First Annual Report
to the
Texas Water Development Board
December, 1973

A Benthos and Plankton Study of the Corpus Christi, Copano and Aransas Bay Systems
I. Report on the Methods Used and Data Collected During the Period September, 1972 - June, 1973

by

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INTRODUCTION

The present study of benthic and planktonic organisms of the Corpus Christi and Aransas Bay systems was begun in September, 1972, under the combined aegis of the Texas Water Development Board (TWDB) and the University of Texas Marine Science Institute (UTMSI) through an inter-agency contract (IAC - (72-73) - 893).

Prior to the initiation of this project, the TWDB had begun a similar project with the Texas Parks and Wildlife Department (TPWD) for the study of the San Antonio Bay system. The TWDB was also cooperating with the U.S. Geological Survey (USGS) on a hydrographic study of several Texas bays. All of this research is ultimately to aid in determining the need for fresh water inflows into Texas estuarine systems. The present study expanded the estuarine research being coordinated by the TWDB into the most southerly Texas estuarine complex (Figure 1).

The objectives of the present study as outlined in the initial contract are similar to the goals of all the research being coordinated by the TWDB and include:

1) the survey of benthic and planktonic communities and their seasonal fluctuations in the Corpus Christi and Aransas Bay systems.
2) the determination of the nutrient budget of these bay systems using data collected under the existing TWDB - USGS cooperative estuarine program.
3) the definition of the primary biological productivity of the Corpus Christi and Aransas Bay systems for the project period.

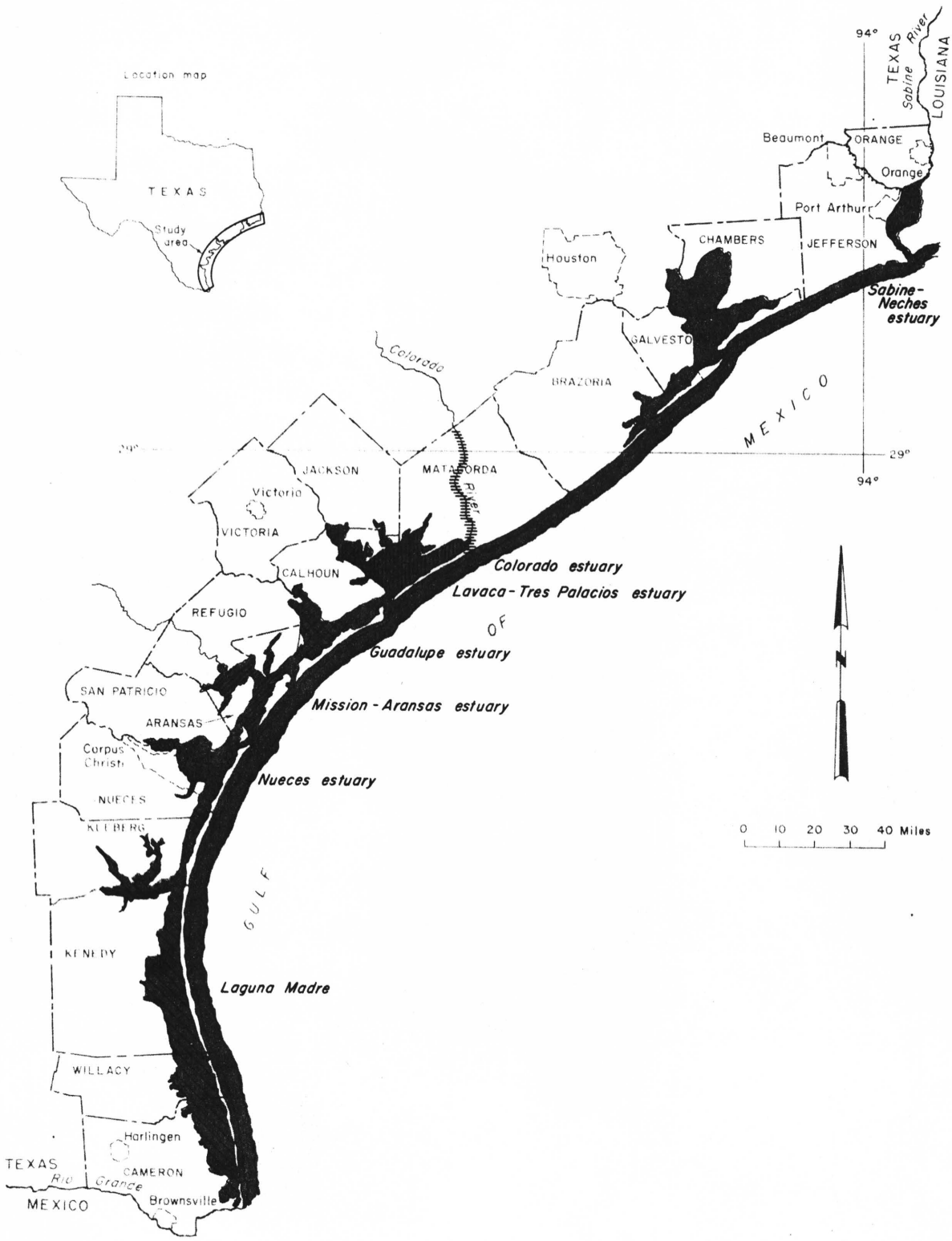


Figure 1
Locations of Estuaries

Base from Official Highway Travel Map, 1969

4) the correlation of nutrient supplies and primary productivity of the estuarine system with seasonal fresh water flows.

This report covers the first ten months of the study (September, 1972 - June, 1973). No collections were made during September, 1972, therefore 9 months of data are reported. Due to taxonomic difficulties in the early collection months, a back-log of samples was built up, preventing the inclusion of July and August data in this report. This data will be included in the next annual report. In this report we wish to outline prior pertinent research in this area, to describe our field and laboratory techniques, to present data thus far collected and recorded and to propose analytical methods by which the present data and that to be collected during the remainder of this project may be analyzed.

Data collected during the period covered by this report has been stored in the TWDB's Coastal Data System (CDS), a computer operative data storage and retrieval system. The system operates on a 1106 Univac computer system which is located at the TWDB in Austin, Texas.

DESCRIPTION OF STUDY AREA

The study area is composed of two major bay systems, Corpus Christi and Aransas Bays. Sampling sites are located in the following bays: Nueces, Corpus Christi, Redfish, Copano, Aransas, St. Charles and Carlos. These bay systems share an opening to the Gulf, Aransas Pass, which is the only major permanent pass in either bay system.

The study area lies within the South Central Climatological Division (TWDB, 1968). It is located between 27° 40' and 28° 10' north latitudes and 96° 50' and 97° 30' west longitudes. The average annual precipitation in this climatological division is 33.24 inches. The

division to the north of this area, the Upper Coast Climatological Division, averages 46.19 inches annually while that to the south, the Southern Climatological Division, averages 22.33 inches (TWDB, 1968). Due to the large area covered by the two bay systems comprising the study area and to the fact that each has historically been studied as a separate estuarine system, we shall describe each separately.

Aransas Bay, composed of Copano, Aransas, Redfish, St. Charles and Carlos Bays, has about 140,000 surface acres (TWDB, 1968). Rainfall in this bay has averaged about 32 inches annually and the mean annual temperature is 21. 11°C (70°F). Historically, Aransas Bay has received about 0.59 million acre-feet of fresh water annually. Of this amount, 0.37 million acre-feet has been precipitation into the bay proper, river inflow has averaged 0.12 million acre-feet annually and local runoff averages 0.1 million acre-feet per year. This area is also called the Mission - Aransas estuary (Hahl and Ratzloff, 1972) and includes Mission, Aransas, Copano and St. Charles Bays, parts of the Intracoastal waterway, Lydia Ann Channel and Aransas Pass. It covers an area of approximately 140 square miles. Water depth at MLW is less than 8 feet in Copano Bay, less than 13 feet in Aransas Bay, less than 5 feet in St. Charles Bay, about 15 feet in the Intracoastal Waterway, about 20 feet in Lydia Ann Channel and more than 40 feet in Aransas Pass. The Mission - Aransas estuary is fed by the San Antonio - Nueces coastal basin with a total drainage area of 2,652 square miles.

Several studies have been done in the Aransas Bay system which include good descriptive material. Parker (1959, pp. 2108 - 2109) gives an excellent table describing physical characteristics of the bays of the Rockport, Texas area. Gunter (1945) describes the Aransas Bay

system, providing information on drainage, oyster reef distribution and water circulation. Of particular interest to this study is Gunter's appraisal that little if any water from the Nueces drainage (Corpus Christi Bay) made its way into the Aransas Bay system. Both Gunter and Parker note that a certain amount of water does enter the Aransas system from the San Antonio Bay system to the north. Parker (1959, p. 2112) observed strong currents in the "land cut" of the Intracoastal Waterway between San Antonio Bay and Aransas Bay concurrent with prolonged northers and high river discharge into San Antonio Bay. The direction was always from San Antonio Bay into the deeper Aransas Bay. Collier and Hedgpeth (1950) give a detailed analysis of the hydrography of the study area.

The Corpus Christi Bay system is composed of Nueces, Oso and Corpus Christi Bays which total about 134,000 surface acres (TWDB, 1968). Rainfall averages 30 inches annually and the mean annual temperature is 21.67°C (71°F). This bay system historically receives approximately 1.0 million acre-feet of fresh water annually. Of this amount, 0.33 million acre-feet is precipitation falling in the bay. The remainder is composed of approximately 0.03 million acre-feet of local runoff and about 0.7 million acre-feet of river inflow. The Nueces estuary (Hahl and Ratzloff, 1972) covers an area of 180 square miles and includes Nueces and Corpus Christi Bays, parts of the Intracoastal Waterway and Aransas Pass (which is also included in the Mission - Aransas estuary). Water depth at MLW is less than 13 feet in Corpus Christi Bay and less than 3 feet in Nueces Bay. The Nueces estuary is fed by drainage from the Nueces River basin. The total drainage area of the basin is 16,950 square miles. Descriptive studies of the

Corpus Christi Bay system include Anderson (1960) and Hood (1952).

There seems to be some discrepancies in the literature as to the total areas of the two bay systems included in the study. These may be due to differences in areas measured rather than errors in measurement. In total surface area (TWDB, 1968) the Aransas Bay system is the larger of the two (140,000 surface acres as compared to 134,000 surface acres). In total estuarine area, the Nueces estuary is larger with 180 square miles as compared to 140 square miles for the Mission - Aransas estuary (Hahl and Ratzloff, 1972). Anderson (1960) gives dimensions of five of the bays within the study area: Nueces, Corpus Christi, Redfish, Aransas and Copano. He does not include St. Charles and Carlos Bays which are sampled in this study. His total area for the five bays is 357 square miles or 228,480 surface acres.

Thirty sampling stations were chosen within the study site so as to give the broadest possible coverage of the different areas and physical parameters. The sites chosen were those on lines used by the USGS and TWDB in other sampling programs (Figures 2 and 3). Generally the sites are marked by some physical feature such as a well-head. A few were found by siting on shore features.

LITERATURE REVIEW

As indicated previously, one of the purposes of this report is to describe prior research pertinent to the present study. Our literature search has been in three basic areas. The first area concerns basic taxonomic works with which identification of organisms found in this study have been made. Specialized bibliographies for benthic, zooplankton and phytoplankton taxonomic literature are given with the literature

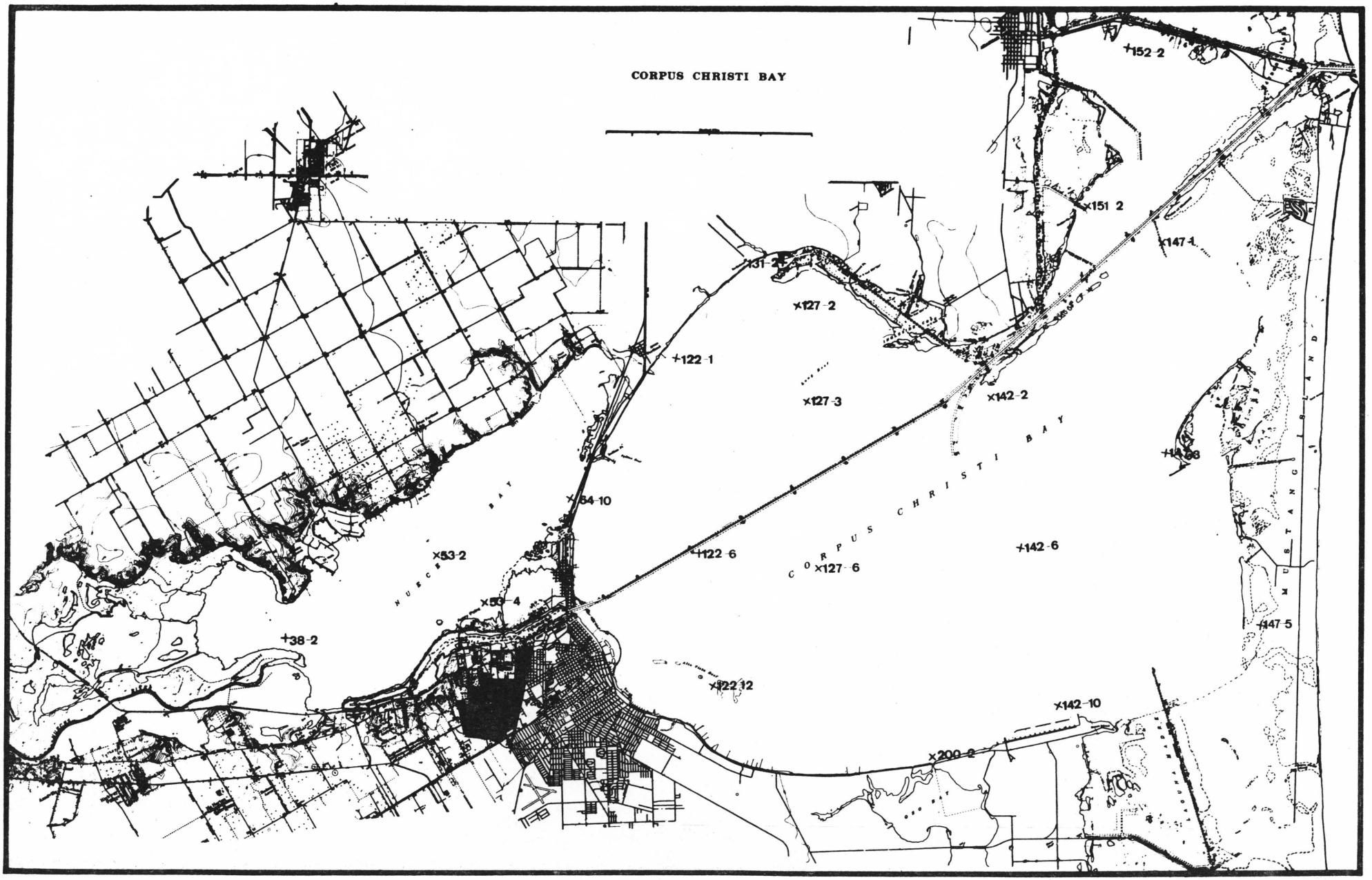


Figure 2. Corpus Christi Bay sampling stations.

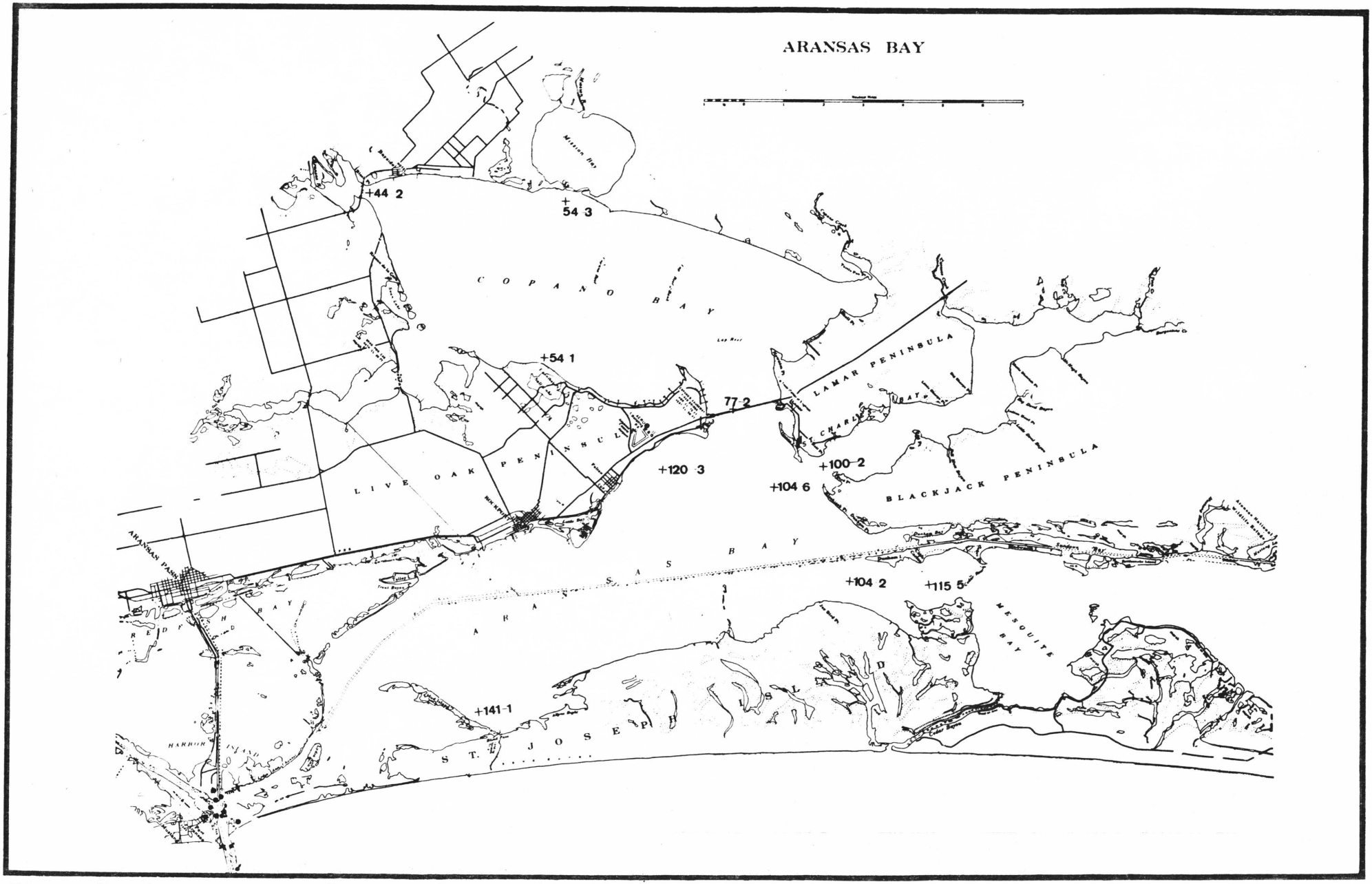


Figure 3. Copano-Aransas Bay sampling stations.

citation. These are kept separate for the benefit of anyone researching a given group. Some of this material has been drawn from world-wide research and some is localized to the Gulf coast.

The second area of previous research felt to be pertinent to this study is that of faunal and floral surveys and hydrographic studies made in our area or along other parts of the Gulf coast. Many studies have been made in this area. Parker (1955, 1959, 1960) worked with macro-invertebrates primarily in the Copano - Aransas bay system. Cross and Parks (1937) have a checklist including invertebrates from our study area. Several studies have been made which include benthic invertebrate species: Hedgpeth (1950, 1953), Whitten et al. (1950), Gunter (1950), Ladd (1951), Simmons (1957), Simmons and Hoese (1959), Breuer (1957, 1962), Hoese and Jones (1963), Copeland (1965), Keith and Hulings (1965), Mackin (1971), Gallaway (1970) and Holland et al. (1973). Phytoplankton surveys made in our area include those by Freese (1952), Wood (1963) and Stevens (1960). Other phytoplankton studies near our study area include Moseley and Copeland (1971), Davis (1971), Simmons and Thomas (1962), Curl (1959), Saunders et al. (1967), Hohn (1959) and Steidinger et al. (1967). Zooplankton studies in our general area include Odum (1963). Moseley and Copeland (1971), Cooper (1967), Gillespie (1971), Hopkins (1966), Cuzon du Rest (1963), and Kalke (1972) have done zooplankton studies near our study area along the Gulf coast. Chemical parameters have been investigated by Odum (1958), Bruce and Hood (1959) and Wilson (1963). Shephard and Rusnak (1957) have reported on sediments along the Texas coast.

The third major area of our literature search is that of ecological surveys outside our generalized area (Gulf of Mexico) with particular

emphasis on those that contain mathematical data manipulative techniques and papers explaining these techniques. Basically these techniques fall into two groups, species diversity and analysis of species groupings.

Ecological surveys outside our general area that have proven to be of interest include Bird (1970), Barnard (1970), Sanders (1958), Gage (1972), Johnson (1970), Lie and Kelly (1970) and Gibbs (1969).

Species diversity studies are numerous. In our general area, diversity studies have been done by Holland et al. (1973), Odum (1963), Bechtel (1970), Bechtel and Copeland (1970) and Hohn (1959). Generalized species diversity literature includes Margalef (1956), Odum et al. (1960), Menhinick (1964), Hairston (1959), Hurlburt (1971), Edden (1971), Coull (1972), Boesch (1972), Wilhm (1967, 1968, 1970a, 1970b), Wilhm and Dorris (1966), Pielou (1966, 1967), Patten (1962), Simpson (1949), Sanders (1968) and McIntosh (1967).

Species aggregations or "communities" are discussed and analyzed using various techniques in the following studies: Stephenson (1973), Thorup (1970), Hughes et al. (1972), Cassie and Michael (1968), Looman and Campbell (1960), Fager (1957, 1973), Fager and Longhurst (1968), Fager and McGowan (1963), Williams and Stephenson (1973), Smith (1971), Pielou (1969), Lambert and Dale (1964) and Nie et al. (1970).

HYDROGRAPHY

Introduction.

Certain physical and chemical parameters of the water column were investigated in this study. Physical parameters included air temperature, total depth, water temperature and conductivity. Chemical parameters investigated included dissolved oxygen, organic nitrogen, nitrate, nitrite, ammonia, total phosphate, orthophosphate, inorganic carbon and organic carbon. Water temperature, dissolved oxygen and conductivity were measured at one foot below the surface, at mid-depth and at one foot above the substrate. Water samples for nutrient and carbon analyses were taken from mid-water. Chlorophyll a and sediment organic carbon analyses were made at selected sites in Corpus Christi Bay for several months during the study period.

Other parameters, including pH and turbidity, were added to the study after June, 1973.

Methods.

Water depth was measured at each sampling site with a sounding line marked at one foot intervals. It was found that a light metal chain with a five pound hemispherical lead weight were straight to the bottom in all currents observed and gave positive indication when the bottom was reached.

Water temperature was measured with a YSI Model 54 oxygen meter (Yellow Springs Instrument Co.) and also with a Martek Model TDC meter (Martek Instruments, Inc.). Air temperature was measured with the oxygen meter only. As there was usually a slight discrepancy between the two temperature readings, oxygen meter readings were used in

computing oxygen mg/l values and those from the TDC meter were used in computing salinity.

Oxygen measurement was recorded as percent saturation on the YSI oxygen meter after calibrating the meter in air (100% saturation) at each station. Conversion of the saturation figures to oxygen in milligrams per liter was done on a Monroe 1865 calculator programmed by the senior author using oxygen solubility information from Weiss (1970).

Specific conductance was measured in micromhos per centimeter and converted to salinity in parts per thousand through a program written for the Monroe 1865 using equations formulated by Mr. William Longley of the University of Texas Marine Science Institute from data in the Martek TDC instrument manual. Both oxygen and salinity programs were written for a Monroe 1766 calculator also.

Water samples used in the nutrient analyses were taken from mid-water by pump. These samples were kept on ice and shipped to the Texas State Department of Health Laboratories in Austin, Texas where the various analyses were made. Analysis of water samples for organic and inorganic carbon was made at the School of Public Health of the University of Texas at Houston, Texas.

Sediment carbon analysis was made by Dr. Ken Winters of the chemistry department at the University of Texas Marine Science Institute.

Chlorophyll a was measured by project personnel using spectrophotometric methods described by Strickland and Parsons (1968).

Discussion.

All of the hydrography data collected during this report period is given in Appendix A. Analysis of this data has been limited to routine investigation of means and ranges (Table 1), to plotting of various parameters through time (Figures 4 - 6) and to plotting and analyzing SYMAP routines (Figures 7 -10) for various hydrographic parameters. No mathematical interpretation of the hydrographic data has been attempted for this report.

Visual inspection of the ranges and means of selected hydrographical parameters (Table 1) shows a great deal of similarity between most parameters in the various bays through time. The most striking dissimilarity is that of salinity, indicating a generally lower salinity in Copano Bay than in the other bays. Salinity in Aransas is also somewhat lower than in the bays of the Nueces estuarine complex. Water temperature follows the expected seasonal fluctuation and dissolved oxygen fluctuates as expected with water temperature.

Plotting the means of 3 parameters through time (Figures 4 - 6) shows several differences among the bays of the study area. It is apparent (Figure 5) that Redfish Bay has less temperature variation than do the other bays. It did not reach the lowest temperatures of the other bays but retained its lowest temperature for several months. The March temperature means are higher than those from April. The lowered salinity regime of Copano Bay is shown on the plots of mean salinity for each bay (Figure 6). The wide range of salinities indicated for Corpus Christi, Nueces and Copano Bays in this figure are due to the influx of flood waters in these bays lowering the salinities at some stations. Dissolved oxygen values were similar in all bays, except in

December and January, when the levels in Copano and Aransas Bays were higher than those in the other bays. These two bays also showed slightly lower mean water temperatures during those months (Figures 4 and 5).

The SYMAP plots provide excellent visual means of interpreting data (Figures 7-10). Plots were made for surface and bottom salinities, and for nutrients, including total phosphate, orthophosphate, inorganic carbon and organic nitrogen. Analysis of the data using series of SYMAPS led to several observations that could not have been made using other means available to us.

It is quite apparent from the SYMAP routines that we are dealing with two very hydrographically dissimilar estuarine systems. The Copano-Aransas system had, over the period reported, a classic positive estuary salinity regime. That is, the salinity gradients went from low at the inflow areas to high at the Gulf pass. Tongues of higher salinity water often made their way along the bottom far into the estuary, covered by lower salinity waters flowing down the bay. Certain current patterns were apparent. Lower salinity water masses tend to move northeast along the northern shore of Copano Bay and southeast along the northern shore of Aransas Bay.

In Corpus Christi Bay the salinity regimes were very confused. The bay appears to have a positive salinity gradient (though not well defined) in some months (e.g. February) and a negative gradient in others (e.g. November). There are apparently areas of very slight bottom circulation in the southwest and northwest corners of the bay. Water entering Corpus Christi Bay from the Cayo del Oso had a definite tendency to move northwest along the southwest shore of the bay.

TABLE 1 MINIMA, MAXIMA AND AVERAGES OF SELECTED HYDROGRAPHIC PARAMETERS

NUECES BAY (LINES 25-64)

	WATER TEMP. °C			DISSOLVED O_2 MG/L			SALINITY °/oo			ORGANIC N_2 MG/L			NO_2 MG/L			NO_3 MG/L			NH_4 MG/L			TOTAL PO_4 MG/L			INORGANIC C MG/L			ORGANIC C MG/L		
	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.
OCTOBER, '72	27.5	29.0	28.4	6.4	7.1	6.6	15.4	25.1	22.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER, '72	13.0	15.0	13.9	7.4	10.3	8.7	19.4	30.6	27.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER, '72	7.0	11.0	9.3	7.5	18.8	11.1	22.3	27.2	24.9	0.30	0.40	0.37	0.005	.027	.018	0.04	0.08	0.05	0.20	0.20	0.20	0.05	0.09	0.07	19.0	22.0	20.5	23.0	29.0	26.0
JANUARY, '73	1.0	18.0	6.5	8.5	12.0	10.8	21.0	31.1	25.1	0.20	1.0	0.48	0.005	.010	.008	0.03	0.10	0.05	0.20	0.40	0.28	0.04	0.19	0.10	--	--	--	--	--	--
FEBRUARY, '73	11.5	13.0	12.4	9.0	10.1	9.4	23.4	28.4	26.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	29.0	22.0	7.0	42.0	26.7
MARCH, '73	22.0	23.0	22.8	..	..	..	24.5	27.9	27.2	0.30	0.40	0.38	0.003	0.005	0.004	0.03	0.03	0.03	0.10	0.10	0.10	0.01	0.11	0.05	12.0	24.0	16.5	6.0	17.0	10.2
APRIL, '73	15.5	16.5	15.9	6.8	7.5	7.2	27.6	29.3	28.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	24.0	21.2	5.0	25.0	12.8
MAY, '73	25.2	27.6	26.4	3.5	7.2	6.3	27.6	31.6	30.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23.0	26.0	24.2	7.0	10.0	8.5
JUNE, '73	29.0	30.0	29.5	5.7	6.4	6.1	3.6	26.5	19.3	0.50	0.80	0.68	0.20	0.04	0.03	0.05	0.09	0.07	0.10	0.20	0.15	0.10	0.22	0.14	8.0	24.0	15.8	18.0	25.0	21.0

CORPUS CHRISTI BAY (LINES 122-200)

OCTOBER, '72	27.0	30.0	28.1	4.4	10.8	6.8	26.8	31.6	29.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER, '72	14.5	18.0	16.5	7.3	8.2	7.8	27.5	30.9	29.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER, '72	8.5	13.0	10.2	9.0	12.5	10.9	27.2	29.2	28.2	0.10	3.00	0.54	0.005	0.017	0.006	0.03	0.08	0.35	0.10	1.00	0.19	0.02	0.07	0.04	15.0	16.0	15.2	15.0	26.0	19.8
JANUARY, '73	5.0	11.5	6.9	8.5	12.0	10.9	21.0	31.1	25.1	0.20	1.00	0.48	0.005	0.10	0.008	0.03	0.10	0.05	0.20	0.40	0.28	0.04	0.19	0.10	--	--	--	--	--	--
FEBRUARY, '73	11.5	13.0	12.4	9.0	10.1	9.4	23.4	28.4	26.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	29.0	22.0	7.0	42.0	26.8
MARCH, '73	22.0	23.0	22.8	..	..	..	24.5	27.9	27.2	0.30	0.40	0.38	0.003	0.005	0.004	0.03	0.03	0.03	0.10	0.10	0.10	0.01	0.11	0.05	12.0	24.0	16.5	6.0	17.0	10.2
APRIL, '73	15.5	16.5	15.9	6.8	7.5	7.2	27.6	29.3	28.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	24.0	21.2	5.0	25.0	12.8
MAY, '73	25.2	27.6	26.4	3.5	7.2	6.3	27.6	31.6	30.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23.0	26.0	24.2	7.0	10.0	8.5
JUNE, '73	29.0	30.0	29.5	5.7	6.4	6.1	3.6	26.5	19.3	0.50	0.80	0.68	0.02	0.04	0.03	0.05	0.09	0.07	0.10	0.20	0.15	0.10	0.22	0.14	8.0	24.0	15.8	18.0	25.0	21.0

COPANO BAY (LINES 44-77)

	WATER TEMP. °C			DISSOLVED O_2 MG/L			SALINITY °/oo			ORGANIC N_2 MG/L			NO_2 MG/L			NO_3 MG/L			NH_4 MG/L			TOTAL PO_4 MG/L			INORGANIC C MG/L			ORGANIC C MG/L		
	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.
OCTOBER, '72	26.5	27.5	26.9	5.7	6.8	6.4	6.2	15.2	9.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER, '72	20.1	21.0	20.8	7.2	10.1	8.6	9.4	13.9	10.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER, '72	7.0	8.5	7.6	11.2	19.8	14.9	10.5	14.1	12.3	0.20	0.70	0.45	0.005	0.005	0.005	0.03	0.26	0.09	0.10	0.20	0.15	0.06	0.16	0.09	18.0	18.0	18.0	23.0	23.0	23.0
JANUARY, '73	4.0	6.8	5.3	13.3	16.3	14.0	11.9	17.7	14.1	0.10	1.4	0.5	0.005	0.005	0.005	0.03	0.04	0.03	0.20	0.40	0.28	0.04	0.09	0.06	--	--	--	--	--	--
FEBRUARY, '73	12.0	15.0	13.4	9.5	11.1	10.2	13.6	21.7	16.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	24.0	20.8	15.0	21.0	18.5
MARCH, '73	20.5	22.8	21.5	6.6	7.5	7.0	15.7	20.3	17.0	0.20	0.40	0.32	0.005	0.03	.011	0.03	0.03	0.03	0.10	0.80	0.28	0.03	0.04	0.04	18.0	22.0	19.5	8.0	13.0	10.0
APRIL, '73	17.0	17.5	17.2	7.3	8.8	8.3	16.6	19.6	17.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.0	27.0	18.2	7.0	14.0	11.5
MAY, '73	25.1	25.3	25.2	6.2	7.4	7.0	15.7	18.3	17.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.0	29.0	25.5	10.0	14.0	11.8
JUNE, '73	25.5	27.5	26.6	3.1	6.8	5.5	0.0	17.0	8.4	0.40	1.40	0.78	0.005	0.015	0.010	0.03	0.16	0.08	0.10	0.10	0.10	0.05	0.39	0.18	10.0	17.0	14.5	15.0	35.0	25.2

REDFISH BAY (LINES 151 and 152)

OCTOBER, '72	28.0	29.0	28.4	6.2	7.0	6.6	25.9	28.2	27.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER, '72	14.5	14.9	14.7	7.2	8.4	7.8	22.1	25.2	23.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER, '72	7.5	13.0	10.2	9.3	16.6	11.2	21.0	26.7	23.9	0.40	0.60	0.50	0.005	0.014	0.009	0.03	0.04	0.04	0.10	0.10	0.10	0.04	0.05	0.04	15.0	15.0	15.0	26.0	26.0	26.0
JANUARY, '73	8.7	10.7	9.6	10.1	12.9	11.6	25.2	27.2	26.1	0.30	0.30	0.30	0.005	0.005	0.005	0.03	0.03	0.03	0.10	0.10	0.10	0.02	0.10	0.06	--	--	--	--	--	--
FEBRUARY, '73	8.0	11.0	9.5	8.5	10.3	9.5	28.4	30.0	29.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.0	23.0	22.0	17.0	19.0	18.0
MARCH, '73	21.5	22.8	22.4	7.3	7.8	7.4	23.4	25.5	24.3	0.10	0.20	0.15	0.003	0.005	0.004	0.03	0.03	0.03	0.10	0.10	0.10	0.01	0.01	0.01	15.0	22.0	18.5	4.0	11.0	7.5
APRIL, '73	19.5	20.0	19.8	6.2	7.5	7.1	25.2	26.2	25.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2	2.2	2.2	7.0	7.0	7.0
MAY, '73	20.2	22.5	20.8	4.9	6.7	6.1	19.2	23.9	20.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23.0	23.0	23.0	10.0	10.0	10.0
JUNE, '73	28.0	29.5	29.0	6.8	7.0	6.9	25.0	27.1	26.0	0.30	0.40	0.35	0.005	0.005	0.005	0.03	0.03	0.03	0.10	0.10	0.10	0.03	0.03	0.03	8.0	16.0	12.0	15.0	25.0	20.0

TABLE 1 (cont'd)

ARANSAS BAY (LINES 100 through 141)

	WATER TEMP. °C			DISSOLVED O_2 MG/L			SALINITY °/oo			ORGANIC N_2 MG/L			NO_2 MG/L			NO_3 MG/L			NH_4 MG/L			TOTAL PO_4 MG/L			INORGANIC C MG/L			ORGANIC C MG/L		
	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.
OCTOBER, '72	27.0	29.2	28.0	6.4	7.6	6.9	11.9	23.5	15.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER, '72	14.9	21.0	17.3	7.7	9.8	8.9	14.0	19.2	17.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER, '72	6.8	9.0	8.0	10.4	20.0	14.6	14.2	19.6	17.4	0.20	0.90	0.47	0.005	0.009	0.006	0.03	0.06	0.04	0.10	0.20	0.12	0.05	0.10	0.07	14.0	20.0	16.7	18.0	24.0	21.3
JANUARY, '73	4.7	7.2	5.9	12.9	17.9	14.2	16.4	22.5	19.8	0.10	0.50	0.23	0.005	0.005	0.005	0.03	0.03	0.03	0.10	0.30	0.18	0.04	0.07	0.06	--	--	--	--	--	--
FEBRUARY, '73	7.5	17.0	13.8	8.8	11.4	10.1	19.1	24.9	22.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.0	29.0	24.7	10.0	23.0	14.5
MARCH, '73	21.0	23.5	22.7	8.2	8.7	8.4	21.1	23.9	22.5	0.10	0.40	0.22	0.005	0.005	0.005	0.03	0.03	0.03	0.10	0.10	0.10	0.01	0.30	0.08	19.0	23.0	22.0	7.0	11.0	8.7
APRIL, '73	17.8	18.5	18.1	8.1	8.9	8.5	19.8	22.4	21.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.0	28.0	24.8	3.0	11.0	6.8
MAY, '73	26.0	26.9	26.5	6.5	7.7	7.1	11.5	18.8	15.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25.0	28.0	26.3	8.0	15.0	11.2
JUNE, '73	27.5	28.5	28.2	5.9	7.5	6.6	15.2	22.9	20.1	0.40	0.80	0.52	0.005	0.014	0.008	0.03	0.07	0.04	0.10	0.20	0.12	0.03	0.10	0.06	14.0	20.0	17.5	15.0	28.0	20.2

.. oxygen meter not functioning
-- no samples taken

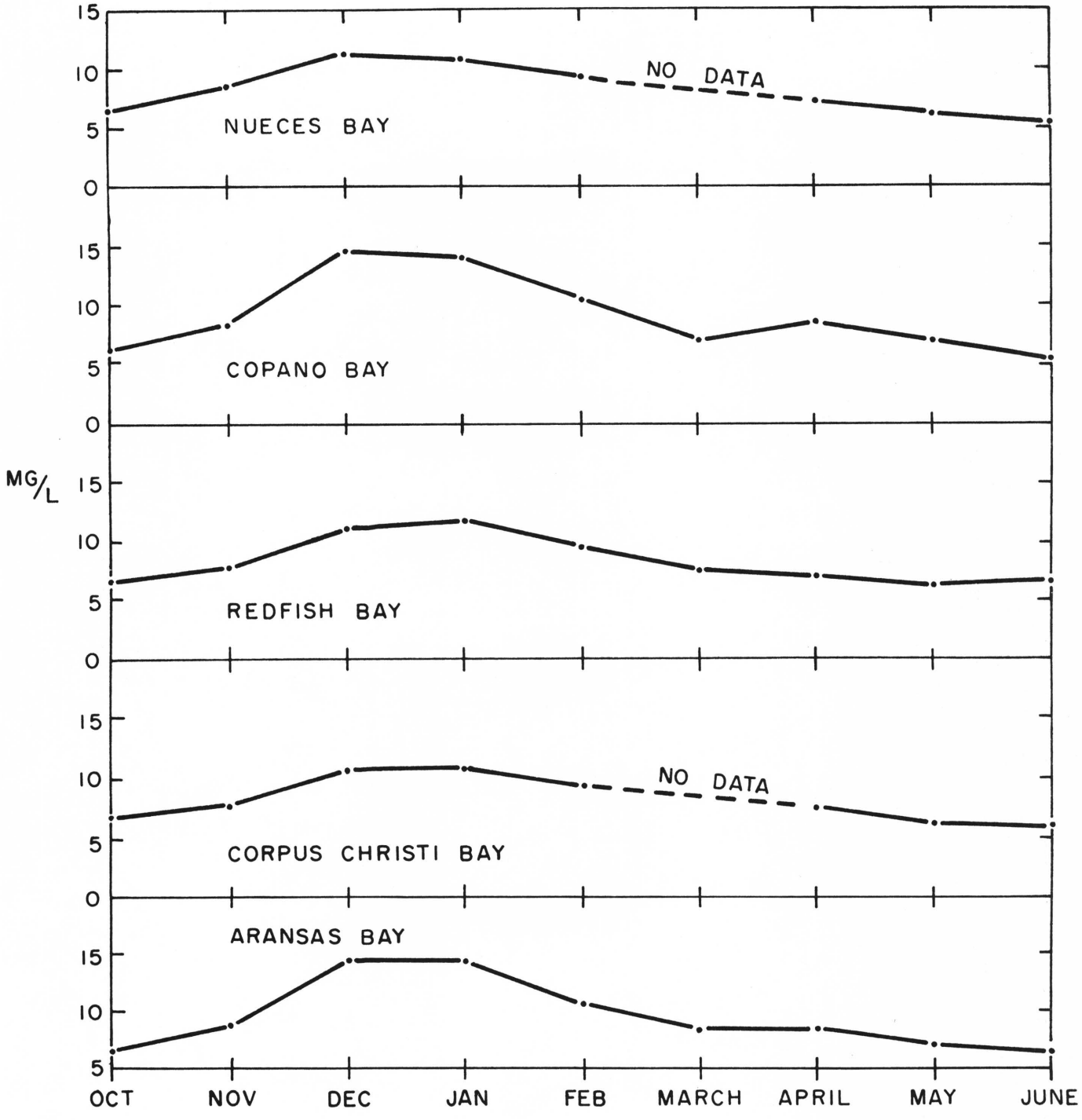


Figure 4. Monthly mean dissolved oxygen values.

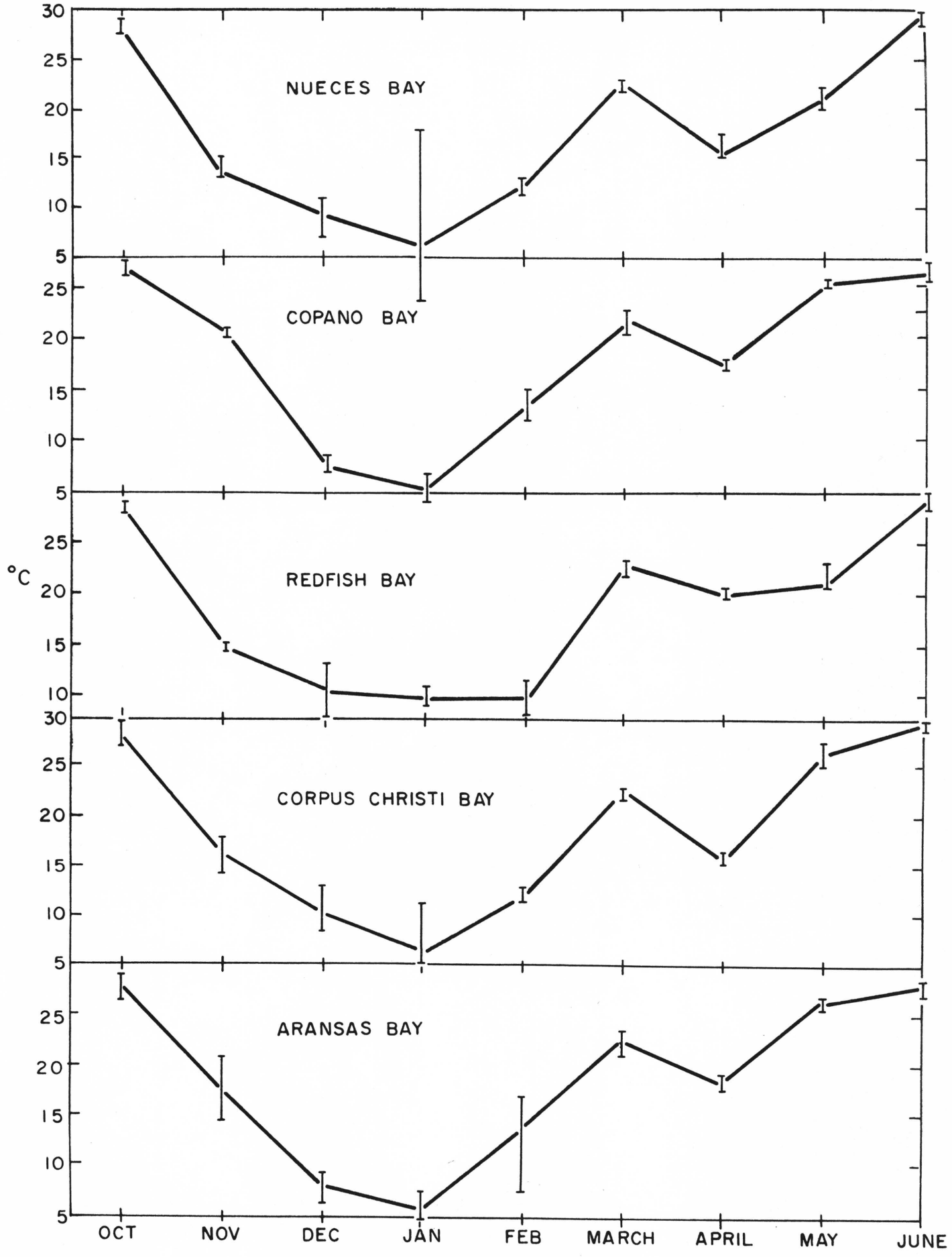


Figure 5. Monthly mean temperature values, showing minima and maxima.

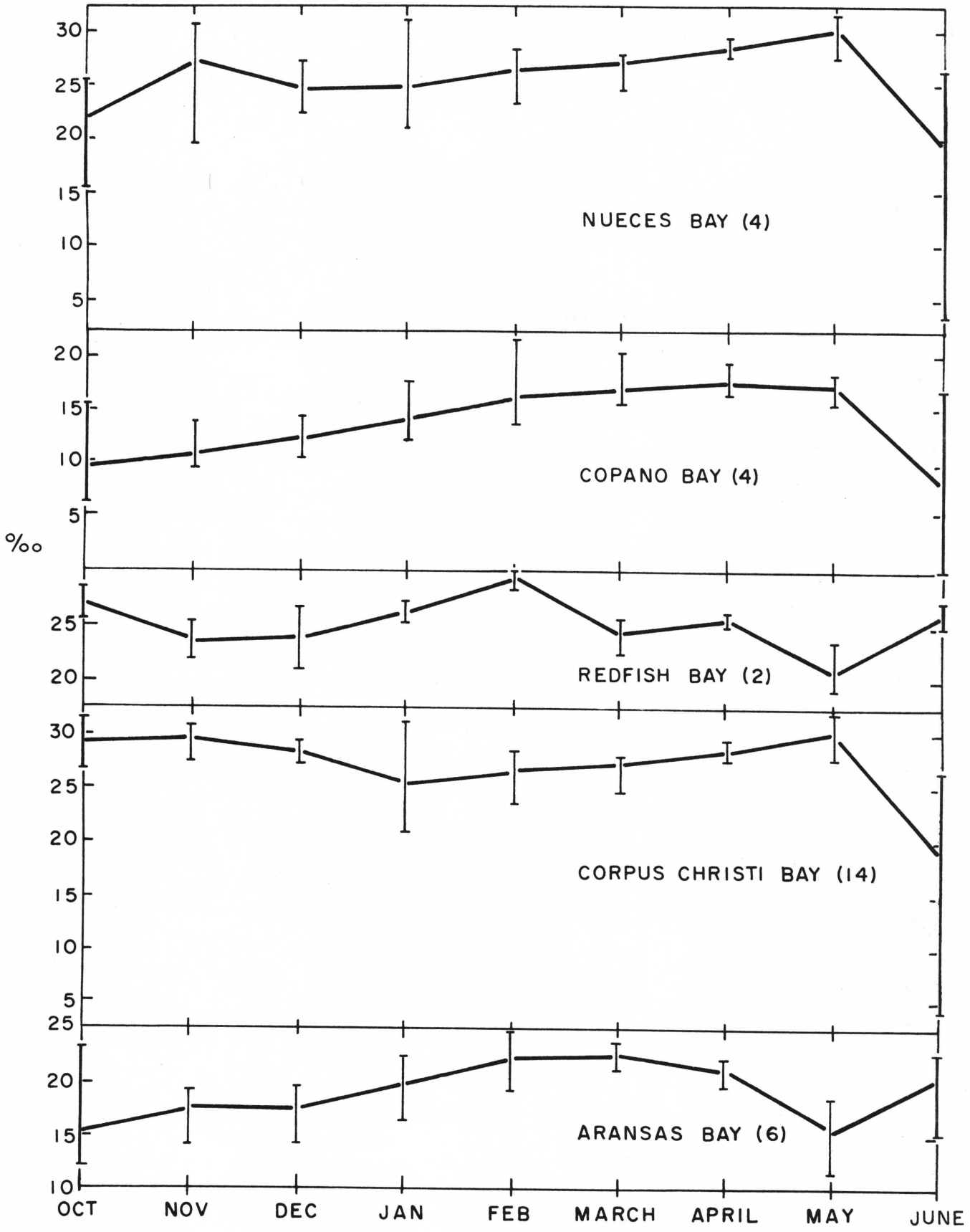


Figure 6. Monthly mean salinities, showing minima and maxima.

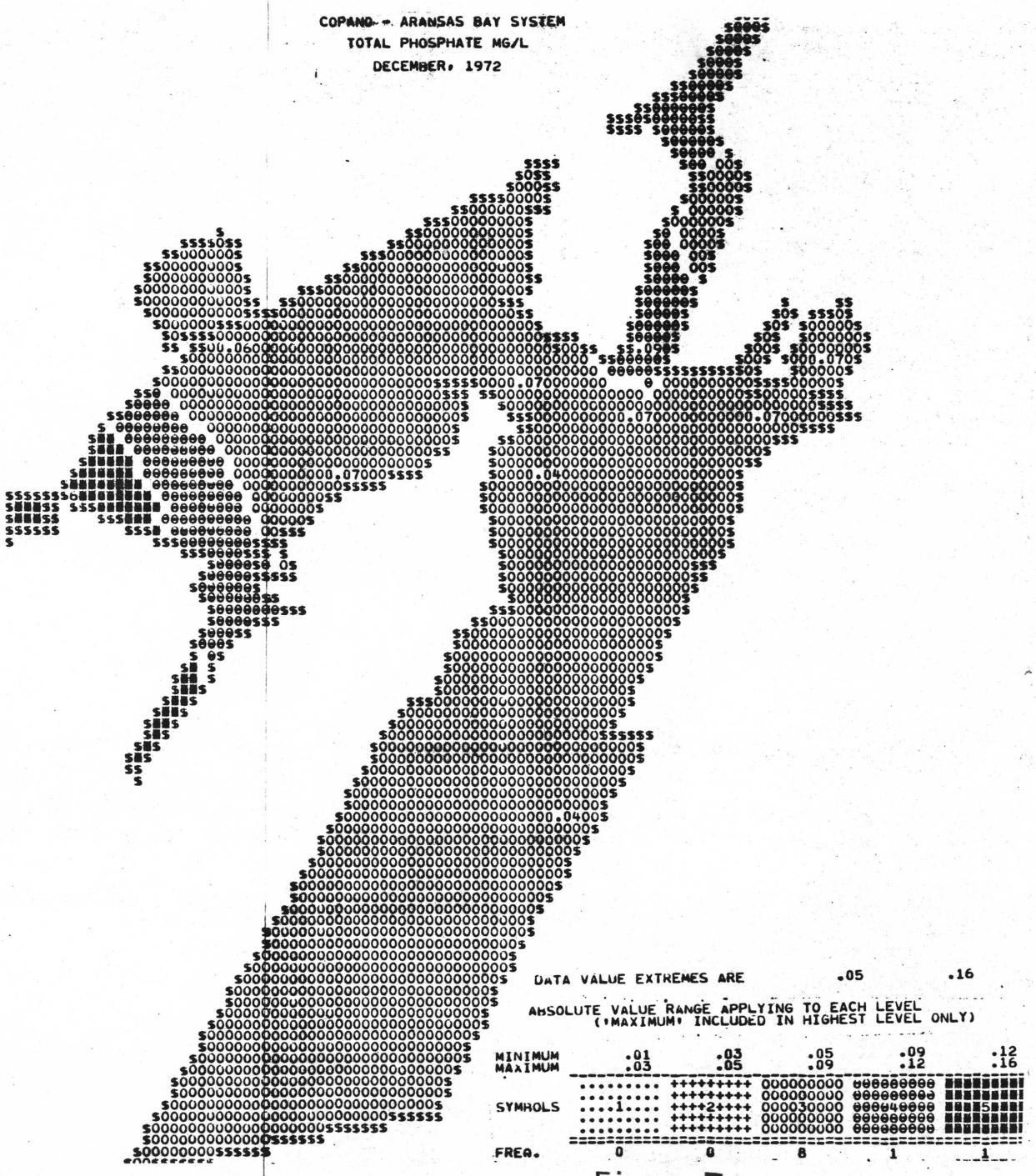

COPANO - ARANSAS BAY SYSTEM
TOTAL PHOSPHATE MG/L
DECEMBER, 1972
DATA VALUE EXTREMES ARE .05 .16
ABSOLUTE VALUE RANGE APPLYING TO EACH LEVEL
("MAXIMUM" INCLUDED IN HIGHEST LEVEL ONLY)
MINIMUM .01 .03 .05 .09 .12
MAXIMUM .03 .05 .09 .12 .16
SYMBOLS
FREQ. 0 0 8 1 1

Figure 7

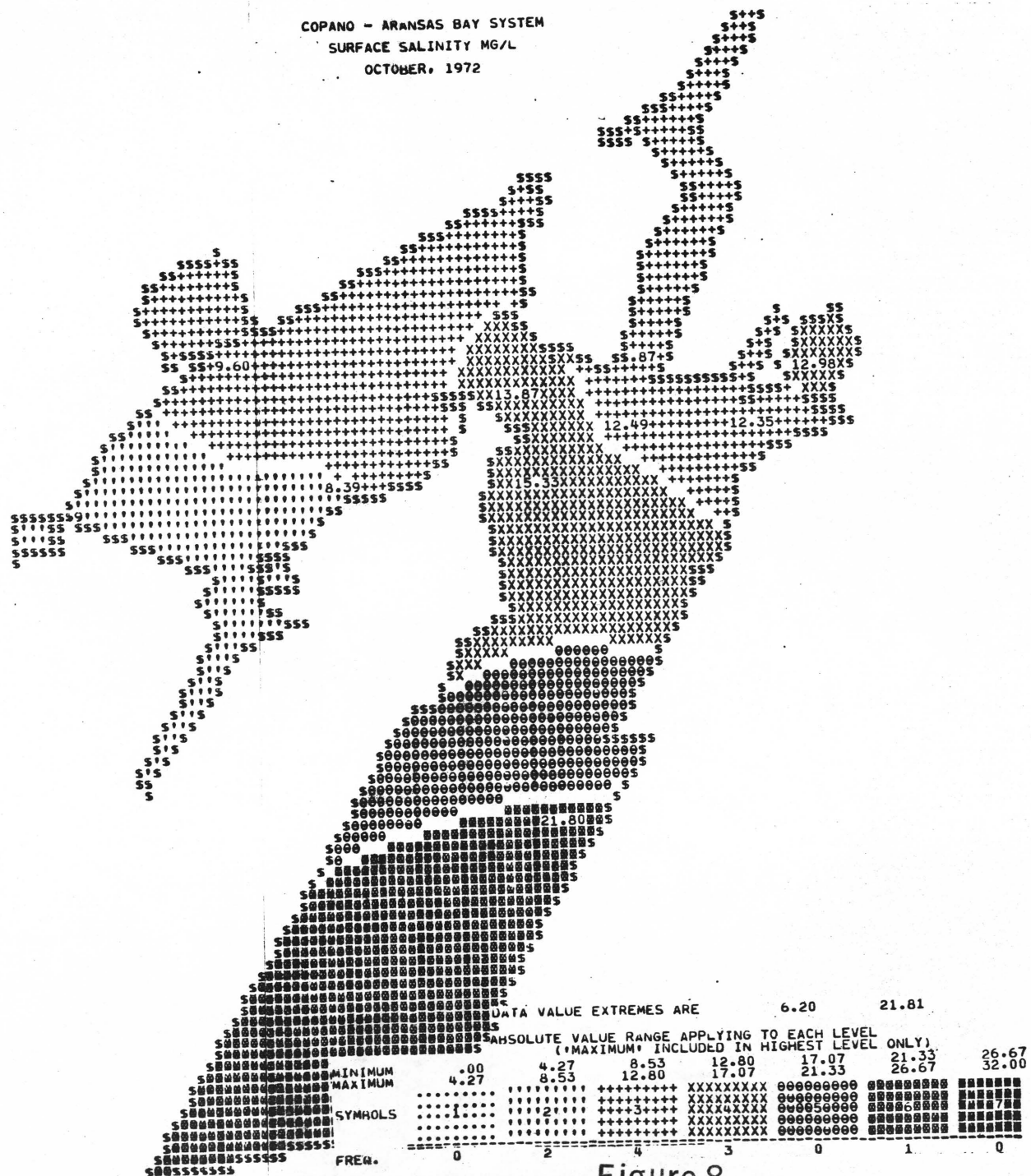
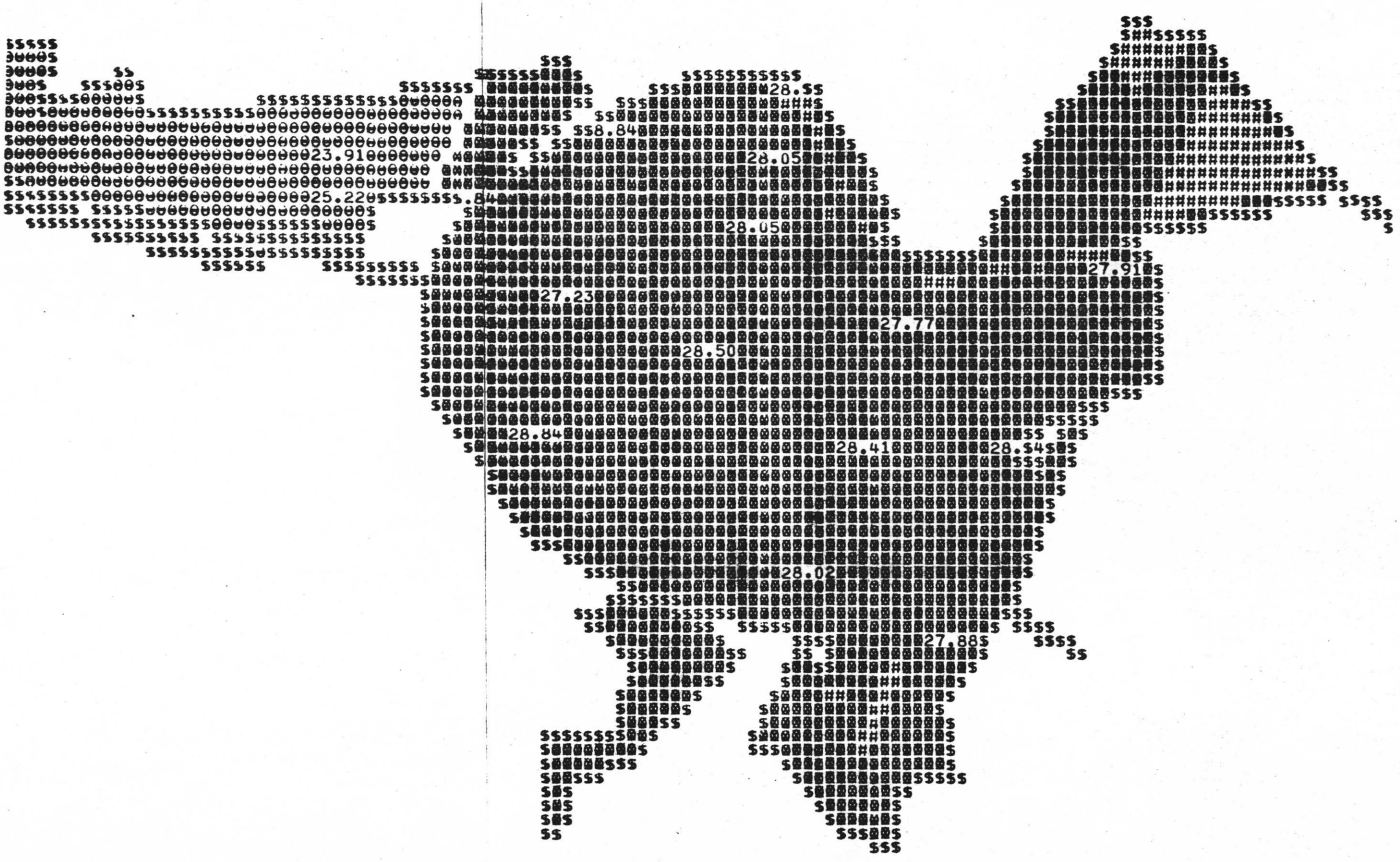

COPANO - ARANSAS BAY SYSTEM
SURFACE SALINITY MG/L
OCTOBER, 1972
DATA VALUE EXTREMES ARE 6.20 21.81
ABSOLUTE VALUE RANGE APPLYING TO EACH LEVEL
('MAXIMUM' INCLUDED IN HIGHEST LEVEL ONLY)
MINIMUM .00 4.27 8.53 12.80 17.07 21.33 26.67
MAXIMUM 4.27 8.53 12.80 17.07 21.33 26.67 32.00
SYMBOLS
FREQ. 0 2 4 3 0 1 0

Figure 8

CORPUS CHRISTI BAY SYSTEM
SURFACE SALINITY MG/L
DECEMBER, 1972



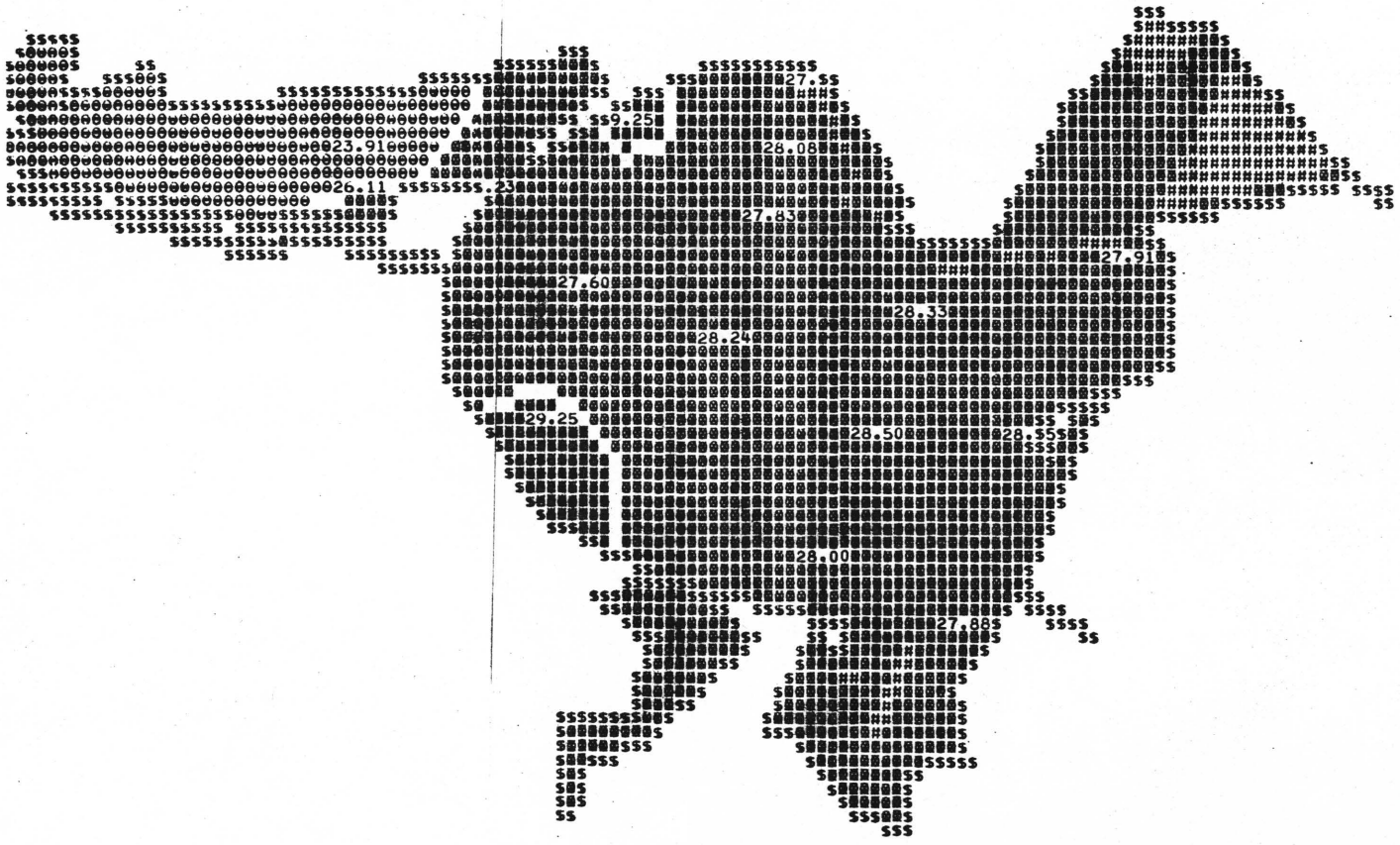
DATA VALUE EXTREMES ARE 23.91 28.85

ABSOLUTE VALUE RANGE APPLYING TO EACH LEVEL
(*MAXIMUM* INCLUDED IN HIGHEST LEVEL ONLY).

MINIMUM	.00	10.00	15.00	20.00	23.00	26.00	29.00
MAXIMUM	10.00	15.00	20.00	23.00	26.00	29.00	32.00
SYMBOLS	.....1.....	.....2.....	.....3.....	XXXXXXXXX	000000000	#########	#########
FREQ.	0	0	0	0	2	15	0

Figure 9

CORPUS CHRISTI BAY SYSTEM
BOTTOM SALINITY MG/L
DECEMBER, 1972



DATA VALUE EXTREMES ARE 23.91 29.25

ABSOLUTE VALUE RANGE APPLYING TO EACH LEVEL
("MAXIMUM" INCLUDED IN HIGHEST LEVEL ONLY)

MINIMUM	.00	10.00	15.00	20.00	23.00	26.00	29.00
MAXIMUM	10.00	15.00	20.00	23.00	26.00	29.00	32.00
SYMBOLS	.	1	2	3	4	5	6 7
FREQ.	0	0	0	0	1	14	2

Figure 10

Surface and bottom salinities in both estuarine systems showed differences in most months, indicating some stratification. In the spring months of March, April and May, SYMAP routines showed no differences between surface and bottom salinities. The high spring winds of this area are probably accountable for thoroughly mixing the bay waters during this period.

SYMAPS of total phosphates were plotted for December, January, March and June in both estuarine systems. In Copano-Aransas, decidedly higher levels of total phosphates were apparent in December and January with an almost complete lack in March. In Corpus Christi Bay, total phosphates appeared uniformly lower compared to Copano-Aransas levels but showed the same drop in March. The highest total phosphate values were always associated with inflow areas. The March drop in total phosphate level may be due to several causes. The most probable is that of uptake by burgeoning populations of organisms in the bays. The possibility of settling of particulate phosphates is slight due to the aforementioned high winds and subsequent mixing of the water.

SYMAP plots were made for orthophosphate in the same months as total phosphate. In Copano-Aransas, orthophosphate shows a definite inverse relation with salinity. This is not meant to be interpreted as a cause and effect relationship, but more probably is related to inflow. In Corpus Christi Bay, orthophosphate is uniformly low throughout the system. The highest values are found at the Nueces and Oso outlets and along the southern shore between these outlets. A salinity gradient effect is not very apparent in December, January or March. The June data for Corpus Christi Bay shows a very marked relation between orthophosphate and the outlet areas.

SYMAPS for organic nitrogen followed patterns very similar to those of total phosphates. The drop in March values reinforces the spring uptake hypothesis. June data from Corpus Christi Bay shows a high influx of organic nitrogen from the Oso and Nueces Rivers with apparently low-nitrogen water masses moving into the bay through Aransas Pass and the new land-cut fish pass near Padre Island.

SYMAPS for inorganic carbon showed no apparent relationships between inorganic carbon and other parameters. There appears to be tremendous variability from month to month in inorganic carbon in both estuarine systems. It was interesting to note that in Corpus Christi Bay in June, when the salinity distribution was most varied, inorganic carbon was most uniformly distributed.

BENTHOS

Introduction.

Benthic organisms are thought to be potential indicators of water quality in estuarine habitats (Holland et al., 1973). As such, their species groupings and numbers may provide valuable information on water conditions with which plans for water development may be made.

During this study approximately 330 species of benthic organisms have been collected (Table 2), making the benthos the most diverse group studied.

Methods.

Field--Bottom samples ($\frac{1}{2}$ ft^3) are collected with a Petersen grab and placed in 6-gallon plastic containers. Formalin (37%) is stirred into the samples to approximate a 5% mixture.

The samples are carried back to the outdoor lab where they are washed with a gentle stream of fresh water, using a washing table which has a screen with mesh of $\frac{1}{4}$ inch openings and a bag with mesh of .5 mm openings. Larger specimens are picked off the screen and placed in small containers with 70% ethanol (or isopropanol). Rocks and shells which have serpulid worm tubes or barnacles are placed in a bucket also containing 70% alcohol. Whatever remains in the mesh bag (organisms, dead shell, debris) is placed in buckets and mixed with 70% alcohol. All buckets and containers are labeled with station number and date of collection.

Laboratory--The sample buckets containing "serpulid rocks" are checked in their entirety for barnacles or worms or other organisms clinging to them. Oysters are counted. A partial sample is then

TABLE 2

Benthic Animals from Corpus Christi and Adjacent Bay Systems

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
Porifera				Sponge A
Coelenterata	Anthozoa			Anenome Anenome, burrowing
Platyhelminthes	Turbellaria			*Stylochus ellipticus* Flatworm A
Nematoda				Nematode A Nematode B
Rhynchocoela				*Cerebratulus lacteus* Nemertean A (white) Nemertean B (yellow bands) Nemertean C (black bands) Nemertean D (purple, yellow) Nemertean E (green eyes) Nemertean F (2 eyes) Nemertean G (4 eyes) Nemertean H (wide black bands red neck, 2 rows of eyespots)
Annelida	Oligochaeta			*Peloscolex* cf. *gabriella* Oligochaete A

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
	Polychaeta		Polynoidea	Harmithoe aculeata
				Lepidasthenia commensalis
				Lepidonotus sublevis
				Lepidonotus variabilis
			Sigalonidae	Sthenelais boa
			Chrysopetalidae	Paleonotus heteroseta
			Amphinomidae	Amphinomid A
				Paramphinome pulchella
			Phyllodocidae	Anaitides erthyrophyllus
				Eteone heteropoda
				Eteone lactea
				Eumida sanguinea
				Nereiphylla fragilis
				Paranaites speciosa
			Hesionidae	Gyptis vittata
				Parahesione luteola
				Podarke obscura
			Pilargidae	Ancistrosyllis jonesi
				Ancistrosyllis papillosa
				Parandalia fauveli
				Sigambra bassi
				Sigambra ocellata
				Sigambra tentaculata
				Synelmis albini
			Syllidae	Autolytus prolifer
				Brania clavata
				Exogone dispar
				Syllis cornuta
				Syllis gracilis
				Synsyllis longicularis
				Typosyllis corallicoloides

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Nereidae	Ceratonereis irritabilis
				Ceratonereis mirabilis
				Ceratonereis tridentata
				Laonereis culveri
				Namalycastis abiuma
				Neanthes succinea
				Nereidae, unidentified
			Nephtyidae	Aglaophamus verrilli
				Nephtys bucera
				Nephtys picta
			Glyceridae	Glycera americana
			Goniadidae	Glycinde solitaria
			Onuphidae	Diopatra cuprea
				Onuphis eremita oculata
			Eunicidae	Lysidice ninetta
				Marphysa sanguinea
			Lumbrineridae	Lumbrinereis parvipedata
			Arabellidae	Drilonereis magna
			Dorvilleidae	Dorvillea sociabilis
				Dorvillea rudolphi
			Orbiniidae	Scoloplos fragilis
				Scoloplos robustus
				Scoloplos rubra
				Orbiniid (Scoloplos sp.)
			Paraonidae	Aricidea fragilis
				Aricidea sp.
			Spionidae	Apoprionospio pygmaea
				Dispio uncinata
				Minuspio cirrifera
				Polydora caulleryi
				Polydora commensalis
				Polydora hamata

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
				Polydora ligni
				Polydora quadrilobata
				Polydora socialis
				Polydora websteri
				Prionospio heterobranchia
				Prionospio pinnata
				Prionospio tenuis
				Prionospio treadwelli
				Scolelepis texana
				Spio setosa
				Spiophanes bombyx
				Streblospio benedicti
				Malococeros indicus
			Magelonidae	Magelona pettiboneae
			Chaetopteridae	Spiochaetopterus oculatus
			Cirratulidae	Tharyx setigera
			Cossuridae	Cossura delta
			Flabelligeridae	Piromis roberti
			Opheliidae	Armandia agilis
			Capitellidae	Capitella capitata
				Capitomastus aciculatus
				Heteromastus filiformis
				Mediomastus californiensis
				Notomastus hemipodus
				Notomastus latericeus
				Notomastus sp.
				Scyphoproctus platyproctus
			Maldanidae	Branchioasychis americana
				Axiothella mucosa
				Axiothella torquata calida
			Oweniidae	Owenia fusiformis
			Sabellaridae	Sabellaria vulgaris
			Pectinariidae	Pectinaria gouldi
			Ampharetidae	Melinna maculata

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Terebellidae	Loimia medusa
				Pista palmata
				Thelepus setosus
			Sabellidae	Chone duneri
				Megalomma bioculatum
				Sabella melanostigma
				Sabella micropthalma
				Sabellid A
			Serpulidae	Eupomatus dianthus
				Pomatoleios caerulescens
				Sphaeropomatus miamiensis
Mollusca	Amphineura		Ischnochitonidae	Ischnochiton papillosus
	Gastropoda		Hydrobiidae	Littoridina sphinctosoma
			Truncatellidae	Truncatella pulchella
			Vitrinellidae	Anticlimax pilsbryi
				Teinostoma biscayense
				Teinostoma parvicallum
				Vitrinella helicoidea
			Caecidae	Caecum glabrum
			Cerithiopsidae	Cerithiopsis emersonii
				Cerithiopsis greeni
				Seila adamsi
			Epitonidae	Epitonium multistriatum
				Epitonium rupicola
			Calyptraeidae	Crepidula fornicata
				Crepidula plana
			Naticidae	Polinices duplicatus
			Columbellidae	Anachis avara
				Anachis obesa
				Mitrella lunata
			Buccenidae	Cantharus cancellarius
			Melongenidae	Busycon contrarium

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Nassariidae	Nassarius vibex
			Olividae	Olivella dealbata
			Pyramidellidae	Pyramidella crenulata
				Odostomia bisuturalis
				Odostomia gibbosa
				Odostomia laevigata
				Odostomia teres
				Turbonilla elegantula
			Acteonidae	Acteon punctostriatus
			Atyidae	Haminoea succinea
			Retusidae	Retusa canaliculata
		Nudibranchia		Coryphella sp.
				Doridella obscura
				Polycerella cf. emersonii
				Nudibranch A
				Nudibranch B
	Scaphopoda			Dentalium texasianum
	Pelecypoda		Nuculidae	Nuculana acuta
			Arcidae	Anadara ovalis
				Anadara transversa
			Mytilidae	Amygdalum papyria
				Brachidontes citrinus
				Brachidontes exustus
				Brachidontes recurvus
			Pinnidae	Atrina seminuda
			Pectinidae	Aequipecten amplicostatus
			Anomiidae	Anomia simplex
			Ostreidae	Crassostrea virginica
			Lucinidae	Lucina multilineata
				Phacoides pectinatus

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Ungulinidae	Diplodonta semiaspera
			Kelliidae	Mysella planulata
			Leptonidae	Leptonid A
			Sportellidae	Aligena texasiana
			Cardiidae	Laevicardium mortoni
				Trachycardium muricatum
			Mactridae	Anatina anatina
				Mulinia lateralis
				Rangia cuneata
				Rangia flexuosa
			Solenidae	Ensis minor
			Tellinidae	Macoma brevifrons
				Macoma constricta
				Macoma mitchelli
				Macoma tenta
				Tellina alternata
				Tellina iris
				Tellina tampaensis
				Tellina texana
				Tellina versicolor
				Tellidora cristata
			Psammobiidae	Sanguinolaria cruenta*
			Solecurtidae	Tagelus divisus
			Scrobiculariidae	Abra aequalis
			Semelidae	Congeria leucophoeta
				Cumingia tellinoides
			Veneridae	Anomalocardia cuneimeris
				Cyclinella tenuis
				Dosinia elegans
				Mercenaria campechiensis
				Mercenaria mercenaria
				Pitar texasiana

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Petricolidae	Petricola pholadiformes
			Corbulidae	Corbula krebsiana
				Corbula swiftiana
				Varicorbula operculata
			Pholadidae	Cyrtopleura costata
				Diplothyra smythi
			Pandoridae	Pandora trilineata
			Periplomatidae	Periploma inequale
			Lyonsiidae	Lyonsia hyalina floridana
				Bivalve A
				Bivalve B (semitruncated)
Arthropoda	Pycnogonida			Pycnogonid A
	Crustacea	Diplostraca		Cladoceran A
		Calanoida		Acartia tonsa+
				Labidocera aestiva+
				Pseudodiaptomus coronatus+
		Harpacticoida		Alteutha depressa
				Canuella canadensis+
				Ectinosoma elongata+
				Longipedia coronatus+
		Cyclopoida		Giardella sp.
				Hemicyclops sp.
				Copepod A (commensal)
				Copepod B
		Thoracica		Balanus eburneus
		Mysidacea		Mysidopsis almyra
				Bowmaniella brasiliensis
		Cumacea		Cyclaspis varians
				Diastylis sculpta
				Oxyurostylis salinoi

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
		Tanaidacea (either Tanadaicea or Isopoda)		Leptochelia rapax
		Isopoda		crustacean, unidentified
				Cassidinidea lunifrons
				Cleantis planicaudata
				Cymodoce faxoni
				Edotea triloba
				Erichsonella attenuata
				Sphaeroma quadridentatum
				Isopod A
		Amphipoda		Acanthohaustoris sp.
				Ampelisca abdita
				Ampelisca holmesii
				Amphipod A
				Amphipod B
				Amphipod C
				Amphipod D
				Amphipod E
				Amphipod F
				Amphipod G
				Ampithoe sp.
				Ampithoidae
				Atylus sp.
				Caprellid A
				Cerapus tubularius
				Corophium ascherusicum
				Corophium louisianum
				Elasmopus sp.
				Erichthonius brasiliensis
				Gammarid A
				Gammarus mucronatus
				Hemiaegina minuta

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
				Listriella cf. clymenellae
				Luconacea incerta
				Melita sp.
				Microprotopus cf. raneyi
				Photis sp.
				Sunampithoe sp.
				Synchelidium sp.
		Decapoda	Penaeidae	Penaeus aztecus
			Alpheidae	Alpheus heterochaelis
				Alpheus sp.
			Ogyrididae	Ogyrides limicola
			Callianassidae	Callianassa atlantica
			Porcellanidae	Euceramus praelongus
				Petrolisthes armatus
			Paguridae	Clibanarius vittatus
				Pagurus annulipes
				Pagurus longicarpus
				Paguristes spinipes
			Leucosiidae	Persephona punctata aquilonaris
			Callapidae	Hepatella sp.
				Hepatus ellipticus
			Portunidae	Callinectes danae
				Callinectes ornatus
				Callinectes sapidus
				Callinectes similis
			Xanthidae	Eurypanopeus depressus
				Menippe mercenaria
				Micropanope nuttingie
				Neopanope texana
				Panopeus herbstii
				Rithropanopeus harrisii

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TABLE 2 (cont.'d)

PHYLUM SUBPHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Pinnotheridae	Pinnixa cristata Pinnixa cylindrica Pinnixa retinens Pinnixa sayana
			Parthenopidae	Heterocrypta granulata
Sipunculida				Phascolion strombi
Phoronida				Phoronis architecta
Echinodermata	Ophiuroidea			Hemipholis elongata Micropholis atra
	Holothuroidea			Pentamera pulcherrima
Chordata Urochordata	Ascidiacea			Molgula manhattensis Tunicate A
Cephalochordata				Branchiostoma caribaeum
Vertebrata	Osteichthyes			Blenny larva Gobiosoma bosci Gobiosoma longipala Gobiosoma robustum Gobionellus shufeldti

TABLE 2 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
				Ophidion sp. Opsanus beta Symphurus plaguosia* Microgobius thallasinus

* - found after June, 1973

+ - believed to be accidental in Benthos

weighed and the serpulid tubes checked for polychaetes. The weight of the total sample is also determined, so that we are subsampling by weight for serpulids.

The buckets containing the contents of the mesh bag are "swirled" to separate organisms from debris. A small amount of the sample is placed in a bucket, water added, and then swirled around rapidly. After allowing a second or so for the heavier shell to settle, the water is poured off through screens of 10, 20 and 40 mesh size. This procedure is repeated until the water pouring off is clear. The residue is checked under a magnifying lamp for anything that may have remained behind. We find that one or two species of bivalves and one species of gastropod usually do not swirl out, but all other varieties of organisms do.

Each screen is washed off and checked, and the "swirlings" are inspected under a dissecting scope. The organisms are sorted to species. Each species is named and counted, and if it is to be kept, placed in a vial of 70% alcohol. One-dram vials with plastic pop-tops are usually used, but larger specimens are placed in appropriately larger vials. Each vial is labeled with station number, date of collection and name (genus and species) of the organism and each vial is sealed with hot paraffin wax to prevent evaporation of the alcohol.

Discussion.

As previously noted, the benthic assemblages of our study area were more diverse than those of the phyto- or zooplankton. Some 331 species were found (Table 2).

It is felt that our ability to return to the same sampling site is more critical to the variability in benthic collections than it is to other physical or biological parameters studied. We feel that for most of our sampling sites, we could return to the site with adequate accuracy. Several sites were changed for various reasons in the early months of the study. In Nueces Bay, station 25-2 was investigated through January, then station 38-2 was adopted (Figure 2) because it was closer to the mouth of the Nueces River and therefore gave more indication of the influence of the river. Early collections at station 122-12 were made at a well site. An artificial shell pad was being sampled until January, when we moved some 50 feet away from the well and began to sample the natural bay bottom. Some variability in the benthos samples is known to have occurred at station 131-2 due to dredging of the channel. Dredging first interfered with the sampling of this station in March. Station 147-5 is in the mouth of a fish pass through the southern end of Mustang Island. Currents of such velocity that anchoring in the channel was impossible, caused some slight changes in this site several times.

Standing crops of individuals per 1/2 cubic foot have been tabulated for each station each month (Table 3). Some stations (e.g. 64-10, 122-6 147-3, 152-2) consistently have large standing crop values. Others (e.g. 142-2, 77-2, 120-3) appear to be consistently low. Peaks in populations appear in December and March-April at many stations. The December population peaks are reflected in the mean standing crop value for Nueces, Corpus Christi and Copano Bays. March-April population peaks are readily seen in the mean standing crop values of the four bay systems, with some overlap into February and May. December peaks seem to be due to an

increase of Mulinia lateralis, Streblospio benedicti, Mediomastus californiensis, Pomatoleios caerulescens, Eupomatus dianthus and Lyonsia hyalina. The April peak in Nueces Bay is almost entirely due to an increase in the population of the amphipod genus Corophium. Collection of oyster shell and other large fragments upon which certain benthic species grow varies each month. It was thought that the sudden increase in certain species (e.g. Eupomatus dianthus, Pomatoleios caerulescens) might be due to collection of large amounts of shell. A correlation coefficient was run on total weight of shell collected each month from station 64-10 and the standing crop value at that station. The correlation was not significant.

The distributions of five of the most common benthic species, Mediomastus californiensis, Glycinde solitaria, Prionospio pinnata, Neanthes succinea and Gyptis vittata, were examined by plotting catch statistics against certain hydrographic parameters. The effects of temperature vs. salinity, temperature vs. oxygen and salinity vs. oxygen on the distribution of these organisms are shown in Tables 4 - 18. The temperature vs. salinity distribution table proved to be the most useful of the three for all five species. For Neanthes succinea, the distribution appeared to be most dependent on salinity, as it is most abundant between 25 and 30 °/oo. There appears to be a slight negative correlation with temperature. Oxygen within the ranges encountered apparently is not limiting. The distribution of the other four species investigated all were apparently more dependent upon salinity than either of the other two parameters. There are probably other factors (e.g. sediment) which more directly affect the distribution of benthos.

TABLE 3 BENTHOS STANDING CROP VALUES*

Line Site	October	November	December	January	February	March	April	May	June
Nueces Bay									
25-2	0	3	29	24	N.S.	N.S.	N.S.	N.S.	N.S.
38-2	N.S.	N.S.	N.S.	N.S.	128	121	6,535	1,082	1,685
53-2	49	114	2,465	50	9	41	721	297	426
53-4	2	23	164	506	225	163	81	34	81
64-10	375	1,227	1,714	2,740	1,189	3,524	4,988	3,145	773
$\bar{x}$	106	342	1,093	830	387	962	3,081	1,139	741
Corpus Christi Bay									
122-1	22	148	116	112	23	110	210	123	106
122-6	93	588	489	777	369	1,144	1,240	1,196	629
122-12	6,890	4,775	11,896	81	24	62	25	33	43
127-2	23	1,069	1,420	132	1,322	171	713	776	223
127-3	33	422	334	42	582	13	452	388	313
127-6	14	24	74	30	356	125	80	99	88
131-2	42	161	748	415	260	20	330	22	4
142-2	27	80	26	131	37	7	103	125	39
142-6	48	55	105	15	31	57	149	30	51
142-10	1,038	42	487	13	903	47	90	8	9
147-1	148	242	594	334	435	1,814	208	353	273
147-3	1,599	396	2,375	1,678	3,706	6,297	1,318	1,069	1,641
147-5	13	42	15	15	41	89	39	43	40
151-2	4	71	20	1	147	19	46	665	117
152-2	185	146	1,028	171	1,374	518	931	569	1,356
200-2	6	108	1,547	298	978	112	559	224	43
$\bar{x}$	636	523	1,368	265	661	663	406	358	311
Copano Bay									
44-2	1	0	95	159	163	17	98	36	10
54-1	1	5	613	4	4	47	41	2	0
54-3	5	6	56	3	349	420	823	733	184
77-2	16	4	5	12	17	60	15	6	30
$\bar{x}$	6	4	192	45	133	136	244	194	56

TABLE 3 (cont'd)

Line Site	October	November	December	January	February	March	April	May	June
Aransas Bay									
100-2	8	17	103	56	67	394	560	118	74
104-2	12	88	105	42	59	85	244	101	94
104-6	25	151	115	27	92	117	284	119	129
115-5	7	77	88	19	320	145	266	104	149
120-3	2	9	18	4	31	45	34	12	31
141-1	75	241	141	63	303	467	614	177	428
$\bar{x}$	22	97	95	35	145	209	334	105	151

*Counts are individuals per 1/2 cubic foot
N.S. = No sample taken

Table 4

DISTRIBUTION OF NEANTHES SUCCINEA
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-	SAMPLES												
.2	OCCURANCES												
	AVG CATCH												
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES												
4.9	OCCURANCES												
	AVG CATCH												
5.0-	SAMPLES						1			2			
9.9	OCCURANCES						0			0			
	AVG CATCH						0			0			
10.0-	SAMPLES	1	7		1		1	1	3	2			
14.9	OCCURANCES	1	6		1		0	0	0	0			
	AVG CATCH	3	35		1		0	0	0	0			
15.0-	SAMPLES	3	5	1	2	9	4	3	8	4			
19.9	OCCURANCES	3	3	0	1	4	2	2	2	1			
	AVG CATCH	4	11	0	1	7	1	4	1	0			
20.0-	SAMPLES	3	3	2	6	4	4	11	2	4			
24.9	OCCURANCES	2	2	2	4	3	3	8	0	0			
	AVG CATCH	3	0	1	5	7	1	4	0	0			
25.0-	SAMPLES	4	15	29	9	14	15	19	10	12			
29.9	OCCURANCES	2	4	11	1	6	6	5	2	4			
	AVG CATCH	58	41	6	20	5	0	4	40	10			
30.0-	SAMPLES			1		3	2		1	6			
34.9	OCCURANCES			1		1	2		0	1			
	AVG CATCH			1		19	70		0	7			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 5

DISTRIBUTION OF NEANTHES SUCCINEA
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0- 1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0- 3.9	SAMPLES								1		
	OCCURANCES								1		
	AVG CATCH								385		
4.0- 5.9	SAMPLES						1	3	9	3	
	OCCURANCES						0	1	2	1	
	AVG CATCH						0	0	3	15	
6.0- 7.9	SAMPLES				2	6	17	9	46	5	
	OCCURANCES				0	0	6	1	17	1	
	AVG CATCH				0	0	1	0	5	26	
8.0- 9.9	SAMPLES				1	1	10	11	15	4	
	OCCURANCES				0	0	4	8	2	2	
	AVG CATCH				0	0	4	3	0	2	
10.0- 11.9	SAMPLES					1	2	4	32		
	OCCURANCES					1	2	4	10		
	AVG CATCH					1	12	6	24		
12.0- 13.9	SAMPLES					2	1	2	7		
	OCCURANCES					2	1	0	2		
	AVG CATCH					16	4	0	32		
14.0- 15.9	SAMPLES					2	4	2	1		
	OCCURANCES					1	3	2	1		
	AVG CATCH					0	11	5	21		
16.0- 17.9	SAMPLES					1	1	1			
	OCCURANCES					1	0	1			
	AVG CATCH					34	0	1			
18.0- 20.0	SAMPLES					3	2				
	OCCURANCES					3	1				
	AVG CATCH					61	4				

Table 6

DISTRIBUTION OF NEANTHES SUCCINEA
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								1				
	AVG CATCH								385				
4.0-5.9	SAMPLES							5	3	9			
	OCCURANCES							2	1	2			
	AVG CATCH							3	1	6			
6.0-7.9	SAMPLES			2	3	13	15	15	18	19			
	OCCURANCES			1	0	6	7	4	3	4			
	AVG CATCH			1	0	5	9	2	2	5			
8.0-9.9	SAMPLES		1	7	9	13	10	1	1				
	OCCURANCES		0	4	2	4	5	1	0				
	AVG CATCH		0	1	0	5	1	1	0				
10.0-11.9	SAMPLES	4	11	17	5	1				1			
	OCCURANCES	2	3	7	4	1				0			
	AVG CATCH	3	57	8	5	22				0			
12.0-13.9	SAMPLES	4	5	3									
	OCCURANCES	3	2	0									
	AVG CATCH	58	6	0									
14.0-15.9	SAMPLES	2	6	1									
	OCCURANCES	2	4	1									
	AVG CATCH	5	8	21									
16.0-17.9	SAMPLES		2	1									
	OCCURANCES		2	0									
	AVG CATCH		17	0									
18.0-20.0	SAMPLES		5										
	OCCURANCES		4										
	AVG CATCH		38										

Table 7

DISTRIBUTION OF GYPTIS VITTATA
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-	SAMPLES												
.2	OCCURANCES												
	AVG CATCH												
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES												
4.9	OCCURANCES												
	AVG CATCH												
5.0-	SAMPLES						1			2			
9.9	OCCURANCES						0			0			
	AVG CATCH						0			0			
10.0-	SAMPLES	1	7		1		1	1	3	2			
14.9	OCCURANCES	0	0		0		0	0	2	1			
	AVG CATCH	0	0		0		0	0	6	1			
15.0-	SAMPLES	3	5	1	2	9	4	3	8	4			
19.9	OCCURANCES	1	4	1	1	1	2	0	4	0			
	AVG CATCH	0	3	3	2	0	1	0	2	0			
20.0-	SAMPLES	3	3	2	6	4	4	11	2	4			
24.9	OCCURANCES	0	2	1	3	1	3	8	1	1			
	AVG CATCH	0	5	0	1	2	9	3	2	1			
25.0-	SAMPLES	4	15	29	9	14	15	19	10	12			
29.9	OCCURANCES	3	5	15	3	9	10	11	8	6			
	AVG CATCH	11	20	10	0	10	4	13	7	1			
30.0-	SAMPLES			1		3	2		1	6			
34.9	OCCURANCES			1		2	2		1	3			
	AVG CATCH			2		9	8		2	1			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 8

DISTRIBUTION OF GYPTIS VITTATA
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0- 1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0- 3.9	SAMPLES								1		
	OCCURANCES								1		
	AVG CATCH								22		
4.0- 5.9	SAMPLES						1	3	9	3	
	OCCURANCES						0	1	6	2	
	AVG CATCH						0	2	4	2	
6.0- 7.9	SAMPLES				2	6	17	9	46	5	
	OCCURANCES				0	3	4	4	29	2	
	AVG CATCH				0	3	1	1	7	1	
8.0- 9.9	SAMPLES				1	1	10	11	15	4	
	OCCURANCES				0	0	4	5	3	4	
	AVG CATCH				0	0	1	4	1	4	
10.0- 11.9	SAMPLES					1	2	4	32		
	OCCURANCES					0	0	3	16		
	AVG CATCH					0	0	1	16		
12.0- 13.9	SAMPLES					2	1	2	7		
	OCCURANCES					0	0	1	4		
	AVG CATCH					0	0	1	6		
14.0- 15.9	SAMPLES					2	4	2	1		
	OCCURANCES					0	2	0	1		
	AVG CATCH					0	1	0	55		
16.0- 17.9	SAMPLES					1	1	1			
	OCCURANCES					0	1	1			
	AVG CATCH					0	3	14			
18.0- 20.0	SAMPLES					3	2				
	OCCURANCES					0	2				
	AVG CATCH					0	7				

Table 9

DISTRIBUTION OF GYPTIS VITTATA
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								1				
	AVG CATCH								22				
4.0-5.9	SAMPLES							5	3	9			
	OCCURANCES							2	1	6			
	AVG CATCH							6	1	2			
6.0-7.9	SAMPLES			2	3	13	15	15	18	19			
	OCCURANCES			0	2	8	9	6	12	5			
	AVG CATCH			0	2	10	3	7	4	0			
8.0-9.9	SAMPLES		1	7	9	13	10	1	1				
	OCCURANCES		0	2	2	3	7	1	1				
	AVG CATCH		0	1	0	1	6	3	2				
10.0-11.9	SAMPLES	4	11	17	5	1				1			
	OCCURANCES	2	4	11	2	0				0			
	AVG CATCH	3	28	12	1	0				0			
12.0-13.9	SAMPLES	4	5	3									
	OCCURANCES	1	2	2									
	AVG CATCH	8	0	2									
14.0-15.9	SAMPLES	2	6	1									
	OCCURANCES	0	2	1									
	AVG CATCH	0	0	55									
16.0-17.9	SAMPLES		2	1									
	OCCURANCES		1	1									
	AVG CATCH		7	3									
18.0-20.0	SAMPLES		5										
	OCCURANCES		2										
	AVG CATCH		2										

Table 10

DISTRIBUTION OF MEDIOMASTUS CALIFORNIENSIS
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-.2	SAMPLES												
	OCCURANCES												
	AVG CATCH												
.3-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-4.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
5.0-9.9	SAMPLES						1			2			
	OCCURANCES						0			0			
	AVG CATCH						0			0			
10.0-14.9	SAMPLES	1	7		1		1	1	3	2			
	OCCURANCES	0	4		0		0	1	1	0			
	AVG CATCH	0	16		0		0	3	24	0			
15.0-19.9	SAMPLES	3	5	1	2	9	4	3	8	4			
	OCCURANCES	1	4	1	1	8	3	3	6	0			
	AVG CATCH	1	16	7	12	77	147	103	52	0			
20.0-24.9	SAMPLES	3	3	2	6	4	4	11	2	4			
	OCCURANCES	2	2	2	4	3	4	9	1	1			
	AVG CATCH	7	214	9	6	45	81	48	12	11			
25.0-29.9	SAMPLES	4	15	29	9	14	15	19	10	12			
	OCCURANCES	4	9	20	4	13	12	17	9	2			
	AVG CATCH	115	215	87	12	233	94	131	170	39			
30.0-34.9	SAMPLES			1		3	2		1	6			
	OCCURANCES			1		1	2		1	4			
	AVG CATCH			1		58	122		5	56			
35.0-39.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												

Table 11

DISTRIBUTION OF MEDIOMASTUS CALIFORNIENSIS
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0-	SAMPLES										
1.9	OCCURANCES										
	AVG CATCH										
2.0-	SAMPLES								1		
3.9	OCCURANCES								1		
	AVG CATCH								658		
4.0-	SAMPLES						1	3	9	3	
5.9	OCCURANCES						0	2	4	2	
	AVG CATCH						0	41	50	1	
6.0-	SAMPLES				2	6	17	9	46	5	
7.9	OCCURANCES				0	2	11	4	34	3	
	AVG CATCH				0	12	52	15	139	88	
8.0-	SAMPLES				1	1	10	11	15	4	
9.9	OCCURANCES				0	0	9	11	9	3	
	AVG CATCH				0	0	114	54	9	35	
10.0-	SAMPLES					1	2	4	32		
11.9	OCCURANCES					0	1	2	21		
	AVG CATCH					0	4	5	140		
12.0-	SAMPLES					2	1	2	7		
13.9	OCCURANCES					1	1	1	5		
	AVG CATCH					16	3	110	89		
14.0-	SAMPLES					2	4	2	1		
15.9	OCCURANCES					1	3	1	1		
	AVG CATCH					14	17	0	272		
16.0-	SAMPLES					1	1	1			
17.9	OCCURANCES					0	1	1			
	AVG CATCH					0	7	423			
18.0-	SAMPLES					3	2				
20.0	OCCURANCES					2	1				
	AVG CATCH					18	7				

Table 12

DISTRIBUTION OF MEDIOMASTUS CALIFORNIENSIS
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
		WATER TEMPERATURE (DEGREES CENTIGRADE)											
.0- 1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0- 3.9	SAMPLES								1				
	OCCURANCES								1				
	AVG CATCH								658				
4.0- 5.9	SAMPLES							5	3	9			
	OCCURANCES							4	2	3			
	AVG CATCH							105	38	5			
6.0- 7.9	SAMPLES			2	3	13	15	15	18	19			
	OCCURANCES			1	2	11	11	12	13	4			
	AVG CATCH			0	29	244	96	64	82	42			
8.0- 9.9	SAMPLES		1	7	9	13	10	1	1				
	OCCURANCES		0	5	6	11	8	1	1				
	AVG CATCH		0	6	7	69	96	53	5				
10.0- 11.9	SAMPLES	4	11	17	5	1				1			
	OCCURANCES	4	8	11	0	1				0			
	AVG CATCH	14	293	73	0	8				0			
12.0- 13.9	SAMPLES	4	5	3									
	OCCURANCES	2	3	3									
	AVG CATCH	107	51	67									
14.0- 15.9	SAMPLES	2	6	1									
	OCCURANCES	1	4	1									
	AVG CATCH	0	16	272									
16.0- 17.9	SAMPLES		2	1									
	OCCURANCES		1	1									
	AVG CATCH		211	7									
18.0- 20.0	SAMPLES		5										
	OCCURANCES		3										
	AVG CATCH		13										

Table 13

DISTRIBUTION OF PRIONOSPIO PINNATA
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0- .2	SAMPLES												
	OCCURANCES												
	AVG CATCH												
.3- 1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0- 4.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
5.0- 9.9	SAMPLES						1			2			
	OCCURANCES						0			0			
	AVG CATCH						0			0			
10.0- 14.9	SAMPLES	1	7		1		1	1	3	2			
	OCCURANCES	0	2		0		1	0	2	2			
	AVG CATCH	0	0		0		3	0	3	2			
15.0- 19.9	SAMPLES	3	5	1	2	9	4	3	8	4			
	OCCURANCES	2	5	0	1	4	3	2	5	4			
	AVG CATCH	2	12	0	9	17	11	1	5	4			
20.0- 24.9	SAMPLES	3	3	2	6	4	4	11	2	4			
	OCCURANCES	3	1	1	5	3	3	9	2	3			
	AVG CATCH	3	11	14	5	7	9	8	22	19			
25.0- 29.9	SAMPLES	4	15	29	9	14	15	19	10	12			
	OCCURANCES	4	8	19	8	12	12	13	8	10			
	AVG CATCH	31	2	20	11	30	15	11	23	8			
30.0- 34.9	SAMPLES			1		3	2		1	6			
	OCCURANCES			0		3	2		1	6			
	AVG CATCH			0		15	29		8	4			
35.0- 39.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												

Table 14

DISTRIBUTION OF PRIONOSPIO PINNATA
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0- 1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0- 3.9	SAMPLES								1		
	OCCURANCES								0		
	AVG CATCH								0		
4.0- 5.9	SAMPLES						1	3	9	3	
	OCCURANCES						1	2	8	3	
	AVG CATCH						8	8	14	4	
6.0- 7.9	SAMPLES				2	6	17	9	46	5	
	OCCURANCES				0	4	11	7	34	5	
	AVG CATCH				0	2	4	16	19	5	
8.0- 9.9	SAMPLES				1	1	10	11	15	4	
	OCCURANCES				0	1	7	9	11	3	
	AVG CATCH				0	3	21	7	7	24	
10.0- 11.9	SAMPLES					1	2	4	32		
	OCCURANCES					0	0	4	22		
	AVG CATCH					0	0	10	14		
12.0- 13.9	SAMPLES					2	1	2	7		
	OCCURANCES					1	0	1	4		
	AVG CATCH					1	0	2	30		
14.0- 15.9	SAMPLES					2	4	2	1		
	OCCURANCES					0	4	1	1		
	AVG CATCH					0	7	0	2		
16.0- 17.9	SAMPLES					1	1	1			
	OCCURANCES					0	0	1			
	AVG CATCH					0	0	34			
18.0- 20.0	SAMPLES					3	2				
	OCCURANCES					1	2				
	AVG CATCH					0	18				

Table 15

DISTRIBUTION OF PRIONOSPIO PINNATA
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0- 5.9	6.0- 8.9	9.0- 11.9	12.0- 14.9	15.0- 17.9	18.0- 20.9	21.0- 23.9	24.0- 26.9	27.0- 29.9	30.0- 32.9	33.0- 35.9	36.0- 38.9
.0- 1.9	SAMPLES OCCURANCES AVG CATCH												
2.0- 3.9	SAMPLES OCCURANCES AVG CATCH								1 0 0				
4.0- 5.9	SAMPLES OCCURANCES AVG CATCH							5 3 7	3 2 17	9 9 9			
6.0- 7.9	SAMPLES OCCURANCES AVG CATCH			2 1 1	3 3 30	13 10 29	15 11 9	15 9 9	18 13 13	19 14 6			
8.0- 9.9	SAMPLES OCCURANCES AVG CATCH		1 1 1	7 1 1	9 8 5	13 10 20	10 9 16	1 1 13	1 1 8				
10.0- 11.9	SAMPLES OCCURANCES AVG CATCH	4 4 32	11 6 2	17 13 20	5 2 1	1 0 0				1 1 1			
12.0- 13.9	SAMPLES OCCURANCES AVG CATCH	4 2 1	5 2 3	3 2 67									
14.0- 15.9	SAMPLES OCCURANCES AVG CATCH	2 2 1	6 3 4	1 1 2									
16.0- 17.9	SAMPLES OCCURANCES AVG CATCH		2 1 17	1 0 0									
18.0- 20.0	SAMPLES OCCURANCES AVG CATCH		5 3 7										

Table 16

DISTRIBUTION OF GLYCINDE SOLITARIA
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0- 5.9	6.0- 8.9	9.0- 11.9	12.0- 14.9	15.0- 17.9	18.0- 20.9	21.0- 23.9	24.0- 26.9	27.0- 29.9	30.0- 32.9	33.0- 35.9	36.0- 38.9
.0-	SAMPLES												
.2	OCCURANCES												
	AVG CATCH												
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES												
4.9	OCCURANCES												
	AVG CATCH												
5.0-	SAMPLES						1			2			
9.9	OCCURANCES						0			0			
	AVG CATCH						0			0			
10.0-	SAMPLES	1	7		1		1	1	3	2			
14.9	OCCURANCES	0	2		0		0	0	1	1			
	AVG CATCH	0	1		0		0	0	1	0			
15.0-	SAMPLES	3	5	1	2	9	4	3	8	4			
19.9	OCCURANCES	1	5	0	1	7	3	1	3	2			
	AVG CATCH	0	19	0	1	9	7	1	7	1			
20.0-	SAMPLES	3	3	2	6	4	4	11	2	4			
24.9	OCCURANCES	1	3	1	4	4	3	10	2	2			
	AVG CATCH	12	9	36	13	15	9	7	6	0			
25.0-	SAMPLES	4	15	29	9	14	15	19	10	12			
29.9	OCCURANCES	3	11	20	5	10	10	12	7	2			
	AVG CATCH	7	3	5	1	5	4	3	6	0			
30.0-	SAMPLES			1		3	2		1	6			
34.9	OCCURANCES			1		1	1		1	2			
	AVG CATCH			12		1	0		1	0			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 17

DISTRIBUTION OF GLYCINDE SOLITARIA
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0- 1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0- 3.9	SAMPLES								1		
	OCCURANCES								0		
	AVG CATCH								0		
4.0- 5.9	SAMPLES						1	3	9	3	
	OCCURANCES						1	1	5	1	
	AVG CATCH						2	0	3	1	
6.0- 7.9	SAMPLES				2	6	17	9	46	5	
	OCCURANCES				0	2	6	8	27	1	
	AVG CATCH				0	1	4	5	3	0	
8.0- 9.9	SAMPLES				1	1	10	11	15	4	
	OCCURANCES				0	0	9	8	9	3	
	AVG CATCH				0	0	8	9	3	3	
10.0- 11.9	SAMPLES					1	2	4	32		
	OCCURANCES					0	1	3	22		
	AVG CATCH					0	7	32	3		
12.0- 13.9	SAMPLES					2	1	2	7		
	OCCURANCES					1	0	2	6		
	AVG CATCH					2	0	21	8		
14.0- 15.9	SAMPLES					2	4	2	1		
	OCCURANCES					0	3	1	1		
	AVG CATCH					0	8	0	1		
16.0- 17.9	SAMPLES					1	1	1			
	OCCURANCES					0	0	1			
	AVG CATCH					0	0	21			
18.0- 20.0	SAMPLES					3	2				
	OCCURANCES					1	2				
	AVG CATCH					1	31				

Table 18

DISTRIBUTION OF GLYCINDE SOLITARIA
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								0				
	AVG CATCH								0				
4.0-5.9	SAMPLES							5	3	9			
	OCCURANCES							3	2	3			
	AVG CATCH							4	1	0			
6.0-7.9	SAMPLES			2	3	13	15	15	18	19			
	OCCURANCES			2	2	7	8	9	11	5			
	AVG CATCH			2	7	3	4	3	7	0			
8.0-9.9	SAMPLES		1	7	9	13	10	1	1				
	OCCURANCES		1	2	5	11	8	1	1				
	AVG CATCH		3	3	1	11	5	22	1				
10.0-11.9	SAMPLES	4	11	17	5	1				1			
	OCCURANCES	2	8	12	2	1				1			
	AVG CATCH	1	4	7	11	15				1			
12.0-13.9	SAMPLES	4	5	3									
	OCCURANCES	2	4	3									
	AVG CATCH	15	2	10									
14.0-15.9	SAMPLES	2	6	1									
	OCCURANCES	0	4	1									
	AVG CATCH	0	5	1									
16.0-17.9	SAMPLES		2	1									
	OCCURANCES		1	0									
	AVG CATCH		10	0									
18.0-20.0	SAMPLES		5										
	OCCURANCES		3										
	AVG CATCH		13										

ZOOPLANKTON

Introduction.

The word plankton is derived from the Greek word, planktos, which means wandering. Zooplankton applies to those animals which, because of their small size and usually limited powers of locomotion, drift aimlessly with the currents in all natural waters and artificial impoundments. Most movement is vertical, associated with changes in swimming level. Horizontal movement is very limited. Zooplankton plays a significant role in the ecosystem, transferring energy from the primary producers to the larger consumers such as the larval young of nearly all species of fish, adult fish that remain plankton feeders throughout their life, and shrimp.

Nearly every major group of aquatic animals is represented in the plankton as larvae, adults, or as both. Holoplankton and meroplankton are the two major categories of zooplankton found in an aquatic environment. The holoplankters are those organisms which are planktonic throughout their life histories. Copepods, larvaceans, chaetognaths, cladocerans and ctenophores comprise the major constituents of this category. The meroplankters are those which spend only a part of their lives in the plankton. These temporary plankters consist of the larval forms of many benthic organisms such as polychaetes, pelecypods, gastropods, barnacles and decapods and the pelagic larvae of fish. These generally appear during specific spawning periods characteristic of each group of organisms, and play an important role in the species composition of zooplankton at such times.

Methods.

Field--Zooplankton samples are collected with a #10 mesh (153 u openings) nylon net. The net is 1.5m long and 0.5m in diameter at its mouth. One-minute tows are made in a counterclockwise direction from the port side of the boat so that the net is towed clear of the boat's wake and wheel-wash. The net is allowed to settle some in the water column before the tow begins, and is pulled to the surface by the end of the tow so that an oblique tow is made. The amount of water filtered is measured by a General Oceanics Model 2030 digital flowmeter attached in the center of the mouth of the net by two turnbuckles. The flowmeter is calibrated periodically by towing the meter in the net frame for a distance of 48m in the UTMSI marina. This is repeated 10 times and averaged in order to obtain a number in terms of meters per revolution. The formula for obtaining the volume of water sampled is as follows:

Volume Sampled = Rev. X Cal. X A

where Rev. is the number of revolutions during the tow (average revolutions per 48m is 1865.), Cal. is meters per revolution, obtained during the calibration (48m/1865 = 0.025731) and A is the area of the mouth of the net towed in meters^2 (for a 0.5m net, A = 0.19635m^2).

Example: 1865 X 0.025731 X 0.19635 = 9.42m^3

At the conclusion of each tow, the plankton bucket is detached from the net and any ctenophores or large medusae are immediately removed. This is done to minimize the amount of jelly from broken ctenophores which hampers analysis of the plankton sample. Removal of the ctenophores from the sample is done by straining the plankton bucket contents through a 1/8 inch hardware cloth mounted in a plastic

funnel. Most of the ctenophores are retained on the screen while the smaller zooplankton is washed through into a 32 oz. collecting jar. The ctenophores are then measured by volume in a graduated cylinder and discarded. After the ctenophores are removed from the screen, the screen is inverted and sprayed with water over the funnel to wash down the remaining zooplankton which may be stuck to the screen. The plankton bucket is then replaced and the net is washed down in order to concentrate the sample in the plankton bucket. The sample in the plankton bucket is washed with sea water into the collecting jar and 100 ml. of 5% buffered formalin is added as a preservative.

Laboratory--In the laboratory the measured volume of ctenophores is converted to numbers of individuals by a regression analysis program for a Monroe 1865 calculator.

Analysis of the plankton samples is made from a series of aliquots taken with a Hensen-Stemple pipette. After the plankton sample has been allowed to settle, the supernatant liquid is removed with a basting syringe and the plankton is transferred to a graduated beaker. The sample is diluted to a measured volume and 1 or 2 ml. aliquots (depending on the concentration of the zooplankton) are taken with the Hensen-Stemple pipette. An aliquot is placed in a gridded Petri dish and examined under a Wild M-5 dissecting microscope at 25X. Following the first sub-sample, 5 to 8- 10 ml. aliquots are taken from the sample and examined at 12X for animals not represented in the first aliquot. The entire sample is then examined for zooplankton which occurred in such small numbers they did not occur in the sub-samples.

In March, 1973, because of the high concentrations of Noctiluca scintillans at some stations, it was unfeasible to make counts by the preceeding method. A 5 ml. aliquot was taken from 500 ml., diluted to a known volume, and sub-sampled twice using a 2 ml. pipette. This procedure was used only for counting N. scintillans. Organisms are identified to species where possible and counts are reported in individuals per cubic meter.

As new organisms are encountered in the plankton samples, slide mounts are made using Turtox CMC-AF, CMC-9 and CMC-10 mounting media. Dissections were made in a drop of CMC-AF mounting media under a Wild M-5 dissecting microscope at 50X with minute insect pins held in L.A. Starrett 166-B pin vises. A Nikon compound microscope is used to identify animals.

Discussion.

A list of the zooplankters collected during the period covered by this report will be found in Table 19.

Standing crops of individuals per cubic meter and means have been tabulated for each station each month (Table 20). These values show seasonal fluctuations in the abundance of zooplankton. Standard deviations indicate that the standing crop values in Aransas Bay are less variable than those in Nueces, Corpus Christi and Copano Bays.

An increase in standing crop values occurred during November in Corpus Christi Bay. This increase was due to large numbers of pelecypod larvae and copepod nauplii. During the November collections the plankton net as described in the methods section was torn and had to be replaced with a 30cm net of #25 nylon netting. This smaller net was used only in November at stations 127-2 through 200-2 with

TABLE 19

Zooplankton from Corpus Christi and Adjacent Bay Systems

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
Protozoa	Ciliophora	Spirotricha	Tintinnidae	Tintinnid A Tintinnid B Tintinnid C *Noctiluca scintillans*
	Mastigophora	Dinoflagellata		
Coelenterata	Hydrozoa	Hydroida		*Hydra* sp. Medusae A Medusae B Medusae C *Stomalophus meleagris* Anenome
	Scyphozoa Anthozoa			
Ctenophora	Tentaculata Nuda			*Mnemiopsis mccradyi* *Beroe ovata*
Platyhelminthes	Turbellaria	Acoela		Flatworm A Flatworm B
Nemertinea				Nemertean
Rotifera				*Asplanchna* sp. *Brachionus plicatilis* *Brachionus* sp.

TABLE 19(cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
Nematoda				Nematode
Annelida	Polychaeta			Scaleworm Larvae Polychaete Larvae Nereid (reproductive form)
			Syllidae	Autolytus prolifer Brania clavata Exogone dispar
			Spionidae	Polydora sp. Streblospio benedicti
			Sabellidae	Chone duneri
			Serpulidae	Pomatoleios kraussi Sphaeropomatus miamiensis
	Hirudinea			Leech
Mollusca	Gastropoda			Gastropod Larvae
		Nudibranchia		Pteropod Elysia sp. Sea Hare
	Pelecypoda			Pelecypod Larvae
			Lyonsiidae	Lyonsia hyalina
	Cephalopoda			Lolliguneulus brevis
Arthropoda	Arachnida	Acarina		Hydracarina (water mites)
	Crustacea	Diplostraca		Cladocerans (immature) Penilia avirostris Evadne nordmanni Podon sp.

TABLE 19(cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Sididae	Diaphanosoma sp.
			Daphnidae	Daphnia sp.
				Ceriodaphnia sp.
			Bosminidae	Bosmina sp.
			Macrothricidae	Ilyocryptus spinifer
			Chidoridae	Leydigia acanthoceroides
				Dunhevedia sp.
		Myodocopa	Halcyprididae	Ostracod (Conchoecia sp. cf)
		Podocopa		Ostracod
		Calanoida	Calanidae	Eucalanus sp.
				Rhincalanus cornutus
			Paracalanidae	Paracalanus crassirostris
				Paracalanus indicus
				Paracalanus quasimodo
			Pseudocalanidae	Clausocalanus furcatus
			Centropagidae	Centropages furcatus
				Centropages hamatus
			Diaptomidae	Diaptomus sp.
				Pseudodiaptomus coronatus
			Temoridae	Temora turbinata
				Temora stylifera
			Pontellidae	Anomalocera ornata
				Labidocera aestiva
				Pontella pennata
				Pontella spinipes
				Pontella meadii
			Acartiidae	Acartia tonsa
				Acartia danae cf
			Tortanidae	Tortanus setacaudatus
		Harpacticoida	Longipediidae	Longipedia coronata
			Canuellidae	Canuella sp.

TABLE 19(cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Ectinosomidae	*Ectinosoma* sp.
			Harpacticidae	*Harpacticus* sp.
			Peltidiidae	*Alteutha depressa*
			Tegastidae	*Parategastes* sp.
			Tisbidae	*Chappaquiddicka* sp.
				Pseudothalestris sp.
			Canthocamptidae	*Mesochra* sp.
				Bryocamptus sp.
			Laophontidae	*Laophonte* sp.
			Macrosetellidae	*Macrosetella gracilis*
			Tachidiidae	*Clytemnestra scutellata*
				Microarthidion littorale
				Euterpinna acutifrons
			Metidae	*Metis* sp.
			Thalestridae	*Pseudothalestris* sp.
			Ameiridae	*Nitocra* sp.
			Cletodidae	*Cletocamptus albuquerquensis*
				Cletocamptus spp.
				Nannopus palustris
			Unidentified	Harpacticoid A
				Harpacticoid B
				Harpacticoid C
				Harpacticoid D
				Harpacticoid E
				Harpacticoid F
				Harpacticoid G
				Harpacticoid H
				Harpacticoid I
				Harpacticoid J
				Harpacticoid K
		Cyclopoida	Oithonidae	*Oithona brevicornis*

TABLE 19 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Cyclopidae	Halicyclops fosteri
				Cyclops sp.
				Mesocyclops edax
				Macrocyclops albidus
				Eucyclops agilis
				Paracyclops sp.
				Hemicyclops sp.
				Neocyclops sp.
			Oncaeidae	Oncaea mediterranea
			Corycaeidae	Corycaeus sp. A
				Corycaeus sp. B
				Corycaeus sp. C
				Corycaeus sp. D
			Ergasilidae	Ergasilis sp.
			Unidentified	Cyclopoid A
				Cyclopoid B
				Cyclopoid C
				Cyclopoid Copipodids
				Copepod Nauplii (Calanoid, Harpacticoid, and Cyclopoid combined)
		Caligoida	Caligidae	Caligus sp.
				Caligus sp. metanauplius
			Argulidae	Argulus alosae
				Argulus funduli
		Thoracica		Barnacle Nauplii
				Barnacle Cypris Larvae
		Stomatopoda		Squilla sp. larvae
		Mysidacea	Mysidae	Mysidopsis sp. (immature)
				Mysidopsis almyra

TABLE 19 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
				Mysidopsis bigelowi
				Bowmaniella sp. (immature)
		Cumacea		Cumacean (immature)
				Cyclaspis varians
		Tanaidacea		Leptochelia rapax
		Isopoda	Idoteidae	Edotea triloba
				Erichsonella attenuata
			Cymothoidae	Aegathoa oculata
			Sphaeromatidae	Cassidinidea lunifrons
				Cymodoce faxoni
				Sphaeroma quadradentatum
			Bopyridae	Bopyrid Isopod
		Amphipoda	Atylidae	Atylus sp.
			Gammaridae	Gammarid Amphipod
				Gammarus mucronatus
			Copophiidae	Corophium louisianum
				Corophium acherusicum
			Hyperiidae	Hyperia sp.
			Caprellidae	Luconacia incerta
				Caprellid (immature)
		Decapoda	Penaeidae	Penaeus aztecus postlarvae
				Penaeus setiferus postlarvae
				Lucifer faxoni
				Metanauplius Larvae
			Palaemonidae	Palaemonetes sp. zoea
				Palaemonetes pugio
				Macrobrachium sp zoea
			Alpheidae	Alpheus sp. zoea
			Hippolytidae	Tozeuma carolinense zoea
			Unidentified	Caridean zoea A
				Caridean zoea B

TABLE 19(cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
				Caridean zoea C
				Caridean zoea D
			Callianassidae	Callianassa sp. zoea
			Porcellanidae	Petrolisthes armatus zoea
				Petrolisthes armatus megalops
				Porcellanid zoea
			Paguridae	Pagurid zoea
				Clibanarius vittatus zoea
			Hippidae	Emerita sp. zoea
			Portunidae	Callinectes sp. zoea
				Callinectes sp. megalops
				Callinectes sapidus
			Xanthidae	Menippe mercenaria zoea
				Rhithropanopeus harrissii zoea
				Hexapanopeus sp. megalops
				Panopeus sp. cf zoea
			Pinnotheridae	Pinnotherid zoea
				Pinnixia sp. megalops
				Pinnixia sp. (juvenile)
			Ocypodidae	Uca sp. zoea
			Unidentified	Brachyuran zoea B
				Brachyuran zoea B
				Brachyuran zoea C
				Brachyuran megalops
				Juvenile crab
	Insecta	Hemiptera	Corixidae	Water Boatman
			Nepidae	Water Scorpion
		Ephemeroptera		Mayfly Larvae
		Odonata		Dragonfly Larvae
				Damselfly Larvae
		Diptera	Culicidae	Mosquito Larvae

TABLE 19 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
		Coleoptera Unidentified	Tendipedidae Cytiscidae	Midgefly Larvae Diving Water Beetle Larvae Insect Larvae A
Phoronida				Actinotroch Larvae
Bryozoa				Cyphonautes Larvae A Cyphonautes Larvae B
Echinodermata				Ophiopluteus Larvae
Chaetognatha				Sagitta sp.
Chordata	Larvacea Osteichthyes			Oikopleura sp. Fish eggs Fish Larvae (unidentified)
		Anguilliformes	Ophichthidae	Myrophis punctatus leptocephalus
		Clupeiformes	Clupeidae Engraulidae	Brevoortia patronus Anchoa mitchilli
		Gobiesociformes	Gobiesocidae	Gobiesox strumosus
		Atheriniformes	Atherinidae	Silversides Larvae
		Gasterosteiformes	Syngnathidae	Hippocampus zosterae Syngnathus louisianae Syngnathus scovelli
		Perciformes	Carangidae	Chloroscombrus chrysurus

TABLE 19 (cont.'d)

PHYLUM	CLASS	ORDER	FAMILY	GENUS, SPECIES
			Sparidae	Lagodon rhomboides
			Sciaenidae	Cynoscion nebulosus
				Leiostomus xanthurus
				Micropogon undulatus
			Mugilidae	Mugil cephalus
			Blenniidae	Blenny Larvae
			Gobiidae	Goby Larvae
				Gobiosoma bosci
			Stromateidae	Peprilus burti
Miscellaneous				Unidentified Larvae
				Egg (small, maybe crustacean)
				Egg case (green)
				Egg case

TABLE 20 ZOOPLANKTON STANDING CROP VALUES*

Line Site	October	November	December	January	February	March	April	May	June
Nueces Bay									
25-2	25,934	7,634	18,525	6,423	N.S.	N.S.	N.S.	N.S.	N.S.
38-2	N.S.	N.S.	N.S.	N.S.	2,252	35,195	4,908	6,613	10,521
53-2	3,705	4,782	3,874	193	2,754	9,335,772	4,570	7,440	26,360
53-4	6,851	15,135	4,879	732	15,590	475,477	9,755	10,740	3,722
64-10	5,002	10,806	1,467	4,890	121,497	15,799,378	12,189	65,173	31,864
$\bar{x}$	10,373	9,589	7,186	3,059	35,523	6,411,456	7,856	22,492	18,117
Corpus Christi Bay									
122-1	828	20,506	524	938	41,432	8,455,717	8,070	11,281	28,512
122-6	2,750	8,031	920	15,080	253,885	27,406,616	7,987	37,923	9,707
122-12	2,257	5,580	625	4,027	55,752,391	210,908,132	3,217	47,073	44,524
127-2	247	195,362	975	1,862	57,724	50,504,166	2,836	27,516	36,733
127-3	622	631,313	840	2,045	24,464	133,908,641	3,165	13,391	28,780
127-6	6,946	63,977	180	509	34,999	57,602,209	4,484	29,520	10,819
131-2	330	11,517	439	1,832	31,940	58,613,001	4,582	13,274	26,778
142-2	68	67,743	1,611	3,942	31,345	60,004,607	4,202	12,821	28,153
142-6	402	39,304	2,582	3,474	8,036	75,701,500	3,293	12,474	9,718
142-10	1,240	53,550	317	4,164	10,275	121,102,714	3,676	11,013	6,846
147-1	3,186	44,737	2,327	1,493	12,878	12,385	10,892	38,934	15,896
147-3	4,737	52,001	2,707	4,098	6,910	32,362	2,837	30,684	22,880
147-5	7,308	51,600	6,034	19,929	5,708	15,063**	7,573	20,811	17,725
151-2	4,201	33,964	4,214	4,099	11,589	38,023	10,537	55,805	10,031
152-2	1,234	39,183	982	1,977	4,037	12,559	16,408	27,551	13,953
200-2	2,888	41,155	2,278	2,001	66,698	516,933	18,043	28,310	37,468
$\bar{x}$	2,453	81,195	1,722	4,467	3,522,145	53,657,037	6,988	26,149	21,783
Copano Bay									
44-2	8,960	4,897	14,238	700	10,967	50,513	7,301	6,585	530
54-1	4,174	4,674	1,076	224	61,811	3,534	4,830	27,101	8,149
54-3	2,144	8,669	12,712	9,492	123,963	8,315	9,228	5,476	21,001
77-2	7,619	3,484	3,227	614	17,402	5,796	15,813	18,903	3,641
$\bar{x}$	5,724	5,431	7,813	2,758	53,536	17,040	9,293	14,516	8,330

TABLE 20 (cont'd)

Line Site	October	November	December	January	February	March	April	May	June
Aransas Bay									
100-2	7,228	9,623	1,842	1,915	41,074	13,409	33,705	19,807	7,659
104-2	3,528	29,048	4,802	1,396	28,889	12,704	4,668	78,757	25,376
104-6	8,714	18,535	3,645	4,811	1,248	12,856	12,854	31,747	15,613
115-5	2,101	18,355	2,888	2,257	16,055	14,155	13,259	35,904	16,425
120-3	7,735	2,069	1,158	688	31,934	45,869	22,054	27,290	13,967
141-1	6,956	9,205	648	4,120	5,042	14,979	6,924	23,432	56,953
$\bar{x}$	6,044	14,473	2,497	2,531	20,707	18,995	15,577	36,156	22,666

*Counts are individuals per cubic meter
**Sample decomposed, no count on Noctiluca scintillans
N.S. = No sample taken

the exception of 131-2 and may have resulted in increased standing crop values. The increase in numbers of pelecypod larvae was noted at stations 122-1, 122-6 and 122-12 before the smaller net was used so it is thought that this increase in standing crop values would have been similar with the 0.5m, #10 net. In Aransas Bay, the November increase in standing crop was the result of increased catches of Acartia tonsa. Another increase in standing crop values began in February and reached a maximum peak of abundance in March. This spring bloom was most apparent in Nueces and Corpus Christi Bays and was associated with large catches of Noctiluca scintillans. A drastic drop in phytoplankton standing crop values in March can be correlated with the N. scintillans bloom in Nueces and Corpus Christi Bays. Compared to the Corpus Christi Bay area only minimal increases in standing crop values occurred in Copano and Aransas Bay areas during this period as a result of increased numbers of barnacle nauplii and N. scintillans.

April standing crop data declined in Nueces and Copano Bays with increases occurring in May and June. Standing crop counts remained similar in Copano and Aransas Bays in April and decreased slightly during May and June. The increases during the period from May through June were correlated with increased catches of copepods and decapod larvae.

The distribution of five copepods, Acartia tonsa, Paracalanus crassirostris, Pseudodiaptomus coronatus, Oithona brevicornis and Centropages hamatus were examined by plotting catch statistics against certain hydrographic parameters (Tables 21-35). Of the three combinations of parameters examined (temperature vs. salinity, temperature vs. oxygen

and salinity vs. oxygen), the temperature vs. salinity was the most useful for all five species. The distribution of Acartia tonsa appeared to be relatively similar between 9.0°C and 29.9°C with a tendency to occur in higher numbers between 24.0°C and 29.9°C. No apparent distributional patterns were seen in relation to salinity. Distribution for the other four species seem to show a slight positive correlation to salinity. All but C. hamatus avoid low temperature extremes. Oxygen values within the ranges encountered showed no apparent effect on distribution.

Decreased salinities resulting from freshwater inflow during June occurred at 38-2, 44-2, 54-3 and 200-2. The lower salinities at these stations resulted in the first major influx of freshwater zooplankton into the study area.

Table 21

DISTRIBUTION OF ACARTIA TONSA
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-	SAMPLES								2				
.2	OCCURANCES								1				
	AVG CATCH								533				
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES										1		
4.9	OCCURANCES										1		
	AVG CATCH										2467		
5.0-	SAMPLES						1	1	1	3			
9.9	OCCURANCES						1	1	1	3			
	AVG CATCH						5109	2338	3981	13285			
10.0-	SAMPLES	4	5		1	1	1	1	2	5			
14.9	OCCURANCES	4	5		1	1	1	1	2	5			
	AVG CATCH	173	1944		364	1600	2666	3920	19655	3754			
15.0-	SAMPLES		7	1	3	9	3	4	8	6			
19.9	OCCURANCES		7	1	3	9	3	4	8	6			
	AVG CATCH		1382	54	2280	6518	13562	2145	15335	7054			
20.0-	SAMPLES	2	5	1	4	4	5	10	2	8			
24.9	OCCURANCES	2	5	1	4	4	5	10	2	8			
	AVG CATCH	291	652	15490	1194	3100	6322	3961	13862	8476			
25.0-	SAMPLES	2	10	30	15	15	16	20	10	28	1		
29.9	OCCURANCES	2	10	29	14	15	16	20	10	28	1		
	AVG CATCH	414	237	185	1127	2240	2193	5349	19086	5520	388		
30.0-	SAMPLES			1	1	2	2		1	5			
34.9	OCCURANCES			1	1	2	2		1	5			
	AVG CATCH			26	120	3053	761		36080	4901			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 22

DISTRIBUTION OF ACARTIA TONSA
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
		WATER TEMPERATURE (DEGREES CENTIGRADE)											
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								0				
	AVG CATCH								0				
4.0-5.9	SAMPLES							2	3	6	1		
	OCCURANCES							2	3	6	1		
	AVG CATCH							14936	11968	11129	2467		
6.0-7.9	SAMPLES				2	13	17	18	21	49			
	OCCURANCES				2	13	17	18	21	49			
	AVG CATCH				2314	2458	4192	4615	16653	5736			
8.0-9.9	SAMPLES			11	11	14	10	3	1				
	OCCURANCES			11	10	14	10	3	1				
	AVG CATCH			1679	1336	5532	3959	496	36080				
10.0-11.9	SAMPLES	3	14	15	11						1		
	OCCURANCES	3	14	14	11						1		
	AVG CATCH	322	654	108	881						388		
12.0-13.9	SAMPLES	4	9	4									
	OCCURANCES	4	9	4									
	AVG CATCH	138	1295	102									
14.0-15.9	SAMPLES	1	2										
	OCCURANCES	1	2										
	AVG CATCH	583	652										
16.0-17.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
18.0-20.0	SAMPLES		1										
	OCCURANCES		1										
	AVG CATCH		1893										

Table 23

DISTRIBUTION OF ACARTIA TONSA
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0-1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0-3.9	SAMPLES	1									
	OCCURANCES	0									
	AVG CATCH	0									
4.0-5.9	SAMPLES	1		1	1			1	6	2	
	OCCURANCES	1		1	1			1	6	2	
	AVG CATCH	1066		2467	31220			10350	13932	3162	
6.0-7.9	SAMPLES				4	8	20	14	69	5	
	OCCURANCES				4	8	20	14	69	5	
	AVG CATCH				3739	7750	9801	9752	5689	3929	
8.0-9.9	SAMPLES				1	2	11	10	21	5	
	OCCURANCES				1	2	11	10	20	5	
	AVG CATCH				5109	2133	6996	3687	1057	8478	
10.0-11.9	SAMPLES					4	4	4	32		
	OCCURANCES					4	4	4	31		
	AVG CATCH					628	2812	253	220		
12.0-13.9	SAMPLES					5	3	3	6		
	OCCURANCES					5	3	3	6		
	AVG CATCH					1536	980	370	149		
14.0-15.9	SAMPLES					1	2				
	OCCURANCES					1	2				
	AVG CATCH					583	652				
16.0-17.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
18.0-20.0	SAMPLES							1			
	OCCURANCES							1			
	AVG CATCH							1893			

Table 24

DISTRIBUTION OF OITHONA BREVICORNIS
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-	SAMPLES								2				
.2	OCCURANCES								0				
	AVG CATCH								0				
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES										1		
4.9	OCCURANCES										0		
	AVG CATCH										0		
5.0-	SAMPLES						1	1	1	3			
9.9	OCCURANCES						1	1	1	3			
	AVG CATCH						158	61	14	148			
10.0-	SAMPLES	4	5		1	1	1	1	2	5			
14.9	OCCURANCES	1	4		1	1	1	1	2	5			
	AVG CATCH	0	31		0	138	171	206	34	159			
15.0-	SAMPLES		7	1	3	9	3	4	6	6			
19.9	OCCURANCES		4	1	3	8	3	3	8	6			
	AVG CATCH		28	13	9	657	548	64	475	305			
20.0-	SAMPLES	2	5	1	4	4	5	10	2	8			
24.9	OCCURANCES	1	4	1	3	4	4	10	1	6			
	AVG CATCH	0	18	39	583	289	335	239	119	1905			
25.0-	SAMPLES	2	10	30	15	15	16	20	10	28	1		
29.9	OCCURANCES	2	10	28	15	15	16	19	10	28	1		
	AVG CATCH	22	26	25	936	2229	354	216	72	179	53		
30.0-	SAMPLES			1	1	2	2		1	5			
34.9	OCCURANCES			1	1	2	2		1	4			
	AVG CATCH			40	22	1812	332		84	88			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 25

DISTRIBUTION OF OITHONA BREVICORNIS
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0- 5.9	6.0- 8.9	9.0- 11.9	12.0- 14.9	15.0- 17.9	18.0- 20.9	21.0- 23.9	24.0- 26.9	27.0- 29.9	30.0- 32.9	33.0- 35.9	36.0- 38.9
.0-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES								1				
3.9	OCCURANCES								0				
	AVG CATCH								0				
4.0-	SAMPLES							2	3	6	1		
5.9	OCCURANCES							2	2	6	0		
	AVG CATCH							100	131	343	0		
6.0-	SAMPLES				2	13	17	18	21	49			
7.9	OCCURANCES				2	13	17	17	20	46			
	AVG CATCH				4837	1798	335	182	212	443			
8.0-	SAMPLES			11	11	14	10	3	1				
9.9	OCCURANCES			9	10	13	10	3	1				
	AVG CATCH			26	586	561	427	77	84				
10.0-	SAMPLES	3	14	15	11						1		
11.9	OCCURANCES	2	12	15	11						1		
	AVG CATCH	14	32	21	28						53		
12.0-	SAMPLES	4	9	4									
13.9	OCCURANCES	1	7	4									
	AVG CATCH	0	17	11									
14.0-	SAMPLES	1	2										
15.9	OCCURANCES	1	2										
	AVG CATCH	0	27										
16.0-	SAMPLES												
17.9	OCCURANCES												
	AVG CATCH												
18.0-	SAMPLES		1										
20.0	OCCURANCES		0										
	AVG CATCH		0										

Table 26

DISTRIBUTION OF OITHONA BREVICORNIS
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0- 1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0- 3.9	SAMPLES	1									
	OCCURANCES	0									
	AVG CATCH	0									
4.0- 5.9	SAMPLES	1		1	1			1	6	2	
	OCCURANCES	0		0	1			1	6	2	
	AVG CATCH	0		0	413			321	289	95	
6.0- 7.9	SAMPLES				4	8	20	14	69	5	
	OCCURANCES				4	8	19	11	69	4	
	AVG CATCH				27	133	304	1288	566	766	
8.0- 9.9	SAMPLES				1	2	11	10	21	5	
	OCCURANCES				1	2	10	9	19	5	
	AVG CATCH				158	154	670	248	382	170	
10.0- 11.9	SAMPLES					4	4	4	32		
	OCCURANCES					3	3	3	32		
	AVG CATCH					8	31	29	28		
12.0- 13.9	SAMPLES					5	3	3	6		
	OCCURANCES					2	1	3	6		
	AVG CATCH					24	4	0	11		
14.0- 15.9	SAMPLES					1	2				
	OCCURANCES					1	2				
	AVG CATCH					0	27				
16.0- 17.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
18.0- 20.0	SAMPLES							1			
	OCCURANCES							0			
	AVG CATCH							0			

Table 27

DISTRIBUTION OF CENTROPAGES HAMATUS
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-	SAMPLES								2				
.2	OCCURANCES								0				
	AVG CATCH								0				
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES										1		
4.9	OCCURANCES										0		
	AVG CATCH										0		
5.0-	SAMPLES						1	1	1	3			
9.9	OCCURANCES						0	0	0	0			
	AVG CATCH						0	0	0	0			
10.0-	SAMPLES	4	5		1	1	1	1	2	5			
14.9	OCCURANCES	1	0		0	0	0	0	0	0			
	AVG CATCH	0	0		0	0	0	0	0	0			
15.0-	SAMPLES		7	1	3	9	3	4	8	6			
19.9	OCCURANCES		6	1	2	3	1	0	0	0			
	AVG CATCH		7	2	2	2	0	0	0	0			
20.0-	SAMPLES	2	5	1	4	4	5	10	2	8			
24.9	OCCURANCES	2	5	0	3	3	1	8	0	0			
	AVG CATCH	109	58	0	42	97	3	18	0	0			
25.0-	SAMPLES	2	10	30	15	15	16	20	10	28	1		
29.9	OCCURANCES	2	10	29	9	0	4	12	1	1	0		
	AVG CATCH	3	154	81	66	0	78	71	0	17	0		
30.0-	SAMPLES			1	1	2	2		1	5			
34.9	OCCURANCES			1	1	1	0		0	0			
	AVG CATCH			13	88	0	0		0	0			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 28

DISTRIBUTION OF CENTROPAGES HAMATUS
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
WATER TEMPERATURE (DEGREES CENTIGRADE)													
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								0				
	AVG CATCH								0				
4.0-5.9	SAMPLES							2	3	6	1		
	OCCURANCES							0	0	0	0		
	AVG CATCH							0	0	0	0		
6.0-7.9	SAMPLES				2	13	17	18	21	49			
	OCCURANCES				0	1	3	8	1	1			
	AVG CATCH				0	0	1	62	0	9			
8.0-9.9	SAMPLES			11	11	14	10	3	1				
	OCCURANCES			9	7	5	3	2	0				
	AVG CATCH			63	29	9	124	5	0				
10.0-11.9	SAMPLES	3	14	15	11						1		
	OCCURANCES	3	10	15	8						0		
	AVG CATCH	2	69	52	85						0		
12.0-13.9	SAMPLES	4	9	4									
	OCCURANCES	2	7	4									
	AVG CATCH	54	99	15									
14.0-15.9	SAMPLES	1	2										
	OCCURANCES	0	2										
	AVG CATCH	0	4										
16.0-17.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
18.0-20.0	SAMPLES		1										
	OCCURANCES		1										
	AVG CATCH		0										

Table 29

DISTRIBUTION OF CENTROPAGES HAMATUS
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0-1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0-3.9	SAMPLES	1									
	OCCURANCES	0									
	AVG CATCH	0									
4.0-5.9	SAMPLES	1		1	1			1	6	2	
	OCCURANCES	0		0	0			0	0	0	
	AVG CATCH	0		0	0			0	0	0	
6.0-7.9	SAMPLES				4	8	20	14	69	5	
	OCCURANCES				0	0	0	2	14	1	
	AVG CATCH				0	0	0	6	22	0	
8.0-9.9	SAMPLES				1	2	11	10	21	5	
	OCCURANCES				0	0	5	5	14	2	
	AVG CATCH				0	0	2	15	101	20	
10.0-11.9	SAMPLES					4	4	4	32		
	OCCURANCES					0	2	4	30		
	AVG CATCH					0	5	91	71		
12.0-13.9	SAMPLES					5	3	3	6		
	OCCURANCES					1	3	3	6		
	AVG CATCH					0	3	96	146		
14.0-15.9	SAMPLES					1	2				
	OCCURANCES					0	2				
	AVG CATCH					0	4				
16.0-17.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
18.0-20.0	SAMPLES							1			
	OCCURANCES							1			
	AVG CATCH							0			

Table 30

DISTRIBUTION OF PARACALANUS CRASSIROSTRIS
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0- .2	SAMPLES								2				
	OCCURANCES								0				
	AVG CATCH								0				
.3- 1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0- 4.9	SAMPLES										1		
	OCCURANCES										0		
	AVG CATCH										0		
5.0- 9.9	SAMPLES						1	1	1	3			
	OCCURANCES						0	0	0	1			
	AVG CATCH						0	0	0	1			
10.0- 14.9	SAMPLES	4	5		1	1	1	1	2	5			
	OCCURANCES	0	0		0	1	1	0	1	1			
	AVG CATCH	0	0		0	19	14	0	10	3			
15.0- 19.9	SAMPLES		7	1	3	9	3	4	8	6			
	OCCURANCES		3	0	1	6	3	2	8	4			
	AVG CATCH		9	0	0	175	403	23	232	50			
20.0- 24.9	SAMPLES	2	5	1	4	4	5	10	2	8			
	OCCURANCES	0	4	0	2	3	3	7	2	7			
	AVG CATCH	0	5	8	57	8	36	127	9	557			
25.0- 29.9	SAMPLES	2	10	30	15	15	16	20	10	28	1		
	OCCURANCES	1	7	22	11	8	10	13	6	16	1		
	AVG CATCH	0	5	16	189	123	99	162	52	114	53		
30.0- 34.9	SAMPLES			1	1	2	2		1	5			
	OCCURANCES			1	1	2	0		1	4			
	AVG CATCH			323	22	177	0		4	89			
35.0- 39.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												

Table 31

DISTRIBUTION OF PARACALANUS CRASSIROSTRIS
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0- 5.9	6.0- 8.9	9.0- 11.9	12.0- 14.9	15.0- 17.9	18.0- 20.9	21.0- 23.9	24.0- 26.9	27.0- 29.9	30.0- 32.9	33.0- 35.9	36.0- 38.9
.0- 1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0- 3.9	SAMPLES								1				
	OCCURANCES								0				
	AVG CATCH								0				
4.0- 5.9	SAMPLES							2	3	6	1		
	OCCURANCES							1	2	5	0		
	AVG CATCH							831	91	133	0		
6.0- 7.9	SAMPLES				2	13	17	18	21	49			
	OCCURANCES				1	5	10	12	15	28			
	AVG CATCH				103	78	161	139	102	155			
8.0- 9.9	SAMPLES			11	11	14	10	3	1				
	OCCURANCES			6	8	11	7	2	1				
	AVG CATCH			39	253	119	26	4	4				
10.0- 11.9	SAMPLES	3	14	15	11						1		
	OCCURANCES	1	9	11	6						1		
	AVG CATCH	0	6	10	10						53		
12.0- 13.9	SAMPLES	4	9	4									
	OCCURANCES	0	2	3									
	AVG CATCH	0	0	11									
14.0- 15.9	SAMPLES	1	2										
	OCCURANCES	0	1										
	AVG CATCH	0	12										
16.0- 17.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
18.0- 20.0	SAMPLES		1										
	OCCURANCES		1										
	AVG CATCH		4										

Table 32

DISTRIBUTION OF PARACALANUS CRASSIROSTRIS
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0-	SAMPLES										
1.9	OCCURANCES										
	AVG CATCH										
2.0-	SAMPLES	1									
3.9	OCCURANCES	0									
	AVG CATCH	0									
4.0-	SAMPLES	1		1	1			1	6	2	
5.9	OCCURANCES	0		0	0			1	5	2	
	AVG CATCH	0		0	0			123	366	209	
6.0-	SAMPLES				4	8	20	14	69	5	
7.9	OCCURANCES				1	2	15	13	37	3	
	AVG CATCH				1	4	165	406	99	66	
8.0-	SAMPLES				1	2	11	10	21	5	
9.9	OCCURANCES				0	2	9	4	16	4	
	AVG CATCH				0	16	159	5	140	79	
10.0-	SAMPLES					4	4	4	32		
11.9	OCCURANCES					0	1	3	24		
	AVG CATCH					0	3	11	10		
12.0-	SAMPLES					5	3	3	6		
13.9	OCCURANCES					0	0	1	4		
	AVG CATCH					0	0	0	7		
14.0-	SAMPLES					1	2				
15.9	OCCURANCES					0	1				
	AVG CATCH					0	12				
16.0-	SAMPLES										
17.9	OCCURANCES										
	AVG CATCH										
18.0-	SAMPLES							1			
20.0	OCCURANCES							1			
	AVG CATCH							4			

Table 33

DISTRIBUTION OF PSUEDODIAPTOMUS CORONATUS
BY TEMPERATURE - SALINITY RANGES

SALINITY (PPT)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0- 5.9	6.0- 8.9	9.0- 11.9	12.0- 14.9	15.0- 17.9	18.0- 20.9	21.0- 23.9	24.0- 26.9	27.0- 29.9	30.0- 32.9	33.0- 35.9	36.0- 38.9
.0-	SAMPLES								2				
.2	OCCURANCES								1				
	AVG CATCH								6				
.3-	SAMPLES												
1.9	OCCURANCES												
	AVG CATCH												
2.0-	SAMPLES										1		
4.9	OCCURANCES										1		
	AVG CATCH										1		
5.0-	SAMPLES						1	1	1	3			
9.9	OCCURANCES						0	1	0	2			
	AVG CATCH						0	35	0	630			
10.0-	SAMPLES	4	5		1	1	1	1	2	5			
14.9	OCCURANCES	1	2		0	1	1	1	2	2			
	AVG CATCH	4	4		0	19	14	33	32	4			
15.0-	SAMPLES		7	1	3	9	3	4	8	6			
19.9	OCCURANCES		2	1	2	5	3	1	7	5			
	AVG CATCH		2	13	1	79	62	84	76	179			
20.0-	SAMPLES	2	5	1	4	4	5	10	2	8			
24.9	OCCURANCES	0	2	1	2	2	4	5	1	8			
	AVG CATCH	0	2	9	23	12	8	20	7	591			
25.0-	SAMPLES	2	10	30	15	15	16	20	10	28	1		
29.9	OCCURANCES	1	0	2	7	13	10	7	5	19	1		
	AVG CATCH	0	0	0	86	85	14	12	176	283	223		
30.0-	SAMPLES			1	1	2	2		1	5			
34.9	OCCURANCES			0	0	2	2		1	3			
	AVG CATCH			0	0	229	73		2	117			
35.0-	SAMPLES												
39.9	OCCURANCES												
	AVG CATCH												

Table 34

DISTRIBUTION OF PSUEDODIAPTOMUS CORONATUS
BY TEMPERATURE - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		WATER TEMPERATURE (DEGREES CENTIGRADE)											
		.0-5.9	6.0-8.9	9.0-11.9	12.0-14.9	15.0-17.9	18.0-20.9	21.0-23.9	24.0-26.9	27.0-29.9	30.0-32.9	33.0-35.9	36.0-38.9
.0-1.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
2.0-3.9	SAMPLES								1				
	OCCURANCES								0				
	AVG CATCH								0				
4.0-5.9	SAMPLES							2	3	6	1		
	OCCURANCES							2	3	5	1		
	AVG CATCH							51	553	1462	1		
6.0-7.9	SAMPLES				2	13	17	18	21	49			
	OCCURANCES				2	11	13	7	13	34			
	AVG CATCH				262	69	18	39	38	152			
8.0-9.9	SAMPLES			11	11	14	10	3	1				
	OCCURANCES			1	6	10	6	1	1				
	AVG CATCH			0	78	95	29	0	2				
10.0-11.9	SAMPLES	3	14	15	11						1		
	OCCURANCES	1	3	1	3						1		
	AVG CATCH	0	0	0	0						223		
12.0-13.9	SAMPLES	4	9	4									
	OCCURANCES	1	1	2									
	AVG CATCH	4	2	3									
14.0-15.9	SAMPLES	1	2										
	OCCURANCES	0	0										
	AVG CATCH	0	0										
16.0-17.9	SAMPLES												
	OCCURANCES												
	AVG CATCH												
18.0-20.0	SAMPLES		1										
	OCCURANCES		1										
	AVG CATCH		13										

Table 35

DISTRIBUTION OF PSUEDODIAPTOMUS CORONATUS
BY SALINITY - OXYGEN RANGES

DISSOLVED OXYGEN (MG/L)		SALINITY (PPT) .0-.2	.3-1.9	2.0-4.9	5.0-9.9	10.0-14.9	15.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0-39.9
.0-1.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
2.0-3.9	SAMPLES	1									
	OCCURANCES	0									
	AVG CATCH	0									
4.0-5.9	SAMPLES	1		1	1			1	6	2	
	OCCURANCES	1		1	1			1	6	1	
	AVG CATCH	13		1	1885			2203	1008	193	
6.0-7.9	SAMPLES				4	8	20	14	69	5	
	OCCURANCES				2	5	14	11	44	4	
	AVG CATCH				10	14	103	201	78	56	
8.0-9.9	SAMPLES				1	2	11	10	21	5	
	OCCURANCES				0	2	8	6	6	3	
	AVG CATCH				0	16	77	7	48	104	
10.0-11.9	SAMPLES					4	4	4	32		
	OCCURANCES					1	2	1	5		
	AVG CATCH					1	3	0	7		
12.0-13.9	SAMPLES					5	3	3	6		
	OCCURANCES					2	1	0	1		
	AVG CATCH					7	4	0	0		
14.0-15.9	SAMPLES					1	2				
	OCCURANCES					0	0				
	AVG CATCH					0	0				
16.0-17.9	SAMPLES										
	OCCURANCES										
	AVG CATCH										
18.0-20.0	SAMPLES							1			
	OCCURANCES							1			
	AVG CATCH							13			

PHYTOPLANKTON

Introduction.

Phytoplankton are microscopic plants found in the waters of the world. These tiny plants are the basis of most aquatic food chains. As such, knowledge of their distribution and periodicity is extremely important to the ecology of any water mass.

Methods.

A one liter sample of surface water is collected and fixed with 100 ml of 5% buffered formalin solution.

Of this liter, 500 ml is concentrated to 35-50 ml (depending upon the density of phytoplankton) through a Sedgwick-Rafter concentrating apparatus. A 1 ml sample of this concentrate is placed on a Sedgwick-Rafter counting cell. Species are named and individuals counted. The final result reported in cells per liter. A Nikon microscope is used for identification work.

Discussion.

A list of the phytoplankters collected during the period covered by this report is given in Table 36.

Standing crop values (# individuals per liter) for phytoplankton collected during the study period (Table 37) indicate differences among stations and through time. Means of these values for each bay indicate seasonal trends in population density. Phytoplankton counts in Nueces and Corpus Christi Bays are generally much higher than those of Aransas and Copano Bays and show more marked seasonal trends.

TABLE 36

Phytoplankton from Corpus Christi and Adjacent Bay Systems

DIVISION	CLASS	ORDER	GENUS, SPECIES
Cyanophyta			Anabaena sp. Merismopedia sp. Nostoc sp. Oscillatoria sp. Spirulina sp. Trichodesmium sp. coccoid blue-green
Chrysophyta	Bacillariophyceae	Centrales	Actinoptychus undulatus Asteromphalus heptactis Bacteriastrum delicatulum Bacteriastrum varians Bacteriastrum sp. Biddulphia regia Biddulphia sp. Ceratulina bergonii Ceratulina sp. Chaetoceros affinis Chaetoceros atlanticus Chaetoceros brevis Chaetoceros coarctus Chaetoceros compressus Chaetoceros constrictus Chaetoceros curvisetus Chaetoceros danicus

TABLE 36 (cont.'d)

DIVISION	CLASS	ORDER	GENUS, SPECIES
			Chaetoceros decipiens
			Chaetoceros didymus
			Chaetoceros gracilis
			Chaetoceros lauderis
			Chaetoceros peruvianus
			Chaetoceros radicans
			Chaetoceros sp. 1
			Chaetoceros sp. 2
			Corethron sp.
			Coscinodiscus asteromphalus
			Coscinodiscus blandus
			Coscinodiscus centralis
			Coscinodiscus concinnis
			Coscinodiscus excentricus
			Coscinodiscus granii
			Coscinodiscus lineatus
			Coscinodiscus marginatus
			Coscinodiscus radiatus
			Coscinodiscus sp. 1
			Coscinodiscus sp. 2
			Ditylum brightwelli
			Eucampia sp.
			Hemiaulus hauckii
			Hemiaulus sinensis
			Hemiaulus sp.
			Lauderia borealis
			Leptocylindricus danicus
			Lithodesmium undulatum
			Melosira granulata
			Melosira nummuloides
			Melosira sulcata
			Melosira sp.
			Rhizosolenia acuminata
			Rhizosolenia alata
			Rhizosolenia calcar-avis

TABLE 36 (cont.'d)

DIVISION	CLASS	ORDER	GENUS, SPECIES
			Rhizosolenia delicatula
			Rhizosolenia fragilissima
			Rhizosolenia hebata
			Rhizosolenia imbricata
			Rhizosolenia robusta
			Rhizosolenia setigera
			Rhizosolenia stolterforthii
			Rhizosolenia styliformis
			Rhizosolenia sp.
			Skeletonema costata
			Thallassiosira decipiens
			Thallasiosira sp. 1
		Pennales	Amphora sp.
			Asterionella japonica
			Caloneis sp.
			Campylodiscus sp.
			Cocconeis scutellum
			Cocconeis sp.
			Diploneis sp.
			Fragilaria sp.
			Gyrosigma balticum
			Gyrosigma sp.
			Licmorpha abbreviata
			Licmorpha sp.
			Navicula clavata
			Navicula sp. 1
			Navicula sp. 2
			Navicula sp. 3
			Nitzchia closterium
			Nitzchia delicatissima
			Nitzchia longissima
			Nitzchia pacifica
			Nitzchia paradoxa
			Nitzchia pugens
			Nitzchia seriata
			Pinnularia sp.

TABLE 36 (cont.'d)

DIVISION	CLASS	ORDER	GENUS, SPECIES
			Pleurosigma decorum Pleurosigma sp. Striatella sp. Surirella sp. Synedra sp. Thallasionema nitzchoides Thallasionema nordskii Thallasiothrix delicatula Thallasiothrix frauenfeldi Thallasiothrix longissima Thallasiothrix mediterranea Tropidoneis lepidoptera Tropidoneis maxima Tropidoneis sp.
Pyrrophyta			Ceratium furca Ceratium fusus Ceratium hircus Ceratium pentagonum Ceratium tripos Dinoflagellate, unknown Dinophysis caudata Dinophysis sp. Gonyaulax monilata Gonyaulax sp. Grammatophora sp. Guinardia flaccida Peridinium claudians Peridinium divergens Peridinium oblongum Peridinium sp. Podolampas elegans

TABLE 37 PHYTOPLANKTON STANDING CROP VALUES*

Line Site	October	November	December	January	February	March	April	May	June
Nueces Bay									
25-2	48,000	1,980	25,360	14,566	N.S.	N.S.	N.S.	N.S.	N.S.
38-2	N.S.	N.S.	N.S.	N.S.	942	11,840	14,700	1,360	1,360
53-2	8,000	29,400	27,600	1,620	19,920	453,500	1,025,500	27,240	10,800
53-4	36,000	157,920	25,560	4,260	32,460	32,580	3,480	18,840	17,900
64-10	81,141,000	4,440	101,639	43,320	2,240,500	25,860	5,120	23,450	7,680
$\bar{x}$	20,308,250	48,435	44,972	15,941	573,455	130,945	262,200	17,722	9,435
Corpus Christi Bay									
122-1	178,000	441,000	115,360	431,400	1,706,850	61,500	195,480	53,160	14,560
122-6	121,000	7,280	89,220	130,080	1,916,000	5,580	58,860	162,300	40,400
122-12	329,000	324,000	46,880	183,600	591,900	9,600	33,700	76,370	13,440
127-2	327,000	103,200	90,540	718,500	1,942,940	1,680	8,664,500	55,260	23,700
127-3	387,005	45,000	26,720	700,000	1,036,000	16,800	1,310,500	93,200	35,440
127-6	176,000	62,000	12,900	749,000	1,237,300	108,440	84,800	41,820	26,340
131-2	419,000	6,281,000	109,800	897,000	701,000	25,920	1,386,200	97,300	23,720
142-2	361,000	66,500	428,700	1,234,630	1,783,990	142,560	154,525	57,120	17,680
142-6	237,000	107,640	53,520	515,500	890,697	59,340	1,050,013	32,460	13,600
142-10	399,000	3,191,000	35,220	801,000	638,500	6,360	369,000	21,300	18,000
147-1	260,000	22,680	200,580	1,233,000	440,949	79,860	719,000	1771,659	71,760
147-3	157,000	64,740	193,496	1,116,494	980,000	40,720	334,882	469,000	13,650
147-5	148,000	11,830	696,450	681,000	640,863	463,300	274,600	404,000	167,667
151-2	357,000	137,916	5,580	710,080	578,000	209,760	1,430,828	280,000	30,780
152-2	211,000	60,000	84,960	1,018,000	2,074,333	83,760	131,642	90,100	1,072,662
200-2	10,000	307,000	104,940	419,500	742,500	51,960	325,560	426,260	9,360
$\bar{x}$	254,812	702,049	143,408	721,174	1,118,863	85,446	1,032,755	258,206	99,547
Copano Bay									
44-2	138,000	2,400	2,800	9,660	1,740	420	13,020	2,700	1,440
54-1	108,000	1,320	420	9,240	14,220	5,700	4,020	5,220	22,020
54-3	46,000	1,000	1,140	1,380	11,940	7,140	42,960	7,920	46,080
77-2	19,000	2,200	56,550	34,980	22,950	4,418	3,900	14,280	15,440
$\bar{x}$	77,750	1,730	15,227	13,815	12,712	4,419	15,975	7,530	21,245

TABLE 37 (cont'd)

Line Site	October	November	December	January	February	March	April	May	June
Aransas Bay									
100-2	48,000	1,900	5,100	48,660	7,320	356,000	44,640	5,810	12,640
104-2	44,000	2,820	S.S.	1,595,304	673,000	18,000	775,000	396,000	19,680
104-6	58,000	4,400	18,240	170,880	34,380	104,520	688,967	278,500	279,500
115-5	35,000	7,440	84,100	83,700	68,800	36,840	63,040	19,680	9,680
120-3	505,000	480	25,533	68,040	52,020	43,500	336,632	35,840	16,560
141-1	146,000	7,380	26,600	1,538,700	123,960	603,300	198,420	146,400	786,667
$\bar{x}$	139,333	4,070	31,914	584,214	159,913	193,693	351,116	147,038	187,454

*Counts are # individuals per liter
N.S. = No sample taken
S.S. = Sample spoiled

In the Nueces estuary, a well-defined spring bloom was observed. The peak counts were in February and declined drastically in March. A lesser fall bloom is well defined in the data from Corpus Christi Bay in October and November. This bloom is apparent only in October for Nueces Bay.

In the Aransas estuary, the spring bloom is somewhat apparent in Aransas Bay beginning in January and maintains fairly high densities through June. This bloom was not observed in Copano Bay. The fall bloom was apparent in these bays only in October.

The higher phytoplankton densities in the Nueces estuary may be the cause of the generally lowered nutrient levels observed. Relations between phytoplankton and zooplankton standing crops have been discussed with the zooplankton data.

RECOMMENDATIONS

Recommendations to the TWDB made by this research group are made with complete cognition of the problems faced by the Board in areas related to some of the recommendations. We wish to recognize the concerted efforts of members of the TWDB staff to overcome problems for us in this first year of our study.

At the beginning of the Corpus Christi-Aransas Bay study, a meeting was held with members of the Board staff and all contract researchers doing work for the Board similar to that which we proposed to do. An agreement as to the necessity of uniformity in collecting techniques and procedures was made. We feel that this agreement should be carefully adhered to and extended to include analysis techniques herein recommended.

The data presented in this report and others to the TWDB has been without the benefit of higher order data manipulative techniques. Our report is based primarily on data reported and analyzed graphically. Admittedly, many of these techniques are quite good, particularly the SYMAP routines. It is felt that a great deal of additional information could be gleaned from our data with more sophisticated mathematical procedures to aid in its analysis.

Mathematical procedures thought to be of most value in accomplishing the goals of this project include two basic types. We need to be able to objectively evaluate stations or regions of our study area as to "goodness". A widely used (often misused and debated) technique for this is the species diversity index. Many diversity indices are now extant, so that one or more of them could be applied to our data. Stations, regions or whole bays could be compared as to total diversity

or for special groups (benthos, zooplankton or phytoplankton). All too often, species diversity studies are limited to one diversity number for an area. We recommend a series of diversity figures through time to give a more adequate picture of the station, area or bay. The second type of data manipulative technique needed would aid in identifying organism assemblages and station types according to biological assemblages. These techniques should aid in interpreting the effects of various physical parameters on the biological assemblage. About fourteen techniques which might be of benefit have been cursorily examined. Several, including factor analysis, Fager's recurrent group analysis and Kendall's rank correlation coefficient, seem particularly suited to our work. We recommend that the individual contractors and members of the Board staff cooperate very closely to bring about the selection and computer implementation of a series of these manipulative techniques.

It is further recommended that these studies be continued for at least three years. This is the minimum period in which seasonal progressions of both physical and biological parameters can be realistically evaluated. Longer study periods may be necessary if a representative cross section of environmental parameters are not present in this minimum period.

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APPENDIX A

Hydrographic data for all line sites collected during the period October, 1972 - June, 1973.

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
						LINE 25						
10/12/72	1600	2	1.0	30.0	--	--	--	99.0	7.1	28.5	27000.	15.4
			3.0	--	--	--	--	96.0	6.8	28.5	27000.	15.4
			5.0	--	--	--	--	96.0	6.9	28.0	28500.	16.4
11/15/72	1145	2	1.0	11.5	2	--	--	111.0	10.3	13.0	24000.	19.4
			4.0	--	--	--	--	100.0	9.2	13.0	25000.	20.3
12/18/72	1220	2	1.0	14.0	2	--	--	96.0	9.3	10.5	26000.	22.3
			2.5	--	--	--	--	92.0	9.0	10.2	26000.	22.3
01/16/73	1550	2	1.0	19.5	2	--	--	--	--	18.0	29000.	21.0
			2.0	--	--	--	--	--	--	18.0	29000.	21.0
						LINE 38						
02/12/73	1140	2	1.0	15.5	2	--	--	100.0	9.2	12.5	28500.	23.4
			2.0	--	--	--	--	100.0	9.2	12.5	28500.	23.4
			3.0	--	--	--	--	100.0	9.3	12.0	28500.	23.4
03/10/73	1125	2	1.0	24.5	2	--	--	--	--	23.0	40000.	26.7
			2.0	--	--	--	--	--	--	23.0	40000.	26.7
			4.0	--	--	--	--	--	--	23.0	40000.	26.7
04/10/73	1030	2	1.0	15.0	2	13.0	45.	90.0	7.4	16.0	37000.	29.3
			2.0	--	--	--	--	90.0	7.4	16.0	37000.	29.3
05/10/73	1535	2	1.0	25.3	2	17.0	135.	100.0	6.6	27.0	51000.	31.6
			1.5	--	--	--	--	99.0	6.5	27.0	51000.	31.6
			3.0	--	--	--	--	93.0	6.1	27.0	51000.	31.6
06/16/73	1645	2	1.0	28.0	2	16.0	135.	80.0	5.9	30.0	8000.	3.6
			2.0	--	--	--	--	80.0	5.9	30.0	8000.	3.6
			3.0	--	--	--	--	80.0	5.9	30.0	8000.	3.6

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
						LINE 25						
10/12/72	1600	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/15/72	1145	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
12/18/72	1220	2	1.0	--	--	.20	.40	.04	.005	.050	.06	--
			2.5	--	--	--	--	--	--	--	--	--
01/16/73	1550	2	1.0	--	--	.20	1.00	.03	.005	.040	.19	--
			2.0	--	--	--	--	--	--	--	--	--
						LINE 38						
02/12/73	1140	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
03/10/73	1125	2	1.0	--	--	.10	.40	.03	.005	.080	.11	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
04/10/73	1030	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
05/10/73	1535	2	1.0	--	--	--	--	--	--	--	--	.0002
			1.5	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
06/16/73	1645	2	1.0	--	--	.10	.70	.06	.020	.130	.22	.0004
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 25	
10/12/72	1600	2	1.0	--	--
			3.0	--	--
			5.0	--	--
11/15/72	1145	2	1.0	--	--
			4.0	--	--
12/18/72	1220	2	1.0	23.0	22.0
			2.5	--	--
01/16/73	1550	2	1.0	--	--
			2.0	--	--
				LINE 38	
02/12/73	1140	2	1.0	30.0	21.0
			2.0	--	--
			3.0	--	--
03/10/73	1125	2	1.0	6.0	24.0
			2.0	--	--
			4.0	--	--
04/10/73	1030	2	1.0	5.0	24.0
			2.0	--	--
05/10/73	1535	2	1.0	10.0	26.0
			1.5	--	--
			3.0	--	--
06/16/73	1645	2	1.0	25.0	24.0
			2.0	--	--
			3.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 38 CONTINUED							
06/16/73	1645	2	4.0	--	--	--	--	--	--	--	--	--
					LINE 53							
10/12/72	1400	2	1.0	30.0	--	--	--	96.0	6.5	29.0	40000.	23.7
			2.5	--	--	--	--	95.5	6.4	29.0	40000.	23.7
			5.0	--	--	--	--	95.0	6.4	29.0	40000.	23.7
11/15/72	1000	2	1.0	10.0	2	--	--	94.0	8.0	14.0	36000.	29.1
			5.5	--	--	--	--	87.0	7.4	14.0	36000.	29.1
12/13/72	0940	2	1.0	6.0	--	--	--	180.0	18.8	7.0	25000.	23.9
			4.5	6.0	--	--	--	130.0	13.5	7.0	25000.	23.9
01/13/73	0835	2	1.0	3.0	--	--	--	94.0	11.5	1.0	21000.	22.6
			2.0	--	--	--	--	94.0	11.1	2.0	22000.	23.4
			3.0	--	--	--	--	95.0	10.8	3.0	23500.	24.8
02/12/73	1306	2	1.0	14.0	2	--	--	105.0	9.6	11.5	32000.	27.3
			2.5	--	--	--	--	104.0	9.5	11.5	32000.	27.3
			5.0	--	--	--	--	104.0	9.5	11.5	32000.	27.3
03/10/73	0955	2	1.0	22.0	2	--	--	--	--	23.0	41500.	27.9
			2.5	--	--	--	--	--	--	23.0	41500.	27.9
			5.0	--	--	--	--	--	--	23.0	41500.	27.9
04/10/73	0800	2	1.0	12.5	2	13.0	45.	84.0	7.0	15.5	35500.	27.6
			2.0	--	--	--	--	84.0	7.0	15.5	36000.	28.0
			3.0	--	--	--	--	82.0	6.8	15.5	36000.	28.0
05/10/73	1430	2	1.0	25.5	2	15.0	135.	99.0	8.7	26.0	47000.	29.5
			2.0	--	--	--	--	98.0	8.6	26.0	47000.	29.5
			4.0	--	--	--	--	98.0	8.6	26.0	47000.	29.5
06/16/73	1540	2	1.0	28.0	2	16.0	135.	92.0	8.2	29.1	36900.	21.5
			2.0	--	--	--	--	92.0	8.2	29.1	36900.	21.5

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 38 CONTINUED							
06/16/73	1645	2	4.0	--	--	--	--	--	--	--	--	--
					LINE 53							
10/12/72	1400	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/15/72	1000	2	1.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
12/13/72	0940	2	1.0	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
01/13/73	0835	2	1.0	--	--	.20	.40	.03	.005	.030	.09	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
02/12/73	1306	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
03/10/73	0955	2	1.0	--	--	.10	.30	.03	.005	.010	.04	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
04/10/73	0800	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
05/10/73	1430	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
06/16/73	1540	2	1.0	--	--	.20	.70	.05	.025	.050	.12	--
			2.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 38 CONTINUED	
06/16/73	1645	2	4.0	--	--
				LINE 53	
10/12/72	1400	2	1.0	--	--
			2.5	--	--
			5.0	--	--
11/15/72	1000	2	1.0	--	--
			5.5	--	--
12/13/72	0940	2	1.0	--	--
			4.5	--	--
01/13/73	0835	2	1.0	--	--
			2.0	--	--
			3.0	--	--
02/12/73	1306	2	1.0	42.0	19.0
			2.5	--	--
			5.0	--	--
03/10/73	0955	2	1.0	8.0	16.0
			2.5	--	--
			5.0	--	--
04/10/73	0800	2	1.0	16.0	20.0
			2.0	--	--
			3.0	--	--
05/10/73	1430	2	1.0	7.0	24.0
			2.0	--	--
			4.0	--	--
06/16/73	1540	2	1.0	18.0	15.0
			2.0	--	--

LINE 53 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
06/16/73	1540	2	3.0	--	--	--	--	92.0	6.2	29.1	36900.	21.5
			4.0	--	--	--	--	--	--	--	--	--
10/12/72	1500	4	1.0	30.0	--	--	--	97.0	6.6	28.5	41500.	24.7
			2.0	--	--	--	--	96.0	6.5	28.5	41500.	24.7
			4.0	--	--	--	--	95.0	6.4	28.5	41500.	24.7
11/14/72	1030	4	1.0	11.0	2	--	--	106.0	9.3	13.0	34000.	27.7
			4.0	--	--	--	--	100.0	8.7	13.5	35000.	28.6
12/18/72	1130	4	1.0	12.5	2	--	--	89.0	8.8	9.0	28000.	25.2
			2.0	--	--	--	--	86.0	8.2	11.0	28000.	24.2
			3.5	--	--	--	--	80.0	7.5	11.0	30000.	26.1
01/13/73	0927	4	1.0	4.5	2	--	--	98.0	11.2	3.0	24000.	25.0
			2.0	--	--	--	--	85.0	8.5	6.5	30500.	31.1
			3.0	--	--	--	--	85.5	8.9	6.5	27500.	25.8
02/12/73	1230	4	1.0	15.2	2	--	--	102.0	9.0	13.0	34000.	28.1
			2.0	--	--	--	--	104.0	9.1	13.0	34000.	28.1
			3.0	--	--	--	--	106.0	9.3	13.0	34000.	28.1
03/10/73	1030	4	1.0	24.5	--	--	--	--	--	23.0	41000.	29.5
			2.0	--	--	--	--	--	--	23.0	41000.	27.5
			4.0	--	--	--	--	--	--	23.0	41000.	27.5
04/10/73	0835	4	1.0	13.0	2	13.0	45.	92.0	7.5	16.5	36000.	28.0
			2.0	--	--	--	--	90.0	7.3	16.5	36000.	28.0
05/10/73	1445	4	1.0	25.5	2	15.0	135.	104.0	6.8	27.6	48000.	30.8
			2.0	--	--	--	--	104.0	6.9	27.0	48000.	30.8
			4.0	--	--	--	--	99.0	6.5	27.0	48000.	30.8
06/16/73	1605	4	1.0	27.7	2	16.0	135.	94.0	6.1	29.5	43500.	25.5
			2.0	--	--	--	--	94.0	6.1	29.5	44000.	25.8
			3.0	--	--	--	--	92.0	6.0	29.5	44000.	25.9
			4.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

LINE 53 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
06/16/73	1540	2	3.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
10/12/72	1500	4	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
11/14/72	1030	4	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
12/18/72	1130	4	1.0	--	--	.20	.40	.08	.027	.090	.09	--
			2.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
01/13/73	0927	4	1.0	--	--	.40	.20	.10	.010	.030	.08	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
02/12/73	1230	4	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
03/10/73	1030	4	1.0	--	--	.10	.40	.03	.005	.020	.05	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
04/10/73	0835	4	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
05/10/73	1445	4	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
06/16/73	1605	4	1.0	--	--	.10	.80	.08	.030	.040	.10	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

LINE 53 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLO DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
06/16/73	1540	2	3.0	--	--
			4.0	--	--
10/12/72	1500	4	1.0	--	--
			2.0	--	--
			4.0	--	--
11/14/72	1030	4	1.0	--	--
			4.0	--	--
12/18/72	1130	4	1.0	--	--
			2.0	--	--
			3.5	--	--
01/13/73	0927	4	1.0	--	--
			2.0	--	--
			3.0	--	--
02/12/73	1230	4	1.0	7.0	29.0
			2.0	--	--
			3.0	--	--
03/10/73	1030	4	1.0	10.0	14.0
			2.0	--	--
			4.0	--	--
04/10/73	0835	4	1.0	25.0	19.0
			2.0	--	--
05/10/73	1445	4	1.0	8.0	24.0
			2.0	--	--
			4.0	--	--
06/16/73	1605	4	1.0	22.0	8.0
			2.0	--	--
			3.0	--	--
			4.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH-0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
						LINE 64						
10/12/72	1300	10	1.0	30.0	--	--	--	98.0	6.7	27.5	42000.	25.0
			2.0	--	--	--	--	96.0	6.6	27.5	42000.	25.1
11/15/72	1230	10	1.0	13.0	5	--	--	102.0	8.5	15.0	37000.	29.7
			12.0	--	--	--	--	102.0	8.4	15.0	38000.	30.6
			24.0	--	--	--	--	96.0	7.9	15.0	38000.	30.6
12/18/72	1305	10	1.0	13.0	4	--	--	98.0	9.5	9.5	30000.	26.8
			10.0	--	--	--	--	120.0	11.7	9.0	30000.	27.2
			20.0	--	--	--	--	148.0	14.4	9.0	30000.	27.2
01/13/73	1230	10	1.0	12.0	4	--	--	110.0	11.7	5.0	27000.	27.2
			10.5	--	--	--	--	110.0	12.0	4.0	27000.	27.2
			21.0	--	--	--	--	110.0	12.0	4.0	27000.	27.2
02/12/73	1345	10	1.0	13.5	6	--	--	114.0	10.1	12.5	34000.	28.4
			15.0	--	--	--	--	--	--	13.0	34000.	28.4
03/10/73	1235	10	1.0	25.0	6	--	--	--	--	22.5	41000.	27.8
			12.0	--	--	--	--	--	--	22.2	40500.	27.6
			24.0	--	--	--	--	--	--	22.0	40500.	27.7
04/10/73	1115	10	1.0	18.5	6	13.0	45.	90.0	7.4	16.0	37000.	28.6
			9.0	--	--	--	--	85.0	7.0	16.0	36000.	28.0
			18.0	--	--	--	--	85.0	7.1	15.5	36000.	28.0
05/10/73	1345	10	1.0	25.0	--	13.0	135.	105.0	7.2	26.0	44000.	27.6
			11.0	--	--	--	--	76.0	5.2	25.5	45500.	29.0
			22.0	--	--	--	--	51.0	3.5	25.2	46000.	29.3
06/16/73	1430	10	1.0	29.0	2	11.0	--	89.0	6.4	29.5	44500.	26.3
			8.0	--	--	--	--	89.0	6.4	29.5	44500.	26.3
			16.0	--	--	--	--	88.0	5.7	29.0	44500.	26.5
			17.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
						LINE 64						
10/12/72	1300	10	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
11/15/72	1230	10	1.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
			24.0	--	--	--	--	--	--	--	--	--
12/18/72	1305	10	1.0	--	--	.20	.38	.04	.021	.050	.05	--
			10.0	--	--	--	--	--	--	--	--	--
			20.0	--	--	--	--	--	--	--	--	--
01/13/73	1230	10	1.0	--	--	.30	.30	.03	.010	.010	.04	--
			10.5	--	--	--	--	--	--	--	--	--
			21.0	--	--	--	--	--	--	--	--	--
02/12/73	1345	10	1.0	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
03/10/73	1235	10	1.0	--	--	.10	.40	.03	.003	.010	.01	--
			12.0	--	--	--	--	--	--	--	--	--
			24.0	--	--	--	--	--	--	--	--	--
04/10/73	1115	10	1.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
			18.0	--	--	--	--	--	--	--	--	--
05/10/73	1345	10	1.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
			22.0	--	--	--	--	--	--	--	--	--
06/16/73	1430	10	1.0	--	--	.20	.50	.09	.040	.050	.10	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
			17.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L						
				LINE 64							
10/12/72	1300	10	1.0	--	--						
			2.0	--	--						
11/15/72	1230	10	1.0	--	--						
			12.0	--	--						
			24.0	--	--						
12/18/72	1305	10	1.0	29.0	19.0						
			10.0	--	--						
			20.0	--	--						
01/13/73	1230	10	1.0	--	--						
			10.5	--	--						
			21.0	--	--						
02/12/73	1345	10	1.0	28.0	19.0						
			15.0	--	--						
03/10/73	1235	10	1.0	17.0	12.0						
			12.0	--	--						
			24.0	--	--						
04/10/73	1115	10	1.0	5.0	22.0						
			9.0	--	--						
			18.0	--	--						
05/10/73	1345	10	1.0	9.0	23.0						
			11.0	--	--						
			22.0	--	--						
06/16/73	1430	10	1.0	19.0	16.0						
			8.0	--	--						
			16.0	--	--						
			17.0	--	--						

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 122							
10/17/72	0945	1	1.0	26.5	--	--	--	96.0	6.4	28.0	47000.	28.9
			8.0	--	--	--	--	94.0	6.3	28.0	47000.	28.9
			16.0	--	--	--	--	66.0	4.4	27.0	48000.	29.6
11/16/72	1430	1	1.0	15.0	2	--	--	102.0	8.1	17.0	40000.	30.4
			7.0	--	--	--	--	102.0	8.1	17.0	40000.	30.0
			14.0	--	--	--	--	102.0	8.1	17.0	40000.	30.0
12/18/72	1400	1	1.0	13.0	2	--	--	96.0	9.0	10.0	32000.	28.8
			6.0	--	--	--	--	108.0	10.4	9.0	32000.	29.2
			13.0	--	--	--	--	110.0	10.6	9.0	32000.	29.2
01/13/73	1400	1	1.0	9.5	--	--	--	101.0	10.3	6.5	29000.	27.8
			6.0	--	--	--	--	102.0	10.7	5.5	28500.	28.0
			12.0	--	--	--	--	98.0	10.4	5.0	28000.	27.5
02/13/73	1435	1	1.0	13.5	2	--	--	118.0	10.4	12.5	34000.	28.4
			6.0	--	--	--	--	116.0	10.4	12.0	33500.	28.0
			12.0	--	--	--	--	115.0	10.4	11.8	33500.	28.0
03/10/73	1345	1	1.0	27.5	2	--	--	--	--	22.0	40000.	27.3
			6.0	--	--	--	--	--	--	21.5	40000.	27.6
			12.0	--	--	--	--	--	--	21.0	40000.	28.0
04/10/73	1300	1	1.0	11.5	2	13.0	90.	94.0	7.6	17.0	37000.	27.5
			5.0	--	--	--	--	94.0	7.6	17.0	37000.	27.5
			10.0	--	--	--	--	92.0	7.5	17.0	37000.	27.5
05/10/73	0900	1	1.0	24.0	2	13.0	135.	100.0	7.1	25.0	39000.	24.4
			5.0	--	--	--	--	100.0	7.1	25.0	39500.	24.8
			10.0	--	--	--	--	100.0	7.1	25.0	39500.	24.8
06/14/73	0930	1	1.0	27.0	2	15.0	135.	87.0	5.9	26.5	45500.	28.4
			5.0	--	--	--	--	87.0	5.9	26.5	45500.	28.4

The University of Texas
Marine Science Institute
Port Aransas, Texas 78373

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
						LINE 122						
10/17/72	0945	1	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
11/16/72	1430	1	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
12/18/72	1400	1	1.0	--	--	.10	.60	.03	.005	.020	.05	--
			6.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
01/13/73	1400	1	1.0	--	--	.20	.20	.03	.005	.010	.05	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
02/13/73	1435	1	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
03/10/73	1345	1	1.0	--	--	.10	.30	.03	.005	.010	.02	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
04/10/73	1300	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
05/10/73	0900	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
06/14/73	0930	1	1.0	--	--	.10	.40	.03	.005	.010	.07	--
			5.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
LINE 122										
10/17/72	0945	1	1.0	--	--					
			8.0	--	--					
			16.0	--	--					
11/16/72	1430	1	1.0	--	--					
			7.0	--	--					
			14.0	--	--					
12/18/72	1400	1	1.0	16.0	15.0					
			6.0	--	--					
			13.0	--	--					
01/13/73	1400	1	1.0	--	--					
			6.0	--	--					
			12.0	--	--					
02/13/73	1435	1	1.0	13.0	23.0					
			6.0	--	--					
			12.0	--	--					
03/10/73	1345	1	1.0	12.0	15.0					
			6.0	--	--					
			12.0	--	--					
04/10/73	1300	1	1.0	3.0	23.0					
			5.0	--	--					
			10.0	--	--					
05/10/73	0900	1	1.0	8.0	23.0					
			5.0	--	--					
			10.0	--	--					
06/14/73	0930	1	1.0	39.0	20.0					
			5.0	--	--					

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
						LINE 122 CONTINUED						
06/14/73	0930	1	10.0	--	--	--	--	87.0	5.9	26.5	45500.	28.4
			11.0	--	--	--	--	--	--	--	--	--
10/17/72	1050	6	1.0	27.5	--	--	--	100.0	6.7	28.0	46000.	28.5
			8.0	--	--	--	--	100.0	6.7	28.0	46000.	28.7
			17.0	--	--	--	--	92.0	6.2	27.5	47000.	29.4
11/16/72	1530	6	1.0	15.0	2	--	--	106.0	8.2	18.0	41000.	30.9
			8.0	--	--	--	--	106.0	8.2	18.0	41000.	30.9
			16.0	--	--	--	--	106.0	8.2	18.0	41000.	30.9
12/18/72	1440	6	1.0	12.5	--	--	--	106.0	10.2	9.5	30000.	27.2
			8.0	--	--	--	--	110.0	10.7	8.8	30000.	27.6
			16.0	--	--	--	--	110.0	10.8	8.5	30000.	27.6
01/13/73	1445	6	1.0	8.0	2	--	--	102.0	10.6	6.0	28500.	27.6
			8.0	--	--	--	--	107.0	11.3	5.3	28000.	27.7
			16.0	--	--	--	--	104.0	11.0	5.0	28500.	28.5
02/12/73	1510	6	1.0	14.0	2	--	--	122.0	11.0	12.0	33000.	27.9
			7.0	--	--	--	--	122.0	11.0	12.0	33000.	27.9
			14.0	--	--	--	--	126.0	11.4	11.5	33000.	28.3
03/10/73	1420	6	1.0	25.0	2	--	--	--	--	22.0	41000.	28.1
			7.0	--	--	--	--	--	--	21.0	41000.	28.7
			14.0	--	--	--	--	--	--	21.0	40000.	28.7
04/10/73	1346	6	1.0	12.0	2	13.0	90.	88.0	7.1	17.0	37000.	27.5
			7.0	--	--	--	--	88.0	7.1	17.0	37000.	27.5
			13.0	--	--	--	--	88.0	7.1	17.0	37000.	27.5
05/10/73	1315	6	1.0	25.5	3	13.0	135.	114.0	7.9	25.5	43000.	27.2
			7.0	--	--	--	--	111.0	7.7	25.0	43000.	27.2
			14.0	--	--	--	--	100.0	7.0	25.0	43000.	27.2
06/14/73	1445	6	1.0	28.5	2	16.0	135.	97.0	6.5	27.2	46000.	28.3
			7.5	--	--	--	--	93.0	6.2	27.0	46000.	28.3

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 122 CONTINUED							
06/14/73	0930	1	10.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
10/17/72	1050	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			17.0	--	--	--	--	--	--	--	--	--
11/16/72	1530	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
12/18/72	1440	6	1.0	--	--	.10	.30	.03	.005	.020	.04	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
01/13/73	1445	6	1.0	--	--	.30	.20	.03	.005	.020	.04	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
02/12/73	1510	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
03/10/73	1420	6	1.0	--	--	.30	.18	.03	.005	.010	.02	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
04/10/73	1346	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
05/10/73	1315	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
06/14/73	1445	6	1.0	--	--	.10	.30	.05	.010	.020	.04	--
			7.5	--	--	--	--	--	--	--	--	--

LINE 122 CONTINUED

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
06/14/73	0930	1	10.0	--	--
			11.0	--	--
10/17/72	1050	6	1.0	--	--
			8.0	--	--
			17.0	--	--
11/16/72	1530	6	1.0	--	--
			8.0	--	--
			16.0	--	--
12/18/72	1440	6	1.0	26.0	16.0
			8.0	--	--
			16.0	--	--
01/13/73	1445	6	1.0	--	--
			8.0	--	--
			16.0	--	--
02/12/73	1510	6	1.0	12.0	26.0
			7.0	--	--
			14.0	--	--
03/10/73	1420	6	1.0	8.0	22.0
			7.0	--	--
			14.0	--	--
04/10/73	1346	6	1.0	4.0	23.0
			7.0	--	--
			13.0	--	--
05/10/73	1315	6	1.0	10.0	24.0
			7.0	--	--
			14.0	--	--
06/14/73	1445	6	1.0	19.0	18.0
			7.5	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR, FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 122 CONTINUED							
06/14/73	1445	6	15.0	--	--	--	--	85.0	5.7	26.9	46000.	28.6
			16.0	--	--	--	--	--	--	--	--	--
10/17/72	1130	12	1.0	28.0	--	--	--	102.0	6.8	28.0	46000.	28.5
			5.0	--	--	--	--	100.0	6.7	28.0	46000.	28.2
			11.0	--	--	--	--	95.0	6.4	28.0	46000.	28.2
11/11/72	1600	12	1.0	16.0	6	--	--	98.0	7.6	18.0	41000.	30.9
			5.0	--	--	--	--	98.0	7.6	18.0	41000.	30.9
			10.0	--	--	--	--	98.0	7.6	18.0	41000.	30.9
12/18/72	1515	12	1.0	12.0	5	--	--	102.0	9.7	9.5	32000.	28.8
			5.0	--	--	--	--	106.0	10.2	9.0	32000.	29.2
			10.0	--	--	--	--	106.0	10.2	8.8	32000.	29.2
01/13/73	1520	12	1.0	8.5	--	--	--	105.0	10.8	6.0	29000.	28.2
			6.5	--	--	--	--	104.0	10.7	6.0	29000.	28.6
			13.0	--	--	--	--	102.0	10.7	5.0	29000.	29.0
02/12/73	1545	12	1.0	14.5	2	--	--	112.0	10.0	12.0	33000.	28.3
			7.0	--	--	--	--	115.0	9.8	14.5	33000.	28.3
			14.0	--	--	--	--	118.0	10.7	11.5	33000.	28.3
03/10/73	1450	12	1.0	25.5	2	--	--	--	--	22.5	42000.	28.5
			7.0	--	--	--	--	--	--	22.5	42000.	28.5
			14.0	--	--	--	--	--	--	22.0	42000.	28.9
04/10/73	1432	12	1.0	12.0	2	13.0	45	88.0	7.1	17.0	38000.	28.7
			5.0	--	--	--	--	88.0	7.1	17.0	38000.	28.3
			10.0	--	--	--	--	88.0	7.1	17.0	37500.	27.9
05/10/73	1245	12	1.0	25.0	2	13.0	135	120.0	8.1	25.2	48500.	31.1
			5.0	--	--	--	--	120.0	8.1	25.2	48500.	31.1
			10.0	--	--	--	--	120.0	8.1	25.2	48500.	31.1
06/14/73	1410	12	1.0	28.0	2	16.0	135	92.0	6.2	27.0	45500.	28.1
			7.0	--	--	--	--	93.0	6.2	27.0	45500.	28.1

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 122 CONTINUED							
06/14/73	1445	6	15.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
10/17/72	1130	12	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
11/11/72	1600	12	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
12/18/72	1515	12	1.0	--	--	.10	.50	.03	.012	.050	.07	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
01/13/73	1520	12	1.0	--	--	.20	.20	.03	.005	.020	.04	--
			6.5	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
02/12/73	1545	12	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
03/10/73	1450	12	1.0	--	--	.20	.30	.03	.005	.040	.04	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
04/10/73	1432	12	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
05/10/73	1245	12	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
06/14/73	1410	12	1.0	--	--	.10	.60	.04	.005	.030	.10	--
			7.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					

LINE 122 CONTINUED

06/14/73	1445	6	15.0	--	--
			16.0	--	--
10/17/72	1130	12	1.0	--	--
			5.0	--	--
			11.0	--	--
11/11/72	1600	12	1.0	--	--
			5.0	--	--
			10.0	--	--
12/18/72	1515	12	1.0	17.0	15.0
			5.0	--	--
			10.0	--	--
01/13/73	1520	12	1.0	--	--
			6.5	--	--
			13.0	--	--
02/12/73	1545	12	1.0	13.0	21.0
			7.0	--	--
			14.0	--	--
03/10/73	1450	12	1.0	8.0	22.0
			7.0	--	--
			14.0	--	--
04/10/73	1432	12	1.0	2.0	24.0
			5.0	--	--
			10.0	--	--
05/10/73	1245	12	1.0	8.0	24.0
			5.0	--	--
			10.0	--	--
06/14/73	1410	12	1.0	17.0	19.0
			7.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 122 CONTINUED							
06/14/73	1410	12	14.0	--	--	--	--	89.0	6.0	27.0	45500.	28.1
			15.0	--	--	--	--	--	--	--	--	--
					LINE 127							
10/16/72	1610	2	1.0	27.5	--	--	--	107.0	7.1	28.5	47000.	28.6
			7.0	--	--	--	--	107.0	7.1	28.5	47000.	28.6
			12.0	--	--	--	--	93.0	6.2	28.0	47000.	28.9
11/17/72	0825	2	1.0	13.9	2	--	--	92.0	7.3	17.5	39000.	29.5
			7.0	--	--	--	--	92.0	7.3	17.5	39000.	29.5
			13.0	--	--	--	--	93.5	7.4	17.7	39000.	29.3
12/19/72	1250	2	1.0	18.5	2	--	--	130.0	12.0	11.0	32000.	28.1
			7.0	--	--	--	--	127.0	12.0	10.0	31500.	28.1
			13.0	--	--	--	--	125.0	12.0	9.5	31250.	28.1
01/15/73	1020	2	1.0	10.0	2	--	--	110.0	11.1	7.0	29500.	27.9
			6.0	--	--	--	--	116.0	11.9	6.5	29000.	27.8
			12.0	--	--	--	--	110.0	11.4	6.0	29000.	28.2
02/20/73	1252	2	1.0	14.0	2	--	--	118.0	10.8	11.0	32000.	28.1
			6.5	--	--	--	--	120.0	11.0	11.0	32000.	28.1
			12.0	--	--	--	--	118.0	10.8	11.0	32000.	28.1
03/12/73	1010	2	1.0	24.3	--	--	--	95.0	6.4	27.0	39500.	27.6
			7.0	--	--	--	--	91.0	6.1	27.0	39500.	27.6
			14.0	--	--	--	--	88.0	5.9	26.0	39500.	27.6
04/13/73	0846	2	1.0	19.5	2	9.0	135.	98.1	7.7	18.8	38500.	27.7
			6.0	--	--	--	--	98.1	7.7	18.5	38500.	27.9
			11.0	--	--	--	--	95.0	7.4	18.5	38500.	27.9
05/10/73	1005	2	1.0	24.0	2	13.0	135.	99.0	7.0	24.5	41000.	26.3
			5.0	--	--	--	--	98.0	6.9	24.5	41000.	26.3
			10.0	--	--	--	--	97.0	6.9	24.5	41000.	26.3

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 122 CONTINUED							
06/14/73	1410	12	14.0	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
					LINE 127							
10/16/72	1610	2	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
11/17/72	0825	2	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
12/19/72	1250	2	1.0	--	--	.10	.40	.03	.005	.010	.03	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
01/15/73	1020	2	1.0	--	--	.20	.10	.03	.005	.010	.03	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
02/20/73	1252	2	1.0	--	--	--	--	--	--	--	--	--
			6.5	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
03/12/73	1010	2	1.0	--	--	.10	.30	.03	.005	.010	.02	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
04/13/73	0846	2	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
05/10/73	1005	2	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
				LINE 122 CONTINUED						
06/14/73	1410	12	14.0	--	--					
			15.0	--	--					
				LINE 127						
10/16/72	1610	2	1.0	--	--					
			7.0	--	--					
			12.0	--	--					
11/17/72	0825	2	1.0	--	--					
			7.0	--	--					
			13.0	--	--					
12/19/72	1250	2	1.0	23.0	15.0					
			7.0	--	--					
			13.0	--	--					
01/15/73	1020	2	1.0	--	--					
			6.0	--	--					
			12.0	--	--					
02/20/73	1252	2	1.0	21.0	21.0					
			6.5	--	--					
			12.0	--	--					
03/12/73	1010	2	1.0	8.0	16.0					
			7.0	--	--					
			14.0	--	--					
04/13/73	0846	2	1.0	4.0	23.0					
			6.0	--	--					
			11.0	--	--					
05/10/73	1005	2	1.0	7.0	26.0					
			5.0	--	--					
			10.0	--	--					

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

LINE 127 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
06/14/73	1045	2	1.0	28.0	2	15.0	135.	88.0	5.9	26.8	45800.	28.6
			5.5	--	--	--	--	87.0	5.8	26.8	45900.	28.9
			11.0	--	--	--	--	87.0	5.8	26.8	45900.	28.9
			12.0	--	--	--	--	--	--	--	--	--
10/16/72	1535	3	1.0	29.0	--	--	--	113.0	7.4	29.0	47000.	28.6
			7.0	--	--	--	--	112.0	7.3	29.0	47000.	28.8
			13.0	--	--	--	--	88.0	5.9	28.0	47000.	29.0
11/17/72	0915	3	1.0	14.5	2	--	--	92.0	7.3	17.3	39000.	29.5
			7.0	--	--	--	--	92.0	7.3	17.5	39000.	29.5
			13.0	--	--	--	--	93.5	7.4	17.5	39000.	29.5
12/19/72	1335	3	1.0	19.0	--	--	--	130.0	12.0	11.0	32000.	28.1
			6.5	--	--	--	--	130.0	12.5	9.5	31000.	27.8
			12.0	--	--	--	--	126.0	12.1	9.5	31000.	27.8
01/15/73	1107	3	1.0	12.5	2	--	--	122.0	12.3	7.0	29500.	27.9
			6.0	--	--	--	--	123.0	12.6	6.5	29000.	27.8
			12.0	--	--	--	--	124.0	12.8	6.0	29000.	28.2
02/20/73	1210	3	1.0	13.0	3	--	--	110.0	10.1	11.0	32000.	28.1
			3.5	--	--	--	--	118.0	10.8	11.0	32000.	28.1
			7.0	--	--	--	--	118.0	10.8	11.0	32000.	28.1
03/12/73	1050	3	1.0	23.0	2	--	--	96.0	6.9	23.0	39500.	27.6
			6.0	--	--	--	--	96.0	7.0	22.5	39500.	27.6
			12.0	--	--	--	--	96.0	7.0	22.8	39500.	27.6
04/13/73	0925	3	1.0	19.2	2	11.0	112.	101.0	7.9	18.5	38400.	27.9
			6.0	--	--	--	--	101.0	7.9	18.5	38400.	27.9
			11.0	--	--	--	--	101.0	7.9	18.5	38400.	27.9
05/10/73	1030	3	1.0	24.0	2	13.0	135.	95.0	6.7	24.5	41500.	26.4
			5.0	--	--	--	--	95.0	6.7	24.5	41500.	26.4
			10.0	--	--	--	--	95.0	6.7	24.5	41500.	26.4
06/14/73	1130	3	1.0	28.0	2	15.0	135.	90.0	6.0	27.0	46500.	28.8

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 127 CONTINUED							
06/14/73	1045	2	1.0	--	--	.10	.30	.03	.005	.010	.09	--
			5.5	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
10/16/72	1535	3	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
11/17/72	0915	3	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
12/19/72	1335	3	1.0	--	--	.10	.60	.03	.005	.020	.06	--
			6.5	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
01/15/73	1107	3	1.0	--	--	.20	.10	.03	.005	.010	.04	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
02/20/73	1210	3	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
03/12/73	1050	3	1.0	--	--	.30	.10	.03	.005	.010	.02	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
04/13/73	0925	3	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
05/10/73	1030	3	1.0	--	--	--	--	--	--	--	--	.0002
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
06/14/73	1130	3	1.0	--	--	.10	.40	.03	.005	.010	.06	.0003

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 127 CONTINUED	
06/14/73	1045	2	1.0	13.0	20.0
			5.5	--	--
			11.0	--	--
			12.0	--	--
10/16/72	1535	3	1.0	--	--
			7.0	--	--
			13.0	--	--
11/17/72	0915	3	1.0	--	--
			7.0	--	--
			13.0	--	--
12/19/72	1335	3	1.0	24.0	15.0
			6.5	--	--
			12.0	--	--
01/15/73	1107	3	1.0	--	--
			6.0	--	--
			12.0	--	--
02/20/73	1210	3	1.0	17.0	21.0
			3.5	--	--
			7.0	--	--
03/12/73	1050	3	1.0	7.0	20.0
			6.0	--	--
			12.0	--	--
04/13/73	0925	3	1.0	13.0	14.0
			6.0	--	--
			11.0	--	--
05/10/73	1030	3	1.0	7.0	25.0
			5.0	--	--
			10.0	--	--
06/14/73	1130	3	1.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

LINE 127 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
06/14/73	1130	3	6.0	--	--	--	--	90.0	6.0	27.0	46500.	28.8
			12.0	--	--	--	--	90.0	6.0	27.0	46500.	28.8
			13.0	--	--	--	--	--	--	--	--	--
10/16/72	1445	6	1.0	29.0	--	--	--	112.0	7.4	28.5	47000.	28.6
			8.0	--	--	--	--	97.0	6.5	27.5	47000.	28.9
			15.0	--	--	--	--	89.0	5.9	28.0	47000.	28.9
11/20/72	1550	6	1.0	11.0	2	--	--	96.0	7.8	16.0	37800.	30.0
			7.0	--	--	--	--	96.0	7.8	16.0	37800.	30.0
			13.0	--	--	--	--	96.0	7.8	16.0	37800.	30.0
12/19/72	1415	6	1.0	18.5	--	--	--	122.0	11.4	10.5	32500.	28.5
			8.0	--	--	--	--	124.0	12.0	9.0	31500.	28.5
			16.0	--	--	--	--	122.0	11.8	9.1	31000.	28.2
01/15/73	1215	6	1.0	16.5	2	--	--	128.0	13.0	6.5	30000.	28.8
			7.0	--	--	--	--	132.0	13.2	7.0	30000.	28.8
			14.0	--	--	--	--	102.0	10.5	6.0	29000.	28.2
02/20/73	1045	6	1.0	12.0	2	--	--	117.0	10.7	11.0	32000.	28.0
			8.0	--	--	--	--	130.0	12.0	10.7	32000.	28.0
			15.5	--	--	--	--	135.0	12.5	10.5	32000.	28.0
03/12/73	1130	6	1.0	21.0	2	--	--	96.0	7.0	22.0	40500.	28.4
			7.0	--	--	--	--	96.0	7.1	21.5	40500.	28.0
			14.0	--	--	--	--	96.0	7.1	21.5	40500.	28.0
04/13/73	1107	6	1.0	19.0	2	9.0	112.	98.5	7.7	18.5	39000.	28.4
			7.0	--	--	--	--	99.0	7.8	18.2	39000.	28.4
			13.0	--	--	--	--	97.0	7.6	18.2	39000.	28.4
05/10/73	1105	6	1.0	28.5	2	13.0	135	100.0	7.1	24.9	39500.	25.0
			7.0	--	--	--	--	100.0	7.1	24.9	39500.	25.0
			14.0	--	--	--	--	98.0	6.9	24.9	39500.	25.0
06/14/73	1204	6	1.0	28.0	2	15.0	135	96.0	6.4	27.0	47000.	29.2

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 127 CONTINUED							
06/14/73	1130	3	6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
10/16/72	1445	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
11/20/72	1550	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
12/19/72	1415	6	1.0	--	--	1.00	3.00	.03	.005	.020	.04	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
01/15/73	1215	6	1.0	--	--	.10	.30	.03	.005	.010	.03	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
02/20/73	1045	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			15.5	--	--	--	--	--	--	--	--	--
03/12/73	1130	6	1.0	--	--	.10	.30	.03	.005	.020	.02	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
04/13/73	1107	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
05/10/73	1105	6	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
06/14/73	1204	6	1.0	--	--	.20	.20	.03	.005	.020	.04	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					

LINE 127 CONTINUED

06/14/73	1130	3	6.0	--	--
			12.0	--	--
			13.0	--	--
10/16/72	1445	6	1.0	--	--
			8.0	--	--
			15.0	--	--
11/20/72	1550	6	1.0	--	--
			7.0	--	--
			13.0	--	--
12/19/72	1415	6	1.0	--	--
			8.0	--	--
			16.0	--	--
01/15/73	1215	6	1.0	--	--
			7.0	--	--
			14.0	--	--
02/20/73	1045	6	1.0	26.0	17.0
			8.0	--	--
			15.5	--	--
03/12/73	1130	6	1.0	5.0	22.0
			7.0	--	--
			14.0	--	--
04/13/73	1107	6	1.0	5.0	22.0
			7.0	--	--
			13.0	--	--
05/10/73	1105	6	1.0	8.0	26.0
			7.0	--	--
			14.0	--	--
06/14/73	1204	6	1.0	16.0	20.0

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 127 CONTINUED							
06/14/73	1204	6	6.5	--	--	--	--	95.0	6.3	27.0	47000.	29.2
			13.0	--	--	--	--	87.0	5.8	27.0	47000.	29.2
			14.0	--	--	--	--	--	--	--	--	--
					LINE 131							
10/16/72	1645	2	1.0	28.2	--	--	--	113.0	7.3	29.5	49000.	29.7
			10.0	--	--	--	--	102.0	6.7	28.8	49000.	30.0
			17.0	--	--	--	--	96.0	6.3	28.5	49000.	30.1
11/15/72	1330	2	1.0	14.0	2	--	--	98.0	7.7	18.0	40000.	29.7
			4.0	--	--	--	--	100.0	7.8	18.0	40000.	29.7
			9.0	--	--	--	--	100.0	7.8	18.0	40000.	29.7
12/19/72	1200	2	1.0	17.0	2	--	--	118.0	11.1	10.2	32000.	28.1
			4.0	--	--	--	--	118.0	11.2	10.2	31500.	27.6
			8.0	--	--	--	--	118.0	11.2	9.8	31500.	28.0
01/15/73	0930	2	1.0	13.5	2	--	--	112.0	11.2	7.5	29500.	27.9
			3.5	--	--	--	--	105.0	10.6	7.0	29500.	27.9
			7.0	--	--	--	--	102.0	10.3	7.0	29500.	27.9
02/20/73	1335	2	1.0	14.5	5	--	--	119.0	10.8	11.2	33000.	28.8
			7.5	--	--	--	--	118.0	10.7	11.2	33000.	28.8
			14.0	--	--	--	--	120.0	11.0	11.0	33000.	28.8
03/12/73	0925	2	1.0	24.0	2	--	--	88.0	6.5	22.0	39500.	25.6
			23.0	--	--	--	--	86.0	6.3	22.0	39500.	25.6
			46.0	--	--	--	--	90.0	6.6	22.9	35000.	24.1
04/13/73	0746	2	1.0	19.8	2	11.0	90.	90.0	7.0	18.8	38200.	27.5
			8.0	--	--	--	--	--	--	--	--	--
			24.0	--	--	--	--	85.0	6.7	18.5	38000.	27.5
			40.0	--	--	--	--	84.5	6.7	17.9	37500.	27.6
05/10/73	0930	2	1.0	24.0	2	13.0	135	100.0	7.0	25.0	40500.	25.7

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 127 CONTINUED							
06/14/73	1204	6	6.5	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
					LINE 131							
10/16/72	1645	2	1.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
			17.0	--	--	--	--	--	--	--	--	--
11/15/72	1330	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
12/19/72	1200	2	1.0	--	--	.10	.40	.03	.005	.010	.03	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
01/15/73	0930	2	1.0	--	--	.10	.20	.03	.005	.010	.02	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
02/20/73	1335	2	1.0	--	--	--	--	--	--	--	--	--
			7.5	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
03/12/73	0925	2	1.0	--	--	.10	.30	.03	.005	.010	.02	--
			23.0	--	--	--	--	--	--	--	--	--
			46.0	--	--	--	--	--	--	--	--	--
04/13/73	0746	2	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			24.0	--	--	--	--	--	--	--	--	--
			40.0	--	--	--	--	--	--	--	--	--
05/10/73	0930	2	1.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
LINE 127 CONTINUED					
06/14/73	1204	6	6.5	--	--
			13.0	--	--
			14.0	--	--
LINE 131					
10/16/72	1645	2	1.0	--	--
			10.0	--	--
			17.0	--	--
11/15/72	1330	2	1.0	--	--
			4.0	--	--
			9.0	--	--
12/19/72	1200	2	1.0	--	--
			4.0	--	--
			8.0	--	--
01/15/73	0930	2	1.0	--	--
			3.5	--	--
			7.0	--	--
02/20/73	1335	2	1.0	21.0	17.0
			7.5	--	--
			14.0	--	--
03/12/73	0925	2	1.0	9.0	20.0
			23.0	--	--
			46.0	--	--
04/13/73	0746	2	1.0	12.0	18.0
			8.0	--	--
			24.0	--	--
			40.0	--	--
05/10/73	0930	2	1.0	6.0	23.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
LINE 131 CONTINUED												
05/10/73	0930	2	30.0	--	--	--	--	86.0	6.2	24.0	41000.	26.1
			50.0	--	--	--	--	--	--	24.0	41500.	27.3
06/14/73	1004	2	1.0	28.0	2	11.0	135	88.0	6.0	26.5	44500.	27.7
			21.0	--	--	--	--	77.0	5.2	26.5	44500.	27.7
			42.0	--	--	--	--	73.0	4.9	26.5	46000.	28.8
LINE 142												
10/16/72	1310	2	1.0	29.0	--	--	--	100.0	6.5	29.5	47000.	28.3
			6.0	--	--	--	--	99.5	6.6	28.0	47000.	28.9
			10.0	--	--	--	--	92.0	6.1	28.0	47000.	28.9
11/20/72	1240	2	1.0	8.9	2	--	--	87.5	7.4	14.5	37500.	29.7
			6.0	--	--	--	--	87.5	7.3	14.9	37500.	29.7
			9.0	--	--	--	--	88.5	7.4	14.9	37500.	29.7
12/19/72	1630	2	1.0	15.5	2	--	--	116.0	10.6	11.8	32500.	27.8
			5.5	--	--	--	--	116.0	11.0	10.0	31500.	28.3
			11.0	--	--	--	--	116.0	11.0	9.8	31500.	28.3
01/15/73	1425	2	1.0	13.0	2	--	--	116.0	11.2	9.0	30000.	26.9
			2.0	--	--	--	--	128.0	12.9	7.0	30000.	28.4
			4.0	--	--	--	--	128.0	13.1	6.5	29500.	27.9
02/11/73	1605	2	1.0	13.0	2	--	--	110.0	9.9	11.7	33000.	28.3
			6.0	--	--	--	--	118.0	10.9	10.5	33000.	28.5
			11.5	--	--	--	--	116.0	10.7	10.7	33000.	28.8
03/12/73	1430	2	1.0	21.5	2	--	--	98.0	7.2	21.5	41000.	28.7
			5.0	--	--	--	--	98.0	7.2	21.5	41000.	28.7
			10.0	--	--	--	--	98.0	7.2	21.5	41000.	28.7
04/14/73	0800	2	1.0	19.3	2	17.0	135	94.0	7.3	19.0	38000.	27.3
			4.0	--	--	--	--	94.0	7.3	19.0	38000.	27.3
			8.0	--	--	--	--	88.0	6.9	19.0	38000.	27.3

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 131 CONTINUED							
05/10/73	0930	2	30.0	--	--	--	--	--	--	--	--	--
			50.0	--	--	--	--	--	--	--	--	--
06/14/73	1004	2	1.0	--	--	.10	.30	.03	.005	.010	.08	--
			21.0	--	--	--	--	--	--	--	--	--
			42.0	--	--	--	--	--	--	--	--	--
					LINE 142							
10/16/72	1310	2	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
11/20/72	1240	2	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
12/19/72	1630	2	1.0	--	--	.10	.30	.03	.005	.010	.04	--
			5.5	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
01/15/73	1425	2	1.0	--	--	.20	.20	.03	.005	.010	.03	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
02/11/73	1605	2	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.5	--	--	--	--	--	--	--	--	--
03/12/73	1430	2	1.0	--	--	.10	.30	.03	.005	.010	.01	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
04/14/73	0800	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
LINE 131 CONTINUED										
05/10/73	0930	2	30.0	--	--					
			50.0	--	--					
06/14/73	1004	2	1.0	14.0	19.0					
			21.0	--	--					
			42.0	--	--					
LINE 142										
10/16/72	1310	2	1.0	--	--					
			6.0	--	--					
			10.0	--	--					
11/20/72	1240	2	1.0	--	--					
			6.0	--	--					
			9.0	--	--					
12/19/72	1630	2	1.0	22.0	16.0					
			5.5	--	--					
			11.0	--	--					
01/15/73	1425	2	1.0	--	--					
			2.0	--	--					
			4.0	--	--					
02/11/73	1605	2	1.0	22.0	17.0					
			6.0	--	--					
			11.5	--	--					
03/12/73	1430	2	1.0	7.0	22.0					
			5.0	--	--					
			10.0	--	--					
04/14/73	0800	2	1.0	--	--					
			4.0	--	--					
			8.0	--	--					

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 142 CONTINUED							
05/14/73	0942	2	1.0	21.0	2	9.0	0	91.0	6.6	23.5	39250.	25.4
			5.0	--	--	--	--	89.0	6.4	23.5	40000.	25.9
			8.0	--	--	--	--	71.0	5.0	24.0	43000.	27.8
06/16/73	1340	2	1.0	27.0	2	11.0	--	90.0	5.8	28.5	48500.	29.4
			4.0	--	--	--	--	89.0	5.8	28.5	48500.	29.4
			8.0	--	--	--	--	89.0	5.8	28.5	48500.	29.4
			9.0	--	--	--	--	--	--	--	--	--
10/16/72	1220	6	1.0	29.7	--	--	--	102.0	6.7	29.0	48000.	29.0
			8.0	--	--	--	--	104.0	7.0	27.5	48000.	29.6
			15.0	--	--	--	--	86.0	5.8	27.2	48000.	29.6
11/20/72	1340	6	1.0	10.0	2	--	--	94.0	7.7	16.0	37000.	29.3
			6.0	--	--	--	--	92.0	7.4	16.5	37000.	29.3
			11.0	--	--	--	--	94.0	7.6	16.5	37000.	29.3
12/19/72	1350	6	1.0	16.0	2	--	--	115.0	10.6	11.2	33000.	28.4
			8.0	--	--	--	--	116.0	11.1	9.5	31500.	28.5
			15.0	--	--	--	--	116.0	11.2	9.0	31500.	28.5
01/15/73	1354	6	1.0	13.0	2	--	--	106.0	10.0	10.0	32000.	28.1
			7.0	--	--	--	--	116.0	11.7	7.0	30000.	28.4
			14.0	--	--	--	--	110.0	11.4	6.0	29000.	28.2
02/11/73	1520	6	1.0	13.2	2	--	--	104.0	9.3	12.0	33000.	28.3
			8.0	--	--	--	--	106.0	9.9	10.2	32000.	28.3
			14.0	--	--	--	--	100.0	9.3	10.2	32000.	28.5
03/12/73	1340	6	1.0	21.5	--	--	--	98.0	7.2	21.5	41000.	28.7
			7.0	--	--	--	--	98.0	7.3	21.0	41000.	28.7
			14.0	--	--	--	--	98.0	7.3	21.0	41000.	28.7
04/13/73	1400	6	1.0	19.0	2	10.0	112.	106.0	8.3	18.5	38500.	28.1
			7.5	--	--	--	--	106.0	8.3	18.5	38500.	28.1
			14.0	--	--	--	--	105.0	8.2	18.5	38500.	28.1
05/15/73	1325	6	1.0	17.5	2	8.0	45.	82.5	6.0	22.5	41500.	27.6

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 142 CONTINUED							
05/14/73	0942	2	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
06/16/73	1340	2	1.0	--	--	.10	.70	.03	.005	.010	.08	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
10/16/72	1220	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
11/20/72	1340	6	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
12/19/72	1350	6	1.0	--	--	.20	.10	.03	.005	.010	.02	--
			8.0	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
01/15/73	1354	6	1.0	--	--	.20	.20	.03	.005	.010	.04	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
02/11/73	1520	6	1.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
03/12/73	1340	6	1.0	--	--	.10	.50	.03	.005	.020	.02	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
04/13/73	1400	6	1.0	--	--	--	--	--	--	--	--	--
			7.5	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
05/15/73	1325	6	1.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 142 CONTINUED	
05/14/73	0942	2	1.0	11.0	23.0
			5.0	--	--
			8.0	--	--
06/16/73	1340	2	1.0	12.0	20.0
			4.0	--	--
			8.0	--	--
			9.0	--	--
10/16/72	1220	6	1.0	--	--
			8.0	--	--
			15.0	--	--
11/20/72	1340	6	1.0	--	--
			6.0	--	--
			11.0	--	--
12/19/72	1350	6	1.0	19.0	15.0
			8.0	--	--
			15.0	--	--
01/15/73	1354	6	1.0	--	--
			7.0	--	--
			14.0	--	--
02/11/73	1520	6	1.0	22.0	17.0
			8.0	--	--
			14.0	--	--
03/12/73	1340	6	1.0	9.0	18.0
			7.0	--	--
			14.0	--	--
04/13/73	1400	6	1.0	4.0	23.0
			7.5	--	--
			14.0	--	--
05/15/73	1325	6	1.0	10.0	24.0

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH&0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 142 CONTINUED							
05/15/73	1325	6	7.0	--	--	--	--	82.0	6.0	22.7	41500.	27.6
			13.0	--	--	--	--	78.5	5.7	22.7	41500.	27.6
06/16/73	1300	6	1.0	30.0	2	11.0	135	110.0	7.2	28.5	46500.	28.1
			6.5	--	--	--	--	108.0	7.0	28.5	46900.	28.4
			13.0	--	--	--	--	102.0	6.6	28.5	47900.	29.1
			14.0	--	--	--	--	--	--	--	--	--
10/16/72	1137	10	1.0	29.0	--	--	--	106.0	7.0	28.0	48000.	29.6
			6.0	--	--	--	--	98.5	6.6	27.5	48000.	29.6
			13.0	--	--	--	--	88.0	5.9	27.5	48000.	29.6
11/20/72	1420	10	1.0	10.8	2	--	--	93.0	7.7	15.5	37000.	29.3
			6.0	--	--	--	--	93.0	7.7	15.5	37000.	29.3
			11.0	--	--	--	--	93.0	7.7	15.5	37000.	29.3
12/19/72	1505	10	1.0	17.0	2	--	--	118.0	10.7	12.0	33000.	28.0
			7.5	--	--	--	--	122.0	11.6	10.0	31300.	28.1
			15.0	--	--	--	--	116.0	11.1	9.5	31000.	28.0
01/15/73	1320	10	1.0	13.0	2	--	--	118.0	11.3	9.0	31500.	28.4
			7.0	--	--	--	--	128.0	13.1	6.3	30000.	28.8
			14.0	--	--	--	--	110.0	11.3	6.0	29500.	28.7
02/11/73	1445	10	1.0	15.0	5	--	--	104.0	9.4	11.7	33000.	28.3
			6.0	--	--	--	--	104.0	9.6	10.7	32500.	28.6
			11.5	--	--	--	--	104.0	9.7	10.0	32000.	28.5
03/12/73	1245	10	1.0	22.5	2	--	--	88.0	6.4	22.0	42500.	29.9
			8.0	--	--	--	--	87.0	6.4	22.0	40500.	28.4
			16.0	--	--	--	--	87.0	6.4	22.0	40500.	28.4
04/13/73	1311	10	1.0	19.0	2	7.0	112	92.0	7.2	18.5	39000.	28.4
			4.2	--	--	--	--	92.0	7.2	18.5	39200.	28.6
			8.0	--	--	--	--	92.0	7.2	18.5	39500.	28.8
05/15/73	1235	10	1.0	18.5	2	11.0	0	80.0	5.8	22.5	42800.	28.5

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 142 CONTINUED							
05/15/73	1325	6	7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
06/16/73	1300	6	1.0	--	--	.10	.60	.03	.005	.030	.05	--
			6.5	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
10/16/72	1137	10	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
11/20/72	1420	10	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
12/19/72	1505	10	1.0	--	--	.10	.30	.03	.005	.020	.04	--
			7.5	--	--	--	--	--	--	--	--	--
			15.0	--	--	--	--	--	--	--	--	--
01/15/73	1320	10	1.0	--	--	.10	.30	.03	.005	.010	.03	--
			7.0	--	--	--	--	--	--	--	--	--
			14.0	--	--	--	--	--	--	--	--	--
02/11/73	1445	10	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.5	--	--	--	--	--	--	--	--	--
03/12/73	1245	10	1.0	--	--	.10	.50	.03	.005	.020	.02	--
			8.0	--	--	--	--	--	--	--	--	--
			16.0	--	--	--	--	--	--	--	--	--
04/13/73	1311	10	1.0	--	--	--	--	--	--	--	--	--
			4.2	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
05/15/73	1235	10	1.0	--	--	--	--	--	--	--	--	--

LINE 142 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
05/15/73	1325	6	7.0	--	--
			13.0	--	--
06/16/73	1300	6	1.0	19.0	17.0
			6.5	--	--
			13.0	--	--
			14.0	--	--
10/16/72	1137	10	1.0	--	--
			6.0	--	--
			13.0	--	--
11/20/72	1420	10	1.0	--	--
			6.0	--	--
			11.0	--	--
12/19/72	1505	10	1.0	17.0	15.0
			7.5	--	--
			15.0	--	--
01/15/73	1320	10	1.0	--	--
			7.0	--	--
			14.0	--	--
02/11/73	1445	10	1.0	19.0	21.0
			6.0	--	--
			11.5	--	--
03/12/73	1245	10	1.0	12.0	22.0
			8.0	--	--
			16.0	--	--
04/13/73	1311	10	1.0	12.0	19.0
			4.2	--	--
			8.0	--	--
05/15/73	1235	10	1.0	9.0	25.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 142 CONTINUED							
05/15/73	1235	10	4.5	--	--	--	--	78.5	5.7	22.7	42800.	28.4
			9.0	--	--	--	--	76.5	5.5	22.9	42500.	28.2
06/16/73	1225	10	1.0	28.0	2	11.0	135	90.0	5.7	28.9	52000.	31.7
			6.0	--	--	--	--	88.0	5.6	28.9	52000.	31.7
			12.0	--	--	--	--	86.0	5.4	28.9	52000.	31.7
			13.0	--	--	--	--	--	--	--	--	--
					LINE 147							
10/16/72	0845	1	1.0	26.5	--	--	--	91.5	6.2	27.0	47000.	28.9
			4.5	--	--	--	--	87.5	5.9	27.0	47500.	29.3
			8.5	--	--	--	--	80.5	5.4	27.0	50000.	31.0
11/19/72	1110	1	1.0	13.1	2	--	--	96.0	7.9	16.0	36000.	27.6
			5.0	--	--	--	--	96.0	7.9	16.0	36000.	27.6
			9.0	--	--	--	--	95.8	7.9	16.0	36000.	27.6
12/20/72	1130	1	1.0	15.0	2	--	--	116.0	10.6	11.5	32000.	27.9
			4.0	--	--	--	--	116.0	10.7	11.2	32000.	27.9
			8.0	--	--	--	--	116.0	10.7	11.2	32000.	27.9
01/15/73	1500	1	1.0	11.2	2	--	--	114.0	11.3	8.0	29000.	27.0
			4.0	--	--	--	--	115.0	11.6	7.0	29000.	27.4
			8.0	--	--	--	--	114.0	11.5	7.0	29000.	27.4
02/11/73	1213	1	1.0	11.2	2	--	--	98.0	8.9	11.0	34500.	29.7
			5.0	--	--	--	--	98.0	8.9	11.0	34500.	30.1
			9.0	--	--	--	--	98.0	8.9	11.0	34500.	30.1
03/15/73	1717	1	1.0	21.2	2	--	--	109.0	8.2	21.2	39500.	26.8
			5.0	--	--	--	--	108.0	8.1	21.2	39500.	26.8
			9.0	--	--	--	--	104.0	7.8	21.0	39500.	27.0
04/14/73	1045	1	1.0	20.0	--	27.0	--	100.0	7.7	19.5	38000.	27.0
			4.0	--	--	--	--	100.0	7.8	19.0	38000.	27.0

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
LINE 142 CONTINUED												
05/15/73	1235	10	4.5	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
06/16/73	1225	10	1.0	--	--	.10	1.00	.03	.005	.010	.10	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
LINE 147												
10/16/72	0845	1	1.0	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
			8.5	--	--	--	--	--	--	--	--	--
11/19/72	1110	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
12/20/72	1130	1	1.0	--	--	.10	.30	.03	.007	.020	.02	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
01/15/73	1500	1	1.0	--	--	.20	.10	.03	.005	.010	.03	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
02/11/73	1213	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
03/15/73	1717	1	1.0	--	--	.10	.20	.03	.005	.010	.01	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
04/14/73	1045	1	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 142 CONTINUED	
05/15/73	1235	10	4.5	--	--
			9.0	--	--
06/16/73	1225	10	1.0	21.0	16.0
			6.0	--	--
			12.0	--	--
			13.0	--	--
				LINE 147	
10/16/72	0845	1	1.0	--	--
			4.5	--	--
			8.5	--	--
11/19/72	1110	1	1.0	--	--
			5.0	--	--
			9.0	--	--
12/20/72	1130	1	1.0	17.0	15.0
			4.0	--	--
			8.0	--	--
01/15/73	1500	1	1.0	--	--
			4.0	--	--
			8.0	--	--
02/11/73	1213	1	1.0	19.0	21.0
			5.0	--	--
			9.0	--	--
03/15/73	1717	1	1.0	5.0	19.0
			5.0	--	--
			9.0	--	--
04/14/73	1045	1	1.0	--	--
			4.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 147 CONTINUED							
04/14/73	1045	1	8.0	--	--	--	--	100.0	7.8	19.0	38000.	27.0
05/15/73	0955	1	1.0	17.0	2	11.0	0	82.0	6.2	22.0	35500.	23.2
			5.0	--	--	--	--	79.5	6.0	22.5	35500.	22.9
			9.0	--	--	--	--	76.0	5.7	22.5	36800.	23.9
06/16/73	0925	1	1.0	27.5	2	11.0	135	90.0	5.9	28.0	46000.	27.9
			4.0	--	--	--	--	90.0	5.9	28.0	46000.	27.9
			8.0	--	--	--	--	88.0	5.8	28.0	47000.	28.6
			9.0	--	--	--	--	--	--	--	--	--
10/16/72	0925	3	1.0	28.0	--	--	--	93.5	6.3	27.0	50000.	31.2
			6.0	--	--	--	--	91.5	6.1	27.0	50000.	31.2
			11.0	--	--	--	--	82.0	5.5	27.0	50000.	31.5
11/19/72	1200	3	1.0	15.0	3	--	--	96.0	7.9	16.0	36000.	27.5
			7.0	--	--	--	--	97.0	8.0	16.0	36400.	27.8
			12.0	--	--	--	--	97.0	8.0	16.0	36400.	27.8
12/20/72	1230	3	1.0	17.5	7	--	--	122.0	11.0	12.0	33000.	28.6
			6.0	--	--	--	--	122.0	11.2	11.5	32000.	28.1
			11.0	--	--	--	--	114.0	10.5	11.2	32000.	28.1
01/15/73	1542	3	1.0	14.8	3	--	--	128.0	12.6	8.0	29500.	27.5
			5.0	--	--	--	--	132.0	13.5	6.5	29000.	27.8
			10.0	--	--	--	--	120.0	13.4	6.0	29000.	28.2
02/11/73	1246	3	1.0	13.0	5	--	--	104.0	9.5	11.2	32500.	28.2
			6.0	--	--	--	--	104.0	9.7	10.2	31800.	28.5
			10.5	--	--	--	--	83.0	7.6	10.5	33000.	29.5
03/15/73	1630	3	1.0	21.7	2	--	--	110.0	8.1	22.0	40500.	27.1
			6.0	--	--	--	--	108.0	8.0	22.0	40500.	27.4
			11.0	--	--	--	--	100.0	7.5	21.0	40500.	27.8
04/14/73	1000	3	1.0	21.0	3	23.0	135	100.0	7.8	19.0	39000.	27.8
			6.0	--	--	--	--	98.0	7.6	19.0	39000.	28.1

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 147 CONTINUED							
04/14/73	1045	1	8.0	--	--	--	--	--	--	--	--	--
05/15/73	0955	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
06/16/73	0925	1	1.0	--	--	.30	.40	.03	.005	.010	.07	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
10/16/72	0925	3	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
11/19/72	1200	3	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
12/20/72	1230	3	1.0	--	--	.20	.18	.04	.005	.010	.03	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
01/15/73	1542	3	1.0	--	--	.20	.10	.03	.005	.010	.03	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
02/11/73	1246	3	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			10.5	--	--	--	--	--	--	--	--	--
03/15/73	1630	3	1.0	--	--	.10	.30	.03	.005	.010	.01	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
04/14/73	1000	3	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 147 CONTINUED	
04/14/73	1045	1	8.0	--	--
05/15/73	0955	1	1.0	10.0	23.0
			5.0	--	--
			9.0	--	--
06/16/73	0925	1	1.0	16.0	20.0
			4.0	--	--
			8.0	--	--
			9.0	--	--
10/16/72	0925	3	1.0	--	--
			6.0	--	--
			11.0	--	--
11/19/72	1200	3	1.0	--	--
			7.0	--	--
			12.0	--	--
12/20/72	1230	3	1.0	19.0	16.0
			6.0	--	--
			11.0	--	--
01/15/73	1542	3	1.0	--	--
			5.0	--	--
			10.0	--	--
02/11/73	1246	3	1.0	27.0	17.0
			6.0	--	--
			10.5	--	--
03/15/73	1630	3	1.0	7.0	20.0
			6.0	--	--
			11.0	--	--
04/14/73	1000	3	1.0	13.0	16.0
			6.0	--	--

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 147 CONTINUED							
04/14/73	1000	3	12.0	--	--	--	--	99.0	7.7	19.0	39000.	28.1
05/15/73	1036	3	1.0	18.5	3	13.0	0*	79.5	5.9	22.0	38700.	25.5
			6.0	--	--	--	--	78.5	5.8	22.5	38700.	25.5
			11.0	--	--	--	--	78.2	5.8	22.5	38700.	25.5
06/16/73	1030	3	1.0	29.0	4	14.0	112.	96.0	6.3	28.0	48500.	29.6
			5.0	--	--	--	--	96.0	6.3	28.0	48500.	29.6
			10.0	--	--	--	--	94.0	6.1	28.0	48500.	29.6
			11.0	--	--	--	--	--	--	--	--	--
10/16/72	1000	5	1.0	27.0	--	--	--	89.0	5.9	27.5	50000.	31.2
			4.0	--	--	--	--	85.0	5.6	27.5	50000.	31.2
			8.0	--	--	--	--	84.0	5.6	27.5	50000.	31.2
11/19/72	1315	5	1.0	12.0	4	--	--	95.0	8.1	14.5	34800.	27.7
			2.0	--	--	--	--	95.0	8.0	14.8	34800.	27.7
			2.7	--	--	--	--	95.0	8.0	14.8	34800.	27.7
12/20/72	1330	5	1.0	18.3	3	--	--	116.0	10.3	13.0	33000.	27.9
			3.0	--	--	--	--	118.0	10.5	12.7	33000.	27.9
			5.0	--	--	--	--	118.0	10.5	12.7	33000.	27.9
01/15/73	1620	5	1.0	16.0	3	--	--	124.0	11.3	11.5	31800.	27.1
			2.0	--	--	--	--	124.0	11.5	11.0	31800.	27.2
			4.0	--	--	--	--	124.0	11.5	11.0	31800.	27.2
02/11/73	1400	5	1.0	14.0	--	--	--	103.0	8.8	13.2	38000.	31.4
03/15/73	1545	5	1.0	20.5	3	--	--	104.0	8.2	19.0	35500.	25.1
			3.0	--	--	--	--	106.0	8.4	19.0	35500.	25.4
			6.0	--	--	--	--	105.0	8.3	19.0	35500.	25.4
04/14/73	0915	5	1.0	20.0	5	17.0	--	100.0	7.8	19.5	35500.	25.1
			2.0	--	--	--	--	100.0	7.8	19.5	35500.	25.1
05/15/73	1125	5	1.0	17.5	3	11.0	0*	89.0	6.8	20.0	39000.	26.9

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/L	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 147 CONTINUED							
04/14/73	1000	3	12.0	--	--	--	--	--	--	--	--	--
05/15/73	1036	3	1.0	--	--	--	--	--	--	--	--	.0004
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
06/16/73	1030	3	1.0	--	--	.10	.80	.03	.005	.010	.05	.0005
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
10/16/72	1000	5	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
11/19/72	1315	5	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			2.7	--	--	--	--	--	--	--	--	--
12/20/72	1330	5	1.0	--	--	.10	.40	.08	.005	.010	.02	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
01/15/73	1620	5	1.0	--	--	.10	.20	.15	.005	.010	.03	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
02/11/73	1400	5	1.0	--	--	--	--	--	--	--	--	--
03/15/73	1545	5	1.0	--	--	.10	.30	.03	.005	.010	.02	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
04/14/73	0915	5	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
05/15/73	1125	5	1.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

LINE 147 CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLO DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
04/14/73	1000	3	12.0	--	--
05/15/73	1036	3	1.0	7.0	24.0
			6.0	--	--
			11.0	--	--
06/16/73	1030	3	1.0	17.0	19.0
			5.0	--	--
			10.0	--	--
			11.0	--	--
10/16/72	1000	5	1.0	--	--
			4.0	--	--
			8.0	--	--
11/19/72	1315	5	1.0	--	--
			2.0	--	--
			2.7	--	--
12/20/72	1330	5	1.0	23.0	15.0
			3.0	--	--
			5.0	--	--
01/15/73	1620	5	1.0	--	--
			2.0	--	--
			4.0	--	--
02/11/73	1400	5	1.0	12.0	23.0
03/15/73	1545	5	1.0	13.0	14.0
			3.0	--	--
			6.0	--	--
04/14/73	0915	5	1.0	9.0	15.0
			2.0	--	--
05/15/73	1125	5	1.0	9.0	22.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 147 CONTINUED							
05/15/73	1125	5	2.0	--	--	--	--	88.7	6.7	20.5	39000.	26.9
			4.0	--	--	--	--	88.5	6.7	20.5	39000.	26.9
06/16/73	1125	5	1.0	29.2	3	11.0	135.	94.0	6.1	28.9	47500.	28.6
			2.0	--	--	--	--	94.0	6.1	28.9	47500.	28.6
			3.0	--	--	--	--	94.0	6.1	28.9	47500.	28.6
			4.0	--	--	--	--	--	--	--	--	--
					LINE 200							
10/16/72	1405	2	1.0	28.7	--	--	--	165.0	10.8	30.0	45000.	26.8
			2.5	--	--	--	--	165.0	10.8	30.0	45000.	26.8
			5.0	--	--	--	--	160.0	10.5	29.8	45000.	26.8
11/20/72	1450	2	1.0	12.8	6	--	--	96.0	7.9	15.5	37000.	29.7
			4.0	--	--	--	--	96.0	7.9	15.5	37000.	29.7
			8.5	--	--	--	--	98.0	8.2	15.0	37000.	29.7
12/18/72	1600	2	1.0	14.5	--	--	--	96.0	9.1	10.0	32000.	28.4
			3.0	--	--	--	--	102.0	9.7	9.5	32000.	28.8
			6.0	--	--	--	--	104.0	9.9	9.5	32000.	28.8
01/13/73	1615	2	1.0	10.0	3	--	--	112.0	11.6	6.0	29000.	27.9
			2.0	--	--	--	--	110.0	11.4	6.0	29000.	28.2
			3.0	--	--	--	--	110.0	11.4	6.0	29000.	28.2
02/20/73	0945	2	1.0	12.0	3	--	--	108.0	10.0	11.0	31500.	27.6
			3.0	--	--	--	--	106.0	9.8	11.0	31500.	27.6
			5.5	--	--	--	--	106.0	9.8	11.0	31500.	27.6
03/10/73	0001	2	1.0	24.0	--	--	--	--	--	22.5	42000.	28.5
			2.0	--	--	--	--	--	--	22.5	42000.	28.5
			4.0	--	--	--	--	--	--	22.0	42000.	28.9
04/13/73	1146	2	1.0	19.8	2	9.0	67.	98.0	7.4	20.0	40500.	28.4
			2.2	--	--	--	--	99.0	7.5	20.0	40500.	28.4

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
						LINE 147 CONTINUED						
05/15/73	1125	5	2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
06/16/73	1125	5	1.0	--	--	.10	.20	.03	.005	.010	.05	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
						LINE 200						
10/16/72	1405	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/20/72	1450	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			8.5	--	--	--	--	--	--	--	--	--
12/18/72	1600	2	1.0	--	--	.20	.30	.04	.017	.060	.07	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
01/13/73	1615	2	1.0	--	--	.30	.30	.06	.008	.070	.08	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
02/20/73	0945	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
03/10/73	0001	2	1.0	--	--	.10	.30	.03	.005	.030	.04	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
04/13/73	1146	2	1.0	--	--	--	--	--	--	--	--	--
			2.2	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L		?				
LINE 147 CONTINUED											
05/15/73	1125	5	2.0	--	--						
			4.0	--	--						
06/16/73	1125	5	1.0	11.0	16.0						
			2.0	--	--						
			3.0	--	--						
			4.0	--	--						
LINE 200											
10/16/72	1405	2	1.0	--	--						
			2.5	--	--						
			5.0	--	--						
11/20/72	1450	2	1.0	--	--						
			4.0	--	--						
			8.5	--	--						
12/18/72	1600	2	1.0	15.0	15.0						
			3.0	--	--						
			6.0	--	--						
01/13/73	1615	2	1.0	--	--						
			2.0	--	--						
			3.0	--	--						
02/20/73	0945	2	1.0	22.0	21.0						
			3.0	--	--						
			5.5	--	--						
03/10/73	0001	2	1.0	11.0	18.0						
			2.0	--	--						
			4.0	--	--						
04/13/73	1146	2	1.0	5.0	26.0						
			2.2	--	--						

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 200 CONTINUED							
04/13/73	1146	2	4.0	--	--	--	--	99.0	7.5	20.1	40500.	28.4
05/10/73	1140	2	1.0	25.0	2	13.0	135.	94.0	6.7	25.0	39000.	24.4
			2.0	--	--	--	--	93.0	6.6	25.0	39000.	24.4
			4.0	--	--	--	--	90.0	6.4	25.0	39000.	24.4
06/14/73	1300	2	1.0	30.0	3	17.0	135.	79.0	5.9	27.9	15000.	8.2
			2.0	--	--	--	--	79.0	5.9	27.9	15000.	8.2
			3.0	--	--	--	--	79.0	5.9	27.9	15000.	8.2
			4.0	--	--	--	--	--	--	--	--	--
					LINE 44							
10/13/72	0915	2	1.0	24.9	--	--	--	83.0	6.4	27.0	11500.	6.2
			2.5	--	--	--	--	82.0	6.3	27.0	11500.	6.2
			5.0	--	--	--	--	79.0	6.1	27.0	11500.	6.2
11/13/72	1310	2	1.0	18.5	2	--	--	92.0	7.7	21.0	15000.	9.4
			3.0	--	--	--	--	120.0	10.1	21.0	15000.	9.4
			5.0	--	--	--	--	120.0	10.1	21.0	15000.	9.5
12/14/72	0800	2	1.0	6.5	2	--	--	119.0	13.4	7.0	13000.	11.4
			2.5	--	--	--	--	135.0	15.3	7.0	13000.	11.4
			4.0	--	--	--	--	162.0	18.3	7.0	13000.	11.4
01/14/73	0925	2	1.0	13.0	2	--	--	118.0	13.5	5.7	14250.	13.3
			2.0	--	--	--	--	118.0	13.3	6.2	15000.	13.8
			4.0	--	--	--	--	146.0	16.3	6.7	15000.	13.8
02/13/73	1005	2	1.0	19.0	2	--	--	106.0	9.7	15.0	20000.	15.1
			2.5	--	--	--	--	108.0	9.9	15.0	20000.	15.1
			5.0	--	--	--	--	104.0	9.5	15.0	20000.	15.3
03/11/73	0925	2	1.0	22.0	2	--	--	88.0	7.1	21.0	24000.	15.7
			2.5	--	--	--	--	88.0	7.2	20.5	24000.	15.8
			4.5	--	--	--	--	88.0	7.2	20.5	24000.	15.8

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 200 CONTINUED							
04/13/73	1146	2	4.0	--	--	--	--	--	--	--	--	--
05/10/73	1140	2	1.0	--	--	--	--	--	--	--	--	.0002
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
06/14/73	1300	2	1.0	--	--	.10	.80	.03	.005	.030	.12	.0005
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
					LINE 44							
10/13/72	0915	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/13/72	1310	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
12/14/72	0800	2	1.0	--	--	.20	.70	.26	.005	.020	.16	--
			2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
01/14/73	0925	2	1.0	--	--	.40	1.40	.03	.005	.070	.09	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
02/13/73	1005	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
03/11/73	0925	2	1.0	--	--	.80	.20	.03	.030	.010	.03	--
			2.5	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLE DEPTH FEET	ORGANIC CARBON MG/L	INORGANIC CARBON MG/L
				LINE 200 CONTINUED	
04/13/73	1146	2	4.0	--	--
05/10/73	1140	2	1.0	11.0	24.0
			2.0	--	--
			4.0	--	--
06/14/73	1300	2	1.0	18.0	20.0
			2.0	--	--
			3.0	--	--
			4.0	--	--
				LINE 44	
10/13/72	0915	2	1.0	--	--
			2.5	--	--
			5.0	--	--
11/13/72	1310	2	1.0	--	--
			3.0	--	--
			5.0	--	--
12/14/72	0800	2	1.0	23.0	18.0
			2.5	--	--
			4.0	--	--
01/14/73	0925	2	1.0	--	--
			2.0	--	--
			4.0	--	--
02/13/73	1005	2	1.0	15.0	24.0
			2.5	--	--
			5.0	--	--
03/11/73	0925	2	1.0	13.0	18.0
			2.5	--	--
			4.5	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 44 CONTINUED							
04/12/73	0925	2	1.0	19.2	2	6.0	112.	84.0	7.3	17.0	24000.	17.3
			2.5	--	--	--	--	84.0	7.3	17.0	24000.	17.3
			4.0	--	--	--	--	84.0	7.3	17.0	24000.	17.3
05/11/73	0920	2	1.0	25.0	2	--	90	86.0	6.3	25.1	30000.	18.3
			2.0	--	--	--	--	85.0	6.2	25.2	30000.	18.3
			3.0	--	--	--	--	84.0	6.2	25.2	30000.	18.3
06/15/73	0930	2	1.0	26.2	2	10.0	180	39.0	3.2	26.0	500.	.0
			2.5	--	--	--	--	38.5	3.1	25.8	500.	.0
			4.0	--	--	--	--	39.0	3.2	25.5	500.	.0
			5.0	--	--	--	--	--	--	--	--	--
					LINE 54							
10/13/72	0950	1	1.0	24.5	--	--	--	87.0	6.7	26.5	15000.	8.4
			3.5	--	--	--	--	85.0	6.5	26.5	15000.	8.4
			7.0	--	--	--	--	85.0	6.4	26.5	19000.	10.9
11/13/72	1400	1	1.0	19.5	2	--	--	87.0	7.2	21.0	17000.	10.8
			4.0	--	--	--	--	87.0	7.2	21.0	17000.	10.8
			8.0	--	--	--	--	87.0	7.2	21.0	17000.	11.0
12/14/72	0915	1	1.0	7.2	2	--	--	102.0	11.2	7.5	15000.	13.3
			3.5	--	--	--	--	125.0	13.8	7.5	15000.	13.3
			6.0	--	--	--	--	173.0	19.1	7.5	15000.	13.3
01/14/73	1020	1	1.0	10.5	2	--	--	114.0	13.5	4.5	14000.	13.5
			3.5	--	--	--	--	115.0	13.6	4.5	14000.	13.5
			6.0	--	--	--	--	116.0	13.6	4.7	14750.	14.2
02/13/73	1050	1	1.0	18.0	2	--	--	112.0	10.5	13.5	20000.	15.9
			4.0	--	--	--	--	110.0	10.4	13.0	20000.	16.1
			8.0	--	--	--	--	116.0	11.1	12.5	20000.	16.1
03/11/73	1025	1	1.0	19.0	2	--	--	82.0	6.6	21.0	24500.	15.8

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	VSAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 44 CONTINUED							
04/12/73	0925	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
05/11/73	0920	2	1.0	--	--	--	--	--	--	--	--	.0002
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
06/15/73	0930	2	1.0	--	--	.10	1.40	.16	.015	.160	.39	.0004
			2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
					LINE 54							
10/13/72	0950	1	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
11/13/72	1400	1	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
12/14/72	0915	1	1.0	--	--	.10	.50	.03	.005	.060	.07	--
			3.5	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
01/14/73	1020	1	1.0	--	--	.20	.20	.04	.005	.040	.07	--
			3.5	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
02/13/73	1050	1	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
03/11/73	1025	1	1.0	--	--	.10	.30	.03	.005	.020	.03	--

DATE OF COLLECTION	TIME	SITE	SAMPLE DEPTH FEET	ORGANIC CARBON MG/L	INORGANIC CARBON MG/L
				LINE 49 CONTINUED	
04/12/73	0925	2	1.0	7.0	27.0
			2.5	--	--
			4.0	--	--
05/11/73	0920	2	1.0	12.0	29.0
			2.0	--	--
			3.0	--	--
06/15/73	0930	2	1.0	23.0	10.0
			2.5	--	--
			4.0	--	--
			5.0	--	--
				LINE 54	
10/13/72	0950	1	1.0	--	--
			3.5	--	--
			7.0	--	--
11/13/72	1400	1	1.0	--	--
			4.0	--	--
			8.0	--	--
12/14/72	0915	1	1.0	--	--
			3.5	--	--
			6.0	--	--
01/14/73	1020	1	1.0	--	--
			3.5	--	--
			6.0	--	--
02/13/73	1050	1	1.0	19.0	19.0
			4.0	--	--
			8.0	--	--
03/11/73	1025	1	1.0	8.0	19.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 54 CONTINUED							
03/11/73	1025	1	3.5	--	--	--	--	82.0	6.6	21.0	24500.	15.8
			6.0	--	--	--	--	82.0	6.6	21.0	24500.	16.0
04/12/73	1005	1	1.0	19.0	2	9.0	112.	100.0	8.7	17.0	23000.	16.6
			3.0	--	--	--	--	100.0	8.7	17.0	23000.	16.6
			6.0	--	--	--	--	100.0	8.7	17.0	23000.	16.6
05/11/73	1005	1	1.0	25.0	2	7.0	90.	99.0	7.3	25.3	29900.	18.2
			2.5	--	--	--	--	99.0	7.3	25.3	29900.	18.2
			5.0	--	--	--	--	99.0	7.3	25.3	29900.	18.2
06/15/73	1030	1	1.0	27.5	2	11.0	157.	91.0	6.5	27.0	28500.	16.8
			4.0	--	--	--	--	88.5	6.4	26.8	28700.	16.9
			7.0	--	--	--	--	91.0	6.5	26.8	28800.	16.9
			8.0	--	--	--	--	--	--	--	--	--
10/13/72	1025	3	1.0	26.0	--	--	--	90.0	6.8	27.0	17000.	9.6
			3.0	--	--	--	--	90.0	6.8	27.0	17000.	9.6
			5.5	--	--	--	--	89.0	6.6	27.0	17000.	9.6
11/13/72	1445	3	1.0	21.5	2	--	--	105.0	8.8	20.9	15000.	9.7
			4.0	--	--	--	--	105.0	8.8	20.8	15000.	9.7
			7.0	--	--	--	--	103.0	8.7	20.8	15000.	9.7
12/14/72	1030	3	1.0	7.1	2	--	--	114.0	12.7	7.8	12000.	10.5
			2.5	--	--	--	--	127.0	14.2	7.8	12000.	10.5
			4.0	--	--	--	--	135.0	15.1	7.8	12000.	10.5
01/14/73	1108	3	1.0	12.5	2	--	--	128.0	14.8	5.7	13000.	11.9
			2.0	--	--	--	--	124.0	14.1	6.0	15000.	13.7
			4.0	--	--	--	--	126.0	14.3	6.0	15000.	13.7
02/13/73	1120	3	1.0	16.0	6	--	--	114.0	10.9	13.5	17500.	13.6
			2.5	--	--	--	--	104.0	10.0	13.0	17500.	13.6
			5.0	--	--	--	--	108.0	10.6	12.0	18000.	14.4
03/11/73	1107	3	1.0	21.2	2	--	--	88.0	7.0	22.0	24800.	16.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 54 CONTINUED							
03/11/73	1025	1	3.5	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
04/12/73	1005	1	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
05/11/73	1005	1	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
06/15/73	1030	1	1.0	--	--	.10	.40	.03	.005	.030	.09	--
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
10/13/72	1025	3	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
11/13/72	1445	3	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
12/14/72	1030	3	1.0	--	--	.20	.20	.03	.005	.030	.06	--
			2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
01/14/73	1108	3	1.0	--	--	.20	.20	.03	.005	.020	.04	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
02/13/73	1120	3	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
03/11/73	1107	3	1.0	--	--	.10	.40	.03	.005	.030	.04	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					

LINE 54 CONTINUED

03/11/73	1025	1	3.5	--	--
			6.0	--	--
04/12/73	1005	1	1.0	11.0	16.0
			3.0	--	--
			6.0	--	--
05/11/73	1005	1	1.0	14.0	24.0
			2.5	--	--
			5.0	--	--
06/15/73	1030	1	1.0	35.0	17.0
			4.0	--	--
			7.0	--	--
			8.0	--	--
10/13/72	1025	3	1.0	--	--
			3.0	--	--
			5.5	--	--
11/13/72	1445	3	1.0	--	--
			4.0	--	--
			7.0	--	--
12/14/72	1030	3	1.0	--	--
			2.5	--	--
			4.0	--	--
01/14/73	1108	3	1.0	--	--
			2.0	--	--
			4.0	--	--
02/13/73	1120	3	1.0	21.0	19.0
			2.5	--	--
			5.0	--	--
03/11/73	1107	3	1.0	8.0	19.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 54 CONTINUED							
03/11/73	1107	3	2.5	--	--	--	--	88.0	7.0	22.0	24800.	16.2
			4.0	--	--	--	--	88.0	7.0	21.5	24800.	16.2
04/13/73	1040	3	1.0	19.0	3	10.0	112	102.0	8.8	17.5	24000.	17.1
			2.0	--	--	--	--	102.0	8.8	17.5	24000.	17.1
05/11/73	1050	3	1.0	24.9	--	9.0	90	96.0	7.2	25.2	26500.	16.0
			2.0	--	--	--	--	96.0	7.2	25.2	16000.	16.0
06/15/73	1120	3	1.0	27.0	3	14.0	157	68.5	5.5	26.5	1200.	.1
			3.0	--	--	--	--	68.8	5.5	26.5	1500.	.3
			5.0	--	--	--	--	67.5	5.4	26.5	1500.	.3
					LINE 77							
10/13/72	1130	2	1.0	26.5	--	--	--	91.0	6.6	27.5	24200.	13.9
			7.0	--	--	--	--	87.0	6.5	27.0	24200.	14.0
			13.0	--	--	--	--	78.0	5.7	27.0	26000.	15.2
11/13/72	1535	2	1.0	21.0	2	--	--	108.0	8.9	20.8	20000.	13.2
			6.0	--	--	--	--	111.0	9.2	20.5	20000.	13.2
			12.0	--	--	--	--	111.0	9.2	20.1	21000.	13.9
12/14/72	1225	2	1.0	8.0	2	--	--	105.0	11.4	8.0	16000.	14.1
			6.5	--	--	--	--	132.0	14.3	8.0	16000.	14.1
			12.0	--	--	--	--	185.0	19.8	8.5	16000.	14.1
01/14/73	1200	2	1.0	10.0	2	--	--	116.0	13.3	5.5	15000.	14.1
			6.2	--	--	--	--	120.0	14.1	4.0	17000.	16.5
			12.0	--	--	--	--	120.0	13.9	4.2	18250.	17.7
02/13/73	1210	2	1.0	16.0	2	--	--	106.0	9.8	13.5	22500.	18.1
			6.5	--	--	--	--	104.0	9.7	12.2	25000.	20.8
			13.0	--	--	--	--	106.0	9.9	12.2	26000.	21.7
03/11/73	1227	2	1.0	25.0	2	--	--	96.7	7.3	22.8	31000.	20.2

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
LINE 54 CONTINUED												
03/11/73	1107	3	2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
04/13/73	1040	3	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
05/11/73	1050	3	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
06/15/73	1120	3	1.0	--	--	.10	.80	.11	.013	.070	.17	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
LINE 77												
10/13/72	1130	2	1.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
11/13/72	1535	2	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
12/14/72	1225	2	1.0	--	--	.10	.40	.03	.005	.040	.07	--
			6.5	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
01/14/73	1200	2	1.0	--	--	.30	.10	.03	.005	.030	.05	--
			6.2	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
02/13/73	1210	2	1.0	--	--	--	--	--	--	--	--	--
			6.5	--	--	--	--	--	--	--	--	--
			13.0	--	--	--	--	--	--	--	--	--
03/11/73	1227	2	1.0	--	--	.10	.40	.03	.005	.030	.04	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L						

LINE 54 CONTINUED

03/11/73	1107	3	2.5	--	--
			4.0	--	--
04/13/73	1040	3	1.0	14.0	15.0
			2.0	--	--
05/11/73	1050	3	1.0	11.0	24.0
			2.0	--	--
06/15/73	1120	3	1.0	28.0	14.0
			3.0	--	--
			5.0	--	--

LINE 77

10/13/72	1130	2	1.0	--	--
			7.0	--	--
			13.0	--	--
11/13/72	1535	2	1.0	--	--
			6.0	--	--
			12.0	--	--
12/14/72	1225	2	1.0	--	--
			6.5	--	--
			12.0	--	--
01/14/73	1200	2	1.0	--	--
			6.2	--	--
			12.0	--	--
02/13/73	1210	2	1.0	19.0	21.0
			6.5	--	--
			13.0	--	--
03/11/73	1227	2	1.0	11.0	22.0

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 77 CONTINUED							
03/11/73	1227	2	6.0	--	--	--	--	97.0	7.4	22.5	31000.	20.2
			11.0	--	--	--	--	98.0	7.5	22.5	31000.	20.3
04/12/73	1120	2	1.0	19.2	2	10.0	135	100.0	8.4	17.5	27000.	19.5
			5.0	--	--	--	--	99.0	8.4	17.0	27000.	19.5
			10.0	--	--	--	--	98.0	8.4	17.0	26900.	19.6
05/11/73	1140	2	1.0	24.9	2	10.0	90.	99.0	7.4	25.3	27000.	16.3
			5.0	--	--	--	--	97.0	7.2	25.3	26200.	15.7
			10.0	--	--	--	--	96.0	7.2	25.3	26200.	15.7
06/15/73	1300	2	1.0	28.5	2	5.0	180	95.0	6.8	27.5	28000.	16.2
			6.0	--	--	--	--	94.5	6.7	27.5	29000.	16.9
			11.0	--	--	--	--	94.5	6.8	27.0	29000.	17.0
			12.0	--	--	--	--	--	--	--	--	--
					LINE 100							
10/13/72	1230	2	1.0	29.0	--	--	--	96.0	7.0	28.0	21000.	11.9
			2.5	--	--	--	--	94.5	6.9	27.5	22000.	12.6
			5.0	--	--	--	--	94.0	6.9	27.5	23000.	13.3
11/13/72	1630	2	1.0	18.0	--	--	--	98.0	7.9	21.0	25000.	16.5
			2.5	--	--	--	--	96.0	7.7	21.0	25000.	16.5
			4.5	--	--	--	--	96.0	7.7	21.0	25000.	16.5
12/14/72	1400	2	1.0	7.2	2	--	--	96.0	10.5	7.5	16000.	14.2
			2.0	--	--	--	--	112.0	12.3	7.5	16000.	14.2
			3.0	--	--	--	--	120.0	13.2	7.5	16000.	14.2
01/14/73	1335	2	1.0	12.5	2	--	--	132.0	14.4	7.0	18000.	16.5
			2.0	--	--	--	--	128.0	14.1	6.5	18000.	16.3
			3.0	--	--	--	--	128.0	14.1	6.5	18000.	16.3
02/13/73	1330	2	1.0	17.5	2	--	--	112.0	9.9	15.5	24500.	19.1
			2.5	--	--	--	--	115.0	10.2	15.0	24500.	19.3

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 77 CONTINUED							
03/11/73	1227	2	6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
04/12/73	1120	2	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
05/11/73	1140	2	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
06/15/73	1300	2	1.0	--	--	.10	.50	.03	.007	.030	.05	--
			6.0	--	--	--	--	--	--	--	--	--
			11.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
					LINE 100							
10/13/72	1230	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/13/72	1630	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
12/14/72	1400	2	1.0	--	--	.10	.90	.06	.005	.060	.10	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
01/14/73	1335	2	1.0	--	--	.10	.30	.03	.005	.020	.04	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
02/13/73	1330	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
				LINE 77 CONTINUED						
03/11/73	1227	2	6.0	--	--					
			11.0	--	--					
04/12/73	1120	2	1.0	14.0	15.0					
			5.0	--	--					
			10.0	--	--					
05/11/73	1140	2	1.0	10.0	25.0					
			5.0	--	--					
			10.0	--	--					
06/15/73	1300	2	1.0	15.0	17.0					
			6.0	--	--					
			11.0	--	--					
			12.0	--	--					
				LINE 100						
10/13/72	1230	2	1.0	--	--					
			2.5	--	--					
			5.0	--	--					
11/13/72	1630	2	1.0	--	--					
			2.5	--	--					
			4.5	--	--					
12/14/72	1400	2	1.0	24.0	14.0					
			2.0	--	--					
			3.0	--	--					
01/14/73	1335	2	1.0	--	--					
			2.0	--	--					
			3.0	--	--					
02/13/73	1330	2	1.0	13.0	26.0					
			2.5	--	--					

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 100 CONTINUED							
02/13/73	1330	2	5.0	--	--	--	--	115.0	10.2	15.0	24500.	19.3
03/11/73	1410	2	1.0	22.0	--	--	--	--	--	23.0	34000.	22.4
			2.0	--	--	--	--	--	--	23.0	34000.	22.4
			3.5	--	--	--	--	--	--	23.0	34000.	22.4
04/12/73	1240	2	1.0	19.0	2	9.0	135	98.0	8.1	18.5	28000.	19.8
			2.0	--	--	--	--	98.0	8.1	18.5	28000.	19.8
05/11/73	1255	2	1.0	25.5	2	11.0	135	87.0	6.6	26.2	20000.	11.5
			2.0	--	--	--	--	87.0	6.6	26.2	20000.	11.5
06/15/73	1413	2	1.0	27.1	2	10.0	10	96.5	6.8	28.5	27000.	15.3
			1.5	--	--	--	--	97.0	6.8	28.5	27000.	15.2
			3.0	--	--	--	--	97.0	6.8	28.5	27000.	15.3
			3.5	--	--	--	--	--	--	--	--	--
					LINE 104							
10/13/72	1309	2	1.0	28.5	--	--	--	93.5	6.8	28.5	22000.	12.3
			3.5	--	--	--	--	99.0	7.2	28.0	23000.	13.1
			7.0	--	--	--	--	99.0	7.1	28.0	29000.	16.9
11/16/72	1130	2	1.0	15.5	2	--	--	104.0	9.3	15.0	25000.	19.2
			3.0	--	--	--	--	106.0	9.4	15.0	25000.	19.2
			5.0	--	--	--	--	106.0	9.5	14.9	25000.	19.2
12/14/72	1600	2	1.0	7.2	--	--	--	100.0	10.5	7.8	21500.	19.5
			3.0	--	--	--	--	166.0	17.5	7.8	21500.	19.5
			5.0	--	--	--	--	180.0	18.9	7.8	21500.	19.5
01/14/73	1500	2	1.0	10.5	--	--	--	126.0	13.6	6.0	23500.	22.0
			3.0	--	--	--	--	128.0	14.0	5.2	23000.	22.3
			5.0	--	--	--	--	136.0	15.0	5.0	23000.	22.3
02/13/73	1400	2	1.0	--	2	--	--	104.0	8.8	16.0	30000.	23.5

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
						LINE 100 CONTINUED						
02/13/73	1330	2	5.0	--	--	--	--	--	--	--	--	--
03/11/73	1410	2	1.0	--	--	.10	.10	.03	.005	.030	.04	--
			2.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
04/12/73	1240	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
05/11/73	1255	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
06/15/73	1413	2	1.0	--	--	.10	.60	.04	.005	.020	.06	--
			1.5	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
						LINE 104						
10/13/72	1309	2	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
11/16/72	1130	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
12/14/72	1600	2	1.0	--	--	.10	.40	.03	.005	.050	.07	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
01/14/73	1500	2	1.0	--	--	.30	.10	.03	.005	.030	.05	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
02/13/73	1400	2	1.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
LINE 100 CONTINUED										
02/13/73	1330	2	5.0	--	--					
03/11/73	1410	2	1.0	8.0	22.0					
			2.0	--	--					
			3.5	--	--					
04/12/73	1240	2	1.0	8.0	28.0					
			2.0	--	--					
05/11/73	1255	2	1.0	15.0	28.0					
			2.0	--	--					
06/15/73	1413	2	1.0	22.0	17.0					
			1.5	--	--					
			3.0	--	--					
			3.5	--	--					
LINE 104										
10/13/72	1309	2	1.0	--	--					
			3.5	--	--					
			7.0	--	--					
11/16/72	1130	2	1.0	--	--					
			3.0	--	--					
			5.0	--	--					
12/14/72	1600	2	1.0	22.0	20.0					
			3.0	--	--					
			5.0	--	--					
01/14/73	1500	2	1.0	--	--					
			3.0	--	--					
			5.0	--	--					
02/13/73	1400	2	1.0	10.0	24.0					

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 104 CONTINUED							
02/13/73	1400	2	3.0	--	--	--	--	104.0	8.8	16.0	30000.	23.5
			6.0	--	--	--	--	104.0	8.8	16.0	30000.	23.5
03/11/73	1620	2	1.0	23.0	2	--	--	--	--	23.0	36000.	23.8
			3.0	--	--	--	--	--	--	23.0	36000.	23.8
			5.5	--	--	--	--	--	--	23.0	36000.	23.8
04/12/73	1340	2	1.0	18.5	2	6.0	135.	108.0	8.8	18.2	31000.	22.2
			2.5	--	--	--	--	108.0	8.9	18.0	31000.	22.2
			4.0	--	--	--	--	106.0	8.7	18.0	31000.	22.2
05/11/73	1400	2	1.0	26.0	2	13.0	135.	108.0	7.7	26.9	31500.	18.8
			2.0	--	--	--	--	106.0	7.5	26.8	31500.	18.8
			3.0	--	--	--	--	106.0	7.5	26.8	31500.	18.8
06/15/73	1525	2	1.0	27.2	2	11.0	135.	89.0	6.1	28.3	35500.	20.8
			3.0	--	--	--	--	88.0	6.1	28.3	35500.	20.8
			5.0	--	--	--	--	88.0	6.1	28.3	35500.	20.8
			6.0	--	--	--	--	--	--	--	--	--
10/13/72	1204	6	1.0	27.0	--	--	--	98.0	7.1	28.0	22000.	12.5
			3.5	--	--	--	--	96.5	7.6	27.0	23000.	13.3
			7.0	--	--	--	--	91.0	6.6	27.0	27000.	15.8
11/13/72	1605	6	1.0	19.5	3	--	--	99.0	8.0	20.1	26000.	17.4
			3.5	--	--	--	--	99.0	8.0	20.1	26000.	17.4
			6.5	--	--	--	--	99.0	8.1	19.9	26000.	17.4
12/14/72	1314	6	1.0	8.5	2	--	--	98.0	10.4	8.5	17500.	15.5
			3.5	--	--	--	--	124.0	13.2	8.5	17500.	15.5
			6.0	--	--	--	--	148.0	15.6	8.8	17500.	15.5
01/14/73	1303	6	1.0	10.7	2	--	--	126.0	13.6	7.0	19500.	17.7
			3.2	--	--	--	--	135.0	15.2	5.0	19500.	18.8
			6.0	--	--	--	--	160.0	17.9	5.0	20000.	19.9
02/13/73	1300	6	1.0	16.5	2	--	--	108.0	9.7	14.0	26000.	20.9

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 104 CONTINUED							
02/13/73	1400	2	3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
03/11/73	1620	2	1.0	--	--	.10	.30	.03	.005	.030	.03	--
			3.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
04/12/73	1340	2	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
05/11/73	1400	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
06/15/73	1525	2	1.0	--	--	.10	.80	.07	.009	.040	.10	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
10/13/72	1204	6	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
11/13/72	1605	6	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			6.5	--	--	--	--	--	--	--	--	--
12/14/72	1314	6	1.0	--	--	.20	.20	.04	.009	.070	.07	--
			3.5	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
01/14/73	1303	6	1.0	--	--	.10	.50	.03	.005	.020	.07	--
			3.2	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
02/13/73	1300	6	1.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L						

LINE 104 CONTINUED

02/13/73	1400	2	3.0	--	--
			6.0	--	--
03/11/73	1620	2	1.0	8.0	22.0
			3.0	--	--
			5.5	--	--
04/12/73	1340	2	1.0	4.0	26.0
			2.5	--	--
			4.0	--	--
05/11/73	1400	2	1.0	10.0	25.0
			2.0	--	--
			3.0	--	--
06/15/73	1525	2	1.0	28.0	14.0
			3.0	--	--
			5.0	--	--
			6.0	--	--
10/13/72	1204	6	1.0	--	--
			3.5	--	--
			7.0	--	--
11/13/72	1605	6	1.0	--	--
			3.5	--	--
			6.5	--	--
12/14/72	1314	6	1.0	--	--
			3.5	--	--
			6.0	--	--
01/14/73	1303	6	1.0	--	--
			3.2	--	--
			6.0	--	--
02/13/73	1300	6	1.0	10.0	24.0

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR, FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 104 CONTINUED							
02/13/73	1300	6	3.5	--	--	--	--	112.0	10.2	13.0	27000.	22.6
			7.0	--	--	--	--	114.0	10.4	13.0	27000.	22.6
03/11/73	1330	6	1.0	23.0	2	--	--	--	--	23.0	34000.	22.4
			3.5	--	--	--	--	--	--	23.0	34000.	22.4
			7.0	--	--	--	--	--	--	23.0	34000.	22.4
04/12/73	1215	6	1.0	18.5	2	9.0	112	99.0	8.2	17.8	29000.	21.0
			3.0	--	--	--	--	99.0	8.2	17.8	29000.	21.0
			5.0	--	--	--	--	98.0	8.1	17.8	29000.	21.0
05/11/73	1235	6	1.0	25.0	2	13.0	90	99.0	7.3	26.0	26800.	16.1
			2.5	--	--	--	--	99.0	7.3	26.0	26800.	16.1
			5.0	--	--	--	--	98.0	7.2	26.0	26800.	16.1
06/15/73	1337	6	1.0	27.0	2	11.0	157	98.5	6.8	27.5	35500.	21.0
			2.5	--	--	--	--	98.5	6.8	28.0	35500.	21.0
			5.0	--	--	--	--	87.0	6.0	27.5	37000.	21.9
			5.5	--	--	--	--	--	--	--	--	--
					LINE 115							
10/13/72	1343	5	1.0	28.5	--	--	--	99.5	7.2	28.5	23000.	13.0
			2.5	--	--	--	--	93.5	6.8	27.9	23000.	13.0
			5.0	--	--	--	--	93.5	6.8	27.5	26000.	14.9
11/16/72	1045	5	1.0	16.8	2	--	--	106.0	9.5	15.0	24500.	18.8
			2.5	--	--	--	--	108.0	9.6	15.0	24500.	18.8
			4.5	--	--	--	--	110.0	9.8	15.0	24500.	18.8
12/14/72	1515	5	1.0	7.8	2	--	--	115.0	12.0	8.2	21500.	19.5
			2.0	--	--	--	--	160.0	16.7	8.2	21500.	19.5
			4.0	--	--	--	--	136.0	14.2	8.2	21500.	19.5
01/14/73	1425	5	1.0	10.5	2	--	--	128.0	13.6	6.5	23750.	21.8
			2.5	--	--	--	--	128.0	13.4	7.2	23500.	21.6

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 104 CONTINUED							
02/13/73	1300	6	3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
03/11/73	1330	6	1.0	--	--	.10	.40	.03	.005	.030	.04	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
04/12/73	1215	6	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
05/11/73	1235	6	1.0	--	--	--	--	--	--	--	--	.0004
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
06/15/73	1337	6	1.0	--	--	.10	.40	.04	.008	.020	.03	.0001
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
					LINE 115							
10/13/72	1343	5	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
11/16/72	1045	5	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
12/14/72	1515	5	1.0	--	--	.10	.30	.03	.008	.060	.07	--
			2.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
01/14/73	1425	5	1.0	--	--	.20	.20	.03	.005	.040	.07	--
			2.5	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
			LINE 104 CONTINUED		
02/13/73	1300	6	3.5	--	--
			7.0	--	--
03/11/73	1330	6	1.0	11.0	19.0
			3.5	--	--
			7.0	--	--
04/12/73	1215	6	1.0	6.0	28.0
			3.0	--	--
			5.0	--	--
05/11/73	1235	6	1.0	12.0	26.0
			2.5	--	--
			5.0	--	--
06/15/73	1337	6	1.0	16.0	19.0
			2.5	--	--
			5.0	--	--
			5.5	--	--
			LINE 115		
10/13/72	1343	5	1.0	--	--
			2.5	--	--
			5.0	--	--
11/16/72	1045	5	1.0	--	--
			2.5	--	--
			4.5	--	--
12/14/72	1515	5	1.0	--	--
			2.0	--	--
			4.0	--	--
01/14/73	1425	5	1.0	--	--
			2.5	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 115 CONTINUED							
01/14/73	1425	5	4.0	--	--	--	--	148.0	15.5	7.2	23250.	21.5
02/13/73	1430	5	1.0	20.0	2	--	--	120.0	9.9	17.0	32000.	24.6
			2.5	--	--	--	--	118.0	9.8	16.5	32000.	24.9
			5.0	--	--	--	--	120.0	10.0	16.5	32000.	24.9
03/11/73	1450	5	1.0	23.0	2	--	--	--	--	23.5	36500.	23.9
			2.5	--	--	--	--	--	--	23.5	36500.	23.9
			4.5	--	--	--	--	--	--	23.5	36500.	23.9
04/12/73	1315	5	1.0	18.5	2	6.0	135	100.0	8.1	18.5	31000.	22.1
			2.0	--	--	--	--	100.0	8.1	18.5	31000.	22.1
			3.0	--	--	--	--	100.0	8.1	18.5	31000.	22.1
05/11/73	0001	5	1.0	25.1	2	13.0	90	92.0	6.9	26.5	21000.	12.1
			2.0	--	--	--	--	92.0	6.9	26.5	21000.	12.1
06/15/73	1450	5	1.0	28.5	2	13.0	157	87.0	5.9	28.5	38500.	22.6
			3.0	--	--	--	--	87.0	5.9	28.5	38250.	22.4
			6.0	--	--	--	--	88.0	5.9	28.5	38250.	22.4
					LINE 120							
10/13/72	1434	3	1.0	28.0	--	--	--	97.5	6.9	29.2	27000.	15.3
			5.0	--	--	--	--	98.0	6.9	28.7	27000.	15.6
			10.0	--	--	--	--	97.0	6.9	28.0	28000.	16.3
11/16/72	1220	3	1.0	17.9	2	--	--	105.0	9.5	16.0	19000.	14.0
			6.0	--	--	--	--	105.0	9.6	15.2	20000.	14.8
			10.0	--	--	--	--	105.0	9.5	15.2	21000.	15.8
12/14/72	1700	3	1.0	8.5	2	--	--	128.0	13.3	9.0	19500.	17.2
			6.0	--	--	--	--	150.0	15.6	9.0	19500.	17.2
			12.0	--	--	--	--	156.0	16.1	9.0	20000.	17.7
01/14/73	1533	3	1.0	9.5	2	--	--	120.0	13.2	6.5	18000.	16.6

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 115 CONTINUED							
01/14/73	1425	5	4.0	--	--	--	--	--	--	--	--	--
02/13/73	1430	5	1.0	--	--	--	--	--	--	--	--	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
03/11/73	1450	5	1.0	--	--	.10	.30	.03	.005	.030	.30	--
			2.5	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
04/12/73	1315	5	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
05/11/73	0001	5	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
06/15/73	1450	5	1.0	--	--	.20	.40	.03	.014	.040	.08	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
					LINE 120							
10/13/72	1434	3	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
11/16/72	1220	3	1.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
12/14/72	1700	3	1.0	--	--	.10	.40	.03	.005	.040	.05	--
			6.0	--	--	--	--	--	--	--	--	--
			12.0	--	--	--	--	--	--	--	--	--
01/14/73	1533	3	1.0	--	--	.20	.20	.03	.005	.030	.05	--

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 115 CONTINUED	
01/14/73	1425	5	4.0	--	--
02/13/73	1430	5	1.0	15.0	29.0
			2.5	--	--
			5.0	--	--
03/11/73	1450	5	1.0	11.0	23.0
			2.5	--	--
			4.5	--	--
04/12/73	1315	5	1.0	11.0	20.0
			2.0	--	--
			3.0	--	--
05/11/73	0001	5	1.0	12.0	28.0
			2.0	--	--
06/15/73	1450	5	1.0	15.0	20.0
			3.0	--	--
			6.0	--	--
				LINE 120	
10/13/72	1434	3	1.0	--	--
			5.0	--	--
			10.0	--	--
11/16/72	1220	3	1.0	--	--
			6.0	--	--
			10.0	--	--
12/14/72	1700	3	1.0	--	--
			6.0	--	--
			12.0	--	--
01/14/73	1533	3	1.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 120 CONTINUED							
01/14/73	1533	3	5.0	--	--	--	--	122.0	14.0	4.7	18250.	17.5
			9.0	--	--	--	--	136.0	15.4	4.7	19000.	18.8
02/13/73	1535	3	1.0	17.5	--	--	--	112.0	10.0	14.0	26500.	21.6
			5.0	--	--	--	--	108.0	9.8	13.0	27500.	22.8
			10.0	--	--	--	--	116.0	10.5	13.0	27500.	22.8
03/11/73	1624	3	1.0	20.0	--	--	--	--	--	22.5	32000.	21.1
			5.0	--	--	--	--	--	--	22.5	32000.	21.1
			10.0	--	--	--	--	--	--	22.5	32000.	21.1
04/12/73	1420	3	1.0	18.8	2	9.0	135	104.0	8.7	17.8	28500.	20.6
			4.5	--	--	--	--	104.0	8.7	17.8	28500.	20.6
			8.0	--	--	--	--	104.0	8.7	17.8	28500.	20.6
05/11/73	1515	3	1.0	26.0	2	13.0	90	97.0	7.0	26.8	26500.	15.7
			3.5	--	--	--	--	96.0	7.0	26.8	26500.	15.7
			7.0	--	--	--	--	92.8	6.7	26.8	26500.	15.7
06/15/73	1622	3	1.0	27.5	2	11.0	135	106.0	7.5	28.0	30000.	17.3
			5.0	--	--	--	--	106.0	7.5	28.0	30000.	17.3
			9.0	--	--	--	--	91.0	6.3	27.8	34000.	20.0
			10.0	--	--	--	--	--	--	--	--	--
					LINE 141							
10/13/72	1525	1	1.0	29.5	--	--	--	100.0	6.9	28.5	36500.	21.8
			4.5	--	--	--	--	99.5	6.9	28.0	37000.	22.1
			9.0	--	--	--	--	92.5	6.4	28.0	39000.	23.5
11/16/72	1640	1	1.0	17.3	4	--	--	105.0	8.9	17.3	26000.	19.0
			5.0	--	--	--	--	108.0	9.2	17.1	26000.	19.0
			9.0	--	--	--	--	108.0	9.2	17.1	26000.	19.0
12/16/72	1400	1	1.0	8.0	4	--	--	142.0	15.2	7.5	20000.	18.2
			3.0	--	--	--	--	166.0	17.9	7.0	20000.	18.5

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 120 CONTINUED							
01/14/73	1533	3	5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
02/13/73	1535	3	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
03/11/73	1624	3	1.0	--	--	.10	.10	.03	.005	.030	.03	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
04/12/73	1420	3	1.0	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
05/11/73	1515	3	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
06/15/73	1622	3	1.0	--	--	.10	.50	.03	.007	.030	.04	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
					LINE 141							
10/13/72	1525	1	1.0	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
11/16/72	1640	1	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			9.0	--	--	--	--	--	--	--	--	--
12/16/72	1400	1	1.0	--	--	.10	.60	.03	.005	.050	.05	--
			3.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLE DEPTH FEET	ORGANIC CARBON MG/L	INORGANIC CARBON MG/L
LINE 120 CONTINUED					
01/14/73	1533	3	5.0	--	--
			9.0	--	--
02/13/73	1535	3	1.0	16.0	26.0
			5.0	--	--
			10.0	--	--
03/11/73	1624	3	1.0	7.0	23.0
			5.0	--	--
			10.0	--	--
04/12/73	1420	3	1.0	3.0	27.0
			4.5	--	--
			8.0	--	--
05/11/73	1515	3	1.0	8.0	26.0
			3.5	--	--
			7.0	--	--
06/15/73	1622	3	1.0	--	--
			5.0	--	--
			9.0	--	--
			10.0	--	--
LINE 141					
10/13/72	1525	1	1.0	--	--
			4.5	--	--
			9.0	--	--
11/16/72	1640	1	1.0	--	--
			5.0	--	--
			9.0	--	--
12/16/72	1400	1	1.0	18.0	16.0
			3.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 141 CONTINUED							
12/16/72	1400	1	6.0	--	--	--	--	184.0	20.0	6.8	20000.	18.5
01/14/73	1618	1	1.0	11.0	5	--	--	122.0	13.2	5.7	23000.	22.1
			3.5	--	--	--	--	122.5	13.4	5.2	23000.	22.5
			7.0	--	--	--	--	118.0	12.9	5.2	23000.	22.5
02/11/73	0930	1	1.0	12.0	7	--	--	110.0	11.3	7.7	24000.	22.0
			4.0	--	--	--	--	110.0	11.4	7.5	24000.	22.2
			7.0	--	--	--	--	114.0	11.4	9.0	24000.	22.2
03/15/73	1330	1	1.0	23.0	2	--	--	106.0	8.2	21.5	32500.	21.6
			4.2	--	--	--	--	108.0	8.3	21.5	32500.	21.6
			7.0	--	--	--	--	112.0	8.7	21.0	32500.	21.7
04/12/73	1510	1	1.0	19.0	3	--	--	106.0	8.7	18.0	31000.	22.4
			3.0	--	--	--	--	106.0	8.7	18.0	31000.	22.4
			6.0	--	--	--	--	106.0	8.7	18.0	31000.	22.4
05/11/73	1600	1	1.0	25.2	2	13.0	90	104.0	7.4	26.5	31500.	18.6
			3.5	--	--	--	--	102.0	7.3	26.5	31500.	18.6
			6.0	--	--	--	--	102.0	7.3	26.5	31700.	18.8
06/15/73	1740	1	1.0	27.7	2	14.0	180	106.0	7.2	28.2	37500.	22.1
			3.0	--	--	--	--	108.0	7.3	28.5	38000.	22.4
			5.5	--	--	--	--	106.0	7.1	28.5	38800.	22.9
			6.5	--	--	--	--	--	--	--	--	--
					LINE 151							
10/17/72	0120	2	1.0	27.5	--	--	--	94.0	6.3	28.2	45000.	27.5
			5.0	--	--	--	--	95.0	6.4	28.0	45000.	27.5
			10.0	--	--	--	--	93.0	6.2	28.0	46000.	28.2
11/19/72	1020	2	1.0	13.5	2	--	--	96.5	8.3	14.8	32000.	25.2
			4.5	--	--	--	--	96.5	8.3	14.8	32000.	25.2
			8.0	--	--	--	--	96.5	8.4	14.5	32000.	25.2

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR, A MG/L
					LINE 141 CONTINUED							
12/16/72	1400	1	6.0	--	--	--	--	--	--	--	--	--
01/14/73	1618	1	1.0	--	--	.20	.10	.03	.005	.020	.05	--
			3.5	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
02/11/73	0930	1	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
03/15/73	1330	1	1.0	--	--	.10	.10	.03	.005	.010	.01	--
			4.2	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
04/12/73	1510	1	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
05/11/73	1600	1	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
06/15/73	1740	1	1.0	--	--	.10	.40	.03	.005	.010	.05	--
			3.0	--	--	--	--	--	--	--	--	--
			5.5	--	--	--	--	--	--	--	--	--
			6.5	--	--	--	--	--	--	--	--	--
					LINE 151							
10/17/72	0120	2	1.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			10.0	--	--	--	--	--	--	--	--	--
11/19/72	1020	2	1.0	--	--	--	--	--	--	--	--	--
			4.5	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 141 CONTINUED	
12/16/72	1400	1	6.0	--	--
01/14/73	1618	1	1.0	--	--
			3.5	--	--
			7.0	--	--
02/11/73	0930	1	1.0	23.0	19.0
			4.0	--	--
			7.0	--	--
03/15/73	1330	1	1.0	7.0	23.0
			4.2	--	--
			7.0	--	--
04/12/73	1510	1	1.0	9.0	20.0
			3.0	--	--
			6.0	--	--
05/11/73	1600	1	1.0	10.0	25.0
			3.5	--	--
			6.0	--	--
06/15/73	1740	1	1.0	--	--
			3.0	--	--
			5.5	--	--
			6.5	--	--
				LINE 151	
10/17/72	0120	2	1.0	--	--
			5.0	--	--
			10.0	--	--
11/19/72	1020	2	1.0	--	--
			4.5	--	--
			8.0	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 151 CONTINUED							
12/20/72	1030	2	1.0	15.5	2	--	--	104.0	9.3	13.0	32000.	26.6
			4.0	--	--	--	--	106.0	9.5	12.8	32000.	26.7
			8.0	--	--	--	--	104.0	9.3	12.8	32000.	26.7
01/16/73	1115	2	1.0	13.5	2	--	--	108.0	10.1	10.7	31000.	26.7
			4.0	--	--	--	--	118.0	11.4	8.7	30000.	27.2
			7.5	--	--	--	--	116.0	11.3	8.7	30000.	27.2
02/11/73	1130	2	1.0	11.0	2	--	--	94.0	8.5	11.0	34000.	30.0
			4.0	--	--	--	--	95.0	8.8	10.2	33500.	29.5
			7.0	--	--	--	--	98.0	9.1	10.0	33500.	29.7
03/15/73	1447	2	1.0	22.0	2	--	--	99.0	7.3	22.5	38000.	25.3
			4.0	--	--	--	--	100.0	7.4	22.5	37500.	24.9
			7.0	--	--	--	--	103.0	7.8	21.5	37500.	25.5
04/14/73	1127	2	1.0	20.0	3	27.0	--	96.0	7.5	19.5	37000.	26.2
			3.0	--	--	--	--	90.0	7.0	19.5	37000.	26.2
			6.0	--	--	--	--	80.0	6.2	19.5	37000.	26.2
05/15/73	0922	2	1.0	16.2	2	10.0	0.	76.0	6.0	20.2	31500.	21.2
			4.0	--	--	--	--	76.0	6.0	20.5	31500.	21.2
			8.0	--	--	--	--	66.0	4.9	22.5	36500.	23.9
06/15/73	1930	2	1.0	27.0	2	14.0	157.	107.0	7.0	29.0	45500.	26.9
			4.0	--	--	--	--	108.0	7.0	29.5	45500.	26.9
			7.0	--	--	--	--	106.0	6.8	29.5	45800.	27.1
			8.0	--	--	--	--	--	--	--	--	--
					LINE 152							
10/17/72	0200	2	1.0	28.0	--	--	--	105.0	7.0	29.0	43000.	25.9
			4.0	--	--	--	--	104.0	6.9	29.0	43000.	25.9
11/19/72	0920	2	1.0	10.0	--	--	--	83.0	7.3	14.5	28000.	22.1
			3.5	--	--	--	--	82.0	7.2	14.9	28000.	22.1

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 151 CONTINUED							
12/20/72	1030	2	1.0	--	--	.10	.60	.04	.014	.030	.04	--
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
01/16/73	1115	2	1.0	--	--	.10	.30	.03	.005	.010	.02	--
			4.0	--	--	--	--	--	--	--	--	--
			7.5	--	--	--	--	--	--	--	--	--
02/11/73	1130	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
03/15/73	1447	2	1.0	--	--	.10	.20	.03	.003	.010	.01	--
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
04/14/73	1127	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
05/15/73	0922	2	1.0	--	--	--	--	--	--	--	--	.0002
			4.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
06/15/73	1930	2	1.0	--	--	.10	.40	.03	.005	.010	.03	.0002
			4.0	--	--	--	--	--	--	--	--	--
			7.0	--	--	--	--	--	--	--	--	--
			8.0	--	--	--	--	--	--	--	--	--
					LINE 152							
10/17/72	0200	2	1.0	--	--	--	--	--	--	--	--	--
			4.0	--	--	--	--	--	--	--	--	--
11/19/72	0920	2	1.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L
				LINE 151 CONTINUED	
12/20/72	1030	2	1.0	--	--
			4.0	--	--
			8.0	--	--
01/16/73	1115	2	1.0	--	--
			4.0	--	--
			7.5	--	--
02/11/73	1130	2	1.0	17.0	23.0
			4.0	--	--
			7.0	--	--
03/15/73	1447	2	1.0	11.0	15.0
			4.0	--	--
			7.0	--	--
04/14/73	1127	2	1.0	--	--
			3.0	--	--
			6.0	--	--
05/15/73	0922	2	1.0	10.0	23.0
			4.0	--	--
			8.0	--	--
06/15/73	1930	2	1.0	15.0	16.0
			4.0	--	--
			7.0	--	--
			8.0	--	--
				LINE 152	
10/17/72	0200	2	1.0	--	--
			4.0	--	--
11/19/72	0920	2	1.0	--	--
			3.5	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	AIR TEMP CENT	NO OF BENTHOS GRABS	WIND VELOCITY MPH	WIND DIR. FROM NORTH=0	DO SATUR PERCENT	DO MG/L	WATER TEMP CENT	FIELD CNDUCTVY	SALINITY MG/ML
					LINE 152 CONTINUED							
11/19/72	0920	2	6.0	--	--	--	--	82.0	7.2	14.9	28000.	22.1
12/15/72	1445	2	1.0	5.1	2	--	--	106.0	11.1	7.5	23000.	21.0
			3.0	--	--	--	--	110.0	11.5	7.5	23000.	21.0
			6.0	--	--	--	--	158.0	16.6	7.5	23000.	21.0
01/16/73	1030	2	1.0	16.2	2	--	--	126.0	12.0	10.2	29000.	25.2
			3.0	--	--	--	--	124.0	11.8	10.2	29000.	25.2
			6.0	--	--	--	--	132.0	12.9	9.0	29000.	25.2
02/11/73	1055	2	1.0	11.0	--	--	--	105.0	9.9	9.5	31000.	28.4
			2.0	--	--	--	--	105.0	10.3	8.0	30500.	28.5
			3.5	--	--	--	--	105.0	10.3	8.0	30500.	28.5
03/15/73	1415	2	1.0	23.5	3	--	--	98.0	7.3	22.8	35500.	23.4
			2.5	--	--	--	--	98.0	7.3	22.5	35500.	23.4
			5.0	--	--	--	--	100.0	7.5	22.5	35500.	23.4
04/14/73	1216	2	1.0	21.0	2	30.0	--	95.0	7.4	20.0	36000.	25.2
			3.0	--	--	--	--	95.0	7.4	20.0	36000.	25.2
			6.0	--	--	--	--	95.0	7.4	20.0	36000.	25.2
05/15/73	0845	2	1.0	18.0	2	11.0	45	84.0	6.7	20.2	28900.	19.3
			3.0	--	--	--	--	82.0	6.5	20.5	28900.	19.2
			6.0	--	--	--	--	82.0	6.5	20.5	28900.	19.2
06/15/73	1900	2	1.0	27.0	2	14.0	157	103.0	6.9	28.0	42300.	25.0
			3.0	--	--	--	--	104.0	6.9	29.0	42300.	25.0
			5.0	--	--	--	--	104.0	6.9	29.0	42300.	25.0
			6.0	--	--	--	--	--	--	--	--	--

TEXAS WATER DEVELOPMENT BOARD

APPENDIX A CONTINUED

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	PH STD U	TURB JKSN JU	AMMONIA NH3-N MG/L	ORGANIC NITROGEN MG/ML	NITRATE NO3-N MG/L	NITRITE NO2-N MG/L	PHOSPHAT ORTHO MG/L	PHOSPHAT TOTAL MG/L	CHLOR. A MG/L
					LINE 152 CONTINUED							
11/19/72	0920	2	6.0	--	--	--	--	--	--	--	--	--
12/15/72	1445	2	1.0	--	--	.10	.40	.03	.005	.030	.05	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
01/16/73	1030	2	1.0	--	--	.10	.30	.03	.005	.010	.10	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
02/11/73	1055	2	1.0	--	--	--	--	--	--	--	--	--
			2.0	--	--	--	--	--	--	--	--	--
			3.5	--	--	--	--	--	--	--	--	--
03/15/73	1415	2	1.0	--	--	.10	.10	.03	.005	.010	.01	--
			2.5	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
04/19/73	1216	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
05/15/73	0845	2	1.0	--	--	--	--	--	--	--	--	--
			3.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--
06/15/73	1900	2	1.0	--	--	.10	.30	.03	.005	.010	.03	--
			3.0	--	--	--	--	--	--	--	--	--
			5.0	--	--	--	--	--	--	--	--	--
			6.0	--	--	--	--	--	--	--	--	--

DATE OF COLLECTION	TIME	SITE	SAMPLOC DEPTH FEET	ORGANIC CARBON MG/L	INORGANI CARBON MG/L					
LINE 152 CONTINUED										
11/19/72	0920	2	6.0	--	--					
12/15/72	1445	2	1.0	26.0	15.0					
			3.0	--	--					
			6.0	--	--					
01/16/73	1030	2	1.0	--	--					
			3.0	--	--					
			6.0	--	--					
02/11/73	1055	2	1.0	19.0	21.0					
			2.0	--	--					
			3.5	--	--					
03/15/73	1415	2	1.0	4.0	22.0					
			2.5	--	--					
			5.0	--	--					
04/14/73	1216	2	1.0	7.0	2.2					
			3.0	--	--					
			6.0	--	--					
05/15/73	0845	2	1.0	10.0	23.0					
			3.0	--	--					
			6.0	--	--					
06/15/73	1900	2	1.0	25.0	8.0					
			3.0	--	--					
			5.0	--	--					
			6.0	--	--					

@XQT CDS.AVAIL

T E X A S W A T E R O R I E N T E D D A T A B A N K

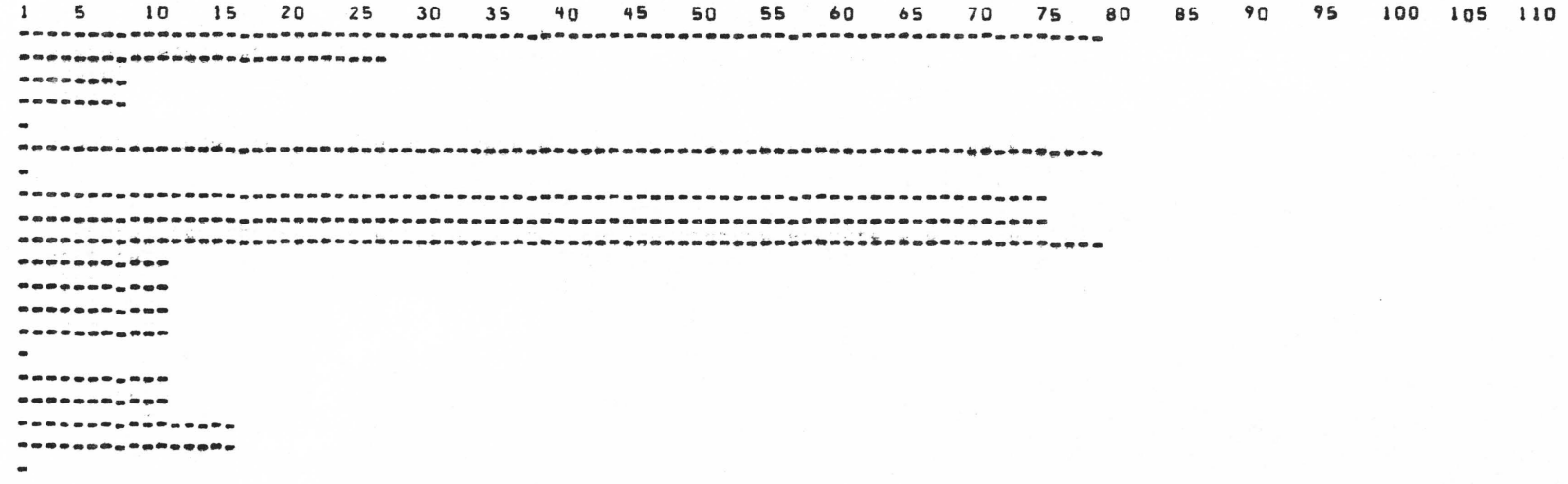
COASTAL DATA SYSTEM

SUMMARY AVAILABILITY REPORT

JOHNNY HOLLAND CORPUS CHRISTI AND COPANO ARANSAS

DATA BASE LIMITS: (NONE)

PARAMETER NO. NUMBER OF OCCURANCES (IN TENS OF OCCURANCES)



TEXAS WATER ORIENTED DATA BANK

COASTAL DATA SYSTEM

DETAILED AVAILABILITY REPORT

JOHNNY MOLLAND CORPUS CHRISTI AND COPANO ARANSAS

DATA BASE LIMITS: (NONE)

PARAMETER NAME	WATER TEMP CENT	TEMP-AIR AIR CENT	WIND VELOCITY MPH	WIND DIR.FROM NORTH=0	CNDUCTVY FIELD @ 25C=MMHO	CNDUCTVY FIELD @ 25C=MMHO	SALINITY AT 25C MG/ML	DO MG/L
PARAMETER NUMBER	(00010)	(00020)	(00035)	(00036)	(00093)	(00094)	(00096)	(00300)
NUMBER OF OCCURANCES	793	270	88	83	2	793	1	750
MAXIMUM VALUE	30.0	30.0	30.	180.	45000.	52000.	6.2	20.0
MINIMUM VALUE	1.0	3.0	5.	0.	11500.	500.	6.2	3.1
MEAN VALUE	18.4	19.2	13.	110.	28250.	32843.	6.2	8.7
FROM DATE	10/12/72	10/12/72	04/10/73	04/10/73	10/13/72	10/12/72	10/13/72	10/12/72
TO DATE	06/16/73	06/16/73	06/16/73	06/16/73	10/16/72	06/16/73	10/13/72	06/16/73

PARAMETER NAME	DO SATUR PERCENT	SALINITY MG/ML	ORGANIC NITROGEN	AMMONIA NH3-N MG/L	NITRITE NO2-N MG/L	NITRATE NO3-N MG/L	ORTHOPO4 PO4 MG/L	PHOS-T P-WET MG/L
PARAMETER NUMBER	(00301)	(00480)	(00605)	(00610)	(00615)	(00620)	(00660)	(00665)
NUMBER OF OCCURANCES	750	791	119	119	119	119	1	119
MAXIMUM VALUE	185.	31.7	3.00	1.00	.04	.260	.01	.390
MINIMUM VALUE	38.	.0	.10	.10	.00	.030	.01	.010
MEAN VALUE	102.	23.9	.40	.16	.01	.039	.01	.059
FROM DATE	10/12/72	10/12/72	12/14/72	12/14/72	12/14/72	12/14/72	12/19/72	12/14/72
TO DATE	06/16/73	06/16/73	06/16/73	06/16/73	06/16/73	06/16/73	12/19/72	06/16/73

PARAMETER NAME	PHOS-D ORTHO MG/L	ORGANIC CARBON MG/L C	INOGANIC CARBON MG/L C	CHLOROPH A MG/L
PARAMETER NUMBER	(00671)	(00680)	(00685)	(32230)
NUMBER OF OCCURANCES	119	163	163	14
MAXIMUM VALUE	.160	42.0	29.0	.000
MINIMUM VALUE	.010	2.0	2.2	.000
MEAN VALUE	.027	14.1	20.2	.000
FROM DATE	12/14/72	12/14/72	12/14/72	05/10/73
TO DATE	06/16/73	06/16/73	06/16/73	06/16/73