EXECUTIVE SUMMARY

A monitoring survey was conducted in 2003 at the West Island Historic Site (WIHS) as part of the Disposal Area Monitoring System (DAMOS). WIHS is located in Buzzards Bay just outside of New Bedford Harbor, Massachusetts and historically accepted dredged material from New Bedford Harbor up until the 1970s. Given the polychlorinated biphenyl (PCB) contamination that exists in New Bedford Harbor, some PCB contaminated sediments were likely disposed at WIHS. The 2003 monitoring survey was designed to provide a physical characterization of the site and a screening-level assessment of potential PCB distribution in surficial sediments at WIHS.

The 2003 monitoring survey included bathymetry, side-scan sonar, and video-assisted grab sampling. The bathymetric survey was performed over a 3 km^2 area that encompassed the boundary of WIHS. The side-scan sonar survey included WIHS and extended to the south, covering a 6.3 km^2 area. Grab samples were collected from 41 locations, focusing on WIHS, but also including reference areas to the west and south of WIHS and within New Bedford Harbor. The monitoring was performed in three phases from August to December 2003, allowing the grab sample station placement to target potential deposition areas identified by the physical characterization. The use of the video-assisted grab allowed for further refinement of sampling locations during the survey. Sediment samples were analyzed using a biomarker-based assay for dioxin toxic equivalents (TEQs) as a screening-level test for the presence of PCBs.

The bathymetry and side-scan surveys and the video performed as part of the sampling all identified the presence of historical disposal at WIHS, with individual rings and mounds as well as clusters of features distributed across and to the south of the site. The survey results also indicated that the disposal features consisted of coarse-grained material or large stone/debris and that much of the site was exposed rock outcrop. Sampling that targeted deeper, apparently finer grained areas of WIHS revealed sediments composed primarily of sand. Hence, any fine-grained material that was historically disposed at WIHS was likely resuspended and transported away from the site by wave and current action. As contaminants such as PCBs are typically associated with fine-grained sediments, the physical characteristics of WIHS limit the potential for extensive PCB contamination. The assay technique that was used appeared to have a relatively low sensitivity for New Bedford Harbor PCBs. However, the results of the screening level testing supported the physical assessment of limited potential for PCB contamination at WIHS.