

## Reactivity of Pore Water Dissolved Organic Carbon in the Water Column: Initial Findings From an Incubation Experiment

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The reactivity of dissolved organic carbon (DOC) in marine anoxic sediments was investigated in an incubation experiment designed to assess the fate of pore water DOC upon export to the oxic water column. Pore water samples from the Santa Barbara Basin (SBB) and the Santa Monica Basin (SMB), California Borderland, were collected from the uppermost 10-20 cm of the sediment column in August 2013. These samples were inoculated with sea water collected from 100 m water depth at SMB, sparged with ultra high purity air to saturate samples with O<sub>2</sub>, and then incubated in the dark at 9.8 °C (temperature of the water column at 100 m depth) for over 6 months. The DOC concentration of the SMB sample dropped from a starting value of ~530 μM to ~460 μM in the first 6 days, then remained constant thereafter. The DOC concentration of the SBB sample also decreased at the onset of the incubation, from an initial value of ~630 μM to ~600 μM in the first 11 days. However, starting day 12, DOC concentration increased, and by day 44 reached a value similar to that at the start of the incubation. We will present these results with Δ<sup>14</sup>C and δ<sup>13</sup>C values of DOC and discuss the implications of these results for the fate of pore water DOC in the water column.