

EXECUTIVE SUMMARY

As part of the Disposal Area Monitoring System (DAMOS) Program, Science Applications International Corporation (SAIC) conducted monitoring surveys of the U.S. Navy Seawolf Mound within the New London Disposal Site (NLDS) in September 1997 and July 1998. Field operations in each survey year included data collection of one or more of the following: precision bathymetric surveys, Remote Ecological Monitoring of the Seafloor (REMOTS[®]) sediment-profile surveys, grab sampling of benthic invertebrates, and sediment coring. This report summarizes the disposal and monitoring activities at the U.S. Navy Seawolf Disposal Mound from 1995-1998. This information is presented as a single report to provide a clear, concise picture of the use of the Seawolf Mound during this time frame and to synthesize important monitoring information related to this dredged material mound. A companion report, Volume I, covers monitoring conducted at other mounds in the site from 1992-1998.

Since its inception in 1977, the DAMOS Program has investigated dredging and dredged material disposal practices in an effort to minimize adverse physical, chemical, and biological impacts. DAMOS utilizes a flexible, tiered management approach centered on comprehensive environmental monitoring to oversee the placement of sediments at nine open water disposal sites along the coast of New England. Active disposal sites are surveyed on a regular basis to ensure the environmental effects of dredged material deposition on the benthic habitat are localized and temporary.

There has been an active dredged material disposal site near New London since at least 1955. DAMOS monitoring of the New London Disposal Site started in 1977 when the program was established. The New London disposal site has been used for on-going disposal throughout the 1990's, including unconfined disposal of suitable sediments, and capped disposal of unsuitable sediments. During the 1995-1996 disposal season, the NLDS received a total barge volume of 877,500 m³ of dredged material generated from three separate projects in the eastern Long Island Sound region (Seawolf, Venetian Harbor, Mystic River). Disposal resulted in creation of one disposal mound, the U.S. Navy Seawolf Mound, consisting of unsuitable dredged material (channel, berthing areas and Mystic River) and suitable cap material (Thames River channel, Venetian Harbor and Mystic River).

Bathymetric surveys, REMOTS[®] data and sediment core data confirmed that the Seawolf Mound was capped with at least 50 cm of suitable dredged material. The Seawolf Mound formed a flat, nearly circular deposit with a diameter of approximately 600 m. After an initial period of consolidation of the fresh dredged material (9 months to 1 year), the mound settled to an average height of 2 m with a small oval apex of 3 m. Across the surface of this mound, a thick layer (0.5-3 m) of suitable material formed a cap consisting of sandy sediments and gray glacial clays from improvement dredging in the Thames River channel. Based on visual analysis and direct sampling of animals in this

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surface layer, recolonization of the fresh dredged material by marine invertebrates proceeded as expected. The stiff clay sediments require a longer period to recolonize than harbor silts, but their biological characteristics are very close to the reference areas of NLDS.

Physical and chemical analysis of sediment cores collected in 1997 and 1998 confirmed that the top 50 cm of the mound was chemically consistent with the suitable capping material. There was no evidence of migration or release of contaminants from layers beneath the cap. Only long cores (>2 m) clearly penetrated beneath the cap into either ambient sediments or unsuitable material. These results are consistent with the conclusion that the cap is a stable, thick layer that has effectively isolated the unsuitable sediments from the environment of Long Island Sound.