

2-21-1989

Press release

City of Tampa Bay Department of Sanitary Sewers

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City of Tampa Bay Department of Sanitary Sewers, "Press release" (1989). *Reports*. Paper 163.
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CITY OF TAMPA

Sandra W. Freedman, Mayor

DEPARTMENT OF SANITARY SEWERS

Advanced Wastewater Treatment Plant

February 21, 1989

The City of Tampa Sanitary Sewers, Bay Study Group, is pleased to announce the completion of the study "Recent Geologic History of Mud-Dominated Sediments in Hillsborough Bay, Florida. Phase I." A copy of the results of this study is enclosed for your reference. The study was a cooperative effort between the Bay Study Group and the University of South Florida, Center for Nearshore Marine Science.

The following comments are in order to summarize the findings presented in this report and to address the next phase of the ongoing investigation of Hillsborough Bay sediments, which the Bay Study Group has conducted since 1983.

Although the results of the report indicate a lack of drastic changes in fine sediment deposition over the last several thousand years, the Bay Study Group agrees with the authors of the report that additional study is needed to determine sedimentary processes over the last 100 years or so when man's influence on Hillsborough Bay and surrounding areas has been the greatest. A Phase II is recommended by the authors which would include detailed analyses of the uppermost sediment layer. Suggested analyses include dating using Pb-210 and other relatively short-lived radioisotopes for accurate timing of recent sedimentary events and also analyses of anthropogenic contaminants such as metals, agricultural chemicals, hydrocarbons and other organic compounds.

It is the opinion of the Bay Study Group that a limited test program of the suggested Phase II parameters should be undertaken before any large and costly bay wide investigation is initiated. First, detailed surface sediment metal concentrations were recently examined in Hillsborough Bay by FDER and Tampa Bay sediment hydrocarbon contamination was studied in 1984-85 by Doyle et. al. Second, it is possible that dating techniques using Pb-210 or other radioisotopes with relatively short half-life may be unsuitable to evaluate recent fine sediment accumulation processes in Hillsborough Bay. The just completed study

indicates that bathymetry determines fine sediment distribution in the bay. Since 1879, however, man has artificially changed the bathymetry of the bay by dredging deep channels and port areas which act as sinks of fine sediment. Today, therefore, perhaps most of the sediment introduced to or produced within the bay is transported to the deep channels and port areas by wind and tide generated currents, where it is eventually removed from the bay system by dredging. Therefore, a record of this recently produced sediment may not be present in the large expanse of fine sediment in central Hillsborough Bay. Further, inputs of naturally occurring Pb-210 and other radioisotopes from phosphate containing mineral deposits located east of Hillsborough Bay, as well as inputs from phosphate processing activities, may also render the Pb-210 dating technique inappropriate as a tool to determine sediment accumulation in Hillsborough Bay.

The Bay Study Group plans to fund a limited Phase II project to evaluate the Pb-210 and other relatively short-lived radioisotope dating techniques for the special case of Hillsborough Bay. Two shallow cores will be collected in the large expanse of fine sediment in the central portion of the bay. A third core will be collected from an apparently undisturbed fine sediment area in Old Tampa Bay, distant from major shipping activities and perhaps less influenced by radioisotopes associated with phosphate mineral deposits and the phosphate processing industry. The location of a fourth core will be determined after analyses of the first three cores are completed.

Should this limited study show that man's influence on the bay is obscured in the fine sediment record of central Hillsborough Bay, then other methods must be employed to determine the fate of recently introduced and produced materials. Such methods may involve trapping of particles as they fall through the water column, in addition to measurements of sediment resuspension and bed-load transport processes.

Your comments on the next phase of this project would be welcome.

Sincerely,

Roger Johansson
Bay Study Group Supervisor