



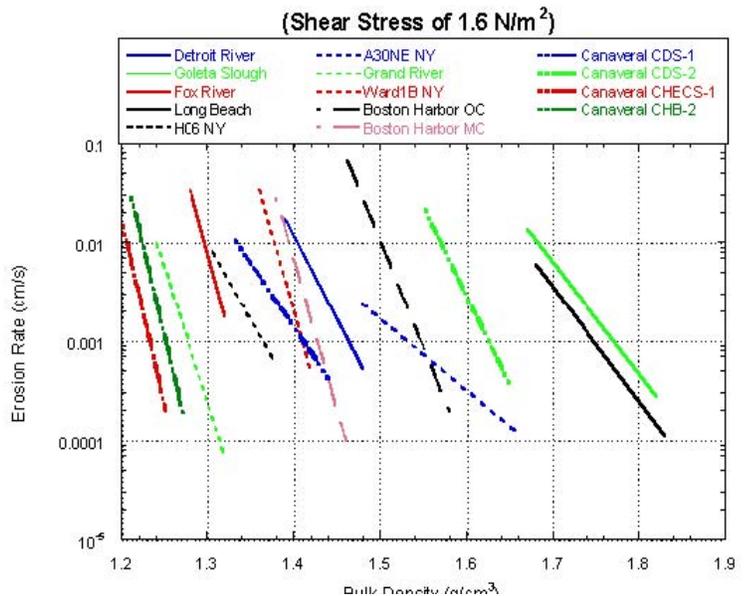
Characterization of the Erodibility of Sediments in Marine Environments

Description

Sandia National Laboratory investigates the erodibility of sediments as a function of consolidation. In addition, *in situ* analysis cores from each site can be taken to determine bulk density, particle size, mineralogy, and organic carbon content as a function of depth.

Boston Harbor

One sediment was from an uncapped contaminated area called the “CAD cell” and one was from a nearby area that is not contaminated. The Army Corps of Engineers retrieved both of these sediments and 30 and 35 gallons of each were shipped to Sandia’s facility.



Erosion vs Bulk Density for Natural Sediments

Canaveral Ocean Dredged Material Disposal Sites (ODMDS)

The U.S. Environmental Protection Agency (EPA) has the responsibility under Section 102 of the Marine Protection Research and Sanctuaries Act (MPRSA) for the management and monitoring of ODMDS. The Canaveral ODMDS was designated by the EPA in 1990 for disposal of dredged material from the U.S. Navy Trident Basin and Entrance Channel, the Port of Canaveral facilities, and the Corps of Engineers Civil Works Projects at Canaveral. Concurrent with the site designation in 1990, a Site Management and Monitoring Plan (SMMP) was developed. This plan is currently in the process of revision. A main component of site monitoring is the determination of the short-term and long-term fate of materials disposed in the marine environment. Concern has been raised regarding the magnitude and extent of disposed dredged material dispersal outside of the ODMDS boundaries and the potential for disposed dredged material impacting potential future offshore sand sources for beach re-nourishment. Additionally, a quantitative analysis is needed to provide an estimate of the long-term capacity of the disposal site. Close to one million cubic yards of material are disposed of at the ODMDS every year. A significant portion of this material comes from the entrance channel where the sediments have been classified as stiff clays and silts, with horizons of very fine silty sand, shell fragments, and organics.



Numerous studies prior and subsequent to site designation have indicated that the ODMDS is a dispersive site for fine grained material and as a result dredged material may extend well beyond the designated boundaries. However, adequate site-specific information is not available to allow for a conclusive and quantitative statement regarding sediment transport from the ODMDS. In order to address this issue, the proposed work is intended to collect site-specific information regarding the erodibility of dredged material disposed at the Canaveral ODMDS. Parameters calculated from the proposed work can be used in existing numerical models to provide quantitative estimates of the sediment transport occurring within and near the ODMDS. This in turn can be used to effectively manage the Canaveral ODMDS to minimize environmental impact.

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Contact

Jesse Roberts
Carlsbad Programs Group
4100 National Parks Highway
Carlsbad, NM 88220
Phone: (505) 284-2710
Fax: (505) 234-0061
Email: jdrober@sandia.gov