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Distribution and geochemical features of extremely REY-rich mud in the Minamitorishima EEZ

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A recent report has documented the wide distribution of “REY-rich mud” , deep-sea sediment containing high concentrations of REY (ΣREY = 400 – 2000 ppm), in the Pacific Ocean (Kato et al., 2011). In 2013, we have discovered the “highly” (ΣREY = 2000 – 5000 ppm) to “extremely” (ΣREY >5000 ppm) REY-rich mud in the Japanese Exclusive Economic Zone (EEZ) around Minamitorishima Island (Kato et al., 2013; Fujinaga et al., 2013; Suzuki et al., 2013). To investigate the detailed distribution of extremely REY-rich mud, we conducted the new research cruise (MR14-E02 by *R/V Mirai* from October 14 to 29, 2014) in the south region of the Minamitorishima EEZ. We collected 11 sediment cores by piston coring in this cruise. Here we report the distribution, bulk-sediment chemical compositions, and geochemical features of the extremely REY-rich mud in the Minamitorishima EEZ.

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