EXECUTIVE SUMMARY

A monitoring survey was conducted in September and October of 2011 at the Central Long Island Sound Disposal Site (CLDS) as part of the Disposal Area Monitoring System (DAMOS) Program. The 2011 monitoring effort involved a September multibeam bathymetric survey to document changes in seafloor topography and an October sediment-profile imaging (SPI) survey to assess the benthic recolonization status. These surveys were conducted with multiple objectives and covered two separate areas within CLDS: an area in the southwest portion of CLDS, where dredged material disposal activities were concentrated over the period from 2005 to 2011, and an area in the extreme northeast portion of CLDS at a disposal mound created nearly 20 years prior.

The multibeam bathymetric survey, performed as a standard confirmatory survey as part of the 2011 monitoring at CLDS in the southwestern portion of the site, revealed that two discrete mounds of dredged material had been created on the seafloor since the previous multibeam bathymetric survey of September 2009. The mounds were labeled by disposal season, as follows: CLIS 09 (2008–09 disposal season) and CLIS 10 (2009–10 disposal season). The size of each mound was generally proportional to the volume of dredged material placed during each season. The new mounds (CLIS 09 and CLIS 10) represent additions of dredged material to an existing line of mounds that are coalescing into a berm on the seafloor. The berm represents the wall of a large confined aquatic disposal (CAD) cell intentionally being created in this part of the disposal site, in accordance with DAMOS management objectives.

Depth difference calculations and analysis of side-scan sonar and backscatter results were used to assess the distribution of dredged material and stability of disposal mounds. Unlike the sediment distribution in 2009, the grain size of dredged material placed recently at CLDS appeared relatively uniform. The new disposal mounds accumulated dredged material and the CLIS 08 mound consolidated. The surfaces of CLIS 08 and NHAV 74 appear to have received fresh dredged material which is apparent in all of the acoustic results. Apart from the presence of the new material, all of the mounds surveyed at CLDS have been stable since 2009.

The 2011 monitoring effort also included a SPI survey to assess the benthic recolonization status of the three mounds created during the 2007 through 2010 disposal seasons. Two mounds (CLIS 07 and CLIS 09) were characterized by relatively well-developed aRPD depths and an advanced, Stage 3 successional status, comparable to the Stage 3 conditions observed at the three nearby reference areas.

In contrast, one mound (CLIS 08) was in an intermediate successional status, as evidenced by both high variability among replicate images and the widespread presence of transitional “Stage 1 going to 2” and “Stage 2 going to 3” successional series. As

succession proceeds over time at this mound, it will converge both with reference conditions and with conditions observed at the two other mounds. Despite the presence of transitional successional stages, the mean aRPD and successional stage values at CLIS 08 were already significantly similar to reference area values.

The 2011 monitoring survey also included multibeam and SPI surveys of the historical Field Verification Program (FVP) mound in the northeastern corner of CLDS. The surface of the FVP mound was stable and had no evidence of sediment transport beyond the several centimeters of fine sand detected in the SPI survey. The SPI results confirmed that the sediments on the surface of the FVP mound were in an advanced stage of benthic succession and significantly similar to reference area conditions. At least one deposit of fresh dredged material appeared to have been placed on the southern margin of the FVP mound since 2005.