

Lithology, constituent mineral, geochemical composition of the drilled core obtained by CK14-04 Cruise, Okinawa Trough

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CK14-04 Cruise by D/V Chikyu was performed in the Iheya-North Knoll, Okinawa Trough from 8 to 26th, June 2014 to investigate the seafloor hydraulic structure and geology. Six holes (C9011B, C9012A, C9013A, C9014A, C9015A and C9016A) were drilled for logging while drilling (LWD) as well as coring of three holes (C9015B, C9015C, C9016B). Holes C9015B and C9015C locate the flank of HRV (high radioactivity vent) mound in the Iheya-North Original site, whereas Hole C9016B is ca. 150 m north from the central part of hydrothermal activity in the Iheya-North Aki site where has been discovered in January 2014. Total coring lengths of Holes C9015B, C9015C and C9016B were 31, 30 and 150 m, respectively. In this presentation, we report the lithology and constituent minerals determined by visual core observation and XRD analysis together with downhole variations of the geochemical composition determined by ICP-QMS analysis. Based on these data, we discuss the geology, hydrothermal alteration, geochemical features and sulfide mineralization in the Iheya-North Knoll, Okinawa Trough.

Keywords: Okinawa Trough, Iheya-North Knoll, seafloor hydrothermal deposit, kuroko-type deposit, CK14-04 Cruise, Expedition 907