

## EXECUTIVE SUMMARY

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As part of the overall Boston Harbor Navigation and Improvement Project (BHNIP), shipping berths 11 and 12 at Conley Terminal in South Boston were deepened to –40 ft and –45 ft MLLW, respectively, in June-July 1997. In phase 1 of the BHNIP, fine-grained maintenance sediment, classified as unsuitable for open ocean-disposal, was dredged and placed into an in-channel confined aquatic disposal (CAD) cell in Boston Harbor. The cell was excavated into the existing federal channel, below the BHNIP channel depth of 40 ft MLLW. Following placement of maintenance material into the cell, sufficient sand to cover the dredged material with a minimum of a 3 ft capping layer was placed using split-hull scows.

A monitoring survey was conducted by SAIC in October 1997 to assess the status of capped CAD cell. Survey methods included one day of vibracoring, and one day of acoustic surveying including bathymetry, subbottom, and side-scan sonar. Results of the survey indicated that most of the CAD cell was covered with a highly variable thickness of sand, while the southern end had little to no cap material. This distribution was consistent with the positioning of the split-hull scows used to dispose the sand. Sand disposal was permitted during the outgoing (southerly) tidal cycle. Prior to the initiation of the project, preliminary modeling of sand transport due to Boston Harbor tidal currents predicted that sand would be transported to the south, so no barge was placed directly over the southern end of the cell. The results suggested that the sand remained in the convective state during placement, so that all the cap material was placed directly below each positioned barge.

The monitoring results also suggested that postcap operations designed to level the sand served to enhance mixing of the cap and underlying dredged material, and resulted in uneven sand coverage. A final videosled survey was conducted by C. R. Environmental in December 1997. These data confirmed the presence of a thick layer of sand covered with tunicates and other organisms in most of the cell, and the flat, fine-grained uncapped mud surface to the south. Overall, the maintenance material was successfully placed in the cell, and capped with sand in all locations where capping barges were located. The results of monitoring of Phase I provided guidance for operational and monitoring modifications for Phase 2 of the BHNIP in 1998-99.