

## EXECUTIVE SUMMARY

Dredge spoil disposal management procedures have been employed at the Central Long Island Sound Disposal Site to "cap" heavy metal enriched spoils from Stamford, CT with silt and sand from inner and outer New Haven harbor. The objectives of these capping procedures were to isolate the enriched material from benthic fauna and the overlying water column and to evaluate the relative merits of sand and silt as capping materials in terms of coverage, stability, effectiveness in isolating contaminants and recolonization potential.

Monitoring of the disposal operation "as conducted as part of the Disposal Area Monitoring System (DAMOS) and consisted of precision bathymetric mapping of spoil distribution, visual observations of the spoil surface and margins, chemical comparisons of spoil and natural sediment and sampling of benthic populations for recolonization and bioaccumulation studies. This paper is concerned primarily with the results and implications of the bathymetric monitoring procedures.

A computerized navigation and bathymetric data acquisition system was used to conduct baseline and replicate bathymetric surveys during the disposal operation to monitor changes in topography resulting from spoil accumulation.

Sequential profiles across two established spoil mounds indicated that Stamford spoil was concentrated as low mounds with rough topography and that both silt and sand provided adequate cover for the enriched material. However, the sand produced a thin (2m) dense blanket of material that spread over a larger area, while silt produced a thick (4m) cohesive cap with steeper sides and less spreading on the flanks.

Post disposal monitoring over a six month period has revealed no significant changes in the sand cap. However, although adequate cover still exists, the silt cap was substantially altered with extensive slumping of the flanks, flattening of the top of the mound and loss of material from the disposal site. This change has been attributed to the passage of Hurricane David combined with the relatively high bottom stress developed by the roughness factor created by the cohesive nature of the silt cap.

Capping of enriched spoils with cleaner materials has been a "qualified" success. The sand cap has been very stable and the silt cap has provided adequate coverage. Continued monitoring is required to insure the long term success of the operation.