EXECUTIVE SUMMARY

This document presents data collected from a monitoring survey at the Cape Arundel Disposal Site (CADS) on May 15 and 16, 1990 as part of the DAMOS (Disposal Area Monitoring System) program. The objectives of the May 1990 field operations were to replace a small temporary buoy with a permanent buoy and to determine the remaining site capacity. It was predicted that the central portion of the trough would have a maximum decrease in depth of 2 meters with only 10 to 30% of the disposed material detected by comparing the sequential bathymetric plots because of the highly irregular topography of the site. Both objectives were accomplished by conducting a precision bathymetric survey.

A small temporary buoy had been deployed at CADS in April 1990. The results of the bathymetric survey in May indicated that the buoy did not need to be repositioned. The new permanent buoy was deployed at 43° 17.775' N, 70° 27.194' W, and the temporary buoy was removed.

The initial site capacity at CADS, estimated in 1987, based on a 36 m minimum depth, was approximately 600,000 m^3 within the disposal site boundaries. The area of the disposal site > 36 m depth was mostly confined to a 300 X 300 m area around the disposal buoy location. Since 1987, 480,000 m^3 of dredged material has been deposited at CADS. Based on scow release points, 80% of the material disposed by the scows, 384,000 m^3, actually was released in areas >36 m depth. The volume measured for the 300 X 300 m area between 1990 and 1987 was 129,260 m^3 (± 2117 m^3, 95% confidence interval). This volume represents 27% of the total dredged material released by scows in the vicinity of CADS from 1987 to 1990. Because of the highly irregular topography at this site it is uncertain whether improvements in estimating these volume changes are possible.

The 384,000 m^3 of dredged material released by the scows over the trough is adjusted to approximately 226,600 m^3 when a 41% correction factor is applied (Tavolaro, 1984). This corrected volume of dredged material would reduce the site capacity from 600,000 m^3 to 373,400 m^3. If only 129,260 m^3 (the amount detected by bathymetry) actually accumulated in the trough, the remaining site capacity would be 470,740 m^3. These translate to a capacity to handle future uncorrected scow log volumes of approximately 633,000 m^3, if all the material accumulated in the site, and 798,000 m^3 if actual detectable amounts only averaged out to a similar 27% of the total recorded volume.