

## EXECUTIVE SUMMARY

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A monitoring survey was conducted at the Central Long Island Sound Disposal Site (CLIS) from July 18 to 23, 1990 as part of the Disposal Area Monitoring System (DAMOS) Program. The objectives of the July 1990 field operations were to delineate the extent and topography of the recently deposited dredged material, to measure near-bottom and near-surface dissolved oxygen concentrations and vertical profiles of temperature and salinity at selected disposal site and reference stations, and to collect additional baseline sediment grain size and chemistry samples from the reference areas. The data included precision bathymetry, Remote Ecological Monitoring of the Seafloor (REMOTS®) sediment-profile photography, conductivity, temperature, and depth (CTD) measurements and dissolved oxygen information, and sediment grab samples. It was predicted that material disposed since 1988 would result in the formation of mounds with radii of 250-300 m at the CLIS-88 and CLIS-89 buoy locations, that benthic recolonization would be mostly Stage I on CLIS-89 and CS-90-1 mounds and Stage III on CLIS-86 and CLIS-88 mounds, and that near-bottom dissolved oxygen concentrations would be similar within the disposal site and reference areas. Sediment chemistry and grain size analytical results were incomplete at the time of the report preparation and will be incorporated into a future report.

The precision bathymetric survey detected disposal mounds CLIS-88, CLIS-89, and CS-90-1 formed since the 1988 survey. The dredged material did form the distinct mounds predicted at the CLIS-88 and CLIS-89 buoy locations. However, the diameter of CLIS-89 was smaller than expected, 200 versus 250 m, and the diameter of CLIS-88 was larger than expected without forming a distinct separate mound due to the proximity of CLIS-87. The thin layer of dredged material seen in REMOTS® photos from up to 300 m away from the disposal mounds was not detected in the bathymetric data.

At CS-90-1, material unsuitable for unconfined open water disposal was capped with clean material. Based on the dredged material footprint detected by an earlier REMOTS® survey, cap material was released at eight locations on the CS-90-1 deposit. The amount of cap material over portions of the mound flank was less than 20 cm. Additional cap material and alternate disposal patterns are recommended.

Benthic recolonization was determined from the analysis of REMOTS® photographs obtained at CLIS and at three outlying reference areas. The 66 REMOTS® stations at CLIS formed a rectangular grid with stations 100 m apart. The recolonization predictions were accurate at CLIS-89, with Stage I taxa predominating. At CS-90-1, Stage I taxa occurred 200 m southwest of the buoy location. Most of the remaining site stations and the reference stations had Stage III assemblages.

The CTD and dissolved oxygen data from CLIS and the reference areas were spatially homogeneous. Dissolved oxygen values ranged from 3.4 to 6.34 mg·l<sup>-1</sup>, indicating the absence of hypoxia.