

GEOCHEMISTRY OF INTERSTITIAL WATERS FROM HYDROTHERMAL SEDIMENTS, NORTH MID-ATLANTIC RIDGE

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Our observations at several hydrothermal sites on Mid-Atlantic Ridge (MAR) show contents of sulphate, P, metals of hydrothermal origin in pore waters from sediments varying strong in different tectonic/geological settings. The zonation in distribution of metals in pore waters at 24°30'N, MAR was established. Mn and Cu anomalous concentrations in bottom waters, massive sulphides and intermetal combinations in sediments testified to recent hydrothermal activity. No direct signs of active high-temperature hydrothermal venting were detected here though. Our investigation of pore water chemistry shows that the zone of low metal and sulphate concentrations accompanied by the high content of P₂O₅ exists within the research area. Similar zones of minima metal concentrations we observed in the vicinities of hydrothermal fields on the South East Pacific Rise. The possibility of the link existing between anomalies observed in the south part of the region and the hydrothermal activity at this site maintains still. Anomalous concentrations of Fe, Mn, Zn, Cu, Pb, Co, Cd, Ni were observed in pore waters from sediments at 14°43'N, MAR. High contents of SO₄, and low concentrations of P₂O₅ in same samples as well as the geological and geophysical data are evidences for the hydrothermal flux existing in this region. Earlier at this site geophysical investigations revealed the existence of the area with a pronounced electrical field coupled with sulphide anomalies. This work was supported by the Russian Foundation for Basic Research, grants ## 99-05-65258, 98-05-64169.