

## EXECUTIVE SUMMARY

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A monitoring survey was conducted in September 2004 at the Massachusetts Bay Disposal Site (MBDS) as part of the Disposal Area Monitoring System (DAMOS). The 2004 field effort consisted of bathymetric and sediment-profile imaging surveys designed to document changes in seafloor topography, evaluate the physical distribution of dredged material around recent disposal locations, and assess the benthic recolonization status of historical disposal mounds.

The management strategy at MBDS has involved the controlled placement of small to moderate volumes of sediment to form individual disposal mounds arranged in a ring around a natural seafloor depression, with the goal of developing the boundaries of a containment cell. Previous studies conducted at MBDS verified the presence of five disposal mounds (MBDS-A through MBDS-E) surrounding the depression in the seafloor. Development of a fifth mound (MBDS-F) was initiated in September 2000, but no discernable mound was visible during the Fall 2000 survey. Since September 2000, disposal of more than 560,000 m<sup>3</sup> of material was targeted at the MBDS-F Mound.

The September 2004 bathymetric survey was performed over a 5.76 km<sup>2</sup> area in the northern portion of MBDS. The 2004 bathymetric data identified the MBDS-F Mound as a distinct feature with a base of approximately 450 m in diameter and a height of approximately 4 m above the surrounding seafloor. Small areas of depth increases and decreases were also identified over previously formed mounds MBDS-A, MBDS-B, MBDS-C, MBDS-D, and MBDS-E. Continued consolidation of dredged material at the historical mounds likely accounted for some of the depth increase, but some of the depth differences are attributed to differences in data collection and processing techniques between the 2004 and 2000 surveys.

The previous SPI survey, conducted in the fall of 2000, indicated that colonization of the surface sediments of the MBDS-B and MBDS-C Mounds had proceeded as expected with Stage III fauna observed at both mounds. However, it was noted that there were fewer occurrences of mature, deposit-feeding communities on the MBDS-C Mound than on the MBDS-B Mound, attributed to the extensive presence of consolidated Boston Blue Clay at the MBDS-C Mound. It was anticipated that as time progressed and the Boston Blue Clay was broken down by physical and biological processes, a more consistent mature infaunal community would develop. The objective of the 2004 SPI survey was to further assess the benthic recolonization status of the MBDS-C Mound and to perform an initial benthic assessment of the MBDS-D Mound. Results of the 2004 SPI survey showed that in the five years since disposal activities at the MBDS-C and MBDS-D Mounds had ceased, the resident benthic community had completely recovered, and both mounds exhibited benthic conditions comparable to those found at the three reference areas.