

Geochemistry of REY-rich mud in the basins southeastern off Minamitorishima Island

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Since the discovery of the new and high-grade resource for rare-earth elements and yttrium (REY), or “REY-rich mud” with 400–8000 ppm of total REY content, in the Japanese exclusive economic zone (EEZ) surrounding Minamitorishima Island (Iijima et al., 2016; Fujinaga et al., 2016), we conducted eight research cruises over five years. During the MR16-07 cruise by R/V MIRAI from November 1 to 25, 2016, we investigated the distribution of the REY-rich mud in several basins located southeastern off Minamitorishima Island, mainly the area outside the Minamitorishima EEZ. We collected 12 sediment cores by piston coring, and implemented bulk chemical analyses by using ICP-MS for trace and rare-earth elements, and XRF for major elements. In the presentation, we report the sedimentological and geochemical features of the deep-sea sediments, and the distribution of REY-rich mud in the southeastern basins nearby the Minamitorishima EEZ.

Keywords: rare earth elements, REY-rich mud, Minamitorishima Island, seafloor mineral resources, deep-sea sediment