

**Properties of Sediments from The New York/New Jersey Harbor\***

K. W. Jones

Brookhaven National Laboratory, Upton, New York 11973-5000 USA

H. Feng

Montclair State University, Upper Montclair, New Jersey 07043 USA

Sediments found in the New York/New Jersey Harbor are widely contaminated with organic and inorganic compounds of anthropogenic origin. As a result, the environmental health of the harbor has deteriorated and the efficient operation of the port compromised by difficulties in disposing of sediments resulting from maintenance and improvements in navigational channels. Knowledge of the properties of the sediments on a micro scale basis is useful in understanding the transport of contaminants through the environment and in developing effective methods for sediment decontamination beneficial use. We have investigated several properties of these sediments using synchrotron radiation techniques. These include computed microtomography using absorption and fluorescence contrast mechanisms, x-ray microscopy, microbeam x-ray fluorescence, and Fourier transform infrared spectroscopy for measurements of microstructure, distribution of metals on individual sediment particles, and chemical forms of the contaminants on a micrometer scale. Results of the individual experiments will be summarized.

\*Supported in part by the US Department of Energy under Contract No. DE-AC02-98CH10886.