriptions and bulk chemical compositions of the deep-sea sediment core samples, and discuss the extent of a highly promising area for future development of REY-rich mud in the Minamitorishima EEZ.

Keywords: rare earth elements and yttrium (REY), REY-rich mud, Minamitorishima Island, deep-sea mineral resource