

EXECUTIVE SUMMARY

The objectives of the monitoring cruise at the New London Disposal Site (NLON) were to 1) delineate the footprint and characterize the topography of the dredged sediment deposited in the vicinity of the NL-TR mound during 1990-1991; 2) assess the benthic recolonization rate at the active disposal site and monitor the successional status at the inactive NL-88 mound; 3) measure near-bottom and surface dissolved oxygen (DO) concentrations at the active disposal site and reference areas and; 4) collect sediment samples at the three reference areas to provide information on percent total organic carbon (TOC), grain size, and levels of polynuclear aromatic hydrocarbons (PAHs), cadmium, lead, and zinc.

The New London Disposal Site covers a one square nautical mile (nmi) area and is centered at 41°16.100' N latitude and 72°04.600' W longitude. It is located approximately 3 nmi south of Eastern Point in Groton, CT. During the 1990-1991 disposal season, 31,475 m³ of dredged material was disposed in the vicinity of the NL-TR mound at the 1990-1991 buoy location, 41°16.428' N and 72°04.333' W. From 24 to 27 June 1991, Science Applications International Corporation (SAIC) conducted routine bathymetric and Remote Ecological Monitoring of the Seafloor (REMOTS®) sediment-profile surveys, sediment sampling, and measurements of near-bottom DO.

A comparison of the June 1991 and July 1990 bathymetric surveys showed an increase in height of 2.4 m at NL-TR. Also apparent was a smaller mound that developed around the buoy and was adjacent to the NL-TR mound. This mound was 0.6 m in height and approximately 100 m in diameter. The combined radii of these two mounds was about 150 m. Based on the 31,475 m³ project volume, the DAMOS Capping Model predicted a mound 2.0 m in height with a 150 m radius.

The objective of the REMOTS® survey was to map that portion of the recently deposited dredged material not detectable with bathymetry. Information obtained from the REMOTS® survey indicated the presence of recently deposited dredged material within 200 m north, 400 m west, and 300 m south of the disposal site center. The REMOTS® sediment-profile survey also provided information on the rate of benthic recolonization. The majority of disposal site and reference area stations were dominated by Stage II, Stage II on III, or Stage III assemblages. Stage II represents a transitional sere between Stages I and III and is associated with recovery of a disturbed benthic habitat. Organism-Sediment Indices for both the disposal site and reference area stations were variable and indicative of a patchy benthic environment.

Results of the metal and PAH analyses indicate relatively low concentrations for the reference areas and no immediate need for further testing beyond the collection of baseline information. Near-bottom dissolved oxygen concentrations were very similar at the reference areas and disposal site, and results indicated a well-oxygenated water column throughout the surveyed area.