

Distribution of Silt and Clay Grain Size and Select Trace Metals in Bottom Sediments of Tampa Bay, July 2003

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We present findings on the distribution of sand/silt/clay in 308 samples collected by the USGS within a 0.5-km shoreline corridor of Tampa Bay, and 84 samples from Middle Tampa, Hillsborough, East, and MacKay Bays, and Palm River collected by the Environmental Protection Commission of Hillsborough County (EPCHC). The percent silt/clay for sediments along a 0.5-km corridor of Tampa Bay ranged from 0 to 100% with a mean value of 16.01. Percent silt/clay for the EPCHC sediments ranged from 2.03 to 66.86% with a mean value of 24.7%. A third of the samples (115) with the highest silt/clay percentage was used for trace metal analyses (Al, As, Cd, Cr, Cu, Ni, Pb, and Zn). Due to the relatively constant proportion of metals to aluminum, metal-to-aluminum graphs were used to evaluate the metal data (Florida Department of Environmental Regulations, 1988); findings were also compared to their Sediment Quality Assessment Guidelines (1944). The findings indicate the presence of some metals with concentrations greater than the 'normal' range for the respective metal:aluminum ratio (i.e., sediments are metal enriched). Some metals, although not enriched, were sufficiently elevated that they could possibly have adverse biological effects.