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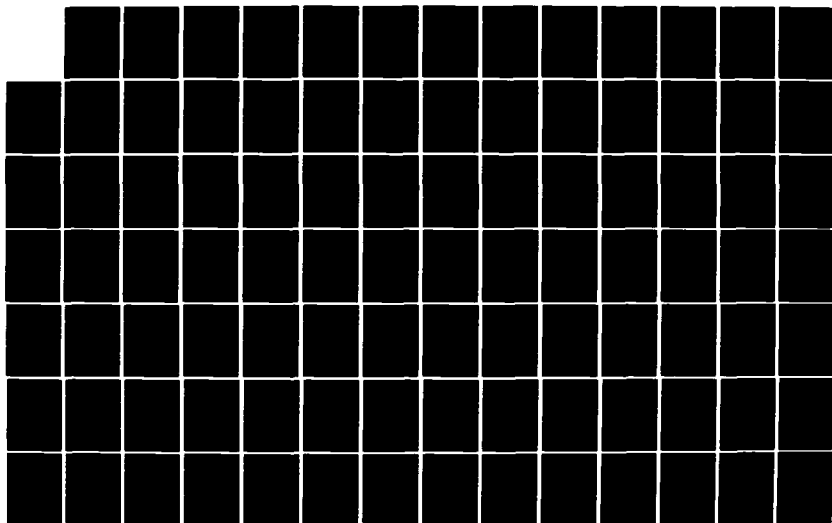
BENTHIC AND SEDIMENTOLOGIC STUDIES ON THE CHARLESTON
HARBOR OCEAN DISPOSAL (U) SOUTH CAROLINA WILDLIFE AND
MARINE RESOURCES DEPT CHARLESTON M. AUG 79
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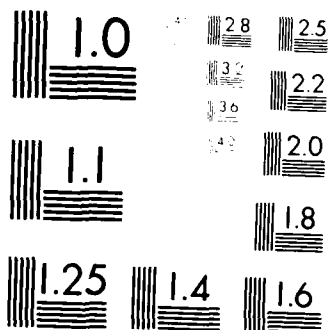
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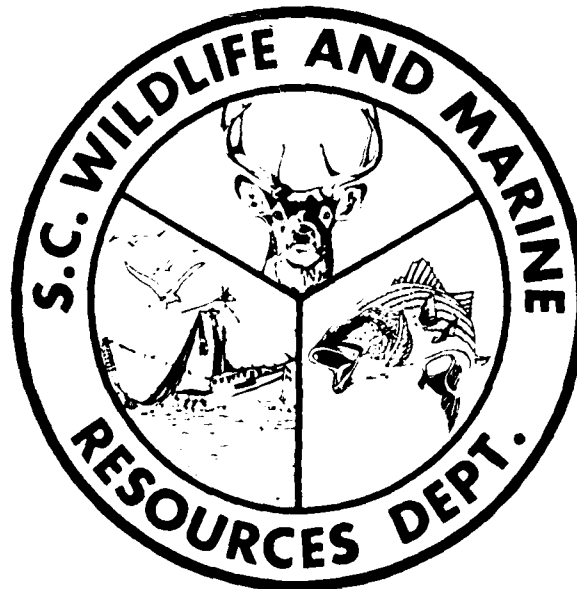
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CHARLESTON DISTRICT
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Final Report



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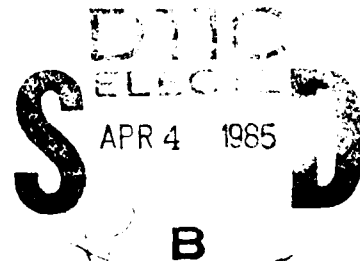
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Final Report

BENTHIC AND SEDIMENTOLOGIC STUDIES
ON
THE CHARLESTON HARBOR OCEAN DISPOSAL AREA,
CHARLESTON HARBOR DEEPENING PROJECT

Marine Resources Division
South Carolina Wildlife and Marine Resources Department
Charleston, South Carolina 29412

August 1979



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INTRODUCTION

Charleston Harbor, South Carolina, is the site of an important commercial port and a U.S. Navy Base. Water depths throughout the entire area are typically shallow, and maintenance dredging is necessary to keep access channels at their prescribed depth because of shoaling. Ships enter the harbor via an entrance channel protected along its inner reaches by a pair of rubble jetties. The Charleston Harbor Project, authorized by the River and Harbor Act, provides that the entrance channel be maintained at a depth of 35 feet and a width of 1000 feet from the sea to the inner end of the jetties (U.S. Army Engineer District, Charleston, 1975). The depth of the entrance channel is maintained using a hopper dredge, and dredged material is disposed in an open ocean disposal area just south of the jetties. According to the Corps report, volumes ranging from 367,460 to 1,410,000 cubic yards of dredged materials have been disposed over this site annually since FY 1965.

Relatively little is known about the marine life and sedimentologic processes of the Charleston Harbor Ocean Disposal Area and vicinity. The South Carolina Wildlife and Marine Resources Department (1972) conducted trawl surveys of the area and found relatively few species and low numbers of individuals compared with inshore estuarine areas. However, no thorough benthic sampling has ever been conducted in the area and no data base exists which might be used to assess the impact of disposing dredged material there. A reconnaissance survey of bottom sediments at the mouth of Charleston Harbor was conducted by the U.S. Coast and Geodetic Survey for the U.S. Navy in 1951. This was largely a gear test experiment and yielded very few quantitative grain size analyses.

During September 1978 the Charleston District, U.S. Army Corps of Engineers

entered into a contract with the South Carolina Wildlife and Marine Resources Department for benthic and sedimentologic studies of the Charleston Harbor Ocean Disposal Area and vicinity. The goals of this study were to:

- (1) Characterize the species composition and density of benthic communities in areas subjected either to deposition of dredged material or to resulting sedimentation;
- (2) Assess the effects of dredged material disposal on bottom communities in the disposal area;
- (3) Describe the mineralogic and textural characteristics of the bottom sediments in and about the Charleston Harbor Ocean Disposal area and the bottom sediments of the Charleston Harbor Entrance Channel.
- (4) Describe the sediment bedforms present in and about the Charleston Harbor Ocean Disposal area as to size, orientation, and composition (mineralogy and texture).
- (5) Ascertain whether the sediment characteristics of the study area have been altered by current disposal practices.
- (6) Provide a data base for appraising the effects of deposition of dredged material from Charleston Harbor in the Ocean Disposal Area.

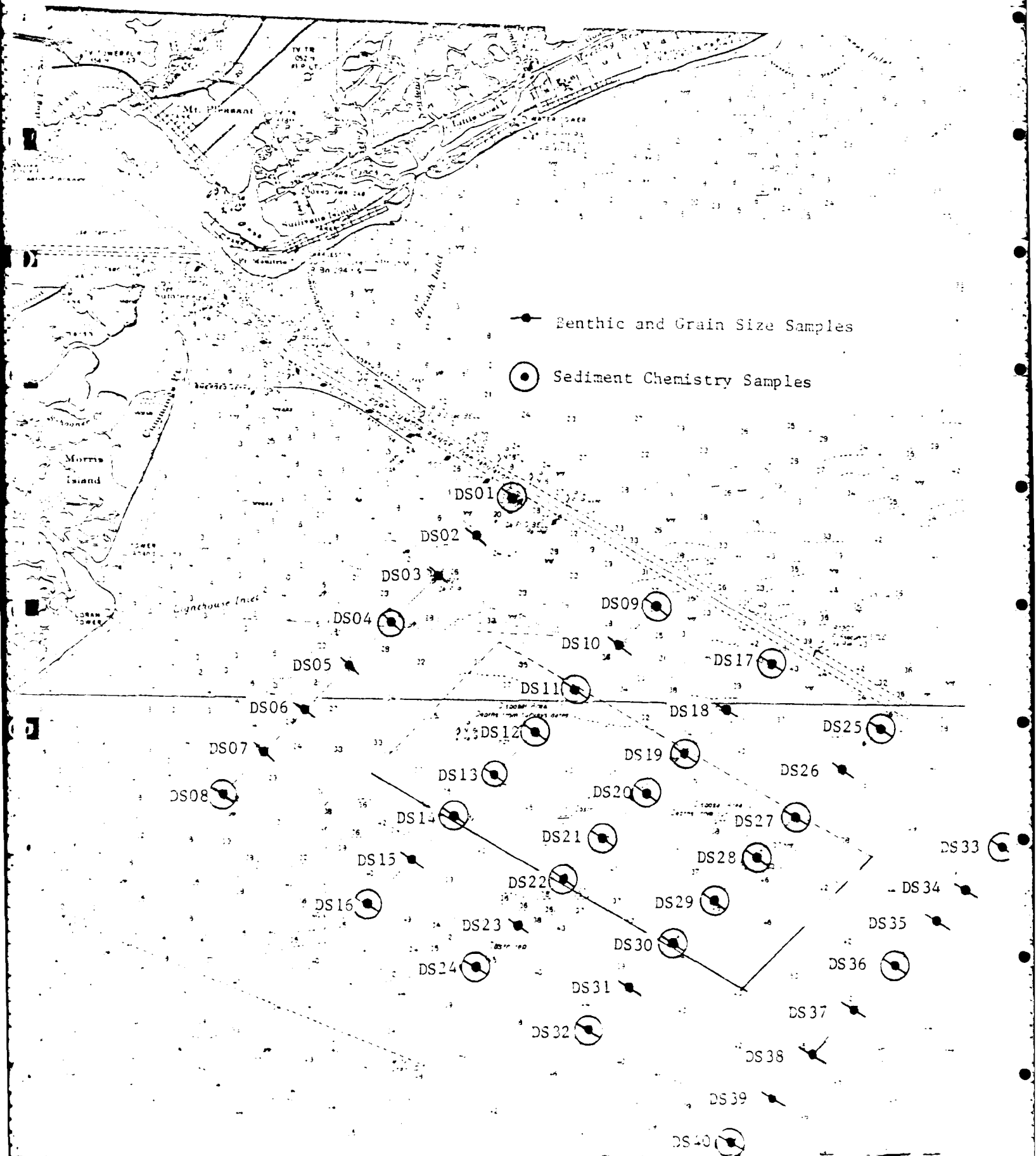
MATERIALS AND METHODS

Benthic Ecology

Sampling of the benthos was undertaken at 40 stations in and adjacent to the Charleston Harbor Ocean Disposal Area during August 1978. Stations were arranged in five transects, with each transect having eight stations (Fig.1). Three of the transects crossed the Ocean Disposal Area, while the other two extended outside the disposal site to the north-west and south-east, respectively. This array of stations provided a total of 12 sampling sites within the Ocean Disposal Area and 28 sites outside. Stations were located using Loran-C aboard the R/V ATLANTIC SUN, and the research vessel was anchored at each site for all sampling except dredge tows.

Quantitative benthic samples were collected using a 0.10 m² Smith-McIntyre grab. Five replicate samples were taken at each of the 40 stations. After measuring the volume of the grab samples, collected materials were washed through a 1 mm sieve. Organisms and sediment remaining on the sieve after washing were removed to appropriately labelled gallon jugs or bottles, stained with rose bengal, and preserved in 10% seawater formaldehyde. Collections were returned to the laboratory for sorting, identification, and enumeration of the fauna.

Quantitative samples were supplemented with qualitative samples of the epifauna taken using a 30 kg modified oyster dredge. The dredge consisted of a rectangular steel frame measuring 80 cm across the mouth, with a 1.5 m long bag of 2.5 cm stretch mesh polypropylene. A skirt of interlacing metal rings protected the bag from chafing. A single tow of five minutes was made at each station. After preliminary sorting of the catch in the field, unidentified epifaunal invertebrates and representative sample of firm substrates were



Map of the Charleston Harbor and Ocean disposal area and the sampling stations.

preserved in 10% seawater formalin and returned to the laboratory for examination and identification.

After identification and enumeration of the fauna from quantitative samples, benthic community structure was analyzed using the following equations

(Pielou, 1977):

- (1) Species Diversity (Shannon's formula)--

$$H' = -\sum p_i \log_2 p_i$$

where H' is the diversity in bits of information per individual, and $p_i = \frac{n_i}{N}$ or the proportion of the sample belonging to the i^{th} species.

- (2) Species richness--

$$SR = \frac{S-1}{\ln N}$$

where S is the number of species and $\ln N$ is the natural logarithm of the total number of individuals of all species in the sample.

- (3) Evenness or equitability--

$$J' = \frac{H'}{\log_2 S}$$

where H' is the species diversity in bits of information per individual and S is the number of species.

Water Chemistry

Surface and bottom water chemistry samples were collected at each station using a Van Dorn bottle. Parameters measured included temperature, salinity, dissolved oxygen, nitrates, silicates, phosphates, turbidity, and suspended and settleable solids. Water temperatures were measured in the field from stem thermometers mounted inside the Van Dorn bottles. All other samples were returned to the laboratory for analysis. Salinity samples were analyzed using a

Beckman Model ES7B Inductron Salinometer. Dissolved oxygen was determined by the modified Winkler titration method (Strickland and Parsons, 1972). Nutrients were analyzed using a Technicon Auto Analyzer II. Turbidities were measured using a Hach Model 21-0A turbidimeter. Solids were determined using standard Methods 2140 and 2147 (American Public Health Association, 1971).

Sediment Chemistry

Separate samples were taken with the Smith-McIntyre grab at 24 stations to obtain sediments for geochemical analysis (Fig. 1). Collected sediments were placed in one-gallon plastic bags, immediately frozen in dry ice, and delivered to the contracting officer at the Charleston District, U. S. Army Corps of Engineers for shipment to the Corps' South Atlantic Division Laboratory, Marietta, Georgia. At this laboratory, analyses were made to determine volatile solids, total organic carbon, DOC, Kjeldahl nitrogen, ammonia nitrogen as NH_3 , nitrite nitrogen as NO_2 , nitrate nitrogen as NO_3 , oil and grease, lead, zinc, mercury, soluble phosphorus as PO_4 , total phosphorus as PO_4 , iron, cadmium, arsenic, chromium, nickel, copper, beryllium, selenium, and vanadium.

Sedimentologic Investigations

Bottom sediments were sampled using a Smith-McIntyre grab in the Charleston Entrance Channel and the Charleston Harbor Ocean Disposal Area. Bottom bedforms were directly observed, measured, and sampled by divers in the Ocean Disposal Area (Fig. 2).

Sediment samples were analyzed for quartz sand, calcium carbonate shell, silt, and clay content (weight percent). Silts and clays were separated from sand-size material by wet sieving or washing through a 62 μ screen. Silt was separated from clay by pipette analysis. Calcium carbonate shell was separated from the quartz sand-size material by HCl digestion. Quartz sand-size fractions were sieved for 30 minutes in a nest of five Tyler screens; resultant grain

size distributions were described by statistical moment measures calculated by the GRAN76 computer program. These grain size distributions were decomposed into their phi-normal components using the RKE computer program (Clark, 1976).

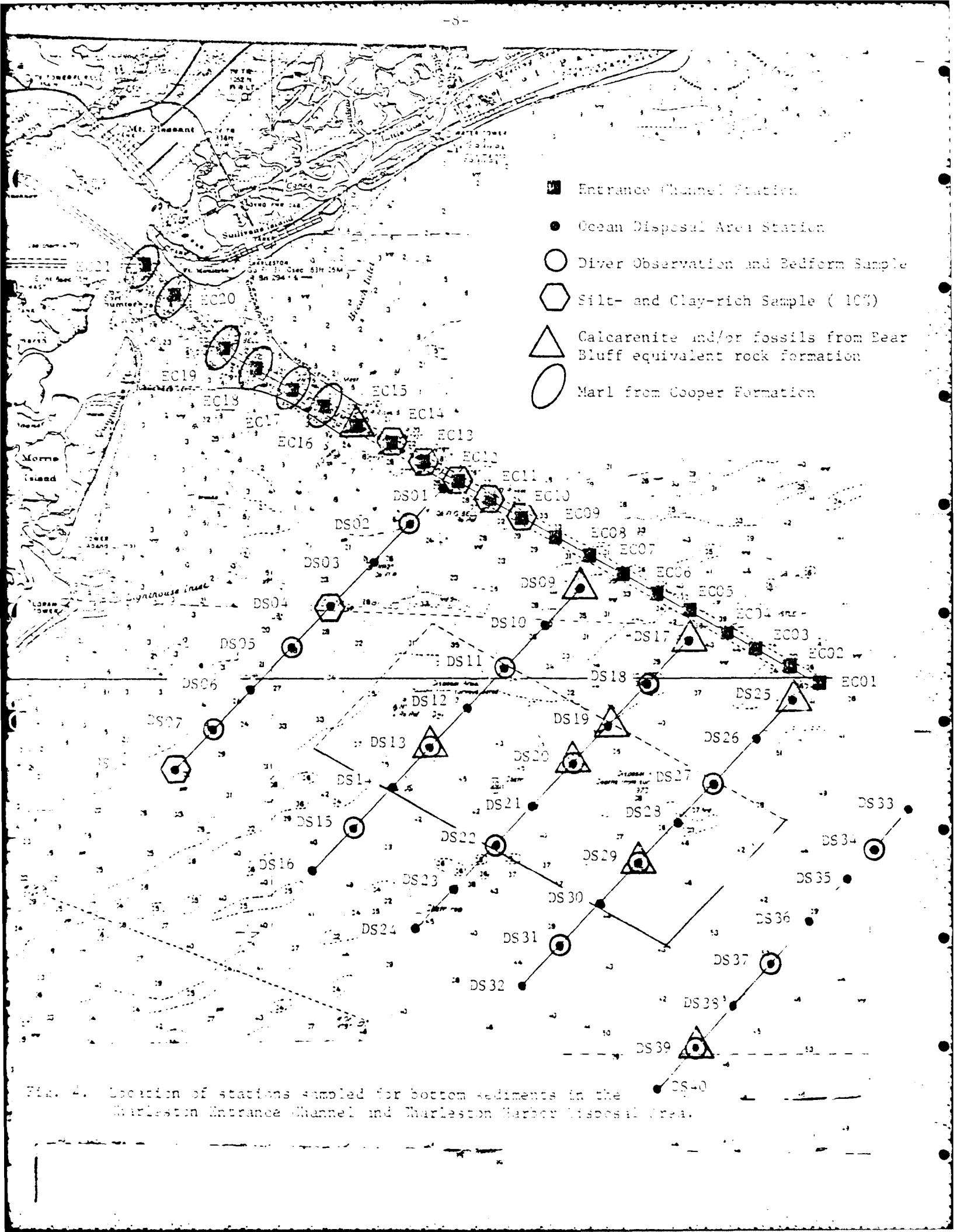


Fig. 4. Location of stations sampled for bottom sediments in the Charleston Entrance Channel and Charleston Harbor Disposal Area.

RESULTS AND DISCUSSION

Hydrography

The Charleston Harbor Ocean Disposal Area occurs in coastal marine waters beyond the harbor mouth, and salinities were all in the euhaline range (30-40‰) during field studies in August of 1978 (Table 1). Salinities were lowest along the innermost transect (averaging 33.33‰) and highest along the outermost transect (averaging 35.13‰). As expected, salinities at a given station were higher on bottom than at the surface, but differences seldom exceeded 3.0‰. Water temperatures were high and reflected the summer season when sampling was conducted. Temperature ranged from a low of 26.5°C in a bottom sample from station DS34 to a high of 30.1 C in a surface sample from station DS23. Most temperature readings were between 28 and 30 C, and differences from surface to bottom in most cases were rather small (Table 1). Oxygen concentrations were relatively high, given the warm temperatures and high salinity of the water. The lowest oxygen value observed was 4.0 mg l⁻¹ in a surface sample from station DS02. Most values of oxygen ranged between 5.0-6.8 mg l⁻¹ (Table 1). Values for other hydrographic parameters measured during the study, including turbidity, nutrients, and solids, are given in Table 1.

Epifaunal Assemblages

A total of 171 epifaunal (or partly epifaunal) macroinvertebrate species was distinguished in oyster dredge collections from the 40 stations in the study area during August, 1978 (Tables 2-42). In terms of species, the fauna was dominated by bryozoans (39 species), cnidarians (33 species), mollusks (29 species), and arthropods (27 species). These four groups accounted for 74.7% of the total number of species identified from the samples. Of the 171 species found, only

eight (the hydroid Clytia cylindrica, the bryozoans Morbiniopora tenuis, Microporella ciliata, and Parasmittina nitida, the sedentary polychaetes Sabellaria vulgaris and Hydroides dianthus, the bivalve Chama macrophylla, and the barnacle Balanus venustus) were found at 20 or more of the 40 stations. The most ubiquitous species was the barnacle Balanus venustus, which was present in samples from 29 stations. This species was common to abundant on suitable shelly substrates.

With a few exceptions, the study area was sparsely populated by epifaunal invertebrates. The bottom, consisting largely of sandy sediments with varying amounts of ground shell, provided an unsuitable substrate for most epibenthic species. The volume of most oyster dredge catches was very small, typically consisting of a few shells along with occasional decapods and echinoderms. Patches with large octocorals (Titanideum frauenfeldii), sponges, and other hard-bottom organisms were infrequent and quite localized, and none of the stations represented significant "live bottom" areas. Sand dollars (Mellita principisperforata) were abundant in fine sand stations (DS01, DS02, DS03, and DS04) along the innermost transect, but elsewhere they were infrequent or absent.

Considerable variability was observed in the number of species from station to station in the study area (Fig.3). The number of species collected at a given site largely reflected the presence or absence of large shells, which provided substrate for the sessile epifauna. Species numbers were quite high where such substrates were present, and typically low where the bottom was sand or sand and ground shell only. A total of 40 or more species was identified in collections from nine of the stations (DS07, DS13, DS17, DS21, DS25, DS26, DS30, DS33, DS38). The maximum number of species (60) occurred in a sample from station DS25. The

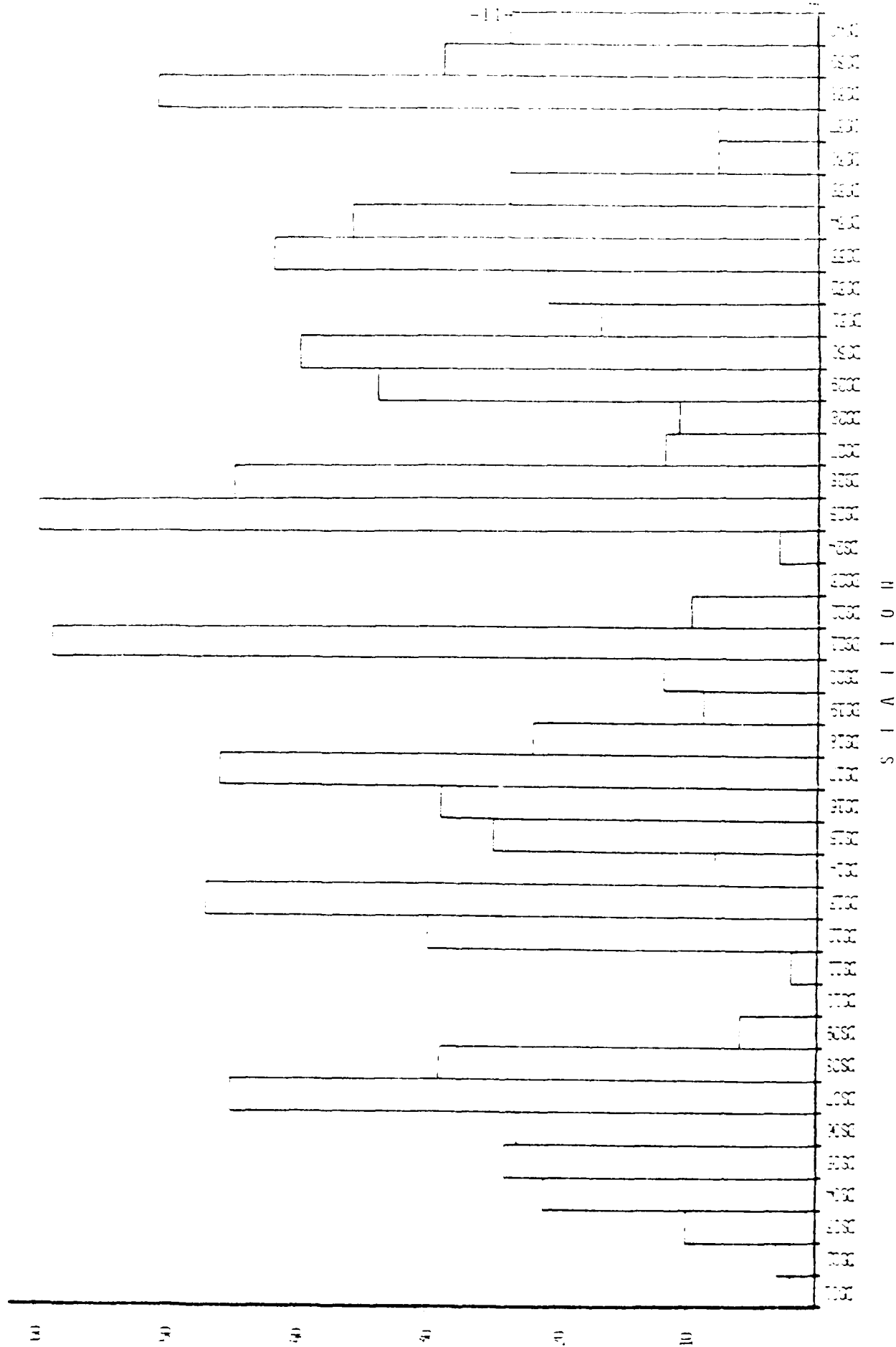


Fig. 3. Number of species in oyster dredge samples from 40 stations in the study area off Charleston, South Carolina.

average number of species per station was 23.1.

No noteworthy difference was detected between the fauna of the Ocean Disposal Area and adjacent sites outside that could unequivocally be attributed to deposition of fresh material. Species number averaged 22.8 inside the Ocean Disposal Area and 22.3 outside. Faunal composition of the two areas was very similar, with 105 species identified inside the disposal area, 152 outside the site, and 86 species common to the two areas. The lower number of species from sites in the Ocean Disposal Area proper is believed to be due primarily to the smaller number of stations sampled there (only 12 of the 40 stations). In addition, the innermost and outermost transects, which did not cross the Ocean Disposal Area, were somewhat different in environmental characteristics and faunal composition from the three middle transects which did.

Infaunal Assemblages

A total of 33,952 benthic macroinvertebrates, representing 493 species, was obtained in quantitative Smith-McIntyre grab collections from the study area (Tables 43-82). Of the total number of organisms collected, 37.5% were polychaetes, 19.6% were the cephalochordate Branchiostoma caribaeum, 13.0% were amphipods, and 7.0% were pelecypods. Representatives of 24 other major taxa comprised the remaining 26% of individuals collected (Table 83). Polychaetes also dominated the fauna taxonomically, with 211 species accounting for 41.3% of the total. Pelecypods comprised 19.2% of the number of species, while decapods and gastropods contributed 9.2% each.

The most abundant single species in the samples was the lancelet, Branchiostoma caribaeum, which comprised nearly one-fifth of the total number of individuals. This species was collected at 31 of the 40 stations included in the study. B. caribaeum was either absent or present in low densities at

Several of the shallower stations inshore, particularly those characterized by finer sediments (see Table 3). Maximum numbers were encountered at stations with bottoms of coarser sand; densities of 2750 and 2748 individuals m^{-2} were found at stations D33 and DS40, respectively. These concentrations exceed the maximum densities of 1345 lancelets m^{-2} recorded by Frankenberg and Leiper (1977) in summer samples from shelf waters off Georgia. In a study of the ecology and distribution of B. caribaeum on the shelf of the southeastern United States, Jory and Pierce (1967) found maximum densities of 204 individuals m^{-2} off Sapelo Island, Georgia. They noted that optimal conditions for aggregations of B. caribaeum included the presence of coarse, shelly, siliceous sand in areas of subsurface wave action and tidal current.

Ranking second in abundance was the sipunculid Aspidosiphon spinalis, which accounted for 3.4% of the total fauna. It was present in collections from 30 of the 40 stations sampled. Other species contributing more than 1% of the total fauna included the polychaetes Spiophanes bombyx, Coniadiides caroliniae, Spio pettiboneae, Nephtys picta, and Prionospio cristata, the lunulitiform bryozoan Cupuladria doma, the amphipod Trichophoxus floridanus, and nematodes of undetermined identity. The polychaete Spiophanes bombyx was the most ubiquitous species, occurring at all of the 40 stations sampled. Also widely distributed were the polychaete Nephtys picta (35 stations), Nemertina (undet.) A (37 stations), the amphipods Pseudoplatyschnopus floridanus and Tiron tropakis (33 stations each), nematodes (33 stations), the decapod Pagurus longicarpus (32 stations), and the pelecypods Tellina probria and Brachidonta concentrica (20 stations each).

Species diversity (H') ranged from 3.47 to 6.15 in samples from the study area (Table 4, Figure 1). Divergence measurements (α') did not reveal any significant

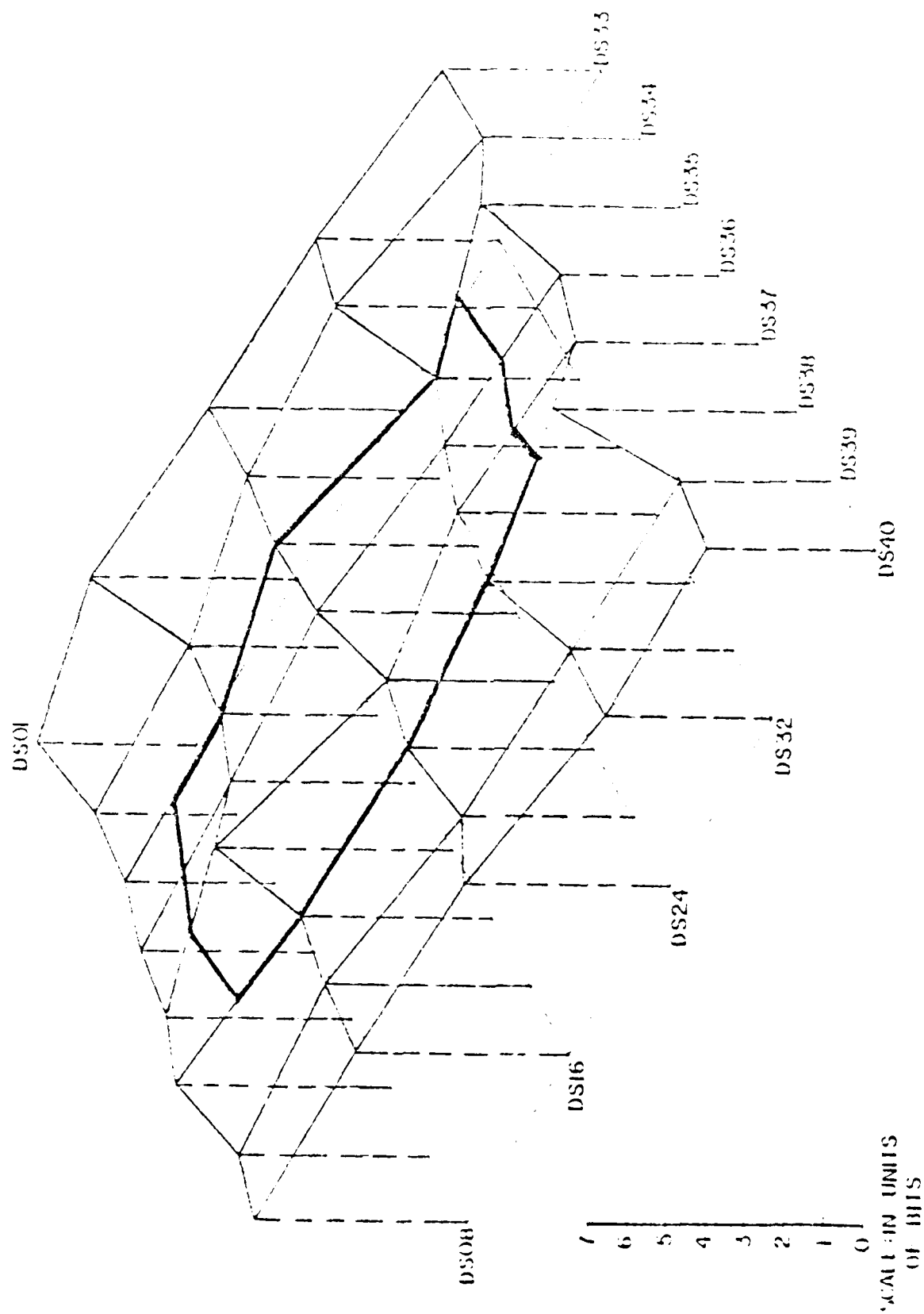


Figure 4. Species diversity values (H') for stations in and adjacent to the Charleston Harbor disposal area. Heavy solid lines indicate boundaries of disposal area.

Differences between stations from inside and outside the disposal area. The mean value for H' was 2.14 for stations inside the disposal area and 2.07 for the entire study area. Diversity values over the entire study area were generally higher than those observed in shallow shelf waters of Virginia (Boesch, 1972) and Rhode Island (Salla, et al., 1972). The high observed H' is attributable in part to the species richness component of diversity, which ranged from 3.52 at DS19 to 22.00 at DS38 (Table 34). The number of species collected at these stations was 31 and 173, respectively. Neither the number of species per station nor species richness (SR) was significantly different between stations inside and outside the disposal area (ANOVA, $p > 0.5$). High diversities were also partly attributable to the evenness component (J'), which measures the distribution of individuals among species present. In spite of the numerical dominance of Branchiostoma caribaeum, 19 other species each contributed more than 1% of the total number of individuals collected. Yet these 20 species combined to account for only 56.4% of the total number of animals present. This is a substantially more even distribution of individuals within the species list than Dorjes (1972) found on transects off Georgia, where the 10 most abundant species contributed 86% of the total. Likewise, the 10 most abundant species of shallow nearshore infaunal communities at Murrells Inlet, South Carolina, contributed 80.2% of the total number of animals collected (Knott, Calder, and Van Dolah, unpublished data).

Many more species were identified from the study area off Charleston than were reported from similar areas off the Georgia coast in the recent publications. Collections from supratidal, intertidal, and subtidal shallow shelf areas out to depths of about 15 m off Sapelo Island yielded 291 species (Dorjes, 1972). Three stations sampled by Frankenberg and Leiper (1977) off Sapelo Island, with

faunal characteristics in water column of the present study area, showed an increase in species density for almost all species. For example, an average of 800 species m^{-2} were obtained from a study area of Charleston Table 62. In the only previous study of this nature in South Carolina, 123 species were identified in samples from nine intertidal and nine subtidal stations (maximum depths of 5 m) in the Murrells Inlet area (Kneib, Giller, and Van Dolah, unpublished data). The infauna of sandy shelf areas on the southeastern continental shelf is therefore far from impoverished taxonomically. Likewise, faunal densities appear to be relatively high.

Sediment Geochemistry

Data resulting from the chemical analysis of sediment samples collected in and adjacent to the Charleston Harbor Ocean Disposal Area are presented in Table 63. These analyses did not reveal any substance exceeding maximum requirements for the determination of the acceptability of dredged material disposal to the nation's waters. Suspended sediment-time curves for the samples are given in Figs. 5-18.

Sedimentologic Investigations

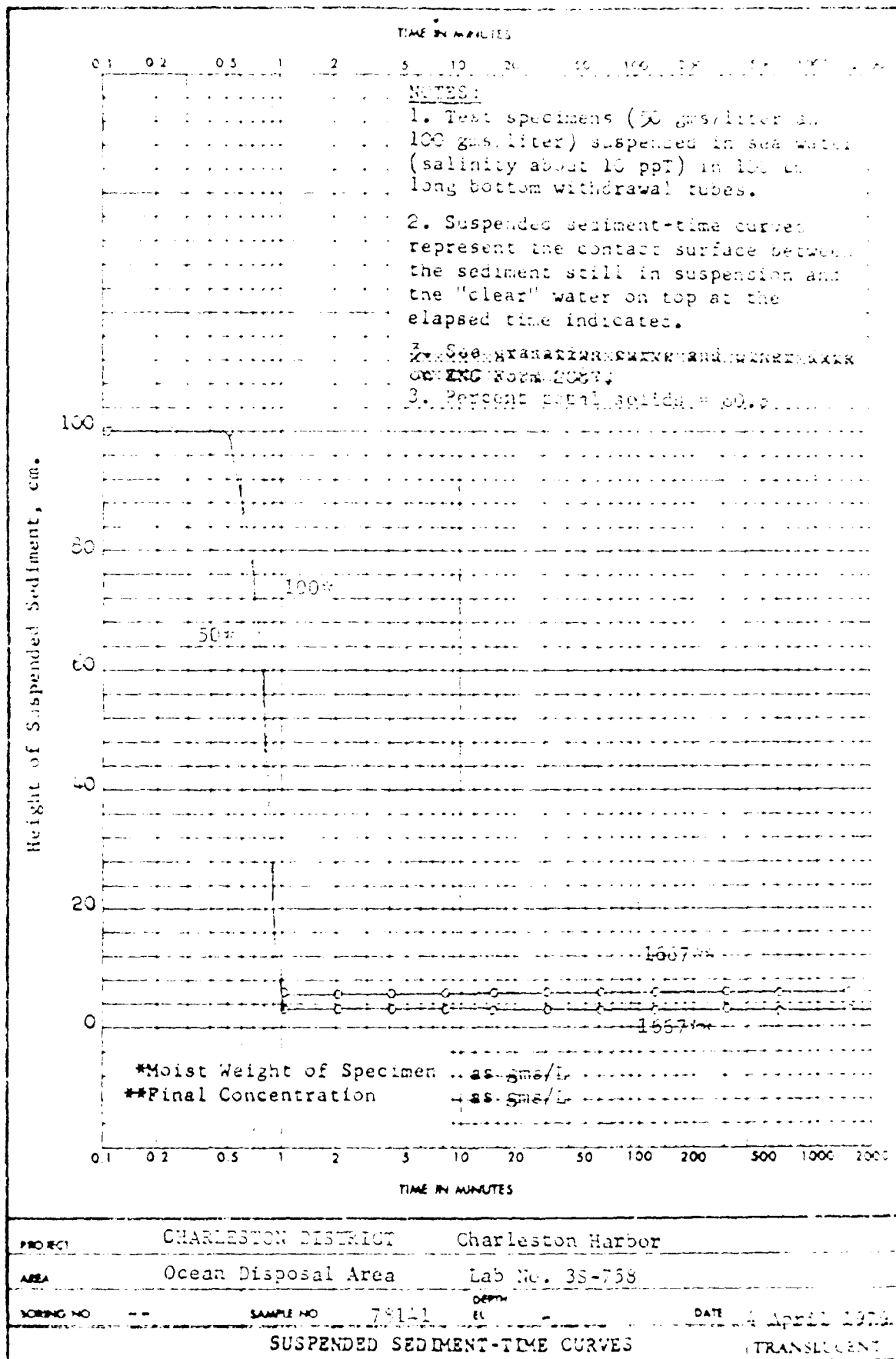
A) Charleston Harbor Entrance Channel:

Analyses of bottom grab samples taken every 0.5 nautical mile from a point opposite Ft. Moultrie to the seaward beginning of the maintained channel have defined 3 distinct composition zones:

- (1) exposed bedrock (calcarenite and marl) covered with a thin veneer of calcium carbonate shell-rich quartz sand stretches between Ft. Moultrie and the seaward end of the jetties (stations EC21 to EC15, Fig. 2 and Table 66).

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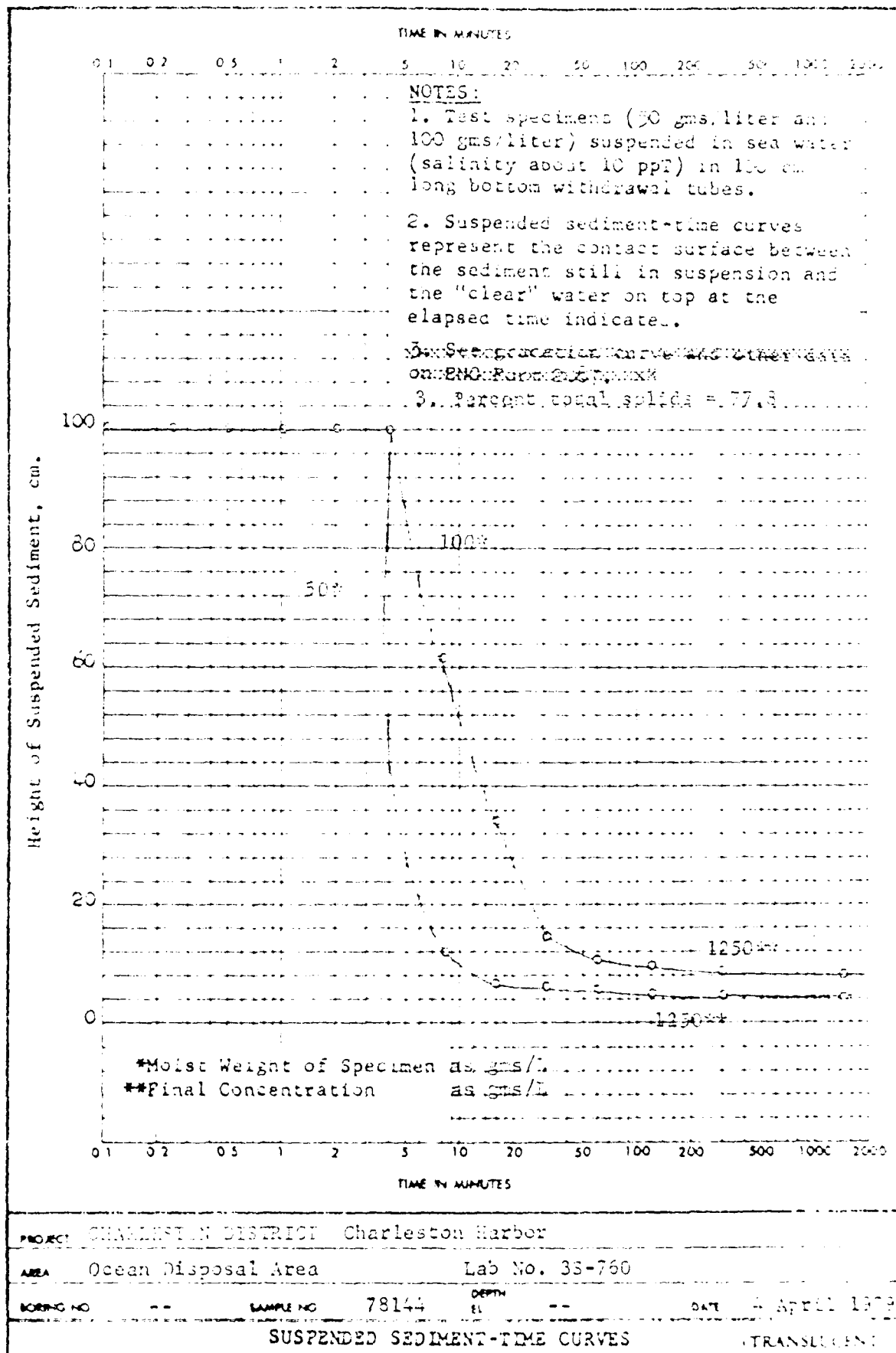
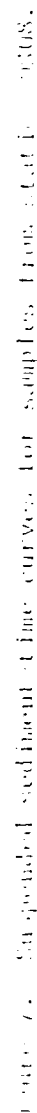


Figure 1. Suspended sediment time curves for samples from station 05064.

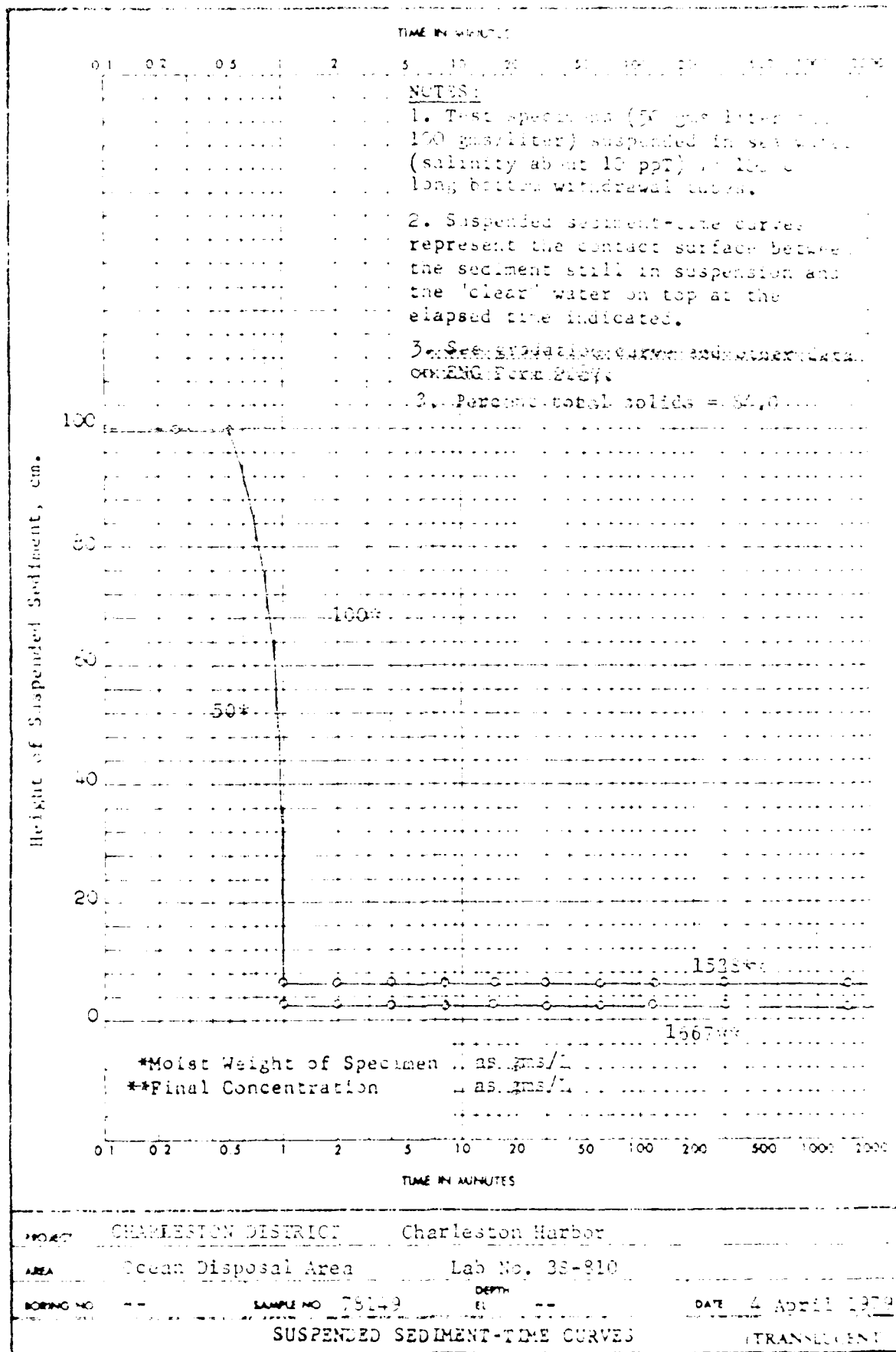
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Figure 3. Suspended sediment time curves for samples from station 33-810.

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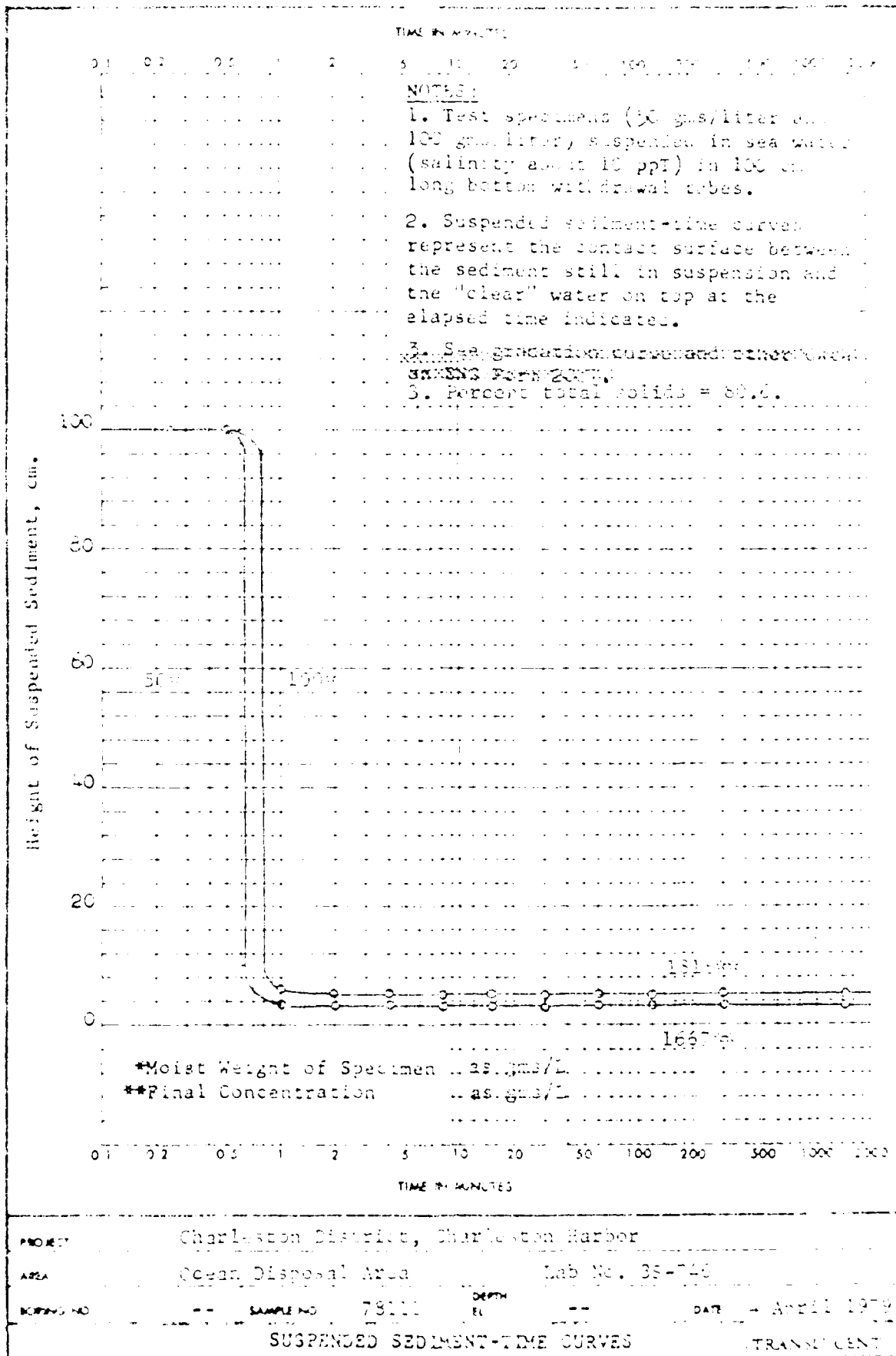


Figure 9. Suspended sediment time curves for samples from station 1811.

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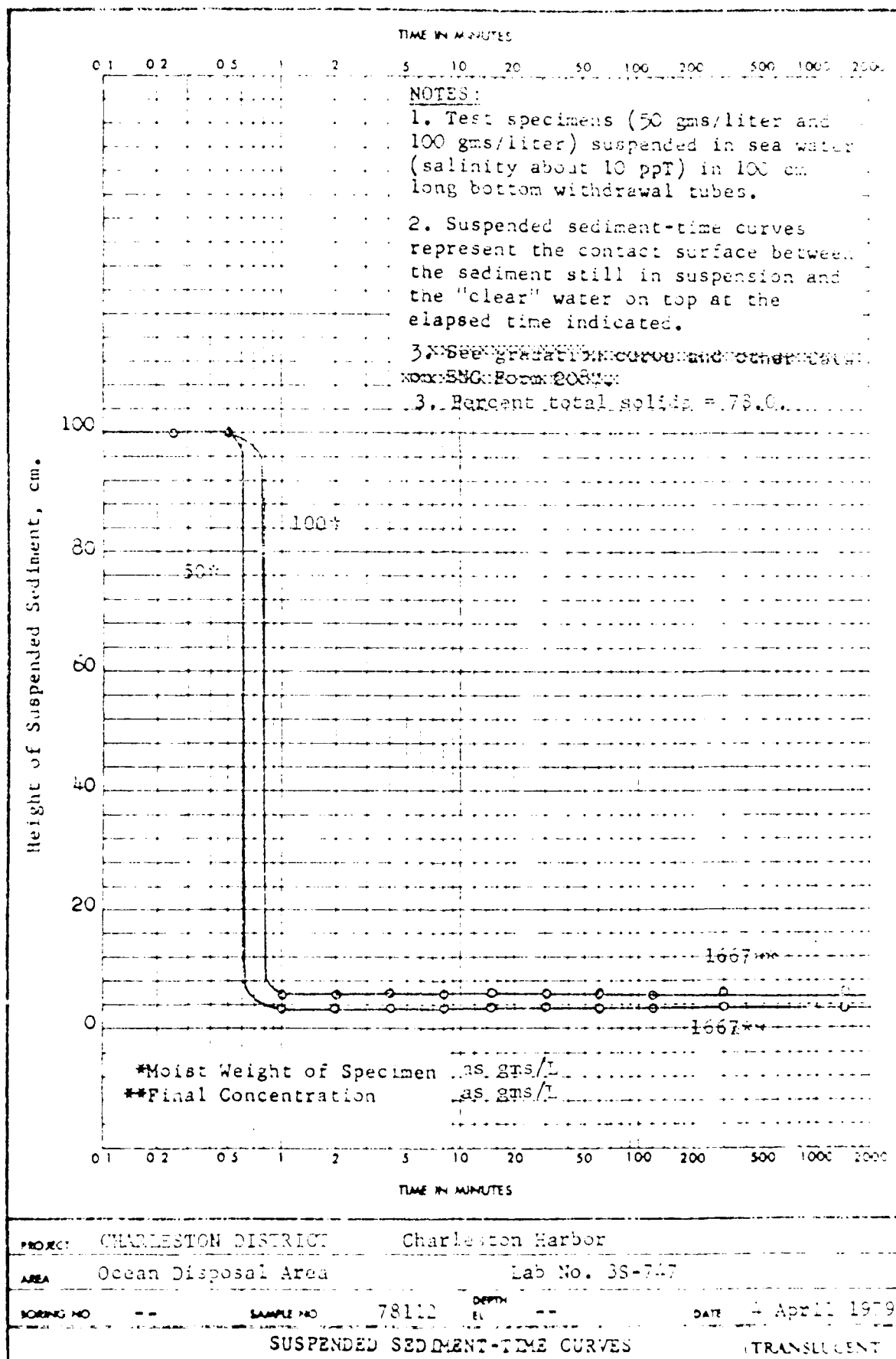


Figure 10. Suspended sediment-time curves for samples from station BS12.

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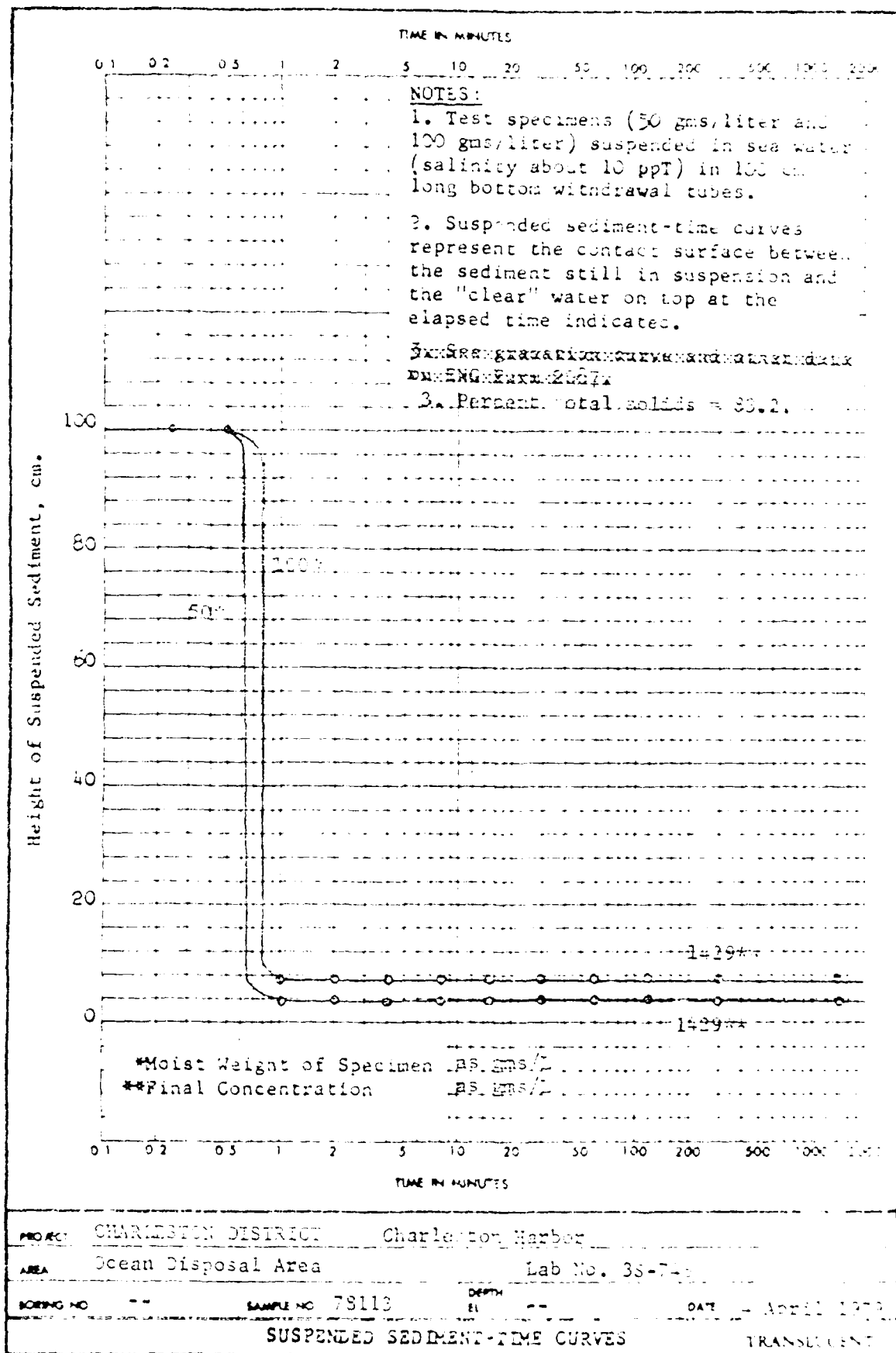


Figure 11. Suspended sediment-time curves for samples from station DS13.

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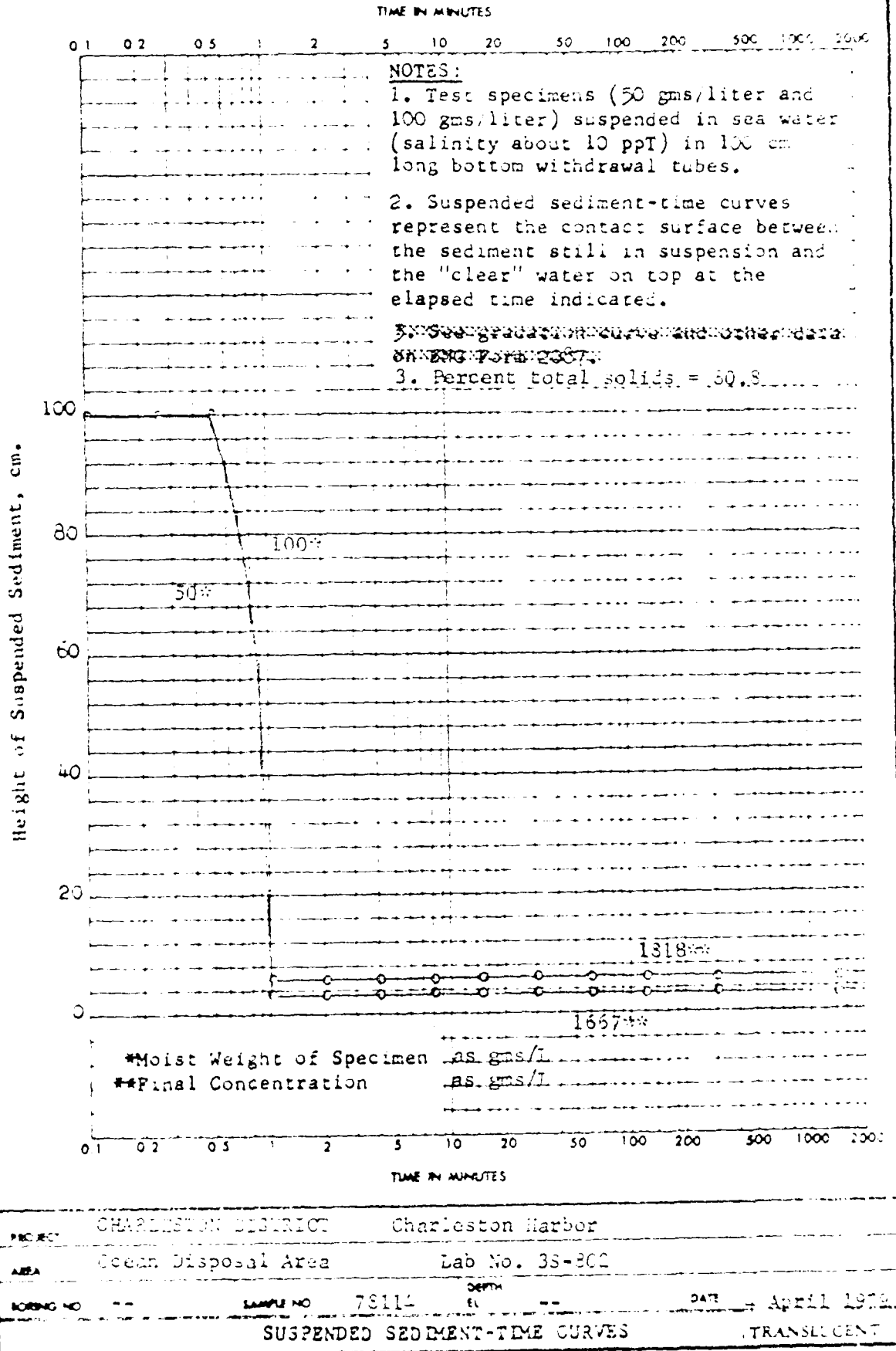
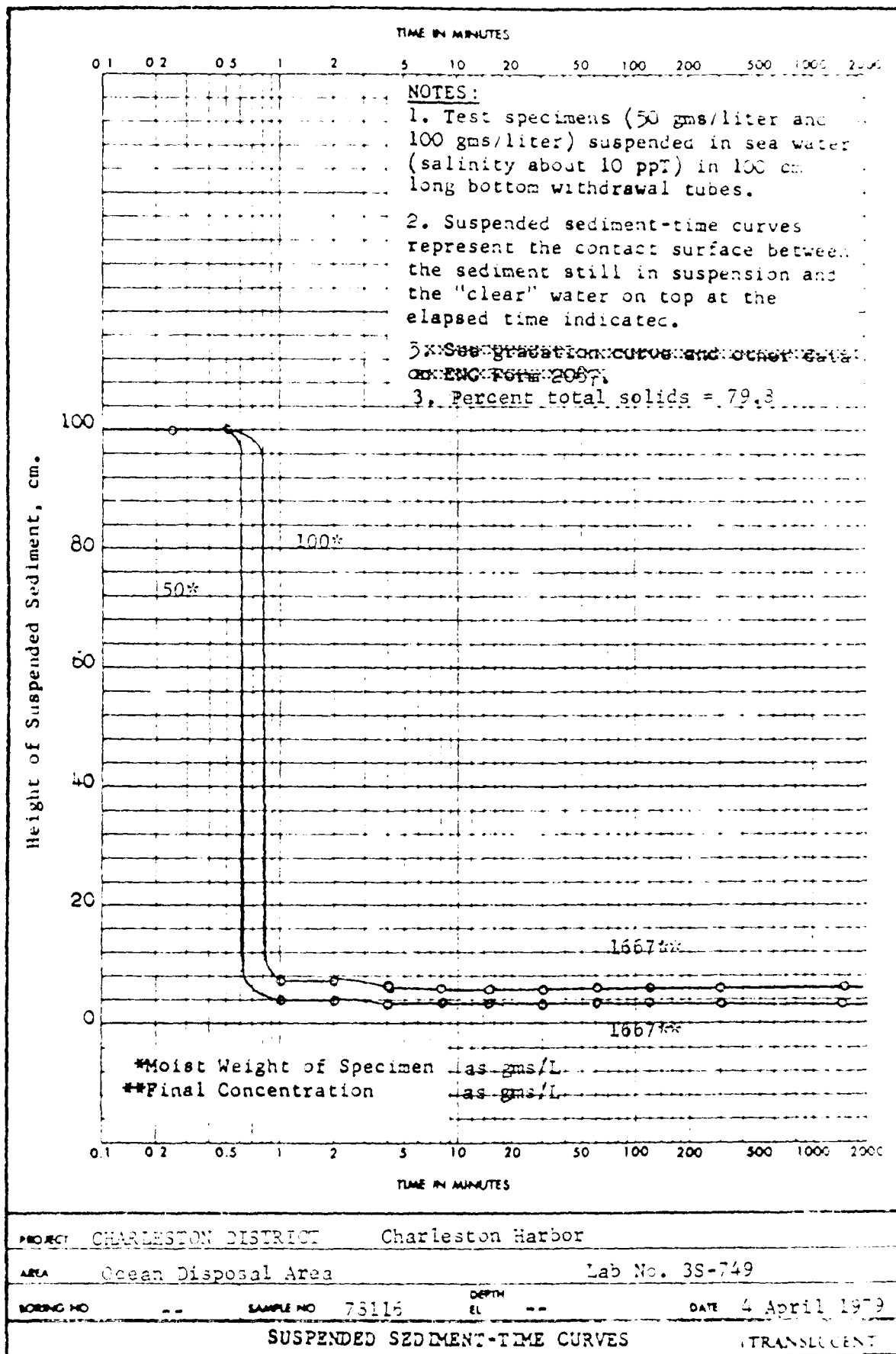


Figure 17. Suspended sediment-time curves for samples from station 9S14.

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Figure 13. Suspended sediment-time curves for samples from station 0516.

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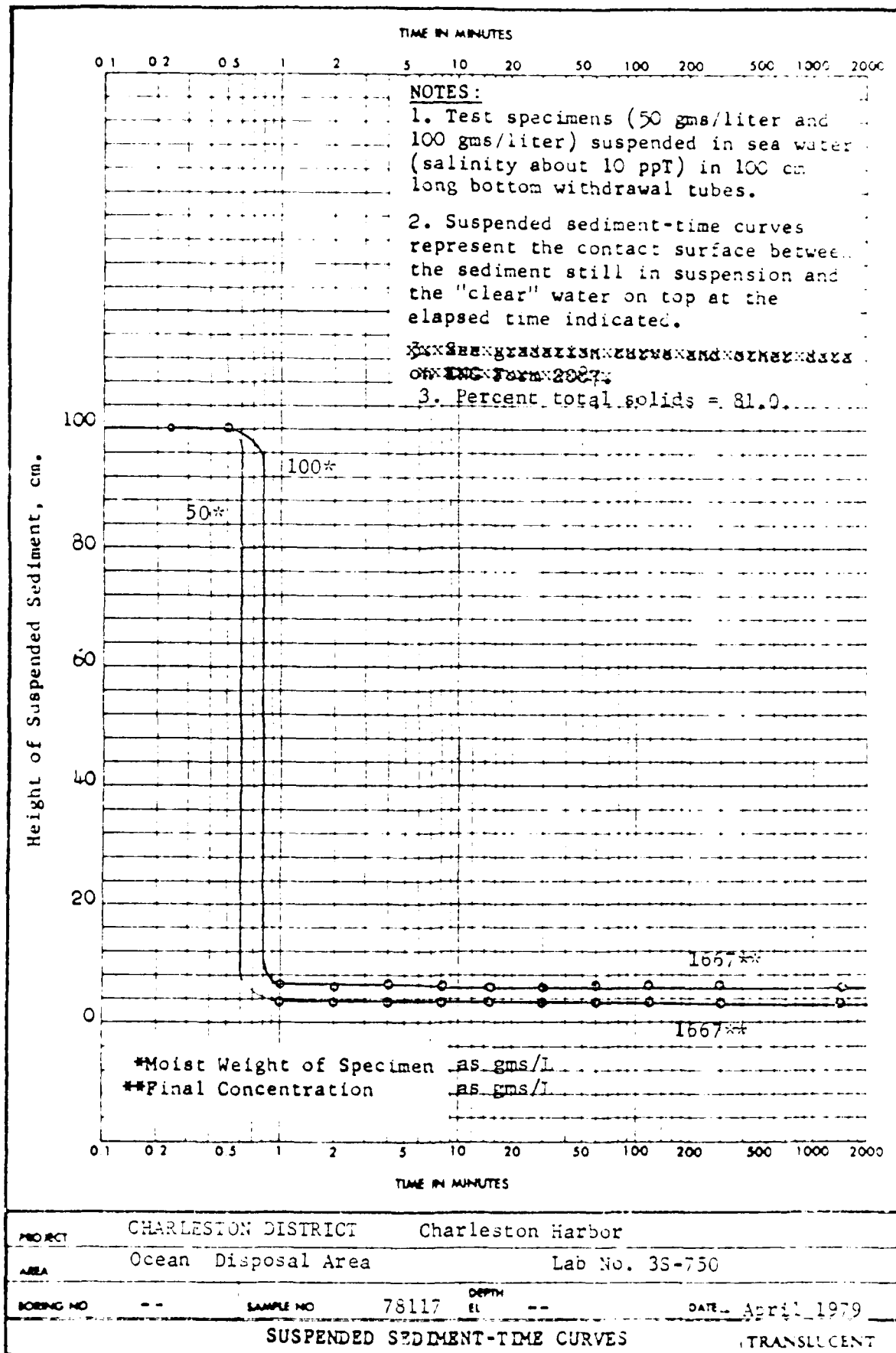


Figure 14. Suspended sediment-time curves for samples from station DS17.

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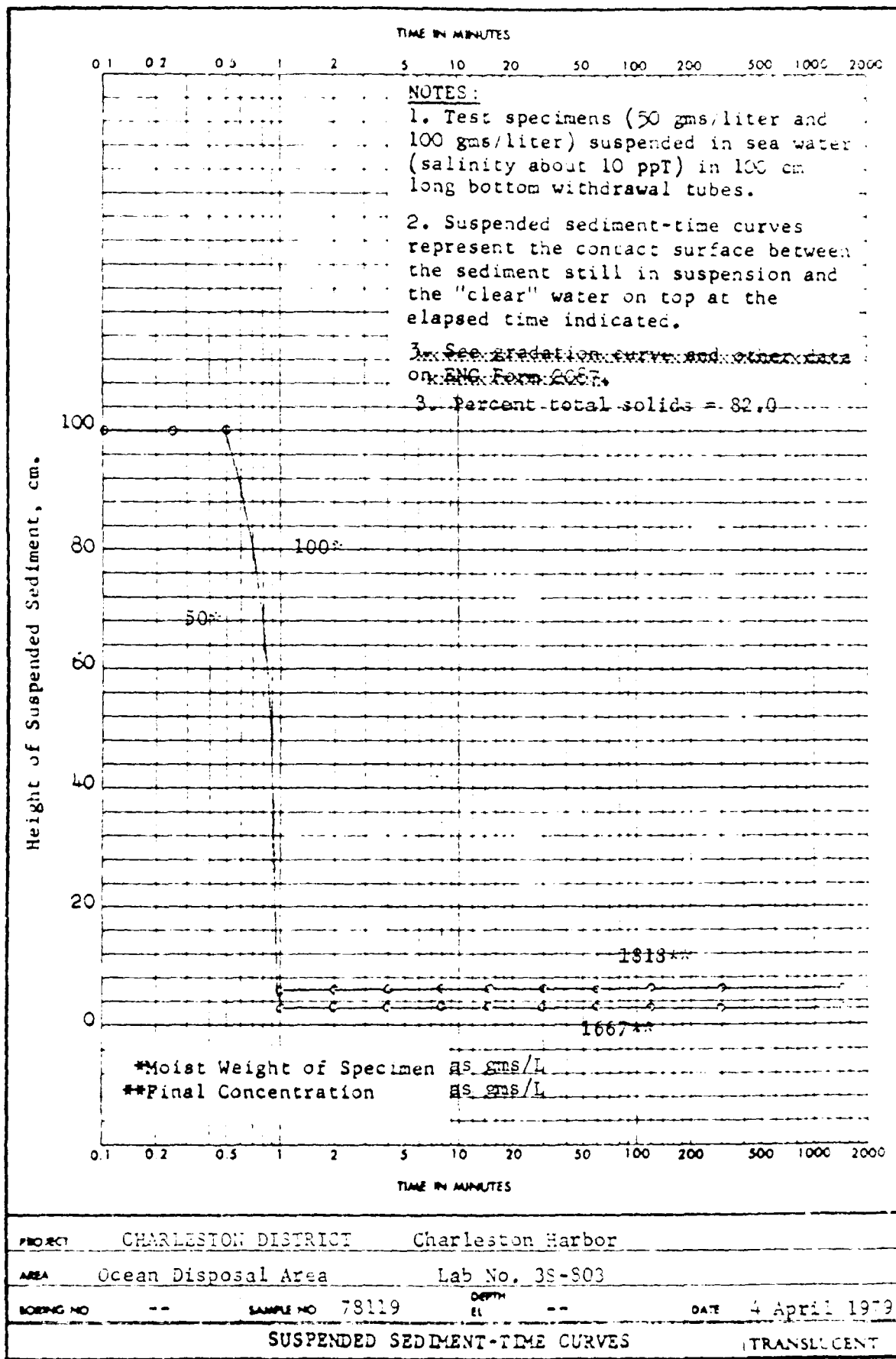
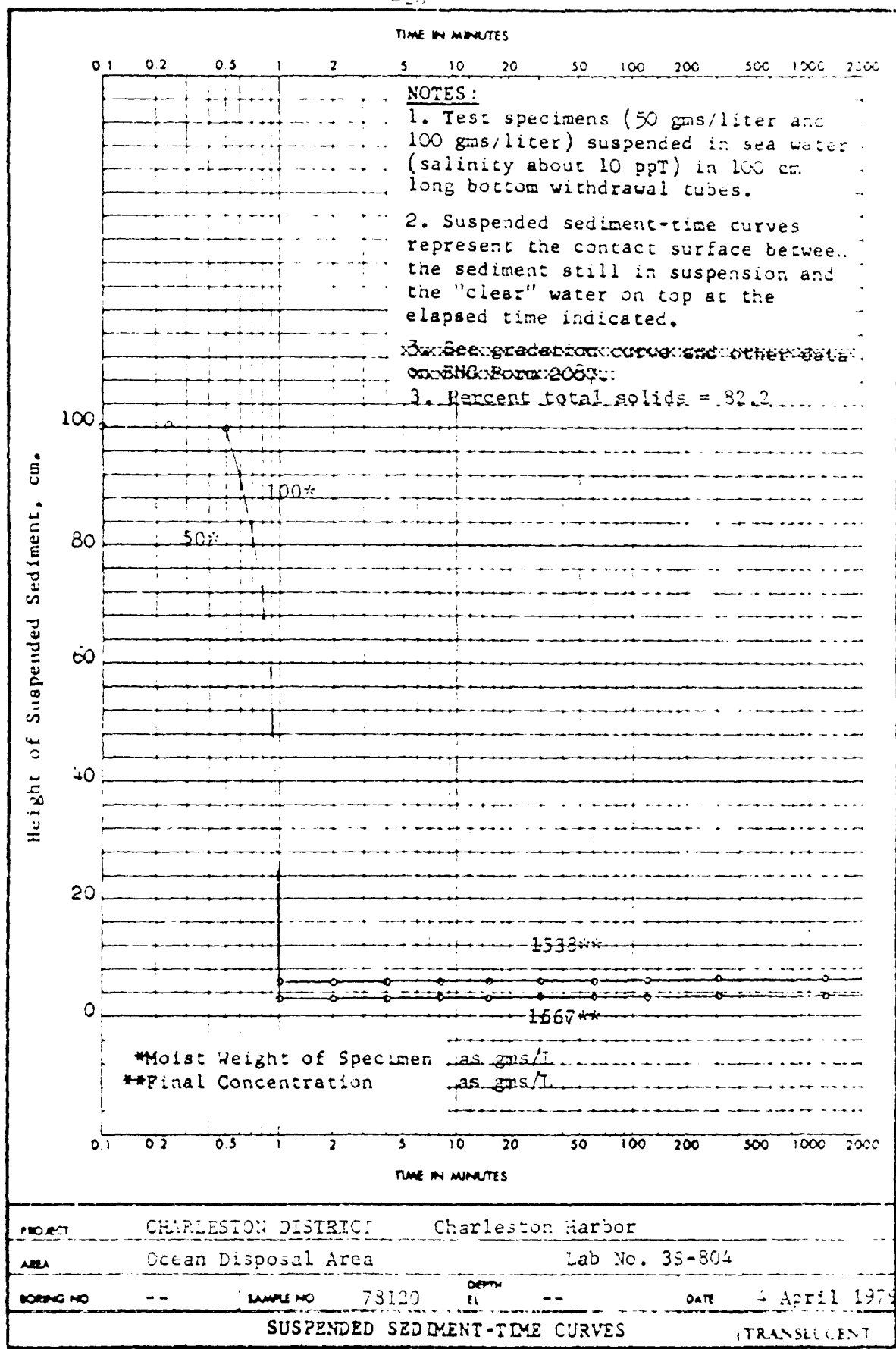


Figure 16. Suspended sediment-time curves for samples from stati BS19.

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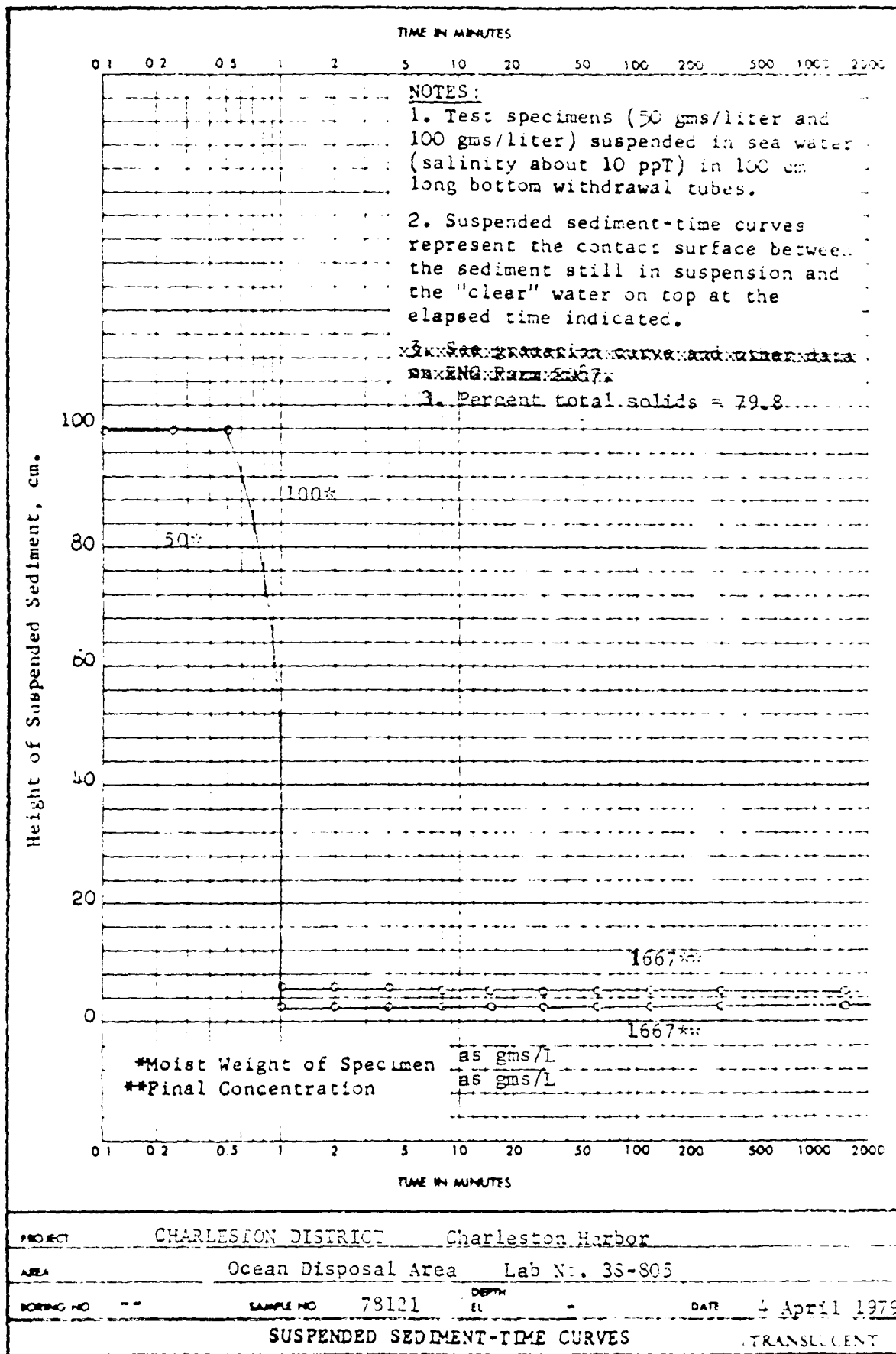


SAD Form 3023
26 Oct 72

Figure 16. Suspended sediment-time curves for samples from stat. 1520.

Regn. No. SAGEC-78-53
Work Order No. 1383

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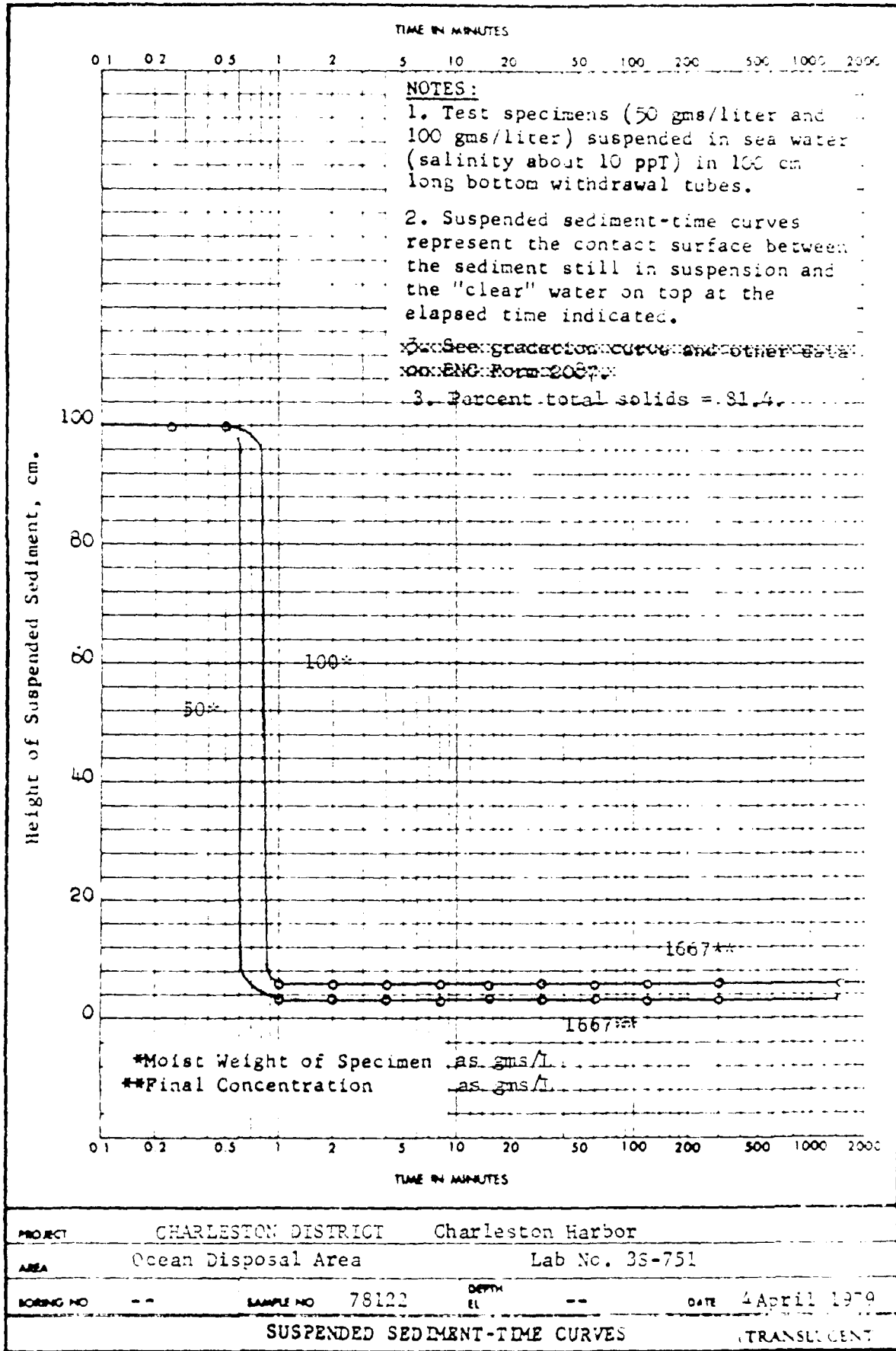


SAD Form 3023
26 Oct 72

Figure 17. Suspended sediment-time curves for samples from stat 10521.

Reqn. No. SACEC-78-53
Work Order No. 1383

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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30001



SAD Form 3023
26 Oct 72

Figure 18. Suspended sediment-time curves for samples from station DS22.

Reqn. No. SACED 78-53
Work Order No. 1383

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CORPS OF ENGINEERS, 111 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

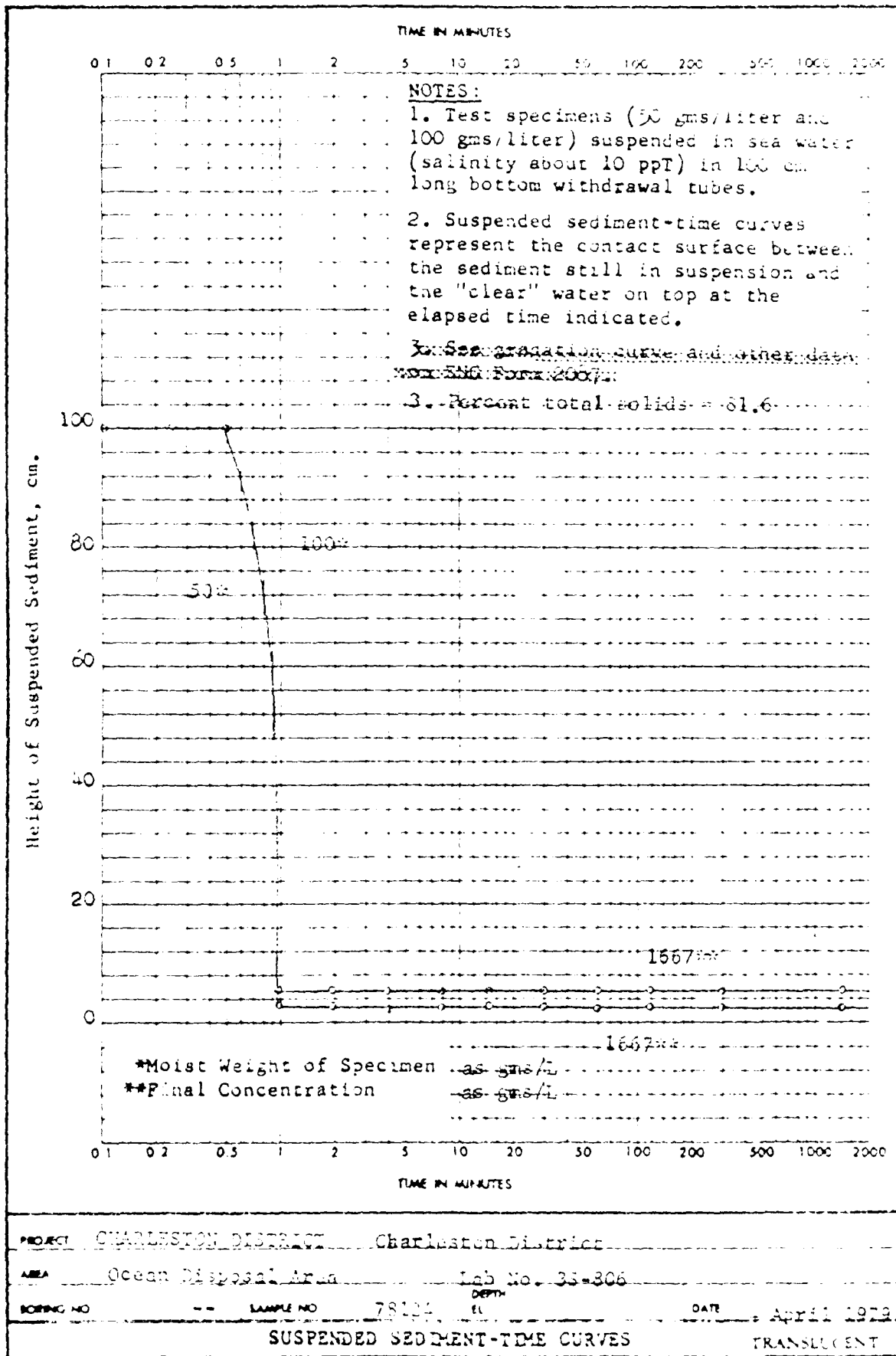


Figure 19. Suspended sediment-time curves for samples from station DS24.

Requ. No. SAC-78-53
Work Order No. 1383

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

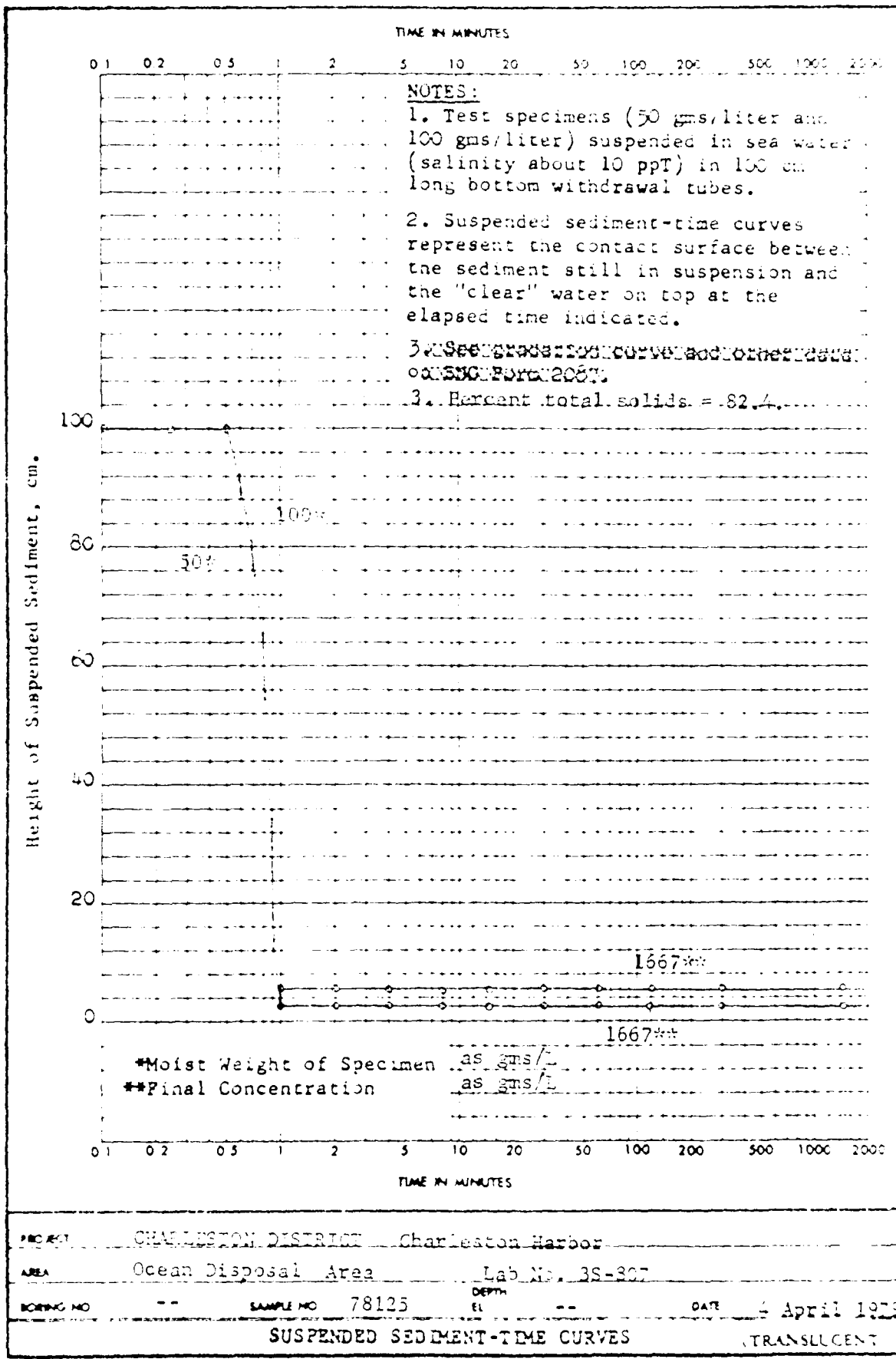
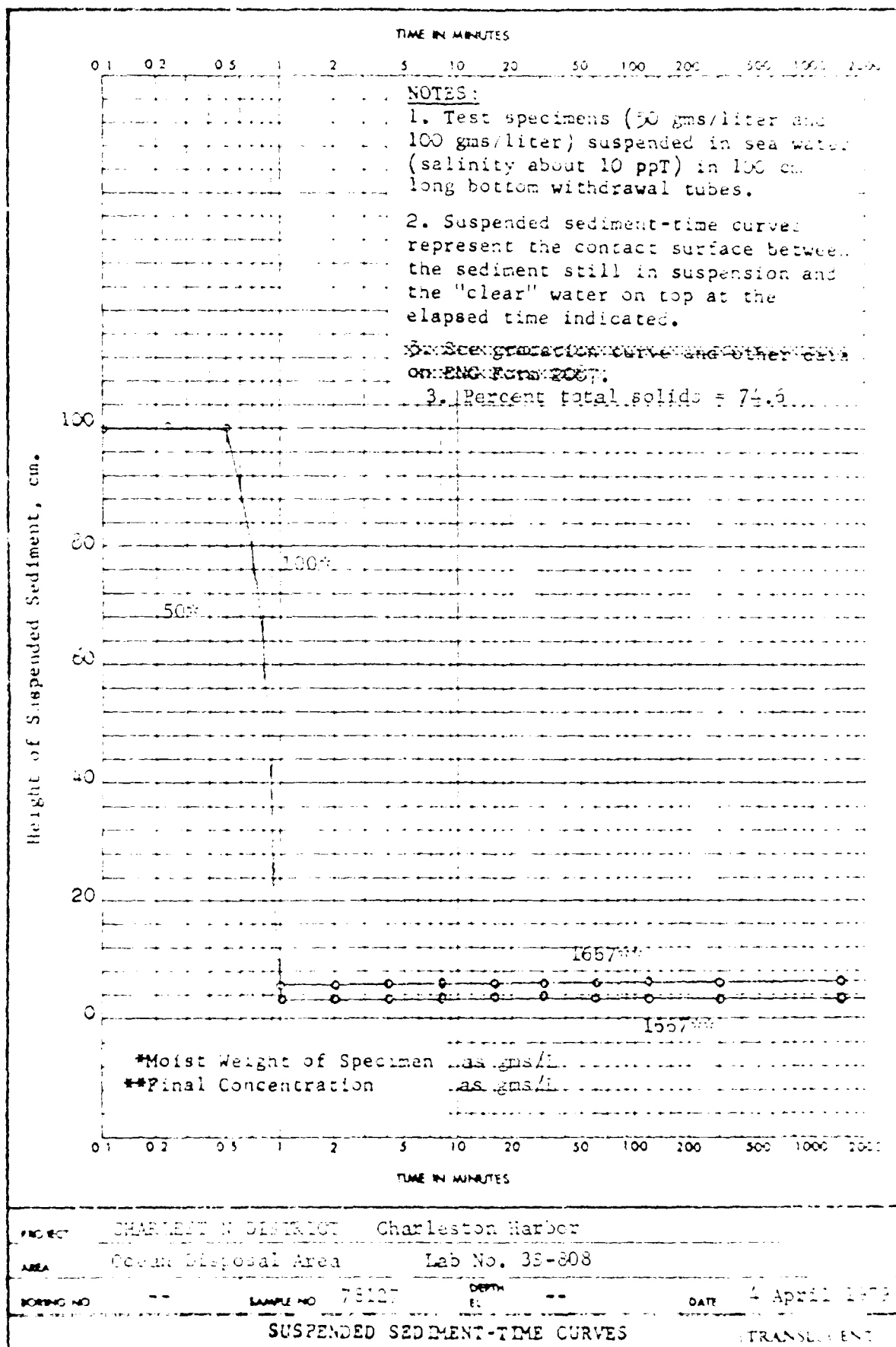


Figure 20. Suspended sediment-time curves for samples from star on 1972.

Reqn. No. SACM-78-53
Work Order No. 1383

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 111 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30001

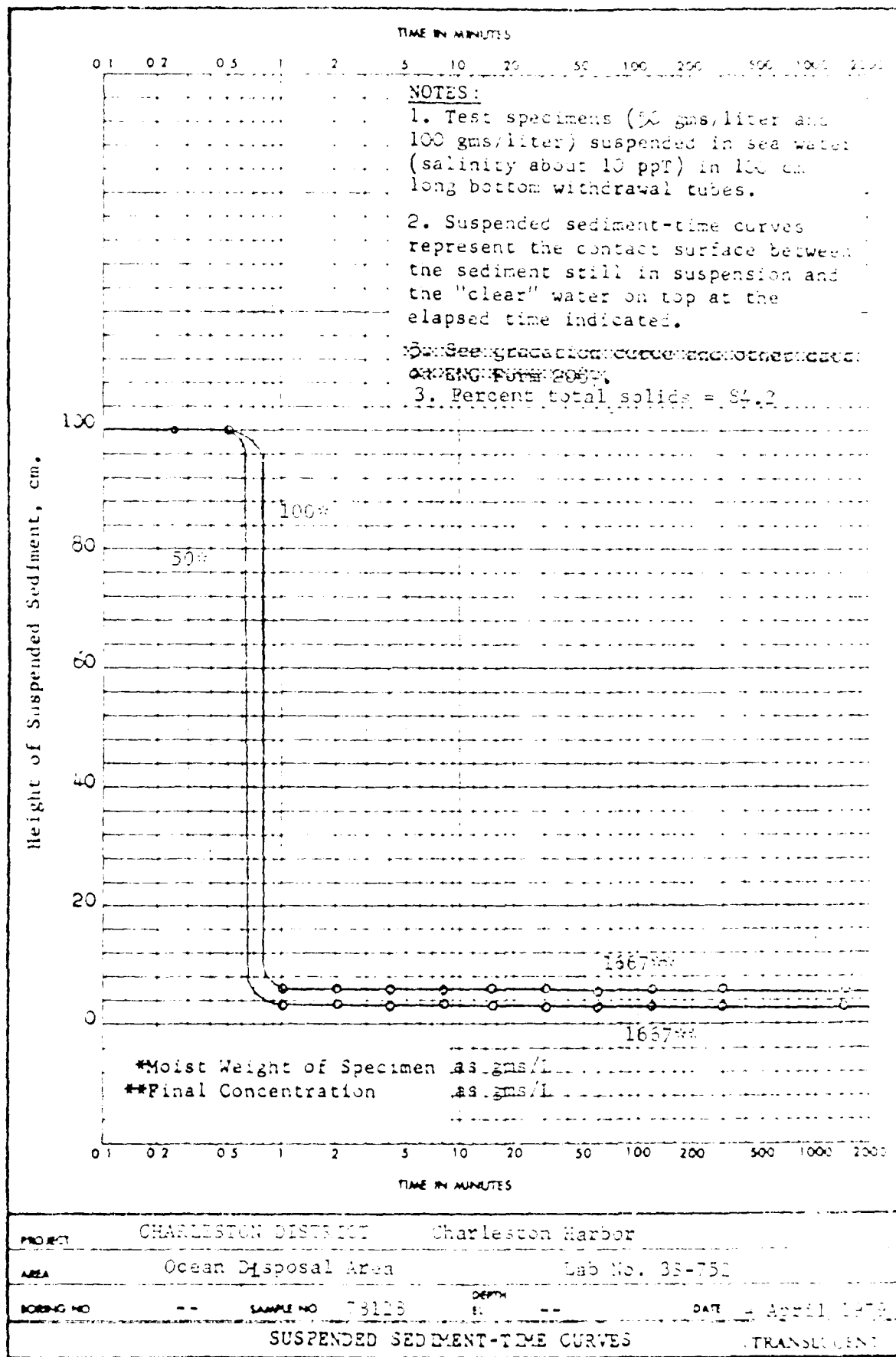


SAD Form 3023
26 Oct 72

Suspended sediment-time curves for samples from station DS27.

Reqn. No. NA000-78-53
Work Order No. 1381

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Figure 2. Suspended sediment time curves for samples from station DS28.

SACNO-78-53
1373
Reqn. No.
Work Order No.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

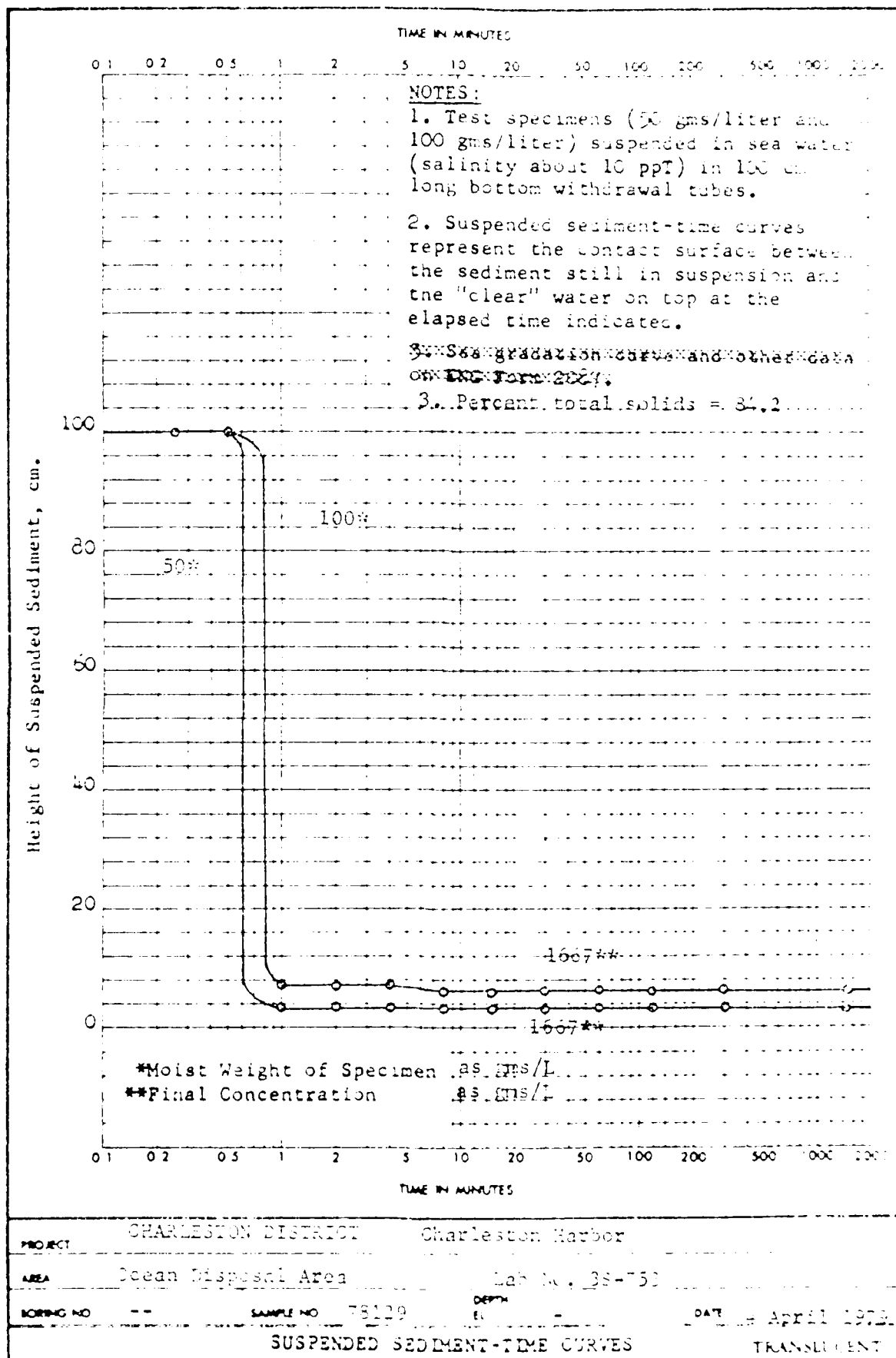


Figure 1A. Suspended sediment time curves for samples from station 1839.

Reqn. No. SACEC-78-53
Work Order No. 1383

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

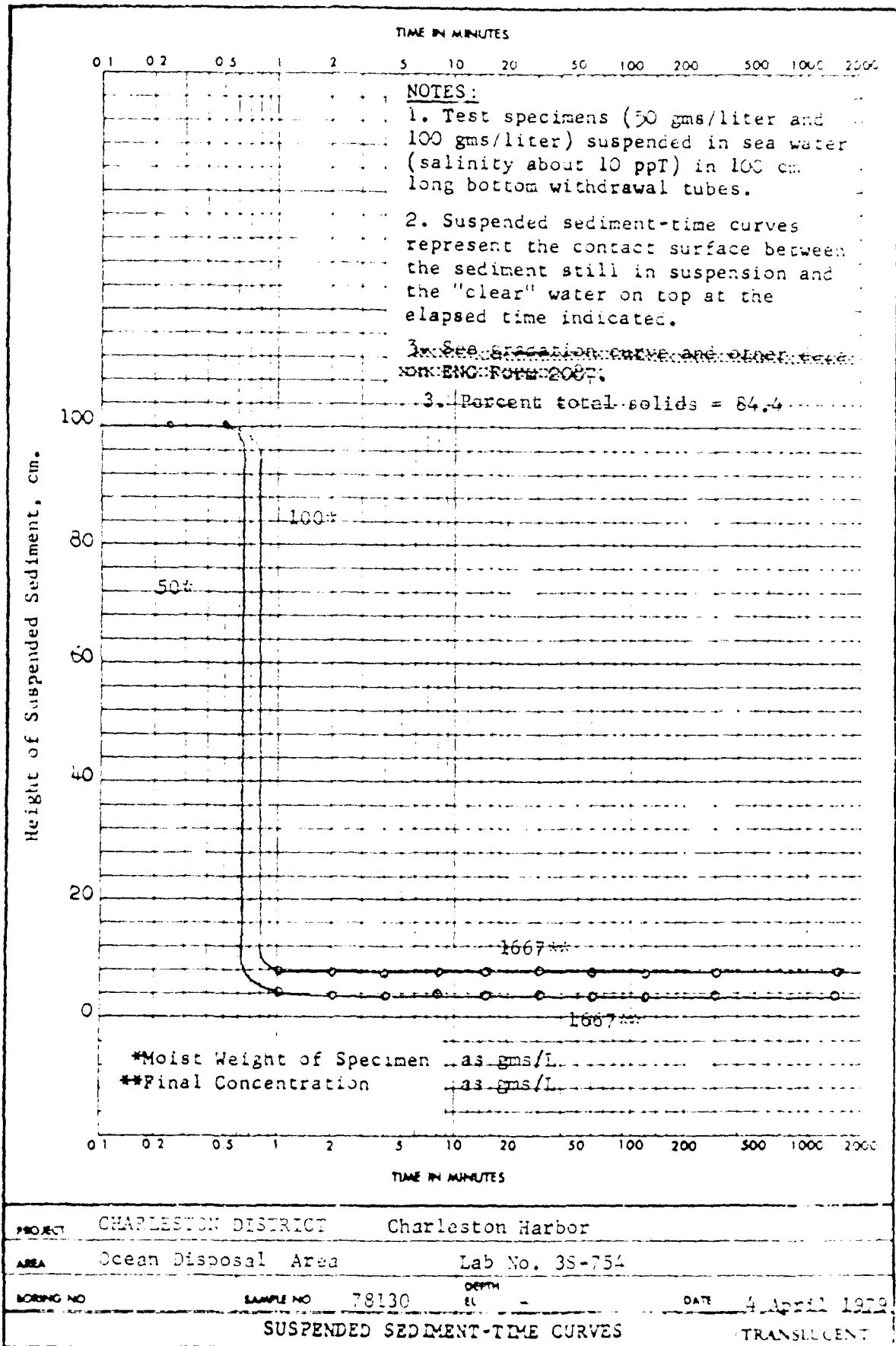


Figure 24. Suspended sediment-time curves for samples from station DS10.

Reqn. No. SACFC-78-53
Work Order No. 1353

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 411 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

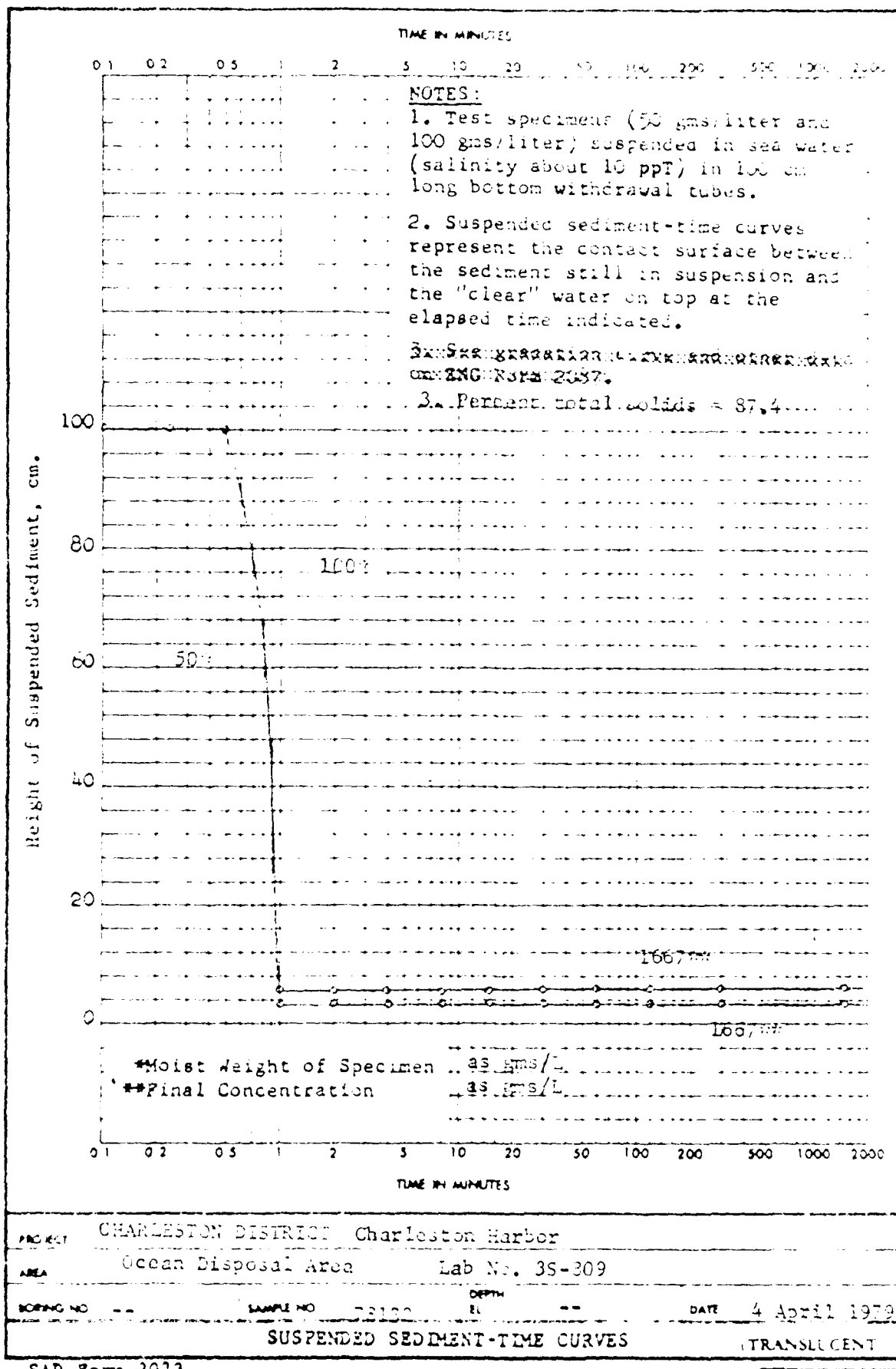
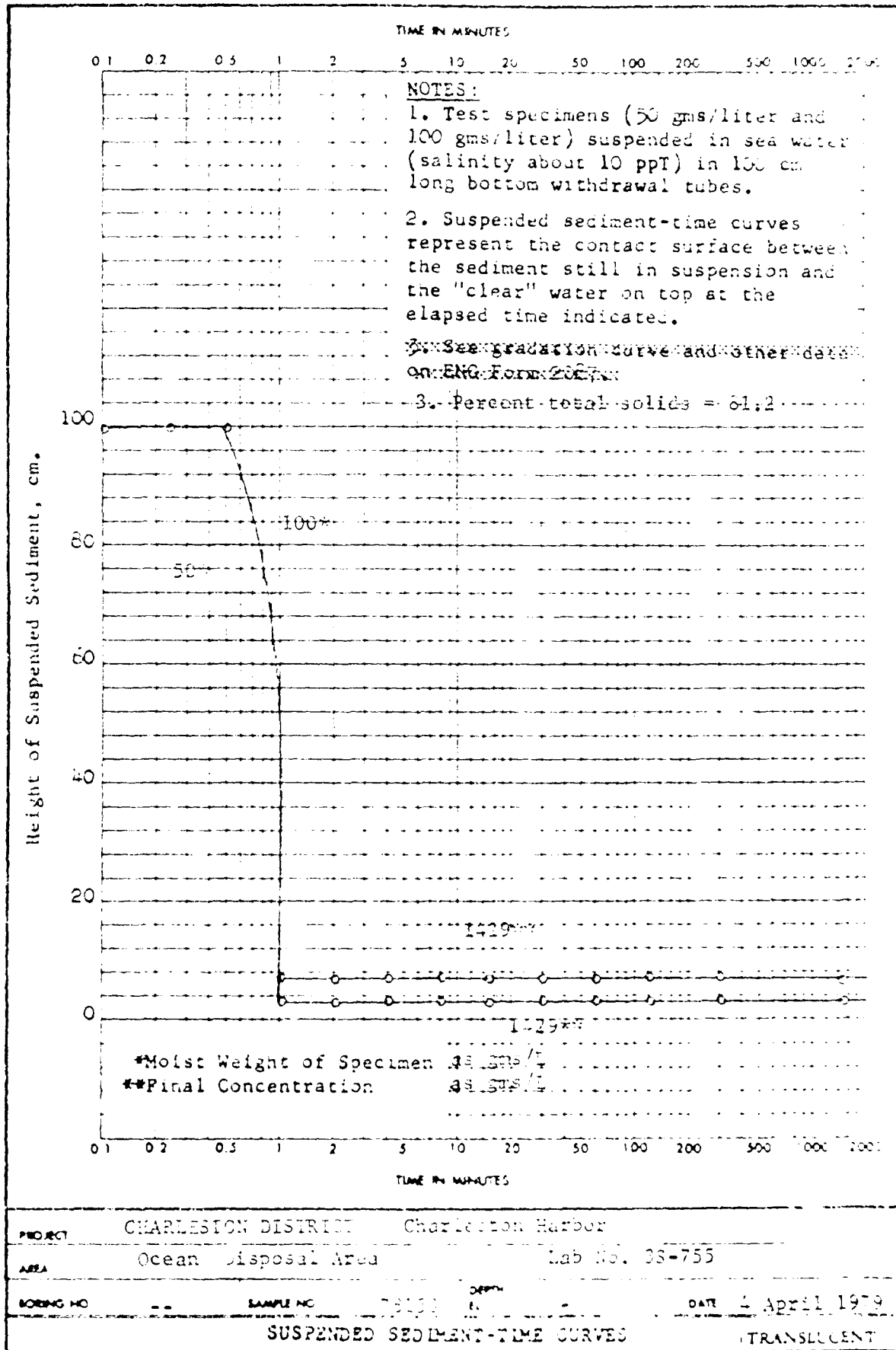


Figure 25. Suspended sediment-time curves for samples from sta. 01532.

SAD Form 3023
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Regn. No. SAU C-78-53
Work Order No. 1383

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

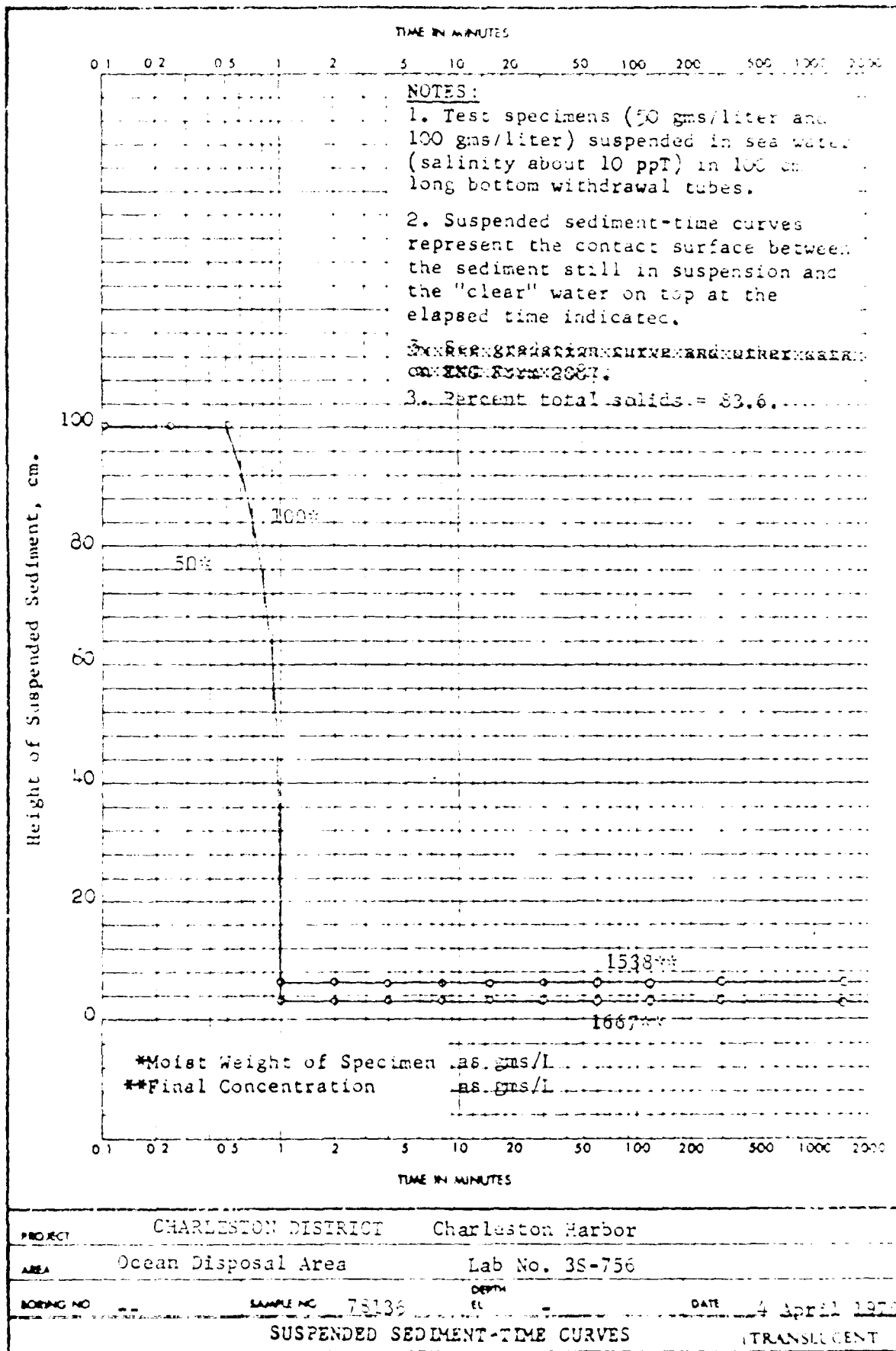


SAD Form 3023
26 Oct 72

Figure 2. Suspended sediment-time curves for samples from station 0533.

Requ. No. SACPC-78-53
Work Order No. 1333

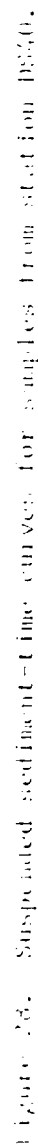
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061



SAD Form 3023
26 Oct 72

Figure 27. Suspended sediment-time curves for samples from station DS36.

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- (2) sandy, clay- or silt-poor in calcium carbonate shell material extends from the seaward end of the jetty to approximately 0.5 nautical mile seaward of buoy 274" (stations EC14 to EC10, Fig. 2 and Table 8a).
- (3) calcium carbonate shell-rich quartz sand extends seaward to the beginning of the maintained channel (stations EC9 to EC01, Fig. 2 and Table 8a).

The 46 individual phi-normal quartz components extracted from the 21 station samples were classified into 6 unique textural groups. These phi-normal components were extracted from cumulative frequency data by the computer program ROKE (Clark, 1976). This classification is based on mean grain size and sorting or standard deviation and was accomplished through cluster analysis, inspection, and step-wise discriminant analysis. These individual phi-normal quartz components are each considered to represent a depositional response to various interacting parameters, i.e., wave-tidal currents and available sediment supply, effecting sedimentation at the sampled stations. The following three major groups containing 72% of the phi-normal quartz components were identified:

Group 1: 10 members, mean grain size of $2.41 \pm .13$ phi, sorting of $0.30 \pm .14$ phi units.

Group 2: 11 members, mean grain size of $2.78 \pm .19$ phi, sorting of $0.10 \pm .15$ phi units.

Group 3: 9 members, mean grain size of $3.09 \pm .37$ phi, sorting of $0.34 \pm .17$ phi units.

The membership of these groups is presented in Table 37.

Using a goodness of fit statistical test, the hypothesis of equal distribution over the three previously mentioned zones was rejected at the 90% confidence level only for Group 3 (see Table 38). Group 3 appears to be localized in Zone 2, the "lagoon", which is clay- and silt-rich. Inspection of the membership of groups characterized by coarser mean grain sizes

and grain size (Table 87) indicated that they 1, 2, 3, and 4 were also not found within Area 2.

The sampled Area 2 stations are from that portion of the Entrance Channel out into the 20 foot- to 30 foot-deep nearshore shelf seaward of the jetties. This man-made "lagoon" is providing a basin suitable for silt and clay deposition. Furthermore, silt and clay deposition within this "lagoon" is much more important than sand deposition, at least in these analyzed grab samples (Table 86). The existence of this very fine sandy, clayey silt deposit raises questions concerning 1) sand transport both on the shoals flanking Charleston Harbor Entrance and in the nearshore region and 2) the depositional fate of silts and clays (potentially pollutant bearing) leaving Charleston Harbor.

3) Charleston Harbor Offshore Disposal Area:

The only direct sedimentologic evidence of Entrance Channel spoil disposed in this region was the presence of fresh calcarenite rock and fossil fragments from geologic formations exposed on the bottom between the jetties. These were found at 4 stations within and 4 stations without the Offshore Disposal Area (Fig. 2). The calcarenite rock fragments are from Bear Bluff equivalent beds (Upper Pliocene in age) as are the fossils, large scallops (Chlamys eborea). No recognizable Cooper Formation rock fragments (marl) were observed. This calcarenite rock was sampled at Entrance Channel station EC15 (Fig. 2).

The bottom sediments of the Offshore Disposal Area are calcium carbonate shell-rich quartz sands (Tables 89 and 90) exhibiting symmetric, wave-generated ripple marks (Table 91). Of the 15 stations observed by divers 13 had symmetric, wave-generated ripple marks with crests oriented NW SE, 1 had asymmetric ripple marks indicating northward transport, and 1 had a flat bed (Table 91). These bedform ripple marks, although sand was not observed to be moving, were

probably a bedform response to recent swell and sea. Bottom sediments in the Offshore Disposal Area are not below wave base and are thus transported under local swell and sea conditions.

These bottom sediments typically contain two phi-normal quartz components, one coarser in grain-size and poorer in sorting than the other (Tables 89 and 90). Ripple mark crests and troughs could be differentiated texturally and compositionally only at stations DS34 and DS39 (Tables 90 and 91). At all the other stations crests and troughs are texturally and compositionally identical.

The 253 individual phi-normal quartz components extracted from bottom sediment samples collected at 40 stations were classified into 16 unique textural groups. These phi-normal components were extracted from cumulative frequency data using the computer program ROKE (Clark, 1976). This classification is based on mean grain size and sorting or standard deviation and was accomplished through cluster analysis, inspection, and step-wise discriminant analysis. The individual phi-normal quartz components are each considered to represent a depositional response to various interacting parameters, i.e., wave-tidal currents and available sediment supply, effecting sedimentation. The following six major groups containing 77% of the phi-normal quartz components were identified:

Group 1: 13 members, mean grain size of $1.01 \pm .13$ phi, Sorting of $0.55 \pm .04$ phi units.

Group 2: 41 members, mean grain size of $2.00 \pm .08$ phi, Sorting of $1.56 \pm .09$ phi units.

Group 3: 20 members, mean grain size of $2.35 \pm .11$ phi, Sorting of $2.33 \pm .17$ phi units.

Group 4: 42 members, mean grain size of $2.31 \pm .06$ phi, Sorting of $2.12 \pm .10$ phi units.

Group 9: 26 members, mean grain size of $2.50 \pm .06$ phi, Sorting of $0.34 \pm .04$ phi units.

Group 10: 26 members, mean grain size of $2.67 \pm .05$ phi, Sorting of $0.26 \pm .05$ phi units.

The membership of these groups is presented in Table 92.

Using a goodness-of-fit statistical test, the hypothesis of equal distribution within and without the disposal area was rejected at the 90% confidence level only for Group 10 (Table 93). Group 10 alone appears to be preferentially located within the Charleston Harbor Offshore Disposal Area. The hypothesis of equal distribution over the five shore-parallel transects was rejected at the 90% confidence level for Groups 1, 5, 6, 9, and 10 (Table 94). Group 3 alone failed to be rejected. The hypothesis of equal distribution over 4 shore-perpendicular transects was rejected at the 90% confidence level for Groups 1, 3, 9, and 10 (Table 95). Groups 5 and 6 failed to be rejected. These tests were made to analyze the geographic distribution of these groups over the study region.

Rejection of both the shore-parallel and shore-perpendicular hypotheses suggests a distribution of isolated points. This is indicated for Groups 1, 9, and 10. In addition, Group 10 is restricted to the Disposal Area proper.

Rejection of only the shore-parallel hypothesis suggests a distribution of shore-parallel bands and is indicated for Groups 5 and 6. Inspection of the actual distribution of Group 5 members over the 5 shore-parallel transects shows that they are concentrated in two non-adjacent bands (Table 94). This situation may not be the result of shoreward sand transport but could reflect local, shore-parallel sources. However, inspection of the distribution of group 6 members over the 5 shore parallel transects shows a steady concentration

of members toward the nearshore and away from the offshore (Table 94). This may be indicative of shoreward transport of finer grained sands winnowed from sediments lying further offshore.

Rejection of only the shore-perpendicular hypothesis suggests a distribution of shore-perpendicular bands and is indicated for Group 8. However, inspection of the actual distribution of Group 8 members over the 4 shore-perpendicular transects (Table 94) shows that they are almost equally concentrated in two non-adjacent bands. This situation may not be the result of sand transport NE-SW across the near-shore shelf, but could result from shoreward transport from isolated point sources.

In summary, the only direct evidence of Entrance Channel spoil found in the study area was the presence of fresh calcarenite pebbles and fossils from geologic formations exposed on the bottom between the jetties. The sandy bottom throughout the study area is ripple marked, an indication that swell and sea move sediment over the entire region - no portion of the study area can be considered below "wave base." Analysis of phi-normal particle components indicates a minimum of 6 unique major textural or grain size groups present in the study area, only one of which is restricted to the Disposal Area proper. Isolated point sources characterize the geographic distributions of three of these groups and are indirectly indicated for 2 more. The remaining group is distributed in shore-parallel bands with members being concentrated in the nearshore bands and deficient in the offshore.

CONCLUSIONS

The Charleston Harbor Ocean Disposal Area is located on the inner continental shelf midway along the coast of South Carolina. Water depths in the area vary from about 10-16 m, and bottom sediments are sandy. Investigations were conducted in and adjacent to the Ocean Disposal Area during the summer and autumn of 1978 to assess the benthic communities and sediment characteristics of the area in relation to disposal of dredged materials over the site.

Waters of high salinity and moderate dissolved oxygen content cover the study area. During August field sampling, salinities varied from 31.32-35.88‰, while oxygen concentrations ranged from 4.0-6.9 mg/l. Turbidities decreased progressively with increasing distance from shore, so that water clarity was markedly greater offshore.

Shifting sands provide an unsuitable substrate for most sessile species, and the study area was sparsely populated with epifaunal invertebrates except in areas where accumulations of large shells were present. The number of species in dredge collections varied widely from one station to another. These differences were related to the presence or absence of suitable substrate rather than any effects from disposal of dredged materials in the area. The amount of material collected by the dredge was small at each of the 40 stations sampled. Although sponges, octocorals, hydroids, bryozoans, and ascidians were occasionally taken in the dredge, no live bottom areas were found anywhere in the study area. No noteworthy differences in epifaunal composition were detected between the Ocean Disposal Area and adjacent sites outside that could be directly attributed to disposal practices.

Although the bottom of the study area appears to constitute a relatively uniform habitat, an unexpectedly large variety of infaunal invertebrates were found in grab samples. Thorough taxonomic workup of these collections resulted in the identification of 493 species. This study shows that benthic communities of the inner continental shelf in this region are faunistically richer and have higher species diversity than previously thought. Most of the constituent species are small, and polychaete worms dominated the fauna both in numbers of species (211) and overall abundance (37.5% of the fauna). The most abundant species was the lancelet Branchiostoma caribaeum, a seasonally abundant organism which accounted for nearly 20% of the total number of animals collected. Lancelets were found in much greater concentrations than have been recorded before from the southeastern continental shelf, reaching maximum densities of 2768 individuals m^{-2} . The detailed account of benthic community structure provided by this report provides a data base for appraising the effects of future dredged material disposal in the area.

Variation in species numbers, faunal density, species diversity, and species richness were noted from one station to another. However, differences between sites inside and outside the Ocean Disposal Area were not statistically significant. No effects of dredged material disposal were detectable on either epifaunal or infaunal communities. Such practices have probably had little lasting impact on the macrobenthos because of the similarity of dredged materials to the existing sediments of the disposal area. On the other hand, the impact of dredged materials of a different particle size, such as silts from Charleston Harbor, would probably be significant if these sediments were not rapidly diluted and dispersed from the area by water currents. If such materials settled on the bottom of the disposal area, the impact would be substantial on the species richness and possibly modifying the site.

The only direct evidence of Entrance Channel spill found in the study area was the presence of fresh calcarenite pebbles and fossils from geologic formations exposed on the bottom between the jetties. The sandy bottom throughout the study area is ripple marked, an indication that swell and sea move sediment over the entire region - no portion of the study area can be considered to be below "wave base." There are a minimum of 6 unique textural or grain size groups present in the study area, only one of which is restricted to the Disposal Area proper. Isolated point sources characterize the geographic distributions of 3 of these groups and are indirectly indicated for 2 more. The group is distributed in shore-parallel bands with members being concentrated in the nearshore bands and deficient in the offshore.

LITERATURE CITED

- World Health Association. 1971. Standard methods for the examination of water and wastewater. 13th Ed. Amer. Public Health Ass., Inc., New York. 374 p.
- Goetsch, D. L. 1972. Species diversity of marine macrobenthos in the Virginia area. Chesapeake Sci. 13: 206-211.
- Clark, M. W. 1976. Some methods for statistical analysis of multimodal distributions and their application to grain-size data. J. Int. Ass. Mathemat. Geol. 8: 267-282.
- Cory, R. L. and E. L. Pierce. 1967. Distribution and ecology of lancelets (Order Amphioxii) over the continental shelf of the southeastern United States. Limnol. Oceanog. 12: 650-656.
- Ferjes, J. 1972. Georgia coastal region, Sapelo Island, U.S.A.: Sedimentology and Biology. VII. Distribution and zonation of macrobenthic animals. Sarsenbergska Marit. 4: 133-216.
- Frankenberg, D. and A. S. Leiper. 1977. Seasonal cycles in benthic communities of the Georgia continental shelf. pp. 383-397, in B. C. Coull, Ed., Ecology of Marine Benthos. Univ. South Carolina Press, Columbia, S. C.
- Pielou, E. C. 1977. Mathematical ecology. Wiley Interscience, New York. 385 p.
- Sullivan, S. D., S. D. Pratt, and T. T. Polgar. 1972. Dredge spoil disposal in Rhode Island Sound. Univ. Rhode Island Mar. Tech. Rep. 2. 48 p.
- South Carolina Wildlife and Marine Resources Department. 1972. A study of the Charleston Harbor estuary with special reference to deposition of dredged sediments. Contract Rep. No. DACW60-71-C-0014 to U. S. Army Engineer District, Charleston.

- Strickland, J. D. H. and T. R. Parsons. 1972. A practical handbook of seawater analysis. Fish. Res. Bd. Canada Bull. 167. 310 p.
- U. S. Army Engineer District, Charleston. 1975. Maintenance dredging of Charleston Harbor, Ashley River, and U. S. Navy channels in Cooper River, Charleston and Berkeley Counties, South Carolina. Draft Environmental Statement, U. S. Army Engineer District, Charleston, S. C. 72 p.
- U. S. Navy Hydrographic Office. 1951. Report on the survey of bottom sediments off Charleston, S. C. U. S. Navy Hydrographic Office, Washington, D. C.

TABLE 6. *Belemnites* collected during benthic sampling in the Charleston Harbor area (W, S, and E) and 16 miles

Station	Date	Depth	Temp. (C)	Salinity (‰)	pO ₂ (mg/l)	Inhibition (10%)	Nitrate	Bottom (mg/l)	Phosphate	Total Sulfide
1001	8-78	8.0	Surface 28.9	31.12	6.5	3.7	1.8	1.9	34.2	19.0
			Bottom 28.0	31.46	5.5	8.7			30.7	39.0
1002	8-78	8.0	Surface 29.7	31.03	5.0	1.8	2.5	1.1	36.7	3.0
			Bottom 28.3	31.99	5.6	6.8	1.5	0.7	39.7	31.0
1003	8-78	9.0	Surface 29.9	32.99	6.5	3.5	2.0	1.2	39.7	15.5
			Bottom 28.7	33.99	5.5	5.7	2.7	0.5	41.3	32.0
1004	8-78	9.0	Surface 29.0	32.05	6.5	5.3	1.5	1.0	72.3	41.0
			Bottom 28.7	33.20	5.1	10.0	10.6	1.5	105.3	147.8
1005	8-78	8.0	Surface 28.3	31.57	6.5	4.6			175.6	106.5
			Bottom 29.7	33.95	5.1	6.9			117.3	36.5
1006	8-78	9.0	Surface 28.6	31.55	6.6	2.5	3.5	1.5	139.7	66.0
			Bottom 28.7	33.63	5.7				66.7	31.0
1007	8-78	9.0	Surface 28.8	33.67	6.6	1.3	5.1	1.7	105.4	0.0
			Bottom 28.7	35.63	5.7	0.7	1.8	1.5	90.3	8.0
1008	8-78	10.7	Surface 28.8	33.65	6.8	0.7			70.7	0.0
			Bottom 28.3	35.61	5.7	5.9	1.5		38.1	3.0
1009	8-78	12.0	Surface 29.0	32.90	6.2	1.8			70.7	5.5
			Bottom 28.0	35.71	5.9	2.0	2.1	0.3	36.7	9.5
1010	8-78	11.0	Surface 29.3	31.70	6.8	1.8	2.0	0.5	105.5	0.0
			Bottom 28.0	35.58	5.7	6.0	1.7	0.5	73.1	0.0
1011	8-78	12.6	Surface 29.3		6.6	1.6	2.8	0.5	133.5	0.0
			Bottom 28.0	35.77	5.8	3.2	2.5	0.3	37.2	9.5
1012	8-78	13.5	Surface 29.5	32.20	6.9	1.5	4.0	0.6	105.5	6.5
			Bottom 28.3	35.73	5.7	2.0	2.9	0.3	47.2	6.5
1013	8-78	11.5	Surface 29.2	35.20	6.5	0.7	2.7	0.7	52.9	8.0
			Bottom 28.1	35.76	5.8	5.0	6.9	0.3	32.5	0.0
1014	8-78	11.5	Surface 29.7	35.27	6.5	0.7	2.8	0.0	35.1	0.0
			Bottom 28.7	35.68	6.7	1.1	2.9	0.4	45.1	5.5
1015	8-78	12.0	Surface 29.3	36.15	6.5	0.7	2.7	1.1	70.7	0.0
			Bottom 28.7	35.70	5.6	3.7	5.7	0.3	105.5	13.0
1016	8-78	12.0	Surface 29.7	36.27	6.5	1.0	3.1	0.1	38.1	0.0
			Bottom 28.7	36.73	5.9	1.3	3.2	0.0	38.1	1.3

Table 1. (continued)

Station	Date	Station Depth	Depth	Temp. (°C)	Salinity (‰)	D.O. (mg/l)	Depth (ft)	Salinity	Nutrients (mg/l) Nitrate Nitrite	Phosphate	Total	Salinity
DS17	8-9-78	13.6	Surface Bottom	20.0 28.3	35.06 35.77	6.6 6.6	1.2 2.3	3.7 3.4	20.7 84.3	1.2 2.3	82.3 174.4	30.8 28.8
DS18	8-9-78	11.2	Surface Bottom	20.2 28.3	35.63 35.85	6.5 6.0	1.0 1.3	2.7 3.2	0.1 0.0	0.1 0.0	91.6 115.7	32.0 30.6
DS19	8-10-78	13.3	Surface Bottom	28.9 28.0	35.92 35.91	6.8 6.0	0.6 1.6	3.8 3.8	0.0 0.0	13.0 3.0		
DS20	8-10-78	12.8	Surface Bottom	29.1 28.7	35.00 35.05	6.7 6.1	0.2 3.0	2.3 2.1	0.0 0.0	19.5 98.1	76.8 109.7	17.0 17.0
DS21	8-10-78	12.8	Surface Bottom	29.0 28.0	35.14 35.98	6.5 6.0	1.1 1.5	2.8 2.6	0.0 0.0	56.2 62.3	28.8 76.4	13.8 30.6
DS22	8-10-78	12.9	Surface Bottom	29.2 28.2	35.61 35.01	6.6 6.2	1.0 2.3	2.8 2.0	0.0 0.1	84.3 28.1	86.8 89.7	36.5 19.5
DS23	8-10-78	14.0	Surface Bottom	30.1 28.5	35.61 35.01	6.9 6.3	0.7 1.9	2.5 2.9	0.3 0.3	35.1 98.6	69.2 86.0	7.6 16.6
DS24	8-10-78	15.2	Surface Bottom	29.6 28.5	35.60 35.05	6.5 6.2	1.2 0.7	2.9 2.5	0.3 0.3	49.2 49.2	6.5 2.0	
DS25	8-11-78	16.1	Surface Bottom	28.0 27.8	35.58 35.15	6.5 6.0	1.2 1.6	1.8 1.1	0.3 0.3	35.1 21.1	77.7 108.3	30.3 22.0
DS26	8-11-78	16.1	Surface Bottom	28.8 27.8	35.80 35.21	6.5 6.0	0.2 1.0	1.6 1.3	0.0 0.1	21.1 21.1		
DS27	8-11-78	12.5	Surface Bottom	29.0 28.0	35.73 35.17	6.5 6.1	1.0 1.3	1.8 1.8	0.0 0.0	28.1 21.1	63.2 63.6	1.6 3.8
DS28	8-11-78	11.6	Surface Bottom	29.0 28.0	35.76 35.17	6.5 6.0	1.0 2.0	1.0 2.1	0.1 0.0	21.1 35.1		
DS29	8-11-78	14.6	Surface Bottom	29.2 28.0	35.72 35.25	6.6 6.0	1.0 4.0	2.3 3.6	0.1 0.4	49.2 63.2	60.7 86.8	2.6 34.0
DS30	8-14-78	14.8	Surface Bottom	29.3 27.6	35.13 35.76	6.3 5.6	0.9 1.0	2.8 5.1	0.0 0.1	56.2 49.2	73.2 93.3	3.7 39.7
DS31	8-14-78	13.2	Surface Bottom	29.6 27.6	35.98 35.77	6.5 5.3	1.0 1.0	2.6 6.2	0.0 0.0	59.2 21.1	76.9 97.2	13.6 40.7
DS32	8-10-78	13.8	Surface Bottom	29.6 28.2	35.72 35.22	6.5 6.6	0.6 1.0	3.5 7.1	0.3 0.3	42.2 28.1	84.0 96.4	10.4 25.3
DS33	8-14-78	14.5	Surface Bottom	28.6 26.5	35.70 35.79	5.5 5.3	0.9 0.5	0.4 7.6	0.3 0.0	14.1 28.1		

Table 1. (Cont.)

Station	Date	Station Depth	Depth	Temp. (C)	Salinity (‰)	P.O. ₂ (mg/l)	Turbidity (kU)	Nitrate	Nitrite	Ammonia	Sulfate	Phosphate	Total	Surface	Bottom
DS 04	8-14-78	15.0	Surface	28.7	35.56	6.4	0.8	3.2	0.0	0.0	28.1	0.0			
			Bottom	26.5	35.80	5.5	0.5	4.6	0.0	0.0	21.1	0.0			
DS 05	8-14-78	15.1	Surface	28.8	35.56	6.4	1.0	2.8	0.0	0.0	28.1	0.0	63.2	11.6	
			Bottom	26.8	35.80	5.5	0.5	6.3	0.0	0.0	42.2	0.0	20.4	16.4	
DS 06	8-14-78	15.2	Surface	28.8	35.56	6.3	0.6	3.2	0.0	0.0	28.1	0.0	21.6	20.4	
			Bottom	26.7	35.82	5.5	0.5	6.0	0.0	0.0	28.1	0.0	28.3	36.0	
DS 07	8-14-78	15.0	Surface	29.0	35.65	6.4	0.5	3.2	0.0	0.0	28.1	0.0	26.3	9.6	
			Bottom	26.9	35.81	5.5	0.7	9.0	0.1	0.1	105.4	0.0	95.5	15.6	
DS 08	8-14-78	15.1	Surface	29.0	35.72	6.4	0.6	3.2	0.0	0.0	21.1	0.0	27.6	16.4	
			Bottom	27.0	35.81	5.3	0.6	4.3	0.6	0.6	28.1	0.0			
DS 09	8-14-78	15.5	Surface	29.4	35.75	6.2	0.7	2.7	0.1	0.1	14.1	0.0	83.6	54.4	
			Bottom	27.0	35.88	5.6	0.5	2.8	0.3	0.3	14.1	0.0	98.0	56.4	
DS 10	8-14-78	15.3	Surface	30.0	35.80	6.6	0.8	3.5	0.1	0.1	56.2	0.0			
			Bottom	26.9	35.87	5.9	0.6	4.2	0.3	0.3	28.1	0.0			

Table 2. List of epifaunal species collected in oyster dredge samples, and their frequency of occurrence at 40 stations in the study area.

Species	Occurrence at Number of Stations
Phylum Porifera	
<u>Cliona</u> sp.	13
<u>Leucosolenia canariensis</u>	5
Porifera (undet.)	3
<u>Spheciospongia vesparia</u>	1
Orange sponge (undet.)	1
Phylum Cnidaria	
<u>Clytia cylindrica</u>	25
<u>Astrangia danae</u>	17
<u>Turritopsis nutricula</u>	16
<u>Schizotricha tenella</u>	15
<u>Eudendrium</u> sp.	14
<u>Dynamena cornicina</u>	13
<u>Telesto sanguinea</u>	12
<u>Ectopleura dumortieri</u>	11
<u>Halecium dysymmetrum</u>	8
<u>Telesto fruticulosa</u>	8
<u>Leptogorgia setacea</u>	7
<u>Zanclaea costata</u>	5
Actiniaria (undet.)	4
<u>Halecium</u> sp.	3
<u>Lovenella grandis</u>	3
<u>Titanideum frauenfeldii</u>	3
<u>Chrysaora quinquecirrha</u> (polyp)	2
<u>Leptogorgia virgulata</u>	2
<u>Lovenella gracilis</u>	2
<u>Monostaechas quadridens</u>	2
<u>Plumularia floridana</u>	2
<u>Proboscoidactyla ornata</u>	2
<u>Bougainvillia</u> sp.	1
<u>Campanulina</u> sp.	1
<u>Clytia fragilis</u>	1
<u>Clytia kincaidi</u>	1
<u>Clytia paulensis</u>	1
<u>Cuspidella humilis</u>	1
<u>Epizoanthus americanus</u>	1
<u>Hydractinia echinata</u>	1
<u>Lophogorgia hebes</u>	1
Pandeidae (undet.)	1
<u>Sertularella conica</u>	1
Phylum Platyhelminthes	
<u>Tubellaria</u> (undet.)	5
Phylum Rhynchocoela	
Nemertean (undet.)	1
Phylum Entoprocta	

Table 1. (continued)

Species	Occurrence at Number of Stations
<u>Barentsia</u> sp.	1
<u>Entoproct</u> (undet.)	1
Phylum Bryozoa	
<u>Parasmittina</u> <u>nitida</u>	24
<u>Membranipora</u> <u>tenuis</u>	23
<u>Microporella</u> <u>ciliata</u>	21
<u>Schizoporella</u> <u>cornuta</u>	17
<u>Aetea</u> <u>anguina</u>	15
<u>Cribrilaria</u> <u>radiata</u>	14
<u>Hippopleurifera</u> <u>mucronata</u>	13
<u>Hippoporina</u> <u>verrilli</u>	12
<u>Phylactella</u> <u>aviculifera</u>	12
<u>Trypsostega</u> <u>venusta</u>	9
<u>Cleidochasma</u> <u>porcellanum</u>	8
<u>Cyclostomata</u> A (undet.)	8
<u>Schizoporella</u> <u>errata</u>	8
<u>Bowerbankia</u> <u>gracilis</u>	7
<u>Crisia</u> sp.	7
<u>Floridina</u> <u>parvicella</u>	7
<u>Hippoporella</u> <u>uvulifera</u>	7
<u>Copidozoum</u> <u>tenuirostre</u>	6
<u>Lichenopora</u> sp.	6
<u>Celleporidae</u> (undet.)	4
<u>Reptadeonella</u> <u>violacea</u>	3
<u>Sundanella</u> <u>sibogae</u>	3
<u>Aeverrillia</u> <u>setigera</u>	2
<u>Amathia</u> <u>distans</u>	2
<u>Caulibugula</u> <u>pearsei</u>	2
<u>Cribrilina</u> <u>floridana</u>	2
<u>Cryptosula</u> <u>pallasiana</u>	2
<u>Hippaliosina</u> <u>rostrigera</u>	2
<u>Hippoporina</u> <u>contracta</u>	2
<u>Alcyonidium</u> <u>hauffi</u>	1
<u>Amathia</u> <u>alternata</u>	1
<u>Amathia</u> sp.	1
<u>Anasca</u> A (undet.)	1
<u>Celleporina</u> <u>hassalli</u>	1
<u>Ctenostomata</u> (undet.)	1
<u>Discoporella</u> <u>umbellata</u>	1
<u>Electra</u> <u>monostachys</u>	1
<u>Membranipora</u> <u>arborescens</u>	1
<u>Nolella</u> <u>stipata</u>	1
Phylum Sipuncula	
<u>Sipunculid</u> (undet.)	14
Phylum Echiura	
<u>Echiurid</u> (undet.)	1
Phylum Annelida	
<u>Hydroides</u> <u>dianthus</u>	27
<u>Sabellaria</u> <u>vulgaris</u>	22
<u>Lepidonotus</u> <u>sublevis</u>	13

Table 2. (continued)

Species	Occurrence at Number of Stations
<u>Hypsicomus phaeotaenia</u>	11
<u>Pomatoceros caeruleus</u>	10
<u>Polychaeta A (undet.)</u>	2
<u>Polvdora sp.</u>	1
<u>Sabellidae (undet.)</u>	1
Phylum Mollusca	
<u>Chama macerophylla</u>	21
<u>Crepidula fornicata</u>	14
<u>Anadara transversa</u>	13
<u>Ostrea equestris</u>	13
<u>Anomia simplex</u>	10
<u>Chaetopleura apiculata</u>	8
<u>Crepidula plana</u>	8
<u>Mitrella lunata</u>	8
<u>Octopus vulgaris</u>	4
<u>Anachis translirata</u>	3
<u>Musculus lateralis</u>	3
<u>Oliva savana</u>	3
<u>Polinices duplicatus</u>	3
<u>Eupleura caudata</u>	2
<u>Modiolus modiolus squamosus</u>	2
<u>Acanthodoris pilosa</u>	1
<u>Argopecten gibbus</u>	1
<u>Dinocardium robustum</u>	1
<u>Didora cayenensis</u>	1
<u>Diplothyra smithi</u>	1
<u>Fasciolaria liliun hunteria</u>	1
<u>Gastropoda (undet.)</u>	1
<u>Lithophaga bisulcata</u>	1
<u>Muricidae (undet.)</u>	1
<u>Prunum apicinum</u>	1
<u>Sinum perspectivum</u>	1
<u>Turbo castanea</u>	1
<u>Urosalpinx cinerea</u>	1
Phylum Arthropoda	
<u>Balanus venustus</u>	29
<u>Balanus calidus</u>	12
<u>Ovalipes stephensoni</u>	11
<u>Kochlorine floridana</u>	8
<u>Xanthidae (undet.)</u>	7
<u>Pilumnus sp.</u>	5
<u>Portunus gibbesii</u>	5
<u>Caprellidae (undet.)</u>	3
<u>Pagurus pollicaris</u>	3
<u>Podochela sidneyi</u>	3
<u>Libinia dubia</u>	2
<u>Ovalipes ocellatus</u>	2
<u>Portunus spinimanus</u>	2
<u>Squilla empusa</u>	2
<u>Balanus galeatus</u>	1

Table 2. (continued)

Species	Occurrence at Number of Stations
<u>Balanus improvisus</u>	1
<u>Callinectes sapidus</u>	1
<u>Chelonibia patula</u>	1
<u>Hepatus pudibundus</u>	1
<u>Hypoconcha sabulosa</u>	1
<u>Metoporphaphis calcarata</u>	1
<u>Micropanope xanthiformis</u>	1
<u>Paguridae (undet.)</u>	1
<u>Pilumnus sayi</u>	1
<u>Synalpheus townsendi</u>	1
<u>Tanystylum orbiculare</u>	1
<u>Trachypenaeus constrictus</u>	1
Phylum Echinodermata	
<u>Arbacia punctulata</u>	14
<u>Astropecten duplicatus</u>	11
<u>Ophiothrix angulata</u>	11
<u>Asterias forbesi</u>	9
<u>Mellita quinquesperforata</u>	8
<u>Luidia clathrata</u>	3
<u>Clypeaster rosaceus</u>	2
<u>Lytechinus variegatus</u>	2
<u>Astropecten articulatus</u>	1
<u>Clypeaster subdepressus</u>	1
<u>Luidia bernasconiae</u>	1
<u>Ophioderma appressum</u>	1
<u>Ophiolepis elegans</u>	1
Phylum Chordata	
<u>Didemnum candidum</u>	12
Ascidacea A (undet.)	8
<u>Styela plicata</u>	7
Ascidacea B (undet.)	6
<u>Amaroucium</u> sp.	4
<u>Amaroucium constellatum</u>	2
Ascidacea C (undet.)	2
Ascidacea (undet.)	1
Ascidacea D (undet.)	1
<u>Clavelina picta</u>	1
Molgulidae (undet.)	1
<u>Styela</u> sp.	1

Table 3. Occurrence of epifaunal invertebrates in dredge collections from station DS01.

Phylum Arthropoda

Ovalipes ocellatus

Phylum Echinodermata

Mellita quinquesperforata

Table 4. Occurrence of epifaunal invertebrates in dredge collections from station DS02.

Phylum Arthropoda

Portunus gibbesii

Phylum Echinodermata

Mellita quinquesperforata

Phylum Chordata

Amaroucium constellatum

Table 5. Occurrence of epifaunal invertebrates in dredge collections from station DS03.

Phylum Cnidaria

Clytia cylindrica

Phylum Polychaeta

Sabellaria vulgaris

Phylum Mollusca

Crepidula fornicata

Crepidula plana

Phylum Arthropoda

Balanus venustus

Pagurus pollicaris

Libinia dubia

Squilla empusa

Phylum Echinodermata

Luidia clathrata

Mellita quinquesperforata

Table 1. Occurrence of epifaunal invertebrates in dredge collections from station DS14.

Phylum Cnidaria

Pandeidae (undet.)
Proboscicaetyla ornata
Eudendrium sp.
Clytia fragilis
Clytia kincaidii
Clytia paulensis
Dynamena cornicina
Schizotricha tenella
Astrangia danae

Phylum Entoprocta

Barentsia sp.

Phylum Bryozoa

Membranipora tenuis

Phylum Annelida

Sabellidae (undet.)
Lepidonotus sublevis
Sabellaria vulgaris
Hydroides dianthus

Phylum Mollusca

Polinices duplicatus
Modiolus modiolus squamosus

Phylum Arthropoda

Callinectes sapidus
Libinia dubia

Phylum Echinodermata

Asterias forbesi
Mellita quinquesperforata

Table 7. Occurrence of epifaunal invertebrates in dredge collections from station DS05.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Turritopsis nutricula

Hydractinia echinata

Eudendrium sp.

Halecium dysymmetrum

Clytia cylindrica

Campanulina sp.

Dynamena cornicina

Chrysaora quinquecirrha (polyp)

Astrangia danae

Phylum Bryozoa

Membranipora arborescens

Membranipora tenuis

Microporella ciliata

Schizoporella cornuta

Phylum Annelida

Hydroides dianthus

Sabellaria vulgaris

Phylum Mollusca

Crepidula plana

Phylum Arthropoda

Balanus venustus

Caprellidae (undet.)

Pagurus pollicaris

Ovalipes ocellatus

Phylum Echinodermata

Asterias forbesi

Arbacia punctulata

Mellita quinquesperforata

Table 8. Occurrence of epifaunal invertebrates in dredge collections from station DS06.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Clytia cylindrica

Lovenella gracilis

Telesto fruticulosa

Astrangia danae

Phylum Bryozoa

Electra monostachys

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitica

Schizoporella cornuta

Schizoporella errata

Phylum Annelida

Lepidonotus sublevis

Hydroides dianthus

Sabellaria vulgaris

Phylum Mollusca

Crepidula fornicata

Anadara transversa

Anomia simplex

Ostrea equestris

Chama macerophylla

Phylum Arthropoda

Balanus venustus

Phylum Chordata

Didemnum candidum

Ascidiacea E (undet.)

Table 9. Occurrence of epifaunal invertebrates in dredge collections from station DS07.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Turritopsis nutricula

Bougainvillia sp.

Eudendrium sp.

Clytia cylindrica

Telesto fruticulosa

Telesto sanguinea

Leptogorgia virgulata

Astrangia danae

Phylum Platyhelminthes

Turbellaria (undet.)

Phylum Bryozoa

Alcyonidium hauffi

Bowerbankia gracilis

Cryptosula pallasiana

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Schizoporella cornuta

Schizoporella errata

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Phylum Mollusca

Crepidula fornicata

Crepidula plana

Anadara transversa

Musculus lateralis

Anomia simplex

Ostrea equestris

Chama macerophylla

Diplothyra smithii

Octopus vulgaris

Phylum Arthropoda

Kochlorine floridana

Balanus calidus

Balanus venustus

Squilla empusa

Pagurus pollicaris

Table 9. (continued)

Xanthidae (undet.)
Phylum Echinodermata
 Astropecten duplicatus
 Asterias forbesi
 Ophiothrix angulata
 Arbacia punctulata
Phylum Chordata
 Didemnum candidum
 Ascidiacea A (undet.)

Table 10. Occurrence of epifaunal invertebrates in dredge collection from station DS08.

Phylum Porifera	
	<u>Porifera (undet.)</u>
Phylum Cnidaria	
	<u>Eudendrium sp.</u>
	<u>Telesto fruticulosa</u>
	<u>Titanideum frauenfeldii</u>
Phylum Bryozoa	
	<u>Celleporidae (undet.)</u>
	<u>Crisia sp.</u>
	<u>Hippoporina verrilli</u>
	<u>Membranipora tenuis</u>
	<u>Schizoporella cornuta</u>
Phylum Mollusca	
	<u>Crepidula fornicata</u>
	<u>Crepidula plana</u>
	<u>Urosalpinx cinerea</u>
	<u>Mitrella lunata</u>
	<u>Anomia simplex</u>
	<u>Ostrea equestris</u>
Phylum Arthropoda	
	<u>Tanystylum orbiculare</u>
	<u>Balanus venustus</u>
	<u>Ovalipes stephensoni</u>
	<u>Portunus spinimanus</u>
	<u>Xanthidae (undet.)</u>
	<u>Pilumnus sp.</u>
	<u>Metoporphaphis calcarata</u>
Phylum Echinodermata	
	<u>Luidia bernasconiae</u>
	<u>Ophiothrix angulata</u>
	<u>Mellita quinquesperforata</u>
Phylum Chordata	
	<u>Amaroucium sp.</u>
	<u>Clavelina picta</u>
	<u>Styela plicata</u>
	<u>Ascidacea (undet.)</u>

Table 11. Occurrence of epifaunal invertebrates in dredge collection from station DS09.

Phylum Cnidaria

Chrysaora quinquecirrha (polyp)

Phylum Bryozoa

Membranipora tenuis

Phylum Annelida

Hydroides dianthus

Phylum Mollusca

Oliva sayana

Phylum Arthropoda

Balanus improvisus

Ovalipes stephensoni

Table 12. Occurrence of epifaunal invertebrates in dredge collections from station DS10.

Nothing recovered

Table 13. Occurrence of epifaunal invertebrates in dredge collections from station DS11.

Phylum Arthropoda

Trachypenaeus constrictus

Phylum Echinodermata

Astropecten duplicatus

Table 1+. Occurrence of epifaunal invertebrates in dredge collections from station DS12.

Phylum Porifera	<u>Spheciospongia vesparia</u>
Phylum Cnidaria	<u>Eudendrium</u> sp.
	<u>Proboscoidactyla ornata</u>
	<u>Clytia cylindrica</u>
	<u>Dynamena cornicina</u>
	<u>Telesto sanguinea</u>
	<u>Titanideum frauenfeldii</u>
	<u>Lophogorgia hebes</u>
	<u>Leptogorgia setacea</u>
	Actiniaria (undet.)
Phylum Bryozoa	<u>Aeverrillia setigera</u>
	<u>Bowerbankia gracilis</u>
	Celleporidae (undet.)
	<u>Crisia</u> sp.
	Ctenostomata (undet.)
	<u>Schizoporella cornuta</u>
Phylum Mollusca	<u>Anachis translirata</u>
	<u>Musculus lateralis</u>
Phylum Arthropoda	<u>Balanus calidus</u>
	<u>Balanus galeatus</u>
	Xanthidae (undet.)
	<u>Pilumnus</u> sp.
	<u>Podochela sidneyi</u>
Phylum Echinodermata	<u>Astropecten duplicatus</u>
Phylum Chordata	<u>Amaroucium</u> sp.
	<u>Didemnum candidum</u>
	<u>Styela plicata</u>
	Molgulidae (undet.)
	Ascidacea C (undet.)
	Ascidacea D (undet.)

Table 15. Occurrence of epifaunal invertebrates in dredge collections from station DS13.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Turritopsis nutricula

Eudendrium sp.

Clytia cylindrica

Dynamena cornicina

Schizotricha tenella

Plumularia floridana

Telesto fruticulosa

Leptogorgia setacea

Astrangia danae

Phylum Platyhelminthes

Tubellaria (undet.)

Phylum Bryozoa

Aetea anguina

Bowerbankia gracilis

Celleporidae (undet.)

Copidozoum tenuirostre

Crisia sp.

Hippoporina contracta

Hippoporina verrilli

Membranipora tenuis

Parasmittina nitida

Schizoporella cornuta

Sundanella sibogae

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Phylum Mollusca

Crepidula fornicata

Mitrella lunata

Prunum apicinum

Anadara transversa

Musculus lateralis

Anomia simplex

Ostrea equestris

Chama macerophylla

Chaetopleura apiculata

Phylum Arthropoda

Kochlorine floridana

Balanus venustus

Xanthidae (undet.)

Pilumnus sp.

Table 15. (continued)

Phylum Echinodermata

Astropecten duplicatus

Asterias forbesi

Ophiothrix angulata

Arbacia punctulata

Phylum Chordata

Didemnum candidum

Styela plicata

Ascidacea A (undet.)

Ascidacea B (undet.)

Table 16. Occurrence of epifaunal invertebrates in dredge collections from station DS14.

Phylum Cnidaria	
	<u>Clytia cylindrica</u>
Phylum Bryozoa	
	<u>Membranipora tenuis</u>
	<u>Parasmittina nitida</u>
Phylum Annelida	
	<u>Sabellaria vulgaris</u>
	<u>Hydroides dianthus</u>
Phylum Mollusca	
	<u>Ostrea equestris</u>
Phylum Arthropoda	
	<u>Balanus venustus</u>
Phylum Echinodermata	
	<u>Luidia clathrata</u>

Table 17. Occurrence of epifaunal invertebrates in dredge collections from station DS15.

Phylum Cnidaria

Eudendrium sp.
Clytia cylindrica
Telesto fruticulosa
Telesto sanguinea
Astrangia danae

Phylum Bryozoa

Aetea anguina
Bowerbankia gracilis
Celleporina hassalli
Crisia sp.
Hippoporina verrilli
Microporella ciliata
Schizoporella cornuta

Phylum Annelida

Lepidonotus sublevis
Hydroides dianthus
Sabellaria vulgaris

Phylum Mollusca

Polinices duplicatus
Modiolus modiolus squamosus
Anadara transversa
Anomia simplex
Dinocardium robustum

Phylum Arthropoda

Balanus venustus
Ovalipes stephensoni

Phylum Echinodermata

Astropecten articulatus
Mellita quinquesperforata

Phylum Chordata

Ascidiacea A (undet.)

Table 18. Occurrence of epifaunal invertebrates in dredge collections from station DS16.

Phylum Cnidaria	<u>Turritopsis nutricula</u>
	<u>Clytia cylindrica</u>
	<u>Dynamena cornicina</u>
	<u>Schizotricha tenella</u>
	<u>Astrangia danae</u>
Phylum Rhynchocoela	Nemertean (undet.)
Phylum Bryozoa	<u>Aetea anguina</u>
	<u>Amathia alternata</u>
	<u>Copidozoum tenuirostre</u>
	<u>Hippoporina verrilli</u>
	<u>Membranipora tenuis</u>
	<u>Microporella ciliata</u>
	<u>Parasmittina nitida</u>
	<u>Schizoporella cornuta</u>
Phylum Annelida	<u>Lepidonotus sublevis</u>
	<u>Sabellaria vulgaris</u>
	<u>Hydroides dianthus</u>
Phylum Mollusca	<u>Crepidula fornicata</u>
	<u>Anadara transversa</u>
	<u>Musculus lateralis</u>
	<u>Anomia simplex</u>
	<u>Chama macerophylla</u>
Phylum Arthropoda	<u>Balanus calidus</u>
	<u>Balanus venustus</u>
Phylum Echinodermata	<u>Ophiethrix angulata</u>
	<u>Arbacia punctulata</u>
Phylum Chordata	<u>Didemnum candidum</u>
	Asciacea A (undet.)
	Asciacea B (undet.)

Table 19. Occurrence of epifaunal invertebrates in dredge collections from station DS17.

Phylum Porifera

Porifera (undet.)

Phylum Cnidaria

Turritopsis nutricula

Eudendrium sp.

Clytia cylindrica

Dynamena cornicina

Schizotricha tenella

Telesto fruticulosa

Telesto sanguinea

Titanideum frauenfeldii

Actiniaria (undet.)

Astrangia danae

Phylum Bryozoa

Aetea anguina

Copidozoum tenuirostre

Cribrilaria radiata

Hippopleurifera mucronata

Hippoporella uvulifera

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Reptadeonella violacea

Schizoporella cornuta

Schizoporella errata

Trypanostega venusta

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Hydroides dianthus

Phylum Mollusca

Crepidula fornicata

Fasciolaria liliium hunteria

Chaetopleura apiculata

Ostrea equestris

Chama macerophylla

Phylum Arthropoda

Balanus calidus

Balanus venustus

Caprellidae (undet.)

Synalpheus townsendi

Paguridae (undet.)

Pilumnus savi

Xanthidae (undet.)

Table 19. (cont.)

Phylum Echinodermata

Ophiethrix angulata

Arbacia punctulata

Clypeaster rosaceus

Phylum Chordata

Amaroucium constellatum

Didemnum candidum

Ascidacea A (undet.)

Table 11. Marine invertebrates in dredge collections from station 1111.

Phylum Cnidaria

Ectopleura dumortieri
Clytia cylindrica
Schizotricha tenella
Telesto sanguinea

Phylum Bryozoa

Cryptosula pallasiana
Hippoporina verrilli
Membranipora tenuis
Microporella ciliata
Schizoporella errata

Phylum Annelida

Hydroides dianthus
Sabellaria vulgaris

Phylum Mollusca

Crepidula fornicata
Crepidula plana
Mitrella lunata
Anadara transversa
Anomia simplex
Ostrea equestris

Phylum Arthropoda

Balanus venustus
Hepatus pudibundus
Ovalipes stephensoni

Phylum Echinodermata

Astropecten duplicatus

Phylum Chordata

Styela sp.

Table 21. Occurrence of epifaunal invertebrates in dredge collections from station DS19.

Phylum Cnidaria

Eudendrium sp.

Halecium dysymmetrum

Clytia cylandrica

Dynamena quadridentata

Schizotricha tenella

Phylum Bryozoa

Microporella ciliata

Phylum Annelida

Hydroides dianthus

Phylum Mollusca

Sinum perspectivum

Phylum Arthropoda

Balanus venustus

Table 22. Occurrence of epifaunal invertebrates in dredge collections from station DS20.

Phylum Cnidaria

Ectopleura dumortieri

Astrangia danae

Phylum Bryozoa

Membranipora tenuis

Parasmittina nitida

Schizoporella cornuta

Schizoporella errata

Phylum Annelida

Hydroides dianthus

Sabellaria vulgaris

Phylum Mollusca

Mitrella lunata

Phylum Arthropoda

Balanus venustus

Micropanope xanthiformis

Phylum Echinodermata

Ophiothrix angulata

Table 23. Occurrence of epifaunal invertebrates in dredge collections from station DS21.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Ectopleura dumortieri

Zanclea costata

Turritopsis nutricula

Eudendrium sp.

Halecium sp.

Lovenella grandis

Clytia cylindrica

Dynamena cornicina

Sertularella conica

Schizotricha tenella

Telesto sanguinea

Actiniaria (undet.)

Astrangia danae

Phylum Bryozoa

Aetea anguina

Anasca A (undet.)

Bowerbankia gracilis

Caulibugula pearsei

Celleporidae (undet.)

Cleidochasma porcellanum

Cribrilaria radiata

Crisia sp.

Floridina parvicella

Hippaliosina rostrigera

Hippopleurifera mucronata

Hippoporella uvulifera

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Reptadeonella violacea

Schizoporella cornuta

Schizoporella errata

Sundanella sibogae

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Polychaeta A (undet.)

Table 23. (continued)

Phylum Mollusca

Diodora cayenensis
Crepidula fornicata
Anachis translirata
Anomia simplex
Ostrea equestris
Chama macerophylla
Octopus vulgaris

Phylum Arthropoda

Kochlorine floridana
Balanus venustus
Xanthidae (undet.)
Podochela sidneyi

Phylum Echinodermata

Ophiothrix angulata
Arbacia punctulata

Phylum Chordata

Amaroucium sp.
Didemnum candidum
Styela plicata
Asciadiacea A (undet.)
Asciadiacea B (undet.)

Table 24. Occurrence of epifaunal invertebrates in dredge collections from station DS22.

Phylum Cnidaria

Astrangia danae

Phylum Bryozoa

Hippopleurifera mucronata

Hippoporella uvulifera

Micro porella ciliata

Parasmittina nitida

Schizoporella cornuta

Phylum Annelida

Sabellaria vulgaris

Hydroides dianthus

Phylum Mollusca

Chama macerophylla

Phylum Echinodermata

Astropecten duplicatus

Table 25. Occurrence of epifaunal invertebrates in dredge collections from station DS23.

Nothing recovered

Table 26. Occurrence of epifaunal invertebrates in dredge collections from DS24.

Phylum Bryozoa

Amathia sp.

Aeverrillia setigera

Phylum Arthropoda

Ovalipes stephensoni

Table 27. Occurrence of epifaunal invertebrates in dredge collections from station DS25.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Ectopleura dumortieri

Zanclea costata

Turritopsis nutricula

Eudendrium sp.

Halecium dysymmetrum

Halecium sp.

Clytia cylindrica

Dynamena cornicina

Schizotricha tenella

Telesto fruticulosa

Telesto sanguinea

Astrangia danae

Phylum Bryozoa

Aetea anguina

Bowerbankia gracilis

Cleidochasma porcellanum

Copidozoum tenuirostre

Cribrilaria radiata

Crisia sp.

Cyclostomata A (undet.)

Discoporella umbellata

Floridina parvicella

Hippopleurifera mucronata

Hippoporina contracta

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Schizoporella cornuta

Schizoporella errata

Sundanella sibogae

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Pomatoceros caeruleus

Phylum Mollusca

Crepidula fornicata

Table 27. (continued)

Crepidula plana
Muricidae (undet.)
Mitrella lunata
Anadara transversa
Musculus lateralis
Anomia simplex
Chama macerophylla
Chaetopleura apiculata

Phylum Arthropoda

Kochlorine floridana
Balanus calidus
Balanus venustus
Paguridae (undet.)
Portunus gibbesii

Phylum Echinodermata

Astropecten duplicatus
Ophiothrix angulata
Arbacia punctulata
Lytechinus variegatus

Phylum Chordata

Didemnum candidum
Ascidacea A (undet.)
Ascidacea B (undet.)

Table 28. Occurrence of epifaunal invertebrates in dredge collections from station DS26.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Turritopsis nutricula

Eudendrium sp.

Halecium dysymmetrum

Clytia cylindrica

Monostaechas quadridens

Schizotricha tenella

Leptogorgia setacea

Phylum Bryozoa

Aetea anguina

Cleidochasma porcellanum

Cribrilaria radiata

Cyclostomata A (undet.)

Hippopleurifera mucronata

Hippoporella uvulifera

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Pomatoceros caeruleus

Polychaeta A (undet.)

Phylum Mollusca

Crepidula plana

Eupleura caudata

Mitrella lunata

Oliva sayana

Anadara transversa

Ostrea equestris

Chama macerophylla

Chaetopleura apiculata

Phylum Arthropoda

Balanus calidus

Balanus venustus

Chelonibia patula

Ovalipes stephensoni

Portunus gibbesii

Table 28. (continued)

Portunus spinimanus
Xanthidae (undet.)
Phylum Echinodermata
Astropecten duplicatus
Ophiothrix angulata
Arbacia punctulata
Phylum Chordata
Styela plicata

Table 29. Occurrence of epifaunal invertebrates in dredge collections from station DS27.

Phylum Cnidaria	
	<u>Turritopsis nutricula</u>
	<u>Cuspidella humilis</u>
	<u>Clytia cylindrica</u>
	<u>Astrangia danae</u>
Phylum Bryozoa	
	<u>Parasmittina nitida</u>
Phylum Sipuncula	
	Sipunculid (undet.)
Phylum Annelida	
	<u>Hydroides dianthus</u>
	<u>Sabellaria vulgaris</u>
Phylum Mollusca	
	<u>Chama macerophylla</u>
Phylum Arthropoda	
	<u>Balanus venustus</u>
	<u>Ovalipes stephensoni</u>
Phylum Echinodermata	
	<u>Mellita quinquesperforata</u>

Table 30. Occurrence of epifaunal invertebrates in dredge collections from station DS28.

Phylum Cnidaria

Ectopleura dumortieri

Turritopsis nutricula

Clytia cylindrica

Schizotricha tenella

Plumularia floridana

Telesto sanguinea

Phylum Bryozoa

Parasmittina nitida

Schizoporella cornuta

Phylum Arthropoda

Balanus venustus

Ovalipes stephensoni

Phylum Echinodermata

Astropecten duplicatus

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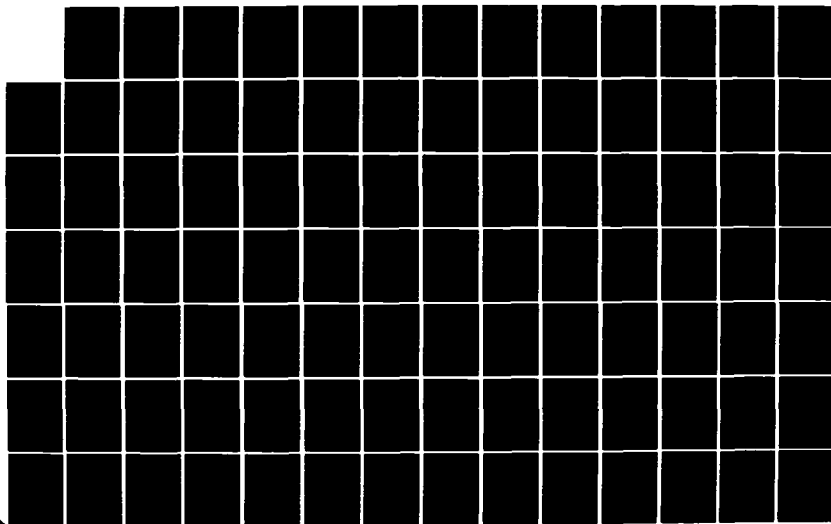
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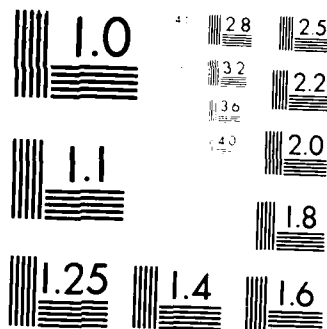
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Table 31. Occurrence of epifaunal invertebrates in dredge collections from station DS29.

Phylum Cnidaria

Ectopleura dumortieri
Eudendrium sp.
Halecium dysymmetrum
Clytia cylindrica
Schizotricha tenella
Astrangia danae

Phylum Bryozoa

Aetea anguina
Cribrilaria radiata
Hippopleurifera mucronata
Hippoporina verrilli
Membranipora tenuis
Parasmittina nitida
Schizoporella cornuta
Schizoporella errata

Phylum Sipuncula

Sipunculid (undet.)

Phylum Echiura

Echiurid (undet.)

Phylum Annelida

Sabellaria vulgaris
Hypsicomus phaeotaenia
Hydroides dianthus
Pomatoceros caeruleus

Phylum Mollusca

Crepidula fornicata
Crepidula plana
Polinices duplicatus
Mitrella lunata
Anadara transversa
Anomia simplex
Ostrea equestris
Chama macerophylla
Octopus vulgaris

Phylum Arthropoda

Kochlorine floridana
Balanus venustus
Xanthidae (undet.)

Phylum Echinodermata

Ophiolepis elegans

Phylum Chordata

Amaroucium sp.

Table 32. Occurrence of epifaunal invertebrates in dredge collections from station DS30.

Phylum Porifera

Cliona sp.

Leucosolenia canariensis

Phylum Cnidaria

Turritopsis nutricula

Eudendrium sp.

Halecium dysymmetrum

Halecium sp.

Clytia cylindrica

Dynamena cornicina

Schizotricha tenella

Telesto sanguinea

Astrangia danae

Phylum Platyhelminthes

Turbellaria (undet.)

Phylum Bryozoa

Aetea anguina

Cribrilaria radiata

Cyclostomata A (undet.)

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Polydora sp.

Hypsicomus phaeotaenia

Hydroides dianthus

Pomatoceros caeruleus

Phylum Mollusca

Crepidula fornicata

Eupleura caudata

Mitrella lunata

Gastropoda (undet.)

Anadara transversa

Argopecten gibbus

Chama macerophylla

Chaetopleura apiculata

Phylum Arthropoda

Balanus calidus

Balanus venustus

Portunus gibbesii

Pilumnus sp.

Phylum Echinodermata

Ophiothrix angulata

Table 32. (continued)

Arbacia punctulata
Phylum Chordata
Styela plicata
Ascidiacea A (undet.)

Table 33. Occurrence of epifaunal invertebrates in dredge collections from station DS31.

Phylum Cnidaria

Clytia cylindrica

Telesto fruticulosa

Phylum Bryozoa

Cribrilaria radiata

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylum Annelida

Lepidonotus sublevis

Sabellaria vulgaris

Phylum Mollusca

Anachis translirata

Mitrella lunata

Acanthodoris pilosa

Anadara transversa

Chama macerophylla

Phylum Arthropoda

Balanus calidus

Balanus venustus

Phylum Echinodermata

Astropecten duplicatus

Arbacia punctulata

Table 34. Occurrence of epifaunal invertebrates in dredge collections from station DS32.

Phylum Cnidaria

Ectopleura dumortieri

Schizotricha tenella

Leptogorgia virgulata

Phylum Bryozoa

Cleidochasma porcellanum

Copidozoum tenuirostre

Cribrilaria radiata

Floridina parvicella

Hippopleurifera mucronata

Hippoporella uvulifera

Hippoporina verrilli

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Hydroides dianthus

Phylum Mollusca

Oliva sayana

Ostrea equestris

Chama macerophylla

Phylum Arthropoda

Balanus venustus

Ovalipes stephensoni

Table 35. Occurrence of epifaunal invertebrates in dredge collections from station DS33.

Phylum Porifera

Cliona sp.

Leucosolenia canariensis

Phylum Cnidaria

Ectopleura dumortieri

Zanclea costata

Turritopsis nutricula

Lovenella grandis

Leptogorgia setacea

Astrangia danae

Phylum Platyhelminthes

Turbellaria (undet.)

Phylum Bryozoa

Aetea anguina

Amathia distans

Anasca A (undet.)

Cleidochasma porcellanum

Cribrilaria radiata

Cribrilina floridana

Cyclostomata A (undet.)

Floridina parvicella

Hippopleurifera mucronata

Hippoporella uvulifera

Lichenopora sp.

Parasmittina nitida

Phylactella aviculifera

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Lepidonotus sublevis

Hypsicomus phaeotaenia

Pomatoceros caeruleus

Phylum Mollusca

Turbo castanea

Chama macerophylla

Chaetopleura apiculata

Octopus vulgaris

Phylum Arthropoda

Kochlorine floridana

Balanus calidus

Balanus venustus

Ovalipes stephensoni

Portunus gibbesii

Podochela sidneyi

Phylum Echinodermata

Table 35. (continued)

Asterias forbesi

Arbacia punctulata

Clypeaster subdepressus

Phylum Chordata

Didemnum candidum

Asidiacea C

Table 36. Occurrence of epifaunal invertebrates in dredge collections from station DS34.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Ectopleura dumortieri

Turritopsis nutricula

Halecium dysymmetrum

Clytia cylindrica

Dynamena cornicina

Phylum Bryozoa

Aetea anguina

Cleidochasma porcellanum

Copidozoum tenuirostre

Cribrilaria radiata

Cyclostomata A (undet.)

Floridina parvicella

Hippopleurifera mucronata

Lichenopora sp.

Microporella ciliata

Parasmittina nitida

Phylactella uvulifera

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Sabellaria vulgaris

Hypsicomus phaeotaenia

Hydroides dianthus

Pomatoceros caeruleus

Phylum Mollusca

Crepidula fornicata

Chaetopleura apiculata

Anadara transversa

Ostrea equestris

Chama macerophylla

Phylum Arthropoda

Kochlorine floridana

Balanus calidus

Balanus venustus

Hypoconcha sabulosa

Pilumnus sp.

Phylum Echinodermata

Arbacia punctulata

Phylum Chordata

Didemnum candidum

Styela plicata

Table 37. Occurrence of epifaunal invertebrates in dredge collections from station DS35.

Phylum Porifera

Cliona sp.

Phylum Cnidaria

Ectopleura dumortieri

Turritopsis nutricula

Clytia cylindrica

Dynamena cornicina

Monostaechas quadridens

Leptogorgia setacea

Phylum Bryozoa

Aetea anguina

Cribrilaria radiata

Cyclostomata A (undet.)

Floridina parviceila

Lichenopora sp.

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Hydroides dianthus

Pomatoceros caeruleus

Phylum Mollusca

Chama macerophylla

Phylum Arthropoda

Balanus venustus

Ovalipes stephensoni

Phylum Echinodermata

Asterias forbesi

Table 38. Occurrence of epifaunal invertebrates in dredge collections from station DS36.

Phylum Cnidaria

Ectopleura dumortieri

Clytia cylindrica

Lovenella grandis

Leptogorgia setacea

Phylum Bryozoa

Hippopleurifera mucronata

Membranipora tenuis

Schizoporella cornuta

Phylum Annelida

Hydroides dianthus

Table 39. Occurrence of epifaunal invertebrates in dredge collections from station DS37.

Phylum Cnidaria

Lovenella grandis

Phylum Bryozoa

Hippoporella uvulifera

Lichenopora sp.

Microporella ciliata

Parasmittina nitida

Phylum Annelida

Hydroides dianthus

Phylum Mollusca

Chama macerophylla

Phylum Arthropoda

Balanus venustus

Table 40. Occurrence of epifaunal invertebrates in dredge collections from station DS38.

Phylum Porifera

Orange sponge (undet.)

Cliona sp.

Phylum Cnidaria

Zanclea costata

Turritopsis nutricula

Halecium dysymmetrum

Schizotricha tenella

Telesto sanguinea

Epizoanthus americanus

Astrangia danae

Phylum Platyhelminthes

Turbellaria (undet.)

Phylum Entoprocta

Entoproct (undet.)

Phylum Bryozoa

Aetea anguina

Amathia distans

Bowerbankia gracilis

Caulibugula pearsei

Cleidochasma porcellanum

Cribrilaria radiata

Cribrilina floridana

Crisia sp.

Cyclostomata A (undet.)

Floridina parvicella

Hippaliosina rostrigera

Hippopleurifera mucronata

Lichenopora sp.

Membranipora tenuis

Microporella ciliata

Nolella stipata

Parasmittina nitida

Phylactella uvulifera

Reptadeonella violacea

Schizoporella cornuta

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Sabellaria vulgaris

Hypsicomus phaeotaenia

Pomatoceros caeruleus

Phylum Mollusca

Trepidula plana

Musculus lateralis

Table 40. (continued)

Lithophaga bisulcata
Chama macerophylla
Chaetopleura apiculata

Phylum Arthropoda

Kochlorine floridana
Balanus calidus
Balanus venustus

Phylum Echinodermata

Luidia clathrata
Astropecten articulatus
Asterias forbesi
Ophioderma appressum
Lytechinus variegatus

Phylum Chordata

Didemnum candidum
Ascidacea B (undet.)

Table 41. Occurrence of epifaunal invertebrates in dredge collections from station DS39.

Phylum Porifera

Leucosolenia canariensis

Phylum Cnidaria

Turritopsis nutricula

Clytia cylindrica

Dynamena cornicina

Schizotricha tenella

Telesto sanguinea

Leptogorgia setacea

Phylum Bryozoa

Aetea anguina

Cleidochasma porcellanum

Cribrilaria radiata

Cyclostomata A (undet.)

Hippopleurifera mucronata

Lichenopora sp.

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Trypsostega venusta

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Pomatoceros caeruleus

Phylum Mollusca

Anadara transversa

Chama macerophylla

Phylum Arthropoda

Balanus calidus

Balanus venustus

Caprellidae (undet.)

Phylum Echinodermata

Asterias forbesi

Ophiothrix angulata

Arbacia punctulata

Phylum Chordata

Didemnum candidum

Table 42. Occurrence of epifaunal invertebrates in dredge collections from station DS40.

Phylum Porifera

Leucosolenia canariensis

Cliona sp.

Porifera (undet.)

Phylum Cnidaria

Zanclaea costata

Turritopsis nutricula

Clytia cylindrica

Telesto sanguinea

Actiniaria (undet.)

Phylum Bryozoa

Aetea truncata

Cribrilaria radiata

Hippopleurifera mucronata

Membranipora tenuis

Microporella ciliata

Parasmittina nitida

Phylactella aviculifera

Phylum Sipuncula

Sipunculid (undet.)

Phylum Annelida

Lepidonotus sublevis

Hydroides dianthus

Pomatoceros caeruleus

Phylum Mollusca

Chama macerophylla

Phylum Arthropoda

Balanus calidus

Balanus venustus

Phylum Echinodermata

Asterias forbesi

Arbacia punctulata

Table -3. Abundance of macroinvertebrate species in grab collections from station DS01. (A = Amphipoda; Gn = Gastropoda; D = Decapoda; E = Echinodermata; I = Isopoda; M = Mollusca; P = Polychaeta).

DS01					
Species	Total Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
<i>Nereis virens</i> (P)	28	5.6	1.5	36	1.0
<i>Nemertina</i> undet. A	10	2.0	1.0	20	2.0
<i>Tellina probrina</i> (M)	8	1.6	1.5	16	3.0
<i>Pseudoplatysia sp. floridana</i> (A)	7	1.4	1.3	14	4.0
<i>Tellina texana</i> (M)	7	1.0	1.2	10	5.0
<i>Protomastix</i> sp. <i>leimnanae</i> A	4	0.8	0.8	8	7.5
<i>Squilla peniformis</i> (Gn)	4	0.8	0.4	8	7.5
<i>Strigella mirabilis</i> (M)	4	0.8	0.8	8	7.5
<i>Mazella rosea</i> (P)	4	0.8	1.1	8	7.5
<i>Prionophoxus epistomus</i> A	3	0.6	1.3	6	11.0
<i>Merita quinquepecterita</i> (E)	3	0.6	0.4	6	11.0
<i>Charix marioni</i> P	3	0.6	0.3	6	11.0
<i>Dissodactylus mellittae</i> D	2	0.4	0.4	4	15.5
<i>Lucinidae</i> undet. A, M	2	0.4	0.5	4	15.5
<i>Alveta</i> sp. (Gn) P	2	0.4	0.5	4	15.5
<i>Goniada littorea</i> (P)	2	0.4	0.5	4	15.5
<i>Anuphis eremita</i> (P)	2	0.4	0.5	4	15.5
<i>Haploscoloplos fragilis</i> (P)	2	0.4	0.5	4	15.5
<i>Trachypneus constrictus</i> D	1	0.2	0.4	2	23.0
<i>Leptochela serratorbita</i> D	1	0.2	0.4	2	23.0
<i>Pinnixa savana</i> (D)	1	0.2	0.4	2	23.0
<i>Astroscapus</i> sp. A (M)	1	0.2	0.4	2	23.0
<i>Chiridotea stenops</i> (I)	1	0.2	0.4	2	23.0
<i>Nemertina</i> undet. B	1	0.2	0.4	2	23.0
<i>Alveta capitata</i> (P)	1	0.2	0.4	2	23.0
<i>Spionanes potovx</i> (P)	1	0.2	0.4	2	23.0
<i>Spionueteopecterus postarum pectatus</i> (P)	1	0.2	0.4	2	23.0

Table 1. Abundance of macroinvertebrate species in grab collections from station DS02. (A = Amphipoda; C = Cumacea; Cr = Crustacea; D = Decapoda; E = Echinodermata; M = Mollusca; P = Polychaeta).

Species	DS02		Estimated Number m ⁻²	Rank by Number
	Total Number	Number 0.1m ² $\bar{x}$ SD		
<i>Nephtys incisa</i> (P)	93	18.6 4.7	186	1.0
<i>Magelona rosae</i> P	33	6.6 3.8	66	2.0
<i>Coronopus amblyx</i> (P)	17	3.4 2.6	34	3.0
<i>Sirratulus</i> sp. (P)	12	2.4 2.9	24	4.0
<i>Dissodactylus mollitae</i> (D)	8	1.6 2.6	16	5.0
<i>Tharyx marioni</i> (P)	6	1.2 1.1	12	6.5
<i>Mellita quinquesperforata</i> (E)	6	1.2 1.2	12	6.5
<i>Tellina probrina</i> (M)	5	1.0 1.4	10	8.0
<i>Amphipis eremita</i> (D)	5	1.0 1.2	10	8.0
<i>Haploscoloplos fragilis</i> (P)	5	1.0 1.0	10	8.0
<i>Oxyrostictis smithi</i> (D)	4	0.8 1.1	8	11.0
<i>Penella penicillata</i> Cr	4	0.8 0.8	8	11.0
<i>Nyctera sibarrachiana</i> (P)	4	0.8 1.0	8	11.0
<i>Corisles limicola</i> (D)	3	0.6 0.9	6	16.0
<i>Pinnixa savina</i> (D)	3	0.6 0.5	6	16.0
Nemertina undet. A	3	0.6 0.6	6	16.0
Nemertina undet. B	3	0.6 1.0	6	16.0
<i>Streblospio benedicti</i> (M)	3	0.6 0.9	6	16.0
<i>Tellina texana</i> (M)	3	0.6 0.9	6	16.0
<i>Corisles limicola</i> (P)	3	0.6 0.6	6	16.0
<i>Brachyura</i> undet. A (D)	2	0.4 0.6	4	21.5
<i>Pseudoplatyschnopus floridanus</i> A	2	0.4 0.4	4	21.5
<i>Owenia fusiformis</i> (P)	2	0.4 0.5	4	21.5
<i>Paraprionospio pinnata</i> (P)	2	0.4 0.5	4	21.5
<i>Leptanella serratorchis</i> (D)	2	0.2 0.4	2	28.0
<i>Pagurus longicarpus</i> (D)	2	0.2 0.4	2	28.0
Decapoda larvae (undet.)	2	0.2 0.4	2	28.0
<i>Batea bathypneustis</i> A	2	0.2 0.4	2	28.0
<i>Natica pusilla</i> (M)	2	0.2 0.4	2	28.0
<i>Mulinia lateralis</i> (M)	2	0.2 0.4	2	28.0
<i>Scoloplos rubra</i> (P)	2	0.2 0.4	2	28.0
<i>Nyctera capitata</i> (P)	2	0.2 0.4	2	28.0
<i>Seriatonereis irritabilis</i> (P)	2	0.2 0.4	2	28.0

Table 40. Abundance of macroinvertebrate species in grab collections from station DS03. (A = Amphipoda; C = Crustacea; Gn = Gnidaria; D = Decapoda; M = Mollusca; P = Polychaeta).

DS03					
Species	Total Number	Number 0.1m ² $\bar{X}$	SD	Estimated Number m ²	Rank by Number
<i>Spiothanes bombyx</i> (P)	81	16.2	8.2	162	1.0
<i>Nepatys picta</i> (P)	79	15.8	7.4	158	2.0
<i>Magelona phyllisae</i> (P)	12	2.4	2.3	24	3.0
<i>Notomastus lobatus</i> (P)	9	1.8	1.8	18	4.5
<i>Prionospio davi</i> (P)	9	1.8	1.1	18	4.5
<i>Caprellaspionopsis fragilis</i> (P)	7	1.4	0.9	14	6.0
<i>Caprellanassa atlantica</i> (D)	6	1.2	0.8	12	7.5
<i>Phyllodoce areolaris</i> (P)	6	1.2	1.1	12	7.5
Nemertina (undet.) A	5	1.0	0.7	10	10.5
<i>Tellina iris</i> (M)	5	1.0	0.7	10	10.5
<i>Neritoides</i> sp. (P)	5	1.0	1.0	10	10.5
<i>Aglaopneustes vermiculatus</i> (P)	5	1.0	0.7	10	10.5
<i>Exoristoides limicola</i> (C)	4	0.8	0.4	8	14.5
<i>Solen viridis</i> (M)	4	0.8	1.3	8	14.5
<i>Hydra subbranchiata</i> (P)	4	0.8	0.8	8	14.5
<i>Amphiprion eremita</i> (P)	4	0.8	1.1	8	14.5
<i>Brachyura</i> (undet.) B (D)	3	0.6	0.9	6	18.5
<i>Tharyx marioni</i> (P)	3	0.6	0.5	6	18.5
<i>Conidae listeria</i> (P)	3	0.6	0.5	6	18.5
<i>Magelona rosea</i> (P)	3	0.6	0.9	6	18.5
<i>Magelona</i> sp. (Dav. '13) (P)	2	0.4	0.9	4	22.5
<i>Scaloplos rubra</i> (P)	2	0.4	0.5	4	22.5
<i>Paraprionospio pinnata</i> (P)	2	0.4	0.5	4	22.5
<i>Stenopella limicola</i> (P)	2	0.4	0.9	4	22.5
<i>Leptopneustes serratorobita</i> (D)	1	0.2	0.4	2	33.0
<i>Albunea paretii</i> (D)	1	0.2	0.4	2	33.0
<i>Pinnixa savana</i> (D)	1	0.2	0.4	2	33.0
<i>Histiella barnardi</i> (A)	1	0.2	0.4	2	33.0
<i>Exoristoides smithi</i> (C)	1	0.2	0.4	2	33.0
<i>Pseudoplatyphmaeus floridanus</i> (A)	1	0.2	0.4	2	33.0
<i>Renilla reniformis</i> (Gn)	1	0.2	0.4	2	33.0
<i>Marisa pusilla</i> (M)	1	0.2	0.4	2	33.0
<i>Modiolus</i> sp. A (M)	1	0.2	0.4	2	33.0
<i>Lucinidae</i> (undet.) A (M)	1	0.2	0.4	2	33.0
<i>Abra aequalis</i> (M)	1	0.2	0.4	2	33.0
<i>Ambrineris impatiens</i> (P)	1	0.2	0.4	2	33.0
<i>Hydra</i> sp. (Det.) (P)	1	0.2	0.4	2	33.0
<i>Stoena lactea</i> (P)	1	0.2	0.4	2	33.0
<i>Ambrineris sicreilli</i> (P)	1	0.2	0.4	2	33.0
<i>Wentia fusiformis</i> (P)	1	0.2	0.4	2	33.0
<i>Magelona papillicornis</i> (P)	1	0.2	0.4	2	33.0

Table 40. Abundance of macroinvertebrate species in grab collections from station DS14. (A = Amphipoda; C = Cumacea; Cn = Cnidaria; D = Decapoda; E = Echinodermata; M = Mollusca; P = Polychaeta; St = Stomatopoda).

Species	DS14			Estimated Number m ⁻²	Rank by Number
	Total Number	Number g	0.1m ² SD		
<i>Spioptanus banyx</i> (P)	96	14.2	13.6	192	1.0
<i>Magelona</i> sp. (Dav 73) (P)	62	12.4	7.6	124	2.0
<i>Nephtys pitta</i> (P)	34	6.8	3.2	68	3.0
<i>Onuphis eremita</i> (P)	18	3.6	2.1	36	4.5
<i>Notocirrus spiniferus</i> (P)	18	3.6	1.1	36	4.5
<i>Callinassa atlantica</i> (D)	9	1.8	1.9	18	7.5
<i>Tigon tropakis</i> (A)	9	1.8	1.1	18	7.5
<i>Cirratulus</i> sp. (P)	9	1.8	1.5	18	7.5
<i>Plumella torquata</i> (P)	9	1.8	1.9	18	7.5
<i>Pinnixa sayana</i> (D)	9	1.8	1.5	18	10.0
<i>Laeonereis acuta</i> (P)	7	1.4	1.5	14	11.5
<i>Urechis caupo</i> (P)	7	1.4	1.1	14	11.5
<i>Tellina texana</i> (M)	7	1.2	2.2	12	13.5
<i>Pelecypoda</i> (undet.) B	7	1.2	1.3	12	15.5
<i>Tharyx marioni</i> (P)	7	1.2	0.8	12	15.5
<i>Notomastus hemipodus</i> (P)	7	1.2	1.5	12	15.5
<i>Nyctera dibranthiata</i> (P)	7	1.2	1.3	12	15.5
<i>Haploscoloplos fragilis</i> (P)	7	1.2	1.8	12	15.5
<i>Nemertina</i> (undet.) A	7	1.0	1.2	10	20.5
<i>Sigambra tentaculata</i> (P)	5	1.0	1.2	10	20.5
<i>Magelona ptychostoma</i> (P)	5	1.0	1.4	10	20.5
<i>Phyllodoce iredalei</i> (P)	5	1.0	1.7	10	20.5
<i>Nyctera americana</i> (P)	4	0.8	0.8	8	24.0
<i>Scoloplos rubra</i> (P)	4	0.8	0.8	8	24.0
<i>Lionia littorea</i> (P)	4	0.8	0.8	8	24.0
<i>Dissodactylus melitae</i> (D)	3	0.6	1.3	6	28.0
<i>Batea catharinensis</i> (A)	3	0.6	0.9	6	28.0
<i>Solen viridis</i> (M)	3	0.6	0.5	6	28.0
<i>Microclymene gonialis</i> (P)	3	0.6	0.7	6	28.0
<i>Armandia agilis</i> (P)	3	0.6	0.9	6	28.0
<i>Oxyurostylis smithi</i> (C)	2	0.4	0.5	4	32.5
<i>Nemertina</i> (undet.) B	2	0.4	0.9	4	32.5
<i>Mellita quinquesperforata</i> (E)	2	0.4	0.9	4	32.5
<i>Tellina iris</i> (M)	2	0.4	0.5	4	32.5
<i>Brachyura</i> (undet.) A, D	1	0.2	0.4	2	45.5
<i>Pagurus longicarpus</i> (D)	1	0.2	0.4	2	45.5
<i>Stomatopoda</i> (St)	1	0.2	0.4	2	45.5
<i>Pseudopluteus</i> (P)	1	0.2	0.4	2	45.5
<i>Melita appendiculata</i> (A)	1	0.2	0.4	2	45.5
<i>Actinularia</i> (undet.) (Cn)	1	0.2	0.4	2	45.5
<i>Ophiuridea</i> (undet.) B, E	1	0.2	0.4	2	45.5
<i>Parthenella</i> sp. A (M)	1	0.2	0.4	2	45.5
<i>Eusynbranchia</i> (M)	1	0.2	0.4	2	45.5
<i>Aora nequalis</i> (M)	1	0.2	0.4	2	45.5
<i>Termodon</i> (M)	1	0.2	0.4	2	45.5
Unknown Taxon A	1	0.2	0.4	2	45.5
<i>Labellaria vulgaris</i> (P)	1	0.2	0.4	2	45.5
<i>Nyctera</i> sp. (Gar.) (P)	1	0.2	0.4	2	45.5
<i>Aglaopneustes</i> (P)	1	0.2	0.4	2	45.5
<i>Umbrinaria latreilli</i> (P)	1	0.2	0.4	2	45.5
<i>Paranulius polynoides</i> (P)	1	0.2	0.4	2	45.5
<i>Paranulius</i> (P)	1	0.2	0.4	2	45.5
<i>Arasella triangularis</i> (P)	1	0.2	0.4	2	45.5
<i>Arasella magna</i> (P)	1	0.2	0.4	2	45.5
<i>Paranulius pinnatus</i> (P)	1	0.2	0.4	2	45.5
<i>Paranulius</i> (P)	1	0.2	0.4	2	45.5

Table 4. Abundance of macroinvertebrate species in grab collections from station 05. A = Annelida; Br = Brachiozoa; C = Ctenophorata; D = Decapoda; E = Echinodermata; I = Insecta; M = Mollusca; P = Polychaeta; S = Siphonophora.

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Table 48. Abundance of macroinvertebrate species in trap collections from station ES06. A = Amphipoda; Br = Branchiopoda; C = Crustacea; Co = Corophiidae; D = Decapoda; E = Echinodermata; Fy = Euphyra; I = Isopoda; M = Mollusca; Mu = Muscidae; P = Polychaeta; Pn = Pteronarcissidae; S = Sipunculidae.

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Table 4. Abundance of 14 invertebrate species in trap collections from station 08. A = Amphipoda; Br = Crustacea; C = Cnidaria; G = Gephyrotrichia; H = Hydaria; I = Isopoda; M = Mollusca; N = Nematoda; P = Polychaeta; S = Sipunculida.

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Table 1. Abundance of macroinvertebrate species in grab collection from station 18 m. A = Amphipoda; B = Bivalvia; C = Crustacea; D = Decapoda; E = Echinoidea; F = Fish; G = Gastropoda; H = Hemichordata; I = Isopoda; J = Mollusca; K = Nematoda; L = Polychaeta; M = Sipuncularia.

Species	1958				Rank by Number
	Total Number	Number 3.1m ² S	Number 3.1m ² D	Estimated Number N	
Amphipoda sp. A	101	20.2	22.1	202	1.3
Amphipoda sp. B	93	12.9	12.2	126	2.1
Amphipoda sp. C	37	7.4	4.1	74	3.1
Amphipoda sp. D	35	7.0	6.2	70	4.1
Amphipoda sp. E	27	5.4	5.2	54	5.1
Amphipoda sp. F	26	3.0	2.4	51	6.1
Amphipoda sp. G	25	5.0	3.7	50	6.5
Amphipoda sp. H	16	3.2	1.3	32	8.1
Amphipoda sp. I	15	3.0	1.2	30	8.5
Amphipoda sp. J	14	2.8	3.0	28	10.1
Amphipoda sp. K	13	2.5	2.5	26	11.1
Amphipoda sp. L	10	2.0	3.1	20	12.1
Amphipoda sp. M	8	1.6	2.9	16	13.1
Amphipoda sp. N	8	1.5	3.0	16	13.5
Amphipoda sp. O	7	1.4	1.1	14	14.1
Amphipoda sp. P	7	1.4	0.8	14	14.5
Amphipoda sp. Q	7	1.4	1.2	14	14.9
Amphipoda sp. R	7	1.4	1.1	14	15.1
Amphipoda sp. S	7	1.4	1.5	14	15.5
Amphipoda sp. T	7	1.4	2.1	14	15.9
Amphipoda sp. U	7	1.4	1.4	14	16.1
Amphipoda sp. V	7	1.4	1.1	14	16.5
Amphipoda sp. W	7	1.4	1.1	14	16.9
Amphipoda sp. X	7	1.4	1.1	14	17.1
Amphipoda sp. Y	7	1.4	1.1	14	17.5
Amphipoda sp. Z	7	1.4	1.1	14	17.9
Amphipoda sp. AA	7	1.4	1.1	14	18.1
Amphipoda sp. AB	7	1.4	1.1	14	18.5
Amphipoda sp. AC	7	1.4	1.1	14	18.9
Amphipoda sp. AD	7	1.4	1.1	14	19.1
Amphipoda sp. AE	7	1.4	1.1	14	19.5
Amphipoda sp. AF	7	1.4	1.1	14	19.9
Amphipoda sp. AG	7	1.4	1.1	14	20.1
Amphipoda sp. AH	7	1.4	1.1	14	20.5
Amphipoda sp. AI	7	1.4	1.1	14	20.9
Amphipoda sp. AJ	7	1.4	1.1	14	21.1
Amphipoda sp. AK	7	1.4	1.1	14	21.5
Amphipoda sp. AL	7	1.4	1.1	14	21.9
Amphipoda sp. AM	7	1.4	1.1	14	22.1
Amphipoda sp. AN	7	1.4	1.1	14	22.5
Amphipoda sp. AO	7	1.4	1.1	14	22.9
Amphipoda sp. AP	7	1.4	1.1	14	23.1
Amphipoda sp. AQ	7	1.4	1.1	14	23.5
Amphipoda sp. AR	7	1.4	1.1	14	23.9
Amphipoda sp. AS	7	1.4	1.1	14	24.1
Amphipoda sp. AT	7	1.4	1.1	14	24.5
Amphipoda sp. AU	7	1.4	1.1	14	24.9
Amphipoda sp. AV	7	1.4	1.1	14	25.1
Amphipoda sp. AW	7	1.4	1.1	14	25.5
Amphipoda sp. AX	7	1.4	1.1	14	25.9
Amphipoda sp. AY	7	1.4	1.1	14	26.1
Amphipoda sp. AZ	7	1.4	1.1	14	26.5
Amphipoda sp. BA	7	1.4	1.1	14	26.9
Amphipoda sp. BB	7	1.4	1.1	14	27.1
Amphipoda sp. BC	7	1.4	1.1	14	27.5
Amphipoda sp. BD	7	1.4	1.1	14	27.9
Amphipoda sp. BE	7	1.4	1.1	14	28.1
Amphipoda sp. BF	7	1.4	1.1	14	28.5
Amphipoda sp. BG	7	1.4	1.1	14	28.9
Amphipoda sp. BH	7	1.4	1.1	14	29.1
Amphipoda sp. BI	7	1.4	1.1	14	29.5
Amphipoda sp. BJ	7	1.4	1.1	14	29.9
Amphipoda sp. BK	7	1.4	1.1	14	30.1
Amphipoda sp. BL	7	1.4	1.1	14	30.5
Amphipoda sp. BM	7	1.4	1.1	14	30.9
Amphipoda sp. BN	7	1.4	1.1	14	31.1
Amphipoda sp. BO	7	1.4	1.1	14	31.5
Amphipoda sp. BP	7	1.4	1.1	14	31.9
Amphipoda sp. BQ	7	1.4	1.1	14	32.1
Amphipoda sp. BR	7	1.4	1.1	14	32.5
Amphipoda sp. BS	7	1.4	1.1	14	32.9
Amphipoda sp. BT	7	1.4	1.1	14	33.1
Amphipoda sp. BU	7	1.4	1.1	14	33.5
Amphipoda sp. BV	7	1.4	1.1	14	33.9
Amphipoda sp. BW	7	1.4	1.1	14	34.1
Amphipoda sp. BX	7	1.4	1.1	14	34.5
Amphipoda sp. BY	7	1.4	1.1	14	34.9
Amphipoda sp. BZ	7	1.4	1.1	14	35.1
Amphipoda sp. CA	7	1.4	1.1	14	35.5
Amphipoda sp. CB	7	1.4	1.1	14	35.9
Amphipoda sp. CC	7	1.4	1.1	14	36.1
Amphipoda sp. CD	7	1.4	1.1	14	36.5
Amphipoda sp. CE	7	1.4	1.1	14	36.9
Amphipoda sp. CF	7	1.4	1.1	14	37.1
Amphipoda sp. CG	7	1.4	1.1	14	37.5
Amphipoda sp. CH	7	1.4	1.1	14	37.9
Amphipoda sp. CI	7	1.4	1.1	14	38.1
Amphipoda sp. CJ	7	1.4	1.1	14	38.5
Amphipoda sp. CK	7	1.4	1.1	14	38.9
Amphipoda sp. CL	7	1.4	1.1	14	39.1
Amphipoda sp. CM	7	1.4	1.1	14	39.5
Amphipoda sp. CN	7	1.4	1.1	14	39.9
Amphipoda sp. CO	7	1.4	1.1	14	40.1
Amphipoda sp. CP	7	1.4	1.1	14	40.5
Amphipoda sp. CQ	7	1.4	1.1	14	40.9
Amphipoda sp. CR	7	1.4	1.1	14	41.1
Amphipoda sp. CS	7	1.4	1.1	14	41.5
Amphipoda sp. CT	7	1.4	1.1	14	41.9
Amphipoda sp. CU	7	1.4	1.1	14	42.1
Amphipoda sp. CV	7	1.4	1.1	14	42.5
Amphipoda sp. CW	7	1.4	1.1	14	42.9
Amphipoda sp. CX	7	1.4	1.1	14	43.1
Amphipoda sp. CY	7	1.4	1.1	14	43.5
Amphipoda sp. CZ	7	1.4	1.1	14	43.9
Amphipoda sp. DA	7	1.4	1.1	14	44.1
Amphipoda sp. DB	7	1.4	1.1	14	44.5
Amphipoda sp. DC	7	1.4	1.1	14	44.9
Amphipoda sp. DD	7	1.4	1.1	14	45.1
Amphipoda sp. DE	7	1.4	1.1	14	45.5
Amphipoda sp. DF	7	1.4	1.1	14	45.9
Amphipoda sp. DG	7	1.4	1.1	14	46.1
Amphipoda sp. DH	7	1.4	1.1	14	46.5
Amphipoda sp. DI	7	1.4	1.1	14	46.9
Amphipoda sp. DJ	7	1.4	1.1	14	47.1
Amphipoda sp. DK	7	1.4	1.1	14	47.5
Amphipoda sp. DL	7	1.4	1.1	14	47.9
Amphipoda sp. DM	7	1.4	1.1	14	48.1
Amphipoda sp. DN	7	1.4	1.1	14	48.5
Amphipoda sp. DO	7	1.4	1.1	14	48.9
Amphipoda sp. DP	7	1.4	1.1	14	49.1
Amphipoda sp. DQ	7	1.4	1.1	14	49.5
Amphipoda sp. DR	7	1.4	1.1	14	49.9
Amphipoda sp. DS	7	1.4	1.1	14	50.1
Amphipoda sp. DT	7	1.4	1.1	14	50.5
Amphipoda sp. DU	7	1.4	1.1	14	50.9
Amphipoda sp. DV	7	1.4	1.1	14	51.1
Amphipoda sp. DW	7	1.4	1.1	14	51.5
Amphipoda sp. DX	7	1.4	1.1	14	51.9
Amphipoda sp. DY	7	1.4	1.1	14	52.1
Amphipoda sp. DZ	7	1.4	1.1	14	52.5
Amphipoda sp. EA	7	1.4	1.1	14	52.9
Amphipoda sp. EB	7	1.4	1.1	14	53.1
Amphipoda sp. EC	7	1.4	1.1	14	53.5
Amphipoda sp. ED	7	1.4	1.1	14	53.9
Amphipoda sp. EE	7	1.4	1.1	14	54.1
Amphipoda sp. EF	7	1.4	1.1	14	54.5
Amphipoda sp. EG	7	1.4	1.1	14	54.9
Amphipoda sp. EH	7	1.4	1.1	14	55.1
Amphipoda sp. EI	7	1.4	1.1	14	55.5
Amphipoda sp. EJ	7	1.4	1.1	14	55.9
Amphipoda sp. EK	7	1.4	1.1	14	56.1
Amphipoda sp. EL	7	1.4	1.1	14	56.5
Amphipoda sp. EM	7	1.4	1.1	14	56.9
Amphipoda sp. EN	7	1.4	1.1	14	57.1
Amphipoda sp. EO	7	1.4	1.1	14	57.5
Amphipoda sp. EP	7	1.4	1.1	14	57.9
Amphipoda sp. EQ	7	1.4	1.1	14	58.1
Amphipoda sp. ER	7	1.4	1.1	14	58.5
Amphipoda sp. ES	7	1.4	1.1	14	58.9
Amphipoda sp. ET	7	1.4	1.1	14	59.1
Amphipoda sp. EU	7	1.4	1.1	14	59.5
Amphipoda sp. EV	7	1.4	1.1	14	59.9
Amphipoda sp. EW	7	1.4	1.1	14	60.1
Amphipoda sp. EX	7	1.4	1.1	14	60.5
Amphipoda sp. EY	7	1.4	1.1	14	60.9
Amphipoda sp. EZ	7	1.4	1.1	14	61.1
Amphipoda sp. FA	7	1.4	1.1	14	61.5
Amphipoda sp. FB	7	1.4	1.1	14	61.9
Amphipoda sp. FC	7	1.4	1.1	14	62.1
Amphipoda sp. FD	7	1.4	1.1	14	62.5
Amphipoda sp. FE	7	1.4	1.1	14	62.9
Amphipoda sp. FF	7	1.4	1.1	14	63.1
Amphipoda sp. FG	7	1.4	1.1	14	63.5
Amphipoda sp. FH	7	1.4	1.1	14	63.9
Amphipoda sp. FI	7	1.4	1.1	14	64.1
Amphipoda sp. FJ	7	1.4	1.1	14	64.5
Amphipoda sp. FK	7	1.4	1.1	14	64.9
Amphipoda sp. FL	7	1.4	1.1	14	65.1
Amphipoda sp. FM	7	1.4	1.1	14	65.5
Amphipoda sp. FN	7	1.4	1.1	14	65.9
Amphipoda sp. FO	7	1.4	1.1	14	66.1
Amphipoda sp. FP	7	1.4	1.1	14	66.5
Amphipoda sp. FQ	7	1.4	1.1	14	66.9
Amphipoda sp. FR	7	1.4	1.1	14	67.1
Amphipoda sp. FS	7	1.4	1.1	14	67.5
Amphipoda sp. FT	7	1.4	1.1	14	67.9
Amphipoda sp. FU	7	1.4	1.1	14	68.1
Amphipoda sp. FV	7	1.4	1.1	14	68.5
Amphipoda sp. FW	7	1.4	1.1	14	68.9
Amphipoda sp. FX	7	1.4	1.1	14	69.1
Amphipoda sp. FY	7	1.4	1.1	14	69.5
Amphipoda sp. FZ	7	1.4	1.1	14	69.9
Amphipoda sp. GA	7	1.4	1.1	14	70.1
Amphipoda sp. GB	7	1.4	1.1	14	70.5
Amphipoda sp. GC	7	1.4	1.1	14	70.9
Amphipoda sp. GD	7	1.4	1.1	14	71.1
Amphipoda sp. GE	7	1.4	1.1	14	71.5
Amphipoda sp. GF	7	1.4	1.1	14	71.9
Amphipoda sp. GG	7	1.4	1.1	14	72.1
Amphipoda sp. GH	7	1.4	1.1	14	72.5
Amphipoda sp. GI	7	1.4	1.1	14	72.9
Amphipoda sp. GJ	7	1.4	1.1	14	73.1
Amphipoda sp. GK	7	1.4	1.1	14	73.5
Amphipoda sp. GL	7	1.4	1.1	14	73.9
Amphipoda sp. GM	7	1.4	1.1	14	74.1
Amphipoda sp. GN	7	1.4	1.1	14	74.5
Amphipoda sp. GO	7	1.4	1.1	14	74.9
Amphipoda sp. GP	7	1.4	1.1	14	75.1
Amphipoda sp. GQ	7	1.4	1.1	14	75.5
Amphipoda sp. GR	7	1.4	1.1	14	75.9
Amphipoda sp. GS	7	1.4	1.1	14	76.1
Amphipoda sp. GT	7	1.4	1.1	14	76.5
Amphipoda sp. GU	7	1.4	1.1	14	76.9
Amphipoda sp. GV	7	1.4	1.1	14	77.1
Amphipoda sp. GW	7	1.4	1.1	14	77.5
Amphipoda sp. GX	7	1.4	1.1	14	77.9
Amphipoda sp. GY	7	1.4	1.1	14	78.1
Amphipoda sp. GZ	7	1.4	1.1	14	78.5
Amphipoda sp. HA	7	1.4	1.1	14	78.9
Amphipoda sp. HB	7	1.4	1.1	14	79.1
Amphipoda sp. HC	7	1.4	1.1	14	79.5
Amphipoda sp. HD	7	1.4	1.1	14	79.9
Amphipoda sp. HE	7	1.4	1.1	14	80.1
Amphipoda sp. HF	7	1.4	1.1	14	80.5
Amphipoda sp. HG	7	1.4	1.1	14	80.9
Amphipoda sp. HH	7	1.4	1.1	14	81.1
Amphipoda sp. HI	7	1.4	1.1	14	81.5
Amphipoda sp. HJ	7	1.4	1.1	14	81.9

	Field Number	Number of Miles		Estimated Number of	Index
		W	S	Number of	Number
1	1	0.2	1.4	1	30.0
2	1	0.2	1.4	1	30.0
3	1	0.2	1.4	1	30.0
4	1	0.2	1.4	1	30.0
5	1	0.2	1.4	1	30.0
6	1	0.2	1.4	1	30.0
7	1	0.2	1.4	1	30.0
8	1	0.2	1.4	1	30.0
9	1	0.2	1.4	1	30.0
10	1	0.2	1.4	1	30.0
11	1	0.2	1.4	1	30.0
12	1	0.2	1.4	1	30.0
13	1	0.2	1.4	1	30.0
14	1	0.2	1.4	1	30.0
15	1	0.2	1.4	1	30.0
16	1	0.2	1.4	1	30.0
17	1	0.2	1.4	1	30.0
18	1	0.2	1.4	1	30.0
19	1	0.2	1.4	1	30.0
20	1	0.2	1.4	1	30.0
21	1	0.2	1.4	1	30.0
22	1	0.2	1.4	1	30.0
23	1	0.2	1.4	1	30.0
24	1	0.2	1.4	1	30.0
25	1	0.2	1.4	1	30.0
26	1	0.2	1.4	1	30.0
27	1	0.2	1.4	1	30.0
28	1	0.2	1.4	1	30.0
29	1	0.2	1.4	1	30.0
30	1	0.2	1.4	1	30.0
31	1	0.2	1.4	1	30.0
32	1	0.2	1.4	1	30.0
33	1	0.2	1.4	1	30.0
34	1	0.2	1.4	1	30.0
35	1	0.2	1.4	1	30.0
36	1	0.2	1.4	1	30.0
37	1	0.2	1.4	1	30.0
38	1	0.2	1.4	1	30.0
39	1	0.2	1.4	1	30.0
40	1	0.2	1.4	1	30.0
41	1	0.2	1.4	1	30.0
42	1	0.2	1.4	1	30.0
43	1	0.2	1.4	1	30.0
44	1	0.2	1.4	1	30.0
45	1	0.2	1.4	1	30.0
46	1	0.2	1.4	1	30.0
47	1	0.2	1.4	1	30.0
48	1	0.2	1.4	1	30.0
49	1	0.2	1.4	1	30.0
50	1	0.2	1.4	1	30.0
51	1	0.2	1.4	1	30.0
52	1	0.2	1.4	1	30.0
53	1	0.2	1.4	1	30.0
54	1	0.2	1.4	1	30.0
55	1	0.2	1.4	1	30.0
56	1	0.2	1.4	1	30.0
57	1	0.2	1.4	1	30.0
58	1	0.2	1.4	1	30.0
59	1	0.2	1.4	1	30.0
60	1	0.2	1.4	1	30.0
61	1	0.2	1.4	1	30.0
62	1	0.2	1.4	1	30.0
63	1	0.2	1.4	1	30.0
64	1	0.2	1.4	1	30.0
65	1	0.2	1.4	1	30.0
66	1	0.2	1.4	1	30.0
67	1	0.2	1.4	1	30.0
68	1	0.2	1.4	1	30.0
69	1	0.2	1.4	1	30.0
70	1	0.2	1.4	1	30.0
71	1	0.2	1.4	1	30.0
72	1	0.2	1.4	1	30.0
73	1	0.2	1.4	1	30.0
74	1	0.2	1.4	1	30.0
75	1	0.2	1.4	1	30.0
76	1	0.2	1.4	1	30.0
77	1	0.2	1.4	1	30.0
78	1	0.2	1.4	1	30.0
79	1	0.2	1.4	1	30.0
80	1	0.2	1.4	1	30.0
81	1	0.2	1.4	1	30.0
82	1	0.2	1.4	1	30.0
83	1	0.2	1.4	1	30.0
84	1	0.2	1.4	1	30.0
85	1	0.2	1.4	1	30.0
86	1	0.2	1.4	1	30.0
87	1	0.2	1.4	1	30.0
88	1	0.2	1.4	1	30.0
89	1	0.2	1.4	1	30.0
90	1	0.2	1.4	1	30.0
91	1	0.2	1.4	1	30.0
92	1	0.2	1.4	1	30.0
93	1	0.2	1.4	1	30.0
94	1	0.2	1.4	1	30.0
95	1	0.2	1.4	1	30.0
96	1	0.2	1.4	1	30.0
97	1	0.2	1.4	1	30.0
98	1	0.2	1.4	1	30.0
99	1	0.2	1.4	1	30.0
100	1	0.2	1.4	1	30.0

Table 51. Abundance of macroinvertebrate species in grab collections from station DS09. A = Amphipoda; C = Cumacea; Ce = Cephalochordata; Ch = Chydaria; D = Decapoda; E = Echinodermata; Ec = Ectopoda; I = Isopoda; M = Mollusca; Ny = Nysidacea; P = Polychaeta; S = Sipunculida; T = Tanaidacea.

Species	Total Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
		X	SD		
<i>Branchiostoma caribaeum</i> (Co)	27	13.4	10.0	134	1.0
<i>Protonaustorius</i> nr. <i>deichmannae</i> (A)	29	5.3	5.0	58	2.0
<i>Tellina propriina</i> (M)	25	5.0	4.4	50	3.0
<i>Anumalis arenita</i> (P)	23	4.6	2.5	46	4.0
<i>Myiaster axycephala</i> (P)	19	3.8	3.1	38	5.0
<i>Acanthohaustorius willsi</i> (A)	18	3.6	4.0	36	7.5
<i>Aspidosiphon spinalis</i> (S)	18	3.6	2.6	36	7.5
<i>Myxotus picta</i> (P)	18	3.6	2.1	36	7.5
<i>Prionospio cristata</i> (P)	18	3.6	2.4	36	7.5
<i>Acanthohaustorius</i> sp. (A)	15	3.0	2.4	30	10.0
<i>Velutina thalassioleporata</i> (E)	12	2.4	2.3	24	11.5
<i>Eryllia concentrica</i> (M)	12	2.4	1.5	24	11.5
Nematoda (undet.)	10	2.0	1.4	20	13.5
<i>Lipuladria loma</i> (E)	10	2.0	1.6	20	13.5
<i>Apantura magnifica</i> (P)	8	1.6	0.9	16	15.5
<i>Crassinella martinicensis</i> (M)	8	1.6	2.5	16	15.5
<i>Oligochaeta</i> (undet.)	7	1.4	1.7	14	17.0
<i>Trichophoxus floridanus</i> (A)	6	1.2	0.4	12	20.0
<i>Strigilla mirabilis</i> (M)	6	1.2	1.6	12	20.0
<i>Prionospio fallax</i> (P)	6	1.2	2.2	12	20.0
<i>Diapatra eureka</i> (P)	6	1.2	2.2	12	20.0
<i>Temipodus roseus</i> (P)	6	1.2	2.2	12	20.0
<i>Myurostylis smithi</i> (C)	6	1.0	1.2	10	24.0
<i>Ancinus depressus</i> (P)	6	1.0	1.0	10	24.0
Nemertina (undet.) A	6	1.0	1.2	10	24.0
Nemertina (undet.) B	4	0.8	0.8	8	27.5
<i>Discoporella umbellata</i> (E)	4	0.8	1.3	8	27.5
<i>Abra aequalis</i> (M)	4	0.8	1.1	8	27.5
<i>Spis pettiboneae</i> (P)	4	0.8	1.3	8	27.5
<i>Trichophoxus epistomus</i> (A)	3	0.6	1.3	6	32.5
<i>Crathura burbancki</i> (P)	3	0.6	1.3	6	32.5
<i>Pseudoplatyschnopus floridanus</i> (A)	3	0.6	0.9	6	32.5
<i>Semele quadrifida</i> (M)	3	0.6	1.3	6	32.5
<i>Cirratulidae</i> (undet.) 3 (P)	3	0.6	0.9	6	32.5
<i>Spionanthes bombyx</i> (P)	3	0.6	0.5	6	32.5
<i>Pagurus longicarpus</i> (D)	2	0.4	0.9	4	41.0
<i>Pinnixa savana</i> (D)	2	0.4	0.5	4	41.0
Amphipoda (undet.) A	2	0.4	0.5	4	41.0
<i>Diastrea</i> sp. A (M)	2	0.4	0.5	4	41.0
<i>Leptognathia laeta</i> (P)	2	0.4	0.5	4	41.0
<i>Crepidula</i> sp. (M)	2	0.4	0.9	4	41.0
<i>Tridula solidissima</i> (M)	2	0.4	1.5	4	41.0
<i>Crassinella lunulata</i> (M)	2	0.4	0.9	4	41.0
<i>Oniadifides caroliniae</i> (P)	2	0.4	0.9	4	41.0
<i>Paranais</i> sp. A (P)	2	0.4	0.9	4	41.0
<i>Myxotus buccera</i> (P)	2	0.4	0.9	4	41.0
<i>Amerita talpida</i> (D)	1	0.2	0.4	2	61.0
<i>Pinnixa</i> sp. (D)	1	0.2	0.4	2	61.0
<i>Maera caroliniana</i> (A)	1	0.2	0.4	2	61.0
<i>Melita nitida</i> (A)	1	0.2	0.4	2	61.0
<i>Campos smithi</i> (A)	1	0.2	0.4	2	61.0
<i>Uca pinnaxia</i> (A)	1	0.2	0.4	2	61.0
<i>Acteocina</i> (undet.) (M)	1	0.2	0.4	2	61.0
<i>Corbellaria</i> (undet.)	1	0.2	0.4	2	61.0
<i>Onchidaria angulata</i> (P)	1	0.2	0.4	2	61.0
<i>Maera caroliniana</i> sp. A (P)	1	0.2	0.4	2	61.0
<i>Melita nitida</i> (M)	1	0.2	0.4	2	61.0
<i>Onchidaria</i> (undet.) (P)	1	0.2	0.4	2	61.0
<i>Onchidaria caroliniana</i> (M)	1	0.2	0.4	2	61.0
<i>Maera caroliniana</i> (M)	1	0.2	0.4	2	61.0
<i>Melita nitida</i> sp. (P)	1	0.2	0.4	2	61.0

Table 22 (Cont.)

Species	Total Number	Number of Estimates		Rank by Number
		T	S	
<i>Lonilla litoralis</i> (P)	1	0.2	0.4	61.0
<i>Cambrinaria latroclia</i> (P)	1	0.2	0.4	61.0
<i>Androstachys liliifolia</i> (P)	1	0.2	0.4	61.0
<i>Neptis inula</i> (P)	1	0.2	0.4	61.0
<i>Notomastix hemionias</i> (P)	1	0.2	0.4	61.0
<i>Polysora</i> sp. A (P)	1	0.2	0.4	61.0
<i>Polysora</i> sp. B (P)	1	0.2	0.4	61.0
<i>Membrana candida</i> (P)	1	0.2	0.4	61.0
<i>Synaldis albini</i> (P)	1	0.2	0.4	61.0
<i>Prinospha microbrachia</i> (P)	1	0.2	0.4	61.0
<i>Arundia maculata</i> (P)	1	0.2	0.4	61.0
<i>Quillorilla killarneyensis</i> (P)	1	0.2	0.4	61.0
<i>Quillorilla aranea</i> (P)	1	0.2	0.4	61.0
<i>Orbitasteris aranea</i> (P)	1	0.2	0.4	61.0

Table 24. Abundance of macroinvertebrate species in grab collections from station DS10. (A = Amphipoda; C = Crustacea; Co = Cephalopoda; E = Echinodermata; Fo = Ectoparasites; I = Isopoda; M = Mollusca; P = Polychaeta).

[illegible]

D

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Fig. 10. Abundance of macroinvertebrate species in grab collections from station DS12. A = Annelida; C = Cumacea; D = Decapoda; E = Echinodermata; H = Ectoprocta; M = Mollusca; My = Mysidacea; S = Sipunculida; P = Polychaeta; Ph = Phoronida.

DS12					
Species	Total Number	Number/0.1m ² X	SD	Estimated Number	Rank
<i>Protomastix</i> sp. <i>del. unum</i> A	97	19.4	13.4	194	1.0
<i>Metilia</i> <i>inductus</i> sp. <i>del. unum</i> B	47	9.4	3.3	34	2.0
<i>Parasit</i> <i>del. unum</i> C	29	5.8	9.1	58	3.0
<i>Del. unum</i> <i>del. unum</i> D	23	4.6	1.9	46	4.0
<i>Del. unum</i> <i>del. unum</i> E	21	4.2	3.6	21	5.0
<i>Del. unum</i> <i>del. unum</i> F	17	3.4	2.4	34	6.0
<i>Del. unum</i> <i>del. unum</i> G	17	3.4	1.3	34	6.0
<i>Del. unum</i> <i>del. unum</i> H	12	2.4	2.5	24	8.0
<i>Del. unum</i> <i>del. unum</i> I	10	2.0	1.0	20	9.0
<i>Del. unum</i> <i>del. unum</i> J	10	2.0	1.0	20	9.0
<i>Del. unum</i> <i>del. unum</i> K	3	1.0	0.9	16	11.0
<i>Del. unum</i> <i>del. unum</i> L	3	1.0	1.1	14	12.0
<i>Del. unum</i> <i>del. unum</i> M	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> N	6	1.2	0.8	12	13.0
<i>Del. unum</i> <i>del. unum</i> O	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> P	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> Q	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> R	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> S	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> T	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> U	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> V	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> W	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> X	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> Y	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> Z	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AA	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AB	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AC	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AD	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AE	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AF	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AG	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AH	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AI	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AJ	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AK	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AL	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AM	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AN	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AO	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AP	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AQ	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AR	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AS	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AT	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AU	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AV	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AW	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AX	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AY	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> AZ	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BA	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BB	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BC	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BD	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BE	6	1.2	1.1	12	13.0
<i>Del. unum</i> <i>del. unum</i> BF	6	1.2	1.1	12	13.0

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Species	Total Number	Number Collected	Estimated Number	Rank by Number
<i>Drepanaspis lavi</i> (P)	2	0.4	0.8	169
<i>Schistocerca gregaria</i> (P)	2	0.4	0.8	170
<i>Aphis persici</i> (D)	1	0.2	0.4	171
<i>Latreutes parvulus</i> (D)	1	0.2	0.4	172
<i>Euclyptus pteridivorus</i> (D)	1	0.2	0.4	173
<i>Brachymeria</i> (undet.) (D)	1	0.2	0.4	174
<i>Pentatomidae</i> (undet.) (D)	1	0.2	0.4	175
<i>Proctosia nemphillii</i> (D)	1	0.2	0.4	176
<i>Euthyporeia parkeri</i> (A)	1	0.2	0.4	177
<i>Lemnos unicornis</i> (A)	1	0.2	0.4	178
<i>Rudilemboides</i> sp. (A)	1	0.2	0.4	179
<i>Hillebergia</i> sp. (A)	1	0.2	0.4	180
<i>Cystanopsis alba</i> (A)	1	0.2	0.4	181
<i>Mysidacea</i> (undet.) (T)	1	0.2	0.4	182
<i>Mysidopsis bigelowi</i> (M)	1	0.2	0.4	183
<i>Camidae</i> (undet.)	1	0.2	0.4	184
<i>Actiniaria</i> (undet.) (Op)	1	0.2	0.4	185
<i>Nemertina</i> (undet.) (B)	1	0.2	0.4	186
<i>Polychaeta angulata</i> (C)	1	0.2	0.4	187
<i>Arbacia punctulata</i> (E)	1	0.2	0.4	188
<i>Turridae</i> (undet.) (G)	1	0.2	0.4	189
<i>Gorbula macracantha</i> (M)	1	0.2	0.4	190
<i>Deleceopoda</i> (undet.) (F)	1	0.2	0.4	191
<i>Anacris avara</i> (M)	1	0.2	0.4	192
<i>Paronilla</i> sp. E (M)	1	0.2	0.4	193
<i>Paronilla</i> sp. F (M)	1	0.2	0.4	194
<i>Deleceopoda</i> (undet.) (K)	1	0.2	0.4	195
<i>Deleceopoda</i> (undet.)	1	0.2	0.4	196
<i>Lousia ovalina</i> (M)	1	0.2	0.4	197
<i>Stilbia macroceros</i> (P)	1	0.2	0.4	198
<i>Bergius verrucularis granulosa</i> (P)	1	0.2	0.4	199
<i>Megastoma</i> sp. B (P)	1	0.2	0.4	200
<i>Macropsa</i> sp. B (Mar.) (P)	1	0.2	0.4	201
<i>Cirratulus</i> sp. (P)	1	0.2	0.4	202
<i>Protodermella biferstadi</i> (P)	1	0.2	0.4	203
<i>Amalia littoralis</i> (P)	1	0.2	0.4	204
<i>Pasta cristata</i> (P)	1	0.2	0.4	205
<i>Metamastus lateripennis</i> (P)	1	0.2	0.4	206
<i>Alutera eximialis</i> (P)	1	0.2	0.4	207
<i>Platonicus rostratus</i> (P)	1	0.2	0.4	208
<i>Amalita ventralis</i> (P)	1	0.2	0.4	209
<i>Alutera lateralis</i> (P)	1	0.2	0.4	210
<i>Alutera</i> (undet.) (P)	1	0.2	0.4	211
<i>Parapneustes longirostris</i> (P)	1	0.2	0.4	212
<i>Alutera</i> (undet.) (P)	1	0.2	0.4	213
<i>Alutera</i> (undet.)	1	0.2	0.4	214
<i>Alutera</i> (undet.)	1	0.2	0.4	215
<i>Alutera</i> (undet.)	1	0.2	0.4	216
<i>Alutera</i> (undet.)	1	0.2	0.4	217
<i>Alutera</i> (undet.)	1	0.2	0.4	218
<i>Alutera</i> (undet.)	1	0.2	0.4	219
<i>Alutera</i> (undet.)	1	0.2	0.4	220

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Table 17. Abundance of major invertebrate species in arid collections (see Table 1 for abbreviations). L = Loricata; C = Ctenophora; D = Doliolida; S = Siphonophora; E = Ephyra; M = Medusae; Mo = Nematocystae; Sph = Siphonophora; Sim = Simuliidae.

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Table 10. Animals of the invertebrate species in trap collections from the island of Bonaire, 1961-1962.
 Br = Brachyura; Cr = Crustacea; D = Dentalia; H = Hemichordata; M = Mollusca; P = Polychaeta; S = Siphonophora;
 T = Tunicata.

Species	BS16				Rank by Number
	Total Number	Number X	1.1m- SD	Estimated Number per trap	
<i>Arachnospila caribbea</i> (D)	445	39.2	38.0	392	1.0
<i>Arachnospila caribbea</i> (D)	175	35.0	34.8	150	2.1
<i>Arachnospila caribbea</i> (D)	128	25.6	24.4	156	3.0
<i>Arachnospila caribbea</i> (D)	121	24.2	24.4	141	4.0
<i>Arachnospila caribbea</i> (D)	115	23.0	22.5	130	5.0
<i>Arachnospila caribbea</i> (D)	111	22.2	22.7	222	6.0
<i>Arachnospila caribbea</i> (D)	91	18.2	19.9	182	7.5
<i>Arachnospila caribbea</i> (D)	91	18.2	19.1	182	7.5
<i>Arachnospila caribbea</i> (D)	88	17.6	19.0	176	9.0
<i>Arachnospila caribbea</i> (D)	71	14.2	19.4	140	10.0
<i>Arachnospila caribbea</i> (D)	61	12.2	19.5	108	11.0
<i>Arachnospila caribbea</i> (D)	51	10.2	19.6	102	12.0
<i>Arachnospila caribbea</i> (D)	48	9.6	19.6	96	13.0
<i>Arachnospila caribbea</i> (D)	39	7.8	19.6	78	14.0
<i>Arachnospila caribbea</i> (D)	31	6.2	19.6	62	15.0
<i>Arachnospila caribbea</i> (D)	32	6.4	19.6	64	16.0
<i>Arachnospila caribbea</i> (D)	29	5.8	19.6	58	17.0
<i>Arachnospila caribbea</i> (D)	26	5.2	19.6	52	18.0
<i>Arachnospila caribbea</i> (D)	23	4.6	19.6	46	19.0
<i>Arachnospila caribbea</i> (D)	25	5.0	19.6	50	20.0
<i>Arachnospila caribbea</i> (D)	23	4.6	19.6	46	20.0
<i>Arachnospila caribbea</i> (D)	21	4.2	19.6	42	21.0
<i>Arachnospila caribbea</i> (D)	22	4.4	19.6	44	22.0
<i>Arachnospila caribbea</i> (D)	22	4.4	19.6	44	23.0
<i>Arachnospila caribbea</i> (D)	21	4.2	19.6	42	24.0
<i>Arachnospila caribbea</i> (D)	20	4.0	19.6	40	25.0
<i>Arachnospila caribbea</i> (D)	19	3.8	19.6	38	26.0
<i>Arachnospila caribbea</i> (D)	18	3.6	19.6	36	27.0
<i>Arachnospila caribbea</i> (D)	17	3.4	19.6	34	28.0
<i>Arachnospila caribbea</i> (D)	16	3.2	19.6	32	29.0
<i>Arachnospila caribbea</i> (D)	15	3.0	19.6	30	30.0
<i>Arachnospila caribbea</i> (D)	13	2.6	19.6	26	31.0
<i>Arachnospila caribbea</i> (D)	12	2.4	19.6	24	32.0
<i>Arachnospila caribbea</i> (D)	11	2.2	19.6	22	33.0
<i>Arachnospila caribbea</i> (D)	10	2.0	19.6	20	34.0
<i>Arachnospila caribbea</i> (D)	9	1.8	19.6	18	35.0
<i>Arachnospila caribbea</i> (D)	8	1.6	19.6	16	36.0
<i>Arachnospila caribbea</i> (D)	7	1.4	19.6	14	37.0
<i>Arachnospila caribbea</i> (D)	6	1.2	19.6	12	38.0
<i>Arachnospila caribbea</i> (D)	5	1.0	19.6	10	39.0
<i>Arachnospila caribbea</i> (D)	4	0.8	19.6	8	40.0
<i>Arachnospila caribbea</i> (D)	3	0.6	19.6	6	41.0
<i>Arachnospila caribbea</i> (D)	2	0.4	19.6	4	42.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	43.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	44.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	45.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	46.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	47.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	48.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	49.0
<i>Arachnospila caribbea</i> (D)	1	0.2	19.6	2	50.0

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Table 54. Abundance of macroinvertebrate species in grab collections from station DS17. (A = Amphipoda; C = Cumacea; Co = Cephalochordata; D = Decapoda; E = Echinodermata; Ec = Ectoprocta; I = Isopoda; M = Mollusca; My = Mysidacea; P = Polychaeta; S = Sipunculidae).

DS17

Species	Total Number	Number 0.1m ² X	SD	Estimated Number m ⁻²	Rank by Number
<i>Tellina pinnatifida</i> (M)	29	5.3	1.8	58	1.0
<i>Neratus pinnatus</i> (P)	24	4.8	1.3	48	2.0
<i>Protonaustorius</i> nr. <i>deichmanniae</i> (A)	23	4.6	2.9	46	3.5
<i>Mellita quinquesperforata</i> (E)	23	4.6	2.2	46	3.5
<i>Trithonopsis epistomus</i> (A)	21	4.2	0.3	42	5.5
<i>Strigilla mirabilis</i> (M)	21	4.2	4.9	42	5.5
<i>Bathynoreia parkeri</i> (A)	19	3.8	3.6	38	7.0
<i>Magelona</i> sp. (Day 73) (P)	18	3.6	5.4	36	8.0
<i>Ananthonaustorius</i> sp. (A)	16	3.2	2.0	32	9.0
<i>Spilopneustes bombyx</i> (P)	10	2.0	1.0	20	10.5
<i>Enoplos</i> <i>eremita</i> (P)	10	2.0	1.6	20	10.5
<i>Donatidorea</i> (undet.) A (E)	7	1.4	1.2	14	12.5
<i>Ervillea concentrica</i> (M)	7	1.4	0.5	14	12.5
<i>Nemertina</i> (undet.) A	6	1.2	0.8	12	15.0
<i>Lipularia domo</i> (Ec)	6	1.2	1.3	12	15.0
<i>Mytilus mytilus</i> (P)	6	1.2	2.2	12	15.0
<i>Mytilus smithi</i> (C)	5	1.0	1.2	10	17.0
<i>Lirion</i> <i>tropikis</i> (A)	4	0.8	0.8	8	19.0
<i>Aspidosiphon misakiensis</i> (S)	4	0.8	1.1	8	19.0
<i>Magelona papillicornis</i> (P)	4	0.8	1.3	8	19.0
<i>Pseudoplatysiphonopsis floridanus</i> (A)	3	0.6	0.5	6	23.0
<i>Turbellaria</i> (undet.)	3	0.6	0.9	6	23.0
<i>Discoporella umbellata</i> (Ec)	3	0.6	0.9	6	23.0
<i>Tellina texana</i> (M)	3	0.6	1.3	6	23.0
<i>Spilopneustes texana</i> (P)	3	0.6	0.9	6	23.0
<i>Alouana parvula</i> (D)	2	0.4	0.5	4	27.5
<i>Alouana</i> sp. A (M)	2	0.4	0.5	4	27.5
<i>Corbula littorea</i> (P)	2	0.4	0.5	4	27.5
<i>Clathrellidae</i> (undet.) B (P)	2	0.4	0.5	4	27.5
<i>Branchiostoma viribaeum</i> (Co)	1	0.2	0.4	2	41.5
<i>Figulus longicarpus</i> (D)	1	0.2	0.4	2	41.5
<i>Leptodopa websteri</i> (D)	1	0.2	0.4	2	41.5
<i>Syncheliidion americanum</i> A	1	0.2	0.4	2	41.5
Amphipoda (undet.) A	1	0.2	0.4	2	41.5
<i>Metridiosus</i> sp. A (My)	1	0.2	0.4	2	41.5
<i>Ampelisca verrilli</i> (A)	1	0.2	0.4	2	41.5
<i>Apanthura magnifica</i> I	1	0.2	0.4	2	41.5
<i>Nemertina</i> (undet.) B	1	0.2	0.4	2	41.5
<i>Caprellia</i> (indet.) (M)	1	0.2	0.4	2	41.5
<i>Antenna</i> (indet.) (M)	1	0.2	0.4	2	41.5
<i>Apachis robusta</i> (M)	1	0.2	0.4	2	41.5
<i>Alouana</i> sp. A (P)	1	0.2	0.4	2	41.5
<i>Aspidosiphon spinalis</i> (S)	1	0.2	0.4	2	41.5
<i>Magelona</i> sp. A (P)	1	0.2	0.4	2	41.5
<i>Tharax marioni</i> (P)	1	0.2	0.4	2	41.5
<i>Crangonopsis</i> (indet.) (P)	1	0.2	0.4	2	41.5
<i>Axiobella munda</i> (P)	1	0.2	0.4	2	41.5
<i>Stomatopus hemipodus</i> (P)	1	0.2	0.4	2	41.5
<i>Ovea fusiformis</i> (P)	1	0.2	0.4	2	41.5
<i>Orthoneris magna</i> (P)	1	0.2	0.4	2	41.5
<i>Arctidea</i> sp. A (P)	1	0.2	0.4	2	41.5
<i>Clidopoda</i> (undet.)	1	0.2	0.4	2	41.5
<i>Prionospio diva</i> (P)	1	0.2	0.4	2	41.5

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Table 20. Cont.

Species	DS18		Estimate: Number/m ²	Rank by Number
	Total Number	Number/0.1m ² $\bar{x}$ SD		
<i>Eurydice vittoralis</i> (A)	1	0.2 0.4	2	71.5
<i>Maera williamsi</i> (A)	1	0.2 0.4	2	71.5
<i>Amphiscia verrilli</i> (A)	1	0.2 0.4	2	71.5
<i>Batei batharinensis</i> (A)	1	0.2 0.4	2	71.5
<i>Ancinus depressus</i> (I)	1	0.2 0.4	2	71.5
<i>Coropium tuberculatum</i> (A)	1	0.2 0.4	2	71.5
<i>Holothuridea</i> (undet.) B (E)	1	0.2 0.4	2	71.5
<i>Illeptidia pyramidata</i> (Br)	1	0.2 0.4	2	71.5
<i>Discoporella umbellata</i> (E)	1	0.2 0.4	2	71.5
<i>Strigilla mirabilis</i> (M)	1	0.2 0.4	2	71.5
<i>Natica pusilla</i> (M)	1	0.2 0.4	2	71.5
<i>Tellina texana</i> (M)	1	0.2 0.4	2	71.5
<i>Semele bellastriata</i> (M)	1	0.2 0.4	2	71.5
<i>Semele maculipes</i> (M)	1	0.2 0.4	2	71.5
<i>Mitrella lunata</i> (M)	1	0.2 0.4	2	71.5
<i>Nucula proxima</i> (M)	1	0.2 0.4	2	71.5
<i>Spisula solidissima</i> (M)	1	0.2 0.4	2	71.5
<i>Pelecypoda</i> (undet.)	1	0.2 0.4	2	71.5
<i>Mytilus americana</i> (P)	1	0.2 0.4	2	71.5
<i>Magelona</i> sp. (Dav 70) (P)	1	0.2 0.4	2	71.5
<i>Subellaria vulgaris</i> (P)	1	0.2 0.4	2	71.5
<i>Ancistrosyllis jonesi</i> (P)	1	0.2 0.4	2	71.5
<i>Owenia fusiformis</i> (P)	1	0.2 0.4	2	71.5
<i>Scotolepis texana</i> (P)	1	0.2 0.4	2	71.5
<i>Micropoda</i> (undet.)	1	0.2 0.4	2	71.5
<i>Chrysopetalidae</i> (undet.) (P)	1	0.2 0.4	2	71.5

Table 11. Abundance of macroinvertebrate species in grab collections from station DS19. (A = Amphipoda; C = Cumacea; Co = Cephalochorita; D = Decapoda; E = Echinodermata; Ec = Ectoprocta; I = Isopoda; M = Mollusca; P = Polychaeta; S = Sipunculida).

DS19					
Species	Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
		$\bar{x}$	SD		
<i>Brachionostoma varibaeum</i> (Co)	37	7.4	13.3	74	1.0
<i>Tellina pectorata</i> (M)	35	7.0	4.0	70	2.5
<i>Onuphis aremita</i> (P)	35	7.0	7.0	70	2.5
<i>Spilophanes bombyx</i> (P)	27	5.4	4.9	54	4.0
<i>Acanthonaustorius</i> sp. (A)	25	5.0	4.5	50	5.0
<i>Scutigilla mirabilis</i> (M)	24	4.8	3.0	48	6.0
<i>Spio pettiboneae</i> (P)	21	4.2	7.7	42	7.0
Nematoda (undet.)	20	4.0	5.5	40	8.5
<i>Grassiniella lunulata</i> (M)	20	4.0	5.7	40	8.5
<i>Ionidiides carolinae</i> (P)	17	3.4	7.6	34	10.0
<i>Discoporella umbellata</i> (Ec)	16	3.2	2.4	32	11.5
<i>Prionospio fallax</i> (P)	16	3.2	7.2	32	11.5
<i>Sepidys pleta</i> (P)	13	2.6	2.6	26	13.0
<i>Irishophoxus floridanus</i> (A)	12	2.4	2.3	24	15.0
Nemertina (undet.) (A)	12	2.4	0.9	24	15.0
<i>Nycteri oxycephala</i> (P)	12	2.4	2.5	24	15.0
Lucinidae (undet.) (A, M)	11	2.2	2.8	22	17.0
<i>Pagurus longicarpus</i> (D)	10	2.0	4.5	20	18.5
<i>Pythura burbancki</i> (I)	10	2.0	2.3	20	18.5
<i>Bathyporeia parkeri</i> (A)	9	1.8	1.3	18	20.0
<i>Protonaustorius</i> nr. <i>Reichmannae</i> (A)	6	1.2	1.0	12	22.0
<i>Ervilia concentrica</i> (M)	6	1.2	1.1	12	22.0
<i>Pharyx parvoni</i> (P)	6	1.2	2.7	12	22.0
<i>Pseudoplatychnopus floridanus</i> (A)	5	1.0	1.0	10	24.0
<i>Heterosyrrya granulata</i> (D)	4	0.8	1.3	8	25.5
<i>Irishophoxus epistomus</i> (A)	4	0.8	0.4	8	25.5
Brachyura (undet.) (A, D)	3	0.6	0.5	6	30.0
<i>Oxyurascyllis smithi</i> (C)	3	0.6	0.9	6	30.0
<i>Lumbrineris latreilli</i> (P)	3	0.6	0.9	6	30.0
<i>Awenia fusiformis</i> (P)	3	0.6	1.3	6	30.0
<i>Armandia maculata</i> (P)	3	0.6	1.3	6	30.0
<i>Prionospio davi</i> (P)	3	0.6	0.9	6	30.0
<i>Elgamora bassi</i> (P)	3	0.6	0.9	6	30.0
<i>Lilljeborgia</i> sp. (A)	2	0.4	0.5	4	38.5
<i>Cyclaspis varians</i> (C)	2	0.4	0.5	4	38.5
<i>Mellita quinqueperforata</i> (Ec)	2	0.4	0.9	4	38.5
<i>Pholopragmus</i> sp. (A, Ec)	2	0.4	0.5	4	38.5
<i>Lupuladria roma</i> (Ec)	2	0.4	0.9	4	38.5
<i>Marellia</i> sp. (Dav) (B) (P)	2	0.4	0.9	4	38.5
<i>Scalopides rubra</i> (P)	2	0.4	0.5	4	38.5
<i>Teretis quadinea</i> (P)	2	0.4	0.5	4	38.5
Thysanotalidae (undet.) (P)	2	0.4	0.9	4	38.5
<i>Spilophanes wiglevi</i> (P)	2	0.4	0.9	4	38.5
<i>Albunea parvella</i> (D)	1	0.2	0.4	2	54.0
<i>Hepatus apneliticus</i> (D)	1	0.2	0.4	2	54.0
<i>Gambus unispinus</i> (A)	1	0.2	0.4	2	54.0
Amphipoda (undet.) (A)	1	0.2	0.4	2	54.0
<i>Hippomedon serratus</i> (A)	1	0.2	0.4	2	54.0
<i>Uron tropakis</i> (A)	1	0.2	0.4	2	54.0
<i>Diya savana</i> (M)	1	0.2	0.4	2	54.0
<i>Spisania solidissima</i> (M)	1	0.2	0.4	2	54.0
<i>Abra aequialis</i> (M)	1	0.2	0.4	2	54.0
<i>Alpheonulus nudus</i> (S)	1	0.2	0.4	2	54.0
<i>Teretis acuminata</i> (P)	1	0.2	0.4	2	54.0
<i>Anelasma willis</i> (P)	1	0.2	0.4	2	54.0
<i>Teretis willis</i> (P)	1	0.2	0.4	2	54.0
<i>Exochella pusilla</i> (P)	1	0.2	0.4	2	54.0
<i>Chironomus tentaculatus</i> (P)	1	0.2	0.4	2	54.0
<i>Teretis magna</i> (P)	1	0.2	0.4	2	54.0
<i>Marellia papilliformis</i> (P)	1	0.2	0.4	2	54.0
<i>Spisania regana</i> (P)	1	0.2	0.4	2	54.0
<i>Chironomus tentaculatus</i> (P)	1	0.2	0.4	2	54.0
<i>Teretis longicauda</i> (P)	1	0.2	0.4	2	54.0
<i>Teretis tentaculata</i> (P)	1	0.2	0.4	2	54.0

Table 21. Abundance of macroinvertebrate species in grab collections from station 0320. A = Amphipoda; Br = Brachiopoda; C = Crustacea; D = Decapoda; E = Echinodermata; Es = Eteopoda; I = Isopoda; M = Mollusca; P = Polychaeta; S = Sipunculidae.

Species	Total Number	Number 0.1m ²		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<i>Tellina proborn</i> (M)	103	20.6	13.2	106	1.9
<i>Discoporella umbellata</i> (Br)	33	6.6	5.0	66	2.5
<i>Nepentys picta</i> (P)	33	6.6	2.4	66	2.5
<i>Nematoda</i> (undet.)	24	4.8	5.6	48	4.0
<i>Spiothanes bombyx</i> (P)	23	4.6	1.8	46	5.0
<i>Acantnokaustorius</i> sp. (A)	20	4.0	3.8	40	6.5
<i>Trichophoxus epistomus</i> (A)	20	4.0	3.5	40	6.5
<i>Prionospio lavi</i> (P)	18	3.6	1.1	36	8.0
<i>Bathyporeia parkeri</i> (A)	17	3.4	4.3	34	9.0
<i>Strebella virabilis</i> (M)	15	3.0	2.1	30	10.5
<i>Alpheia exoccephala</i> (P)	15	3.0	2.3	30	10.5
<i>Prochaetopterus</i> sp. <i>schmanna</i> (A)	14	2.8	2.8	28	12.0
<i>Tellina texana</i> (M)	13	2.6	1.1	26	13.0
<i>Nemertina</i> (undet.) A	12	2.4	0.9	24	14.0
<i>Brachiostoma varibaeum</i> (D)	11	2.2	2.7	22	15.0
<i>Tiron tropakis</i> (A)	10	2.0	1.4	20	17.0
<i>Eryllia concentrica</i> (M)	10	2.0	0.7	20	17.0
<i>Magelona</i> sp. (Dav '73) (P)	10	2.0	1.0	20	17.0
<i>Yellia pinguicorporata</i> (E)	7	1.4	1.1	14	19.5
<i>Chironomus</i> sp. A (E)	7	1.4	1.1	14	19.5
<i>Pseudoplatyschnus floridanus</i> (A)	6	1.2	0.8	12	21.0
<i>Exurostylis smithi</i> (P)	5	1.0	1.4	10	22.5
<i>Onuphis fremia</i> (P)	5	1.0	1.2	10	22.5
<i>Synopelidion americanum</i> (A)	4	0.8	0.8	8	26.0
<i>Turbellaria</i> (undet.)	4	0.8	1.1	8	26.0
<i>Natica pusilla</i> (M)	4	0.8	0.4	8	26.0
<i>Crassinella lunulata</i> (M)	4	0.8	0.8	8	26.0
<i>Natica littorea</i> (P)	4	0.8	0.8	8	26.0
<i>Pagurus longicarpus</i> (D)	3	0.6	0.9	6	32.5
<i>Amphipoda</i> (undet.) A	3	0.6	1.3	6	32.5
<i>Aspidosiphon hispidus</i> (S)	3	0.6	0.9	6	32.5
<i>Azicampus verrilli</i> (P)	3	0.6	1.3	6	32.5
<i>Wenia fusiformis</i> (P)	3	0.6	0.8	6	32.5
<i>Magelona papillicornis</i> (P)	3	0.6	0.5	6	32.5
<i>Strebella texana</i> (P)	3	0.6	0.9	6	32.5
<i>Prionospio cristata</i> (P)	3	0.6	0.9	6	32.5
<i>Nemobius unicolor</i> (A)	2	0.4	0.9	4	42.0
<i>Astracoda</i> (undet.)	2	0.4	0.5	4	42.0
<i>Lacinidae</i> (undet.) A (M)	2	0.4	0.5	4	42.0
<i>Alpheia</i> sp. (Dav '73) (P)	2	0.4	0.5	4	42.0
<i>Arratellidae</i> (undet.) P (P)	2	0.4	0.4	4	42.0
<i>Nepentys incisa</i> (P)	2	0.4	0.9	4	42.0
<i>Nepentys arctica</i> (P)	2	0.4	0.9	4	42.0
<i>Aristidea</i> sp. A (P)	2	0.4	0.4	4	42.0
<i>Varionidae</i> (undet.) (P)	2	0.4	0.5	4	42.0
<i>Spio pettiboneae</i> (P)	2	0.4	0.9	4	42.0
<i>Haploscoloplos foliosus</i> (P)	2	0.4	0.9	4	42.0
<i>Crithopsis constrictus</i> (D)	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) A (D)	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) B (D)	1	0.2	0.4	2	48.5
<i>Corbula limicola</i> (D)	1	0.2	0.4	2	48.5
<i>Valispa stapperseni</i> (D)	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) C	1	0.2	0.4	2	48.5
<i>Trichophoxus floridanus</i> (A)	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) D	1	0.2	0.4	2	48.5
<i>Brachyura</i> sp. (Dav '73)	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) E	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) F	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) G	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) H	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) I	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) J	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) K	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) L	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) M	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) N	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) O	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) P	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) Q	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) R	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) S	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) T	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) U	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) V	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) W	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) X	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) Y	1	0.2	0.4	2	48.5
<i>Brachyura</i> (undet.) Z	1	0.2	0.4	2	48.5

Table 62. Cont.

(S2)

Species	Total Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
		$\bar{x}$	SD		
<u>Mitrella lunata</u> (M)	1	0.2	0.4	2	64.5
<u>Nama macerophylla</u> (M)	1	0.2	0.4	2	64.5
<u>Terebra consava</u> (M)	1	0.2	0.4	2	64.5
Unknown Taxon A	1	0.2	0.4	2	64.5
<u>Charyx marioni</u> (P)	1	0.2	0.4	2	64.5
<u>Eteone lactei</u> (P)	1	0.2	0.4	2	64.5
<u>Lumbrinereis lateralis</u> (P)	1	0.2	0.4	2	64.5
<u>Loimia medusa</u> (P)	1	0.2	0.4	2	64.5
<u>Arctidea suecica</u> (P)	1	0.2	0.4	2	64.5
<u>Onuphis nebulosa</u> (P)	1	0.2	0.4	2	64.5
<u>Spiochaetopterus costarum oculatus</u> (P)	1	0.2	0.4	2	64.5
<u>Diopatra cuprea</u> (P)	1	0.2	0.4	2	64.5
<u>Allogameta</u> (indet.)	1	0.2	0.4	2	64.5
<u>Notomirtus spiniferus</u> (P)	1	0.2	0.4	2	64.5
<u>Perone'llina</u> (indet.) (P)	1	0.2	0.4	2	64.5
<u>Thrysoetallina</u> (indet.) (P)	1	0.2	0.4	2	64.5

[illegible]

Table 99. Abundance of macroinvertebrate species in grab collections from station DS11. A = Amphipoda; B = Bivalvia; C = Crustacea; D = Decapoda; E = Echinodermata; Ec = Ectopoda; M = Mollusca; P = Polychaeta; S = Siphonophora.

[illegible]

$$M = M_0 + \frac{1}{2} \frac{M_0^2}{\sqrt{1 - M_0^2}} \cos^2 \alpha, \quad \frac{1}{2} \frac{M_0^2}{\sqrt{1 - M_0^2}} \sin^2 \alpha = 1$$

Species	Local Number	Number Collected	Estimated Number	Range
		N	SD	Number
<u>Strigilla mirabilis</u> (M)	10	1.0	1.0	1.0
<u>Tellina</u> sp. (P)	10	1.0	1.0	1.0
<u>Lucinilla</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Polysiphonia</u> sp. (P)	10	1.0	1.0	1.0
<u>Dischidorella</u> sp. (P)	10	1.0	1.0	1.0
<u>Siphonophora</u> sp. (P)	10	1.0	1.0	1.0
<u>Nematoda</u> sp. (P)	10	1.0	1.0	1.0
<u>Tricladophora</u> sp. (P)	10	1.0	1.0	1.0
<u>Volvox</u> sp. (P)	10	1.0	1.0	1.0
<u>Acetabularia</u> sp. (P)	10	1.0	1.0	1.0
<u>Psuedoventriculus</u> sp. (P)	10	1.0	1.0	1.0
<u>Hydra</u> sp. (P)	10	1.0	1.0	1.0
<u>Magelona</u> sp. (P)	10	1.0	1.0	1.0
<u>Prionospio</u> sp. (P)	10	1.0	1.0	1.0
<u>Prochaetodon</u> sp. (P)	10	1.0	1.0	1.0
<u>Carbonilla</u> sp. (P)	10	1.0	1.0	1.0
<u>Ervillea</u> sp. (P)	10	1.0	1.0	1.0
<u>Branchiostoma</u> sp. (P)	10	1.0	1.0	1.0
<u>Synbranchiostoma</u> sp. (P)	10	1.0	1.0	1.0
<u>Leptostomus</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
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<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
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<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
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<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
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<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
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<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	1.0
<u>Amphiprion</u> sp. (P)	10	1.0	1.0	1.0
<u>Parrotfish</u> sp. (P)	10	1.0	1.0	1.0
<u>Nephtys</u> sp. (P)	10	1.0	1.0	

Table 20. Abundance of macroinvertebrate species in grab collections from station DSD-1. A = Amphipoda; C = Cumacea; D = Decapoda; E = Echinodermata; EC = Ectopoda; I = Isopoda; M = Mollusca; Ph = Phoronida; P = Polychaeta; Py = Pyrosomella; S = Siphonophora.

[illegible]

Total number of

DS2-

Species	Total Number	Number / 100 m ²		Estimated Number of	Rank by Number
		$\bar{x}$	SD		
<i>Chloroceryle alpestris</i> (A-M)	1	0.2	0.4	2	57.5
<i>Asiaticornis tristis</i> (P)	1	0.2	0.4	2	57.5
<i>Chloroceryle alpestris</i> (P)	1	0.2	0.4	2	57.5
<i>Myadestes occidentalis</i> (P)	1	0.2	0.4	2	57.5
<i>Chloroceryle alpestris</i> (P)	1	0.2	0.4	2	57.5
<i>Myadestes occidentalis</i> (P)	1	0.2	0.4	2	57.5
<i>Chloroceryle alpestris</i> (P)	1	0.2	0.4	2	57.5
<i>Myadestes occidentalis</i> (P)	1	0.2	0.4	2	57.5
<i>Asiaticornis tristis</i> (P)	1	0.2	0.4	2	57.5
<i>Chloroceryle alpestris</i> (P)	1	0.2	0.4	2	57.5
<i>Myadestes occidentalis</i> (P)	1	0.2	0.4	2	57.5
<i>Chloroceryle alpestris</i> (P)	1	0.2	0.4	2	57.5
<i>Myadestes occidentalis</i> (P)	1	0.2	0.4	2	57.5

F

Species	Total Number	Number	1st	2nd	3rd	Rank by Number
<i>Alpheidae</i> (P)	4	10.0	1.0	1.0	1.0	1.0
<i>Alpheidae</i> (M)	5	10.0	1.0	1.0	1.0	2.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	3.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	4.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	5.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	6.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	7.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	8.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	9.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	10.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	11.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	12.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	13.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	14.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	15.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	16.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	17.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	18.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	19.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	20.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	21.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	22.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	23.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	24.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	25.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	26.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	27.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	28.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	29.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	30.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	31.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	32.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	33.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	34.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	35.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	36.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	37.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	38.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	39.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	40.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	41.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	42.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	43.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	44.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	45.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	46.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	47.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	48.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	49.0
<i>Alpheidae</i> (P)	10	10.0	1.0	1.0	1.0	50.0

Table 1. (Cont.)

Species	Total		Number of In-		Estimated	Pink
	Number	SD	Number	SD	Number	Number
<i>Isotia longipala</i> (P)	1	1.2	1	1.2	1	13.
<i>Parapharyngodon pinnatus</i> (P)	1	1.2	1	1.2	1	47.1
<i>Spil. pectinatus</i> (P)	1	1.2	1	1.2	1	55.1
<i>Isotia longipala</i> (P)	1	1.2	1	1.2	1	55.1
<i>Spil. pectinatus</i> (P)	1	1.2	1	1.2	1	55.1

Table 4. Abundance of macroinvertebrate species in grab collections from station 716. A = Amphipoda; C = Crustacea; D = Decapoda; E = Echinodermata; L = Liliaceae; S = Siphonacea; M = Mollusca; P = Polychaeta; S = Sipunculidae.

Species	Total Number	Number / Volume		Estimated Number m ²	Rank by Number
		N	SD		
<i>Amphipoda</i> sp. 1	45	19.0	14.8	19.0	1.0
<i>Amphipoda</i> sp. 2	40	17.0	13.6	17.0	2.0
<i>Amphipoda</i> sp. 3	36	15.0	11.9	15.0	3.0
<i>Amphipoda</i> sp. 4	34	14.0	10.8	14.0	4.0
<i>Amphipoda</i> sp. 5	27	11.0	8.1	11.0	5.0
<i>Amphipoda</i> sp. 6	27	11.0	8.1	11.0	5.0
<i>Amphipoda</i> sp. 7	24	10.0	7.7	10.0	6.0
<i>Amphipoda</i> sp. 8	23	9.0	7.0	9.0	7.0
<i>Amphipoda</i> sp. 9	19	8.0	6.0	8.0	8.0
<i>Amphipoda</i> sp. 10	14	6.0	4.2	6.0	9.0
<i>Amphipoda</i> sp. 11	14	6.0	4.2	6.0	9.0
<i>Amphipoda</i> sp. 12	13	5.0	3.9	5.0	10.0
<i>Amphipoda</i> sp. 13	10	4.0	3.0	4.0	11.0
<i>Amphipoda</i> sp. 14	9	3.0	2.3	3.0	12.0
<i>Amphipoda</i> sp. 15	9	3.0	2.3	3.0	12.0
<i>Amphipoda</i> sp. 16	8	3.0	2.3	3.0	13.0
<i>Amphipoda</i> sp. 17	8	3.0	2.3	3.0	13.0
<i>Amphipoda</i> sp. 18	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 19	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 20	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 21	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 22	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 23	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 24	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 25	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 26	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 27	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 28	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 29	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 30	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 31	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 32	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 33	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 34	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 35	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 36	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 37	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 38	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 39	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 40	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 41	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 42	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 43	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 44	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 45	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 46	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 47	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 48	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 49	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 50	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 51	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 52	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 53	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 54	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 55	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 56	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 57	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 58	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 59	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 60	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 61	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 62	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 63	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 64	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 65	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 66	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 67	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 68	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 69	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 70	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 71	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 72	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 73	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 74	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 75	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 76	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 77	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 78	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 79	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 80	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 81	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 82	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 83	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 84	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 85	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 86	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 87	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 88	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 89	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 90	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 91	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 92	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 93	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 94	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 95	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 96	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 97	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 98	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 99	7	3.0	2.3	3.0	14.0
<i>Amphipoda</i> sp. 100	7	3.0	2.3	3.0	14.0

Table 48. (Cont.)

Species	Total Number	Number, 0.1m ²		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<i>Ophioparagus</i> sp. A (E)	1	0.2	0.4	2	70.0
<i>Semele bellastrata</i> (M)	1	0.2	0.4	2	70.0
<i>Carbonilla</i> sp. B (M)	1	0.2	0.4	2	70.0
<i>Macrocallista nimbosa</i> (M)	1	0.2	0.4	2	70.0
<i>Terebra concava</i> (M)	1	0.2	0.4	2	70.0
<i>Crassinella lunulata</i> (M)	1	0.2	0.4	2	70.0
<i>Aspidosiphon misakiensis</i> (S)	1	0.2	0.4	2	70.0
<i>Sipuncularia</i> (undet.) (S)	1	0.2	0.4	2	70.0
<i>Aricidea suecica</i> (P)	1	0.2	0.4	2	70.0
<i>Aricidea ferrugii</i> (P)	1	0.2	0.4	2	70.0
<i>Anadistrosyllis jonesi</i> (P)	1	0.2	0.4	2	70.0
<i>Hydroides protulicola</i> (P)	1	0.2	0.4	2	70.0
<i>Syllidae</i> (undet.) A (P)	1	0.2	0.4	2	70.0
<i>Terebellidae</i> (undet.) A (P)	1	0.2	0.4	2	70.0
<i>Syllis regulata carolinae</i> (P)	1	0.2	0.4	2	70.0
<i>Spiochaetopterus costarum oculatus</i> (P)	1	0.2	0.4	2	70.0
<i>Ampelctes dentatus</i> (P)	1	0.2	0.4	2	70.0
<i>Pectinaria gouldii</i> (P)	1	0.2	0.4	2	70.0
<i>Scaloplos</i> sp. (P)	1	0.2	0.4	2	70.0
<i>Hesionidae</i> (undet.) (P)	1	0.2	0.4	2	70.0
<i>Mediomastus californiensis</i> (P)	1	0.2	0.4	2	70.0
<i>Phyllodoce irenae</i> (P)	1	0.2	0.4	2	70.0
<i>Polydora caeca</i> (P)	1	0.2	0.4	2	70.0
<i>Magelona rosea</i> (P)	1	0.2	0.4	2	70.0
<i>Schistomerinigos rudolphi</i> (P)	1	0.2	0.4	2	70.0
<i>Diomenella torquata</i> (P)	1	0.2	0.4	2	70.0
<i>Prionospio cirrifera</i> (P)	1	0.2	0.4	2	70.0

F



Table 62. (Cont.)

1967					Rank
Species	Total Number	Number m ⁻²	Number m ⁻²	Estimated Number m ⁻²	by Number
<u>Semelle bellistriata</u> (M)	1	0.2	0.4	2	63.5
<u>Crassinella martinicensis</u> (M)	1	0.2	0.4	2	63.5
<u>Pelecyopoda</u> (undet.) 2	1	0.2	0.4	2	63.5
<u>Magelona</u> sp. A (P)	1	0.2	0.4	2	63.5
<u>Syllidae</u> (undet.) B (P)	1	0.2	0.4	2	63.5
<u>Protodoryllaea kefersteini</u> (P)	1	0.2	0.4	2	63.5
<u>Magelona</u> sp. (Dav 73) (P)	1	0.2	0.4	2	63.5
<u>Cirratalidae</u> (undet.) B (P)	1	0.2	0.4	2	63.5
<u>Nephtys incisa</u> (P)	1	0.2	0.4	2	63.5
<u>Spiochaetopterus costarum oculatus</u> (P)	1	0.2	0.4	2	63.5
<u>Scoloplos</u> sp. (P)	1	0.2	0.4	2	63.5
<u>Diopatra cuprea</u> (P)	1	0.2	0.4	2	63.5
<u>Poecilognathus</u> sp. (P)	1	0.2	0.4	2	63.5
<u>Aricidea</u> sp. A (P)	1	0.2	0.4	2	63.5
<u>Euniceidae</u> (undet.) (P)	1	0.2	0.4	2	63.5
<u>Sigambra bassi</u> (P)	1	0.2	0.4	2	63.5
<u>Chrysopetalidae</u> (undet.) (P)	1	0.2	0.4	2	63.5

Table 10. Abundance of polychaete species in grab collections from station DS28. A = Amphipoda; B = Bivalvia; C = Cirripedia; D = Decapoda; E = Echinodermata; F = Gastropoda; G = Isopoda; H = Mollusca; I = Mysidacea; J = Polychaeta; K = Scudacea.

Species	DS28		Number/0.1m ²	Estimated Number/0.1m ²	Rank
	Total Number	%			
<i>Branchiostoma lanceolatum</i>	157	31.4	16.3	31.4	1.0
<i>Trichopneustes claviger</i> A	72	14.4	1.2	12.1	2.0
<i>Palaemonetes pugio</i> P	44	8.8	1.2	4.4	3.0
<i>Bathyporeia pilosa</i> A	44	8.8	1.2	4.4	4.0
<i>Nereis virens</i> P	28	5.6	1.2	4.4	5.0
<i>Natantia undet.</i>	28	5.6	1.2	4.4	6.0
<i>Pseudoplatyschopus claviger</i> A	28	5.6	1.2	4.4	7.0
<i>Trichopneustes epistomus</i> A	28	5.6	1.2	4.4	8.0
<i>Acanthoasterias sp.</i> A	28	5.6	1.2	4.4	9.0
<i>Nuphis crenata</i> P	28	5.6	1.2	4.4	10.0
<i>Caprellia loma</i> B	28	5.6	1.2	4.4	11.0
<i>Caprellia pinnata</i> B	28	5.6	1.2	4.4	12.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	13.0
<i>Nemertina undet.</i> A	28	5.6	1.2	4.4	14.0
<i>Parasphaerostomus sp. indeterminata</i> A	28	5.6	1.2	4.4	15.0
<i>Adiantum magnifica</i>	28	5.6	1.2	4.4	16.0
<i>Trigloporus micropilis</i> M	28	5.6	1.2	4.4	17.0
<i>Nematoda undet.</i>	28	5.6	1.2	4.4	18.0
<i>Nemopsis amerinae</i> Mv	28	5.6	1.2	4.4	19.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	20.0
<i>Anulus depressus</i> P	28	5.6	1.2	4.4	21.0
<i>Solapneustes bombyx</i> P	28	5.6	1.2	4.4	22.0
<i>Spio pectinifera</i> P	28	5.6	1.2	4.4	23.0
<i>Alcioborall sp.</i> A	28	5.6	1.2	4.4	24.0
<i>Discoporella umbellata</i> B	28	5.6	1.2	4.4	25.0
<i>Murella mutua</i> M	28	5.6	1.2	4.4	26.0
<i>Erythraea sinuata</i> M	28	5.6	1.2	4.4	27.0
<i>Ligocnaster undet.</i>	28	5.6	1.2	4.4	28.0
<i>Pionosyllis sp.</i> P	28	5.6	1.2	4.4	29.0
<i>Pagurus longicarpus</i> D	28	5.6	1.2	4.4	30.0
<i>Campos unicornis</i> A	28	5.6	1.2	4.4	31.0
<i>Camada undet.</i> F	28	5.6	1.2	4.4	32.0
<i>Mysidopsis bigelowi</i> Mv	28	5.6	1.2	4.4	33.0
<i>Melica quinquesperforata</i> B	28	5.6	1.2	4.4	34.0
<i>Conturoidea undet.</i> B E	28	5.6	1.2	4.4	35.0
<i>Aristea serrata</i> P	28	5.6	1.2	4.4	36.0
<i>Mytilus stephensoni</i> D	28	5.6	1.2	4.4	37.0
<i>Eucyrtus listralis</i> P	28	5.6	1.2	4.4	38.0
<i>Brithothrix brasiliensis</i> A	28	5.6	1.2	4.4	39.0
<i>Stomatopoda undet.</i>	28	5.6	1.2	4.4	40.0
<i>Mytilus varians</i> D	28	5.6	1.2	4.4	41.0
<i>Opisthorhynchus sp.</i> A E	28	5.6	1.2	4.4	42.0
<i>Carbonilla sp.</i> D M	28	5.6	1.2	4.4	43.0
<i>Mytilus lunata</i> M	28	5.6	1.2	4.4	44.0
<i>Abra aequalis</i> M	28	5.6	1.2	4.4	45.0
<i>Terebra loricata</i> M	28	5.6	1.2	4.4	46.0
<i>Grassimella lunulata</i> M	28	5.6	1.2	4.4	47.0
<i>Aspidosiphon spinalis</i> S	28	5.6	1.2	4.4	48.0
<i>Conioides caroliniae</i> P	28	5.6	1.2	4.4	49.0
<i>Axiopneustes verrilli</i> P	28	5.6	1.2	4.4	50.0
<i>Aricidea suecica</i> P	28	5.6	1.2	4.4	51.0
<i>Anelostoma ionesi</i> P	28	5.6	1.2	4.4	52.0
<i>Nereis virens</i> P	28	5.6	1.2	4.4	53.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	54.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	55.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	56.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	57.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	58.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	59.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	60.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	61.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	62.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	63.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	64.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	65.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	66.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	67.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	68.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	69.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	70.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	71.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	72.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	73.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	74.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	75.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	76.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	77.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	78.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	79.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	80.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	81.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	82.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	83.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	84.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	85.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	86.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	87.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	88.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	89.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	90.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	91.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	92.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	93.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	94.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	95.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	96.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	97.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	98.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	99.0
<i>Mytilus edulis</i> B	28	5.6	1.2	4.4	100.0

Table 71. Abundance of macroinvertebrate species in grab collections from station DS29. A = Amphipoda; B = Brachipoda; C = Cumacea; G = Cephalochoriat; D = Decapoda; E = Echinodermata; F = Ectoprocta; I = Isopoda; M = Mollusca; P = Polycheta; S = Sipunculida; T = Tanaidacea).

Species	Total Number	Number (0.1m ²) X	SD	Estimated Number/m ²	Rank by Number
<i>Branchiostoma caribaeum</i> (Co)	266	53.2	37.1	532	1.3
<i>Nematoda</i> (undet.)	154	30.8	34.7	308	1.4
<i>Trichophoxus floridanus</i> (A)	78	15.6	9.0	156	1.5
<i>Conioides caroliniae</i> (P)	58	11.6	11.5	116	1.6
<i>Solophanes bombyx</i> (P)	52	10.4	2.9	104	1.7
<i>Bathyporeia parkeri</i> (A)	38	7.6	4.2	76	1.8
<i>Aspidosiphon spinalis</i> (S)	38	7.6	8.1	76	1.9
<i>Pyathura burbancki</i> (I)	35	7.0	7.6	70	2.0
<i>Pseudonaviculispinus floridanus</i> (A)	27	5.4	3.2	54	2.1
<i>Tellina praeoria</i> (M)	27	5.4	3.3	54	2.2
<i>Neptys picta</i> (P)	27	5.4	2.4	54	2.3
<i>Aligonaeta</i> (undet.)	24	4.8	5.4	48	2.4
<i>Copuladria form</i> (E)	23	4.6	0.2	46	2.5
<i>Aspidosiphon mississippiensis</i> (S)	20	4.0	2.0	40	2.6
<i>Onuphis eremita</i> (P)	19	3.8	1.5	38	2.7
<i>Armandia maculata</i> (P)	17	3.4	2.1	34	2.8
<i>Piron propakis</i> (A)	15	3.0	4.6	30	2.9
<i>Strigilla mirabilis</i> (M)	15	3.0	3.7	30	3.0
<i>Acinchochaustorius</i> sp. (A)	14	2.8	2.8	28	3.1
<i>Ervillea concentrica</i> (M)	14	2.8	2.6	28	3.2
<i>Rudilemboides</i> sp. (A)	12	2.4	2.1	24	3.3
<i>Parbellaria</i> (undet.)	12	2.4	1.9	24	3.4
<i>Nemertina</i> (undet.) (A)	11	2.2	1.1	22	3.5
<i>Amphionda</i> (undet.) (A)	10	2.0	2.3	20	3.6
<i>Apantchura magnifica</i> (I)	10	2.0	1.4	20	3.7
<i>Discoporella umbellata</i> (E)	10	2.0	1.6	20	3.8
<i>Anisostyella lonesi</i> (P)	10	2.0	2.5	20	3.9
<i>Nematoda</i> (undet.)	9	1.8	1.6	18	4.0
<i>Mynera oxycephala</i> (P)	9	1.8	1.9	18	4.1
<i>Myurostylis smithi</i> (C)	8	1.6	1.1	16	4.2
<i>Hesionidae</i> (undet.) (A) (P)	8	1.6	1.8	16	4.3
<i>Prionospio cristata</i> (P)	8	1.6	1.8	16	4.4
<i>Trichophoxus epistomus</i> (A)	7	1.4	1.1	14	4.5
<i>Microgasterus lyriiformis</i> (P)	7	1.4	1.7	14	4.6
<i>Neptys incisa</i> (P)	7	1.4	1.1	14	4.7
<i>Aricidea perruti</i> (P)	6	1.2	1.3	12	4.8
<i>Liljeborgia</i> sp. (A)	5	1.0	1.2	10	4.9
<i>Phidippidea</i> (undet.) (E)	5	1.0	0.7	10	5.0
<i>Emel-nuculoides</i> (M)	5	1.0	1.4	10	5.1
<i>Axiostella mucosa</i> (P)	5	1.0	0.7	10	5.2
<i>Syllis regulata caroliniae</i> (P)	5	1.0	2.2	10	5.3
<i>Phyllodoce arenae</i> (P)	5	1.0	1.7	10	5.4
<i>Magelona rosea</i> (P)	5	1.0	2.0	10	5.5
<i>Chrysometallidae</i> (undet.) (P)	5	1.0	1.2	10	5.6
<i>Isolia pulchella</i> (P)	5	1.0	1.7	10	5.7
<i>Conchellidium americanum</i> (A)	4	0.8	1.3	8	5.8
<i>Lumbrineris latreilli</i> (P)	4	0.8	0.4	8	5.9
<i>Onuphis nebulosa</i> (P)	4	0.8	0.8	8	6.0
<i>Squilla pettiboneae</i> (P)	4	0.8	1.8	8	6.1
<i>Sigambra bassi</i> (P)	4	0.8	0.4	8	6.2
<i>Acanthopora mayaguetensis</i> (P)	4	0.8	1.7	8	6.3
<i>Gummeta</i> (undet.) (P)	4	0.8	0.3	8	6.4
<i>Mollusca pinguicorporata</i> (E)	3	0.6	0.4	6	6.5
<i>Genia fusiformis</i> (P)	3	0.6	0.4	6	6.6
<i>Synalaxis libani</i> (P)	3	0.6	1.3	6	6.7
<i>Isostichopus parvulus</i> (P)	3	0.6	1.1	6	6.8
<i>Paropus longicauda</i> (P)	3	0.6	0.4	6	6.9
<i>Amphipoda perrilli</i> (A)	2	0.4	0.8	4	7.0
<i>Erpichthys brasilianensis</i> (A)	2	0.4	0.4	4	7.1
<i>Neostomatia pyramidalis</i> (P)	2	0.4	0.4	4	7.2
<i>Callinectes</i> (M)	2	0.4	0.4	4	7.3

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Table 12. Abundance of macroinvertebrate species in grab collections from station DS30. A = Amphipoda; C = Crustacea; Co = Cephalochordata; Ch = Chidaria; D = Decapoda; E = Echinodermata; H = Hemichordata; I = Isopoda; M = Mollusca; P = Polychaeta; S = Sipunculida; T = Tanaidacea.

DS30					
Species	Total Number	Number $\bar{x}$	0.1m ² SD	Estimated Number T	Rank by Number
Aspidosiphon spinalis (S)	1013	202.6	89.5	2126	1.0
Branchiostoma ligabaeum (A)	399	79.8	27.6	798	2.0
Donatidius caroliniae (P)	173	34.6	16.7	173	3.0
Scyllis regulata caroliniae (P)	138	27.6	16.7	173	4.0
Sipunculilla tenuis (S)	101	20.2	10.3	101	5.0
Alpheidae ventralis (M)	89	17.8	14.3	178	6.0
Hyatonia smithii (D)	85	17.0	8.4	170	7.0
Thysanopetalidae undet. (P)	83	16.6	7.4	166	8.0
Prionospira cristata (P)	77	15.4	7.9	154	9.0
Limnadia limn. (S)	66	13.2	6.6	132	10.0
Hydromedusa (P)	65	13.0	6.2	130	11.0
Hydractinia undet. (P)	60	12.0	7.3	120	12.0
Hydra troglodytes (A)	55	11.0	6.0	110	13.0
Hydra troglodytes (P)	48	9.6	9.0	96	14.0
Hydra troglodytes (A)	46	9.2	11.0	92	15.0
Hydra troglodytes (P)	45	9.0	4.1	90	16.0
Hydra troglodytes (A)	39	7.8	3.0	78	17.0
Hydra troglodytes (M)	38	7.6	2.6	76	18.0
Hydra troglodytes (P)	37	7.4	6.1	74	19.0
Hydra troglodytes (A)	36	7.2	9.6	72	20.0
Hydra troglodytes (P)	34	6.8	6.4	68	21.0
Hydra troglodytes (A)	33	6.6	3.0	66	22.0
Hydra troglodytes (P)	32	6.4	6.9	64	23.0
Hydra troglodytes (A)	32	6.4	1.7	64	24.0
Hydra troglodytes (P)	31	6.2	3.7	62	25.0
Hydra troglodytes (A)	31	6.2	4.3	62	26.0
Hydra troglodytes (P)	30	6.0	2.2	60	27.0
Hydra troglodytes (A)	29	5.8	4.1	58	28.0
Hydra troglodytes (P)	29	5.8	1.6	58	29.0
Hydra troglodytes (A)	27	5.4	7.1	54	30.0
Hydra troglodytes (P)	27	5.4	1.8	54	31.0
Hydra troglodytes (A)	25	5.0	3.9	50	32.0
Hydra troglodytes (P)	24	4.8	4.1	48	33.0
Hydra troglodytes (A)	23	4.6	3.6	46	34.0
Hydra troglodytes (P)	23	4.6	4.7	46	35.0
Hydra troglodytes (A)	21	4.2	4.0	42	36.0
Hydra troglodytes (P)	20	4.0	4.3	40	37.0
Hydra troglodytes (A)	19	3.8	1.3	38	38.0
Hydra troglodytes (P)	18	3.6	5.3	36	39.0
Hydra troglodytes (A)	18	3.6	3.0	36	40.0
Hydra troglodytes (P)	18	3.6	3.0	36	41.0
Hydra troglodytes (A)	16	3.2	3.8	32	42.0
Hydra troglodytes (P)	16	3.2	3.4	32	43.0
Hydra troglodytes (A)	15	3.0	2.3	30	44.0
Hydra troglodytes (P)	15	3.0	1.0	30	45.0
Hydra troglodytes (A)	15	3.0	1.2	30	46.0
Hydra troglodytes (P)	15	3.0	2.1	30	47.0
Hydra troglodytes (A)	15	3.0	3.0	30	48.0
Hydra troglodytes (P)	14	2.8	2.8	28	49.0
Hydra troglodytes (A)	14	2.8	1.5	28	50.0
Hydra troglodytes (P)	14	2.8	1.5	28	51.0
Hydra troglodytes (A)	13	2.6	1.3	26	52.0
Hydra troglodytes (P)	13	2.6	2.1	26	53.0
Hydra troglodytes (A)	13	2.6	1.9	26	54.0
Hydra troglodytes (P)	12	2.4	2.4	24	55.0
Hydra troglodytes (A)	12	2.4	2.4	24	56.0
Hydra troglodytes (P)	12	2.4	2.2	24	57.0
Hydra troglodytes (A)	12	2.4	2.2	24	58.0
Hydra troglodytes (P)	12	2.4	2.2	24	59.0
Hydra troglodytes (A)	12	2.4	2.2	24	60.0
Hydra troglodytes (P)	12	2.4	2.2	24	61.0
Hydra troglodytes (A)	12	2.4	2.2	24	62.0
Hydra troglodytes (P)	12	2.4	2.2	24	63.0
Hydra troglodytes (A)	12	2.4	2.2	24	64.0
Hydra troglodytes (P)	12	2.4	2.2	24	65.0
Hydra troglodytes (A)	12	2.4	2.2	24	66.0
Hydra troglodytes (P)	12	2.4	2.2	24	67.0
Hydra troglodytes (A)	12	2.4	2.2	24	68.0
Hydra troglodytes (P)	12	2.4	2.2	24	69.0
Hydra troglodytes (A)	12	2.4	2.2	24	70.0
Hydra troglodytes (P)	12	2.4	2.2	24	71.0
Hydra troglodytes (A)	12	2.4	2.2	24	72.0
Hydra troglodytes (P)	12	2.4	2.2	24	73.0
Hydra troglodytes (A)	12	2.4	2.2	24	74.0
Hydra troglodytes (P)	12	2.4	2.2	24	75.0
Hydra troglodytes (A)	12	2.4	2.2	24	76.0
Hydra troglodytes (P)	12	2.4	2.2	24	77.0
Hydra troglodytes (A)	12	2.4	2.2	24	78.0
Hydra troglodytes (P)	12	2.4	2.2	24	79.0
Hydra troglodytes (A)	12	2.4	2.2	24	80.0
Hydra troglodytes (P)	12	2.4	2.2	24	81.0
Hydra troglodytes (A)	12	2.4	2.2	24	82.0
Hydra troglodytes (P)	12	2.4	2.2	24	83.0
Hydra troglodytes (A)	12	2.4	2.2	24	84.0
Hydra troglodytes (P)	12	2.4	2.2	24	85.0
Hydra troglodytes (A)	12	2.4	2.2	24	86.0
Hydra troglodytes (P)	12	2.4	2.2	24	87.0
Hydra troglodytes (A)	12	2.4	2.2	24	88.0
Hydra troglodytes (P)	12	2.4	2.2	24	89.0
Hydra troglodytes (A)	12	2.4	2.2	24	90.0
Hydra troglodytes (P)	12	2.4	2.2	24	91.0
Hydra troglodytes (A)	12	2.4	2.2	24	92.0
Hydra troglodytes (P)	12	2.4	2.2	24	93.0
Hydra troglodytes (A)	12	2.4	2.2	24	94.0
Hydra troglodytes (P)	12	2.4	2.2	24	95.0
Hydra troglodytes (A)	12	2.4	2.2	24	96.0
Hydra troglodytes (P)	12	2.4	2.2	24	97.0
Hydra troglodytes (A)	12	2.4	2.2	24	98.0
Hydra troglodytes (P)	12	2.4	2.2	24	99.0
Hydra troglodytes (A)	12	2.4	2.2	24	100.0

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Table 72. (Cont.)

DS 1				
Species	Total Number	Number/0.1m ²	Estimated Number/0.1m ²	95% CI
<i>Ebulla cariosa</i> (D)	1	0.2	0.4	134.0
<i>Pinnixa</i> sp. A (D)	1	0.2	0.4	134.0
<i>Majidae</i> (undet.) B (D)	1	0.2	0.4	134.0
<i>Heterosquilla granulata</i> (D)	1	0.2	0.4	134.0
<i>Brachyura</i> (undet.) D	1	0.2	0.4	134.0
<i>Portunidae</i> (undet.) (D)	1	0.2	0.4	134.0
<i>Processa hemphilli</i> (D)	1	0.2	0.4	134.0
<i>Maera williamsi</i> (A)	1	0.2	0.4	134.0
<i>Cyclopsis varians</i> (C)	1	0.2	0.4	134.0
<i>Lepeos smithi</i> (A)	1	0.2	0.4	134.0
<i>Ampipoda</i> (undet.) G	1	0.2	0.4	134.0
<i>Triplala serrata</i> (A)	1	0.2	0.4	134.0
<i>Podoceritidae</i> (undet.) (A)	1	0.2	0.4	134.0
<i>Argissa</i> sp. A	1	0.2	0.4	134.0
<i>Penicillaria</i> (undet.) C B	1	0.2	0.4	134.0
<i>Natica pusilla</i> M	1	0.2	0.4	134.0
<i>Exilopium multistriatum</i> M	1	0.2	0.4	134.0
<i>Glycymeris pectinata</i> M	1	0.2	0.4	134.0
<i>Polysiphonophora</i> (undet.) D (M)	1	0.2	0.4	134.0
<i>Nudibranchia</i> (undet.) C (M)	1	0.2	0.4	134.0
<i>Anomia simplex</i> M	1	0.2	0.4	134.0
<i>Chirops</i> sp. M	1	0.2	0.4	134.0
<i>Chaetum</i> sp. M	1	0.2	0.4	134.0
<i>Leptocarpus</i> sp.	1	0.2	0.4	134.0
<i>Eumetridia</i> (undet.)	1	0.2	0.4	134.0
<i>Scyllis leucogena</i> P	1	0.2	0.4	134.0
<i>Leptocarpus</i> (undet.) A P	1	0.2	0.4	134.0
<i>Parasphaera americana</i> P	1	0.2	0.4	134.0
<i>Marphesia</i> sp. B (Mar.) P	1	0.2	0.4	134.0
<i>Scallopia</i> sp. C P	1	0.2	0.4	134.0
<i>Caprellaria vulgaris</i> P	1	0.2	0.4	134.0
<i>Tharyx marioni</i> P	1	0.2	0.4	134.0
<i>Microgaster</i> P	1	0.2	0.4	134.0
<i>Leptocarpus</i> P	1	0.2	0.4	134.0
<i>Triplala serrata</i> P	1	0.2	0.4	134.0
<i>Amphirocopsis</i> (undet.) P	1	0.2	0.4	134.0
<i>Leptocarpus</i> P	1	0.2	0.4	134.0
<i>Triplala</i> sp. P	1	0.2	0.4	134.0
<i>Leptocarpus</i> P	1	0.2	0.4	134.0
<i>Marphesia</i> sp. P	1	0.2	0.4	134.0
<i>Leptocarpus</i> sp. P	1	0.2	0.4	134.0
<i>Leptocarpus</i> P	1	0.2	0.4	134.0
<i>Leptocarpus</i> P	1	0.2	0.4	134.0

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	Total Number	Number 5	Number 10	Estimated Number	Rank by Number
<u>Aspilota</u> sp. A	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. B	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. C	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. D	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. E	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. F	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. G	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. H	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. I	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. J	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. K	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. L	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. M	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. N	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. O	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. P	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. Q	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. R	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. S	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. T	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. U	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. V	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. W	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. X	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. Y	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. Z	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AA	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AB	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AC	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AD	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AE	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AF	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AG	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AH	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AI	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AJ	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AK	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AL	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AM	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AN	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AO	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AP	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AQ	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AR	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AS	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AT	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AU	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AV	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AW	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AX	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AY	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. AZ	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BA	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BB	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BC	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BD	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BE	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BF	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BG	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BH	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BI	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BJ	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BK	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BL	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BM	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BN	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BO	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BP	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BQ	1	0.2	0.5	2	76.0
<u>Aspilota</u> sp. BR					

Abbreviations of macroinvertebrate species in table 1: A = Amphipoda; Br = Brachyopoda; C = Curatidae; G = Cephalochorididae; H = Hemiptera; I = Isopoda; J = Ectopoda; K = Ectopoda; L = Ectopoda; M = Mollusca; Mo = Mollusca; P = Polychaeta; S = Siphonulidae; T = Tanaidacea.

Species	Total Number	Number Collected $\bar{x}$	SD	Estimated Number m ²	Rank by Number
<i>Dracopistoma pariflorum</i> (P)	486	47.1	26.1	47.1	1.0
<i>Aspilosiphon spinulosus</i> (P)	59	11.8	6.6	11.8	2.0
<i>Triphocnax floricornis</i> (A)	57	11.4	4.7	11.4	3.0
<i>Hemipodus fuscescens</i> (P)	14	9.8	5.4	9.8	4.0
<i>Parvula heteroclitus</i> (P)	35	7.0	4.1	7.0	5.0
<i>Epuladria dema</i> (P)	32	6.4	3.3	6.4	6.0
<i>Syllis regularis caroliniae</i> (P)	31	6.1	2.7	6.1	7.0
<i>Aspionchaetorhis pilosus</i> (A)	21	4.8	2.0	4.8	8.0
<i>Urechis</i> undet.	19	4.6	3.3	4.6	9.0
<i>Amphidides caroliniae</i> (P)	19	4.1	1.5	4.1	10.0
<i>Paraprionyx eximius</i> (P)	19	4.1	3.4	4.1	11.0
<i>Chamaeponia</i> (P)	18	3.6	2.3	3.6	12.0
<i>Parachanes homox</i> (P)	17	3.4	1.7	3.4	13.0
<i>Crinopsis pinnata</i> (P)	17	3.4	2.1	3.4	14.0
<i>Amphides taylori</i> (P)	15	3.0	1.6	3.0	15.0
<i>Amphidides</i> undet. (A)	14	2.8	0.1	2.8	16.0
<i>Neomysis americana</i> (M)	14	2.8	5.7	2.8	17.0
<i>Caprellia</i> sp. 3 (A)	14	2.8	1.6	2.8	18.0
<i>Chrysopetallidae</i> undet. (P)	13	2.6	1.3	2.6	19.0
<i>Desmarestia elongata</i> (P)	12	2.4	1.3	2.4	20.0
<i>Udalia sanguinea</i> (P)	11	2.2	2.3	2.2	21.0
<i>Pinnosyllis</i> sp. (P)	10	2.0	1.2	2.0	22.0
<i>Pinnixa reticulata</i> (P)	9	1.8	1.8	1.8	23.0
<i>Pinnis propalis</i> (A)	9	1.8	1.5	1.8	24.0
<i>Pinnis pinnata</i> (P)	9	1.8	1.2	1.8	25.0
<i>Pinnis nebulosa</i> (P)	9	1.8	1.5	1.8	26.0
<i>Pseudosquillaehopopus floridanus</i> (A)	9	1.6	2.3	1.6	27.0
<i>Alpheidae</i> (M)	9	1.6	1.3	1.6	28.0
<i>Alpheidae</i> (P)	8	1.6	2.2	1.6	29.0
<i>Paranephrops</i> (A) (P)	8	1.6	2.1	1.6	30.0
<i>Leptocryptus</i> (P)	7	1.4	1.5	1.4	31.0
<i>Amphimeris</i> (P)	7	1.4	1.7	1.4	32.0
<i>Nemertina</i> undet. (A)	6	1.2	0.8	1.2	33.0
<i>Amphimeris</i> (P)	6	1.2	0.8	1.2	34.0
<i>Amphimeris</i> (P)	6	1.2	2.7	1.2	35.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	36.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	37.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	38.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	39.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	40.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	41.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	42.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	43.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	44.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	45.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	46.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	47.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	48.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	49.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	50.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	51.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	52.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	53.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	54.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	55.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	56.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	57.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	58.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	59.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	60.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	61.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	62.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	63.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	64.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	65.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	66.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	67.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	68.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	69.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	70.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	71.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	72.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	73.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	74.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	75.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	76.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	77.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	78.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	79.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	80.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	81.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	82.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	83.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	84.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	85.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	86.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	87.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	88.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	89.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	90.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	91.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	92.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	93.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	94.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	95.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	96.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	97.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	98.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	99.0
<i>Amphimeris</i> (P)	6	1.2	1.2	1.2	100.0

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Table 75. (Cont.)

PS33					
Species	Total Number	Number $\bar{x}$	O.I.m ² SD	Estimated Number/m ²	Rank by Number
<i>Phoris</i> sp. (A)	4	0.8	1.3	8	62.0
<i>Dicoporella umbellata</i> (E.)	4	0.8	0.8	8	62.0
<i>Dipelia denticulata</i> (P)	4	0.8	0.8	8	62.0
<i>Eulalia macroceros</i> (P)	4	0.8	1.3	8	62.0
<i>Aricidea ferruci</i> (P)	4	0.8	1.1	8	62.0
Terebellidae (undet.) A (P)	4	0.8	1.1	8	62.0
<i>Ampharete americana</i> (P)	4	0.8	0.4	8	62.0
<i>Padocheia sidneyi</i> (D)	3	0.6	0.9	6	69.5
<i>Corbula barrattiana</i> (M)	3	0.6	0.5	6	69.5
<i>Polyplacophora</i> (undet.) B (M)	3	0.6	0.5	6	69.5
<i>Glycera papillosa</i> (P)	3	0.6	1.3	6	69.5
<i>Syllis gracilis</i> (P)	3	0.6	0.5	6	69.5
<i>Phylodoce longipes</i> P)	3	0.6	1.3	6	69.5
<i>Syllis cornuta</i> (P)	3	0.6	0.5	6	69.5
<i>Anides maraguetensis</i> (P)	3	0.6	0.9	6	69.5
Aspeudiidae (undet.) B (T)	2	0.4	0.9	-	83.0
<i>Cyathostella smithi</i> (C)	2	0.4	0.9	4	83.0
<i>Apantura magnifica</i> (I)	2	0.4	0.5	4	83.0
Ophiuroidea (undet.) B (E)	2	0.4	0.5	4	83.0
<i>Grassinella marginalepsis</i> (M)	2	0.4	0.5	4	83.0
Pelecypoda (undet.) G	2	0.4	0.9	-	83.0
<i>Hyalina vesicii</i> (M)	2	0.4	0.5	4	83.0
<i>Anchis avara</i> (M)	2	0.4	0.9	4	83.0
<i>Chaetopleura apiculata</i> (M)	2	0.4	0.9	4	83.0
<i>Lewyardium pistum</i> (M)	2	0.4	0.5	4	83.0
<i>Aspirosiphon misakiensis</i> (S)	2	0.4	0.5	4	83.0
<i>Harmothoe</i> sp. B Day) P)	2	0.4	0.9	4	83.0
Terebellidae (undet.) C (P)	2	0.4	0.9	4	83.0
Phylodocida (undet.) A (P)	2	0.4	0.5	4	83.0
<i>Nephtys prolifera</i> (P)	2	0.4	0.9	4	83.0
<i>Antalyra lentulus</i> (P)	2	0.4	0.5	4	83.0
<i>Leptonereis sublevis</i> (P)	2	0.4	0.5	4	83.0
<i>Muscidia cinerea</i> (P)	2	0.4	0.5	4	83.0
<i>Eulalia sanguinea</i> (P)	2	0.4	0.9	4	83.0
<i>Stenonia typica</i> (D)	1	0.2	0.4	2	106.0
Palaemoninae (undet.) (D)	1	0.2	0.4	2	106.0
Leiosthiidae (undet.) (D)	1	0.2	0.4	2	106.0
<i>Ampelisca vadorum</i> (A)	1	0.2	0.4	2	106.0
<i>Trichoneurus floridanus</i> A)	1	0.2	0.4	2	106.0
Amphinoda (undet.) F	1	0.2	0.4	2	106.0
Lumacea (undet.) E	1	0.2	0.4	2	106.0
<i>Ampelisca verrilli</i> (A)	1	0.2	0.4	2	106.0
<i>Lumba websteri</i> A)	1	0.2	0.4	2	106.0
Nemertina (undet.) D	1	0.2	0.4	2	106.0
Conirodites (undet.) F-E)	1	0.2	0.4	2	106.0
<i>Aradia punctulata</i> E)	1	0.2	0.4	2	106.0
<i>Tellina proterina</i> M)	1	0.2	0.4	2	106.0
<i>Glycymeris pectinata</i> (M)	1	0.2	0.4	2	106.0
<i>Argas</i> sp. (M)	1	0.2	0.4	2	106.0
Furcinidae (undet.) A (M)	1	0.2	0.4	2	106.0
<i>Dentalium abnormum</i> (M)	1	0.2	0.4	2	106.0
<i>Argopecten gibbus</i> (M)	1	0.2	0.4	2	106.0
<i>Luna navespartilla</i> M)	1	0.2	0.4	2	106.0
Nudibranchia (undet.) B-M.	1	0.2	0.4	2	106.0
<i>Novena sphenobranchia</i> (P)	1	0.2	0.4	2	106.0
<i>Ramalinthus meridionalis</i> P)	1	0.2	0.4	2	106.0
<i>Scaphopus</i> sp. B-P	1	0.2	0.4	2	106.0
<i>Verrillia parvula</i> (P)	1	0.2	0.4	2	106.0
<i>Urechidites lucia</i> P)	1	0.2	0.4	2	106.0
<i>Caprellaria vulgaris</i> (P)	1	0.2	0.4	2	106.0
<i>Squilla tunda</i> (P)	1	0.2	0.4	2	106.0

Table 7b. Abundance of macroinvertebrate species in grab collections from station DS3. A = Amphipoda; C = Cumacea; Co = Cephalochordata; D = Decapoda; E = Echinodermata; Ec = Ectopoda; I = Isopoda; M = Mollusca; My = Mysidacea; P = Polychaeta; S = Sipunculida; St = Stomatopoda; T = Tanaidacea.

Species	Total Number	Number 0.1m ²		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<i>Branchiostoma caribaeum</i> (C)	231	126.2	73.4	1262	1.0
<i>Swilla regulata carolinae</i> (P)	79	15.3	7.6	158	2.0
<i>Uron tropakis</i> (A)	78	15.6	4.7	156	3.0
<i>Cupuladria lima</i> (E)	45	9.0	11.0	90	4.5
<i>Prionospio cristata</i> (P)	45	9.0	6.9	90	4.5
Nematoda (undet.)	33	6.6	7.2	66	6.5
Chrysopetalidae (undet.) (P)	33	6.6	4.3	66	6.5
<i>Aspidosiphon spinalis</i> (S)	32	6.4	5.3	64	8.0
<i>Dotadides carolinae</i> (P)	29	5.8	4.5	58	9.5
<i>Tharyx raroni</i> (P)	29	5.8	4.3	58	9.5
<i>Polyplocophora</i> (undet.) A (M)	27	5.4	5.9	54	11.0
<i>Hemipodus roseus</i> (P)	26	5.2	3.1	52	12.0
<i>Zucillemboides</i> sp. (A)	25	5.0	3.9	50	13.5
<i>Trichophoxus floridanus</i> (A)	25	5.0	5.7	50	13.5
<i>Nematys indica</i> (P)	21	4.2	1.6	42	15.0
<i>Oligochaeta</i> (undet.)	19	3.8	3.1	38	16.0
<i>Calyptraea centralis</i> (M)	18	3.6	1.9	36	17.0
<i>Eurydice littoralis</i> (P)	16	3.2	3.6	32	18.0
<i>Exogone hispid</i> (P)	15	3.0	2.2	30	19.0
<i>Aricidea serrata</i> (P)	13	2.6	1.3	26	20.0
<i>Armandia maculata</i> (P)	11	2.2	2.9	22	21.0
<i>Scalopanus bonavex</i> (P)	9	1.8	2.9	18	22.5
<i>Onides mayaguezensis</i> (P)	9	1.8	2.7	18	22.5
<i>Pinnixa retinens</i> (D)	8	1.6	2.3	16	25.0
<i>Apanachea magnifica</i> (P)	8	1.6	1.1	16	25.0
<i>Minispio irritata</i> (P)	8	1.6	2.2	16	25.0
<i>Hydrobiolax smithii</i> (D)	7	1.4	1.1	14	28.0
<i>Leptochelia radox</i> (T)	7	1.4	1.5	14	28.0
<i>Nereis succinea</i> (P)	7	1.4	2.1	14	28.0
<i>Cassinella lunulata</i> (M)	6	1.2	1.1	12	31.0
<i>Paranovellia</i> sp. (P)	6	1.2	2.2	12	31.0
<i>Polycirrus eximius</i> (P)	6	1.2	0.8	12	31.0
<i>Conopliidae</i> (undet.) (D)	5	1.0	1.7	10	35.0
<i>Parurus longicarpus</i> (D)	5	1.0	1.7	10	35.0
<i>Disioporella umbellata</i> (E)	5	1.0	1.2	10	35.0
<i>Cerebellaria</i> (undet.) B (P)	5	1.0	2.2	10	35.0
<i>Sigalion arenicola</i> (P)	5	1.0	0.7	10	35.0
<i>Glyptopora</i> sp. (A)	4	0.8	1.3	8	40.0
<i>Microdeutopus</i> sp. (A)	4	0.8	0.8	8	40.0
<i>Cheratina</i> (undet.) A	4	0.8	0.8	8	40.0
<i>Parinonovellia longicauda</i> (P)	4	0.8	0.8	8	40.0
<i>Campanilexides acuta</i> (P)	4	0.8	1.8	8	40.0
<i>Strachia</i> (undet.)	3	0.6	0.9	6	46.5
<i>Polispa varians</i> (D)	3	0.6	0.3	6	46.5
<i>Polispa proposita</i> (M)	3	0.6	0.9	6	46.5
<i>Cassinella martinicensis</i> (M)	3	0.6	1.3	6	46.5
<i>Clifingia</i> sp. B (S)	3	0.6	1.3	6	46.5
<i>Marphysa</i> sp. B (lar.) (P)	3	0.6	0.3	6	46.5
<i>Axiopella munda</i> (P)	3	0.6	0.9	6	46.5
<i>Scutimeringos rudicola</i> (P)	3	0.6	1.3	6	46.5
<i>Acanipora</i> (undet.) A	2	0.4	0.5	4	57.0
<i>Campylaspis</i> sp. (D)	2	0.4	0.5	4	57.0
<i>Pharis</i> sp. (A)	2	0.4	0.5	4	57.0
<i>Leptostylis smithi</i> (D)	2	0.4	0.5	4	57.0
<i>Palaemon</i> (undet.) I	2	0.4	0.5	4	57.0
<i>Palaemonia</i> (undet.) I	2	0.4	0.5	4	57.0
<i>Clava barenzambella</i> (M)	2	0.4	0.5	4	57.0
<i>Coralliophila indicata</i> (P)	2	0.4	0.5	4	57.0
<i>Paranovellia apogon</i> (P)	2	0.4	0.5	4	57.0
<i>Cerebellaria</i> (undet.) A (P)	2	0.4	0.5	4	57.0
<i>Urechis</i> sp. (P)	2	0.4	0.5	4	57.0
<i>Urechis sanguinea</i> (P)	2	0.4	0.5	4	57.0
<i>Travisia</i> sp. (P)	2	0.4	0.5	4	57.0

Table 2. Cont.

[illegible]

Table 77. Abundance of macroinvertebrate species in grab collections from station DS35. (A = Amphipoda; C = Cumacea; Ce = Cephalochordata; D = Decapoda; E = Echinodermata; Ec = Ectoprocta; I = Isopoda; M = Mollusca; Mw = Mysidacea; P = Polychaeta; S = Sipunculida; T = Tanaidacea).

DS35

Species	Total Number	Number X	SD	Estimated Number.m ⁻²	Rank by Number
<i>Branchiostoma caribaeum</i> Ce	409	93.8	49.8	938	1.0
<i>Urechis tropakis</i> (A)	65	13.0	12.2	130	2.0
<i>Prionospio cristata</i> (P)	63	12.6	7.2	126	3.0
<i>Hemipodus roseus</i> (P)	61	12.2	8.3	122	4.0
<i>Spilis regulata caroliniae</i> (P)	60	12.0	3.4	120	5.0
Chrysopetalidae (undet.) (P)	54	10.8	9.1	108	6.0
<i>Calyptopaea centralis</i> (M)	52	10.4	9.3	104	7.0
<i>Glyptoplax smithii</i> (D)	49	9.8	11.0	98	8.0
<i>Aspiosiphon spinalis</i> (S)	48	9.6	5.6	96	9.0
<i>Goniadides caroliniae</i> (P)	47	9.4	3.3	94	10.0
<i>Vermiliopsis annulata</i> (P)	39	7.8	9.4	78	11.0
Nematoda (undet.)	35	7.0	5.6	70	12.0
Polychaetophora (undet.) A (M)	32	6.4	3.8	64	13.0
<i>Trishophoxus floridanus</i> (A)	25	5.0	7.0	50	14.5
<i>Polifingia</i> sp. A (S)	25	5.0	9.0	50	14.5
<i>Spioptanes bomayx</i> (P)	24	4.8	4.0	48	16.0
Polychaetophora (undet.) B (M)	22	4.4	1.7	44	17.0
<i>Eulalia sanguinea</i> (P)	21	4.2	4.4	42	18.0
<i>Exogone dispar</i> (P)	20	4.0	4.2	40	19.0
<i>Lupuladria doma</i> (Ec)	19	3.8	2.4	38	20.0
<i>Photis</i> sp. (A)	17	3.4	6.0	34	21.5
<i>Axiolabella mucosa</i> (P)	17	3.4	2.1	34	21.5
<i>Hesionura elongata</i> (P)	15	3.0	3.2	30	23.5
<i>Polycirrus eximius</i> (P)	15	3.0	1.6	30	23.5
<i>Minuspio cirrifera</i> (P)	14	2.8	1.9	28	25.0
<i>Eurydice listralis</i> (I)	13	2.6	2.1	26	26.5
<i>Onuphis nebulosa</i> (P)	13	2.6	0.9	26	26.5
Cirratulidae (undet.) B (P)	12	2.4	2.3	24	28.0
<i>Pinnixa retinens</i> (D)	11	2.2	1.6	22	29.5
<i>Travisia parva</i> (P)	11	2.2	2.3	22	29.5
<i>Crassinella lunulata</i> (M)	10	2.0	1.9	20	31.0
<i>Mera caroliniana</i> (A)	9	1.8	1.6	18	33.5
<i>Apantura magnifica</i> (I)	9	1.8	1.9	18	33.5
Corbellaria (undet.)	9	1.8	2.4	18	33.5
<i>Marphysa</i> sp. B (lar.) (P)	9	1.8	1.8	18	33.5
Isopoda (undet.) A	8	1.6	1.8	16	37.5
<i>Leptognatha laeta</i> T	8	1.6	1.3	16	37.5
<i>Nephtys squamosa</i> (P)	8	1.6	1.8	16	37.5
Oligochaeta (undet.)	8	1.6	1.6	16	37.5
Gonellacidae (undet.) (D)	7	1.4	1.1	14	42.5
Astracoda (undet.)	7	1.4	1.3	14	42.5
<i>Trapanosyllis</i> sp. (P)	7	1.4	2.1	14	42.5
<i>Metanastoe lateralis</i> (P)	7	1.4	1.1	14	42.5
<i>Neuntya indica</i> P	7	1.4	1.1	14	42.5
<i>Sentistamerinos rudolphi</i> (P)	7	1.4	1.7	14	42.5
<i>Alteborghia</i> sp. A	6	1.2	1.3	12	48.0
<i>Lembae smithi</i> (A)	6	1.2	2.7	12	48.0
<i>Urechis nequalis</i> (M)	6	1.2	1.6	12	48.0
<i>Polinia macroceris</i> (P)	6	1.2	1.5	12	48.0
Phyllodiscidae (undet.) A (P)	6	1.2	2.2	12	48.0
<i>Pagurus longicarpus</i> (D)	5	1.0	1.7	10	54.0
<i>Levinseni longicarpus</i> (M)	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. A	5	1.0	1.4	10	54.0
<i>Alpheidae</i> sp. B	5	1.0	1.2	10	54.0
<i>Alpheidae</i> sp. C	5	1.0	1.4	10	54.0
<i>Alpheidae</i> sp. D	5	1.0	1.2	10	54.0
<i>Alpheidae</i> sp. E	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. F	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. G	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. H	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. I	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. J	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. K	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. L	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. M	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. N	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. O	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. P	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. Q	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. R	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. S	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. T	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. U	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. V	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. W	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. X	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. Y	5	1.0	1.0	10	54.0
<i>Alpheidae</i> sp. Z	5	1.0	1.0	10	54.0

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[illegible]

Table 77. (Cont.).

Species	Total Number	Number, 0.1m ²		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<i>Tharyx marioni</i> (P)	1	0.2	0.4	2	113.0
<i>Strophopus lyriformis</i> (P)	1	0.2	0.4	2	113.0
<i>Acistresyllis jonesi</i> (P)	1	0.2	0.4	2	113.0
<i>Glycera oxycephala</i> (P)	1	0.2	0.4	2	113.0
<i>Eunice websteri</i> (P)	1	0.2	0.4	2	113.0
<i>Terebellidae</i> (undet.) 3 (P)	1	0.2	0.4	2	113.0
<i>Nereis succinea</i> (P)	1	0.2	0.4	2	113.0
<i>Eteone heteropoda</i> (P)	1	0.2	0.4	2	113.0
<i>Poecilochaetus</i> sp. (P)	1	0.2	0.4	2	113.0
<i>Lysidice ninetta</i> (P)	1	0.2	0.4	2	113.0
<i>Phyllodoce arenae</i> (P)	1	0.2	0.4	2	113.0
<i>Aonides mayaguezensis</i> (P)	1	0.2	0.4	2	113.0

Table 13. Abundance of macroinvertebrate species in grab collections from station DS36. (A = Amphipoda; C = Cumacea; Co = Cephalochordata; D = Decapoda; E = Echinodermata; I = Isopoda; M = Mollusca; My = Mysidacea; P = Polychaeta; S = Sipunculida).

Species	Total Number	Number 0.1m ²		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<i>Branchiostoma virgatum</i> (Co)	353	70.6	50.4	706	1.0
<i>Caprellidae</i> sp. (E)	162	32.4	58.1	324	2.0
<i>Trichophoxus floridanus</i> (A)	58	11.6	7.3	116	3.0
<i>Spicophanes bonyx</i> (P)	37	7.4	3.3	74	4.0
<i>Acanthonaustorius</i> sp. (A)	25	5.0	10.1	50	5.0
<i>Axioteilia mucosa</i> (P)	24	4.8	4.2	48	6.0
<i>Armandia maculata</i> (P)	20	4.0	3.5	40	7.0
<i>Nemertina</i> (undet.) (A)	19	3.8	2.5	38	8.0
<i>Nematoda</i> (undet.)	18	3.6	2.1	36	9.5
<i>Nephtys incisa</i> (P)	18	3.6	3.0	36	9.5
<i>Chrysopetalidae</i> (undet.) (P)	16	3.2	2.3	32	11.0
<i>Glycera oxycephala</i> (P)	15	3.0	2.4	30	12.5
<i>Nephtys picta</i> (P)	15	3.0	2.3	30	12.5
<i>Onuphis eremica</i> (P)	12	2.4	2.1	24	14.0
<i>Acanthura magnifica</i> (I)	10	2.0	1.4	20	15.0
<i>Trichophoxus epistomus</i> (A)	8	1.6	3.0	16	17.0
<i>Prochaetodon</i> sp. (A)	8	1.6	2.3	16	17.0
<i>Aspidosiphon spinalis</i> (S)	8	1.6	1.1	16	17.0
<i>Syllis regulata</i> (Caroliniae) (P)	7	1.4	1.7	14	19.5
<i>Prionospio cristata</i> (P)	7	1.4	3.1	14	19.5
<i>Bathyporeia parkeri</i> (A)	6	1.2	1.2	12	21.5
<i>Pseudocythere ambigua</i> (P)	6	1.2	1.0	12	21.5
<i>Prionospio fallax</i> (P)	5	1.0	1.0	10	23.5
<i>Phyllodoce arenae</i> (P)	5	1.0	1.4	10	23.5
<i>Pinnixa reticiens</i> (D)	4	0.8	0.8	8	29.5
<i>Rudiloboides</i> sp. (A)	4	0.8	1.3	8	29.5
<i>Gastrosaccus</i> sp. (A) (My)	4	0.8	1.3	8	29.5
<i>Ampelisca verrilli</i> (A)	4	0.8	1.3	8	29.5
<i>Tiron propaxis</i> (A)	4	0.8	1.3	8	29.5
<i>Polychaetophora</i> (undet.) (A) (M)	4	0.8	1.3	8	29.5
<i>Cirratulidae</i> (undet.) (P)	4	0.8	0.8	8	29.5
<i>Aristidea perrini</i> (P)	4	0.8	1.3	8	29.5
<i>Prionospio cirratibranchiata</i> (P)	4	0.8	1.3	8	29.5
<i>Magelona rosea</i> (P)	4	0.8	1.3	8	29.5
<i>Acanthonaustorius millsi</i> (A)	3	0.6	1.3	6	36.0
<i>Holothuroidea</i> (undet.) (S)	3	0.6	0.5	6	36.0
<i>Oligochaeta</i> (undet.)	3	0.6	1.3	6	36.0
<i>Trachypneus constrictus</i> (D)	2	0.4	0.4	4	48.0
<i>Glymborgia</i> sp. (A)	2	0.4	0.5	4	48.0
<i>Terbarnia</i> sp. (A)	2	0.4	0.9	4	48.0
<i>Photis</i> sp. (A)	2	0.4	0.4	4	48.0
<i>Neomysis americana</i> (My)	2	0.4	0.4	4	48.0
<i>Brvilia concentrica</i> (M)	2	0.4	0.5	4	48.0
<i>Crassinella lunulata</i> (M)	2	0.4	0.4	4	48.0
<i>Aspidosiphon mitakiensis</i> (S)	2	0.4	0.4	4	48.0
<i>Onchides caroliniae</i> (P)	2	0.4	0.4	4	48.0
<i>Limbrinaea latreilli</i> (P)	2	0.4	0.5	4	48.0
<i>Macrallymenia donaldi</i> (P)	2	0.4	0.4	4	48.0
<i>Terebellinae</i> (undet.) (A) (P)	2	0.4	0.5	4	48.0
<i>Owenia fusiformis</i> (P)	2	0.4	0.4	4	48.0
<i>Glymenella torquata</i> (P)	2	0.4	0.4	4	48.0
<i>Pionosyllis</i> sp. (P)	2	0.4	0.4	4	48.0
<i>Isolia pinnella</i> (P)	2	0.4	0.4	4	48.0
<i>Lemnae uncinata</i> (A)	2	0.4	0.4	4	48.0
<i>Hydrotus</i> sp. (A)	2	0.4	0.4	4	48.0
<i>Limnodynema</i> (undet.) (A) (P)	2	0.4	0.4	4	48.0
<i>Hydrotus stehensoni</i> (P)	2	0.4	0.4	4	48.0
<i>Hydrotus</i> sp. (A)	2	0.4	0.4	4	48.0
<i>Portunidae</i> (undet.) (D)	2	0.4	0.4	4	48.0
<i>Procladius</i> sp. (P)	2	0.4	0.4	4	48.0
<i>Ampelisca</i> (undet.) (A)	2	0.4	0.4	4	48.0

Table 13. (Cont.)

Species	Total Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
		$\bar{x}$	SD		
<u>Cyclaspis varians</u> (C)	1	0.2	0.4	2	68.0
<u>Oxyurostylis smitni</u> (C)	1	0.2	0.4	2	68.0
<u>Cyathura burbancki</u> (I)	1	0.2	0.4	2	68.0
<u>Pseudoplatyishnopus floridanus</u> (A)	1	0.2	0.4	2	68.0
<u>Actiniaria</u> (undet.)	1	0.2	0.4	2	68.0
<u>Ophiuroidea</u> (undet.)	1	0.2	0.4	2	68.0
<u>Discoasterella umbellata</u> (Ec)	1	0.2	0.4	2	68.0
<u>Olivella mucica</u> (M)	1	0.2	0.4	2	68.0
<u>Tellina probrina</u> (M)	1	0.2	0.4	2	68.0
<u>Calyptraea centralis</u> (M)	1	0.2	0.4	2	68.0
<u>Chione</u> sp. (M)	1	0.2	0.4	2	68.0
<u>Sipunculus nudus</u> (S)	1	0.2	0.4	2	68.0
<u>Nereis acuminata</u> (P)	1	0.2	0.4	2	68.0
<u>Lolita pedusa</u> (P)	1	0.2	0.4	2	68.0
<u>Polyscirrus eximius</u> (P)	1	0.2	0.4	2	68.0
<u>Dispio acuminata</u> (P)	1	0.2	0.4	2	68.0
<u>Nereis succinea</u> (P)	1	0.2	0.4	2	68.0
<u>Orilonereis magna</u> (P)	1	0.2	0.4	2	68.0
<u>Ekogona dispar</u> (P)	1	0.2	0.4	2	68.0
<u>Magelona puvilliae</u> (P)	1	0.2	0.4	2	68.0
<u>Magelona papillicornis</u> (P)	1	0.2	0.4	2	68.0
<u>Eunice vittata</u> (P)	1	0.2	0.4	2	68.0

D

Figure 1

5

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Table 79. (Cont.)

DS37

Species	Total Number	Number/0.1m ²		Estimated Number/m ²	Rank by Number
		$\bar{x}$	SD		
<u>Pagurus longicarpus</u> (D)	1	0.2	0.4	1	77.0
<u>Ovalipes stephensoni</u> (D)	1	0.2	0.4	2	77.0
<u>Processa hemphilli</u> (D)	1	0.2	0.4	3	77.0
<u>Synchelidium americanum</u> (A)	1	0.2	0.4	4	77.0
<u>Bathyporeia parkeri</u> (A)	1	0.2	0.4	5	77.0
<u>Rudilemboidea</u> sp. (A)	1	0.2	0.4	6	77.0
<u>Carinobatea carinata</u> (A)	1	0.2	0.4	7	77.0
<u>Microdeutopus</u> sp. (A)	1	0.2	0.4	8	77.0
<u>Leptochelia rapax</u> (T)	1	0.2	0.4	9	77.0
<u>Nannosquilla</u> sp. (St)	1	0.2	0.4	10	77.0
<u>Oxyurostylis smithi</u> (C)	1	0.2	0.4	11	77.0
<u>Pseudoplatyschnopus floridanus</u> (A)	1	0.2	0.4	12	77.0
<u>Melissa quinquesperforata</u> (E)	1	0.2	0.4	13	77.0
<u>Onchophragmus</u> sp. A (E)	1	0.2	0.4	14	77.0
<u>Polysiphophora</u> (undet.) A (M)	1	0.2	0.4	15	77.0
<u>Propidia</u> sp. (M)	1	0.2	0.4	16	77.0
<u>Anachis avara</u> (M)	1	0.2	0.4	17	77.0
<u>Mitrella lunata</u> (M)	1	0.2	0.4	18	77.0
<u>Abra aequalis</u> (M)	1	0.2	0.4	19	77.0
<u>Lolifingia</u> sp. B (S)	1	0.2	0.4	20	77.0
<u>Trypanosyllis</u> sp. (P)	1	0.2	0.4	21	77.0
<u>Pomatoperos americanus</u> (P)	1	0.2	0.4	22	77.0
<u>Parapionosyllis longicirrata</u> (P)	1	0.2	0.4	23	77.0
<u>Tharyx marioni</u> (P)	1	0.2	0.4	24	77.0
<u>Artisidea perruti</u> (P)	1	0.2	0.4	25	77.0
<u>Polysiphurus eximius</u> (P)	1	0.2	0.4	26	77.0
<u>Hesionidae</u> (undet.) A (P)	1	0.2	0.4	27	77.0
<u>Nereis succinea</u> (P)	1	0.2	0.4	28	77.0
<u>Phyllodocidae</u> (undet.) P	1	0.2	0.4	29	77.0

Table 50. Abundance of macroinvertebrate species in grab collections from station D336. A = Amphipoda; Br = Brachiopoda; C = Camacea; Co = Cephalochordata; Ch = Chitridia; D = Decapoda; E = Echinodermata; Ec = Ectoprocta; I = Isopoda; M = Mollusca; My = Mysidacea; P = Polychaeta; S = Sipunculida; T = Tanaidacea.

D336					
Species	Total Number	Number 0.1m ² N	SD	Estimated Number m ²	Rank by Number
<i>Euclyptus vittata</i> P.	146	29.2	12.7	292	1.0
<i>Leptodermis viridula</i> P.	133	26.6	9.4	266	2.0
<i>Chrysomelidae</i> undet. P.	132	26.4	5.4	264	3.0
<i>Syllis regulata caroliniae</i> P.	73	14.6	6.1	146	4.0
<i>Oligochaeta</i> undet. P.	65	13.0	7.3	130	5.0
<i>Aspidosiphon spinalis</i> (S)	53	10.6	4.0	106	6.0
<i>Polychaeta</i> undet. P.	50	10.0	5.4	100	7.0
<i>Asmineira bilobata</i> (P)	45	9.0	5.3	90	8.0
<i>Branchiostoma caribaeum</i> Co.	44	8.8	4.5	88	9.0
<i>Pagurus longicarpus</i> D.	35	7.0	4.2	70	10.0
<i>Exogone planar</i> P.	30	6.0	2.5	60	11.0
<i>Polychaeta</i> undet. A, M.	29	5.8	4.0	58	12.0
<i>Lumbricoides latrillii</i> (P)	28	5.6	3.6	56	13.0
<i>Rudilobos</i> sp. A	27	5.4	3.5	54	14.0
<i>Amphipoda</i> undet. A	25	5.0	4.8	50	15.0
<i>Lemna</i> undet. A	24	4.8	3.0	48	16.0
<i>Hydrilla pyramidalis</i> Br.	24	4.8	2.2	48	17.0
<i>Nematoda</i> undet. P.	24	4.8	3.8	48	18.0
<i>Synaldis albani</i> (P)	24	4.8	2.5	48	19.0
<i>Prionospio pinnata</i> P.	24	4.8	1.9	48	20.0
<i>Pholis</i> sp. A	23	4.6	1.8	46	21.0
<i>Polychaeta</i> undet. B, M.	22	4.4	3.0	44	22.0
<i>Polychaeta</i> undet. P.	22	4.4	3.9	44	23.0
<i>Annelida</i> undet. P.	20	4.0	3.1	40	24.0
<i>Hydrilla</i> (P)	19	3.8	1.9	38	25.0
<i>Hydrilla</i> (P)	19	3.8	3.6	38	26.0
<i>Hydrilla</i> (A)	18	3.6	1.8	36	27.0
<i>Medusae</i> undet. P.	18	3.6	2.3	36	28.0
<i>Parapionosyllis longicirrata</i> (P)	17	3.4	1.8	34	29.0
<i>Parapionosyllis longicirrata</i> (P)	16	3.2	1.6	32	30.0
<i>Cirratulidae</i> undet. B, P.	16	3.2	1.6	32	31.0
<i>Amphipoda</i> undet. P.	15	3.0	3.7	30	32.0
<i>Microdeutopus</i> sp. (A)	15	3.0	3.9	30	33.0
<i>Theridionella annulata</i> (P)	15	3.0	3.3	30	34.0
<i>Hydromedusa</i> undet. M.	14	2.8	1.8	28	35.0
<i>Phyllidia longipes</i> P.	14	2.8	1.8	28	36.0
<i>Hydrilla</i> undet. P.	13	2.6	1.4	26	37.0
<i>Axiometra mucosa</i> (P)	13	2.6	1.3	26	38.0
<i>Isopoda</i> undet. A	12	2.4	1.3	24	39.0
<i>Crassinella lunulata</i> M.	12	2.4	1.4	24	40.0
<i>Maurolicthe zinnii</i> P.	12	2.4	2.0	24	41.0
<i>Hydromedusa</i> P.	12	2.4	1.6	24	42.0
<i>Hydromedusa</i> (D)	11	2.2	1.0	22	43.0
<i>Hydrilla</i> (A)	11	2.2	1.6	22	44.0
<i>Syllis</i> (P)	10	2.0	2.0	20	45.0
<i>Alpheus</i> (D)	9	1.8	1.8	18	46.0
<i>Hydrilla</i> (D)	9	1.8	1.1	18	47.0
<i>Hydrilla</i> undet. B, P.	9	1.8	2.5	18	48.0
<i>Hydrilla</i> (P)	9	1.8	1.9	18	49.0
<i>Hydrilla</i> (P)	9	1.8	1.8	18	50.0
<i>Hydrilla</i> (P)	9	1.8	2.0	18	51.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	52.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	53.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	54.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	55.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	56.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	57.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	58.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	59.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	60.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	61.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	62.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	63.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	64.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	65.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	66.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	67.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	68.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	69.0
<i>Hydrilla</i> (P)	9	1.8	1.6	18	70.0

Table 30. (Cont.)

[illegible]

Table 30 (Cont.)

2538

Species	Total Number	Number 0.1m ²		Estimated Number/m ²	Rank by Number
		$\bar{x}$	SD		
<i>Piezidia</i> undet. A (D)	1	0.2	0.4	1	150.0
<i>Autamita evermanni</i> (D)	1	0.2	0.4	2	150.0
<i>Pollia murica</i> (D)	1	0.2	0.4	3	150.0
<i>Marilia</i> undet. B (D)	1	0.2	0.4	4	150.0
<i>Lillimassa atlantica</i> (D)	1	0.2	0.4	5	150.0
<i>Elasmopus levis</i> A	1	0.2	0.4	6	150.0
<i>Leptochela floridanus</i> A	1	0.2	0.4	7	150.0
<i>Leptochela</i> undet. E	1	0.2	0.4	8	150.0
<i>Leptochela</i> undet. I	1	0.2	0.4	9	150.0
<i>Medanthurus</i> sp. (I)	1	0.2	0.4	10	150.0
<i>Leptochela</i> sp. (I)	1	0.2	0.4	11	150.0
<i>Leptochela</i> sp. B (M)	1	0.2	0.4	12	150.0
<i>Leptochela</i> sp. (M)	1	0.2	0.4	13	150.0
<i>Leptochela</i> sp. (A)	1	0.2	0.4	14	150.0
<i>Leptochela</i> sp. A	1	0.2	0.4	15	150.0
<i>Leptochela</i> sp. T	1	0.2	0.4	16	150.0
<i>Leptochela</i> undet. (Cn)	1	0.2	0.4	17	150.0
<i>Leptochela</i> undet.	1	0.2	0.4	18	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	19	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	20	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	21	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	22	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	23	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	24	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	25	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	26	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	27	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	28	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	29	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	30	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	31	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	32	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	33	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	34	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	35	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	36	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	37	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	38	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	39	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	40	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	41	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	42	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	43	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	44	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	45	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	46	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	47	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	48	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	49	150.0
<i>Leptochela</i> undet. (P)	1	0.2	0.4	50	150.0

Table 41. Abundance of macroinvertebrate species in grab collections from station 1849. A = Amphipoda; L = Lemniscus; C = Corophium insidiosum; B = Decapoda; E = Echinodermata; Eo = Eurytemora; I = Isopoda; M = Mollusca; P = Polychaeta; S = Stomatopoda; T = Tanaidacea.

Species	DS 19		Estimated Number/m ²	Rank by Number
	Total Number	Number 3.1m ² FD		
<i>Ascaris suum</i> (det.)	1027		2.51	1.0
<i>Ascaris suum</i> A	49		1.94	2.0
<i>Ascaris suum</i> (det.)	42		1.41	3.0
<i>Ascaris suum</i> (det.) A M	36		1.12	4.0
<i>Ascaris suum</i> (det.) P	34		.98	5.0
<i>Ascaris suum</i> P	27		.84	6.0
<i>Ascaris suum</i> (det.)	21		.68	7.0
<i>Ascaris suum</i> (det.) P	18		.56	8.0
<i>Ascaris suum</i> (det.) P	16		.48	9.0
<i>Ascaris suum</i> P	14		.43	10.0
<i>Ascaris suum</i> (det.)	13		.41	11.0
<i>Ascaris suum</i> (det.) A M	12		.39	12.0
<i>Ascaris suum</i> (det.) P	11		.37	13.0
<i>Ascaris suum</i> (det.)	10		.35	14.0
<i>Ascaris suum</i> (det.)	9		.33	15.0
<i>Ascaris suum</i> (det.)	8		.31	16.0
<i>Ascaris suum</i> (det.)	7		.29	17.0
<i>Ascaris suum</i> (det.)	6		.27	18.0
<i>Ascaris suum</i> (det.)	5		.25	19.0
<i>Ascaris suum</i> (det.)	4		.23	20.0
<i>Ascaris suum</i> (det.)	3		.21	21.0
<i>Ascaris suum</i> (det.)	2		.19	22.0
<i>Ascaris suum</i> (det.)	1		.17	23.0
<i>Ascaris suum</i> (det.)	1		.15	24.0
<i>Ascaris suum</i> (det.)	1		.13	25.0
<i>Ascaris suum</i> (det.)	1		.11	26.0
<i>Ascaris suum</i> (det.)	1		.09	27.0
<i>Ascaris suum</i> (det.)	1		.07	28.0
<i>Ascaris suum</i> (det.)	1		.05	29.0
<i>Ascaris suum</i> (det.)	1		.03	30.0
<i>Ascaris suum</i> (det.)	1		.01	31.0
<i>Ascaris suum</i> (det.)	1		.01	32.0
<i>Ascaris suum</i> (det.)	1		.01	33.0
<i>Ascaris suum</i> (det.)	1		.01	34.0
<i>Ascaris suum</i> (det.)	1		.01	35.0
<i>Ascaris suum</i> (det.)	1		.01	36.0
<i>Ascaris suum</i> (det.)	1		.01	37.0
<i>Ascaris suum</i> (det.)	1		.01	38.0
<i>Ascaris suum</i> (det.)	1		.01	39.0
<i>Ascaris suum</i> (det.)	1		.01	40.0
<i>Ascaris suum</i> (det.)	1		.01	41.0
<i>Ascaris suum</i> (det.)	1		.01	42.0
<i>Ascaris suum</i> (det.)	1		.01	43.0
<i>Ascaris suum</i> (det.)	1		.01	44.0
<i>Ascaris suum</i> (det.)	1		.01	45.0
<i>Ascaris suum</i> (det.)	1		.01	46.0
<i>Ascaris suum</i> (det.)	1		.01	47.0
<i>Ascaris suum</i> (det.)	1		.01	48.0
<i>Ascaris suum</i> (det.)	1		.01	49.0
<i>Ascaris suum</i> (det.)	1		.01	50.0

Species	DS39		Estimated Number	Range by Number
	Total Number	Number X		
<i>Dentalium salinus</i> (M)	2		+	20.5
<i>Sipunculus nudus</i> (S)	2		+	20.5
<i>Trochanosyllis</i> sp. (P)	2		+	20.5
<i>Syllis ferruginea</i> (P)	2		+	20.5
<i>Nyctera papillosa</i> (P)	2		+	20.5
<i>Notomastus lateralis</i> (P)	2		+	20.5
Terebellidae (undet.) B (P)	2		+	20.5
<i>Nyctera fibranchiata</i> (P)	2		+	20.5
Nereidae (undet.) (P)	2		+	20.5
<i>Eulalia sanguinea</i> (P)	2		+	20.5
<i>Phyllodoce arenae</i> (P)	2		+	20.5
<i>Alpheus formosus</i> (D)	1		2	20.5
<i>Epallia parvosa</i> (D)	1		2	20.5
<i>Heterocrypta granulata</i> (D)	1		2	20.5
Portunidae (undet.) (D)	1		2	20.5
<i>Circiana polita</i> (I)	1		2	20.5
<i>Trichopnoxys floridanus</i> (A)	1		2	20.5
<i>Uca caroliniana</i> (A)	1		2	20.5
<i>Libinia littoralis</i> (A)	1		2	20.5
Decapoda (undet.) H	1		2	20.5
Turbellaria (undet.)	1		2	20.5
Polychaeta (undet.) B (E)	1		2	20.5
<i>Streblospio benedicti</i> (M)	1		2	20.5
Columbellidae (undet.) A (M)	1		2	20.5
Turridae (undet.) A (M)	1		2	20.5
Turridae (undet.) B (M)	1		2	20.5
<i>Hydrobia ulvae</i> (M)	1		2	20.5
Marginellidae (undet.) A (M)	1		2	20.5
<i>Nudibranchia</i> (undet.) C (P)	1		2	20.5
<i>Ensis directus</i> (M)	1		2	20.5
<i>Lima pulchella</i> (M)	1		2	20.5
<i>Crassostrea lenis</i> (M)	1		2	20.5
<i>Littorina</i> sp. B (S)	1		2	20.5
<i>Stomatopoda stenilophora</i> (P)	1		2	20.5
Terebellidae (undet.) C (P)	1		2	20.5
Phyllodoce (undet.) A (P)	1		2	20.5
<i>Amphipoda</i> (P)	1		2	20.5
<i>Amphipoda websteri</i> (P)	1		2	20.5
<i>Stomatopoda</i> (P)	1		2	20.5
<i>Amphipoda</i> (P)	1		2	20.5
Amphipoda (undet.) (P)	1		2	20.5
<i>Amphipoda</i> (P)	1		2	20.5
<i>Amphipoda</i> (P)	1		2	20.5

*Nematode grabs were combined; no mean or standard deviation available.

Table 3. Abundance of macroinvertebrate species in grab collections from station DS40. A = Amphipoda; C = Crustacea; Ch = Cephalochordata; D = Decapoda; E = Echinodermata; Ec = Ectopoda; I = Isopoda; M = Mollusca; My = Mysidacea; P = Polychaeta; Py = Pyrosomella; S = Sibunculilla; T = Tanaidacea.

Species	Total Number	Number (0.1m ²)		Estimated Number m ⁻²	Rank by Number
		$\bar{x}$	SD		
<u>Brachiosquilla viridula</u> (D)	139			2788	1.0
<u>Axiidissus spinalis</u> (A)	339			678	2.0
<u>Nemastella</u> (undet.)	111			222	3.0
<u>Polydora</u> (undet.) (A)	101			202	4.0
<u>Polydora</u> (undet.) (B)	74			158	5.0
<u>Golfingia</u> sp. 3 (S)	74			148	6.0
<u>Eurydice litorea</u> (A)	68			136	7.0
<u>Hydrulax smithii</u> (D)	60			120	8.0
<u>Parionella</u> (undet.)	55			110	9.0
<u>Sipunculida</u> (undet.)	54			108	10.5
<u>Ionidides caroliniae</u> (P)	54			108	10.5
<u>Leptognathia</u> (A)	50			100	12.0
<u>Thalassidroma</u> (P)	47			94	14.0
<u>Parionellidae</u> (undet.) (B)	47			94	14.0
<u>Eurydice vittata</u> (P)	47			94	14.0
<u>Tiron tropakis</u> (A)	42			84	17.0
<u>Syllis regulata caroliniae</u> (P)	42			84	17.0
<u>Hemipolys roseus</u> (P)	42			84	17.0
<u>Golfingia</u> sp. A (S)	40			80	19.0
<u>Pholoe minuta</u> (P)	39			78	20.0
<u>Chrysopetalidae</u> (undet.) (P)	34			68	21.0
<u>Exogone dispar</u> (P)	27			54	22.0
<u>Photis</u> sp. (A)	25			50	24.0
<u>Axiobella mucosa</u> (P)	25			50	24.0
<u>Aligochaeta</u> (undet.)	25			50	24.0
<u>Microdeutopus</u> sp. (A)	20			40	26.0
<u>Maeta caroliniana</u> (A)	19			38	27.0
<u>Lembo unicornis</u> (A)	18			36	28.5
<u>Notomastus lobatus</u> (P)	18			36	28.5
<u>Enicola serrata</u> (A)	17			34	30.5
<u>Longipis nebulosa</u> (P)	17			34	30.5
<u>Alpheus normanni</u> (D)	16			32	32.0
<u>Pagurus longicarpus</u> (D)	15			30	34.0
<u>Nephtys squamosa</u> (P)	15			30	34.0
<u>Travisia parva</u> (P)	15			30	34.0
<u>Syllis ovalina</u> (P)	13			26	36.0
<u>Terebellidae</u> (undet.) (A)	12			24	37.0
<u>Nephtys incisus</u> (P)	11			22	38.0
<u>Onuphidae</u> (undet.) (D)	10			20	41.5
<u>Amelissa viduorum</u> (A)	10			20	41.5
<u>Amphipoda</u> sp. (D)	10			20	41.5
<u>Harmothoe</u> sp. B (Dav) (P)	10			20	41.5
<u>Protodermella kefersteini</u> (P)	10			20	41.5
<u>Lagodon serrata</u> (P)	10			20	41.5
<u>Apantaria magnifica</u> (A)	9			18	45.0
<u>Carinobatea carinata</u> (A)	8			16	46.5
<u>Armandia maculata</u> (P)	8			16	46.5
<u>Trichopneustes floridanus</u> (A)	7			14	49.5
<u>Marginella aureodincta</u> (M)	7			14	49.5
<u>Alpheidae</u> (P)	7			14	49.5
<u>Isidia pulchella</u> (P)	7			14	49.5
<u>Sipuncia typica</u> (D)	6			12	54.5
<u>Urechis</u> sp. (A)	6			12	54.5
<u>Thalassidea stenops</u> (P)	6			12	54.5
<u>Parola iridescens</u> (M)	6			12	54.5
<u>Stomatopoda</u> (P)	6			12	54.5
<u>Urechis</u> sp. (P)	6			12	54.5
<u>Isidia</u> (undet.)	6			12	54.5

[illegible]

Species	Total Number	Number 0.1m ² *		Estimated Number **	Rank by Number
		#	SD		
<u>Tanystylum orbiculare</u> (P)	5			10	60.0
<u>Crassinella lamulata</u> "	5			10	60.0
<u>Clypeera sphaerocranella</u> (P)	5			10	60.0
<u>Amphipoda</u> (undet.) A	4			8	65.5
<u>Amphipoda</u> (undet.) F	4			8	65.5
<u>Calyptraea centralis</u> "	4			8	65.5
<u>Pentalium salinus</u> M	4			8	65.5
<u>Gastropoda</u> (undet.) B	4			8	65.5
<u>Obolus denticulatus</u> (P)	4			8	65.5
<u>Pinnixa rotunda</u> (P)	3			6	73.0
<u>Amadea</u> (undet.) H	3			6	73.0
<u>Capillaria varians</u> (P)	3			6	73.0
<u>Nemertina</u> (undet.) G	3			6	73.0
<u>Cladocerca medialis</u> (P)	3			6	73.0
<u>Crassinella tectonellana</u> "	3			6	73.0
<u>Viridocerca viridescens</u> (M)	3			6	73.0
<u>Cystodonta</u> (undet.) A	3			6	73.0
<u>Capillaria arctica</u> (P)	3			6	73.0
<u>Tridacna</u> (undet.) C	2			4	85.5
<u>Brachyura</u> (undet.) D	2			4	85.5
<u>Portunidae</u> (undet.) E	2			4	85.5
<u>Lentachella ripax</u> (P)	2			4	85.5
<u>Leptocarpus</u> (undet.) I	2			4	85.5
<u>Amphipoda</u> (undet.) J	2			4	85.5
<u>Amphipoda</u> (undet.) K	2			4	85.5
<u>Onchocerca</u> (undet.) B-E	2			4	85.5
<u>Anadara ovata</u> M	2			4	85.5
<u>Libinia aequalis</u> M	2			4	85.5
<u>Clypeera tessellata</u> (P)	2			4	85.5
<u>Psammolysus tenuicollis</u> (P)	2			4	85.5
<u>Platyspira lamarckii</u> (P)	2			4	85.5
<u>Lysidina pinetta</u> (P)	2			4	85.5
<u>Eulalia sanguinea</u> (P)	2			4	85.5
<u>Petaloporeis socialis</u> (P)	2			4	85.5
<u>Latrepes parvulus</u> (P)	1			2	111.5
<u>Heteropoda granulata</u> (D)	1			2	111.5
<u>Dracopis hamphillii</u> (D)	1			2	111.5
<u>Diapadia imbricata</u> A	1			2	111.5
<u>Amadea</u> (undet.) E	1			2	111.5
<u>Mysidacea</u> (undet.) A	1			2	111.5
<u>Heteropoda formosa</u> M	1			2	111.5
<u>Amadea</u> (undet.) F	1			2	111.5
<u>Psammolysus floridanus</u> A	1			2	111.5
<u>Nemertina</u> (undet.) C	1			2	111.5
<u>Asteria</u> (undet.) B-E	1			2	111.5
<u>Onchocerca angulata</u> E	1			2	111.5
<u>Viridocerca</u> (undet.) M	1			2	111.5
<u>Viridocerca</u> (undet.) N	1			2	111.5
<u>Viridocerca</u> (undet.) O	1			2	111.5
<u>Viridocerca</u> (undet.) P	1			2	111.5
<u>Viridocerca</u> (undet.) Q	1			2	111.5
<u>Viridocerca</u> (undet.) R	1			2	111.5
<u>Viridocerca</u> (undet.) S	1			2	111.5
<u>Viridocerca</u> (undet.) T	1			2	111.5
<u>Viridocerca</u> (undet.) U	1			2	111.5
<u>Viridocerca</u> (undet.) V	1			2	111.5
<u>Viridocerca</u> (undet.) W	1			2	111.5
<u>Viridocerca</u> (undet.) X	1			2	111.5
<u>Viridocerca</u> (undet.) Y	1			2	111.5
<u>Viridocerca</u> (undet.) Z	1			2	111.5
<u>Viridocerca</u> (undet.) AA	1			2	111.5
<u>Viridocerca</u> (undet.) AB	1			2	111.5
<u>Viridocerca</u> (undet.) AC	1			2	111.5
<u>Viridocerca</u> (undet.) AD	1			2	111.5
<u>Viridocerca</u> (undet.) AE	1			2	111.5
<u>Viridocerca</u> (undet.) AF	1			2	111.5
<u>Viridocerca</u> (undet.) AG	1			2	111.5
<u>Viridocerca</u> (undet.) AH	1			2	111.5
<u>Viridocerca</u> (undet.) AI	1			2	111.5
<u>Viridocerca</u> (undet.) AJ	1			2	111.5
<u>Viridocerca</u> (undet.) AK	1			2	111.5
<u>Viridocerca</u> (undet.) AL	1			2	111.5
<u>Viridocerca</u> (undet.) AM	1			2	111.5
<u>Viridocerca</u> (undet.) AN	1			2	111.5
<u>Viridocerca</u> (undet.) AO	1			2	111.5
<u>Viridocerca</u> (undet.) AP	1			2	111.5
<u>Viridocerca</u> (undet.) AQ	1			2	111.5
<u>Viridocerca</u> (undet.) AR	1			2	111.5
<u>Viridocerca</u> (undet.) AS	1			2	111.5
<u>Viridocerca</u> (undet.) AT	1			2	111.5
<u>Viridocerca</u> (undet.) AU	1			2	111.5
<u>Viridocerca</u> (undet.) AV	1			2	111.5
<u>Viridocerca</u> (undet.) AW	1			2	111.5
<u>Viridocerca</u> (undet.) AX	1			2	111.5
<u>Viridocerca</u> (undet.) AY	1			2	111.5
<u>Viridocerca</u> (undet.) AZ	1			2	111.5
<u>Viridocerca</u> (undet.) BA	1			2	111.5
<u>Viridocerca</u> (undet.) BB	1			2	111.5
<u>Viridocerca</u> (undet.) BC	1			2	111.5
<u>Viridocerca</u> (undet.) BD	1			2	111.5
<u>Viridocerca</u> (undet.) BE	1			2	111.5
<u>Viridocerca</u> (undet.) BF	1			2	111.5
<u>Viridocerca</u> (undet.) BG	1			2	111.5
<u>Viridocerca</u> (undet.) BH	1			2	111.5
<u>Viridocerca</u> (undet.) BI	1			2	111.5
<u>Viridocerca</u> (undet.) BJ	1			2	111.5
<u>Viridocerca</u> (undet.) BK	1			2	111.5
<u>Viridocerca</u> (undet.) BL	1			2	111.5
<u>Viridocerca</u> (undet.) BM	1			2	111.5
<u>Viridocerca</u> (undet.) BN	1			2	111.5
<u>Viridocerca</u> (undet.) BO	1			2	111.5
<u>Viridocerca</u> (undet.) BP	1			2	111.5
<u>Viridocerca</u> (undet.) BQ	1			2	111.5
<u>Viridocerca</u> (undet.) BR	1			2	111.5
<u>Viridocerca</u> (undet.) BS	1			2	111.5
<u>Viridocerca</u> (undet.) BT	1			2	111.5
<u>Viridocerca</u> (undet.) BU	1			2	111.5
<u>Viridocerca</u> (undet.) BV	1			2	111.5
<u>Viridocerca</u> (undet.) BW	1			2	111.5
<u>Viridocerca</u> (undet.) BX	1			2	111.5
<u>Viridocerca</u> (undet.) BY	1			2	111.5
<u>Viridocerca</u> (undet.) BZ	1			2	111.5
<u>Viridocerca</u> (undet.) CA	1			2	111.5
<u>Viridocerca</u> (undet.) CB	1			2	111.5
<u>Viridocerca</u> (undet.) CC	1			2	111.5
<u>Viridocerca</u> (undet.) CD	1			2	111.5
<u>Viridocerca</u> (undet.) CE	1			2	111.5
<u>Viridocerca</u> (undet.) CF	1			2	111.5
<u>Viridocerca</u> (undet.) CG	1			2	111.5
<u>Viridocerca</u> (undet.) CH	1			2	111.5
<u>Viridocerca</u> (undet.) CI	1			2	111.5
<u>Viridocerca</u> (undet.) CJ	1			2	111.5
<u>Viridocerca</u> (undet.) CK	1			2	111.5
<u>Viridocerca</u> (undet.) CL	1			2	111.5
<u>Viridocerca</u> (undet.) CM	1			2	111.5
<u>Viridocerca</u> (undet.) CN	1			2	111.5
<u>Viridocerca</u> (undet.) CO	1			2	111.5
<u>Viridocerca</u> (undet.) CP	1			2	111.5
<u>Viridocerca</u> (undet.) CQ	1			2	111.5
<u>Viridocerca</u> (undet.) CR	1			2	111.5
<u>Viridocerca</u> (undet.) CS	1			2	111.5
<u>Viridocerca</u> (undet.) CT	1			2	111.5
<u>Viridocerca</u> (undet.) CU	1			2	111.5
<u>Viridocerca</u> (undet.) CV	1			2	111.5
<u>Viridocerca</u> (undet.) CW	1			2	111.5
<u>Viridocerca</u> (undet.) CX	1			2	111.5
<u>Viridocerca</u> (undet.) CY	1			2	111.5
<u>Viridocerca</u> (undet.) CZ	1			2	111.5
<u>Viridocerca</u> (undet.) DA	1			2	111.5
<u>Viridocerca</u> (undet.) DB	1			2	111.5
<u>Viridocerca</u> (undet.) DC	1			2	111.5
<u>Viridocerca</u> (undet.) DD	1			2	111.5
<u>Viridocerca</u> (undet.) DE	1			2	111.5
<u>Viridocerca</u> (undet.) DF	1			2	111.5
<u>Viridocerca</u> (undet.) DG	1			2	111.5
<u>Viridocerca</u> (undet.) DH	1			2	111.5
<u>Viridocerca</u> (undet.) DI	1			2	111.5
<u>Viridocerca</u> (undet.) DJ	1			2	111.5
<u>Viridocerca</u> (undet.) DK	1			2	111.5
<u>Viridocerca</u> (undet.) DL	1			2	111.5
<u>Viridocerca</u> (undet.) DM	1			2	111.5
<u>Viridocerca</u> (undet.) DN	1			2	111.5
<u>Viridocerca</u> (undet.) DO	1			2	111.5
<u>Viridocerca</u> (undet.) DP	1			2	111.5
<u>Viridocerca</u> (undet.) DQ	1			2	111.5
<u>Viridocerca</u> (undet.) DR	1			2	111.5
<u>Viridocerca</u> (undet.) DS	1			2	111.5
<u>Viridocerca</u> (undet.) DT	1			2	111.5
<u>Viridocerca</u> (undet.) DU	1			2	111.5
<u>Viridocerca</u> (undet.) DV	1			2	111.5
<u>Viridocerca</u> (undet.) DW	1			2	111.5
<u>Viridocerca</u> (undet.) DX	1			2	111.5
<u>Viridocerca</u> (undet.) DY	1			2	111.5
<u>Viridocerca</u> (undet.) DZ	1			2	111.5
<u>Viridocerca</u> (undet.) EA	1			2	111.5
<u>Viridocerca</u> (undet.) EB	1			2	111.5
<u>Viridocerca</u> (undet.) EC	1			2	111.5
<u>Viridocerca</u> (undet.) ED	1			2	111.5
<u>Viridocerca</u> (undet.) EE	1			2	111.5
<u>Viridocerca</u> (undet.) EF	1			2	111.5
<u>Viridocerca</u> (undet.) EG	1			2	111.5
<u>Viridocerca</u> (undet.) EH	1			2	111.5
<u>Viridocerca</u> (undet.) EI	1			2	111.5
<u>Viridocerca</u> (undet.) EJ	1			2	111.5
<u>Viridocerca</u> (undet.) EK	1			2	111.5
<u>Viridocerca</u> (undet.) EL	1			2	111.5
<u>Viridocerca</u> (undet.) EM	1			2	111.5
<u>Viridocerca</u> (undet.) EN	1			2	111.5
<u>Viridocerca</u> (undet.) EO	1			2	111.5
<u>Viridocerca</u> (undet.) EP	1			2	111.5
<u>Viridocerca</u> (undet.) EQ	1			2	111.5
<u>Viridocerca</u> (undet.) ER	1			2	111.5
<u>Viridocerca</u> (undet.) ES	1			2	111.5
<u>Viridocerca</u> (undet.) ET	1			2	111.5
<u>Viridocerca</u> (undet.) EU	1			2	111.5
<u>Viridocerca</u> (undet.) EV	1			2	111.5
<u>Viridocerca</u> (undet.) EW	1			2	111.5
<u>Viridocerca</u> (undet.) EX	1			2	111.5
<u>Viridocerca</u> (undet.) EY	1			2	111.5
<u>Viridocerca</u> (undet.) EZ	1			2	111.5
<u>Viridocerca</u> (undet.) FA	1			2	111.5
<u>Viridocerca</u> (undet.) FB	1			2	111.5
<u>Viridocerca</u> (undet.) FC	1			2	111.5
<u>Viridocerca</u> (undet.) FD	1			2	111.5
<u>Viridocerca</u> (undet.) FE	1			2	111.5
<u>Viridocerca</u> (undet.) FF	1			2	111.5
<u>Viridocerca</u> (undet.) FG	1			2	111.5
<u>Viridocerca</u> (undet.) FH	1			2	111.5
<u>Viridocerca</u> (undet.) FI	1			2	111.5
<u>Viridocerca</u> (undet.) FJ	1			2	111.5
<u>Viridocerca</u> (undet.) FK	1			2	111.5
<u>Viridocerca</u> (undet.) FL	1			2	111.5
<u>Viridocerca</u> (undet.) FM	1			2	111.5
<u>Viridocerca</u> (undet.) FN	1			2	111.5
<u>Viridocerca</u> (undet.) FO	1			2	111.5
<u>Viridocerca</u> (undet.) FP	1			2	111.5
<u>Viridocerca</u> (undet.) FQ	1			2	111.5
<u>Viridocerca</u> (undet.) FR	1			2	111.5
<u>Viridocerca</u> (undet.) FS	1			2	111.5
<u>Viridocerca</u> (undet.) FT	1			2	111.5
<u>Viridocerca</u> (undet.) FU	1			2	111.5
<u>Viridocerca</u> (undet.) FV	1			2	111.5
<u>Viridocerca</u> (undet.) FW	1			2	111.5
<u>Viridocerca</u> (undet.) FX	1			2	111.5
<u>Viridocerca</u> (undet.) FY	1			2	111.5
<u>Viridocerca</u> (undet.) FZ	1			2	111.5
<u>Viridocerca</u> (undet.) GA	1			2	111.5
<u>Viridocerca</u> (undet.) GB	1			2	111.5
<u>Viridocerca</u> (undet.) GC	1			2	111.5
<u>Viridocerca</u> (undet.) GD	1			2	111.5
<u>Viridocerca</u> (undet.) GE	1			2	111.5
<u>Viridocerca</u> (undet.) GF	1			2	111.5
<u>Viridocerca</u> (undet.) GG	1			2	111.5
<u>Viridocerca</u> (undet.) GH	1			2	111.5
<u>Viridocerca</u> (undet.) GI	1			2	111.5
<u>Viridocerca</u> (undet.) GJ	1			2	111.5
<u>Viridocerca</u> (undet.) GK	1			2	111.5
<u>Viridocerca</u> (undet.) GL	1			2	111.5
<u>Viridocerca</u> (undet.) GM	1			2	111.5
<u>Viridocerca</u> (undet.) GN	1			2	111.5
<u>Viridocerca</u> (undet.) GO	1			2	111.5
<u>Viridocerca</u> (undet.) GP	1			2	111.5
<u>Viridocerca</u> (undet.) GQ	1			2	111.5
<u>Viridocerca</u> (undet.) GR	1			2	111.5
<u>Viridocerca</u> (undet.) GS	1			2	111.5
<u>Viridocerca</u> (undet.) GT	1			2	111.5
<u>Viridocerca</u> (undet.) GU	1			2	111.5
<u>Vir</u>					

Table 21. cont.

BS40

Species	Total Number	Number 0.1m ² *		Estimated Number m ²	Rank by Number
		$\bar{x}$	SD		
<u>Trypanosyllis</u> sp. (P)	1			2	111.5
<u>Serpulus vermicularis granulosa</u> (P)	1			2	111.5
<u>Urolophus</u> (P)	1			2	111.5
<u>Sphaerosyllis plicifera</u> (P)	1			2	111.5
<u>Pherusa</u> sp. (P)	1			2	111.5
<u>Scoloplos rubra</u> (P)	1			2	111.5
<u>Hydrobia protuberata</u> (P)	1			2	111.5
<u>Polydora</u> sp. 3 (P)	1			2	111.5
<u>Urosalpinx</u> (P)	1			2	111.5
<u>Arabella iricolor</u> (P)	1			2	111.5
<u>Nereidae</u> (undet.) (P)	1			2	111.5

*Duplicate grabs were combined; no mean or standard deviation available.

Table 83. Number of individuals and number of species for each of the major invertebrate taxa of infaunal organisms from the ocean disposal area study site.

Taxon	Number of Individuals	% of Total	Cumul. %	Taxon	Number of Species	% of Total	Cumul. %
Polychaeta	12,713	37.47	37.47	Polychaeta	211	42.80	42.80
Cephalochordata	6,633	19.55	57.02	Pelecypoda	53	10.75	53.55
Amphipoda	3,406	10.04	67.06	Decapoda	49	9.94	63.49
Pelecypoda	2,369	6.98	74.04	Gastropoda	49	9.94	73.43
Sipunculida	1,768	5.21	79.25	Amphipoda	43	8.72	82.15
Ectoprocta	1,329	3.92	83.17	Echinodermata	20	4.06	86.21
Nematoda	1,142	3.36	86.53	Isopoda	12	2.43	88.64
Decapoda	1,052	3.10	89.63	Cumacea	7	1.42	90.06
Isopoda	590	1.74	91.37	Mysidacea	7	1.42	91.48
Gastropoda	535	1.58	92.95	Sipunculida	6	1.22	92.70
Polyplocophora	451	1.33	94.28	Polyplacophora	5	1.01	93.71
Echinodermata	405	1.19	95.47	Stomatopoda	4	0.81	94.52
Rhynchocoela	366	1.08	96.55	Tanaidacea	4	0.81	95.33
Oligochaeta	296	0.87	97.42	Rhynchocoela	3	0.61	95.94
Tanaidacea	203	0.60	98.02	Scaphapoda	3	0.61	96.55
Cumacea	195	0.57	98.59	Anthozoa	2	0.40	96.95
Ostracoda	119	0.35	98.94	Ectoprocta	2	0.40	97.35
Mysidacea	111	0.33	99.27	Pycnogonida	2	0.40	97.75
Unknown Taxa	66	0.19	99.46	Unknown Taxa	2	0.40	98.15
Brachiopoda	63	0.18	99.64	Brachiopoda	1	0.20	98.35
Turbellaria	59	0.17	99.81	Cephalochordata	1	0.20	98.55
Scaphapoda	21	0.06	99.87	Echitrida	1	0.20	98.75
Anthozoa	16	0.05	99.92	Hemichordata	1	0.20	98.95
Pycnogonida	14	0.04	99.96	Nematoda	1	0.20	99.15
Stomatopoda	6	0.02	99.98	Oligochaeta	1	0.20	99.35
Phoronida	2	0.01		Ostracoda	1	0.20	99.55
Hemichordata	1	0.01		Phoronida	1	0.20	99.75
Echitrida	1	0.01	100.00	Turbellaria	1	0.20	99.95

Table 84. Species diversity and species density information for grab samples collected in and adjacent to the Offshore Disposal Area during August, 1978.

Station	Diversity (H')	Evenness (J')	Richness (SR)	Number of Individuals/0.5 m ²	Number of Species
DS01	3.96	0.83	5.62	102	27
DS02	3.48	0.70	5.68	234	32
DS03	3.70	0.69	7.13	273	41
DS04	4.34	0.75	8.99	407	55
DS05	4.66	0.79	9.03	550	58
DS06	5.50	0.79	17.69	1,108	125
DS07	4.81	0.70	16.83	1,107	119
DS08	5.40	0.80	16.24	643	106
DS09	5.18	0.83	12.13	447	75
DS10	3.66	0.74	5.52	230	31
DS11*	3.86	0.73	6.99	264	40
DS12*	4.63	0.77	10.43	419	64
DS13*	5.98	0.81	22.00	1,978	168
DS14*	4.78	0.82	10.02	296	58
DS15	5.17	0.82	13.10	416	80
DS16	5.53	0.75	20.86	2,593	165
DS17	4.78	0.84	9.06	310	53
DS18	4.83	0.75	12.69	812	86
DS19*	5.09	0.85	10.38	475	65
DS20*	5.04	0.80	12.75	531	81
DS21*	4.20	0.71	9.39	596	61
DS22*	4.74	0.80	10.09	347	60
DS23	4.30	0.81	6.77	274	39
DS24	5.34	0.86	12.93	262	73
DS25	4.60	0.76	10.43	462	65
DS26	5.13	0.79	13.94	551	89
DS27*	3.46	0.55	10.90	1,169	78
DS28*	4.31	0.72	9.84	546	63
DS29*	4.95	0.73	14.85	1,253	107
DS30*	5.23	0.70	21.00	3,966	175
DS31**	4.11	0.63	13.55	1,031	95
DS32	4.20	0.65	12.42	1,197	89
DS33	3.98	0.58	14.79	2,919	119
DS34	4.02	0.61	13.04	1,459	96
DS35	5.11	0.72	18.30	1,690	137
DS36	3.97	0.62	12.06	974	84
DS37	4.64	0.71	13.57	759	91
DS38	6.13	0.82	22.90	1,830	173
DS39	3.91	0.58	13.67	2,169	106
DS40	4.20	0.60	15.73	3,420	129

* stations located in disposal area

** number of individuals in 0.4 m²

Table 39. Geochemical analysis of sediments from the Charleston Harbor Ocean Disposal Area (expressed as percent by weight, dry basis).

	DS01	DS04	DS08	DS09	DS11	DS12	DS13	DS14	DS16
Volatiles Solids	1.48	2.34	2.17	1.65	0.86	1.16	1.27	1.69	1.45
Total Organic Carbon	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
C.O.D.	0.10	0.86	0.30	0.26	0.27	0.33	0.16	0.24	0.36
Nitrogen Kjeldahl	0.10	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.01
Ammonia Nitrogen as NH ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Nitrite Nitrogen as NO ₂	0.00002	0.00001	0.00001	0.00002	0.00001	0.00002	0.00002	0.00002	0.00002
Nitrate Nitrogen as NO ₃	0.00006	0.00019	0.00009	0.00006	0.00009	0.00004	0.00008	0.00006	0.00004
Oil and Grease	0.008	0.010	0.007	0.01	0.022	0.003	0.013	0.012	0.002
Lead	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00019
Zinc	0.0028	0.0016	0.0010	0.0012	0.0014	0.0008	0.0013	0.0012	0.0010
Manganese	0.000020	0.000036	0.000022	0.000007	0.000020	0.000015	0.000019	0.000014	0.000042
Soluble Phosphorus as PO ₄	0.00014	0.00001	0.00006	0.00004	0.00005	0.00002	0.00003	0.00005	0.00005
Total Phosphorus as PO ₄	0.56	0.35	0.20	1.38	0.73	0.19	0.21	0.07	0.21
Iron	0.38	0.68	0.63	0.36	0.42	0.34	0.33	0.31	0.34
Cadmium	0.00003	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Arsenic	0.00017	0.00024	0.00040	0.00055	0.00015	0.00018	0.00040	0.00014	0.00070
Chromium	0.0027	0.0038	0.0031	0.0021	0.0031	0.0027	0.0022	0.0027	0.0022
Nickel	0.00008	0.00021	0.00005	0.00008	0.00006	0.00010	0.00018	0.00018	0.00003
Copper	0.0016	0.0027	0.0018	0.0018	0.0018	0.0016	0.0024	0.0016	0.0016
Silver	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Selenium	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Vanadium	0.00005	0.00030	0.00010	0.00005	0.00037	0.00005	0.00010	0.00037	0.00020

Table 8% (Cont.)

	DS-17	DS-19	DS-20	DS-21	DS-22	DS-24	DS-25	DS-27	DS-28
Volatile Solids	1.26	1.74	1.48	1.47	0.88	1.70	1.44	1.74	0.70
Total Organic Carbon	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
C.O.D.	0.41	0.31	0.33	0.28	0.17	0.26	0.22	0.20	0.15
Nitrogen Kjeldahl	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ammonia Nitrogen as NH ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Nitrite Nitrogen as NO ₂	0.00002	0.00002	0.00001	0.00002	0.00001	0.00001	0.00002	0.00002	0.00001
Nitrate Nitrogen as NO ₃	0.00006	0.00008	0.00015	0.00002	0.00009	0.00008	0.00005	0.00005	0.00009
Oil and Grease	0.010	0.008	0.014	0.007	0.010	0.003	0.010	0.009	0.007
Lead	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Zinc	0.0014	0.0015	0.0016	0.0015	0.0008	0.0012	0.0010	0.0015	0.0006
Mercury	0.000037	0.000030	0.000017	0.000012	0.000023	0.000022	0.000029	0.000018	0.000113
Soluble Phosphorus as PO ₄	0.00006	0.00005	0.00002	0.00007	0.00005	0.00006	0.00006	0.00001	0.00003
Total Phosphorus as PO ₄	0.56	1.06	0.64	0.16	0.19	0.13	0.12	0.77	0.25
Iron	0.44	0.27	0.31	0.37	0.22	0.31	0.31	0.20	0.19
Cadmium	0.00003	0.00005	0.00002	0.00001	0.00001	0.00001	0.00001	0.00003	0.00001
Arsenic	0.00020	0.00014	0.00029	0.00015	0.00011	0.00020	0.00017	0.00013	0.00014
Chromium	0.0007	0.0027	0.0022	0.0022	0.0017	0.0022	0.0022	0.0022	0.0020
Nickel	0.00018	0.00013	0.00021	0.00023	0.00005	0.00016	0.00006	0.00018	0.00005
Copper	0.0016	0.0008	0.0012	0.0022	0.0008	0.0012	0.0010	0.0010	0.0010
Beryllium	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Selenium	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Vanadium	0.00020	0.00030	0.00020	0.00010	0.00005	0.00005	0.00005	0.00005	0.00005

Table No. (Cont.)

	DS-29	DS-30	DS-31	DS-33	DS-36	DS-40
Volatile Solids	1.30	1.54	0.89	1.95	1.15	1.70
Total Organic Carbon	1.0	1.0	1.0	1.0	1.0	1.0
C.O.D.	0.22	0.26	0.14	0.32	0.20	0.36
Nitrogen Kjeldahl	0.01	0.01	0.01	0.02	0.01	0.02
Ammonia Nitrogen as NH ₃	0.01	0.01	0.01	0.01	0.01	0.01
Nitrite Nitrogen as NO ₂	0.00002	0.00001	0.00001	0.00002	0.00001	0.00002
Nitrate Nitrogen as NO ₃	0.00008	0.00011	0.00010	0.00007	0.00011	0.000013
Oil and Grease	0.011	0.007	0.001	0.012	0.007	0.008
Lead	0.00005	0.00006	0.00005	0.00025	0.00005	0.00005
Zinc	0.0008	0.0016	0.0006	0.0008	0.0007	0.0008
Mercury	0.000015	0.000021	0.000006	0.000043	0.000015	0.000018
Soluble Phosphorus as PO ₄	0.00008	0.00008	0.00010	0.00007	0.00001	0.000022
Total Phosphorus as PO ₄	0.22	0.25	1.17	0.19	0.16	0.15
Iron	0.19	0.20	0.12	0.41	0.19	0.18
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Arsenic	0.00018	0.00020	0.00012	0.00100	0.00029	0.00018
Chromium	0.0022	0.0022	0.0017	0.0031	0.0022	0.0017
Nickel	0.00006	0.00005	0.00005	0.00005	0.00005	0.00005
Copper	0.0012	0.0014	0.0012	0.0010	0.0012	0.0018
Barium	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Selenium	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Vanadium	0.00005	0.00005	0.00005	0.00020	0.00005	0.00005

TABLE 1. Results of channel geometry and point location distributions for Charles River Entrance Channel samples.

CHARLES RIVER ENTRANCE CHANNEL

STATION	DATE	COORDINATE (Easting, Northing)	CHANN DEPTH	CHANN WIDTH	CHANN LENGTH	CHANN AREA	CHANN PERIMETER	TOTAL DISTRIBUTION			COMPONENT 1			COMPONENT 2			COMPONENT 3					
								MEAN	SD	% of Sample	MEAN	SD	% of Sample	MEAN	SD	% of Sample	MEAN	SD	% of Sample	MEAN	SD	% of Sample
								CHARLES RIVER ENTRANCE CHANNEL														
1-1	26	27	2.16	1.13	1.88	2.36	1.88	2.36	1.88	1.88	2.36	1.88	1.88	2.36	1.88	1.88	2.36	1.88	1.88	2.36		
1-2	27	28	2.33	1.82	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99		
1-3	28	29	2.16	1.67	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03		
1-4	29	30	0.25	1.33	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		
1-5	30	31	2.33	1.98	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55		
1-6	31	32	2.33	1.66	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25		
1-7	32	33	2.23	1.66	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79		
1-8	33	34	2.36	1.81	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05		
1-9	34	35	2.66	1.33	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		
1-10	35	36	2.98	1.78	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52		
1-11	36	37	3.51	1.99	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56		
1-12	37	38	1.50	1.33	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07		
1-13	38	39	3.36	1.66	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02		
1-14	39	40	3.36	1.66	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02		
1-15	40	41	3.09	1.66	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07		
1-16	41	42	3.28	1.66	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07		
1-17	42	43	2.52	1.66	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87		
1-18	43	44	2.09	1.66	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80		
1-19	44	45	2.62	1.66	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81		
1-20	45	46	2.91	1.66	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82		
1-21	46	47	2.52	1.66	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81		

NOTE: 1. All values are in feet. 2. Skewness indicates a cause effect, frequency of time fall.

3. 0.00 indicates a cause effect, frequency of time fall.

4. 0.00 indicates a cause effect, frequency of time fall.

5. 0.00 indicates a cause effect, frequency of time fall.

TABLE 87. Membership of the six (6) unique textural groups identified in the Charleston Entrance Channel as determined on quartz: phi-normal components.

GROUP 1:	Mean = $2.41 + .12 \phi$ S.D. = $0.30 + .04 \phi$ units	GROUP 2:	Mean = $1.95 + .18 \phi$ S.D. = $0.60 + .10 \phi$ units	GROUP 3:	Mean = $1.79 + .59 \phi$ S.D. = $0.84 + .09 \phi$ units
EC01-1		EC01-2		EC03-2	
EC02-1		EC02-2		EC07-2	
EC03-1		EC05-2		EC16-2	
EC04-1		EC15-2		EC17-2	
EC05-1		EC18-2		EC21-1	
EC06-3		EC20-1			
EC16-1					
EC17-1					
EC18-1					
EC20-2					
GROUP 4:	Mean = $2.78 + .19 \phi$ S.D. = $0.10 + 0.5 \phi$ units	GROUP 5:	Mean = $3.09 + .37 \phi$ S.D. = $0.34 + .13 \phi$ units	GROUP 6:	Mean = $-0.14 + .99 \phi$ S.D. = $0.55 + .09 \phi$ units
EC05-3		EC07-1		EC04-1	
EC06-1		EC08-1		EC04-3	
EC06-2		EC09-1			
EC07-3		EC10-1			
EC08-2		EC11-1			
EC09-2		EC12-1			
EC10-2		EC13-1			
EC11-2		EC14-1			
EC12-2		EC19-1			
EC13-2					
EC14-2					
EC15-1					
EC19-2					
EC21-2					

Table 88. Goodness-of-fit tests for the three (3) major unique textural groups identified from the quartz phi-normal components of Charleston Entrance channel bottom sediments. The null hypothesis being tested is that of equal distribution over the 3 zones.

GROUP 1: $\chi^2 = 2.84$, 2 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Zone 1 (Jetties)	3.04	4
Zone 2 ("Canyon")	2.17	0
Zone 3 (Shelf)	4.78	6

GROUP 4: $\chi^2 = 1.71$, 2 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Zone 1 (Jetties)	4.26	3
Zone 2 ("Canyon")	3.04	5
Zone 3 (Shelf)	6.70	6

GROUP 5: $\chi^2 = 6.21^*$, 2 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Zone 1 (Jetties)	2.74	1
Zone 2 ("Canyon")	1.96	5
Zone 3 (Shelf)	4.30	3

*Reject the null hypothesis of equal distribution at the 90% confidence level.

Figure 1 is a schematic representation of the experimental design. It shows a sequence of events: a subject is presented with a stimulus (a face), then a response is recorded (a button press), and finally, the subject is presented with a feedback stimulus (a face). The response is recorded at two different time points, labeled '1' and '2', and the feedback stimulus is presented at two different time points, labeled '1' and '2'.

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AD-A152 031

BENTHIC AND SEDIMENTOLOGIC STUDIES ON THE CHARLESTON
HARBOR OCEAN DISPOSAL (U) SOUTH CAROLINA WILDLIFE AND
MARINE RESOURCES DEPT CHARLESTON M. AUG 79

3/3

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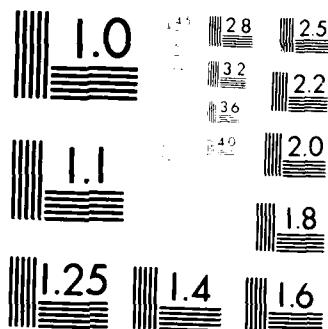
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MICROCOPY RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

BLE 42. Membership of six (6) unique textural groups identified in the Charleston Harbor Offshore Disposal Study Area is determined on quartz phi-normal components. These six (6) groups account for 70% of the total quartz phi-normal components.

GROUP 1: Mean = $1.01 \pm .13 \phi$
S.D. = $.55 \pm .09 \phi$ units
No. = 23

DS-10-A1 DS-19-E1
DS-10-C1 DS-19-F1
DS-12-A1
DS-12-B1
DS-12-C1
DS-12-D1
DS-12-E1
DS-12-F1
DS-11-A1
DS-11-B1
DS-11-C1
DS-11-D1
DS-11-E1
DS-11-F1
DS-10-A1
DS-10-B1
DS-10-C1
DS-10-D1
DS-10-E1
DS-10-F1

GROUP 5: Mean = $2.00 \pm .08 \phi$
S.D. = $.56 \pm .09 \phi$ units
No. = 41

DS-05-B2 DS-27-C1
DS-05-C2 DS-27-E2
DS-05-D2 DS-29-A2
DS-11-A2 DS-29-B2
DS-11-B2 DS-29-C2
DS-13-B2 DS-29-F2
DS-13-D2 DS-31-A2
DS-13-E2 DS-31-B2
DS-13-F2 DS-31-C2
DS-15-A2 DS05-1
DS-15-B2 DS09-1
DS-15-C2 DS10-1
DS-15-D2 DS15-1
DS-15-E2 DS16-2
DS-15-F2 DS20-2
DS-18-A2 DS25-2
DS-18-B2 DS28-1
DS-18-D2 DS34-1
DS-18-E2 DS36-2
DS-18-F2 DS38-2
DS-27-A2

GROUP 6: Mean = $2.35 \pm .11 \phi$
S.D. = $.53 \pm .07 \phi$ units
No. = 20

DS-02-A1
DS-02-B1
DS-92-C1
DS-02-D1
DS-02-E1
DS-02-F1
DS-11-C2
DS-11-D2
DS-11-E2
DS-11-F2
DS-13-A1
DS-29-D2
DS12-2
DS14-2
DS17-2
DS19-1
DS21-2
DS22-2
DS24-1
DS29-1

GROUP 4: Mean = $1.31 \pm .06 \phi$
S.D. = $.23 \pm .06 \phi$ units
No. = 42

DS-02-A2 DS-27-E1
DS-02-B2 DS-27-F2
DS-02-E2 DS-31-D2
DS-12-A1 DS-31-E2
DS-15-A1 DS-31-F2
DS-15-B1 DS05-2
DS-15-C1 DS09-2
DS-15-D1 DS10-2
DS-15-E1 DS13-1
DS-15-F1 DS14-1
DS-16-A2 DS19-2
DS-16-B2 DS21-2
DS-16-C2 DS22-2
DS-16-D2 DS23-2
DS-16-E2 DS24-1
DS-16-F2 DS25-1
DS-17-A1 DS-39-B2
DS-17-B2 DS-39-E2
DS-17-C2 DS-39-F2
DS-17-D2 DS40-2

GROUP 9: Mean = $2.50 \pm .06 \phi$
S.D. = $.34 \pm .04 \phi$ units
No. = 26

DS-13-B1 DS26-1
DS-13-F1 DS27-1
DS-18-A1 DS33-3
DS-18-C1 DS-39-A2
DS-18-D1 DS-39-C2
DS-18-E1
DS-18-F1
DS-22-A2
DS-22-B2
DS-22-C2
DS-22-D2
DS-29-A1
DS-29-B1
DS-37-A1
DS-37-B1
DS-37-C1
DS-37-D1
DS-37-E1
DS-37-F1
DS11-1
DS15-2

GROUP 10: Mean = $2.67 \pm .05 \phi$
S.D. = $.26 \pm .05 \phi$ units
No. = 26

DS-11-A1 DS20-1
DS-11-B1 DS21-1
DS-11-C1 DS22-1
DS-11-D1 DS23-2
DS-11-E1 DS25-1
DS-11-F1
DS-13-D1
DS-13-E1
DS-22-E2
DS-22-F2
DS-29-C1
DS-29-D1
DS-29-E1
DS-29-F1
DS01-1
DS11-2
DS12-1
DS14-1
DS17-1
DS18-1
DS19-1

Table 93. Goodness-of-fit tests for the six (6) major unique textural groups identified from the quartz phi-normal components of Charleston Harbor Offshore Disposal Study Area bottom sediments. The null hypothesis being tested is that of equal distribution Inside of and Outside of the Charleston Harbor Offshore Disposal Area proper.

GROUP 1: $\chi^2 = .10$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	8.74	8
Outside	14.26	15

GROUP 5: $\chi^2 = .03$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	15.58	15
Outside	25.42	26

GROUP 6: $\chi^2 = 2.45$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	7.6	11
Outside	12.4	9

GROUP 8: $\chi^2 = .09$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	15.96	15
Outside	26.04	27

Table 93. (Cont Inued)

GROUP 9: $\chi^2 = .08$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	9.88	10
Outside	16.12	16

GROUP 10: $\chi^2 = 20.19^*$, 1 D.F.

	<u>EXPECTED</u>	<u>OBSERVED</u>
Inside	9.88	21
Outside	16.12	5

*Reject null hypothesis of equal distribution at the 90% confidence level.

Table 94. Goodness-of-fit tests for the six (6) major unique textural groups identified from the quartz phi-normal components of Charleston Harbor Offshore Disposal Study Area bottom sediments. The null hypothesis being tested is that of equal distribution over shore-parallel transects.

Group 1: $\chi^2 = 11.86^*$, 4 D.F.					Group 5: $\chi^2 = 11.36^*$, 4 D.F.					Group 6: $\chi^2 = 8.74^*$, 4 D.F.				
Stations	Expected	Observed	Stations	Observed	Stations	Expected	Observed	Stations	Expected	Stations	Expected	Observed	Stations	Observed
1-8	4.14	1	1-8	7.38	1-8	7.38	4	1-8	3.6	1-8	3.6	6	1-8	6
9-16	4.83	0	9-16	8.61	9-16	8.61	15	9-16	4.2	9-16	4.2	7	9-16	7
17-24	4.71	8	17-24	8.40	17-24	8.40	7	17-24	4.1	17-24	4.1	5	17-24	5
25-32	4.71	7	25-32	8.40	25-32	8.40	12	25-32	4.1	25-32	4.1	2	25-32	2
33-40	4.60	7	33-40	8.20	33-40	8.20	3	33-40	4.0	33-40	4.0	0	33-40	0

Group 8: $\chi^2 = 3.94$, 4 D.F.					Group 9: $\chi^2 = 9.44^*$, 4 D.F.					Group 10: $\chi^2 = 16.26^*$, 4 D.F.				
Stations	Expected	Observed	Stations	Observed	Stations	Expected	Observed	Stations	Expected	Stations	Expected	Observed	Stations	Observed
1-8	7.56	4	1-8	4.68	1-8	4.68	0	1-8	4.68	1-8	4.68	1	1-8	1
9-16	8.82	9	9-16	5.46	9-16	5.46	4	9-16	5.46	9-16	5.46	11	9-16	11
17-24	8.61	8	17-24	5.33	17-24	5.33	9	17-24	5.33	17-24	5.33	9	17-24	9
25-32	8.61	13	25-32	5.33	25-32	5.33	4	25-32	5.33	25-32	5.33	5	25-32	5
33-40	8.40	8	33-40	5.20	33-40	5.20	8	33-40	5.20	33-40	5.20	0	33-40	0

*Reject the null hypothesis of equal distribution at the 90% confidence level.

Table 9. Goodness-of-fit tests for the six (6) major unique textural groups identified from the quartz phi-normal components of Charleston Harbor Offshore Disposal Study Area bottom sediments. The null hypothesis being tested is that of equal distribution over shore-perpendicular transects.

Group 1: $\chi^2 = 15.38^*$, 3 D.F.				Group 5: $\chi^2 = 0.43$, 3 D.F.				Group 6: $\chi^2 = 4.73$, 3 D.F.			
<u>Transects</u>	<u>Expected</u>	<u>Observed</u>		<u>Transects</u>	<u>Expected</u>	<u>Observed</u>		<u>Transects</u>	<u>Expected</u>	<u>Observed</u>	
I (East)	5.175	2		I (East)	9.225	9		I (East)	4.5	7	
II	5.175	2		II	9.225	8		II	4.5	6	
III	7.36	6		III	13.12	13		III	6.4	6	
IV (West)	5.29	13		IV (West)	9.43	11		IV (West)	4.6	1	
Group 8: $\chi^2 = 16.73^*$, 3 D.F.				Group 9: $\chi^2 = 8.12^*$, 3 D.F.				Group 10: $\chi^2 = 9.60^*$, 3 D.F.			
<u>Transects</u>	<u>Expected</u>	<u>Observed</u>		<u>Transects</u>	<u>Expected</u>	<u>Observed</u>		<u>Transects</u>	<u>Expected</u>	<u>Observed</u>	
I (East)	9.45	2		I (East)	5.85	7		I (East)	5.85	4	
II	9.45	15		II	5.85	2		II	5.85	11	
III	13.44	4		III	8.32	14		III	8.32	10	
IV (West)	9.66	17		IV (West)	5.98	3		IV (West)	5.98	1	

*Reject the null hypothesis of equal distribution at the 90% confidence level.

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