

LARGE CHANGE OF ARCHITECTURE AND FLUID PASSWAY AT THE TAG HYDROTHERMAL MOUND, MID-ATLANTIC RIDGE

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The TAG (Trans Atlantic Geotraverse) hydrothermal mound, in the rift valley of the Mid-Atlantic Ridge at 26°N, 45°W, is one of the largest hydrothermal mound ever known in the world. Since the first finding of the mound its whole edifice, stratigraphy and structure, chemistry and long-term change were made clear by the previous studies by the use of deep-tows, submersibles and surface ships. Here we present a new data sets on the location of active hydrothermal vents, type of smokers, architecture of the mound, long-term monitoring and chemistry of the hydrothermal fluids. The TAG hydrothermal mound is migrating with NNE-SSW trending fault movement since 1994 to form the two new black smoker mounds east of the Central Blacksmoker Complex previously and now existed. The chemical compositions of the vent fluids did not change at all even 17 drill holes during the ODP Leg 158 were dug up on and around the TAG mound as deep as maximum 125m below sea floor. We detected big change of the Eh, pH, CTD and gamma-ray intensity along the vents and faults on the mound. We also found the existence of the plume structure by the measurements during the descent and ascent the submersible. The TAG hydrothermal mound is now migration together with fault system suggesting that the passway of the hydrothermal fluid changes without any reaction with the mound forming materials since 1994.