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**WEST HACKBERRY STRATEGIC PETROLEUM RESERVE SITE BRINE
DISPOSAL MONITORING, YEAR I REPORT**

Final Report. Volume 5: Supporting Data for Estuarine Hydrology, Discharge
Plume Analysis, Chemical Oceanography, Biological Oceanography and Data
Management

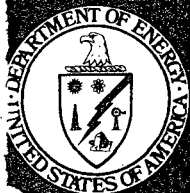
February 1983

Work Performed Under Contract No. AC96-80P010288

McNeese State University
Lake Charles, Louisiana

and

Texas A & M University
College Station, Texas



U. S. DEPARTMENT OF ENERGY

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WEST HACKBERRY STRATEGIC PETROLEUM RESERVE SITE BRINE DISPOSAL MONITORING

YEAR I REPORT
FINAL REPORT

VOLUME V
SUPPORTING DATA FOR ESTUARINE HYDROLOGY, DISCHARGE PLUME ANALYSIS,
CHEMICAL OCEANOGRAPHY, BIOLOGICAL OCEANOGRAPHY AND DATA MANAGEMENT

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Prepared for the

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Lake Charles, Louisiana

Texas A & M University
College Station, Texas
through the
Texas A & M
Research Foundation

February, 1983

APPENDICES

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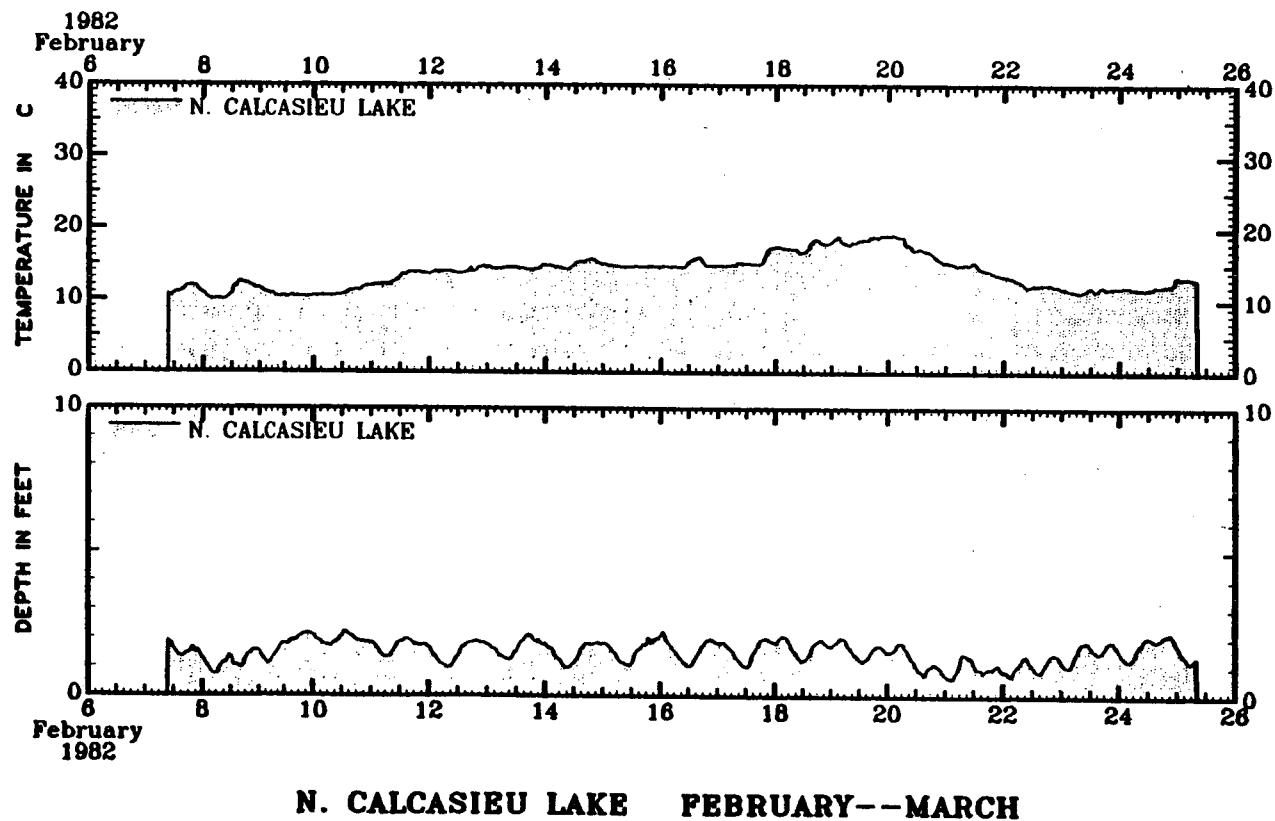


Figure C-1. Temperature and water level data for north Calcasieu Lake (station E2).

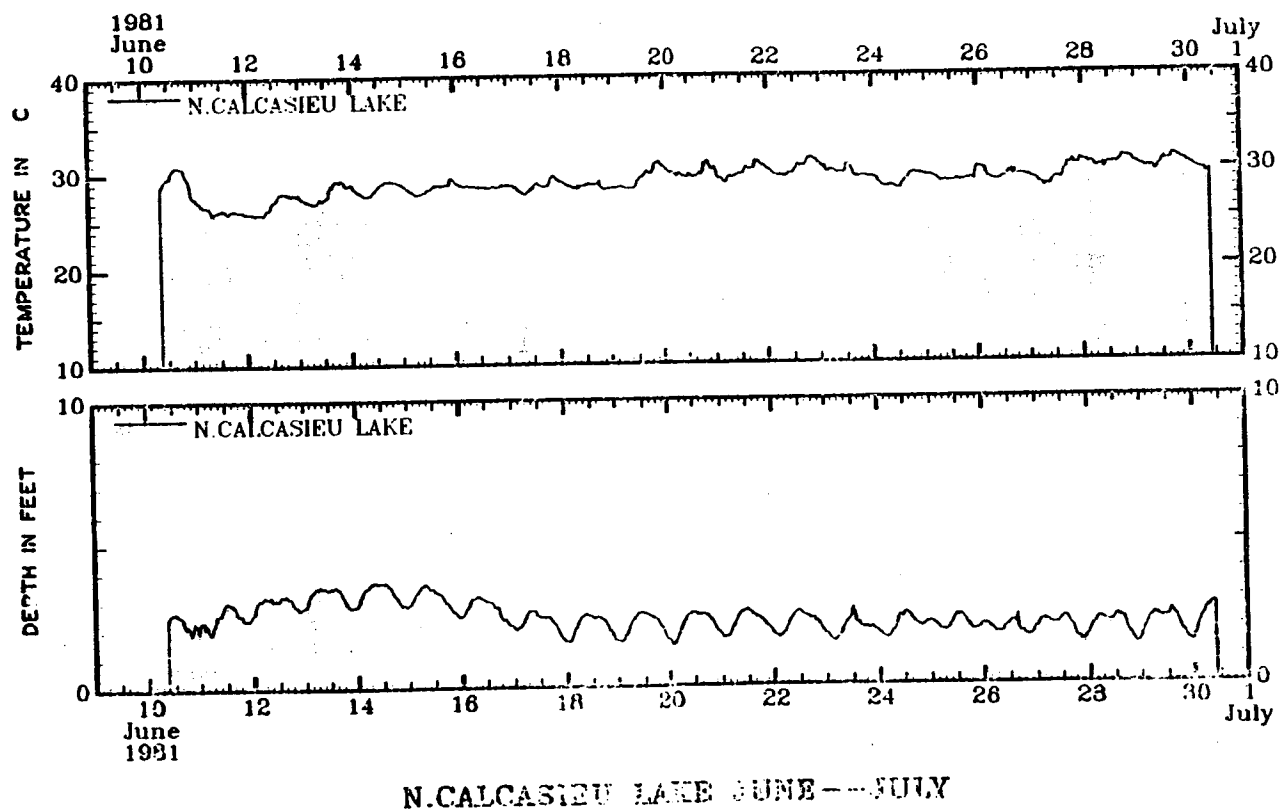


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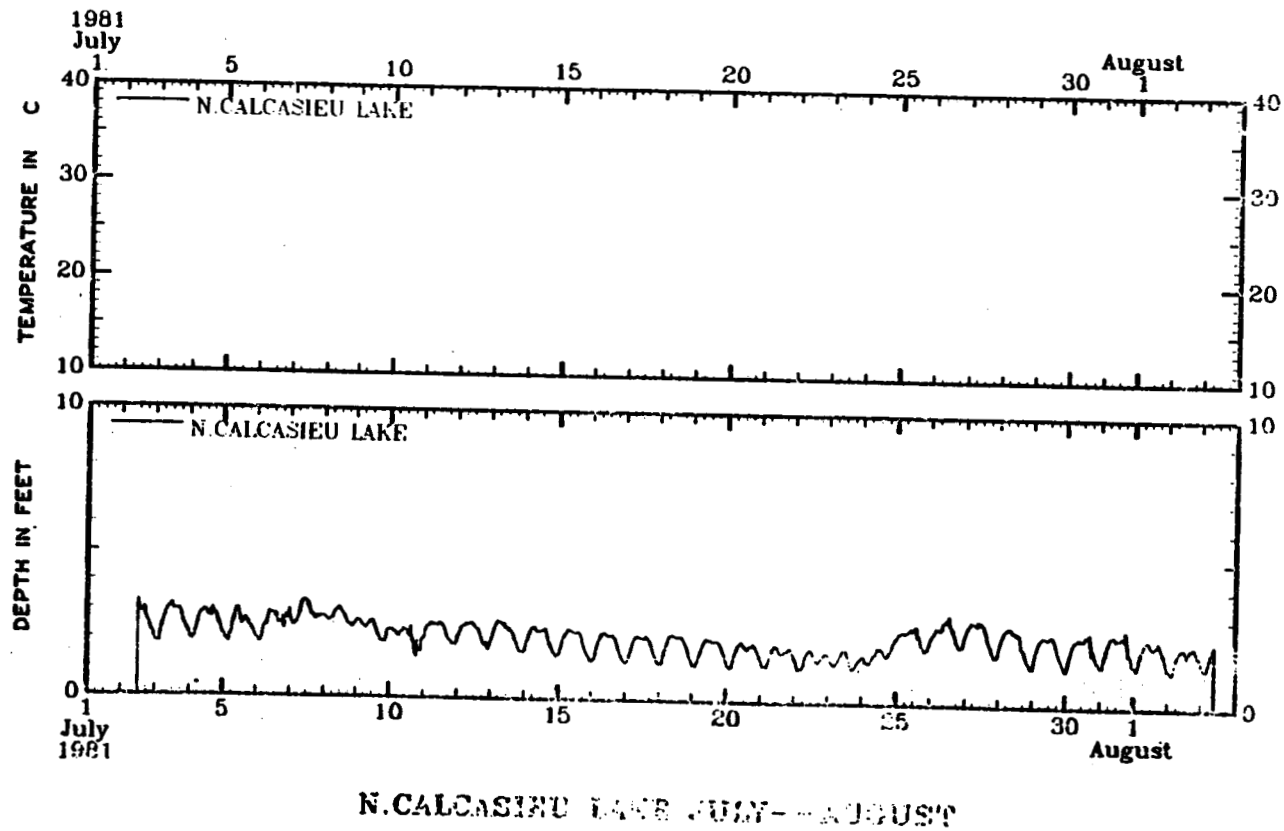


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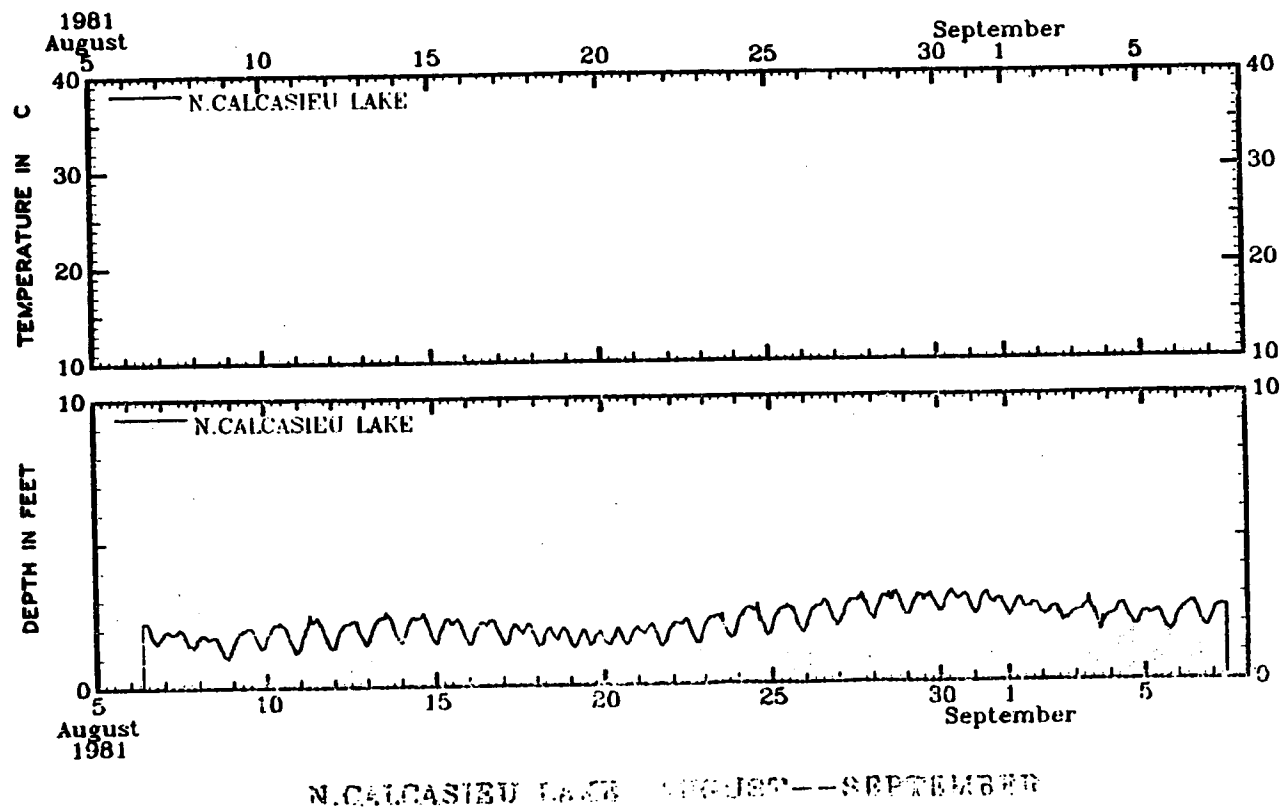


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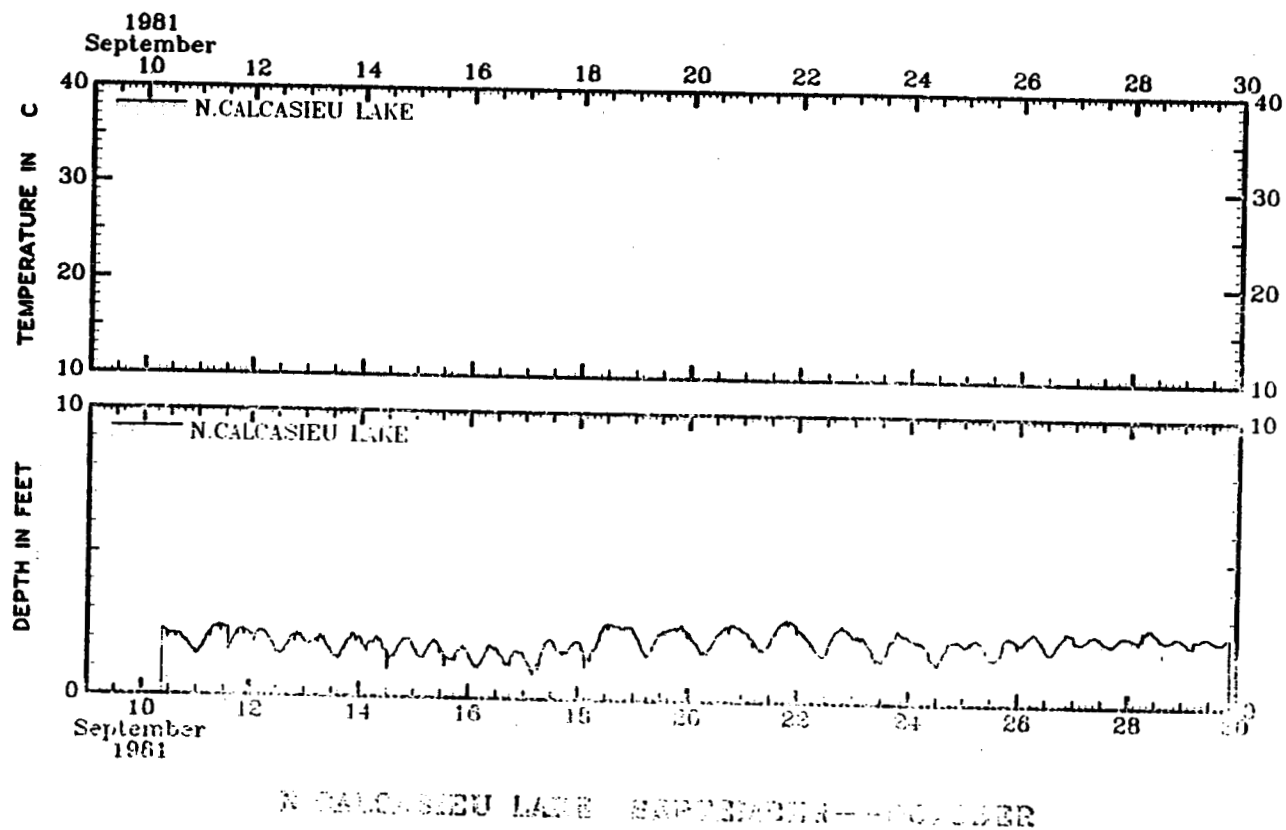


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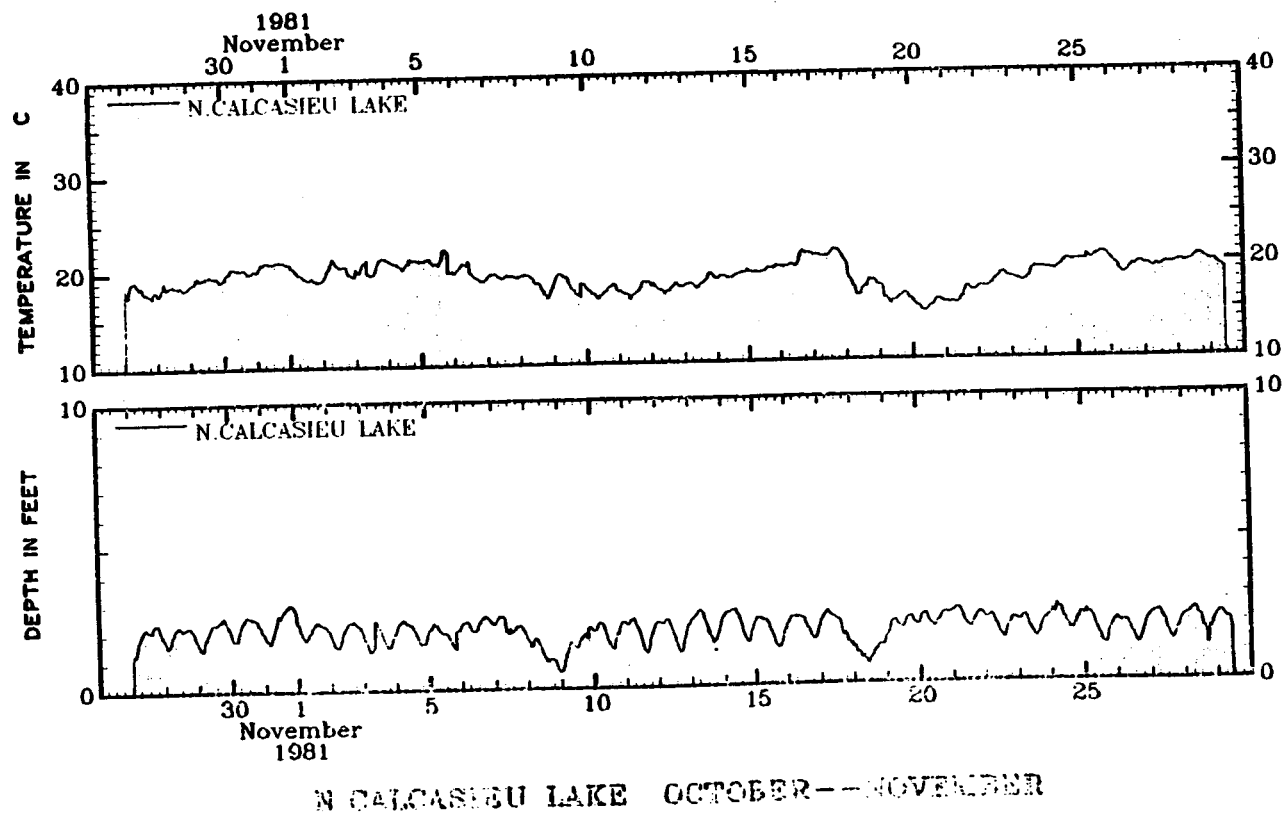


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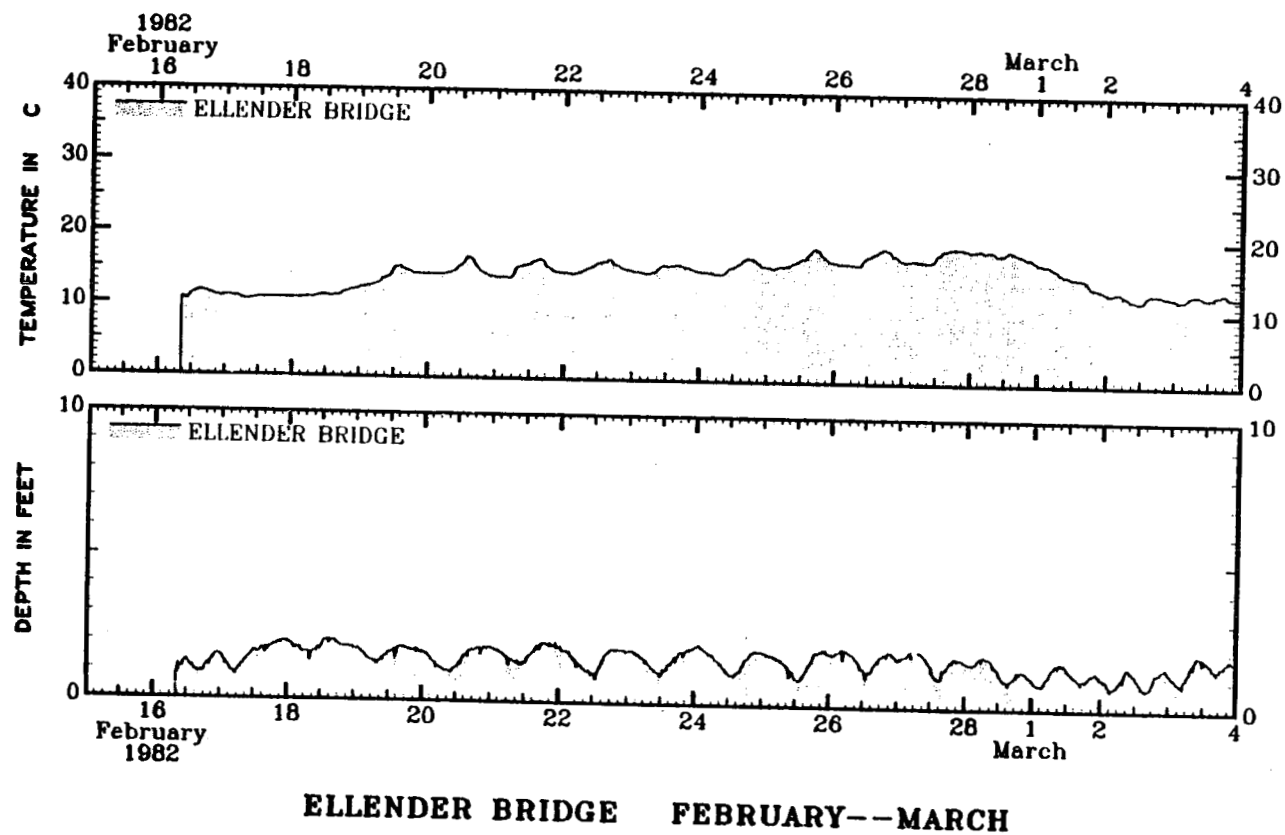


Figure C-2. Temperature and water level data for Ellender Bridge (station E6).

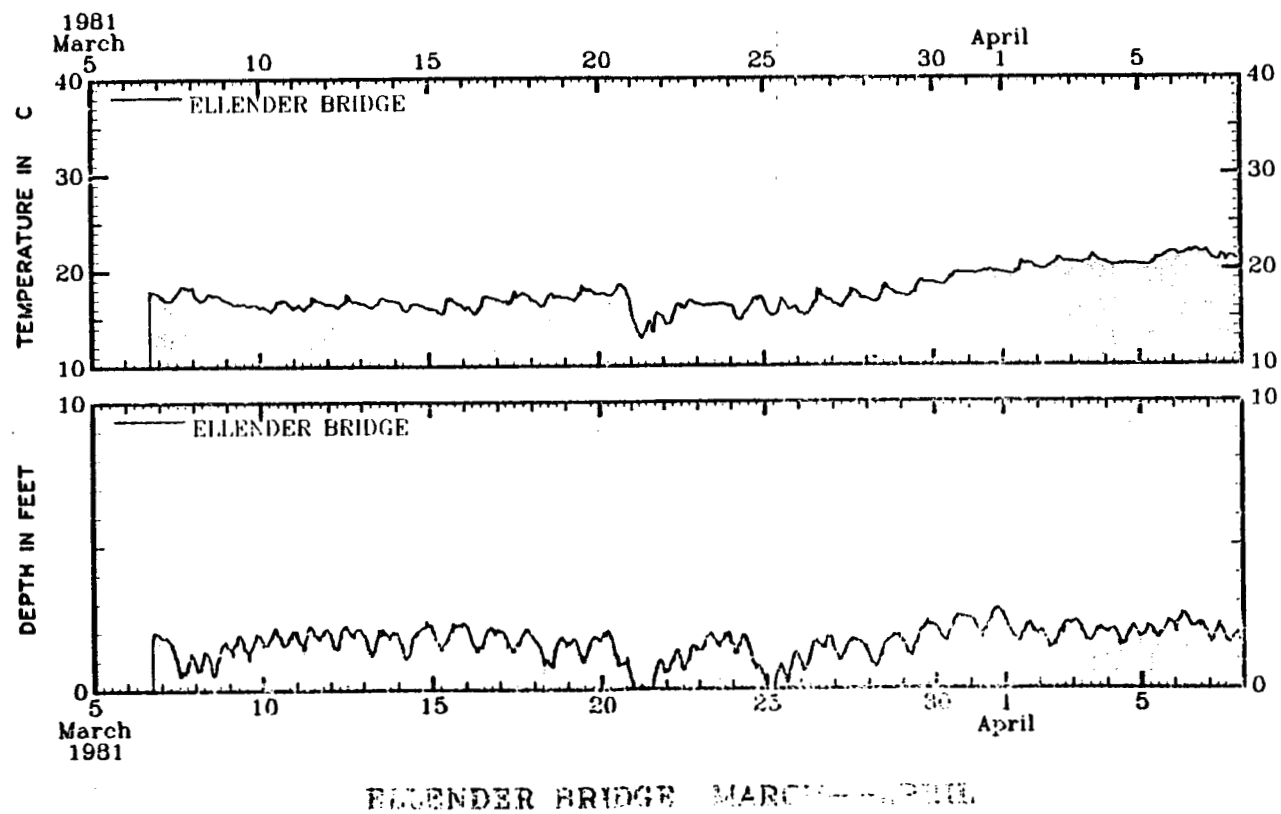


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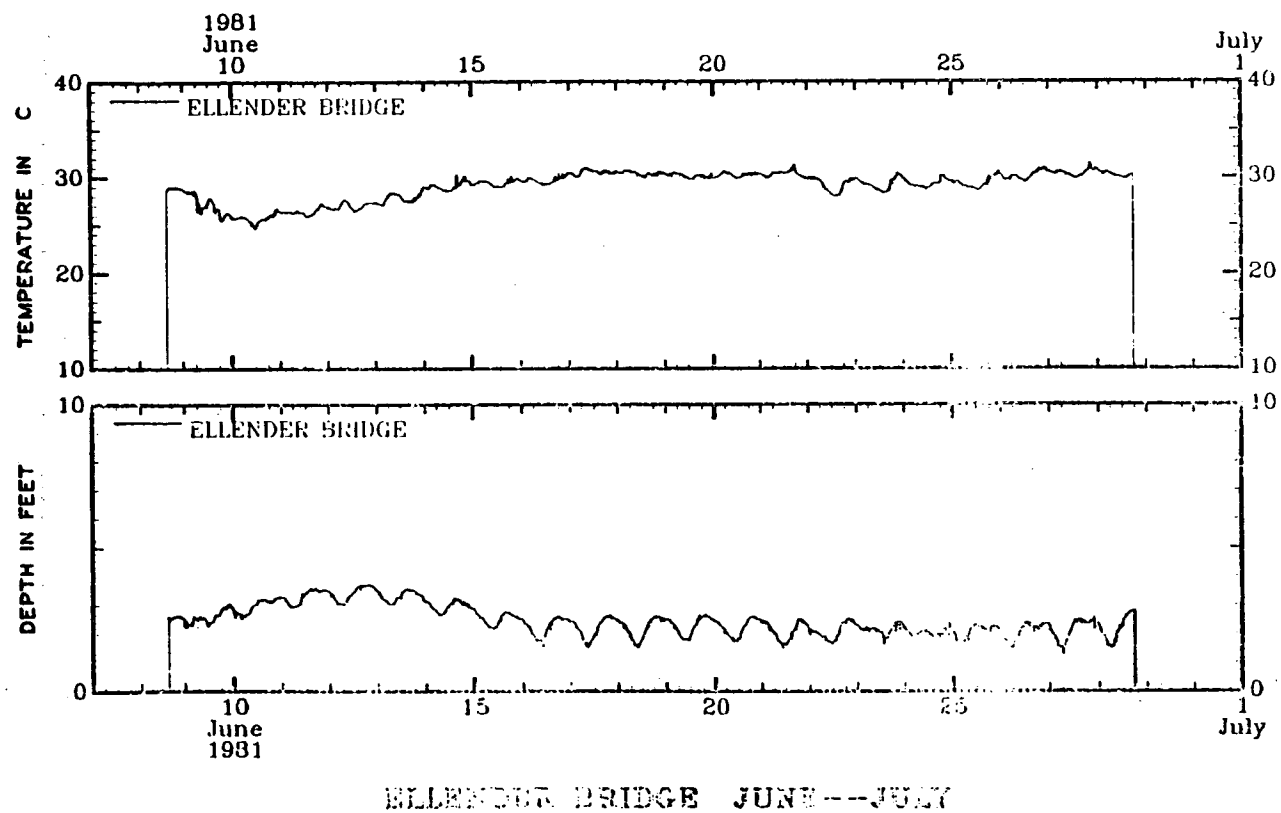


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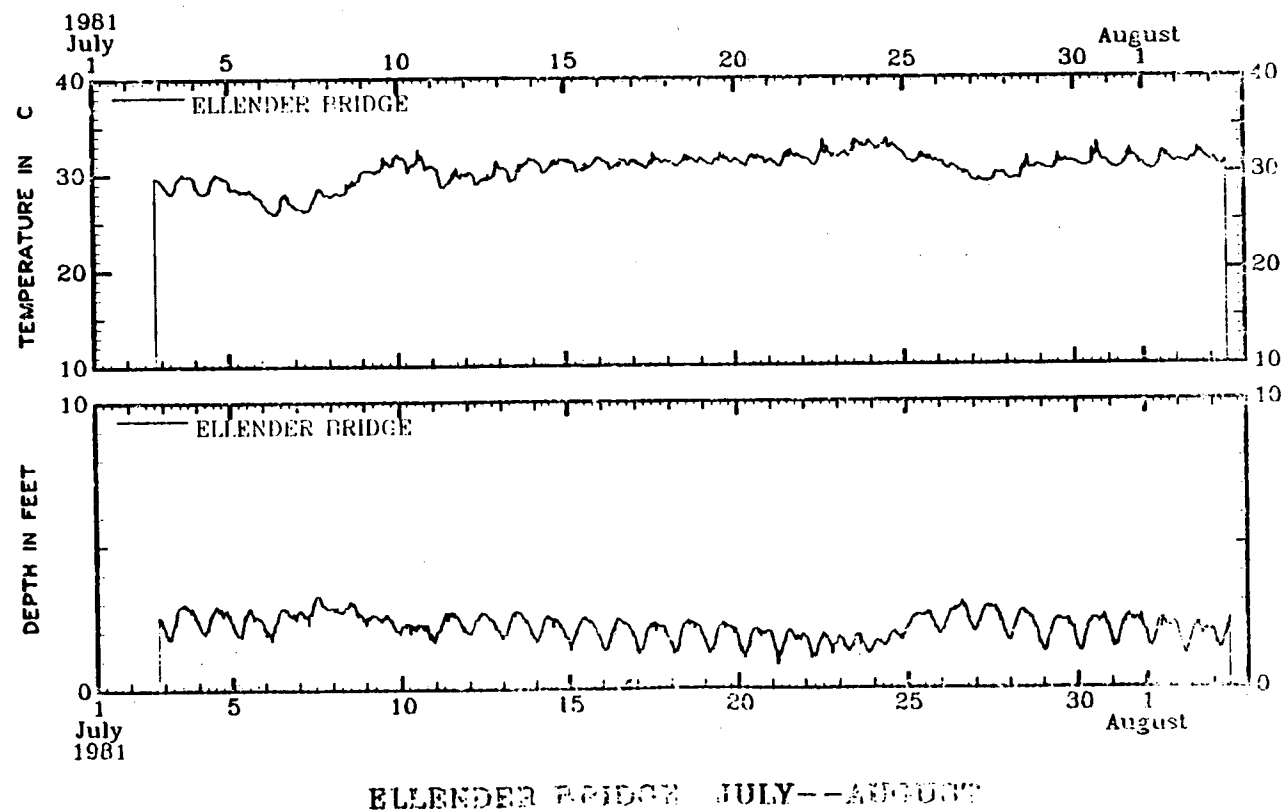


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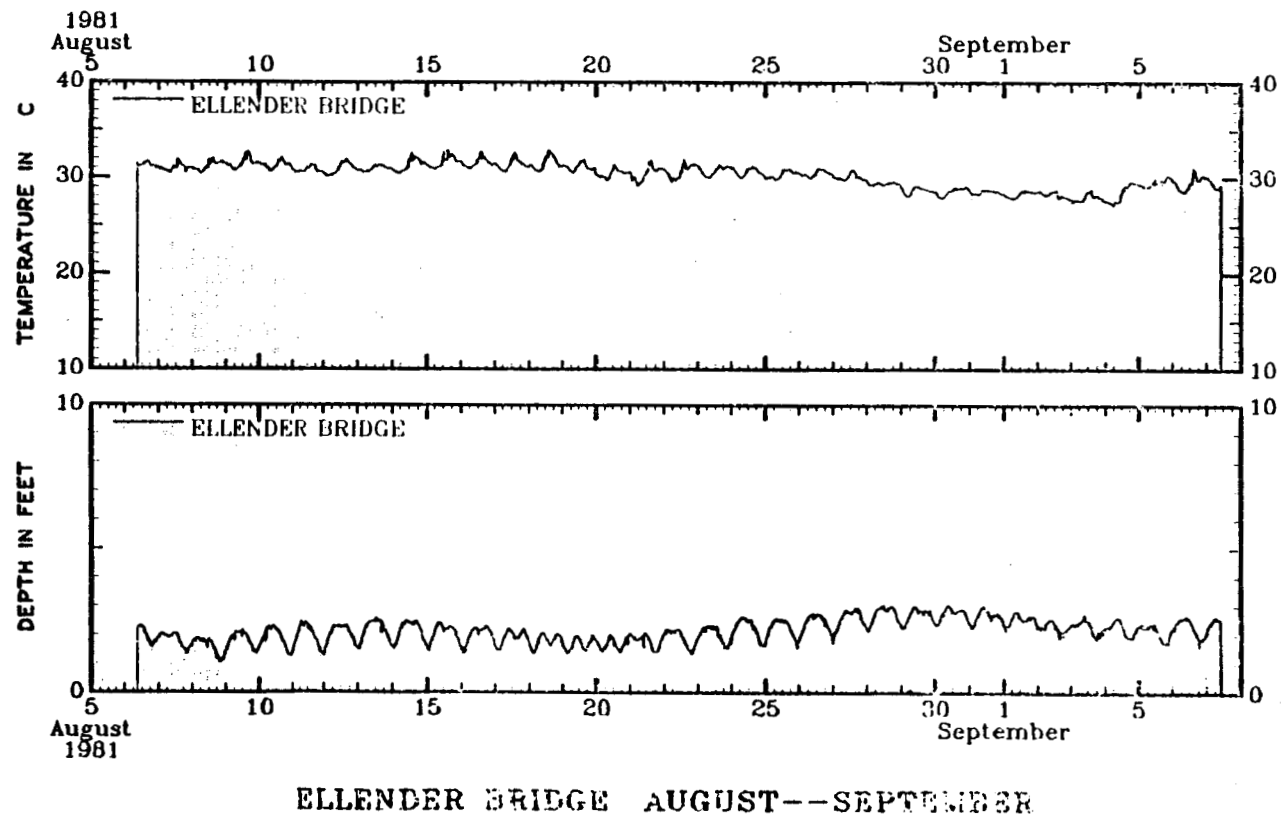


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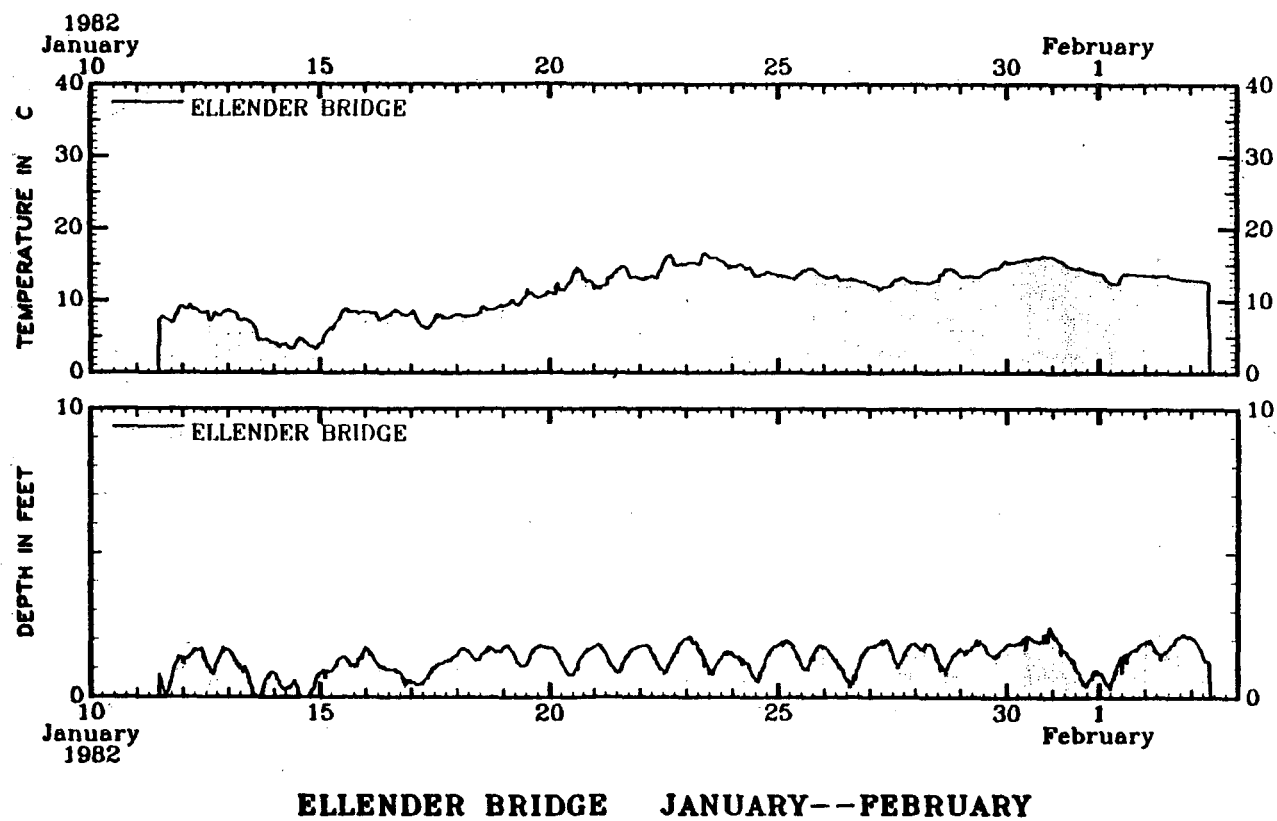
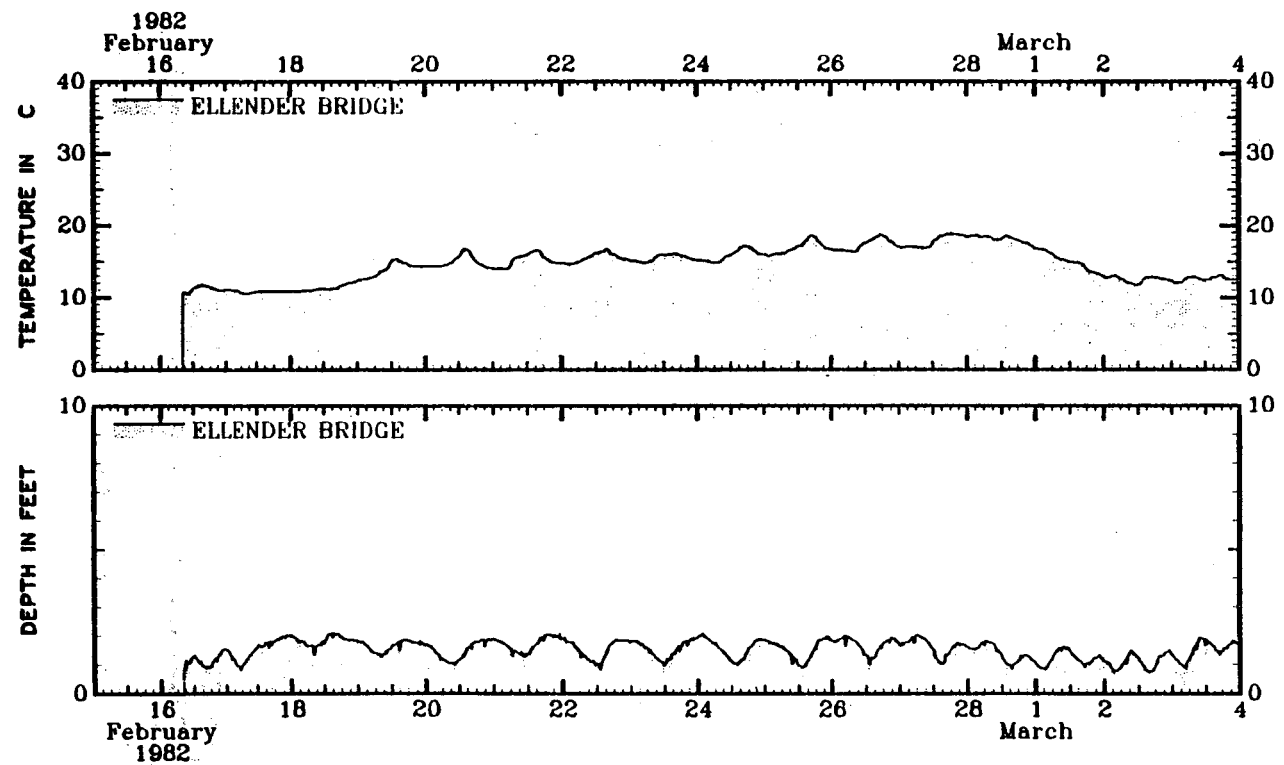


Figure C-2. Continued.



ELLENDER BRIDGE FEBRUARY--MARCH

Figure C-2. Continued.

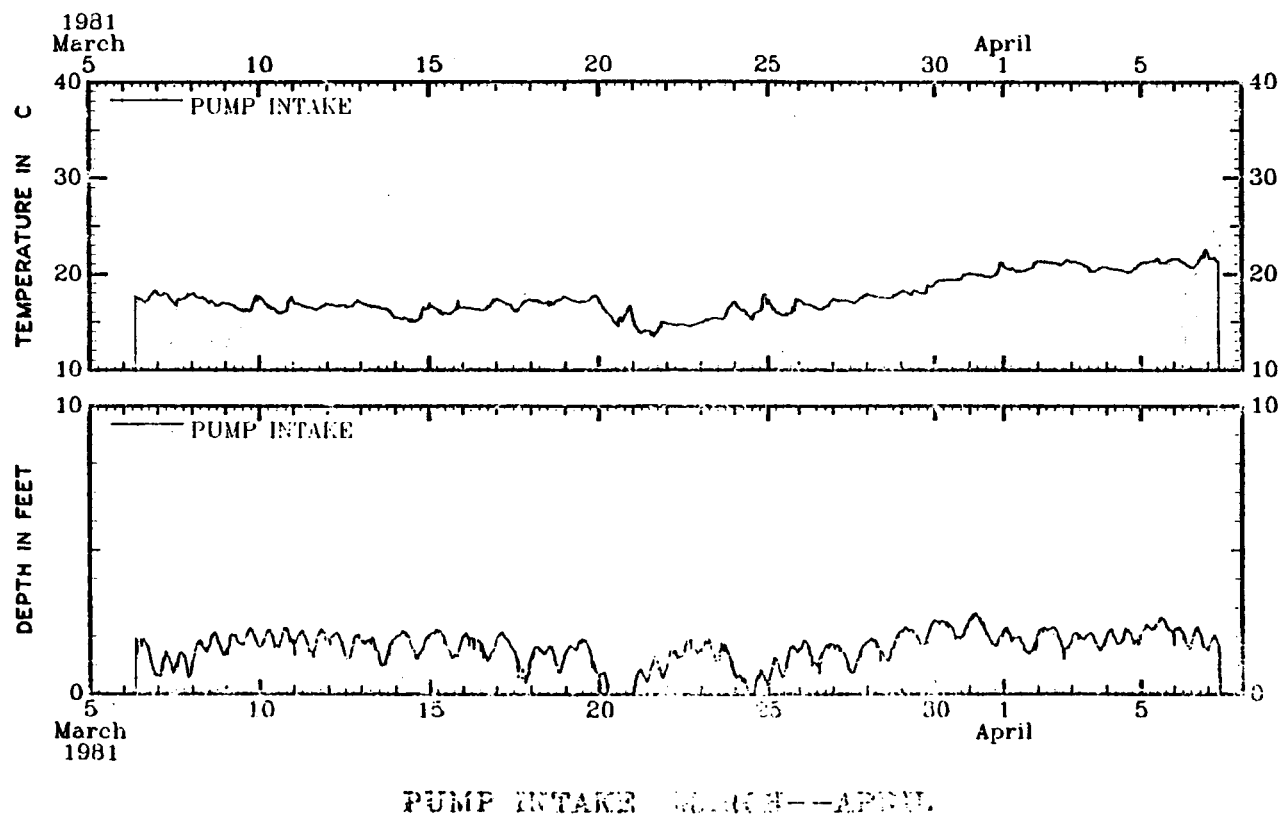


Figure C-3. Temperature and water level data for the pump intake (station E1).

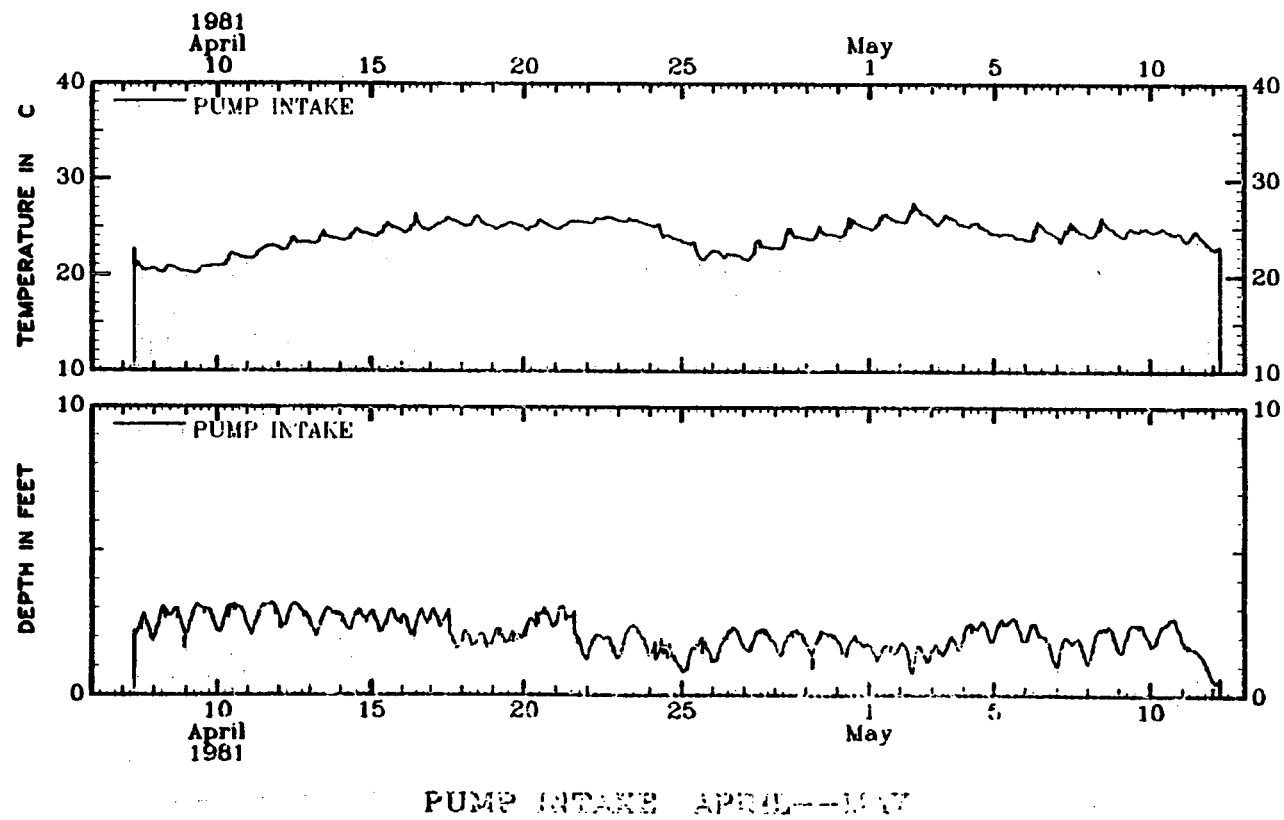


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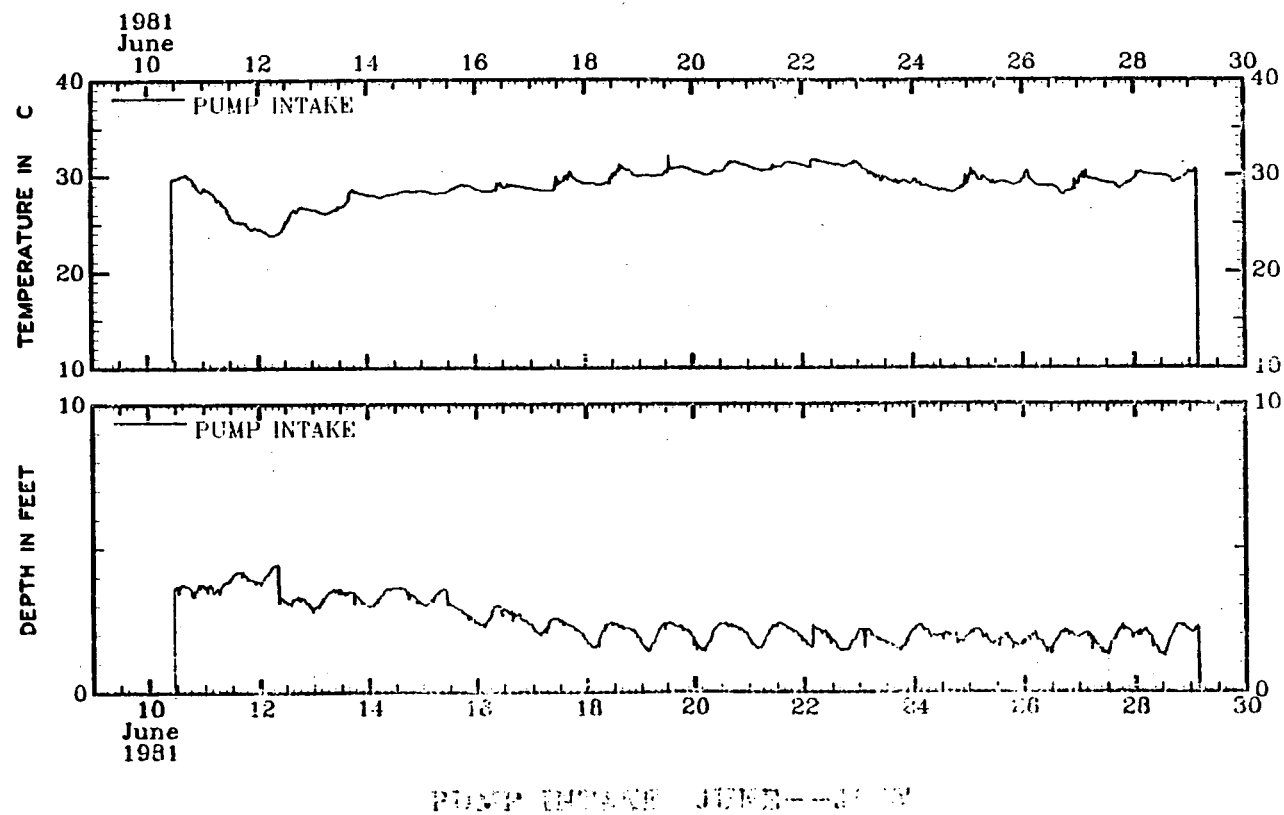


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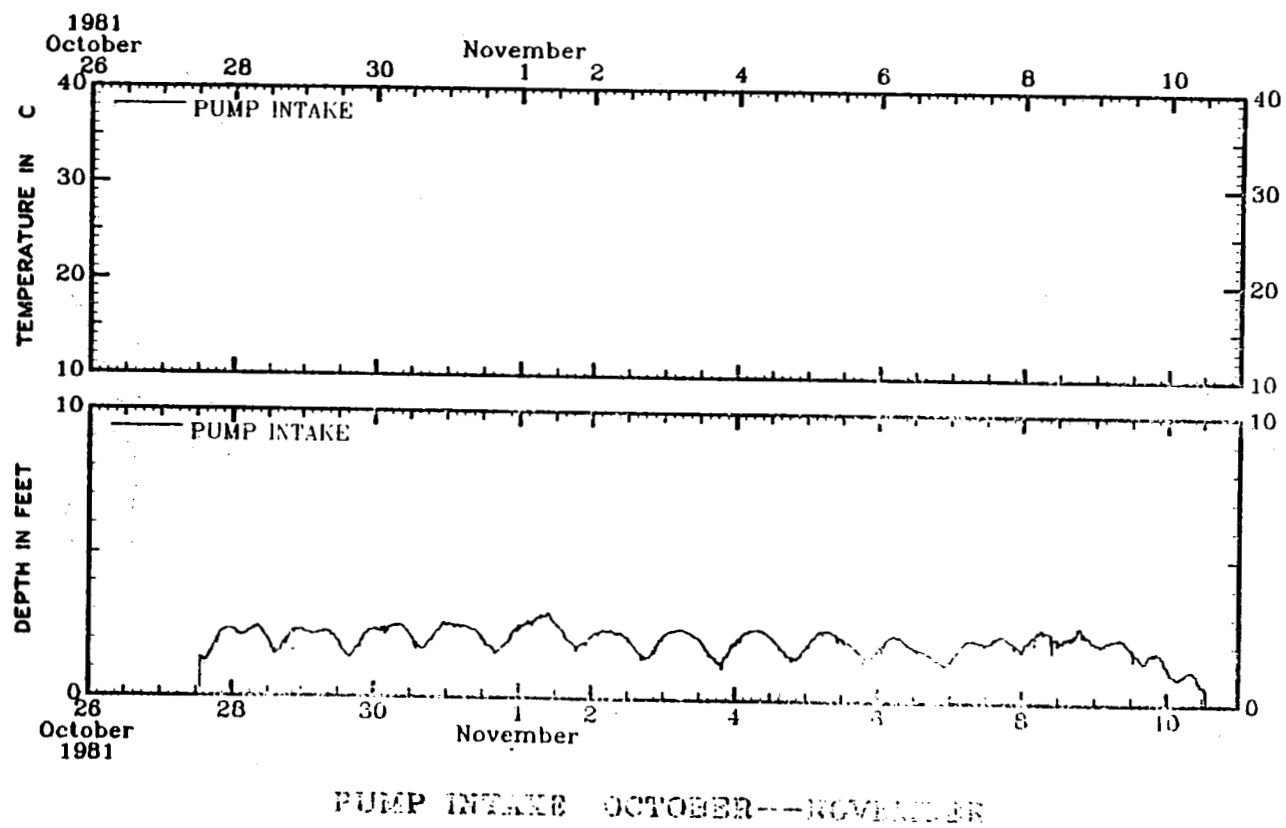


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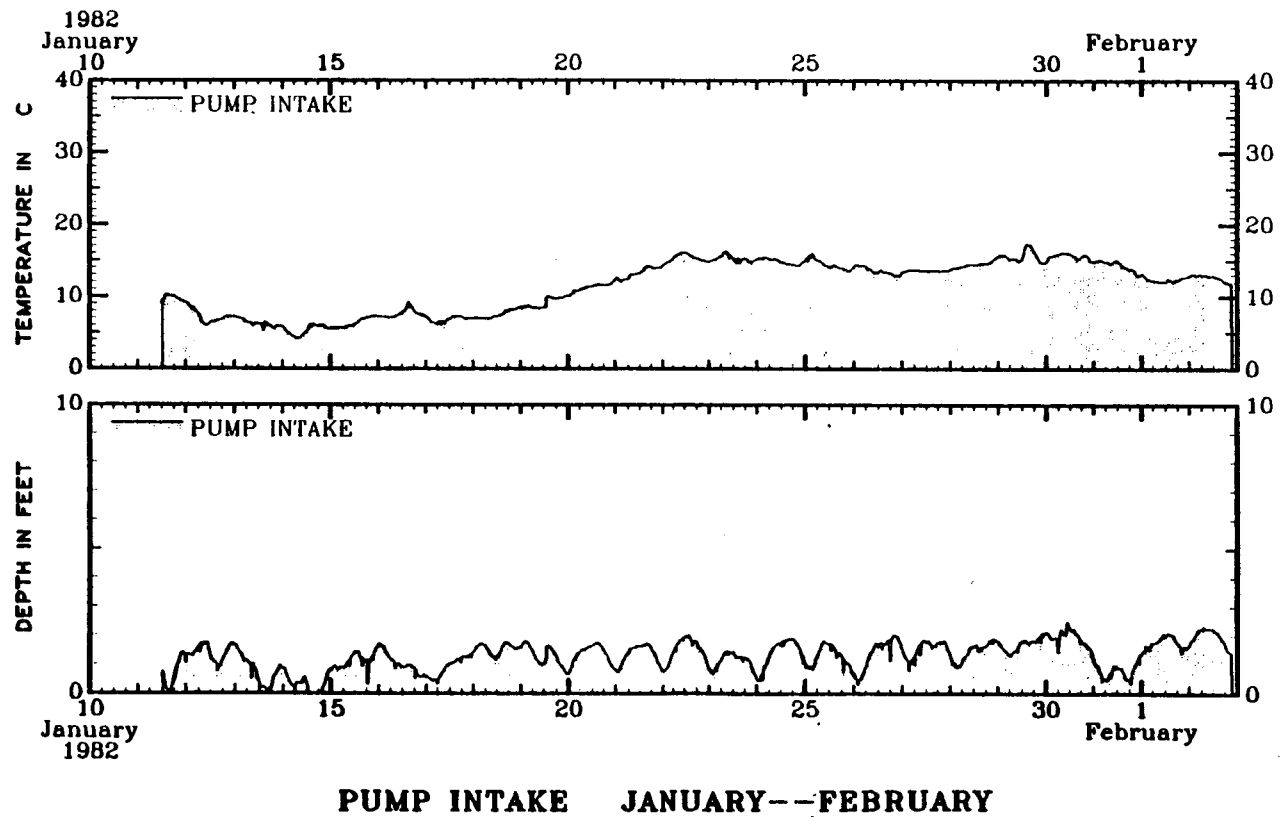


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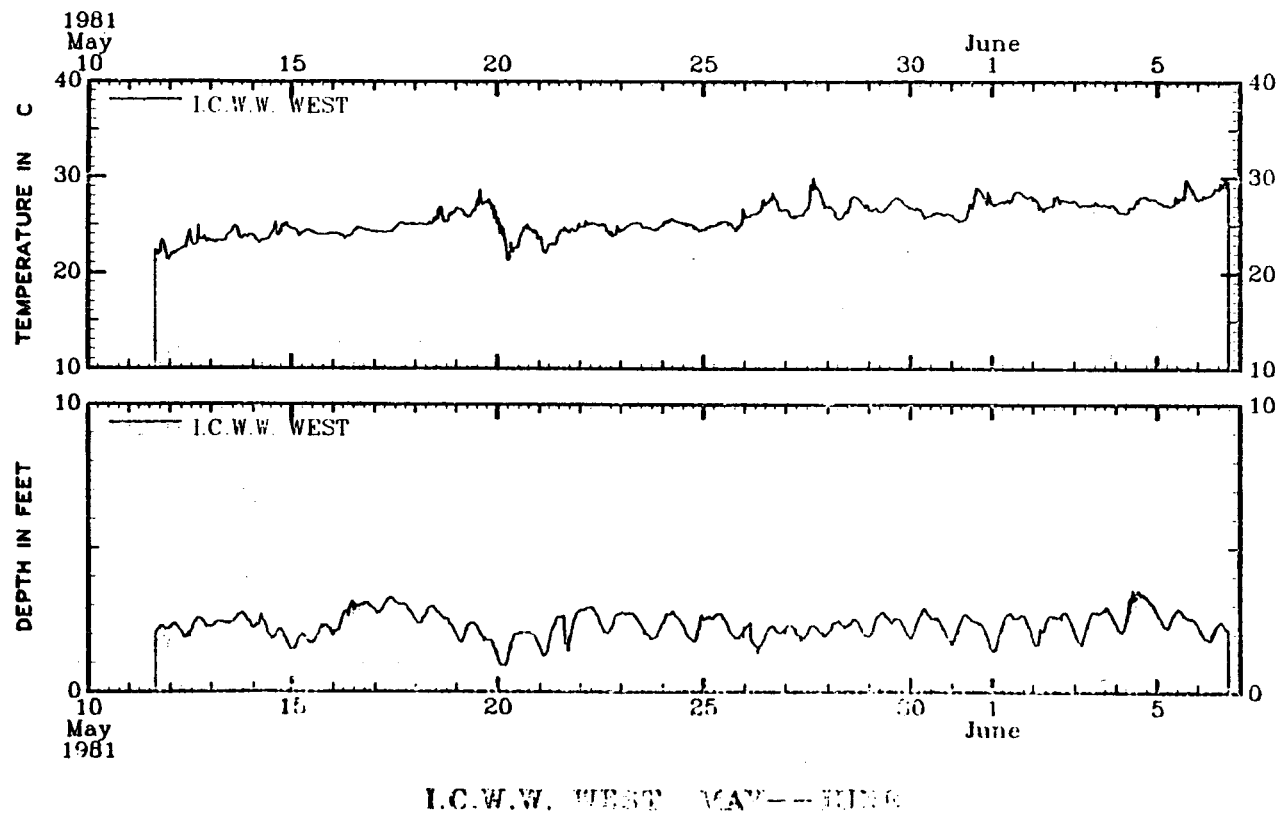


Figure C-4. Temperature and water level data for the Intracoastal Waterway West (station E7).

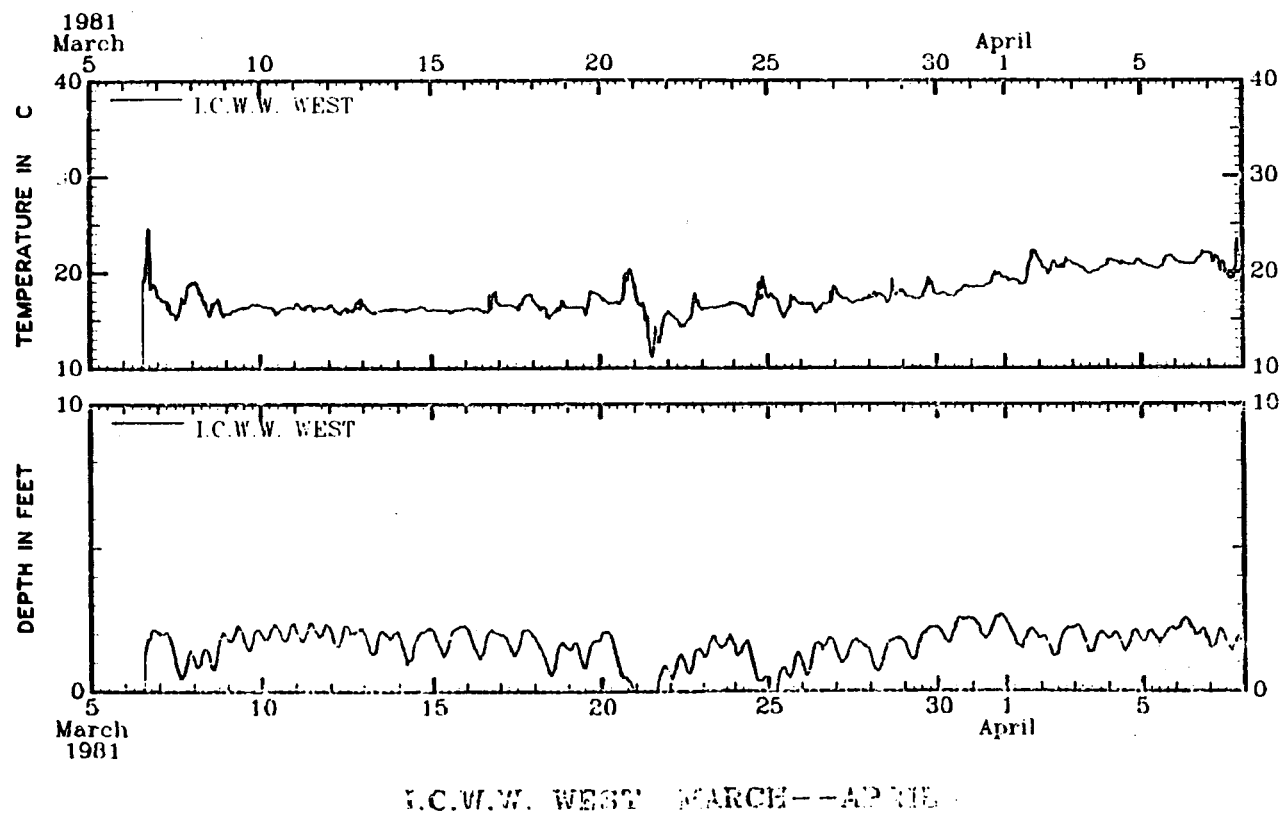


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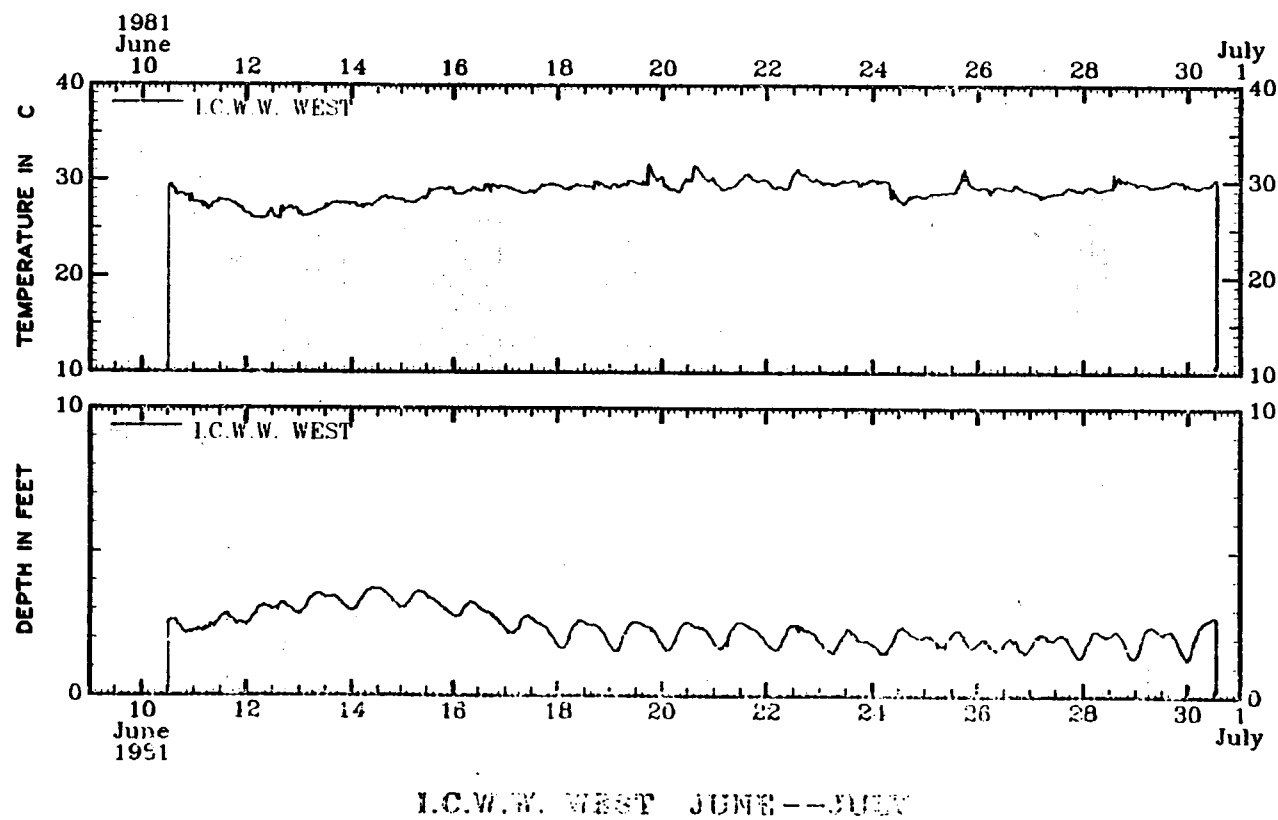
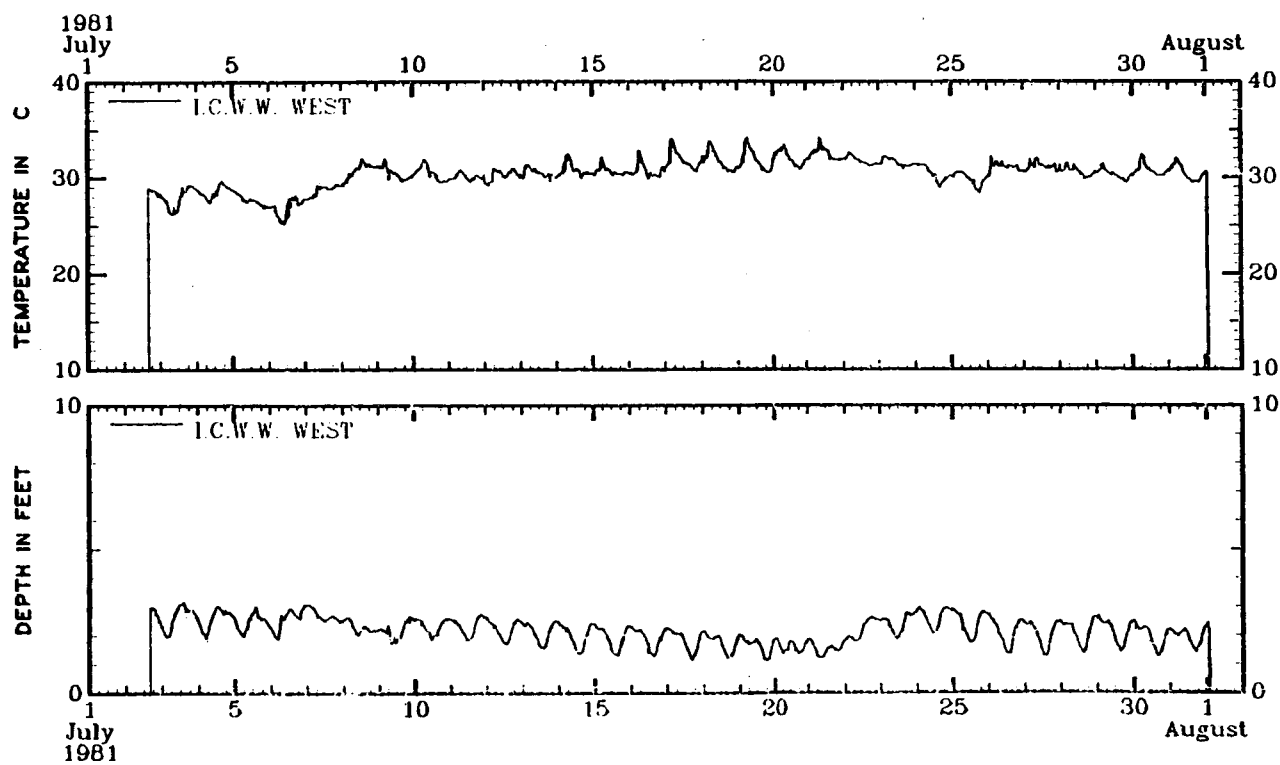
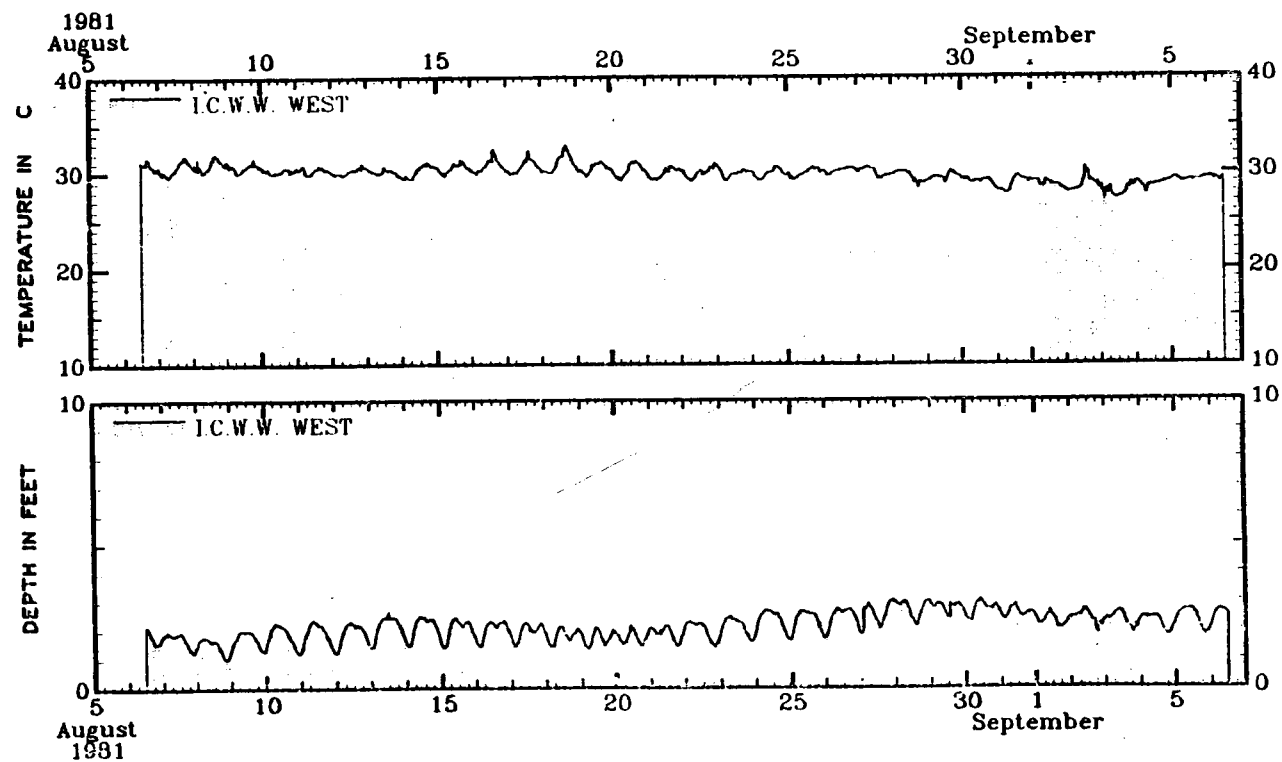


Figure C-4. Continued.



I.C.W.W. WEST JULY--AUGUST

Figure C-4. Continued.



I.C.W.W. WEST AUGUST-SEPTEMBER

Figure C-4. Continued.

C-24

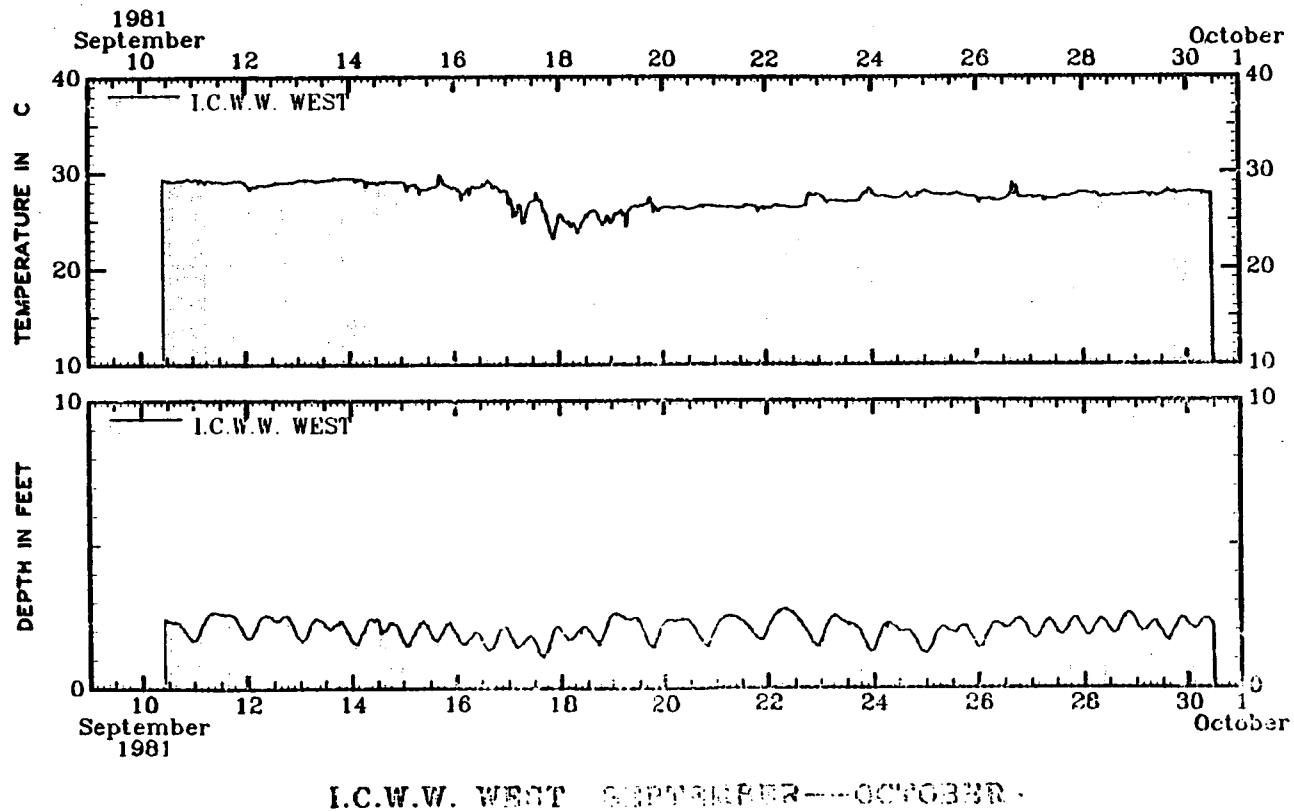


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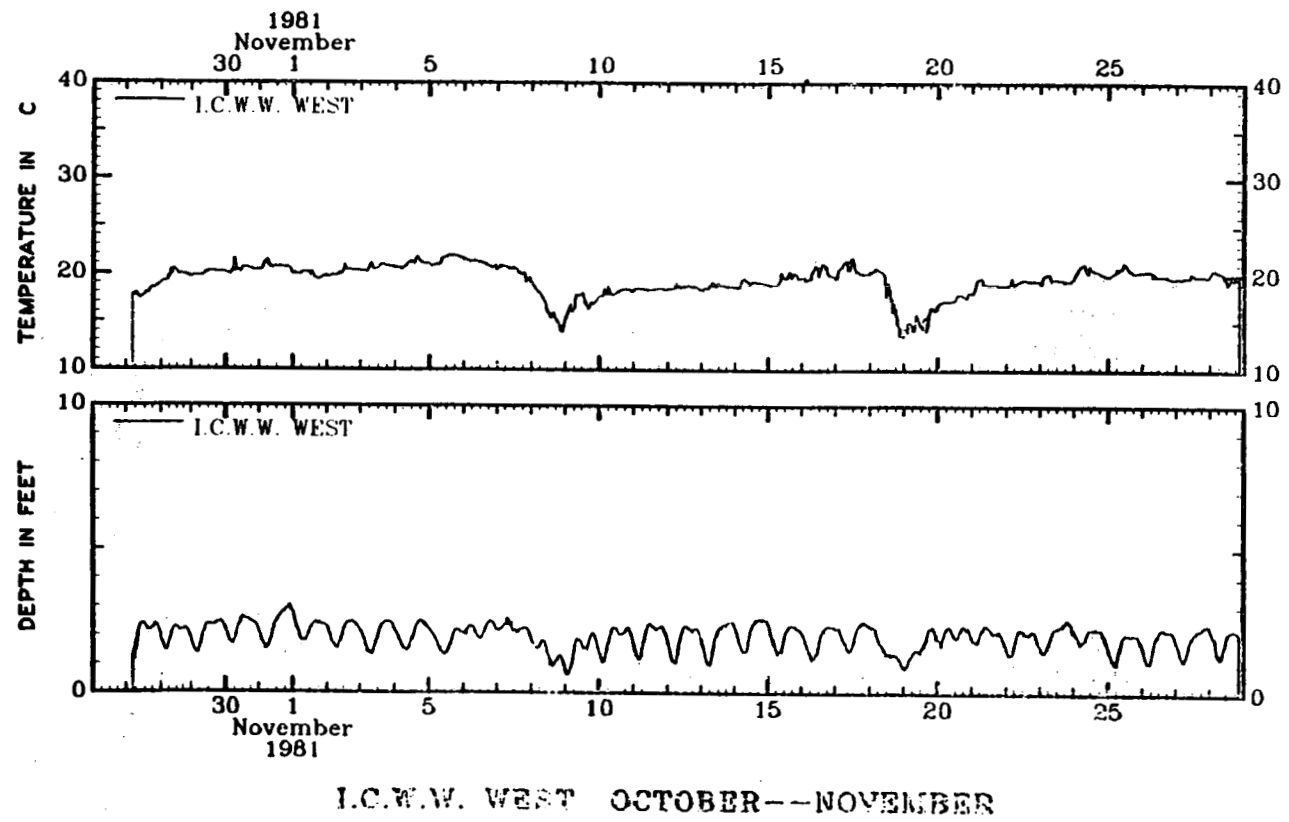


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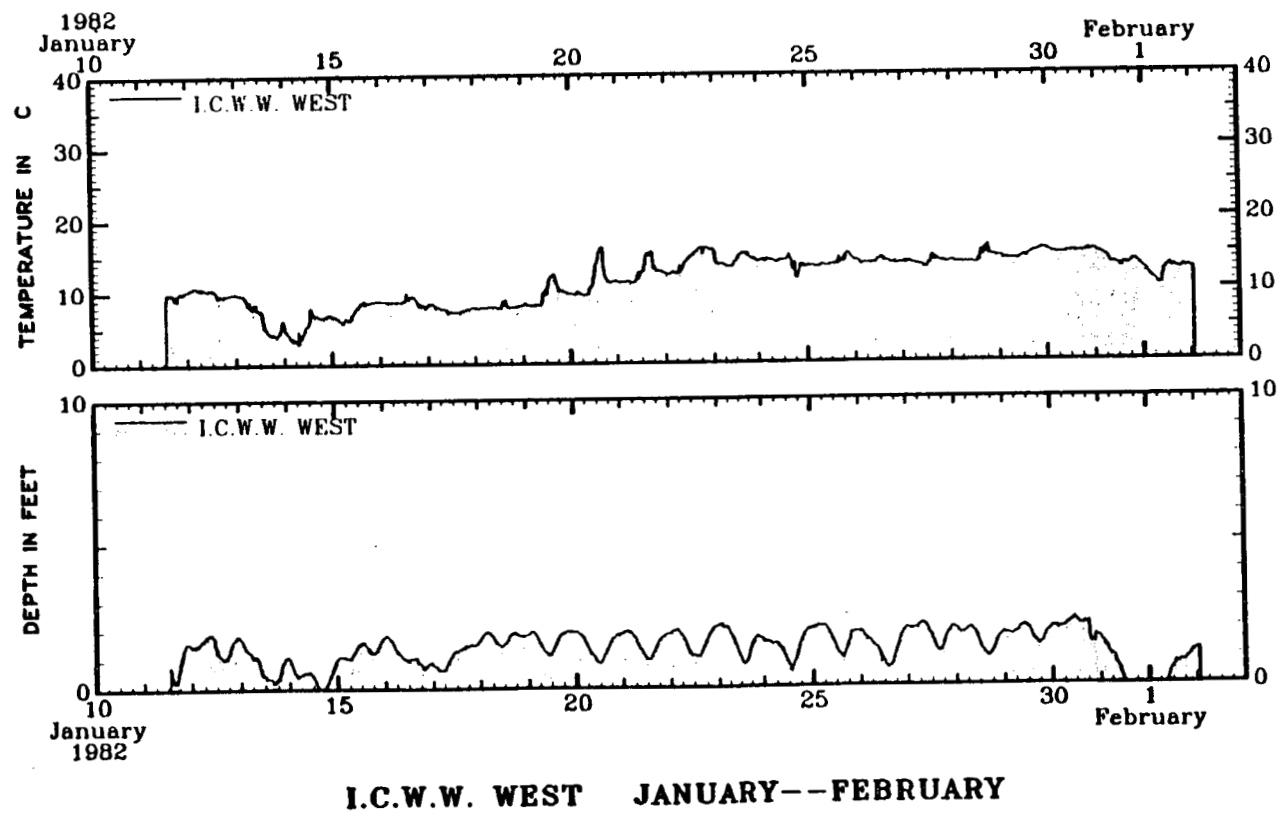


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C-27

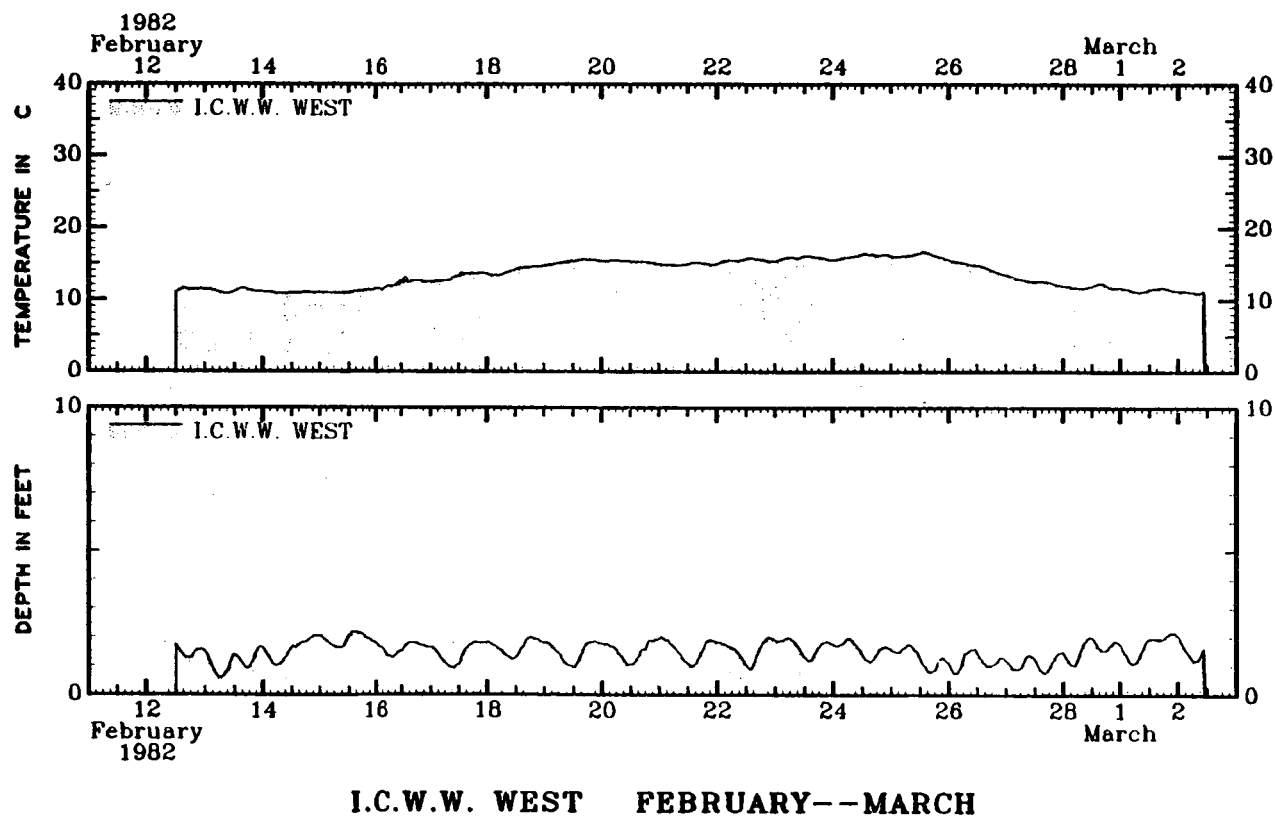


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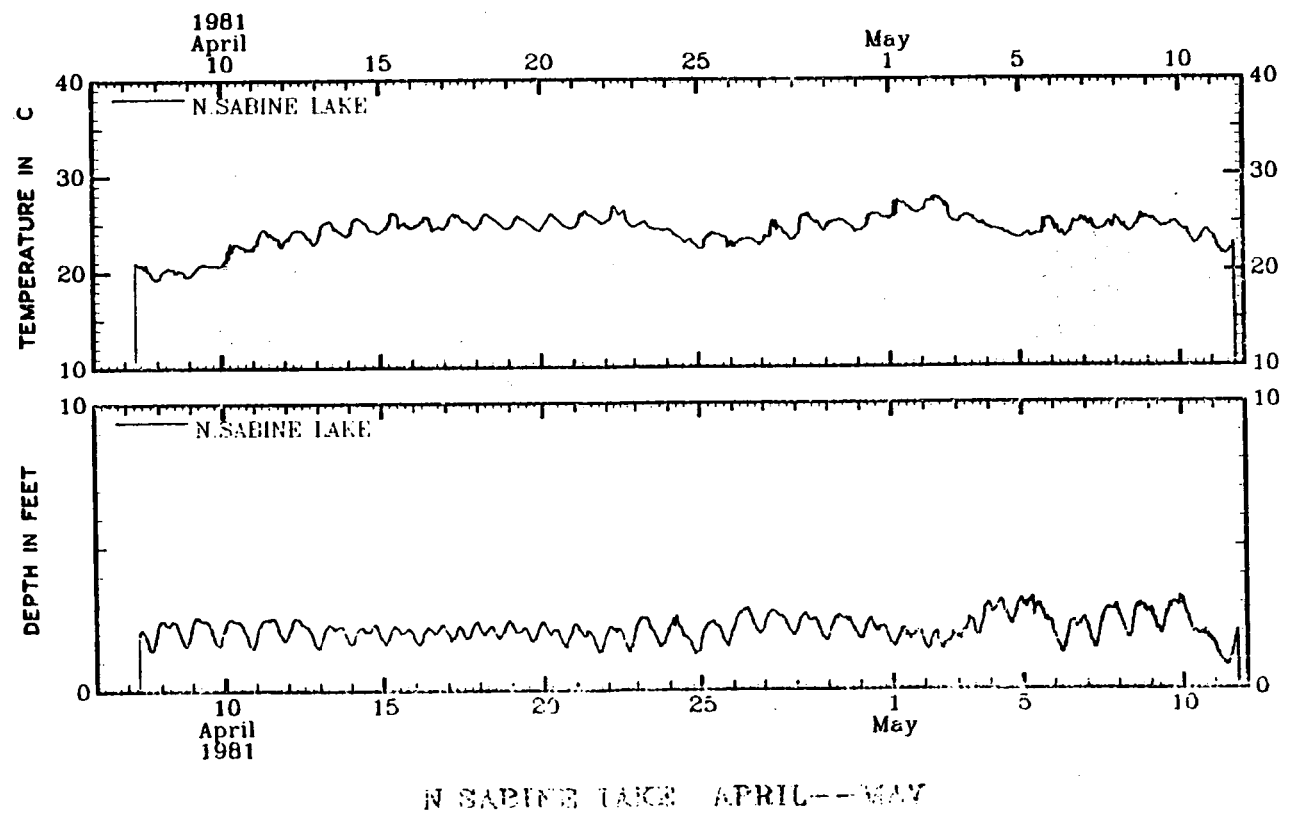


Figure C-5. Temperature and water level data for north Sabine Lake (station E8).

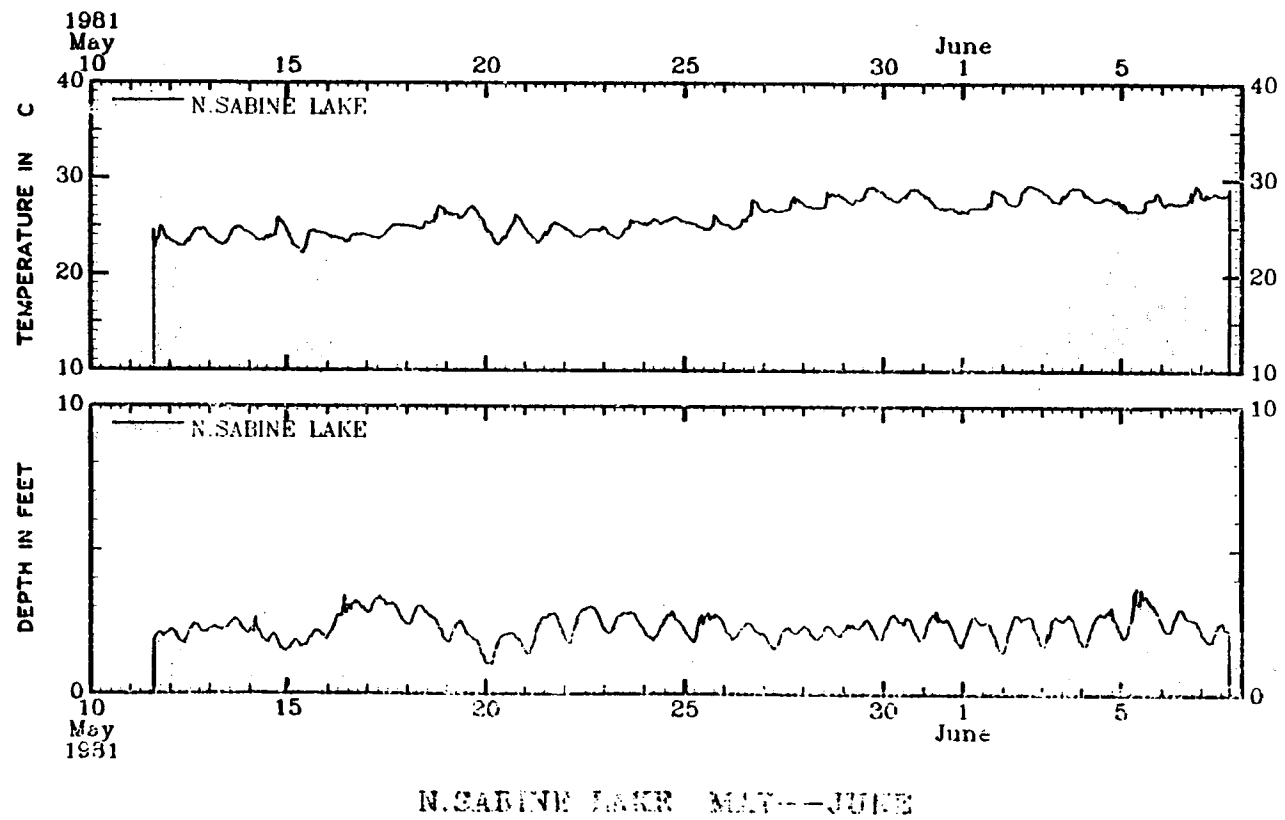


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C-30

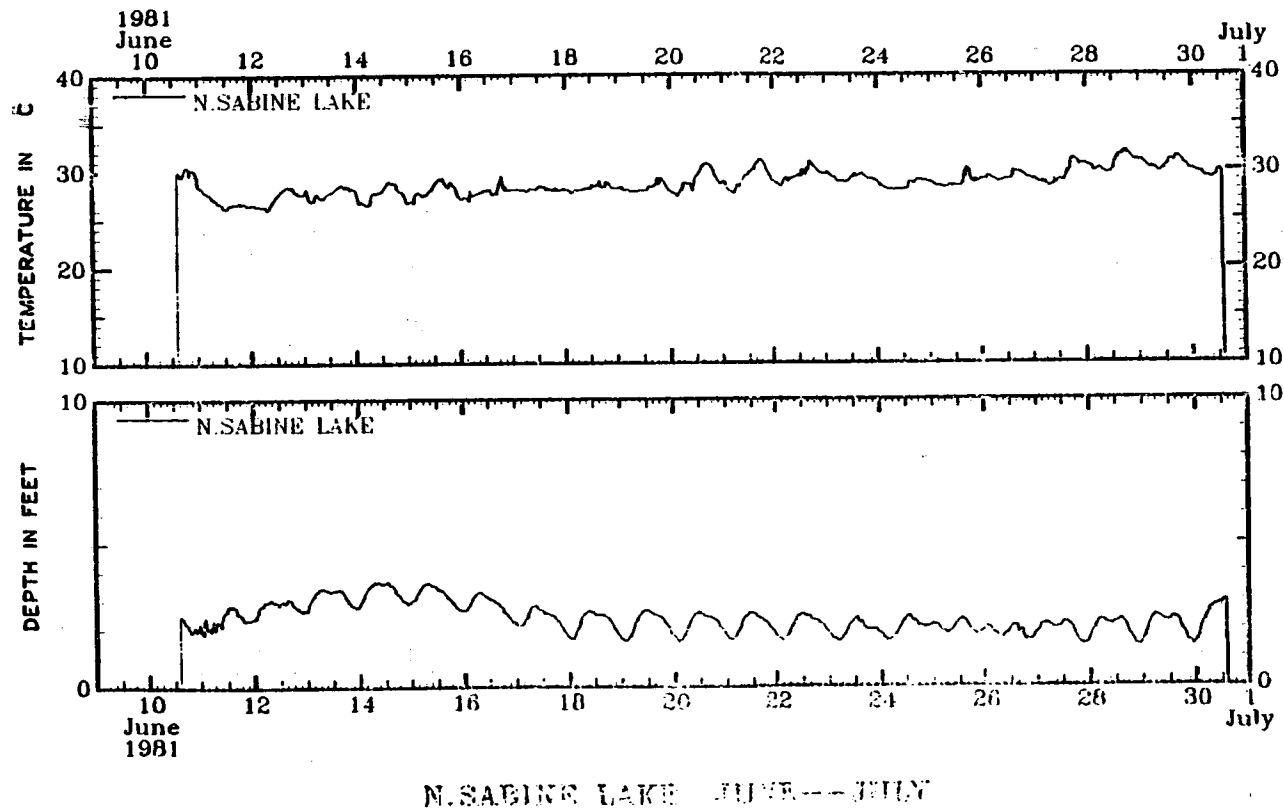


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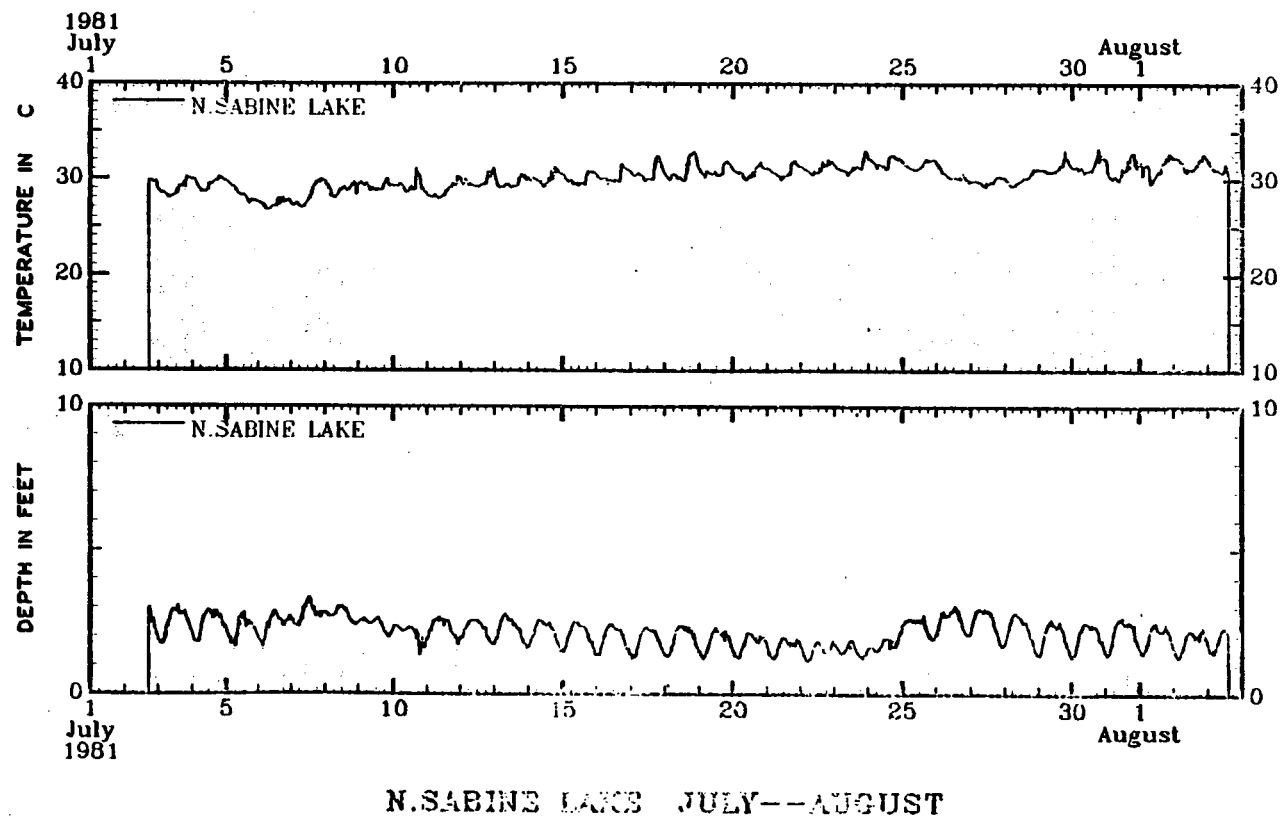


Figure C-5. Continued.

Table C-1. Average monthly USGS gauged inflows at Calcasieu Lake from 1967 through 1981.

Calcasieu - Average Monthly Inflows In CFS For 1967											
I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	-	I	-	I	-	I	-	I	I
I	FEB	I	-	I	-	I	-	I	-	I	I
I	MAR	I	-	I	-	I	-	I	-	I	I
I	APR	I	-	I	-	I	-	I	-	I	I
I	MAY	I	-	I	-	I	-	I	-	I	I
I	JUN	I	-	I	-	I	-	I	-	I	I
I	JUL	I	-	I	-	I	-	I	-	I	I
I	AUG	I	-	I	-	I	-	I	-	I	I
I	SEP	I	-	I	-	I	-	I	-	I	I
I	OCT	I	306.29	I	4.25	I	0.11	I	310.65	I	I
I	NOV	I	398.60	I	2.78	I	0.09	I	401.47	I	I
I	DEC	I	5494.39	I	534.80	I	550.17	I	6579.35	I	I

Calcasieu - Average Monthly Inflows In CFS For 1968											
I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	6566.45	I	660.97	I	796.71	I		8024.12	I
I	FEB	I	1630.15	I	98.00	I	97.55	I		1825.70	I
I	MAR	I	-	I	182.81	I	208.87	I		391.68	I
I	APR	I	3958.33	I	355.73	I	324.73	I		4638.80	I
I	MAY	I	2290.97	I	174.71	I	245.71	I		2711.39	I
I	JUN	I	1116.70	I	212.82	I	286.89	I		1616.41	I
I	JUL	I	660.65	I	27.82	I	42.43	I		730.89	I
I	AUG	I	537.16	I	30.67	I	24.88	I		592.71	I
I	SEP	I	709.70	I	124.89	I	359.94	I		1194.53	I
I	OCT	I	385.16	I	10.19	I	5.77	I		401.12	I
I	NOV	I	472.47	I	81.74	I	58.50	I		612.71	I
I	DEC	I	4225.80	I	510.35	I	695.19	I		5431.35	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1969

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	1469.45	I	90.03	I	84.45	I	1643.94	I
I	FEB	I	4047.68	I	551.79	I	682.96	I	5282.42	I
I	MAR	I	5086.77	I	405.61	I	439.65	I	5932.03	I
I	APR	I	5693.33	I	531.33	I	583.27	I	6807.93	I
I	MAY	I	3830.97	I	400.48	I	431.34	I	4662.79	I
I	JUN	I	731.20	I	13.43	I	8.35	I	752.97	I
I	JUL	I	811.42	I	14.42	I	38.29	I	864.13	I
I	AUG	I	387.06	I	3.86	I	0.49	I	391.42	I
I	SEP	I	320.70	I	2.03	I	9.41	I	332.15	I
I	OCT	I	343.84	I	0.51	I	0.11	I	344.46	I
I	NOV	I	313.30	I	4.77	I	0.03	I	318.10	I
I	DEC	I	888.84	I	129.49	I	88.21	I	1106.54	I

Calcasieu - Average Monthly Inflows In CFS For 1970

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	1348.32	I	28.95	I	25.31	I	1402.59	I
I	FEB	I	944.04	I	44.35	I	44.76	I	1033.15	I
I	MAR	I	1524.06	I	99.32	I	95.68	I	1719.06	I
I	APR	I	1509.23	I	153.39	I	119.94	I	1782.57	I
I	MAY	I	1234.06	I	22.99	I	12.32	I	1269.37	I
I	JUN	I	324.60	I	70.24	I	40.72	I	435.57	I
I	JUL	I	310.84	I	1.53	I	0.09	I	312.45	I
I	AUG	I	310.48	I	1.71	I	0.24	I	312.43	I
I	SEP	I	405.07	I	20.78	I	14.89	I	440.74	I
I	OCT	I	4716.55	I	624.20	I	1555.78	I	6896.52	I
I	NOV	I	1526.40	I	123.73	I	286.57	I	1936.70	I
I	DEC	I	1193.45	I	33.10	I	21.89	I	1248.44	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1971

I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	1774.97	I	102.45	I	98.61	I		1976.03	I
I	FEB	I	2608.71	I	374.00	I	428.64	I		3411.36	I
I	MAR	I	3951.61	I	219.74	I	242.55	I		4413.90	I
I	APR	I	1241.03	I	12.07	I	3.41	I		1256.51	I
I	MAY	I	2200.65	I	82.02	I	76.36	I		2359.02	I
I	JUN	I	391.17	I	2.51	I	3.39	I		397.07	I
I	JUL	I	398.97	I	2.95	I	0.11	I		402.04	I
I	AUG	I	802.35	I	54.00	I	51.24	I		907.59	I
I	SEP	I	645.20	I	16.37	I	24.59	I		686.16	I
I	OCT	I	584.26	I	3.71	I	4.19	I		592.16	I
I	NOV	I	612.13	I	33.86	I	37.10	I		683.09	I
I	DEC	I	10001.29	I	631.45	I	824.06	I		11456.80	I

Calcasieu - Average Monthly Inflows In CFS For 1972

I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	5489.35	I	504.32	I	641.48	I		6635.15	I
I	FEB	I	2998.62	I	170.52	I	234.79	I		3403.93	I
I	MAR	I	3386.45	I	323.77	I	361.61	I		4071.84	I
I	APR	I	897.53	I	19.59	I	13.28	I		930.40	I
I	MAY	I	1284.29	I	43.12	I	74.51	I		1401.92	I
I	JUN	I	741.87	I	17.47	I	22.03	I		781.37	I
I	JUL	I	670.68	I	8.55	I	44.03	I		723.26	I
I	AUG	I	599.45	I	37.06	I	22.62	I		659.14	I
I	SEP	I	363.13	I	23.22	I	12.12	I		398.47	I
I	OCT	I	1164.26	I	16.53	I	43.50	I		1224.29	I
I	NOV	I	1709.90	I	118.66	I	85.82	I		1914.38	I
I	DEC	I	5270.64	I	231.77	I	192.48	I		5694.90	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1973										
I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	4662.58	I	511.55	I	612.45	I	5786.57	I
I	FEB	I	6325.36	I	501.93	I	522.11	I	7349.39	I
I	MAR	I	10819.35	I	695.35	I	938.61	I	12453.31	I
I	APR	I	9145.66	I	590.63	I	725.77	I	10462.06	I
I	MAY	I	7850.00	I	523.68	I	572.51	I	8946.18	I
I	JUN	I	2106.03	I	332.40	I	514.72	I	2953.15	I
I	JUL	I	766.13	I	265.52	I	239.19	I	1270.83	I
I	AUG	I	1124.81	I	70.79	I	55.69	I	1251.29	I
I	SEP	I	3381.97	I	493.60	I	856.67	I	4732.23	I
I	OCT	I	3167.03	I	389.03	I	679.97	I	4236.03	I
I	NOV	I	2535.00	I	242.93	I	259.23	I	3037.17	I
I	DEC	I	4437.09	I	382.74	I	315.52	I	5135.35	I

Calcasieu ~ Average Monthly Inflows In CFS For 1974											
I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	12674.19	I	1127.94	I	1399.16	I		15201.29	I
I	FEB	I	5766.43	I	257.82	I	240.82	I		6265.07	I
I	MAR	I	2127.42	I	154.03	I	209.16	I		2490.61	I
I	APR	I	4336.46	I	269.67	I	282.22	I		4888.35	I
I	MAY	I	1926.45	I	76.90	I	50.18	I		2053.54	I
I	JUN	I	1515.20	I	52.27	I	10.11	I		1577.58	I
I	JUL	I	808.90	I	50.48	I	7.82	I		867.21	I
I	AUG	I	637.10	I	47.10	I	24.06	I		708.25	I
I	SEP	I	1048.43	I	126.02	I	70.98	I		1245.43	I
I	OCT	I	399.87	I	6.10	I	1.43	I		407.40	I
I	NOV	I	1384.20	I	84.23	I	156.00	I		1624.43	I
I	DEC	I	4415.48	I	458.84	I	434.74	I		5309.05	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1975

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	6943.55	I	570.00	I	801.19	I	8314.74	I
I	FEB	I	2439.64	I	140.25	I	163.64	I	2743.54	I
I	MAR	I	3100.00	I	127.42	I	127.45	I	3354.87	I
I	APR	I	2951.33	I	214.97	I	293.87	I	3460.17	I
I	MAY	I	10333.22	I	428.39	I	424.99	I	11186.59	I
I	JUN	I	4312.66	I	309.87	I	510.80	I	5133.32	I
I	JUL	I	3584.52	I	339.16	I	128.58	I	4052.26	I
I	AUG	I	4533.55	I	458.65	I	380.16	I	5372.35	I
I	SEP	I	1281.47	I	207.40	I	142.57	I	1631.44	I
I	OCT	I	2540.90	I	249.90	I	294.91	I	3085.71	I
I	NOV	I	1878.20	I	95.47	I	165.41	I	2139.08	I
I	DEC	I	1761.19	I	163.42	I	191.55	I	2116.16	I

Calcasieu - Average Monthly Inflows In CFS For 1976

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	2667.94	I	240.35	I	263.29	I	3171.58	I
I	FEB	I	1818.62	I	72.31	I	65.21	I	1956.14	I
I	MAR	I	3936.77	I	537.35	I	798.94	I	5273.06	I
I	APR	I	2547.87	I	113.13	I	199.93	I	2860.93	I
I	MAY	I	2631.19	I	35.32	I	42.44	I	2708.95	I
I	JUN	I	1796.70	I	105.93	I	128.73	I	2031.36	I
I	JUL	I	1044.03	I	169.61	I	216.55	I	1430.19	I
I	AUG	I	490.03	I	13.61	I	7.49	I	511.13	I
I	SEP	I	389.07	I	6.61	I	3.22	I	398.89	I
I	OCT	I	347.84	I	9.05	I	6.88	I	363.77	I
I	NOV	I	415.40	I	24.41	I	82.99	I	522.80	I
I	DEC	I	1537.35	I	318.13	I	611.29	I	2466.77	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1977

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	3538.06	I	374.26	I	475.77	I	4388.09	I
I	FEB	I	2764.64	I	204.71	I	174.00	I	3143.36	I
I	MAR	I	4904.06	I	346.13	I	302.13	I	5552.32	I
I	APR	I	2879.33	I	258.33	I	298.07	I	3435.74	I
I	MAY	I	2197.06	I	30.69	I	9.81	I	2237.56	I
I	JUN	I	438.67	I	10.68	I	10.93	I	460.27	I
I	JUL	I	346.81	I	7.46	I	0.02	I	354.29	I
I	AUG	I	557.94	I	36.77	I	55.34	I	650.04	I
I	SEP	I	583.63	I	24.85	I	24.36	I	632.85	I
I	OCT	I	881.32	I	86.05	I	53.45	I	1020.83	I
I	NOV	I	1620.83	I	231.73	I	216.37	I	2068.93	I
I	DEC	I	6177.42	I	475.00	I	519.87	I	7172.29	I

Calcasieu - Average Monthly Inflows In CFS For 1978

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	5376.13	I	662.48	I	806.10	I	6844.70	I
I	FEB	I	5060.00	I	259.86	I	211.43	I	5531.28	I
I	MAR	I	1335.90	I	34.74	I	30.78	I	1401.42	I
I	APR	I	738.07	I	9.89	I	4.49	I	752.45	I
I	MAY	I	393.90	I	4.44	I	0.33	I	398.66	I
I	JUN	I	1507.23	I	41.20	I	126.42	I	1674.85	I
I	JUL	I	352.97	I	20.42	I	0.34	I	373.72	I
I	AUG	I	370.48	I	40.38	I	5.45	I	416.32	I
I	SEP	I	502.20	I	22.81	I	12.76	I	537.77	I
I	OCT	I	254.52	I	1.20	I	0.22	I	255.93	I
I	NOV	I	304.53	I	5.70	I	17.25	I	327.49	I
I	DEC	I	714.90	I	61.19	I	53.22	I	829.31	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1979

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	5374.84	I	477.29	I	441.23	I	6293.35	I
I	FEB	I	7646.43	I	581.29	I	666.71	I	8894.42	I
I	MAR	I	5248.39	I	377.74	I	503.65	I	6129.77	I
I	APR	I	4633.66	I	477.47	I	752.50	I	5863.63	I
I	MAY	I	1660.71	I	60.53	I	70.76	I	1792.01	I
I	JUN	I	2964.23	I	183.44	I	307.40	I	3455.07	I
I	JUL	I	3310.74	I	420.35	I	348.61	I	4079.70	I
I	AUG	I	1117.81	I	40.94	I	40.59	I	1199.33	I
I	SEP	I	7285.16	I	371.68	I	538.86	I	8195.70	I
I	OCT	I	850.84	I	25.97	I	11.69	I	888.50	I
I	NOV	I	2443.90	I	140.41	I	196.68	I	2780.98	I
I	DEC	I	6209.22	I	297.45	I	281.42	I	6788.09	I

Calcasieu - Average Monthly Inflows In CFS For 1980

I	Month	I	Calcasieu	I	Beckwith	I	Bear H	I	Total	I
I	JAN	I	4372.90	I	397.84	I	593.26	I	5364.00	I
I	FEB	I	5241.03	I	364.24	I	408.34	I	6013.61	I
I	MAR	I	6723.55	I	542.35	I	503.77	I	7769.67	I
I	APR	I	9019.33	I	501.37	I	601.60	I	10122.29	I
I	MAY	I	6061.61	I	872.71	I	1504.27	I	8438.58	I
I	JUN	I	853.73	I	13.82	I	5.84	I	873.40	I
I	JUL	I	343.68	I	15.12	I	1.19	I	359.99	I
I	AUG	I	267.39	I	14.03	I	0.70	I	282.11	I
I	SEP	I	328.97	I	10.84	I	2.87	I	342.67	I
I	OCT	I	442.84	I	23.53	I	21.88	I	488.25	I
I	NOV	I	403.87	I	14.41	I	25.74	I	444.02	I
I	DEC	I	618.10	I	78.78	I	98.19	I	795.06	I

Table C-1. Continued.

Calcasieu - Average Monthly Inflows In CFS For 1981											
I	Month	I	Calcasieu	I	Beckwith	I	Bear	H	I	Total	I
I	JAN	I	369.81	I	28.05	I	58.61	I		456.47	I
I	FEB	I	1217.89	I	155.29	I	268.96	I		1642.14	I
I	MAR	I	1525.87	I	110.65	I	125.20	I		1761.72	I
I	APR	I	472.47	I	12.31	I	11.45	I		496.23	I
I	MAY	I	778.90	I	9.05	I	4.00	I		791.95	I
I	JUN	I	4467.36	I	381.98	I	442.10	I		5291.44	I
I	JUL	I	1719.42	I	253.79	I	520.87	I		2494.08	I
I	AUG	I	395.68	I	8.21	I	6.45	I		410.34	I
I	SEP	I	352.50	I	10.34	I	2.47	I		365.31	I
I	OCT	I	-	I	-	I	-	I		-	I
I	NOV	I	-	I	-	I	-	I		-	I
I	DEC	I	-	I	-	I	-	I		-	I

Table C-2. Average monthly USGS gauged inflows at Sabine Lake from 1967 through 1981.

Sabine - Average Monthly Inflows In CFS For 1967														
I	Month	I	Sabine	I	Cow B	I	Neches	I	Village	I	Pine Is	I	Total	I
I	JAN	I	--	I	--	I	--	I	--	I	--	I	--	I
I	FEB	I	--	I	--	I	--	I	--	I	--	I	--	I
I	MAR	I	--	I	--	I	--	I	--	I	--	I	--	I
I	APR	I	--	I	--	I	--	I	--	I	--	I	--	I
I	MAY	I	--	I	--	I	--	I	--	I	--	I	--	I
I	JUN	I	--	I	--	I	--	I	--	I	--	I	--	I
I	JUL	I	--	I	--	I	--	I	--	I	--	I	--	I
I	AUG	I	--	I	--	I	--	I	--	I	--	I	--	I
I	SEP	I	--	I	--	I	--	I	--	I	--	I	--	I
I	OCT	I	291.74	I	0.05	I	547.26	I	22.81	I	2.95	I	864.80	I
I	NOV	I	327.30	I	0.08	I	448.03	I	34.93	I	2.55	I	812.90	I
I	DEC	I	1695.55	I	17.93	I	536.81	I	125.10	I	63.97	I	2439.35	I

Sabine - Average Monthly Inflows In CFS For 1968														
I	Month	I	Sabine	I	Cow B	I	Neches	I	Village	I	Pine Is	I	Total	I
I	JAN	I	4241.29	I	267.38	I	3098.06	I	273.03	I	193.55	I	8073.30	I
I	FEB	I	1558.97	I	27.40	I	2707.93	I	169.14	I	37.42	I	4500.85	I
I	MAR	I	2531.94	I	85.52	I	3644.84	I	392.97	I	136.10	I	6791.35	I
I	APR	I	6335.00	I	320.66	I	11873.66	I	1042.87	I	629.90	I	20202.08	I
I	MAY	I	6205.48	I	162.59	I	11904.84	I	1238.06	I	550.68	I	20061.64	I
I	JUN	I	17187.66	I	531.56	I	11661.33	I	1928.23	I	881.07	I	32189.85	I
I	JUL	I	5584.19	I	58.16	I	9136.13	I	658.77	I	387.10	I	15824.34	I
I	AUG	I	3278.39	I	3.18	I	4170.32	I	139.94	I	34.97	I	7626.78	I
I	SEP	I	5648.33	I	97.99	I	1800.43	I	197.33	I	102.13	I	7846.21	I
I	OCT	I	2691.94	I	1.86	I	3005.81	I	130.87	I	109.02	I	5939.48	I
I	NOV	I	2170.33	I	9.84	I	3970.33	I	241.93	I	16.89	I	6409.31	I
I	DEC	I	17496.77	I	165.19	I	8599.35	I	670.94	I	115.61	I	27047.86	I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1969

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	10818.39 I	87.64 I	7622.90 I	375.32 I	26.62 I	18930.86 I
I FEB I	8899.29 I	359.61 I	8910.36 I	1370.04 I	727.23 I	20266.51 I
I MAR I	27480.64 I	230.45 I	14363.22 I	1572.84 I	930.42 I	44577.57 I
I APR I	33243.33 I	209.27 I	21176.66 I	831.83 I	485.53 I	55946.63 I
I MAY I	24003.22 I	253.88 I	24122.58 I	3595.19 I	782.74 I	52757.61 I
I JUN I	10645.66 I	7.11 I	13983.66 I	436.87 I	139.87 I	25213.16 I
I JUL I	3354.84 I	11.58 I	2649.03 I	115.94 I	88.45 I	6219.83 I
I AUG I	3540.00 I	0.26 I	2417.42 I	58.77 I	36.07 I	6052.52 I
I SEP I	3210.00 I	0.22 I	1783.00 I	59.33 I	18.94 I	5071.49 I
I OCT I	804.61 I	0.05 I	1267.74 I	46.00 I	2.90 I	2121.30 I
I NOV I	1469.37 I	0.12 I	931.77 I	93.87 I	6.41 I	2501.52 I
I DEC I	1762.35 I	4.61 I	1582.45 I	293.71 I	147.08 I	3790.21 I

Sabine - Average Monthly Inflows In CFS For 1970

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	2272.58 I	5.68 I	2809.03 I	336.45 I	37.19 I	5460.93 I
I FEB I	3445.71 I	8.74 I	2355.36 I	344.11 I	62.76 I	6216.67 I
I MAR I	9766.45 I	34.94 I	4434.84 I	470.71 I	253.72 I	14960.65 I
I APR I	12821.00 I	50.87 I	5430.66 I	498.23 I	151.73 I	18952.49 I
I MAY I	8020.64 I	26.39 I	4544.52 I	1060.13 I	424.42 I	14076.10 I
I JUN I	1427.67 I	10.82 I	1794.00 I	303.47 I	322.57 I	3858.52 I
I JUL I	1983.84 I	0.05 I	1302.81 I	59.42 I	59.81 I	3405.92 I
I AUG I	2668.87 I	0.14 I	826.55 I	38.87 I	37.71 I	3572.14 I
I SEP I	3150.67 I	2.51 I	1059.53 I	58.07 I	80.20 I	4350.97 I
I OCT I	5452.13 I	505.35 I	1186.74 I	411.45 I	643.42 I	8199.08 I
I NOV I	2828.33 I	164.83 I	1343.27 I	266.63 I	528.23 I	5131.29 I
I DEC I	2149.84 I	3.37 I	1147.10 I	157.87 I	12.79 I	3470.96 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1971

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	4391.29 I	23.53 I	1124.65 I	249.61 I	4.75 I	5793.82 I
I FEB I	3325.36 I	131.81 I	1148.11 I	174.96 I	35.34 I	4815.57 I
I MAR I	5336.13 I	82.40 I	1351.94 I	296.81 I	108.35 I	7175.61 I
I APR I	1030.43 I	0.45 I	1556.67 I	104.03 I	72.37 I	2763.95 I
I MAY I	1504.52 I	44.43 I	1234.61 I	289.81 I	145.10 I	3218.46 I
I JUN I	2011.90 I	1.30 I	1397.13 I	72.03 I	40.00 I	3522.37 I
I JUL I	1522.13 I	0.27 I	1255.32 I	31.13 I	54.65 I	2863.50 I
I AUG I	1383.94 I	4.45 I	396.45 I	125.39 I	164.84 I	2075.06 I
I SEP I	620.87 I	8.68 I	398.07 I	89.67 I	40.17 I	1157.44 I
I OCT I	1028.19 I	7.58 I	524.58 I	210.42 I	46.74 I	1817.51 I
I NOV I	981.40 I	0.97 I	372.63 I	192.50 I	33.90 I	1581.40 I
I DEC I	14176.87 I	349.74 I	3466.16 I	2449.42 I	1133.58 I	21575.77 I

Sabine - Average Monthly Inflows In CFS For 1972

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	20454.84 I	269.48 I	3755.48 I	1488.03 I	485.58 I	26453.41 I
I FEB I	10540.00 I	161.17 I	2943.93 I	906.79 I	612.03 I	15163.92 I
I MAR I	4594.84 I	183.01 I	2902.10 I	1110.13 I	386.23 I	9176.29 I
I APR I	2472.00 I	7.53 I	2782.33 I	699.93 I	170.40 I	6132.19 I
I MAY I	5189.68 I	75.32 I	4140.00 I	2300.58 I	928.29 I	12633.86 I
I JUN I	3223.13 I	5.67 I	2918.00 I	151.07 I	54.00 I	6351.87 I
I JUL I	3381.94 I	15.77 I	2104.52 I	233.26 I	94.00 I	5829.48 I
I AUG I	5584.19 I	3.24 I	1930.65 I	98.19 I	33.69 I	7649.95 I
I SEP I	5781.00 I	5.89 I	1649.67 I	93.20 I	76.73 I	7606.47 I
I OCT I	1942.29 I	8.80 I	1418.06 I	156.65 I	20.50 I	3546.30 I
I NOV I	2468.00 I	103.73 I	2192.33 I	581.70 I	615.07 I	5960.83 I
I DEC I	7615.48 I	176.90 I	3867.10 I	927.94 I	580.29 I	13167.70 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1973

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	17425.80 I	348.32 I	7555.48 I	1740.58 I	837.61 I	27907.79 I
I FEB I	17971.43 I	247.21 I	11151.79 I	3018.07 I	939.18 I	33327.67 I
I MAR I	18260.96 I	363.81 I	11921.93 I	2424.58 I	1039.35 I	34010.63 I
I APR I	26993.33 I	363.20 I	20716.66 I	4154.16 I	2133.33 I	54360.69 I
I MAY I	23225.80 I	313.15 I	18309.68 I	2292.29 I	726.16 I	44867.07 I
I JUN I	15254.66 I	154.59 I	15484.00 I	2673.23 I	2031.53 I	35598.01 I
I JUL I	12670.64 I	30.05 I	12639.35 I	1250.81 I	436.23 I	27027.07 I
I AUG I	6263.22 I	38.67 I	3935.48 I	995.74 I	461.52 I	11694.63 I
I SEP I	10526.33 I	292.32 I	6772.00 I	1435.10 I	1158.50 I	20184.25 I
I OCT I	6678.06 I	289.35 I	8065.16 I	1736.06 I	1164.06 I	17932.70 I
I NOV I	8724.66 I	125.03 I	11799.00 I	1759.63 I	877.17 I	23285.49 I
I DEC I	17535.48 I	100.03 I	15243.87 I	2581.19 I	606.71 I	36067.28 I

Sabine - Average Monthly Inflows In CFS For 1974

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	32796.77 I	540.61 I	21706.45 I	5693.22 I	2205.77 I	62942.83 I
I FEB I	27992.86 I	119.64 I	21678.57 I	1784.36 I	423.29 I	51998.71 I
I MAR I	10438.71 I	65.50 I	18041.93 I	1048.68 I	185.63 I	29780.44 I
I APR I	9518.66 I	38.52 I	7296.00 I	1884.33 I	459.23 I	19196.74 I
I MAY I	9194.19 I	4.13 I	5353.87 I	579.61 I	200.26 I	15332.05 I
I JUN I	5997.00 I	2.68 I	4364.00 I	417.83 I	155.70 I	10937.20 I
I JUL I	5690.64 I	0.62 I	3847.42 I	165.77 I	73.35 I	9777.81 I
I AUG I	5832.58 I	2.59 I	3444.84 I	178.00 I	77.68 I	9535.68 I
I SEP I	5727.33 I	1.36 I	4564.66 I	493.43 I	138.10 I	10924.88 I
I OCT I	1256.19 I	0.23 I	2544.52 I	240.32 I	71.80 I	4113.07 I
I NOV I	6296.33 I	52.55 I	6914.66 I	1910.33 I	1527.33 I	16701.21 I
I DEC I	20561.29 I	146.68 I	10410.96 I	2485.68 I	1107.19 I	34711.80 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1975

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	23680.64 I	346.45 I	14516.77 I	2919.35 I	1357.48 I	42820.70 I
I FEB I	23632.14 I	76.79 I	17035.71 I	2251.96 I	430.50 I	43427.10 I
I MAR I	20496.77 I	56.93 I	14370.96 I	1640.03 I	267.26 I	36831.95 I
I APR I	15077.33 I	211.67 I	8704.00 I	1369.37 I	879.53 I	26241.89 I
I MAY I	21513.55 I	251.93 I	15804.19 I	2268.55 I	639.48 I	40477.69 I
I JUN I	15453.33 I	492.50 I	9708.00 I	2120.40 I	2374.00 I	30148.23 I
I JUL I	9321.61 I	105.20 I	7684.19 I	1097.81 I	255.16 I	18463.97 I
I AUG I	7982.26 I	171.80 I	6952.90 I	1579.65 I	943.94 I	17630.54 I
I SEP I	5639.00 I	100.25 I	4588.33 I	357.00 I	74.47 I	10759.05 I
I OCT I	2692.90 I	61.77 I	3390.00 I	647.77 I	296.72 I	7089.16 I
I NOV I	1538.00 I	63.15 I	2176.33 I	784.00 I	498.27 I	5059.75 I
I DEC I	1982.26 I	108.19 I	1962.90 I	727.35 I	444.58 I	5225.28 I

Sabine - Average Monthly Inflows In CFS For 1976

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	2583.55 I	64.35 I	1867.42 I	1084.26 I	281.90 I	5881.47 I
I FEB I	3771.03 I	22.25 I	1764.14 I	544.55 I	53.71 I	6155.68 I
I MAR I	9936.13 I	294.77 I	3333.87 I	855.55 I	291.01 I	14711.32 I
I APR I	7200.66 I	85.80 I	4118.00 I	716.33 I	235.83 I	12356.62 I
I MAY I	8416.13 I	122.07 I	8399.35 I	1574.13 I	377.39 I	18889.06 I
I JUN I	11755.00 I	193.45 I	7039.33 I	1305.67 I	463.20 I	20756.64 I
I JUL I	8509.68 I	74.94 I	6895.48 I	715.26 I	137.03 I	16332.38 I
I AUG I	7849.35 I	1.83 I	6716.13 I	147.35 I	29.97 I	14744.63 I
I SEP I	4972.66 I	0.18 I	5381.33 I	132.87 I	21.80 I	10508.84 I
I OCT I	1760.74 I	2.44 I	2912.90 I	222.94 I	35.75 I	4934.76 I
I NOV I	1501.57 I	33.93 I	2370.67 I	335.40 I	199.80 I	4441.36 I
I DEC I	4112.90 I	347.61 I	4171.29 I	1404.84 I	1388.35 I	11424.99 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1977

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	7051.93 I	236.81 I	6123.22 I	1162.03 I	653.03 I	15227.02 I
I FEB I	8158.21 I	85.86 I	5503.57 I	992.43 I	504.61 I	15244.68 I
I MAR I	13559.35 I	62.53 I	5692.58 I	1128.74 I	127.97 I	20571.16 I
I APR I	12946.33 I	129.59 I	7665.66 I	1380.90 I	743.20 I	22865.68 I
I MAY I	6120.00 I	35.51 I	8457.74 I	577.87 I	139.39 I	15330.50 I
I JUN I	4222.00 I	8.86 I	4832.00 I	489.10 I	349.47 I	9901.42 I
I JUL I	3707.10 I	0.38 I	3604.52 I	141.32 I	56.35 I	7509.66 I
I AUG I	4420.96 I	0.23 I	3105.81 I	178.48 I	12.25 I	7717.73 I
I SEP I	4482.66 I	0.43 I	2482.00 I	200.87 I	54.87 I	7220.83 I
I OCT I	1180.06 I	3.07 I	1850.97 I	110.65 I	11.42 I	3156.17 I
I NOV I	1780.27 I	49.20 I	718.00 I	250.80 I	1220.78 I	4019.04 I
I DEC I	4157.42 I	164.45 I	1754.39 I	859.81 I	830.35 I	7766.41 I

Sabine - Average Monthly Inflows In CFS For 1978

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	6225.48 I	334.90 I	3929.26 I	1810.45 I	1080.16 I	13380.25 I
I FEB I	9271.43 I	181.07 I	5423.21 I	2086.50 I	875.89 I	17838.10 I
I MAR I	5730.00 I	11.54 I	2091.61 I	615.45 I	89.13 I	8537.72 I
I APR I	2136.50 I	0.42 I	2197.67 I	234.80 I	51.63 I	4621.01 I
I MAY I	2444.71 I	0.04 I	1964.19 I	123.97 I	29.10 I	4562.00 I
I JUN I	3620.00 I	249.36 I	2704.67 I	163.37 I	244.97 I	6982.85 I
I JUL I	2613.23 I	0.55 I	3066.77 I	93.23 I	96.58 I	5870.34 I
I AUG I	2054.16 I	0.23 I	1840.97 I	88.55 I	17.26 I	4001.17 I
I SEP I	3371.67 I	1.15 I	552.50 I	203.77 I	33.90 I	4162.98 I
I OCT I	791.39 I	0.03 I	488.13 I	69.90 I	3.79 I	1353.23 I
I NOV I	1567.17 I	4.60 I	1385.70 I	839.90 I	110.01 I	3907.38 I
I DEC I	3762.58 I	12.80 I	2363.65 I	1288.39 I	340.03 I	7767.44 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1979

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	15821.93 I	319.19 I	6950.64 I	3712.90 I	1347.39 I	28152.06 I
I FEB I	24121.43 I	373.46 I	11587.86 I	3195.71 I	1327.07 I	40605.52 I
I MAR I	23529.03 I	322.39 I	17567.74 I	2430.65 I	1261.10 I	45110.89 I
I APR I	24600.00 I	841.27 I	20246.66 I	6732.73 I	4971.83 I	57392.49 I
I MAY I	17054.84 I	54.99 I	18812.90 I	991.23 I	275.94 I	37189.89 I
I JUN I	17261.66 I	265.89 I	18296.66 I	1430.10 I	387.13 I	37641.45 I
I JUL I	5935.16 I	208.20 I	9060.96 I	1292.48 I	1893.71 I	18390.51 I
I AUG I	4729.03 I	38.38 I	9644.19 I	575.90 I	689.97 I	15677.47 I
I SEP I	6756.33 I	239.32 I	7089.66 I	1793.80 I	1487.20 I	17366.31 I
I OCT I	2211.39 I	12.04 I	3494.19 I	386.26 I	71.62 I	6175.50 I
I NOV I	3043.00 I	106.43 I	2492.00 I	1448.07 I	342.37 I	7431.86 I
I DEC I	8931.93 I	137.61 I	6700.32 I	1109.13 I	160.52 I	17039.51 I

Sabine - Average Monthly Inflows In CFS For 1980

I Month I	Sabine I	Cow B I	Neches I	Village I	Pine Is I	Total I
I JAN I	9705.48 I	441.19 I	6784.84 I	1728.52 I	1296.39 I	19956.41 I
I FEB I	16431.03 I	237.66 I	11926.55 I	1892.93 I	822.90 I	31311.06 I
I MAR I	12769.68 I	257.84 I	8743.87 I	1593.29 I	684.55 I	24049.21 I
I APR I	21380.00 I	234.98 I	13770.00 I	2099.63 I	818.60 I	38303.21 I
I MAY I	20973.87 I	438.96 I	13438.71 I	1906.94 I	1360.65 I	38119.11 I
I JUN I	4399.66 I	0.83 I	10616.33 I	286.53 I	45.20 I	15348.55 I
I JUL I	3185.48 I	0.19 I	4047.10 I	111.58 I	33.35 I	7377.70 I
I AUG I	2893.55 I	0.21 I	3180.32 I	79.84 I	14.48 I	6168.39 I
I SEP I	2525.93 I	10.07 I	2492.33 I	126.30 I	600.99 I	5755.62 I
I OCT I	1769.44 I	151.77 I	2251.13 I	158.76 I	808.59 I	5139.67 I
I NOV I	1425.07 I	4.14 I	2404.00 I	209.00 I	31.00 I	4073.21 I
I DEC I	1366.42 I	38.10 I	2442.90 I	263.26 I	123.88 I	4234.55 I

Table C-2. Continued.

Sabine - Average Monthly Inflows In CFS For 1981										
I Month I	Sabine	I	Cow B	I	Neches	I	Village	I	Pine Is	I Total I
I JAN I	1422.23	I	29.61	I	2080.00	I	273.71	I	60.89	I 3866.43 I
I FEB I	2301.43	I	165.10	I	613.71	I	349.29	I	430.46	I 3860.00 I
I MAR I	2287.10	I	30.02	I	1734.87	I	528.68	I	179.52	I 4760.18 I
I APR I	1584.13	I	3.87	I	1431.60	I	259.70	I	69.40	I 3348.70 I
I MAY I	2484.23	I	5.82	I	1220.10	I	296.71	I	137.32	I 4144.17 I
I JUN I	5210.33	I	237.26	I	6006.00	I	4348.33	I	2795.20	I 18597.12 I
I JUL I	6459.03	I	281.25	I	3546.13	I	1214.97	I	783.74	I 12285.12 I
I AUG I	6839.03	I	1.99	I	2166.77	I	121.81	I	20.48	I 9150.07 I
I SEP I	1613.67	I	1.49	I	2138.67	I	255.10	I	28.95	I 4037.88 I
I OCT I	--	I	--	I	--	I	--	I	--	I -- I
I NOV I	--	I	--	I	--	I	--	I	--	I -- I
I DEC I	--	I	--	I	--	I	--	I	--	I -- I

Table C-3. Average monthly gauged and ungauged inflows to Calcasieu Lake from 1968 through 1981.

Flow For Calcasieu		For 1968 IN Ac-Ft				
Month	Gaged Flow	Ungaged			Total	
		Runoff	Diversion	Total Ungaged		
			-Return			
Jan	493383.9	51857.1	-3361.5	55218.7	548602.5	
Feb	105015.4	17515.3	-1311.8	18827.1	123842.4	
Mar	24083.4	6783.1	737.9	6045.2	30128.7	
Apr	276027.7	1021.9	14839.9	-13818.1	262209.6	
May	166716.8	-13892.3	19513.3	-33405.5	133311.2	
Jun	96183.1	342328.2	20825.1	321503.1	417686.1	
Jul	44940.7	162473.4	22792.8	139680.5	184621.1	
Aug	36444.3	-37455.4	14758.0	-52213.3	-15769.0	
Sep	71079.4	-31787.4	7461.0	-39248.3	31831.1	
Oct	24663.9	-49585.5	-1393.8	-48191.7	-23527.7	
Nov	36458.8	96260.5	-4017.4	100277.9	136736.7	
Dec	333960.7	52805.8	-3361.5	56167.3	390128.0	

Flow For Calcasieu		For 1969 IN Ac-Ft				
Month	Gaged Flow	Runoff	Diversion	Total Ungaged	Total	
Jan	101081.8	-17164.2	-3361.5	-13802.6	87279.2	
Feb	293370.8	286510.5	-1311.8	287822.3	581193.1	
Mar	364746.3	43705.1	737.9	42967.2	407713.4	
Apr	405099.8	401896.9	14839.9	387057.0	792156.8	
May	286703.6	116397.5	19513.3	96884.2	383587.8	
Jun	44804.8	-84224.0	20825.1	-105049.1	-60244.2	
Jul	53133.3	297746.7	22792.8	274953.8	328087.1	
Aug	24067.5	-77953.7	14758.0	-92711.6	-68644.1	
Sep	19764.3	-36746.0	7461.0	-44207.0	-24442.7	
Oct	21180.0	-3705.8	-1393.8	-2311.9	18868.1	
Nov	18928.3	-58240.0	-4017.4	-54222.6	-35294.3	
Dec	68038.4	146223.6	-3361.5	149585.1	217623.6	

Table C-3. Continued.

Flow For Calcasieu				For 1970 IN Ac-Ft		
I	I	I	Ungaged			I
I Month	I Gaged	I				I Total
I	I Flow	I	Runoff	I Diversion	I Total	I
I	I	I		-I -Return	I Ungaged	I
I Jan	I 86241.9	I	5865.5	I -3361.5	I 9227.0	I 95468.8
I Feb	I 57378.2	I	17697.2	I -1311.8	I 19009.0	I 76387.2
I Mar	I 105700.8	I	65992.6	I 737.9	I 65254.7	I 170955.5
I Apr	I 106070.2	I	-18759.0	I 14839.9	I -33599.0	I 72471.2
I May	I 78050.5	I	134373.8	I 19513.3	I 114860.4	I 192910.9
I Jun	I 25918.2	I	11636.6	I 20825.1	I -9188.5	I 16729.7
I Jul	I 19211.8	I	-94751.8	I 22792.8	I -117544.6	I -98332.8
I Aug	I 19210.6	I	-41578.8	I 14758.0	I -56336.7	I -37126.1
I Sep	I 26225.8	I	-13277.6	I 7461.0	I -20738.5	I 5487.3
I Oct	I 424050.3	I	908495.8	I -1393.8	I 909889.6	I 1333939.0
I Nov	I 115241.5	I	-30666.1	I -4017.4	I -26648.6	I 88592.8
I Dec	I 76763.6	I	42052.3	I -3361.5	I 45413.8	I 122177.3

Flow For Calcasieu For 1971 IN Ac-Ft						
I Jan	I 121501.3	I	I -25088.0	I -3361.5	I -21726.5	I 99774.8
I Feb	I 189457.3	I	I 35270.1	I -1311.8	I 36582.0	I 226039.2
I Mar	I 271399.8	I	I -49952.0	I 737.9	I -50689.9	I 220709.9
I Apr	I 74767.5	I	I -39648.0	I 14839.9	I -54487.9	I 20279.6
I May	I 145050.3	I	I 154179.1	I 19513.3	I 134665.8	I 279716.1
I Jun	I 23627.3	I	I -53088.1	I 20825.1	I -73913.1	I -50285.8
I Jul	I 24720.5	I	I -6412.9	I 22792.8	I -29205.7	I -4485.2
I Aug	I 55805.5	I	I 77706.5	I 14758.0	I 62948.5	I 118754.1
I Sep	I 40829.3	I	I 39713.6	I 7461.0	I 32252.6	I 73081.9
I Oct	I 36410.5	I	I -42434.7	I -1393.8	I -41040.9	I -4630.4
I Nov	I 40646.7	I	I -37137.8	I -4017.4	I -33120.4	I 7526.3
I Dec	I 704451.1	I	I 527195.2	I -3361.5	I 530556.7	I 1235007.0

Table C-3. Continued.

Flow For Calcasieu			For 1972 IN Ac-Ft		
Month	Gaged Flow	Unghed			Total
		Runoff	Diversion	Total Unghed	
Jan	407979.3	210041.6	-3361.5	213403.1	621382.4
Feb	195796.2	7659.2	-1311.8	8971.0	204767.2
Mar	250367.5	-5835.8	737.9	-6573.7	243793.8
Apr	55362.6	-25088.0	14839.9	-39928.0	15434.7
May	86200.7	38837.8	19513.3	19324.5	105525.1
Jun	46494.7	-82199.4	20825.1	-103024.5	-56529.8
Jul	44471.5	95004.0	22792.8	72211.1	116682.6
Aug	40528.9	112565.9	14758.0	97807.9	138336.8
Sep	23710.6	110457.0	7461.0	102996.0	126706.6
Oct	75278.6	214624.8	-1393.8	216018.6	291297.2
Nov	113913.4	23876.5	-4017.4	27893.9	141807.4
Dec	350165.4	131848.9	-3361.5	135210.4	485375.8

Flow For Calcasieu			For 1973 IN Ac-Ft		
I Jan	I 355802.2	I 50420.3	I -3361.5	I 53781.8	I 409583.9
I Feb	I 408164.4	I 23824.0	I -1311.8	I 25135.8	I 433300.2
I Mar	I 765724.1	I 212848.3	I 737.9	I 212110.4	I 977834.4
I Apr	I 622535.6	I 472495.2	I 14839.9	I 457655.3	I 1080190.0
I May	I 550079.1	I 169590.4	I 19513.3	I 150077.1	I 700156.1
I Jun	I 175724.4	I -1138.9	I 20825.1	I -21964.0	I 153760.3
I Jul	I 78140.3	I -47152.1	I 22792.8	I -69944.9	I 8195.3
I Aug	I 76938.8	I -49385.9	I 14758.0	I -64143.9	I 12794.9
I Sep	I 281587.1	I 911344.8	I 7461.0	I 903883.8	I 1185470.0
I Oct	I 260463.3	I 12714.5	I -1393.8	I 14108.3	I 274571.5
I Nov	I 180724.0	I 1301.0	I -4017.4	I 5318.4	I 186042.4
I Dec	I 315760.3	I 135562.1	I -3361.5	I 138923.6	I 454683.9

Table C-3. Continued.

Flow For Calcasieu				For 1974 IN Ac-Ft				
I	I	I	Ungaged			I	I	
I Month	I	Gaged	I				Total	I
I	I	Flow	I Runoff	I Diversion	I Total	I	I	
I	I		I	-Return	I Ungaged	I	I	
I Jan	I	934690.7	I 544230.3	I -3361.5	I 547591.8	I 1482282.0	I	
I Feb	I	347944.3	I 51385.0	I -1311.8	I 52696.8	I 400641.0	I	
I Mar	I	153141.5	I 40142.9	I 737.9	I 39405.0	I 192546.4	I	
I Apr	I	290876.9	I 22079.6	I 14839.9	I 7239.7	I 298116.6	I	
I May	I	126267.2	I 242223.4	I 19513.3	I 222710.1	I 348977.3	I	
I Jun	I	93872.5	I -36163.8	I 20825.1	I -56988.9	I 36883.6	I	
I Jul	I	53322.7	I -87807.8	I 22792.8	I -110600.6	I -57278.0	I	
I Aug	I	43548.6	I 39165.9	I 14758.0	I 24408.0	I 67956.6	I	
I Sep	I	74108.2	I -23368.1	I 7461.0	I -30829.0	I 43279.2	I	
I Oct	I	25050.0	I 37050.3	I -1393.8	I 38444.1	I 63494.1	I	
I Nov	I	96660.3	I 114683.4	I -4017.4	I 118700.9	I 215361.1	I	
I Dec	I	326440.8	I 162732.8	I -3361.5	I 166094.3	I 492535.0	I	

Flow For Calcasieu				For 1975 IN Ac-Ft								
I	Jan	I	511253.3	I	138168.0	I	-3361.5	I	141529.5	I	652782.8	I
I	Feb	I	152368.4	I	-18368.0	I	-1311.8	I	-17056.2	I	135312.1	I
I	Mar	I	206282.8	I	-2000.9	I	737.9	I	-2738.8	I	203543.9	I
I	Apr	I	205894.3	I	151419.4	I	14839.9	I	136579.4	I	342473.8	I
I	May	I	687836.5	I	163427.6	I	19513.3	I	143914.3	I	831750.8	I
I	Jun	I	305453.6	I	50753.8	I	20825.1	I	29928.7	I	335382.3	I
I	Jul	I	249163.5	I	68792.5	I	22792.8	I	45999.7	I	295163.1	I
I	Aug	I	330332.9	I	27336.9	I	14758.0	I	12579.0	I	342911.8	I
I	Sep	I	97077.4	I	72196.4	I	7461.0	I	64735.4	I	161812.8	I
I	Oct	I	189732.8	I	-46448.4	I	-1393.8	I	-45054.6	I	144678.1	I
I	Nov	I	127284.0	I	60862.1	I	-4017.4	I	64879.5	I	192163.5	I
I	Dec	I	130117.4	I	-8518.5	I	-3361.5	I	-5156.9	I	124960.5	I

Table C-3. Continued.

Flow For Calcasieu				For 1976 IN Ac-Ft			
I	I	I	Ungaged			I	I
I Month	I	Gaged				I	Total
I	I	Flow	I Runoff	I Diversion	I Total	I	I
I	I		I	-Return	I Ungaged	I	I
I Jan	I	195012.8	I 5307.2	I -3361.5	I 8668.7	I	203681.4
I Feb	I	112518.4	I -8511.6	I -1311.8	I -7199.8	I	105318.5
I Mar	I	324227.6	I 804.2	I 737.9	I 66.3	I	324293.9
I Apr	I	170237.0	I -33152.0	I 14839.9	I -47992.0	I	122245.0
I May	I	166566.8	I -23287.9	I 19513.3	I -42801.2	I	123765.5
I Jun	I	120874.3	I 156755.9	I 20825.1	I 135930.8	I	256805.1
I Jul	I	87938.9	I -55457.4	I 22792.8	I -78250.2	I	9688.8
I Aug	I	31428.1	I -105952.0	I 14758.0	I -120709.9	I	-89281.8
I Sep	I	23735.6	I -36371.0	I 7461.0	I -43832.0	I	-20096.4
I Oct	I	22367.3	I 24696.7	I -1393.8	I 26090.5	I	48457.8
I Nov	I	31108.8	I 55237.8	I -4017.4	I 59255.3	I	90364.0
I Dec	I	151675.6	I 103751.6	I -3361.5	I 107113.1	I	258788.8

		Flow For Calcasieu For 1977 IN Ac-Ft					
I	Jan	I 269812.9	I 88445.3	I -3361.5	I	I 91806.8	I 361619.7
I	Feb	I 174573.3	I -17177.8	I -1311.8	I	I -15866.0	I 158707.3
I	Mar	I 341398.6	I -18592.1	I 737.9	I	I -19329.9	I 322068.6
I	Apr	I 204440.6	I 186154.9	I 14839.9	I	I 171315.0	I 375755.6
I	May	I 137582.1	I -51296.0	I 19513.3	I	I -70809.3	I 66772.8
I	Jun	I 27388.0	I 175839.9	I 20825.1	I	I 155014.8	I 182402.8
I	Jul	I 21784.4	I -43076.8	I 22792.8	I	I -65869.6	I -44085.1
I	Aug	I 39969.4	I 390785.6	I 14758.0	I	I 376027.6	I 415997.0
I	Sep	I 37657.2	I -17952.3	I 7461.0	I	I -25413.3	I 12243.9
I	Oct	I 62768.4	I 52403.0	I -1393.8	I	I 53796.8	I 116565.2
I	Nov	I 123109.8	I 163317.6	I -4017.4	I	I 167335.0	I 290444.8
I	Dec	I 441006.8	I 18910.8	I -3361.5	I	I 22272.3	I 463279.0

Table C-3. Continued.

Flow For Calcasieu				For 1978 IN Ac-Ft							
I	I	I	I	Ungaged			I	I			
I	Month	I	Gaged	I				I	Total		
I	I	I	Flow	I	Runoff	I	Diversion	I	Total		
I	I	I	I	I	I	-Return	I	Ungaged	I		
I	Jan	I	420864.0	I	201667.9	I	-3361.5	I	205029.4	I	625893.4
I	Feb	I	307191.7	I	4497.7	I	-1311.8	I	5809.6	I	313001.3
I	Mar	I	86169.9	I	-22491.6	I	737.9	I	-23229.5	I	62940.5
I	Apr	I	44773.9	I	-48832.0	I	14839.9	I	-63671.9	I	-18898.1
I	May	I	24512.6	I	-77504.0	I	19513.3	I	-97017.3	I	-72504.6
I	Jun	I	99660.4	I	86641.9	I	20825.1	I	65816.8	I	165477.3
I	Jul	I	22979.1	I	42824.8	I	22792.8	I	20032.0	I	43011.1
I	Aug	I	25598.5	I	188542.3	I	14758.0	I	173784.3	I	199382.8
I	Sep	I	31999.5	I	83866.9	I	7461.0	I	76405.9	I	108405.4
I	Oct	I	15736.5	I	-99008.0	I	-1393.8	I	-97614.2	I	-81877.6
I	Nov	I	19487.0	I	34600.2	I	-4017.4	I	38617.6	I	58104.6
I	Dec	I	50992.3	I	3318.4	I	-3361.5	I	6679.9	I	57672.2
Flow For Calcasieu				For 1979 IN Ac-Ft							
I	Jan	I	386963.0	I	68045.4	I	-3361.5	I	71406.9	I	458369.9
I	Feb	I	493971.1	I	173117.8	I	-1311.8	I	174429.6	I	668400.6
I	Mar	I	376904.6	I	202030.7	I	737.9	I	201292.8	I	578197.4
I	Apr	I	348909.9	I	235485.4	I	14839.9	I	220645.5	I	569555.4
I	May	I	110186.3	I	254572.8	I	19513.3	I	235059.5	I	345245.8
I	Jun	I	205590.8	I	-43114.3	I	20825.1	I	-63939.4	I	141651.3
I	Jul	I	250850.9	I	534127.3	I	22792.8	I	511334.4	I	762185.4
I	Aug	I	73743.9	I	-29372.6	I	14758.0	I	-44130.5	I	29613.4
I	Sep	I	487677.9	I	760905.6	I	7461.0	I	753444.6	I	1241122.0
I	Oct	I	54631.7	I	-28722.9	I	-1393.8	I	-27329.1	I	27302.7
I	Nov	I	165479.7	I	102622.4	I	-4017.4	I	106639.9	I	272119.6
I	Dec	I	417383.2	I	22481.7	I	-3361.5	I	25843.2	I	443226.4

Table C-3. Continued.

		Flow For Calcasieu		For 1980 IN Ac-Ft			
I I Month I	I	I Gaged I Flow I	I I Runoff I	Ungaged		I I Total I	I
				I Diversion I -Return	I Total I Ungaged		
I Jan	I	I 329819.4	I 89996.7	I -3361.5	I 93358.2	I 423177.6	I
I Feb	I	I 345906.6	I 7403.3	I -1311.8	I 8715.2	I 354621.8	I
I Mar	I	I 477738.4	I 305002.9	I 737.9	I 304265.0	I 782003.4	I
I Apr	I	I 602317.9	I -24734.5	I 14839.9	I -39574.4	I 562743.4	I
I May	I	I 518867.8	I 1435506.0	I 19513.3	I 1415992.0	I 1934859.0	I
I Jun	I	I 51970.9	I -73864.1	I 20825.1	I -94689.1	I -42718.2	I
I Jul	I	I 22134.9	I 243699.4	I 22792.8	I 220906.5	I 243041.4	I
I Aug	I	I 17346.3	I -88480.0	I 14758.0	I -103237.9	I -85891.6	I
I Sep	I	I 20390.3	I 49674.4	I 7461.0	I 42213.5	I 62603.7	I
I Oct	I	I 30021.3	I 25274.6	I -1393.8	I 26668.4	I 56689.7	I
I Nov	I	I 26421.0	I 3718.6	I -4017.4	I 7736.1	I 34157.1	I
I Dec	I	I 48886.3	I 8281.6	I -3361.5	I 11643.2	I 60529.5	I

		Flow For Calcasieu		For 1981 IN Ac-Ft			
I I Month I	I	I Gaged I Flow I	I I Runoff I	Ungaged		I I Total I	I
				I Diversion I -Return	I Total I Ungaged		
I Jan	I	I 28067.2	I 5384.9	I -3361.5	I 8746.4	I 36813.6	I
I Feb	I	I 91199.8	I 41984.0	I -1311.8	I 43295.8	I 134495.6	I
I Mar	I	I 108323.8	I -17920.0	I 737.9	I -18657.9	I 89665.9	I
I Apr	I	I 29527.7	I -32143.4	I 14839.9	I -46983.3	I -17455.6	I
I May	I	I 48695.1	I 119315.8	I 19513.3	I 99802.5	I 148497.6	I
I Jun	I	I 314862.5	I 809913.3	I 20825.1	I 789088.1	I 1103950.0	I
I Jul	I	I 153354.8	I 137388.1	I 22792.8	I 114595.2	I 267950.0	I
I Aug	I	I 25230.8	I -44298.9	I 14758.0	I -59056.8	I -33826.0	I
I Sep	I	I 21737.5	I -45277.3	I 7461.0	I -52738.2	I -31000.8	I
I Oct	I	I -	I -	I -	I -	I -	I
I Nov	I	I -	I -	I -	I -	I -	I
I Dec	I	I -	I -	I -	I -	I -	I

Table C-4. Average monthly gauged and ungauged inflows to Sabine Lake from 1968 through 1981.

Flow For Sabine				For 1968 IN Ac-Ft			
I	I	I	I	Ungaged		I	I
I Month	I Gaged	I	I	I Diversion	I Total	I	I
I	I Flow	I	I Runoff	I -Return	I Ungaged	I	I
I Jan	I -	I	I -	I -	I -	I -	I
I Feb	I -	I	I -	I -	I -	I -	I
I Mar	I -	I	I -	I -	I -	I -	I
I Apr	I 1202106.0	I	I 581203.1	I 18100.0	I 563103.1	I 1765209.0	I
I May	I 1233542.0	I	I 280331.3	I 23800.0	I 256531.3	I 1490073.0	I
I Jun	I 1915428.0	I	I 907369.0	I 25400.0	I 881969.0	I 2797397.0	I
I Jul	I 973000.6	I	I -41174.3	I 27800.0	I -68974.3	I 904026.3	I
I Aug	I 468952.4	I	I 30012.8	I 18000.0	I 12012.8	I 480965.1	I
I Sep	I 466881.9	I	I 438588.4	I 9100.0	I 429488.4	I 896370.3	I
I Oct	I -	I	I -	I -	I -	I -	I
I Nov	I 381380.3	I	I 83488.6	I -4900.0	I 88388.6	I 469768.8	I
I Dec	I 1663106.0	I	I 165825.9	I -4100.0	I 169925.9	I 1833031.0	I
Flow For Sabine				For 1969 IN Ac-Ft			
I Jan	I 1164013.0	I	I -3941.6	I -4100.0	I 158.4	I 1164171.0	I
I Feb	I 1125545.0	I	I 300042.4	I -1600.0	I 301642.4	I 1427187.0	I
I Mar	I 2740966.0	I	I 124094.1	I 900.0	I 123194.1	I 2864160.0	I
I Apr	I 3329052.0	I	I 309803.3	I 18100.0	I 291703.3	I 3620755.0	I
I May	I 3243935.0	I	I 227781.8	I 23800.0	I 203981.8	I 3447916.0	I
I Jun	I 1500287.0	I	I -61720.5	I 25400.0	I -87120.4	I 1413166.0	I
I Jul	I 382442.1	I	I 451305.4	I 27800.0	I 423505.4	I 805947.5	I
I Aug	I 372154.8	I	I -20671.3	I 18000.0	I -38671.8	I 333482.9	I
I Sep	I 301774.4	I	I -76991.8	I 9100.0	I -86091.8	I 215682.6	I
I Oct	I 130433.5	I	I -20134.3	I -1700.0	I -18434.3	I 111999.2	I
I Nov	I 148850.6	I	I 11324.4	I -4900.0	I 16224.4	I 165075.0	I
I Dec	I 233050.8	I	I 644228.1	I -4100.0	I 648328.1	I 881378.9	I

Table C-4. Continued.

Flow For Sabine				For 1970 IN Ac-Ft			
I I I I	I Month I I	I Gaged Flow I	I Runoff I	Ungaged		I Total I	I Total I
				I Diversion I -Return	I Total Ungaged		
I	Jan	I 335779.4	I 46661.1	I -4100.0	I 50761.1	I 386540.5	I
I	Feb	I 345256.4	I 53754.1	I -1600.0	I 55354.1	I 400610.4	I
I	Mar	I 919894.3	I 88144.1	I 900.0	I 87244.1	I 1007138.0	I
I	Apr	I 1127751.0	I 7649.8	I 18100.0	I -10450.2	I 1117300.0	I
I	May	I 865505.6	I 190383.2	I 23800.0	I 166583.2	I 1032088.0	I
I	Jun	I 229597.7	I -4525.6	I 25400.0	I -29925.6	I 199672.1	I
I	Jul	I 209421.7	I -25515.8	I 27800.0	I -53315.8	I 156105.9	I
I	Aug	I 219642.3	I 57984.1	I 18000.0	I 39984.1	I 259626.4	I
I	Sep	I 258900.6	I 513511.7	I 9100.0	I 504411.7	I 763312.3	I
I	Oct	I 504141.5	I 2605790.0	I -1700.0	I 2607490.0	I 3111631.0	I
I	Nov	I 305332.7	I -17703.0	I -4900.0	I -12803.0	I 292529.7	I
I	Dec	I 213420.9	I 21447.4	I -4100.0	I 25547.4	I 238968.4	I

Flow For Sabine				For 1971 IN Ac-Ft			
I I I I	I Month I I	I Gaged Flow I	I Runoff I	Ungaged		I Total I	I Total I
				I Diversion I -Return	I Total Ungaged		
I	Jan	I 356248.0	I 15505.8	I -4100.0	I 19605.8	I 375853.8	I
I	Feb	I 267443.1	I 90783.1	I -1600.0	I 92383.1	I 359826.2	I
I	Mar	I 441210.9	I 25211.6	I 900.0	I 24311.6	I 465522.5	I
I	Apr	I 164466.2	I -28389.1	I 18100.0	I -46489.1	I 117977.1	I
I	May	I 197895.3	I 74625.1	I 23800.0	I 50825.1	I 248720.3	I
I	Jun	I 209595.4	I 138272.1	I 25400.0	I 112872.1	I 322467.5	I
I	Jul	I 176069.7	I 948.1	I 27800.0	I -26851.9	I 149217.8	I
I	Aug	I 127590.4	I 329980.1	I 18000.0	I 311980.1	I 439570.5	I
I	Sep	I 68872.4	I 70202.8	I 9100.0	I 61102.8	I 129975.3	I
I	Oct	I 111754.3	I -12120.8	I -1700.0	I -10420.8	I 101333.5	I
I	Nov	I 94099.8	I 2569.5	I -4900.0	I 7469.5	I 101569.3	I
I	Dec	I 1326642.0	I 547791.6	I -4100.0	I 551891.6	I 1878533.0	I

Table C-4. Continued.

Flow For Sabine				For 1972 IN Ac-Ft			
I I Month I	I Gaged I Flow I	I Runoff I	Ungaged		I Total I Ungaged I	I Total I	I
			I Diversion I -Return I	I Total I			
I Jan	I 1626556.0	I 204198.6	I -4100.0	I 208298.6	I 1834854.0	I	I
I Feb	I 872238.6	I 33738.8	I -1600.0	I 35338.8	I 907577.4	I	I
I Mar	I 564227.9	I 119302.0	I 900.0	I 118402.0	I 682629.9	I	I
I Apr	I 364890.6	I 137049.9	I 18100.0	I 118949.9	I 483840.5	I	I
I May	I 776825.6	I 232183.1	I 23800.0	I 208383.1	I 985208.7	I	I
I Jun	I 377962.5	I -71635.6	I 25400.0	I -97035.6	I 280926.9	I	I
I Jul	I 358440.7	I 68229.7	I 27800.0	I 40429.7	I 398870.4	I	I
I Aug	I 470376.9	I -38890.8	I 18000.0	I -56890.8	I 413486.1	I	I
I Sep	I 452616.3	I 523409.2	I 9100.0	I 514309.2	I 966925.4	I	I
I Oct	I 218053.3	I 58215.2	I -1700.0	I 59915.2	I 277968.5	I	I
I Nov	I 354693.8	I 112635.6	I -4900.0	I 117535.6	I 472229.4	I	I
I Dec	I 809650.1	I 69628.3	I -4100.0	I 73728.3	I 883378.3	I	I

Flow For Sabine				For 1973 IN Ac-Ft			
I Jan	I 1715982.0	I 76453.5	I -4100.0	I 80553.5	I 1796535.0	I	I
I Feb	I 1850924.0	I 76453.5	I -1600.0	I 78053.5	I 1928977.0	I	I
I Mar	I 2091230.0	I 284904.8	I 900.0	I 284004.8	I 2375234.0	I	I
I Apr	I 3234683.0	I 363564.0	I 18100.0	I 345464.0	I 3580147.0	I	I
I May	I 2758767.0	I 212902.1	I 23800.0	I 189102.1	I 2947869.0	I	I
I Jun	I 2118227.0	I 589453.9	I 25400.0	I 564053.9	I 2682280.0	I	I
I Jul	I 1661829.0	I 333700.7	I 27800.0	I 305900.7	I 1967729.0	I	I
I Aug	I 719074.5	I 583026.1	I 18000.0	I 565026.1	I 1284100.0	I	I
I Sep	I 1201046.0	I 433808.2	I 9100.0	I 424708.2	I 1625754.0	I	I
I Oct	I 1102638.0	I 690020.8	I -1700.0	I 691720.8	I 1794358.0	I	I
I Nov	I 1385582.0	I 35245.8	I -4900.0	I 40145.8	I 1425727.0	I	I
I Dec	I 2217687.0	I 76235.3	I -4100.0	I 80335.3	I 2298022.0	I	I

Table C-4. Continued.

Flow For Sabine				For 1974 IN Ac-Ft			
I I I I	I Month I I I	I Gaged Flow I I I	I Runoff I I I	Ungaged		I Total I I I	I Total I I I
				I Diversion I I I	I -Return I I I	I Total Ungaged I I I	
I	Jan	I 3870201.0	I 714386.8	I	-4100.0	I 718486.8	I 4588687.0
I	Feb	I 2887859.0	I 32148.6	I	-1600.0	I 33748.6	I 2921607.0
I	Mar	I 1831126.0	I 100191.6	I	900.0	I 99291.6	I 1930417.0
I	Apr	I 1142285.0	I 21791.0	I	18100.0	I 3691.0	I 1145975.0
I	May	I 942730.9	I 133799.8	I	23800.0	I 109999.8	I 1052730.0
I	Jun	I 650808.4	I -10451.1	I	25400.0	I -35851.1	I 614957.3
I	Jul	I 601214.0	I -8618.7	I	27800.0	I -36418.7	I 564795.3
I	Aug	I 586326.0	I 107240.1	I	18000.0	I 89240.1	I 675566.1
I	Sep	I 650075.3	I 4891.5	I	9100.0	I -4208.5	I 645866.8
I	Oct	I 252902.7	I 132122.4	I	-1700.0	I 133822.4	I 386725.1
I	Nov	I 993790.9	I 152873.4	I	-4900.0	I 157773.4	I 1151564.0
I	Dec	I 2134343.0	I 110100.3	I	-4100.0	I 114200.3	I 2248543.0

Flow For Sabine				For 1975 IN Ac-Ft			
I	Jan	I 2632940.0	I 256128.3	I -4100.0	I 260228.3	I 2893168.0	I
I	Feb	I 2411816.0	I 23121.9	I -1600.0	I 24721.9	I 2436537.0	I
I	Mar	I 2264706.0	I 40781.2	I 900.0	I 39881.2	I 2304587.0	I
I	Apr	I 1561500.0	I 143999.5	I 18100.0	I 125899.5	I 1687399.0	I
I	May	I 2488874.0	I 394614.1	I 23800.0	I 370814.1	I 2859688.0	I
I	Jun	I 1793944.0	I 438182.1	I 25400.0	I 412782.1	I 2206726.0	I
I	Jul	I 1135305.0	I 388205.1	I 27800.0	I 360405.1	I 1495710.0	I
I	Aug	I 1084059.0	I 539586.6	I 18000.0	I 521586.6	I 1605645.0	I
I	Sep	I 640207.9	I 30757.9	I 9100.0	I 21657.9	I 661865.8	I
I	Oct	I 435895.3	I 238693.6	I -1700.0	I 240393.6	I 676288.9	I
I	Nov	I 301076.0	I 196359.8	I -4900.0	I 201259.8	I 502335.8	I
I	Dec	I 321289.9	I 183335.9	I -4100.0	I 187435.9	I 508725.8	I

Table C-4. Continued.

Flow For Sabine				For 1976 IN Ac-Ft			
I	I	I	Ungaged			I	I
I Month	I Gaged	I				I Total	I
I	I Flow	I Runoff	I Diversion	I Total	I	I	I
I	I	I	I -Return	I Ungaged	I	I	I
I Jan	I 361637.3	I 2154.6	I -4100.0	I 6254.6	I 367891.9	I	I
I Feb	I 354078.7	I -576.0	I -1600.0	I 1024.0	I 355102.7	I	I
I Mar	I 904563.7	I 152247.2	I 900.0	I 151347.2	I 1055910.0	I	I
I Apr	I 735269.9	I 64081.5	I 18100.0	I 45981.5	I 781251.4	I	I
I May	I 1161442.0	I 104240.4	I 23800.0	I 80440.4	I 1241882.0	I	I
I Jun	I 1235105.0	I 256828.8	I 25400.0	I 231428.8	I 1466533.0	I	I
I Jul	I 1004238.0	I 151135.3	I 27800.0	I 123335.3	I 1127573.0	I	I
I Aug	I 906611.7	I 43784.6	I 18000.0	I 25784.6	I 932396.3	I	I
I Sep	I 625319.4	I -22140.1	I 9100.0	I -31240.1	I 594079.3	I	I
I Oct	I 303426.5	I 101214.5	I -1700.0	I 102914.5	I 406341.0	I	I
I Nov	I 264279.1	I 93152.6	I -4900.0	I 98052.6	I 362331.8	I	I
I Dec	I 702495.0	I 224449.3	I -4100.0	I 228549.3	I 931044.3	I	I

Flow For Sabine				For 1977 IN Ac-Ft			
I	Jan	I 936272.8	I 89757.3	I -4100.0	I 93857.3	I 1030130.0	I
I	Feb	I 846646.6	I 2496.0	I -1600.0	I 4096.0	I 850742.5	I
I	Mar	I 1264871.0	I 48272.7	I 900.0	I 47372.7	I 1312243.0	I
I	Apr	I 1360602.0	I 202764.4	I 18100.0	I 184664.4	I 1545266.0	I
I	May	I 942635.6	I 84854.2	I 23800.0	I 61054.2	I 1003689.0	I
I	Jun	I 589175.3	I 77429.7	I 25400.0	I 52029.7	I 641205.0	I
I	Jul	I 461750.9	I -32506.7	I 27800.0	I -60306.7	I 401444.3	I
I	Aug	I 474544.6	I 219721.3	I 18000.0	I 201721.3	I 676265.9	I
I	Sep	I 429668.9	I -37549.1	I 9100.0	I -46649.1	I 383019.9	I
I	Oct	I 194065.2	I 38600.3	I -1700.0	I 40300.3	I 234365.5	I
I	Nov	I 239149.4	I 516145.2	I -4900.0	I 521045.2	I 760194.6	I
I	Dec	I 477537.8	I 74308.5	I -4100.0	I 78408.5	I 555946.3	I

Table C-4. Continued.

Flow For Sabine				For 1978 IN Ac-Ft				
I I I I	I I I I	I I I I	Ungaged				I I I I	I I I I
			I I I	I I I	I I I			
Month	Gaged Flow	Runoff	Diversion -Return	Total Ungaged	Total			
Jan	822719.4	312197.9	-4100.0	316297.9	1139017.0			
Feb	990677.9	42872.0	-1600.0	44472.0	1035149.0			
Mar	524963.7	-8896.0	900.0	-9796.0	515167.6			
Apr	274969.2	-43072.0	18100.0	-61172.0	213797.2			
May	280506.4	-65322.7	23800.0	-89122.6	191383.8			
Jun	415508.3	566664.7	25400.0	541264.7	956773.0			
Jul	360953.0	12211.2	27800.0	-15588.8	345364.2			
Aug	246022.3	269246.4	18000.0	251246.4	497268.7			
Sep	247714.4	78305.7	9100.0	69205.7	316920.1			
Oct	-	-	-	-	-			
Nov	232505.1	183850.3	-4900.0	188750.3	421255.4			
Dec	477601.2	24470.3	-4100.0	28570.3	506171.5			

Flow For Sabine				For 1979 IN Ac-Ft			
I I I I	I I I I	I I I I	I I I I	I I I	I I I	I I I	I I I I
Month	Gaged Flow	Runoff	Diversion -Return	Total Ungaged	Total		
Jan	1731001.0	147264.4	-4100.0	151364.4	1882365.0		
Feb	2255113.0	160639.4	-1600.0	162239.4	2417352.0		
Mar	2773758.0	676497.3	900.0	675597.3	3449355.0		
Apr	3415087.0	423777.3	18100.0	405677.3	3820764.0		
May	2286715.0	111025.2	23800.0	87225.2	2373940.0		
Jun	2239820.0	106636.6	25400.0	81236.6	2321056.0		
Jul	1130788.0	1174434.0	27800.0	1146634.0	2277422.0		
Aug	963969.9	22271.3	18000.0	4271.3	968241.2		
Sep	1033367.0	508178.1	9100.0	499078.1	1532445.0		
Oct	379716.7	266617.5	-1700.0	268317.5	648034.2		
Nov	442226.2	89827.8	-4900.0	94727.8	536954.0		
Dec	1047718.0	31430.1	-4100.0	35530.1	1083248.0		

Table C-4. Continued.

Flow For Sabine				For 1980 IN Ac-Ft			
I	I	I	I	Ungaged		I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
I	I	I	I	I	I	I	I
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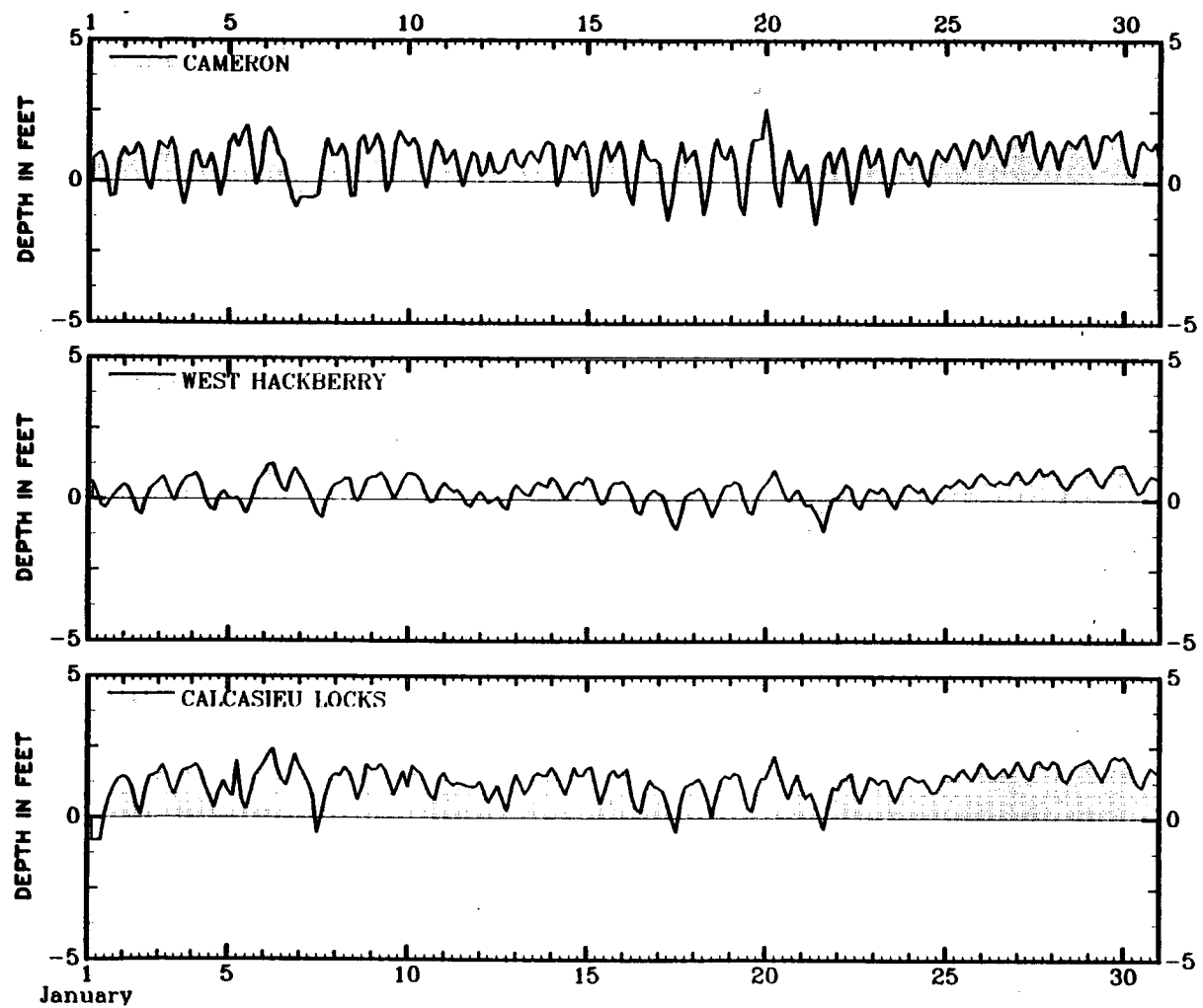


Figure C-6. 1981 Corps of Engineers monthly tide data for Cameron, West Hackberry, and Calcasieu Locks.

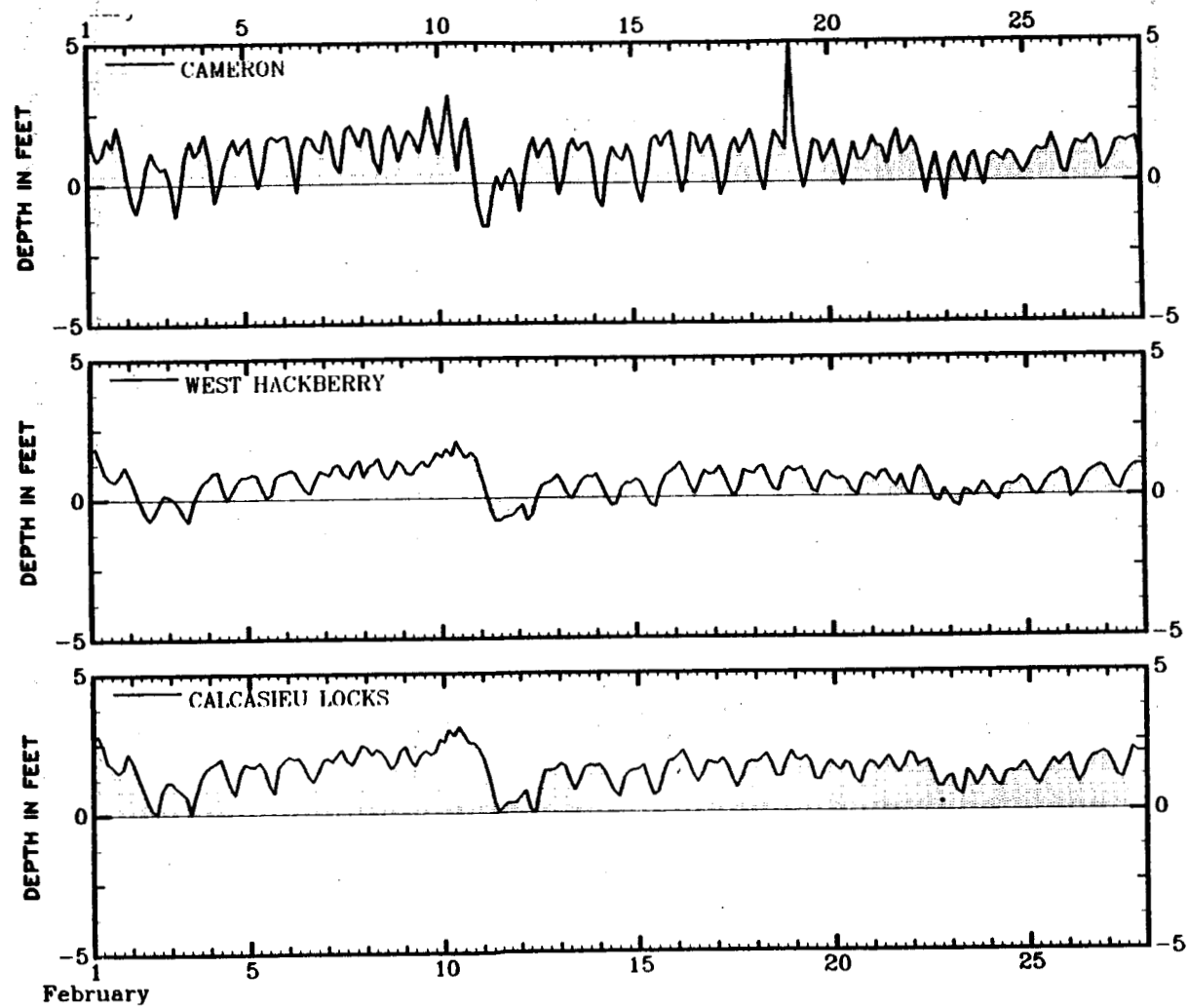


Figure C-6. Continued.

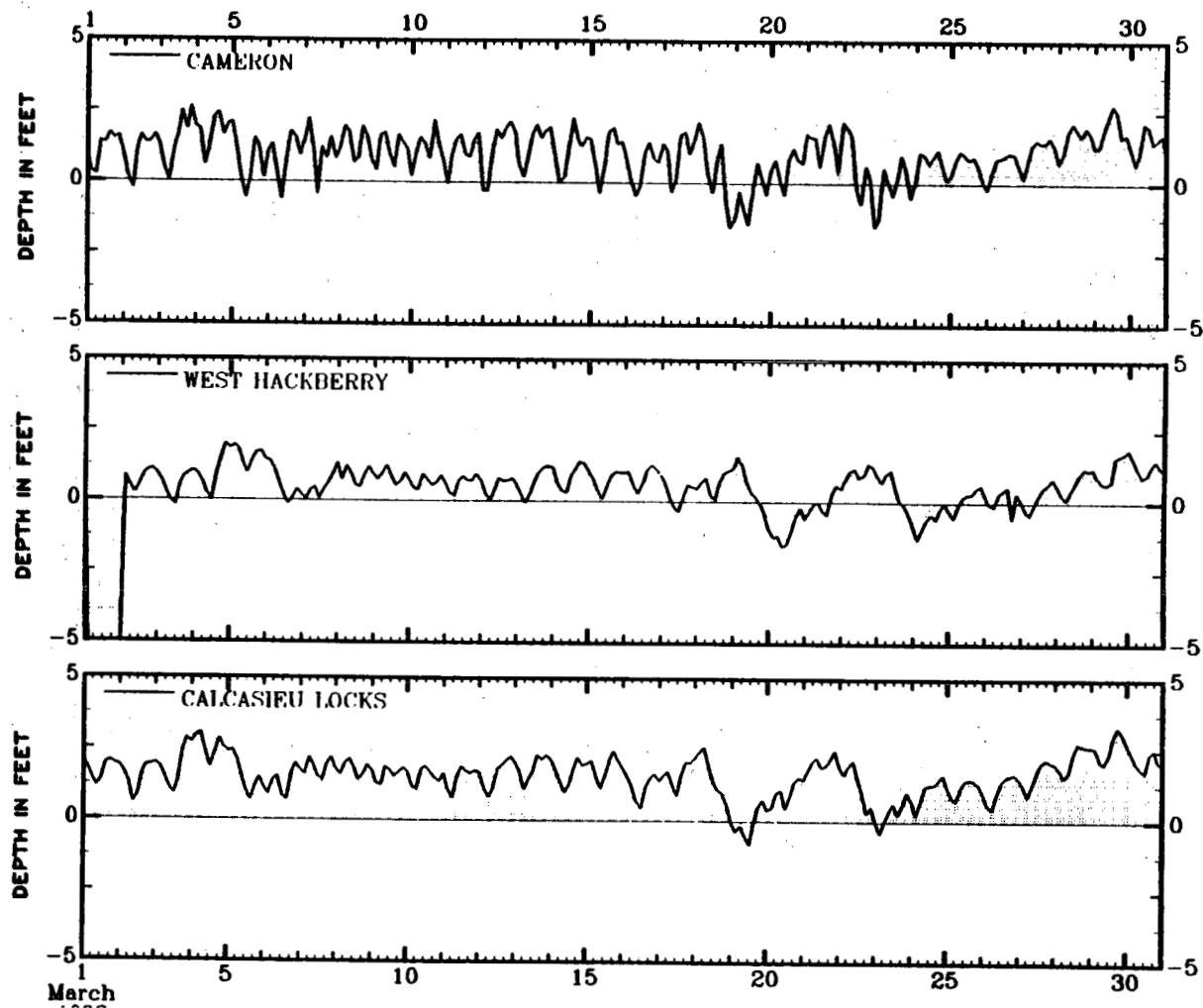


Figure C-6. Continued.

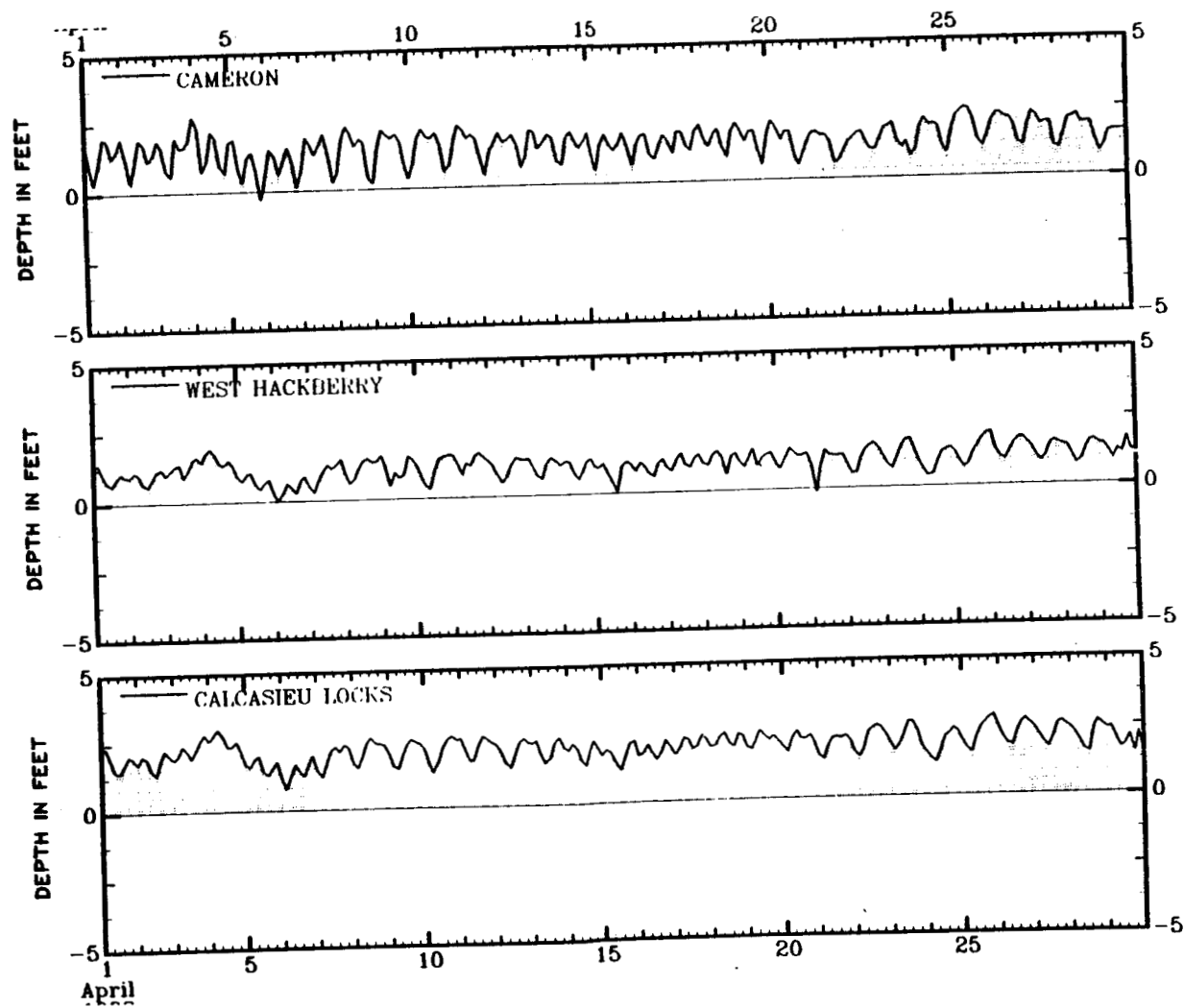


Figure C-6. Continued.

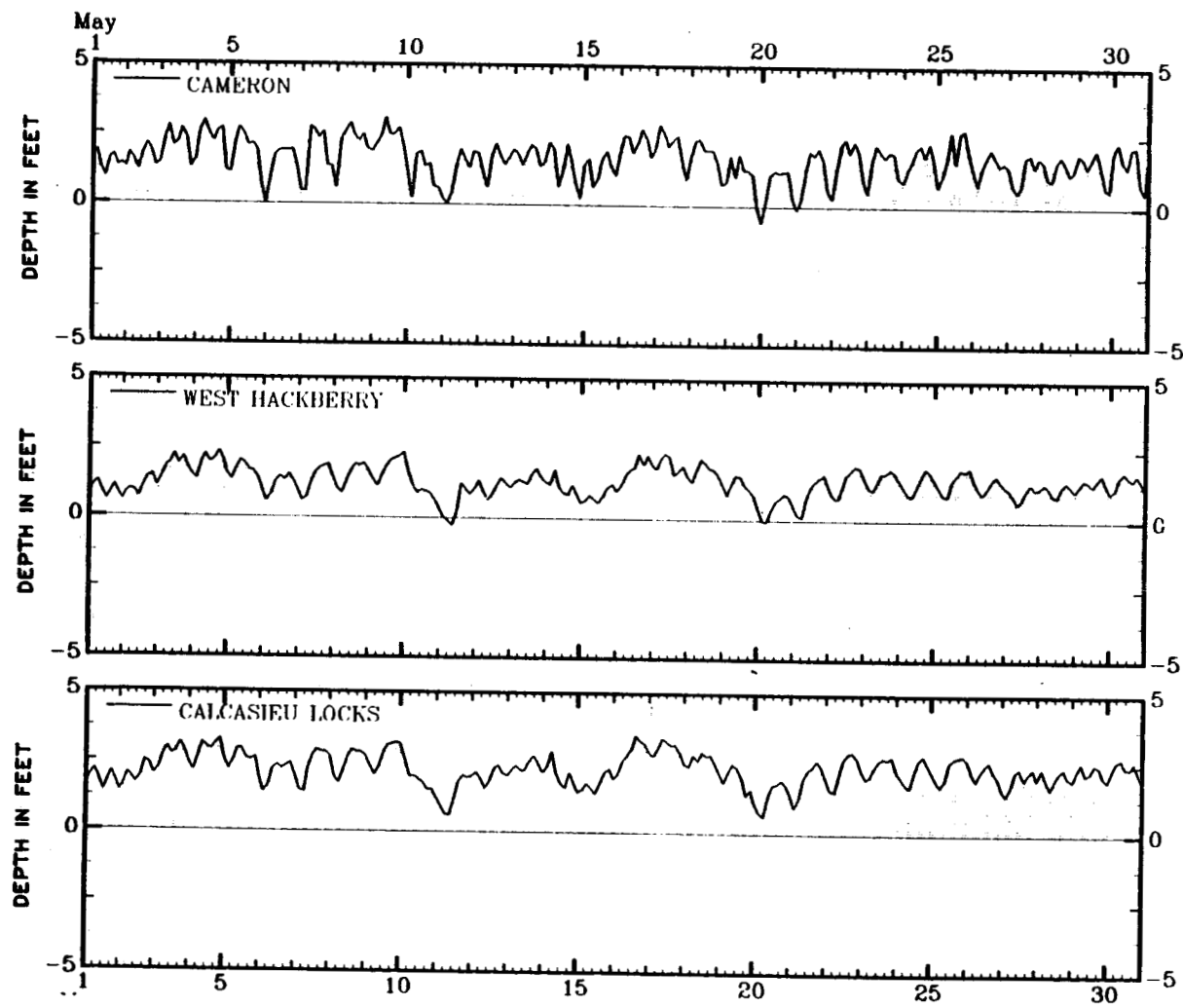


Figure C-6. Continued.

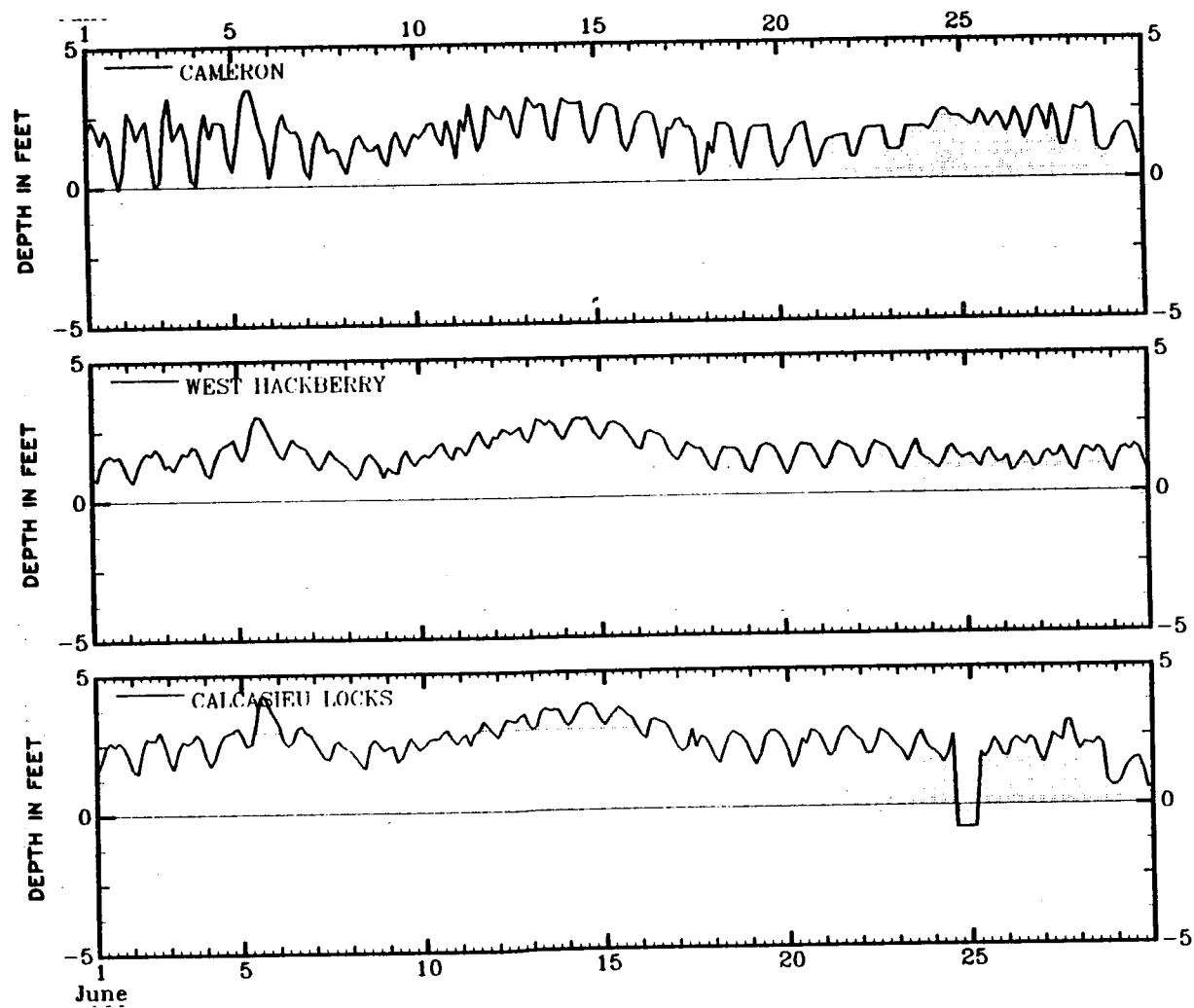


Figure C-6. Continued.

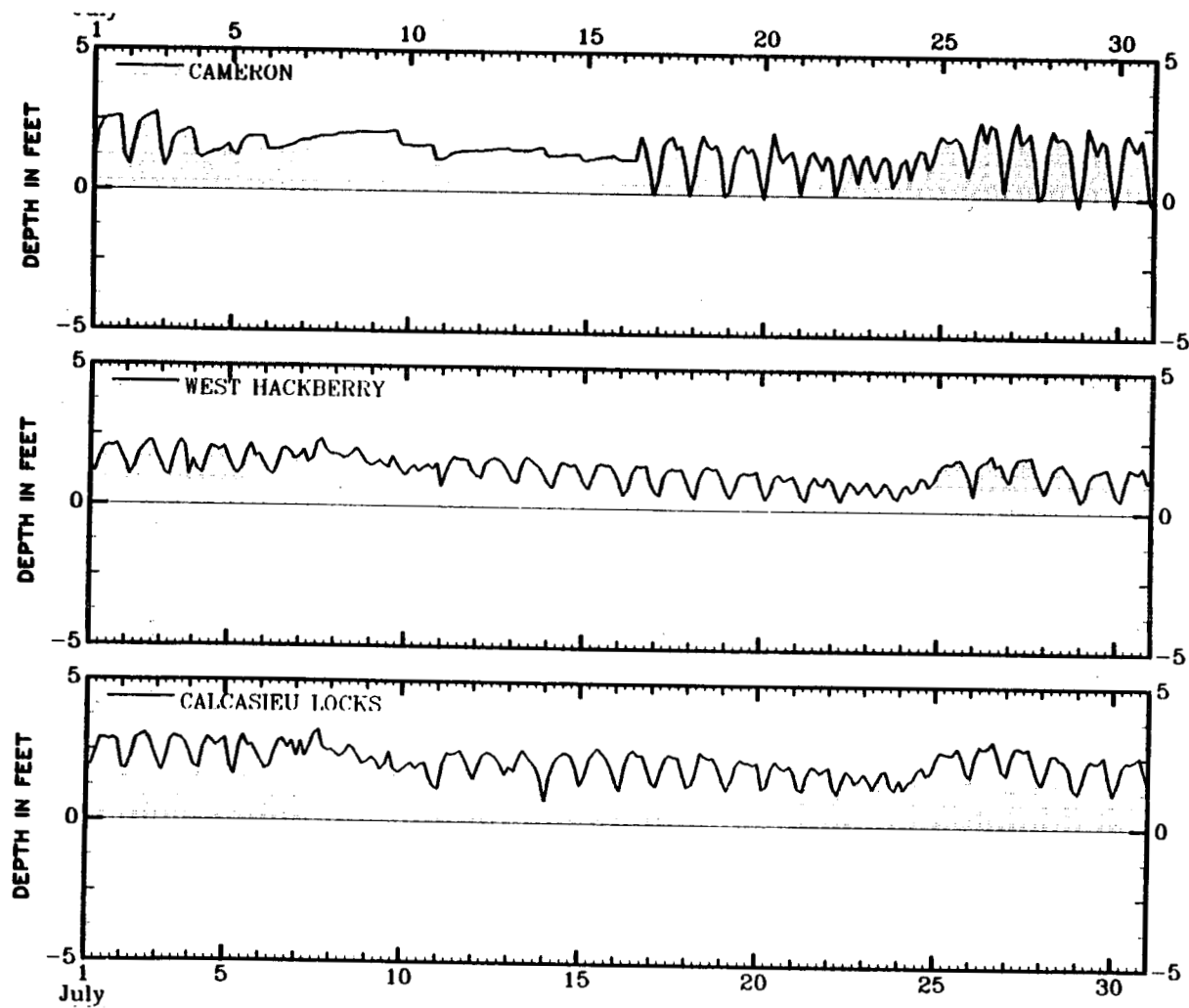


Figure C-6. Continued.

C-70

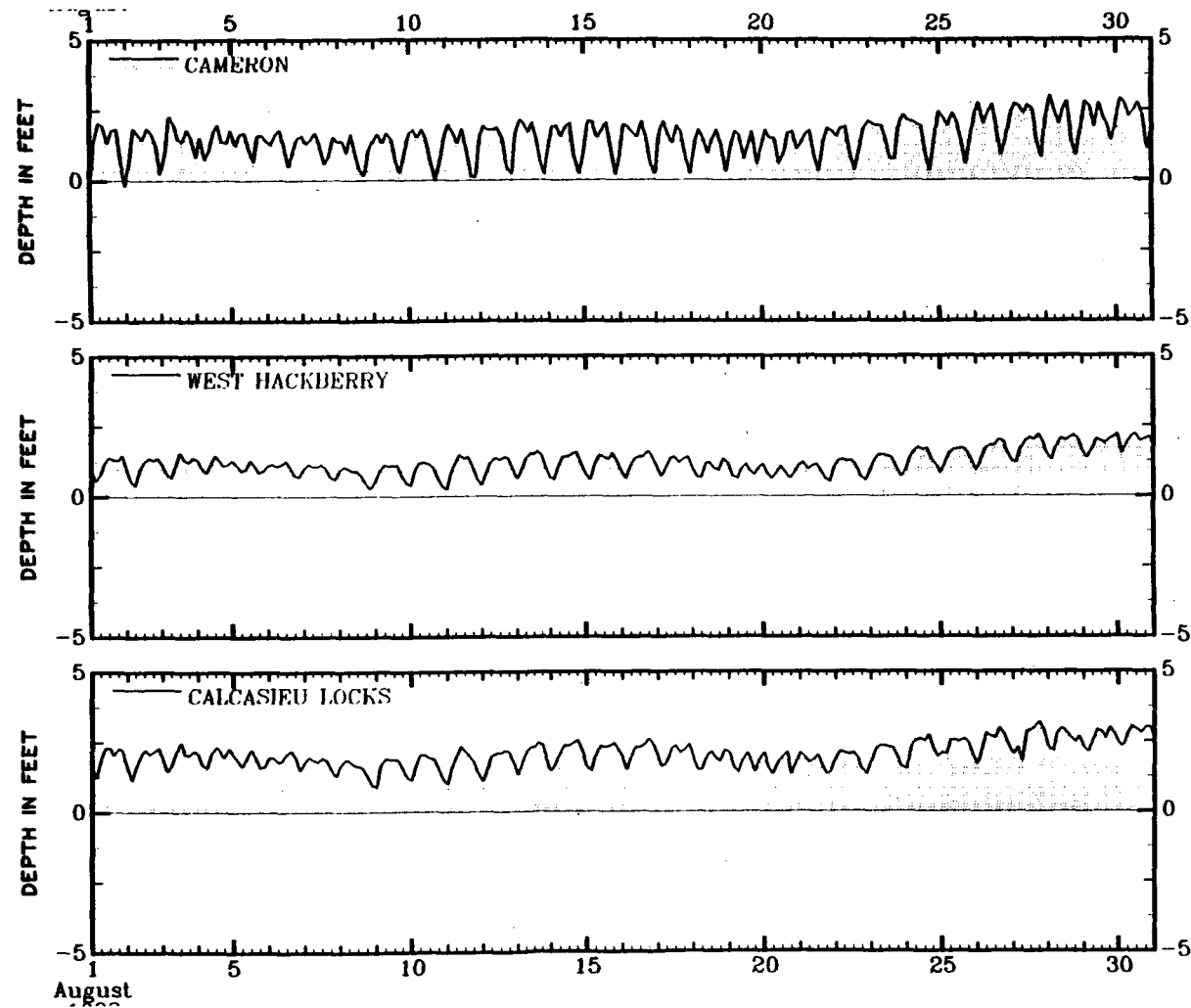


Figure C-6. Continued.

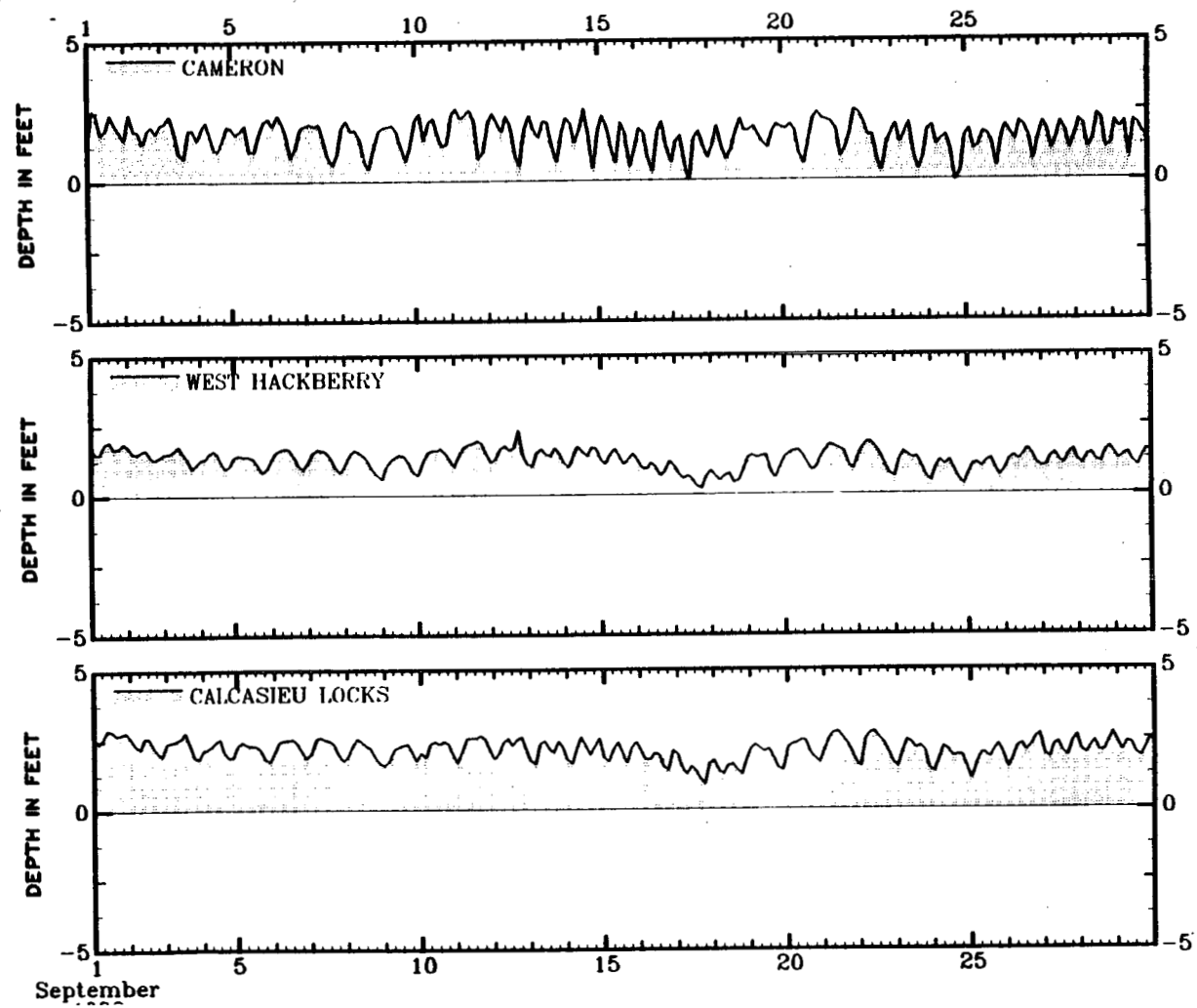


Figure C-6. Continued.

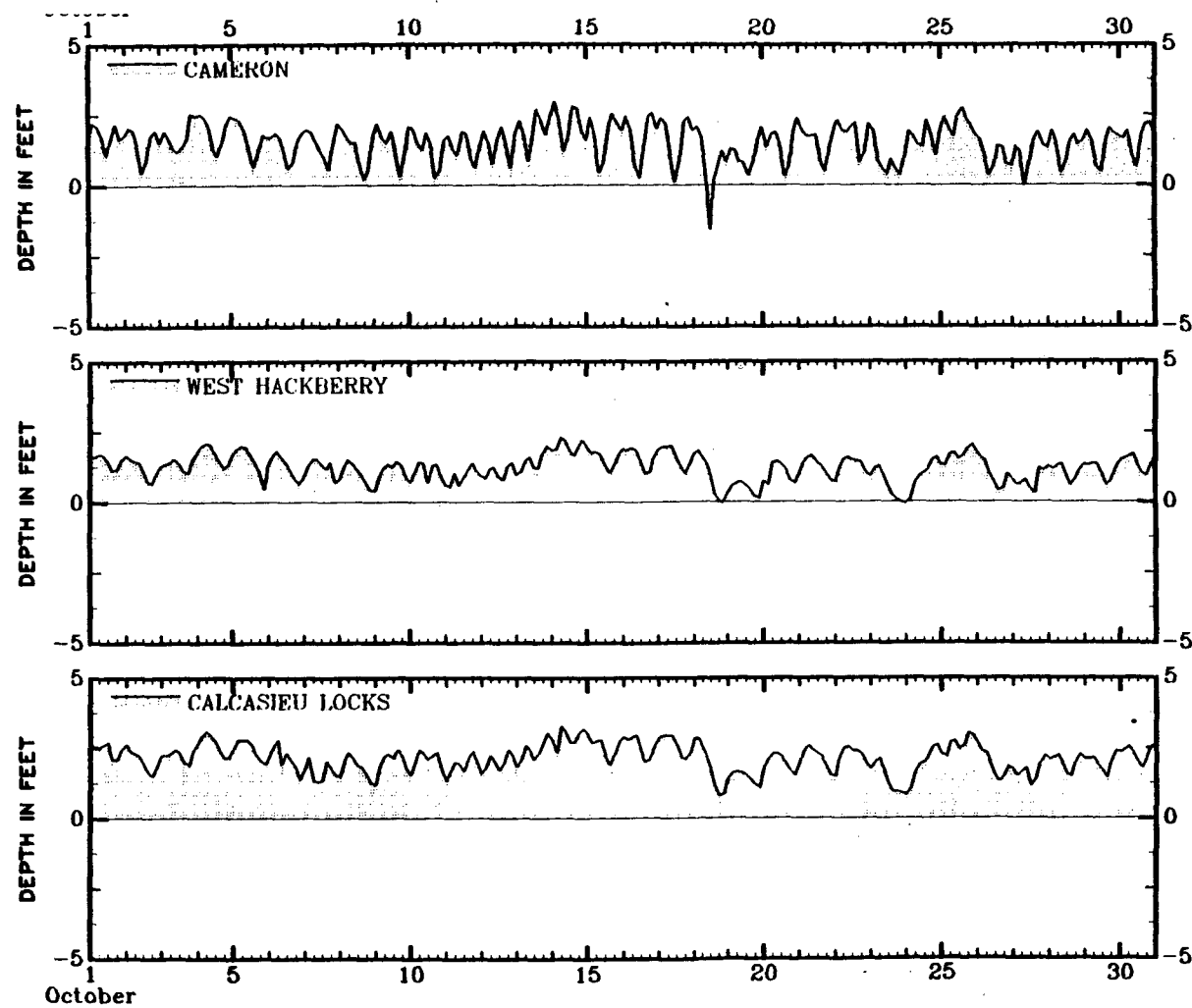


Figure C-6. Continued.

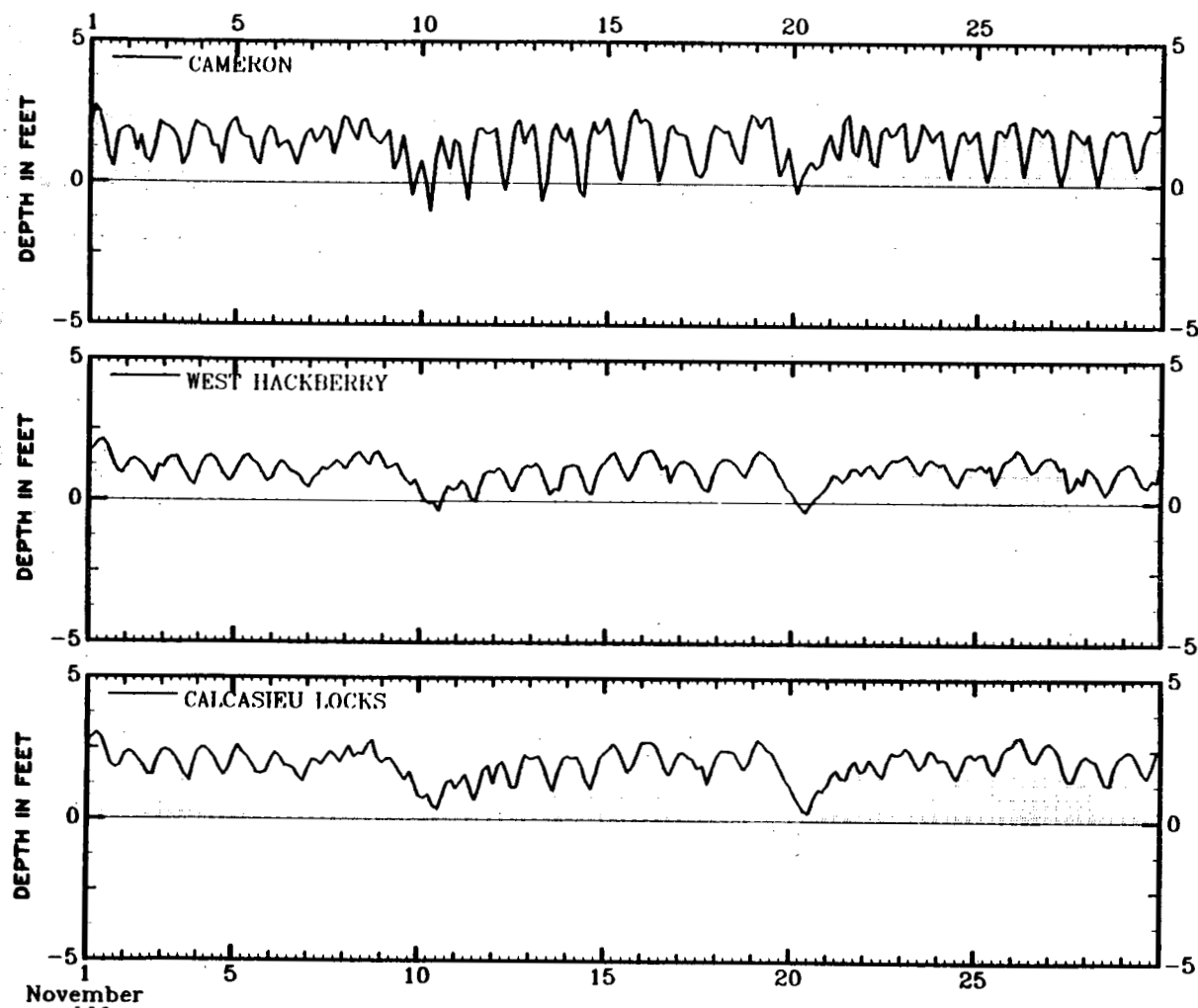


Figure C-6. Continued.

C-74

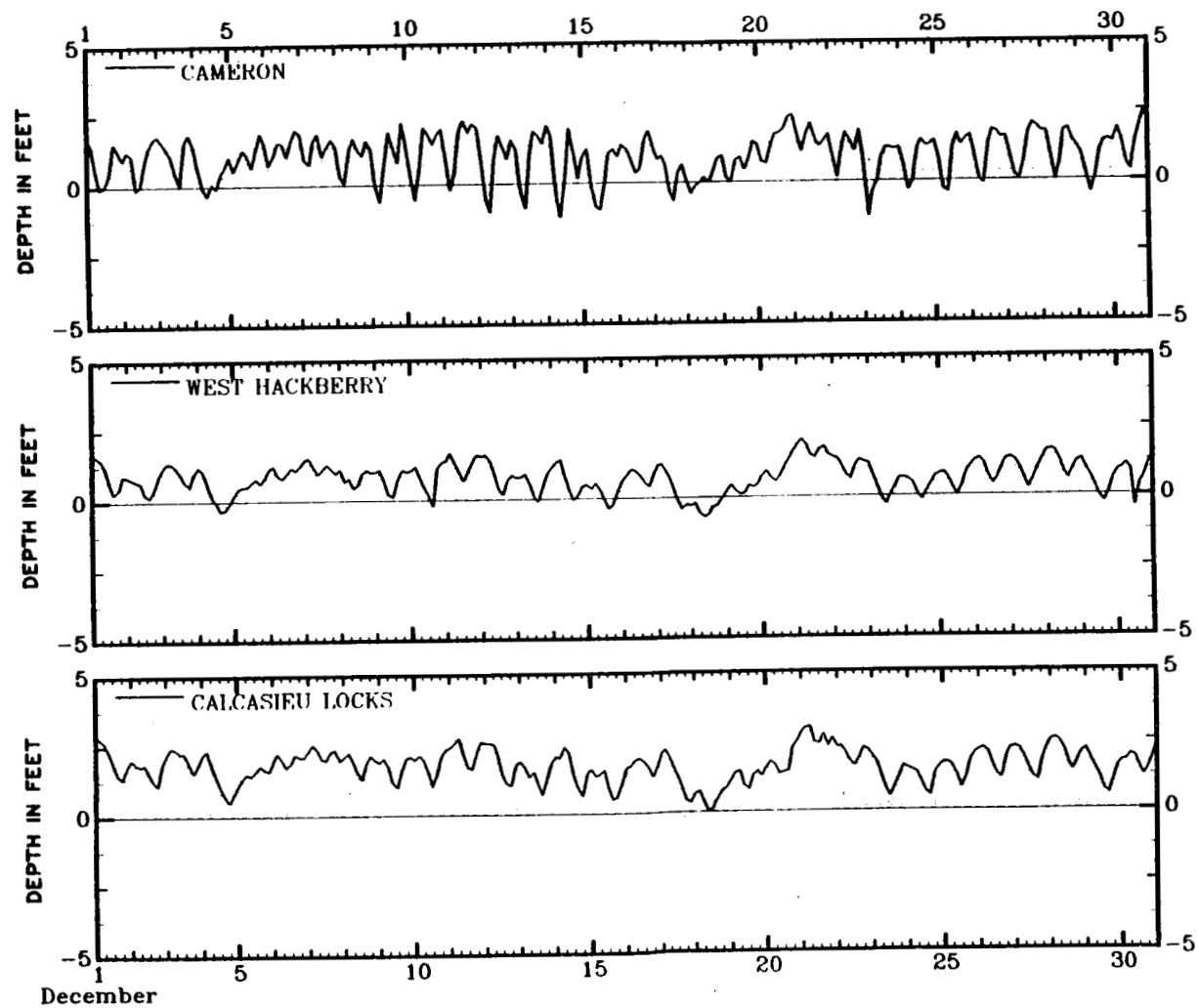


Figure C-6. Continued.

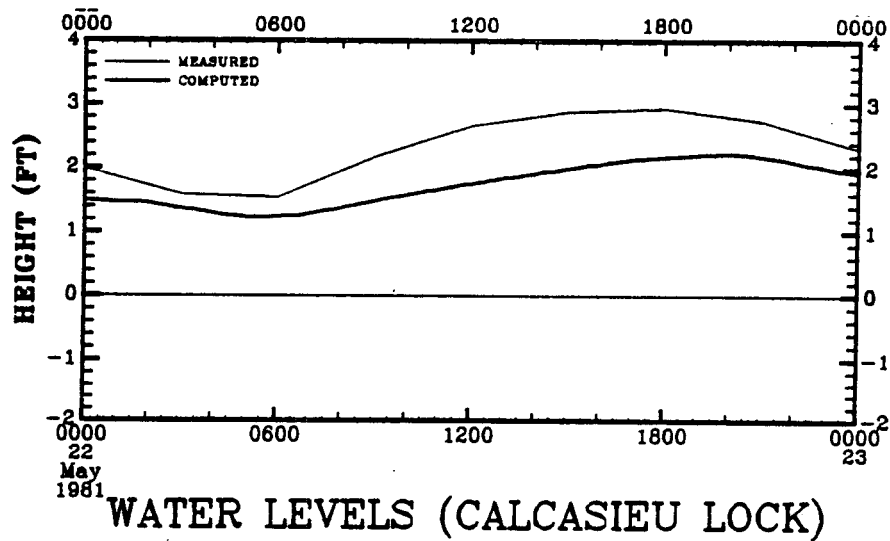
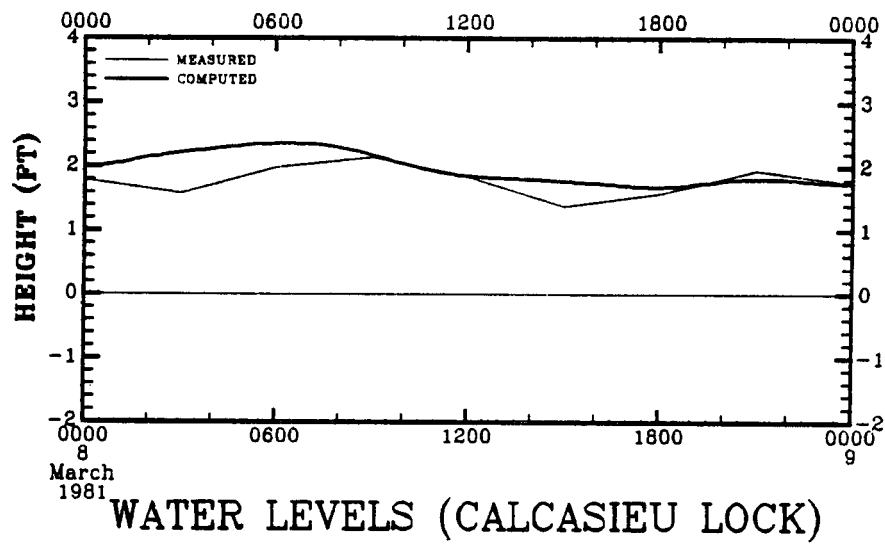


Figure C-7. Measured and computed water levels for Calcasieu locks on March 8, May 22, June 12, July 4, August 8, September 12, and November 11, 1981.

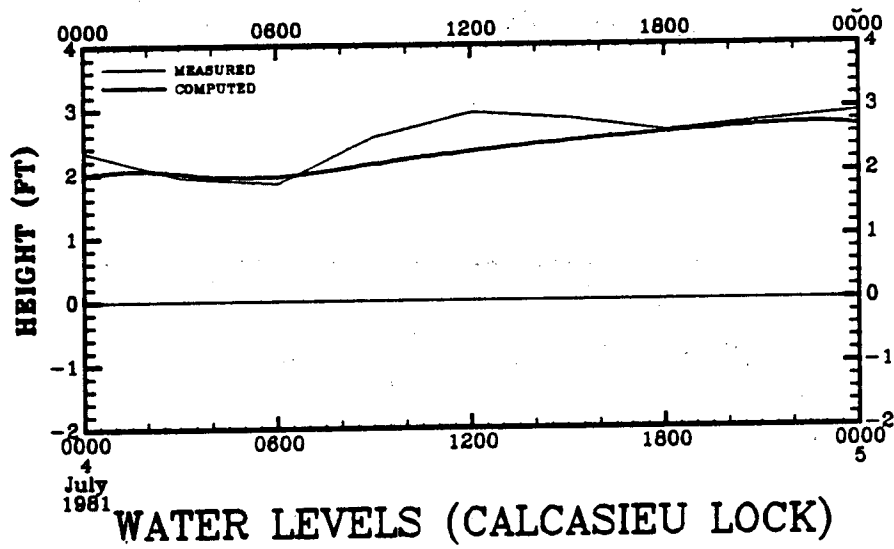
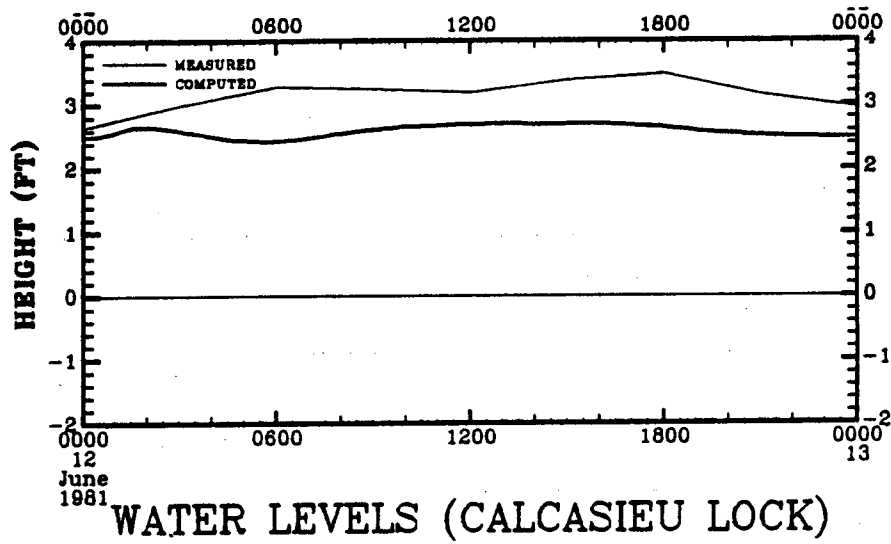


Figure C-7. Continued.

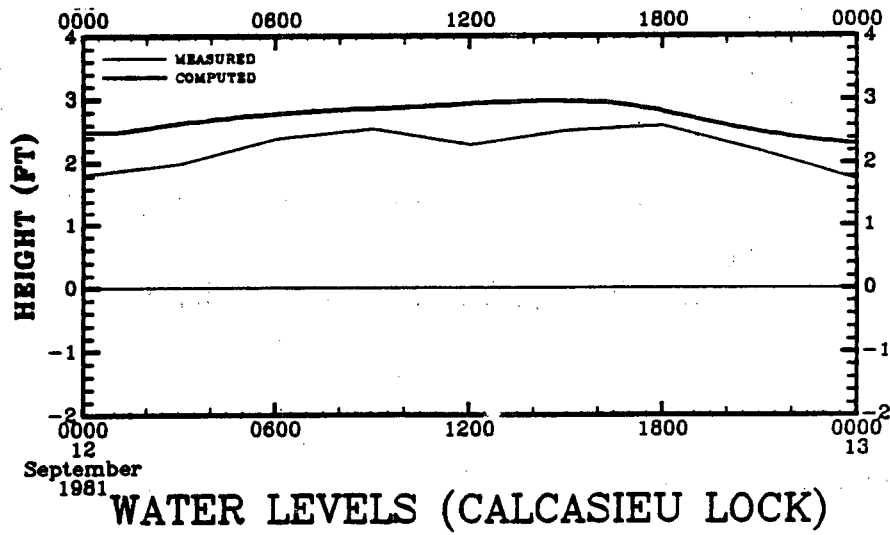
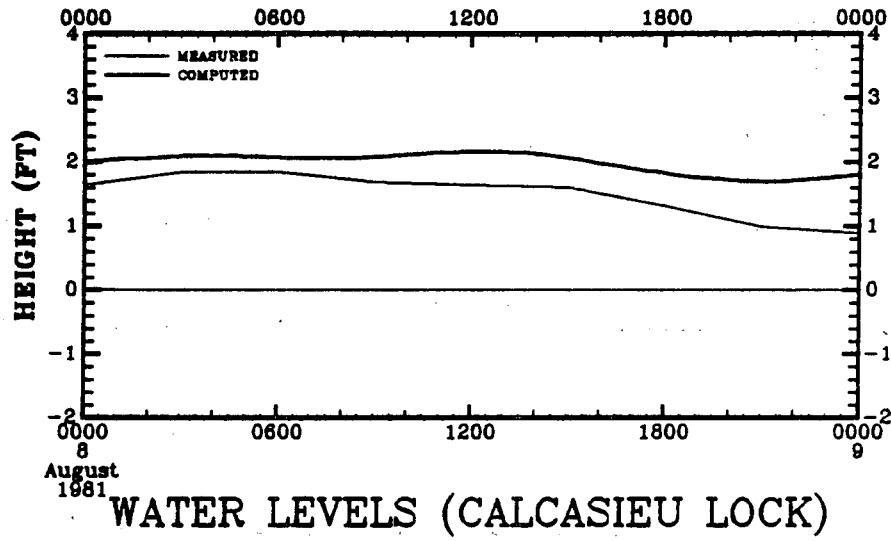


Figure C-7. Continued.

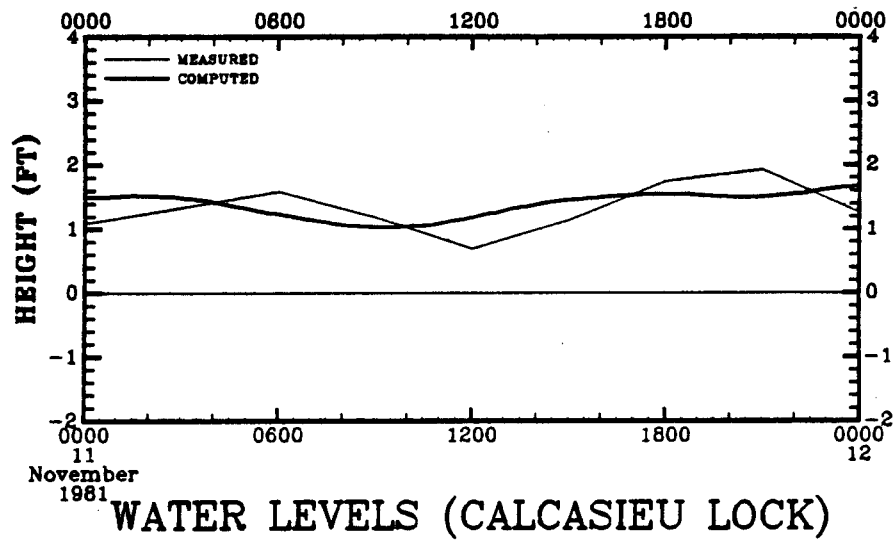
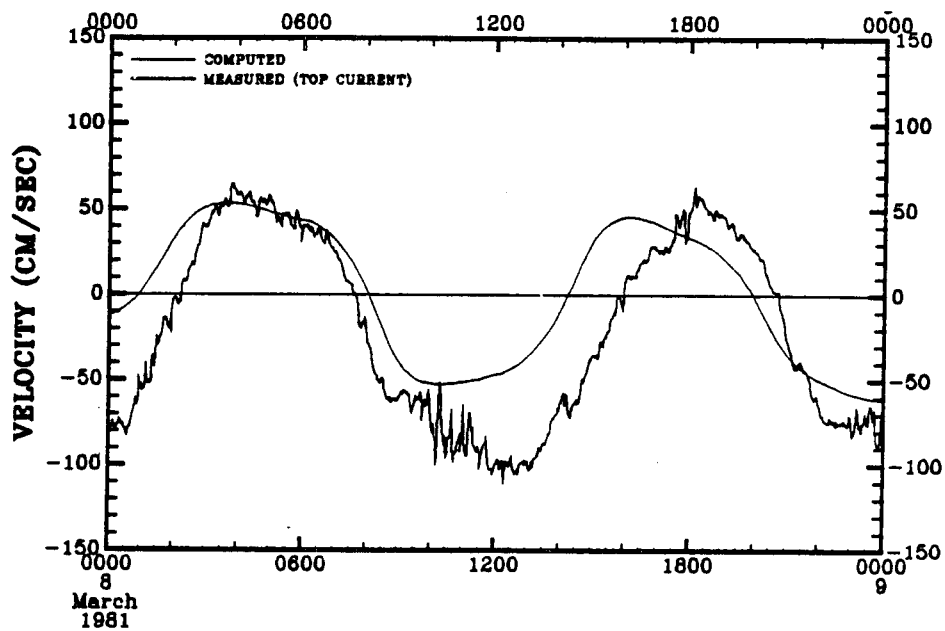
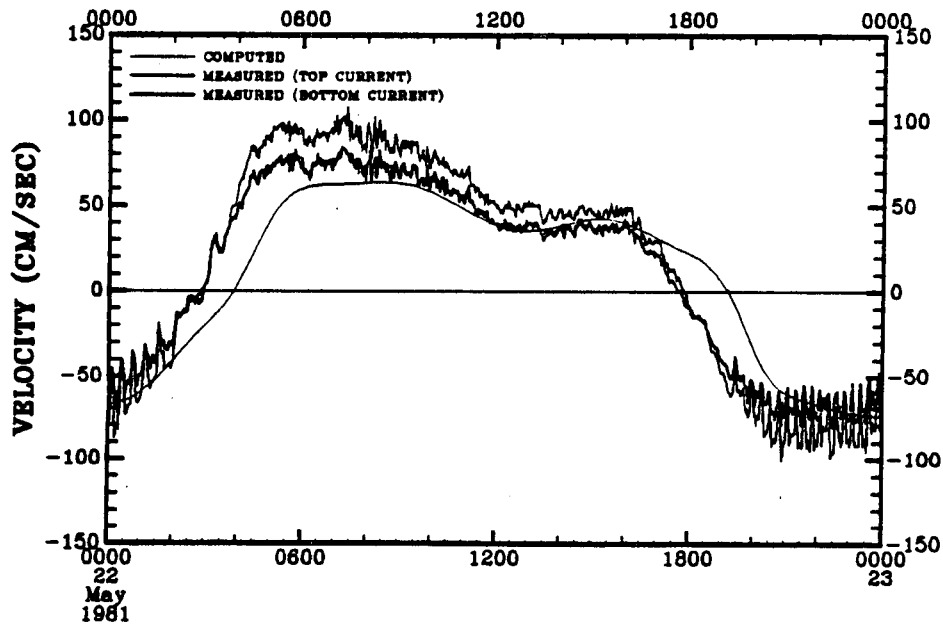


Figure C-7. Continued.



CURRENT (CALCASIEU PASS NEAR CAMERON)



CURRENT (CALCASIEU PASS NEAR CAMERON)

Figure C-8. Measured and computed current velocity in Calcasieu Pass near Cameron, Louisiana for March 8, May 22, June 12, July 4, August 8, September 12, and November 11, 1981.

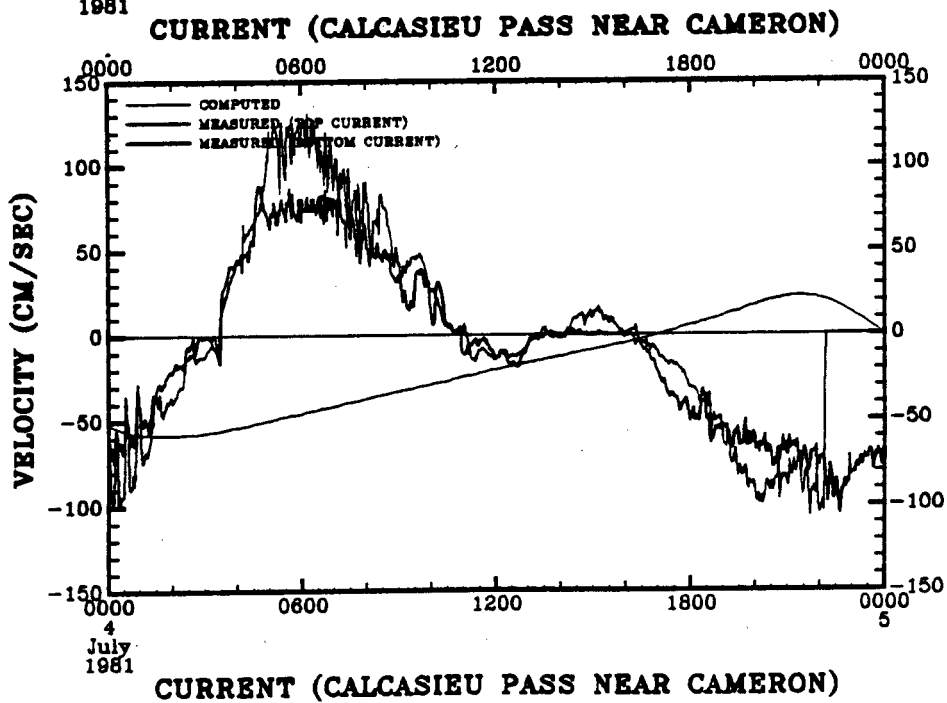
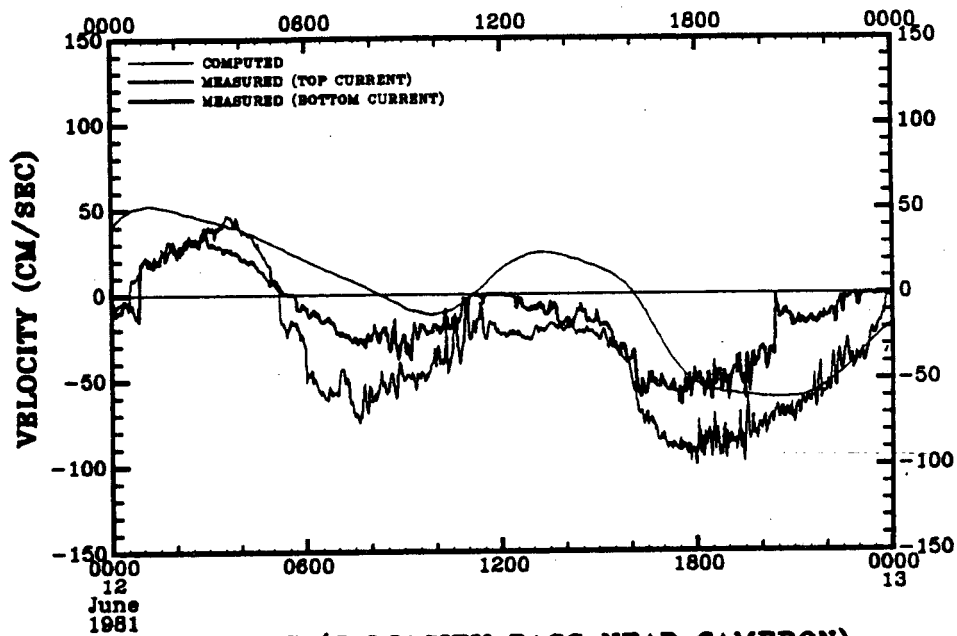


Figure C-8. Continued.

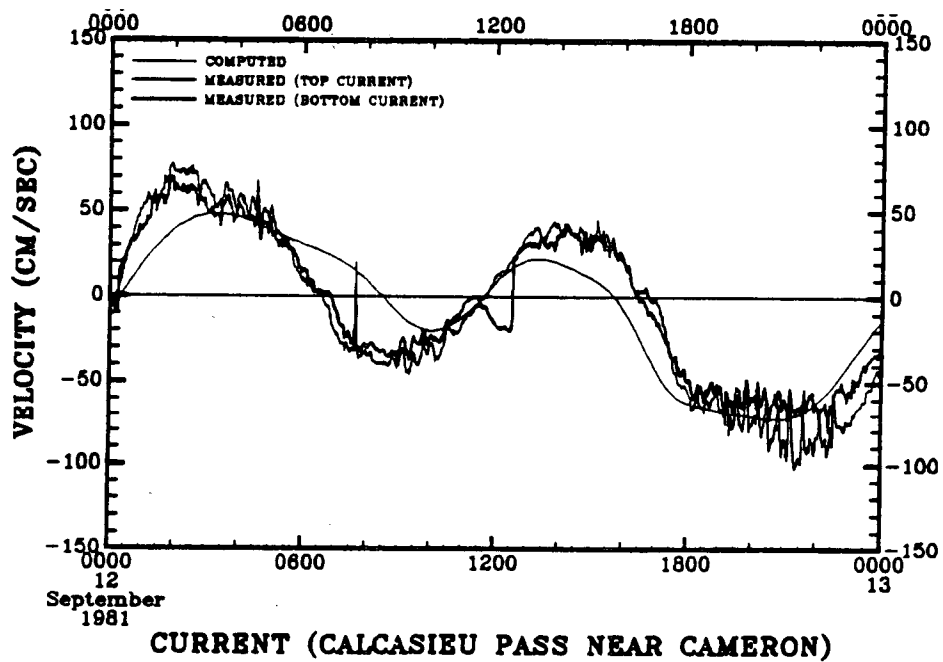
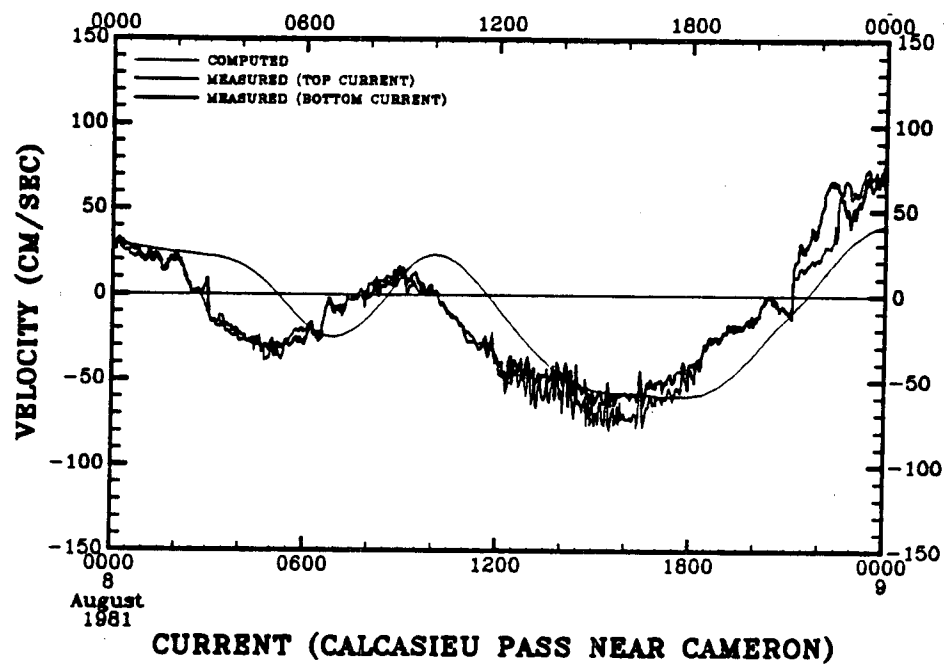


Figure C-8. Continued.

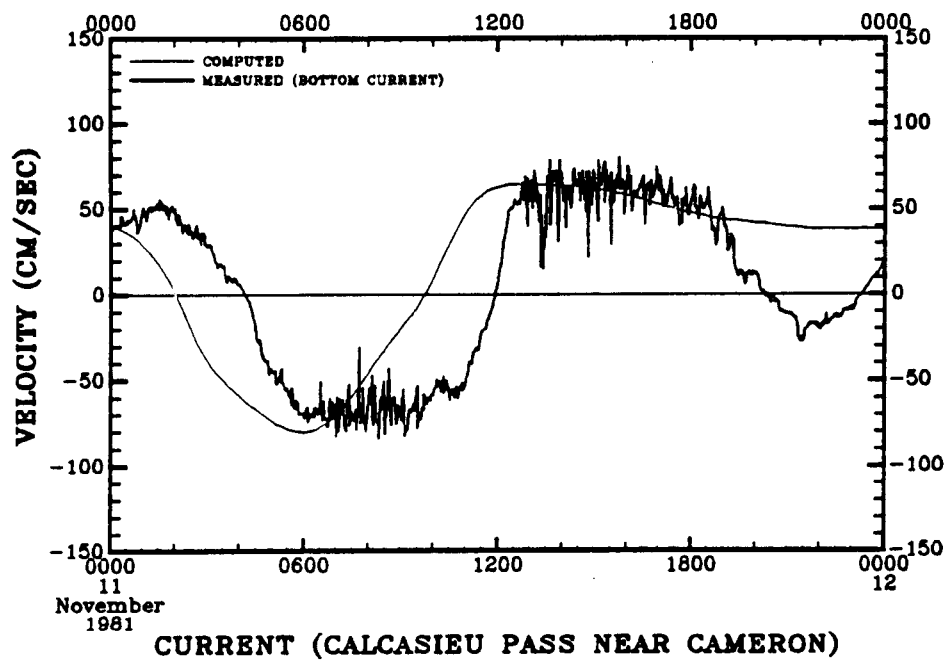
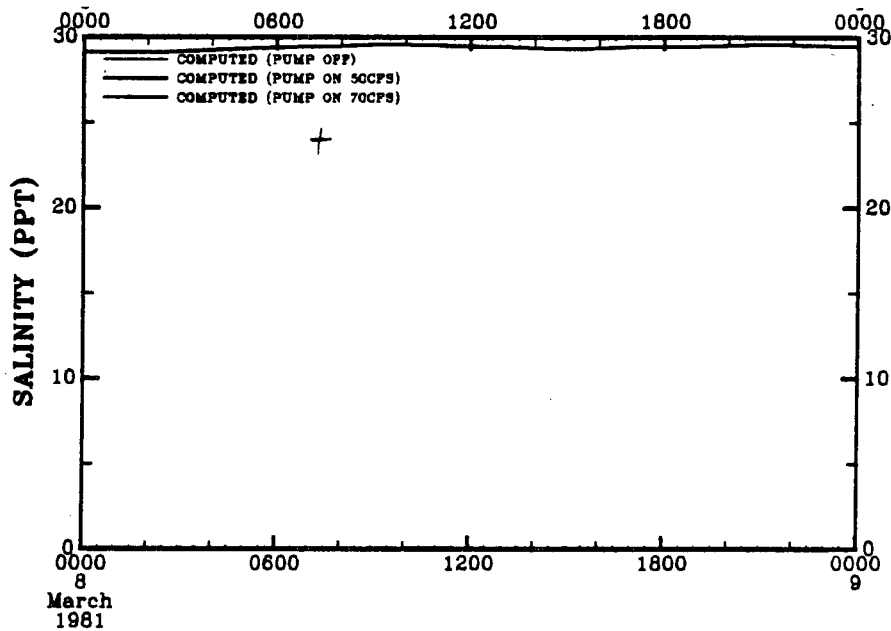
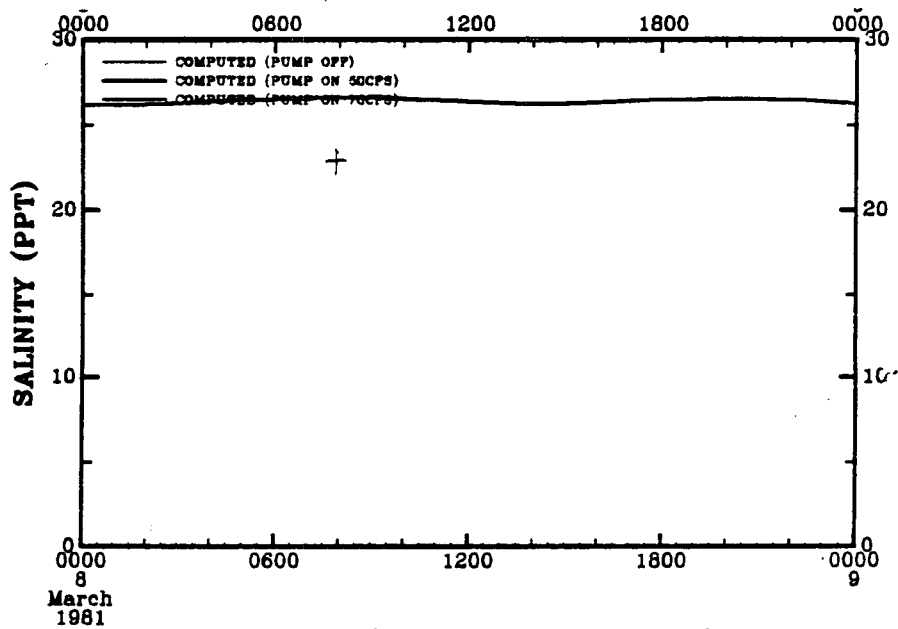


Figure C-8. Continued.

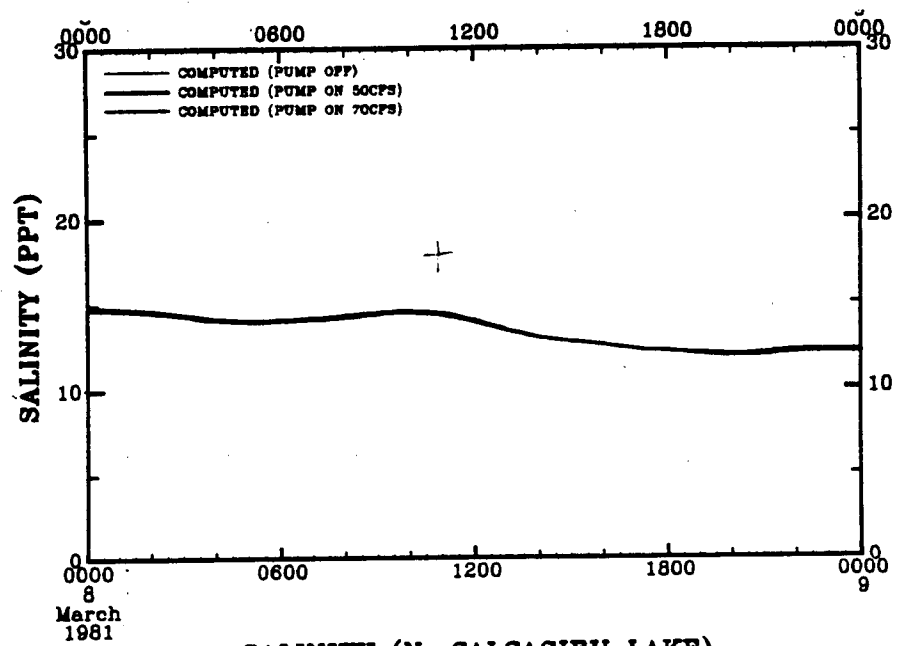


SALINITY (S.W. CALCASIEU LAKE)

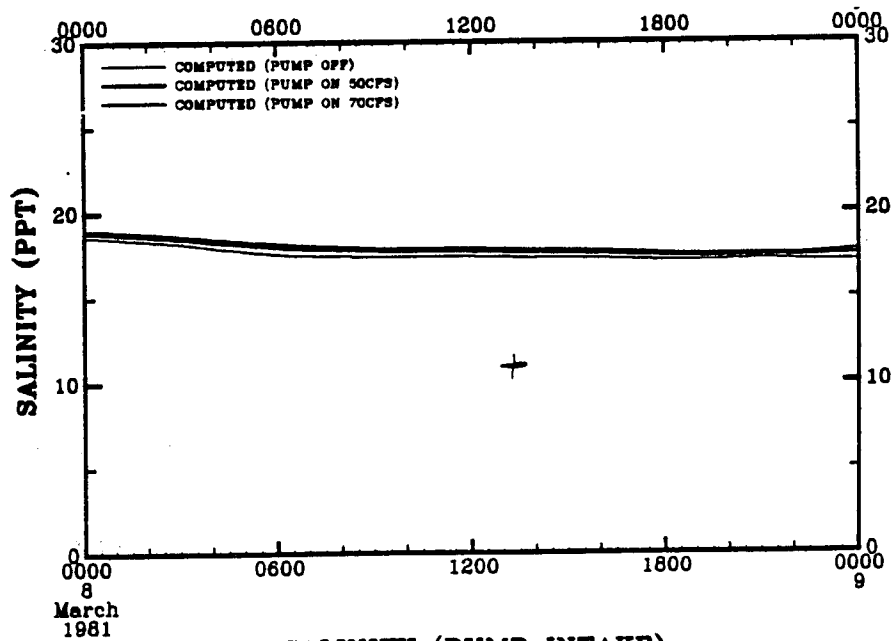


SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Computed salinity levels in Calcasieu Lake and Intracoastal Waterway for March 8, May 22, June 12, July 4, August 8, September 12, and November 11, 1981.

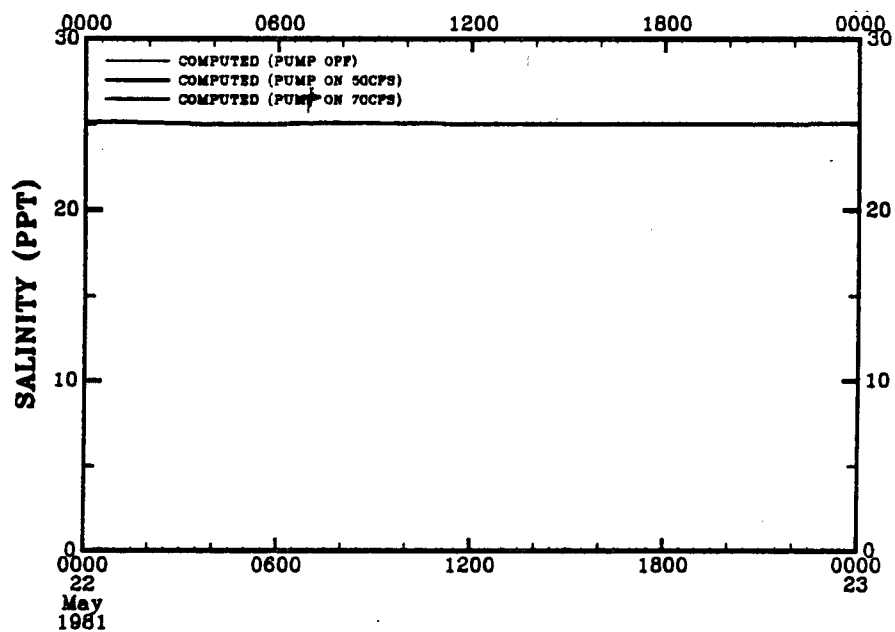


SALINITY (N. CALCASIEU LAKE)

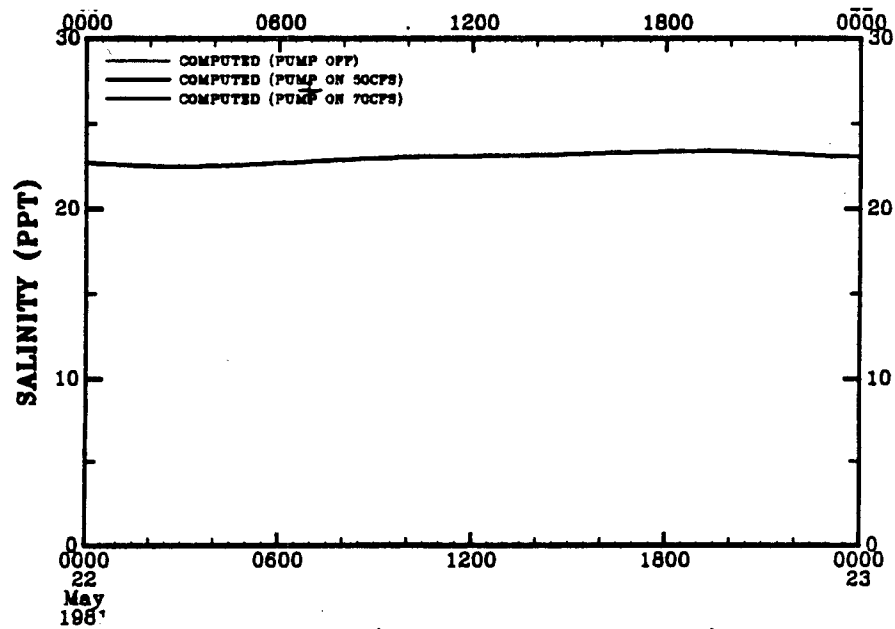


SALINITY (PUMP INTAKE)

Figure C-9. Continued.



SALINITY (S.W. CALCASIEU LAKE)



SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Continued.

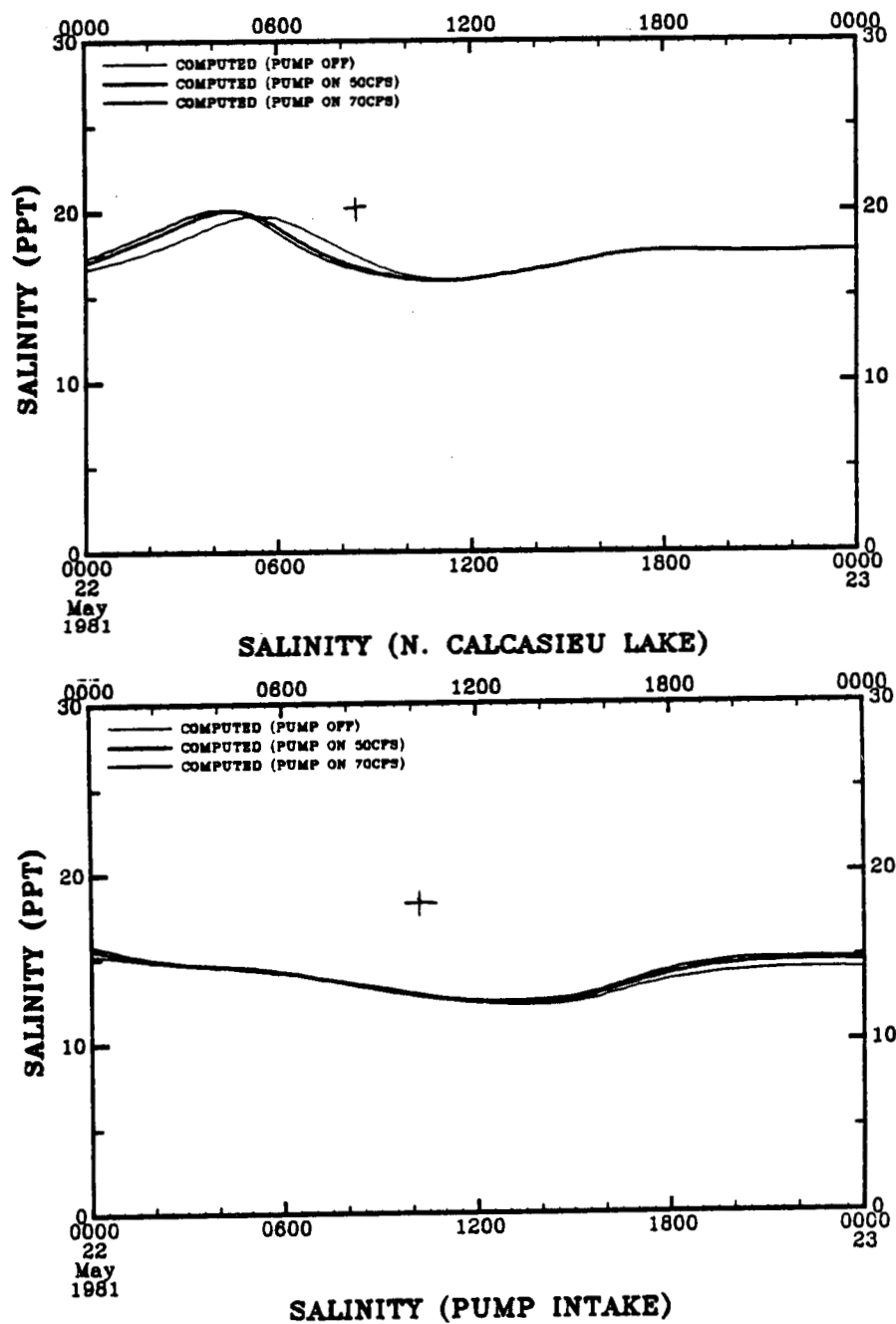
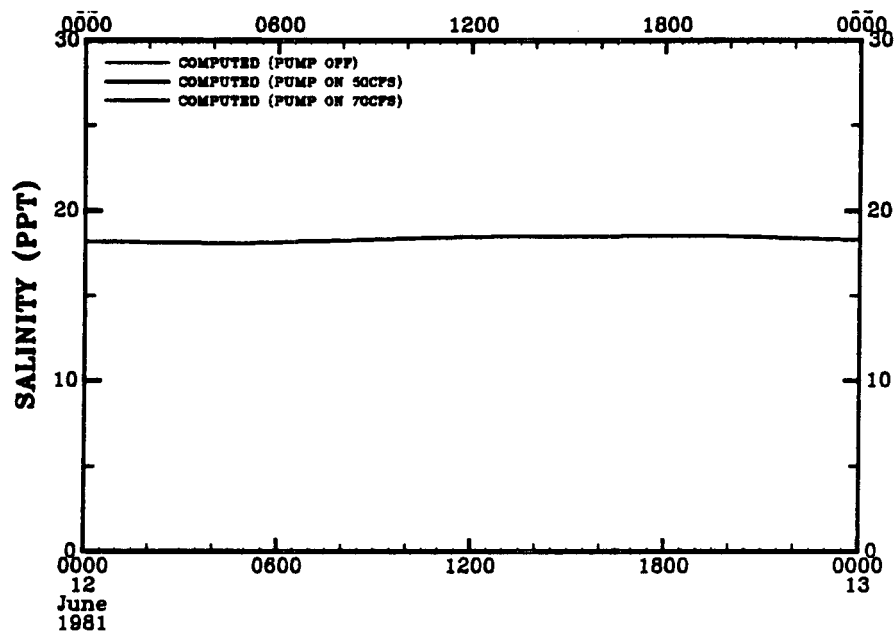
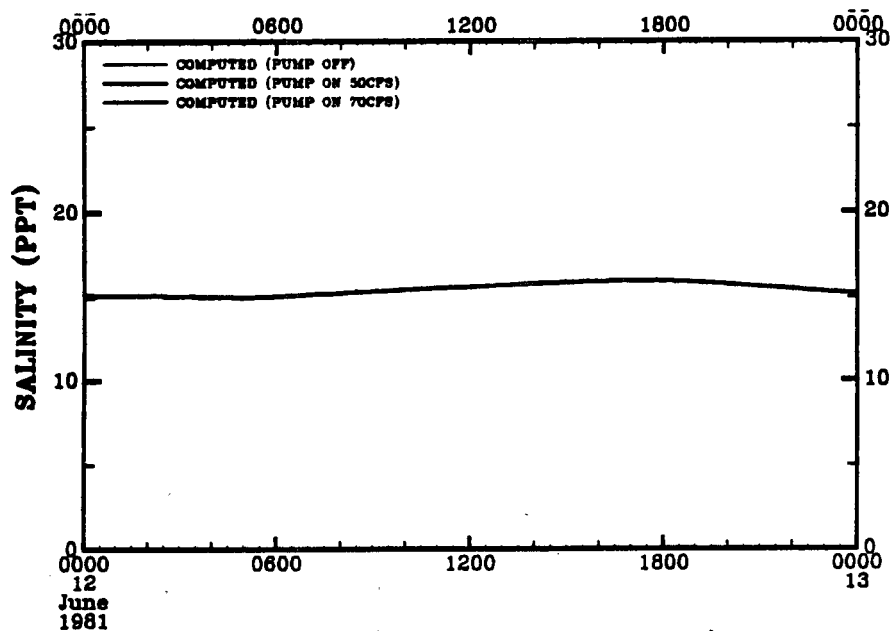


Figure C-9. Continued.



SALINITY (S.W. CALCASIEU LAKE)



SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Continued.

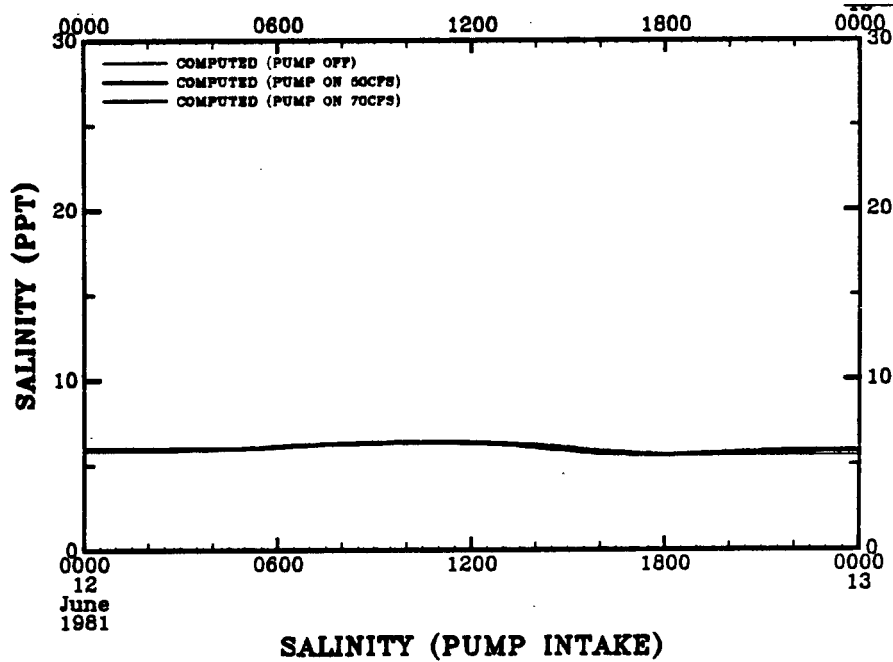
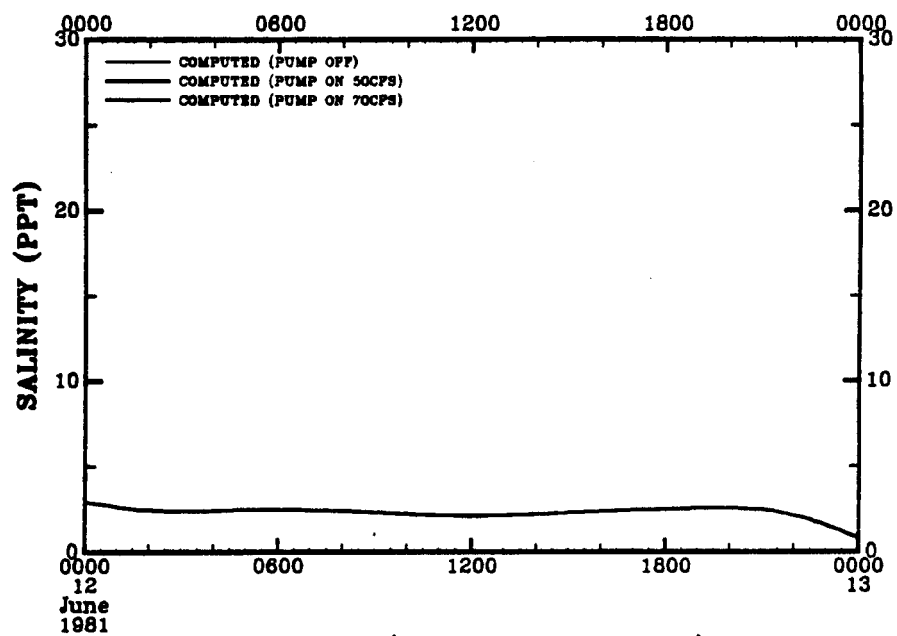
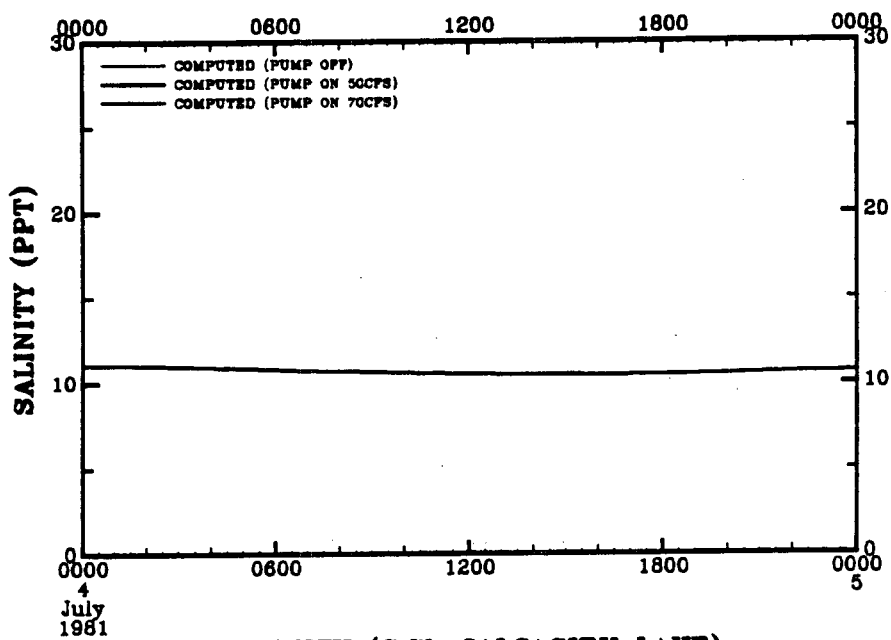
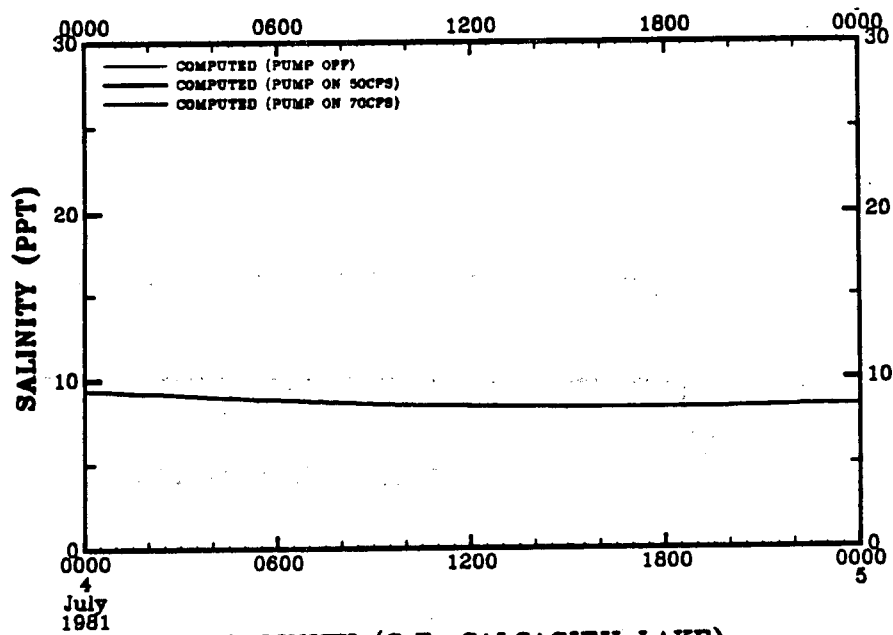


Figure C-9. Continued.

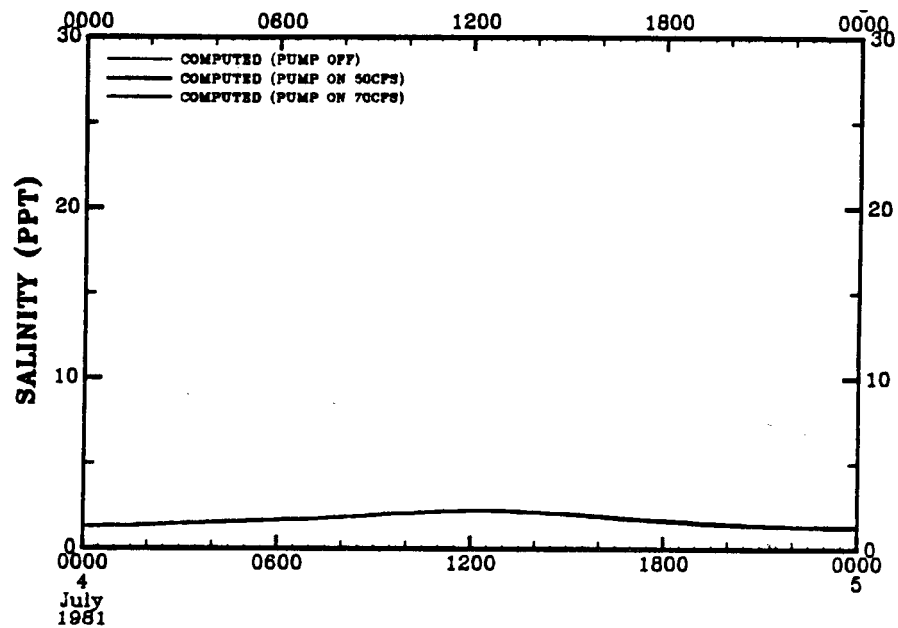


SALINITY (S.W. CALCASIEU LAKE)

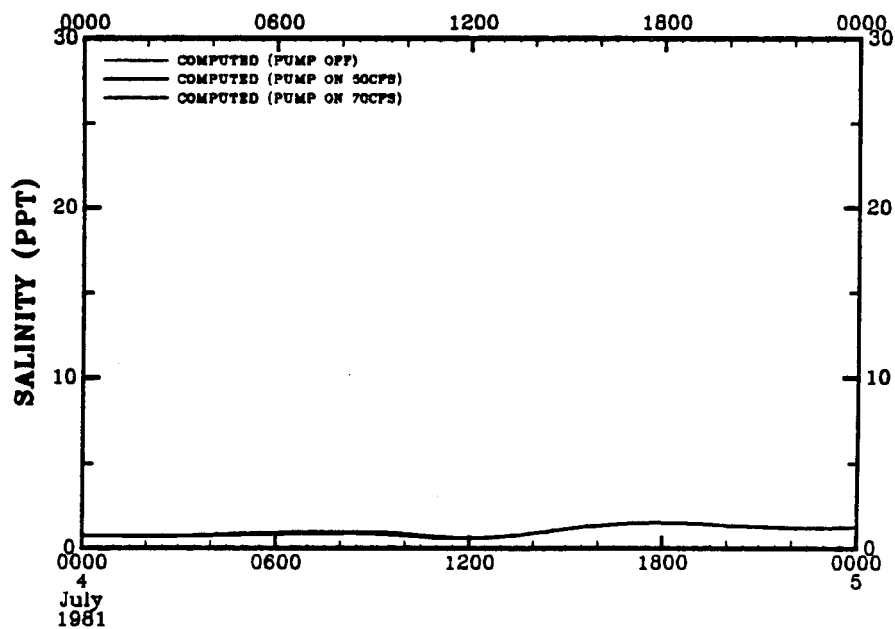


SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Continued.



SALINITY (N. CALCASIEU LAKE)



SALINITY (PUMP INTAKE)

Figure C-9. Continued.

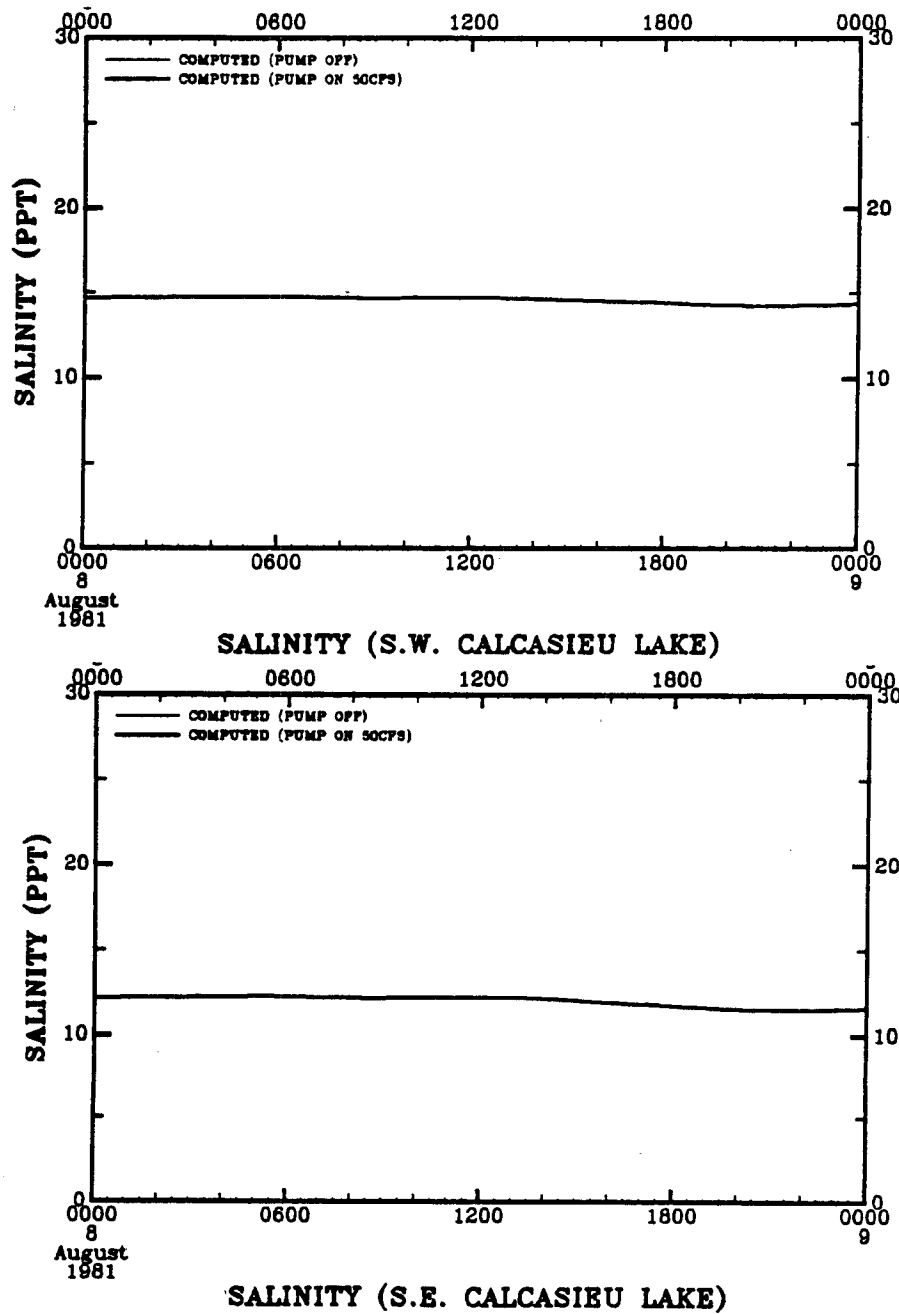


Figure C-9. Continued.

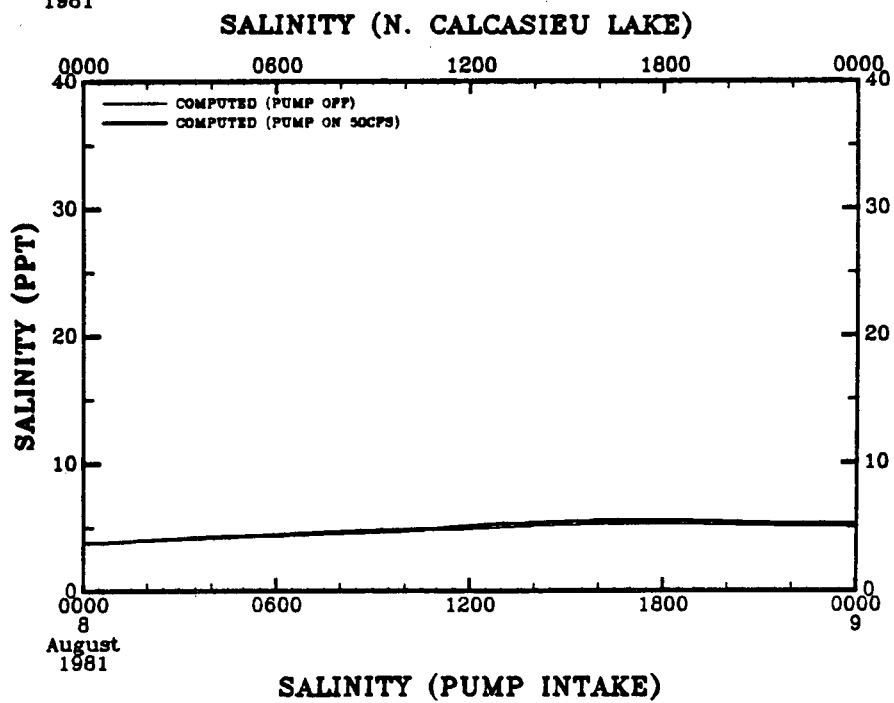
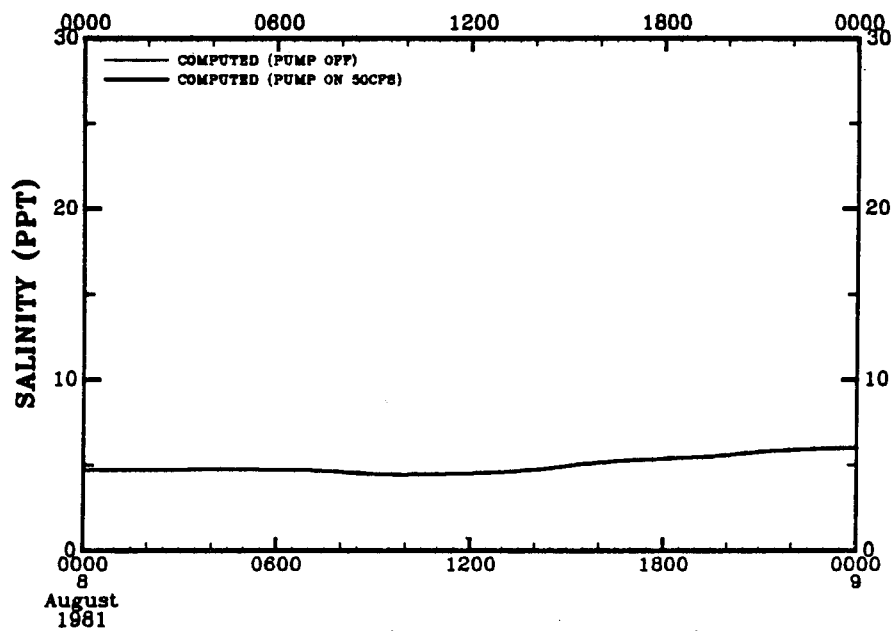
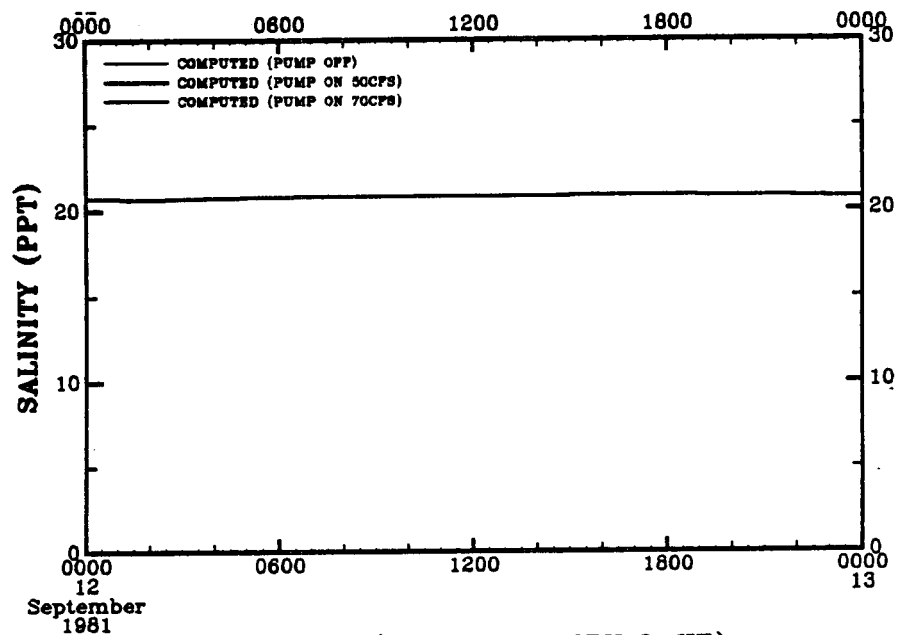
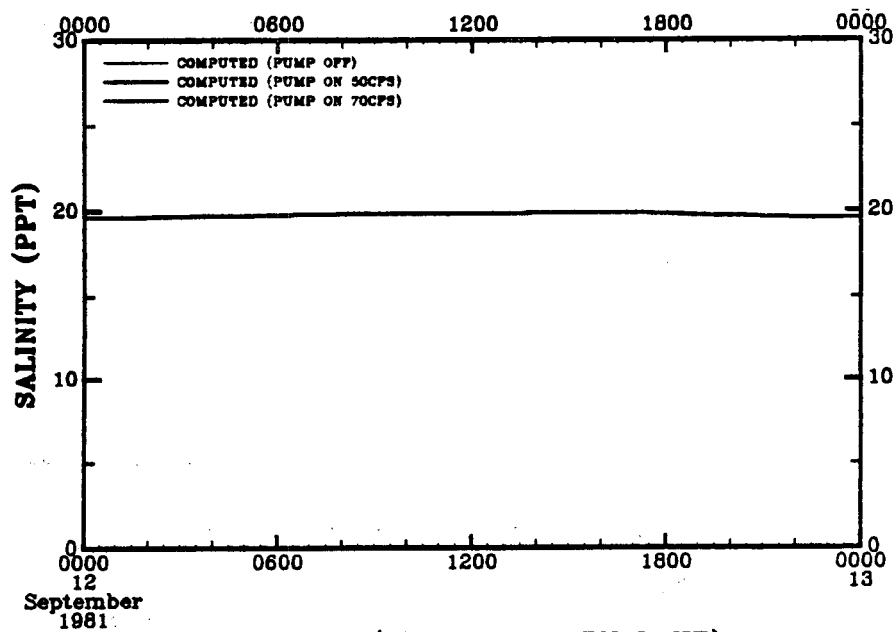


Figure C-9. Continued.



SALINITY (S.W. CALCASIEU LAKE)



SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Continued.

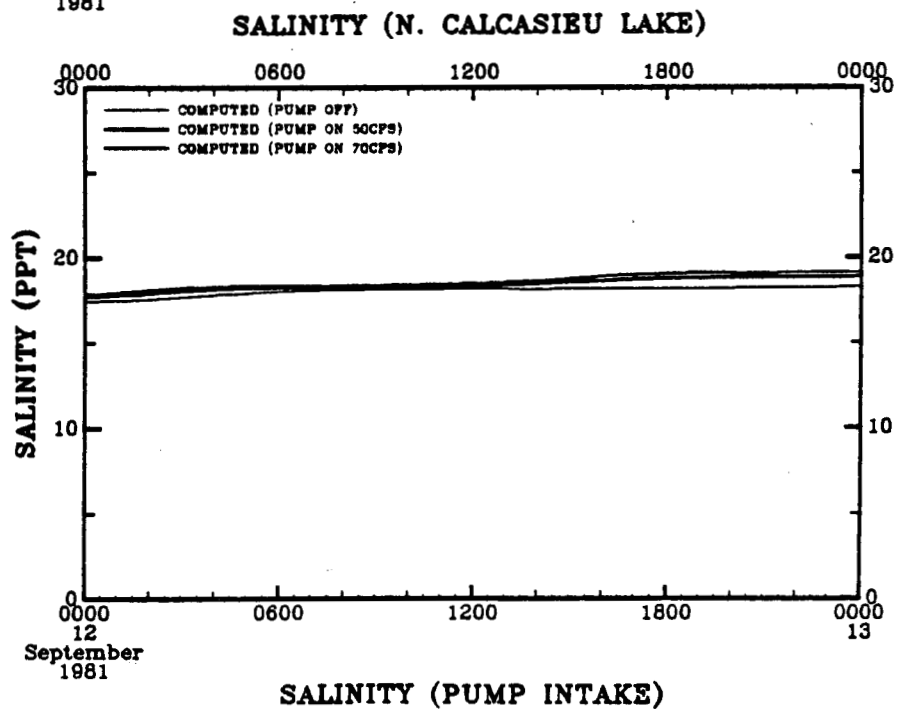
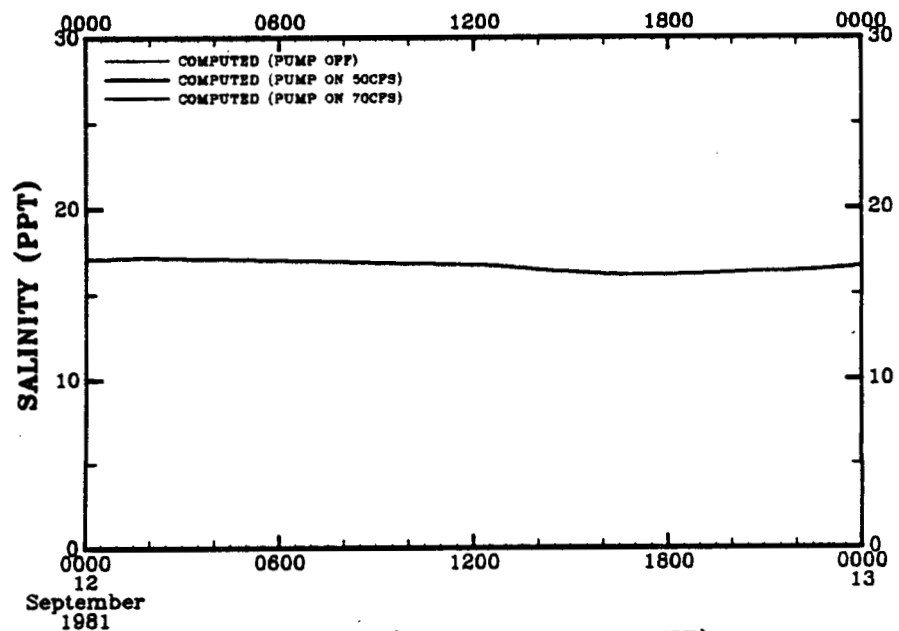
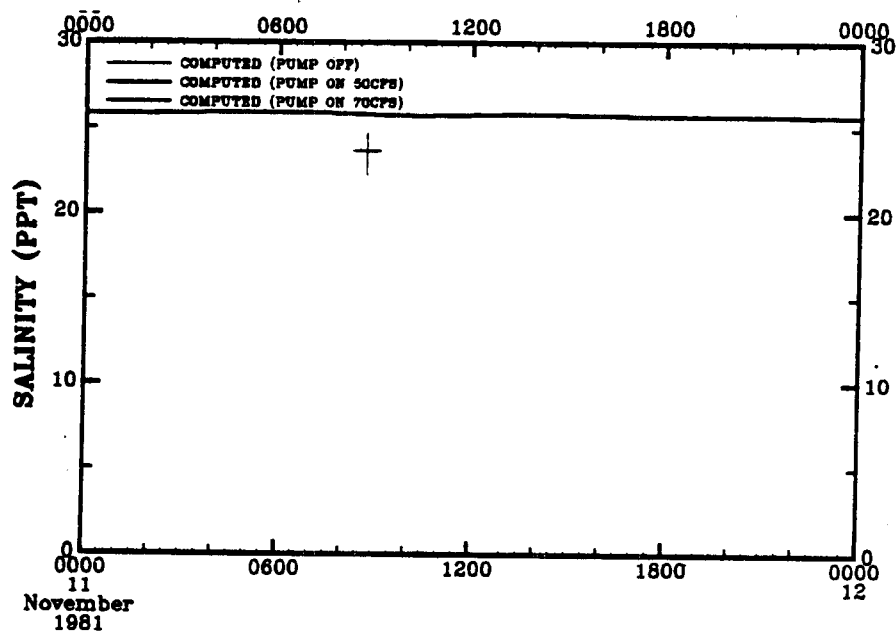
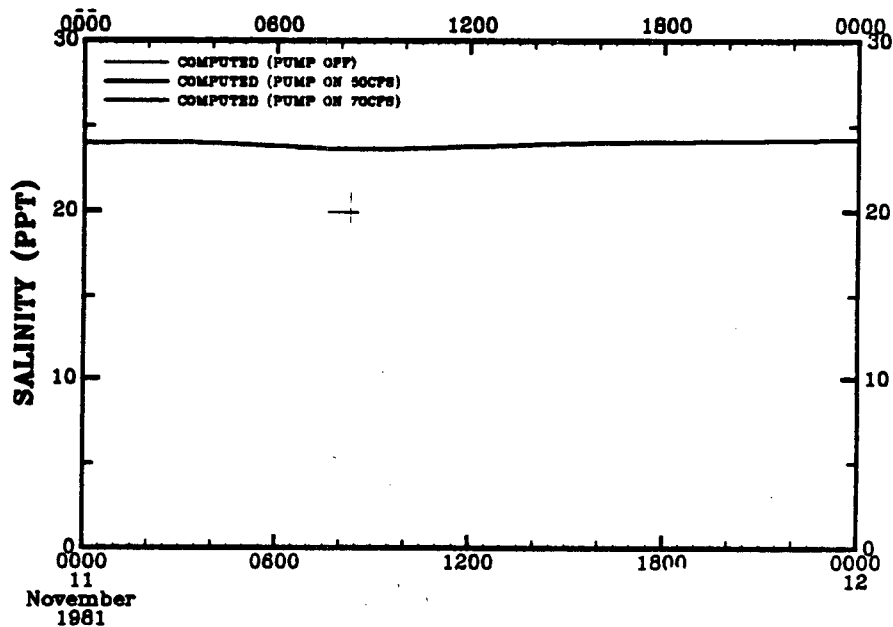


Figure C-9. Continued.



SALINITY (S.W. CALCASIEU LAKE)



SALINITY (S.E. CALCASIEU LAKE)

Figure C-9. Continued.

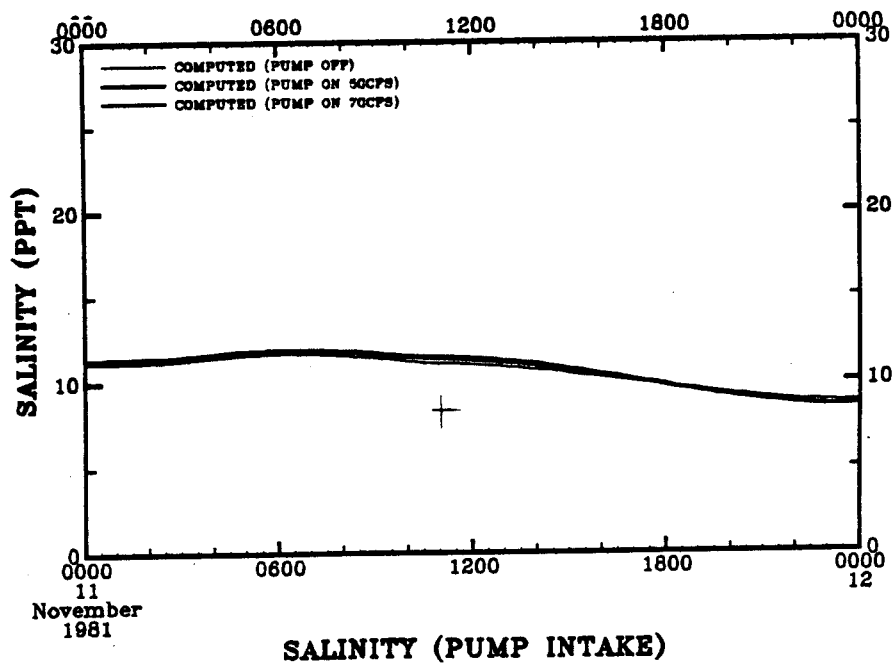
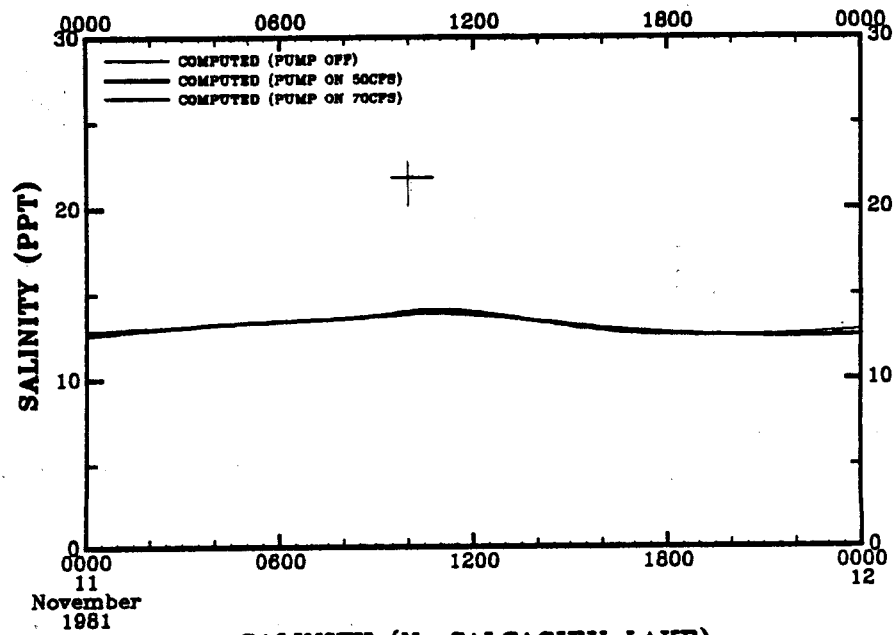


Figure C-9. Continued.

Table C-5. Postdisposal Hydrographic Data from the Calcasieu Lake for the Period
May 1981 through April 1982.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
5/22/81	E4	0630	0.5	40.8	26.8	22.9	7.7	17.8
			0.9	40.8	26.8	23.0	7.9	17.7
	E3	0700	0.2	40.7	26.7	22.4	7.3	17.8
			0.6	40.7	26.7	22.4	7.5	17.8
	E2	810	0.8	32.7	20.9	23.4	7.4	13.3
			1.2	32.7	20.9	23.4	7.5	13.3
6/10/81	E4	0740	0.5	33.7	21.4	29.3	6.0	11.8
			0.9	33.7	21.4	29.3	6.1	11.8
	E3	0815	0.2	33.5	21.2	29.3	5.6	11.7
			0.6	33.5	21.2	29.2	5.7	11.8
	E2	0935	0.8	25.7	15.8	29.3	7.0	7.6
			1.2	26.3	16.2	29.2	6.3	8.0
7/2/81	E4	1100	0.5	19.0	11.5	29.7	5.4	4.4
			0.9	19.1	11.6	29.6	5.6	4.5
	E2	1400	0.8	12.0	7.1	29.4	5.3	1.2
			1.2	12.1	7.2	29.5	5.9	1.2
8/6/81	E4	0805	0.5	23.3	13.9	29.6	5.7	6.2
			0.9	27.1	16.4	30.3	1.3	7.8
	E3	0830	0.2	25.0	15.0	29.4	6.4	7.1
			0.6	25.1	15.1	29.4	6.6	7.1
	E2	0935	0.8	19.7	11.5	30.5	6.1	4.1
			1.2	20.0	11.7	30.6	6.7	4.2

Table C-5. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
9/10/81	E4	0646	0.5	29.9	18.6	26.5	5.8	10.7
			0.9	29.9	18.6	26.4	5.9	10.7
	E3	0720	0.2	29.4	18.3	25.1	6.5	10.8
			0.6	29.4	18.3	25.7	6.7	10.6
	E2	0836	0.8	28.9	18.0	26.5	5.4	10.1
			1.5	29.0	18.0	26.5	5.7	10.2
10/3/81	E4	0925	0.5	31.8	19.7	24.9	6.4	11.9
			0.9	31.8	19.7	24.9	6.5	11.9
	E3	0951	0.2	34.3	21.4	24.2	6.7	13.4
			0.6	34.3	21.4	24.2	7.2	13.4
	E2	1125	0.8	32.4	20.1	25.4	6.7	12.1
			1.2	32.4	20.1	25.3	6.9	12.1
11/11/81	E4	0815	0.5	31.5	19.6	15.5	8.8	14.1
			0.9	31.5	19.6	15.5	9.4	14.1
	E3	0841	0.2	36.4	23.0	15.0	8.4	16.8
			0.6	36.4	23.0	15.0	8.9	16.8
	E2	1000	0.8	33.8	21.2	16.9	7.5	15.0
			1.2	33.5	21.0	17.0	7.6	14.8
12/3/81	E4	0900	0.5	36.7	23.3	15.8	7.5	16.8
			1.2	38.5	24.6	16.2	6.5	17.7
	E3	0950	0.2	37.0	23.5	15.0	8.8	17.2
			0.6	37.0	23.5	15.0	8.6	17.2
	E2	1043	0.2	34.1	21.4	16.4	10.2	15.3
			1.5	34.2	21.5	16.4	9.9	15.4

Table C-5. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
1/11/82	E4	0839	0.5	30.1	18.6	5.0	11.2	14.7
			1.2	30.1	18.6	5.0	11.2	14.7
	E2	1034	0.8	30.3	18.7	8.2	9.6	14.6
			1.2	27.8	17.0	7.9	10.3	13.3
2/12/82	E4	0826	0.5	33.8	21.4	9.3	9.2	16.5
			0.9	33.8	21.4	9.3	9.2	16.5
	E3	0847	0.2	35.9	22.9	10.0	10.4	17.6
			0.6	36.0	22.9	10.0	10.4	17.6
	E2	0947	0.8	31.0	19.4	10.2	9.0	14.8
			1.2	31.1	19.5	10.2	9.2	14.9
3/12/82	E4	1457	0.5	28.9	17.7	20.2	10.34	11.6
			0.9	28.9	17.7	19.4	9.59	11.8
	E3	1433	0.2	27.3	16.6	21.4	7.05	10.5
			0.6	27.5	16.8	21.1	7.15	10.7
	E2	1335	0.8	19.9	11.7	20.8	10.37	7.0
			1.5	20.0	11.8	19.7	8.13	7.3
4/28/82	E4	1800	0.5	18.4	10.8	21.6	8.91	6.1
			0.9	28.5	17.6	21.1	7.48	11.3
	E3	1740	0.2	23.4	14.1	22.3	8.29	8.4
			0.6	23.6	14.3	22.0	7.90	8.6
	E2	1700	0.8	4.2	2.2	20.1	5.43	0.0
			1.5	6.7	3.6	20.5	5.31	0.9

Table C-6. Postdisposal Hydrographic Data for Calcasieu Pass for the Period
May 1981 through April 1982.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
5/22/81	E5	0545	1.0	40.1	26.2	23.9	8.3	17.1
			3.0	40.2	26.3	23.9	8.3	17.2
			6.0	40.2	26.3	23.9	8.1	17.2
6/10/81	E5	0640	1.0	31.4	19.7	29.0	5.5	10.7
			3.0	32.4	20.5	29.1	5.1	11.2
			6.0	37.8	24.3	28.8	4.7	14.2
7/2/81	E5	1025	1.0	21.2	12.9	30.3	6.1	5.2
			3.0	21.3	13.0	30.3	6.7	5.3
			6.0	22.3	13.7	30.2	6.7	5.8
8/6/81	E5	1917	1.0	26.5	16.0	30.5	5.7	7.5
			3.0	27.0	16.4	30.5	5.6	7.4
			6.0	27.6	16.8	30.6	5.6	8.0
			7.0	27.8	16.9	30.6	5.7	8.1
9/10/81	E5	0445	1.0	35.5	22.6	28.0	6.2	13.1
			3.0	35.5	22.6	28.1	6.0	13.1
			6.0	35.7	22.7	28.2	6.6	13.2
			7.0	35.8	22.8	28.3	6.8	13.2
10/3/81	E5	0832	1.0	31.1	19.2	26.6	7.2	11.0
			3.0	31.1	19.2	26.5	6.9	11.1
			6.0	31.2	19.3	26.5	6.9	11.1
			7.0	31.2	19.3	26.4	7.2	11.1
11/11/81	E5	1717	1.0	43.2	27.8	18.5	7.6	19.7
			3.0	43.2	27.8	18.4	7.6	19.7
			6.0	43.2	27.8	18.4	7.6	19.7
			7.0	43.2	27.8	18.4	7.5	19.7

Table C-6. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
12/3/81	E5	0809	1.0	44.8	29.1	18.2	6.2	20.7
			3.0	44.8	29.1	18.2	6.0	20.7
			6.0	44.8	29.1	18.2	6.1	20.7
			7.0	44.9	29.2	18.2	6.2	20.8
1/11/82	E5	0740	1.0	32.5	20.2	6.4	9.3	15.9
			3.0	33.4	20.9	7.1	8.9	16.3
			6.0	34.3	21.5	7.5	9.2	16.8
			7.0	33.9	21.2	7.4	9.6	16.6
2/12/82	E5	0735	1.0	45.0	29.4	10.2	10.1	22.6
			3.0	45.0	29.4	10.2	9.8	22.6
			6.0	45.1	29.5	10.2	9.4	22.6
			7.0	45.1	29.5	10.2	9.8	22.6
3/12/82	E5	0650	1.0	35.5	22.2	16.4	8.8	15.9
			3.0	35.5	22.2	16.4	9.0	15.9
			6.0	35.6	22.3	16.5	8.8	16.0
4/28/82	E5	0640	1.0	18.1	10.6	20.7	7.6	6.2
			3.0	8.1	10.6	20.8	7.9	6.2
			6.0	24.9	15.2	20.7	8.0	9.6

Table C 7. Postdisposal Hydrographic Data from the Intracoastal Waterway Between Lake Sabine and Lake Calcasieu for the Period May 1981 through April 1982.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
5/22/81	E6	0820	1.0	31.1	19.8	23.3	6.3	12.4
			1.5	31.1	19.8	23.3	6.3	12.4
			4.5	31.1	19.8	23.3	6.6	12.4
	E1	1000	0.5	30.0	19.0	24.5	6.7	11.5
			2.1	29.9	19.0	24.4	6.6	11.5
			3.7	29.9	19.0	24.5	6.7	11.5
	E7	1205	1.0	12.8	7.5	25.0	5.8	2.8
			2.5	14.5	8.6	24.7	5.4	3.7
			5.5	21.1	12.9	24.5	5.0	7.0
6/10/81	E6	0955	1.0	9.5	5.1	29.0	4.7	-2
			1.5	12.6	7.0	29.1	4.9	1.2
			4.5	18.5	10.9	29.8	5.3	3.9
	E1	1130	0.5	11.9	6.6	29.8	5.7	.7
			2.1	11.9	6.6	29.8	5.8	.7
			3.7	12.0	6.7	29.7	5.8	.8
	E7	1325	1.0	0.7	0.2	28.6	5.2	-3.7
			2.5	0.8	0.2	28.6	5.1	-3.7
			5.5	0.8	0.2	28.8	5.3	-3.8
7/2/81	E6	1500	1.0	0.2	0.7	30.2	5.0	-3.9
			1.5	0.2	0.7	30.2	4.8	-3.9
			4.5	0.2	0.7	30.2	5.0	-3.9
	E1	1530	0.5	10.6	6.3	30.2	4.8	0.3
			2.1	10.7	6.3	30.2	5.0	0.4
	E7	1625	1.0	2.1	1.5	29.2	5.1	-2.9
			2.5	3.0	2.0	29.5	5.1	-2.9
			5.5	3.5	2.2	29.5	5.5	-2.5

Table C-7. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
8/6/81	E6	1007	1.0	6.6	3.5	31.2	5.0	-2.1
			1.5	7.1	3.8	31.2	4.9	-1.1
			4.5	7.6	4.1	31.1	8.0	-1.6
			5.5	7.7	4.1	31.1	4.9	-1.6
	E1	1045	0.5	2.4	1.2	31.3	5.7	-3.8
			2.1	2.3	1.2	31.0	5.5	-3.7
			3.7	2.3	1.2	31.0	5.6	-3.7
			4.7	2.3	1.2	31.0	5.6	-3.7
	E7	1312	1.0	1.4	0.7	30.9	5.7	-4.0
			2.5	1.5	0.8	30.6	5.5	-3.9
			5.5	1.9	1.0	30.3	4.9	-3.7
			6.5	2.0	1.0	30.3	5.0	-3.6
9/10/81	E6	0925	1.0	28.0	17.3	28.3	5.1	9.1
			1.5	28.1	17.4	28.3	4.8	9.2
			4.5	28.1	17.4	28.3	4.9	9.2
			5.5	28.1	17.4	28.3	5.0	9.2
	E1	0922	0.5	10.0	5.5	27.5	5.9	0.5
			2.1	10.1	5.5	27.5	5.8	0.6
			3.7	10.3	5.7	27.5	5.9	0.7
	E7	1110	1.0	5.8	3.0	28.3	5.4	-1.6
			2.5	8.4	4.5	28.5	4.0	- .5
			5.5	18.9	11.2	29.8	3.1	4.1
			6.5	20.8	12.4	29.9	3.0	5.0
10/3/81	E6	1145	1.0	29.1	17.8	26.6	5.0	10.0
			1.5	29.1	17.8	26.7	5.0	10.0
			4.5	29.1	17.8	26.6	4.9	10.0
			5.5	29.1	17.8	26.5	5.2	10.1
	E1	1210	0.5	19.3	11.3	26.8	6.6	5.1
			2.1	19.4	11.4	26.8	6.1	5.2
			3.7	19.5	11.5	26.6	6.3	5.3

Table C-7. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
10/3/81 (continued)	E7	1402	1.0	13.9	7.9	27.6	6.8	2.3
			2.5	14.5	8.3	27.6	6.0	2.6
			5.5	14.6	8.4	27.5	5.9	2.7
11/11/81	E6	1017	1.5	18.9	11.1	17.4	8.1	7.3
			4.5	26.7	16.3	17.3	7.2	11.2
			5.5	29.3	18.1	17.5	7.7	12.5
	E1	1105	0.5	13.5	7.7	18.5	8.1	4.4
			2.1	13.5	7.7	18.3	7.8	4.5
			3.7	13.5	7.7	18.2	7.9	4.5
			4.7	13.5	7.7	18.2	7.9	4.5
	E7	1220	1.0	9.4	5.2	18.2	8.3	2.6
			2.5	10.6	5.9	17.8	7.5	3.2
			5.5	11.1	6.2	17.6	7.6	3.5
12/3/81	E6	1124	1.0	32.8	20.5	17.5	6.4	14.4
			1.5	32.8	20.5	17.5	6.6	14.4
			4.5	32.8	20.5	17.5	6.4	14.4
			5.5	32.8	20.5	17.5	6.4	14.4
	E1	1148	0.5	14.3	8.2	17.5	8.2	5.0
			1.2	14.3	8.2	17.5	7.4	5.0
			2.1	14.3	8.2	17.5	7.8	5.0
			3.7	14.3	8.2	17.5	7.9	5.0
			4.7	17.5	10.2	14.3	7.7	7.1
	E7	1315	0.0	6.9	3.7	17.4	7.2	1.6
1/11/82	E6	1128	1.0	25.6	15.5	6.8	10.9	12.2
			1.5	25.4	15.4	6.9	11.0	12.1
			4.5	25.4	15.4	6.9	11.1	12.1
			5.5	25.6	15.5	6.5	11.7	12.2
	E1	1214	0.5	18.5	10.8	9.0	10.3	8.3
			2.1	19.3	11.4	8.8	11.5	8.8

Table C-7. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
1/11/82 (continued)	E7	1315	1.0	7.7	4.2	9.1	9.8	3.1
			2.5	8.5	4.7	9.3	10.2	3.5
			5.5	9.8	5.4	9.4	9.5	4.1
2/12/82	E6	1019	1.0	29.0	18.1	10.6	8.3	13.7
			1.5	29.2	18.2	10.7	8.3	13.8
			4.5	29.2	18.2	10.6	8.6	13.8
			5.5	29.2	18.2	10.6	8.8	13.8
	E1	1148	0.5	21.5	13.0	10.7	8.7	9.8
			2.1	21.6	13.0	10.6	8.8	9.9
			3.7	21.6	13.0	10.6	8.8	9.9
	E7	1205	1.0	6.6	3.6	10.9	8.1	2.5
			2.5	6.8	3.7	10.9	8.6	2.6
			5.5	12.1	6.9	10.6	8.5	5.1
				13.3	7.7	10.7	8.4	5.7
3/13/82	E6	1317	1.0	19.8	11.7	19.2	7.68	7.3
			4.5	19.8	11.7	19.2	8.55	7.3
			5.5	19.8	11.7	19.2	8.53	7.3
	E1	1248	0.5	3.9	2.1	17.3	8.14	0.4
			2.1	3.9	2.1	17.3	7.43	0.4
	E7	1145	1.0	2.3	1.2	17.1	7.35	0.0
			2.5	3.4	1.8	16.2	6.68	0.4
			5.5	3.9	2.1	16.3	7.20	0.5
4/28/82	E6	1643	1.0	5.0	2.6	19.4	5.32	0.4
			4.5	5.0	2.6	19.4	5.05	0.4
			5.5	5.0	2.6	19.4	5.07	0.4
	E1	1535	0.5	0.6	0.4	20.0	6.38	0.0
			2.1	0.6	0.4	19.8	6.04	0.0
	E7	1353	1.0	0.3	0.2	18.8	5.45	0.0
			2.5	0.3	0.2	18.8	5.35	0.0
			5.5	0.2	0.2	18.2	5.30	0.0

Table C-8. Postdisposal Hydrographic Data from the Sabine Lake for the Period May 1981 through April 1982.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
5/22/81	E8	1320	1.0	21.5	13.2	24.4	7.4	7.2
			1.5	21.4	13.1	24.4	7.4	7.1
	E9	1350	1.0	26.2	16.4	24.1	8.8	9.7
			1.8	26.2	16.4	24.1	8.8	9.7
	E10	1430	0.5	30.2	19.2	24.1	7.8	11.7
			0.9	30.2	19.2	24.1	7.9	11.7
6/10/81	E8	1438	1.0	16.6	9.6	30.0	7.4	2.9
			1.5	18.3	10.7	30.2	7.6	3.6
	E9	1630	1.0	13.0	7.3	30.4	8.7	1.0
			1.8	12.9	7.2	30.4	8.8	1.0
	E10	1707	0.5	26.4	16.2	30.6	4.4	7.6
			0.9	26.3	16.2	30.6	7.3	7.5
7/2/81	E8	1745	1.0	1.1	1.1	30.0	5.6	-3.5
			1.5	1.2	1.1	29.9	5.8	-3.5
	E9	1810	1.0	5.6	3.4	29.2	6.1	-1.5
			1.8	5.6	3.4	29.1	7.2	-1.5
	E10	1850	0.5	8.8	5.2	29.5	6.6	-0.3
			0.9	8.9	5.3	29.5	6.8	-0.3
8/6/81	E8	1415	1.0	6.8	3.6	31.0	7.9	-1.9
			1.5	7.0	3.7	30.9	7.9	-1.8
	E9	1500	1.0	9.7	5.3	31.0	6.8	- .7
			1.8	10.3	5.6	30.4	3.8	- .2
	E10	1545	0.5	6.6	3.5	31.3	7.4	-2.1
			0.9	7.2	3.8	30.7	6.6	-1.7

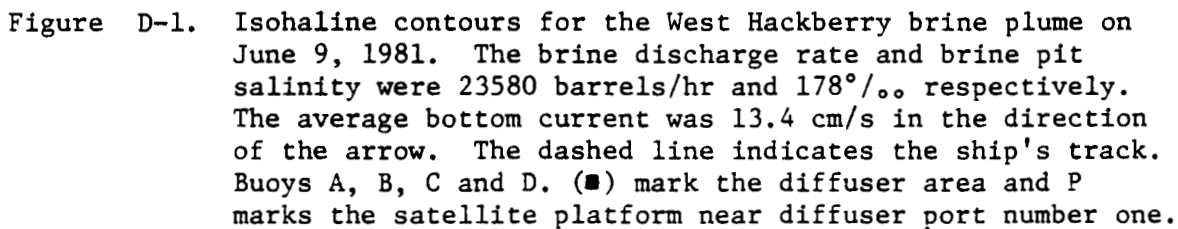
Table C-8. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
9/10/81	E8	1200	1.0	17.5	10.2	27.7	6.4	4.0
			1.5	21.4	12.8	29.2	5.4	5.5
	E9	1235	1.0	14.2	8.1	27.2	6.1	2.6
			1.8	14.2	8.1	27.1	6.0	2.6
	E10	1330	0.5	13.0	7.3	27.6	6.4	1.9
			0.9	12.9	7.3	27.4	6.7	1.9
10/3/81	E8	1433	1.0	18.4	10.8	26.3	8.3	4.8
			1.5	19.4	11.4	26.4	7.6	5.3
			1.8	22.2	13.2	26.4	6.4	6.6
	E9	1453	1.0	20.3	12.0	26.7	8.0	5.6
			1.8	20.3	12.0	26.6	7.6	5.7
			2.4	20.3	12.0	26.4	6.9	5.7
	E10	1511	0.5	18.2	10.6	26.6	7.5	4.7
			0.9	18.2	10.6	26.6	7.8	4.7
11/11/81	E8	1318	1.0	20.4	12.1	18.7	7.7	7.7
			1.5	20.4	12.1	18.0	7.7	7.9
			1.8	22.8	13.7	18.5	7.3	9.0
	E9	1340	1.0	20.2	12.0	17.2	8.8	7.9
			1.8	20.4	12.1	16.6	8.6	8.2
			2.4	21.2	12.6	16.6	8.6	8.6
	E10	1407	0.5	20.6	12.2	17.1	9.2	8.2
			0.9	20.6	12.2	16.9	9.1	8.2
12/3/81	E8	1446	1.0	23.6	14.2	18.5	7.8	9.4
			1.5	23.8	14.4	18.5	7.5	9.5
	E9	1522	1.0	22.1	13.2	16.8	10.8	9.0
			1.8	22.1	13.2	16.8	10.9	9.0
			2.4	22.1	13.2	16.8	10.7	9.0
	E10	1602	0.5	22.2	13.3	16.7	9.5	9.1
			0.9	22.2	13.3	16.7	9.2	9.1

Table C-8. Continued.

Date	Station Number	Time (local)	Depth (m)	Conductivity (mmho/cm at 25°C)	Salinity (‰)	Temperature (°C)	Dissolved Oxygen (mg/l)	Sigma-t
1/11/82	E8	1409	1.0	22.3	13.3	9.1	9.8	10.2
			1.5	20.0	11.8	9.0	10.4	9.1
			1.8	25.5	15.4	9.1	10.9	11.9
2/12/82	E8	1258	1.0	19.4	11.6	11.8	8.4	8.6
			1.5	19.6	11.7	11.7	8.4	8.7
			1.8	21.8	13.2	11.4	7.9	9.9
	E9	1337	1.0	20.0	12.0	10.9	9.3	9.0
			1.8	20.0	12.0	10.2	9.5	9.1
			2.4	20.1	12.0	10.0	9.5	9.2
	E10	1409	0.5	21.4	12.9	11.6	9.1	9.6
			0.9	21.4	12.9	11.5	9.2	9.6
3/12/82	E8	1054	1.0	8.3	4.5	19.7	9.0	1.8
			1.5	11.0	6.1	19.0	7.8	3.2
			1.8	12.6	7.1	18.6	8.1	4.0
	E9	1035	1.0	9.2	5.1	18.3	9.0	2.5
			1.8	9.3	5.1	18.1	9.0	2.6
			2.4	9.4	5.2	18.3	8.2	2.7
	E10	1005	0.5	12.3	6.9	19.0	8.9	3.8
			0.9	12.3	6.9	19.0	8.9	3.8
4/28/82	E8	1205	1.0	0.5	0.3	19.2	6.2	0.0
			1.8	0.7	0.4	19.2	6.0	0.0
	E9	1150	1.0	20.0	11.9	19.7	5.7	7.4
			1.8	20.0	11.9	19.7	5.5	7.4
			2.4	20.0	11.9	19.2	5.3	7.5
	E10	1110	0.5	5.9	3.1	22.4	6.8	.1
			0.9	5.9	3.1	22.4	6.7	.1

Appendix D. contains all the isohaline and above ambient salinity contours (Figures D-1 through D-13) which were measured during the first year of discharge from the West Hackberry brine disposal site. All vertical profiles of salinity (Figures D-19 through D-31) and dissolved oxygen (Figures D-32 through D-40) are also included.



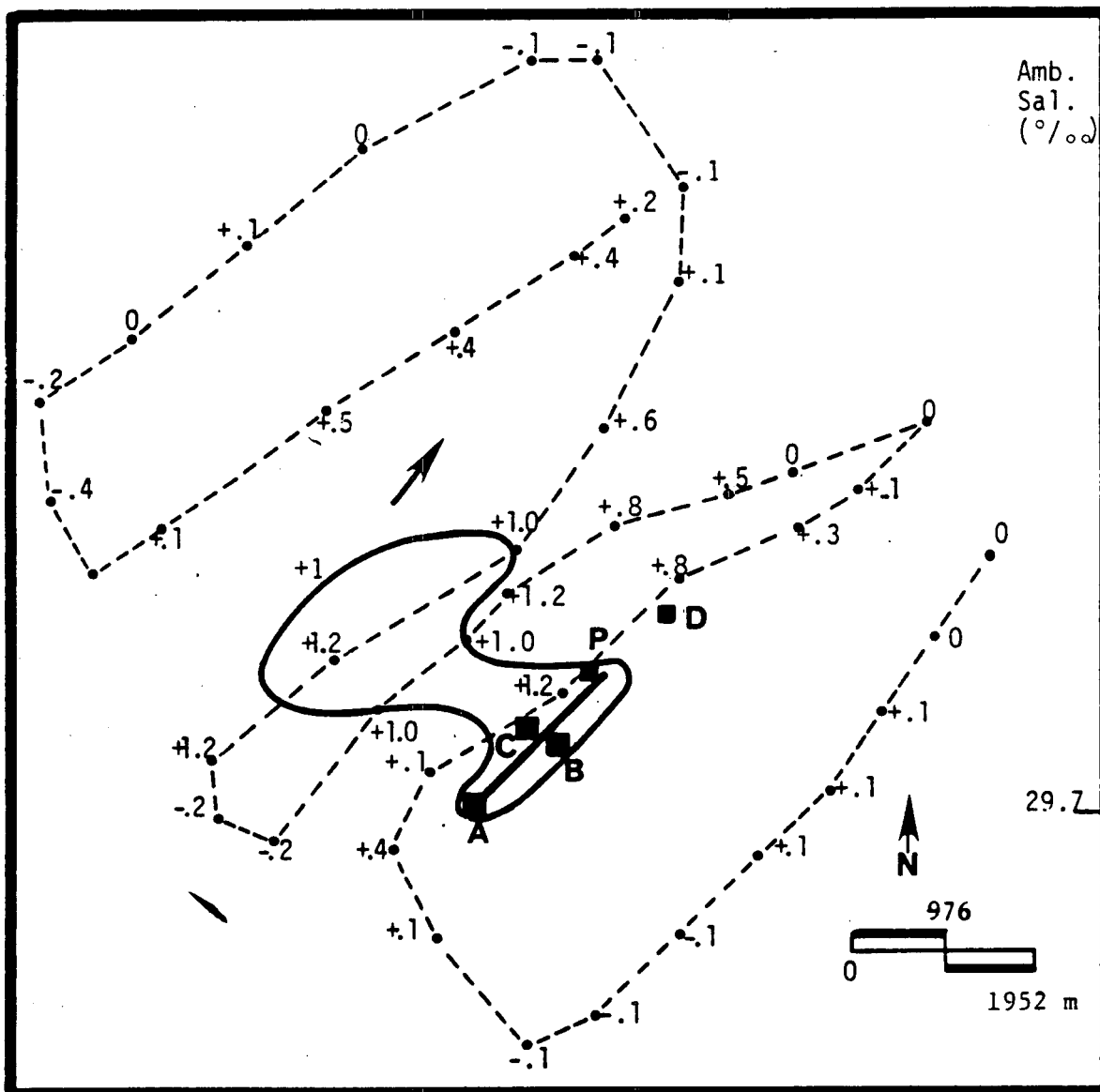


Figure D-2. Above ambient isohaline contours for the West Hackberry brine plume on June 9, 1981. The brine discharge rate and brine pit salinity were 23,580 barrels/hour and 178 ‰ respectively. The average bottom current was 13.4 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C, and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

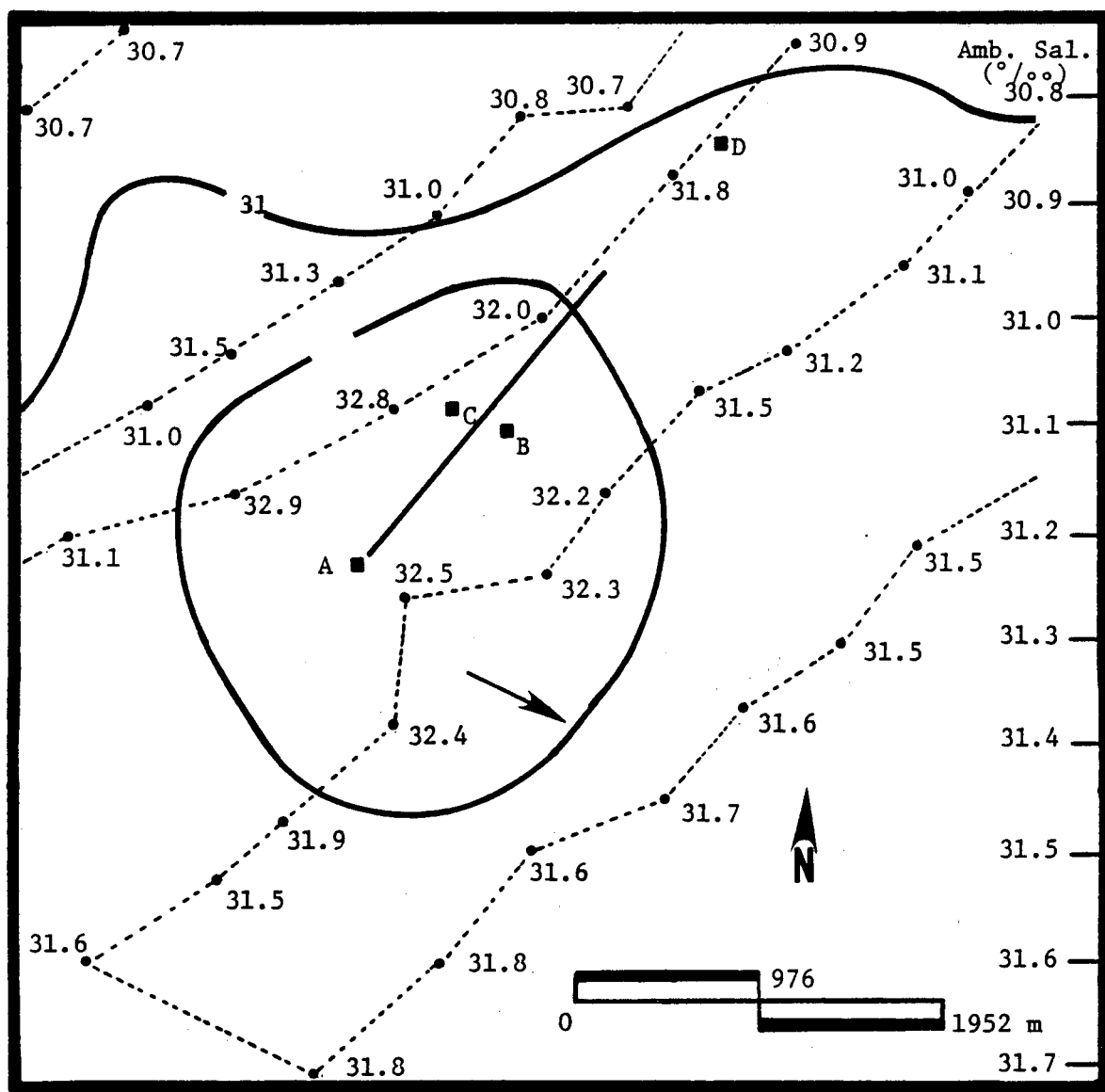
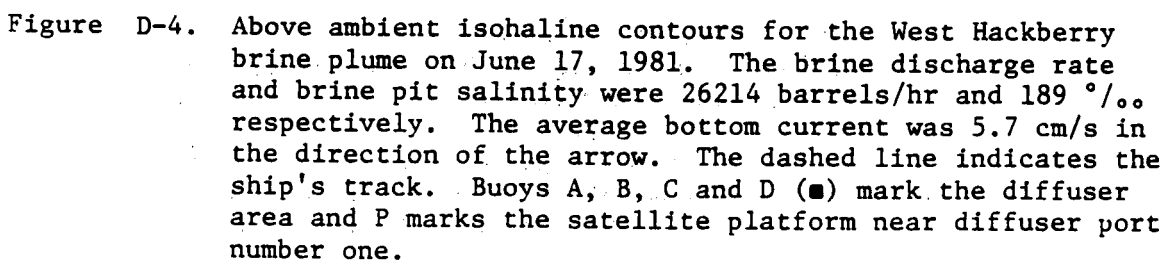


Figure D-3. Isohaline contours for the West Hackberry brine plume on June 17, 1981. The brine discharge rate and brine pit salinity were 26214 barrels/hr and 189 ‰, respectively. The average bottom current was 5.7 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.



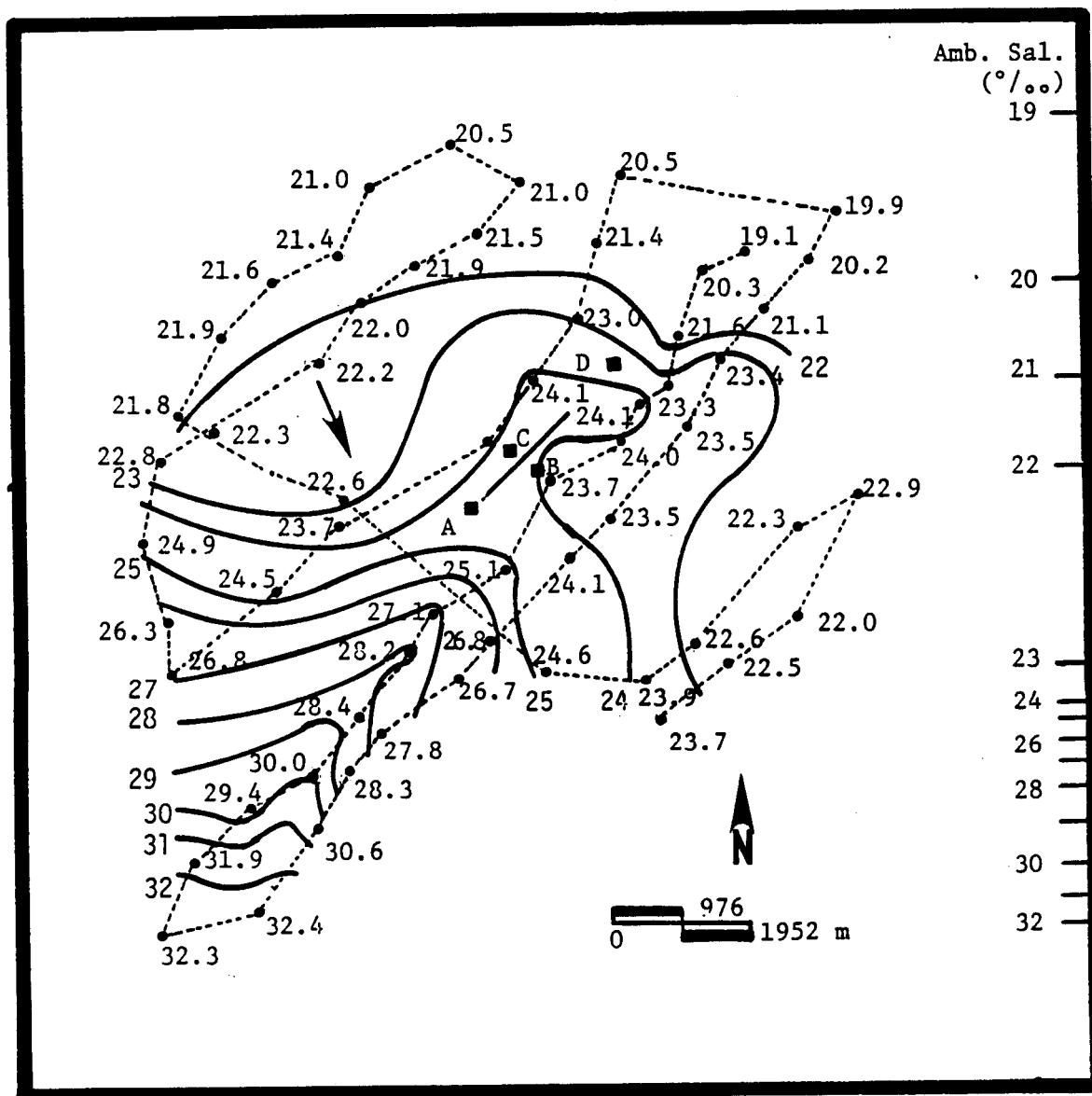


Figure D-5. Isohaline contours for the West Hackberry brine plume on June 30, 1981. The brine discharge rate and brine pit salinity were 28307 barrels/hr and 208 ‰, respectively. The average bottom current was 7.6 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

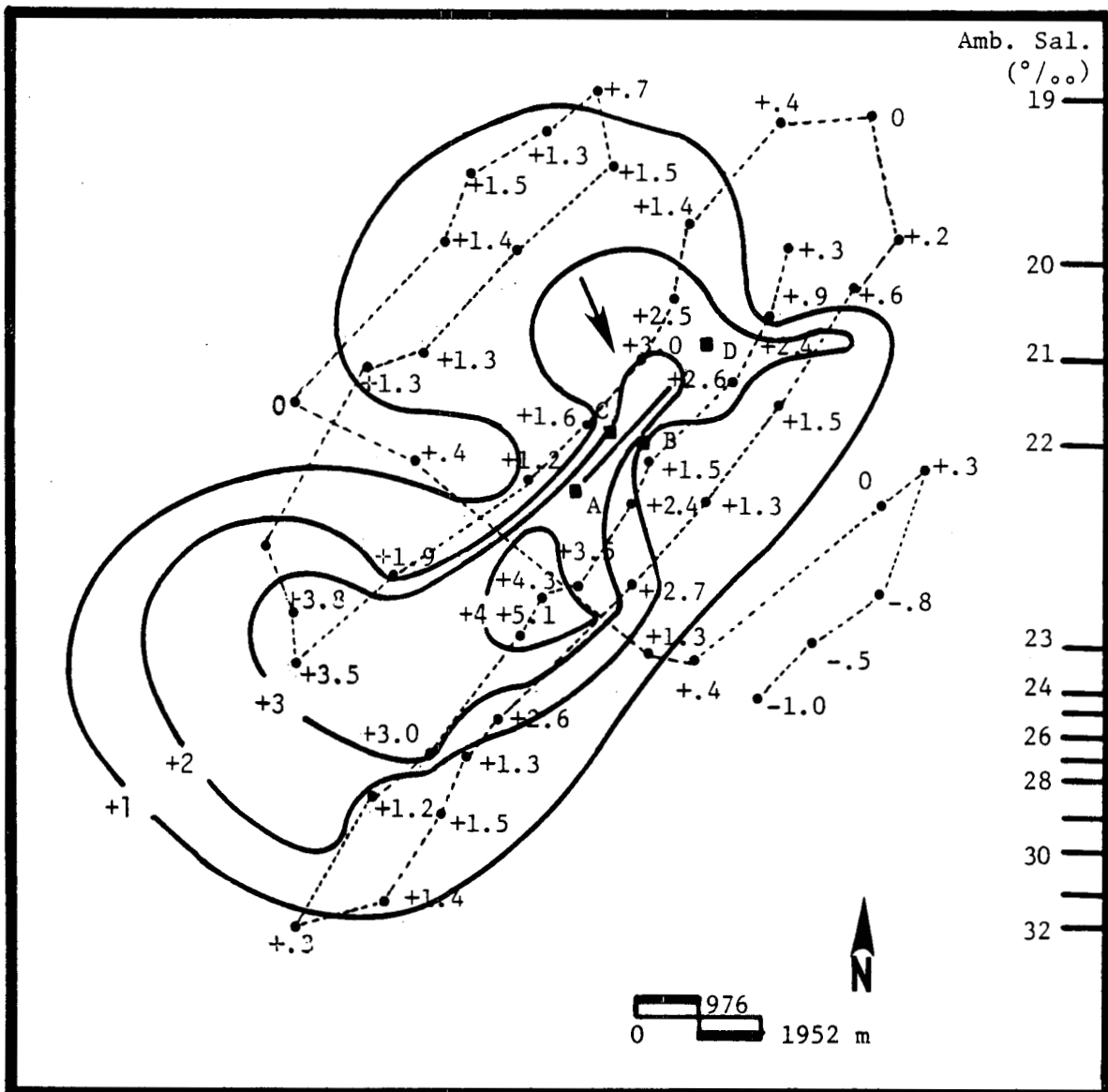


Figure D-6. Above ambient isohaline contours for the West Hackberry brine plume on June 30, 1981. The brine discharge rate and brine pit salinity were 28307 barrels/hr and 208 ‰, respectively. The average bottom current was 7.6 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

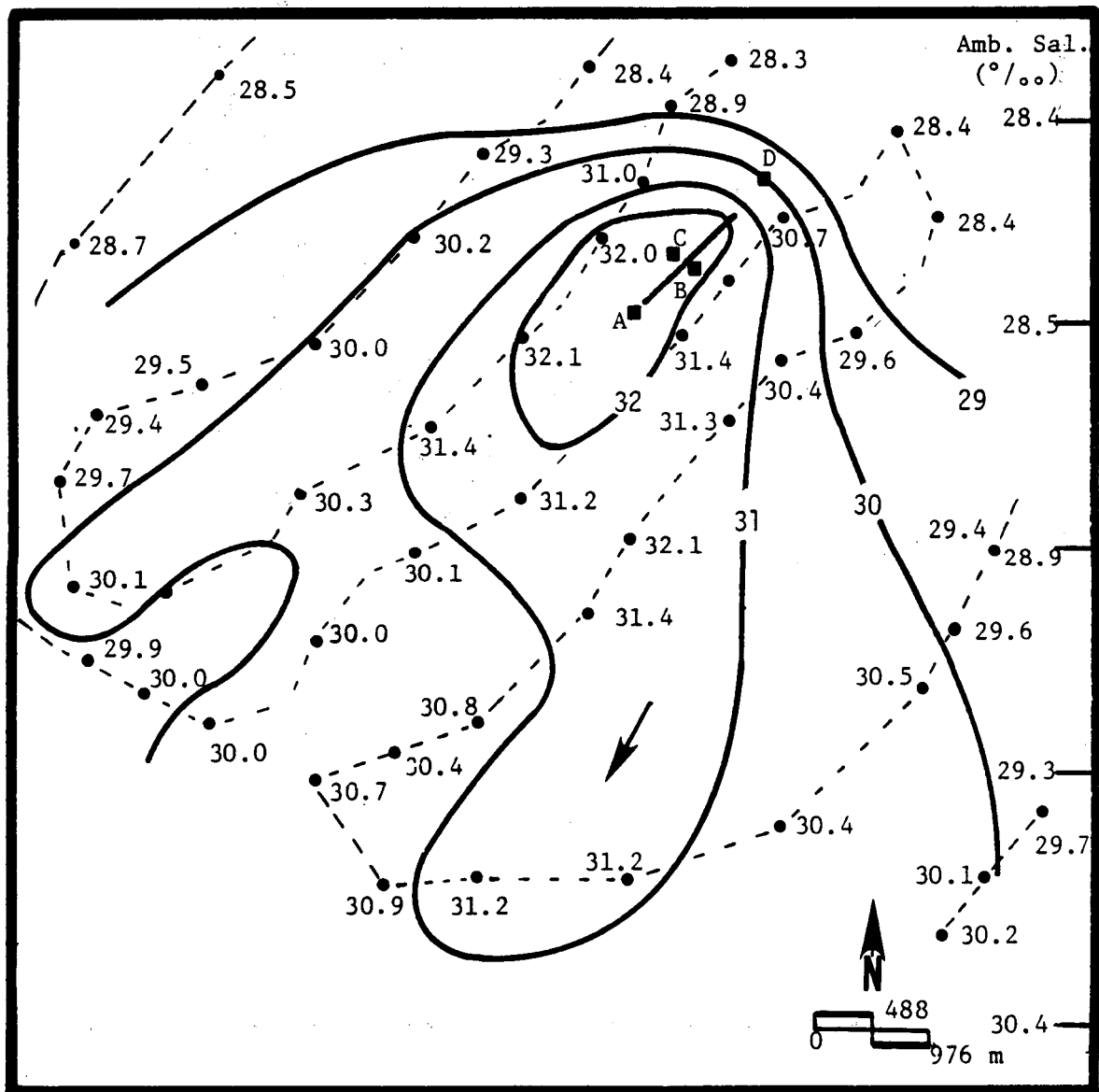


Figure D-7. Isohaline contours for the West Hackberry brine plume on August 12, 1981. The brine discharge rate and brine pit salinity were 25643 barrels/hr and 228 ‰ respectively. The average bottom current was 6.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

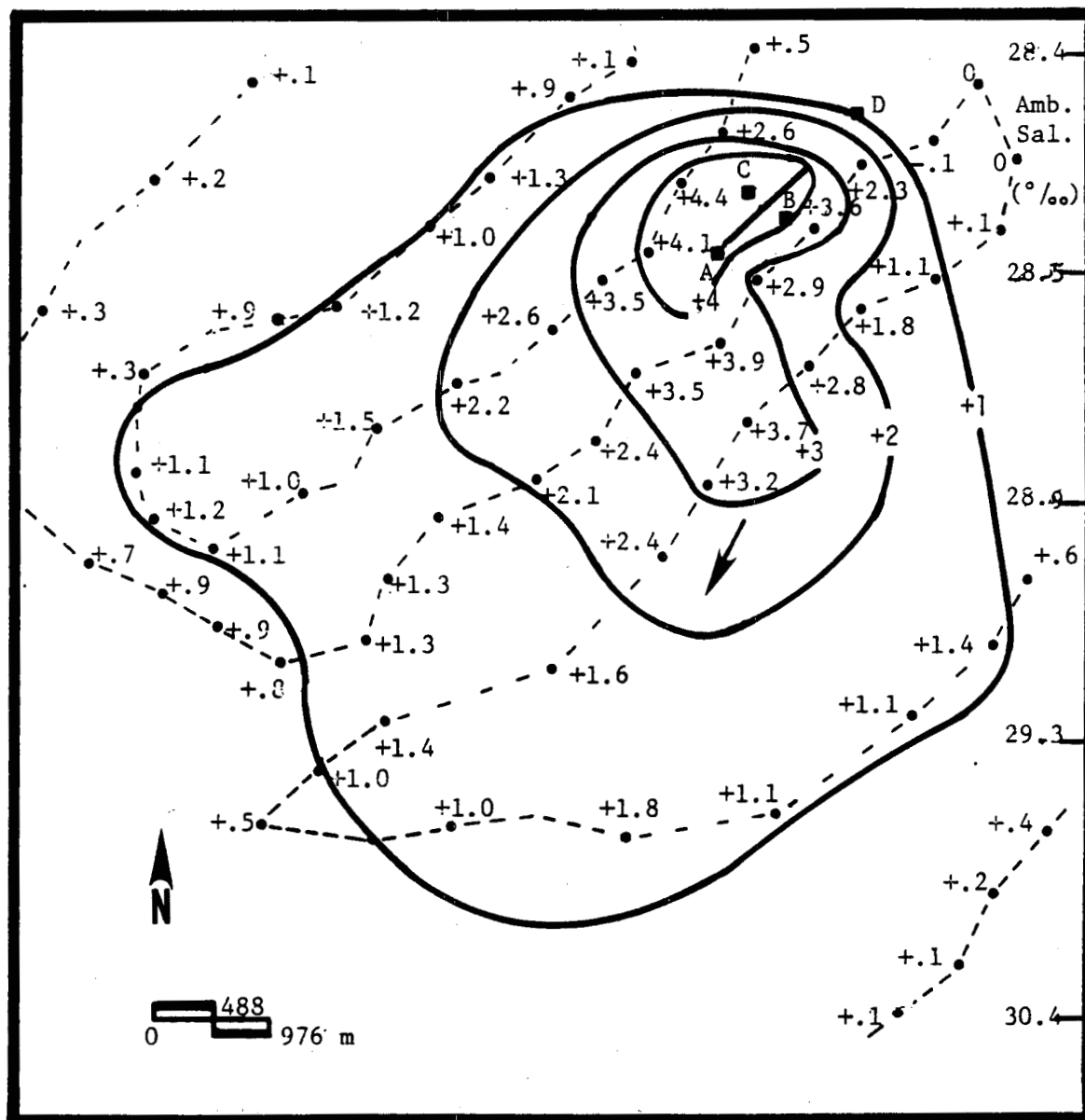


Figure D-8. Above ambient isohaline contours for the West Hackberry brine plume on August 12, 1981. The brine discharge rate and brine pit salinity were 25643 barrels/hr and 228 ‰, respectively. The average bottom current was 6.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

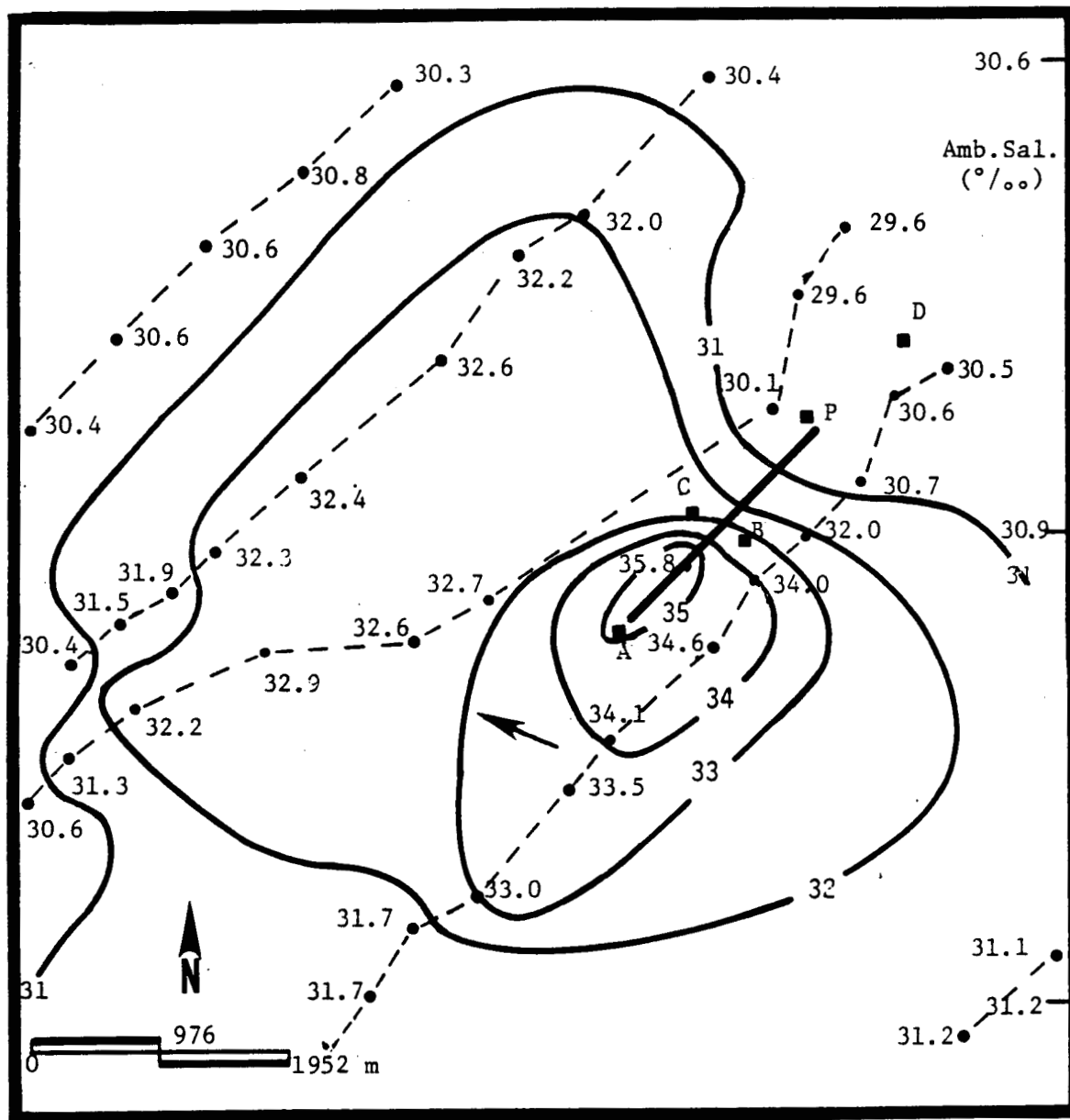


Figure D-9. Isohaline contours for the West Hackberry brine plume on October 28, 1981. The brine discharge rate and brine pit salinity were 24500 barrels/hr and 225 ‰ respectively. The average bottom current was 15.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

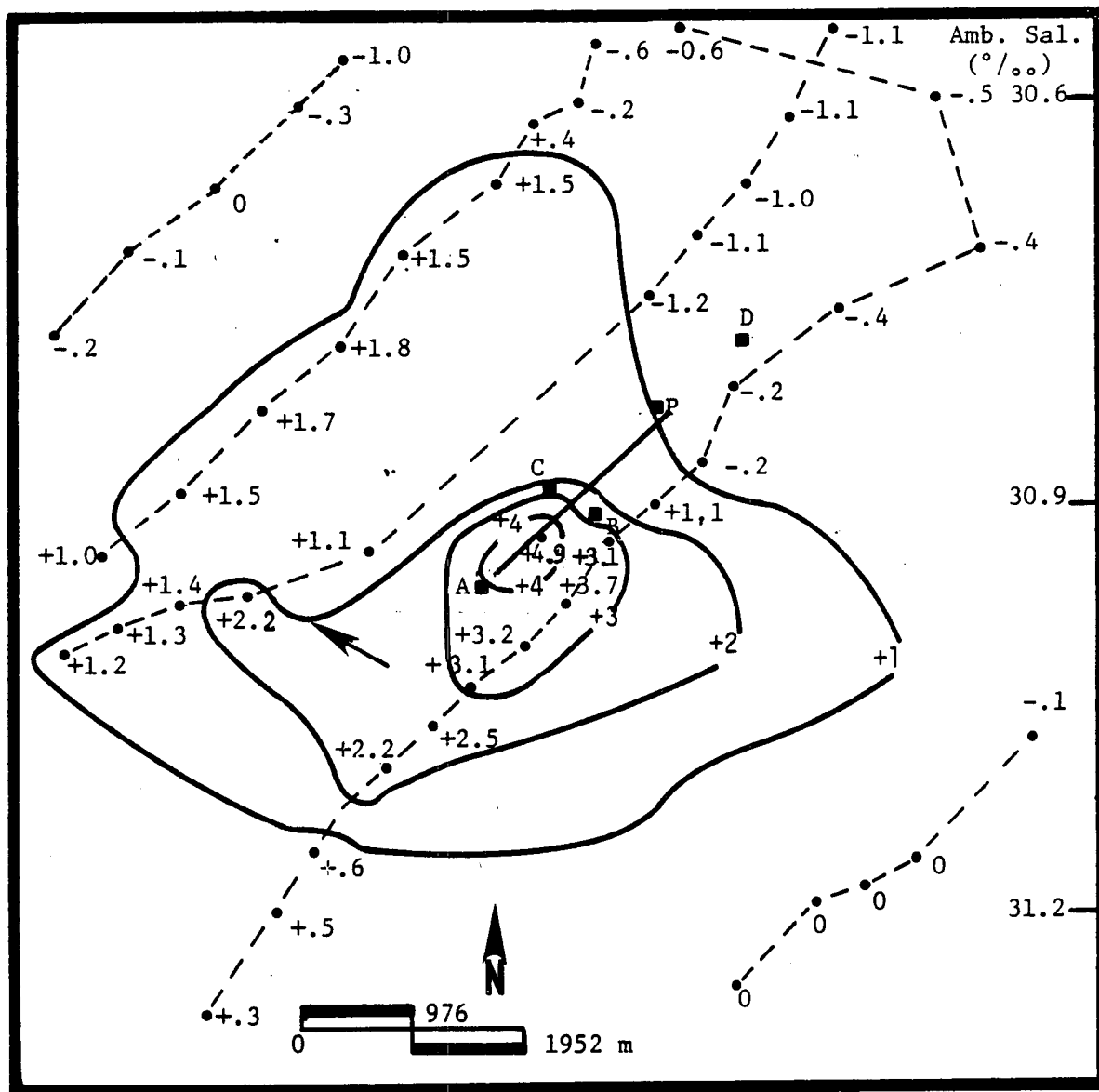


Figure D-10. Above ambient isohaline contours for the West Hackberry brine plume on October 28, 1981. The brine discharge rate and brine pit salinity were 24500 barrels/hr and 225 ‰, respectively. The average bottom current was 15.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

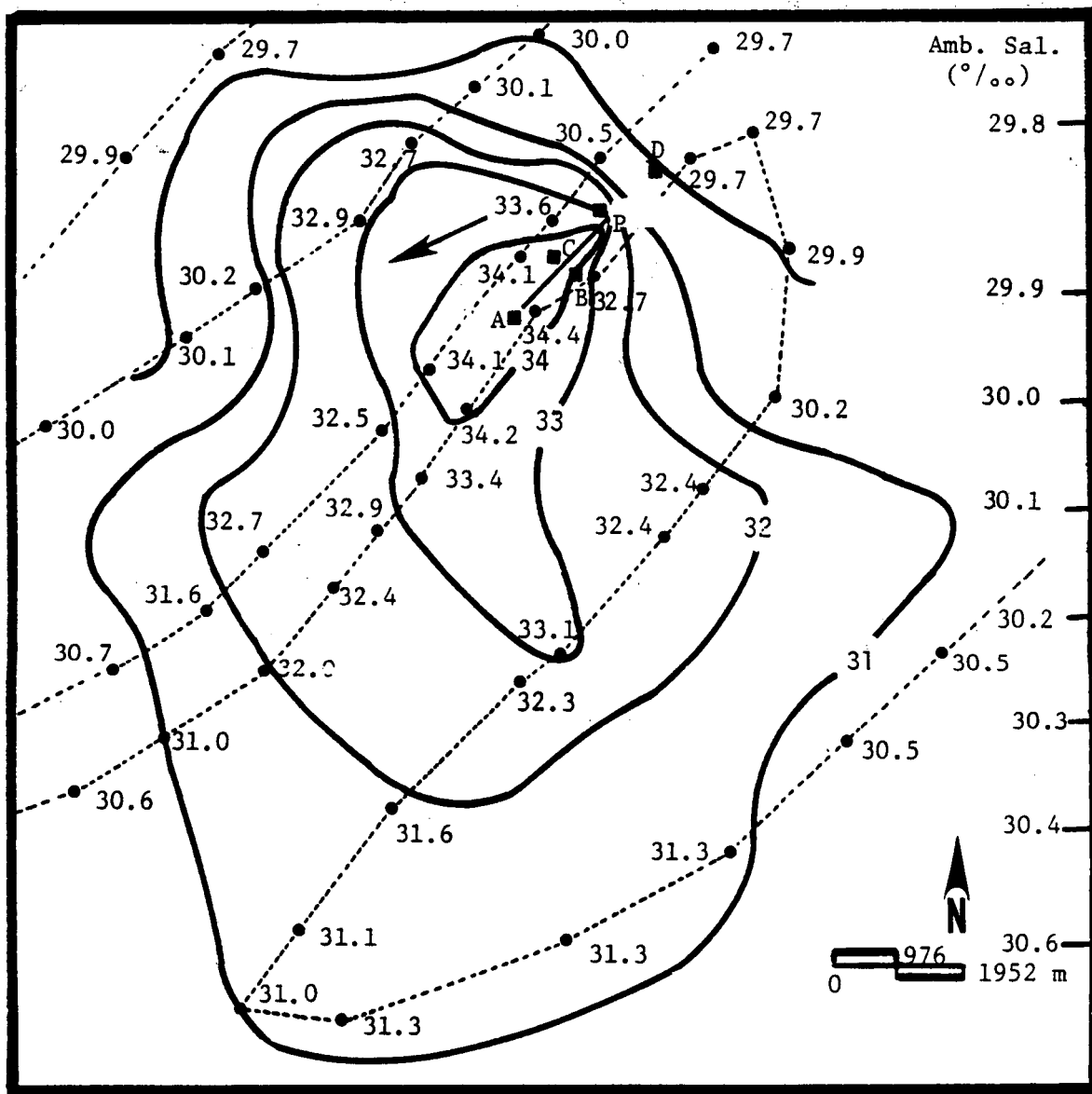


Figure D-11. Isohaline contours for the West Hackberry brine plume on November 25, 1981. The brine discharge rate and brine pit salinity were 21680 barrels/hr and 209 ‰ respectively. The average bottom current was 7.6 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

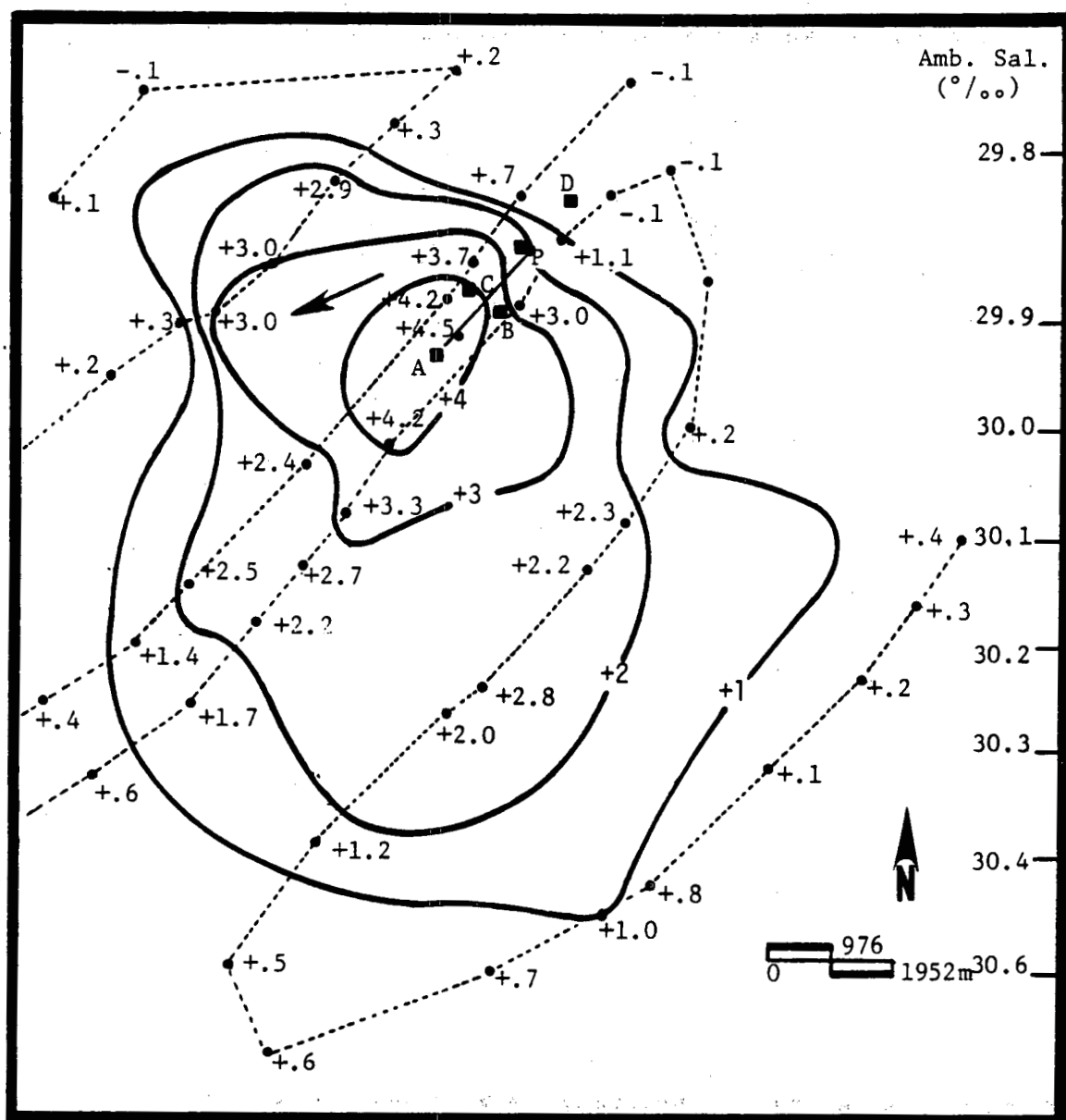


Figure D-12. Above ambient isohaline contours for the West Hackberry brine plume on November 25, 1981. The brine discharge rate and brine pit salinity were 21680 barrels/hr and 209‰ respectively. The average bottom current was 7.6 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (●) mark the diffuser area and P marks the satellite platform near diffuser port number one.

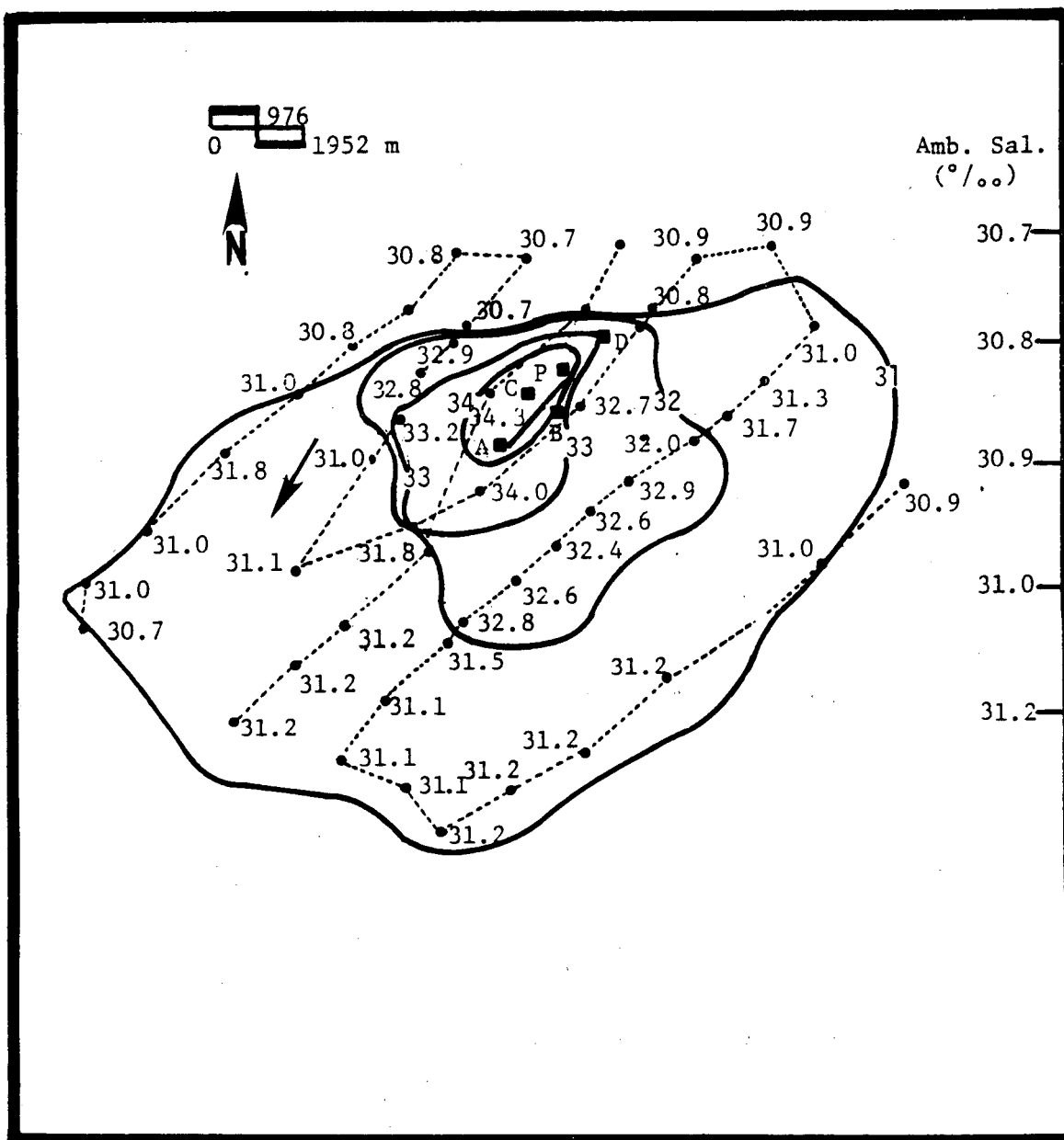


Figure D-13. Isohaline contours for the West Hackberry brine plume on December 16, 1981. The brine discharge rate and brine pit salinity were 21500 barrels/hr and 202‰, respectively. The average bottom current was 5.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (●) mark the diffuser area and P marks the satellite platform near diffuser port number one.

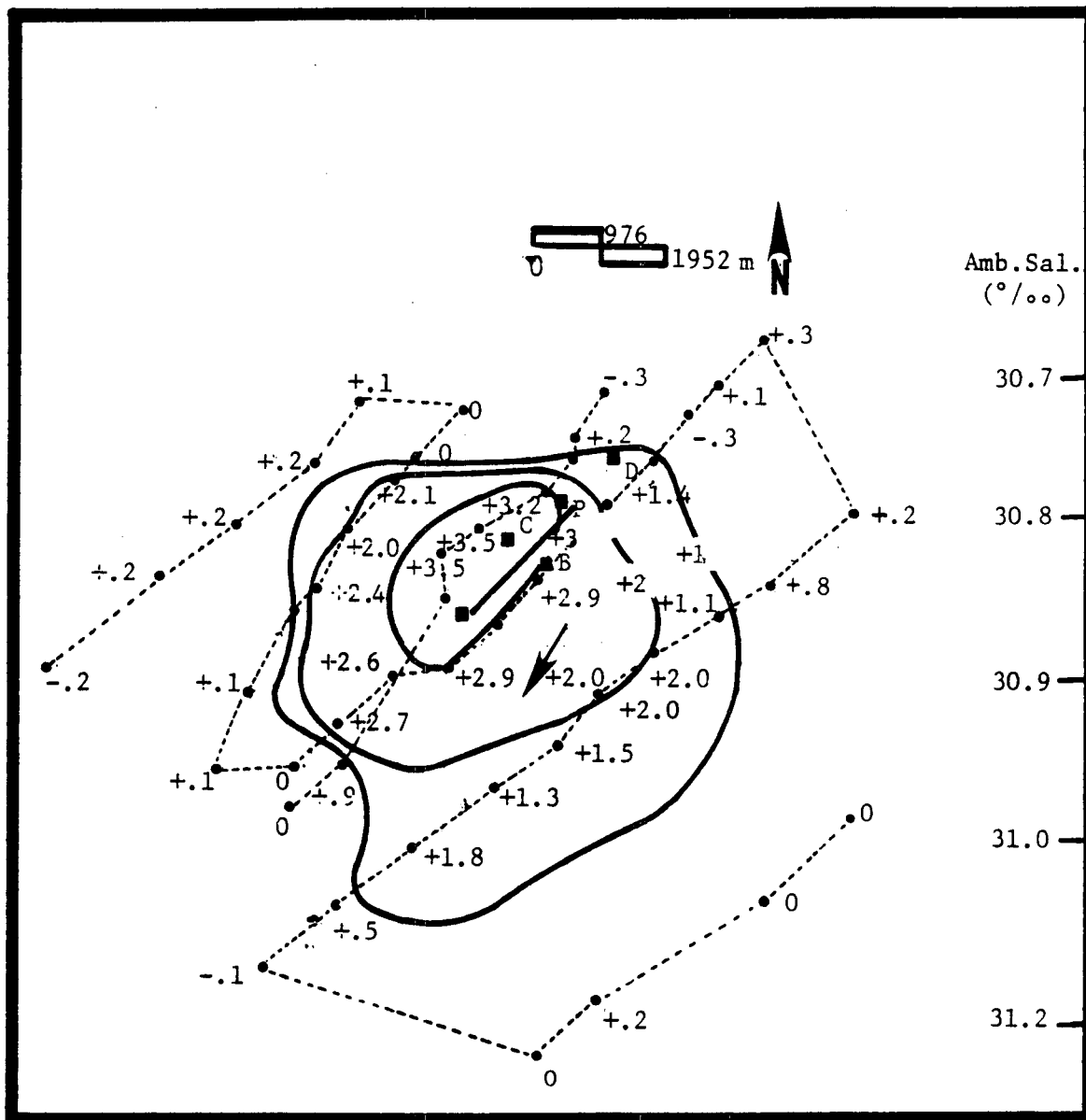


Figure D-14. Above ambient isohaline contours for the West Hackberry brine plume on December 16, 1981. The brine discharge rate and brine pit salinity were 21500 barrels/hr and 202‰, respectively. The average bottom current was 5.8 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

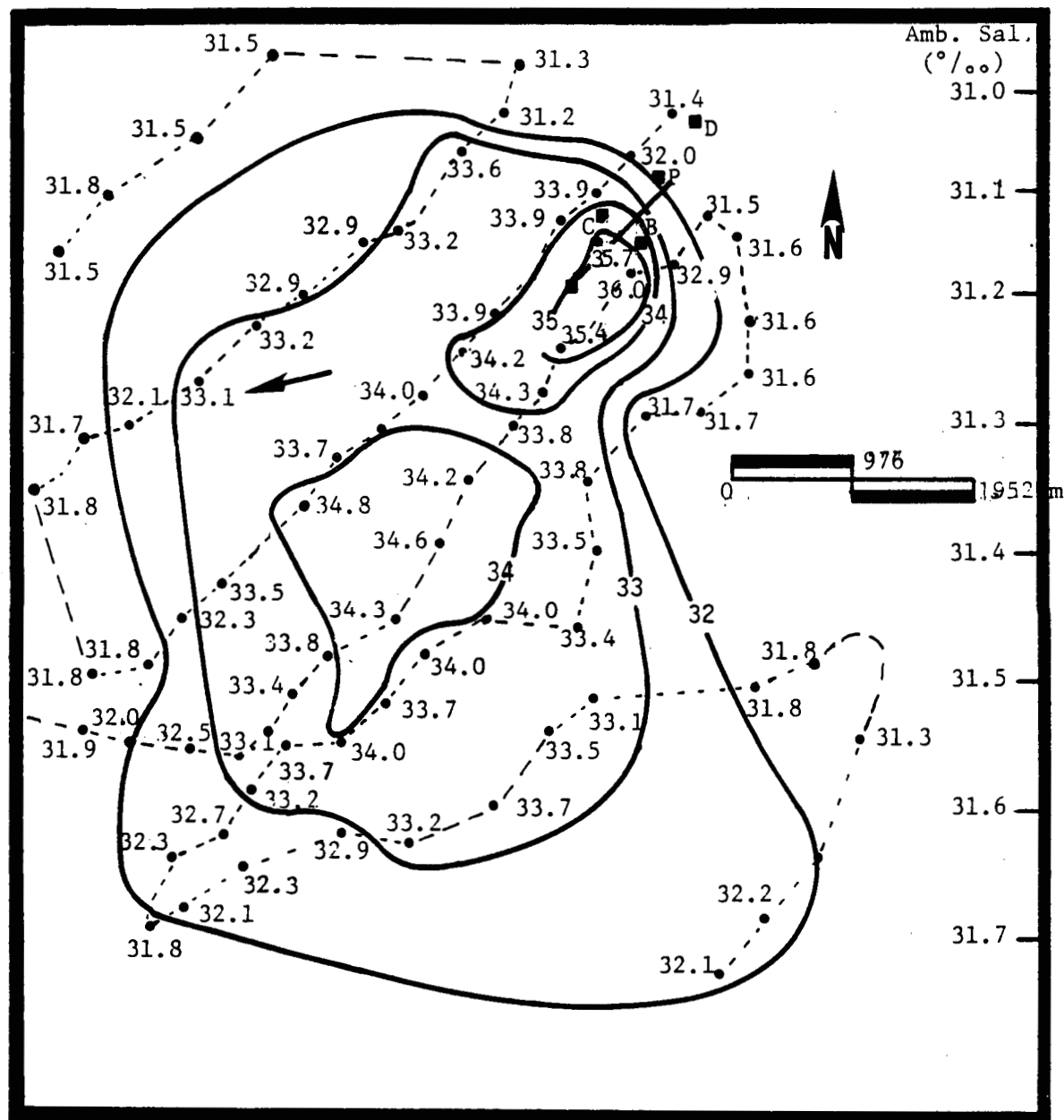


Figure D-15. Isohaline contours for the West Hackberry brine plume on February 14, 1982. The brine discharge rate and brine pit salinity were 23896 barrels/hr and 217‰, respectively. The average bottom current was 15.2 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

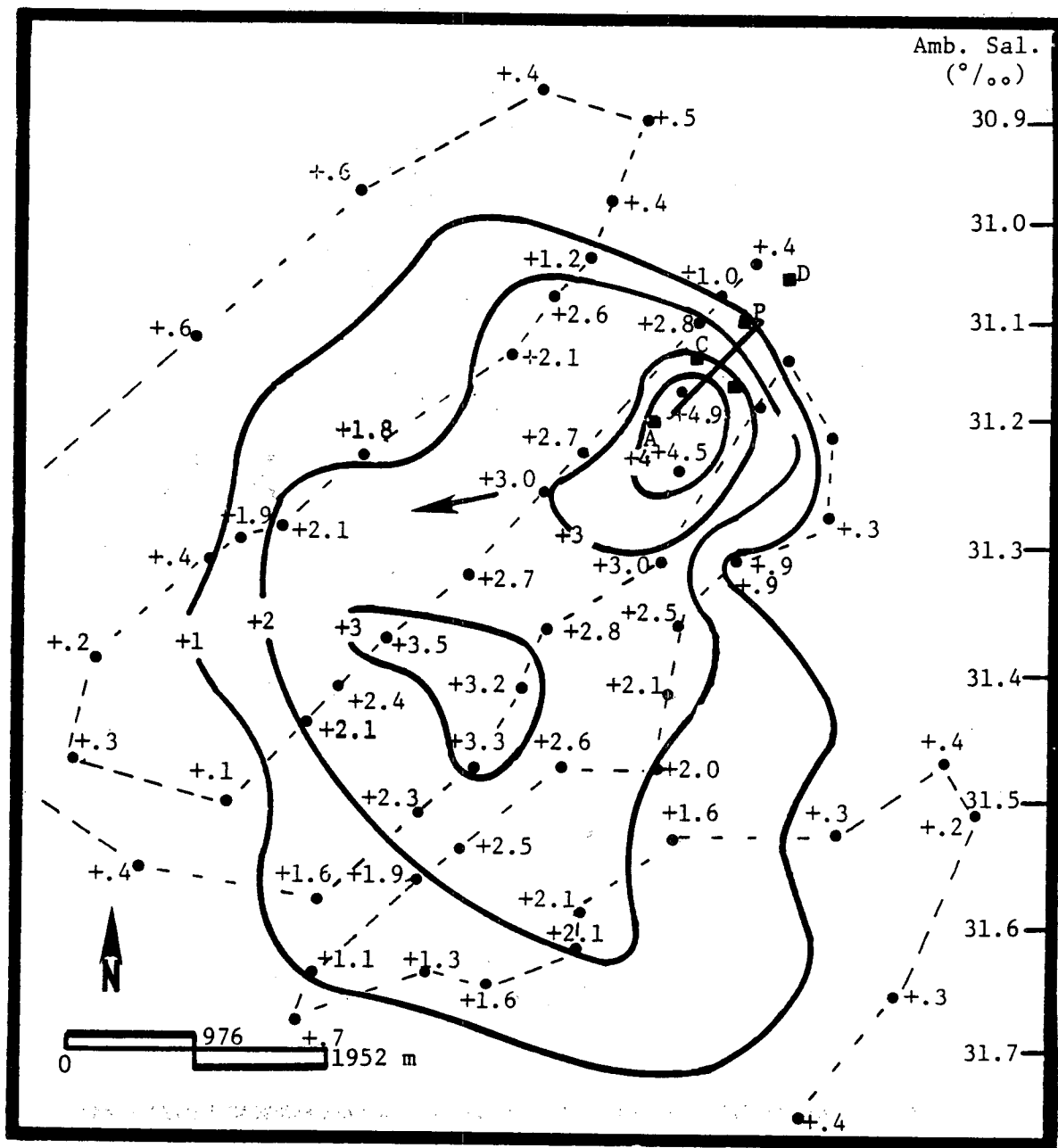


Figure D-16. Above ambient isohaline contours for the West Hackberry brine plume on February 14, 1982. The brine discharge rate and brine pit salinity were 23896 barrels/hr and 217‰ respectively. The average bottom current was 15.2 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

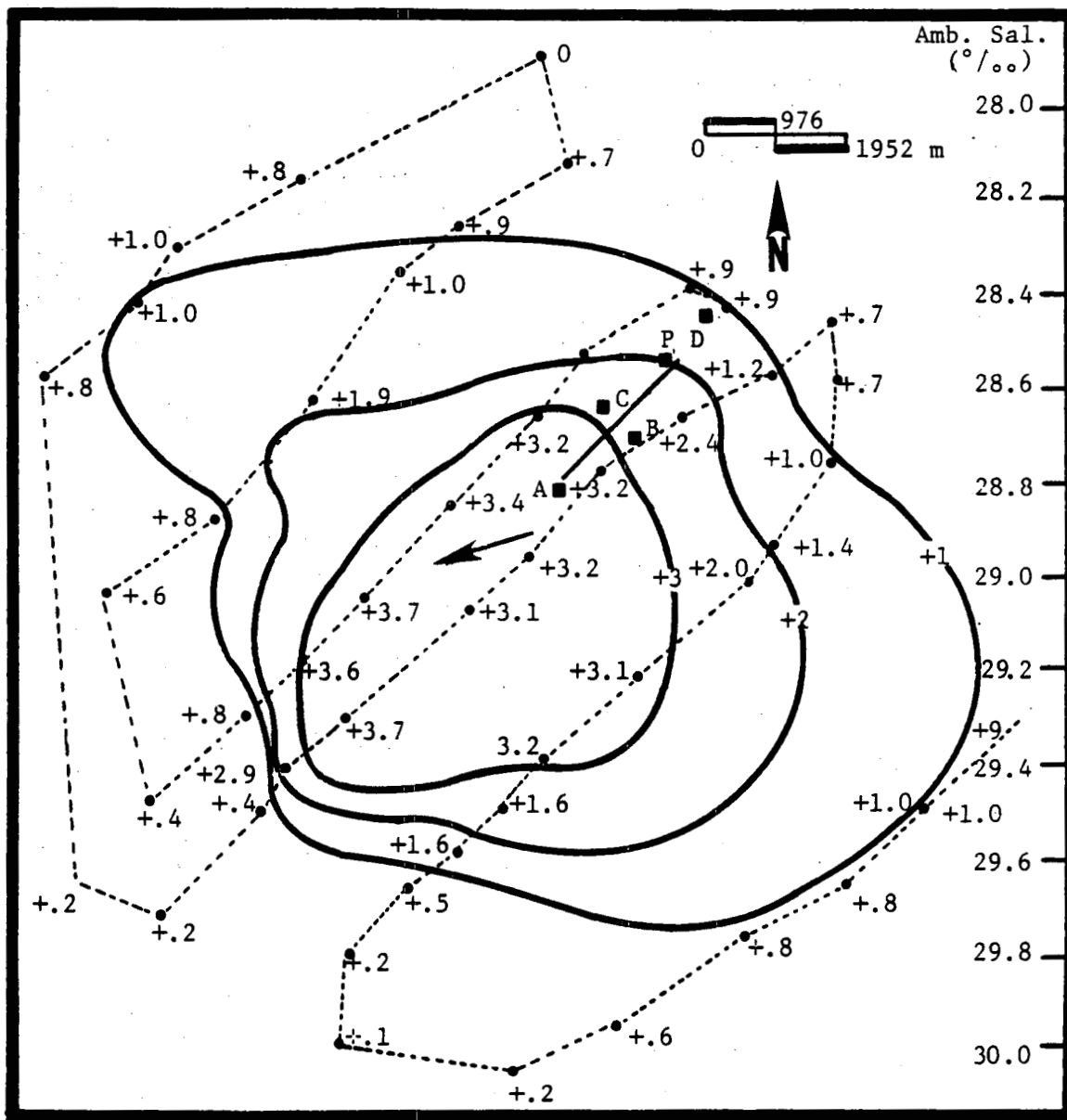


Figure D-18. Above ambient isohaline contours for the West Hackberry brine plume on April 30, 1982. The brine discharge rate and brine pit salinity were 23315 barrels/hr and 299 ‰ respectively. The average bottom current was 8.6 cm/s in the direction of the arrow. The dashed line indicates the ship's track. Buoys A, B, C and D (■) mark the diffuser area and P marks the satellite platform near diffuser port number one.

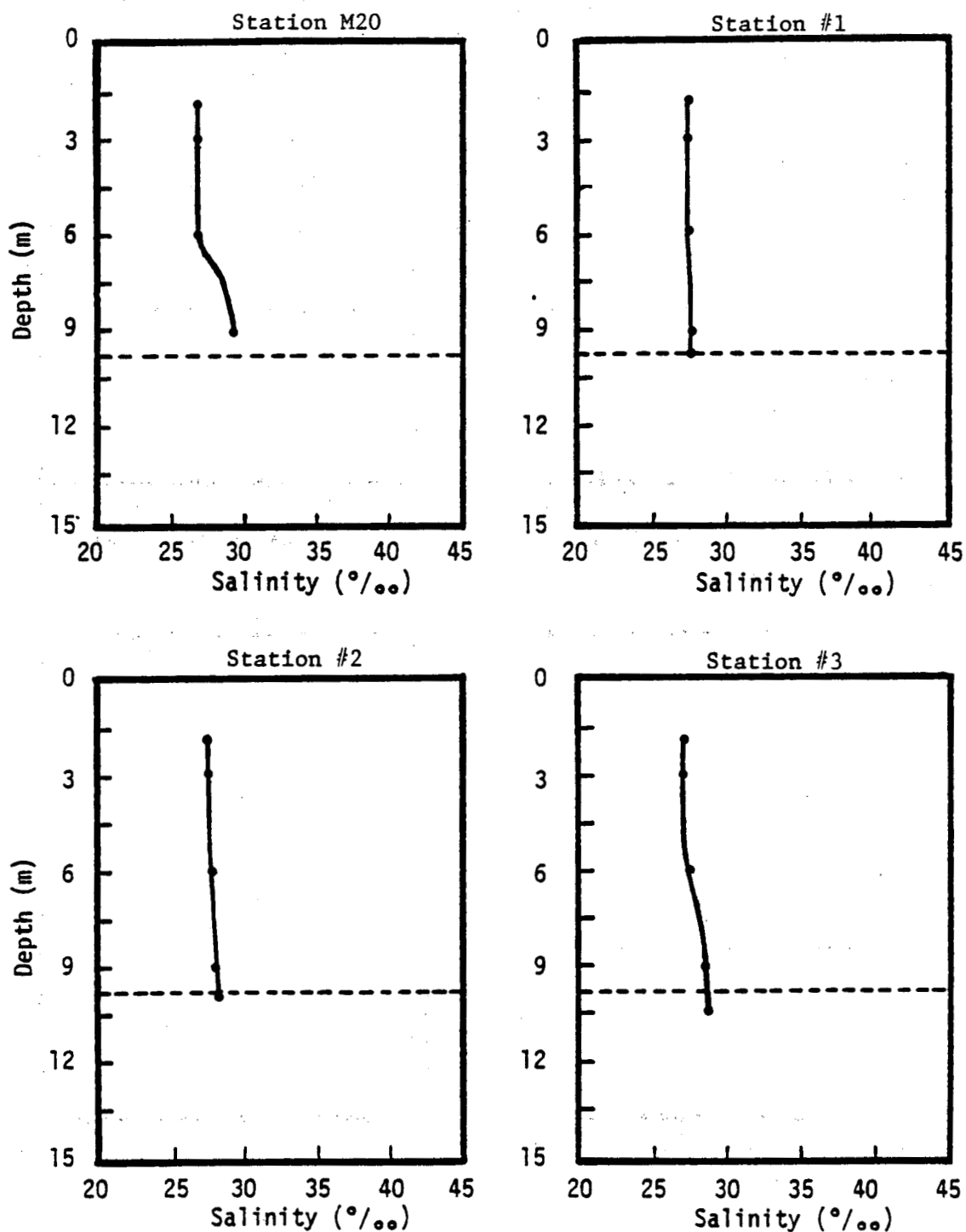


Figure D-19. Vertical salinity profiles near the diffuser on May 25, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

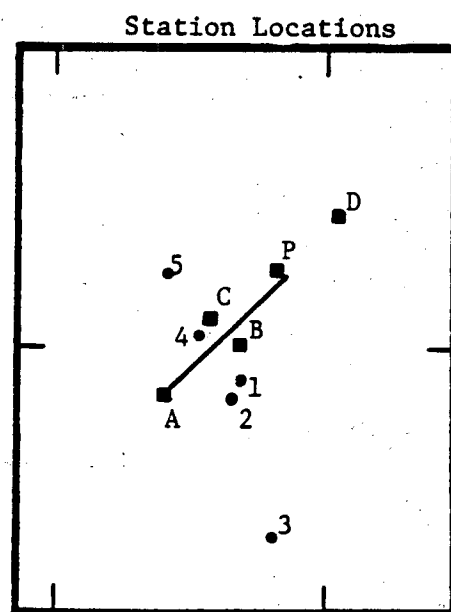
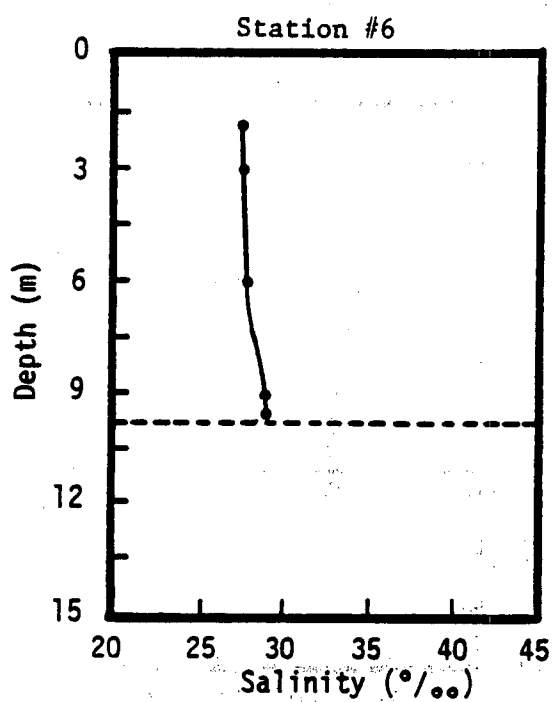
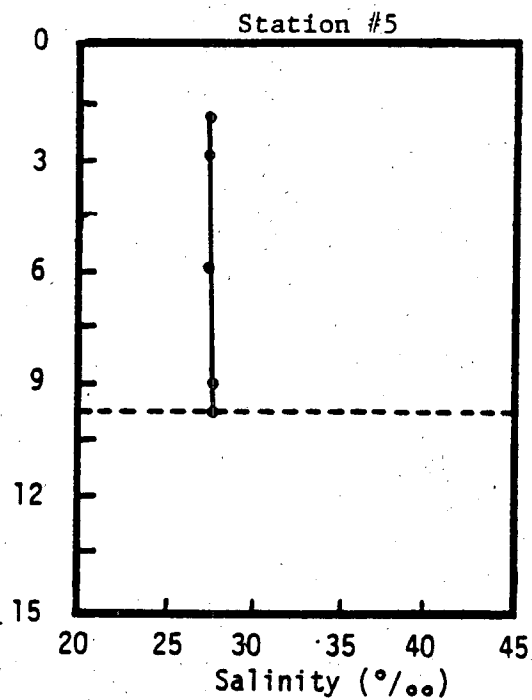
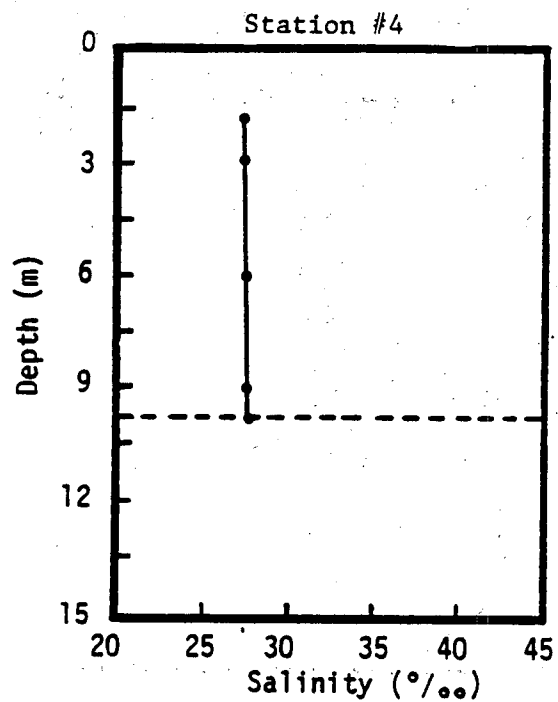


Figure D-19. Continued.

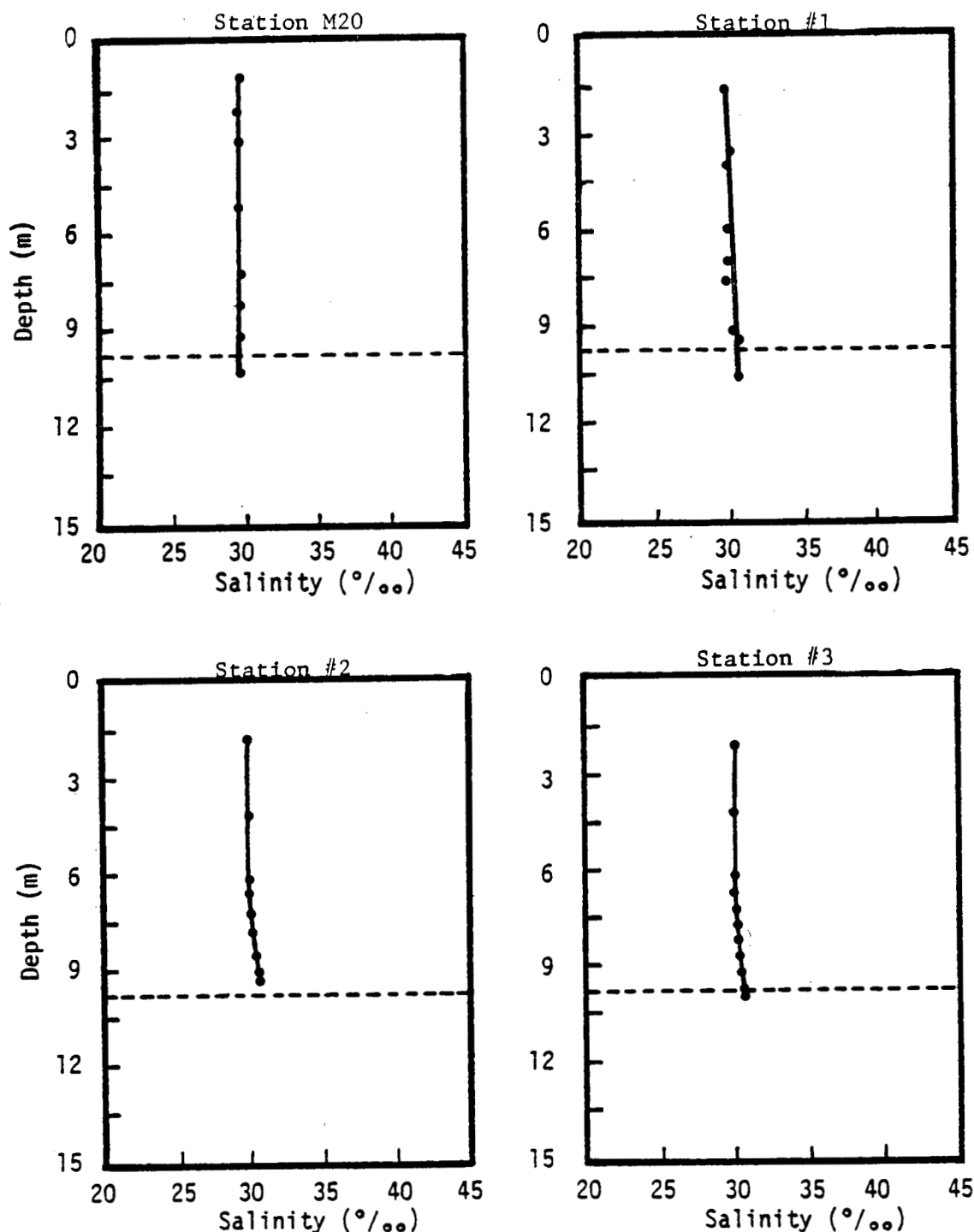


Figure D-20. Vertical salinity profiles near the diffuser on June 1, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

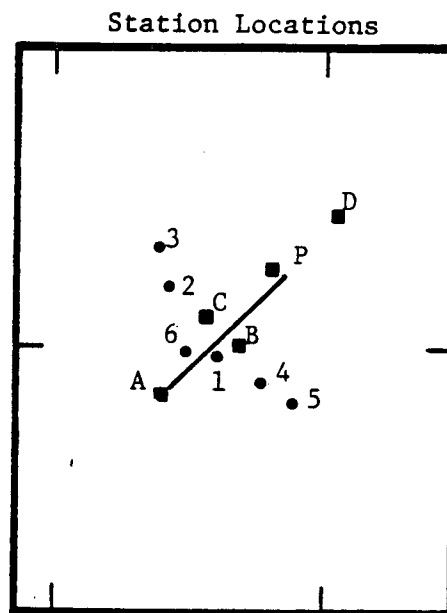
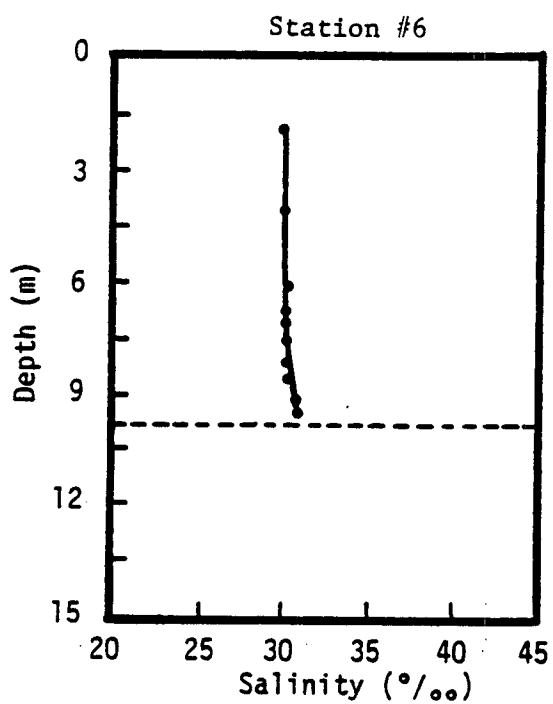
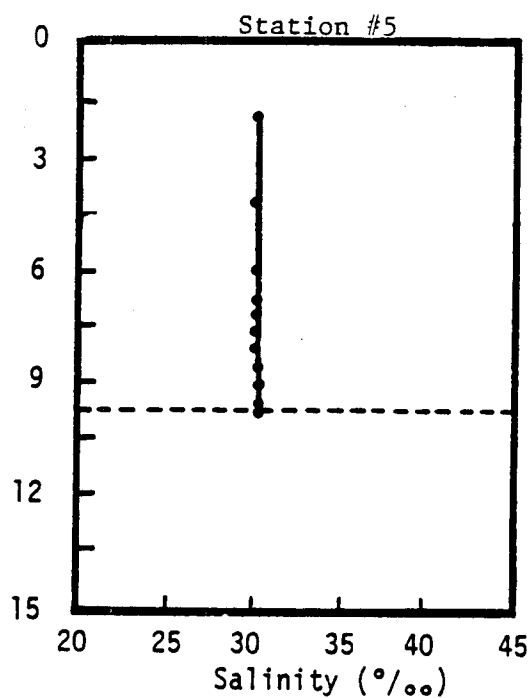
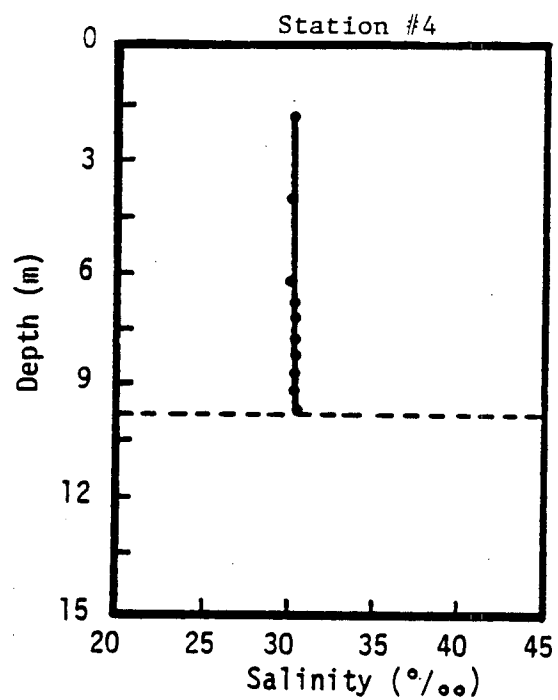


Figure D-20. Continued.

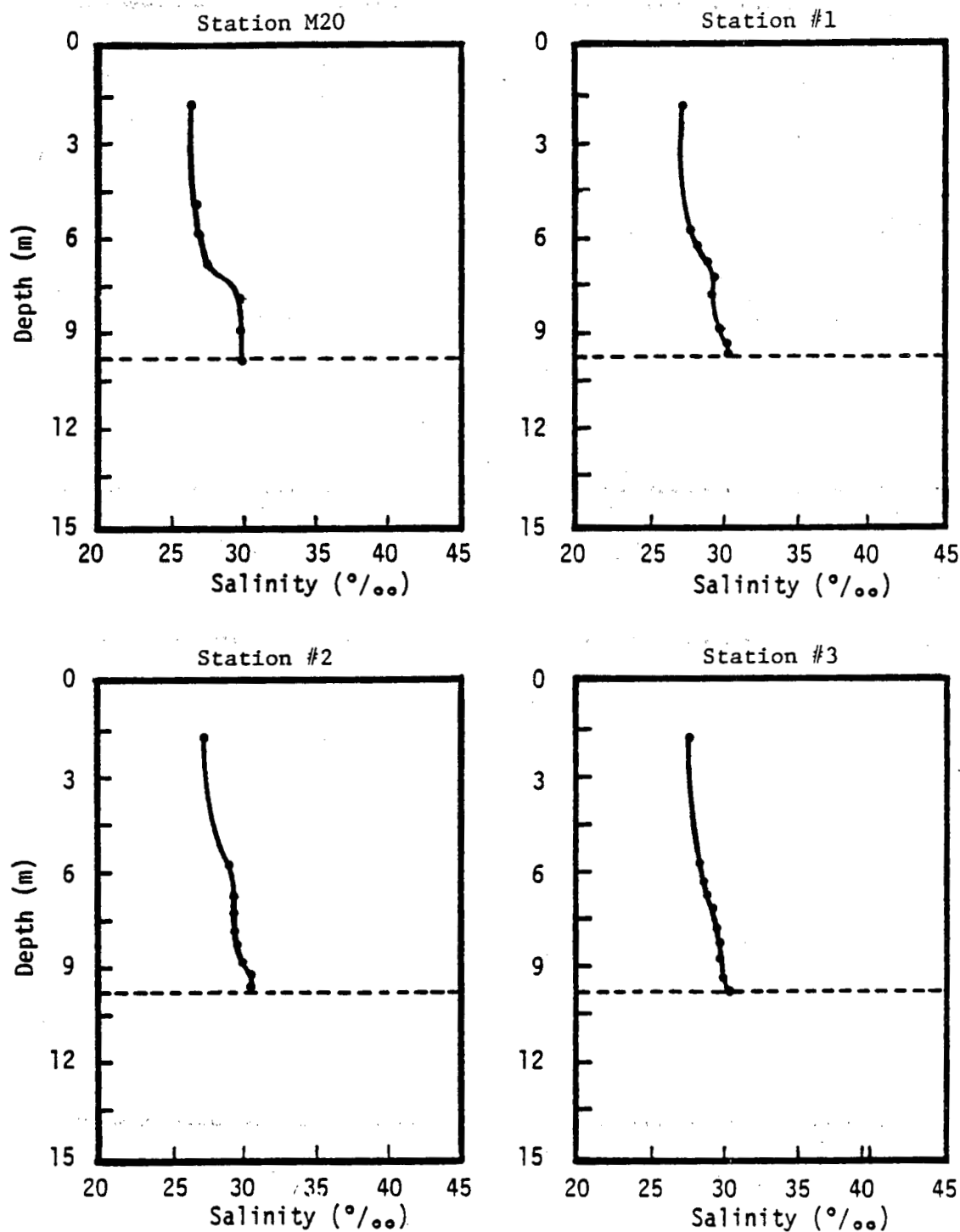


Figure D-21. Vertical salinity profiles near the diffuser on June 9, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

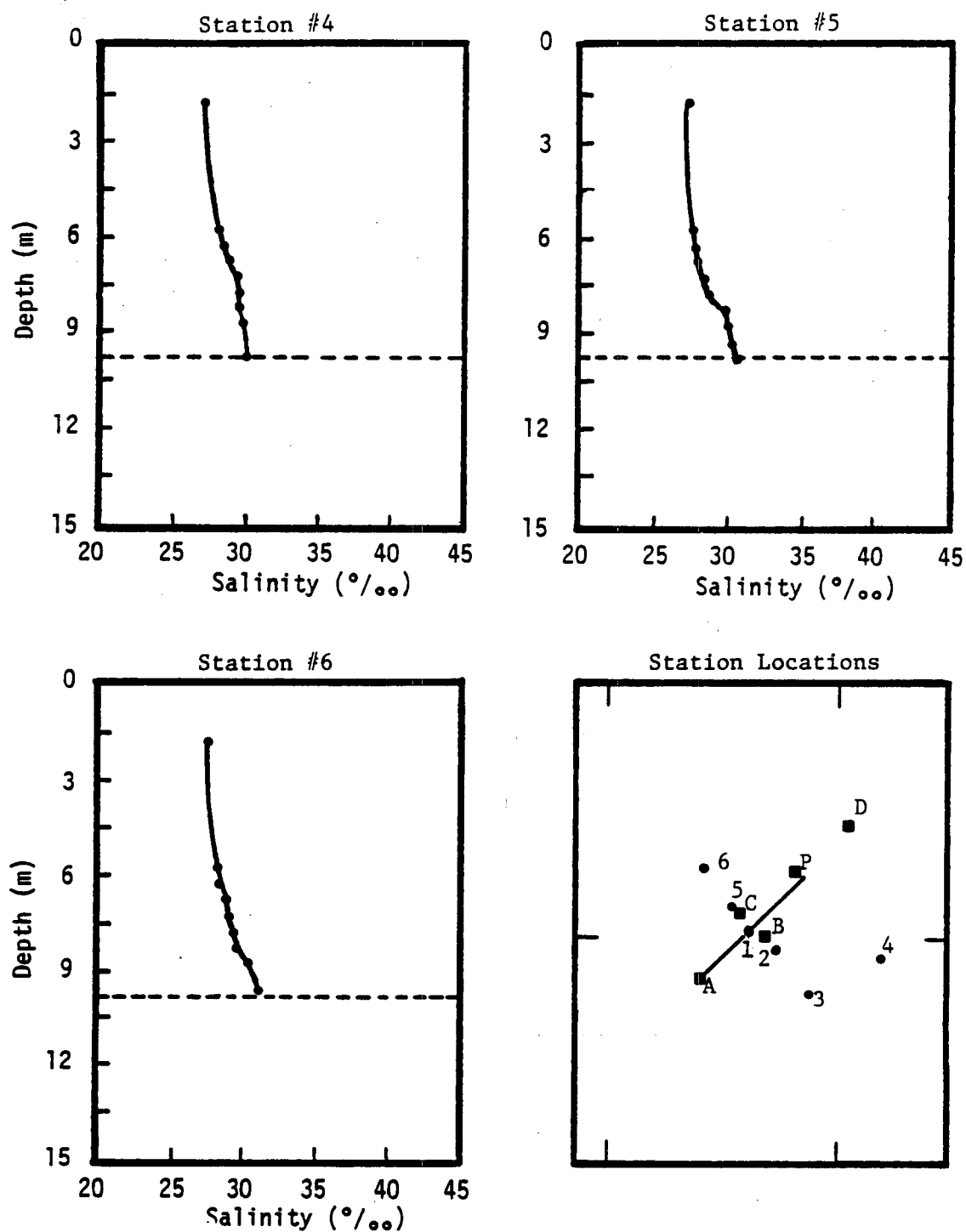


Figure D-21. Continued.

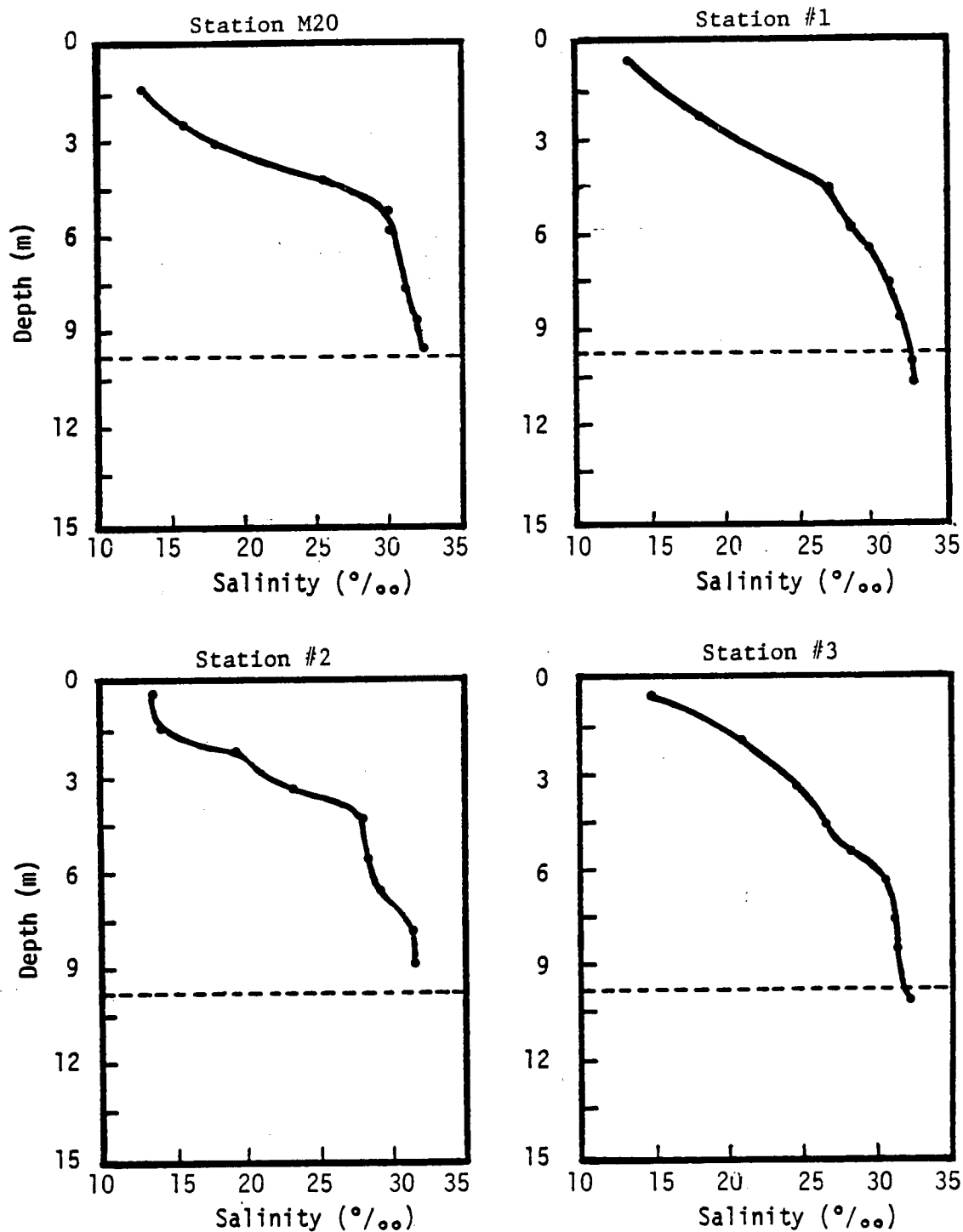


Figure D-22. Vertical salinity profiles near the diffuser on June 17, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

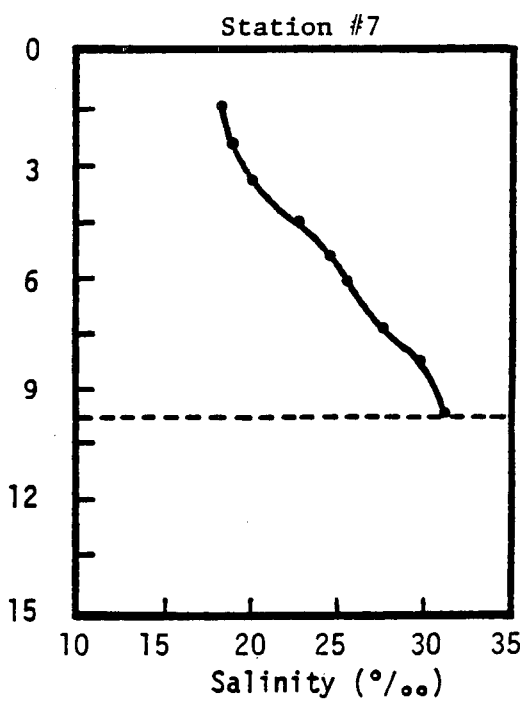
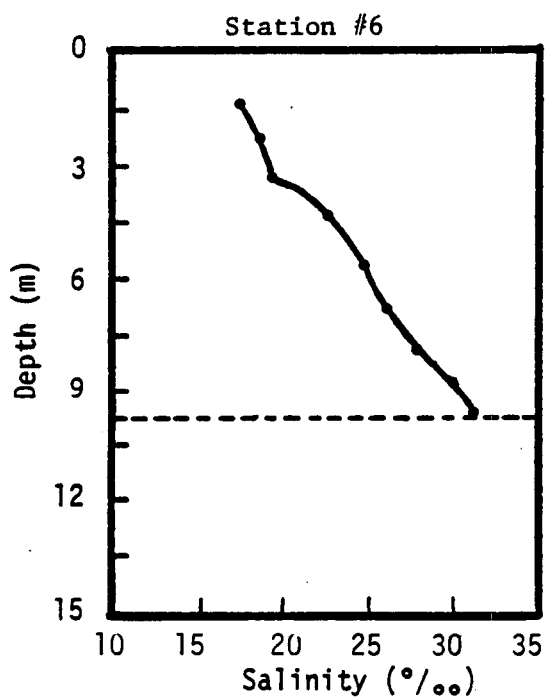
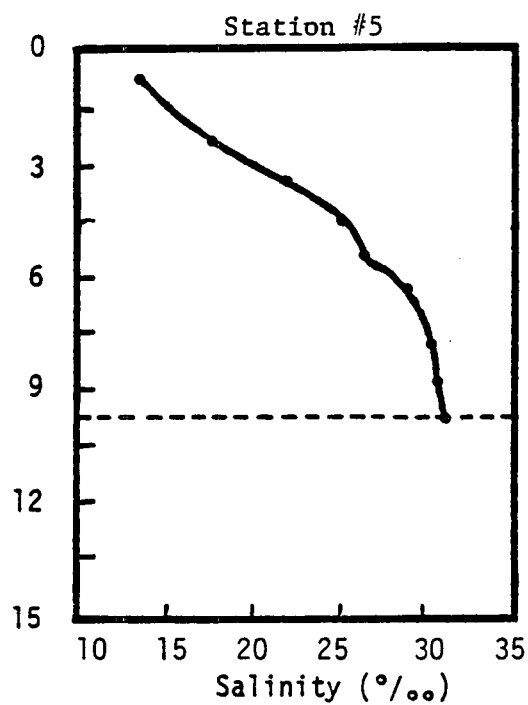
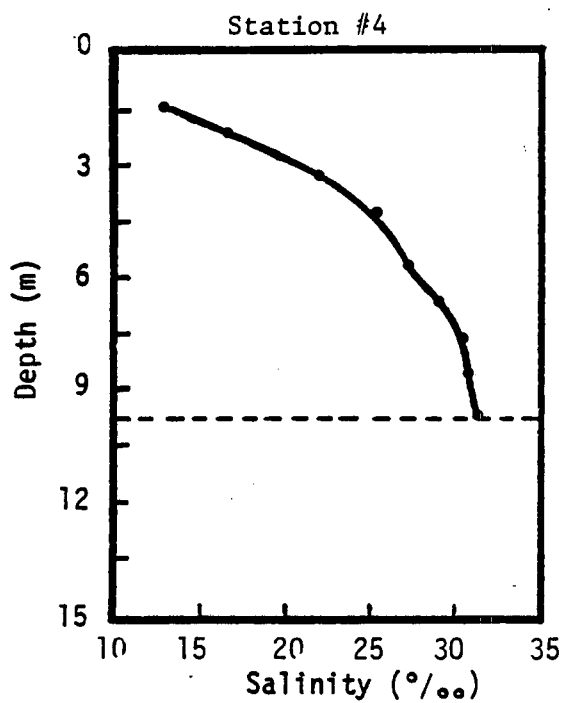


Figure D-22. Continued.

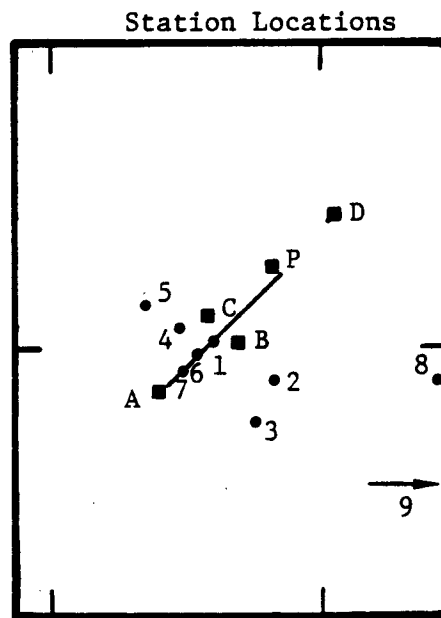
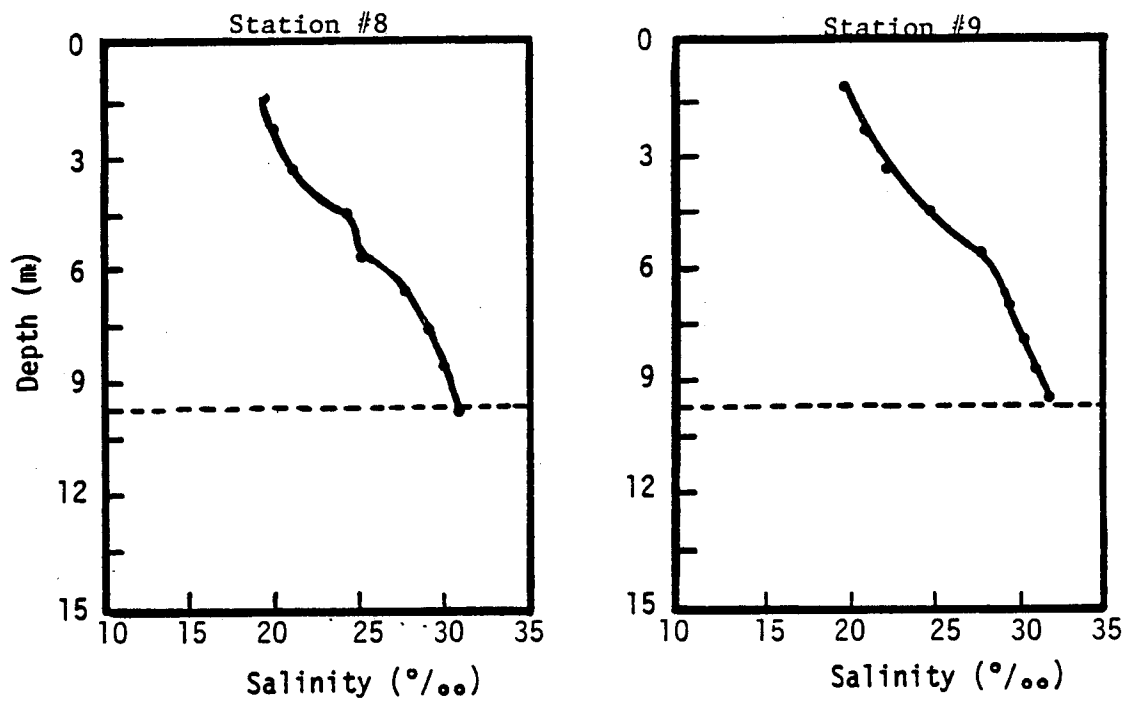


Figure D-22. Continued.

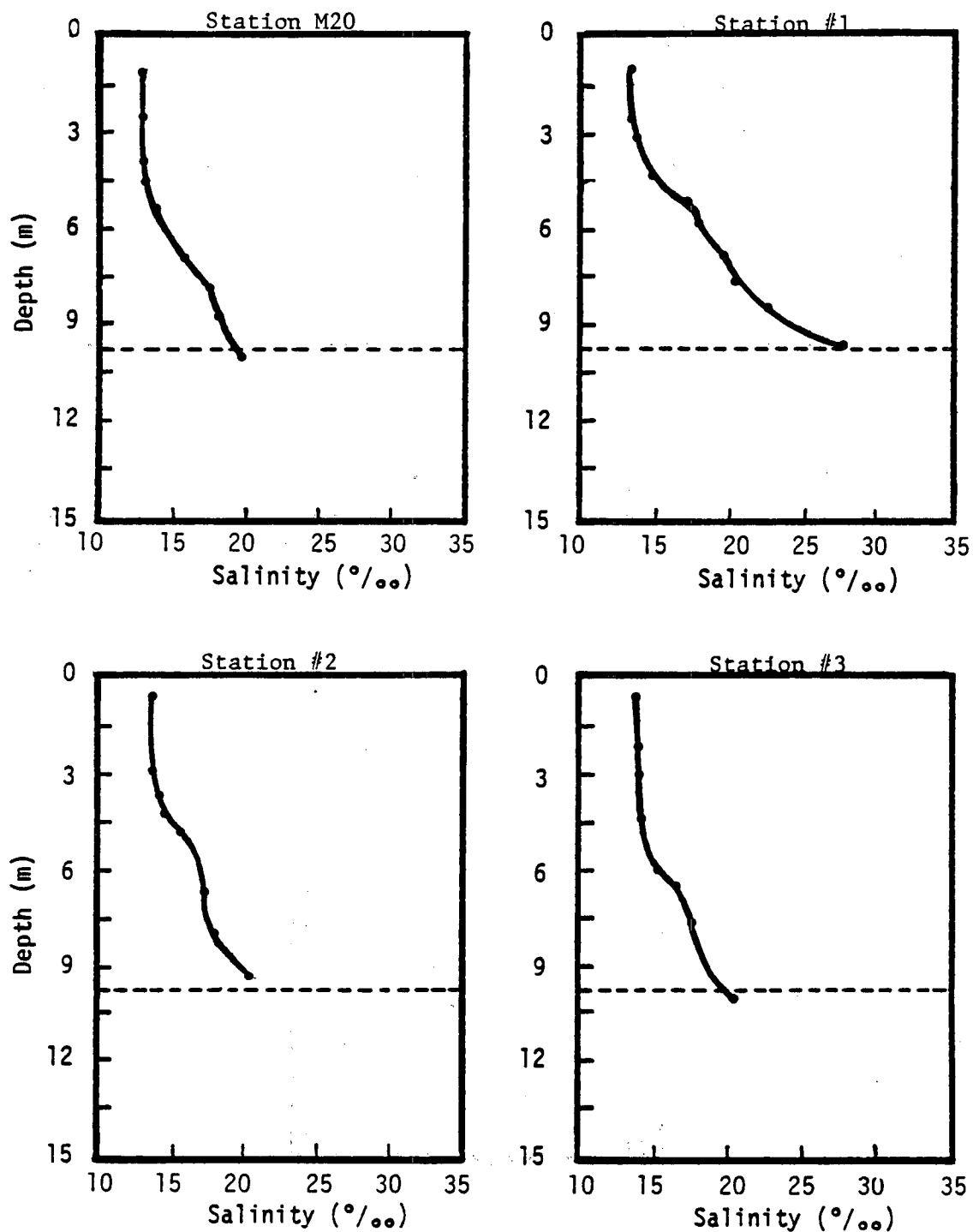


Figure D-23. Vertical salinity profiles near the diffuser on June 30, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

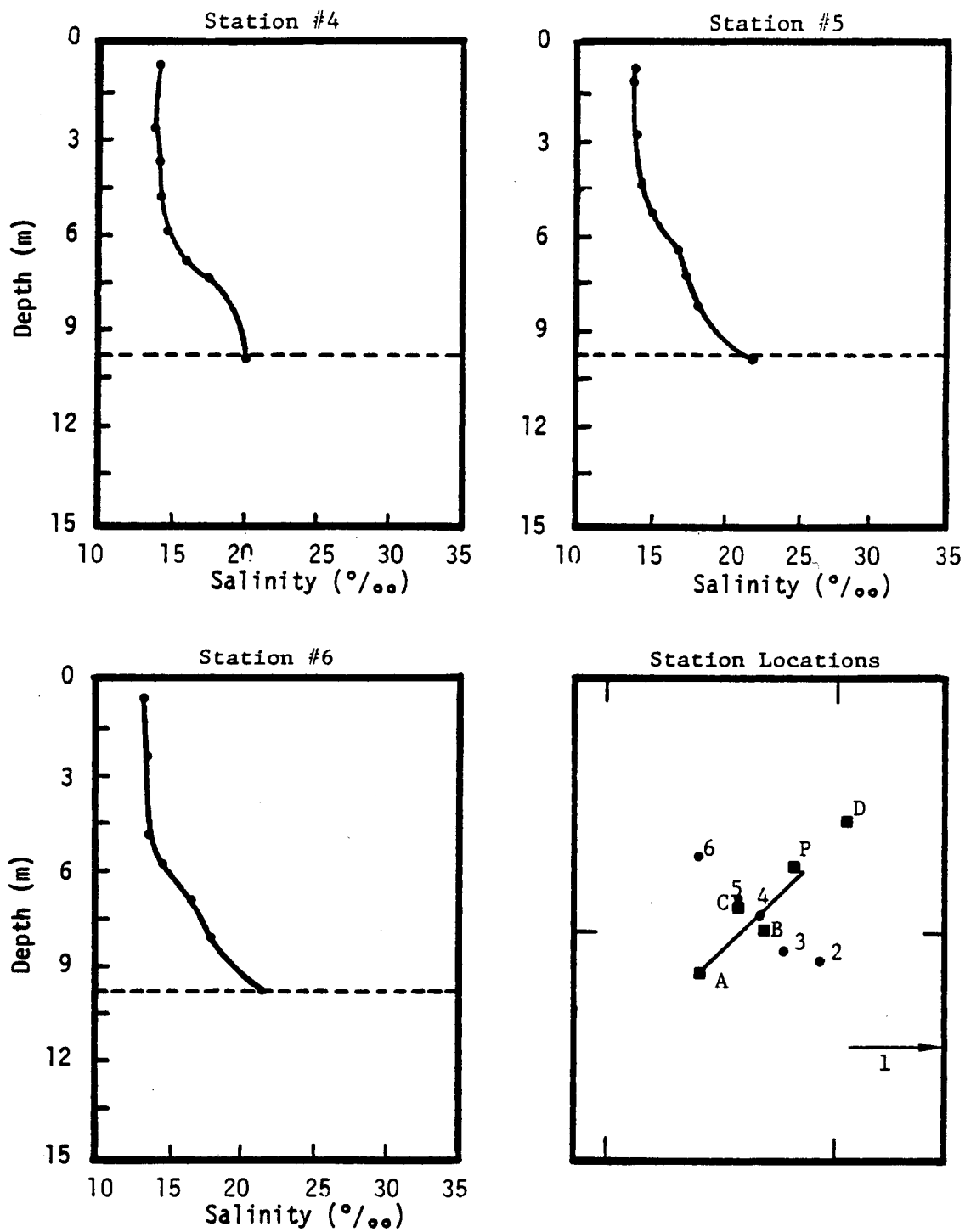


Figure D-23. Continued.

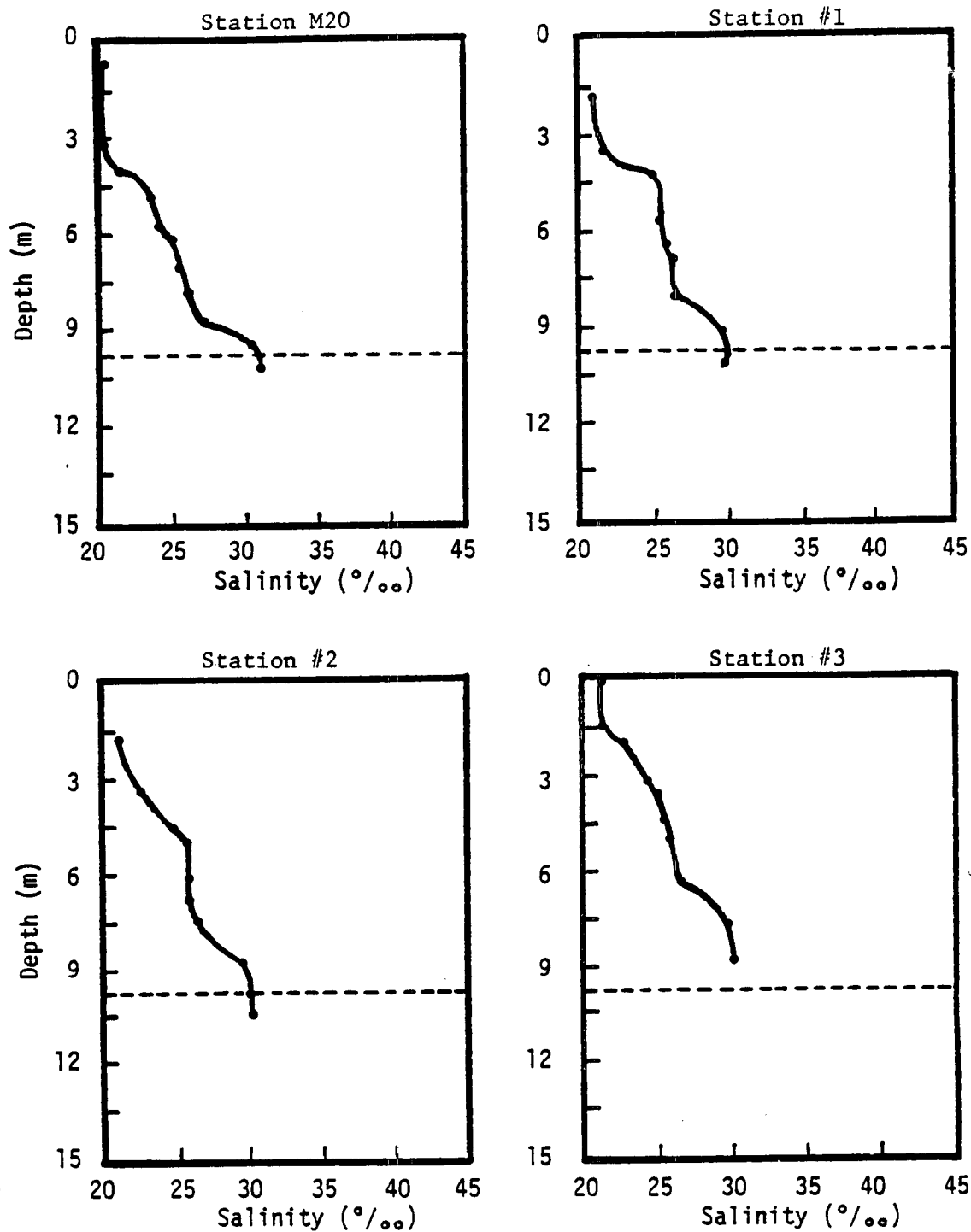


Figure D-24. Vertical salinity profiles near the diffuser on July 17, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and station M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

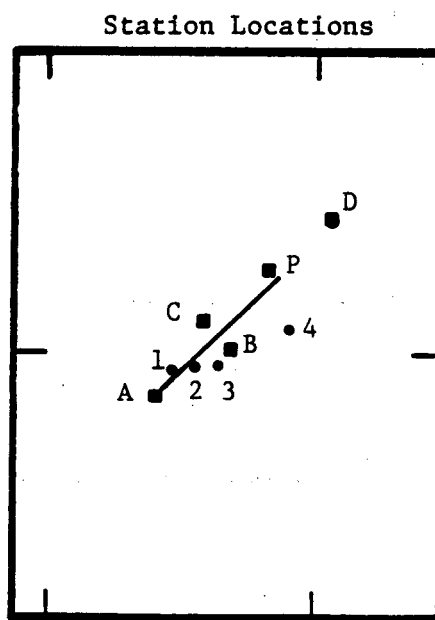
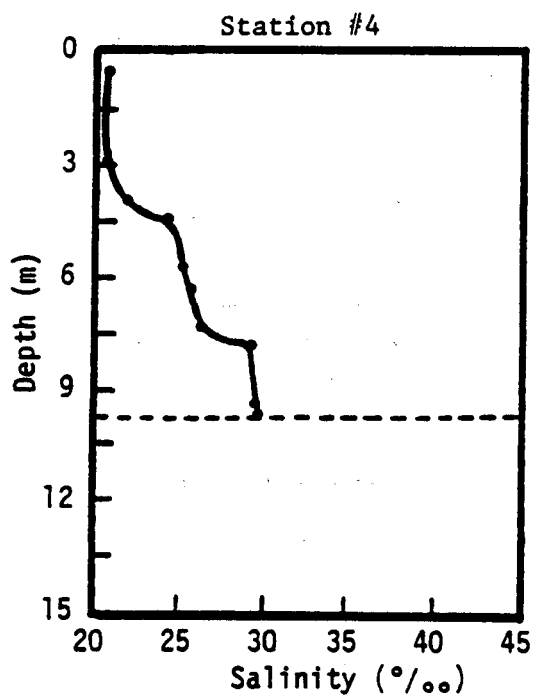


Figure D-24. Continued.

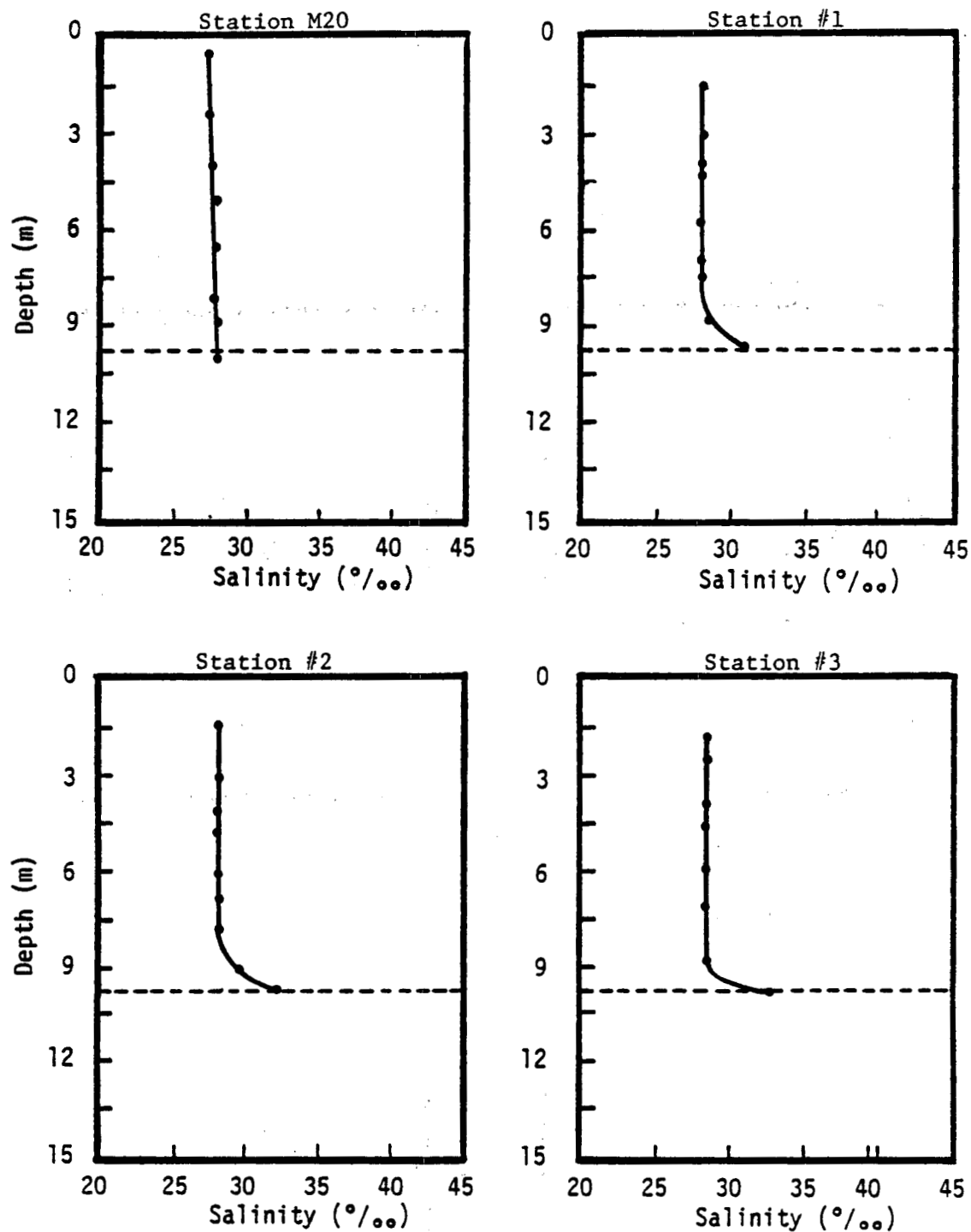


Figure D-25. Vertical salinity profiles near the diffuser on August 12, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

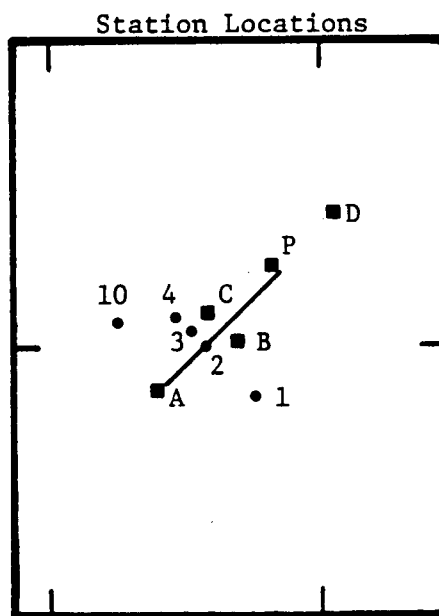
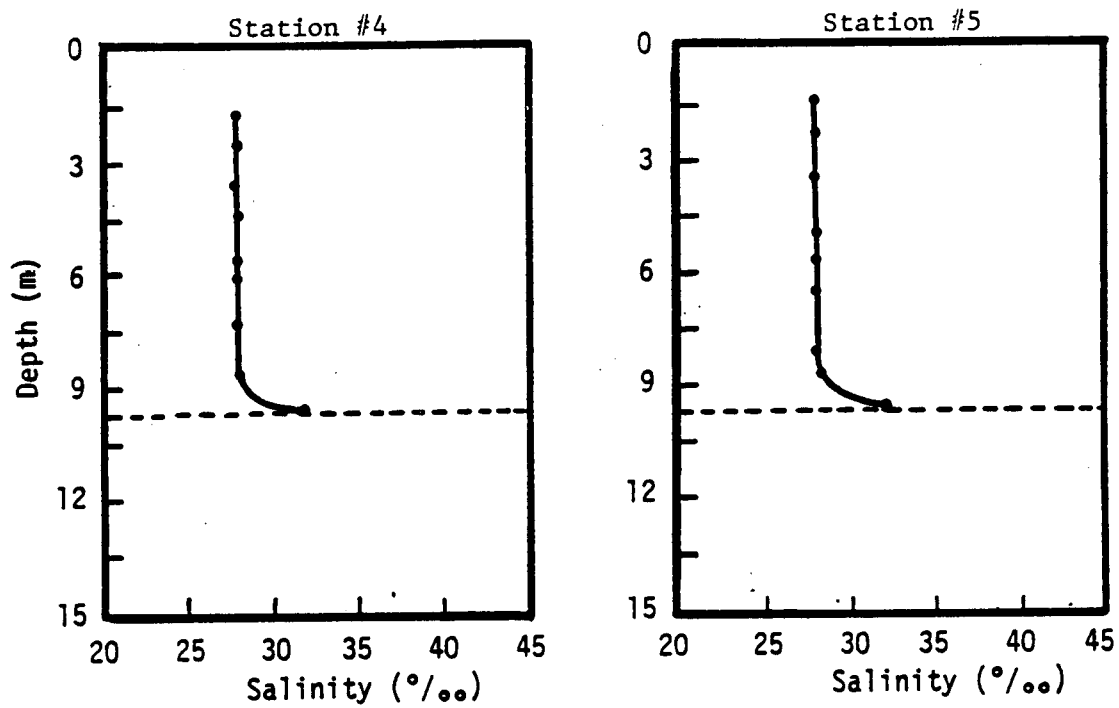


Figure D-25. Continued.

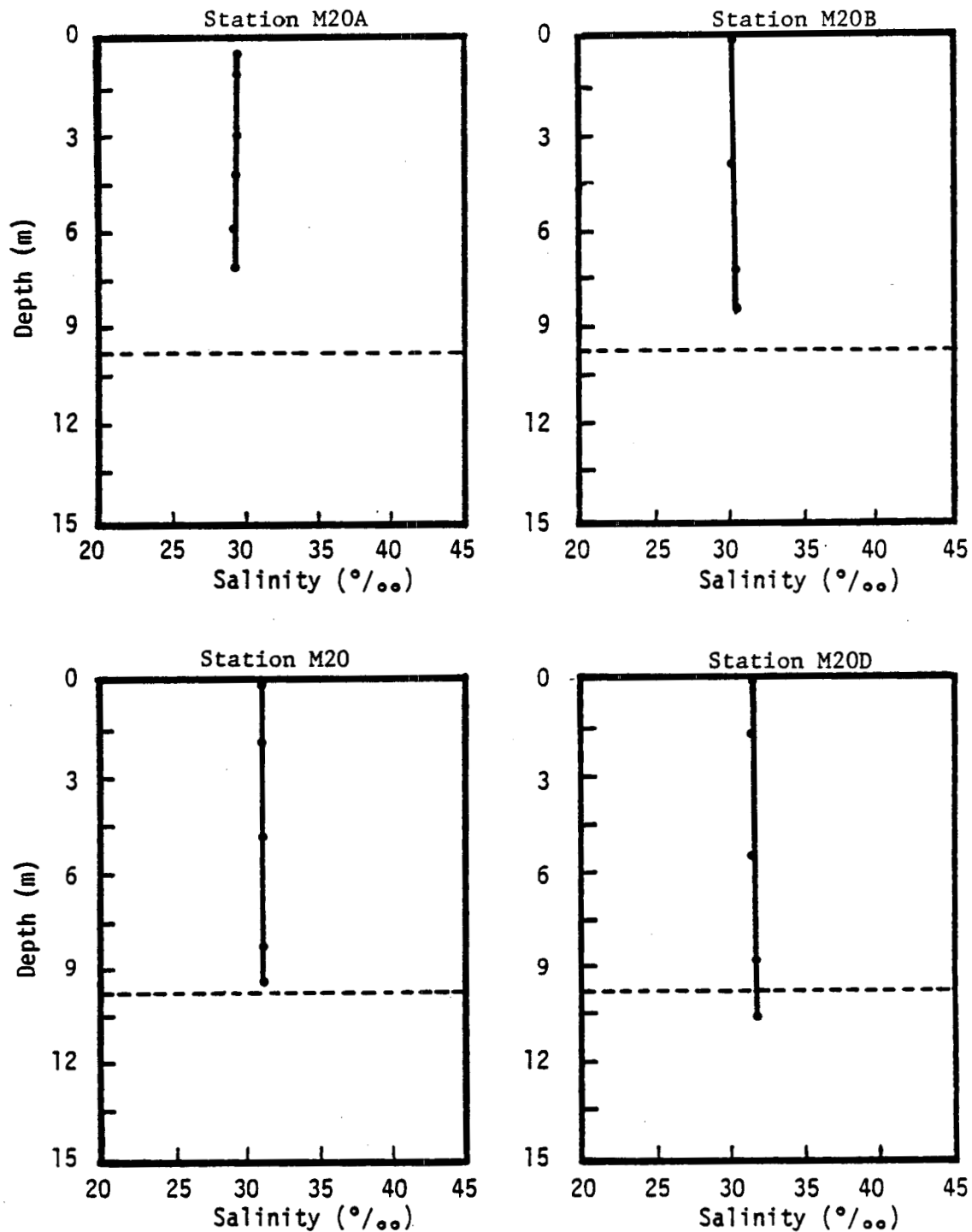


Figure D-26. Vertical salinity profiles near the diffuser on October 25, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

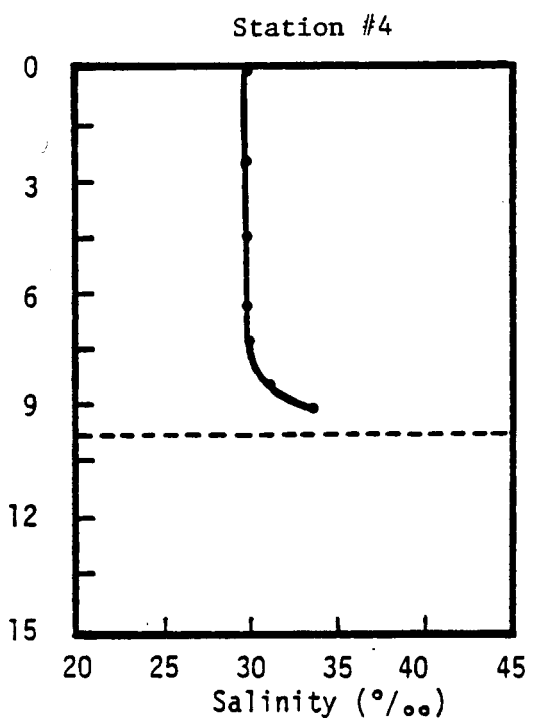
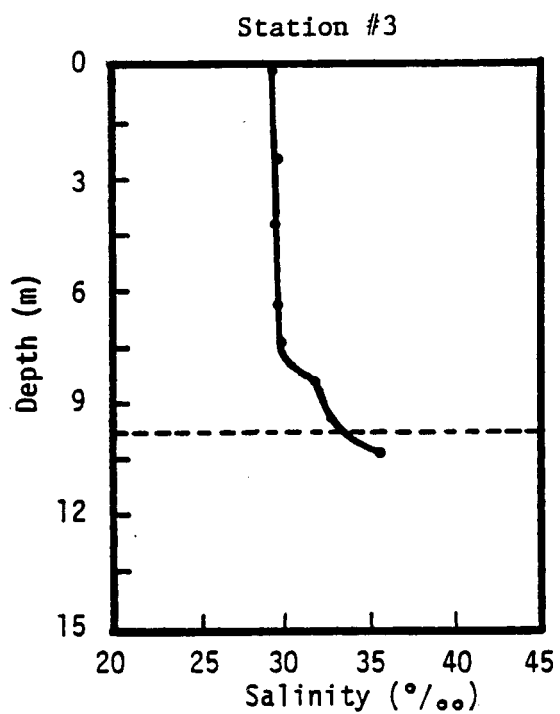
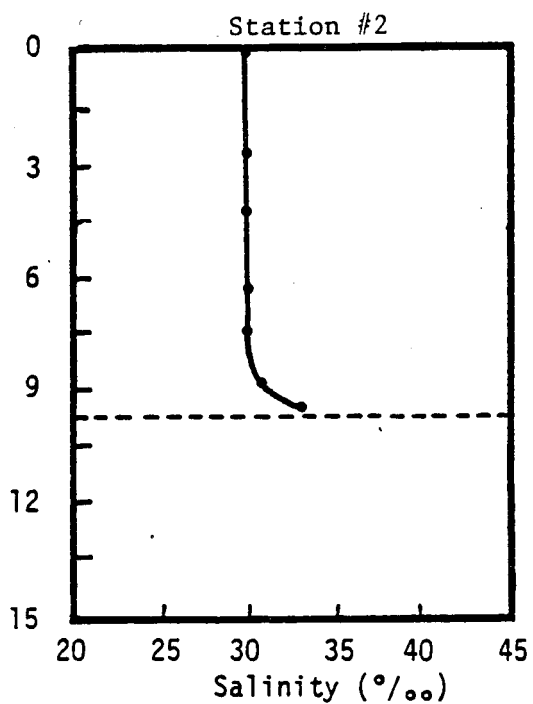
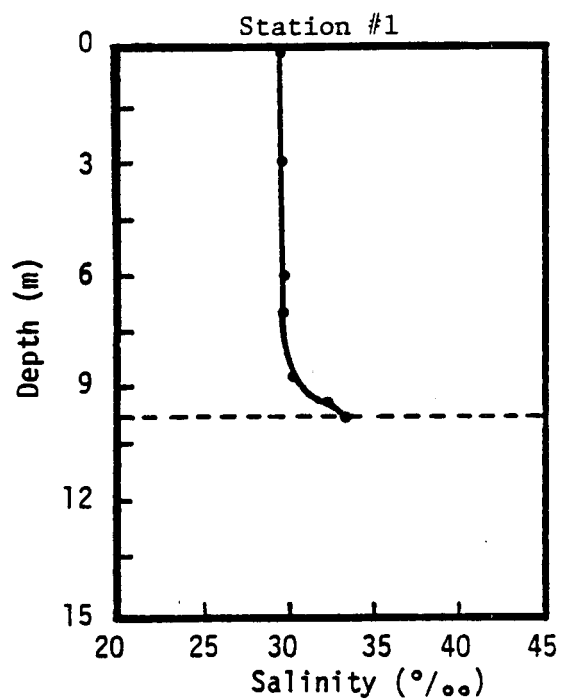


Figure D-26. Continued.

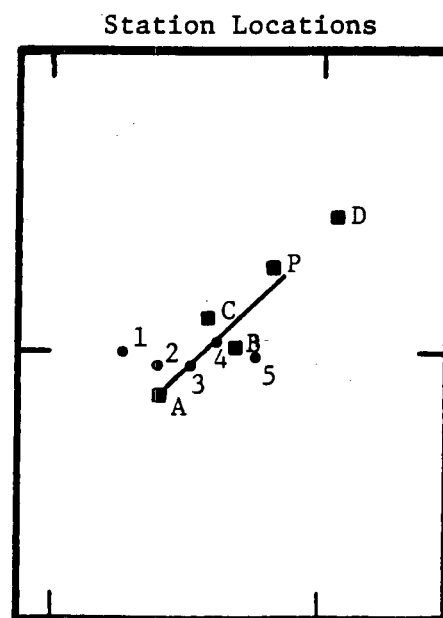
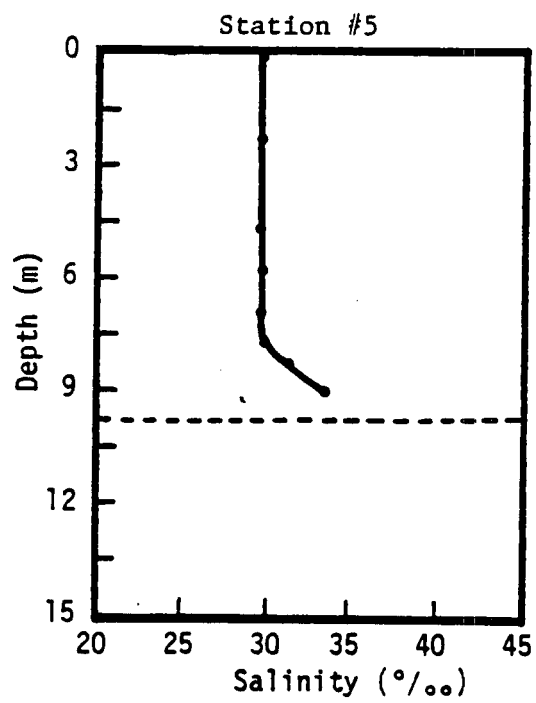


Figure D-26. Continued.

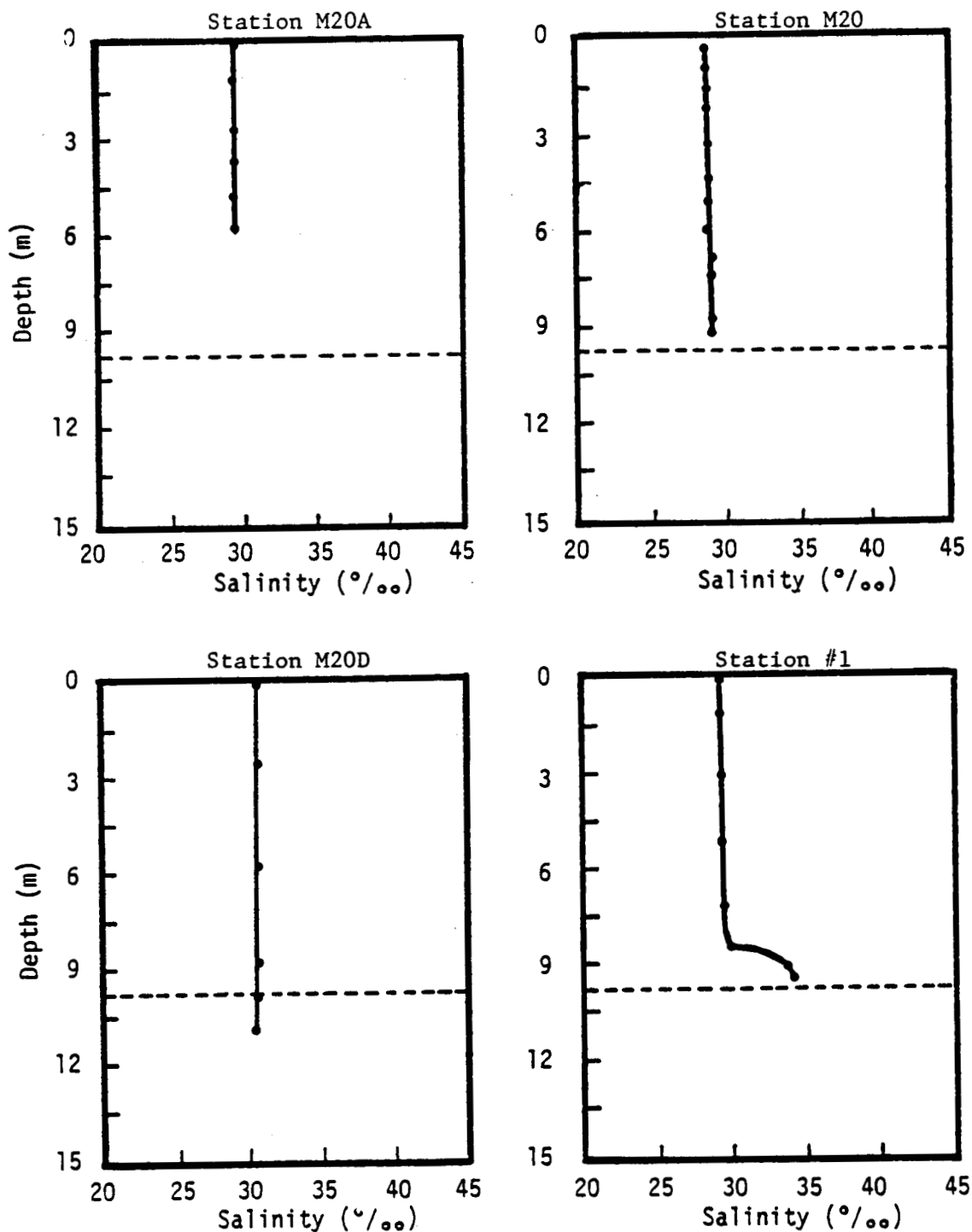


Figure D-27. Vertical salinity profiles near the diffuser on November 25, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

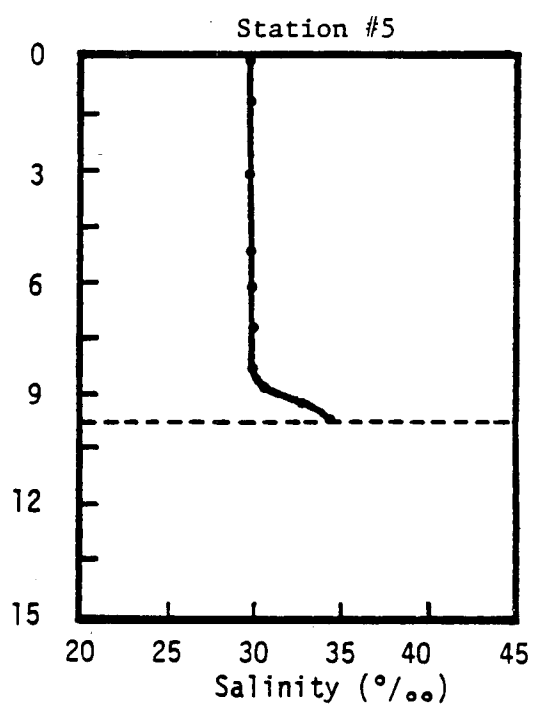
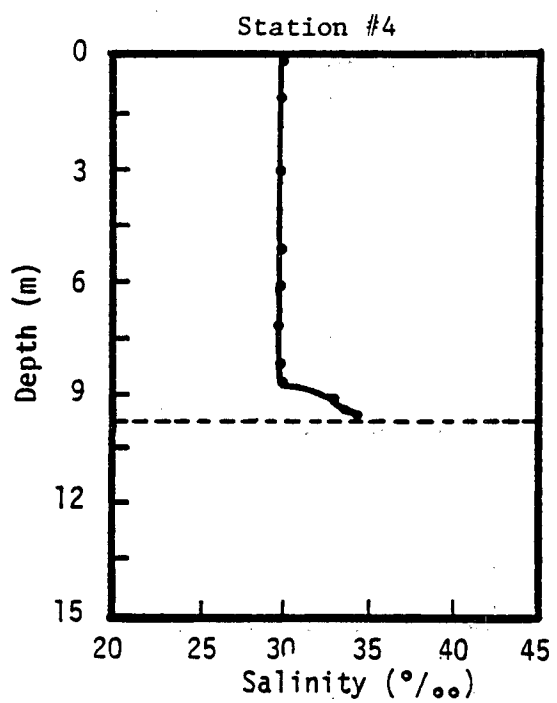
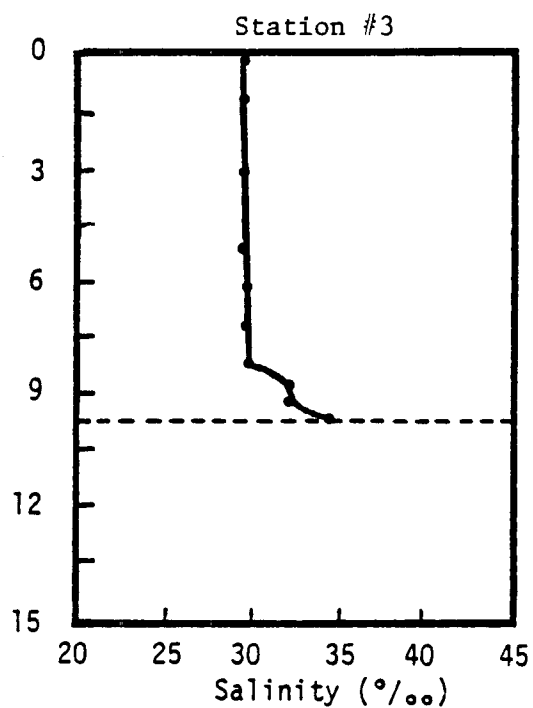
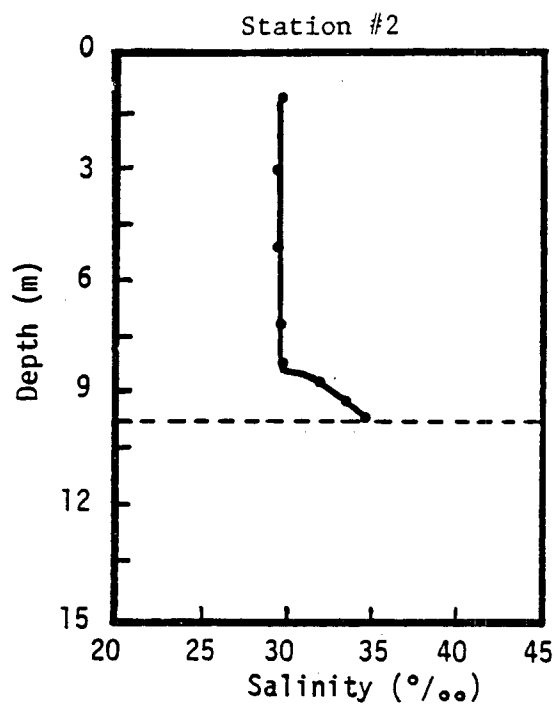


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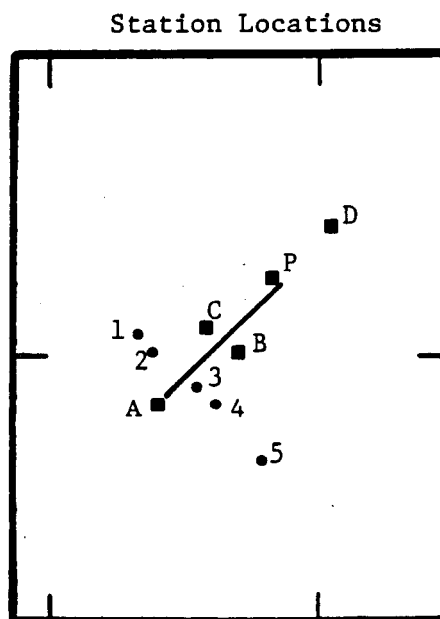


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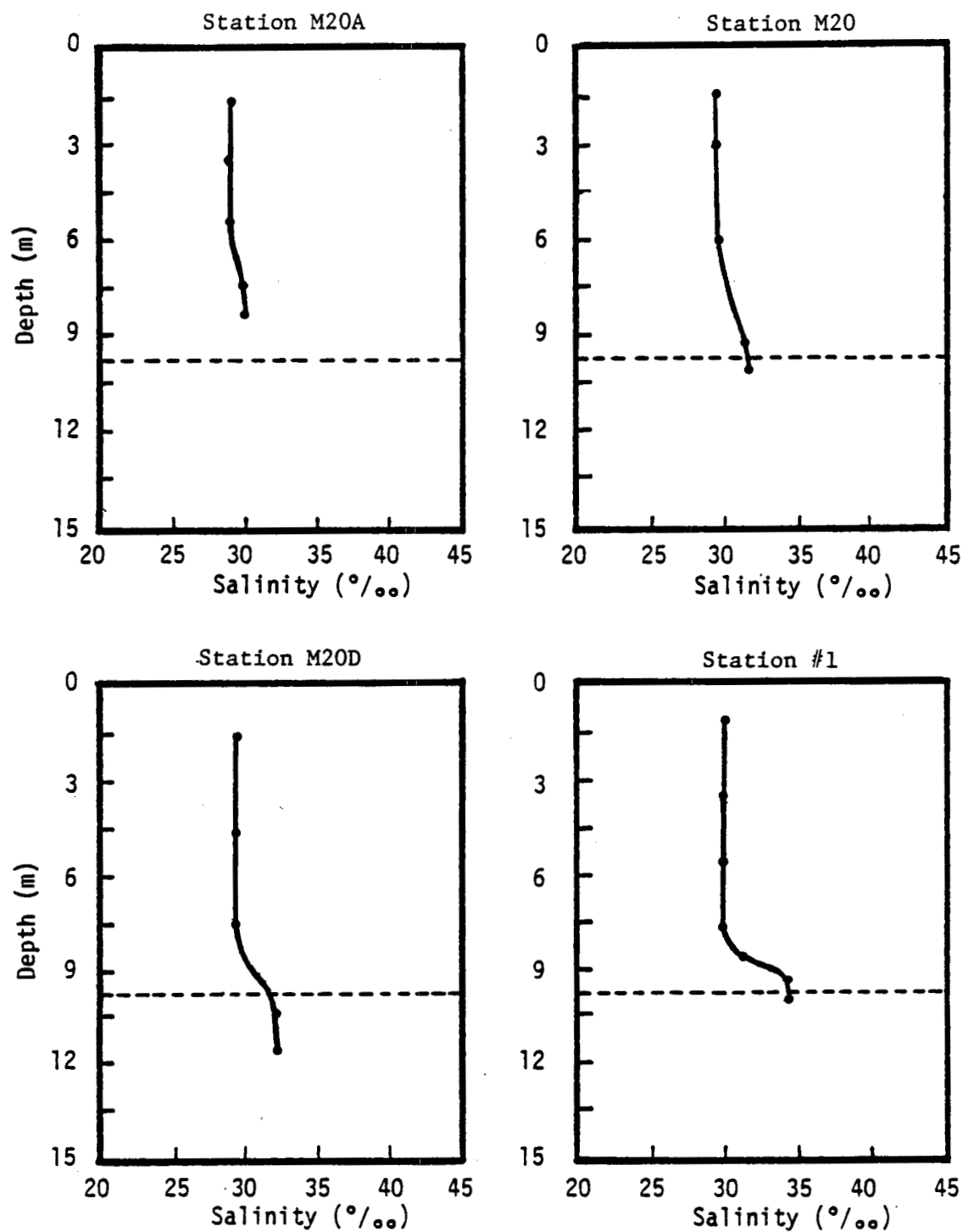


Figure D-28. Vertical salinity profiles near the diffuser on December 16, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

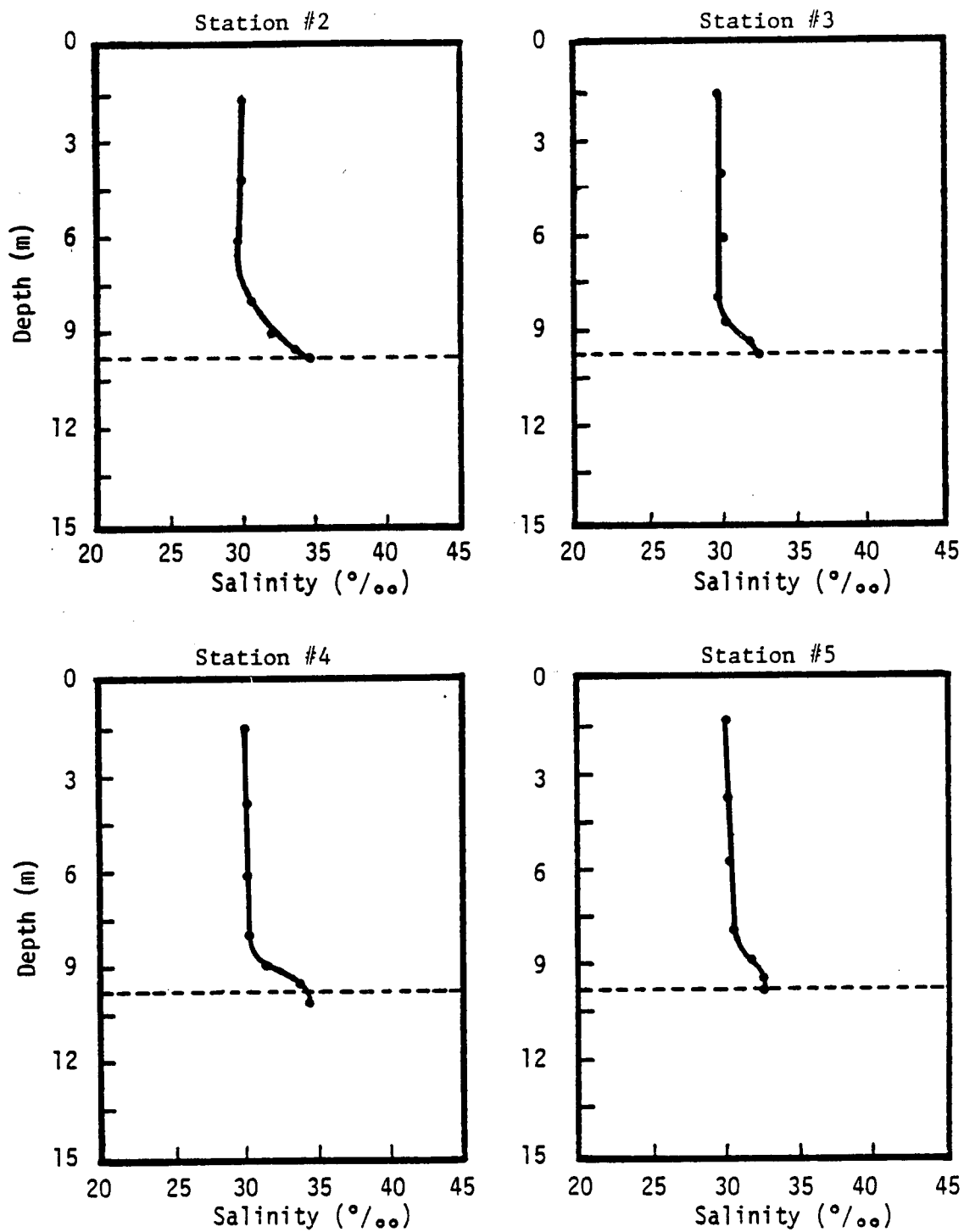


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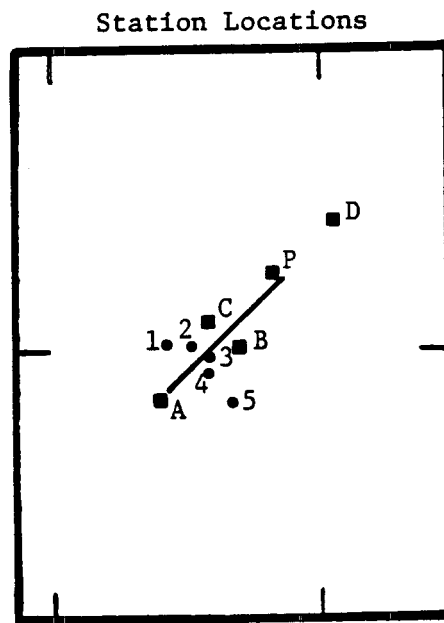


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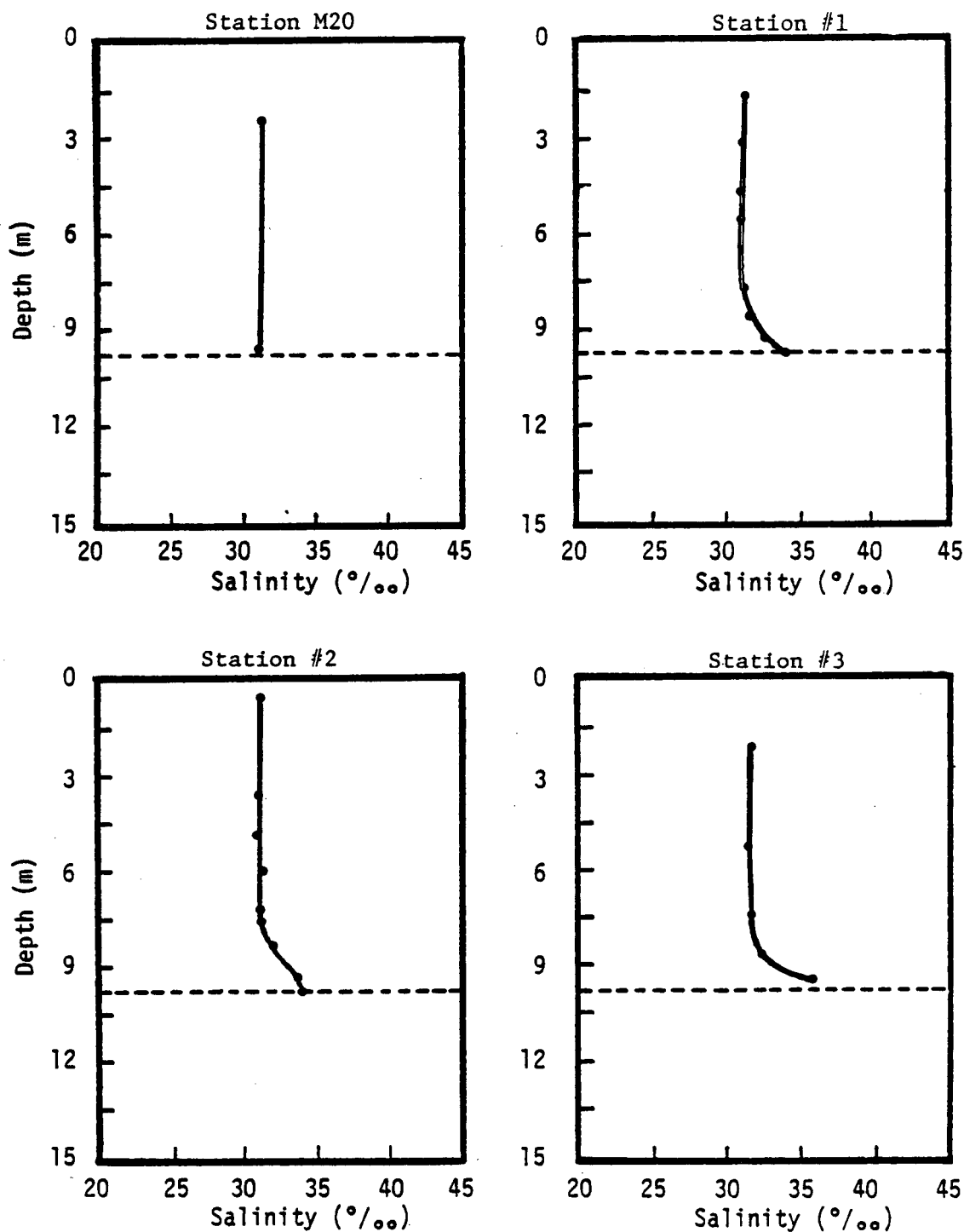


Figure D-29. Vertical salinity profiles near the diffuser on February 14, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

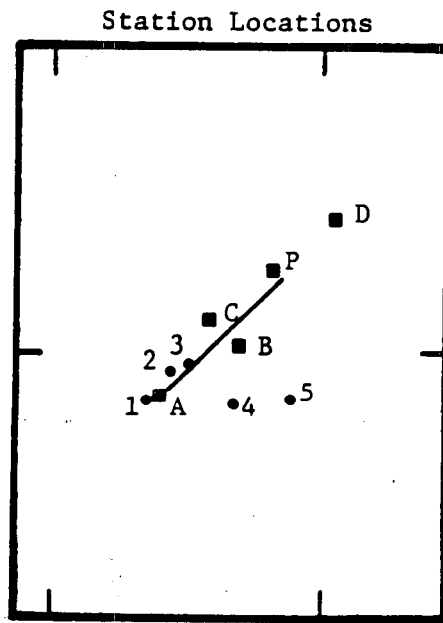
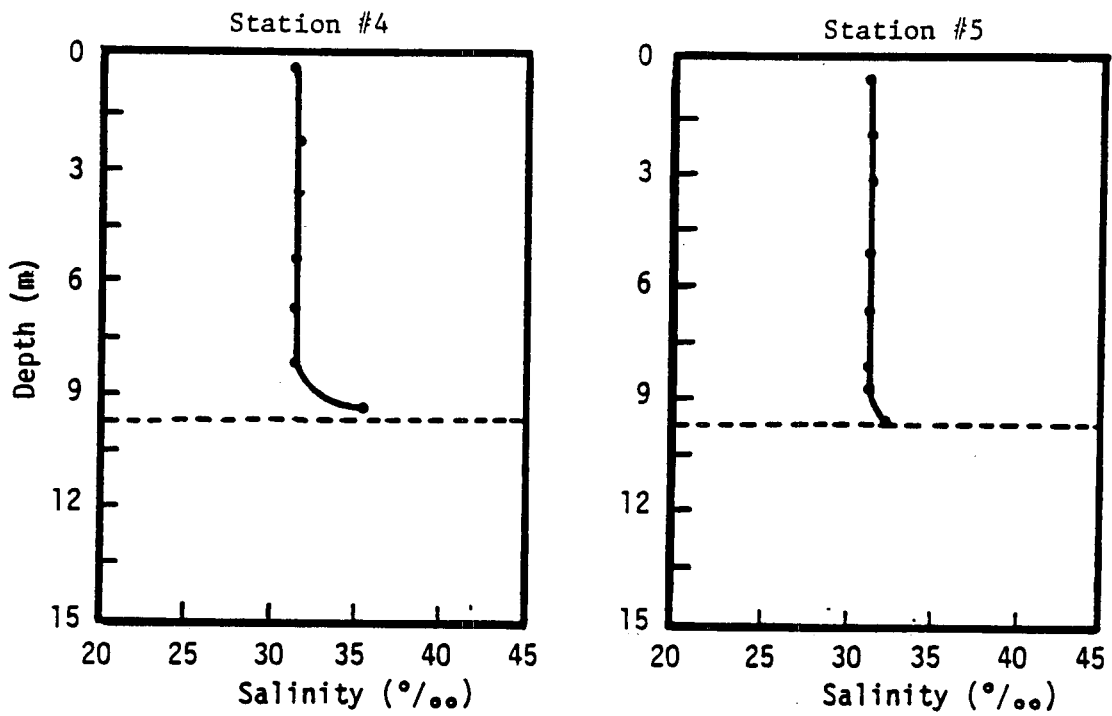


Figure D-29. Continued.

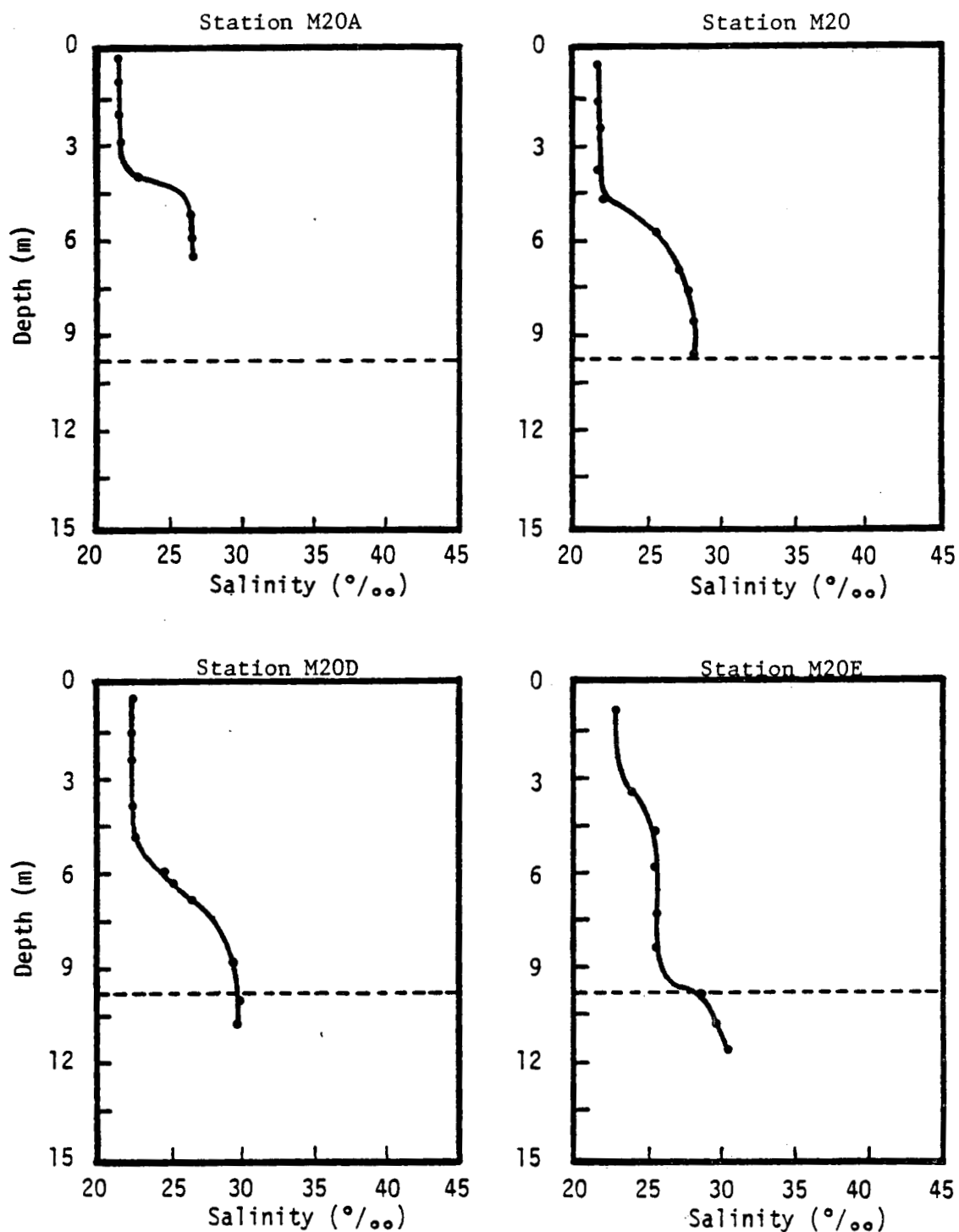


Figure D-30. Vertical salinity profiles near the diffuser on March 1, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

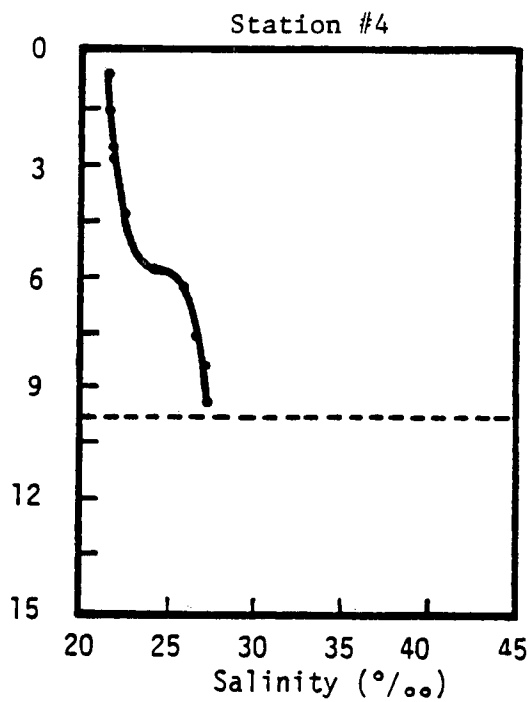
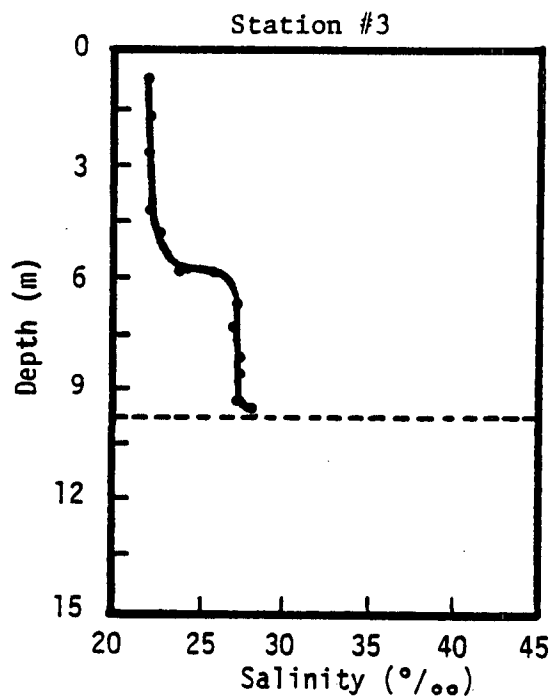
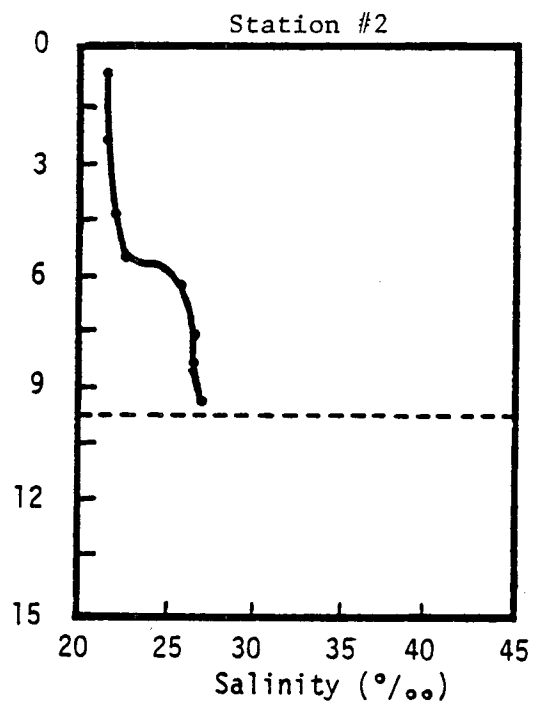
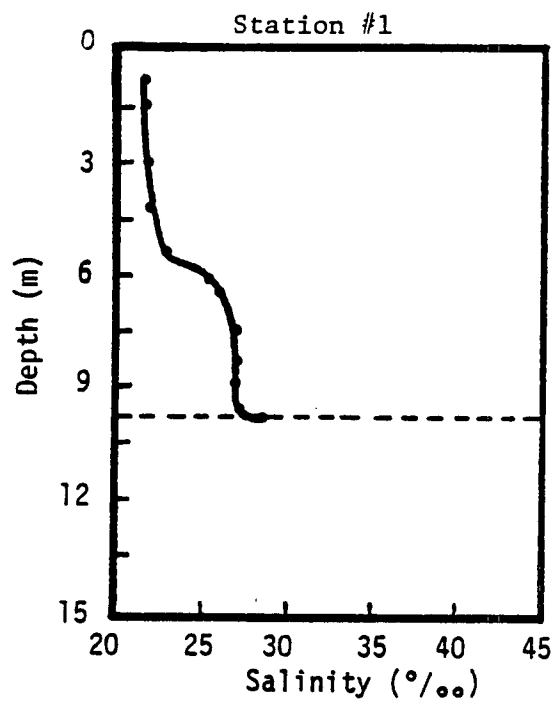


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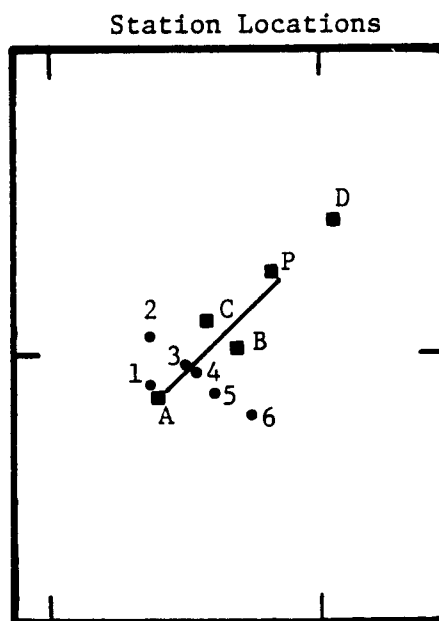
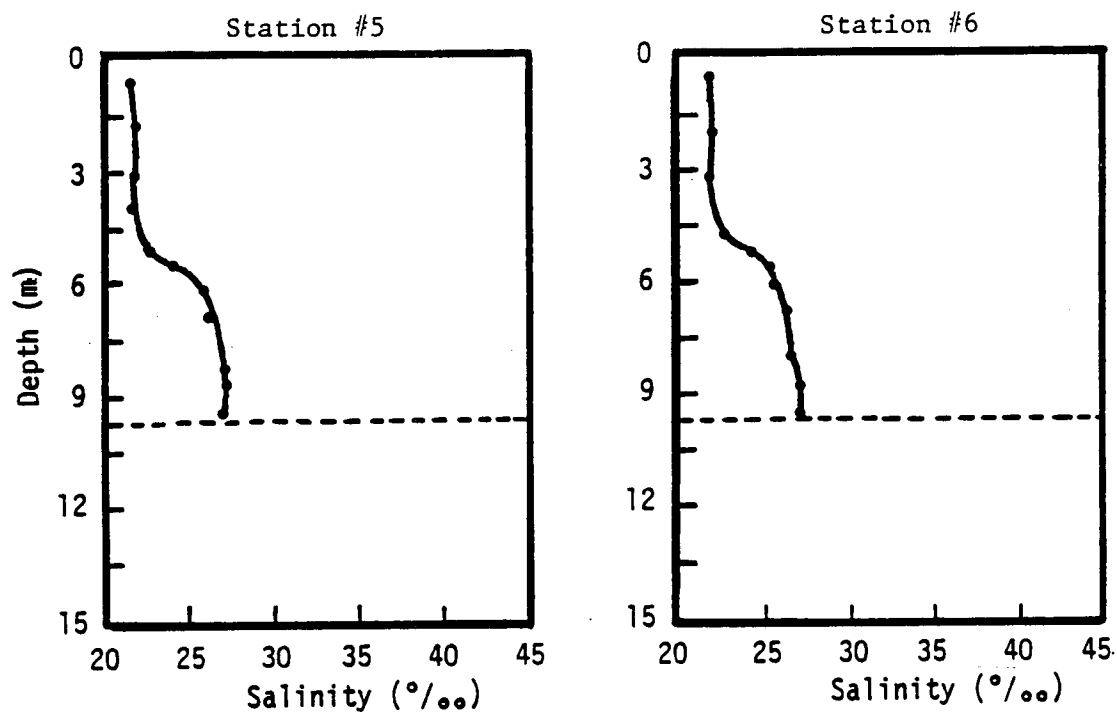


Figure D-30. Continued.

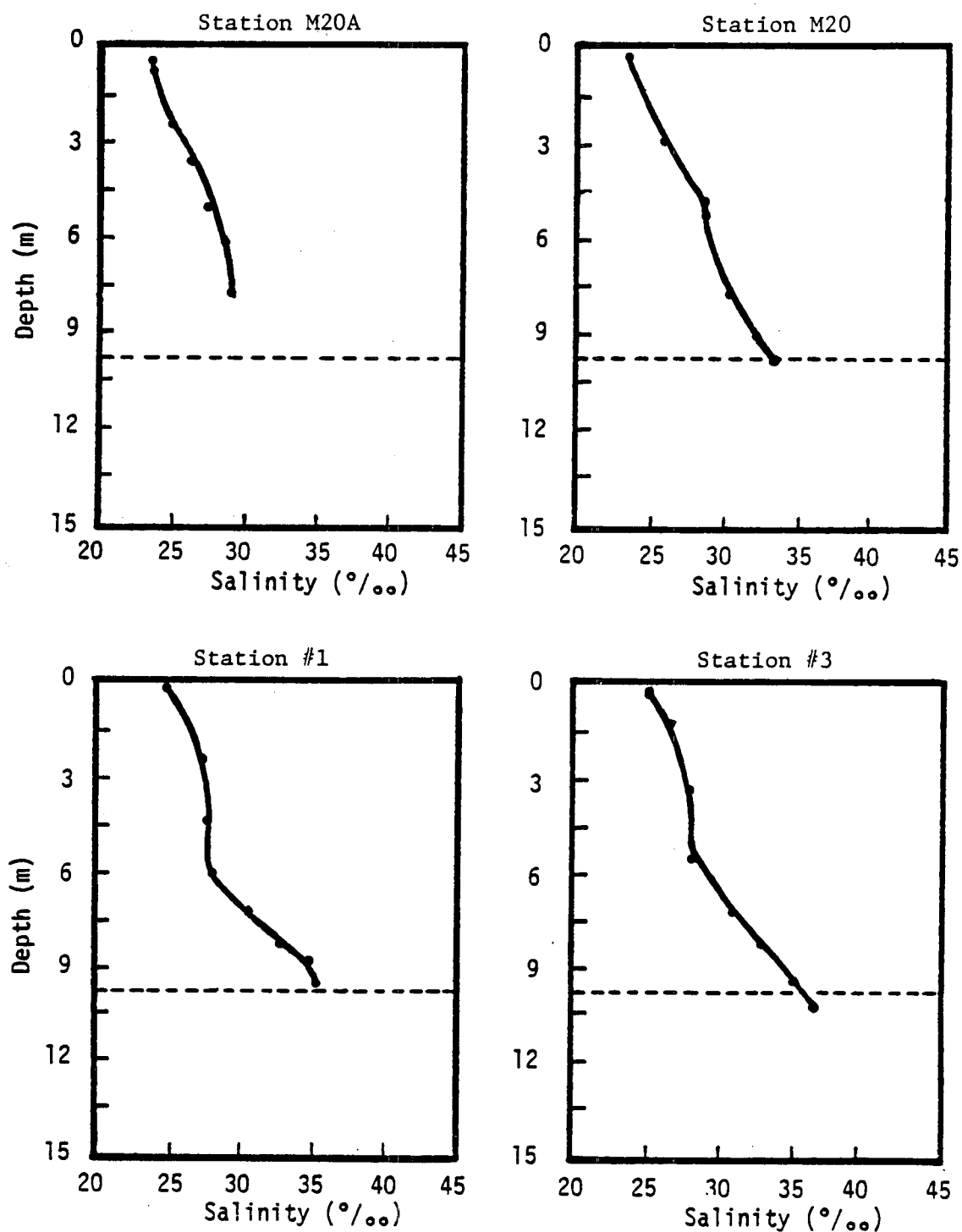


Figure D-31. Vertical salinity profiles near the diffuser on April 30, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations M20A, M20, and M20D are control stations located 7.4 km east of the diffuser, and stations M20A and M20D are 3.7 km north (inshore) and south (offshore) of station 20 respectively. A schematic of the near diffuser station locations is shown on the last page of each figure.

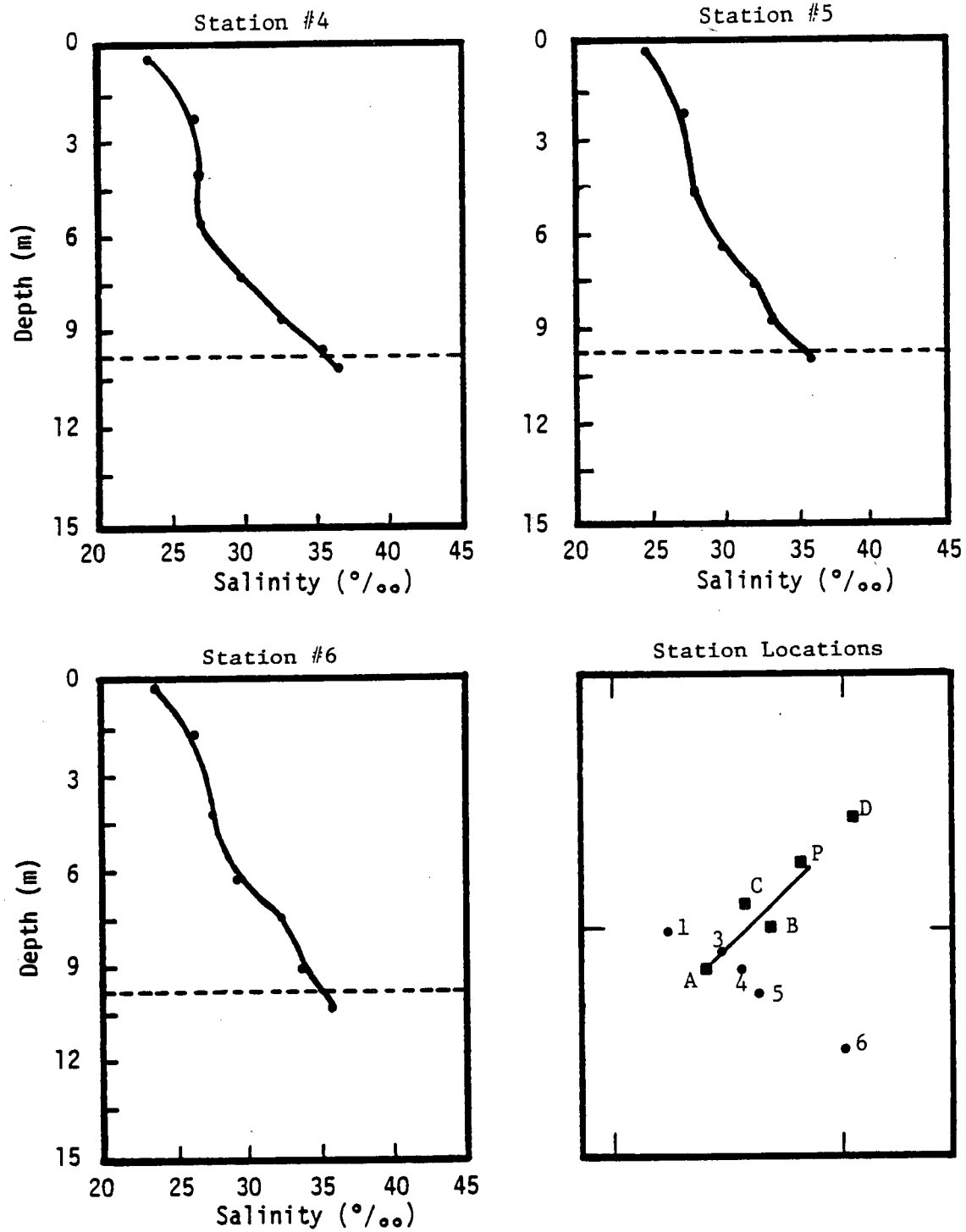


Figure D-31. Continued.

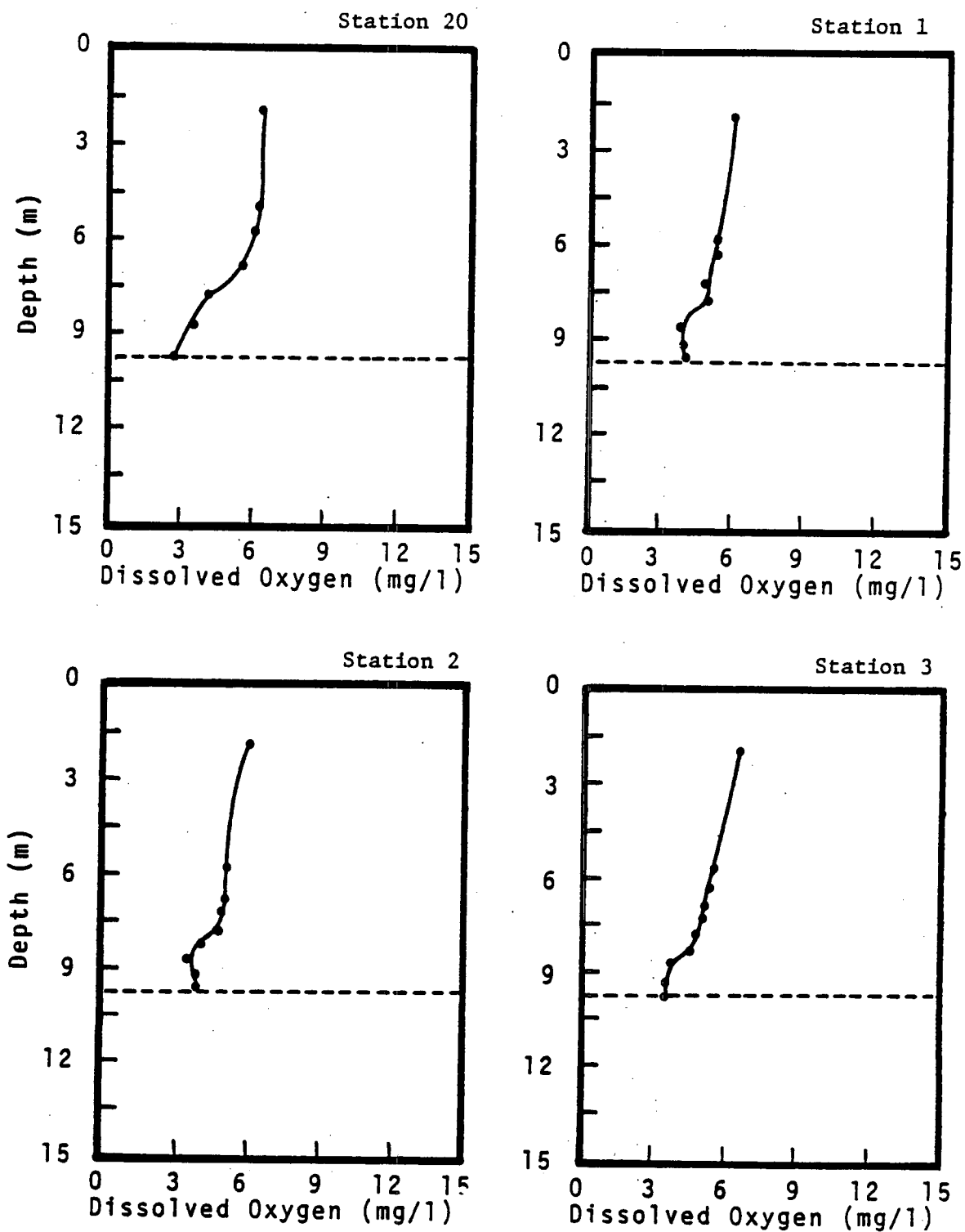


Figure D-32. Vertical dissolved oxygen profiles near the diffuser on June 9, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

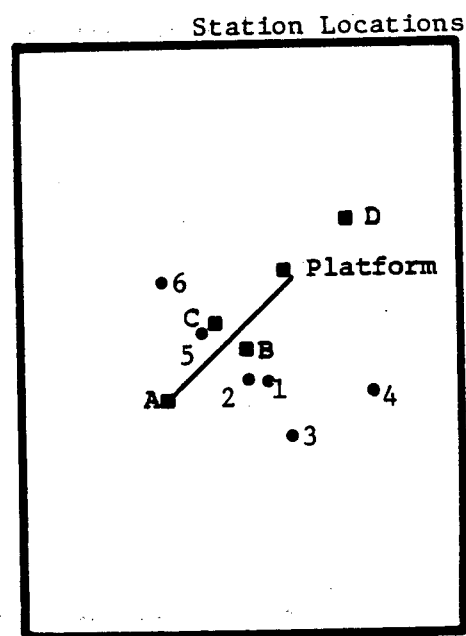
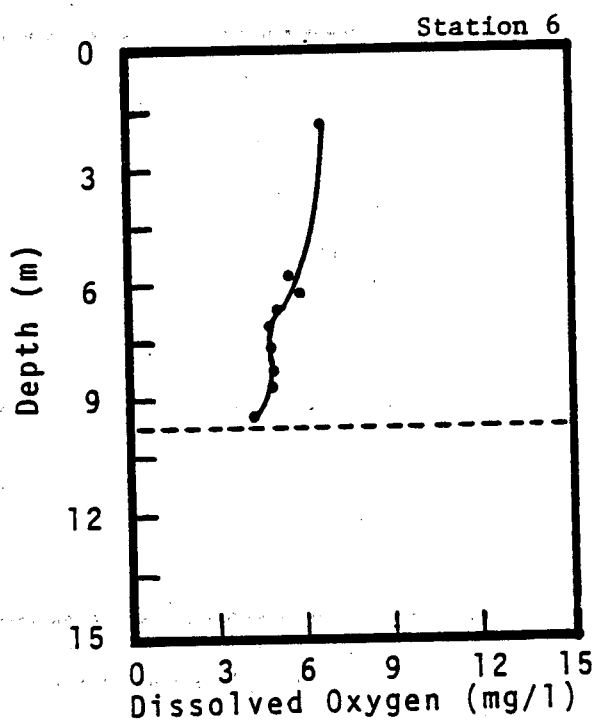
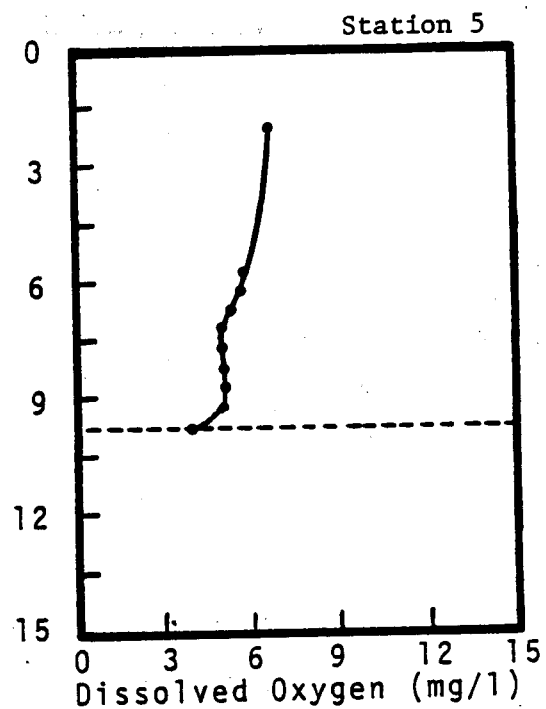
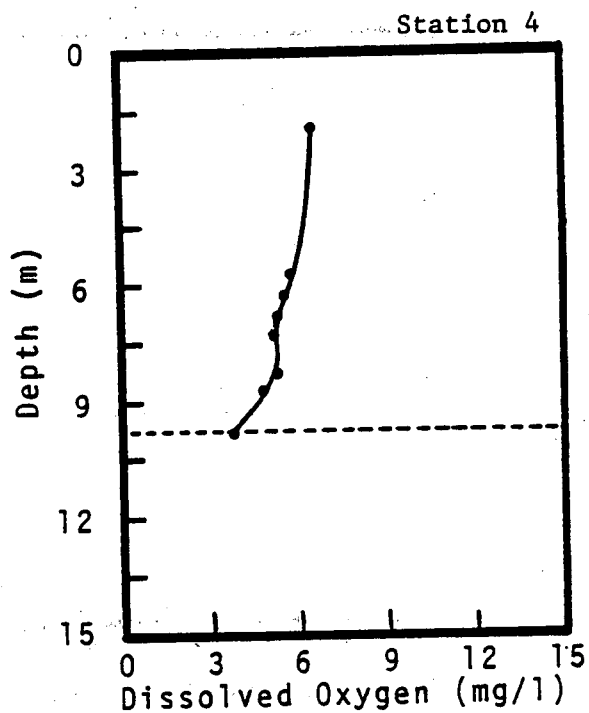


Figure D-32. Continued.

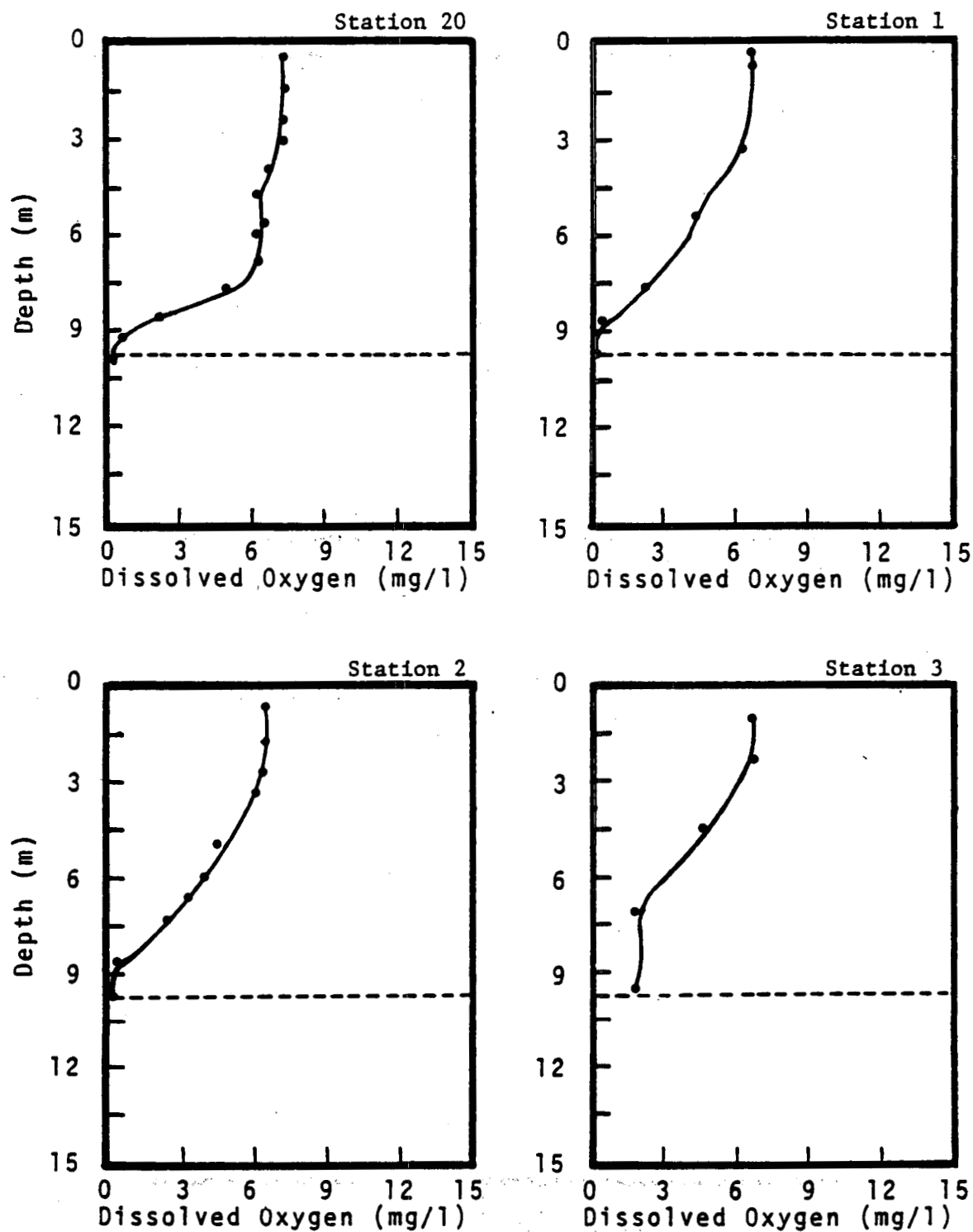


Figure D-33. Vertical dissolved oxygen profiles near the diffuser on July 17, 1981. The dashed line represents the depth of natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

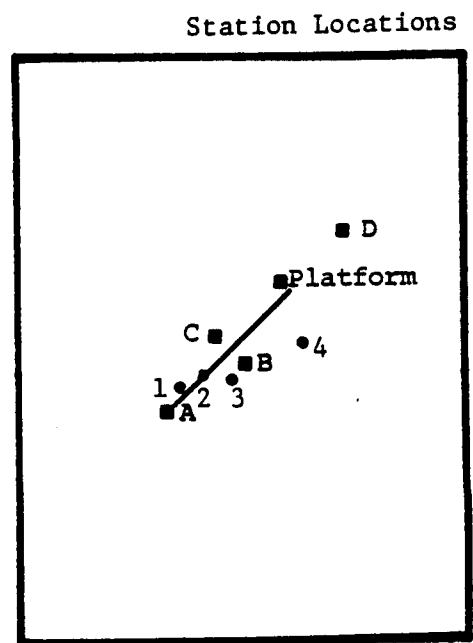
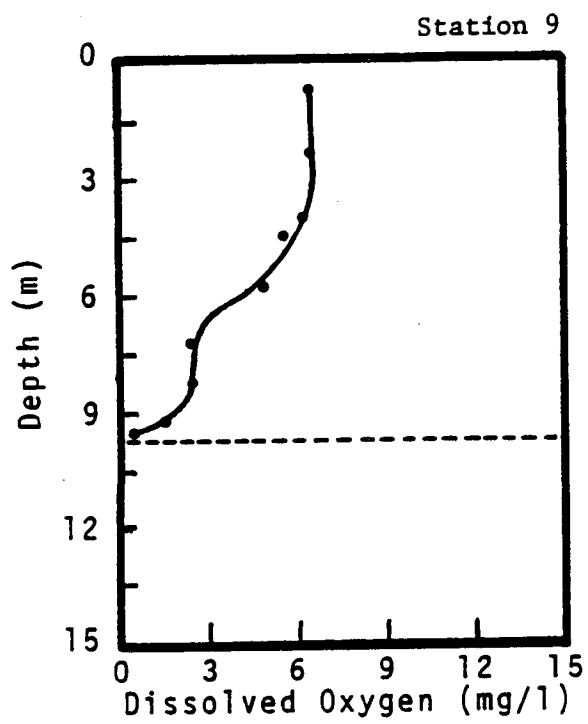


Figure D-33. Continued.

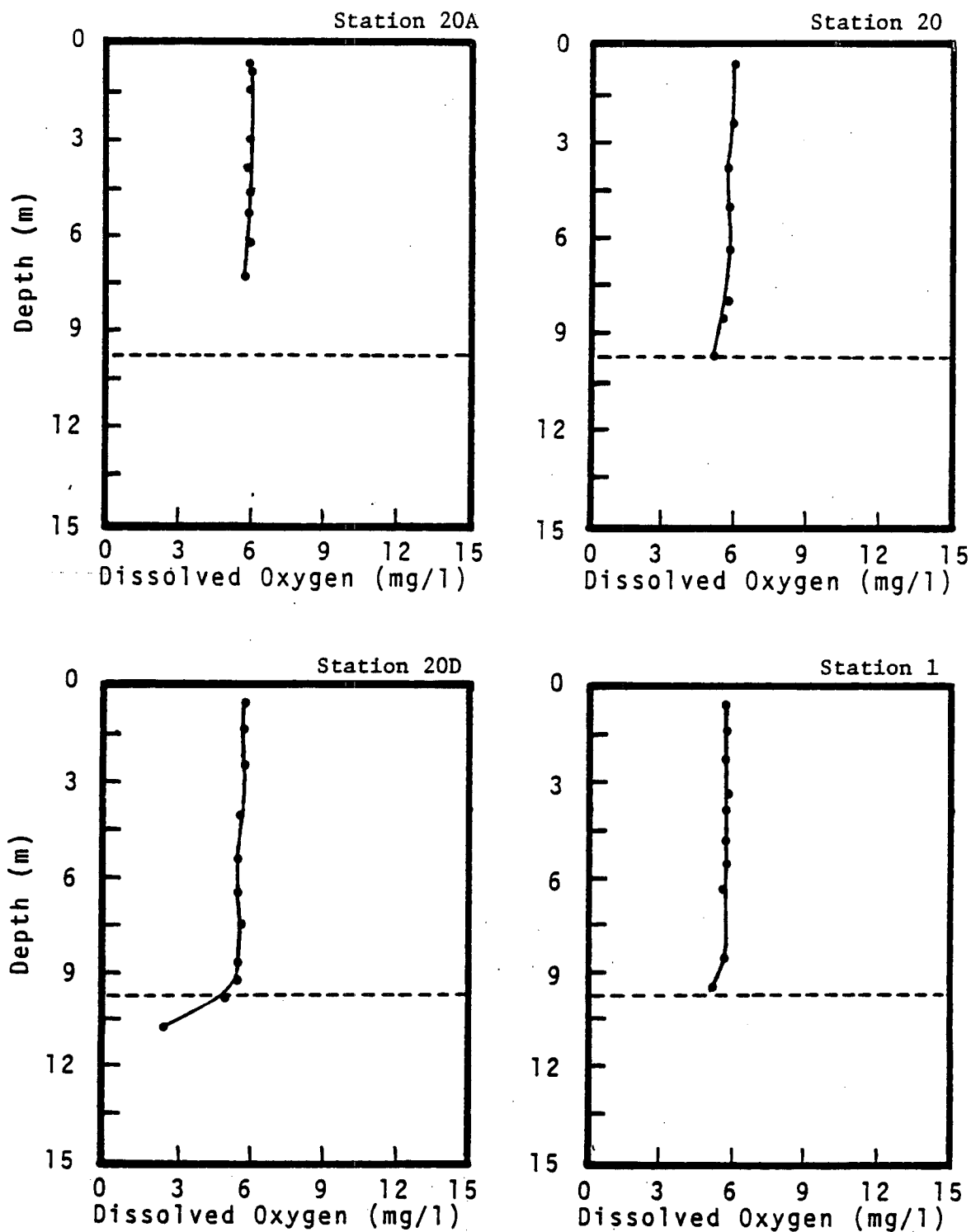


Figure D-34. Vertical dissolved oxygen profiles near the diffuser on August 12, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

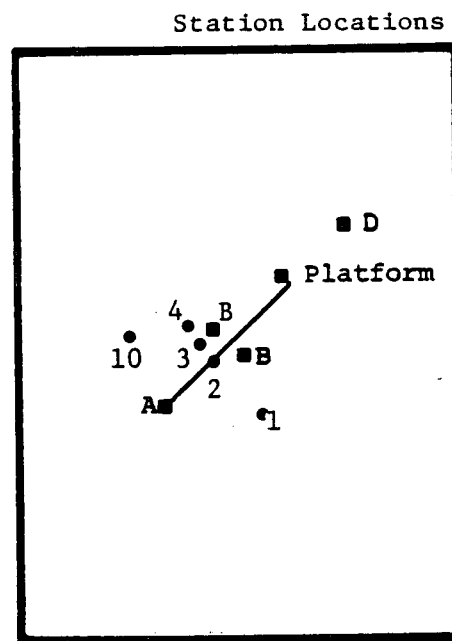
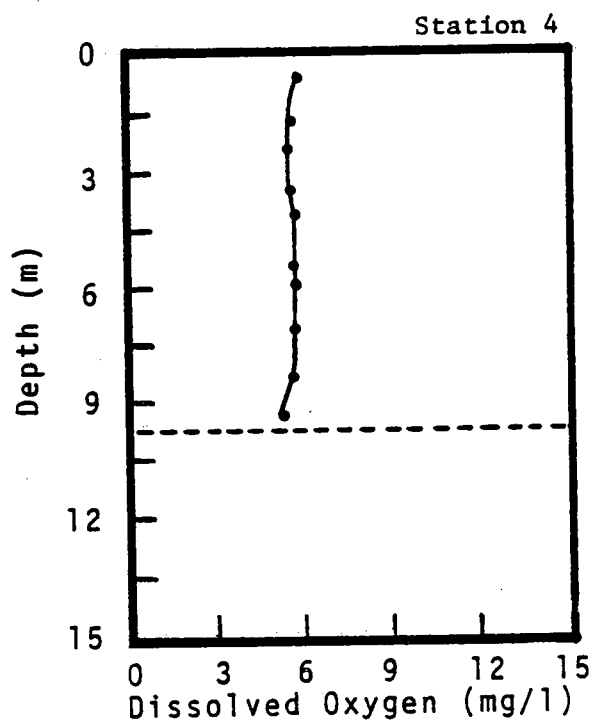
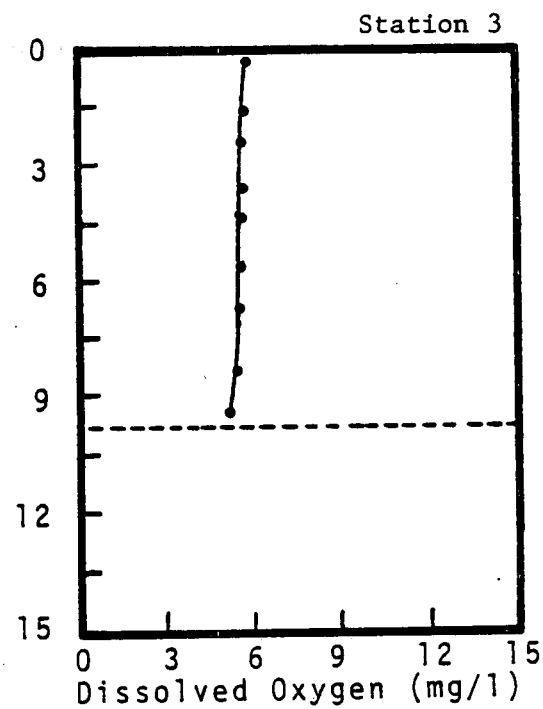
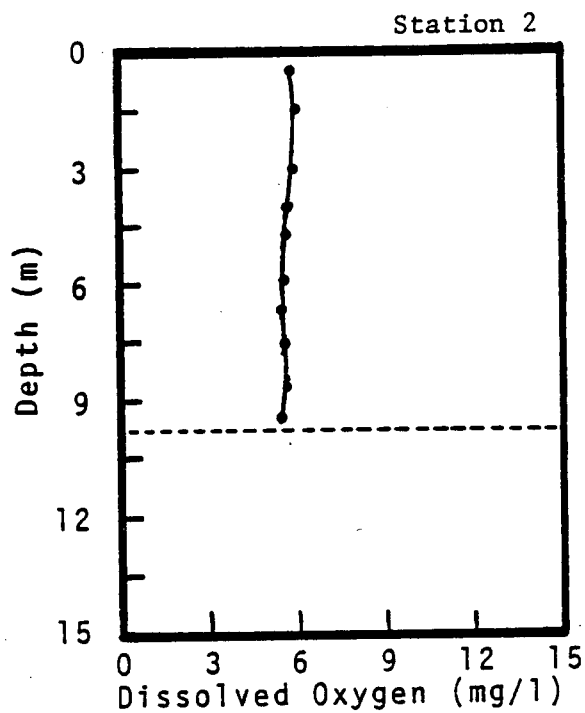


Figure D-34. Continued.

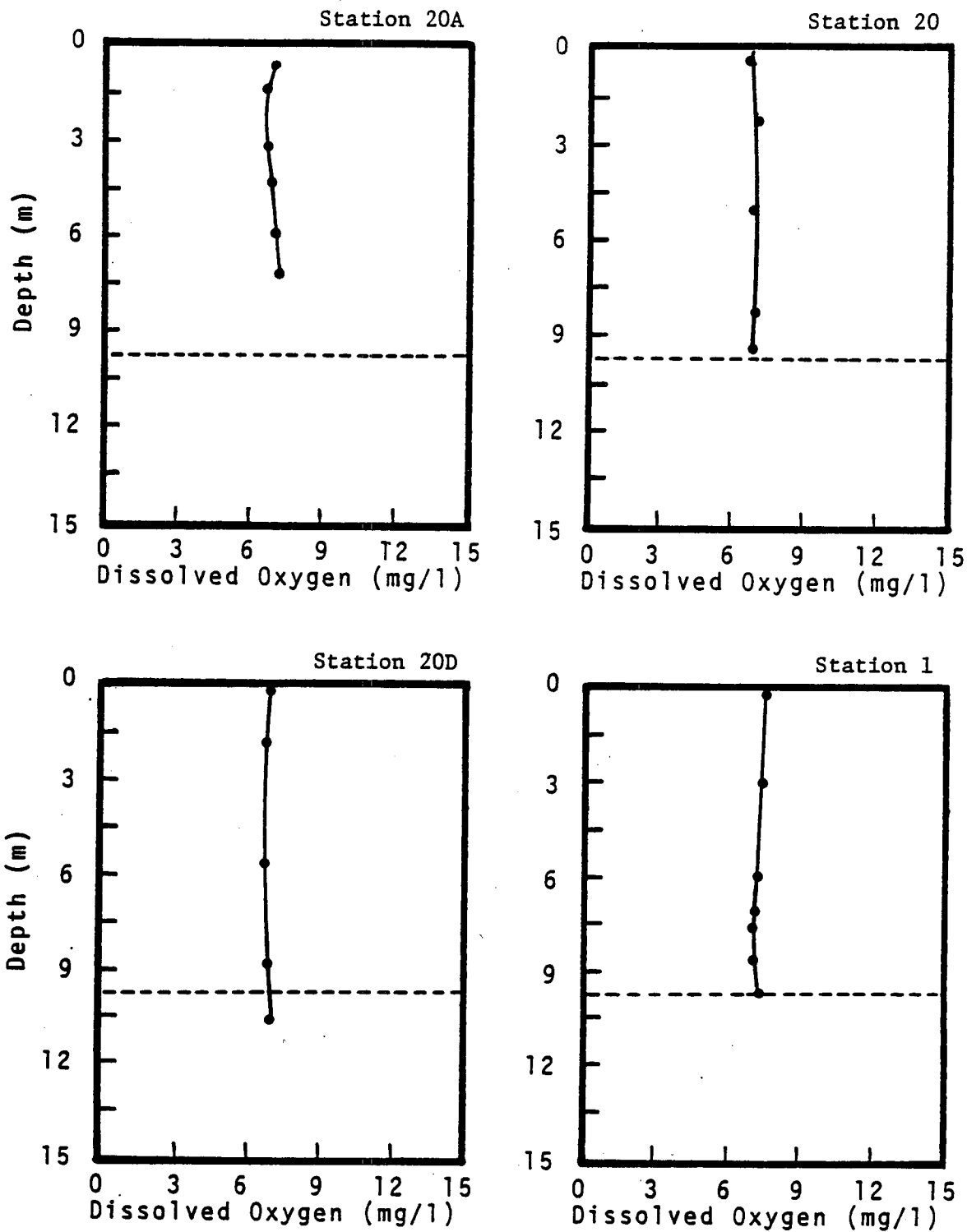


Figure D-35. Vertical dissolved oxygen profiles near the diffuser on October 28, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

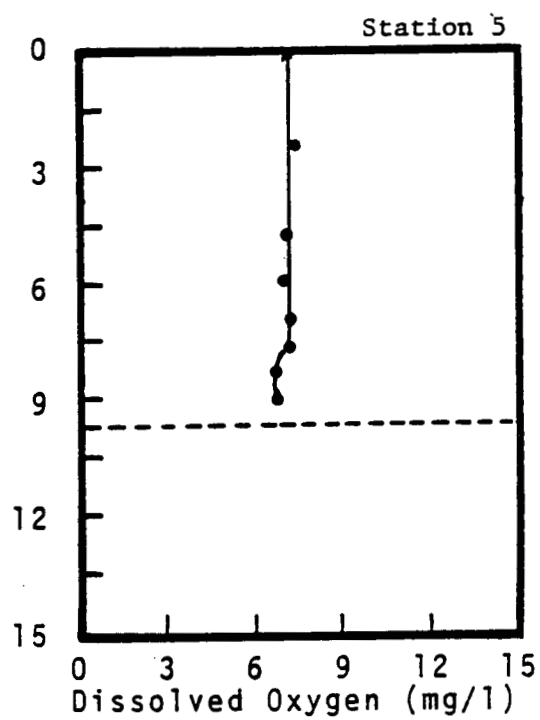
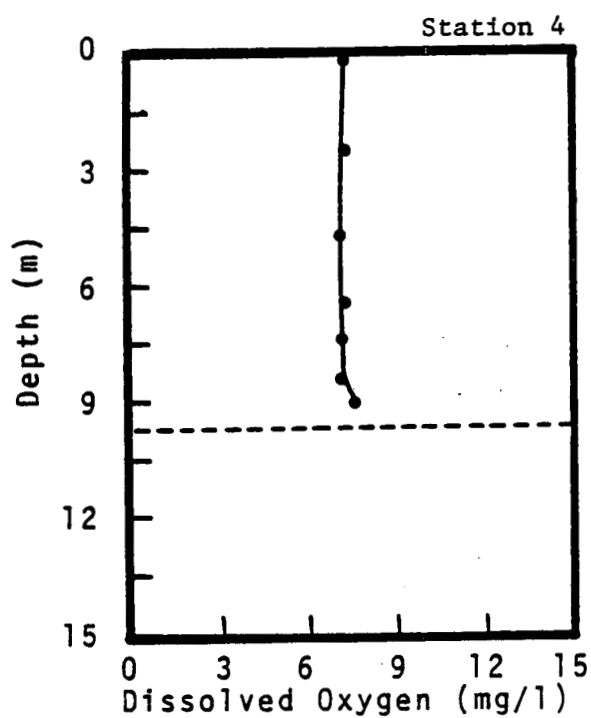
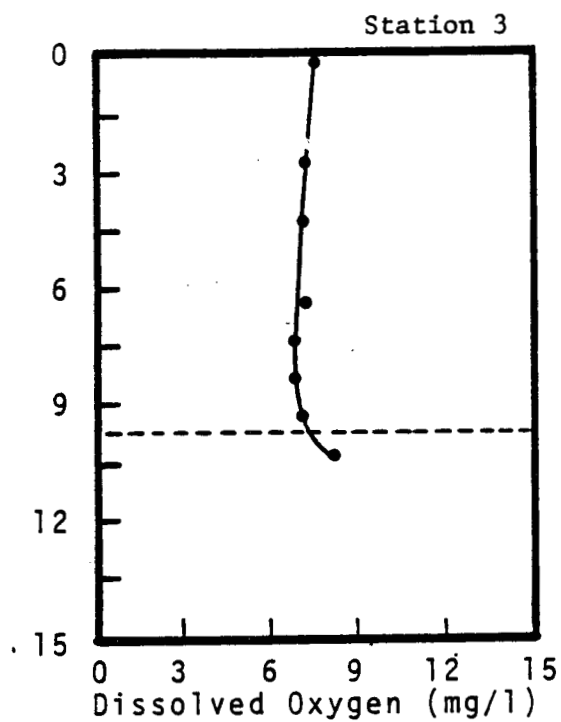
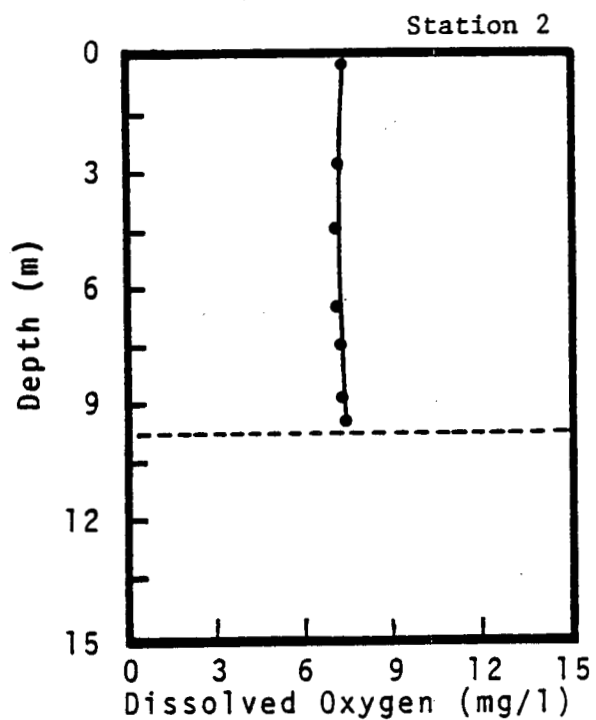


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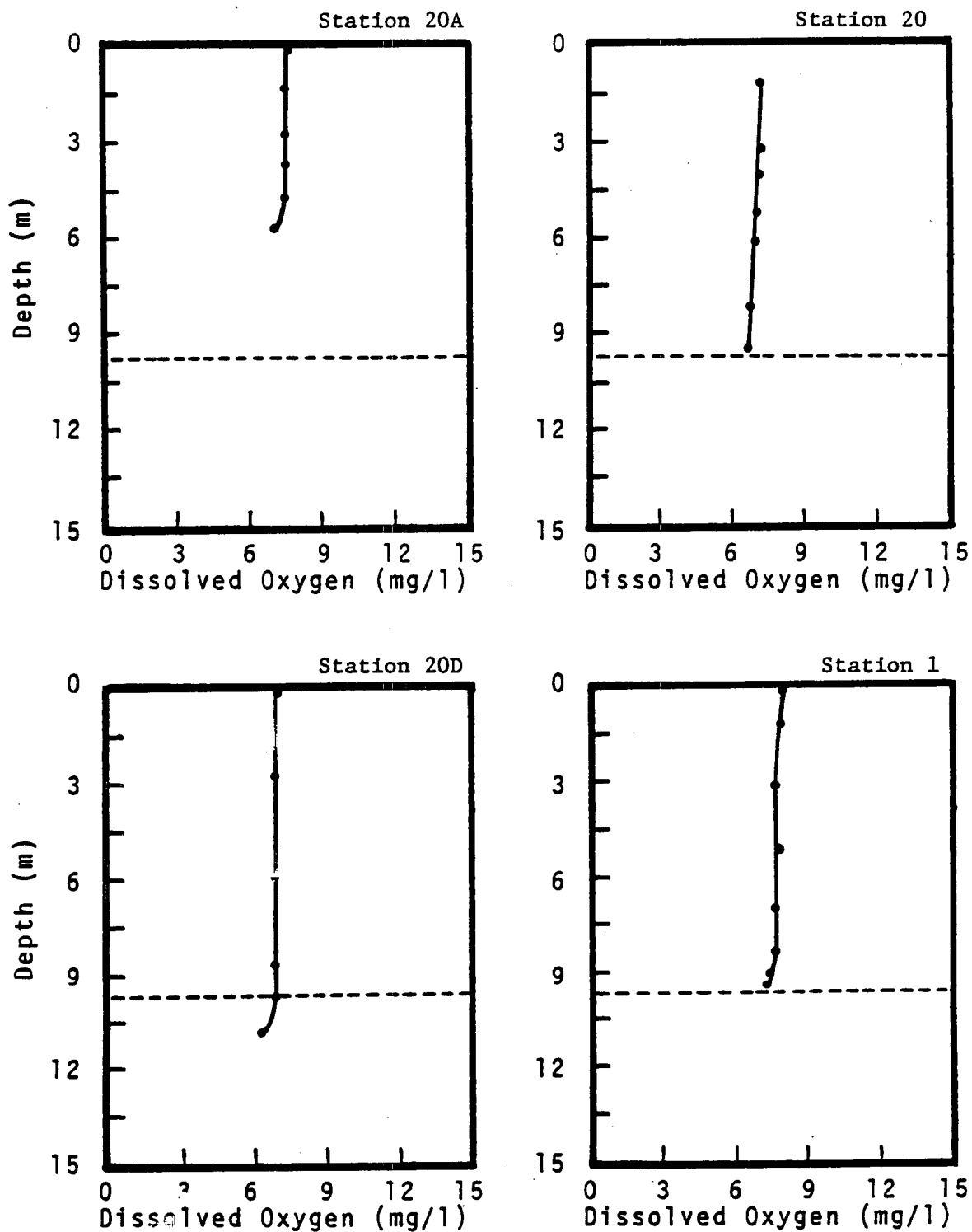


Figure D-36. Vertical dissolved oxygen profiles near the diffuser on November 25, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

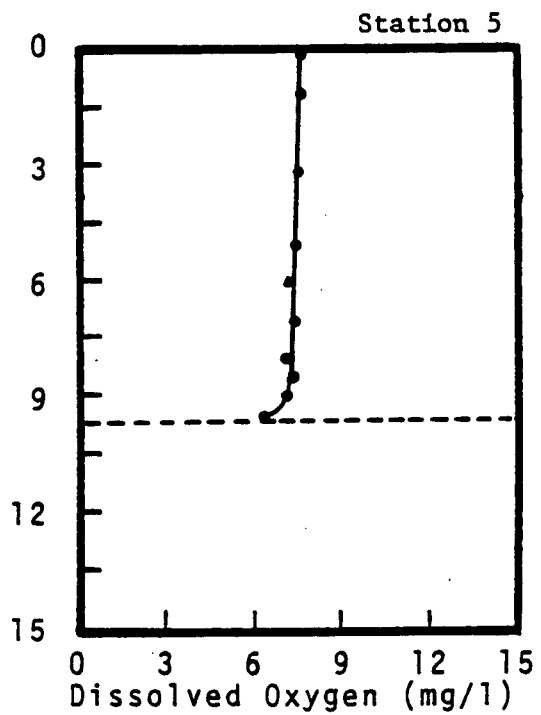
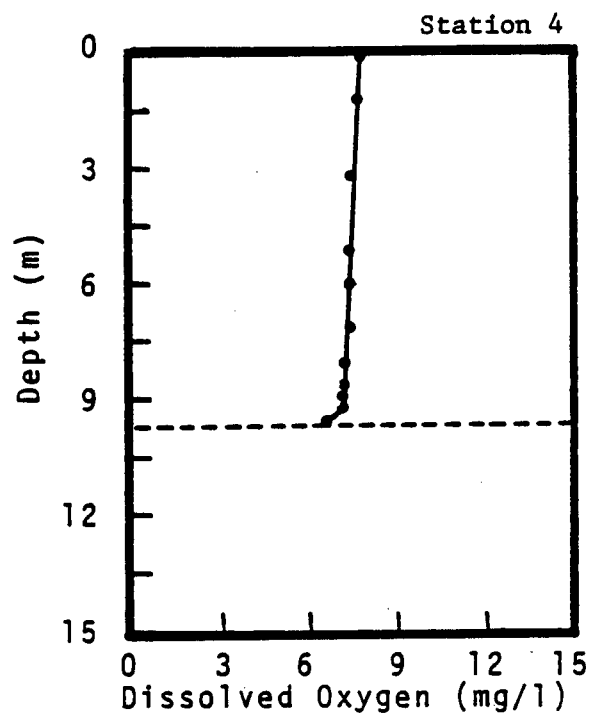
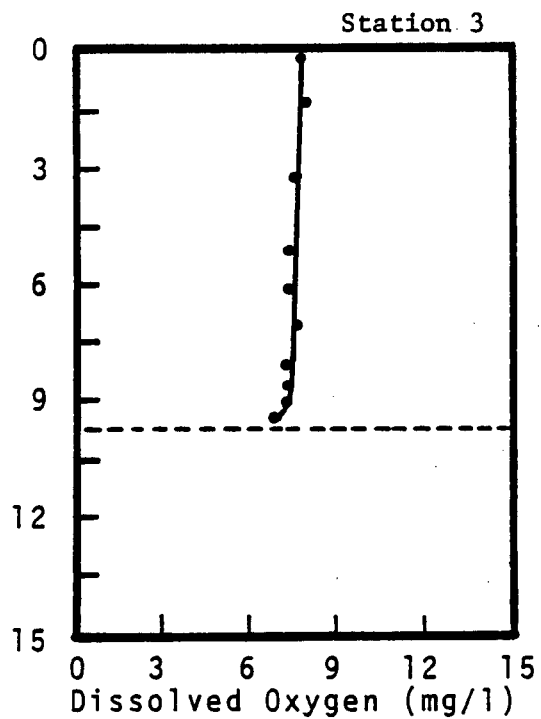
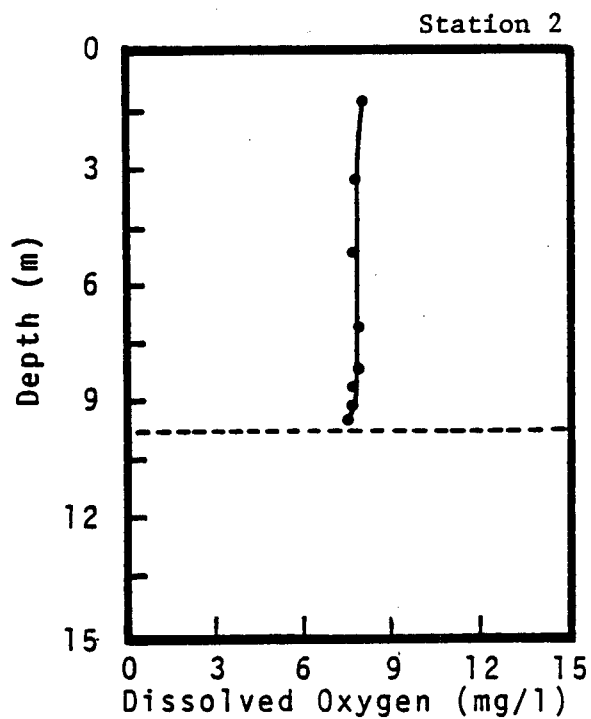


Figure D-36. Continued.

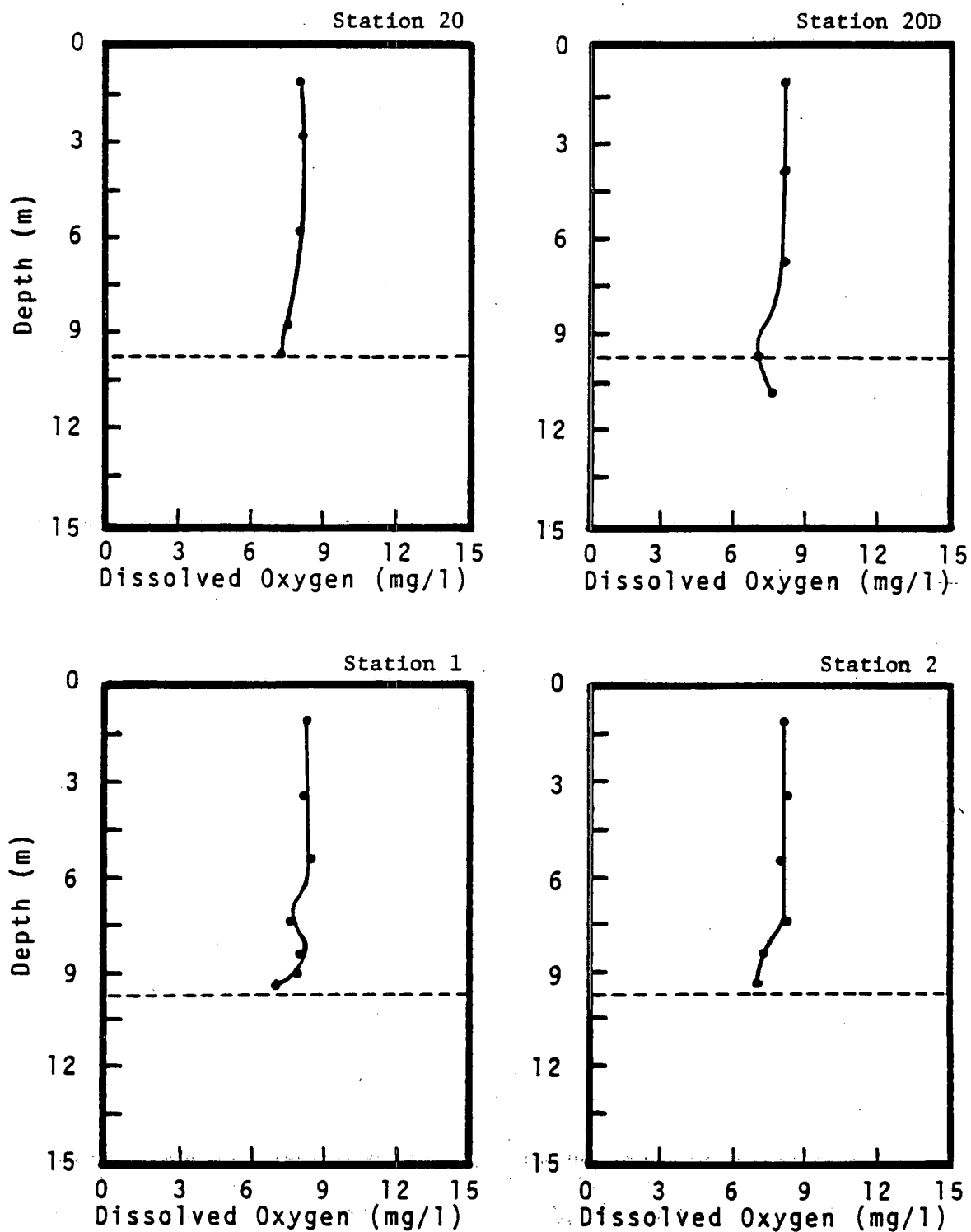


Figure D-37. Vertical dissolved oxygen profiles near the diffuser on December 16, 1981. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

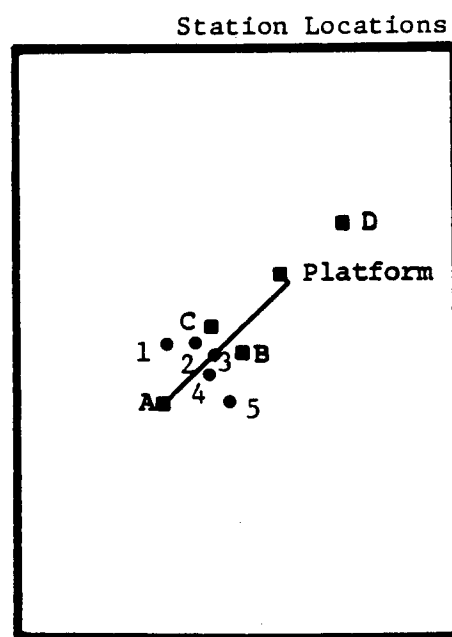
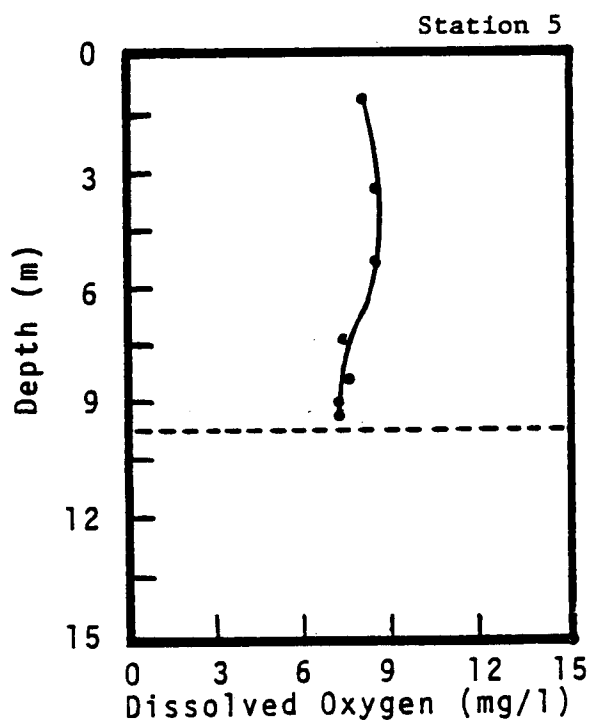
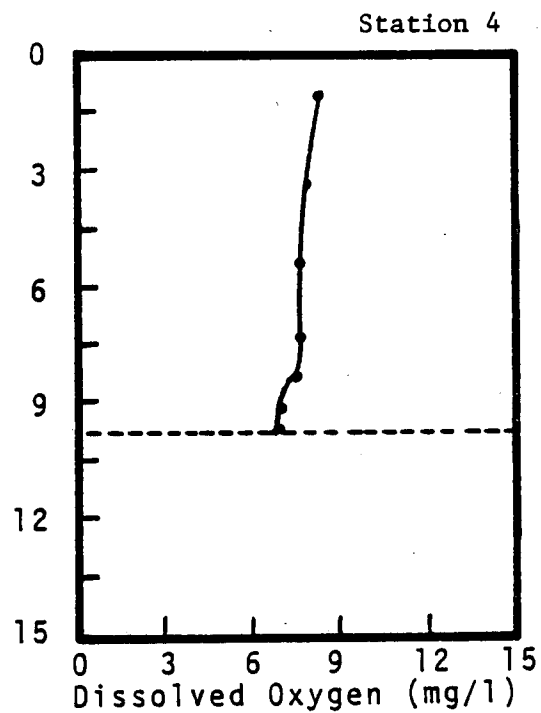
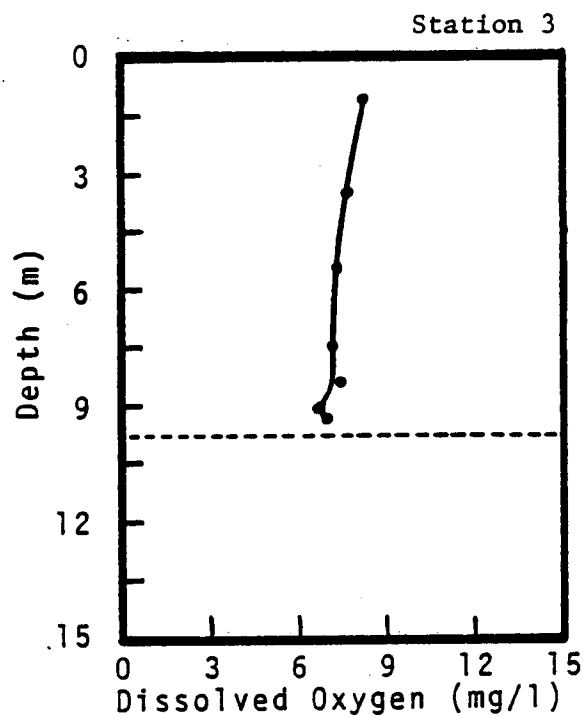


Figure D-37. Continued.

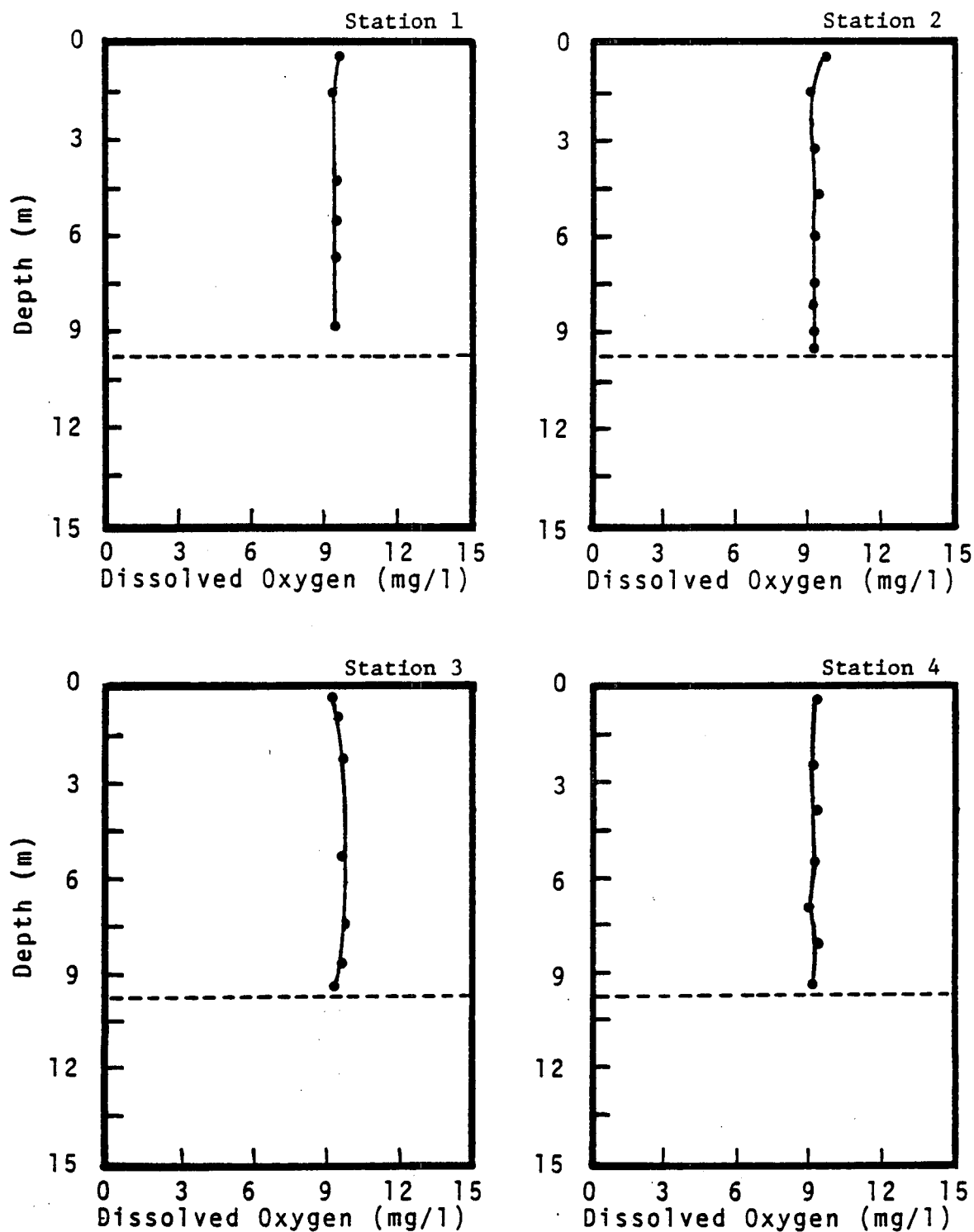


Figure D-38. Vertical dissolved oxygen profiles near the diffuser on February 14, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

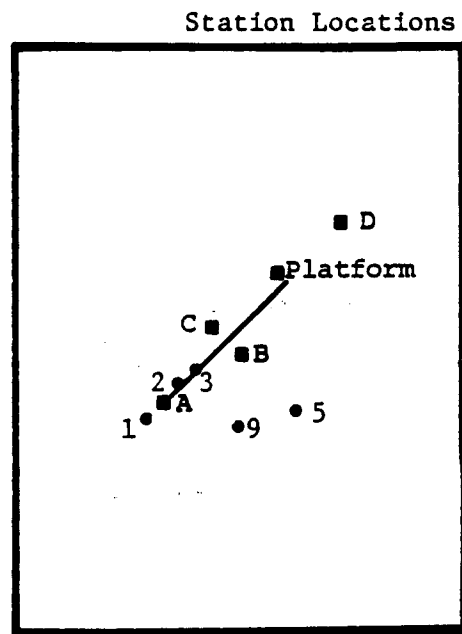
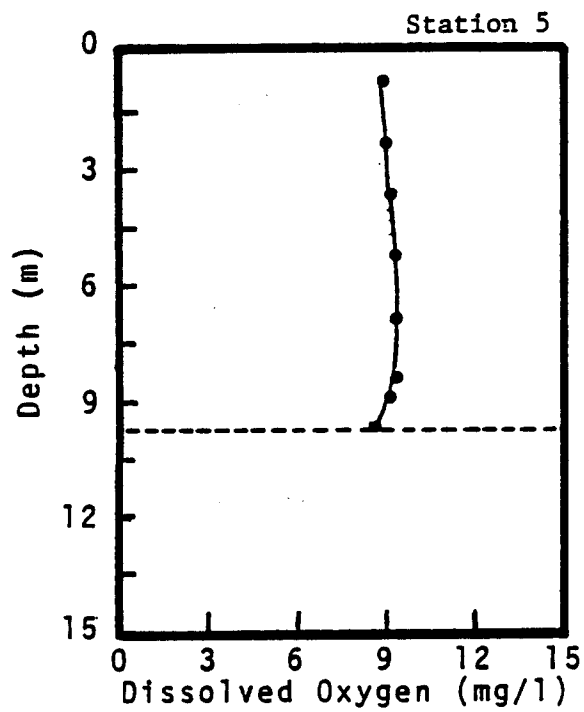


Figure D-38. Continued.

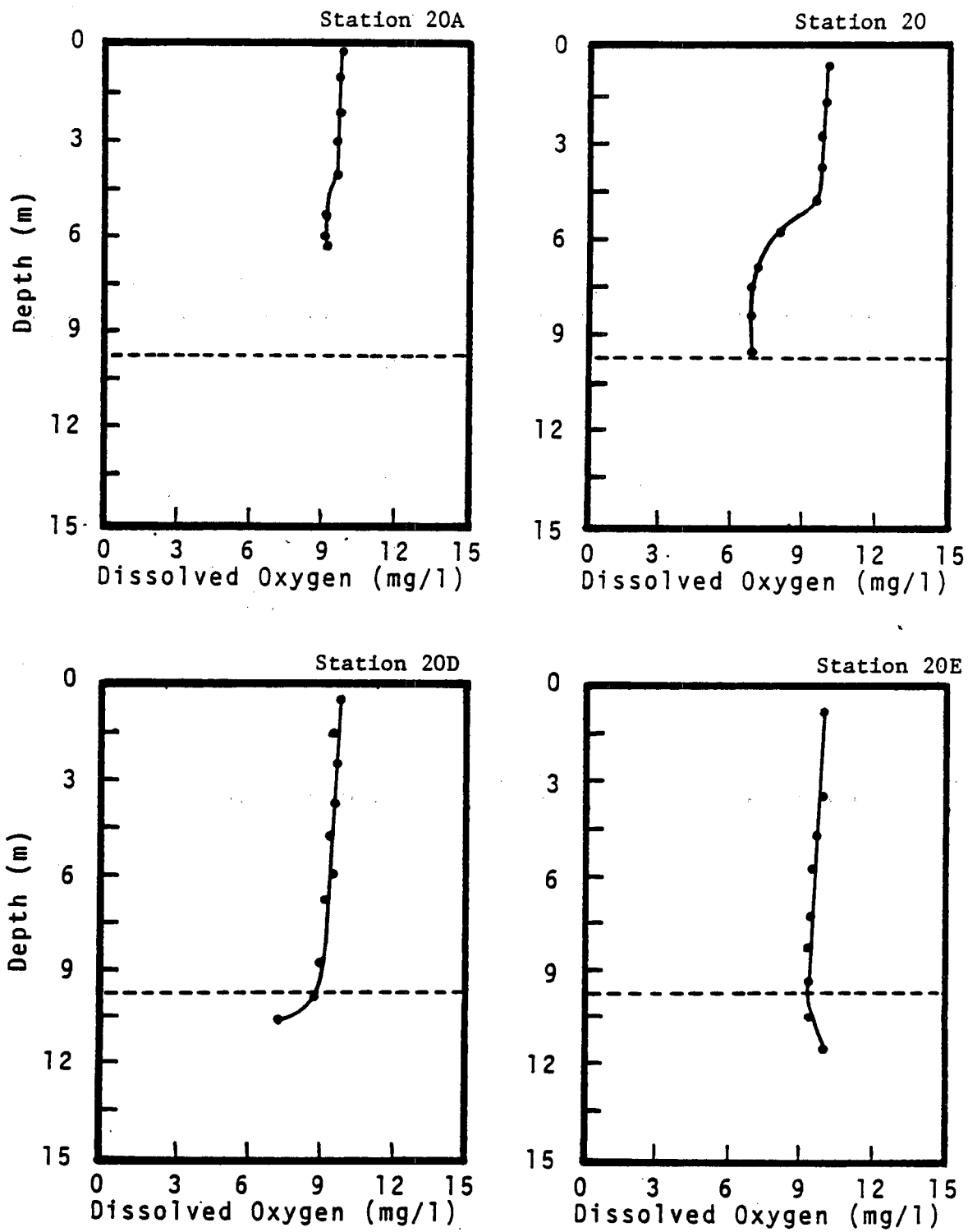


Figure D-39. Vertical dissolved oxygen profiles near the diffuser on March 1, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

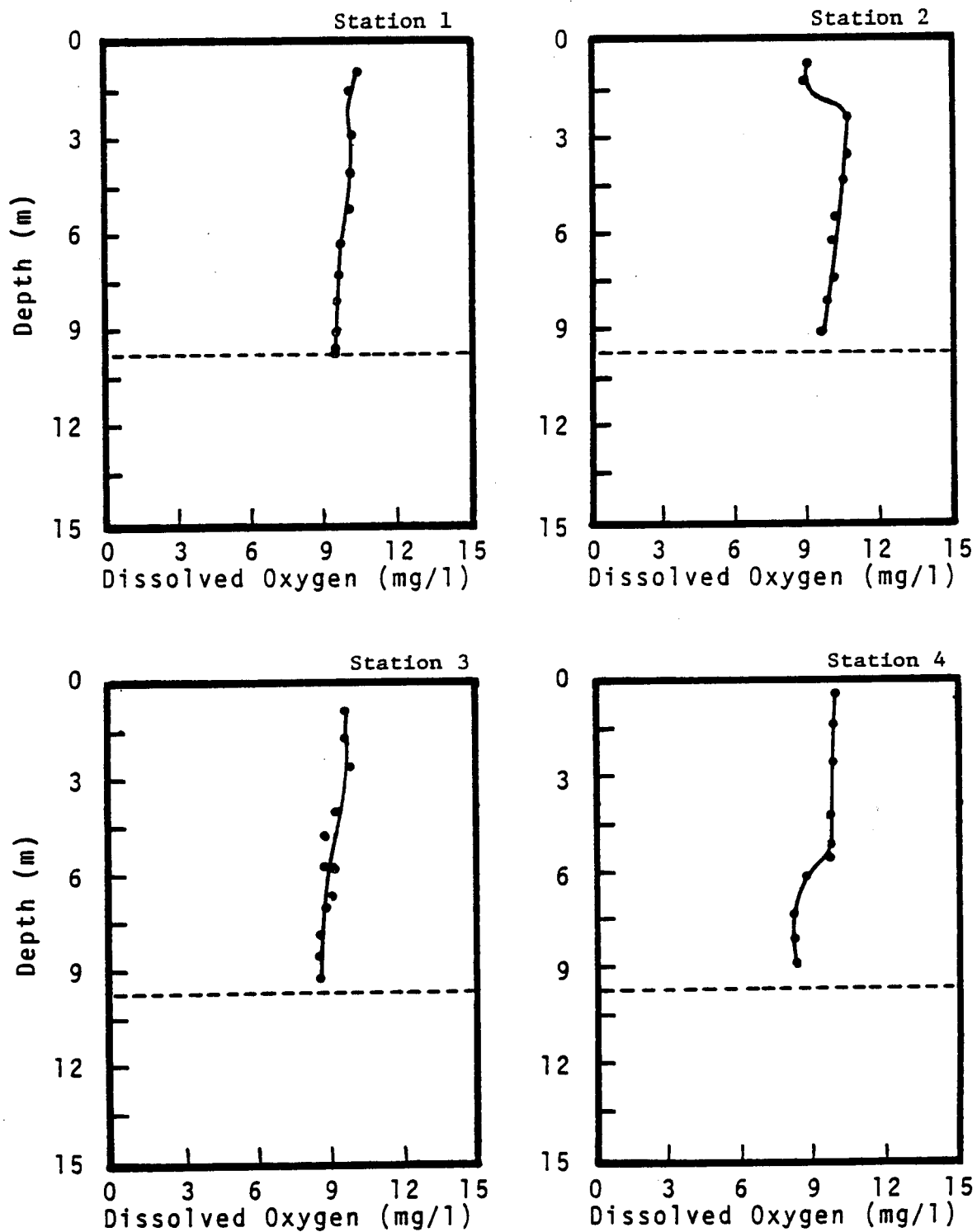


Figure D-39. Continued.

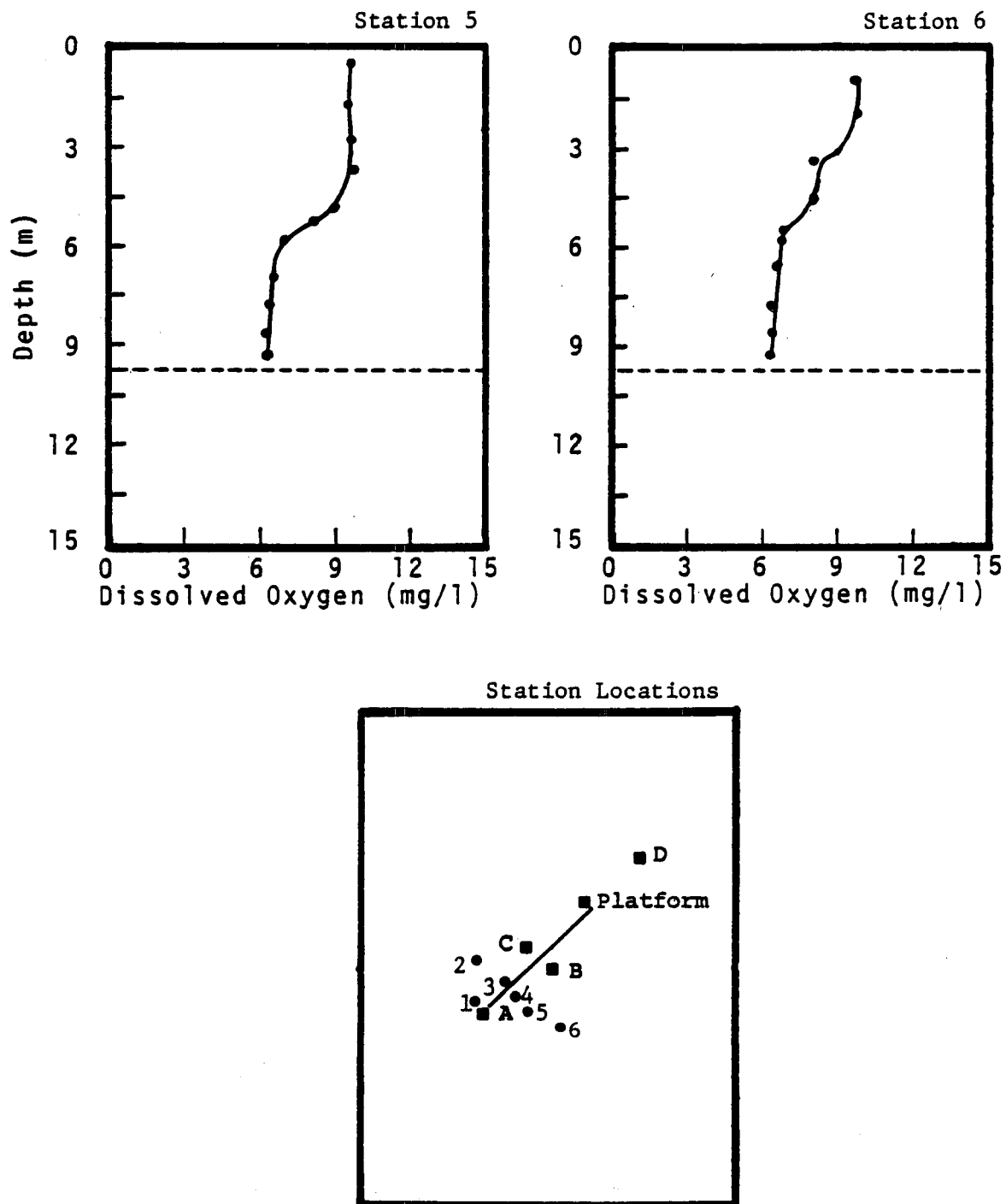


Figure D-39. Continued.

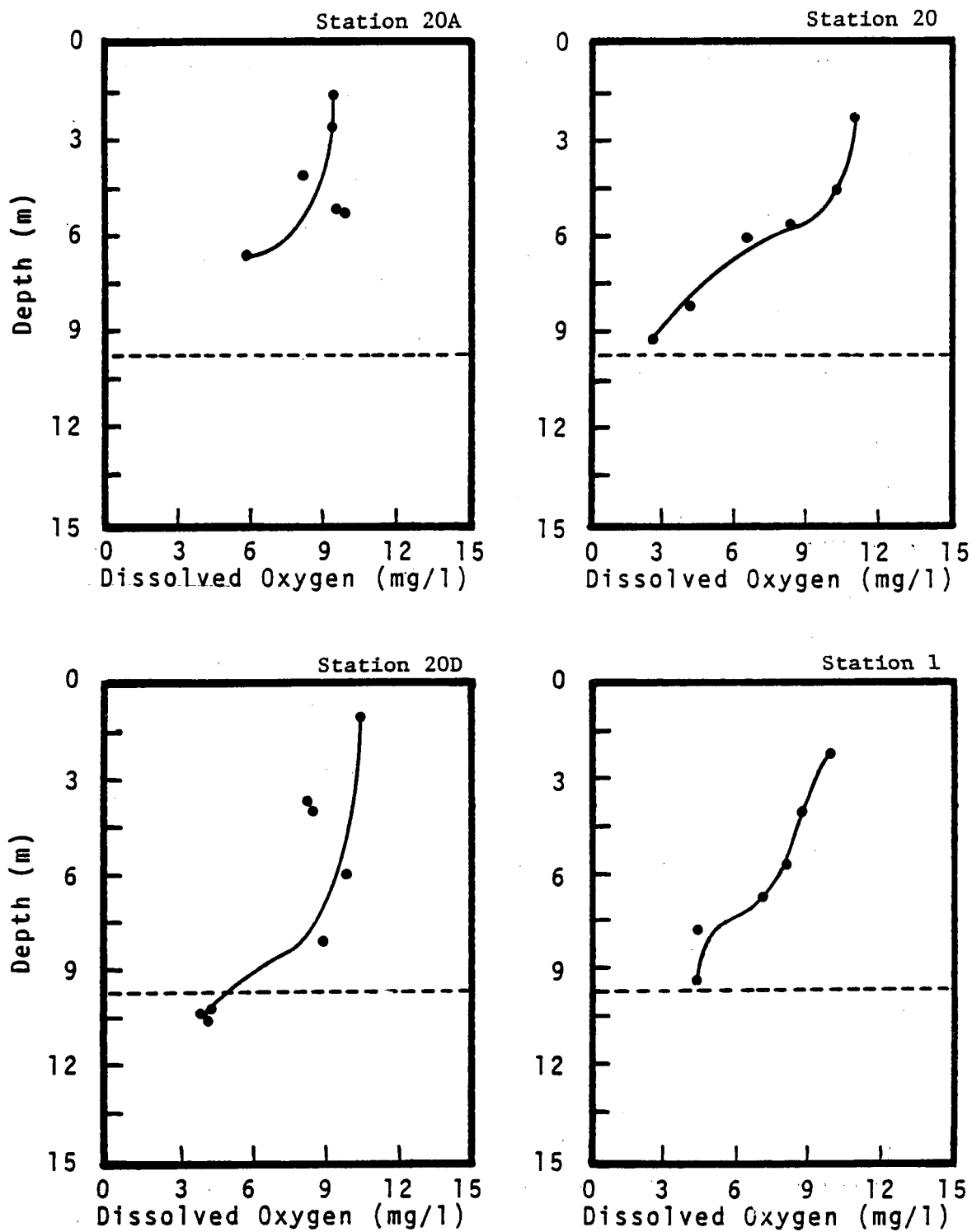


Figure D-40. Vertical dissolved oxygen profiles near the diffuser on April 30, 1982. The dashed line represents the depth of the natural bottom (9.6 m). Stations 20A, 20, and 20D are control stations located 7.4 km east of the diffuser, and 20A and 20D are 3.7 km north and south of stations 20 respectively.

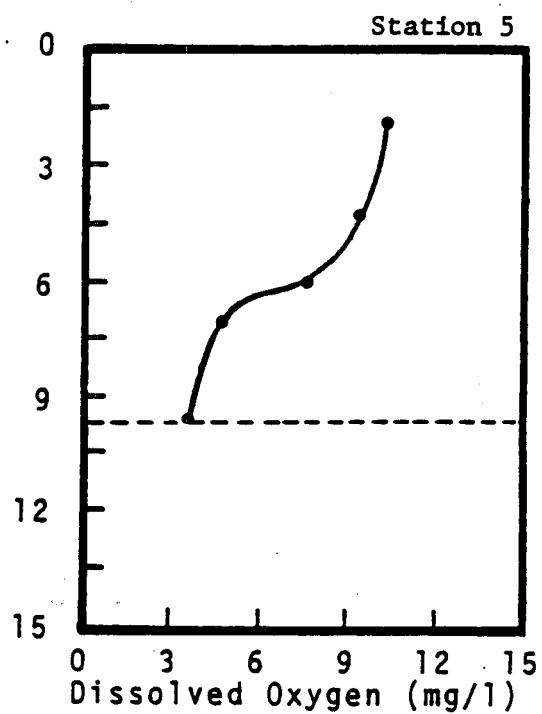
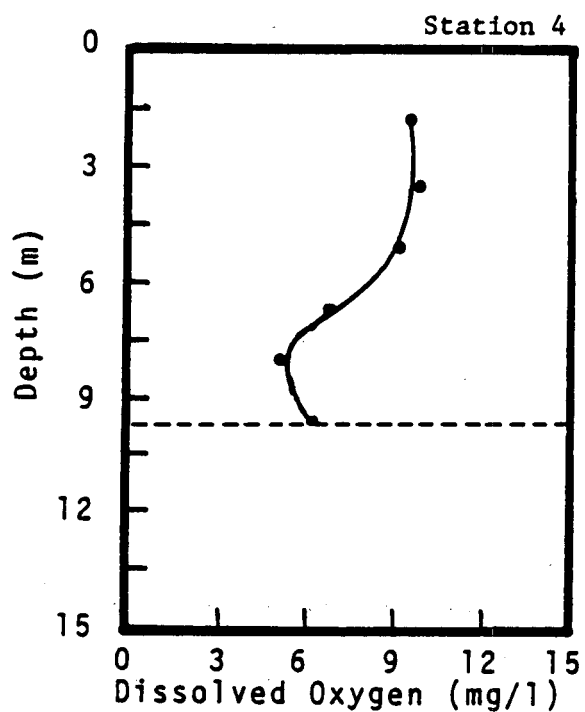
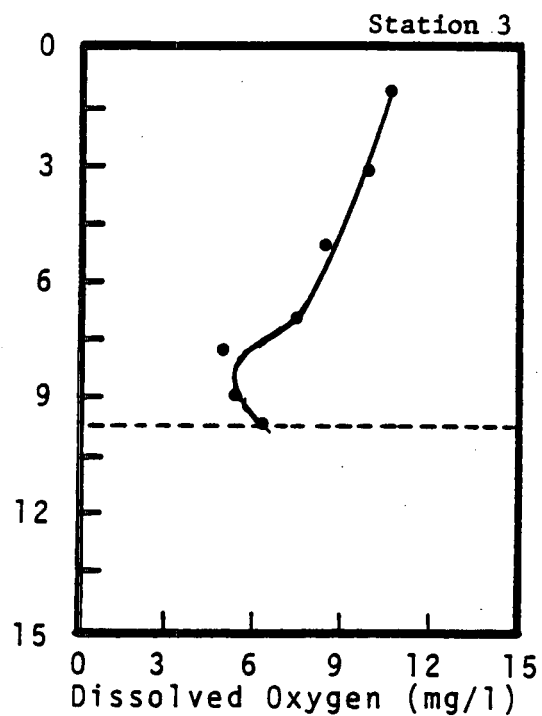
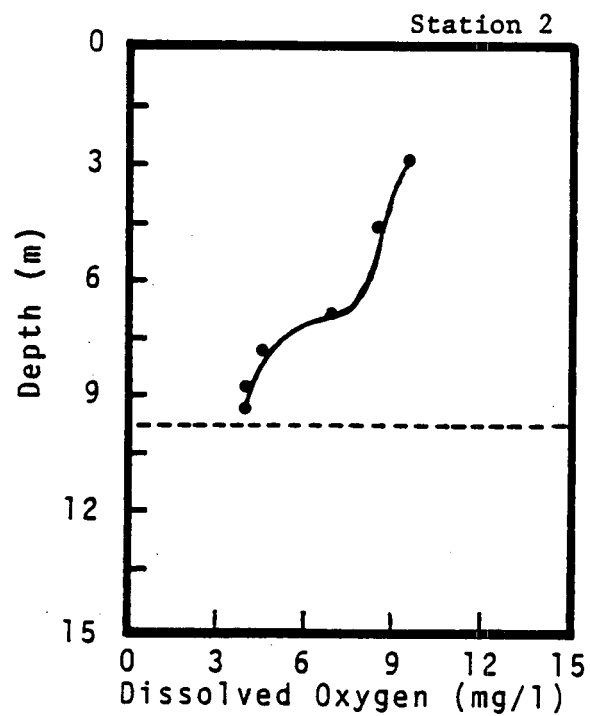


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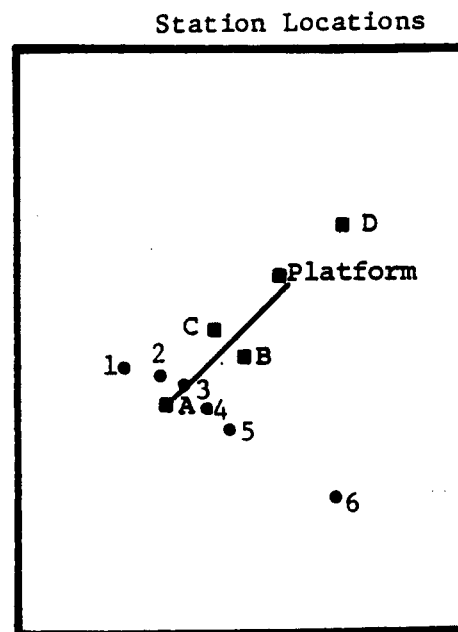
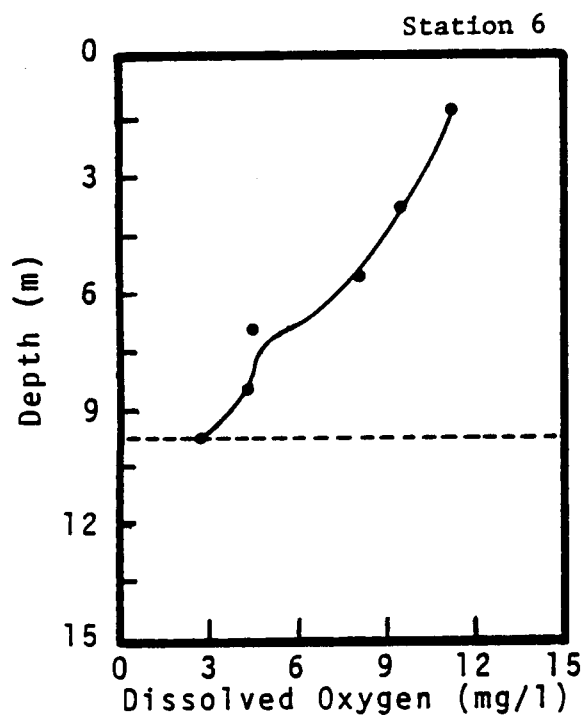


Figure D-40. Continued.

Table E-1. Monthly salinity values for West Hackberry site from May 1981 through April 1982.

SALINITY (0/00)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	26.74	20.80	17.95	27.30	27.40	26.80	30.00	28.40	25.50	31.00	26.80	19.50
	B	29.25	27.84	26.73	31.00	26.00	22.90	32.90	33.70	31.80	31.00	28.30	27.50
DN	S	28.02	19.98	18.64	27.30	27.50	27.20	30.80	28.40	25.30	30.70	26.90	20.20
	B	31.15	27.84	26.14	31.40	24.90	23.10	31.30	32.40	31.50	31.30	26.90	28.10
DS	S	27.80	19.71	17.26	27.30	28.00	22.30	30.70	28.70	25.70	31.20	26.80	19.60
	B	31.19	27.77	26.99	30.20	26.00	28.80	33.10	33.70	33.80	33.60	31.40	30.30
DW	S	26.52	20.99	17.71	27.30	26.70	27.00	30.00	28.30	24.90	31.10	26.80	19.70
	B	30.12	27.98	26.94	30.40	25.50	23.30	34.30	32.40	31.90	33.00	30.30	29.90
E1	S	18.71	6.07	-	1.20	5.50	11.50	7.70	8.20	10.80	13.00	2.10	0.40
	B	18.56	6.19	-	1.20	5.70	11.30	7.70	10.20	11.40	13.00	2.10	0.40
E2	S	25.05	14.45	-	11.50	18.00	21.10	21.20	21.40	18.70	19.40	11.70	2.20
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	27.28	19.21	-	15.00	18.30	21.40	23.00	23.50	-	22.90	16.60	14.10
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	27.35	19.21	-	13.90	18.60	19.70	19.60	23.30	18.60	21.40	17.70	10.80
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	-	18.07	17.15	16.00	22.80	19.30	27.80	29.10	19.70	29.40	11.70	10.60
	B	26.90	22.55	23.34	16.90	22.60	19.20	27.80	29.20	21.20	29.50	11.80	10.60
M3	S	26.59	21.06	17.89	27.30	25.30	21.90	30.00	27.90	25.70	-	26.80	19.90
	B	30.78	27.43	27.00	29.80	25.00	26.70	30.70	32.50	33.10	-	28.90	28.00
M10	S	27.49	19.58	17.36	27.20	27.80	23.10	30.70	28.50	25.90	31.10	26.80	19.60
	B	31.26	27.91	26.79	30.40	25.70	29.90	35.90	34.30	34.20	32.60	31.40	28.70
M10A	S	27.96	20.17	18.38	27.20	28.00	23.00	30.00	28.40	26.20	31.10	26.80	19.50
	B	31.97	27.91	26.14	31.50	25.60	27.70	34.90	35.10	32.00	32.90	32.90	29.70
M21	S	29.36	22.38	19.25	27.30	22.80	24.30	29.40	30.50	25.90	28.80	25.70	20.90
	B	29.83	25.68	23.25	27.40	22.80	21.60	30.30	32.00	28.30	28.80	25.80	25.00
M22	S	31.12	24.74	17.90	27.60	28.70	27.20	29.70	27.90	33.90	-	29.90	26.20
	B	32.23	29.58	26.13	30.40	28.70	29.30	32.60	34.60	33.80	-	31.30	31.90
M18	S	-	20.46	18.07	27.40	26.50	20.80	29.90	29.00	26.40	-	26.70	20.00
	B	-	27.84	26.91	29.70	25.90	26.90	30.50	32.40	32.30	-	27.00	28.30
NE	S	27.56	20.17	17.36	27.20	27.90	26.80	29.35	28.40	25.60	30.80	26.80	19.40
	B	29.65	27.98	25.87	31.10	25.30	23.20	31.09	32.30	31.80	30.80	26.90	29.40
NW	S	27.95	19.98	17.71	27.20	28.10	27.00	29.40	28.20	26.70	30.70	26.80	20.30
	B	31.67	27.77	26.99	31.70	25.20	23.10	29.81	32.40	31.70	30.80	26.90	30.40
SE	S	27.49	19.52	17.53	27.20	25.70	22.70	29.71	28.90	25.70	31.30	26.70	19.30
	B	31.39	27.77	26.66	30.10	27.80	28.30	31.95	32.60	32.30	31.30	28.70	29.90
SW	S	-	-	-	-	-	-	29.88	28.50	25.80	31.30	26.90	19.70
	B	-	-	-	-	-	-	31.96	32.40	32.00	32.90	30.60	28.70

Table E-2. Monthly nitrite values for West Hackberry site from May 1981 through April 1982.

TEMPERATURE (C)

		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	25.00	29.00	31.00	30.80	29.00	27.50	19.00	18.80	10.30	11.39	15.20	20.30
	B	25.00	28.00	29.50	30.50	29.00	27.50	20.00	20.60	10.60	11.40	15.50	20.50
DN	S	23.00	28.50	29.80	30.50	29.20	27.50	18.90	18.80	10.20	11.28	15.30	20.20
	B	23.70	28.00	29.00	30.50	28.50	27.50	20.00	20.50	10.20	11.39	15.10	20.50
DS	S	23.00	29.00	32.30	30.80	29.00	28.00	19.20	18.90	9.90	11.43	15.80	20.50
	B	24.50	28.00	29.50	30.50	29.00	27.50	19.70	20.50	11.70	11.44	15.50	20.50
DW	S	25.00	29.00	31.00	31.00	29.00	27.50	19.10	18.90	10.10	11.42	15.30	20.30
	B	25.00	28.00	29.00	31.00	29.50	27.50	19.30	20.50	10.60	11.49	15.40	20.50
E1	S	24.80	30.50	32.00	32.00	27.50	26.00	18.50	17.50	8.80	10.70	17.30	20.00
	B	25.00	30.00	32.50	31.00	27.50	26.00	18.20	17.50	9.00	10.60	17.30	19.80
E2	S	23.00	29.00	31.50	30.50	26.50	25.50	16.70	16.40	7.90	10.20	20.80	20.10
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	23.00	29.30	31.80	29.90	26.00	24.20	15.00	15.00	-	10.00	21.40	22.30
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	23.00	29.30	31.00	29.00	26.00	25.00	15.50	15.90	5.00	9.30	20.20	21.60
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	23.50	28.80	29.80	30.00	27.00	24.00	18.50	18.30	6.20	10.20	16.40	20.70
	B	23.00	28.00	29.50	31.00	27.00	24.00	18.40	18.20	7.40	10.20	16.50	20.80
M3	S	25.00	29.00	31.00	31.00	29.50	29.00	19.40	19.50	10.70	-	15.90	21.50
	B	25.00	28.00	29.00	31.00	29.50	28.50	20.30	20.60	10.60	-	15.50	20.50
M10	S	23.50	29.00	32.00	31.00	29.00	27.50	19.30	19.00	10.10	11.41	15.60	20.60
	B	24.40	28.00	29.50	31.00	29.00	27.50	19.40	20.60	10.70	11.39	15.40	20.50
M10A	S	23.10	28.50	29.00	31.00	29.00	28.10	19.10	18.90	7.00	11.41	15.40	20.30
	B	23.60	28.00	29.00	31.00	29.00	28.00	19.70	20.40	10.00	11.45	15.30	20.50
M21	S	22.80	28.50	30.00	30.50	28.00	27.50	18.30	19.50	9.40	9.66	16.00	20.30
	B	23.00	28.00	29.00	30.50	28.00	27.80	18.60	20.40	10.60	9.68	15.80	20.50
M22	S	24.50	28.00	32.00	31.00	29.50	28.00	19.91	19.40	13.70	-	16.10	21.80
	B	24.50	27.50	30.00	31.00	29.50	28.00	20.45	21.00	13.70	-	15.50	20.50
M18	S	-	29.50	31.00	30.80	29.00	28.00	19.08	19.40	10.00	-	16.30	21.70
	B	-	28.00	30.00	31.00	29.00	28.00	19.81	20.70	10.70	-	15.40	20.50
NE	S	23.50	28.50	32.00	31.00	29.00	27.50	18.90	18.80	10.30	11.34	15.40	20.20
	B	24.50	28.00	30.50	31.00	29.00	27.50	20.20	20.50	11.50	11.33	15.10	20.50
NW	S	23.00	28.50	31.00	31.00	29.00	27.20	18.70	18.80	9.90	11.27	15.10	20.20
	B	23.50	28.00	29.50	31.00	29.00	27.50	19.50	20.60	10.70	11.33	15.10	20.50
SE	S	23.50	29.00	31.50	31.00	29.00	27.50	19.20	18.90	10.60	11.50	15.70	20.50
	B	24.00	28.00	29.50	30.50	29.00	27.50	19.80	20.60	10.60	11.51	15.70	20.50
SW	S	-	-	-	-	-	-	19.30	18.90	9.80	11.50	15.50	20.40
	B	-	-	-	-	-	-	20.00	20.60	10.20	11.45	15.50	20.50

Table E-3. Monthly dissolved oxygen values for West Hackberry site from May 1981 through April 1982.

DISSOLVED OXYGEN (MG/L)

		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	9.00	9.20	8.90	6.20	2.60	7.10	8.00	7.20	10.50	8.50	8.69	7.70
	B	7.00	4.70	3.00	-	7.20	8.10	7.90	6.40	7.80	8.60	8.05	7.10
DN	S	7.50	7.30	9.10	5.70	1.30	5.20	8.20	7.20	10.40	8.80	8.89	7.60
	B	4.60	5.40	1.90	2.30	6.70	8.00	6.50	6.30	8.20	8.70	8.61	6.70
DS	S	7.20	7.80	8.40	5.90	2.20	8.10	7.80	7.20	10.60	8.70	9.02	7.70
	B	4.30	5.00	0.60	1.80	6.70	6.80	6.80	6.50	7.50	8.40	8.23	6.50
DW	S	8.70	8.70	8.20	6.10	4.90	7.00	8.20	7.20	8.20	8.60	8.81	7.80
	B	4.40	4.80	0.70	2.00	7.40	8.30	7.90	6.80	10.30	8.40	8.39	7.00
E1	S	6.70	5.70	6.70	5.80	4.50	6.60	8.00	7.50	-	9.20	7.89	5.70
	B	6.60	5.70	4.50	6.20	5.50	6.80	7.70	7.30	-	9.20	7.88	5.10
E2	S	7.30	7.30	8.10	6.20	6.10	-	7.80	9.30	9.40	8.60	9.87	5.50
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	7.60	6.00	7.90	5.80	6.40	6.50	8.50	8.50	-	10.40	8.01	8.50
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	7.90	6.50	5.70	6.20	6.00	6.60	8.40	7.70	10.50	9.30	10.14	9.50
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	8.00	5.90	5.20	5.80	6.90	-	8.10	6.20	10.50	9.80	8.80	7.50
	B	8.00	5.00	1.70	5.40	9.50	-	7.80	7.40	9.60	9.60	8.04	7.30
M3	S	8.60	8.20	7.50	6.30	6.00	8.70	8.20	7.80	10.60	8.70	9.56	9.50
	B	4.00	6.40	0.80	2.40	7.70	4.70	6.90	7.00	8.20	8.90	8.28	6.70
M10	S	7.30	7.80	8.80	5.80	1.60	7.90	8.00	7.40	10.40	9.00	9.00	8.10
	B	4.20	5.00	0.50	2.70	6.00	4.60	7.90	6.80	7.80	8.80	7.92	6.30
M10A	S	7.60	7.30	8.80	5.60	7.00	8.70	8.20	7.30	11.00	8.50	8.97	7.90
	B	4.00	5.60	0.80	1.60	1.50	6.50	7.30	7.20	7.90	8.40	8.00	7.00
M21	S	5.10	6.80	7.00	4.60	5.90	0.90	8.50	5.90	10.10	8.80	8.41	7.40
	B	6.80	4.10	2.60	4.50	6.40	5.90	7.40	6.30	9.10	8.60	8.19	6.70
M22	S	9.00	7.90	7.90	6.00	6.10	7.30	7.60	8.00	8.700	-	8.07	9.50
	B	5.00	5.30	2.20	4.00	7.40	5.80	7.30	6.80	8.10	-	7.27	6.30
M18	S	9.40	9.50	8.90	6.20	5.20	7.80	8.10	7.70	10.10	8.70	9.48	10.50
	B	6.00	4.70	0.70	1.90	6.60	6.20	5.80	6.40	8.10	8.80	8.19	6.50
NE	S	7.80	7.40	9.00	5.90	1.80	7.30	8.20	7.10	10.10	8.60	8.80	8.00
	B	4.40	5.10	3.90	1.00	6.50	8.10	6.00	6.40	8.00	8.40	8.58	6.90
NW	S	7.40	7.40	9.00	5.80	1.60	6.30	9.60	7.30	10.40	8.80	8.78	8.00
	B	4.10	6.00	1.30	2.70	6.50	7.80	6.70	7.00	9.10	8.50	8.51	6.60
SE	S	7.60	7.60	9.10	5.80	2.50	7.90	8.10	7.30	10.20	8.90	9.09	7.90
	B	4.40	5.40	0.60	1.00	2.30	5.90	6.80	6.30	7.60	8.80	7.94	6.90
SW	S	-	-	-	-	-	-	8.30	7.30	10.20	8.30	8.48	7.60
	B	-	-	-	-	-	-	6.80	6.60	8.10	8.00	8.14	7.10

Table E-4. Monthly pH values for West Hackberry site from May 1981 through April 1982.

PH		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	8.60	8.60	8.60	8.09	7.78	7.87	8.01	8.30	10.36	8.31	8.50	7.92
	B	8.40	8.40	8.10	7.45	8.14	8.15	7.98	8.16	9.84	8.31	8.46	7.85
DN	S	8.50	8.50	8.50	7.94	7.74	7.88	8.13	8.37	-	8.24	8.54	7.82
	B	8.40	8.40	7.80	7.54	8.08	8.19	8.10	8.08	-	8.27	8.53	7.83
DS	S	8.50	8.50	8.40	7.93	7.69	8.11	7.98	8.30	-	6.54	8.49	7.95
	B	8.40	8.40	7.70	7.51	8.04	7.80	7.93	8.14	4.83	6.53	8.40	7.87
DW	S	8.60	8.30	8.40	8.05	7.80	8.20	8.05	8.30	7.96	8.32	8.46	7.86
	B	8.40	8.40	7.70	7.53	8.13	8.32	8.00	8.19	8.15	8.32	8.41	7.86
E1	S	-	7.20	6.90	6.88	7.41	7.51	7.24	7.46	9.90	7.92	7.22	6.91
	B	-	7.20	7.10	6.82	7.41	7.66	7.51	7.50	9.02	7.88	7.31	7.18
E2	S	-	8.30	8.70	7.16	8.14	8.12	6.62	8.43	9.04	8.30	8.75	7.31
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	-	7.90	9.00	7.67	8.04	8.19	8.10	8.54	-	8.52	8.08	8.74
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	-	7.90	-	7.74	8.14	8.21	7.99	8.45	8.91	8.33	8.64	8.78
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	-	8.10	7.80	7.76	8.24	8.61	8.14	8.48	8.53	8.45	8.55	8.55
	B	-	8.30	8.10	7.72	8.21	8.63	8.48	8.51	8.44	8.45	8.47	8.56
M3	S	8.60	8.60	8.30	8.02	8.04	8.11	8.36	8.42	8.27	-	8.36	8.14
	B	8.30	8.30	7.70	7.71	8.13	7.78	8.24	8.32	8.18	-	8.32	7.96
M10	S	8.50	8.50	8.30	7.93	7.65	8.33	7.99	8.13	7.40	8.22	8.39	7.98
	B	8.40	8.40	7.70	7.45	8.04	8.12	7.98	7.42	5.15	8.31	8.34	7.84
M10A	S	8.50	8.50	7.80	7.86	7.65	8.30	8.02	8.35	8.16	8.06	8.49	7.94
	B	8.40	8.50	8.50	7.53	8.05	7.93	7.97	8.20	8.16	8.24	8.44	7.86
M21	S	8.40	8.50	8.30	7.98	8.12	8.41	8.23	8.80	8.23	8.07	8.79	7.91
	B	8.40	8.40	7.70	7.93	8.10	8.32	8.20	8.97	8.19	8.23	8.70	7.82
M22	S	8.60	8.50	8.50	8.00	7.93	8.03	8.13	8.52	8.21	-	8.32	8.17
	B	8.40	8.30	7.90	7.81	7.90	7.82	8.01	8.35	8.21	-	8.27	7.89
M18	S	8.60	8.60	8.40	8.08	7.84	8.35	8.43	8.36	8.09	-	8.41	8.21
	B	8.40	8.40	7.90	7.68	8.13	8.08	8.27	8.18	8.18	-	8.32	7.89
NE	S	8.50	8.50	8.60	7.90	7.60	7.99	8.12	8.29	-	8.27	8.54	7.94
	B	8.50	8.40	8.20	7.38	8.05	8.21	7.95	8.11	-	8.29	8.52	7.84
NW	S	8.50	8.50	8.50	7.84	7.66	8.26	8.09	8.40	9.92	7.99	8.56	7.90
	B	8.40	8.40	7.70	7.52	8.09	8.35	8.15	8.14	10.33	8.24	8.53	7.83
SE	S	8.50	8.50	8.40	7.89	8.06	8.19	7.95	8.29	-	6.54	8.46	7.82
	B	8.40	8.40	7.80	7.37	7.71	7.84	7.86	8.09	-	6.29	8.39	7.93
SW	S	-	-	-	-	-	-	7.99	8.30	-	8.34	8.48	7.95
	B	-	-	-	-	-	-	7.88	8.16	-	8.33	8.41	7.88

Table E-5. Monthly turbidity values for West Hackberry site from May 1981 through April 1982.

TURBIDITY (NTU)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	1.00	3.00	1.10	1.00	15.00	1.00	2.00	3.00	3.00	3.00	1.00	3.50
	B	13.00	6.30	2.40	2.00	2.00	-1.00	2.00	5.00	33.00	8.00	3.80	2.20
DN	S	0.70	3.00	1.40	-1.00	14.00	65.00	2.00	3.00	4.00	4.00	2.50	2.80
	B	15.00	41.00	2.90	7.00	2.00	-1.00	2.00	5.00	4.00	4.00	6.50	2.20
DS	S	1.00	3.00	1.00	-1.00	2.00	1.00	1.00	2.00	20.00	30.00	4.20	2.30
	B	9.00	27.00	2.70	2.00	1.00	1.00	4.00	4.00	7.00	10.00	3.00	1.80
DW	S	1.30	3.00	2.20	1.00	3.00	2.00	2.00	3.00	4.00	2.00	2.00	2.50
	B	14.00	10.00	2.30	2.00	1.00	-1.00	2.00	4.00	3.00	30.00	4.00	3.20
E1	S	25.00	43.00	41.00	26.00	2.00	24.00	10.00	18.00	15.50	20.00	34.00	45.00
	B	33.00	39.00	90.00	31.00	12.00	18.00	13.00	31.00	14.00	21.00	40.00	54.00
E2	S	11.00	15.00	14.00	8.00	9.00	13.00	9.00	5.00	9.00	9.00	8.00	44.00
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	19.00	18.00	10.00	7.00	14.00	19.00	15.00	4.00	-	8.00	8.30	9.30
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	12.00	24.00	11.00	7.00	18.00	27.00	40.00	5.00	75.00	17.00	7.30	7.00
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	7.00	7.50	9.30	7.00	5.00	12.00	6.00	5.00	50.00	16.00	5.60	8.80
	B	14.00	8.00	10.00	9.00	6.00	7.00	5.00	23.00	64.00	22.00	14.00	14.00
M3	S	0.70	2.60	4.00	1.00	6.00	-1.00	1.00	3.00	2.00	4.00	2.60	2.30
	B	7.00	13.00	2.90	4.00	1.00	10.00	4.00	5.00	4.00	3.00	6.50	2.20
M10	S	1.60	3.00	3.50	-1.00	8.00	1.00	1.00	2.00	4.00	5.00	3.00	2.60
	B	27.00	21.00	5.50	1.00	2.00	125.0	3.00	3.00	2.00	11.00	2.60	2.20
M10A	S	2.20	3.00	2.50	-1.00	6.00	-1.00	2.00	3.00	2.00	3.00	3.50	5.50
	B	15.00	34.00	2.00	2.00	1.00	2.00	3.00	4.00	2.00	10.00	3.50	2.50
M21	S	-	3.90	3.70	14.00	23.00	4.00	2.00	7.00	5.00	8.00	8.00	3.70
	B	-	57.00	9.00	15.00	10.00	7.00	5.00	14.00	41.00	28.00	12.00	11.00
M22	S	1.70	1.90	4.00	1.00	-1.00	-1.00	3.00	2.00	1.00	-	0.70	0.95
	B	18.00	10.00	3.60	1.00	2.00	2.00	1.00	7.00	3.00	-	2.40	1.00
M18	S	2.20	3.20	2.20	1.00	5.00	1.00	4.00	2.00	2.00	13.00	5.60	3.00
	B	24.00	17.00	4.50	1.00	1.00	3.00	2.00	3.00	10.00	4.00	10.00	2.30
NE	S	1.20	3.40	1.50	-1.00	6.00	1.00	2.00	3.00	-	4.00	4.20	2.80
	B	17.00	50.00	29.00	2.00	2.00	-1.00	9.00	5.00	9.00	5.00	5.00	1.50
NW	S	0.80	37.00	1.40	1.00	8.00	2.00	4.00	3.00	3.00	3.00	3.00	1.30
	B	18.00	36.00	2.40	6.00	1.00	-1.00	2.00	4.00	2.00	37.00	7.20	1.00
SE	S	1.00	2.70	2.50	-1.00	1.00	1.00	2.00	2.00	6.00	3.00	4.00	2.50
	B	11.00	17.00	3.00	1.00	4.00	2.00	2.00	5.00	99.00	15.00	2.20	2.00
SW	S	-	-	-	-	-	-	2.00	3.00	4.00	2.00	2.60	2.00
	B	-	-	-	-	-	-	4.00	5.00	3.00	4.00	3.50	2.00

Table E-6. Monthly oil and grease values for West Hackberry site from May 1981 through April 1982.

OIL & GREASE (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	12.40	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	42.60	0.90	< 0.1
DN	S	< 0.1	20.10	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	9.70	< 0.1	< 0.1	0.80	< 0.4
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	43.50	< 0.1
DS	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.00	< 0.1	3.80	1.20	0.60	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	5.20	< 0.1	0.60	< 0.1
DW	S	< 0.1	< 0.1	0.80	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	< 0.1	0.80	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	< 0.1
E1	S	< 0.1	< 0.1	1.40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	14.80	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	< 0.1
E2	S	< 0.1	< 0.1	0.70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.30	< 0.1
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	-	< 0.1	1.00	< 0.1
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	< 0.1	< 0.1	1.40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	11.40	2.70	< 0.1
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.50	< 0.1	< 0.1	10.50	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	11.40	0.60	< 0.1
M3	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	26.40	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	10.00	0.60	1.70
M10	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	13.60	< 0.1	0.60	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.40	0.80	19.00	< 0.1
M10A	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	26.40	< 0.1	1.40
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	9.60	20.90	0.80	< 0.1
M21	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.00	< 0.1	0.60	11.10	0.60	0.60
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	9.00	< 0.1	< 0.1
M22	S	< 0.1	< 0.1	0.60	< 0.1	< 0.1	< 0.1	< 0.1	1.80	1.00	-	0.60	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.00	-	0.60	< 0.1
M18	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.40	< 0.1	< 0.1	0.60	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	11.70	0.90	< 0.1	0.70	< 0.1
NE	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	34.80	1.10	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	9.60	56.40	< 0.1	< 0.1
NW	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	10.20	< 0.1	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4.60	< 0.1	< 0.1	< 0.1
SE	S	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	29.40	< 0.1	< 0.1
	B	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.60	63.00	0.60	0.60
SW	S	-	-	-	-	-	-	< 0.1	< 0.1	0.80	28.80	-	< 0.1
	B	-	-	-	-	-	-	< 0.1	< 0.1	0.60	10.57	0.80	< 0.1

Table E-7. Monthly nitrite values for West Hackberry site from May 1981 through April 1982.

NO2-N (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	0.02	0.02	< 0.01	0.02	0.06	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.03
	B	0.02	0.02	0.03	0.12	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
DN	S	0.02	0.02	< 0.01	0.03	0.12	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.02	0.02	0.07	0.12	0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.02
DS	S	0.02	0.02	< 0.01	0.02	0.09	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02
	B	0.02	0.02	0.03	0.10	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
DW	S	0.01	0.02	0.01	0.02	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.01	0.02	0.08	0.10	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
E1	S	0.07	0.03	< 0.01	0.01	0.01	0.13	0.03	0.01	0.02	0.01	0.01	0.01
	B	0.03	0.03	< 0.01	0.01	0.02	0.11	0.02	0.01	0.02	0.01	0.01	< 0.01
E2	S	0.02	0.02	< 0.01	0.12	0.08	0.06	0.02	0.01	0.01	0.01	< 0.01	0.01
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	0.02	0.02	< 0.01	0.01	0.01	-	< 0.01	< 0.01	-	< 0.01	< 0.01	0.02
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	0.01	0.01	< 0.01	0.01	0.01	0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.03
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	0.01	0.03	0.03	0.01	0.03	0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	0.03
	B	0.01	0.03	0.10	0.01	0.03	0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	0.04
M3	S	0.01	0.02	0.02	0.02	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02
	B	0.02	0.02	0.06	0.09	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02
M10	S	0.01	0.02	0.02	0.03	0.15	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	0.02
	B	0.03	0.02	< 0.01	0.09	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01
M10A	S	0.01	0.02	< 0.01	0.03	0.14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
	B	< 0.01	0.02	0.11	-	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
M21	S	0.02	0.02	< 0.01	0.03	0.02	< 0.01	< 0.01	0.01	0.01	< 0.01	0.01	0.01
	B	0.01	0.03	0.04	0.03	0.02	0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	0.01
M22	S	0.01	0.02	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	1.00-	-	< 0.01	0.01
	B	0.01	0.01	0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	0.01	0.01
M18	S	0.01	0.02	< 0.01	0.03	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.02	0.02	0.06	0.13	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
NE	S	0.02	0.02	< 0.01	0.03	0.12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.03	0.03	0.04	-	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
NW	S	0.03	0.02	< 0.01	0.03	0.13	< 0.01	< 0.01	0.01	0.01	< 0.01	0.01	0.01
	B	0.02	0.03	0.08	0.13	0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.01
SE	S	0.02	0.03	< 0.01	0.03	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.02	0.02	0.02	0.14	0.11	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
SW	S	-	-	-	-	-	-	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02
	B	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01

Table E-8. Monthly nitrate values for West Hackberry site from May 1981 through April 1982.

NO3-N (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	0.08	< 0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	0.01	0.16	< 0.01	0.02	0.42
	B	0.05	0.03	< 0.01	0.03	< 0.01	< 0.01	< 0.01	0.01	0.01	< 0.01	0.04	0.09
DN	S	0.21	< 0.01	< 0.01	0.01	0.07	< 0.01	0.01	0.01	0.09	< 0.01	0.03	0.30
	B	0.06	0.04	0.03	0.04	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.03	0.08
DS	S	0.19	0.11	< 0.01	0.01	0.05	< 0.01	< 0.01	< 0.01	0.13	< 0.01	0.02	0.20
	B	0.04	0.04	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.03	0.12
DW	S	0.09	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.11	< 0.01	0.02	0.18
	B	0.06	0.04	0.05	0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.04	0.12
E1	S	0.16	0.10	< 0.01	< 0.01	< 0.01	0.03	0.08	0.05	0.07	0.10	0.06	0.06
	B	0.20	0.10	< 0.01	< 0.01	< 0.01	0.02	0.08	0.05	0.10	0.10	0.07	0.05
E2	S	0.21	0.05	< 0.01	0.05	0.03	0.02	0.03	0.02	0.06	0.08	0.01	0.19
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	0.02	0.05	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	< 0.01	< 0.01	0.10
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	0.11	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.22
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	0.12	0.09	0.01	< 0.01	< 0.01	0.02	0.01	0.01	0.01	< 0.01	< 0.01	0.45
	B	0.14	0.08	0.13	< 0.01	0.01	0.01	0.01	0.02	< 0.01	< 0.01	< 0.01	0.29
M3	S	0.17	< 0.01	0.02	0.01	0.01	< 0.01	< 0.01	< 0.01	0.11	< 0.01	< 0.01	0.16
	B	0.07	0.03	0.06	0.03	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.03	0.17
M10	S	0.17	< 0.01	< 0.01	< 0.01	0.05	0.01	< 0.01	< 0.01	0.10	< 0.01	0.02	0.41
	B	0.03	0.04	< 0.01	0.03	0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.18
M10A	S	0.17	< 0.01	< 0.01	< 0.01	0.05	< 0.01	< 0.01	0.01	0.13	< 0.01	0.02	0.18
	B	0.09	0.04	0.06	-	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.04	0.16
M21	S	0.16	0.10	< 0.01	0.01	0.01	< 0.01	< 0.01	0.02	0.11	0.01	< 0.01	0.13
	B	0.16	0.11	0.07	0.01	< 0.01	0.01	< 0.01	< 0.01	0.05	0.01	< 0.01	0.23
M22	S	0.02	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	1.000	-	0.02	0.03
	B	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	0.01	0.02
M18	S	0.09	0.16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.01	0.01	0.18
	B	0.12	0.04	0.04	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.06
NE	S	0.19	< 0.01	< 0.01	0.01	0.05	< 0.01	< 0.01	< 0.01	0.15	0.01	0.02	0.32
	B	0.03	0.04	0.04	-	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.03	0.05
NW	S	0.12	< 0.01	< 0.01	0.01	0.07	< 0.01	< 0.01	< 0.01	0.16	< 0.01	0.02	0.41
	B	0.05	0.07	0.05	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.18
SE	S	0.17	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.08	< 0.01	0.02	0.15
	B	0.04	0.04	< 0.01	0.04	0.05	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.04	0.18
SW	S	-	-	-	-	-	-	< 0.01	< 0.01	0.11	< 0.01	0.03	0.33
	B	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.17

Table E-9. Monthly ammonia values for West Hackberry site from May 1981 through April 1982.

NH3-N (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	0.02	0.05	0.03	0.02	0.14	0.03	< 0.01	0.05	0.02	< 0.01	0.03	0.07
	B	0.47	0.13	0.24	0.09	0.02	0.01	< 0.01	0.04	0.03	0.01	0.03	0.05
DN	S	< 0.01	0.05	0.05	0.05	0.16	0.12	< 0.01	0.05	< 0.01	0.01	0.01	0.04
	B	0.45	0.17	0.18	0.07	0.08	0.02	0.01	0.02	0.02	0.02	0.02	0.06
DS	S	0.14	0.04	0.01	0.02	0.10	0.01	< 0.01	0.04	< 0.01	< 0.01	0.03	0.05
	B	0.62	0.16	0.24	0.09	0.08	0.02	0.01	0.02	0.02	0.02	0.04	0.05
DW	S	0.55	0.03	0.03	0.02	0.09	0.03	< 0.01	0.03	< 0.01	0.02	0.01	0.06
	B	0.50	0.13	0.18	0.11	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.03	0.02	0.06
E1	S	1.92	0.34	0.05	< 0.01	0.04	0.03	0.06	0.06	0.29	0.11	0.18	0.04
	B	1.93	0.30	0.15	0.01	0.14	0.02	0.07	0.05	0.27	0.10	0.21	0.05
E2	S	1.66	0.12	0.03	0.13	0.45	0.20	-	0.02	0.38	0.02	0.03	0.29
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	0.20	0.04	0.03	0.05	0.05	0.01	0.03	< 0.01	-	0.01	< 0.01	0.03
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	0.24	0.04	0.08	0.11	0.05	0.09	0.04	0.01	0.04	0.06	0.02	0.03
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	0.20	0.28	0.06	0.03	0.07	0.04	0.04	0.04	0.07	0.04	0.05	0.14
	B	0.17	0.15	0.16	0.06	0.08	0.04	0.04	0.03	0.11	0.04	0.03	0.15
M3	S	0.02	0.04	0.04	< 0.01	0.05	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.02
	B	0.54	0.11	0.19	0.02	0.02	0.11	< 0.01	0.02	< 0.01	0.02	0.03	0.07
M10	S	0.04	0.04	0.28	< 0.01	0.15	0.04	< 0.01	0.02	< 0.01	0.01	0.02	0.05
	B	0.42	0.14	0.01	0.06	0.04	0.12	< 0.01	0.01	< 0.01	0.01	0.02	0.06
M10A	S	0.05	0.07	0.02	0.02	0.10	< 0.01	< 0.01	0.03	< 0.01	0.01	< 0.01	0.07
	B	0.40	0.16	0.06	0.10	0.05	0.06	0.01	0.01	< 0.01	0.02	0.03	0.06
M21	S	0.09	0.07	0.02	0.06	0.19	0.03	< 0.01	0.04	< 0.01	0.03	0.01	0.04
	B	0.23	0.18	0.29	0.11	< 0.01	0.09	< 0.01	0.02	< 0.01	0.04	0.03	0.07
M22	S	< 0.01	0.21	0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	1.00-	-	< 0.01	0.03
	B	0.25	0.15	0.23	0.05	0.03	0.01	< 0.01	0.01	< 0.01	-	0.03	0.05
M18	S	0.10	0.02	0.01	0.01	0.08	0.01	< 0.01	0.01	< 0.01	0.02	0.03	0.02
	B	0.29	0.17	0.16	0.07	0.02	0.04	0.02	0.02	0.01	< 0.01	0.03	0.06
NE	S	0.08	0.06	0.02	0.03	0.06	0.03	< 0.01	0.03	< 0.01	0.03	0.03	0.05
	B	0.50	0.18	0.15	0.12	0.05	0.02	0.02	0.03	< 0.01	0.03	0.02	0.07
NW	S	0.13	0.06	0.01	0.04	0.14	0.04	< 0.01	0.03	< 0.01	0.02	0.02	0.04
	B	0.46	0.13	0.10	0.02	0.07	0.01	0.01	0.02	< 0.01	0.04	0.03	0.06
SE	S	0.10	0.06	0.02	0.03	0.02	0.01	< 0.01	0.02	< 0.01	0.01	0.02	0.07
	B	0.40	0.15	0.40	0.11	0.09	0.06	< 0.01	0.03	0.07	0.04	0.02	0.06
SW	S	-	-	-	-	-	-	< 0.01	0.02	< 0.01	0.01	0.03	0.06
	B	-	-	-	-	-	-	< 0.01	0.03	0.01	0.01	0.02	0.06

Table E-10. Monthly orthophosphate value for West Hackberry site from May 1981 through April 1982.

O-P04-P (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	< 0.01	0.02	< 0.01	< 0.01	0.04	< 0.01	0.01	0.02	0.02	< 0.01	< 0.01	0.02
	B	0.04	0.04	0.07	0.06	0.01	< 0.01	0.02	0.01	0.07	0.03	< 0.01	0.01
DN	S	0.01	0.03	< 0.01	< 0.01	0.02	0.16	0.02	0.01	0.02	< 0.01	< 0.01	0.02
	B	0.02	0.08	0.04	0.06	0.01	0.01	0.03	0.01	0.01	< 0.01	0.01	0.01
DS	S	< 0.01	0.03	< 0.01	< 0.01	0.02	< 0.01	0.01	0.01	0.02	< 0.01	< 0.01	0.01
	B	0.02	0.08	0.12	0.04	< 0.01	0.02	0.03	0.01	0.02	0.02	< 0.01	0.01
DW	S	< 0.01	0.02	< 0.01	-	0.02	0.02	0.02	0.01	0.02	< 0.01	< 0.01	0.02
	B	0.06	0.04	0.07	0.06	0.01	< 0.01	0.02	< 0.01	0.01	0.02	< 0.01	0.02
E1	S	0.03	0.07	0.05	0.02	0.05	0.05	0.05	0.01	0.09	0.02	0.03	0.01
	B	0.04	0.08	0.21	0.02	0.04	0.04	0.06	0.02	0.03	0.03	0.01	0.03
E2	S	0.04	0.04	0.03	0.03	0.02	0.05	0.05	0.01	0.02	0.03	< 0.01	0.05
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	0.02	0.05	0.03	0.02	0.02	0.04	0.05	0.01	-	0.02	< 0.01	0.02
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	0.02	0.08	0.02	0.02	0.03	0.05	0.06	0.02	0.01	0.02	< 0.01	0.02
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	0.02	0.05	0.02	0.03	0.02	0.02	0.06	0.02	0.02	0.02	< 0.01	0.03
	B	0.03	0.06	0.05	0.03	0.02	0.02	0.04	0.03	< 0.01	0.03	< 0.01	0.04
M3	S	0.01	0.03	0.01	< 0.01	0.01	0.01	0.01	0.01	0.01	0.01	< 0.01	< 0.01
	B	0.04	0.05	0.09	0.03	0.01	0.08	0.03	0.01	0.01	< 0.01	< 0.01	0.02
M10	S	0.02	0.03	0.01	0.03	0.04	0.01	0.02	0.01	0.02	< 0.01	< 0.01	0.02
	B	0.06	0.07	0.13	0.03	< 0.01	0.37	0.02	0.01	< 0.01	0.01	< 0.01	0.02
M10A	S	0.01	0.03	< 0.01	< 0.01	0.03	0.01	0.01	0.01	0.01	0.01	< 0.01	0.03
	B	0.05	0.06	0.04	0.05	< 0.01	0.03	0.03	< 0.01	0.01	0.02	< 0.01	0.02
M21	S	0.03	0.04	0.01	0.04	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.04
	B	0.05	0.10	0.05	0.09	0.03	0.05	0.04	0.01	0.01	0.02	0.01	0.04
M22	S	< 0.01	0.03	0.04	0.01	0.01	0.01	0.01	< 0.01	1.00-	-	< 0.01	< 0.01
	B	0.03	0.03	0.06	0.01	0.02	0.02	0.03	0.01	< 0.01	-	< 0.01	0.01
M18	S	< 0.01	0.02	< 0.01	< 0.01	0.02	< 0.01	0.01	0.01	0.01	0.02	< 0.01	0.02
	B	0.05	0.04	0.08	0.05	0.01	0.03	0.04	0.01	0.02	< 0.01	0.01	0.02
NE	S	0.01	0.03	< 0.01	< 0.01	0.03	0.02	0.01	0.01	0.02	< 0.01	< 0.01	0.02
	B	0.05	0.08	0.06	0.05	0.01	< 0.01	0.06	0.01	0.02	< 0.01	< 0.01	0.01
NW	S	0.01	0.04	< 0.01	0.01	0.02	0.05	0.01	0.01	0.02	< 0.01	< 0.01	0.01
	B	0.06	0.10	0.05	0.03	< 0.01	< 0.01	0.03	0.01	< 0.01	0.04	< 0.01	0.02
SE	S	0.03	0.04	0.01	< 0.01	0.01	-	0.01	0.01	0.01	< 0.01	< 0.01	0.02
	B	0.05	0.06	0.13	0.04	0.02	-	0.03	0.01	0.16	0.02	< 0.01	0.01
SW	S	-	-	-	-	-	-	0.01	0.01	0.02	< 0.01	< 0.01	0.02
	B	-	-	-	-	-	-	0.03	0.01	0.01	0.01	< 0.01	0.01

Table E-11. Monthly values for total phosphorus for West Hackberry site from May 1981 through April 1982.

TOTAL-P (MG/L)		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	0.02	0.02	0.01	0.02	0.04	0.03	0.03	0.02	0.02	0.01	0.02	0.02
	B	0.03	0.02	0.08	0.06	0.01	0.01	0.04	0.01	0.07	0.02	< 0.01	0.01
DN	S	0.03	0.04	0.01	0.02	0.06	0.20	0.03	0.01	0.02	< 0.01	0.01	0.02
	B	0.05	0.10	0.04	0.06	0.01	0.01	0.05	0.01	0.01	< 0.01	0.02	0.01
DS	S	0.02	0.03	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.01	< 0.01	0.02
	B	0.04	0.07	0.12	0.06	< 0.01	0.03	0.04	0.01	0.02	0.02	< 0.01	0.01
DW	S	0.02	0.02	0.02	0.01	0.02	0.02	0.03	0.01	0.02	< 0.01	< 0.01	0.02
	B	0.06	0.03	0.07	0.07	< 0.01	0.01	0.03	< 0.01	0.02	0.04	0.02	0.02
E1	S	0.08	0.12	0.11	0.05	0.06	0.04	0.05	0.01	0.29	0.02	0.04	0.12
	B	0.09	0.14	0.24	0.06	0.04	0.04	0.07	0.02	0.30	0.03	0.05	0.12
E2	S	0.09	0.07	0.07	0.03	0.02	0.04	0.07	0.01	0.05	0.04	0.02	0.07
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	0.06	0.05	0.06	0.04	0.02	0.05	0.08	0.01	-	0.02	0.02	0.02
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	0.04	0.04	0.05	0.03	0.03	0.06	0.12	0.02	0.14	0.04	< 0.01	0.02
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	0.03	0.06	0.05	0.04	0.05	0.03	0.07	0.02	0.04	0.02	< 0.01	0.03
	B	0.03	0.05	0.06	0.04	0.02	0.03	0.06	0.03	0.10	0.03	< 0.01	0.04
M3	S	0.02	0.01	0.01	< 0.01	0.01	0.02	0.02	0.01	0.01	< 0.01	0.01	0.02
	B	0.03	0.03	0.10	0.03	0.01	0.06	0.04	0.01	0.01	< 0.01	< 0.01	0.02
M10	S	0.02	0.02	0.01	0.03	0.04	0.01	0.02	0.01	0.01	0.02	< 0.01	0.02
	B	0.04	0.03	0.14	0.03	< 0.01	0.59	0.02	0.01	0.01	0.01	0.01	0.02
M10A	S	0.02	0.02	0.01	< 0.01	0.03	0.01	0.02	0.01	0.01	0.01	0.02	0.03
	B	0.06	0.04	0.06	0.05	< 0.01	0.03	0.03	0.01	0.01	0.02	< 0.01	0.02
M21	S	0.02	0.05	0.02	0.04	0.02	0.02	0.03	0.01	0.01	0.01	0.01	0.04
	B	0.08	0.02	0.03	0.09	0.03	0.03	0.04	0.01	0.01	0.02	0.01	0.04
M22	S	0.01	0.02	0.01	0.01	0.06	0.01	0.01	< 0.01	0.01	-	0.01	0.01
	B	0.05	0.02	0.07	0.02	0.02	0.03	0.04	0.01	< 0.01	-	< 0.01	0.01
M18	S	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02
	B	0.06	0.02	0.08	0.05	0.01	0.03	0.04	0.01	0.02	< 0.01	< 0.01	0.02
NE	S	0.03	0.02	0.01	< 0.01	0.03	0.02	0.03	0.01	-	< 0.01	0.01	0.02
	B	0.07	0.12	0.08	0.05	0.01	0.02	0.09	0.01	0.02	< 0.01	< 0.01	0.01
NW	S	0.01	0.03	0.01	0.01	0.04	0.02	0.03	0.01	0.02	< 0.01	< 0.01	0.01
	B	0.04	0.08	0.05	0.03	< 0.01	0.01	0.04	0.01	< 0.01	0.04	0.01	0.02
SE	S	0.02	0.03	0.01	< 0.01	0.01	0.01	0.02	0.01	0.01	0.01	< 0.01	0.02
	B	0.03	0.03	0.15	0.04	0.02	0.03	0.03	0.01	0.20	0.02	< 0.01	0.01
SW	S	-	-	-	-	-	-	0.02	0.01	0.02	< 0.01	< 0.01	0.02
	B	-	-	-	-	-	-	0.03	0.01	0.01	0.01	0.02	0.01

Table E-12. Monthly silica values for West Hackberry site from May 1981 through April 1982.

SI02 (MG/L)

		05-21-81	06-08-81	07-16-81	08-07-81	09-11-81	10-02-81	11-12-81	12-02-81	01-11-82	02-08-82	03-12-82	04-27-82
DE	S	0.80	1.30	1.10	1.00	7.20	< 0.1	0.10	0.80	0.90	0.40	1.00	0.20
	B	1.50	1.70	2.90	3.20	0.40	0.10	0.20	0.60	1.10	0.60	0.60	0.10
DN	S	1.00	2.00	1.10	1.10	0.70	2.30	0.20	0.50	1.00	0.40	0.70	2.60
	B	1.70	4.40	3.30	3.00	4.70	0.20	0.20	0.50	0.40	0.40	0.90	1.10
DS	S	0.80	1.60	1.10	1.10	2.10	0.20	0.10	0.50	0.90	0.10	0.80	2.60
	B	1.50	3.30	4.90	2.90	0.40	0.30	0.40	0.50	0.40	0.60	0.50	-
DW	S	0.90	1.80	1.10	1.30	1.30	< 0.1	0.10	0.50	0.90	0.30	0.60	3.00
	B	2.40	2.10	3.20	2.90	0.60	0.20	0.20	0.20	0.40	1.00	0.80	0.90
E1	S	4.70	10.00	9.00	9.30	6.10	3.80	5.00	4.20	8.70	1.60	6.80	12.40
	B	5.10	9.90	12.10	9.60	9.70	3.80	5.00	4.60	7.90	3.20	7.10	12.20
E2	S	5.20	6.70	7.50	6.70	4.70	2.00	1.80	1.20	1.60	2.60	1.70	9.40
	B	-	-	-	-	-	-	-	-	-	-	-	-
E3	S	2.00	3.20	7.80	6.40	5.30	1.40	1.20	0.20	-	0.90	1.00	2.10
	B	-	-	-	-	-	-	-	-	-	-	-	-
E4	S	2.10	1.70	8.10	6.00	5.80	1.30	3.60	0.20	3.10	1.80	1.60	5.80
	B	-	-	-	-	-	-	-	-	-	-	-	-
E5	S	1.40	4.00	3.10	5.30	1.70	0.80	0.60	0.60	2.40	0.90	4.40	5.50
	B	1.80	2.40	3.90	5.00	1.50	0.50	0.70	0.70	2.30	0.50	0.80	5.80
M3	S	1.00	1.60	3.40	1.90	1.00	0.40	0.20	0.50	0.80	0.40	0.70	2.90
	B	1.30	2.50	3.70	2.10	0.90	1.40	0.40	0.60	0.40	0.30	0.60	1.00
M10	S	0.90	1.40	1.30	1.20	4.10	0.30	0.20	0.60	0.80	0.40	1.00	3.10
	B	2.00	2.90	4.90	2.10	0.60	6.80	0.30	0.40	0.40	0.50	0.60	1.40
M10A	S	1.00	1.90	1.20	1.30	4.10	0.50	0.20	0.70	0.90	0.60	0.50	0.30
	B	1.30	3.20	3.00	2.90	0.80	0.30	0.30	0.70	0.40	0.80	0.80	1.00
M21	S	1.20	1.60	1.30	2.60	4.80	0.20	0.30	0.70	1.00	0.60	0.70	2.50
	B	2.80	9.50	2.60	4.40	2.70	1.00	0.20	0.30	2.00	1.20	0.90	2.10
M22	S	0.50	1.30	1.10	1.60	0.60	< 0.1	0.10	0.50	1.00	-	0.30	0.70
	B	2.00	1.80	2.60	1.30	0.50	0.90	0.40	0.50	0.20	-	0.50	0.70
M18	S	0.80	1.60	3.50	1.10	1.90	0.50	0.20	0.50	0.70	0.60	0.80	2.70
	B	2.30	2.10	4.10	2.80	0.50	0.50	0.50	0.50	0.40	0.20	1.20	1.20
NE	S	0.80	1.80	1.10	1.30	3.20	< 0.1	0.10	0.80	-	0.60	1.10	2.70
	B	2.20	4.30	3.20	3.60	0.50	0.20	1.00	0.70	0.40	0.60	0.90	0.90
NW	S	1.10	1.80	1.10	1.30	3.30	0.20	0.20	0.80	0.80	0.30	0.50	2.70
	B	1.70	4.40	3.10	2.60	0.50	< 0.1	0.10	0.20	0.30	1.60	0.90	1.10
SE	S	1.00	1.80	1.10	1.30	0.80	< 0.1	< 0.1	0.40	0.90	0.30	0.90	2.60
	B	1.30	2.20	5.20	2.80	2.80	0.60	0.40	0.60	3.10	0.60	0.60	1.10
SW	S	-	-	-	-	-	-	0.30	0.60	1.00	0.90	0.80	2.60
	B	-	-	-	-	-	-	0.40	0.10	0.40	0.50	0.40	0.70

Table E-13. Quarterly sodium values in water column at West Hackberry site from May 1981 through April 1982.

NA (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	7.00	7.50	8.60	7.90
	B	8.80	6.70	9.60	8.30
DN	S	6.70	6.20	8.40	7.50
	B	9.90	6.90	9.30	7.40
NE	S	6.50	5.40	8.70	7.10
	B	10.10	6.30	9.50	7.50
DE	S	8.20	6.00	10.20	7.70
	B	8.90	5.50	11.00	8.20
NW	S	6.20	5.80	8.80	7.70
	B	8.90	6.00	9.50	9.30
SE	S	6.50	5.70	8.80	9.80
	B	7.10	6.30	9.50	7.90
E1	S	2.70	2.50	2.70	1.60
	B	2.20	2.30	2.50	0.80
E2	S	5.50	4.40	2.50	3.30
	B	-	-	-	-
E3	S	6.90	4.60	2.50	5.20
	B	-	-	-	-
E4	S	6.70	4.60	7.60	5.10
	B	-	-	-	-
E5	S	5.10	5.30	8.60	6.40
	B	8.10	4.90	8.40	6.90
M3	S	7.00	5.70	8.70	9.80
	B	7.80	5.30	9.60	7.80
M10	S	6.60	5.90	9.00	7.90
	B	8.20	6.30	10.20	8.60
M10A	S	6.30	6.00	9.50	7.20
	B	8.90	6.20	10.10	7.50
M18	S	7.00	5.90	8.70	7.70
	B	8.20	6.00	9.30	7.60
M21	S	7.30	5.40	8.80	7.60
	B	8.20	5.40	9.30	7.50
M22	S	8.40	10.80	8.30	8.20
	B	9.50	6.60	10.10	8.60
DW	S	7.20	5.40	8.40	7.80
	B	9.40	5.90	9.70	8.30
SW	S	-	-	8.50	7.80
	B	-	-	9.20	8.60

Table E-14. Quarterly potassium values in water column at West Hackberry site from May 1981 through April 1982.

K (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	0.240	0.230	0.310	0.300
	B	0.350	0.210	0.360	0.310
DN	S	0.240	0.220	0.310	0.280
	B	0.350	0.250	0.350	0.280
NE	S	0.240	0.210	0.310	0.280
	B	0.340	0.250	0.360	0.290
DE	S	0.260	0.240	0.370	0.300
	B	0.350	0.210	0.430	0.320
NW	S	0.230	0.230	0.320	0.290
	B	0.330	0.220	0.350	0.300
SE	S	0.220	0.230	0.320	0.270
	B	0.340	0.250	0.370	0.290
E1	S	0.050	0.050	0.050	0.030
	B	0.050	0.050	0.060	0.020
E2	S	0.160	0.110	0.070	0.120
	B	-	-	-	-
E3	S	0.220	0.150	0.110	0.190
	B	-	-	-	-
E4	S	0.280	0.160	0.250	0.200
	B	-	-	-	-
E5	S	0.210	0.190	0.360	0.250
	B	0.320	0.180	0.330	0.280
M3	S	0.300	0.220	0.320	0.290
	B	0.340	0.200	0.380	0.290
M10	S	0.240	0.130	0.320	0.290
	B	0.350	0.240	0.370	0.310
M10A	S	0.240	0.230	0.370	0.280
	B	0.380	0.240	0.350	0.300
M18	S	0.240	0.230	0.330	0.300
	B	0.360	0.230	00.36	0.290
M21	S	0.260	0.200	0.330	0.290
	B	0.310	0.210	0.360	0.290
M22	S	0.310	0.540	0.300	0.330
	B	0.370	0.270	0.420	0.330
DW	S	0.250	0.220	0.320	0.300
	B	0.360	0.220	0.370	0.310
SW	S	-	-	0.320	0.300
	B	-	-	0.360	0.310

Table E-15. Quarterly calcium values in water column at West Hackberry site from May 1981 through April 1982.

CA (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	0.290	0.270	0.370	0.310
	B	0.380	0.280	0.390	0.330
DN	S	0.290	0.280	0.340	0.300
	B	0.380	0.300	0.390	0.290
NE	S	0.280	0.260	0.350	0.290
	B	0.370	0.290	0.390	0.300
DE	S	0.310	0.280	0.670	0.320
	B	0.380	0.260	0.440	0.320
NW	S	0.280	0.280	0.340	0.310
	B	0.360	0.280	0.370	0.310
SE	S	0.280	0.280	0.340	0.290
	B	0.380	0.300	0.370	0.300
E1	S	0.100	0.080	0.130	0.050
	B	0.100	0.070	0.120	0.030
E2	S	0.210	0.190	0.120	0.130
	B	-	-	-	-
E3	S	0.270	0.190	0.110	0.200
	B	-	-	-	-
E4	S	0.280	0.200	0.300	0.210
	B	-	-	-	-
E5	S	0.250	0.220	0.640	0.260
	B	0.350	0.210	0.560	0.280
M3	S	0.310	0.260	0.360	0.300
	B	0.370	0.240	0.390	0.310
M10	S	0.290	0.290	0.350	0.310
	B	0.370	0.260	0.380	0.320
M10A	S	0.280	0.260	0.410	0.290
	B	0.370	0.280	0.390	0.300
M18	S	0.280	0.270	0.360	0.300
	B	0.380	0.260	00.37	0.300
M21	S	0.300	0.240	0.360	0.310
	B	0.340	0.240	0.370	0.320
M22	S	0.340	0.540	0.340	0.330
	B	0.390	0.290	0.420	0.330
DW	S	0.290	0.280	0.500	0.310
	B	0.380	0.280	0.390	0.320
SW	S	-	-	0.340	0.310
	B	-	-	0.370	0.330

Table E-16. Quarterly magnesium values in water column at West Hackberry site from May 1981 through April 1982.

MG (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	0.78	1.07	0.96	0.97
	B	1.09	0.78	1.06	1.01
DN	S	0.80	0.69	0.95	0.92
	B	1.33	0.69	1.05	0.91
NE	S	0.77	0.60	0.98	0.94
	B	1.30	0.74	1.06	0.98
DE	S	1.04	0.60	1.08	0.96
	B	1.10	0.63	1.22	1.04
NW	S	0.78	0.65	0.96	0.94
	B	1.50	0.62	1.02	1.15
SE	S	0.80	0.65	0.96	1.20
	B	0.82	0.70	1.04	0.96
E1	S	0.27	0.74	0.26	0.14
	B	0.20	0.24	0.26	0.02
E2	S	0.57	0.19	0.24	0.33
	B	-	-	-	-
E3	S	0.76	0.45	0.26	0.57
	B	-	-	-	-
E4	S	0.81	0.46	0.86	0.60
	B	-	-	-	-
E5	S	0.68	0.46	0.98	0.77
	B	1.05	0.55	0.94	0.84
M3	S	0.81	0.65	0.95	1.19
	B	0.96	0.60	1.05	0.95
M10	S	0.78	0.65	0.96	0.98
	B	1.04	0.69	1.16	0.98
M10A	S	0.72	0.66	1.14	0.93
	B	1.03	0.66	1.04	0.97
M18	S	0.77	0.66	0.97	0.92
	B	0.90	0.66	1.05	0.92
M21	S	0.82	0.58	1.00	0.93
	B	0.92	0.60	1.02	0.90
M22	S	0.93	1.31	0.92	1.07
	B	1.18	-	1.16	1.11
DW	S	0.80	0.63	0.92	0.98
	B	1.07	0.63	1.08	0.99
SW	S	-	-	0.94	0.96
	B	-	-	1.06	1.02

Table E-17. Quarterly chloride values in water column at West Hackberry site from May 1981 through April 1982.

CL (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	12.30	11.80	16.10	15.50
	B	17.40	11.60	18.60	16.00
DN	S	12.70	12.10	16.10	14.30
	B	17.60	13.30	18.80	14.80
NE	S	12.20	11.30	16.50	13.80
	B	16.80	12.90	18.20	14.30
DE	S	13.30	13.10	17.80	15.50
	B	17.40	11.20	21.60	15.50
NW	S	12.60	12.00	16.30	14.60
	B	17.10	11.90	18.30	15.30
SE	S	12.10	11.80	16.30	13.80
	B	17.60	12.90	20.40	14.30
E1	S	3.90	0.80	5.20	2.20
	B	2.00	3.30	4.90	1.20
E2	S	10.80	8.40	5.10	6.40
	B	-	-	-	-
E3	S	11.90	8.70	4.90	9.60
	B	-	-	-	-
E4	S	12.60	8.70	14.40	10.10
	B	-	-	-	-
E5	S	10.90	10.30	17.00	12.60
	B	16.80	9.60	16.70	14.30
M3	S	13.60	11.60	16.70	14.60
	B	16.80	10.60	18.80	14.80
M10	S	12.60	12.40	17.30	14.60
	B	17.40	12.80	18.80	16.80
M10A	S	12.70	12.40	18.70	13.60
	B	16.90	12.90	19.50	14.10
M18	S	12.30	12.40	16.70	13.60
	B	17.40	12.80	17.70	14.60
M21	S	13.30	10.90	17.60	14.60
	B	14.90	11.90	18.30	15.10
M22	S	15.60	26.70	15.40	15.50
	B	18.90	14.00	19.80	15.80
DW	S	11.60	11.20	16.60	15.30
	B	17.40	12.00	18.80	16.30
SW	S	-	-	16.90	14.60
	B	-	-	18.10	15.80

Table E-18. Quarterly sulfate values in water column at West Hackberry site from May 1981 through April 1982.

SO4 (G/L)		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	1.61	1.40	2.20	2.58
	B	2.38	1.60	2.80	2.78
DN	S	1.60	1.40	2.20	2.45
	B	2.24	1.50	2.60	2.30
NE	S	1.59	1.40	2.50	2.30
	B	2.28	1.50	2.70	2.25
DE	S	1.70	1.40	2.30	2.35
	B	2.20	1.40	2.60	2.53
NW	S	1.74	1.40	2.50	2.50
	B	2.26	1.40	2.60	2.36
SE	S	1.72	1.40	2.30	2.63
	B	2.27	1.50	2.60	2.50
E1	S	0.67	0.20	1.60	0.36
	B	0.66	0.10	1.60	0.16
E2	S	1.17	0.70	1.80	1.07
	B	-	-	-	-
E3	S	1.54	0.80	2.00	1.16
	B	-	-	-	-
E4	S	1.57	0.80	2.10	1.52
	B	-	-	-	-
E5	S	1.50	1.10	2.60	1.98
	B	2.24	1.10	2.30	2.26
M3	S	1.78	1.40	2.40	2.85
	B	2.24	1.30	2.60	2.70
M10	S	1.68	1.30	2.60	2.08
	B	2.24	1.50	2.60	2.35
M10A	S	1.60	1.40	2.50	2.48
	B	2.24	1.40	2.70	2.40
M18	S	1.68	1.30	2.40	2.30
	B	2.22	1.50	2.30	2.40
M21	S	1.94	1.20	2.50	2.40
	B	2.03	1.20	2.50	2.31
M22	S	2.24	1.50	2.40	2.98
	B	2.45	1.60	3.00	2.75
DW	S	1.75	1.50	2.50	2.40
	B	2.38	1.40	2.80	2.50
SW	S	-	-	2.60	2.10
	B	-	-	2.90	2.65

Table E-19. Quarterly sodium/potassium ion ratios in water column at West Hackberry site from May 1981 through April 1982.

RATIO : NA/K		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	29.17	32.61	27.74	26.33
	B	25.14	31.90	26.67	26.77
DN	S	27.92	28.18	27.10	26.79
	B	28.29	27.60	26.57	26.43
NE	S	27.08	25.71	28.06	25.36
	B	29.71	25.20	26.39	25.86
DE	S	31.54	25.00	27.57	25.67
	B	25.43	26.19	25.58	25.63
NW	S	26.96	25.22	27.50	26.55
	B	26.97	27.27	27.14	31.00
SE	S	29.55	24.78	27.50	36.30
	B	20.88	25.20	25.68	27.24
E1	S	54.00	50.00	54.00	53.33
	B	44.00	46.00	41.67	40.00
E2	S	34.38	40.00	35.71	27.50
	B	-	-	-	-
E3	S	31.36	30.67	22.73	27.37
	B	-	-	-	-
E4	S	23.93	28.75	30.40	25.50
	B	-	-	-	-
E5	S	24.29	27.89	23.89	25.60
	B	25.31	27.22	25.45	24.64
M3	S	23.33	25.91	27.19	33.79
	B	22.94	26.50	25.26	26.90
M10	S	27.50	45.38	28.13	27.24
	B	23.43	26.25	27.57	27.74
M10A	S	26.25	26.09	25.68	25.71
	B	23.42	25.83	28.86	25.00
M18	S	29.17	25.65	26.36	25.67
	B	22.78	26.09	25.83	26.21
M21	S	28.08	27.00	26.67	26.21
	B	26.45	25.71	25.83	25.86
M22	S	27.10	20.00	27.67	24.85
	B	25.68	24.44	24.05	26.06
DW	S	28.80	24.55	26.25	26.00
	B	26.11	26.82	26.22	26.77
SW	S	-	-	26.56	26.00
	B	-	-	25.56	27.74

Table E-20. Quarterly calcium/magnesium ion ratios in water column at West Hackberry from May 1981 through April 1982.

RATIO : CA/MG

		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	0.37	0.25	0.39	0.32
	B	0.35	0.36	0.37	0.33
DN	S	0.36	0.41	0.36	0.33
	B	0.29	0.43	0.37	0.32
NE	S	0.36	0.43	0.36	0.31
	B	0.28	0.39	0.37	0.31
DE	S	0.30	0.47	0.62	0.33
	B	0.35	0.41	0.36	0.31
NW	S	0.36	0.43	0.35	0.33
	B	0.24	0.45	0.36	0.27
SE	S	0.35	0.43	0.35	0.24
	B	0.46	0.43	0.36	0.31
E1	S	0.37	0.11	0.50	0.36
	B	0.50	0.29	0.46	1.50
E2	S	0.37	1.00	0.50	0.39
	B	-	-	-	-
E3	S	0.36	0.42	0.42	0.35
	B	-	-	-	-
E4	S	0.35	0.43	0.35	0.35
	B	-	-	-	-
E5	S	0.37	0.48	0.65	0.34
	B	0.33	0.38	0.60	0.33
M3	S	0.38	0.40	0.38	0.25
	B	0.39	0.40	0.37	0.33
M10	S	0.37	0.45	0.36	0.32
	B	0.36	0.38	0.33	0.33
M10A	S	0.39	0.39	0.36	0.31
	B	0.36	0.42	0.38	0.31
M18	S	0.36	0.41	0.37	0.33
	B	0.42	0.39	0.35	0.33
M21	S	0.37	0.41	0.36	0.33
	B	0.37	0.40	0.36	0.36
M22	S	0.37	0.41	0.37	0.31
	B	0.33	-	0.36	0.30
DW	S	0.36	0.44	0.54	0.32
	B	0.36	0.44	0.36	0.32
SW	S	-	-	0.36	0.32
	B	-	-	0.35	0.32

Table E-21. Quarterly chloride/sulfate ion ratios in water column at West Hackberry site from May 1981 through April 1982.

RATIO : CL/SO4		06-08-81	09-11-81	12-02-81	03-12-82
DS	S	7.64	8.43	7.32	6.01
	B	7.31	7.25	6.64	5.76
DN	S	7.94	8.64	7.32	5.84
	B	7.86	8.87	7.23	6.43
NE	S	7.67	8.07	6.60	6.00
	B	7.37	8.60	6.74	6.36
DE	S	7.82	9.36	7.74	6.60
	B	7.91	8.00	8.31	6.13
NW	S	7.24	8.57	6.52	5.84
	B	7.57	8.50	7.04	6.48
SE	S	7.03	8.43	7.09	5.25
	B	7.75	8.60	7.85	5.72
E1	S	5.82	4.00	3.25	6.11
	B	3.03	33.00	3.06	7.50
E2	S	9.23	12.00	2.83	5.98
	B	-	-	-	-
E3	S	7.73	10.88	2.45	8.28
	B	-	-	-	-
E4	S	8.03	10.88	6.86	6.64
	B	-	-	-	-
E5	S	7.27	9.36	6.54	6.36
	B	7.50	8.73	7.26	6.33
M3	S	7.64	8.29	6.96	5.12
	B	7.50	8.15	7.23	5.48
M10	S	7.50	9.54	6.65	7.02
	B	7.77	8.53	7.23	7.15
M1C	S	7.94	8.86	7.48	5.48
	B	7.54	9.21	7.22	5.88
M18	S	7.32	9.54	6.96	5.91
	B	7.84	8.53	7.70	6.08
M21	S	6.86	9.08	7.04	6.08
	B	7.34	9.92	7.32	6.54
M22	S	6.96	17.80	6.42	5.20
	B	7.71	8.75	6.60	5.75
DW	S	6.63	7.47	6.64	6.38
	B	7.31	8.57	6.71	6.52
SW	S	-	-	6.50	6.95
	B	-	-	6.24	5.96

Table E-22. Quarterly sodium values in sediment pore water at West Hackberry site from May 1981 through April 1982.

NA (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	9.20	6.00	10.20	9.33
DN	8.60	4.30	9.20	9.28
DW	9.20	6.00	10.00	9.00
DE	9.30	6.60	9.00	9.76
E1	4.20	2.20	4.10	1.16
E2	5.80	3.70	6.80	4.16
E3	7.30	4.80	6.40	5.84
E4	7.30	4.10	7.30	5.64
E5	8.10	4.60	7.30	7.00
M3	10.50	5.40	8.90	9.54
M6	8.80	6.00	9.20	9.01
M10	9.10	6.00	9.70	10.24
M10A	9.40	5.40	10.20	9.36
M15	8.90	6.00	8.80	9.53
M18	9.10	5.70	9.60	9.79
M20	9.90	5.20	8.40	9.69
M22	6.50	-	-	-
M21	8.30	-	-	-
SE	-	-	9.60	9.33
SW	-	6.20	9.30	10.40
NE	-	5.90	8.90	8.96
NW	-	5.90	9.30	9.32
M1	-	5.30	8.90	9.23
M9	-	5.40	9.20	9.17
M11	-	6.70	9.10	10.03

Table E-23. Quarterly potassium values in sediment pore waters at West Hackberry site from May 1981 through April 1982.

K (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	0.320	0.210	0.350	0.370
DN	0.300	0.130	0.330	0.360
DW	0.320	0.210	0.340	0.340
DE	0.350	0.210	0.330	0.420
E1	0.090	0.030	0.400	0.020
E2	0.160	0.110	0.230	0.150
E3	0.230	0.150	0.240	0.260
E4	0.230	0.130	0.250	0.280
E5	0.260	0.150	0.260	0.300
M3	0.300	0.220	0.340	0.490
M6	0.310	0.230	0.340	0.420
M10	0.340	0.220	0.350	0.390
M10A	0.330	0.200	0.340	0.330
M15	0.300	0.230	0.320	0.580
M18	0.320	0.220	0.340	0.370
M20	0.360	0.190	0.330	0.430
M22	0.370	-	-	-
M21	0.280	-	-	-
SE	-	0.230	0.320	0.400
SW	-	0.210	0.340	0.480
NE	-	0.220	0.370	0.400
NW	-	0.210	0.320	0.420
M1	-	0.220	0.320	0.380
M9	-	0.200	0.340	0.370
M11	-	0.210	0.340	0.510

Table E-24. Quarterly calcium values in sediment pore waters at West Hackberry site from May 1981 through April 1982.

CA (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	0.380	0.260	0.380	0.390
DN	0.370	0.190	0.360	0.400
DW	0.380	0.260	0.380	0.380
DE	0.380	0.280	0.380	0.420
E1	0.170	0.100	0.140	0.050
E2	0.240	0.170	0.280	0.150
E3	0.290	0.200	0.280	0.230
E4	0.300	0.190	0.300	0.230
E5	0.340	0.210	0.300	0.310
M3	0.360	0.260	0.370	0.390
M6	0.370	0.290	0.380	0.340
M10	0.370	0.270	0.380	0.390
M10A	0.360	0.250	0.380	0.380
M15	0.380	0.300	0.370	0.400
M18	0.380	0.280	0.380	0.420
M20	0.380	0.260	0.360	0.390
M22	0.380	-	-	-
M21	0.350	-	-	-
SE	-	0.290	0.390	0.380
SW	-	0.260	0.370	0.430
NE	-	0.260	0.370	0.370
NW	-	0.270	0.370	0.400
M1	-	0.250	0.370	0.380
M9	-	0.260	0.380	0.380
M11	-	0.260	0.370	0.380

Table E-25. Quarterly magnesium values in sediment pore waters at West Hackberry site from May 1981 through April 1982.

MG (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	1.09	0.65	1.03	1.06
DN	1.04	0.47	0.97	1.08
DW	1.06	0.65	1.06	1.03
DE	1.10	0.71	1.07	1.17
E1	1.16	0.20	0.40	0.10
E2	0.64	0.44	0.73	0.40
E3	0.82	0.55	0.80	0.68
E4	0.84	0.50	0.80	0.62
E5	0.97	0.56	0.92	0.80
M3	1.06	0.64	1.03	1.15
M6	1.06	0.70	1.05	1.02
M10	1.04	0.66	1.04	1.07
M10A	1.04	0.61	1.04	0.99
M15	1.06	0.70	1.04	1.11
M18	1.09	0.69	1.12	1.12
M20	1.26	0.61	1.01	1.19
M22	0.74	-	-	-
M21	0.96	-	-	-
SE	-	-	1.11	1.04
SW	-	0.65	1.04	1.18
NE	-	0.69	1.04	1.09
NW	-	0.69	1.05	1.09
M1	-	0.63	1.05	1.12
M9	-	0.65	1.07	1.10
M11	-	0.72	1.05	1.16

Table E-26. Quarterly chloride values in sediment pore waters at West Hackberry site from May 1981 through April 1982.

CL (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	17.20	13.30	18.90	16.50
DN	17.10	8.60	17.60	16.80
DW	17.90	12.90	18.90	17.00
DE	18.00	13.60	18.20	17.00
E1	6.70	3.70	7.30	1.70
E2	9.90	7.20	12.20	6.40
E3	13.50	9.50	12.90	10.80
E4	13.30	8.50	13.40	10.60
E5	15.30	9.70	14.80	12.30
M3	16.80	12.50	17.60	17.30
M6	17.00	13.90	18.90	16.50
M10	17.20	12.30	19.10	17.50
M10A	17.20	14.90	19.20	17.00
M15	16.90	13.90	18.20	17.30
M18	17.20	13.20	18.30	17.30
M20	19.40	12.10	17.40	18.20
M22	17.80	-	-	-
M21	15.70	-	-	-
SE	-	13.90	18.80	17.00
SW	-	13.00	18.40	18.00
NE	-	13.40	17.90	16.80
NW	-	13.10	18.20	17.30
M1	-	12.30	17.60	16.80
M9	-	12.10	18.40	17.00
M11	-	12.10	18.00	17.30

Table E-27. Quarterly sulfate values in sediment pore waters at West Hackberry site from May 1981 through April 1982.

SO4 (G/L)	06-08-81	09-11-81	12-02-81	03-12-82
DS	2.20	1.80	2.80	2.15
DN	2.15	1.80	2.60	2.25
DW	2.10	1.80	2.60	2.15
DE	2.38	1.90	2.70	3.30
E1	0.80	0.20	0.60	0.14
E2	1.15	1.00	2.80	0.65
E3	1.40	1.10	1.80	1.49
E4	1.65	1.30	1.80	1.24
E5	1.90	1.40	1.80	2.00
M3	1.92	2.00	2.60	2.95
M6	1.90	1.80	2.40	2.35
M10	2.20	1.90	2.50	2.42
M10A	1.95	1.90	2.60	2.15
M15	2.45	1.90	2.60	3.17
M18	2.10	2.00	2.80	2.45
M20	2.28	1.90	2.40	-
M22	2.35	-	-	-
M21	1.88	-	-	-
SE	-	2.00	2.70	2.52
SW	-	1.80	2.40	3.55
NE	-	2.00	2.50	2.37
NW	-	1.80	2.50	2.42
M1	-	2.00	2.50	2.25
M9	-	1.80	2.50	2.20
M11	-	2.00	2.70	2.90

Table E-28. Quarterly sodium/potassium ion ratios in sediment pore waters at West Hackberry site from May 1981 through April 1982.

RATIO : NA/K				
	06-08-81	09-11-81	12-02-81	03-12-82
DS	28.75	28.57	29.14	25.22
DN	28.67	33.08	27.88	25.78
DW	28.75	28.57	29.41	26.47
DE	26.57	31.43	27.27	23.24
E1	46.67	73.33	10.25	58.00
E2	36.25	33.64	29.57	27.73
E3	31.74	32.00	26.67	22.46
E4	31.74	31.54	29.20	20.14
E5	31.15	30.67	28.08	23.33
M3	35.00	24.55	26.18	19.47
M6	28.39	26.09	27.06	21.45
M10	26.76	27.27	27.71	26.26
M10A	28.48	27.00	30.00	28.36
M15	29.67	26.09	27.50	16.43
M18	28.44	25.91	28.24	26.46
M20	27.50	27.37	25.45	22.53
M22	17.57	-	-	-
M21	29.64	-	-	-
SE	-	-	30.00	23.33
SW	-	29.52	27.35	21.67
NE	-	26.82	24.05	22.40
NW	-	28.10	29.06	22.19
M1	-	24.09	27.81	24.29
M9	-	27.00	27.06	24.78
M11	-	31.90	26.76	19.67

Table E-29. Quarterly calcium/magnesium ion ratios in sediment pore waters at West Hackberry site from May 1981 through April 1982.

RATIO : CA/MG				
	06-08-81	09-11-81	12-02-81	03-12-82
DS	0.35	0.40	0.37	0.37
DN	0.36	0.40	0.37	0.37
DW	0.36	0.40	0.36	0.37
DE	0.35	0.39	0.36	0.36
E1	0.15	0.50	0.35	0.50
E2	0.38	0.39	0.38	0.38
E3	0.35	0.36	0.35	0.34
E4	0.36	0.38	0.38	0.37
E5	0.35	0.38	0.33	0.39
M3	0.34	0.41	0.36	0.34
M6	0.35	0.41	0.36	0.33
M10	0.36	0.41	0.37	0.36
M10A	0.35	0.41	0.37	0.38
M15	0.36	0.43	0.36	0.36
M18	0.35	0.41	0.34	0.38
M20	0.30	0.43	0.36	0.33
M22	0.51	-	-	-
M21	0.36	-	-	-
SE	-	-	0.35	0.37
SW	-	0.40	0.36	0.36
NE	-	0.38	0.36	0.34
NW	-	0.39	0.35	0.37
M1	-	0.40	0.35	0.34
M9	-	0.40	0.36	0.35
M11	-	0.36	0.35	0.33

Table E-30. Quarterly chloride/sulfate ion ratios in sediment pore waters at West Hackberry site from May 1981 through April 1982.

RATIO : CL/SO4

	06-08-81	09-11-81	12-02-81	03-12-82
DS	7.82	7.39	6.75	7.67
DN	7.95	4.78	6.77	7.47
DW	8.52	7.17	7.27	7.91
DE	7.56	7.16	6.74	5.15
E1	8.38	18.50	12.17	12.14
E2	8.61	7.20	4.36	9.85
E3	9.64	8.64	7.17	7.25
E4	8.06	6.54	7.44	8.55
E5	8.05	6.93	8.22	6.15
M3	8.75	6.25	6.77	5.86
M6	8.95	7.72	7.88	7.02
M10	7.82	6.47	7.64	7.23
M10A	8.82	7.84	7.38	7.91
M15	6.90	7.32	7.00	5.46
M18	8.19	6.60	6.54	7.06
M20	8.51	6.37	7.25	-
M22	7.57	-	-	-
M21	8.35	-	-	-
SE	-	6.95	6.96	6.75
SW	-	7.22	7.67	5.07
NE	-	6.70	7.16	7.09
NW	-	7.28	7.28	7.15
M1	-	6.15	7.04	7.47
M9	-	6.72	7.36	7.73
M11	-	6.05	6.67	5.97

Table E-31. Monthly sediment parameters for estuarine station E1, 1981-1982.

Station E1	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	6.48	7.53	3.64	0.365	0.63	7.3/47.6/45.1
	Jun	7.02	7.85	3.51	0.321	0.59	2.0/50.5/47.6
	Jul	7.24	7.93	3.66	0.242	0.61	6.3/44.9/48.7
	Aug	6.12	7.17	3.60	0.369	0.76	12.2/52.1/35.7
	Sep	6.18	7.43	3.73	0.412	0.65	10.6/50.2/39.1
	Oct	6.22	7.45	3.63	0.417	0.68	7.86/51.0/41.2
	Nov	6.64	7.71	3.47	0.400	0.64	4.2/52.9/42.9
	Dec	6.10	7.25	3.58	0.414	0.69	10.4/49.3/40.4
	Jan	6.6	7.56	3.63	0.293	0.73	10.65/45.3/44.1
	Feb	5.79	6.89	3.56	0.419	0.73	16.3/45.4/38.3
	Mar	4.91	5.86	4.26	0.277	0.78	35.41/23.12/41.47
	Apr	6.55	7.63	3.51	0.380	0.68	6.40/46.56/47.04

Table E-32. Monthly sediment parameters for estuarine station E2, 1981-1982.

Station E2	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	6.56	7.60	3.91	0.313	0.62	13.5/40.8/45.7
	Jun	7.45	7.91	3.91	0.110	0.67	11.8/38.5/49.7
	Jul	6.89	7.79	3.74	0.281	0.64	7.8/44.9/47.2
	Aug	7.11	7.80	3.69	0.208	0.72	9.9/44.2/45.9
	Sep	7.79	8.22	3.66	0.153	0.58	5.0/43.1/51.8
	Oct	4.13	5.68	3.98	0.515	0.85	38.7/33.2/28.1
	Nov	7.09	7.81	3.59	0.260	0.64	6.7/45.9/47.5
	Dec	6.10	7.25	3.58	0.414	0.69	19.9/22.4/57.6
	Jan	7.41	7.96	3.52	0.206	0.66	5.9/44.6/49.4
	Feb	7.47	7.82	3.75	0.085	0.74	11.4/38.8/42.8
	Mar	4.82	6.09	3.74	0.466	0.79	28.64/36.93/34.43
	Apr	5.44	6.36	4.37	0.265	0.74	26.47/35.95/37.58

Table E-33. Monthly sediment parameters for estuarine station E3, 1981-1982.

Station E3	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	10.55	9.73	3.42	-0.334	0.70	2.9/28.9/68.2
	Jun	10.14	9.50	3.36	-0.266	0.75	3.10/25.9/70.9
	Jul	--	--	--	--	--	--
	Aug	4.08	5.85	4.20	0.503	0.84	39.9/30.0/30.0
	Sep	9.97	9.21	3.66	-0.275	0.66	6.2/32.3/61.4
	Oct	9.71	9.45	3.08	-0.135	0.76	1.5/28.9/69.6
	Nov	3.36	4.81	4.41	0.466	1.18	53.3/22.9/23.8
	Dec	9.85	9.51	3.09	-0.161	0.72	9.0/57.8/33.1
	Jan	--	--	--	--	--	--
	Feb	9.47	9.30	3.18	-0.132	0.78	2.9/29.2/67.9
	Mar	5.62	6.69	3.91	0.336	0.78	20.8/35.5/43.7
	Apr	8.93	8.31	3.98	-0.183	0.69	16.48/25.94/57.58

Table E-34. Monthly sediment parameters for estuarine station E4, 1981-1982.

Station E4	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	5.88	6.93	4.16	0.439	0.77	16.3/53.7/41.1
	Jun	6.22	7.48	3.86	0.360	0.66	9.7/45.0/45.3
	Jul	3.66	6.03	4.00	0.748	0.65	47.2/19.6/33.2
	Aug	4.98	6.50	3.87	0.509	0.67	31.4/33.3/35.4
	Sep	6.12	7.24	4.06	0.344	0.58	25.2/30.9/44.0
	Oct	8.03	7.95	3.98	-0.037	0.67	16.4/30.2/53.4
	Nov	6.67	7.30	3.92	0.229	0.59	27.0/28.5/44.5
	Dec	4.47	6.36	3.73	0.673	0.63	38.8/25.1/36.2
	Jan	5.60	5.86	4.94	0.114	0.68	30.8/27.6/41.6
	Feb	7.12	7.38	4.00	0.092	0.63	24.9/27.5/47.6
	Mar	4.50	6.15	3.93	0.551	0.67	38.0/21.6/40.3
	Apr	4.33	6.26	3.99	0.612	0.63	41.2/22.67/36.13

Table E-35. Monthly sediment parameters for estuarine station E5, 1981-1982.

Station E5	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay
		M_ϕ	M_σ	σ_1	SK_I	K_g	%
	May	3.93	6.12	3.93	0.683	0.79	29.9/42.8/30.2
	Jun	4.00	6.11	3.72	0.700	1.23	18.1/56.4/25.4
	Jul	3.57	4.84	2.29	0.699	2.96	45.6/37.8/16.6
	Aug	3.25	5.17	3.60	0.736	1.14	57.5/21.4/21.1
	Sep	8.72	8.26	3.51	-0.117	0.60	5.1/37.7/57.2
	Oct	4.65	6.03	3.98	0.455	0.75	35.6/33.2/31.2
	Nov	9.80	9.01	3.75	-0.287	0.79	8.5/24.7/66.9
	Dec	4.14	5.93	4.13	0.546	0.70	35.5/29.3/35.3
	Jan	6.73	7.41	3.95	0.211	0.63	19.3/34.0/46.6
	Feb	7.60	7.56	3.89	-0.002	0.65	21.9/27.6/50.5
	Mar	3.00	4.16	2.68	0.765	4.38	72.6/10.8/16.8
	Apr	6.51	7.32	4.28	0.107	0.67	28.3/24.6/46.2

Table E-36. Monthly sediment parameters for offshore station M1, 1981-1982.

Station M1	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	---	---	---	---	---	---
	Jun	---	---	---	---	---	---
	Jul	---	---	---	---	---	---
	Aug	---	---	---	---	---	---
	Sep	8.12	8.12	4.00	-0.014	0.62	15.2/31.0/53.8
	Oct	5.02	6.29	4.17	0.395	0.65	36.4/23.3/40.3
	Nov	4.94	6.62	4.04	0.502	0.64	37.9/21.6/40.5
	Dec	4.34	6.19	4.00	0.579	0.66	38.6/23.0/38.4
	Jan	6.91	7.62	3.82	0.212	0.69	
	Feb	5.44	6.53	4.15	0.346	0.63	33.3/25.1/41.7
	Mar	9.18	8.78	3.66	-0.162	0.69	8.1/23.4/68.5
	Apr	5.33	6.48	4.28	0.344	0.63	34.75/25.40/39.85

Table E-37. Monthly sediment parameters for offshore station M3, 1981-1982.

Station M3	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	9.99	9.33	3.54	-0.276	0.75	5.9/24.1/70.1
	Jun	6.15	6.78	4.22	0.208	0.68	24.8/30.8/44.4
	Jul	8.65	8.43	3.83	-0.078	0.62	9.4/32.4/58.3
	Aug	4.97	6.26	4.17	0.402	0.69	29.5/33.3/37.2
	Sep	7.11	7.35	4.35	0.081	0.59	27.5/24.5/48.1
	Oct	8.94	8.49	3.83	-0.176	0.70	11.4/29.3/59.4
	Nov	6.49	7.25	4.06	0.219	0.64	26.4/29.4/44.1
	Dec	8.61	8.29	3.99	-0.146	0.69	13.6/30.3/56.1
	Jan	3.34	5.48	3.99	0.680	0.80	53.0/17.3/28.7
	Feb	6.38	6.91	4.25	0.169	0.64	28.3/26.7/45.0
	Mar	3.55	5.30	3.95	0.584	1.11	48.9/25.6/25.6
	Apr	3.47	5.42	4.25	0.581	0.83	50.5/21.8/27.7

Table E-38. Monthly sediment parameters for offshore station M6, 1981-1982.

Station M6	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.62	8.89	3.87	-0.277	0.75	9.1/24.3/66.6
	Jun	7.62	7.95	3.96	0.072	0.64	13.5/35.9/50.6
	Jul	---	---	---	---	---	---
	Aug	---	---	---	---	---	---
	Sep	7.27	7.88	3.89	0.164	0.64	10.7/40.5/59.5
	Oct	9.14	8.63	3.58	-0.178	0.71	5.9/31.8/62.2
	Nov	9.86	9.40	3.34	-0.221	0.80	4.9/26.3/68.9
	Dec	9.38	8.95	3.44	-0.181	0.79	6.6/37.5/55.9
	Jan	9.78	9.27	3.40	-0.230	0.82	5.5/23.9/70.7
	Feb	9.11	8.60	3.82	-0.209	0.75	11.0/28.3/60.7
	Mar	8.14	7.94	4.06	-0.081	0.67	17.3/25.0/57.7
	Apr	6.57	7.03	4.31	0.146	0.61	30.5/24.7/44.8

Table E-39. Monthly sediment parameters for offshore station M9, 1981-1982.

Station M9	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_G	σ_1	SK_I	K_g	
	May	10.51	10.25	2.75	-0.204	0.88	0.2/17.9/81.8
	Jun	--	--	--	--	--	--
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	3.83	6.15	4.03	0.699	0.68	43.2/22.9/33.7
	Oct	5.10	6.80	3.50	0.627	0.68	10.4/51.0/38.6
	Nov	10.17	9.79	3.07	-0.213	0.80	1.51/25.2/73.3
	Dec	9.91	9.63	3.05	-0.173	0.84	1.9/24.0/74.1
	Jan	10.06	9.81	2.87	-0.145	0.78	0.3/24.6/75.1
	Feb	9.76	9.51	3.00	-0.136	0.79	0.3/27.5/72.1
	Mar	9.37	9.07	3.25	-0.107	0.67	3.5/24.2/72.3
	Apr	9.81	9.43	3.20	-0.185	0.79	2.4/26.9/70.7

Table E-40. Monthly sediment parameters for offshore station M10, 1981-1982.

Station M10	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.71	9.00	3.91	-0.310	0.83	6.8/26.7/66.6
	Jun	3.93	5.98	3.53	0.764	0.68	42.2/23.1/37.3
	Jul	8.02	8.15	3.77	0.035	0.62	8.4/37.9/53.7
	Aug	7.31	7.63	3.95	0.093	0.68	17.2/34.1/48.7
	Sep	3.83	6.15	4.03	0.699	0.68	5.7/32.7/61.6
	Oct	9.10	8.18	2.67	-0.47	0.57	5.47/37.39/57.13
	Nov	8.18	8.28	3.79	-0.007	0.69	6.6/39.5/53.9
	Dec	6.49	7.42	3.81	0.265	0.70	11.5/44.3/44.2
	Jan	9.11	8.66	3.64	-0.149	0.67	6.5/32.1/61.4
	Feb	9.35	8.91	3.47	-0.175	0.75	5.7/28.5/65.8
	Mar	9.99	9.71	3.05	-0.186	0.86	2.4/14.7/83.0
	Apr	7.25	7.90	3.42	0.267	0.62	2.5/48.8/48.8

Table E-41. Monthly sediment parameters for offshore station M10A, 1981-1982.

Station M10A	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	10.46	9.41	3.70	-0.373	0.75	6.9/23.5/69.6
	Jun	9.63	9.11	3.43	-0.192	0.71	3.5/31.0/65.6
	Jul	9.73	9.00	3.72	-0.259	0.70	8.1/26.1/65.8
	Aug	8.72	8.48	3.89	-0.124	0.77	9.8/32.1/57.1
	Sep	6.52	7.51	3.65	0.337	0.63	7.7/45.8/46.4
	Oct	9.01	8.48	3.81	-0.193	0.74	13.1/25.7/61.2
	Nov	10.11	9.77	2.95	-0.178	0.79	0.5/24.5/74.9
	Dec	9.66	9.32	3.19	-0.163	0.80	2.0/28.7/69.3
	Jan	9.67	9.32	3.11	-0.135	0.71	0.3/30.2/69.5
	Feb	9.88	9.60	2.96	-0.148	0.80	0.5/25.5/74.0
	Mar	8.69	8.34	3.80	-0.141	0.70	10.3/25.7/64.0
	Apr	9.16	8.94	3.41	-0.075	0.65	1.1/36.0/62.8

Table E-42. Monthly sediment parameters for offshore station M11, 1981-1982.

Station M11	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	--	--	--	--	--	--
	Jun	--	--	--	--	--	--
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	7.96	8.02	3.99	0.009	0.61	15.9/31.8/52.3
	Oct	4.44	6.35	3.72	0.663	0.68	26.2/38.3/35.5
	Nov	7.26	7.76	3.86	-0.146	0.63	12.9/38.4/48.7
	Dec	6.19	7.26	3.83	0.329	0.67	14.9/41.2/43.7
	Jan	6.86	7.57	3.71	0.243	0.69	13.5/39.7/46.8
	Feb	8.22	7.99	3.89	-0.080	0.66	15.4/31.1/53.5
	Mar	7.48	7.78	3.86	0.091	0.64	14.7/30.5/54.9
	Apr	6.62	7.30	3.96	0.216	0.64	22.0/32.1/45.9

Table E-43. Monthly sediment parameters for offshore station M15, 1981-1982.

Station M15	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.90	9.05	3.68	-0.279	0.62	5.5/29.3/65.2
	Jun	10.00	9.15	3.60	-0.288	0.68	4.3/28.2/67.6
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	10.09	9.64	3.11	-0.224	0.89	1.1/22.6/76.4
	Oct	9.37	8.87	3.42	-0.165	0.73	2.3/32.3/65.4
	Nov	9.58	9.07	3.45	-0.195	0.74	4.2/29.9/65.9
	Dec	9.73	9.30	3.27	-0.191	0.79	2.95/26.49/70.6
	Jan	9.43	8.94	3.45	-0.178	0.74	4.3/29.5/65.2
	Feb	7.98	8.03	3.76	-0.001	0.69	11.0/36.7/52.3
	Mar	9.33	8.80	3.65	-0.179	0.67	6.5/25.2/68.3
	Apr	8.44	8.25	3.77	-0.069	0.66	11.1/33.3/55.6

Table E-44. Monthly sediment parameters for offshore station M18 1981-1982.

Station M18	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.89	9.20	3.55	-0.265	0.73	6.1/25.4/ 6.5
	Jun	8.78	8.54	3.63	-0.065	0.62	5.4/36.4/58.2
	Jul	8.40	8.35	3.75	-0.016	0.61	8.9/34.4/56.7
	Aug	9.91	9.24	3.51	-0.252	0.68	4.5/27.7/67.8
	Sep	10.09	9.64	3.11	-0.224	0.89	2.5/29.7/67.7
	Oct	6.88	7.36	4.23	-0.079	0.74	22.1/31.1/46.8
	Nov	9.76	9.41	3.16	-0.161	0.76	0.7/30.2/69.1
	Dec	9.73	9.34	3.20	-0.176	0.77	0.7/28.6/70.7
	Jan	9.64	9.09	3.47	-0.219	0.78	5.9/26.2/67.9
	Feb	9.04	8.66	3.55	-0.126	0.68	5.5/33.4/61.2
	Mar	9.12	8.73	3.55	-0.137	0.70	5.8/26.0/68.3
	Apr	9.55	9.06	3.43	-0.191	0.72	4.5/27.3/67.3

Table E-45. Monthly sediment parameters for offshore station M20, 1981-1982.

Station M20	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.92	9.24	3.48	-0.243	0.69	2.1/29.1/68.7
	June	9.83	8.98	3.70	-0.277	0.66	6.1/26.3/67.5
	July	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	10.27	9.60	3.33	-0.275	0.72	1.3/29.0/69.5
	Oct	10.01	9.62	3.11	-0.191	0.77	1.3/27.0/71.7
	Nov	10.03	9.51	3.26	-0.222	0.74	0.5/30.6/68.9
	Dec	9.79	9.51	3.04	-0.146	0.78	0.6/27.7/71.7
	Jan	9.73	9.29	3.30	-0.186	0.75	2.5/28.9/68.5
	Feb	9.70	9.33	3.21	-0.178	0.78	2.8/27.1/70.1
	Mar	8.52	8.24	3.88	-0.089	0.63	13.5/24.6/62.0
	Apr	6.69	7.29	4.01	0.167	0.61	28.7/24.8/46.5

Table E-46. Monthly sediment parameters for offshore station M21, 1981-1982.

Station M21	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	10.71	10.31	2.82	-0.247	0.80	0.7/18.4/80.9
	Jun	9.97	9.42	3.29	-0.230	0.80	0.9/27.1/71.9
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	--	--	--	--	--	--
	Oct	--	--	--	--	--	--
	Nov	--	--	--	--	--	--
	Dec	--	--	--	--	--	--
	Jan	--	--	--	--	--	--
	Feb	--	--	--	--	--	--
	Mar	--	--	--	--	--	--
	Apr	--	--	--	--	--	--

Table E-47. Monthly sediment parameters for offshore station M22, 1981-1982.

Station M22	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	2.40	3.42	2.98	0.653	2.74	72.7/13.3/14.1
	Jun	2.12	2.40	2.68	0.460	4.27	80.0/9.6/10.4
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	--	--	--	--	--	--
	Oct	--	--	--	--	--	--
	Nov	--	--	--	--	--	--
	Dec	--	--	--	--	--	--
	Jan	--	--	--	--	--	--
	Feb	--	--	--	--	--	--
	Mar	--	--	--	--	--	--
	Apr	--	--	--	--	--	--

Table E-48. Monthly sediment parameters for offshore station DN, 1981-1982.

Station DN	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	9.90	9.57	2.98	-0.168	0.87	0.8/23.2/75.9
	Jun	10.12	9.49	3.35	-0.262	0.76	3.5/27.7/70.8
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	8.62	8.50	3.73	-0.040	0.62	7.0/36.8/56.1
	Oct	8.88	8.46	3.73	-0.136	0.66	9.6/30.8/59.6
	Nov	10.24	9.90	2.95	-0.192	0.80	1.7/22.9/75.4
	Dec	9.75	9.47	3.11	-0.163	0.84	2.7/24.7/72.6
	Jan	7.20	7.55	3.97	0.128	0.58	25.7/25.8/48.6
	Feb	8.55	8.28	4.14	-0.152	0.77	13.7/28.1/58.2
	Mar	10.10	9.79	3.03	-0.194	0.82	1.8/15.2/83.1
	Apr	10.05	9.53	3.28	-0.239	0.80	2.9/24.8/72.4

Table E-49. Monthly sediment parameters for offshore station NE, 1981-1982.

Station NE	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.11	8.86	3.41	-0.085	0.65	1.7/37.0/61.3
	June	--	--	--	--	--	--
	July	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sept	9.59	8.83	3.94	-0.271	0.66	8.6/31.4/60.0
	Oct	9.98	9.75	2.89	-0.146	0.81	0.3/24.4/75.3
	Nov	9.99	9.59	3.16	-0.203	0.79	1.1/26.7/72.9
	Dec	1.55	1.64	0.53	0.362	1.32	97.6/0.1/2.3
	Jan	2.77	3.37	2.66	0.565	2.73	72.8/13.2/14.0
	Feb	9.86	9.49	3.13	-0.187	0.80	1.5/25.9/72.5
	Mar	9.33	8.84	3.50	-0.171	0.73	5.1/22.3/72.7
	Apr	9.40	8.87	3.53	-0.179	0.70	4.1/31.7/64.2

Table E-50. Monthly sediment parameters for offshore station DE, 1981-1982.

Station DE	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
E-50	May	8.31	8.28	3.74	0.005	0.59	8.1/37.1/54.8
	Jun	7.48	7.96	3.66	0.181	0.58	5.9/44.2/49.9
	Jul	9.72	9.06	3.57	-0.226	0.65	3.8/30.0/66.2
	Aug	9.09	8.64	3.61	-0.132	0.68	4.9/35.2/59.9
	Sep	7.98	8.19	3.80	0.061	0.60	6.9/27.4/65.7
	Oct	9.71	9.41	3.12	-0.154	0.79	1.9/27.3/70.9
	Nov	9.72	9.15	3.55	-0.299	0.95	10.4/21.7/67.6
	Dec	9.63	9.20	3.34	-0.197	0.84	4.9/24.9/70.3
	Jan	9.93	9.51	3.18	-0.203	0.82	1.3/25.7/72.9
	Feb	5.88	7.06	3.70	0.421	0.63	17.2/40.4/42.4
	Mar	8.64	8.26	3.79	-0.121	0.65	12.4/24.3/63.3
	Apr	8.96	8.60	3.70	-0.132	0.70	8.7/31.3/60.2

Table E-51. Monthly sediment parameters for offshore station SE, 1981-1982.

Station SE	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	9.06	8.56	4.15	-0.249	0.87	9.1/33.7/57.2
	Jun	--	--	--	--	--	--
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	10.34	9.64	3.40	-0.306	0.79	4.6/24.2/71.2
	Oct	8.37	8.19	3.73	-0.057	0.65	10.5/34.5/55.0
	Nov	9.77	9.19	3.41	-0.219	0.75	2.7/28.9/68.4
	Dec	9.68	9.33	3.23	-0.173	0.80	3.2/28.2/68.6
	Jan	9.40	8.71	3.80	-0.233	0.74	10.3/24.9/64.9
	Feb	9.03	8.60	3.59	-0.144	0.67	7.3/31.8/60.9
	Mar	9.00	8.56	3.77	-0.151	0.66	9.6/23.1/67.3
	Apr	8.75	8.33	3.87	-0.144	0.67	12.9/28.5/58.6

Table E-52. Monthly sediment parameters for offshore station DS, 1981-1982.

Station DS	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	9.80	9.28	3.27	-0.217	0.81	2.5/23.8/73.7
	Jun	9.55	8.89	3.61	-0.207	0.63	3.9/32.4/63.7
	Jul	3.65	5.45	3.68	0.668	1.95	44.5/34.3/21.3
	Aug	--	--	--	--	--	--
	Sep	7.98	8.19	3.80	0.061	0.60	8.3/38.9/52.8
	Oct	8.97	8.36	3.74	-0.200	0.66	11.4/31.6/52.0
	Nov	9.49	8.93	3.53	-0.188	0.69	4.18/31.6/64.2
	Dec	8.99	8.55	3.61	-0.131	0.65	5.61/34.4/60.1
	Jan	9.82	9.31	3.28	-0.199	0.73	1.8/28.6/69.7
	Feb	9.40	8.96	3.40	-0.162	0.72	3.5/31.5/64.91
	Mar	9.46	9.06	3.29	-0.145	0.72	1.9/23.8/74.3
	Apr	9.06	8.75	3.45	-0.110	0.69	4.5/34.6/60.9

Table E-53. Monthly sediment parameters for offshore station SW, 1981-1982.

Station SW	Date	Median Diameter	Mean Diameter	Sorting	Skewness	Kurtosis	Sand/Silt/Clay %
		M_ϕ	M_σ	σ_1	SK_I	K_g	
	May	--	--	--	--	--	--
	Jun	--	--	--	--	--	--
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	4.27	6.19	4.24	0.564	0.65	29.1/33.6/37.5
	Oct	8.45	8.22	3.73	-0.066	0.62	9.3/35.2/55.5
	Nov	3.58	6.08	3.82	0.839	0.61	49.2/15.1/35.7
	Dec	8.36	8.12	3.87	-0.082	0.64	13.9/31.4/54.7
	Jan	9.85	9.40	3.22	-0.192	0.74	1.1/29.0/69.9
	Feb	9.81	9.47	3.04	-0.150	0.75	0.3/28.0/71.7
	Mar	9.42	8.89	3.51	-0.178	0.69	3.5/24.6/71.9
	Apr	9.26	8.88	3.45	-0.139	0.71	4.3/32.2/63.6

Table E-54. Monthly sediment parameters for offshore station DW, 1981-1982.

Station DW	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	10.61	9.50	3.64	-0.378	0.66	3.6/30.0/66.4
	Jun	8.50	8.42	3.69	-0.008	0.58	5.4/38.2/56.4
	Jul	10.18	9.60	3.24	-0.248	0.80	1.5/24.4/74.1
	Aug	8.90	8.63	3.50	-0.076	0.69	3.2/28.2/58.6
	Sep	8.93	8.48	3.94	-0.143	0.58	11.5/31.0/57.5
	Oct	9.27	8.82	3.46	-0.148	0.69	2.9/32.7/64.3
	Nov	9.74	9.15	3.43	-0.209	0.68	1.1/32.1/66.8
	Dec	9.32	8.95	3.37	-0.139	0.72	3.6/31.1/65.4
	Jan	8.08	8.27	3.45	0.092	0.62	3.0/43.2/53.7
	Feb	10.03	9.69	3.01	-0.185	0.82	0.7/24.5/74.9
	Mar	9.99	9.71	2.97	-0.167	0.81	0.7/16.2/83.1
	Apr	9.15	8.97	3.27	-0.055	0.64	1.0/36.9/62.2

Table E-55. Monthly sediment parameters for offshore station NW, 1981-1982.

Station NW	Date	Median Diameter M_ϕ	Mean Diameter M_σ	Sorting σ_1	Skewness SK_I	Kurtosis K_g	Sand/Silt/Clay %
	May	9.36	8.64	4.00	-0.249	0.70	14.3/24.6/61.6
	Jun	--	--	--	--	--	--
	Jul	--	--	--	--	--	--
	Aug	--	--	--	--	--	--
	Sep	10.56	9.96	3.18	-0.298	0.79	1.4/24.2/74.4
	Oct	9.98	9.64	2.98	-0.169	0.79	0.8/24.7/74.4
	Nov	10.25	9.90	2.94	-0.195	0.78	1.4/23.4/75.3
	Dec	9.85	9.54	3.17	-0.193	0.85	4.5/23.1/72.4
	Jan	9.09	8.78	3.42	-0.098	0.66	2.0/36.0/61.9
	Feb	9.28	8.76	3.53	-0.168	0.86	4.6/31.8/63.5
	Mar	10.06	9.67	3.08	-0.198	0.80	0.8/17.9/81.4
	Apr	9.27	8.75	3.58	-0.162	0.65	4.2/32.5/63.3

APPENDIX F. Conductivity, Temperature, Depth, Dissolved Oxygen, (CTD/DO) pH, and Turbidity Data from Biological Sample Cruises.

F.1 Introduction

This section reports on the CTD/DO, pH and turbidity data of the West Hackberry Brine Disposal Project. The inherent variability of environmental data collected from a dynamic system such as the near-shore and estuarine systems of the north-central Gulf Coast necessitates the concurrent acquisition of certain water quality and biological data in order to derive associations between water quality degradation and biological impacts. This aspect of the study was intended to quantify the variation of water quality variables among sample stations, depth and temporally and to assist in the interpretation of biological variability. Additional results and discussions relating to specific cruises are presented in respective discipline chapters.

F.2 Materials and Methods

Monthly biological sampling occurred at five estuarine and nine marine stations. The estuarine stations, shown in Figure F-1, were located in the lower Calcasieu River Basin. Station E-1 was located in the Intracoastal Waterway near the leach water intake structure. The other four stations were located: at the north end of Calcasieu Lake, E2; in West Cove, northeast of Rabbit Island, E3; at the south end of Calcasieu Lake, east of the ship channel, E4; and at Calcasieu Pass, E5.

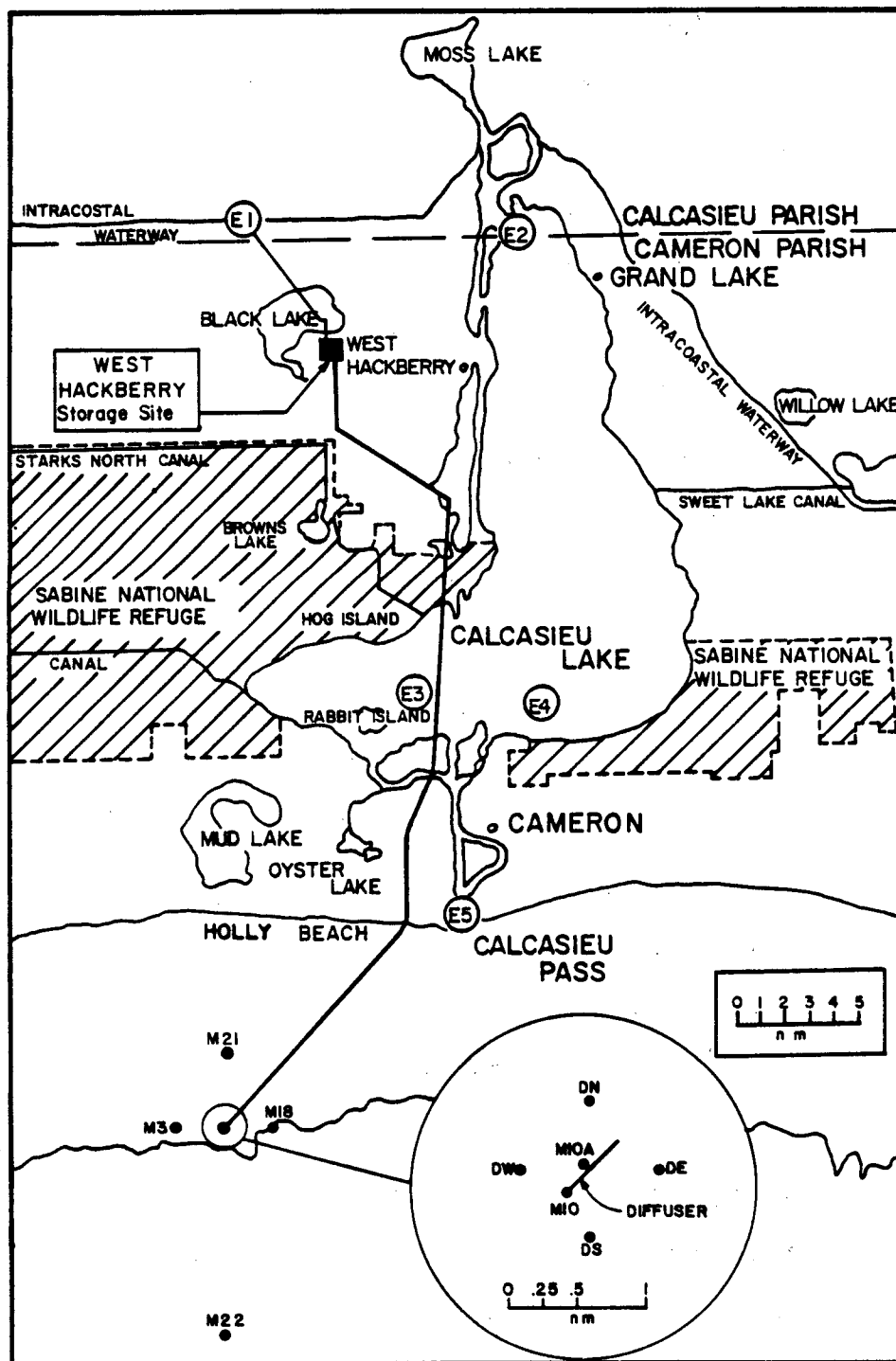


Figure F-1. Station locations.

The marine stations, centered about the diffuser, were aligned in an east-west orientation approximately along the ten meter isobath and in a north-south or transhore orientation. The station locations are illustrated in Figure F-1.

Upon arrival at each station and prior to biological sampling, general oceanographic and meteorological observations and a successful water quality profile were recorded. Data include the field LORAN C reading, time (GMT), date (GMT), depth (m), wind direction (tens of degrees), wind speed (mph), weather, cloud cover and sea state. The weather and sea state conditions were obtained on site from the NOAA weather service, visually verified and recorded using the NOAA codes (NOAA-EDIS 1978).

Conductivity, temperature, depth, dissolved oxygen, and pH profiles were taken with a Hydrolab Series 8000 meter. Depth (m), temperature ($^{\circ}\text{C}$) and pH were directly recorded from the instrument's digital display. Conductivity was measured in $\mu\text{mhos cm}^{-1}$ and converted to salinity in parts per thousand ($^{\circ}/\text{oo}$). Dissolved oxygen was measured in mg l^{-1} , corrected for temperature and salinity, and converted to ml l^{-1} . Turbidity samples were returned to the laboratory for analysis according to Standard Methods for the Examination of Water and Waste Water (1975).

The measurements were taken within one meter of the bottom, within one meter of the surface and every three meters in between. If stratification was evident, the profile measurements were performed at meter intervals until the stratifying layers were located.

Analyses were designed to quantify variation in water quality parameters among stations, depths and cruises (temporal). The analyses included: multivariate analysis of variance (MANOVA), univariate analysis of variance (ANOVA) and Duncan's multiple range test. For these analyses, dissolved oxygen concentrations which vary inversely with temperature and salinity were converted to percent oxygen saturation.

The MANOVA analyses treats the five variables (temperature, salinity, pH, % O₂ saturation and turbidity) as a vector quantity and tests for variation among treatment groups (stations and cruises), simultaneously. A non-significant F-statistic supports the hypothesis of equality among the treatment groups and further analyses are not necessary. A significant F-statistic implies differences may exist and more detailed analyses were conducted to identify the source and magnitude of variation.

F.3 Result and Discussion

F.3.1 Estuarine

Water quality data from thirty-three estuarine sample cruises were analysed. Only complete data sets with observations from all estuarine stations were used. Analyses incorporated surface observations only, since water depths of less than one meter existed at stations E2, E3 and E4. The MANOVA, ANOVA and Duncan's multiple range test results are presented in Tables F-1 and F-2.

These data do not support the hypothesis of equality among the

Table F-1. Manova and Anova Tables for surface values of temperature, salinity, pH, % oxygen saturation and turbidity for thirty-three estuarine cruises.

MANOVA TABLE						
Source of Variation	Log(Generalized Variance)	U-Statistic	Degrees of Freedom			Approximate F-Statistic
Station	40.13387	0.120892	5	4	128	18.3618*
Cruise	45.00298	0.000928	5	32	128	11.9817*
Error	38.02101					20 412.21 160 619.16
ANOVA TABLES						
Variable	Source of Variation	Sum of Squares	Degrees of Freedom		Mean Square	F-Statistic
Temperature	Mean	79261.9275	1		79261.9375	85907.9375
	Station	49.6279	4		12.4070	13.4473*
	Cruise	9273.4336	32		289.7947	314.0935*
	Error	118.0977	128		0.9226	
Salinity	Mean	43234.4023	1		43234.4023	4805.0742
	Station	4092.0547	4		1023.0137	113.6979*
	Cruise	4650.8008	32		145.3375	16.1528*
	Error	1151.6992	128		8.9977	
pH	Mean	9884.1680	1		9884.1680	22312.8867
	Station	13.775	4		3.4439	7.7743*
	Cruise	12.7226	32		0.3976	0.8975
	Error	56.7015	128		0.4430	
% O ₂ Saturation	Mean	1208094.0000	1		1208094.0000	6855.3828
	Station	4169.1797	4		1042.2949	5.9145*
	Cruise	19166.0234	32		598.9382	3.3987*
	Error	22556.8750	128		176.2256	
Turbidity	Mean	244847.6875	1		244847.6875	143.1993
	Station	14321.3750	4		3580.3438	2.0940*
	Cruise	155249.0000	32		4851.5313	2.8374*
	Error	218959.3125	128		1709.8384	

*F-Statistic significant at the 0.05 level.

Table F-2. Duncans multiple range test for surface samples of estuarine cruises. Station means are included and similar stations are underlined.

DUNCAN'S MULTIPLE RANGE TEST					
	E1	E2	E5	E3	E4
Temperature(°C)	22.512	22.448	22.085	21.321	21.221
	E5	E3	E4	E2	E1
Salinity (‰)	23.151	18.099	17.180	14.584	7.923
	E5	E3	E4	E2	E1
pH	8.020	8.002	7.837	7.588	7.252
	E3	E4	E5	E2	E1
% O ₂ Saturation	94.569	87.490	82.586	82.381	80.817
	E5	E4	E1	E3	E2
Turbidity (NTU)	47.806	45.415	43.199	33.612	22.576

five estuarine stations with respect to temperature, salinity, pH nor dissolved oxygen saturation values.

Turbidity varied as much among stations as temporally, however those station differences were only slightly significant and were not detected by multiple range tests. Gradients were evident for the other variables with E3 similar to E4 except for % O₂ saturation. E3, the shallowest station had higher O₂ saturation values (94.5%) than the other estuarine stations (mean vlues of 87.4 - 80.8%).

Among stations: average temperatures varied from 22.5 - 21.2°C; salinities from 23.1 - 7.9 ‰; pH from 8.0 - 7.2 units; O₂ saturation from 94.5 - 80.0%; and turbidity from 47.8 - 22.5 NTU.

Variation among cruises are illustrated with the temporal plots of CTD/DO data for stations E1, Figure F-2 and station E5, Figure F-3.

F.3.2. Marine

The water quality data from the seven marine stations along the 10 meter isobath (M3, M18, M10A, DN, DE, DS, and DW) were analysed to quantify among station variance during 38 biological cruises.

The MANOVA, ANOVA and Duncan's multiple range test results are presented in Tables F-3 through F-6 for three strata (surface, mid-depth and bottom) analysed separately.

The MANOVA analyses indicated pronounced cruise and minor station variation for these water quality variables. ANOVA and Duncan's multiple range test of surface samples indicate only pH variation, which averaged 8.1 pH units for those stations near and west of the diffuser and 8.0 pH units for those stations east of the diffuser.

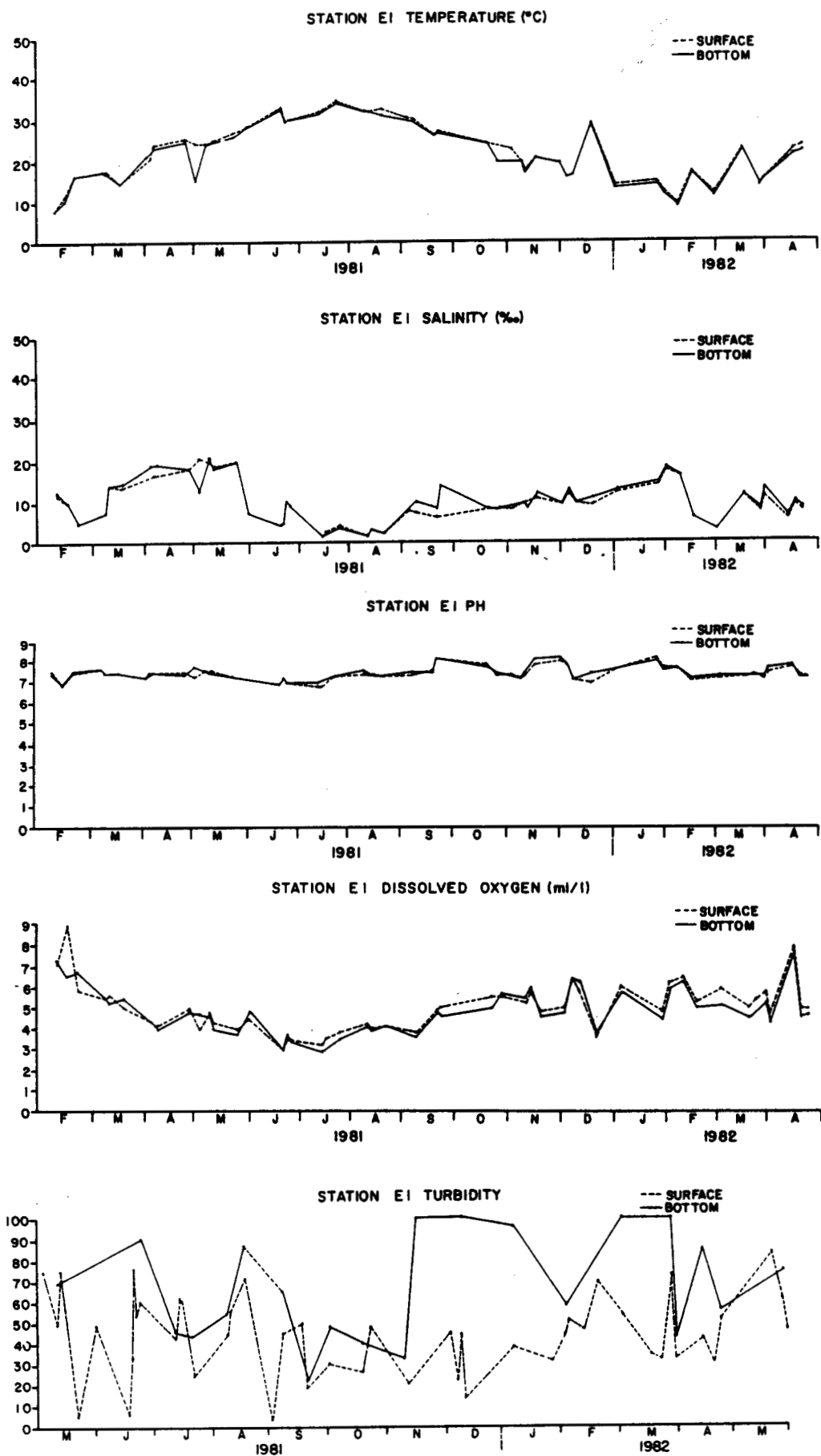


Figure F-2. Station E1 CTD/DO, pH and turbidity data.

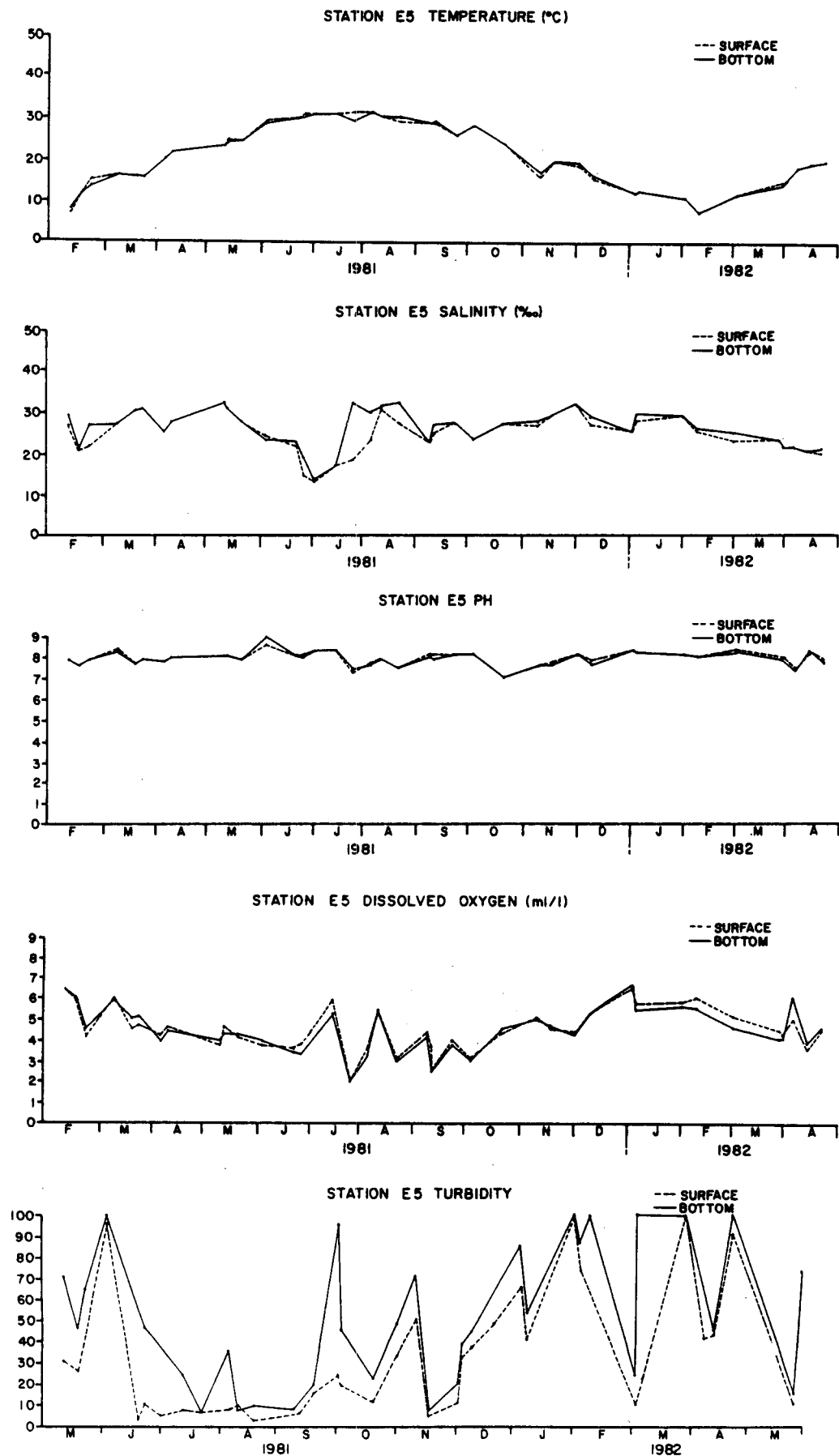


Figure F-3. Station E5 CTD/D0, pH and turbidity data.

Table F-3. Manova and Anova Tables for surface values of temperature, salinity, pH, % oxygen saturation and turbidity for thirty-eight marine cruises.

MANOVA TABLE					
Source of Variation	Log(Generalized Variance)	U-Statistic	Degrees of Freedom	Approximate F-Statistic	Degrees of Freedom
Cruise	38.84734	0.000004	5 37 222	65.1540*	1087.35
Station	26.69069	0.080553	5 6 222	1.5896*	874.00*
Error	26.47818				
ANOVA TABLES					
Variable	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-Statistic
Temperature	Mean	128128.9375	1	128128.9375	701507.1875
	Cruise	11506.9336	37	310.9980	1702.7173*
	Station	0.8193	6	0.1365	0.7476
	Error	40.5479	222	0.1826	
Salinity	Mean	191229.1250	1	191229.1250	250219.5000
	Cruise	6486.8086	37	175.3191	229.4016*
	Station	8.2906	6	1.3818	1.8080
	Error	169.6625	222	0.7642	
pH	Mean	17390.7695	1	17390.7695	1555087.0000
	Cruise	4.8215	37	0.1303	11.6524*
	Station	0.2021	6	0.0337	3.0117*
	Error	2.4827	222	0.0112	
% O ₂ Saturation	Mean	2371708.0000	1	2371708.0000	65259.3828
	Cruise	40262.1328	37	1088.1655	29.9417*
	Station	426.3633	6	71.0605	1.9553
	Error	8068.1016	222	36.3428	
Turbidity	Mean	5576.1250	1	5576.1250	345.7676
	Cruise	1582.6309	37	42.7738	2.6523*
	Station	131.7568	6	21.9595	1.3617
	Error	3580.1504	222	16.1268	

*F-Statistic significant at the 0.05 level.

Table F-4. Manova and Anova Tables for mid-depth samples of marine cruises.

MANOVA TABLE					
Source of Variation	Log(Generalized Variance)	U-Statistic	Degrees of Freedom		
Cruise	37.24138	0.000012	5	37	222
Station	26.08253	0.810195	5	6	222
Error	25.87206				
Approximate F-Statistic					
				52.1949*	185 1087.35
				1.5740*	30 874.00
ANOVA TABLES					
Variable	Source of Variation	Sum of Squares	Degrees of Freedom		Mean Square
Temperature	Mean	125136.2500	1		125136.2500
	Cruise	11522.2891	37		311.4131
	Station	0.3778	6		0.0630
	Error	23.5402	222		0.1060
Salinity	Mean	222965.3750	1		222965.3750
	Cruise	2186.6484	37		59.0986
	Station	23.5918	6		3.9320
	Error	196.2031	222		0.8838
pH	Mean	17306.6445	1		17306.6445
	Cruise	5.2753	37		0.1426
	Station	0.1435	6		0.0239
	Error	2.5769	222		0.0116
% O ₂ Saturation	Mean	1919223.0000	1		1919223.0000
	Cruise	30468.2656	37		823.4666
	Station	292.6250	6		48.7708
	Error	8868.5234	222		39.9483
Turbidity	Mean	5423.3242	1		5423.3242
	Cruise	1399.7234	37		37.8304
	Station	27.3313	6		4.5552
	Error	2214.3162	222		9.9744

*F-Statistic significant at the 0.05 level.

Table F-5. Manova and Anova Tables for bottom samples of marine cruises.

MANOVA TABLE					
Source of Variation	Log(Generalized Variance)	U-Statistic	Degrees of Freedom	Approximate F-Statistic	Degrees of Freedom
Cruise	41.54688	0.000036	5 37 222	40.3388*	185 1087.35
Station	31.75423	0.641974	5 6 222	3.4137*	30 874.00
Error	31.31102				
ANOVA TABLES					
Variable	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-Statistic
Temperature	Mean	125596.0625	1	125596.0625	927880.3125
	Cruise	11415.4766	37	308.5264	2279.3352*
	Station	1.2005	6	0.2001	1.4782
	Error	30.0495	222	0.1354	
Salinity	Mean	260474.2500	1	260474.2500	216747.1875
	Cruise	1505.0635	37	40.6774	33.8487*
	Station	85.3701	6	14.2284	11.8398*
	Error	266.7869	222	1.2017	
pH	Mean	17045.6719	1	17045.6719	1045045.9375
	Cruise	10.0906	37	0.2727	16.7200*
	Station	0.1679	6	0.0280	1.7158
	Error	3.6210	222	0.0163	
% O ₂ Saturation	Mean	1425446.0000	1	1425446.0000	12751.7148
	Cruise	62571.3125	37	1691.1165	15.1283*
	Station	1204.3203	6	200.7200	1.7956
	Error	24816.1875	222	111.7846	
Turbidity	Mean	35371.6563	1	35371.6563	121.1219
	Cruise	37498.3438	37	1013.4688	3.4704*
	Station	1404.0313	6	234.0052	0.8013
	Error	64831.4688	222	292.0334	

*F-Statistic significant at the 0.05 level.

Table F-6. Duncan's multiple range test for surface, mid-depth and bottom samples of marine cruises.
Station cell means are included and similar stations are underlined.

	SURFACE						
Temperature (°C)	M3 22.018	DS 21.999	DN 21.989	DW 21.942	M10A 21.934	DE 21.905	M18 21.847
Salinity (‰)	M3 27.166	DW 26.898	M18 26.863	DS 26.774	DE 26.754	M10A 26.648	DN 26.586
pH	DN 8.124	DS 8.124	DW 8.088	M3 8.087	M10A 8.061	DE 8.061	M18 8.052
% O ₂ Saturation	DN 96.685	DS 95.947	M3 94.298	M10A 93.860	DW 93.661	DE 93.580	M18 92.950
Turbidity (NTU)	DN 6.144	M10A 4.976	M18 4.313	DS 4.268	DW 4.252	DE 4.1444	M3 3.950

MID-DEPTH

Temperature (°C)	M18 21.749	DW 21.718	M3 21.715	M10A 21.689	DS 21.665	DE 21.660	DN 21.631
Salinity (‰)	M3 29.293	M18 29.140	DW 29.112	DE 29.101	M10A 28.899	DS 28.798	DN 28.324
pH	DN 8.088	DS 8.087	M3 8.086	DW 8.081	DE 8.045	M18 8.036	M10A 8.036
% O ₂ Saturation	M3 87.124	DN 85.198	M18 85.140	DW 84.887	DE 84.477	DS 84.329	M10A 83.446
Turbidity (NTU)	DN 5.168	DS 4.800	M10A 4.460	DW 4.344	M18 4.331	DE 4.307	M3 4.194

BOTTOM

Temperature (°C)

M10A	M3	DE	DW	M18	DS	DN
21.815	21.802	21.773	21.749	21.668	21.655	21.644

Salinity (‰)

M10A	DS	DW	DE	M3	M18	DN
32.127	31.889	31.666	31.088	30.943	30.905	30.432

pH

DW	DN	M3	DS	M10A	DE	M18
8.037	8.029	8.028	8.001	7.989	7.979	7.969

% O₂ Saturation

DW	M10	M18	DS	DN	M3	DE
76.554	76.450	72.729	72.162	71.625	71.586	71.329

Turbidity (NTU)

DN	M10A	DS	DW	M18	M3	DE
14.668	14.239	12.336	12.286	9.452	9.026	8.710

Only salinities for mid-depth samples were significantly different among stations. They differed on average by 1 ‰ with station DN the lowest at 28 ‰.

Bottom samples varied in salinity. There were essentially two groups: the diffuser stations (M10A, DS and DW); and DE, M3, M18. The lowest average salinity occurred at station DN (30.4 ‰). This value was approximately 2 ‰ lower than at station M10A.

Average percent oxygen saturation values were: 93% - 96% for surface samples; 83% - 87% for mid-depth; and 71% - 76% for bottom samples. Supersaturation of surface samples occurred on approximately 10% of the marine cruises.

Temporal variations are illustrated in Figures F-4 through F-8 for marine stations M10, M18, DW, M21 and M22. Stratification frequently occurred for salinity and dissolved oxygen concentrations with spring and summer months represented periods of intense stratification. During this period, bottom waters become hypoxic, frequently falling below 1.0 ml $^{-1}$. Surface salinities were occasionally 10-15 ‰ lower than bottom salinities. Also, bottom pH values were lower than surface pH values. The near shore station M21 was least affected by stratification. Bottom turbidities values were typically higher than surface values. In addition, turbidity generally decreased with increasing distance offshore.

F.4 Conclusions

For the 12 month sampling period, surface waters at estuarine stations E1 through E5 varied in temperature, salinity, pH and

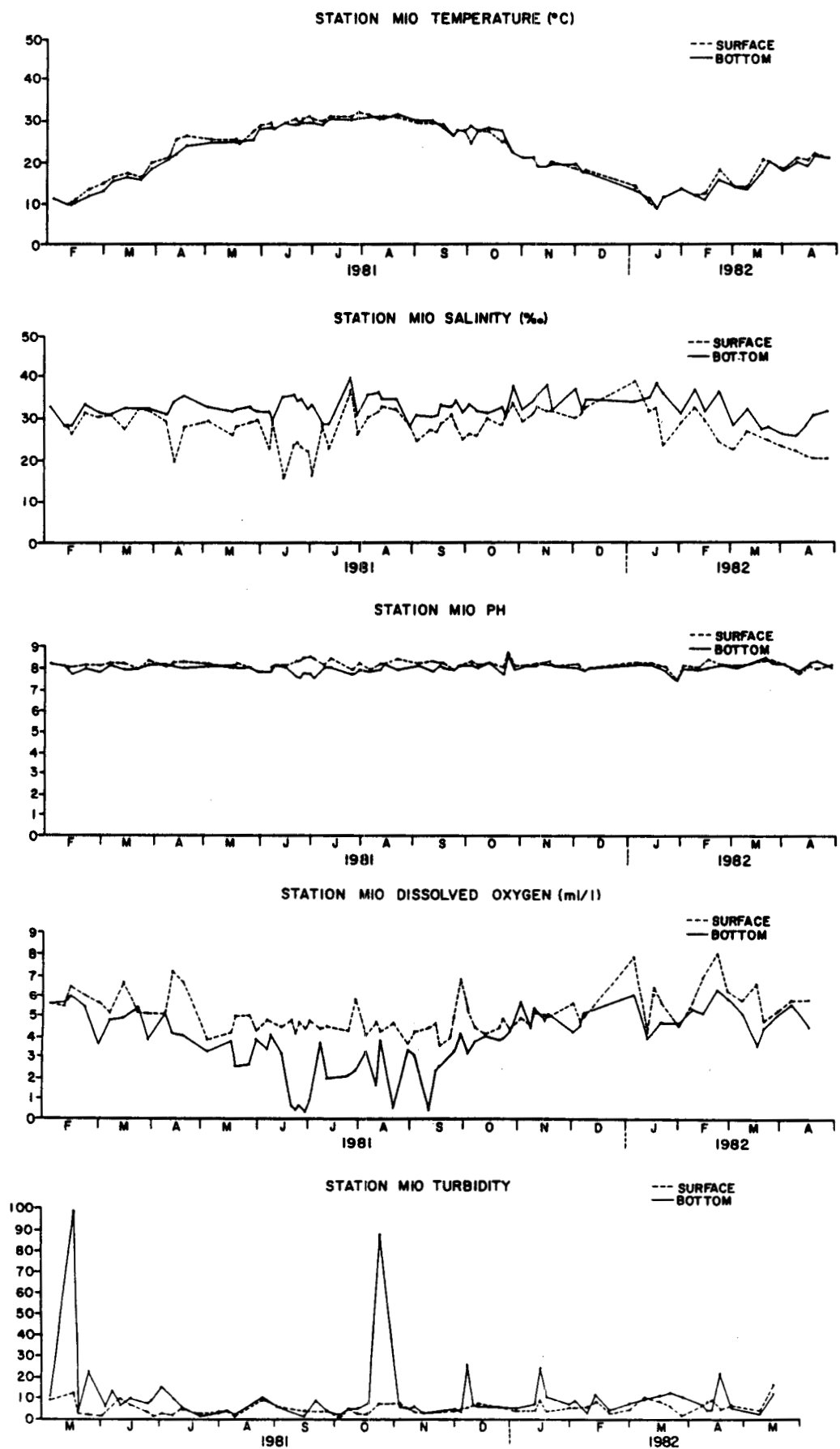


Figure F-4. Station M10 CTD/DO, pH and turbidity data.

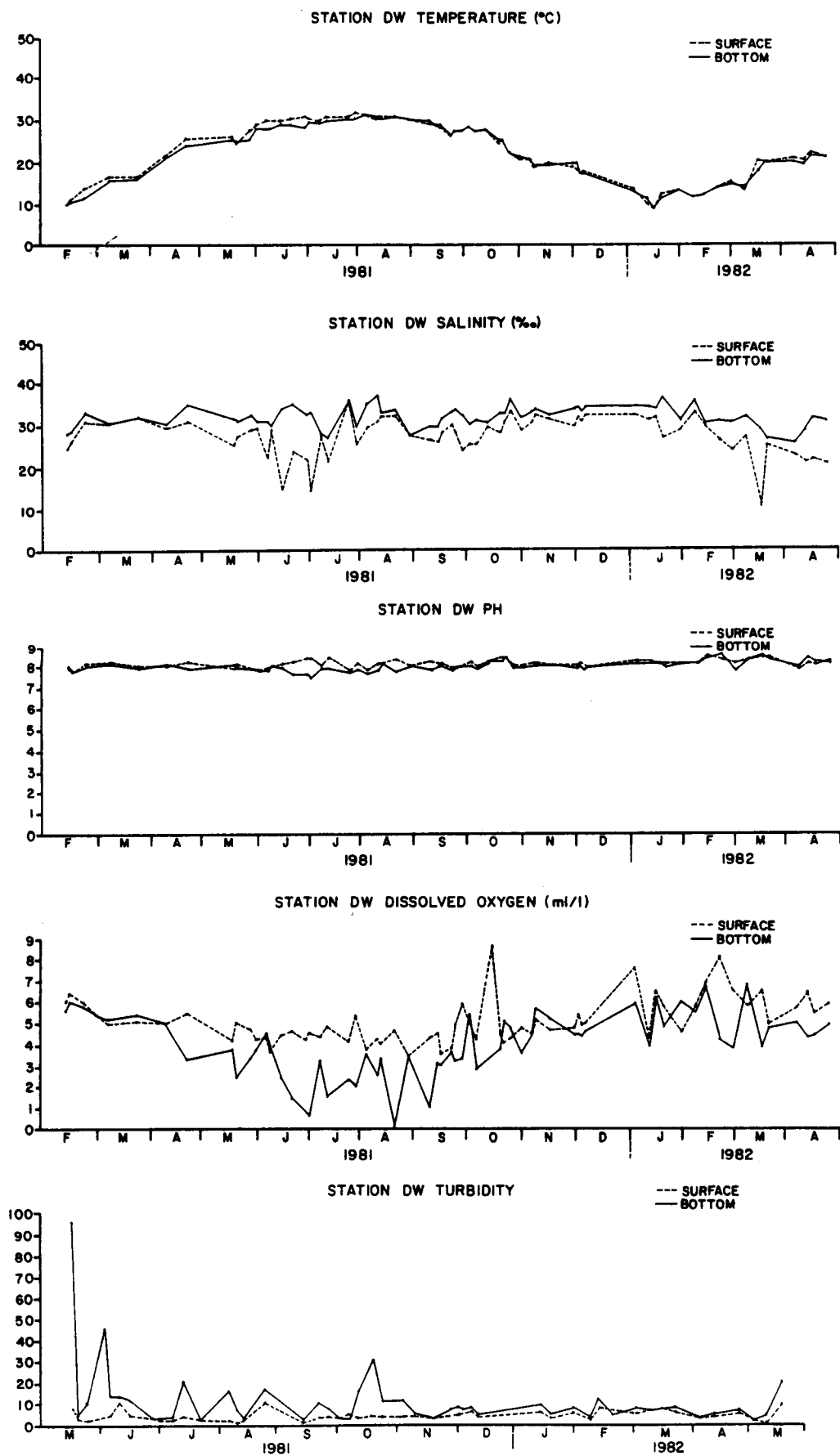


Figure F-5. Station DW CTD/DO, pH and turbidity data.

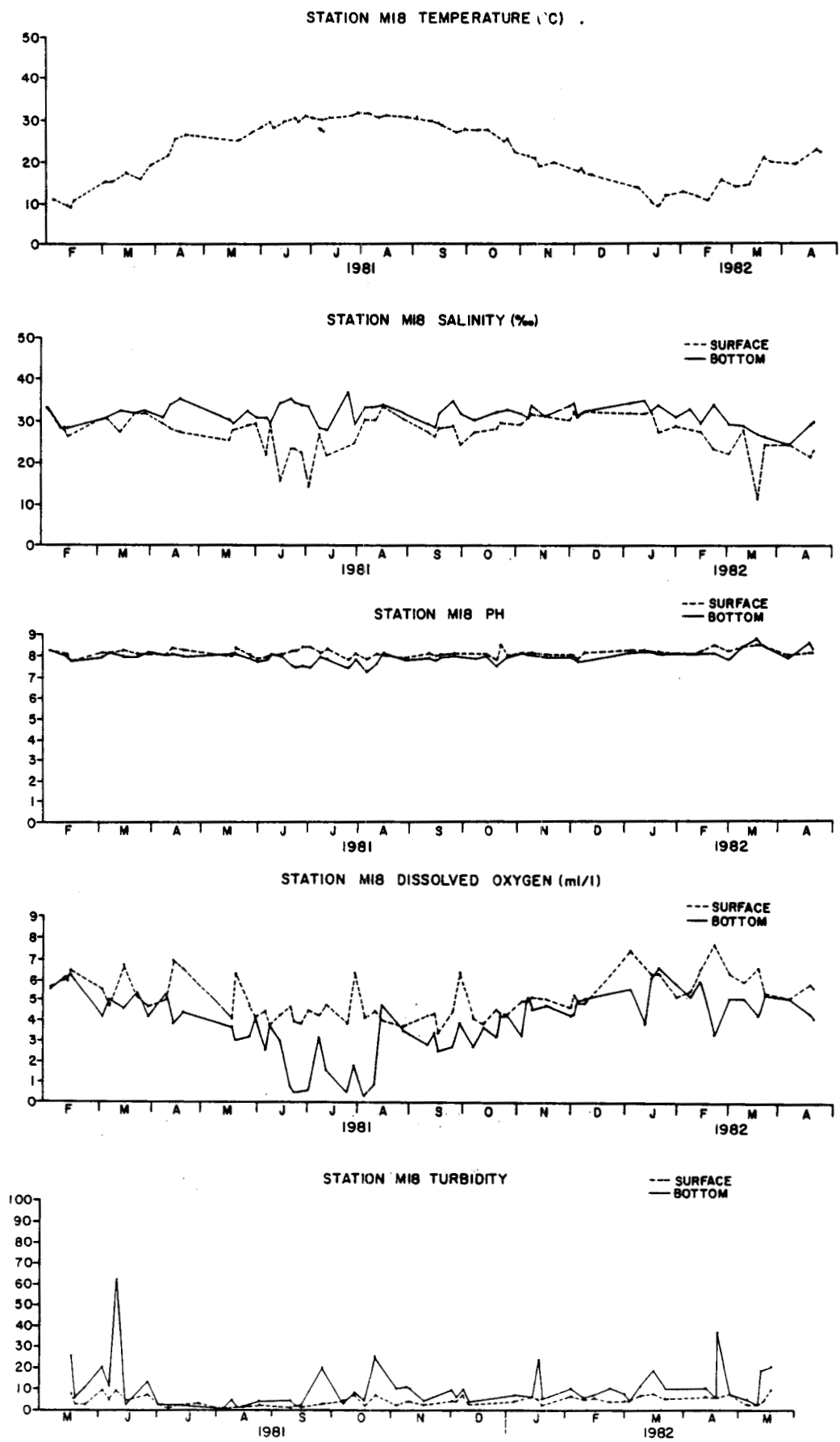


Figure F-6. Station M18 CTD/D_O, ph and turbidity data.

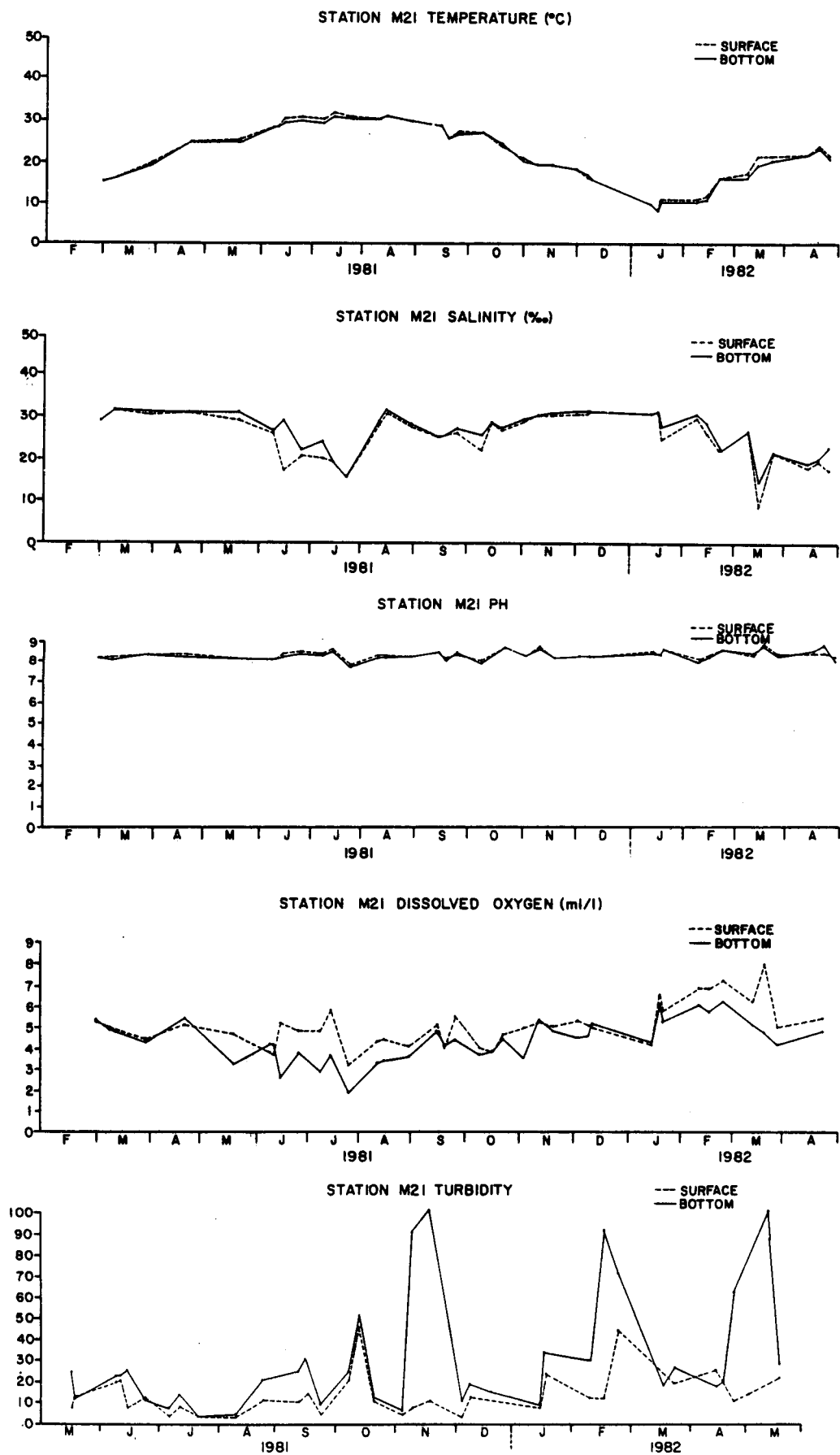


Figure F-7. Station M21 CTD/DO, pH and turbidity data.

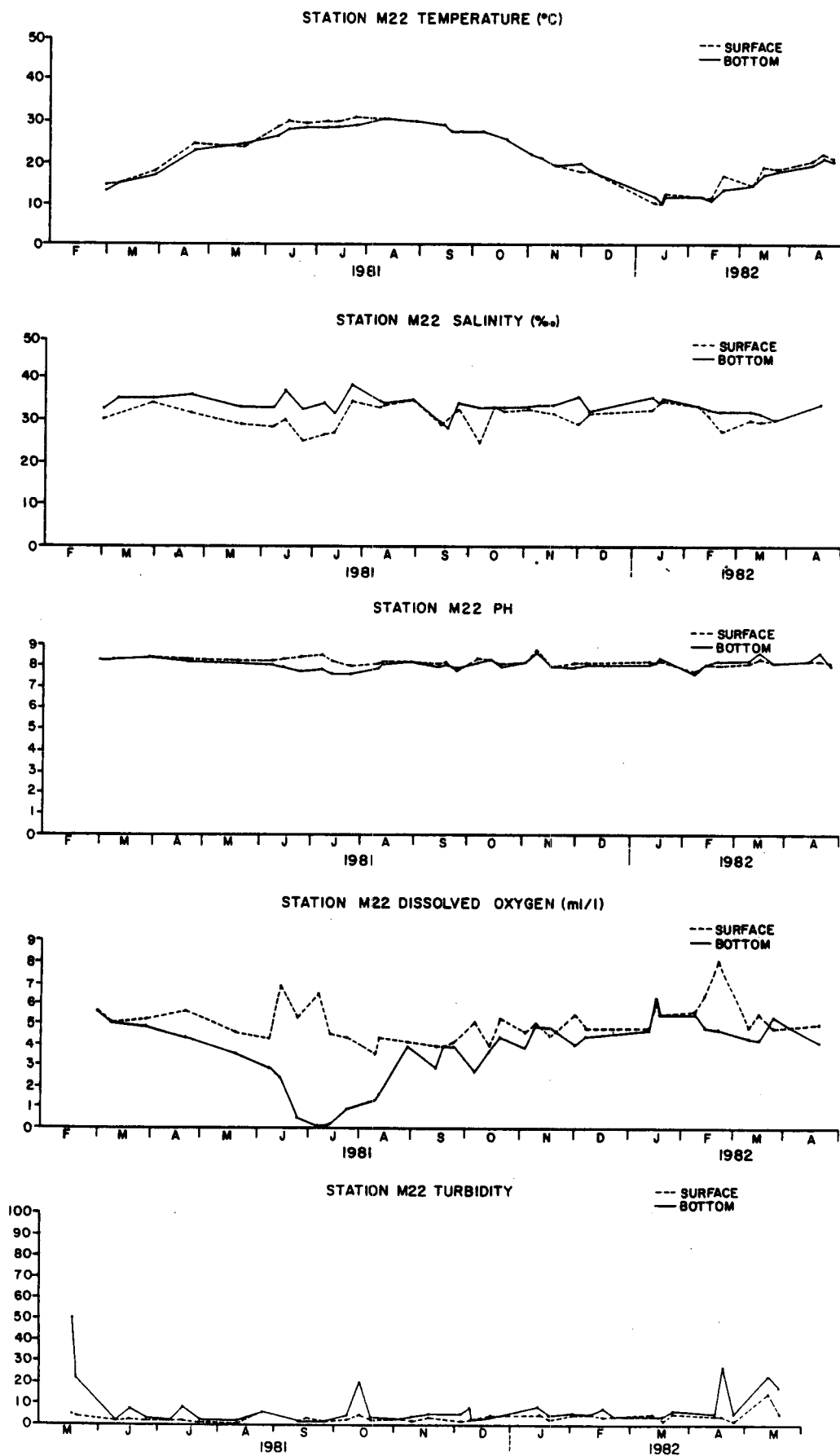


Figure F-8. Station M22 CTD/DO, pH and turbidity data.

dissolved oxygen. An up estuary gradient was evident, particularly for salinity and pH. Values for these parameters typically decreased from E5 to E1. Stations E3 and E4 were similar for all variables except dissolved oxygen which was much higher at E3. This difference may be attributable to increased primary productivity or turbulent mixing at E3, the most shoal of the estuarine stations.

Marine waters of the 10 meter isobath varied greatly among depths and cruises. Station differences were minor: surface pH values were lower east of the diffuser and higher west of the diffuser; mid-depth salinities varied on average by 1 ‰; and average bottom salinities differed by about 2 ‰ for the diffuser stations M10A, DS, and DW as compared to controls, M3 and M18.

Frequent stratification of marine waters occurred but persisted in summer months resulting in severe hypoxia. During these periods, salinity, pH and dissolved oxygen clines were observed with high salinity, low pH and low dissolved oxygen values occurring in bottom waters.

Table G-1. Systematic list of marine zooplankton and their monthly occurrence
May 1981 - April 1982

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
CNIDARIA																
C.	Hydrozoa															
	unid. hydrozoa	Medusae			X	X	X	X	X	X	X	X	X	X	X	X
C.	Scyphozoa															
	unid. scyphozoa	Medusae				X	X									
CTENOPHORA																
	unid. ctenophore			X	X	X	X	X	X	X	X	X	X	X	X	X
ANNELIDA																
C.	Polychaeta															
	unid. polychaete	Larvae	X		X	X	X	X	X	X	X	X		X	X	
F.	Alciopidae															
	unid. alciopid	Adult									X					
F.	Tonopteridae															
	Tonpteris	Adult									X	X				X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
MOLLUSCA																
C.	Gastropoda															
	unid. gastropod				X											
	Prosobranchia (Sub Class)															
	unid. prosobranch			X			X	X						X		X
F.	Neritidae															
	unid. neritidae										X	X				X
F.	Littorinidae															
	<u>Littorina</u> sp.					X	X	X			X	X				
F.	Architectonicidae															
	<u>Philippa krebsii</u>										X					X
F.	Cerithiidae															
	<u>Cerithiopsis</u> sp.															
	unid. sp.															
F.	Epitoniidae															
	<u>Epitonium</u> sp.			X	X	X		X	X	X	X					X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Calyptraeidae <u>Crepidula</u> sp.		X									X				
F.	Atlantidae <u>Atlanta gaudichaudi</u> <u>Atlanta helicinoides</u>		X									X			X	X
F.	Naticidae unid. Naticidae		X	X	X	X	X	X	X	X	X	X	X	X	X	X
F.	Cynatiidae <u>Cynatium parthenopeum</u> <u>Charonia variegata</u>										X					X
F.	Muricidae unid. Muricidae <u>Thais</u> sp.				X		X									
F.	Columbellidae <u>Anachis</u> sp.				X	X	X	X	X	X	X					X
F.	Nassariidae <u>Nassarius</u> sp.		X	X	X	X	X	X	X	X	X					X
F.	Turridae unid. Turridae		X	X	X							X				

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
	Opisthobranchia (Sub Class)															
	unid. opisthobranch												X		X	
F.	Acteonidae															
	<u>Acteon punctostriatus</u>					X			X	X	X	X	X			X
F.	Pyramidellidae															
	<u>Litiopa melanstoma</u>															X
F.	Limacinidae															
	<u>Limacina trochiformis</u>											X		X	X	X
F.	Cavoliniidae															
	<u>Creseis acicula</u>		X			X	X				X	X				X
	<u>Creseis conica</u>		X									X			X	X
	<u>Creseis virgula</u>														X	
F.	Clionidae															
	unid. clionidae														X	
	<u>Paraclype longicaudata</u>															X
C.	Bivalvia (Pelecypoda)															
	unid. pelecypod		X	X	X	X	X	X	X	X	X	X			X	X
	Pteriomorpha (Sub Class)															
F.	Mytilidae															
	unid. Mytilidae											X				
	<u>Modiolus demissus</u>									X	X	X				X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
Heterodonta (Sub Class)																
F.	Petricolidae															
	<u>Petricola pholadiformis</u>			X				X			X					
F.	Tellinidae															
	<u>Tellina</u> sp.			X			X			X	X				X	
F.	Solenidae															
	<u>Ensis minor</u>										X	X	X	X	X	X
	<u>Solen viridis</u>		X	X												
F.	Matridae															
	<u>Mulinia lateralis</u>		X	X	X	X	X	X	X	X	X	X				X
F.	Galeomatidae															
	<u>Planktonya henseni</u>										X	X				X
C.	Cephalopoda															
F.	Loliginidae															
	<u>Loliguncula brevis</u>		X	X			X	X			X	X	X			X
	<u>Loligo plei</u>															X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
ARTHIROPODA																
Chelicerata (Sub Phylum)																
C.	Pycnogonida															
	unid. pycnogonid			X												
Crustacea (Sub Phylum)																
C.	Branchiopoda															
O.	Cladocera															
	<u>Penilia avirostris</u>	Adult				X	X	X		X	X					
	<u>Podon polyphemoides</u>	Adult			X		X								X	
	<u>Evadne tergestina</u>	Adult				X	X									
C.	Ostracoda															
O.	Myodocopa															
	unid. spp.	Adult								X	X	X	X	X	X	
C.	Copepoda															
O.	Calanoida															
	unid. calanoid											X				
F.	Calanidae															
	<u>Eucalanus</u> sp.	Adult										X				
		Juvenile	X							X	X	X	X	X	X	
	<u>Eucalanus pileatus</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Juvenile	X	X	X	X	X	X	X	X					X	

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
	<u>Rhincalanus</u> sp.	Juvenile												X		
	<u>Rhincalanus cornutus</u>	Adult													X	
	<u>Undinula vulgaris</u>	Adult								X	X	X	X	X	X	
		Juvenile								X		X				
	<u>Nannocalanus minor</u>	Adult									X			X	X	
		Juvenile													X	
F.	Paracalanidae															
	<u>Parvocalanus crassirostris</u>	Adult	X			X			X							
	<u>Paracalanus quasimodo</u>	Adult	X	X				X	X	X	X	X	X	X	X	
		Juvenile								X	X	X				
F.	Temoridae															
	<u>Temora longicornis</u>	Adult										X				
	<u>Temora stylifera</u>	Adult	X	X				X	X	X	X	X	X	X	X	
		Juvenile	X													
	<u>Temora turbinata</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Juvenile	X							X			X			
F.	Centropagidae															
	<u>Centropages</u> sp.	Adult						X								
		Juvenile						X				X				
	<u>Centropages hians</u>	Adult									X	X	X	X	X	
		Juvenile										X	X	X		
	<u>Centropages velificatus</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Juvenile	X	X	X	X	X				X	X	X		X	

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Diaptomidae															
	<u>Pseudodiaptomus coronatus</u>	Adult	X	X				X	X	X	X	X				X
		Juvenile		X				X	X			X				
F.	Candaciidae															
	<u>Candacia curta</u>	Adult										X				
F.	Pontellidae															
	<u>Labidocera aestiva</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Juvenile	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	<u>Pontella neadii</u>	Adult		X												
	<u>Pontella spinipes</u>	Adult										X				
	<u>Anomalocera ornata</u>	Adult													X	
	<u>Pontellopsis villosa</u>	Adult										X				
	<u>Calanopia americana</u>	Adult		X				X	X	X	X					
		Juvenile							X							
F.	Acartiidae															
	<u>Acartia lilljeborgii</u>	Adult				X	X	X								
	<u>Acartia tonsa</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Juvenile	X	X	X	X	X	X	X	X	X	X				X
F.	Tortanidae															
	<u>Tortanus compernis</u>	Adult				X										
F.	Euchaetidae															
	<u>Euchaeta</u> sp.	Juvenile										X				
	<u>Euchaeta marina</u>	Adult													X	X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
O.	Harpacticoida unid. harpacticoid	Adult									X				X	
F.	Tachidiidae <u>Euterpina acutifrons</u>	Adult		X												
O.	Cyclopoida unid. cyclopoid	Adult					X									
F.	Oithonidae <u>Oithona colcarva</u> <u>Oithona plumifera</u>	Adult Adult					X						X			
F.	Oncaeidae <u>Oncaea mediterranea</u>	Adult									X	X		X	X	
F.	Corycaeidæ <u>Corycaeus amazonicus</u> <u>Corycaeus giesbrechti</u> <u>Corycaeus subulatus</u>	Adult Juvenile Adult Adult	X X X	X X X	X X X	X X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	
F.	Sapphirinidae <u>Sapphirina nigromaculata</u>	Adult	X							X	X				X	

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
O.	Calligoida															
	unid. caligoid	Adult	X	X	X	X			X		X	X	X	X	X	
C.	Branchiura															
	<u>Argulus</u> sp.	Adult									X					
C.	Cirripedia															
	unid. cirriped	Cypris	X	X								X	X	X	X	
		Nauplii	X	X	X			X	X	X	X	X	X	X	X	
C.	Malacostraca															
	Hoplocarida (Super Order)															
O.	Stomatopoda															
	unid. stomatopod	Larvae	X	X												
	Pericarida (Super Order)															
O.	Mysidacea															
F.	Mysidae															
	<u>Mysidopsis almyra</u>										X	X				
	<u>Mysidopsis bahia</u>			X					X							
	<u>Prionysis atlantica</u>										X	X			X	
	<u>Brasilomysis castroi</u>			X												
O.	Cumacea															
F.	Diastylidae															
	<u>Diastylis</u> sp.			X												
	<u>Oxyurostylis smithi</u>			X												
O.	Isopoda															
	unid. isopod														X	
F.	Cymothoidae															
	unid. cymothoid					X						X				

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Munnidae															
	<u>Munnidae</u> sp. A		X	X												
O.	Amphipoda															
F.	Bateidae															
	<u>Batea catharinensis</u>			X												
F.	Corophiidae															
	<u>Corophium</u> sp.		X	X								X	X			
F.	Isaeidae															
	<u>Microprotopus shoemakeri</u>		X	X												
F.	Ischyroceridae															
	<u>Jassa</u> sp. A		X													
F.	Stenothoidae															
	<u>Stenothoe</u> sp.											X			X	
	Hyperiidae (Sub Order)															
	unid. hyperiidea		X		X						X	X		X	X	
	Eucarida (Super Order)															
O.	Euphausiacea															
F.	Euphausiidae															
	unid. euphausiid														X	X
	<u>Stylocheiron longicorne</u>													X	X	X
O.	Decapoda															
	unid. decapod	PL				X	X	X								X
		Zoea		X										X	X	
		Megalops	X					X								

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
Natantia (Suborder)																
F.	Penaeidae															
	<u>Penaeus</u> sp.	PL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		Protozoa				X	X	X	X		X					
		Zoea	X		X	X	X	X	X							
	<u>Penaeus aztecus</u>	PL					X	X	X		X					
	<u>Penaeus setiferus</u>	PL		X				X	X							
	<u>Trachypenaeus</u> sp.	PL		X	X		X	X	X							
		Protozoa	X		X	X	X	X	X							X
		Zoea	X		X	X	X	X	X	X	X					X
	<u>Sicyonia</u> sp.	Protozoa									X					
		Zoea							X							
	<u>Xiphopenaeus kroyeri</u>	Protozoa		X		X	X	X	X							
		Zoea	X	X	X	X	X	X		X						X
F. Sergestidae																
	<u>Acetes</u> sp.	PL			X											
	<u>Acetes americanus</u>	PL	X	X	X	X	X	X	X	X	X	X		X	X	
		Protozoa	X	X	X	X	X	X	X	X	X					X
		Zoea	X	X	X	X	X	X	X	X						X
	<u>Lucifer faxoni</u>	PL	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Protozoa		X	X	X	X	X	X	X	X					X
		Zoea	X	X	X	X	X	X	X	X	X			X	X	
F. Pasiphaeidae																
	<u>Leptochela serratorbita</u>	Zoea														X
		PL		X	X				X	X	X					X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Palaemonidae															
	<u>Palaemonetes</u> sp.	PL	X	X			X	X	X	X	X					X
		Zoea	X	X	X		X	X	X	X						X
	<u>Palaemonetes pugio</u>	PL		X	X	X			X							
	<u>Neopontonides beaufortensis</u>	PL		X												
F.	Alpheidae															
	<u>Alpheus</u> sp.	Zoea		X	X			X	X	X	X	X			X	X
	<u>Alpheus heterochaelis</u>	PL		X												
		Zoea					X									
	<u>Alpheus normanni</u>	Zoea		X												
F.	Ogyrididae															
	<u>Ogyrides</u> sp.	PL		X					X							
		Zoea	X													
	<u>Ogyrides alphaerostris</u>	PL		X					X	X						X
		Zoea		X	X	X	X	X	X	X	X	X				X
F.	Hippolytidae															
	<u>Hippolyte pleuracantha</u>	Zoea		X	X	X	X	X	X	X	X	X	X	X	X	X
	<u>Latreutes</u> sp.	PL	X													
	<u>Latreutes fuorum</u>	PL		X												
	<u>Latreutes parvulus</u>	PL		X												
	<u>Lysmata wurdemanni</u>	Zoea														
F.	Processidae															
	<u>Processa bermudensis</u>	PL		X				X								

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Hippidae															
	<u>Emerita</u> sp.	Zoea			X											
F.	Albuneidae															
	<u>Albunea</u> sp.	Zoea													X	
		Megalops								X						
	<u>Albunea paretii</u>	Zoea	X													
F.	Leucosiidae															
	<u>Persephona</u> sp.	Zoea	X	X		X	X			X	X				X	
		Megalops	X	X	X	X									X	
F.	Calappidae															
	<u>Hepatus</u> sp.	Zoea		X												
F.	Portunidae															
	und. portunid	PL								X	X	X				
	<u>Callinectes</u> sp.	PL	X	X							X					
		Zoea	X	X	X	X	X	X	X	X					X	
		Megalops	X	X	X		X	X	X	X	X	X	X	X	X	
	<u>Callinectes sapidus</u>	PL							X							
	<u>Ovalipes floridanus</u>	PL									X					
	<u>Portunus</u> sp.	PL								X						
		Zoea	X	X	X	X	X							X	X	
		Megalops	X		X	X	X	X	X	X				X	X	
	<u>Portunus spinimanus</u>	Zoea		X												

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Xanthidae															
	unid. xanthid	PL		X												
		Zoea			X									X		
		Megalops	X	X												
	<u>Hexapanopeus angustifrons</u>	Zoea	X	X	X	X	X	X	X	X	X					X
		Megalops		X	X	X	X	X	X	X	X			X		X
	<u>Menippe</u> sp.	Zoea	X													
	<u>Menippe mercenaria</u>	Zoea		X	X	X	X	X								
		Megalops			X	X	X	X	X	X						
	<u>Neopanope</u> sp.	Zoea	X	X	X	X	X	X	X							X
		Megalops	X	X	X		X	X	X	X	X					X
	<u>Panopeus</u> sp.	Zoea	X	X	X	X	X	X								X
		Megalops	X	X			X				X					
	<u>Rhithropanopeus harrisii</u>	Zoea		X	X											X
		Megalops					X									
F.	Pinnotheridae															
	unid. pinnotherid	PL	X													
		Megalops	X													
	<u>Dissodactylus</u> sp.	PL														
	<u>Dissodactylus mellitae</u>	Zoea		X		X	X	X	X		X					
		Megalops		X		X										
	<u>Pinnixa</u> sp.	PL		X					X	X	X				X	X
		Protozoea							X							
		Zoea	X	X	X	X	X	X	X	X	X	X	X	X		X
		Megalops		X				X	X	X	X					X
	<u>Pinnotheres maculatus</u>	Zoea	X													
F.	Grapsidae															
	<u>Sesamia</u> sp.	Zoea		X	X	X										
		Megalops	X	X	X	X	X	X	X	X						X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Ocypodidae															
	<u>Uca</u> sp.	Zoea	X	X	X	X	X	X	X							X
		Megalops				X	X	X								
F.	Majidae															
	<u>Libinia</u> sp.	Zoea														X
		Megalops	X						X	X	X					X
	<u>Libinia dubia</u>	Megalops				X										
F.	Parthenopidae															
	<u>Parthenope</u> sp.	Megalops	X													
	PHORONIDA															
	unid. phoronid	Larvae									X					
	ECHINODERMATA															
C.	Stelleroidea															
	Ophiuroidea (Sub Class)															
	unid. ophiuroid	Larvae	X	X		X	X									
	CHAETOGNATHA															
	<u>Sagitta</u> sp.	Juvenile	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	<u>Sagitta enflata</u>	Adult	X	X					X	X	X	X				X
	<u>Sagitta helenae</u>	Adult	X								X					
	<u>Sagitta friderici</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
CHORDATA																
Urochordata (Subphylum)																
C.	Thaliacea															
	unid. thaliacea	Adult										X			X	X
C.	Larvacea															
F.	Oikopleuridae															
	Oikopleura sp.	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vertebrata (Subphylum)																
C.	Osteichthyes															
	unid. anguilliform	Egg						X								
	unid. teleostei	Egg	X		X	X	X	X	X	X						
		Larvae	X	X										X		
		Y-S larvae	X			X	X				X	X		X		
		PL													X	
F.	Ophichthidae															
	<u>Myrophis punctatus</u>	Larvae										X				
		PL										X				
F.	Clupeidae															
	unid. clupeid	Egg			X	X	X	X								X
		Y-S larvae				X	X									
		Larvae			X	X	X	X	X							X
		PL				X	X	X								
	<u>Brevoortia</u> sp.	Egg						X	X	X					X	
		Y-S larvae							X	X				X		

Table G-1. continued

TAXA	LIFE HISTORY	1981										1982			
		5	6	7	8	9	10	11	12	1	2	3	4		
	Larvae						X	X	X	X	X	X	X		
	PL						X	X	X	X	X	X	X		
<u>Harengula jaguana</u>	Egg			X	X										
	PL	X	X												
<u>Opisthonema oglinum</u>	Egg						X								
	Larvae						X								
	PL					X	X								
<u>Sardinella aurita</u>	Egg		X												
	Y-S larvae	X	X												
	Larvae	X	X												
	PL	X	X												
F.	Engraulidae														
	<u>Anchoa</u> sp.	Y-S larvae	X	X	X	X	X						X		
		Larvae	X	X	X	X	X	X				X	X		
		PL	X	X	X	X	X	X				X	X		
	<u>Anchoa hepsetus</u>	Egg	X	X	X	X		X				X	X		
		PL	X	X				X							
	<u>Anchoa mitchilli</u>	Egg	X	X	X	X	X					X	X		
		Y-S larvae			X										
		Larvae	X	X			X	X					X		
		PL	X	X	X	X	X	X		X	X		X		
F.	Synodontidae														
	<u>Synodus foetens</u>	PL	X					X							
	<u>Synodus</u> sp.	PL											X		
F.	Gobiesocidae														
	<u>Gobiesox strumosus</u>	Larvae	X					X	X				X		

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
		PL	X	X						X					X	X
F.	Gadidae															
	unid. gadidae	Larvae		X												
F.	Ophidiidae															
	unid. ophidiid	Larvae								X		X				
		PL									X					
F.	Atherinidae															
	<u>Menida beryllina</u>	Larvae	X													
		PL	X													
F.	Syngnathidae															
	<u>Hippocampus erectus</u>	PL					X									
	<u>Syngnathus</u> sp.	PL	X	X												
		Larvae	X													
	<u>Syngnathus louisianae</u>	PL				X				X	X			X	X	X
		Larvae														X
F.	Serranidae															
	unid. serranid	Larvae														X
F.	Carangidae															
	unid. carangid	Larvae	X	X			X	X								
		PL	X							X						
	<u>Caranx</u> sp.	Larvae		X												
	<u>Chloroscombrus chrysurus</u>	Larvae				X	X	X	X							
		PL				X	X	X	X							
	<u>Elagatis bipinnulata</u>	Larvae		X												
	<u>Oligoplites saurus</u>	Larvae				X	X									

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
		PL			X											
	<u>Seriola</u> sp.	PL						X								
	<u>Trachurus</u> sp.	PL								X						
	<u>Trachurus lathami</u>	PL			X			X								
		Larvae					X	X								
F.	<u>Haemulidae</u>															
	<u>Haemulon</u> sp.	Larvae											X	X		
F.	<u>Sparidae</u>															
	<u>Lagodon rhomboides</u>	PL										X	X	X		
F.	<u>Sciaenidae</u>															
	und. sciaenid	Egg	X	X	X	X	X	X	X					X	X	
		Y-S larvae		X	X							X		X	X	
		Larvae		X	X									X		
	<u>Cynoscion</u> sp.	Larvae				X								X		
	<u>Cynoscion arenarius</u>	Y-S larvae	X													
		Larvae	X	X	X	X	X	X	X					X	X	
		PL	X	X	X	X	X	X			X				X	
	<u>Cynoscion nebulosus</u>	Larvae		X	X	X	X							X		
	<u>Cynoscion nothus</u>	Larvae	X													
		PL						X	X							
	<u>Larimus fasciatus</u>	Larvae	X								X					
		PL									X					

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
	<u>Leiostomus xanthurus</u>	PL											X	X		
	<u>Menticirrhus</u> sp.	PL	X	X				X	X	X						X
		Larvae	X	X	X	X	X	X	X	X					X	X
	<u>Micropogonias undulatus</u>	Larvae								X	X	X		X		
		PL							X	X	X	X		X		X
	<u>Pogonias cromis</u>	Larvae												X	X	X
		PL														X
	<u>Sciaenops ocellatus</u>	Larvae						X	X			X				
		PL						X	X	X	X					
	<u>Stellifer lanceolatus</u>	Larvae			X			X	X							
		PL			X			X	X	X						
F.	Ephippidae															
	<u>Chaetodipterus faber</u>	Larvae				X	X									
F.	Trichodontidae															
	<u>Asctroscopus y-graecum</u>	PL												X		
F.	Blenniidae															
	unid. blenny	Larvae	X	X	X	X	X	X	X	X	X	X				X
		PL	X	X						X						
	<u>Chasmodes bosquianus</u>	PL				X	X									
F.	Gobiidae															
	unid. goby	Larvae	X	X		X	X									X
		PL	X	X	X	X	X	X	X	X		X	X			X

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Trichiuridae															
	<u>Trichiurus lepturus</u>	Larvae	X								X					X
		Y-S larvae	X													X
F.	Scombridae															
	<u>Scomberomorus maculatus</u>	Larvae		X			X	X								
F.	Stromateidae															
	<u>Peprilus</u> sp.	Egg	X													
		Larvae				X										X
		PL								X						
	<u>Peprilus alepidotus</u>	Egg	X	X												
		Larvae	X	X	X											
		PL						X								
	<u>Peprilus burti</u>	Larvae									X	X				
		PL									X	X		X		
F.	Triglidae															
	<u>Prionotus</u> sp.	Larvae									X	X				
		PL									X					
F.	Bothidae															
	unid. bothid	Larvae										X				
		PL										X				
	<u>Citharichthys</u> sp.	Larvae	X	X									X		X	
		PL		X									X	X		X
	<u>Etropus crossotus</u>	PL								X						

Table G-1. continued

	TAXA	LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Soleidae															
	unid. soleid	Egg	X	X												
	<u>Archirus lineatus</u>	Larvae	X	X												
		PL		X				X								
F.	Cynoglossidae															
	<u>Symphurus</u> sp.	Egg					X	X	X							
		Larvae				X	X	X							X	
		PL		X												
	<u>Symphurus civitatus</u>	PL							X							
F.	Tetraodontidae															
	<u>Sphoeroides parvus</u>	PL	X													
	<u>Sphoeroides</u> sp.	PL													X	

Table G-2. Systematic list of estuarine zooplankton and their monthly occurrence
May 1981 - April 1982

TAXA		LIFE HISTORY	1981												1982			
			5	6	7	8	9	10	11	12	1	2	3	4				
CNIDARIA																		
C.	Hydrozoa																	
	unid. hydrozoa	Medusae										X						
CTENOPIIDA																		
	unid. ctenophore			X	X	X	X	X	X	X	X			X	X	X		
ANNELIDA																		
C.	Polychaeta																	
	unid. polychaete	Larvae	X			X			X	X	X	X					X	
MOLLUSCA																		
C.	Gastropoda																	
	unid. gastropod		X															
	Prosobranchia (Subclass)																X	
	unid. prosobranch					X				X								
O.	Mesogastropoda																	
F.	Littorinidae																	
	Littorina sp.				X		X	X			X							

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Hydrobiidae <u>Hydrobia</u> sp.		X	X		X										
F.	Caecidae <u>Caecum</u> sp.		X													
F.	Epitonidae <u>Epitoneum</u> sp.		X									X				
F.	Naticidae unid. Naticidae		X				X									
O.	Neogastropoda															
F.	Columbellidae <u>Anachis</u> sp.											X				
F.	Nassariidae <u>Nassarius</u> sp.		X				X	X	X	X	X					
	Opisthobranchia (Subclass) unid. opisthobranch		X					X			X	X	X			X
O.	Cephalaspidea															
F.	Acteonidae <u>Acteon punctostriatus</u>						X			X	X					
O.	Nudibranchia unid. nudibranch		X													
C.	Bivalvia (Pelecypoda) unid. pelecypoda		X	X			X			X	X	X	X	X	X	X

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
	Pteriomorpha (Subclass)															
O.	Mytiloida															
F.	Mytilidae															
	unid. mytilidae		X			X										
	<u>Modiolus demissus</u>				X					X		X			X	
F.	Ostreidae															
	<u>Crassostrea virginica</u>		X			X	X	X								
	Heterodonta (Subclass)															
O.	Veneroida															
F.	Petricolidae															
	<u>Petricola pholadiformis</u>										X	X				X
F.	Tellinidae															
	<u>Tellina</u> sp.		X	X		X		X	X		X					X
F.	Donacidae															
	<u>Donax</u> sp.		X					X								
F.	Solenidae															
	<u>Ensis minor</u>														X	
	<u>Solen viridis</u>		X													
F.	Macridae															
	<u>Mulina latera is</u>		X			X	X	X	X		X			X	X	

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
C.	Cephalopoda															
F.	Loliginidae															
	<u>Lolliguncula brevis</u>		X				X									
ANUROPODA																
Crustacea (Subphylum)																
C.	Branchiopoda															
O.	Cladocera															
	<u>Penilia avirostris</u>	Adult		X			X									
	<u>Bosmina sp.</u>	Adult											X			
	<u>Evadne tergestina</u>	Adult					X									
C.	Copepoda															
O.	Calanoida															
F.	Paracalanidae															
	<u>Parvocalanus crassirostris</u>	Adult	X	X			X	X	X	X	X	X	X	X	X	

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Temoridae															
	<u>Temora</u> sp.	Juvenile	X													
	<u>Temora turbinata</u>	Adult					X									
		Juvenile					X									
	<u>Eurytemora affinis</u>	Adult		X										X		
		Juvenile		X				X						X		
F.	Centropagidae															
	<u>Centropages hamatus</u>	Adult									X		X	X		
		Juvenile										X		X		
	<u>Centropages velificatus</u>	Juvenile					X			X						
	<u>Pseudodiaptomus coronatus</u>	Adult	X					X	X	X	X	X			X	
		Juvenile	X	X				X	X	X	X	X	X	X	X	
F.	Pontellidae															
	<u>Labidocera aestiva</u>	Adult						X	X							
		Juvenile	X	X			X	X	X	X	X	X	X		X	
F.	Acartiidae															
	<u>Acartia tonsa</u>	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Juvenile	X	X	X	X	X	X	X	X	X	X	X	X	X	
F.	Tortanidae															
	<u>Tortanus</u> sp.	Juvenile		X												

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
0.	Harpacticoida															
	unid. harpacticoid	Adult	X	X	X	X	X	X				X	X	X		
		Juvenile	X													
0.	Cyclopoida															
	unid. cyclopoid	Adult				X	X	X	X		X	X	X	X	X	
		Juvenile												X		
	Cyclopoida sp. A	Adult				X										
	Cyclopoida sp. B	Adult	X	X												
	Cyclopoida sp. C	Adult	X	X					X							
	Cyclopoida sp. D	Adult				X	X									
F.	Oithonidae															
	Oithona colcarva	Adult	X	X	X	X	X	X	X	X	X	X	X	X	X	
0.	Caligoida															
	unid. caligoid	Adult	X													
C.	Cirripedia															
	unid. cirriped	Cypris	X	X	X				X	X	X	X	X	X	X	
		Nauplii	X	X		X	X	X	X	X	X	X	X	X	X	
C.	Malacostraca															
	Pericarida (Super Order)															
0.	Mysidacea															
F.	Mysidae															
	Mysidopsis almyra					X	X	X								
	Mysidopsis bahia			X												
0.	Cunacea															
F.	Diastylidae															
	Diastylis sp.															
													</			

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
O.	Isopoda															
F.	Cymothoidae															
	unid. cymothoidae			X												
	Eucarida (Super Order)															
O.	Decapoda															
	unid. decapod	Zoea									X				X	
	unid. brachyuran														X	
	Natantia (Suborder)															
F.	Penaeidae															
	<u>Penaeus</u> sp.	PL	X	X	X	X	X	X	X	X	X	X	X	X	X	
	<u>Penaeus aztecus</u>	PL	X	X	X		X	X		X	X					
	<u>Penaeus setiferus</u>	PL		X	X	X	X	X	X	X	X					
	<u>Trachypenaeus</u> sp.	Zoea						X								
F.	Sergestidae															
	<u>Acetes americanus</u>	PL	X	X	X	X	X		X	X				X	X	
	<u>Lucifer faxoni</u>	PL	X	X	X		X	X	X	X				X	X	
		Zoea			X		X	X								
F.	Palaemonidae															
	<u>Palaemonetes</u> sp.	PL	X				X	X		X				X	X	
		Zoea	X	X	X	X	X	X	X					X	X	
		Megalops	X													
F.	Alpheidae															
	<u>Alpheus</u> sp.	Zoea		X	X	X	X	X	X							

Table G-1. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Ogyrididae															
	<u>Ogyrides alphaerostris</u>	PL	X		X									X		
		Zoea	X	X		X				X						
F.	Hippolytidae															
	<u>Lysmata wurdemanni</u>	Zoea									X					
F.	Reptantia (Suborder)															
	Callinassidae															
	<u>Callinassa</u> sp.	PL			X											
	<u>Callinassa</u> sp. B	Zoea		X	X	X	X									
	<u>Upogebia affinis</u>	Zoea	X	X		X	X	X								
F.	Porcellanidae															
	unid. porcellanid	Zoea	X													
F.	Diogenidae															
	<u>Clibanarius vittatus</u>	Zoea			X		X									
F.	Paguridae															
	<u>Pagurus</u> sp.	Zoea	X				X	X	X	X			X	X		
		Megalops	X								X					
F.	Portunidae															
	<u>Callinectes</u> sp.	PL												X		
		Zoea	X		X	X	X									
		Megalops	X				X	X		X		X				

Table G-2. continued

TAXA		LIFE HISTORY	1981											1982			
			5	6	7	8	9	10	11	12	1	2	3	4			
	<u>Callinectes sapidus</u>	PL	X	X								X	X				
		Zoea		X													
F.	Xanthidae																
	unid. xanthid	Zoea	X														
	<u>Eurypanopeus</u> sp.	Zoea												X	X		
	<u>Ilexapanopeus angustifrons</u>	Zoea	X				X			X	X					X	
		Megalops	X														
	<u>Neopanope</u> sp.	Zoea	X	X	X	X	X	X	X								
		Megalops	X	X					X								
	<u>Panopeus</u> sp.	Zoea	X	X		X	X	X	X	X							
		Megalops	X			X											
	<u>Rithropanopeus harrisi</u>	Zoea	X	X	X	X	X	X	X		X			X	X		
		Megalops			X	X	X	X	X								
	<u>Menippe mercenaria</u>	Zoea	X	X		X											
F.	Pinnotheridae																
	<u>Pinnixa</u> sp.	PL										X					
		Zoea	X	X				X	X	X	X			X	X	X	
	<u>Pinnotheres</u> sp.	PL	X														
F.	Grapsidae																
	<u>Sesanna</u> sp.	Zoea	X	X	X	X	X	X	X								
		Megalops	X		X	X											
F.	Ocypodidae																
	<u>Uca</u> sp.	Zoea	X	X	X	X	X	X							X	X	
		Megalops		X													

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
CIAETOGNATHA																
	<u>Sagitta</u> sp.	Juvenile	X	X		X					X	X				
	<u>Sagitta friderici</u>	Adult				X										
CHORDATA																
	Urochordata (Subphylum)															
C.	Larvacea															
F.	Oikopleuridae															
	<u>Oikopleura</u>	Adult		X		X			X	X	X					
	Vertebrata (Subphylum)															

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
C.	Osteichthyes															
F.	Elopidae															
	<u>Elops saurus</u>	Larvae													X	
F.	Ophichthidae															
	<u>Myrophis punctatus</u>	Larvae										X				
		PL		X								X	X	X		
F.	Clupeidae															
	und. clupeid	Larvae						X	X							
	<u>Brevoortia</u> sp.	Larvae									X	X				
		PL	X						X	X	X	X	X	X	X	X
	<u>Brevoortia patronus</u>	PL	X													
	<u>Sardinella aurita</u>	Larvae	X													
F.	Engraulidae															
	<u>Anchoa</u> sp.	Y-s larv	X	X		X	X							X	X	
		Larvae	X	X	X	X	X	X						X	X	
		PL	X	X	X	X	X				X				X	
	<u>Anchoa mitchilli</u>	Egg	X	X	X	X	X							X	X	
		PL	X	X	X	X	X	X			X	X	X	X	X	
F.	Synodontidae															
	<u>Synodus foetens</u>	PL													X	

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
F.	Gobiesocidae															
	<u>Gobiesox strumosus</u>	Larvae	X					X		X						
		PL	X							X					X	
F.	Atherinidae															
	<u>Menbras martinica</u>	Larvae						X								
		PL	X					X						X		
	<u>Menidia beryllina</u>	Larvae	X	X	X								X	X		
		PL	X	X			X					X	X		X	
F.	Syngnathidae															
	<u>Syngnathus louisianae</u>	PL	X								X					
F.	Carangidae															
	unid. carangid	Larvae					X									
	<u>Caranx sp.</u>	Larvae	X													
	<u>Chloroscombrus chrysurus</u>	Larvae					X									
F.	Sparidae															
	<u>Lagodon rhomboides</u>	PL										X				
F.	Sciaenidae															
	unid. sciaenid	Egg	X	X	X	X		X		X			X	X	X	
		Y-s larv	X					X						X		
	<u>Bairdiella chrysoura</u>	Larvae	X													

Table G-2. continued

TAXA		LIFE HISTORY	1981										1982			
			5	6	7	8	9	10	11	12	1	2	3	4		
	<u>Cynoscion arenarius</u>	Y-s larv				X										
		Larvae	X			X	X	X							X	X
		PL	X												X	X
	<u>Cynoscion nebulosus</u>	Larvae	X			X	X									
		PL	X			X										
	<u>Leiostomus xanthurus</u>	Larvae													X	
	<u>Menticirrhus</u> sp.	Larvae	X													
		PL	X													
	<u>Micropogonias undulatus</u>	Larvae		X												
		PL	X	X					X	X	X	X		X	X	
	<u>Pogonias cromis</u>	Larvae												X		
	<u>Sciaenops ocellatus</u>	Larvae						X			X					
		PL						X	X		X					
	<u>Stellifer lanceolatus</u>	Larvae						X								
		PL	X				X	X	X							
F.	Blennidae															
	unid. blenny	Larvae	X	X	X	X	X	X							X	X
		PL			X											
F.	Gobiidae															
	unid. goby	Y-s larv	X	X	X											
		Larvae	X	X	X	X	X	X						X		X
		PL	X	X	X	X	X	X			X					
F.	Stromateidae															
	<u>Peprilus alepidotus</u>	Y-s larv	X													
F.	Bothidae															
	<u>Citharichthys</u> sp.	PL										X				

Table G-2. continued

TAXA	LIFE HISTORY	1981										1982			
		5	6	7	8	9	10	11	12	1	2	3	4		
<u>Etropus crossotus</u>	PL												X		
F. Soleidae															
<u>Achirus lineatus</u>	Larvae	X													
<u>Trinectes maculatus</u>	PL				X										
F. Cynoglossidae															
<u>Symphurus civitatus</u>	PL									X					
F. Tetraodontidae															
<u>Sphoeroides</u> sp.	Larvae	X													

Table G-3.

F Values for Biomass Only

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf	0.94 ns	9.98 *	2.13 ns	2.12 ns	3.52 *	3.97 *	1.69 ns	6.53 *	0.91 ns	2.79 *	0.72 ns	22.20 *
505 Bott	0.44 ns	0.18 ns	4.92 *	2.13 ns	1.77 ns	2.21 ns	12.96 *	2.63 *	7.12 *	1.81 *	2.89 *	2.52 *
333 Surf	3.40 *	8.73 *	4.01 *	1.90 ns	1.86 ns	5.66 *	1.42 ns	7.32 *	0.86 ns	12.40 *	3.30 *	27.68 *
333 Bott	1.69 ns	3.71 *	2.61 *	5.61 *	0.87 ns	2.22 ns	7.38 *	5.89 *	4.44 *	0.91 ns	2.07 ns	2.01 ns

F Values for Biomass including Ctenophores and Scyphozoans

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf				0.86 ns	2.15 ns	5.12 *						
505 Bott				2.13 ns	1.77 ns	1.03 ns						
333 Surf				1.06 ns	1.18 ns	3.67 *						
333 Bott				5.61 *	0.87 ns	4.57 *						

ns (non-significant)

* (significant)

Table G-4.

F Values for post larval Lucifer faxoni

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf	6.97 *	10.62 *	6.19 *	5.26*	2.70 *	3.73 *	6.90 *	1.63 ns			1.67 ns	1.48 ns
505 Bott	1.10 ns	8.42 *	6.06 *	193.64*	10.41 *	3.10 *	14.94 *	1.85 ns			1.10 ns	1.27 ns

F Values for post larval Penaeus sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf			1.12 ns	6.17 *	2.20 ns	1.66 ns			1.00 ns			
505 Bott			2.93 *	2.07 ns	6.52 *	1.21 ns			6.59 *			

F Values for post larval Acetes americanus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf			59.32*	1.54 ns	2.82 *	1.64 ns						1.14 ns
505 Bott			5.76*	6.11 *	3.65 *	3.29 *						5.21 *

ns (non-significant)

* (significant)

Table G-4. continued

F Values for larval Brevoortia sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf							8.97 *	1.01 ns		3.97 *		
505 Bott							0.80 ns	2.75 *		3.66 *		

F Values for post larval Brevoortia sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf							6.37 *	3.76 *	1.28 ns	14.34 *	2.41 ns	
505 Bott							1.00 ns	1.00 ns	1.00 ns	1.00 ns	0.75 ns	

F Values for post larval Micropogonius undulatus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf						0.94 ns	0.75 ns	0.63 ns				
505 Bott						3.35 *	2.63 *	1.12 ns				

ns (non-significant)

* (significant)

Table G-4. continued

F Values for larval Anchoa sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf	2.76 *		9.82 *								7.78 *	1.23 ns
505 Bott	1.70 ns		2.42 ns								3.13 *	0.97 ns

F Values for post larval Anchoa sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf	2.49 ns	8.27 *	7.56 *									5.48 *
505 Bott	1.36 ns	1.70 ns	1.56 ns									9.27 *

F Values for larval Chloroscombrus chrysurus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
505 Surf			1.21 ns	11.20 *	6.70 *							
505 Bott			3.83 *	16.02 *	11.38 *							

ns (non-significant)

* (significant)

Table G-4. continued

F Values for larval Cynoscion regalis

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
5/16 Surf	0.61 ns		1.58 ns	1.99 ns	1.93 ns							3.47 *
5/16 Bott	2.83 *		9.19 *	1.12 ns	3.47 *							2.88 *

F Values for post larval Cynoscion regalis

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
5/16 Surf												3.70 *
5/16 Bott												3.99 *

F Values for larval Sciaenops ocellatus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
5/16 Surf					7.53 *							
5/16 Bott					3.52 *							

F Values for larval Clupeidae

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
5/16 Surf					3.15 *	10.25 *						
5/16 Bott					2.47 ns	2.25 ns						

ns (non-significant)

* (significant)

Table G-4. continued

F Values for yolksac larvae Anchoa sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			3.31 *									
333 Bott			2.06 ns									

F Values for yolksac larvae Brevoortia sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf							2.68 *					
333 Bott							3.40 *					

F Values for eggs Anchoa mitchilli

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			30.76 *									
333 Bott			2.97 *									

ns (non-significant)

* (significant)

Table G-4. continued

F Value for eggs Anchoa hepsetus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			2.12 ns									
333 Bott			8.02 *									

F Values for eggs Sciaenidae

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			5.50 *	12.15 *								
333 Bott			3.47 *	6.54 *								

F Values for zoeae Neopanope sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			3.26 *									
333 Bott			0.58 ns									

ns (non-significant)

* (significant)

Table G-4. continued

F Values for zoeae Panopeus sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	6.39 *		1.34 ns									
333 Bott	1.18 ns		0.99 ns									

F Values for zoeae Pinnixa sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	5.42 *	2.65 *	3.28 *									
333 Bott	1.56 ns	2.51 *	1.64 ns									

F Values for zoeae Uca sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	0.97 ns		0.81 ns									
333 Bott	1.07 ns		1.02 ns									

ns (non-significant)

* (significant)

Table G-4. continued

F Values for zoeae Hexapanopeus angustifrons

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	6.92 *											
333 Bott	2.98 *											

F Values for megalopae Sesanna sp.

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf			3.49 *									
333 Bott			1.12 ns									

F Values for males Acartia tonsa

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	1.75 ns	1.64 ns	2.93 *	1.63 ns								
333 Bott	2.81 *	2.49 ns	2.96 *	1.39 ns								

ns (non-significant)

* (significant)

Table G-4. continued

F Values for females Acartia tonsa

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	1.13 ns	2.37 ns	3.36 *	1.86 ns								
333 Bott	1.86 ns	4.23 *	3.33 *	1.29 ns								

F Values for total Acartia tonsa

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	1.17 ns	2.28 ns	3.29 *	1.84 ns								
333 Bott	2.07 ns	3.93 *	3.16 *	1.29 ns								

F Values for males Centropages velificatus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf		3.83 *										
333 Bott		7.67 *										

ns (non-significant)

* (significant)

Table G-4. continued

F Values for females Centropages velificatus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf		9.74 *										
333 Bott		3.07 *										

F Values for total Centropages velificatus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf		6.49 *		7.81 *								
333 Bott		13.45 *		403.23 *								

F Values for total Corycaeus americanus

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf				2.72 *								
333 Bott				8.03 *								

ns (non-significant)

* (significant)

Table G-4. continued

F Values for total Temora turbinata

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf				6.43 *								
333 Bott				29.46 *								

F Values for immature Labidocera aestiva

MESH SIZE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
333 Surf	1.61 ns	3.00 *										
333 Bott	1.32 ns	1.94 ns										

ns (non-significant)
* (significant)

Table G-5.

Student-Newman-Keuls Test
Station Means

Biomass Only

<u>MAY</u> 333 Surf	DW 1.395	DS 0.693	DE 0.608	M22 0.591	DN 0.586	M10A 0.504	M21 0.486	M18 0.236	M3 0.219
<u>JUN</u> 505 Surf	M22 0.742	DS 0.420	DN 0.366	DW 0.183	M10A 0.181	M18 0.176	DE 0.171	M21 0.144	M3 0.110
333 Surf	M22 1.644	DS 0.744	DN 0.587	DW 0.271	M10A 0.253	M18 0.230	DE 0.199	M21 0.128	M3 0.059
333 Bott	M21 2.066	DN 1.597	DW 1.573	M22 1.038	M18 1.018	M10A 0.779	DE 0.754	M3 0.586	DS 0.257
<u>JUL</u> 333 Surf	M21 1.412	DE 1.246	DS 1.070	M10A 0.628	DN 0.599	M3 0.568	DW 0.520	M22 0.518	M18 0.492
505 Bott	M22 0.936	DE 0.435	DN 0.334	DS 0.330	M21 0.330	DW 0.292	M10A 0.144	M3 0.083	M18 0.067

Table G-5. continued

Student-Newman-Keuls Test
Station Means

Biomass Only

AUG 333 Bott	M22	DS	DW	M21	M3	M10A	DN	M18	DE
	1.568	0.753	0.414	0.400	0.394	0.328	0.315	0.290	0.204
SEP 505 Surf	DS	DW	DE	M3	M18	M22	M10A	DN	M21
	2.058	1.926	1.374	1.259	1.176	0.835	0.741	0.459	0.333
OCT 505 Surf	M21	M22	DS	M10A	DN	DW	DE	M3	M18
	1.343	1.322	0.817	0.688	0.499	0.459	0.287	0.166	0.134
333 Surf	M22	DW	M10A	M21	DS	DN	DE	M3	M18
	2.331	2.173	1.606	1.486	1.089	0.734	0.311	0.254	0.251

Table G-5. continued

Student-Newman-Keuls Test
Station Means

Biomass Only

NOV 505 Bott	DS 16.330	DN 3.163	M21 2.723	DW 2.161	M3 1.963	M10A 1.388	M22 1.322	DE 0.594	M18 0.556
333 Bott	DS 8.878	DN 3.793	M21 3.667	DW 3.056	M3 2.514	M22 2.081	DE 1.634	M18 1.531	M10A 1.085
DEC 505 Surf	M10A 1.806	M18 1.629	DW 1.124	DE 0.856	M22 0.786	DS 0.580	M3 0.403	DN 0.154	M21 0.153
333 Surf	M10A 1.978	M18 1.649	DE 1.221	DW 1.190	M22 0.619	DS 0.352	M3 0.255	M21 0.200	DN 0.153
505 Bott	M3 2.061	M18 1.399	DN 1.338	DW 1.308	DE 1.146	M10A 1.046	DS 0.968	M21 0.524	M22 0.456
333 Bott	M3 1.988	DN 1.951	M18 1.322	DW 1.297	DE 1.280	DS 1.165	M10A 1.092	M22 0.542	M21 0.396

Table G-5. continued

Student-Newman-Keuls Test
Station Means

Biomass Only

JAN
505 Bott

M18	DE	M10A	DS	DW	M22	DN	M21	M3
0.935	0.600	0.511	0.461	0.318	0.195	0.124	0.087	0.051

333 Bott

M18	M10A	DE	DW	DS	DN	M22	M21	M3
0.810	0.620	0.558	0.433	0.414	0.341	0.141	0.130	0.104

FEB
505 Surf

M22	DE	M10A	M21	DN	M18	DW	M3	DS
0.456	0.187	0.128	0.085	0.074	0.073	0.069	0.067	0.067

333 Surf

M22	DE	M10A	M21	M3	DS	DN	M18	DW
0.449	0.179	0.134	0.118	0.113	0.086	0.057	0.052	0.051

MAR
505 Bott

DW	M22	DN	M10A	M3	DE	M18	DS	M21
1.241	0.933	0.836	0.819	0.810	0.557	0.330	0.326	0.202

Table G-5. continued

Student-Newman-Keuls Test
Station Means

Biomass Only

<u>APR</u> 505 Surf	M22 2.623	DW 0.879	M18 0.584	M10A 0.510	M3 0.471	DE 0.387	DS 0.288	DN 0.271	M21 0.250
333 Surf	M22 2.681	DW 0.919	M21 0.794	M18 0.740	M3 0.632	DS 0.472	DE 0.458	M10A 0.439	DN 0.436
505 Bott	DW 2.710	M18 1.653	M3 1.373	M22 1.247	M10A 1.132	DN 0.750	DE 0.738	DS 0.612	M21 0.302

Table G-5. continued

Student-Newman-Keuls Test
Station Means

Biomass Including Ctenophores and Scyphozoans

G-55	AUG 333 Bott	M22 1.568	DS 0.753	DW 0.414	M21 0.401	M3 0.395	M10A 0.328	DN 0.315	M18 0.290	DE 0.205
	OCT 505 Surf	M21 17.083	M22 1.321	DS 0.817	M10A 0.688	DN 0.499	DW 0.459	DE 0.287	M3 0.166	M18 0.134
	333 Surf	M21 12.137	M22 2.331	DW 2.173	M10A 1.606	DS 1.090	DN 0.734	DE 0.311	M3 0.254	M18 0.251
	333 Bott	M21 9.244	DN 4.968	DW 4.713	M10A 3.216	DS 3.125	M3 3.041	M22 2.967	M18 1.789	DE 1.295

Table G-6.

Student-Newman-Keuls Test
Station MeansLucifer faxoni post larvaeMAY

505 Surf	DS 5.700	M22 5.033	DN 2.467	M10A 0.167	DE 0.100	M3 0.067	M18 0.067	DW 0.067	M21 0.033
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JUN

505 Surf	M22 1.033	DS 0.967	DW 0.433	DN 0.200	DE 0.200	M3 0.100	M18 0.100	M21 0.067	M10A 0.067
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505 Bott

M18 18.467	DW 15.967	M10A 15.267	DE 7.800	M3 3.733	M22 1.000	M21 0.800	DS 0.400	DN 0.200
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JUL

505 Surf	M22 5.667	M3 0.133	DE 0.100	M18 0.100	M10A 0.067	M21 0.033	DS 0.033	DN 0.033	DW 0.000
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505 Bott

M22 5.400	M3 0.100	M10A 0.067	M18 0.033	DW 0.033	DS 0.033	DN 0.033	DE 0.033	M21 0.000
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Table G-6. continued

Student-Newman-Keuls Test
Station MeansLucifer faxoni post larvae

<u>AUG</u> 505 Surf	DS	DN	DE	M18	M22	DW	M10A	M3	M21
	30.800	29.567	1.867	1.300	1.000	0.900	0.500	0.233	0.033
505 Bott	M22	DS	M10A	DW	M18	DN	DE	M3	M21
	6.467	0.533	0.267	0.167	0.100	0.100	0.067	0.033	0.000
<u>SEP</u> 505 Bott	M3	M22	M18	DW	M10A	DS	DE	DN	M21
	5.033	2.600	2.167	2.000	1.933	0.500	0.367	0.133	0.033
<u>OCT</u> 505 Surf	M22	M10A	DS	DW	M3	DN	M18	M21	DE
	1219.433	70.300	8.400	7.967	0.900	0.633	0.600	0.267	0.033

Table G-6. continued

Student-Newman-Keuls Test
Station MeansLucifer faxoni post larvae

NOV 505 Surf	DW 31.833	M10A 17.967	DE 17.833	M18 14.433	M3 9.000	M22 5.367	DN 4.367	DS 0.800	M21 0.467
505 Bott	M22 10.533	DS 8.567	DN 5.033	M21 4.767	DW 1.433	M3 0.900	DE 0.867	M18 0.733	M10A 0.467

Penaeus sp. post larvae

JUL 505 Bott	M22 0.633	DN 0.233	M3 0.167	DS 0.133	DW 0.067	DE 0.067	M21 0.033	M18 0.033	M10A 0.033
AUG 505 Surf	DN 1.500	M18 0.600	DW 0.600	DE 0.467	M10A 0.267	DS 0.267	M3 0.100	M22 0.067	M21 0.033
SEP 505 Bott	M3 0.500	M22 0.200	DS 0.167	M10A 0.133	M18 0.067	DW 0.033	DN 0.033	DE 0.033	M21 0.000

Table G-6. continued

Student-Newman-Keuls Test
Station Means

<u>JAN</u> <u>505</u> Bott	M18	M21	DW	M10A	DS	DE	M3	M22	DN
	0.500	0.167	0.067	0.033	0.033	0.033	0.000	0.000	0.000

Acetes americanus post larvae

<u>AUG</u> <u>505</u> Bott	M22	DE	DS	M18	M10A	DW	DN	M3	M21
	3.767	0.400	0.300	0.167	0.133	0.067	0.067	0.000	0.000

<u>SEP</u> <u>505</u> Bott	DE	M10A	M18	M22	DW	M3	DN	DS	M21
	1.100	1.067	1.067	0.833	0.800	0.633	0.600	0.067	0.000

<u>OCT</u> <u>505</u> Bott	DN	M21	M18	M3	DS	DE	DW	M22	M10A
	3.067	1.933	0.433	0.267	0.167	0.100	0.067	0.033	0.000

<u>APR</u> <u>505</u> Bott	DE	DW	M18	M3	M10A	DS	M21	DN	M22
	49.400	41.367	26.500	25.033	23.000	2.300	0.500	0.067	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station MeansBrevoortia sp. larvae

NOV 505 Surf	DW	DN	M10A	DS	DE	M22	M21	M18	M3
	59.433	16.367	15.333	10.167	8.733	6.767	5.133	3.667	2.500

DEC 505 Bott	M18	DE	M22	M21	DW	DN	M3	M10A	DS
	0.200	0.133	0.033	0.033	0.033	0.033	0.000	0.000	0.000

FEB 505 Surf	M3	M22	DS	DE	M18	M10A	DW	M21	DN
	0.300	0.300	0.167	0.133	0.067	0.033	0.033	0.000	0.000

505 Bott	M22	M21	DW	DS	DN	DE	M3	M18	M10A
	0.367	0.033	0.033	0.033	0.033	0.033	0.000	0.000	0.000

Brevoortia sp. post larvae

NOV 505 Surf	DW	M10A	M18	M21	DE	DS	DN	M3	M22
	6.100	3.433	2.333	2.333	1.933	1.533	0.733	0.233	0.133

DEC 505 Surf	M10A	DS	DW	DE	DN	M3	M22	M18	M21
	6.133	1.667	1.500	1.200	0.867	0.833	0.233	0.133	0.000

Table G-6., continued

Student-Newman-Keuls Test
Station Means

<u>FEB</u> 505 Surf	M22 4.467	DN 0.267	DS 0.167	M10A 0.100	M18 0.100	M3 0.067	DW 0.033	DE 0.033	M21 0.000
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Micropogonius undulatus post larvae

<u>OCT</u> 505 Bott	DN 0.800	M21 0.700	DE 0.233	M10A 0.167	DW 0.167	M22 0.133	DS 0.133	M18 0.033	M3 0.000
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<u>NOV</u> 505 Bott	DS 0.500	M3 0.300	M22 0.267	M18 0.100	M10A 0.100	DW 0.100	M21 0.067	DN 0.067	DE 0.067
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Anchoa sp. larvae

<u>MAY</u> 505 Surf	DW 1.767	DS 0.767	M18 0.667	DE 0.233	M22 0.200	M10A 0.200	DN 0.200	M3 0.100	M21 0.067
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<u>JUL</u> 505 Surf	M21 8.033	DE 4.867	M10A 3.000	M18 0.933	DS 0.667	DN 0.663	M3 0.267	DW 0.133	M22 0.000
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Table G-6. continued

Student-Newman-Keuls Test
Station Means

<u>MAR</u> 505 Surf	M3 2.967	M21 2.933	M10A 1.500	M18 1.033	DE 0.533	DW 0.500	M22 0.067	DS 0.033	DN 0.033
505 Bott	M21 3.233	DW 0.300	M10A 0.133	M3 0.033	DN 0.033	M22 0.000	M18 0.000	DS 0.000	DE 0.000
<u>Anchoa sp. post larvae</u>									
<u>JUN</u> 505 Surf	M18 3.500	DW 3.067	M21 1.967	M10A 0.833	DE 0.667	M3 0.533	DS 0.100	DN 0.100	M22 0.000
<u>JUL</u> 505 Surf	M21 0.433	DE 0.133	M3 0.100	M18 0.100	DN 0.100	M22 0.067	M10A 0.067	DS 0.033	DW 0.000
<u>APR</u> 505 Surf	M21 6.467	M10A 0.933	DN 0.900	DW 0.633	DS 0.367	M18 0.300	M22 0.233	M3 0.200	DE 0.133
505 Bott	M21 2.267	DS 0.800	DW 0.800	M3 0.200	DN 0.133	DE 0.133	M22 0.100	M18 0.067	M10A 0.067

Table G-6. continued

Student-Newman-Keuls Test
Station MeansChloroscombrus chrysurus larvae

JUL 505 Bott	M22 1.133	M10A 0.333	DE 0.300	M3 0.100	M18 0.100	DW 0.067	DS 0.067	M21 0.000	DN 0.000
AUG 505 Surf	DN 4.800	DW 1.767	M18 1.000	DS 0.933	DE 0.500	M3 0.433	M22 0.200	M10A 0.133	M21 0.000
505 Bott	M22 4.800	DS 0.267	M10A 0.133	DW 0.100	DN 0.067	DE 0.067	M3 0.033	M21 0.000	M18 0.000
SEP 505 Surf	M22 1.000	M3 0.367	M18 0.233	DW 0.133	DE 0.100	M10A 0.067	M21 0.000	DS 0.000	DN 0.000
505 Bott	M22 1.233	M18 0.267	DE 0.200	M3 0.167	M10A 0.167	DW 0.067	M21 0.000	DS 0.000	DN 0.000

Cynoscion arenarius larvae

JUL 505 Bott	M22 1.333	M3 0.367	DN 0.367	DW 0.133	DS 0.100	M10A 0.067	M21 0.033	M18 0.033	DE 0.033
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Table G-6. continued

Student-Newman-Keuls Test
Station Means

SEP 505 Bott	DE 2.267	DW 2.133	M3 1.133	M18 1.067	DN 0.967	M10A 0.800	DS 0.467	M22 0.433	M21 0.367
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APR 505 Surf	M22 1.133	DS 0.067	DE 0.033	M3 0.000	M21 0.000	M18 0.000	M10A 0.000	DW 0.000	DN 0.000
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Cynoscion regalis post larvae

APR 505 Surf	M22 0.267	DS 0.033	M3 0.000	M21 0.000	M18 0.000	M10A 0.000	DW 0.000	DN 0.000	DE 0.000
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505 Bott	M18 1.500	DE 0.967	M10A 0.367	M3 0.233	DN 0.233	M22 0.167	DW 0.167	M21 0.133	DS 0.100
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Clupeidae larvae

SEP 505 Surf	DE 0.667	M18 0.333	M22 0.267	M3 0.233	M10A 0.233	DW 0.067	M21 0.033	DS 0.000	DN 0.000
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Table G-6. continued

Student-Newman-Keuls Test
Station Means

Clupeidae larvae

<u>OCT</u> 505 Surf	M10A	DW	DS	M22	M3	M18	DE	M21	DN
	0.667	0.667	0.233	0.133	0.100	0.100	0.033	0.000	0.000

Sciaenops ocellatus larvae

<u>SEP</u> 505 Surf	DE	M10A	M3	M22	M18	M21	DW	DS	DN
	0.633	0.467	0.200	0.167	0.133	0.033	0.033	0.033	0.000

505 Bott	DE	M18	M10A	M3	DW	M22	DS	DN	M21
	1.033	0.900	0.800	0.567	0.500	0.500	0.200	0.033	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station Means

Anchoa sp. yolksac larvae

JUL 333 Surf	DW	M18	DE	M10A	M3	DS	M22	M21	DN
	7.433	4.967	3.800	1.333	0.567	0.067	0.000	0.000	0.000

Brevoortia sp. yolksac larvae

NOV 333 Bott	M3	M18	DE	M10A	DS	DW	DN	M22	M21
	6.500	4.900	2.333	2.300	1.700	0.567	0.167	0.100	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station MeansAnchoa mitchilli eggs

<u>JUL</u>									
333 Surf	M18	M3	DW	DE	DS	M21	DN	M22	M10A
	425.733	332.100	213.433	172.500	35.367	18.933	17.367	0.000	0.000
333 Bott	DS	M18	M3	DE	DN	DW	M21	M10A	M22
	18.567	10.033	5.033	4.633	4.400	1.533	1.367	0.733	0.033

Anchoa hepsetus eggs

<u>JUL</u>									
333 Bott	M3	DS	M18	DN	DW	DE	M10A	M22	M21
	6.033	4.600	2.900	0.633	0.467	0.233	0.100	0.000	0.000

Sciaenidae eggs

<u>JUL</u>									
333 Surf	M10A	DW	M3	DE	M22	M21	M18	DS	DN
	14.567	5.967	1.700	0.700	0.100	0.100	0.000	0.000	0.000
333 Bott	DE	DS	M18	DW	DN	M3	M10A	M22	M21
	8.400	6.467	5.133	2.000	1.833	0.967	0.633	0.233	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station Means

Sciaenidae eggs

AUG

333 Surf

M21	DE	M18	M10A	M3	DW	DS	DN	M22
27.100	22.800	17.733	15.867	5.000	3.567	1.967	1.100	0.233

333 Bott

M3	M18	DE	M21	M10A	DS	DN	DW	M22
27.000	21.000	10.033	8.867	6.700	3.133	1.833	1.633	0.233

Table G-6. continued

Student-Newman-Keuls Test
Station MeansNeopanope sp. zoeae

<u>JUL</u> 333 Surf	M21	DN	DS	M3	M10A	DW	M18	M22	DE
	0.467	0.333	0.267	0.100	0.067	0.067	0.033	0.000	0.000

Panopeus sp. zoeae

<u>MAY</u> 333 Surf	DS	DN	DW	M3	M18	M10A	DE	M22	M21
	7.733	4.733	3.300	2.800	1.000	0.367	0.167	0.067	0.067

Pinnixa sp. zoeae

<u>MAY</u> 333 Surf	DE	M18	M21	M10A	M22	DN	DW	M3	DS
	30.500	15.633	11.267	3.967	3.233	2.033	1.667	1.067	0.533

<u>JUN</u> 333 Surf	M18	M21	M3	DS	DN	DW	DE	M10A	M22
	11.533	8.233	8.033	6.833	5.800	4.967	3.700	3.433	2.400

333 Bott	M22	M21	DS	M10A	DE	M18	DN	M3	DW
	48.133	42.967	6.600	5.800	5.433	5.200	4.067	2.567	2.533

Table G-6. continued

Student-Newman-Keuls Test
Station Means

Pinnixa sp. zoeae

<u>JUL</u>									
333 Surf	M21	M10A	DE	M3	M18	DS	M22	DW	DN
	0.167	0.133	0.067	0.033	0.033	0.033	0.000	0.000	0.000

Ilexapanopeus angustifrons zoeae

<u>MAY</u>									
333 Surf	M18	DS	M22	DE	M3	DW	DN	M10A	M21
	23.900	13.800	12.867	8.900	4.000	4.000	3.067	2.133	1.900
333 Bott	M22	M21	M3	DE	M10A	M18	DS	DW	DN
	46.067	23.400	20.767	16.267	11.867	9.400	7.767	6.267	4.400

Table G-6. continued

Student-Newman-Keuls Test
Station Means

Sesarma sp. megalopae

<u>JUL</u>									
333 Surf	M10A	DE	M18	M21	DN	DW	DS	M3	M22
	0.467	0.233	0.200	0.167	0.167	0.067	0.033	0.000	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station MeansAcartia tonsa malesMAY333 Bott

M18	M10A	DN	DW	DE	DS	M3	M21	M22
1589.800	876.567	768.567	521.933	277.866	99.867	72.167	32.600	10.433

JUL333 Surf

DS	M21	DN	M18	DE	DW	M10A	M3	M22
2473.533	2259.767	439.100	364.133	338.200	137.100	64.433	27.900	6.333

Acartia tonsa femalesJUN333 Bott

M18	M3	DE	M10A	DW	M21	M22	DN	DS
2416.733	1348.133	1296.366	1141.500	1038.600	503.933	324.700	19.600	5.100

JUL333 Surf

DS	M21	DN	M18	DE	M10A	DW	M22	M3
11963.898	11538.996	2326.900	509.866	719.400	419.366	351.333	267.333	137.533

333 Bott

M3	M18	DS	M22	DW	M21	M10A	DE	DN
5228.031	1437.900	1136.733	644.533	513.733	374.800	236.600	80.833	66.467

Table G-6. continued

Student-Newman-Keuls Test
Station MeansAcartia tonsa totalJUN

333 Bott

M18	DE	M3	M10A	DW	M21	M22	DN	DS
2796.866	1659.233	1633.300	1351.967	1299.100	523.300	390.567	51.533	7.467

JUL

333 Surf

DS	M21	DN	M18	DE	DW	M10A	M22	M3
14437.430	13798.465	2766.000	1874.033	1057.633	497.433	483.800	273.733	165.433

333 Bott

M3	M18	DS	DW	M22	M21	M10A	DE	DN
6613.066	2794.167	1693.800	870.800	835.267	440.133	336.567	138.767	116.633

Centropages velificatus malesJUN

333 Surf

M22	DS	DN	DW	M18	M10A	DE	M21	M3
133.467	76.267	31.667	8.967	3.200	0.767	0.733	0.100	0.033

333 Bott

M22	DN	DW	DE	M10A	DS	M3	M21	M18
56.067	11.533	10.500	5.567	2.433	1.067	0.000	0.000	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station MeansCentropages velificatus females

<u>JUN</u> 333 Surf	M22	DS	DN	M18	M10A	DE	DW	M21	M3
	143.200	65.500	26.633	4.100	1.200	1.100	0.767	0.267	0.067

Centropages velificatus total

<u>JUN</u> 333 Surf	M22	DS	DN	DW	M18	M10A	DE	M21	M3
	276.700	141.767	58.267	8.733	7.300	1.967	1.833	0.400	0.100

333 Bott	M22	DW	DE	DN	M3	M10A	M21	M18	DS
	82.733	31.433	27.233	19.433	8.967	7.300	4.567	3.400	1.367

<u>AUG</u> 333 Surf	M22	DS	DN	M18	DE	DW	M10A	M21	M3
	210.700	122.533	109.300	47.100	23.567	21.300	7.367	1.300	0.667

333 Bott	M22	M18	DS	DN	DW	DE	M10A	M21	M3
	397.100	22.300	21.567	17.267	7.967	6.033	5.500	0.500	0.000

Table G-6. continued

Student-Newman-Keuls Test
Station MeansCorycaeus americanus total

<u>AUG</u> 333 Bott	M22	DN	DS	M18	DW	DE	M3	M10A	M21
	249.633	63.833	63.467	10.667	4.900	3.400	1.467	1.233	0.000

Temora turbinata total

<u>AUG</u> 333 Surf	M22	DS	DN	M18	M10A	DE	DW	M3	M21
	1934.267	442.833	158.533	104.733	98.400	64.700	56.733	14.267	0.033

333 Bott	M22	DS	DN	M18	DE	M3	DW	M10A	M21
	1695.133	578.767	154.833	138.867	32.600	30.467	13.100	12.267	0.000

Labidocera aestiva immature

<u>JUN</u> 333 Surf	M22	DN	DS	M18	DW	DE	M10A	M3	M21
	567.366	222.300	156.167	79.967	75.500	55.100	20.467	3.500	1.867

H.1 Species Discussion

H.1.1 Penaeid Shrimp

The shrimp fishery of the south Atlantic and Gulf Coast is based almost entirely on the catches of three species of penaeid shrimp, white shrimp, (Penaeus setiferus), brown shrimp, (Penaeus aztecus), and pink shrimp, (Penaeus duorarum) (Broad, 1965). P. duorarum was not found to be abundant in the study area. Hildebrand (1954) suggests that a combination of low salinities and mud bottoms may bar this species from Louisiana west of the Mississippi.

Two other penaeid shrimp species, the seabob, (Xiphopenaeus kroyeri) and the rock shrimp, (Sicyonia dorsalis), have limited commercial utility.

H.1.1.2 White Shrimp: Penaeus setiferus

Lindner and Cook (1970) have prepared a comprehensive synopsis of biological data on the white shrimp, Penaeus setiferus. A number of other investigators have contributed to knowledge on the life history of the white shrimp. Some of the major contributors include: Anderson, et al. (1949a); Broad (1965); Christmas, et al. (1966); and Gaidry and White (1973).

White shrimp spawn at sea probably over the entire range of their abundance but usually in shallow coastal waters. Off Louisiana, most spawning occurs in depths between 9 and 31 m. Spawning probably begins in late March or early April and continues through September or November with a peak in June or July (Lindner and Anderson, 1956). The eggs are demersal and the larval stages planktonic. It has been estimated that one mature shrimp can produce from 500,000 to 1,000,000 eggs. Anderson et al. (1949) counted about 860,000 eggs in the ovaries of a ripe female 172 mm TL.

The number of times white shrimp spawn in a season is not known. Most shrimp biologists agree that these shrimp may spawn repeatedly in a single season. Lindner and Anderson (1956) speculated that a single shrimp could spawn as many as four times in a season and that a few females survive to spawn during a second season.

There is no record that mating has been observed, but it is believed that P. setiferus is promiscuous. The male attaches a spermatophore externally between the third, fourth, and fifth pairs of pereopods of the female before spawning. It is generally believed that upon emission, the eggs are fertilized by sperm from the spermatophore.

The eggs hatch within 12 hours (Broad, 1965). The actual emergence of the larvae from the eggs takes only a few seconds

(Pearson, 1939). Pearson (1939) described white shrimp larvae from specimens taken from plankton. He described five naupliar substages, three protozoal substages, and two mysis substages. Johnson and Fielding (1956) reported that the length of larval life was 10 to 12 days depending to some extent on local food and habitat.

At the postlarval stage, the shrimp are still planktonic in the offshore waters. At a total length of about 7 mm, they enter the estuarine nursery grounds (Weymouth et al. 1933; Pearson, 1939; Anderson et al., 1949a; Bearden, 1961; Baxter and Renfro, 1966). The means by which the postlarval shrimp make their way into the estuaries is not understood, but it is assumed that favorable tidal currents are the primary mechanism involved (Williams, 1955b). Gaidry and White (1973) report that in Louisiana, June to September is the peak period for postlarval entry into the estuaries. In addition, lower numbers enter in late fall and spring. Lindner and Anderson (1956) stated that inshore recruitment starts in June and continues until the onset of cold weather.

Upon reaching the estuaries, the postlarval shrimp become benthic (Anderson et al., 1949b; Williams, 1955b). Habitats are characterized by shallow water, muddy or peaty bottoms high in organic detritus, abundant marsh grasses, moderate to low salinities, and widely fluctuating temperature (Weymouth et al., 1933; Anderson et al., 1949a; Williams, 1955b; Loesch, 1965).

Growth rates of postlarval shrimp in the estuaries have been estimated by a number of investigators. Viosca (1920) and Gunter (1950) estimated growth at about 1.0 mm per day; Williams (1955b) at 1.2 mm per day; and Lindner and Anderson (1956) at 1.3 mm per day.

As the shrimp grow, there is a general movement from the shallow marginal areas to the deeper portions of the estuaries and then out to the open sea. White shrimp first appear on the estuarine fishing grounds in June or July at a modal size of between 80 and 100 mm TL (Weymouth et al., 1933; Gunter, 1950; Lindner and Anderson, 1956). Within a month of this occurrence, some of the young have reached offshore waters at a modal length of between 100 and 120 mm. Their seaward movement continues throughout the summer and is heightened in fall and winter by lowering temperatures (Lindner and Anderson, 1956).

Hence offshore commercial catches are dependent upon recruitment from the estuaries. Spawning activity within a season appears to increase to a single peak and then decline, but the young produced do not follow this pattern. Depending on locality, two or three broods of young shrimp may appear on the fishing grounds each season. (Gunter, 1950; Lindner and Anderson, 1956).

Recruitment of postlarval shrimp to the estuaries is dependent upon offshore spawning which probably occurs from March through November with a peak in June or July (Lindner and Anderson, 1956). In Louisiana, Gaidry and White (1973, p. 140) report "the principal influx of postlarvae occurs from June through August where in most years there

are two or three distinct age groups or sizes in the estuaries. Beginning with the initial influx of postlarvae in June, the shrimp show very rapid growth, and in mid August a 28-30 count per pound (145-160 mm) white shrimp is found in the estuary, at which time the fall shrimp season is opened. The commercial fishermen harvest these large shrimp of high value early. In seven weeks these large shrimp are caught, have emigrated offshore, or dispersed to where they are less accessible to commercial fishermen. About this time (mid-September) large numbers of juvenile white shrimp appear in the estuary and represent another definite age group; occasionally a third group appears in November. With the passage of winter's first cold front, a mass offshore exodus occurs; these shrimp overwinter offshore and in spring return to the inshore waters, resulting in the spring population."

Although the offshore movement of fall populations is apparently in response to decreasing water temperatures, other factors such as salinity changes and commercial fishing pressure may also be factors (Gaidry and White, 1973).

Food habit studies on shrimp are difficult because stomach contents are usually macerated and difficult to identify. Viosca (1920) and Weymouth et al. (1933) reported that white shrimp are omnivorous. Weymouth et al. (1933) observed cannibalism in captive shrimp. A list of food items summarized by Broad (1965) from various observers included: algae, diatoms, parts of vascular plants, dino-

flagellates, bryozoans, polychaetes, angleworms, crustaceans, insect remains, mollusks, fish and fish parts.

Predation on shrimp is severe and universal. Gunter (1957, p. 102) said that "it is a general observation of everyone working with shrimp that they are eaten by almost everything that is large enough to eat them all the time. They are eaten by everything that lives around, in, or above the sea, including the lowly jellyfish. They are not only eaten but they are preferred."

H.1.1.3 Brown Shrimp: Penaeus aztecus

Cook and Lindner (1970) have prepared an excellent synopsis of biological data on the brown shrimp. Among the many researchers who have contributed to knowledge on brown shrimp biology are: Burkenroad (1934, 1939); Gunter (1950, 1961); Gunter and Hildebrand (1951, 1954); Bearden (1961) and Gaidry and White (1973).

The general life history cycle of the brown shrimp is very similar to that of the white shrimp. Spawning occurs at sea, and eggs and larvae occur in all offshore waters inhabited by the adults (Cook and Lindner, 1970). Renfro and Brusher (MS) studied the ovarian condition of brown shrimp in the northwestern Gulf of Mexico and concluded that spawning occurs in depths from 14 m to 110 m. The greatest percentage of females in the ripe stage was found at 46 m and spawning apparently occurs throughout the year.

Although mating has never been observed, it is thought that brown shrimp are promiscuous. It is also thought that fertilization occurs

when the female releases eggs and sperm simultaneously in the open sea as described for white shrimp.

Eggs hatched under laboratory conditions in 14 to 18 hours after spawning. The actual emergence of the larvae from the eggs takes about 30 seconds (Cook, unpublished records). The larval stages of the brown shrimp have been described by Cook (unpublished records) as follows: 5 naupliar, 3 protozoear, and 3 mysis substages.

The early postlarval stages remain planktonic in the offshore waters until they reach a total length of 10 to 14 mm. At that time, they begin migrating into the estuarine nursery grounds. Although it is generally thought that the postlarval shrimp move into the estuaries shortly after spawning, there is increasing evidence that larval and postlarval shrimp remain offshore for the winter and enter the estuaries the following spring (Temple and Fischer, 1968; Aldrich et al., 1968).

The means by which postlarval shrimp enter the estuaries is not known, but planktonic movement on flood tides is the generally accepted mechanism (Simmons and Hoese, 1959; Baxter, 1966; Copeland and Truitt, 1966; St. Amant et al., 1966).

Upon entering the estuaries, the postlarvae become benthic and inhabit the marginal areas usually in less than 0.9 m of water. Preference is shown for areas with an abundance of vegetation or organic detritus or both. The young shrimp remain in the shallows for

2 to 4 weeks, moving to the deeper waters of the estuaries and finally returning to offshore waters (Parker, 1966; St. Amant et al., 1966).

Growth rates of postlarval and juvenile brown shrimp in the estuaries range from 1.0 to 2.5 mm per day (Williams, 1955; Joyce, 1965; Loesch, 1965; St. Amant et al., 1966). The size at which juvenile shrimp leave the estuaries is variable. Approximate average size of brown shrimp leaving the nursery grounds has been reported by Joyce (1965) at 100-105 mm and Copeland (1965) at 70-80 mm.

The food habits of brown shrimp and their predators are thought to be similar to those described for white shrimp.

H.1.1.4 Comparisons of White and Brown Shrimp

U.S. catch records from 1889 to 1940 range from 3,365 metric tons in 1897 to 68,283 metric tons in 1940. It is estimated that white shrimp constituted 95% of these reported landings (Anderson et al., 1949b). The white shrimp catch declined between 1945 and 1948 and has not reached the high levels of the early 1940's since then. The first large catches of brown shrimp in the U.S. were in 1947 (Springer, 1951). The U.S. landings for brown shrimp 1957-1965 range from 29,724 metric tons in 1961 to 55,245 metric tons in 1959. The mean brown shrimp catch for this period was 43,638. Landings for white shrimp for the same time period range from 14,447 metric tons in 1957 to 36,188 metric tons in 1963, with a mean catch of 25,376.

Although white and brown shrimp have similar life histories and distributions, specific differences do exist but they are difficult to

define. Springer and Bullis (1952, 1954) and Hildebrand (1954) report that white and brown shrimp occur on terrigenous silt bottoms while another penaeid shrimp, the pink shrimp, occurs on coral sand and shell. White shrimp occur closer to the shore, mainly inside the 10 fathom isobath while brown shrimp occur offshore of it. Differences in distribution may be associated with differences in nursery areas. Gunter (1961) suggests that the salinity of Texas nursery areas may be optimal for P. aztecus and that of Louisiana estuaries for P. setiferus.

Differences in salinity tolerances for postlarvae and juveniles have been studied by various investigators. Gunter et al. (1964) recorded lower salinity limits of 0.42⁰/oo for P. setiferus, 0.80⁰/oo for P. aztecus and 2.50⁰/oo for P. duorarum. This general trend has also been noted by Gunter (1950, 1961), Gunter et al. (1964), Joyce (1965) and Williams (1955a).

Apparently the spawning seasons of P. setiferus and P. aztecus overlap but the peak spawning activity of P. aztecus is either later or earlier (Williams, 1955b; Joyce, 1965; Christmas et al., 1966; Renfro and Brusher, MS).

According to de Sylva (1954), P. setiferus is not as hardy as P. aztecus. Butler (1962) observed that under laboratory conditions, P. aztecus is more hardy than P. setiferus. Butler (1962) and Chin and Allen (1957) have reported on the extreme toxicity of insecticides to shrimp. Butler (1962) reports that smaller shrimp and postlarvae are

apparently more sensitive to insecticide pollution and that white shrimp generally show less resistance than browns.

For the study period May 1981 through April 1982, 5133 Penaeus setiferus were collected at estuarine stations and 7160 were collected at marine stations. A total of 6765 Penaeus aztecus were collected in the estuary and 20,515 in the Gulf.

Relative abundances of both white and brown shrimp are presented in Figures H-2 through H-5 for February 1981 through April 1982.

H.1.1.5 White Shrimp

During post-discharge sampling P. setiferus ranked fourth and fourteenth in total abundance at estuarine and marine stations, respectively. In the estuary, peak abundances occurred in August, corresponding to the opening of the inshore white shrimp season. Relatively high abundances also occurred in July, September, and October 1981 and in April 1982 (Figure H-5). In marine samples, P. setiferus reached a peak in January with a lesser peak in October (Figure H-4). The large January peak possibly reflects an overwintering population comprised of mature individuals that will stay offshore and smaller individuals that will return to the estuary in the spring to complete maturation.

Bray-Curtis similarities showed a highly similar record of occurrence for P. setiferus and Cynoscion arenarius. The test showed these two species were found together more often than any other two

species collected. Their occurrence is similar at a level of 0.839 with 1.0 representing identity (Figure 7-16).

A length frequency study was done on all Penaeus setiferus taken at marine stations. Total lengths were recorded in 5 mm intervals and the total number of shrimp in each interval was tabulated.

In February 1981, white shrimp length frequencies showed an abundance of shrimp in the 100 to 165 mm range, with the largest number in the 120-125 mm interval.

March length frequencies showed no clear peak but indicated the presence of shrimp from 100-195 mm TL fairly evenly distributed. April data showed that the majority of shrimp were in the 145-175 mm range with a peak in the 160-165 mm interval. This probably reflects growth of the larger age class collected in February and March and little if any recruitment.

In May, most white shrimp were 140-165 mm TL with a peak in the 150-155 mm interval and some recruitment is indicated. The average weight of all white shrimp collected offshore in May was 27.8 g, lower than the 35.7 g average weight seen in April, a further indication of recruitment.

June lengths ranged from 140-170 mm for the majority of shrimp with the largest number in the 150-155 mm interval, possibly indicating continued growth of shrimp present earlier in the year; some recruitment is also indicated. Average weight increased to 31.5 g. In July, only three white shrimp were collected due to hypoxia. In

August, length frequency data seem to indicate recruitment of a new wave from the estuary. Several smaller shrimp were scattered in the size intervals from 45-120 mm. The majority of shrimp were in the 120-155 mm range with the 135-140 mm interval being dominant. Average weight dropped to 21.1 g.

September data also seem to indicate recruitment from the estuary. A small peak occurred in the size range from 60-115 mm with the major peak occurring at 140-170 mm. The largest number of shrimp fell in the 155-160 mm interval. The average weight of 27.3 g represented a slight increase over August.

In October, a small peak of shrimp in the 65-110 mm range occurred. The major peak was in the 110-170 mm range. The largest number of shrimp fell in the 130-135 mm interval. This represents a drop in size from the 155-160 mm dominant group in September. Average weight also dropped from 27.3 g in September to 14.2 g in October. The drop in average size and weight seems to represent further recruitment from the estuary.

November was similar with a small peak in the 55-90 mm range and a major peak in the 100-145 mm range. The largest number occurred in the 115-120 mm interval and the average weight was 13.9 g. Both length and weight decreased from the October figures.

December data probably reflect the growth of those shrimp present in the previous months with a major peak in the 100-155 mm range and the

largest number in the 120-125 mm interval. Average weight increased slightly to 18.1 g.

January 1982 data reflect two size peaks similar to those observed in February 1981. The smaller peak was represented by shrimp 55-95 mm TL and the major peak by those 105-145 mm TL. The largest number fell in the 120-125 mm interval and the average weight was 11.4 g. The two distinct size classes present in both January 1982 and February 1981 could indicate that two age classes had moved into marine waters to overwinter. Gaidry and White (1973) state that this situation does occur and that the smaller size group returns to the estuary with the onset of spring to continue maturation.

Length frequency tabulations for February, March and April 1982 showed similar trends for all three months. Considerably fewer shrimp were taken in these months than in 1981, and the majority of shrimp fell in the 105-190 mm range with a slight growth trend over the three month period indicated.

Most recruitment of shrimp from the estuarine nursery grounds appears to start in June and continue in waves through November. The peak of recruitment appears to be in October with a large peak in January due to a mass exodus from the estuary for overwintering.

At the same time, average lengths reflect a continual loss of larger shrimp, either to the fishery or to migration into deeper offshore waters.

H.1.1.6 Brown Shrimp

P. aztecus ranked third and fourth in total abundance at estuarine and marine stations respectively during the post-discharge study. In the estuary, peak abundances occurred from April to July with a high peak in April (Figure H-3).

Very pronounced peaks for brown shrimp occurred in the Gulf in May and June reflecting the offshore movement of maturing individuals from the estuarine nursery areas (Figure H-2).

Bray-Curtis similarities showed a highly similar record of occurrence for P. aztecus and Stellifer lanceolatus. Their occurrence is similar at a level of 0.69 with 1.0 representing identity (Figure 7-16).

Length frequency studies were also done on all Penaeus aztecus taken at marine stations.

In the months of February, March, and April 1981 only small numbers of brown shrimp were collected. Lengths ranged from 80-145 mm and a general trend toward larger size from February to April was noted.

In May, a large number of brown shrimp (8,450) were captured indicating recruitment from the estuary. The majority of shrimp were in the 75-110 mm range with the largest number in the 90-95 mm interval. The average weight of these shrimp was 5.2 g.

In June, another large catch (10,300) showed that the majority of brown shrimp were in the 70-120 mm range with a peak in the 80-85 mm

interval. The average weight in June was 8.1 g, indicating possible further recruitment from the estuary.

In July only five brown shrimp were taken due to hypoxia. In August, 810 browns were caught; the majority were 80-120 mm TL. The largest number was in the 90-95 mm interval. Average weight was 9.4 g. Since both length and weight increased from June, it is assumed that this reflects growth of shrimp present in previous months and little if any recruitment is noted.

In September, 60 brown shrimp with the majority in the 95-115 mm size range were captured. The largest number of shrimp were in the 95-100 mm interval, and the average weight was 9.3 g indicating some growth and little if any recruitment.

In October, 339 brown shrimp were taken. Recruitment was indicated by the presence of a small peak in the 65-70 mm interval, and the major peak was 75-105 mm. Average weight also dropped to 5.8 g.

In November, 404 shrimp were caught. Recruitment was indicated by a peak of small shrimp at 70-120 mm. There was also a small peak in the 120-140 mm range. The largest number of shrimp were in the 90-95 mm interval, and the average weight was 10.7 g.

In December, only 64 shrimp were caught with most in the 80-105 mm range. The largest number of shrimp were 95-100 mm TL. The average weight was 8.7 g. There is some indication of growth and loss to fishing pressure or offshore migration by the larger shrimp.

In January 1982, only 31 brown shrimp were captured, scattered between 60-115 mm TL. In February 1982, only 13 shrimp were taken followed by catches of 31 and 8 in March and April, respectively.

The period of major recruitment from the estuary to the offshore waters appears to be in May and June. As with white shrimp, recruitment occurs in waves, and large size classes are lost either to the fishery or offshore migration.

H.1.2 Brevoortia patronus

Life history stages of the Gulf menhaden, Brevoortia patronus, have been well documented (Suttkus, 1956; Christmas and Gunter, 1960; Springer and Woodburn, 1960; Roithmayr and Waller, 1963; Turner, 1969; Fore and Baxter, 1972; Wagner, 1973). Spawning occurs during fall and winter, October through March, in the northern Gulf of Mexico (Turner, 1969; Fore and Baxter, 1972; Wagner, 1973), with adult menhaden migrating to offshore Gulf waters in October for spawning purposes (Roithmayr and Waller, 1963). Larval menhaden, utilizing estuaries as nursery grounds, move into shallow estuarine areas to mature (Turner, 1969; Fore and Baxter, 1972; Day et al., 1973; Wagner, 1973).

Juveniles are able to tolerate lower salinities and temperatures than adults, and small B. patronus move into the upper reaches of the estuaries, then migrate Gulfward as they mature (Fore and Baxter, 1972; Day et al., 1973). The juveniles usually spend five to eight months in the estuarine areas, returning to the Gulf as sub-adults during late fall (Wagner, 1973).

B. patronus are planktivorous filter feeders (Gunter, 1938a). Darnell (1958) found menhaden stomachs to contain large quantities of organic detritus along with phytoplankton and zooplankton.

Our collected data concur with previous findings. Maximum numbers of B. patronus were found in Calcasieu Lake during early spring and summer (Figure H-9). One peak occurred in July 1981 when 561 individuals, possibly spawned during February or March, were captured (average weight - 2.0 g). A second peak, those probably recently spawned, was noted in March 1982 when 580 fish were caught weighing an average of 0.3 g each.

Movement out of the estuaries is closely correlated with temperature changes. Maturing menhaden begin migrating from the estuaries with the first pronounced temperature drop in the fall (Day et al., 1973). Between our September and October estuarine sampling cruises, we noticed a temperature decrease of seven centigrade degrees. Our catches of B. patronus for these two months totaled 21 and 2 individuals, respectively. No menhaden were captured in Calcasieu Lake during November.

Menhaden were collected at marine stations during every month except July 1981 when hypoxic conditions were evident (Figure H-8). Catches at marine stations during December indicated the probability of two age groups existing in the Gulf at that time: Group I - young of the year menhaden after recent migration from estuarine waters (95-105 mm SL) and Group II - adult B. patronus in the Gulf for spawning

purposes (140-150 mm SL). Small catches occurred in January and April. These low numbers may be attributed to gear selectivity: because menhaden are pelagic, they are less susceptible to capture by a bottom trawl.

H.1.3 Bairdiella chrysoura

Previous studies of Gulf of Mexico fish populations indicate that the spawning season of the silver perch, Bairdiella chrysoura, occurs during late spring and early summer--April through June (Gunter, 1938a and 1945; Springer and Woodburn, 1960; Hoese, 1965; Wagner, 1973). Sabins (1973) postulated that the spawning season extended into September. Hildebrand and Cable (1930) found larvae and eggs in estuaries, sounds, and fifteen miles into the Atlantic Ocean indicating spawning in estuarine and coastal marine waters. On the Gulf coast, the spawning area for silver perch is limited to estuaries (Gunter, 1945; Springer and Woodburn, 1960; Sabins, 1973).

Darnell (1958) examined silver perch stomachs from Lake Ponchartrain. He found their diet consisted of mysids, penaeids, fish and other crustaceans. Springer and Woodburn (1960) added polychaetes and insect larvae to Darnell's list. This feeding regime classifies B. chrysoura trophically as a mid-carnivore.

During the 12 months of post-discharge sampling, only 81 silver perch were captured. Forty-four individuals were caught in Calcasieu Lake during summer and fall. Those caught in June, July and August ranged from 33 mm to 74 mm SL and were possibly spawned during the

spring which would agree with previous findings. Thirty-seven Gulf specimens were captured during May, June, January and March with a mean SL of 113 mm.

H.1.4 Cynoscion nebulosus

The spotted seatrout, Cynoscion nebulosus, is one of the most important fish in the Gulf coast area, recreationally and commercially. Although primarily an estuarine species, individuals occasionally occur in the Gulf.

Several studies have indicated that C. nebulosus spawn from March through October throughout the northern Gulf of Mexico (Pearson, 1929; Gunter, 1945; Guest and Gunter, 1958; Springer and Woodburn, 1960). Jannke (1971) suggested year round spawning, but at reduced levels during late fall and winter. He based his findings on larval and juvenile catches in the Florida Everglades National Park.

Spotted seatrout spawn in bays and lagoons (Pearson, 1929; Guest and Gunter, 1958) and near coastal passes, possibly in drifting masses of detritus (Sabins, 1973).

Larval and juvenile development occurs in beds of inland vegetation which offer protection and food (Guest and Gunter, 1958). The young remain in the bays until maturity (Pearson, 1929), moving from shallow grassy areas into deeper bay waters with the onset of winter (Guest and Gunter, 1958).

Adult C. nebulosus remain in estuarine areas year round. As the temperatures drop in the fall, the fish move into the deeper, warmer

waters of the bays with some individuals migrating out into the Gulf and wintering along the beaches (Guest and Gunter, 1958).

Food habits of the spotted seatrout have been well documented (Pearson, 1929; Gunter, 1945; Moody, 1950; Guest and Gunter, 1958; Springer and Woodburn, 1960; Day et al., 1973). Moody (1950) found that C. nebulosus pass through several feeding stages as they grow - from zooplankton to shrimp to fish. Gunter (1945) reported a seasonal preference shift from shrimp in the summer to fish in the winter, possibly due to the low availability of shrimp in the colder months. Adult spotted seatrout are classified in the upper level of the trophic spectrum--as top carnivores (Day et al., 1973).

Forty specimens of C. nebulosus were captured by trawling in Calcasieu Lake during our study. Peak abundance was in February 1982 when 12 individuals were caught. Increased numbers caught during the winter months was possibly due to increased susceptibility to trawl capture in cold water. No spotted seatrout were captured during May through August. This low catch of C. nebulosus was probably due to trawl avoidance. An experimental gill net was employed from May through November 1981 at station E3. Large C. nebulosus (> 200 mm SL) were netted in May and July through October. Only seven individuals (108-157 mm SL) were captured by trawl in Gulf waters, all at the near-shore control station M21 during January 1982.

H.1.5 Cynoscion nothus and Cynoscion arenarius

Cynoscion arenarius is generally considered to be the inshore counterpart of C. nothus. Our sampling area--the 10 m contour--seems to be an area of overlap. Hoese and Moore (1977) state that between 8 and 12 fathoms C. nothus begins to replace C. arenarius, and after 12 fathoms C. nothus is the only Cynoscion occurring. Ginsburg (1931) reported that C. arenarius is more common in estuarine and inshore Gulf waters with C. nothus becoming more common farther offshore. Miller (1965) did not find this to be the case. His data show more C. nothus at 3, 6 and 12 fathoms. Our sampling area is 5-6 fathoms deep. Overall we captured more C. nothus in number and more C. arenarius in weight: 8634 ind, 147,267 g and 7299 ind, 161,590 g respectively. Both species were found at all stations, even M21 which is approximately 2 fathoms deep. H.D. Hoese (personal communication) suggests distance offshore as the determining factor.

It has been reported previously that there is an obvious difference in size with C. arenarius reaching a greater length than C. nothus (Ginsburg, 1931). According to our data, C. arenarius ranged from 23 mm to 256 mm SL, while C. nothus ranged from 37 mm to 181 mm SL. C. nothus had a larger mean SL during May through September with the mean SL of C. arenarius being greater from October through April. Our data tend to agree with Ginsburg's findings.

H.1.6 Cynoscion nothus

The life history of the silver seatrout, Cynoscion nothus, is not well known. Most biologists contend that the species spawns well

offshore, probably in deep water (Gunter, 1945; Hildebrand, 1954; Guest and Gunter, 1958). The spawning season is presumed to be long, with peaks in summer and fall (Welsh and Breder, 1923; Gunter, 1938a and 1945; Hildebrand, 1954; Miller, 1965). Although primarily an offshore species C. nothus occasionally move into bays during the winter when water salinity is low (Gunter 1938a and 1945). Miller (1965) caught three individuals in Aransas Bay, Texas during March and April which supports Gunter's findings.

A total of 8634 individuals were collected at our marine stations from May 1981 through April 1982. Peak abundances occurred during May, September and March (Figure H-14). The silver seatrout caught from November through March had a mean SL of 60-75 mm and were probably spawned in summer and early fall. No C. nothus were collected in Calcasieu Lake during our sampling period.

H.1.7 Cynoscion arenarius

Sand seatrout, Cynoscion arenarius, are an abundant inhabitant of Gulf and estuarine waters. Gunter (1938a and 1945), Hildebrand (1954), Guest and Gunter (1958), Springer and Woodburn (1960), Miller (1965), Jannke (1971), Wagner (1973) and Schlossman and Chittenden (1981) all suggest a spawning season between March and September. Schlossman and Chittenden (1981) found definite spawning peaks in spring and late summer. Spawning presumably occurs in the Gulf near coastal passes (Simmons, 1951). Schlossman and Chittenden (1981) suggested spawning

grounds for C. arenarius that include inshore Gulf waters and lower estuaries.

During the cooler months, Gunter (1938a and 1945) noted a general exodus from estuarine waters. This trend was also detected by Schlossman and Chittenden (1981).

A total of 7299 fish were captured at our Gulf stations between May 1981 and April 1982. Peak abundance months were June, September and January (Figure H-15). In Calcasieu Lake, we collected 1981 individuals, primarily during June through November (Figure H-16). Only one C. arenarius was caught during the months of January, February and March, which supports previous findings of estuarine emigration.

H.1.8 Leiostomus xanthurus

There have been many studies conducted concerning the life history and habits of the spot, Leiostomus xanthurus. Although all previous findings concur on the spawning season of spot, different peaks have been noted. A spawning season from late December to March was reported by Pearson (1929), Gunter (1938a), Springer and Woodburn (1960), Parker (1971), and Sabins (1973). Sabins (1973) found a peak in December, while Pearson (1929) thought January and February to be the height of the season. Parker (1971) suggested a possible second peak during March and April. The differences in spawning times may be explained by differences in the geographical area of study. Spawning seasons are generally expanded as one moves further south since spawning is usually

temperature related. Spawning occurs offshore either near tidal passes (Pearson, 1929) or in deep water far from land (Dawson, 1958).

After hatching, larval and postlarval spot migrate into estuarine nursery areas (Pearson, 1929; Wagner, 1973), remaining there for eight or nine months (Parker, 1971). Spot probably mature and spawn in Gulf waters by the end of their second year (Parker, 1971).

Gunter (1945) noticed movement of bay populations to Gulf waters in midwinter suggesting overwintering in the Gulf. Miller (1965) caught numerous individuals in Aransas Bay, Texas before May and large numbers of spot in the Gulf after May indicating an exodus from estuarine waters during late spring.

Food habit studies of L. xanthurus indicate that young spot feed on zooplankton (Springer and Woodburn, 1960; Parker, 1971). Adult spot are primarily bottom feeders and prefer microbenthic animals (Day et al., 1973). This feeding regime places L. xanthurus as mid-carnivores (Day et al., 1973).

A total of 3395 spot were collected at marine stations with 70% of all individuals caught in June (mean SL 93 mm), August (mean SL 125 mm), and September (mean SL 137 mm). Lowest catches of spot occurred during October, November and December. In agreement with Gunter (1945), we noticed an increase in the Gulf catch during January (Figure H-17) along with a decrease in size of specimens (mean SL 108 mm, mean wt 31.7 g) suggesting overwintering in Gulf waters. Our data also indicate a migration from estuarine waters during spring with a peak

estuarine abundance in May and then a peak Gulf abundance in June, which supports Miller's (1965) findings. In Calcasieu Lake, 955 L. xanthurus were collected. Peak abundances were noted in May, August and February (Figure H-18).

H.1.9 Larimus fasciatus

While Welsh and Breder (1923) reported the banded drum, Larimus fasciatus, as one of the most abundant fish on the Gulf coast, most investigators find this not to be true. Four banded drum were captured in 109 hauls off Texas (Gunter, 1945), while Miller (1965) caught 43 fish between February and July 1964 in the same area. Springer and Woodburn (1960) did not report this species from Florida. In Louisiana, Gunter (1938b) caught 215 banded drum in 422 trawls.

The life history of L. fasciatus has not been investigated in depth. Hildebrand and Cable (1934) reported spawning off North Carolina from May through October in nearshore waters and up to twelve miles offshore. Gunter (1938a) suggested that spawning begins off Louisiana in April, based on his May collections of postlarval banded drum. Christmas and Waller (1973) took small individuals during April, June, August and October indicating summer spawning.

During post-discharge sampling, a total of 2058 individuals were collected at all marine stations, with 88% of the total caught from January through April with mean SL of 47 mm, 50 mm, 53 mm and 61 mm during those months. L. fasciatus was among the ten most abundant species each month during this period.

H.1.10 Menticirrhus americanus

The spawning season for the southern kingfish, Menticirrhus americanus, is April through September off North Carolina (Hildebrand and Cable, 1934). Work done by Sabins (1973) indicates a corresponding season in the Gulf, and Gunter (1938a) found fish with well-developed roe in the Gulf off Louisiana in April, May and June. He also (1945) reported fish with developing roe from Aransas Bay, Texas in March and November. Springer and Woodburn (1960) suggest that spawning occurs during May and June in the Tampa Bay area. Miller (1965), however, reported a spawning season from fall to spring, while data from Jannke's (1971) study indicate year round spawning in the Florida Everglades. Welsh and Breder (1923) suggest two spawning peaks, one in spring and one in fall.

Gunter (1945) indicated that all spawning and early stages of M. americanus occur in Gulf waters. Hoese (1965) reported nearshore spawning during summer and spawning farther offshore during spring and fall.

During post-discharge sampling, a total of 1604 southern kingfish were collected at marine stations with peak abundances occurring during winter months, October through March (Figure H-19). The smallest average size M. americanus occurred during January (mean SL 93 mm, mean wt 17.7 mm) possibly indicating spawning during late summer. Only nine individuals were caught in Calcasieu Lake. These were found in October, November and December.

M. littoralis, the Gulf kingfish, was the only other species of the genus Menticirrhus encountered during post-discharge sampling. Two individuals were collected in August at M21, the nearshore station. This finding agrees with the idea that M. littoralis is associated with the surf zone (Gunter, 1945).

H.1.11 Micropogonias undulatus

The Atlantic croaker, Micropogonias undulatus, is usually reported as one of the most abundant fish on the Gulf coast of Louisiana and Texas (Pearson, 1929; Gunter, 1938a and 1945; Miller, 1965). The life history of the croaker has been well documented by many investigators (Pearson, 1929; Gunter, 1938a and 1945; Springer and Woodburn, 1960; Miller, 1965; Hansen, 1970; Parker, 1971; Arnoldi et al., 1973; Christmas and Waller, 1973; Sabins, 1973; Wagner, 1973).

The spawning season of M. undulatus is late fall to late winter: October through March, with a peak in November (Pearson, 1929; Gunter, 1938a and 1945; Miller, 1965; Hansen, 1970; Wagner, 1973). Parker (1971) and Sabins (1973) extend the season into April and June. The spawning area for croakers is thought to be offshore, possibly near tidal passes (Pearson, 1929; Hansen, 1970; Parker, 1971; Wagner, 1973). Welsh and Breder (1923) stated that spawning sometimes occurs in estuaries.

Marshes have been found to be primary nursery areas for croakers (Arnoldi et al., 1973; Day et al., 1973). After remaining planktonic for a short time (Gunter, 1938a), postlarval croakers move into upper

estuaries and bays from November to April (Hansen, 1970; Wagner, 1973). Suttkus (1955) and Wagner (1973) noted migration of young of the year croakers from estuaries to Gulf waters from September through November. This movement corresponded with a drop in water temperature indicating that croakers overwinter in deeper, warmer Gulf waters. Wagner (1973) reported that age I M. undulatus move back into estuarine areas in the spring and remain until maturity. Also in September, a general offshore migration of adult fish occurs for spawning purposes (Pearson, 1929; Gunter, 1938a; Hansen, 1970; Parker, 1971; Wagner, 1973).

During post-discharge sampling, M. undulatus ranked second and third in abundance at estuarine and marine stations, respectively. In Calcasieu Lake, 13,287 individuals were caught with peak abundances during February, March and April (Figure H-21). Low numbers of M. undulatus occurred during August, September and October indicating a possible emigration of young of the year for overwintering in deeper, warmer Gulf waters. Large catches of postlarval and juvenile croakers (15-100 mm SL) migrating to nursery areas were collected in the lake from November to April. At marine stations, a total of 22,346 croakers were captured with 93% occurring during four months: May-June 1981 and March-April 1982 (Figure H-20). Low catches during October and November were due possibly to offshore spawning migration of adult fish or to migration for overwintering in deeper waters. Beginning in December, a decrease in the average size was noted continuing through May indicating possible recruitment from estuarine stocks.

H.1.12 Pogonias cromis

The black drum, Pogonias cromis, is of commercial and recreational importance along the Gulf coast. Black drum reach spawning age at the end of their second year, about 230 mm SL (Simmons and Breuer, 1962). Jannke (1971) reported a spawning season in the Florida Everglades from November to March. Principal spawning in Texas takes place during February and March with a possible secondary spawn during June and July (Pearson, 1929; Simmons and Breuer, 1962). Spawning occurs in bay areas as well as in Gulf waters near passes (Pearson, 1929; Simmons and Breuer, 1962).

According to Pearson (1929), there is a spawning migration from estuarine to Gulf waters beginning in January. After spawning, adults move back into their preferred bay habitat (Pearson, 1929). Young black drum move into estuaries and remain there until maturity (Pearson, 1929).

Preferred food of adult P. cromis includes crustaceans, mollusks and fish (Pearson, 1929; Simmons and Breuer, 1962). Young black drum feed on polychaetes, copepods, and amphipods (Pearson, 1929; Simmons and Breuer, 1962).

During post-discharge sampling, 18 P. cromis were caught at marine stations, ranging from 360 mm to 864 mm SL (one black drum was caught in August measuring 110 mm). Most of these fish were captured during March and April (Figure H-22). In the pre-discharge study, all black drum in marine collections were caught in March. One hundred two

individuals were captured in Calcasieu Lake. Peak estuarine abundance occurred from August to December (Figure H-23). Based on standard length, most black drum collected in the lake were juveniles or were entering their second year (Pearson, 1929). One large adult (470 mm SL) was caught over an oyster reef in Turner's Bay during December.

H.1.13 Sciaenops ocellatus

The red drum, Sciaenops ocellatus, is one of the most important fish on the Gulf coast, both recreationally and commercially.

The spawning season of S. ocellatus is from early fall to winter depending on geographical location. In the Florida Everglades, Janke (1971) reported spawning from mid-September to mid-February with a peak in October. Springer and Woodburn (1960) suggested spawning in the Tampa Bay area during September and October. Off Mississippi, spawning occurs during September and October (Christmas and Waller, 1973). Pearson (1929), Gunter (1945), and Sabins (1973) reported that red drum spawn from September through November off the Louisiana and Texas coasts. Spawning is thought to occur in the Gulf near passes and channels (Pearson, 1929; Simmons and Breuer, 1962; Christmas and Waller, 1973).

Young red drum are transported by currents into estuarine nursery areas (Pearson, 1929; Simmons and Breuer, 1962; Perret et al., 1980). Simmons and Breuer (1962) found that juvenile red drum actively avoid currents and prefer water with grassy or muddy bottoms. Seasonal migration has been reported by Pearson (1929), Simmons and Breuer

(1962), and Perret et al. (1980): S. ocellatus move into the Gulf during cold weather returning to bays and lagoons in the spring. To summarize, it would seem that red drum are spawned in the fall off the mouths of estuaries. They overwinter in the estuary. Some individuals may move into the Gulf to overwinter the following year. When red drum move into the Gulf to spawn in their third year most apparently remain there permanently.

Adult red drum are assumed to be bottom and pelagic feeders (Pearson, 1929). Several food habit studies indicate that crabs, shrimp and fish are of primary importance in the diet of S. ocellatus (Pearson, 1929; Gunter, 1945; Springer and Woodburn, 1960; Simmons and Breuer, 1962; Boothby and Avault, 1971; Perret et al., 1980).

During post-discharge sampling, three red drum, caught at marine stations during October and November, measured 640, 690, and 810 mm SL. Although gonad condition was not recorded, it can be assumed that these adults were ready to spawn or had just finished spawning. Four red drum were collected in Calcasieu Lake. One individual caught in August (235 mm SL, 244.0 g) was at the end of its first year according to Pearson's (1929) growth rates. The three fish caught during January and February, measuring 49 mm, 78 mm, and 80 mm SL, were young-of-the-year. The low number of red drum caught, probably due to net avoidance, make data analyses difficult.

H.1.14 Stellifer lanceolatus

The star drum, Stellifer lanceolatus, is one of the most abundant fish on the Gulf coast, and Louisiana is the center of its abundance (Hoesse and Moore, 1977). Gunter (1938a) found it second only to Micropogonias undulatus in number off Louisiana.

The spawning season for star drum is late spring and summer (May through August) on the Atlantic coast (Welsh and Breder, 1923; Hildebrand and Cable, 1934). Gunter (1938a) found ripe fish off Louisiana in April, May and June indicating possible spawning during spring and summer. Hoesse (1965) caught larval S. lanceolatus from June to September which agrees with the findings of Hildebrand and Cable (1934). Apparently spawning occurs in the same location that adults occupy year round (Hildebrand and Cable, 1934). Vecchione (personal communication) found larval and postlarval star drum during early fall at all marine stations and at station E5 at the entrance to the Calcasieu ship channel.

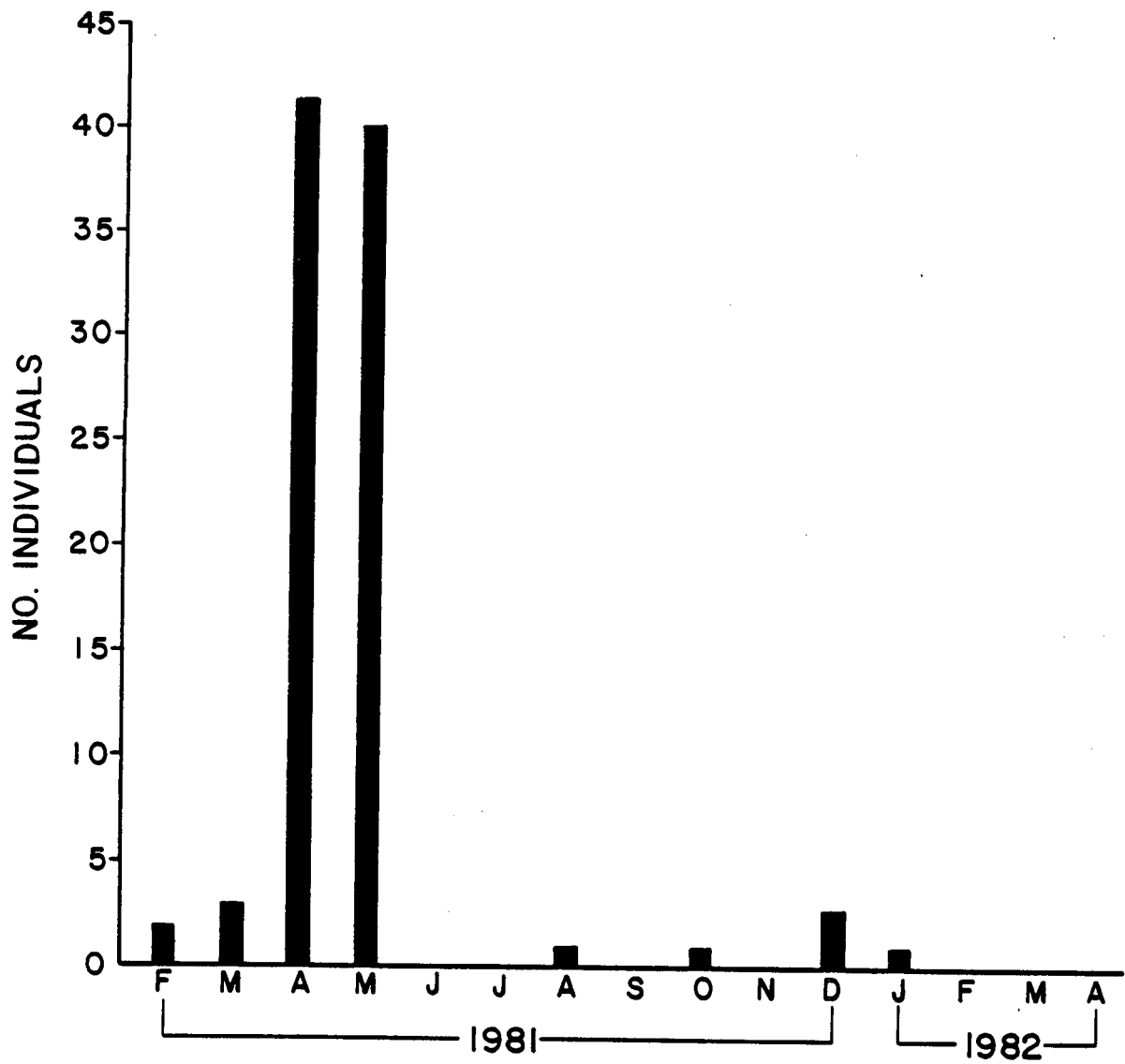
This species seems to prefer high salinity ($> 30^{\circ}/\text{oo}$) waters, nearshore rather than open Gulf (Gunter, 1938a and 1945).

A total of 46,670 star drum were caught at Gulf stations during post-discharge sampling. This species was second only to the Atlantic bumper, Chloroscombrus chrysurus, in numerical abundance. Peak abundance months were June and August when 65% of the total catch was collected (Figure H-24). Based on length frequencies, two possible age groups were evident during most months with differences of 20 - 40 mm between them. In October, November and December, the youngest age

group ranged from 30 - 50 mm SL indicating a possible spawning season in late summer or early fall. In Calcasieu Lake, 129 S. lanceolatus were captured, with 75% of those occurring in September and October (Figure H-25).

FIGURE H-1.

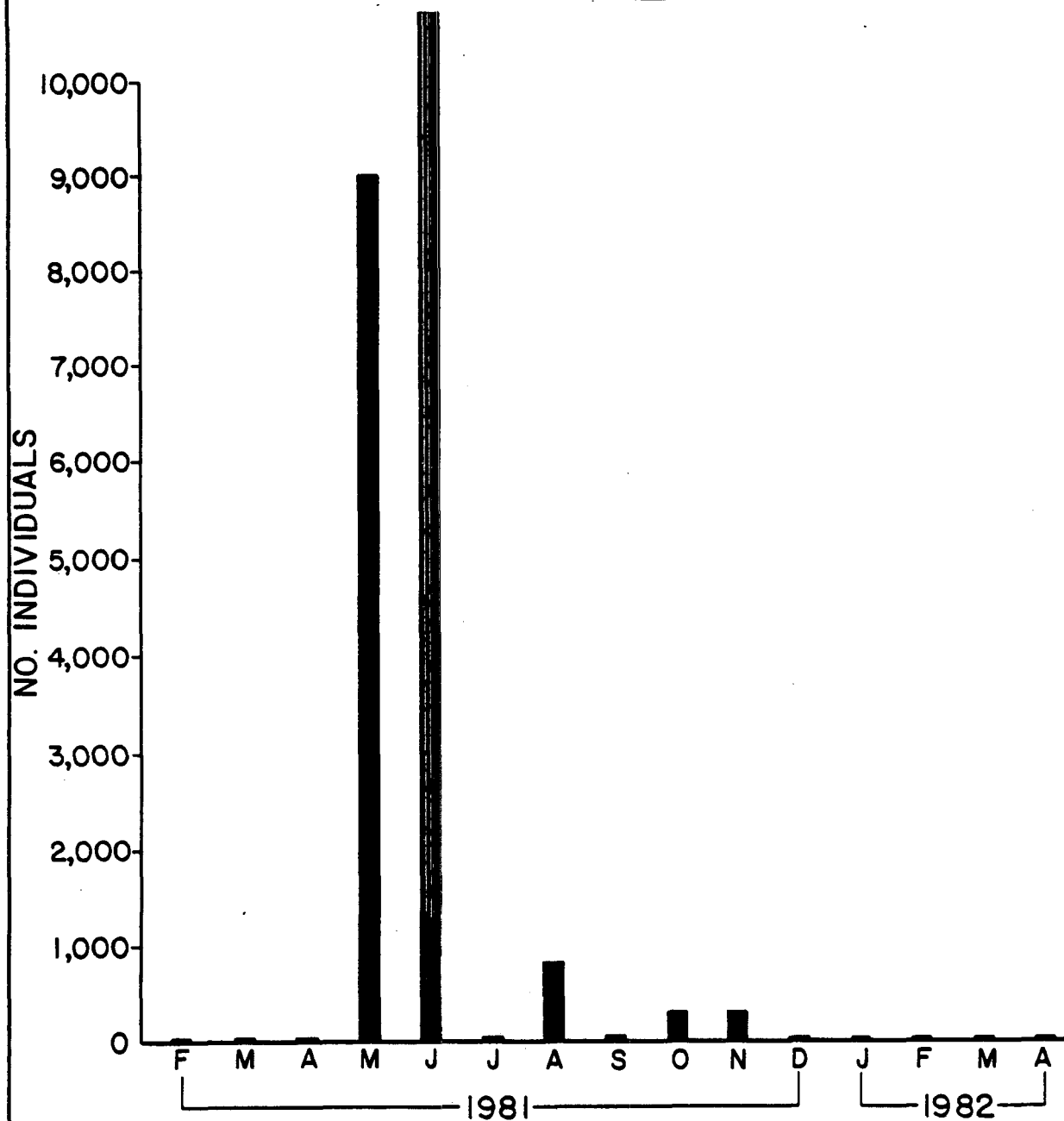
SEASONAL ABUNDANCE OF LOLLIGUNCULA BREVIS
AT ESTUARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

7.5	3.3	23.3	2.9			3.0		3.0		8.7	13.0		
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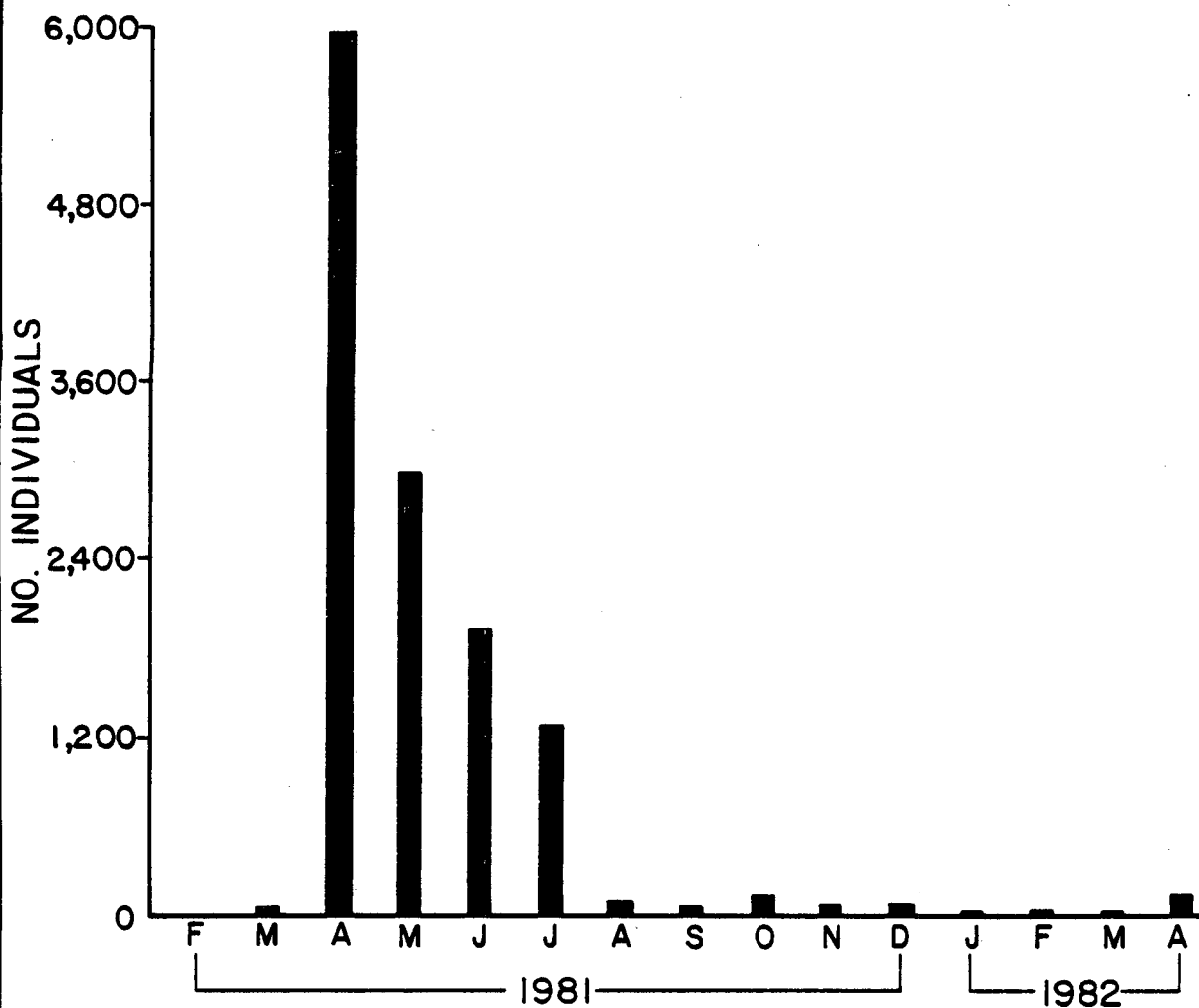
FIGURE H-2.
SEASONAL ABUNDANCE OF PENAEUS AZTECUS AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

5.1	7.2	12.2	5.2	8.1	11.6	9.4	9.3	5.8	10.7	8.7	5.5	5.9	7.6	14.8
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FIGURE H-3.
SEASONAL ABUNDANCE OF PENAEUS AZTECUS
AT ESTUARINE STATIONS.



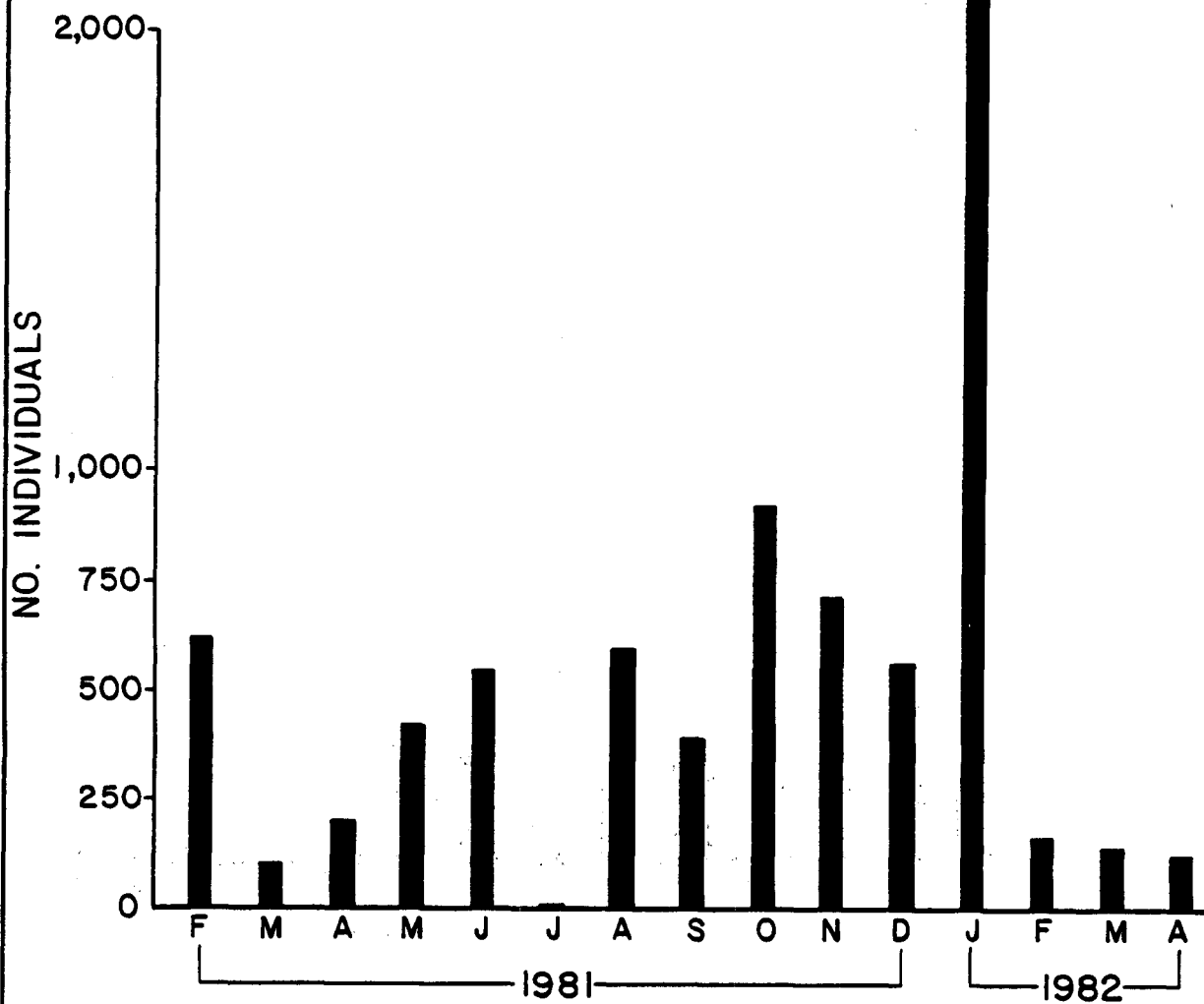
AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

7.0	1.7	3.2	5.1	6.9	5.4	5.3	3.2	2.7	1.7	4.0	2.1	2.1	1.3
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FIGURE H-4.

SEASONAL ABUNDANCE OF PENAEUS SETIFERUS

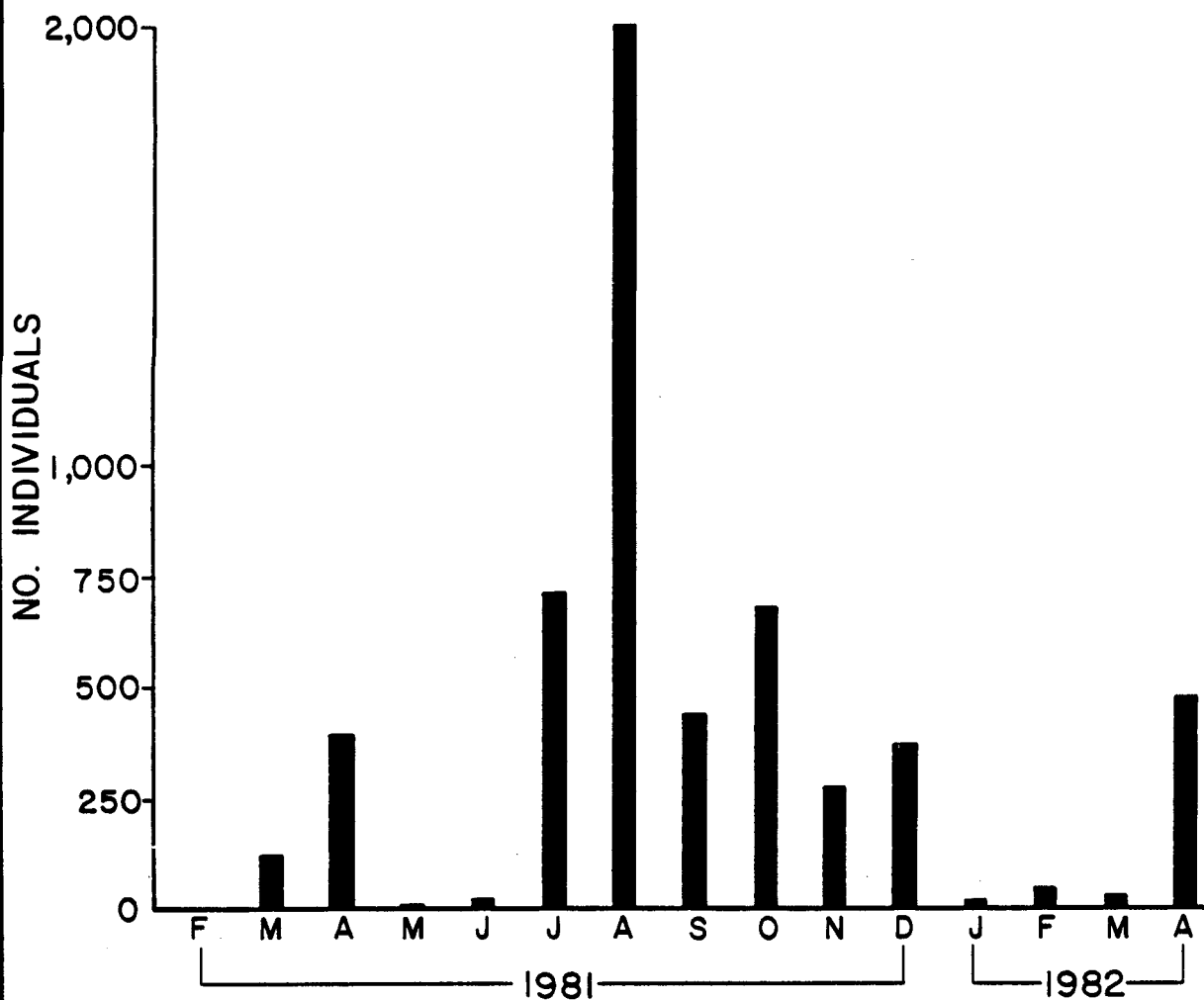
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

15.6	28.2	35.7	27.8	31.5	37.7	21.1	27.3	14.2	13.9	18.1	11.4	22.0	28.8	34.2
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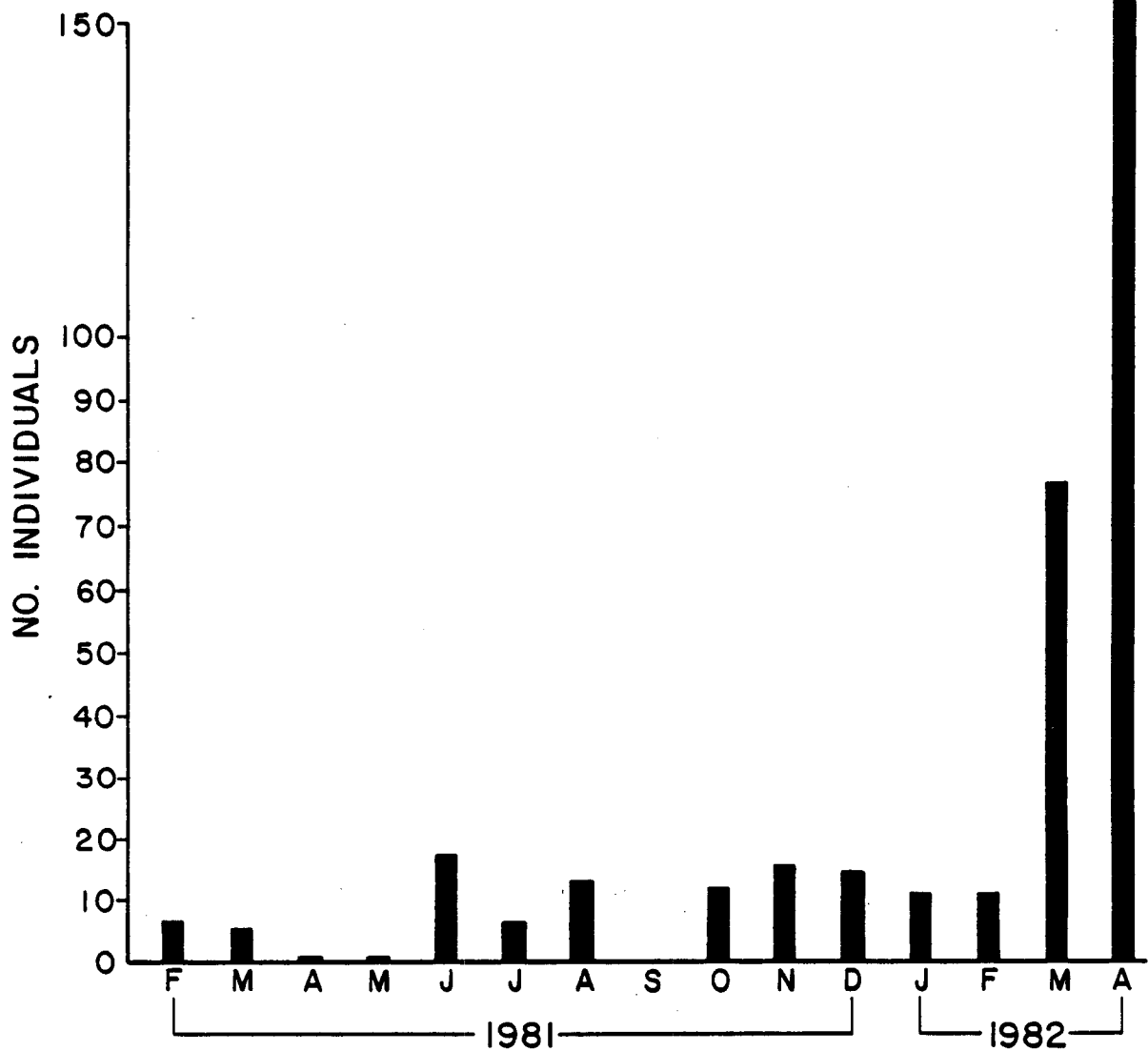
FIGURE H-5.
SEASONAL ABUNDANCE OF PENAEUS SETIFERUS
AT ESTUARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

	2.9	16.5	23.2	2.1	3.4	8.9	4.4	4.4	2.8	2.7	2.4	3.1	3.9	1.2
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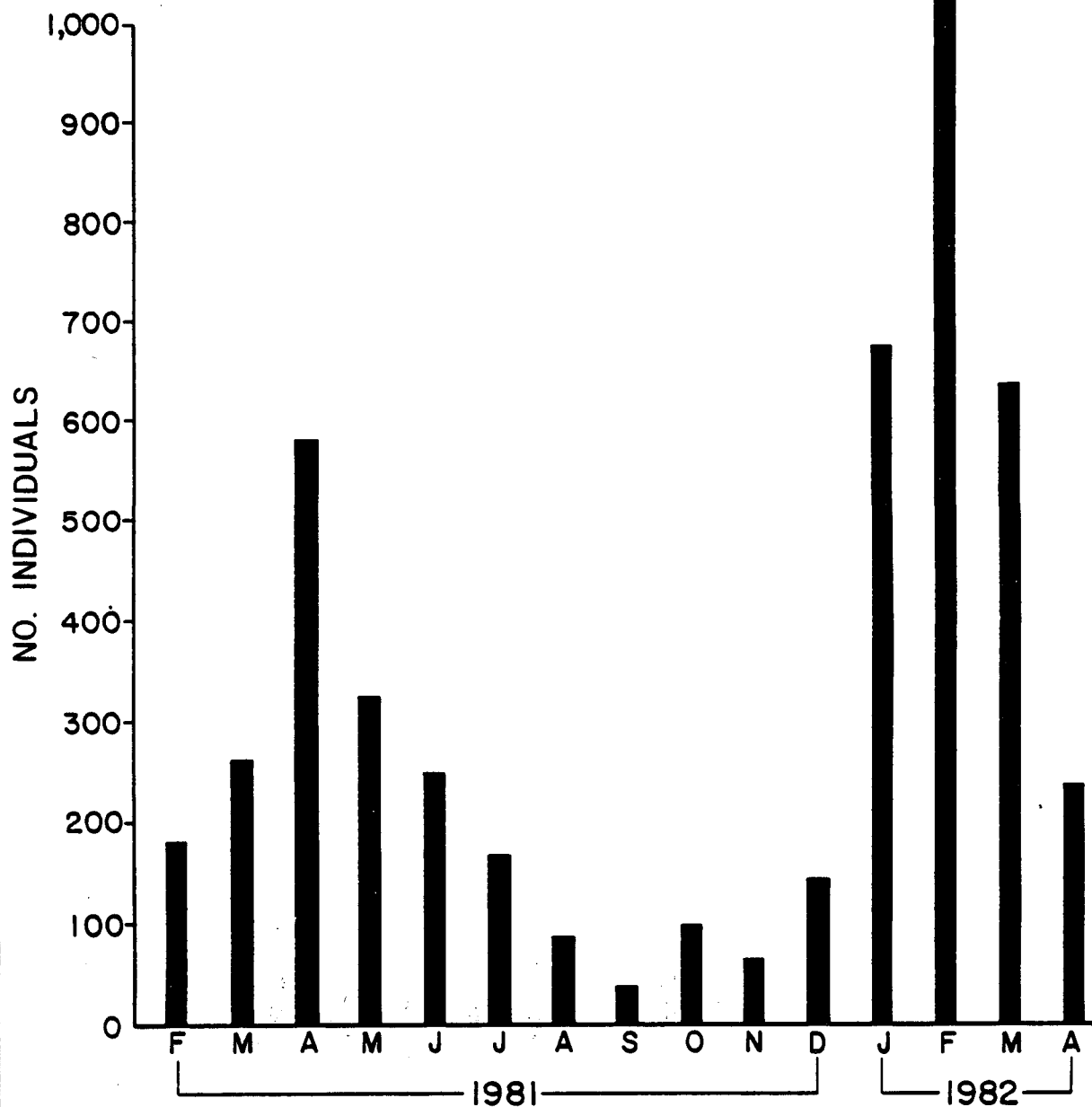
FIGURE H-6.
SEASONAL ABUNDANCE OF CALLINECTES SAPIDUS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

49.7	117.2	165.0	101.0	51.5	110.0	55.2	2.3	28.3	41.5	94.7	120.8	38.8	30.7
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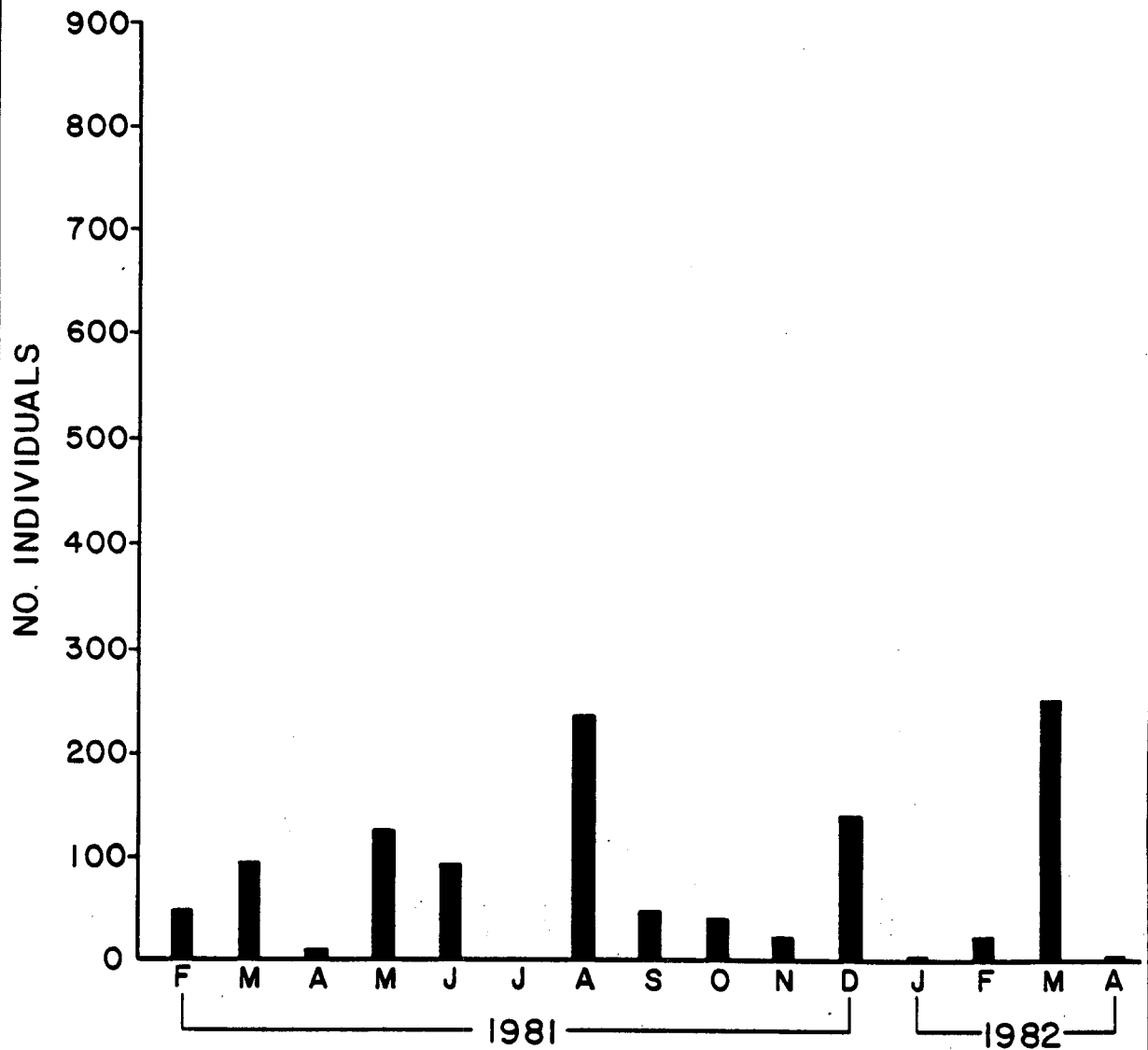
FIGURE H-7.
SEASONAL ABUNDANCE OF CALLINECTES SAPIDUS
AT ESTUARINE STATIONS



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

7.0	44.4	37.1	76.4	70.1	84.5	54.7	59.6	22.1	51.5	4.1	4.6	3.2	3.5	21.9
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FIGURE H-8.
SEASONAL ABUNDANCE OF BREVOORTIA PATRONUS
AT MARINE STATIONS.

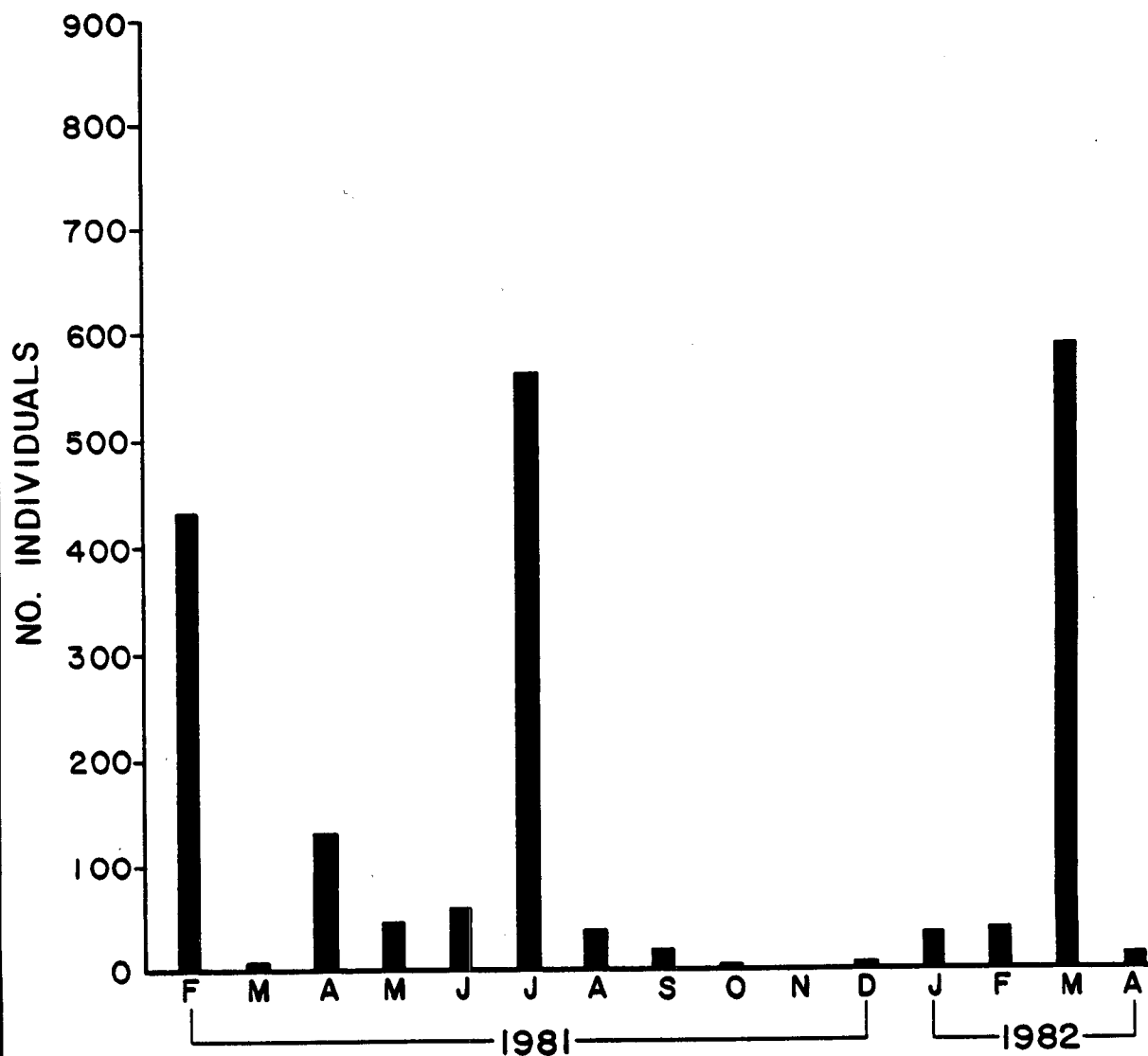


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

11.6	13.9	31.6	36.1	29.6	60.7	22.9	22.6	76.5	44.6	30.6	18.4	30.2	54.0
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FIGURE H-9.

SEASONAL ABUNDANCE OF BREVOORTIA PATRONUS
AT ESTUARINE STATIONS

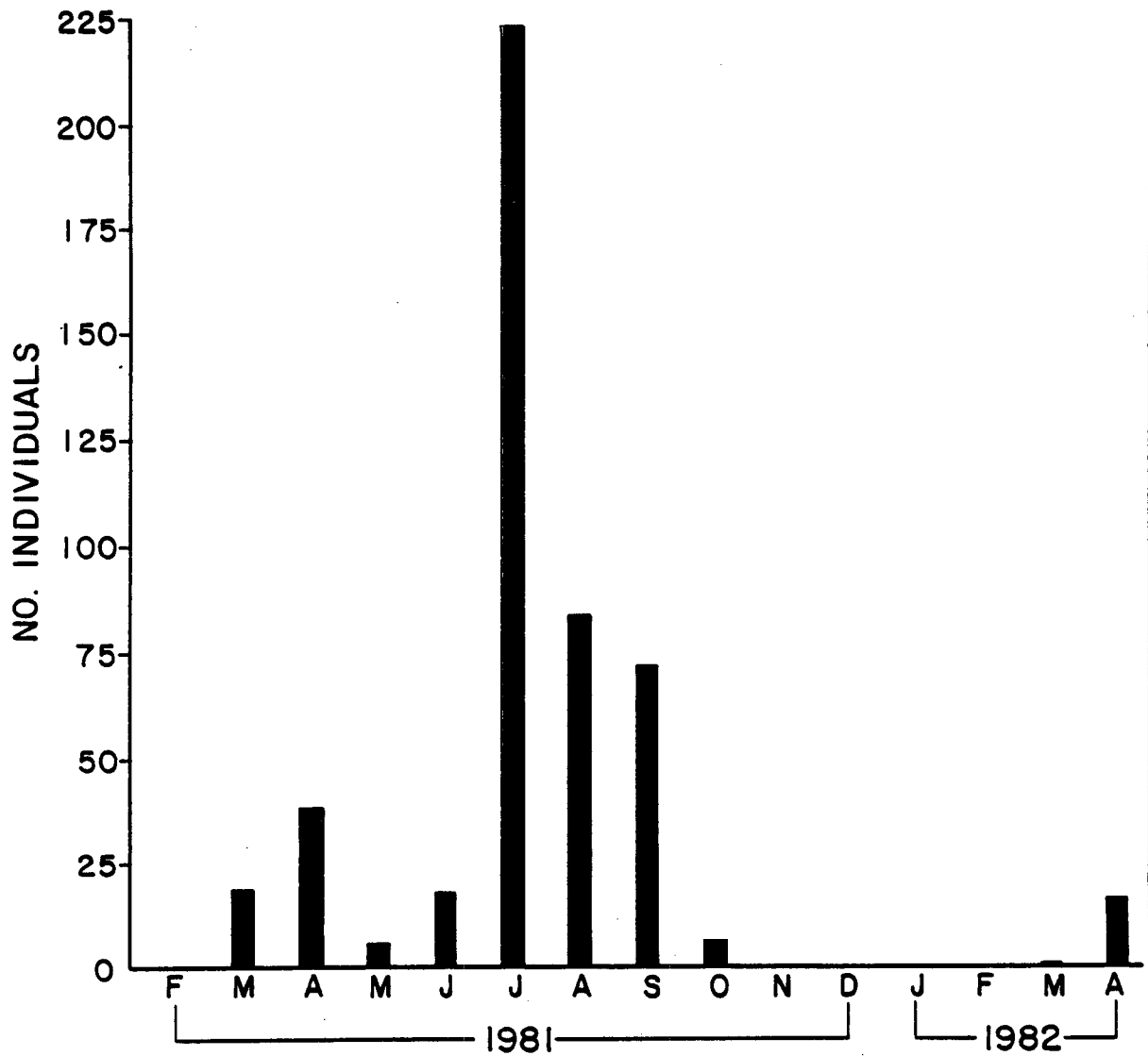


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

3.0	6.8	2.0	4.8	3.2	2.0	4.4	14.4	11.0	10.5	0.9	7.3	0.3	2.7
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FIGURE H-12.
SEASONAL ABUNDANCE OF ARIUS FELIS
AT ESTUARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

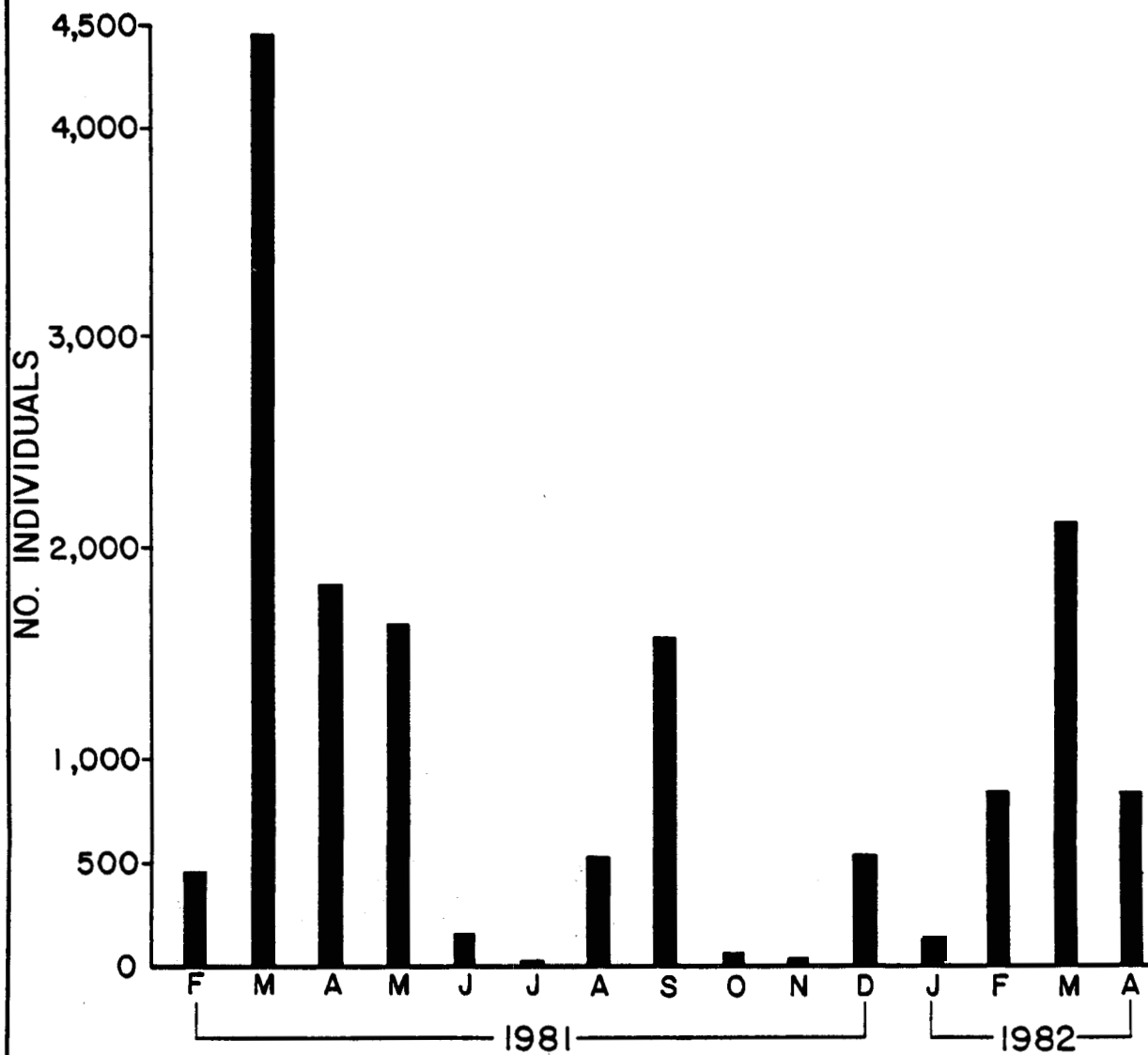
55.4	36.1	13.5	72.9	44.0	22.0	12.1	31.3					40.0	36.6
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FIGURE H-14.

SEASONAL ABUNDANCE OF CYNOSCION NOTHUS

AT MARINE STATIONS.



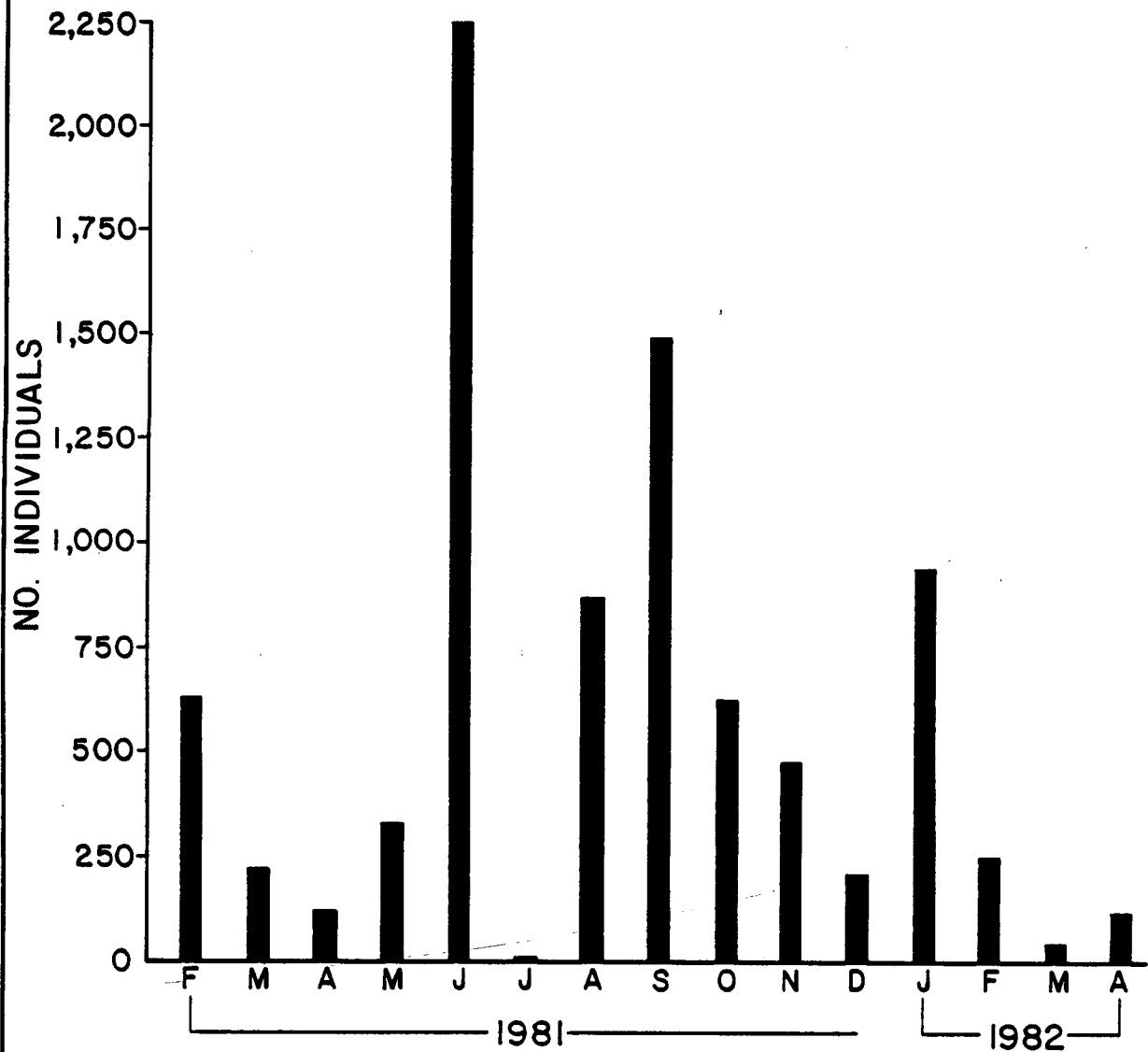
AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

4.5	4.2	12.1	17.2	40.3	57.3	49.9	38.5	11.9	5.2	3.9	8.6	5.1	7.3	11.9
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FIGURE H-15.

SEASONAL ABUNDANCE OF CYNOSCION ARENARIUS

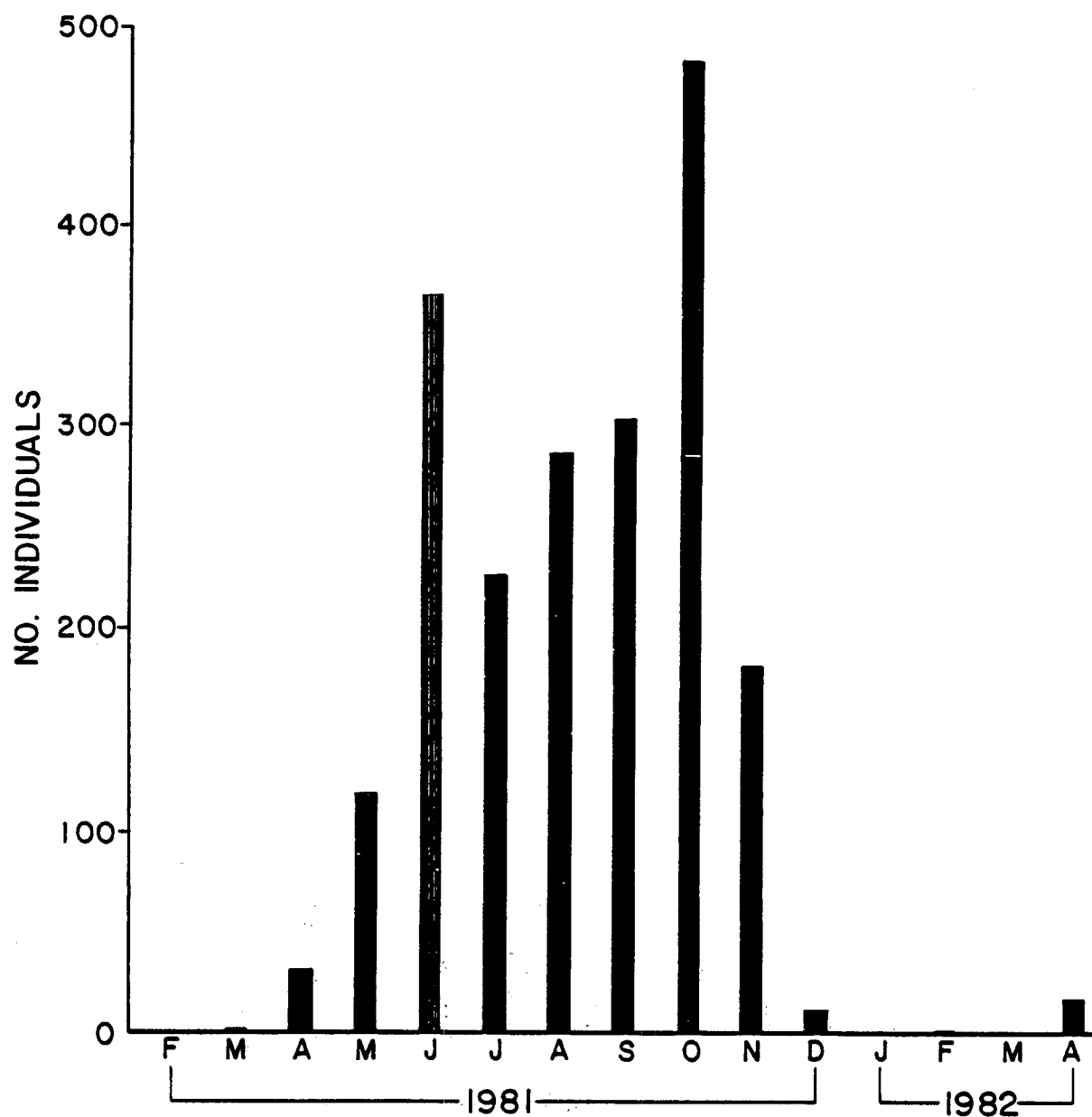
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

15.2	23.0	85.8	18.2	10.2	63.5	32.0	37.1	23.7	21.3	24.6	15.9	27.0	27.4	25.1
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FIGURE H-16.
SEASONAL ABUNDANCE OF CYNOSCION ARENARIUS
AT ESTUARINE STATIONS.

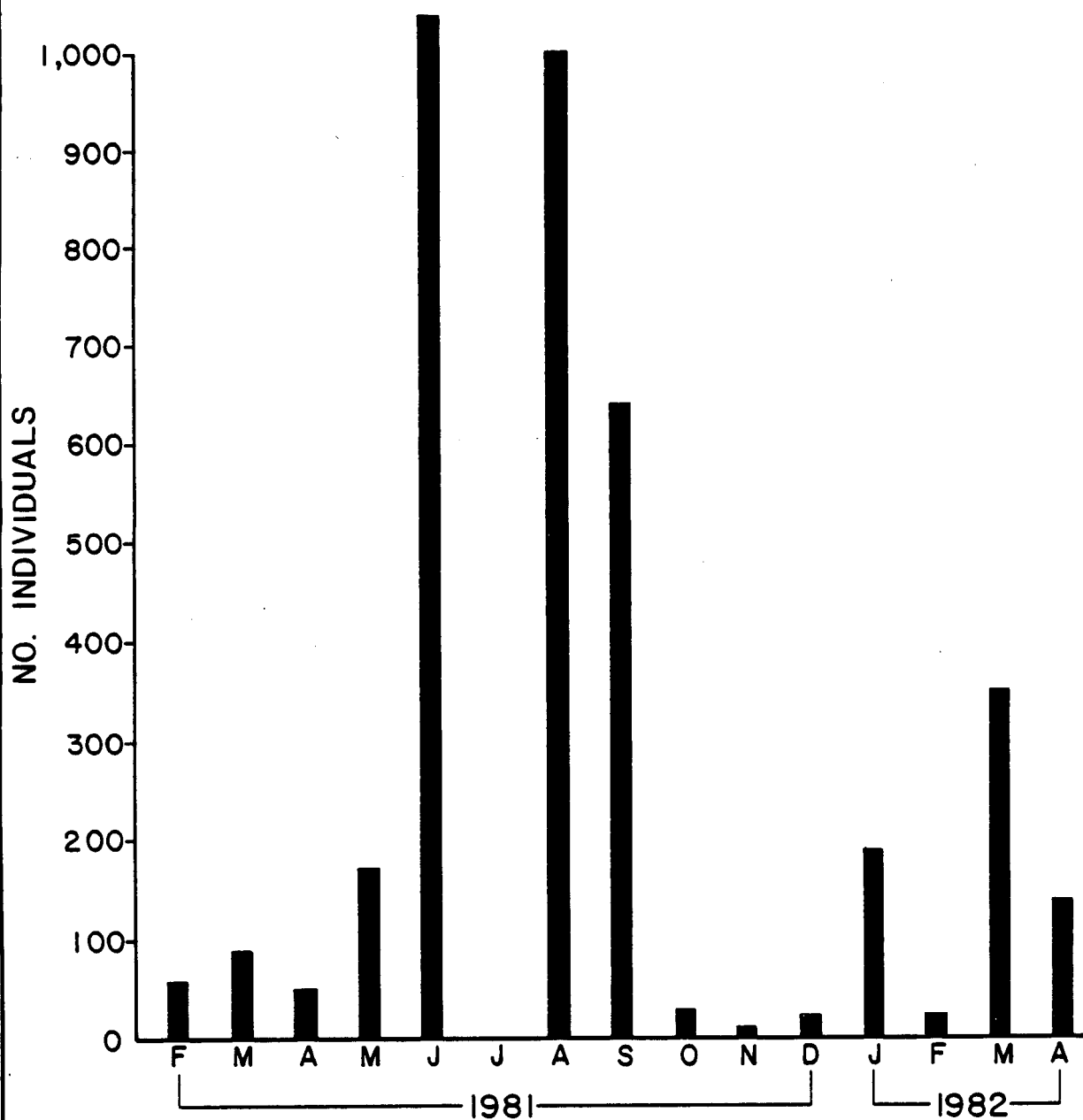


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

	6.5	2.6	3.1	2.6	3.3	7.1	5.7	2.7	3.3	8.2		2.0		0.9
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FIGURE H-17.

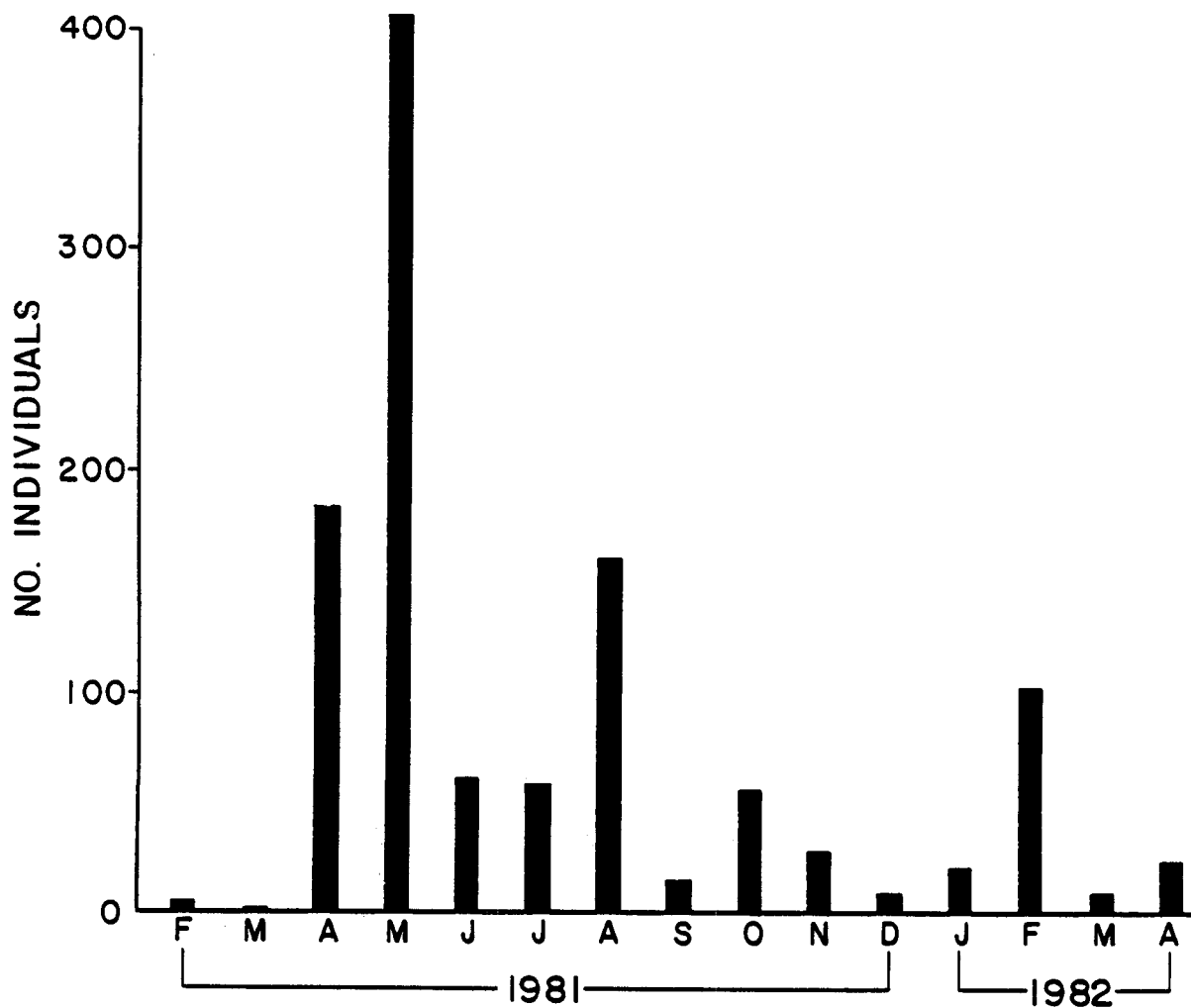
SEASONAL ABUNDANCE OF LEIOSTOMUS XANTHURUS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

42.3	46.1	67.1	22.3	19.6	57.5	79.2	67.1	43.1	46.0	31.7	26.8	40.2	48.6
------	------	------	------	------	------	------	------	------	------	------	------	------	------

FIGURE H-18.
SEASONAL ABUNDANCE OF LEIOSTOMUS XANTHURUS
AT ESTUARINE STATIONS.

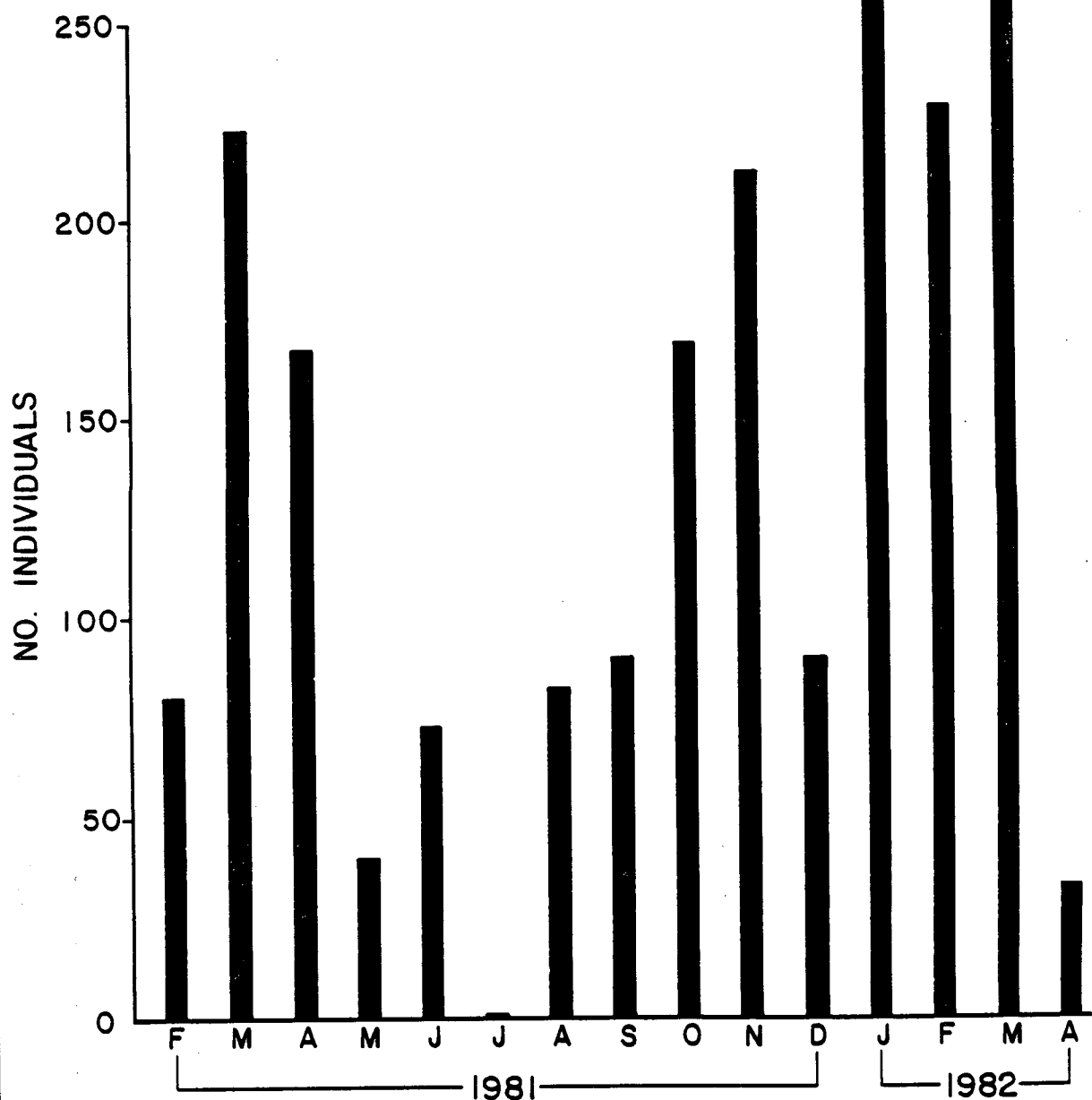


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

29.3	30.5	11.5	8.3	13.2	7.8	12.7	31.5	45.1	33.0	39.1	35.2	36.9	48.1	62.8
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FIGURE H-19.
SEASONAL ABUNDANCE OF MENTICIRRHUS AMERICANUS

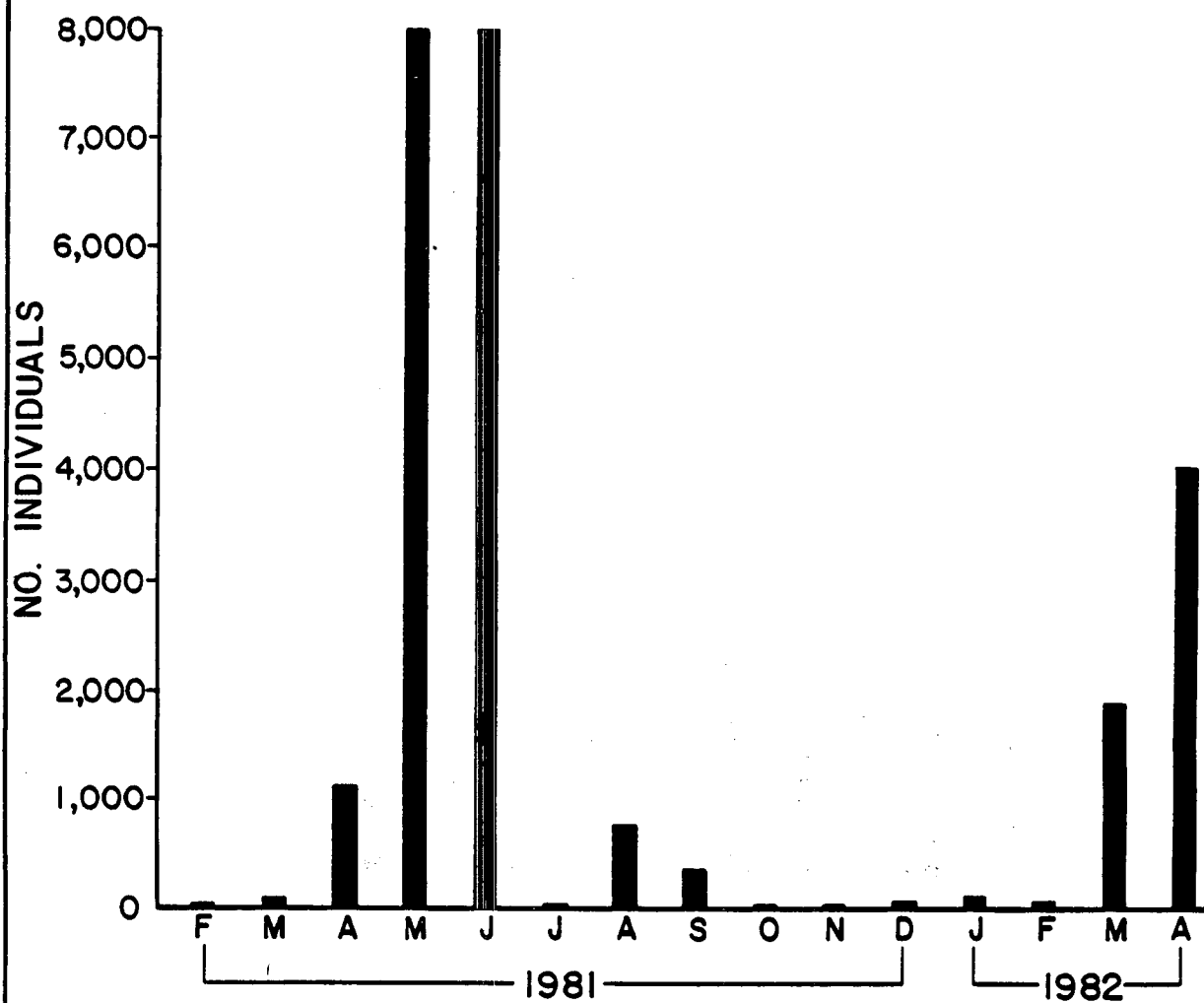
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

71.9	73.1	102.0	47.1	61.3	71.0	57.9	49.8	52.5	33.4	34.7	17.7	37.8	55.7	323.6
------	------	-------	------	------	------	------	------	------	------	------	------	------	------	-------

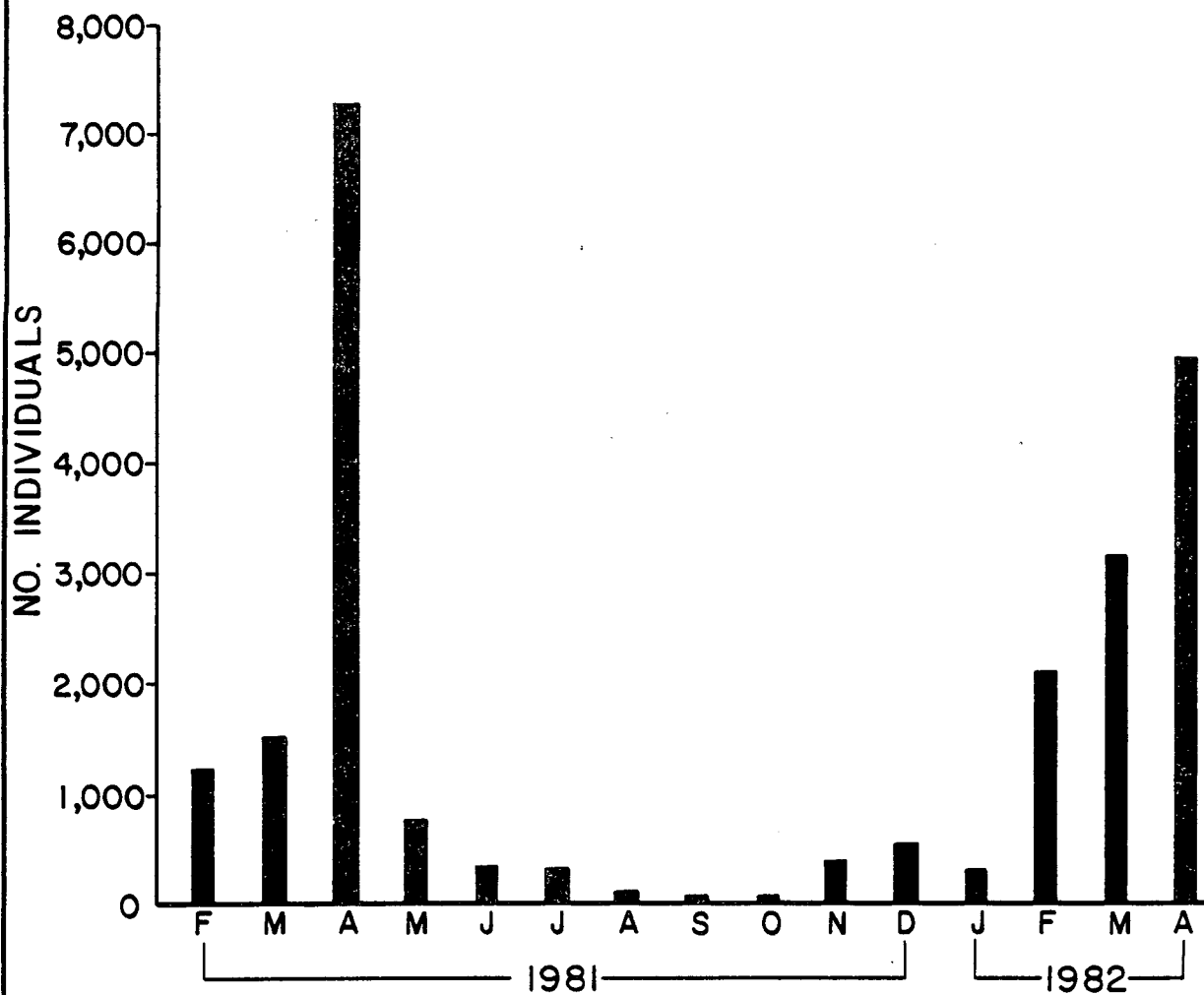
FIGURE H-20.
SEASONAL ABUNDANCE OF MICROPOGONIAS UNDULATUS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

37.3	13.3	10.2	11.6	17.9	63.1	42.9	49.7	75.8	38.3	11.9	8.9	7.9	4.1	5.8
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FIGURE H-21.
SEASONAL ABUNDANCE OF MICROPOGONIAS UNDULATUS
AT ESTUARINE STATIONS.

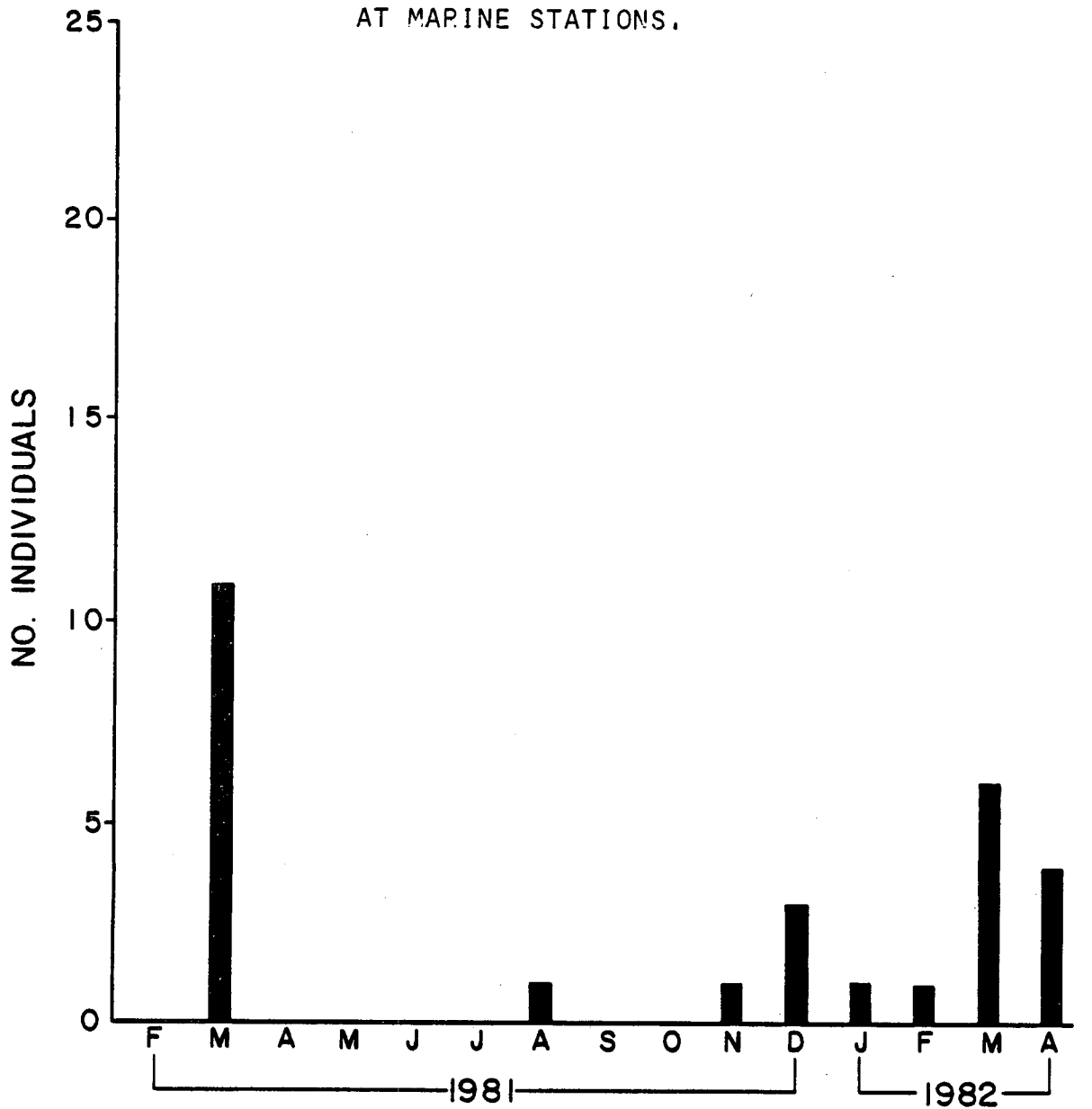


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

0.8	2.7	5.6	6.7	10.8	22.3	17.7	32.2	11.6	0.7	0.9	1.1	1.1	1.6	2.1
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FIGURE H-22.

SEASONAL ABUNDANCE OF POGONIAS CROMIS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

4506.2				31.0			520.0	6333.3	1015.0	6400.0	9000.0	5500.0
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FIGURE H-23.

SEASONAL ABUNDANCE OF POGONIAS CROMIS AT ESTUARINE STATIONS.

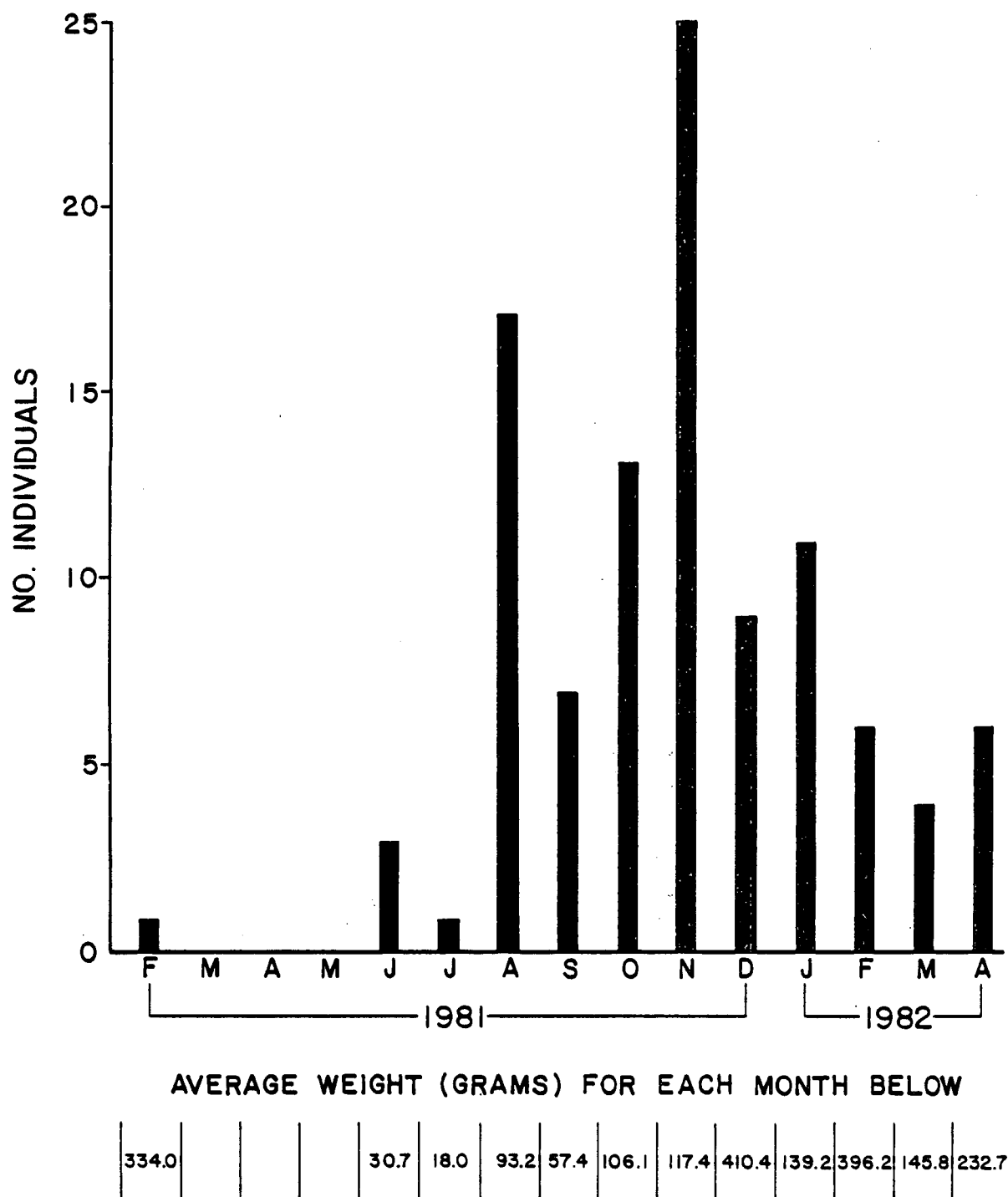
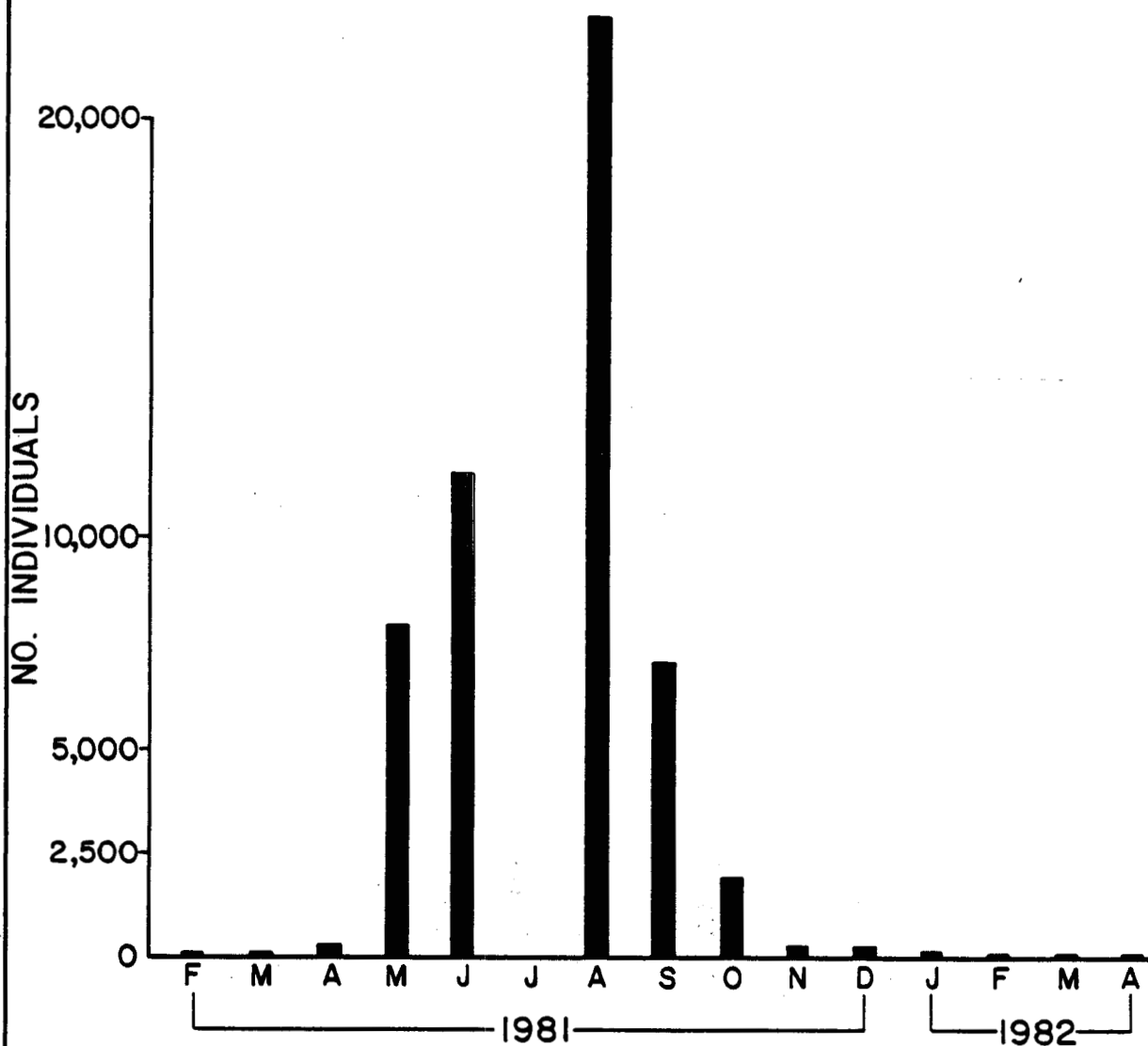


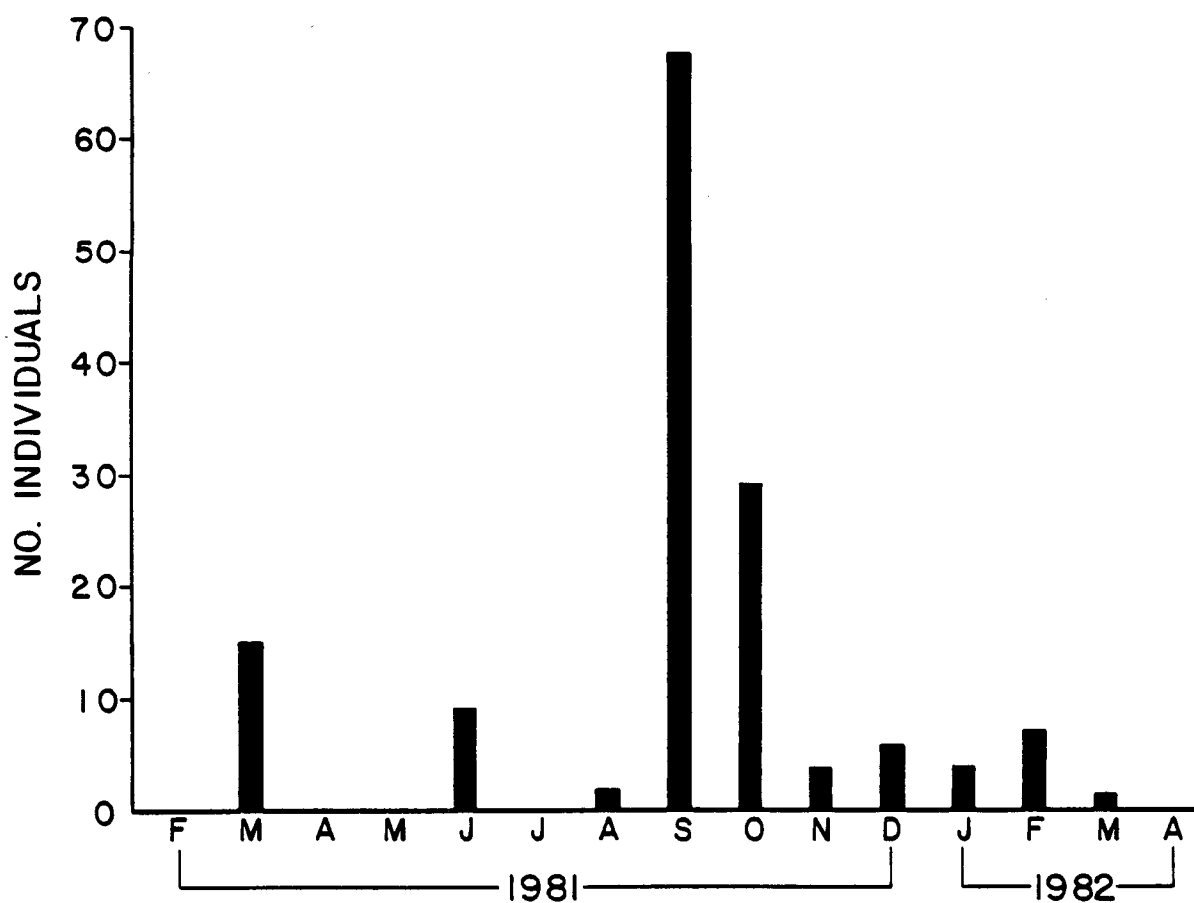
FIGURE H-24.
SEASONAL ABUNDANCE OF STELLIFER LANCEOLATUS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

14.5	13.7	8.7	7.1	8.2	7.5	11.1	9.5	9.4	3.5	8.3	13.4	8.2	17.3
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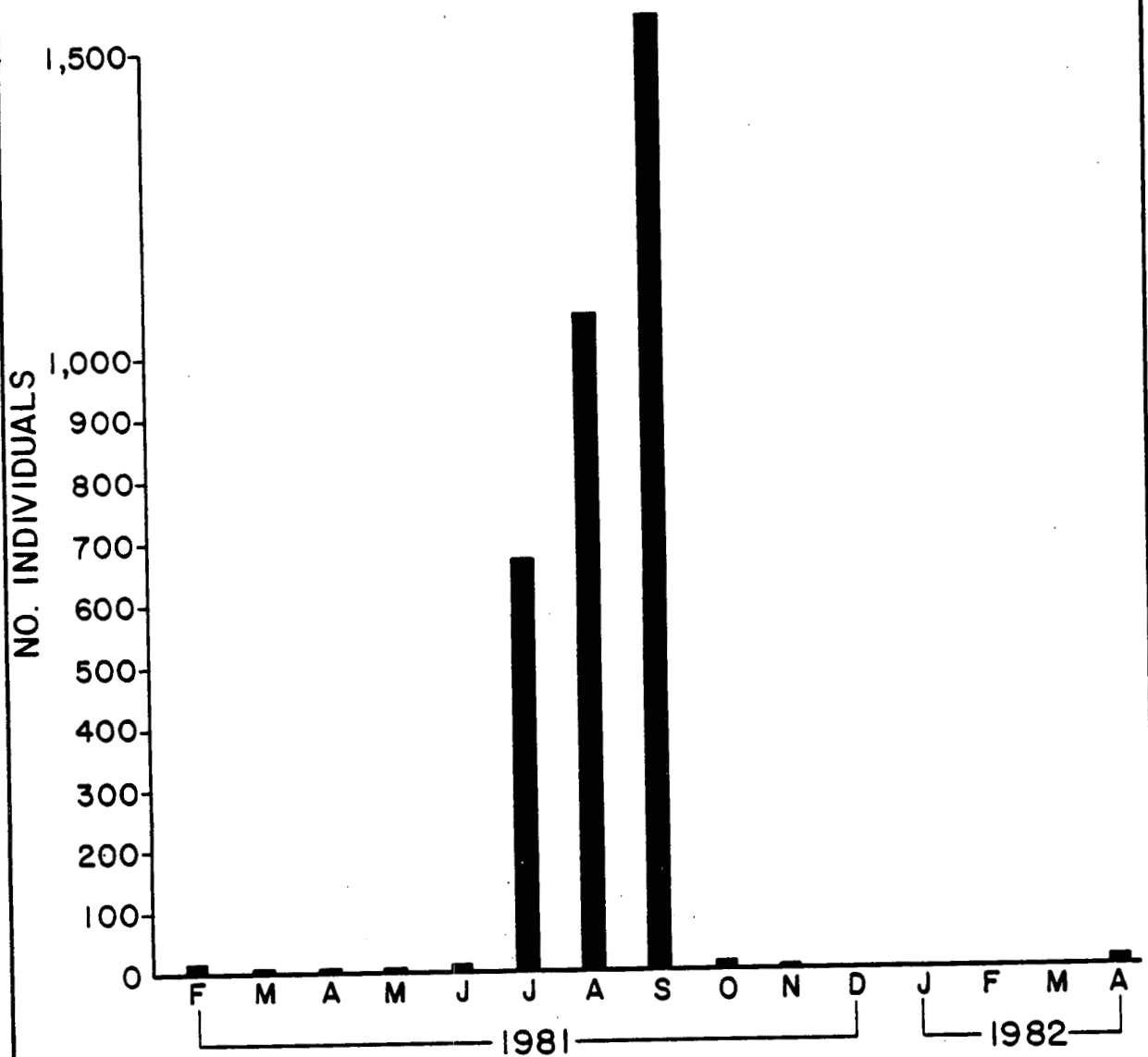
FIGURE H-25.
SEASONAL ABUNDANCE OF STELLIFER LANCEOLATUS
AT ESTUARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

	2.7			2.2		3.0	6.5	2.0	2.3	7.2	6.5	7.3	12.0	

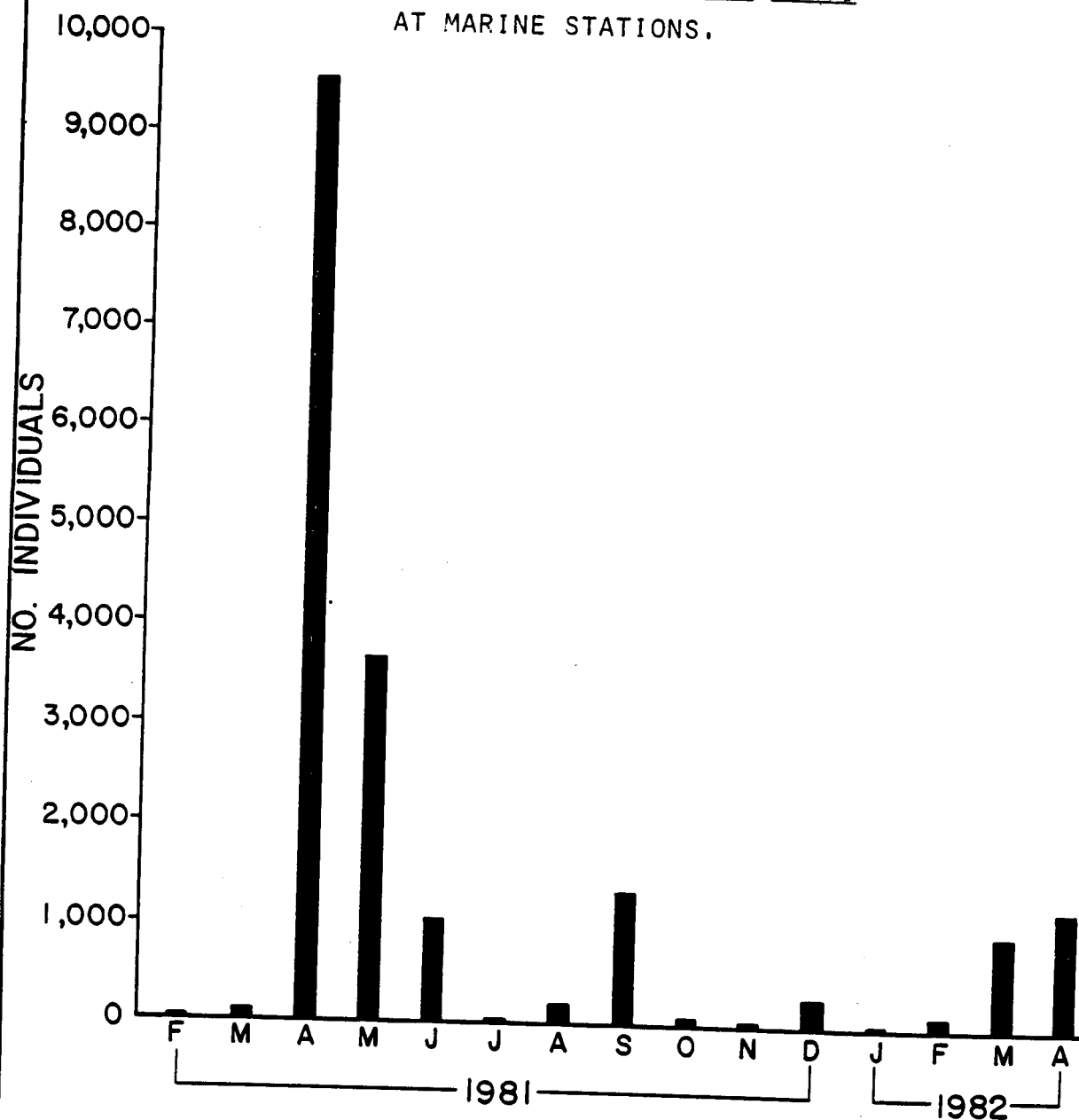
FIGURE H-26.
SEASONAL ABUNDANCE OF PEPRILUS ALEPIDOTUS
AT MARINE STATIONS.



AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

40.9	4.5	90.6	73.3	140.8	12.7	13.0	30.4	41.6	43.8					65.6
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FIGURE H-27.
SEASONAL ABUNDANCE OF PEPRILUS BURTII
AT MARINE STATIONS.

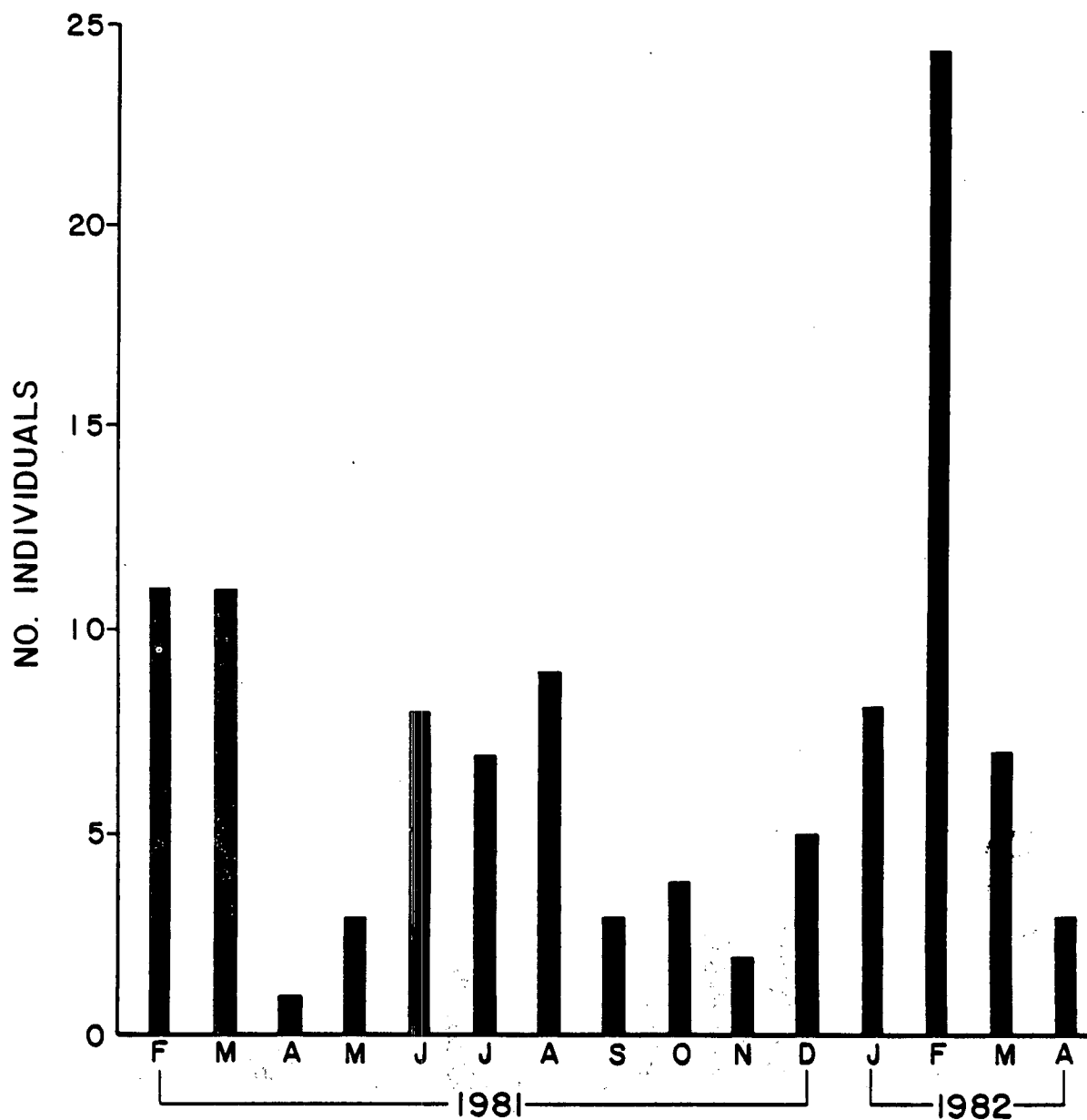


AVERAGE WEIGHT (GRAMS) FOR EACH MONTH BELOW

3.0	8.4	14.1	24.2	25.3	36.7	9.6	26.4	39.2	6.9	9.2	2.4	6.4	12.9	23.5
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FIGURE H-28.

SEASONAL ABUNDANCE OF PARALICHTHYS LETHOSTIGMA
AT ESTUARINE STATIONS.



AVERAGE WEIGHT. (GRAMS) FOR EACH MONTH BELOW

145.8	79.2	94.0	106.7	193.4	320.3	135.6	221.7	104.0	67.5	114.8	70.8	85.4	88.0	172.0
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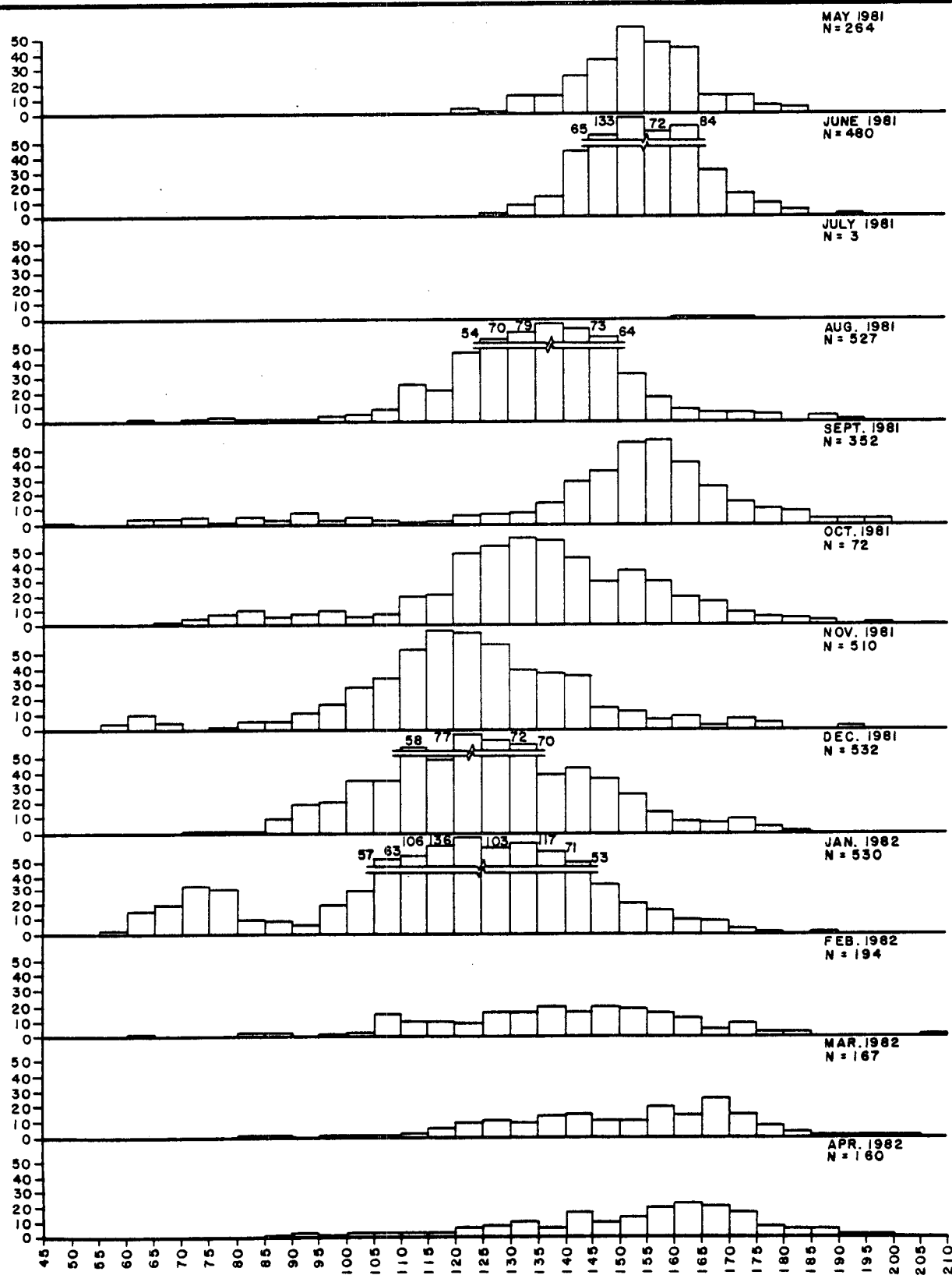
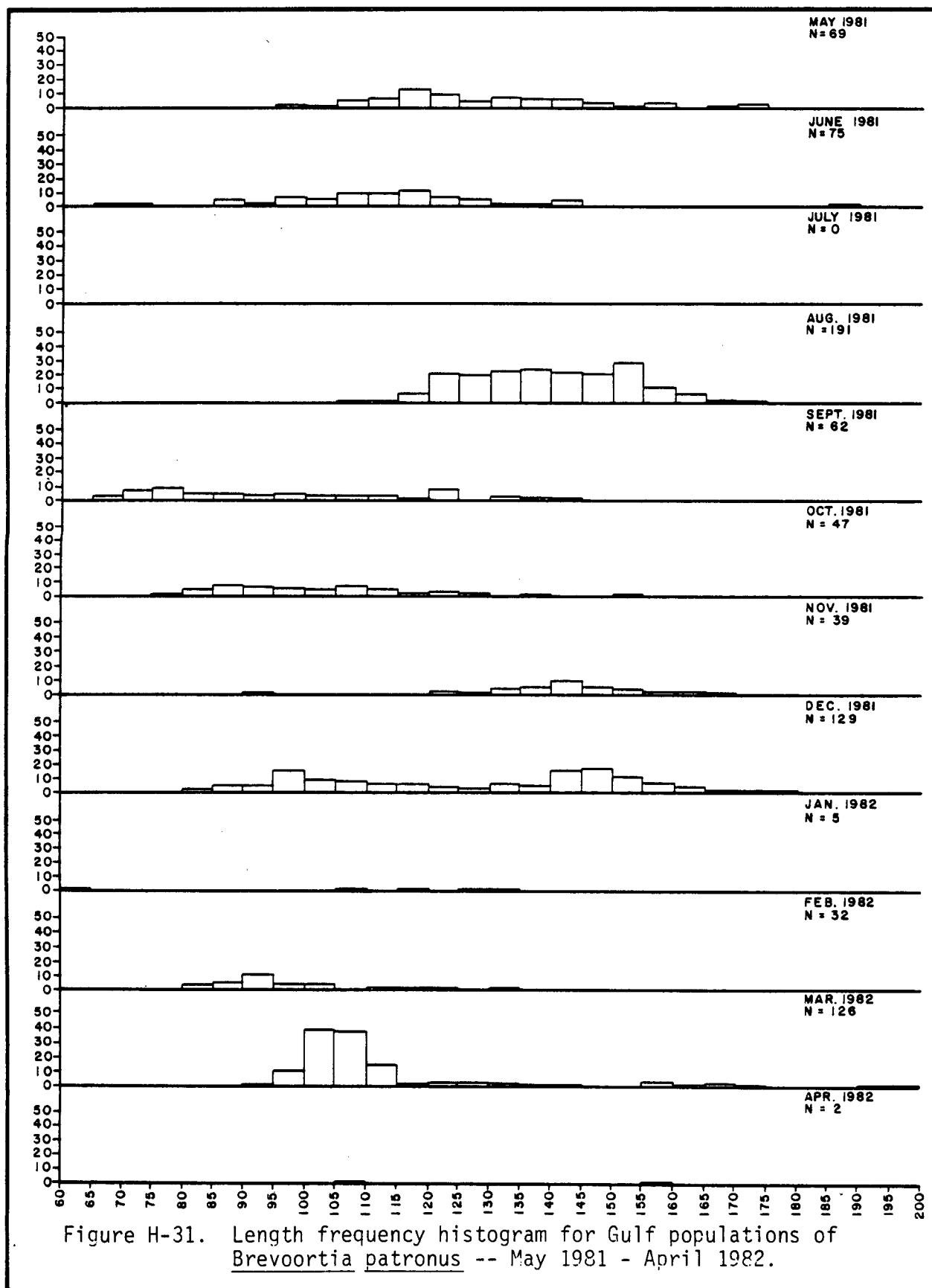
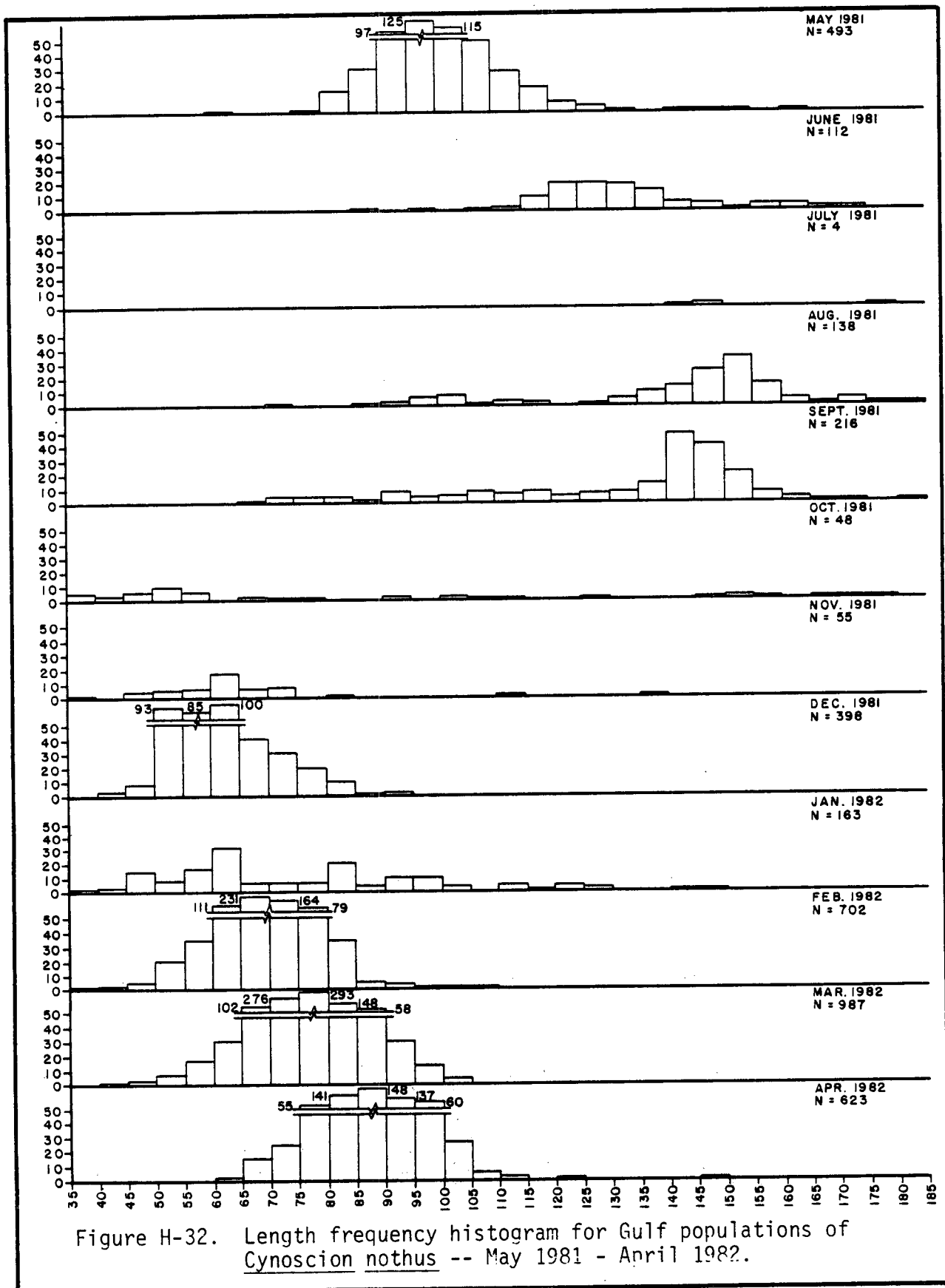
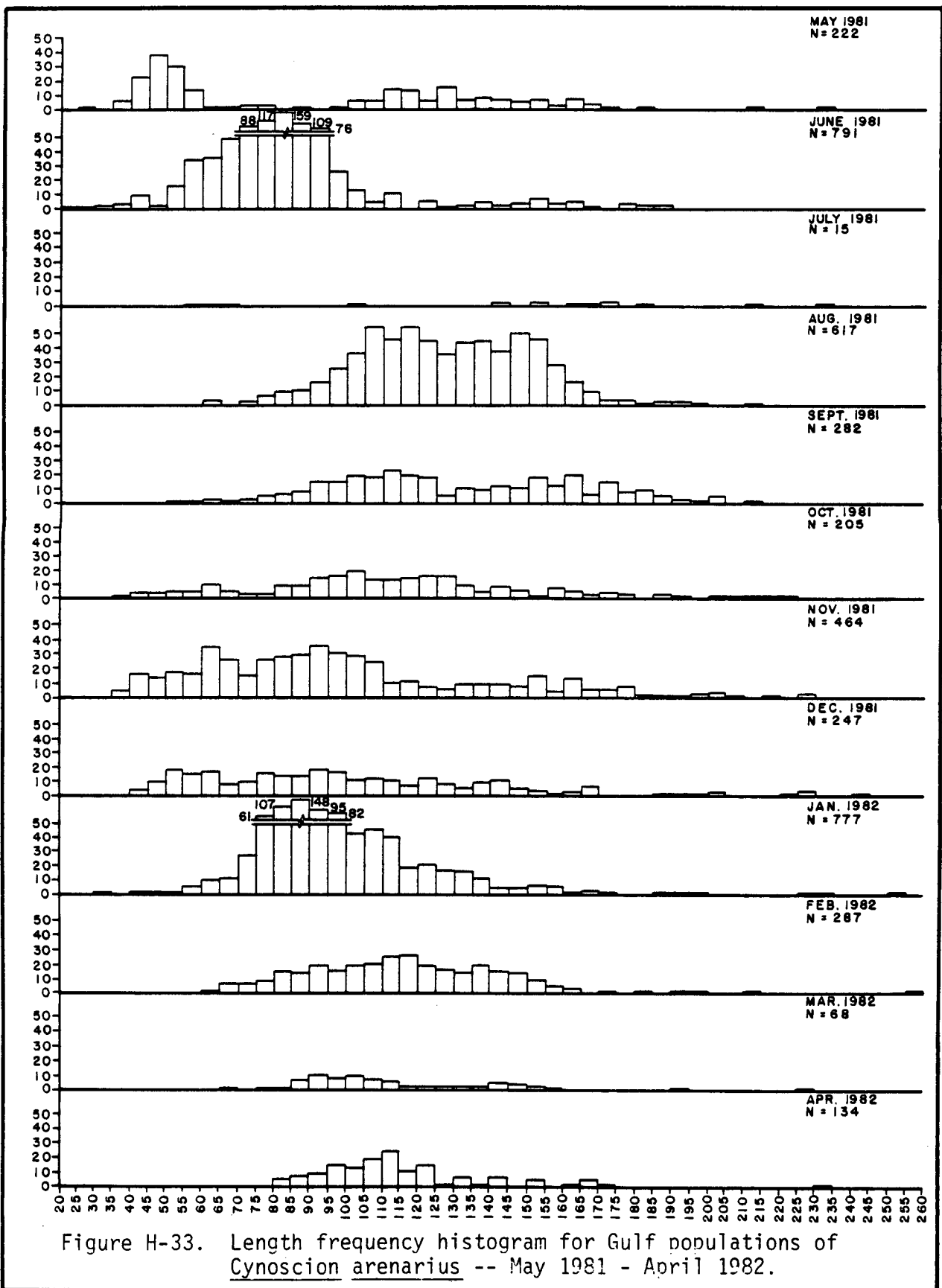


Figure H-30. Length frequency histogram of Gulf populations of *Penaeus setiferus* -- May 1981 - April 1982.







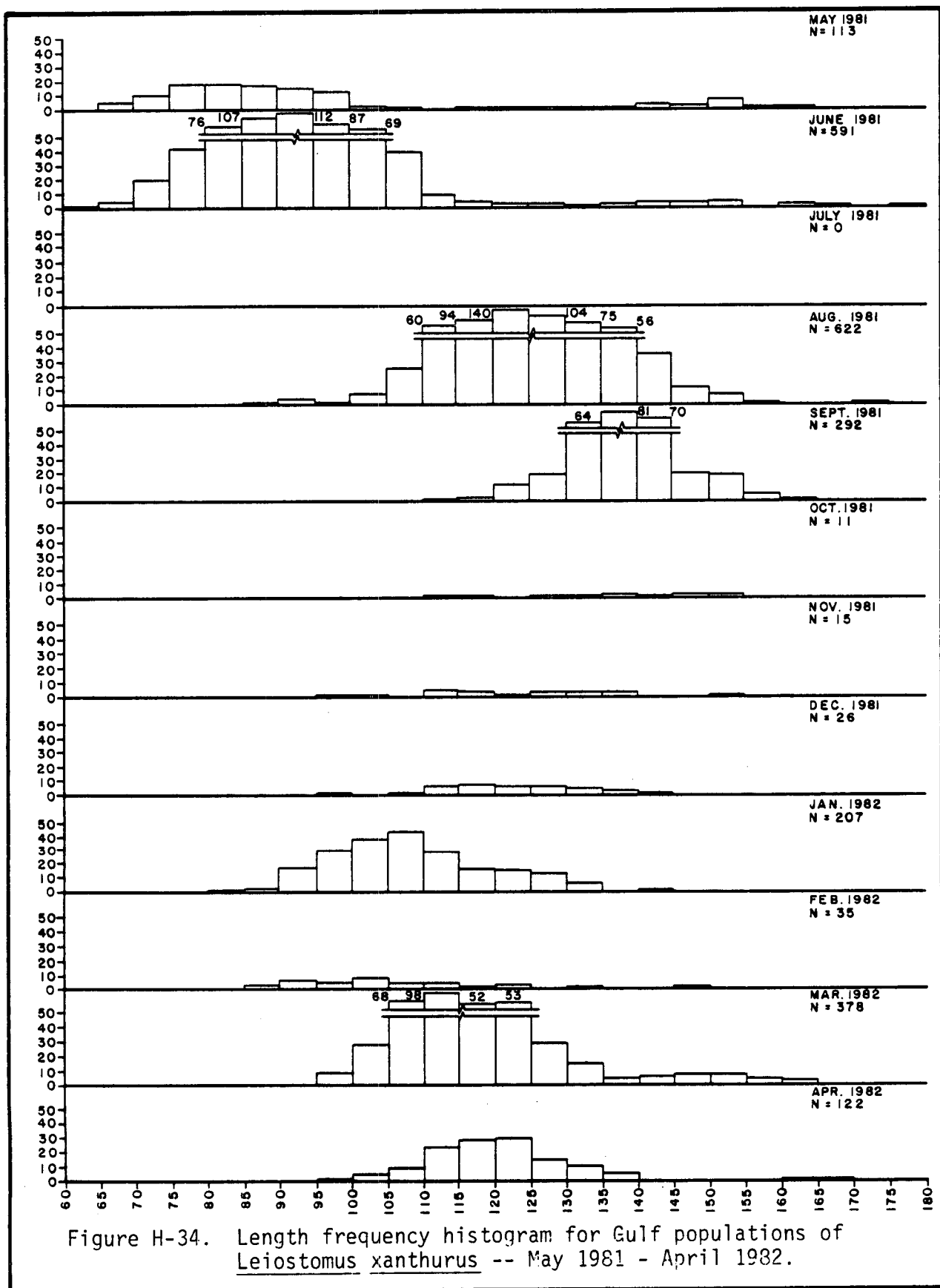
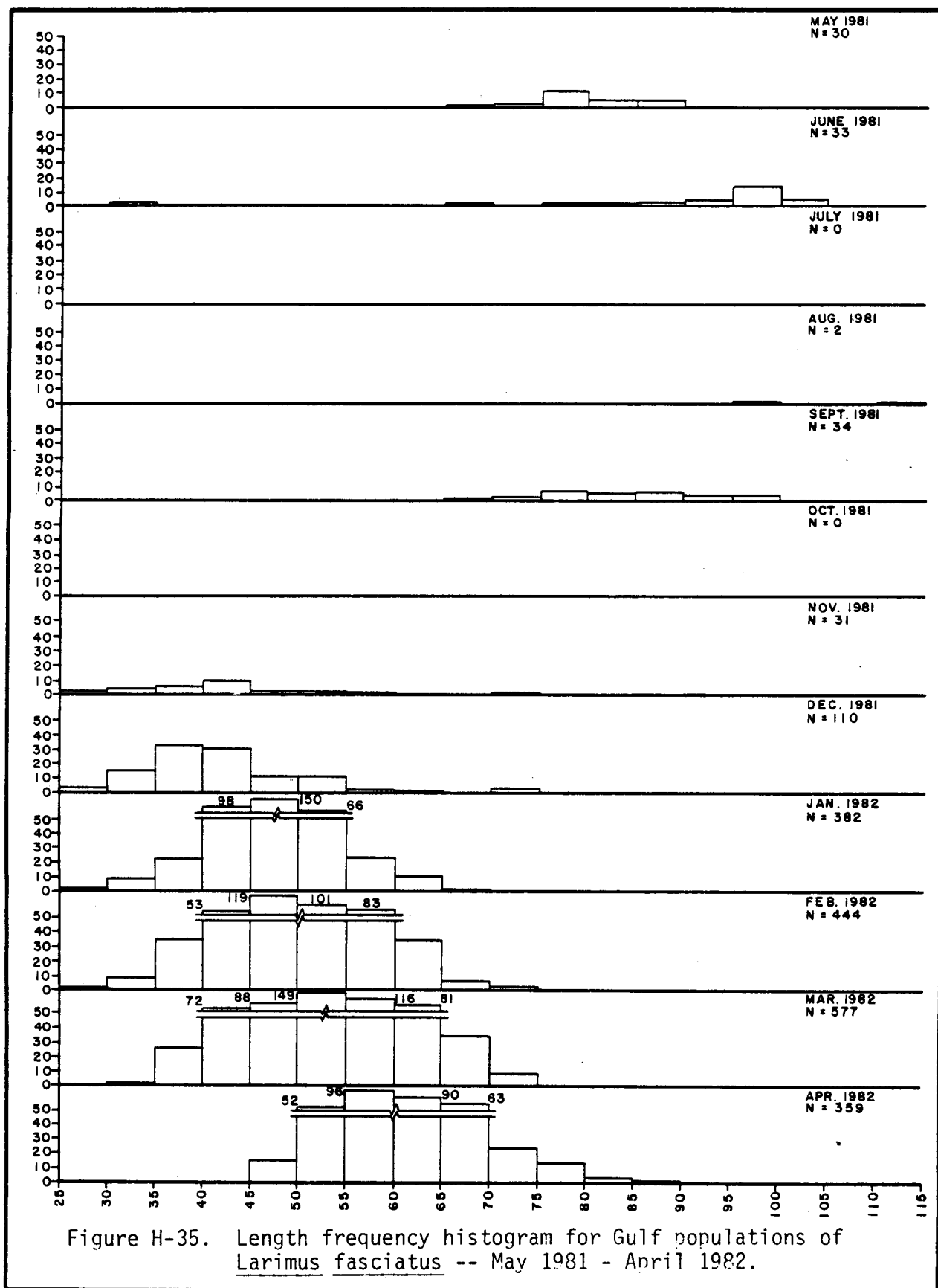


Figure H-34. Length frequency histogram for Gulf populations of *Leiostomus xanthurus* -- May 1981 - April 1982.



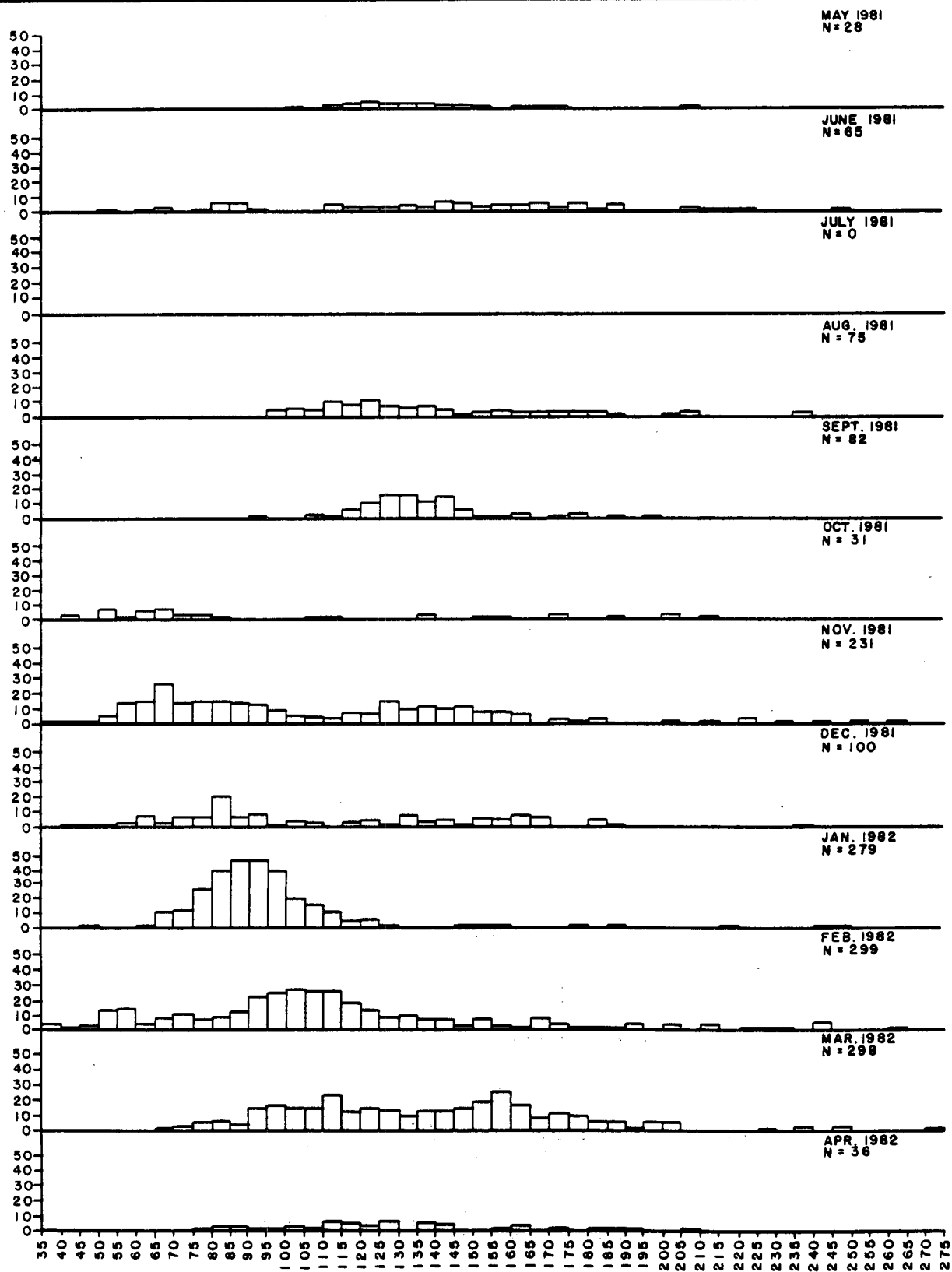


Figure H-36. Length frequency histogram for Gulf populations of *Menticirrhus americanus* -- May 1981 - April 1982.

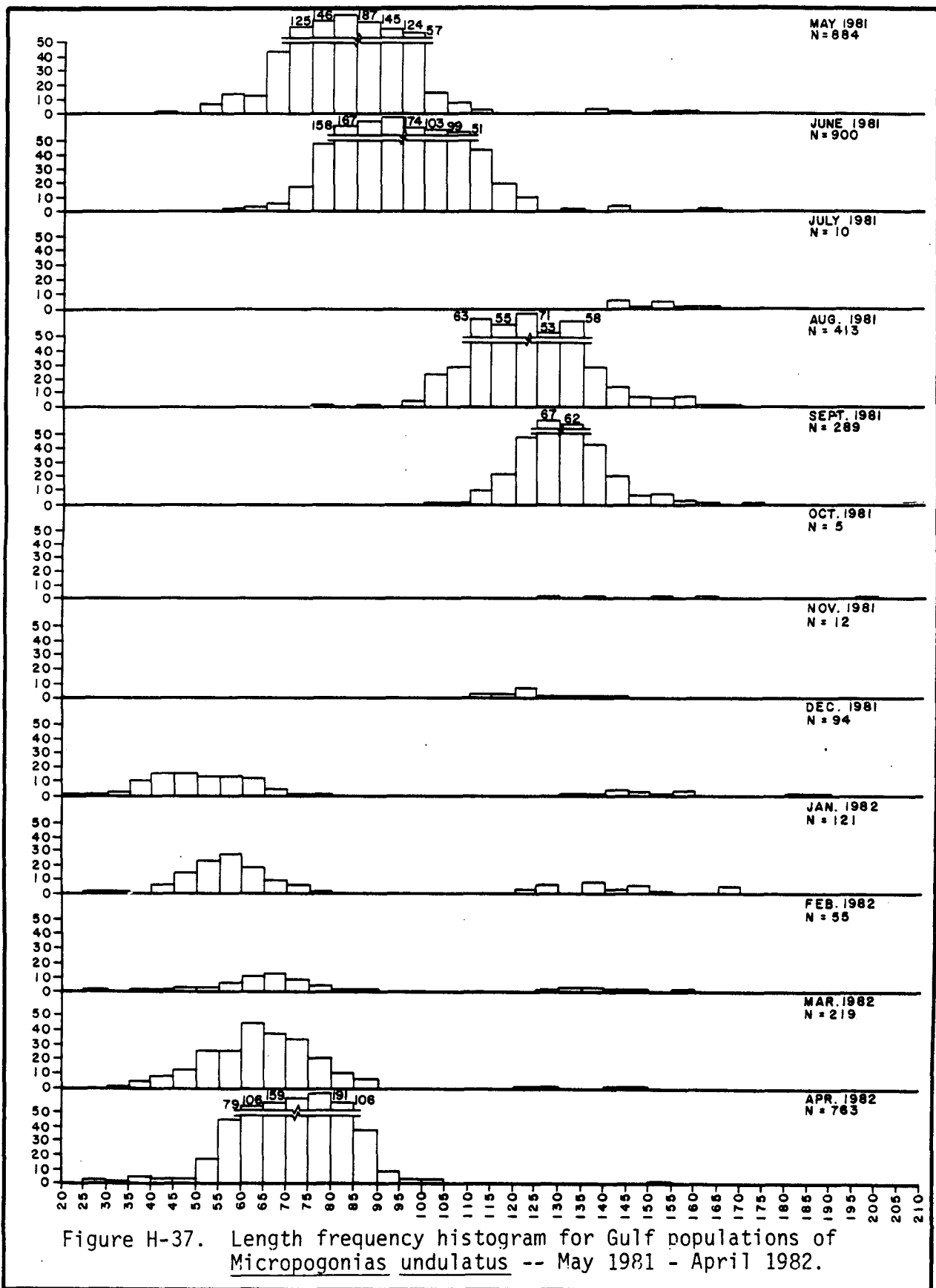


Figure H-37. Length frequency histogram for Gulf populations of *Micropogonias undulatus* -- May 1981 - April 1982.

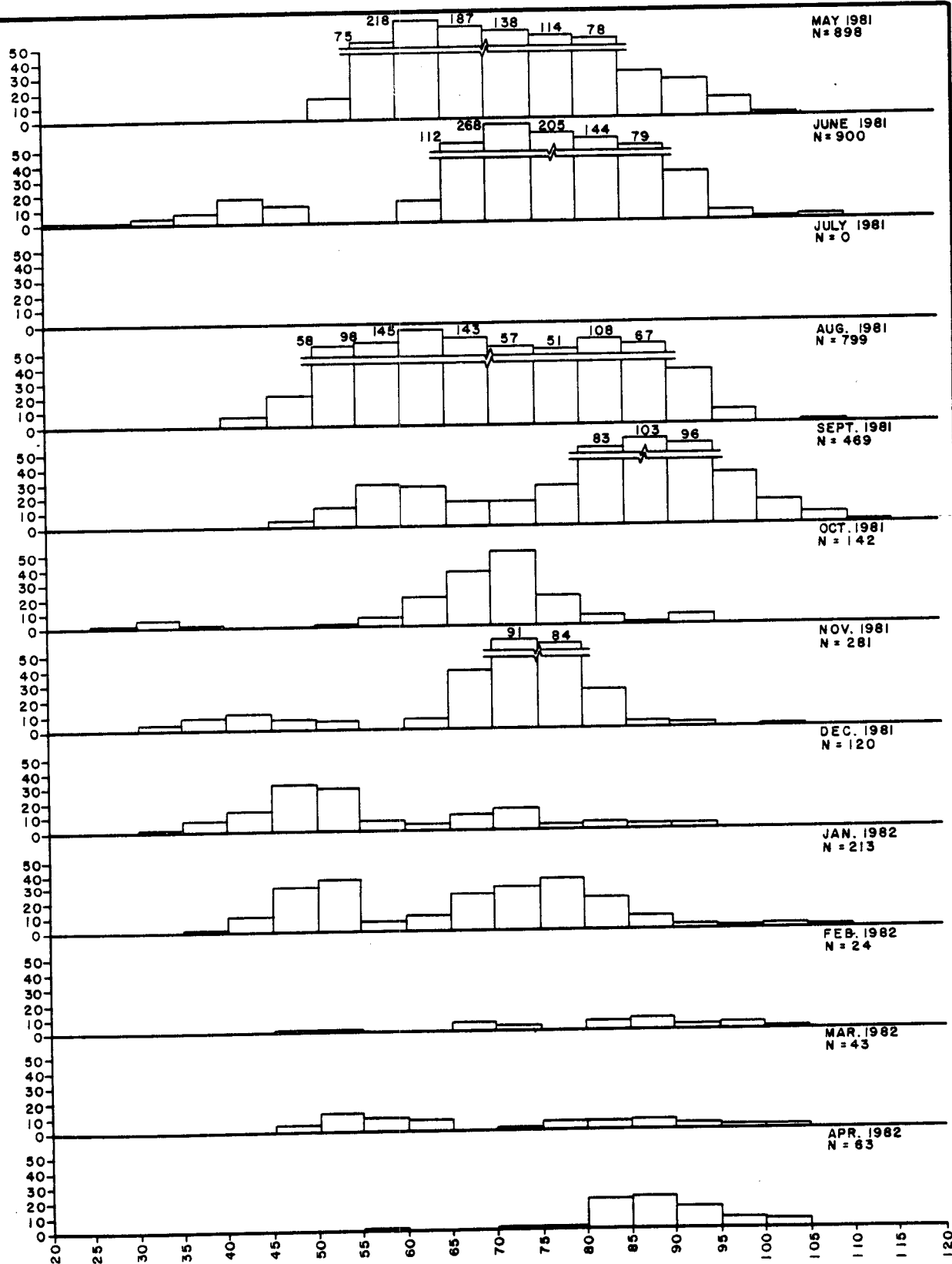


Figure H-38. Length frequency histogram for Gulf populations of *Stellifer lanceolatus* -- May 1981 - April 1982.

Table H-39. Most abundant species collected during May, 1981 at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Micropogonias undulatus</u>	83208
<u>Peprilus burti</u>	80044
<u>Stellifer lanceolatus</u>	50765
<u>Penaeus aztecus aztecus</u>	44214
<u>Arius felis</u>	28290
<u>Cynoscion nothus</u>	25256
<u>Trichiurus lepturus</u>	17652
<u>Callinectes similis</u>	12042
<u>Penaeus setiferus</u>	10834
<u>Trachypenaeus similis</u>	10370

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Penaeus aztecus aztecus</u>	8450
<u>Stellifer lanceolatus</u>	7173
<u>Micropogonias undulatus</u>	7164
<u>Callinectes similis</u>	6193
<u>Trachypenaeus similis</u>	4006
<u>Peprilus burti</u>	3302
<u>Cynoscion nothus</u>	1472
<u>Squilla empusa</u>	1150
<u>Arius felis</u>	534
<u>Trichiurus lepturus</u>	496

Table H-40. Most abundant species collected during June, 1981 at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Micropogonias undulatus</u>	127896
<u>Stellifer lanceolatus</u>	85065
<u>Penaeus aztecus aztecus</u>	83166
<u>Callinectes similis</u>	34916
<u>Arius felis</u>	27885
<u>Peprilus burti</u>	23442
<u>Cynoscion arenarius</u>	20424
<u>Leiostomus xanthurus</u>	18174
<u>Chloroscombrus chrysurus</u>	15698
<u>Penaeus setiferus</u>	15684

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Stellifer lanceolatus</u>	10371
<u>Penaeus aztecus aztecus</u>	10300
<u>Micropogonias undulatus</u>	7143
<u>Callinectes similis</u>	5031
<u>Trachypenaeus similis</u>	2910
<u>Cynoscion arenarius</u>	2002
<u>Squilla empusa</u>	1464
<u>Leiostomus xanthurus</u>	927
<u>Peprilus burti</u>	927
<u>Chloroscombrus chrysurus</u>	576

Table H-41. Most abundant species collected during July, 1981 at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Chloroscombrus chrysurus</u>	133491
<u>Lolliguncula brevis</u>	26504
<u>Arius felis</u>	19804
<u>Peprilus alepidotus</u>	7545
<u>Bagre marinus</u>	1158
<u>Cynoscion arenarius</u>	953
<u>Rhizoprionodon terraenovae</u>	915
<u>Micropogonias undulatus</u>	631
<u>Callinectes sapidus</u>	550
<u>Peprilus burti</u>	514

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Chloroscombrus chrysurus</u>	5524
<u>Lolliguncula brevis</u>	2299
<u>Peprilus alepidotus</u>	596
<u>Arius felis</u>	360
<u>Selene setapinnis</u>	26
<u>Cynoscion arenarius</u>	15
<u>Peprilus burti</u>	14
<u>Micropogonias undulatus</u>	10
<u>Penaeus aztecus aztecus</u>	5
<u>Callinectes sapidus</u>	5

Table H-42. Most abundant species collected during August, 1981 at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Stellifer lanceolatus</u>	149060
<u>Chloroscombrus chrysurus</u>	97040
<u>Leiostomus xanthurus</u>	52017
<u>Arius felis</u>	37702
<u>Micropogonias undulatus</u>	31717
<u>Cynoscion arenarius</u>	25117
<u>Cynoscion nothus</u>	23223
<u>Brevoortia patronus</u>	12926
<u>Peprilus alepidotus</u>	12381
<u>Bagre marinus</u>	11949

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Chloroscombrus chrysurus</u>	22002
<u>Stellifer lanceolatus</u>	19951
<u>Xiphopenaeus kroyeri</u>	1075
<u>Peprilus alepidotus</u>	949
<u>Leiostomus xanthurus</u>	904
<u>Arius felis</u>	826
<u>Penaeus aztecus aztecus</u>	810
<u>Cynoscion arenarius</u>	784
<u>Micropogonias undulatus</u>	740
<u>Penaeus setiferus</u>	537

Table H-43. Most abundant species collected during September, 1981
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Chloroscombrus chrysurus</u>	203522
<u>Stellifer lanceolatus</u>	70569
<u>Cynoscion nothus</u>	53745
<u>Cynoscion arenarius</u>	49692
<u>Leiostomus xanthurus</u>	44098
<u>Peprilus alepidotus</u>	41659
<u>Peprilus burti</u>	31953
<u>Micropogonias undulatus</u>	17497
<u>Penaeus setiferus</u>	9734
<u>Bagre marinus</u>	5203

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Chloroscombrus chrysurus</u>	41890
<u>Stellifer lanceolatus</u>	6382
<u>Cynoscion nothus</u>	1396
<u>Peprilus alepidotus</u>	1369
<u>Cynoscion arenarius</u>	1339
<u>Peprilus burti</u>	1212
<u>Leiostomus xanthurus</u>	557
<u>Penaeus setiferus</u>	357
<u>Micropogonias undulatus</u>	352
<u>Anchoa hepsetus</u>	281

Table H-44. Most abundant species collected during October, 1981
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Chloroscombrus chrysurus</u>	115012
<u>Arius felis</u>	48956
<u>Stellifer lanceolatus</u>	16297
<u>Cynoscion arenarius</u>	13418
<u>Penaeus setiferus</u>	11891
<u>Portunus gibbesii</u>	9055
<u>Menticirrhus americanus</u>	7923
<u>Sciaenops ocellatus</u>	5400
<u>Xiphopenaeus kroyeri</u>	4473
<u>Carcharhinus isodon</u>	4400

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Chloroscombrus chrysurus</u>	18739
<u>Portunus gibbesii</u>	4892
<u>Stellifer lanceolatus</u>	1712
<u>Arius felis</u>	1584
<u>Anchoa mitchilli</u>	1257
<u>Xiphopenaeus kroyeri</u>	915
<u>Penaeus setiferus</u>	835
<u>Callinectes similis</u>	717
<u>Cynoscion arenarius</u>	567
<u>Lolliguncula brevis</u>	360

Table H-45. Most abundant species collected during November, 1981 at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Callinectes similis</u>	29193
<u>Arius felis</u>	27120
<u>Portunus gibbesii</u>	12859
<u>Sciaenops ocellatus</u>	11700
<u>Cynoscion arenarius</u>	11057
<u>Penaeus setiferus</u>	10967
<u>Squilla empusa</u>	8010
<u>Menticirrhus americanus</u>	7710
<u>Lolliguncula brevis</u>	7234
<u>Chloroscombrus chrysurus</u>	6697

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Callinectes similis</u>	6164
<u>Portunus gibbesii</u>	5890
<u>Trachypenaeus similis</u>	1889
<u>Squilla empusa</u>	1807
<u>Anchoa mitchilli</u>	1453
<u>Lolliguncula brevis</u>	891
<u>Penaeus setiferus</u>	791
<u>Chloroscombrus chrysurus</u>	721
<u>Cynoscion arenarius</u>	520
<u>Penaeus aztecus aztecus</u>	404

Table H-46. Most abundant species collected during December, 1981
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Lolliguncula brevis</u>	20396
<u>Pogonias cromis</u>	19000
<u>Archosargus probatocephalus</u>	14050
<u>Penaeus setiferus</u>	11344
<u>Brevoortia patronus</u>	7136
<u>Trichiurus lepturus</u>	7027
<u>Cynoscion arenarius</u>	6072
<u>Etropus crossotus</u>	5453
<u>Arius felis</u>	3491
<u>Menticirrhus americanus</u>	3470

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Lolliguncula brevis</u>	1923
<u>Anchoa mitchilli</u>	904
<u>Portunus gibbesii</u>	820
<u>Callinectes similis</u>	720
<u>Trichiurus lepturus</u>	663
<u>Etropus crossotus</u>	633
<u>Penaeus setiferus</u>	626
<u>Cynoscion nothus</u>	596
<u>Trachypenaeus similis</u>	515
<u>Stellifer lanceolatus</u>	392

Table H-47. Most abundant species collected during January, 1982
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Penaeus setiferus</u>	29687
<u>Cynoscion arenarius</u>	16645
<u>Portunus gibbesii</u>	10378
<u>Etropus crossotus</u>	7368
<u>Leiostomus xanthurus</u>	6558
<u>Squilla empusa</u>	5723
<u>Menticirrhus americanus</u>	4938
<u>Anchoa mitchilli</u>	4678
<u>Trachypenaeus similis</u>	4300
<u>Lolliguncula brevis</u>	3129

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Portunus gibbesii</u>	3054
<u>Penaeus setiferus</u>	2600
<u>Trachypenaeus similis</u>	1806
<u>Anchoa mitchilli</u>	1706
<u>Etropus crossotus</u>	1195
<u>Cynoscion arenarius</u>	1048
<u>Squilla empusa</u>	671
<u>Lolliguncula brevis</u>	657
<u>Larimus fasciatus</u>	382
<u>Prionotus tribulus</u>	282

Table H-48. Most abundant species collected during February, 1982
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Menticirrhus americanus</u>	9366
<u>Cynoscion arenarius</u>	7741
<u>Pogonias cromis</u>	6400
<u>Squilla empusa</u>	5451
<u>Lolliguncula brevis</u>	5149
<u>Cynoscion nothus</u>	4911
<u>Trichiurus lepturus</u>	4327
<u>Penaeus setiferus</u>	4305
<u>Portunus gibbesii</u>	4299
<u>Trachypenaeus similis</u>	4085

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Trachypenaeus similis</u>	1848
<u>Portunus gibbesii</u>	1345
<u>Cynoscion nothus</u>	954
<u>Anchoa mitchilli</u>	869
<u>Squilla empusa</u>	818
<u>Lolliguncula brevis</u>	743
<u>Etropus crossotus</u>	663
<u>Trichiurus lepturus</u>	531
<u>Larimus fasciatus</u>	449
<u>Cynoscion arenarius</u>	287

Table H-49. Most abundant species collected during March, 1982
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Pogonias cromis</u>	63000
<u>Arius felis</u>	18722
<u>Cynoscion nothus</u>	17035
<u>Menticirrhus americanus</u>	16600
<u>Leiostomus xanthurus</u>	15560
<u>Peprilus burti</u>	13607
<u>Trachypenaeus similis</u>	10518
<u>Micropogonias undulatus</u>	8577
<u>Brevoortia patronus</u>	8412
<u>Lolliguncula brevis</u>	6373

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Trachypenaeus similis</u>	4869
<u>Cynoscion nothus</u>	2333
<u>Micropogonias undulatus</u>	2093
<u>Anchoa mitchilli</u>	1537
<u>Portunus gibbesii</u>	1311
<u>Peprilus burti</u>	1057
<u>Lolliguncula brevis</u>	782
<u>Larimus fasciatus</u>	577
<u>Squilla empusa</u>	432
<u>Prionotus tribulus</u>	389

Table H-50. Most abundant species collected during April, 1982
at marine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Arius felis</u>	56346
<u>Peprilus burti</u>	30955
<u>Micropogonias undulatus</u>	25881
<u>Trichiurus lepturus</u>	22490
<u>Pogonias cromis</u>	22000
<u>Cynoscion nothus</u>	11506
<u>Leiostomus xanthurus</u>	7527
<u>Penaeus setiferus</u>	5469
<u>Callinectes sapidus</u>	5222
<u>Lolliguncula brevis</u>	4762

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Micropogonias undulatus</u>	4426
<u>Peprilus burti</u>	1318
<u>Trachypenaeus similis</u>	1245
<u>Trichiurus lepturus</u>	1223
<u>Cynoscion nothus</u>	964
<u>Anchoa mitchilli</u>	854
<u>Callinectes similis</u>	645
<u>Squilla empusa</u>	526
<u>Lolliguncula brevis</u>	423
<u>Larimus fasciatus</u>	410

Table H-51. Most abundant species collected during May, 1981 at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Callinectes sapidus</u>	25058
<u>Penaeus aztecus aztecus</u>	9754
<u>Micropogonias undulatus</u>	5383
<u>Leiostomus xanthurus</u>	3360
<u>Anchoa mitchilli</u>	2958
<u>Cynoscion arenarius</u>	369
<u>Brevoortia patronus</u>	347
<u>Paralichthys lethostigma</u>	320
<u>Penaeus setiferus</u>	186
<u>Callinectes similis</u>	150

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	3330
<u>Penaeus aztecus aztecus</u>	3033
<u>Micropogonias undulatus</u>	803
<u>Leiostomus xanthurus</u>	403
<u>Callinectes sapidus</u>	328
<u>Cynoscion arenarius</u>	118
<u>Brevoortia patronus</u>	73
<u>Callinectes similis</u>	53
<u>Lolliguncula brevis</u>	40
<u>Citharichthys spilopterus</u>	26

Table H-52. Most abundant species collected during June, 1981 at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Callinectes</u> <u>sapidus</u>	17513
<u>Penaeus</u> <u>aztecus</u> <u>aztecus</u>	9809
<u>Micropogonias</u> <u>undulatus</u>	4177
<u>Paralichthys</u> <u>lethostigma</u>	1547
<u>Arius</u> <u>felis</u>	1313
<u>Anchoa</u> <u>mitchilli</u>	1307
<u>Cynoscion</u> <u>arenarius</u>	959
<u>Leiostomus</u> <u>xanthurus</u>	832
<u>Archosargus</u> <u>probatocephalus</u>	395
<u>Brevoortia</u> <u>patronus</u>	208

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Penaeus</u> <u>aztecus</u> <u>aztecus</u>	1940
<u>Anchoa</u> <u>mitchilli</u>	1813
<u>Micropogonias</u> <u>undulatus</u>	386
<u>Cynoscion</u> <u>arenarius</u>	363
<u>Callinectes</u> <u>sapidus</u>	250
<u>Brevoortia</u> <u>patronus</u>	65
<u>Leiostomus</u> <u>xanthurus</u>	62
<u>Sphoeroides</u> <u>parvus</u>	52
<u>Penaeus</u> <u>setiferus</u>	32
<u>Arius</u> <u>felis</u>	18

Table H-53. Most abundant species collected during July, 1981 at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Callinectes sapidus</u>	14191
<u>Arius felis</u>	9776
<u>Penaeus aztecus aztecus</u>	8900
<u>Micropogonias undulatus</u>	7463
<u>Penaeus setiferus</u>	2408
<u>Paralichthys lethostigma</u>	2042
<u>Anchoa mitchilli</u>	1679
<u>Brevoortia patronus</u>	1104
<u>Cynoscion arenarius</u>	757
<u>Leiostomus xanthurus</u>	462

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	3180
<u>Penaeus aztecus aztecus</u>	1299
<u>Penaeus setiferus</u>	717
<u>Brevoortia patronus</u>	561
<u>Micropogonias undulatus</u>	335
<u>Cynoscion arenarius</u>	227
<u>Arius felis</u>	222
<u>Callinectes sapidus</u>	168
<u>Leiostomus xanthurus</u>	59
<u>Citharichthys spilopterus</u>	36

Table H-54. Most abundant species collected during August, 1981 at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Penaeus setiferus</u>	17848
<u>Callinectes sapidus</u>	4595
<u>Anchoa mitchilli</u>	4388
<u>Leiostomus xanthurus</u>	2043
<u>Cynoscion arenarius</u>	2011
<u>Micropogonias undulatus</u>	1979
<u>Arius felis</u>	1823
<u>Pogonias cromis</u>	1584
<u>Paralichthys lethostigma</u>	1220
<u>Penaeus aztecus aztecus</u>	593

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	5318
<u>Penaeus setiferus</u>	2002
<u>Cynoscion arenarius</u>	285
<u>Leiostomus xanthurus</u>	161
<u>Micropogonias undulatus</u>	112
<u>Penaeus aztecus aztecus</u>	109
<u>Callinectes sapidus</u>	84
<u>Arius felis</u>	83
<u>Caranx hippos</u>	77
<u>Chloroscombrus chrysurus</u>	53

Table H-55. Most abundant species collected during September, 1981
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Anchoa mitchilli</u>	3883
<u>Micropogonias undulatus</u>	2541
<u>Callinectes sapidus</u>	2385
<u>Penaeus setiferus</u>	1925
<u>Cynoscion arenarius</u>	1714
<u>Arius felis</u>	868
<u>Paralichthys lethostigma</u>	665
<u>Leiostomus xanthurus</u>	504
<u>Stellifer lanceolatus</u>	438
<u>Pogonias cromis</u>	402

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	2057
<u>Penaeus setiferus</u>	440
<u>Cynoscion arenarius</u>	299
<u>Micropogonias undulatus</u>	79
<u>Arius felis</u>	72
<u>Stellifer lanceolatus</u>	67
<u>Chloroscombrus chrysurus</u>	64
<u>Callinectes sapidus</u>	40
<u>Penaeus aztecus aztecus</u>	23
<u>Brevoortia patronus</u>	21

Table H-56. Most abundant species collected during October, 1981
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Penaeus setiferus</u>	2998
<u>Leiostomus xanthurus</u>	2525
<u>Callinectes sapidus</u>	2080
<u>Anchoa mitchilli</u>	1581
<u>Pogonias cromis</u>	1379
<u>Cynoscion arenarius</u>	1306
<u>Micropogonias undulatus</u>	1077
<u>Bairdiella chrysoura</u>	622
<u>Paralichthys lethostigma</u>	416
<u>Penaeus aztecus aztecus</u>	366

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	1832
<u>Penaeus setiferus</u>	679
<u>Cynoscion arenarius</u>	476
<u>Penaeus aztecus aztecus</u>	114
<u>Callinectes sapidus</u>	94
<u>Micropogonias undulatus</u>	93
<u>Leiostomus xanthurus</u>	56
<u>Stellifer lanceolatus</u>	29
<u>Bairdiella chrysoura</u>	16
<u>Prionotus tribulus</u>	15

Table H-57. Most abundant species collected during November, 1981
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Anchoa mitchilli</u>	8017
<u>Callinectes sapidus</u>	3554
<u>Pogonias cromis</u>	2936
<u>Leiostomus xanthurus</u>	989
<u>Penaeus setiferus</u>	807
<u>Cynoscion arenarius</u>	607
<u>Bairdiella chrysoura</u>	298
<u>Micropogonias undulatus</u>	296
<u>Dorosoma cepedianum</u>	202
<u>Paralichthys lethostigma</u>	135

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	11636
<u>Micropogonias undulatus</u>	419
<u>Penaeus setiferus</u>	288
<u>Cynoscion arenarius</u>	182
<u>Callinectes sapidus</u>	69
<u>Penaeus aztecus aztecus</u>	38
<u>Leiostomus xanthurus</u>	30
<u>Pogonias cromis</u>	25
<u>Prionotus tribulus</u>	15
<u>Bairdiella chrysoura</u>	10

Table H-58. Most abundant species collected during December, 1981
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Pogonias cromis</u>	3694
<u>Anchoa mitchilli</u>	2108
<u>Archosargus probatocephalus</u>	1235
<u>Mugil cephalus</u>	1148
<u>Penaeus setiferus</u>	1042
<u>Callinectes sapidus</u>	598
<u>Paralichthys lethostigma</u>	574
<u>Micropogonias undulatus</u>	530
<u>Leiostomus xanthurus</u>	352
<u>Cynoscion nebulosus</u>	139

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	3345
<u>Micropogonias undulatus</u>	575
<u>Penaeus setiferus</u>	385
<u>Callinectes sapidus</u>	146
<u>Penaeus aztecus aztecus</u>	52
<u>Mugil cephalus</u>	25
<u>Cynoscion arenarius</u>	13
<u>Dorosoma petenense</u>	12
<u>Leiostomus xanthurus</u>	9
<u>Pogonias cromis</u>	9

Table H-59. Most abundant species collected during January, 1982
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Callinectes sapidus</u>	3060
<u>Pogonias cromis</u>	1531
<u>Anchoa mitchilli</u>	916
<u>Archosargus probatocephalus</u>	749
<u>Leiostomus xanthurus</u>	739
<u>Paralichthys lethostigma</u>	566
<u>Micropogonias undulatus</u>	402
<u>Cynoscion nebulosus</u>	155
<u>Symphurus plagiusa</u>	129
<u>Mugil cephalus</u>	125

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	3621
<u>Callinectes sapidus</u>	670
<u>Micropogonias undulatus</u>	352
<u>Symphurus plagiusa</u>	46
<u>Brevoortia patronus</u>	35
<u>Leiostomus xanthurus</u>	21
<u>Penaeus setiferus</u>	17
<u>Pogonias cromis</u>	11
<u>Paralichthys lethostigma</u>	8
<u>Palaemonetes vulgaris</u>	7

Table H-60. Most abundant species collected during February, 1982
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Leiostomus xanthurus</u>	3804
<u>Callinectes sapidus</u>	3356
<u>Micropogonias undulatus</u>	2398
<u>Pogonias cromis</u>	2377
<u>Paralichthys lethostigma</u>	2049
<u>Mugil cephalus</u>	860
<u>Anchoa mitchilli</u>	546
<u>Cynoscion nebulosus</u>	395
<u>Brevoortia patronus</u>	307
<u>Dorosoma petenense</u>	216

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Micropogonias undulatus</u>	2094
<u>Anchoa mitchilli</u>	1390
<u>Callinectes sapidus</u>	1036
<u>Leiostomus xanthurus</u>	103
<u>Penaeus setiferus</u>	59
<u>Symphurus plagiusa</u>	50
<u>Brevoortia patronus</u>	42
<u>Palaemonetes vulgaris</u>	38
<u>Paralichthys lethostigma</u>	24
<u>Cynoscion nebulosus</u>	12

Table H-61. Most abundant species collected during March, 1982
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Micropogonias undulatus</u>	4984
<u>Anchoa mitchilli</u>	3095
<u>Callinectes sapidus</u>	2189
<u>Paralichthys lethostigma</u>	616
<u>Pogonias cromis</u>	583
<u>Mugil cephalus</u>	580
<u>Leiostomus xanthurus</u>	481
<u>Brevoortia patronus</u>	174
<u>Cynoscion nebulosus</u>	173
<u>Penaeus setiferus</u>	130

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Anchoa mitchilli</u>	6450
<u>Micropogonias undulatus</u>	3127
<u>Callinectes sapidus</u>	633
<u>Brevoortia patronus</u>	580
<u>Penaeus setiferus</u>	33
<u>Leiostomus xanthurus</u>	10
<u>Penaeus aztecus aztecus</u>	9
<u>Trichiurus lepturus</u>	8
<u>Paralichthys lethostigma</u>	7
<u>Palaemonetes vulgaris</u>	6

Table H-62. Most abundant species collected during April, 1982
at estuarine stations.

Ten most abundant species by weight in grams.

<u>SPECIES</u>	<u>TOTAL WEIGHT</u>
<u>Micropogonias undulatus</u>	10250
<u>Callinectes sapidus</u>	5135
<u>Anchoa mitchilli</u>	2960
<u>Archosargus probatocephalus</u>	1875
<u>Leiostomus xanthurus</u>	1570
<u>Pogonias cromis</u>	1396
<u>Arius felis</u>	622
<u>Penaeus setiferus</u>	580
<u>Paralichthys lethostigma</u>	516
<u>Mugil cephalus</u>	342

Ten most abundant species by number of individuals.

<u>SPECIES</u>	<u>TOTAL NUMBER</u>
<u>Micropogonias undulatus</u>	4912
<u>Anchoa mitchilli</u>	4031
<u>Penaeus setiferus</u>	473
<u>Callinectes sapidus</u>	234
<u>Penaeus aztecus aztecus</u>	135
<u>Polydactylus octonemus</u>	121
<u>Leiostomus xanthurus</u>	25
<u>Cynoscion arenarius</u>	17
<u>Arius felis</u>	17
<u>Brevoortia patronus</u>	15

Table I-1. SEA WEATHER CONDITIONS

SITE	DATE	TIME (CST)	AIR TEMP (C)	PRESSURE (HG)	WIND SPEED	WIND DIR	CLOUD CLOVER	CLOUD TYPE	VISIBILITY	CONDITION
E1	04/09/81	1140	25.00	30.10	01	99	03	06	07	C
E2	04/09/81	0855	21.00	30.15	01	18	06	05	07	C
E3	04/09/81	0745	21.00	30.10	02	18	06	05	06	C
E4	04/09/81	0710	21.00	30.10	03	18	07	05	06	C
E5	04/09/81	0607	21.00	30.10	03	18	07	05	05	D
M1	04/10/81	1410	24.00	30.10	02	13	02	08	06	C
M3	04/10/81	1450	25.00	30.10	02	11	01	06	06	C
M6	04/10/81	1511	26.00	30.10	02	11	01	06	06	C
M8	04/10/81	1250	24.00	30.10	02	11	02	08	06	C
M9	04/10/81	1230	23.00	30.10	02	11	02	08	06	C
M10	04/10/81	1215	23.00	30.15	02	11	02	08	06	C
M20	04/10/81	1658	24.00	30.10	04	11	00	00	06	B
M10A	04/10/81	1534	27.00	30.10	04	11	01	06	06	C
M11	04/10/81	1142	24.00	30.15	02	11	01	08	06	C
M21	04/10/81	1314	99999	30.10	02	11	02	08	06	C
M12	04/10/81	1125	25.00	30.15	02	11	04	08	06	C
M22	04/10/81	1015	23.00	30.15	02	11	08	09	04	F
M13	04/10/81	1055	22.50	30.15	02	11	07	09	05	F
M23	04/10/81	0945	22.00	30.15	02	11	08	09	01	FG
M15	04/10/81	1612	25.00	30.10	04	11	01	06	06	C
M18	04/10/81	1630	24.00	30.10	04	11	01	06	06	C
DE	05/21/81	1427	25.00	30.00	03	12	00	99	08	B
DN	05/21/81	0726	18.50	30.00	03	11	02	02	07	C
DS	05/21/81	0918	19.50	30.05	04	11	00	02	07	C
DW	05/21/81	1412	25.00	30.00	03	12	00	99	08	B
E1	05/22/81	0945	26.00	29.95	03	13	03	08	07	C
E2	05/22/81	0810	21.00	29.90	02	13	02	06	07	C
E3	05/22/81	0704	21.30	29.90	02	13	03	06	07	C
E4	05/22/81	0633	20.00	29.90	02	13	03	06	07	C
E5	05/22/81	0545	21.00	29.90	03	13	09	99	99	C
M3	05/21/81	1342	25.30	30.00	03	12	00	99	08	B
M10	05/21/81	0903	19.50	30.05	04	12	00	02	07	C
M10A	05/21/81	0754	17.70	30.00	04	12	01	02	07	C
M21	05/21/81	0637	16.00	30.00	02	11	02	02	07	C
M22	05/21/81	1100	22.00	30.05	03	12	00	08	08	C
M18	05/21/81	1457	25.00	30.00	03	12	00	09	08	B
NE	05/21/81	0845	17.70	30.00	04	12	00	02	07	C
NW	05/21/81	0741	99999	30.00	04	12	01	02	07	C
SE	05/21/81	0834	19.00	30.00	04	12	00	02	07	C
DE	06/08/81	1530	28.00	29.80	03	20	01	06	08	C
DN	06/08/81	0825	28.00	29.80	03	22	02	06	08	C
DS	06/08/81	1009	27.60	29.85	03	21	02	06	08	C
DW	06/08/81	1514	28.00	29.80	03	20	01	06	08	C
E1	06/10/81	1130	29.00	29.80	03	17	07	06	05	U
E2	06/10/81	1015	28.80	29.80	04	18	06	06	05	U
E3	06/10/81	0815	28.33	29.80	04	18	03	06	07	C
E4	06/10/81	0740	28.90	29.80	04	18	03	06	07	C
E5	06/10/81	0640	28.00	29.80	04	18	03	06	08	C
M3	06/08/81	1400	28.00	29.80	03	20	01	06	08	C
M10	06/08/81	0953	28.00	29.85	03	21	02	06	08	C
M10A	06/08/81	0852	28.00	29.80	03	20	02	06	08	C
M21	06/08/81	0715	28.40	29.80	03	17	02	06	08	C
M22	06/08/81	1132	28.00	29.85	04	25	02	06	08	C
M18	06/08/81	1600	28.00	29.80	02	22	01	06	08	C
NE	06/08/81	0926	28.00	29.85	03	20	02	06	08	C
NW	06/08/81	0840	28.10	29.80	03	22	02	06	08	C
SE	06/08/81	0907	27.80	29.80	03	20	02	06	08	C

Table I-1. SEA WEATHER CONDITIONS (Continued).

SITE	DATE	TIME (CST)	AIR TEMP (C)	PRESSURE (HG)	WIND SPEED	WIND DIR	CLOUD CLOVER	CLOUD TYPE	VISIBILITY	CONDITION
DE	07/01/81	1825	26.50	29.90	01	19	06	05	07	C
DE	07/16/81	1018	29.95	29.95	02	23	03	05	07	C
DN	07/01/81	0758	28.90	29.90	00	18	01	06	06	C
DN	07/16/81	0630	29.30	29.92	03	21	01	05	07	C
DS	07/01/81	1049	29.50	29.90	00	18	03	05	07	C
DS	07/16/81	1510	32.50	29.92	02	22	02	05	07	C
DW	07/01/81	1810	28.00	29.90	01	19	06	05	07	C
DW	07/16/81	1038	29.00	29.95	02	23	03	05	07	C
E1	07/02/81	1430	27.00	29.90	00	99	08	09	05	PR
E1	07/17/81	1500	33.00	29.90	02	23	03	05	07	C
E2	07/02/81	1300	27.00	29.90	00	99	08	09	05	PR
E2	07/17/81	1310	31.50	29.90	02	23	03	05	07	C
E3	07/02/81	9999	99999	99999	99	99	99	99	99	A
E3	07/17/81	1130	31.00	29.90	01	23	03	05	07	C
E4	07/02/81	1000	27.00	29.90	00	99	08	09	05	PR
E4	07/17/81	1015	30.25	29.90	01	23	05	05	07	C
E5	07/02/81	0911	26.75	29.90	05	18	07	09	05	U
E5	07/16/81	0825	28.00	29.95	02	24	03	05	07	C
M10	07/01/81	1033	29.00	29.90	00	18	02	05	07	C
M10	07/16/81	1535	31.00	29.92	02	18	01	08	07	C
M10A	07/01/81	0905	28.80	29.90	00	18	02	06	06	C
M10A	07/16/81	1645	29.00	29.92	03	18	01	08	07	C
M18	07/01/81	1851	27.00	29.90	01	19	06	05	07	C
M18	07/16/81	0945	32.00	29.95	02	23	02	05	07	C
M21	07/01/81	0717	29.80	29.90	01	18	01	08	06	C
M21	07/16/81	0545	29.00	29.92	03	21	01	05	07	C
M22	07/01/81	1417	29.20	29.90	00	18	07	05	07	C
M22	07/16/81	1336	32.50	29.92	02	22	02	05	07	C
M3	07/01/81	1721	28.80	29.90	00	18	06	05	07	C
M3	07/16/81	1115	27.00	29.95	02	21	03	05	07	C
NE	07/01/81	1009	29.00	29.90	00	18	02	05	07	C
NE	07/16/81	1600	30.00	29.92	03	18	01	08	07	C
NW	07/01/81	0842	99999	29.90	01	18	01	06	06	C
NW	07/16/81	1738	29.80	29.92	03	18	01	08	07	C
SE	07/01/81	0937	27.00	29.90	00	18	02	05	07	C
SE	07/16/81	1625	29.50	29.92	03	18	01	08	07	C

Table I-1. SEA WEATHER CONDITIONS (Continued).

SITE	DATE	TIME (CST)	AIR TEMP (C)	PRESSURE (HG)	WIND SPEED	WIND DIR	CLOUD CLOVER	CLOUD TYPE	VISIBILITY	CONDITION
M21	08/07/81	0941	29.30	29.89	03	25	05	06	07	C
DN	08/07/81	1015	27.50	29.89	03	25	05	06	07	C
NW	08/07/81	1106	30.00	29.89	03	25	03	06	07	C
M10A	08/07/81	1122	29.00	29.89	03	25	03	06	07	C
SE	08/07/81	1200	31.50	29.89	03	25	03	06	07	C
NE	08/07/81	1220	28.00	29.89	03	25	05	06	07	C
M10	08/07/81	1237	29.30	29.89	03	25	05	06	07	C
DS	08/07/81	1252	27.00	29.89	03	25	05	06	07	C
M22	08/07/81	1534	29.90	29.89	03	23	05	06	07	C
M3	08/07/81	1730	28.00	29.80	03	27	02	06	07	C
DW	08/07/81	1757	27.80	29.80	03	27	02	06	07	C
DE	08/07/81	1811	27.80	29.80	03	27	02	06	07	C
M18	08/07/81	1836	27.00	29.80	03	27	03	06	07	C
E4	08/05/81	0805	30.00	29.95	03	45	03	06	07	C
E3	08/05/81	0830	30.00	29.95	03	45	03	06	07	C
E2	08/05/81	0935	30.30	29.95	01	31	03	08	07	C
E1	08/05/81	1045	28.00	29.95	01	27	05	06	07	C
E5	08/05/81	1921	30.00	29.95	03	24	01	05	06	C
E5	09/10/81	0440	21.00	29.93	03	02	09	99	99	C
E4	09/10/81	0640	19.50	29.93	03	02	01	08	07	C
E3	09/10/81	0720	19.80	29.93	03	02	01	08	07	C
E2	09/10/81	0835	19.60	29.93	02	02	00	99	07	B
E1	09/10/81	0925	21.00	29.95	02	02	00	99	07	B
M21	09/11/81	1010	27.00	29.98	05	07	07	08	07	C
DN	09/11/81	1057	27.00	30.00	05	07	07	08	07	C
NW	09/11/81	1135	26.20	30.00	05	07	04	08	07	C
M10A	09/11/81	1154	25.50	30.00	05	07	05	08	07	C
SE	09/11/81	1209	25.00	30.00	05	09	04	08	07	C
NE	09/11/81	1231	26.20	30.00	05	09	04	08	07	C
M10	09/11/81	1251	26.50	30.00	05	09	04	08	07	C
DS	09/11/81	1320	26.00	30.05	05	09	01	08	07	C
M22	09/11/81	1535	30.00	30.00	05	09	02	08	07	C
M3	09/11/81	1745	30.00	30.00	05	09	02	08	07	C
DW	09/11/81	1838	28.00	29.95	04	09	01	08	07	C
DE	09/11/81	1925	29.00	29.95	04	09	01	08	07	C
M18	09/11/81	1947	29.00	29.95	04	09	99	99	99	A
M21	10/02/81	0845	26.00	30.08	02	34	09	99	01	FG
NW	10/02/81	0955	25.00	30.08	03	36	09	99	01	FE
DW	10/02/81	1020	25.50	30.08	03	36	07	99	02	FE
M10	10/02/81	1050	25.50	30.08	03	36	07	99	02	FE
M10A	10/02/81	1115	25.00	30.08	03	36	05	99	03	FS
DN	10/02/81	1130	24.20	30.08	03	36	05	99	03	Z
NE	10/02/81	1155	25.00	30.08	03	36	06	08	05	C
DE	10/02/81	1220	24.50	30.08	03	30	06	08	05	C
SE	10/02/81	1235	24.50	30.08	03	30	06	08	05	C
DS	10/02/81	1305	26.50	30.08	03	30	00	99	07	B
M22	10/02/81	1438	28.00	29.90	03	07	00	99	05	B
M3	10/02/81	1630	29.50	29.90	02	04	00	99	07	B
M18	10/02/81	1820	29.00	30.00	02	06	00	99	07	B
E5	10/03/81	0832	20.30	30.14	03	09	00	99	07	B
E4	10/03/81	0925	20.30	30.14	04	06	00	99	07	B
E3	10/03/81	0951	18.50	30.14	03	06	00	99	07	B
E2	10/03/81	1125	22.00	30.14	02	06	00	99	07	B
E1	10/03/81	1210	26.30	30.10	02	09	00	99	07	B
M21	11/12/81	1010	17.80	99999	99	12	08	99	03	A
NW	11/12/81	1050	18.00	99999	03	09	08	99	03	A
DN	11/12/81	1100	18.00	99999	03	09	08	99	03	A
NE	11/12/81	1107	18.00	99999	03	09	08	99	03	A
DE	11/12/81	1135	18.00	99999	03	09	08	99	03	A
M10A	11/12/81	1127	18.00	99999	03	09	08	99	03	A
DW	11/12/81	1157	18.00	99999	03	09	08	99	03	A
SW	11/12/81	1212	18.00	99999	03	09	08	99	03	A
DS	11/12/81	1219	18.00	99999	03	09	08	99	03	A
SE	11/12/81	1228	18.00	99999	03	09	08	99	03	A

Table I-1. SEA WEATHER CONDITIONS (Continued).

SITE	DATE	TIME (CST)	AIR TEMP (C)	PRESSURE (HG)	WIND SPEED	WIND DIR	CLOUD CLOVER	CLOUD TYPE	VISIBILITY	CONDITION
M10	11/12/81	1242	18.00	99999	03	09	08	99	03	A
M22	11/12/81	1418	18.30	99999	03	09	08	99	03	A
M3	11/12/81	1534	18.30	99999	03	09	08	99	03	A
M18	11/12/81	1740	17.80	99999	03	09	08	99	99	A
E4	11/11/81	0817	12.78	99999	04	03	00	99	99	A
E3	11/11/81	0837	14.44	99999	04	03	00	99	99	A
E2	11/11/81	0954	14.44	99999	02	03	00	99	99	A
E1	11/11/81	1115	22.78	99999	00	00	00	99	99	A
M21	12/02/81	0736	17.00	31.60	00	99	00	05	08	A
NW	12/02/81	0831	15.00	31.60	00	99	00	05	08	A
DN	12/02/81	0845	15.00	31.60	00	99	00	05	08	A
NE	12/02/81	0855	16.80	31.60	00	99	00	05	08	A
DE	12/02/81	0909	16.00	31.60	00	99	00	05	08	A
M10A	12/02/81	0920	99999	31.60	00	99	00	05	08	A
DW	12/02/81	0930	19.50	31.60	00	99	00	05	08	A
SW	12/02/81	0946	19.00	31.60	00	99	00	05	08	A
DS	12/02/81	0956	19.00	31.60	00	99	00	05	08	A
SE	12/02/81	1010	20.00	31.60	00	99	00	05	08	A
M10	12/02/81	1025	18.50	31.60	00	99	00	05	08	A
M22	12/02/81	1142	19.20	31.60	00	04	00	05	08	A
M3	12/02/81	1310	20.00	31.60	00	04	00	05	08	A
M18	12/02/81	1445	27.30	31.60	00	04	00	05	08	A
E5	12/02/81	0800	99999	30.20	02	18	00	99	07	B
E4	12/02/81	0840	99999	30.20	02	18	00	99	07	B
E3	12/02/81	0905	99999	30.20	03	18	00	99	07	B
E2	12/02/81	0930	99999	30.20	03	18	00	99	07	B
E1	12/02/81	1001	99999	30.20	02	23	01	08	07	C
M21	01/21/82	0954	99999	99999	02	18	09	99	00	F
NW	01/21/82	1223	99999	99999	02	18	09	99	00	F
DN	01/21/82	1246	99999	99999	02	18	09	99	00	F
NE	01/21/82	1306	99999	99999	02	18	09	99	00	F
DE	01/21/82	1320	99999	99999	02	18	09	99	00	F
M10A	01/21/82	1350	99999	99999	02	18	09	99	00	F
DW	01/21/82	1401	99999	99999	02	18	09	99	00	F
SW	01/21/82	1417	99999	99999	02	18	09	99	00	F
DS	01/21/82	1431	99999	99999	02	18	09	99	00	F
SE	01/21/82	1455	99999	99999	02	18	09	99	00	F
M10	01/21/82	1509	99999	99999	02	18	09	99	00	F
M22	01/21/82	1629	99999	99999	02	18	09	99	00	F
M3	01/21/82	1812	99999	99999	02	18	09	99	00	F
M18	01/21/82	2104	99999	99999	03	18	09	99	00	F
E5	01/11/82	0730	15.00	99999	05	01	00	99	09	B
E4	01/11/82	0839	99999	99999	04	01	00	99	09	B
E3	01/11/82	9999	99999	99999	99	99	99	99	99	A
E2	01/11/82	1031	99999	99999	01	01	00	99	09	B
E1	01/11/82	1206	99999	99999	02	01	00	99	09	B
M21	02/08/82	0915	59.50	30.23	02	12	08	00	04	O
NW	02/08/82	1007	60.00	30.23	03	12	08	00	03	O
DN	02/08/82	1017	60.00	30.23	03	12	08	00	03	O
NE	02/08/82	1027	60.00	30.23	03	12	08	00	03	O
DE	02/08/82	1042	57.00	30.23	03	12	08	00	02	O
M10A	02/08/82	1100	57.00	30.23	03	12	08	00	02	O
DW	02/08/82	1118	58.00	30.20	03	12	08	00	02	O
SW	02/08/82	1133	58.00	30.20	03	12	08	00	02	O
DS	02/08/82	1153	58.00	30.14	04	12	08	00	02	O
SE	02/08/82	1215	58.00	30.14	04	12	08	00	02	O
M10	02/08/82	1229	60.00	30.14	04	12	08	00	02	O
M3	02/08/82	1330	60.00	30.14	04	12	08	00	02	O
M18	02/08/82	1356	60.00	30.14	04	12	08	00	02	O

Table I-1. SEA WEATHER CONDITIONS (Continued).

SITE	DATE	TIME (CST)	AIR TEMP (C)	PRESSURE (HG)	WIND SPEED	WIND DIR	CLOUD CLOVER	CLOUD TYPE	VISIBILITY	CONDITION
E5	02/12/82	0730	52.00	30.23	02	36	08	00	03	0
E4	02/12/82	0877	49.00	30.23	02	36	08	00	03	0
E3	02/12/82	0842	49.00	30.25	02	06	08	00	03	0
E2	02/12/82	0940	50.00	30.25	01	06	08	00	03	0
E1	02/12/82	1040	54.00	30.25	01	06	07	00	03	C
M21	03/12/82	0812	67.00	30.05	01	15	09	00	00	FE
NW	03/12/82	0910	66.00	30.05	01	15	09	00	01	FE
DN	03/12/82	0923	66.00	30.09	01	15	09	00	01	FE
NE	03/12/82	0930	66.00	30.09	01	15	09	00	03	FS
DE	03/12/82	0942	66.00	30.09	01	15	09	00	03	FS
M10A	03/12/82	0950	66.00	30.09	01	15	09	00	03	FS
DW	03/12/82	1006	68.00	30.09	02	15	07	06	04	C
SW	03/12/82	1020	68.00	30.09	02	15	07	06	04	C
DS	03/12/82	1032	68.00	30.09	02	15	07	06	04	C
SE	03/01/82	1040	68.00	30.09	02	15	07	06	04	C
M10	03/12/82	1050	68.00	30.09	02	15	07	06	04	C
M22	03/12/82	1149	66.00	30.05	02	15	07	06	04	C
M3	03/12/82	1310	66.00	30.05	02	15	07	06	04	C
M18	03/12/82	1440	69.00	30.00	02	15	09	00	02	FS
E5	03/12/82	1535	69.00	30.00	02	15	09	00	02	FS
E1	03/13/82	1212	78.00	30.20	03	15	08	06	07	C
E2	03/13/82	1335	83.00	30.20	03	15	04	08	07	C
E3	03/13/82	1432	79.00	30.20	03	15	04	08	07	C
E4	03/13/82	1455	79.00	30.20	03	15	04	08	07	C

Table I-2. SEA SURFACE CONDITIONS

SITE	DATE	TIME (CST)	WATER TEMP (DEGREES C)	SEA STATE	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	COLOR
E1	04/09/81	1140	23.00	01	00	00	00	03
E2	04/09/81	0855	22.00	01	00	02	18	03
E3	04/09/81	0745	21.00	03	01	02	18	03
E4	04/09/81	0710	21.00	03	01	02	18	03
E5	04/09/81	0607	21.00	03	01	02	18	03
M1	04/10/81	1410	20.90	03	02	02	11	03
M3	04/10/81	1450	22.00	03	02	02	11	03
M6	04/10/81	1511	22.00	03	02	02	11	03
M8	04/10/81	1250	22.00	03	02	12	11	03
M9	04/10/81	1230	23.00	03	02	12	11	03
M10	04/10/81	1215	22.00	03	02	12	11	03
M20	04/10/81	1658	22.00	04	03	02	11	03
M10A	04/10/81	1534	22.00	04	03	02	11	03
M11	04/10/81	1142	22.00	03	02	02	11	03
M21	04/10/81	1314	22.00	03	02	02	11	03
M12	04/10/81	1125	20.90	03	02	02	11	03
M22	04/10/81	1015	20.40	03	02	02	11	03
M13	04/10/81	1055	20.60	03	02	02	11	03
M23	04/10/81	0945	19.80	03	02	02	11	03
M15	04/10/81	1612	22.00	04	03	02	11	03
M18	04/10/81	1630	22.00	04	03	02	11	03
DE	05/21/81	1427	25.00	03	02	02	12	04
DN	05/21/81	0726	23.00	03	02	02	11	06
DS	05/21/81	0818	23.00	04	03	02	10	03
DW	05/21/81	1412	25.00	03	02	02	12	04
E1	05/22/81	0945	26.00	00	00	10	99	03
E2	05/22/81	0810	23.00	01	00	02	13	03
E3	05/22/81	0704	23.00	01	00	10	13	03
E4	05/22/81	0633	23.50	01	00	10	13	03
E5	05/22/81	0545	23.50	03	00	02	18	99
M3	05/21/81	1342	25.00	03	02	02	12	04
M10	05/21/81	0903	23.50	04	03	02	11	03
M10A	05/21/81	0754	23.10	04	03	02	11	06
M21	05/21/81	0637	22.80	02	01	02	11	06
M22	05/21/81	1100	24.50	03	03	02	12	04
M18	05/21/81	1457	99999	03	02	02	12	04
NE	05/21/81	0845	23.50	04	03	02	11	03
NW	05/21/81	0741	23.00	04	03	02	11	06
SE	05/21/81	0834	23.50	04	03	02	11	03
DE	06/08/81	1530	29.00	03	02	02	20	03
DN	06/08/81	0825	28.50	03	02	02	22	03
DS	06/08/81	1009	29.00	03	02	02	21	03
DW	06/08/81	1514	29.00	03	02	02	20	03
F1	06/10/81	1130	30.00	01	00	00	00	99
E2	06/10/81	1015	29.00	02	01	02	18	03
E3	06/10/81	0815	29.30	02	01	02	18	03
E4	06/10/81	0740	29.30	02	01	02	18	03
E5	06/10/81	0640	28.80	02	01	02	18	03
M3	06/08/81	1400	29.00	03	02	02	20	03
M10	06/08/81	0953	29.00	03	02	02	21	03
M10A	06/08/81	0852	28.50	03	02	02	20	03
M21	06/08/81	0715	28.50	03	02	02	20	03
M22	06/08/81	1132	28.00	03	02	02	25	03
M18	06/08/81	1600	29.50	02	02	02	22	03
NE	06/08/81	0926	28.50	03	02	02	20	03
NW	06/08/81	0840	28.50	03	02	02	22	03
SE	06/08/81	0907	29.00	03	02	02	20	03

Table I-2. SEA SURFACE CONDITIONS (Continued).

SITE	DATE	TIME (CST)	WATER TEMP (DEGREES C)	SEA STATE	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	COLOR
M10	07/01/81	1033	31.00	00	00	02	18	03
M10	07/16/81	1535	32.00	01	00	02	18	03
M10A	07/01/81	0905	28.80	01	00	02	18	03
M10A	07/16/81	1645	29.00	02	01	02	18	03
M21	07/01/81	0717	30.80	01	00	02	18	03
M21	07/16/81	0545	30.00	02	01	02	22	03
M22	07/01/81	1417	32.00	00	00	02	18	03
M22	07/16/81	1336	32.00	01	00	02	22	03
M18	07/01/81	1851	32.00	01	01	02	19	03
M18	07/16/81	0945	31.00	02	01	02	23	03
NE	07/01/81	1009	30.00	00	00	02	18	03
NE	07/16/81	1600	32.00	02	00	02	18	03
NW	07/01/81	0842	31.00	01	00	02	18	03
NW	07/16/81	1738	31.00	02	01	02	18	03
SE	07/01/81	0937	30.50	00	00	02	18	03
SE	07/16/81	1625	31.50	02	00	02	18	03
E3	07/02/81	9999	99999	99	99	99	99	99
E3	07/17/81	1130	31.80	01	00	02	99	03
E4	07/02/81	1000	29.70	00	00	10	49	03
E4	07/17/81	1015	31.00	01	00	02	99	03
E5	07/02/81	0911	30.00	02	01	02	18	03
E5	07/16/81	0825	29.80	01	00	02	99	03
M3	07/01/81	1727	32.00	01	00	02	18	03
M3	07/16/81	1115	31.00	01	00	02	22	03
DE	07/01/81	1825	31.00	01	01	02	19	03
DE	07/16/81	1018	31.00	02	01	02	23	03
DN	07/01/81	0758	30.00	01	00	02	18	03
DN	07/16/81	0630	29.80	02	01	02	22	03
DS	07/01/81	1049	31.00	00	00	02	18	03
DS	07/16/81	1510	32.00	01	00	02	22	03
DW	07/01/81	1810	31.50	01	01	02	19	03
DW	07/16/81	1038	31.00	02	01	02	23	03
E1	07/02/81	1430	30.20	00	00	10	49	03
E1	07/17/81	1500	32.00	01	00	02	99	03
E2	07/02/81	1300	29.40	00	00	10	49	03
E2	07/17/81	1310	31.50	01	00	02	99	03

Table I-2. SEA SURFACE CONDITIONS (Continued).

SITE	DATE	TIME (CST)	WATER TEMP (DEGREES C)	SEA STATE	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	COLOR
M21	08/07/81	0941	30.50	03	01	02	25	03
DN	08/07/81	1015	30.50	03	01	02	25	03
NW	08/07/81	1106	31.00	03	01	02	25	03
M10A	08/07/81	1122	31.00	03	01	02	25	03
SE	08/07/81	1200	31.00	03	01	02	25	03
NE	08/07/81	1220	31.00	03	01	02	25	03
M10	08/07/81	1237	31.00	03	01	02	25	03
DS	08/07/81	1252	30.80	03	01	02	25	03
M22	08/07/81	1534	31.00	03	02	02	23	03
M3	08/07/81	1730	31.00	03	02	02	27	03
DW	08/07/81	1757	31.00	03	02	02	27	03
DE	08/07/81	1811	30.80	03	02	02	27	03
M18	08/07/81	1836	30.80	03	02	02	27	03
E4	08/05/81	0805	29.00	02	01	02	45	03
E3	08/05/81	0830	29.90	02	01	02	45	03
E2	08/05/81	0935	30.50	01	01	02	01	03
E1	08/05/81	1045	37.00	00	00	02	99	03
E5	08/05/81	1921	30.00	01	01	02	01	03
E5	09/10/81	0440	27.00	02	00	02	02	03
E4	09/10/81	0640	26.00	02	00	02	02	03
E3	09/10/81	0720	26.00	02	00	02	02	03
E2	09/10/81	0835	26.50	01	00	02	02	03
E1	09/10/81	0925	27.50	01	00	02	02	03
M21	09/11/81	1010	28.00	03	02	02	09	03
DN	09/11/81	1057	28.50	03	02	02	09	03
NW	09/11/81	1135	29.00	03	02	02	09	03
M10A	09/11/81	1154	29.00	03	02	02	09	03
SE	09/11/81	1209	29.00	04	03	02	29	03
NE	09/11/81	1231	29.00	04	03	02	29	03
M10	09/11/81	1251	29.00	04	03	02	29	03
DS	09/11/81	1320	29.00	04	02	02	27	03
M22	09/11/81	1535	29.50	04	03	02	27	03
M3	09/11/81	1745	29.50	03	02	02	27	03
DW	09/11/81	1838	29.50	03	02	02	07	03
DE	09/11/81	1925	29.00	03	02	02	07	03
M18	09/11/81	1947	29.00	03	02	02	07	03
M21	10/02/81	0845	27.80	02	01	02	34	16
NW	10/02/81	0955	27.50	03	02	02	36	14
DW	10/02/81	1020	27.50	03	02	02	36	14
M10	10/02/81	1050	27.50	03	02	02	36	14
M10A	10/02/81	1115	27.50	03	02	02	36	14
DN	10/02/81	1130	27.50	03	02	02	36	14
NE	10/02/81	1155	27.50	03	02	02	36	14
DE	10/02/81	1220	27.50	03	02	02	30	14
SE	10/02/81	1235	27.50	03	02	02	30	14
DS	10/02/81	1305	28.00	03	02	02	30	14
M22	10/02/81	1438	28.00	03	02	02	07	12
M3	10/02/81	1630	29.00	02	01	02	04	06
M18	10/02/81	1820	28.00	02	01	02	06	08
E5	10/03/81	0832	24.00	01	00	02	09	14
E4	10/03/81	0925	25.00	01	00	02	06	17
E3	10/03/81	0951	24.20	01	00	02	06	17
E2	10/03/81	1125	25.50	01	00	02	06	14
E1	10/03/81	1210	26.00	01	00	02	09	17
M21	11/12/81	1010	18.00	99	01	99	99	03
NW	11/12/81	1050	18.50	99	01	99	09	03
DN	11/12/81	1100	18.00	99	01	99	09	03
NE	11/12/81	1107	18.50	99	01	99	09	03
DE	11/12/81	1135	18.50	99	02	99	09	03
M10A	11/12/81	1127	19.00	99	02	99	09	03
DW	11/12/81	1157	19.00	99	02	99	09	03
SW	11/12/81	1212	19.00	99	02	99	09	03
DS	11/12/81	1219	19.00	99	02	99	09	03

Table I-2. SEA SURFACE CONDITIONS (Continued).

SITE	DATE	TIME (CST)	WATER TEMP (DEGREES C)	SEA STATE	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	COLOR
SE	11/12/81	1228	19.00	99	02	99	09	03
M10	11/12/81	1242	19.00	99	02	99	09	03
M22	11/12/81	1418	19.50	99	02	99	09	03
M3	11/12/81	1534	19.50	99	02	99	09	03
M18	11/12/81	1740	19.00	99	02	99	09	03
E4	11/11/81	0817	99999	02	01	10	03	99
E3	11/11/81	0837	99999	00	01	10	03	99
E2	11/11/81	0954	99999	00	01	10	03	99
E1	11/11/81	1115	99999	00	00	10	03	99
M21	12/02/81	9999	99999	00	00	99	00	03
NW	12/02/81	9999	99999	00	00	99	00	03
DN	12/02/81	9999	99999	00	00	99	00	03
NE	12/02/81	9999	99999	00	00	99	00	03
DE	12/02/81	9999	99999	00	00	99	00	03
M10A	12/02/81	9999	99999	00	00	99	00	03
DW	12/02/81	9999	99999	00	00	99	00	03
SW	12/02/81	9999	99999	00	00	99	00	03
DS	12/02/81	9999	99999	00	00	99	00	03
SE	12/02/81	9999	99999	00	00	99	28	03
M10	12/02/81	9999	99999	00	00	99	30	03
M22	12/02/81	9999	99999	00	00	99	30	03
M3	12/02/81	9999	99999	00	00	99	30	03
M18	12/02/81	9999	99999	00	00	99	30	03
E5	12/02/81	9999	99999	01	01	02	36	15
E4	12/02/81	9999	99999	01	01	02	36	15
E3	12/02/81	9999	99999	01	01	02	36	15
E2	12/02/81	9999	99999	01	01	02	36	14
E1	12/02/81	9999	99999	00	00	00	00	17
M21	01/21/82	9999	99999	03	02	03	18	14
NW	01/21/82	9999	99999	03	02	03	18	14
DN	01/21/82	9999	99999	03	02	03	18	14
NE	01/21/82	9999	99999	03	02	03	18	14
DE	01/21/82	9999	99999	03	02	03	18	14
M10A	01/21/82	9999	99999	03	02	03	18	14
DW	01/21/82	9999	99999	03	02	03	18	14
SW	01/21/82	9999	99999	03	02	03	18	14
DS	01/21/82	9999	99999	03	02	03	18	14
SE	01/21/82	9999	99999	03	02	03	18	14
M10	01/21/82	9999	99999	03	02	03	18	14
M22	01/21/82	9999	99999	03	02	03	18	14
M3	01/21/82	9999	99999	04	03	02	18	99
M18	01/21/82	9999	99999	04	03	02	18	99
E5	01/11/82	9999	99999	02	00	02	01	14
E4	01/11/82	9999	99999	01	01	02	01	14
E3	01/11/82	9999	99999	99	99	99	99	99
E2	01/11/82	9999	99999	00	00	10	00	15
E1	01/11/82	9999	99999	00	00	10	00	15
M21	02/08/82	9999	99999	03	02	02	30	18
NW	02/08/82	9999	99999	04	03	02	30	18
DN	02/08/82	9999	99999	04	03	02	30	18
NE	02/08/82	9999	99999	04	03	02	30	18
DE	02/08/82	9999	99999	04	03	02	30	18
M10A	02/08/82	9999	99999	04	03	02	30	18
DW	02/08/82	9999	99999	04	03	02	30	18
SW	02/08/82	9999	99999	04	03	02	30	18
DS	02/08/82	9999	99999	04	04	02	30	18
SE	02/08/82	9999	99999	04	04	02	30	18
M10	02/08/82	9999	99999	04	04	02	30	18
M3	02/08/82	9999	99999	04	04	02	30	18
M18	02/08/82	9999	99999	04	04	02	30	18
E5	02/12/82	9999	99999	01	01	02	18	18
E4	02/12/82	9999	99999	02	02	02	18	18
E3	02/12/82	9999	99999	02	02	02	18	18
E2	02/12/82	9999	99999	01	01	02	18	18
E1	02/12/82	9999	99999	00	00	10	00	15

Table I-2. SEA SURFACE CONDITIONS (Continued).

SITE	DATE	TIME (CST)	WATER TEMP (DEGREES C)	SEA STATE	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	COLOR
M21	03/12/82	9999	99999	03	02	02	12	14
NW	03/12/82	9999	99999	03	02	02	12	14
DN	03/12/82	9999	99999	03	02	02	12	14
NE	03/12/82	9999	99999	03	02	02	12	14
DE	03/12/82	9999	99999	03	02	02	12	14
M10A	03/12/82	9999	99999	03	02	02	12	14
DW	03/12/82	9999	99999	03	02	02	12	14
SW	03/12/82	9999	99999	03	02	02	12	14
DS	03/12/82	9999	99999	03	02	02	12	14
SE	03/12/82	9999	99999	03	02	02	12	14
M10	03/12/82	9999	99999	03	02	02	12	14
M22	03/12/82	9999	99999	03	02	02	12	12
M3	03/12/82	9999	99999	03	02	02	12	12
M18	03/12/82	9999	99999	03	02	02	12	14
E5	03/12/82	9999	99999	03	02	02	12	14
E1	03/13/82	9999	99999	01	00	02	00	18
E2	03/13/82	9999	99999	03	02	02	36	18
E3	03/13/82	9999	99999	03	02	02	36	18
E4	03/13/82	9999	99999	02	01	02	36	15

Table I-3. OVER THE SIDE DATA

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
E1	04/09/81	1150	00.50	16.50	21.80	7.30
E1	04/09/81	1150	02.10	16.50	21.60	7.40
E1	04/09/81	1150	03.70	16.40	21.50	7.50
E2	04/09/81	0900	00.80	21.80	21.30	7.20
E2	04/09/81	0900	01.20	23.10	21.10	7.10
E3	04/09/81	0745	00.20	23.30	21.10	7.20
E3	04/09/81	0745	00.60	23.00	21.10	7.20
E4	04/09/81	0710	00.50	22.90	20.90	7.40
E4	04/09/81	0710	00.90	22.90	20.90	7.30
E5	04/09/81	0610	01.00	24.30	21.20	7.30
E5	04/09/81	0610	03.00	24.50	21.30	7.20
E5	04/09/81	0610	06.00	24.50	21.40	7.20
E6	04/09/81	0930	01.00	17.20	21.20	7.00
E6	04/09/81	0930	01.50	17.10	21.10	7.10
E6	04/09/81	0930	04.50	17.10	21.20	7.20
E7	04/09/81	1340	01.00	8.00	22.40	8.00
E7	04/09/81	1340	02.50	8.70	21.90	7.70
E7	04/09/81	1340	05.50	9.30	21.70	7.10
E8	04/09/81	1500	01.00	15.10	23.90	9.40
E8	04/09/81	1500	01.50	15.10	23.90	9.10
E9	04/09/81	1550	01.00	14.40	22.40	8.40
E9	04/09/81	1550	01.80	14.40	22.40	8.40
E10	04/09/81	1615	00.50	20.10	23.00	7.70
E10	04/09/81	1615	00.90	20.10	23.00	7.70
DE	05/21/81	1430	01.00	26.30	24.60	9.00
DE	05/21/81	1430	02.40	26.30	24.50	9.10
DE	05/21/81	1430	05.40	26.40	24.40	8.30
DE	05/21/81	1430	08.40	28.90	24.80	5.60
DN	05/21/81	0725	01.00	26.40	24.10	7.60
DN	05/21/81	0725	04.10	26.60	24.30	7.60
DN	05/21/81	0725	08.10	30.00	24.80	4.70
DS	05/21/81	0920	01.00	26.20	24.10	7.70
DS	05/21/81	0920	03.10	26.20	24.10	7.60
DS	05/21/81	0920	06.10	26.30	24.10	7.60
DS	05/21/81	0920	09.10	30.60	24.90	4.20
DW	05/21/81	1412	01.00	26.10	24.40	8.80
DW	05/21/81	1412	02.50	26.20	24.40	8.80
DW	05/21/81	1412	05.50	26.30	24.30	8.20
DW	05/21/81	1412	08.50	29.80	24.90	4.50
M1	05/21/81	1315	01.00	26.40	24.40	8.80
M1	05/21/81	1315	02.40	26.40	24.40	8.40
M1	05/21/81	1315	05.40	26.60	24.30	7.90
M1	05/21/81	1315	08.40	30.40	24.90	3.70
M3	05/21/81	1345	01.00	26.20	24.50	8.70
M3	05/21/81	1345	02.40	26.20	24.50	8.60
M3	05/21/81	1345	05.40	26.80	24.40	8.00
M3	05/21/81	1345	08.40	30.50	24.90	3.90
M10A	05/21/81	0754	02.40	26.40	24.10	7.40
M10A	05/21/81	0754	05.40	26.50	24.10	7.40
M10A	05/21/81	0754	08.40	30.70	24.80	4.00
M11	05/21/81	0945	01.00	26.30	24.10	7.90
M11	05/21/81	0945	03.40	26.30	24.10	7.90
M11	05/21/81	0945	06.40	26.40	24.10	7.90
M11	05/21/81	0945	09.40	31.10	25.00	4.30
M21	05/21/81	0640	01.00	27.60	24.00	6.70
M21	05/21/81	0640	01.50	27.70	24.00	6.70
M21	05/21/81	0640	04.50	28.20	24.00	6.50
M22	05/21/81	1100	01.00	30.50	24.30	8.00
M22	05/21/81	1100	04.30	30.50	24.30	7.90
M22	05/21/81	1100	07.30	30.70	24.30	7.40
M22	05/21/81	1100	10.30	31.60	24.60	4.80
M23	05/21/81	1137	01.00	31.70	24.40	7.40
M23	05/21/81	1137	03.40	31.60	24.30	7.40
M23	05/21/81	1137	06.40	31.90	24.30	7.00
M23	05/21/81	1137	09.40	31.90	24.30	6.90

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M10	05/21/81	0905	01.00	26.20	24.10	7.80
M10	05/21/81	0905	02.80	26.30	24.10	7.60
M10	05/21/81	0905	05.80	26.90	24.40	7.30
M10	05/21/81	0905	08.80	30.60	24.90	3.90
M20	05/21/81	1531	01.00	26.40	24.60	9.30
M20	05/21/81	1531	02.80	26.40	24.60	9.30
M20	05/21/81	1531	05.80	26.50	24.40	8.70
M20	05/21/81	1531	08.80	28.20	24.70	5.70
M10A	05/21/81	0754	01.00	26.40	24.10	7.40
M15	05/21/81	1443	01.00	26.30	24.60	9.40
M15	05/21/81	1443	02.80	26.30	24.60	9.40
M15	05/21/81	1443	05.80	26.40	24.40	8.60
M15	05/21/81	1443	08.80	28.10	24.50	6.60
M18	05/21/81	1500	01.00	26.50	24.60	9.30
M18	05/21/81	1500	02.80	26.50	24.60	9.20
M18	05/21/81	1500	05.80	26.50	24.40	8.20
M18	05/21/81	1500	08.80	28.30	24.80	6.20
NE	05/21/81	0845	01.00	26.30	24.00	7.80
NE	05/21/81	0845	02.10	26.30	24.00	7.90
NE	05/21/81	0845	05.10	26.30	24.00	7.70
NE	05/21/81	0845	08.10	29.00	24.70	7.10
NW	05/21/81	0741	01.00	26.30	24.00	7.60
NW	05/21/81	0741	02.10	26.30	24.10	7.60
NW	05/21/81	0741	05.10	26.70	24.20	7.50
NW	05/21/81	0741	08.10	30.40	24.70	4.30
SE	05/21/81	0835	01.00	26.20	24.00	7.70
SE	05/21/81	0835	02.80	26.30	24.00	7.80
SE	05/21/81	0835	05.80	26.50	24.10	7.40
SE	05/21/81	0835	08.80	30.40	24.80	4.30
M6	05/21/81	1400	01.00	26.10	24.50	8.90
M6	05/21/81	1400	02.80	26.20	24.40	8.80
M6	05/21/81	1400	05.80	26.30	24.30	8.20
M6	05/21/81	1400	08.80	28.80	24.80	6.20
M9	05/21/81	0715	01.00	26.40	24.10	7.70
M9	05/21/81	0715	02.10	26.40	24.10	7.60
M9	05/21/81	0715	05.10	26.60	24.20	7.60
M9	05/21/81	0715	08.10	30.40	24.80	4.10
DE	06/08/81	1530	1.00	22.80	29.40	8.00
DE	06/08/81	1530	2.40	28.90	27.80	5.40
DE	06/08/81	1530	5.40	29.80	27.60	4.40
DE	06/08/81	1530	8.40	30.00	27.60	4.00
DN	06/08/81	0825	1.00	21.70	28.30	6.50
DN	06/08/81	0825	2.10	28.30	27.90	4.70
DN	06/08/81	0825	5.10	28.70	27.80	4.90
DN	06/08/81	0825	8.10	30.00	27.60	4.60
DS	06/08/81	1009	1.00	21.60	28.60	6.90
DS	06/08/81	1009	3.10	25.90	28.10	5.40
DS	06/08/81	1009	6.10	29.80	27.60	4.20
DS	06/08/81	1009	9.10	29.90	27.60	4.20
DW	06/08/81	1515	1.00	23.10	29.30	7.70
DW	06/08/81	1515	2.80	24.10	28.60	6.70
DW	06/08/81	1515	5.80	29.30	27.70	5.60
DW	06/08/81	1515	8.80	30.00	27.60	3.90
M1	06/08/81	1335	1.00	24.00	29.00	8.40
M1	06/08/81	1335	2.40	24.00	28.80	8.10
M1	06/08/81	1335	5.40	28.90	27.80	4.70
M1	06/08/81	1335	8.40	29.50	27.60	4.00
M3	06/08/81	1400	1.00	23.10	29.10	7.20
M3	06/08/81	1400	2.40	23.30	28.70	7.00
M3	06/08/81	1400	5.40	29.30	27.70	5.90
M3	06/08/81	1400	8.40	29.50	27.60	4.50
M6	06/08/81	1420	1.00	23.00	29.20	7.60
M6	06/08/81	1420	2.80	23.00	28.60	7.70
M6	06/08/81	1420	5.80	29.30	27.70	5.50
M6	06/08/81	1420	8.80	29.80	27.50	3.90

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M9	06/08/81	0805	1.00	21.70	28.30	6.50
M9	06/08/81	0805	2.10	22.10	28.20	6.40
M9	06/08/81	0805	5.10	29.40	27.80	5.00
M9	06/08/81	0805	8.10	30.20	27.60	4.60
M10	06/08/81	0953	1.00	21.50	28.60	6.90
M10	06/08/81	0953	2.80	21.90	28.50	6.80
M10	06/08/81	0953	5.80	29.00	27.90	5.20
M10	06/08/81	0953	8.80	30.00	27.60	4.20
M10A	06/08/81	0855	1.00	21.90	28.40	6.40
M10A	06/08/81	0855	2.40	26.90	27.90	5.10
M10A	06/08/81	0855	5.40	29.30	27.80	4.90
M10A	06/08/81	0855	8.40	30.00	27.60	4.70
M11	06/08/81	1030	1.00	22.30	28.60	6.90
M11	06/08/81	1030	3.40	22.30	28.50	6.70
M11	06/08/81	1030	6.40	29.10	27.80	5.80
M11	06/08/81	1030	9.40	30.00	27.60	3.90
M21	06/08/81	0715	1.00	24.30	28.20	5.90
M21	06/08/81	0715	1.50	24.10	28.20	5.60
M21	06/08/81	0715	4.50	26.30	27.90	4.70
M22	06/08/81	1130	1.00	26.60	28.50	6.80
M22	06/08/81	1130	4.30	26.80	28.20	6.60
M22	06/08/81	1130	7.30	29.10	27.60	5.50
M22	06/08/81	1130	10.30	31.50	26.90	4.40
M23	06/08/81	1215	1.00	26.70	28.70	7.70
M23	06/08/81	1215	3.40	27.00	28.10	7.00
M23	06/08/81	1215	6.40	31.10	27.00	5.50
M23	06/08/81	1215	9.40	32.50	26.70	4.50
M15	06/08/81	1548	1.00	22.80	29.50	8.10
M15	06/08/81	1548	2.80	23.80	28.80	6.90
M15	06/08/81	1548	5.80	29.40	27.70	5.60
M15	06/08/81	1548	8.80	30.10	27.50	3.80
M18	06/08/81	1600	1.00	22.70	29.60	8.30
M18	06/08/81	1600	2.80	22.80	29.20	8.20
M18	06/08/81	1600	5.80	29.20	27.70	5.60
M18	06/08/81	1600	8.80	29.90	27.60	4.30
NE	06/08/81	0925	1.00	21.90	28.40	6.50
NE	06/08/81	0925	2.10	22.10	28.10	6.20
NE	06/08/81	0925	5.10	28.10	27.90	4.70
NE	06/08/81	0925	8.10	30.00	27.50	4.50
NW	06/08/81	0840	1.00	21.70	28.40	6.50
NW	06/08/81	0840	2.10	21.80	28.30	6.50
NW	06/08/81	0840	5.10	27.80	27.90	4.80
NW	06/08/81	0840	8.10	29.90	27.60	5.10
SE	06/08/81	0907	1.00	21.40	28.50	6.70
SE	06/08/81	0907	2.80	22.10	28.30	6.40
SE	06/08/81	0907	5.80	29.70	27.60	4.20
SE	06/08/81	0907	8.80	29.90	27.60	4.60
DE	07/16/81	1120	1.00	20.80	31.30	8.90
DE	07/16/81	1120	2.40	22.10	30.90	6.70
DE	07/16/81	1120	5.40	26.90	30.20	6.70
DE	07/16/81	1120	8.40	29.30	29.50	3.40
DE	07/16/81	1120	9.40	30.00	29.00	0.90
DN	07/16/81	0730	1.00	21.00	30.90	9.20
DN	07/16/81	0730	2.10	21.10	31.00	8.50
DN	07/16/81	0730	5.10	26.90	32.30	4.90
DN	07/16/81	0730	8.10	27.50	29.60	4.90
DN	07/16/81	0730	9.10	29.00	29.10	1.60
DS	07/16/81	1611	1.00	20.60	31.30	9.20
DS	07/16/81	1611	3.10	22.50	31.00	8.60
DS	07/16/81	1611	6.10	26.50	30.00	6.20
DS	07/16/81	1611	9.10	29.00	28.70	0.70
DS	07/16/81	1611	10.10	30.30	28.50	0.80
DW	07/16/81	1140	1.00	20.50	31.30	7.90
DW	07/16/81	1140	2.80	20.90	31.00	8.70
DW	07/16/81	1140	5.80	26.80	30.20	6.70
DW	07/16/81	1140	8.80	27.90	29.20	1.90
DW	07/16/81	1140	9.80	29.90	28.60	0.70

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
E1	07/02/81	1530	0.50	6.30	30.20	4.80
E1	07/02/81	1530	2.10	6.30	30.20	5.00
E2	07/02/81	1400	0.80	7.10	29.40	5.30
E2	07/02/81	1400	1.20	7.20	29.50	5.90
E4	07/02/81	1100	0.50	11.50	29.70	5.40
E4	07/02/81	1100	0.90	11.60	29.60	5.60
E5	07/02/81	1025	1.00	12.90	30.30	6.10
E5	07/02/81	1025	3.00	13.00	30.30	6.70
E5	07/02/81	1025	6.00	13.70	30.20	6.70
E6	07/02/81	1500	1.00	0.70	30.20	5.00
E6	07/02/81	1500	1.50	0.70	30.20	4.80
E6	07/02/81	1500	4.50	0.70	30.20	5.00
E7	07/02/81	1625	1.00	1.50	29.20	5.10
E7	07/02/81	1625	2.50	2.00	29.50	5.10
E7	07/02/81	1625	5.50	2.20	29.50	5.50
E8	07/02/81	1745	1.00	1.10	30.00	5.60
E8	07/02/81	1745	1.50	1.10	29.90	5.80
E9	07/02/81	1810	1.00	3.40	29.20	6.10
E9	07/02/81	1810	1.80	3.40	29.10	7.20
E10	07/02/81	1850	0.50	5.20	29.50	6.60
E10	07/02/81	1850	0.90	5.30	29.50	6.80
M1	07/16/81	1248	1.00	20.90	31.40	8.60
M1	07/16/81	1248	2.40	21.70	30.80	7.60
M1	07/16/81	1248	5.40	26.50	30.10	4.80
M1	07/16/81	1248	8.40	30.20	28.60	0.70
M1	07/16/81	1248	9.40	30.40	28.60	0.70
M3	07/16/81	1217	1.00	20.70	31.00	7.40
M3	07/16/81	1217	2.40	21.30	30.70	6.60
M3	07/16/81	1217	5.40	26.10	30.10	5.00
M3	07/16/81	1217	8.40	27.60	29.40	1.60
M3	07/16/81	1217	9.40	30.00	28.60	0.70
M6	07/16/81	1200	1.00	20.60	31.30	7.80
M6	07/16/81	1200	2.80	21.00	30.80	6.90
M6	07/16/81	1200	5.80	26.80	30.20	6.60
M6	07/16/81	1200	8.80	27.80	29.70	2.60
M6	07/16/81	1200	9.80	30.00	28.60	0.80
M10	07/16/81	0820	1.00	21.60	30.60	7.90
M10	07/16/81	0820	2.80	23.50	30.50	7.70
M10	07/16/81	0820	5.80	28.20	29.80	7.10
M10	07/16/81	0820	8.80	28.70	28.90	2.90
M10	07/16/81	0820	9.80	30.20	28.60	0.70
M20	07/16/81	1025	1.00	21.00	31.10	9.10
M20	07/16/81	1025	2.80	21.10	30.80	7.80
M20	07/16/81	1025	5.80	26.80	30.20	6.80
M20	07/16/81	1025	8.80	27.40	29.60	5.00
M20	07/16/81	1025	9.80	31.00	28.50	1.10
M10A	07/16/81	1747	1.00	20.30	32.00	8.90
M10A	07/16/81	1747	2.40	20.40	31.90	9.10
M10A	07/16/81	1747	5.40	24.70	30.60	7.60
M10A	07/16/81	1747	8.40	27.00	29.70	2.50
M10A	07/16/81	1747	9.40	28.70	29.10	1.70
M11	07/16/81	1535	1.00	20.20	32.00	8.10
M11	07/16/81	1535	3.40	25.20	30.60	7.90
M11	07/16/81	1535	6.40	26.60	30.00	5.10
M11	07/16/81	1535	9.40	30.90	28.40	0.70
M11	07/16/81	1535	10.40	31.00	28.40	0.70
M21	07/16/81	0650	1.00	21.80	30.70	6.80
M21	07/16/81	0650	1.50	21.80	30.70	6.80

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M21	07/16/81	0650	4.50	24.10	30.40	4.20
M21	07/16/81	0650	5.50	25.80	29.80	1.70
M12	07/16/81	1540	1.00	19.80	31.90	8.00
M12	07/16/81	1540	4.00	25.00	30.80	7.70
M12	07/16/81	1540	7.00	26.80	30.00	5.60
M12	07/16/81	1540	10.00	30.60	28.60	0.70
M12	07/16/81	1540	11.00	31.30	28.60	0.80
M22	07/16/81	1436	1.00	23.60	31.00	7.60
M22	07/16/81	1436	4.30	26.40	30.30	6.10
M22	07/16/81	1436	7.30	26.50	30.10	6.10
M22	07/16/81	1436	10.30	27.60	29.40	5.00
M22	07/16/81	1436	11.30	29.60	29.00	1.60
M13	07/16/81	1513	1.00	21.00	30.70	7.60
M13	07/16/81	1513	4.60	26.50	30.30	6.10
M13	07/16/81	1513	7.60	27.10	29.90	4.80
M13	07/16/81	1513	10.60	28.20	29.20	2.20
M13	07/16/81	1513	11.60	31.00	28.50	0.70
M23	07/16/81	1403	1.00	22.10	31.10	7.60
M23	07/16/81	1403	3.40	25.60	30.20	6.60
M23	07/16/81	1403	6.40	26.30	30.30	6.50
M23	07/16/81	1403	9.40	27.40	29.50	3.90
M23	07/16/81	1403	10.40	32.90	28.40	0.70
M15	07/16/81	1104	1.00	20.60	31.20	8.40
M15	07/16/81	1104	2.80	21.30	31.00	8.60
M15	07/16/81	1104	5.80	26.90	30.20	6.90
M15	07/16/81	1104	8.80	28.10	29.20	2.20
M15	07/16/81	1104	9.80	30.40	28.60	0.70
M18	07/16/81	1048	1.00	20.80	31.30	9.10
M18	07/16/81	1048	2.80	21.30	31.00	8.60
M18	07/16/81	1048	5.80	26.80	30.10	6.90
M18	07/16/81	1048	8.80	28.00	29.20	3.40
M18	07/16/81	1048	9.80	30.30	28.60	0.80
NE	07/16/81	1700	1.00	20.50	32.10	9.00
NE	07/16/81	1700	2.10	21.30	31.20	8.20
NE	07/16/81	1700	5.10	26.30	30.30	7.00
NE	07/16/81	1700	8.10	29.60	29.80	3.70
NE	07/16/81	1700	9.10	29.60	29.90	3.50
NW	07/16/81	1842	1.00	20.40	31.90	8.70
NW	07/16/81	1842	2.10	20.50	31.60	8.90
NW	07/16/81	1842	5.10	25.20	30.40	7.80
NW	07/16/81	1842	8.10	27.20	29.50	1.80
NW	07/16/81	1842	9.10	30.30	29.50	3.60
SE	07/16/81	1730	1.00	20.40	32.10	8.90
SE	07/16/81	1730	2.80	21.30	31.00	7.90
SE	07/16/81	1730	5.80	26.30	30.00	4.30
SE	07/16/81	1730	8.80	29.70	29.50	3.20
SE	07/16/81	1730	9.80	29.90	28.70	0.70
E4	08/06/81	0805	0.50	13.90	29.60	5.70
E4	08/06/81	0805	0.90	16.40	30.30	1.30
E3	08/06/81	0830	0.20	15.00	29.40	6.40
E3	08/06/81	0830	0.60	15.10	29.40	6.60
E2	08/06/81	0935	0.80	11.50	30.50	6.10
E2	08/06/81	0935	1.20	11.70	30.60	6.70
E6	08/06/81	1007	1.00	3.50	31.20	5.00
E6	08/06/81	1007	1.50	3.80	31.20	4.90
E6	08/06/81	1007	4.50	4.10	31.10	8.00
E6	08/06/81	1007	5.50	4.10	31.10	4.90
E1	08/06/81	1045	0.50	1.20	31.30	5.70
E1	08/06/81	1045	2.10	1.20	31.00	5.50
E1	08/06/81	1045	3.70	1.20	31.00	5.60
E1	08/06/81	1045	4.70	1.20	31.00	5.60
E7	08/06/81	1312	1.00	0.70	30.90	5.70
E7	08/06/81	1312	2.50	0.80	30.60	5.50
E7	08/06/81	1312	5.50	1.00	30.30	4.90
E7	08/06/81	1312	6.50	1.00	30.30	5.00
E8	08/06/81	1415	1.00	3.60	31.00	7.90
E8	08/06/81	1415	1.50	3.70	30.90	7.90

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
E9	08/06/81	1500	1.00	5.30	31.00	6.80
E9	08/06/81	1500	1.80	5.60	30.40	3.80
E10	08/06/81	1545	0.50	3.50	31.30	7.40
E10	08/06/81	1545	0.90	3.80	30.70	6.60
E5	08/06/81	1917	1.00	16.00	30.50	5.70
E5	08/06/81	1917	3.00	16.40	30.50	5.60
E5	08/06/81	1917	6.00	16.80	30.60	5.60
E5	08/06/81	1917	7.00	16.90	30.60	5.70
M21	08/07/81	0941	1.00	27.30	30.50	4.60
M21	08/07/81	0941	1.50	27.30	30.60	4.70
M21	08/07/81	0941	4.50	27.40	30.50	4.90
M21	08/07/81	0941	5.50	27.40	30.50	5.00
DN	08/07/81	1010	1.00	27.30	30.60	5.60
DN	08/07/81	1010	2.10	27.30	30.60	5.50
DN	08/07/81	1010	5.10	27.40	30.60	5.40
DN	08/07/81	1010	8.10	29.70	30.60	0.70
DN	08/07/81	1010	9.10	31.40	30.60	1.00
M9	08/07/81	1033	1.00	27.20	30.60	5.60
M9	08/07/81	1033	2.10	27.20	30.60	5.60
M9	08/07/81	1033	5.10	27.30	30.60	5.40
M9	08/07/81	1033	8.10	29.90	30.60	1.00
M9	08/07/81	1033	9.10	31.50	30.60	2.70
M8	08/07/81	1052	1.00	27.20	30.70	5.60
M8	08/07/81	1052	3.90	27.20	30.60	5.60
M8	08/07/81	1052	6.90	30.10	30.40	0.10
M8	08/07/81	1052	7.90	30.10	30.40	0.30
M10A	08/07/81	1137	1.00	27.20	30.70	5.60
M10A	08/07/81	1137	2.40	27.20	30.70	5.50
M10A	08/07/81	1137	5.40	27.50	30.60	4.80
M10A	08/07/81	1137	8.40	29.70	30.70	1.50
M10A	08/07/81	1137	9.40	31.50	30.70	3.00
SE	08/07/81	1200	1.00	27.20	30.80	5.60
SE	08/07/81	1200	2.80	27.20	30.70	5.60
SE	08/07/81	1200	5.80	27.20	30.80	5.10
SE	08/07/81	1200	8.80	29.50	30.80	2.20
SE	08/07/81	1200	9.80	30.10	30.50	0.60
NE	08/07/81	1210	1.00	27.20	30.80	5.70
NE	08/07/81	1210	2.10	27.20	30.80	5.70
NE	08/07/81	1210	5.10	27.50	30.70	4.80
NE	08/07/81	1210	8.10	29.60	30.70	1.20
NE	08/07/81	1210	9.10	31.10	30.60	1.00
M10	08/07/81	1233	1.00	27.20	30.80	5.60
M10	08/07/81	1233	2.80	27.20	30.70	5.80
M10	08/07/81	1233	5.80	27.30	30.60	5.10
M10	08/07/81	1233	8.80	29.60	30.60	2.00
M10	08/07/81	1233	9.80	30.40	30.50	1.00
DS	08/07/81	1253	1.00	27.30	30.80	5.70
DS	08/07/81	1253	3.10	27.20	30.80	5.50
DS	08/07/81	1253	6.10	29.40	30.80	3.80
DS	08/07/81	1253	9.10	29.60	30.70	2.80
DS	08/07/81	1253	10.10	30.20	30.50	1.40
M11	08/07/81	1311	1.00	27.30	30.70	5.90
M11	08/07/81	1311	3.40	27.40	30.70	5.80
M11	08/07/81	1311	6.40	29.00	30.80	5.80
M11	08/07/81	1311	9.40	29.60	30.80	3.30
M11	08/07/81	1311	10.40	29.60	30.70	3.00
M12	08/07/81	1400	1.00	27.50	30.70	6.40
M12	08/07/81	1400	4.00	27.50	30.70	6.20
M12	08/07/81	1400	7.00	29.20	30.70	5.00

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M12	08/07/81	1400	10.00	29.30	30.70	3.70
M12	08/07/81	1400	11.00	29.30	30.70	3.80
M13	08/07/81	1502	1.00	27.70	30.80	6.60
M13	08/07/81	1502	4.60	27.50	30.50	6.10
M13	08/07/81	1502	7.60	30.00	30.90	2.90
M13	08/07/81	1502	10.60	30.00	30.90	2.80
M13	08/07/81	1502	11.60	30.00	30.80	3.10
M22	08/07/81	1535	1.00	27.60	30.60	6.50
M22	08/07/81	1535	4.30	28.20	30.40	6.40
M22	08/07/81	1535	7.30	28.80	30.30	5.90
M22	08/07/81	1535	10.30	30.40	30.70	3.90
M22	08/07/81	1535	11.30	30.40	30.70	4.20
M23	08/07/81	1600	1.00	28.90	30.60	6.30
M23	08/07/81	1600	3.40	29.00	30.60	6.30
M23	08/07/81	1600	6.40	29.80	30.60	5.40
M23	08/07/81	1600	9.40	30.90	30.60	3.40
M23	08/07/81	1600	10.40	31.00	30.60	3.90
M1	08/07/81	1710	1.00	27.50	30.70	6.80
M1	08/07/81	1710	2.40	27.50	30.70	6.80
M1	08/07/81	1710	5.40	29.80	30.90	3.80
M1	08/07/81	1710	8.40	30.30	30.90	3.40
M1	08/07/81	1710	9.40	30.30	30.90	3.80
M3	08/07/81	1731	1.00	27.30	30.70	6.20
M3	08/07/81	1731	2.40	27.20	30.70	6.20
M3	08/07/81	1731	5.40	27.40	30.70	6.10
M3	08/07/81	1731	8.40	29.80	30.80	2.80
M3	08/07/81	1731	9.40	29.80	30.70	3.20
M6	08/07/81	1745	1.00	27.20	30.70	6.10
M6	08/07/81	1745	2.80	27.20	30.70	6.10
M6	08/07/81	1745	5.80	27.30	30.70	6.00
M6	08/07/81	1745	8.80	29.80	30.80	2.80
M6	08/07/81	1745	9.80	29.80	30.80	2.80
DW	08/07/81	1800	1.00	27.30	30.70	6.20
DW	08/07/81	1800	2.80	27.30	30.70	6.20
DW	08/07/81	1800	5.80	27.50	30.70	6.10
DW	08/07/81	1800	8.80	29.80	30.70	2.50
DW	08/07/81	1800	9.80	30.40	30.60	1.90
DE	08/07/81	1810	1.00	27.30	30.80	6.30
DE	08/07/81	1810	2.40	27.30	30.80	6.40
DE	08/07/81	1810	5.40	27.40	30.80	6.30
DE	08/07/81	1810	8.40	30.10	30.60	2.00
DE	08/07/81	1810	9.40	31.00	30.50	0.20
M15	08/07/81	1825	1.00	27.30	30.80	6.50
M15	08/07/81	1825	2.80	27.30	30.80	6.40
M15	08/07/81	1825	5.80	27.40	30.80	6.20
M15	08/07/81	1825	8.80	29.70	30.80	3.20
M15	08/07/81	1825	9.80	29.80	30.60	2.80
M18	08/07/81	1839	1.00	27.40	30.80	6.10
M18	08/07/81	1839	2.80	27.40	30.80	6.10
M18	08/07/81	1839	5.80	27.40	30.80	6.10
M18	08/07/81	1839	8.80	29.70	30.70	2.50
M18	08/07/81	1839	9.80	29.70	30.60	1.70
M20	08/07/81	1901	1.00	27.50	30.80	5.90
M20	08/07/81	1901	2.80	27.50	30.80	5.80
M20	08/07/81	1901	5.80	29.60	30.80	1.70
M20	08/07/81	1901	8.80	29.80	30.80	1.10
M20	08/07/81	1901	9.80	29.80	30.70	1.10
NW	08/07/81	2106	1.00	27.20	30.70	5.50
NW	08/07/81	2106	2.10	27.20	30.70	5.50
NW	08/07/81	2106	5.10	27.20	30.60	5.20
NW	08/07/81	2106	8.10	29.80	30.70	1.40
NW	08/07/81	2106	9.10	31.70	30.70	2.80

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
E5	09/10/81	0445	1.00	22.60	28.00	6.20
E5	09/10/81	0445	3.00	22.60	28.10	6.00
E5	09/10/81	0445	6.00	22.70	28.20	6.60
E5	09/10/81	0445	7.00	22.80	28.30	6.80
E4	09/10/81	0646	0.50	18.60	26.50	5.80
E4	09/10/81	0646	0.90	18.60	26.40	5.90
E3	09/10/81	0720	0.20	18.30	25.10	6.50
E3	09/10/81	0720	0.60	18.30	25.70	6.70
E2	09/10/81	0836	0.80	18.00	26.50	5.40
E2	09/10/81	0836	1.20	18.00	26.50	5.30
E2	09/10/81	0836	1.50	18.00	26.50	5.70
E6	09/10/81	0925	0.00	17.30	28.30	5.10
E6	09/10/81	0925	1.00	17.30	28.30	5.10
E6	09/10/81	0925	1.50	17.40	28.30	4.80
E6	09/10/81	0925	4.50	17.40	28.30	4.90
E6	09/10/81	0925	5.50	17.40	28.30	5.00
E1	09/10/81	0922	0.50	5.50	27.50	5.90
E1	09/10/81	0922	2.10	5.50	27.50	5.80
E1	09/10/81	0922	3.70	5.70	27.50	5.90
E7	09/10/81	1110	1.00	3.00	28.30	5.40
E7	09/10/81	1110	2.50	4.50	28.50	4.00
E7	09/10/81	1110	5.50	11.20	29.80	3.10
E7	09/10/81	1110	6.50	12.40	29.90	3.00
E8	09/10/81	1200	0.00	9.40	27.90	6.90
E8	09/10/81	1200	1.00	10.20	27.70	6.40
E8	09/10/81	1200	1.50	12.80	29.20	5.40
E9	09/10/81	1235	0.00	8.10	27.30	6.20
E9	09/10/81	1235	1.00	8.10	27.20	6.10
E9	09/10/81	1235	1.80	8.10	27.10	6.00
E10	09/10/81	1330	0.00	7.30	27.80	6.70
E10	09/10/81	1330	0.50	7.30	27.60	6.40
E10	09/10/81	1330	0.90	7.30	27.40	6.70
M21	09/11/81	1010	0.00	22.80	28.00	6.10
M21	09/11/81	1010	1.00	22.80	28.00	6.10
M21	09/11/81	1010	1.50	22.80	28.10	6.10
M21	09/11/81	1010	4.50	22.80	28.00	6.10
M21	09/11/81	1010	5.50	22.80	28.00	6.00
M8	09/11/81	1038	0.00	24.10	28.30	6.60
M8	09/11/81	1038	1.00	24.10	28.30	6.60
M8	09/11/81	1038	3.90	24.10	28.30	6.50
M8	09/11/81	1038	6.90	24.40	28.40	6.30
M8	09/11/81	1038	7.90	25.70	28.80	2.70
DN	09/11/81	1100	1.00	24.90	28.50	6.80
DN	09/11/81	1100	2.10	24.90	28.50	6.80
DN	09/11/81	1100	5.10	25.00	28.50	6.60
DN	09/11/81	1100	8.10	26.50	28.90	5.30
DN	09/11/81	1100	9.10	27.50	29.10	1.90
M9	09/11/81	1116	1.00	24.70	28.50	6.80
M9	09/11/81	1116	2.10	24.70	28.50	6.70
M9	09/11/81	1116	5.10	24.90	28.50	6.60
M9	09/11/81	1116	8.10	26.60	29.00	2.90
M9	09/11/81	1116	9.10	26.70	29.00	2.30
NW	09/11/81	1136	1.00	25.20	28.60	6.80
NW	09/11/81	1136	2.10	25.30	28.60	6.80
NW	09/11/81	1136	5.10	25.40	28.60	6.50
NW	09/11/81	1136	8.10	25.90	29.00	4.10
NW	09/11/81	1136	9.10	28.10	29.10	1.50
M10A	09/11/81	1155	1.00	25.60	28.60	6.70
M10A	09/11/81	1155	2.40	25.60	28.60	6.70
M10A	09/11/81	1155	5.40	25.70	28.70	6.40
M10A	09/11/81	1155	8.40	27.10	28.90	4.20
M10A	09/11/81	1155	9.40	28.00	29.20	1.60
SE	09/11/81	1211	1.00	25.70	28.70	7.00
SE	09/11/81	1211	2.80	25.70	28.70	6.90
SE	09/11/81	1211	5.80	26.00	28.70	6.50
SE	09/11/81	1211	8.80	26.30	28.80	5.10
SE	09/11/81	1211	9.80	27.80	29.10	2.70

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
DS	09/11/81	1319	6.10	26.00	28.70	6.70
DS	09/11/81	1319	9.10	27.30	28.80	4.50
DS	09/11/81	1319	10.10	28.00	29.00	2.20
M11	09/11/81	1352	1.00	26.30	28.80	7.00
M11	09/11/81	1352	3.40	26.30	28.80	6.80
M11	09/11/81	1352	6.40	26.50	28.80	6.40
M11	09/11/81	1352	9.40	27.80	29.10	3.20
M11	09/11/81	1352	10.40	27.90	29.20	2.00
M12	09/11/81	1411	0.00	27.50	28.90	6.10
M12	09/11/81	1411	1.00	27.50	28.90	6.20
M12	09/11/81	1411	4.00	27.50	28.90	6.00
M12	09/11/81	1411	7.00	27.60	28.90	5.60
M12	09/11/81	1411	10.00	27.80	29.10	4.60
M12	09/11/81	1411	11.00	28.00	29.10	3.10
M13	09/11/81	1500	0.00	28.50	28.80	6.30
M13	09/11/81	1500	1.00	28.50	28.80	6.30
M13	09/11/81	1500	4.60	28.50	28.80	6.30
M13	09/11/81	1500	7.60	28.50	28.80	6.10
M13	09/11/81	1500	10.60	28.60	28.80	6.10
M13	09/11/81	1500	11.60	28.50	28.80	6.10
M22	09/11/81	1533	1.00	28.70	28.80	6.20
M22	09/11/81	1533	4.30	28.70	28.80	6.10
M22	09/11/81	1533	7.30	28.70	28.80	6.10
M22	09/11/81	1533	10.30	28.70	28.80	6.10
M22	09/11/81	1533	11.30	28.70	28.80	6.00
M23	09/11/81	1604	1.00	28.80	28.90	6.70
M23	09/11/81	1604	3.40	28.80	28.90	6.50
M23	09/11/81	1604	6.40	28.90	28.90	6.50
M23	09/11/81	1604	9.40	28.90	28.90	6.40
M23	09/11/81	1604	10.40	28.90	28.90	6.30
M1	09/11/81	1715	1.00	24.50	28.70	8.00
M1	09/11/81	1715	2.40	24.60	28.70	7.90
M1	09/11/81	1715	5.40	24.70	28.60	7.50
M1	09/11/81	1715	8.40	25.10	28.80	5.50
M1	09/11/81	1715	9.40	26.50	29.00	2.20
M3	09/11/81	1748	1.00	25.00	28.80	7.90
M3	09/11/81	1748	2.40	25.00	28.80	7.60
M3	09/11/81	1748	5.40	25.10	28.80	7.20
M3	09/11/81	1748	8.40	25.30	28.80	6.30
M3	09/11/81	1748	9.40	25.30	28.80	5.90
M6	09/11/81	1815	1.00	25.40	28.70	7.60
M6	09/11/81	1815	2.80	25.50	28.70	7.60
M6	09/11/81	1815	5.80	25.40	28.70	7.40
M6	09/11/81	1815	8.80	25.80	28.80	5.10
M6	09/11/81	1815	9.80	26.00	28.80	3.90
DW	09/11/81	1838	1.00	25.50	28.70	7.70
DW	09/11/81	1838	2.80	25.60	28.70	7.50
DW	09/11/81	1838	5.80	25.60	28.70	7.20
DW	09/11/81	1838	8.80	25.70	28.70	6.50
DW	09/11/81	1838	9.80	26.70	28.90	3.30
DE	09/11/81	1928	1.00	26.00	28.80	7.00
DE	09/11/81	1928	2.40	26.00	28.80	7.10
NE	09/11/81	1233	1.00	25.30	28.50	7.10
NE	09/11/81	1233	2.10	25.30	28.50	7.10
NE	09/11/81	1233	5.10	25.60	28.60	6.70
NE	09/11/81	1233	8.10	27.80	29.10	2.20
NE	09/11/81	1233	9.10	27.90	29.20	1.60
M10	09/11/81	1254	1.00	25.70	28.80	7.10
M10	09/11/81	1254	2.80	25.70	28.70	7.00
M10	09/11/81	1254	5.80	25.80	28.70	6.40
M10	09/11/81	1254	8.80	26.70	28.90	3.40
M10	09/11/81	1254	9.80	27.80	29.10	1.80
DS	09/11/81	1319	1.00	26.00	28.70	6.90
DS	09/11/81	1319	3.10	26.00	28.70	6.90

Table I-3. OVER THE SIDE DATA (Continued)

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
DE	09/11/81	1928	5.40	26.00	28.80	7.00
DE	09/11/81	1928	8.40	26.20	28.80	6.00
DE	09/11/81	1928	9.40	27.40	29.00	2.40
M18	09/11/81	1949	1.00	25.90	28.80	7.00
M18	09/11/81	1949	2.80	26.00	28.70	6.90
M18	09/11/81	1949	5.80	26.10	28.80	6.40
M18	09/11/81	1949	8.80	26.20	28.80	5.80
M18	09/11/81	1949	9.80	26.50	29.00	2.20
M20	09/11/81	2015	1.00	25.80	28.70	7.10
M20	09/11/81	2015	2.80	25.80	28.70	7.00
M20	09/11/81	2015	5.80	25.90	28.70	6.90
M20	09/11/81	2015	8.80	26.00	28.70	6.30
M20	09/11/81	2015	9.80	26.00	28.70	5.90
M21	10/02/81	0845	1.00	21.60	27.50	5.90
M21	10/02/81	0845	1.50	22.10	27.50	6.10
M21	10/02/81	0845	4.50	24.10	27.50	7.90
M21	10/02/81	0845	5.50	24.30	27.50	7.60
M8	10/02/81	0920	0.00	23.60	27.10	7.80
M8	10/02/81	0920	1.00	23.60	27.10	7.60
M8	10/02/81	0920	3.90	24.60	27.60	8.30
M8	10/02/81	0920	6.90	25.70	27.60	7.80
M8	10/02/81	0920	7.90	25.70	27.60	7.80
NW	10/02/81	0950	1.00	23.10	27.30	8.20
NW	10/02/81	0950	2.10	23.60	27.40	8.30
NW	10/02/81	0950	5.10	26.20	27.40	7.80
NW	10/02/81	0950	8.10	26.80	27.30	7.50
NW	10/02/81	0950	9.10	27.00	27.30	7.60
DW	10/02/81	1020	2.80	23.30	27.40	8.50
DW	10/02/81	1020	5.80	26.20	27.30	7.60
DW	10/02/81	1020	8.80	26.90	27.30	7.40
DW	10/02/81	1020	9.80	27.00	27.30	7.50
M10	10/02/81	1045	1.00	23.10	27.40	7.90
M10	10/02/81	1045	2.80	24.20	27.40	7.90
M10	10/02/81	1045	5.80	26.40	27.30	7.50
M10	10/02/81	1045	8.80	27.10	27.30	6.20
M10	10/02/81	1045	9.80	29.90	27.30	5.80
M10A	10/02/81	1110	1.00	23.00	27.40	8.10
M10A	10/02/81	1110	2.40	23.60	27.40	8.10
M10A	10/02/81	1110	5.40	26.40	27.30	7.30
M10A	10/02/81	1110	8.40	27.70	27.40	6.10
M10A	10/02/81	1110	9.40	27.70	27.30	6.20
DN	10/02/81	1130	1.00	23.10	27.40	7.90
DN	10/02/81	1130	2.10	23.30	27.40	8.10
DN	10/02/81	1130	5.10	25.70	27.60	8.00
DN	10/02/81	1130	8.10	26.50	27.40	7.00
DN	10/02/81	1130	9.10	27.20	27.30	5.20
NE	10/02/81	1145	1.00	23.20	27.50	8.10
NE	10/02/81	1145	2.10	23.30	27.50	8.00
NE	10/02/81	1145	5.10	24.10	27.50	7.90
NE	10/02/81	1145	8.10	26.70	27.40	7.10
NE	10/02/81	1145	9.10	26.80	27.30	6.90
DE	10/02/81	1215	1.00	22.90	27.60	7.90
DE	10/02/81	1215	2.40	23.10	27.50	7.80
DE	10/02/81	1215	5.40	26.10	27.50	7.70
DE	10/02/81	1215	8.40	26.70	27.30	6.80
DE	10/02/81	1215	9.40	26.80	27.30	6.30
SE	10/02/81	1230	1.00	22.70	27.60	8.00
SE	10/02/81	1230	2.80	23.30	27.60	8.10
SE	10/02/81	1230	5.80	26.40	27.40	7.30
SE	10/02/81	1230	8.80	26.70	27.30	6.60
SE	10/02/81	1230	9.80	28.30	27.30	4.70
DS	10/02/81	1258	1.00	22.30	27.70	8.30
DS	10/02/81	1258	3.10	23.20	27.60	8.20
DS	10/02/81	1258	6.10	26.40	27.30	7.40
DS	10/02/81	1258	9.10	26.60	27.30	6.70
DS	10/02/81	1258	10.10	28.80	27.30	5.50

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M11	10/02/81	1314	1.00	21.90	27.80	8.00
M11	10/02/81	1314	3.40	25.90	27.30	7.60
M11	10/02/81	1314	6.40	26.70	27.20	6.30
M11	10/02/81	1314	9.40	27.40	27.10	5.20
M11	10/02/81	1314	10.40	28.40	27.00	1.80
M12	10/02/81	1340	1.00	21.70	27.90	8.50
M12	10/02/81	1340	3.00	25.00	27.50	8.30
M12	10/02/81	1340	4.00	26.60	27.20	7.50
M12	10/02/81	1340	7.00	27.10	27.20	6.90
M12	10/02/81	1340	10.00	28.30	27.00	3.70
M12	10/02/81	1340	11.00	28.40	27.00	2.70
M13	10/02/81	1411	1.00	22.00	28.10	8.50
M13	10/02/81	1411	1.60	25.50	27.50	8.10
M13	10/02/81	1411	4.60	27.20	27.30	7.40
M13	10/02/81	1411	7.60	28.00	27.20	7.10
M13	10/02/81	1411	10.60	28.80	27.20	5.30
M13	10/02/81	1411	11.60	29.20	27.10	4.60
M22	10/02/81	1430	1.00	27.20	27.60	7.50
M22	10/02/81	1430	1.30	27.20	27.30	7.30
M22	10/02/81	1430	4.30	27.40	27.20	7.10
M22	10/02/81	1430	7.30	27.80	27.20	7.00
M22	10/02/81	1430	10.30	29.20	27.20	5.80
M22	10/02/81	1430	11.30	29.30	27.20	5.80
M23	10/02/81	1455	1.00	27.40	27.80	7.70
M23	10/02/81	1455	3.40	27.40	27.30	7.20
M23	10/02/81	1455	6.40	27.90	27.20	7.10
M23	10/02/81	1455	9.40	29.30	27.20	5.90
M23	10/02/81	1455	10.40	30.10	27.20	4.90
M1	10/02/81	1558	1.00	23.60	28.00	8.80
M1	10/02/81	1558	2.40	24.20	27.80	8.50
M1	10/02/81	1558	5.40	25.50	27.20	5.20
M1	10/02/81	1558	8.40	26.70	27.10	3.50
M1	10/02/81	1558	9.40	26.70	27.10	3.60
M3	10/02/81	1620	1.00	21.90	28.10	8.60
M3	10/02/81	1620	2.40	22.80	27.80	8.60
M3	10/02/81	1620	5.40	25.80	27.20	6.80
M3	10/02/81	1620	8.40	26.70	27.20	5.10
M3	10/02/81	1620	9.40	26.70	27.20	5.20
M6	10/02/81	1634	1.00	21.60	28.10	8.50
M6	10/02/81	1634	2.80	23.00	27.70	8.60
M6	10/02/81	1634	5.80	26.10	27.20	6.60
M6	10/02/81	1634	8.80	27.10	27.10	4.80
M6	10/02/81	1634	9.80	27.20	27.10	4.70
DW	10/02/81	1701	1.00	21.90	28.00	8.20
DW	10/02/81	1701	2.80	22.20	27.80	8.20
DW	10/02/81	1701	5.80	26.20	27.30	7.00
DW	10/02/81	1701	8.80	27.10	27.30	6.30
DW	10/02/81	1701	9.80	28.70	27.30	4.60
M10A	10/02/81	1728	1.00	21.30	28.10	8.10
M10A	10/02/81	1728	2.40	21.70	28.00	8.30
M10A	10/02/81	1728	5.40	26.30	27.40	7.40
M10A	10/02/81	1728	8.40	28.80	27.40	6.40
M10A	10/02/81	1728	9.40	31.20	27.40	6.70
M15	10/02/81	1750	1.00	21.20	28.10	8.10
M15	10/02/81	1750	2.80	22.50	27.90	8.10
M15	10/02/81	1750	5.80	25.40	27.50	7.90
M15	10/02/81	1750	8.80	26.80	27.30	6.80
M15	10/02/81	1750	9.80	26.80	27.30	6.00
M18	10/02/81	1816	1.00	20.80	28.00	8.00
M18	10/02/81	1816	2.80	21.70	27.80	7.70
M18	10/02/81	1816	5.80	24.30	27.50	7.90
M18	10/02/81	1816	8.80	26.90	27.30	6.80
M18	10/02/81	1816	9.80	26.90	27.30	6.00
M20	10/02/81	1840	1.00	20.20	28.00	7.80
M20	10/02/81	1840	2.80	20.40	28.00	7.80
M20	10/02/81	1840	5.80	23.30	27.60	7.80
M20	10/02/81	1840	8.80	26.10	27.50	6.40

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M20	10/02/81	1840	9.80	26.90	27.30	6.30
E5	10/03/81	0832	1.00	19.20	26.60	7.20
E5	10/03/81	0832	3.00	19.20	26.50	6.90
E5	10/03/81	0832	6.00	19.30	26.50	6.90
E5	10/03/81	0832	7.00	19.30	26.40	7.20
E4	10/03/81	0925	0.50	19.70	24.90	6.40
E4	10/03/81	0925	0.90	19.70	24.90	6.50
E3	10/03/81	0951	0.20	21.40	24.20	6.70
E3	10/03/81	0951	0.60	21.40	24.20	7.20
E2	10/03/81	1125	0.80	20.10	25.40	6.70
E2	10/03/81	1125	1.20	20.10	25.30	6.90
E6	10/03/81	1145	1.00	17.80	26.60	5.00
E6	10/03/81	1145	1.50	17.80	26.70	5.00
E6	10/03/81	1145	4.50	17.80	26.60	4.90
E6	10/03/81	1145	5.50	17.80	26.50	5.20
E1	10/03/81	1210	0.50	11.30	26.80	6.60
E1	10/03/81	1210	2.10	11.40	26.80	6.10
E1	10/03/81	1210	3.70	11.50	26.60	6.30
E7	10/03/81	1402	1.00	7.90	27.60	6.80
E7	10/03/81	1402	2.50	8.30	27.60	6.00
E7	10/03/81	1402	5.50	8.40	27.50	5.90
E8	10/03/81	1433	1.00	10.80	26.30	8.30
E8	10/03/81	1433	1.50	11.40	26.40	7.60
E8	10/03/81	1433	1.80	13.20	26.40	6.40
E9	10/03/81	1453	1.00	12.00	26.70	8.00
E9	10/03/81	1453	1.80	12.00	26.60	7.60
E9	10/03/81	1453	2.40	12.00	26.40	6.90
E10	10/03/81	1511	0.50	10.60	26.60	7.50
E10	10/03/81	1511	0.90	10.60	26.60	7.80
E4	11/11/81	0815	0.50	19.60	15.50	8.80
E4	11/11/81	0815	0.90	19.60	15.50	9.40
E3	11/11/81	0841	0.20	23.00	15.00	8.40
E3	11/11/81	0841	0.60	23.00	15.00	8.90
E2	11/11/81	1000	0.80	21.20	16.90	7.50
E2	11/11/81	1000	1.20	21.00	17.00	7.60
E6	11/11/81	1017	1.50	11.10	17.40	8.10
E6	11/11/81	1017	4.50	16.30	17.30	7.20
E6	11/11/81	1017	5.50	18.10	17.50	7.70
E1	11/11/81	1105	0.50	7.70	18.50	8.10
E1	11/11/81	1105	2.10	7.70	18.30	7.80
E1	11/11/81	1105	3.70	7.70	18.20	7.90
E1	11/11/81	1105	4.70	7.70	18.20	7.90
E7	11/11/81	1220	1.00	5.20	18.20	8.30
E7	11/11/81	1220	2.50	5.90	17.80	7.50
E7	11/11/81	1220	5.50	6.20	17.60	7.60
E8	11/11/81	1318	1.00	12.10	18.70	7.70
E8	11/11/81	1318	1.50	12.10	18.00	7.70
E8	11/11/81	1318	1.80	13.70	18.50	7.30
E9	11/11/81	1340	1.00	12.00	17.20	8.80
E9	11/11/81	1340	1.80	12.10	16.60	8.60
E9	11/11/81	1340	2.40	12.60	16.60	8.60
E10	11/11/81	1407	0.50	12.20	17.10	9.20
E10	11/11/81	1407	0.90	12.20	16.90	9.10
E5	11/11/81	1717	0.00	27.80	18.50	7.70
E5	11/11/81	1717	1.00	27.80	18.50	7.60
E5	11/11/81	1717	3.00	27.80	18.40	7.60
E5	11/11/81	1717	6.00	27.80	18.40	7.60
E5	11/11/81	1717	7.00	27.80	18.40	7.50

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M21	11/18/81	0914	1.00	29.40	19.70	7.70
M21	11/18/81	0914	4.50	29.70	19.60	7.80
M21	11/18/81	0914	5.50	30.30	19.50	4.60
M8	11/18/81	0925	1.00	29.80	19.70	7.60
M8	11/18/81	0925	3.90	30.30	19.70	7.30
M8	11/18/81	0925	6.90	30.80	19.70	6.60
M8	11/18/81	0925	7.90	31.00	19.80	5.90
M9	11/18/81	0935	1.00	30.80	19.70	7.50
M9	11/18/81	0935	5.10	30.80	19.70	7.20
M9	11/18/81	0935	8.10	31.20	19.80	6.10
M9	11/18/81	0935	9.10	31.20	19.90	5.10
DN	11/18/81	0946	1.00	30.80	19.80	7.60
DN	11/18/81	0946	2.10	30.80	19.80	7.60
DN	11/18/81	0946	5.10	30.90	19.70	7.50
DN	11/18/81	0946	8.10	31.20	19.80	6.60
DN	11/18/81	0946	9.10	31.30	19.90	5.90
M10A	11/18/81	1000	1.00	30.80	19.80	7.60
M10A	11/18/81	1000	2.40	30.80	19.80	7.50
M10A	11/18/81	1000	5.40	30.80	19.70	7.50
M10A	11/18/81	1000	8.40	34.70	19.80	7.40
M10A	11/18/81	1000	9.40	36.70	19.80	7.40
M10	11/18/81	1012	1.00	30.70	19.80	7.60
M10	11/18/81	1012	2.80	30.70	19.70	7.50
M10	11/18/81	1012	5.80	30.70	19.70	7.40
M10	11/18/81	1012	8.80	33.80	19.80	7.40
M10	11/18/81	1012	9.80	35.90	19.80	7.20
DS	11/18/81	1022	1.00	30.70	19.90	7.60
DS	11/18/81	1022	3.10	30.70	19.80	7.70
DS	11/18/81	1022	6.10	30.70	19.70	7.60
DS	11/18/81	1022	9.10	31.40	19.80	6.80
DS	11/18/81	1022	10.10	33.10	19.80	7.60
M11	11/18/81	1034	1.00	30.30	20.10	7.70
M11	11/18/81	1034	3.40	30.60	19.90	7.70
M11	11/18/81	1034	6.40	30.60	19.80	7.70
M11	11/18/81	1034	9.40	31.10	19.70	7.20
M11	11/18/81	1034	10.40	34.80	19.90	6.70
M12	11/18/81	1047	1.00	30.00	20.10	7.70
M12	11/18/81	1047	4.00	30.40	19.90	7.70
M12	11/18/81	1047	7.00	30.60	19.80	7.50
M12	11/18/81	1047	10.00	31.80	19.80	6.70
M12	11/18/81	1047	11.00	33.60	20.00	5.90
M13	11/18/81	1108	1.00	29.70	20.20	7.50
M13	11/18/81	1108	1.60	29.70	20.10	7.50
M13	11/18/81	1108	4.60	30.30	20.00	7.50
M13	11/18/81	1108	7.60	30.90	19.80	7.30
M13	11/18/81	1108	10.60	31.80	20.20	6.90
M13	11/18/81	1108	11.60	31.80	20.30	6.80
M22	11/18/81	1130	1.00	29.70	20.30	7.60
M22	11/18/81	1130	1.30	29.80	20.10	7.50
M22	11/18/81	1130	4.30	30.70	20.00	7.10
M22	11/18/81	1130	7.30	31.00	20.10	7.30
M22	11/18/81	1130	10.30	32.60	20.50	6.80
M22	11/18/81	1130	11.30	32.60	20.50	6.80
M23	11/18/81	1152	1.00	30.30	20.50	7.40
M23	11/18/81	1152	3.40	30.90	20.40	7.10
M23	11/18/81	1152	6.40	32.10	20.80	5.90
M23	11/18/81	1152	9.40	32.50	20.60	6.50
M23	11/18/81	1152	10.40	32.60	20.80	6.80
M1	11/18/81	1251	1.00	30.20	20.50	7.60
M1	11/18/81	1251	2.40	30.20	20.40	7.60
M1	11/18/81	1251	5.40	30.20	19.90	7.70
M1	11/18/81	1251	8.40	30.50	19.80	7.40
M1	11/18/81	1251	9.40	30.40	19.90	7.50
M3	11/18/81	1311	1.00	30.00	20.30	7.60
M3	11/18/81	1311	2.40	30.00	20.00	7.70
M3	11/18/81	1311	5.40	30.10	19.80	7.70
M3	11/18/81	1311	8.40	30.50	19.90	7.00
M3	11/18/81	1311	9.40	30.70	20.20	4.50

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M6	11/18/81	1326	1.00	30.00	20.30	7.70
M6	11/18/81	1326	2.80	30.00	20.10	7.70
M6	11/18/81	1326	5.80	30.00	19.80	7.60
M6	11/18/81	1326	8.80	30.40	19.80	6.30
M6	11/18/81	1326	9.80	31.90	20.10	3.50
DW	11/18/81	1335	1.00	30.00	20.30	7.70
DW	11/18/81	1335	2.80	30.00	20.20	7.70
DW	11/18/81	1335	5.80	30.00	19.80	7.30
DW	11/18/81	1335	8.80	30.70	19.90	5.80
DW	11/18/81	1335	9.80	34.30	20.00	6.60
M10	11/18/81	1404	1.00	30.00	20.40	7.70
M10	11/18/81	1404	2.80	30.00	20.20	7.70
M10	11/18/81	1404	5.80	30.20	19.80	7.40
M10	11/18/81	1404	8.80	31.50	19.90	6.70
M10	11/18/81	1404	9.80	34.10	20.00	6.90
M10A	11/18/81	1350	1.00	30.00	20.40	7.90
M10A	11/18/81	1350	2.40	30.00	20.10	7.90
M10A	11/18/81	1350	5.40	30.00	19.80	7.60
M10A	11/18/81	1350	8.40	31.30	19.90	6.60
M10A	11/18/81	1350	9.40	34.90	19.90	7.10
DE	11/18/81	1444	1.00	30.00	20.50	7.90
DE	11/18/81	1444	2.40	30.00	20.30	8.00
DE	11/18/81	1444	5.40	30.30	19.80	7.90
DE	11/18/81	1444	8.40	30.60	19.80	7.20
DE	11/18/81	1444	9.40	32.90	19.90	4.80
M15	11/18/81	1454	1.00	30.00	20.40	8.00
M15	11/18/81	1454	2.80	30.00	20.20	7.90
M15	11/18/81	1454	5.80	30.20	19.80	7.70
M15	11/18/81	1454	8.80	30.60	19.80	7.00
M15	11/18/81	1454	9.80	32.80	20.20	4.70
M18	11/18/81	1504	1.00	29.90	20.50	7.90
M18	11/18/81	1504	2.80	29.90	20.00	7.80
M18	11/18/81	1504	5.80	30.10	19.80	7.70
M18	11/18/81	1504	8.80	30.60	19.90	7.00
M18	11/18/81	1504	9.80	30.50	19.90	7.10
M20	11/18/81	1520	1.00	29.70	20.50	8.10
M20	11/18/81	1520	2.80	29.70	20.20	8.00
M20	11/18/81	1520	5.80	30.00	19.80	7.90
M20	11/18/81	1520	8.80	30.40	19.80	6.80
M20	11/18/81	1520	9.80	30.30	19.90	6.50
M21	12/02/81	0752	1.00	30.50	19.50	5.70
M21	12/02/81	0752	1.50	30.50	19.60	5.60
M21	12/02/81	0752	4.50	31.90	20.50	6.30
M21	12/02/81	0752	5.50	32.00	20.40	6.50
M8	12/02/81	0809	1.00	28.70	18.70	6.50
M8	12/02/81	0809	3.90	31.90	20.60	6.60
M8	12/02/81	0809	6.90	32.20	20.60	7.10
M8	12/02/81	0809	7.90	32.40	20.60	7.80
M9	12/02/81	0824	1.00	28.30	18.80	6.80
M9	12/02/81	0824	2.10	28.70	19.20	6.60
M9	12/02/81	0824	5.10	32.30	20.70	6.70
M9	12/02/81	0824	8.10	32.40	20.70	7.30
M9	12/02/81	0824	9.10	32.40	20.60	8.30
NW	12/02/81	0838	0.00	28.20	18.80	6.90
NW	12/02/81	0838	1.00	28.20	18.80	6.80
NW	12/02/81	0838	2.10	28.30	18.90	6.60
NW	12/02/81	0838	5.10	32.20	20.60	7.00
NW	12/02/81	0838	8.10	32.40	20.70	7.50
NW	12/02/81	0838	9.10	32.40	20.60	7.90
DN	12/02/81	0849	1.00	28.40	18.80	6.90
DN	12/02/81	0849	2.10	28.40	19.00	6.90
DN	12/02/81	0849	5.10	32.20	20.70	6.80
DN	12/02/81	0849	8.10	32.40	20.70	7.10
DN	12/02/81	0849	9.10	32.40	20.50	7.80

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
NE	12/02/81	0905	1.00	28.40	18.80	6.90
NE	12/02/81	0905	2.10	28.60	18.80	6.90
NE	12/02/81	0905	5.10	30.90	19.80	6.40
NE	12/02/81	0905	8.10	32.50	20.70	6.90
NE	12/02/81	0905	9.10	32.30	20.50	7.50
DE	12/02/81	0915	1.00	28.40	18.80	7.10
DE	12/02/81	0915	2.40	28.70	18.90	6.80
DE	12/02/81	0915	5.40	32.20	20.70	6.70
DE	12/02/81	0915	8.40	32.90	20.60	6.70
DE	12/02/81	0915	9.40	33.70	20.60	6.90
M10A	12/02/81	0932	1.00	28.40	18.90	7.00
M10A	12/02/81	0932	2.40	28.70	19.00	6.90
M10A	12/02/81	0932	5.40	32.40	20.70	6.80
M10A	12/02/81	0932	8.40	34.50	20.30	7.40
M10A	12/02/81	0932	9.40	35.10	20.40	8.00
DW	12/02/81	0937	1.00	28.30	18.90	7.10
DW	12/02/81	0937	2.80	28.60	19.20	7.00
DW	12/02/81	0937	5.80	32.30	20.70	6.90
DW	12/02/81	0937	8.80	32.40	20.70	7.10
DW	12/02/81	0937	9.80	32.40	20.50	7.30
SW	12/02/81	0947	1.00	28.50	18.90	7.20
SW	12/02/81	0947	3.10	28.80	19.20	6.80
SW	12/02/81	0947	6.10	32.30	20.60	6.80
SW	12/02/81	0947	9.10	32.40	20.70	6.80
SW	12/02/81	0947	10.10	32.40	20.60	7.20
DS	12/02/81	1000	1.00	28.70	18.90	7.30
DS	12/02/81	1000	3.10	29.10	19.20	7.10
DS	12/02/81	1000	6.10	32.30	20.70	6.70
DS	12/02/81	1000	9.10	32.70	20.60	6.60
DS	12/02/81	1000	10.10	33.70	20.50	6.20
SE	12/02/81	1014	1.00	28.90	18.90	7.40
SE	12/02/81	1014	2.80	29.00	19.20	7.00
SE	12/02/81	1014	5.80	32.40	20.70	6.80
SE	12/02/81	1014	8.80	32.60	20.70	6.80
SE	12/02/81	1014	9.80	32.60	20.60	7.00
M10	12/02/81	1032	1.00	28.50	19.00	7.40
M10	12/02/81	1032	2.80	28.60	19.10	7.20
M10	12/02/81	1032	5.80	32.30	20.70	6.90
M10	12/02/81	1032	8.80	32.40	20.70	6.90
M10	12/02/81	1032	9.80	34.30	20.60	7.10
M11	12/02/81	1047	1.00	28.90	19.10	7.50
M11	12/02/81	1047	3.40	29.20	19.10	7.30
M11	12/02/81	1047	6.40	32.50	20.70	6.80
M11	12/02/81	1047	9.40	33.00	20.90	7.30
M11	12/02/81	1047	10.40	33.00	20.80	7.90
M12	12/02/81	1059	1.00	29.50	19.30	7.60
M12	12/02/81	1059	4.00	29.70	19.40	7.30
M12	12/02/81	1059	7.00	32.60	20.70	6.70
M12	12/02/81	1059	10.00	33.20	20.90	6.80
M12	12/02/81	1059	11.00	33.20	20.80	6.60
M13	12/02/81	1115	1.00	27.90	19.20	8.00
M13	12/02/81	1115	1.60	27.90	19.20	8.00
M13	12/02/81	1115	4.60	28.90	19.40	7.60
M13	12/02/81	1115	7.60	33.20	20.80	6.90
M13	12/02/81	1115	10.60	33.50	20.70	7.10
M13	12/02/81	1115	11.60	33.70	20.70	7.10
M22	12/02/81	1145	1.00	27.90	19.40	8.10
M22	12/02/81	1145	1.30	28.00	19.30	8.20
M22	12/02/81	1145	4.30	29.10	19.70	7.60
M22	12/02/81	1145	7.30	34.30	21.10	7.00
M22	12/02/81	1145	10.30	34.40	21.10	6.90
M22	12/02/81	1145	11.30	34.60	21.00	7.00
M23	12/02/81	1215	1.00	28.30	19.50	8.20
M23	12/02/81	1215	3.40	28.70	19.50	8.10
M23	12/02/81	1215	6.40	30.70	20.10	7.70
M23	12/02/81	1215	9.40	34.70	21.20	6.90
M23	12/02/81	1215	10.40	35.20	21.40	7.10

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M1	12/02/81	1245	1.00	27.40	19.00	7.70
M1	12/02/81	1245	2.40	27.60	19.00	7.30
M1	12/02/81	1245	5.40	32.40	20.80	6.80
M1	12/02/81	1245	8.40	32.70	20.80	6.70
M1	12/02/81	1245	9.40	32.70	20.80	7.00
M3	12/02/81	1311	1.00	27.90	19.50	7.90
M3	12/02/81	1311	2.40	28.00	19.10	7.60
M3	12/02/81	1311	5.40	32.30	20.70	6.80
M3	12/02/81	1311	8.40	32.50	20.70	6.80
M3	12/02/81	1311	9.40	32.50	20.60	7.00
M6	12/02/81	1323	1.00	28.20	19.20	8.00
M6	12/02/81	1323	2.80	28.30	19.20	7.60
M6	12/02/81	1323	5.80	32.20	20.70	7.00
M6	12/02/81	1323	8.80	32.30	20.70	6.90
M6	12/02/81	1323	9.80	32.30	20.60	7.00
DW	12/02/81	1338	1.00	28.30	19.30	7.90
DW	12/02/81	1338	2.80	28.50	19.30	7.80
DW	12/02/81	1338	5.80	32.20	20.70	7.10
DW	12/02/81	1338	8.80	32.90	20.70	7.00
DW	12/02/81	1338	9.80	34.80	20.60	7.10
M10	12/02/81	1351	1.00	28.50	19.30	8.00
M10	12/02/81	1351	2.80	28.60	19.20	7.80
M10	12/02/81	1351	5.80	32.30	20.70	7.10
M10	12/02/81	1351	8.80	32.70	20.70	7.10
M10	12/02/81	1351	9.80	35.80	20.60	7.10
M10A	12/02/81	1420	1.00	28.50	19.30	8.00
M10A	12/02/81	1420	2.40	28.70	19.30	7.80
M10A	12/02/81	1420	5.40	32.30	20.70	7.20
M10A	12/02/81	1420	8.40	34.90	20.50	6.90
M10A	12/02/81	1420	9.40	34.40	20.50	7.30
DE	12/02/81	1430	1.00	28.60	19.30	8.00
DE	12/02/81	1430	2.40	28.70	19.30	7.90
DE	12/02/81	1430	5.40	31.60	20.50	7.20
DE	12/02/81	1430	8.40	32.30	20.70	7.20
DE	12/02/81	1430	9.40	33.80	20.60	7.20
M15	12/02/81	1430	1.00	28.80	19.40	8.10
M15	12/02/81	1430	2.80	28.90	19.30	7.70
M15	12/02/81	1430	5.80	31.90	20.70	7.40
M15	12/02/81	1430	8.80	32.40	20.70	7.10
M15	12/02/81	1430	9.80	33.40	20.50	6.80
M18	12/02/81	1450	1.00	29.00	19.40	8.00
M18	12/02/81	1450	2.80	29.20	19.30	7.90
M18	12/02/81	1450	5.80	30.90	20.30	7.40
M18	12/02/81	1450	8.80	32.40	20.70	7.00
M18	12/02/81	1450	9.80	32.40	20.70	7.40
M20	12/02/81	1511	1.00	29.20	19.40	8.10
M20	12/02/81	1511	2.80	29.30	19.40	7.90
M20	12/02/81	1511	5.80	30.10	19.80	7.50
M20	12/02/81	1511	8.80	32.40	20.70	6.50
M20	12/02/81	1511	9.80	32.40	20.70	6.70
E5	12/03/81	0809	0.00	29.10	18.30	6.20
E5	12/03/81	0809	1.00	29.10	18.20	6.20
E5	12/03/81	0809	3.00	29.10	18.20	6.00
E5	12/03/81	0809	6.00	29.10	18.20	6.10
E5	12/03/81	0809	7.00	29.20	18.20	6.20
E4	12/03/81	0900	0.50	23.30	15.80	7.50
E4	12/03/81	0900	0.90	23.50	15.90	7.30
E4	12/03/81	0900	1.20	24.60	16.20	6.50
E3	12/03/81	0950	0.20	23.50	15.00	8.80
E3	12/03/81	0950	0.60	23.50	15.00	8.60
E2	12/03/81	1043	0.20	21.40	16.40	10.20
E2	12/03/81	1043	0.80	21.50	16.30	9.90
E2	12/03/81	1043	1.50	21.50	16.40	9.90
E6	12/03/81	1124	0.00	20.00	17.60	6.80
E6	12/03/81	1124	1.00	20.50	17.50	6.40
E6	12/03/81	1124	1.50	20.50	17.50	6.60
E6	12/03/81	1124	4.50	20.50	17.50	6.40
E6	12/03/81	1124	5.50	20.50	17.50	6.40

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
E1	12/03/81	1148	0.50	8.20	17.50	8.20
E1	12/03/81	1148	1.20	8.20	17.50	7.40
E1	12/03/81	1148	2.10	8.20	17.50	7.80
E1	12/03/81	1148	3.70	8.20	17.50	7.90
E1	12/03/81	1148	4.70	10.20	14.30	7.70
E7	12/03/81	1315	0.00	3.70	17.40	7.20
E7	12/03/81	1315	0.00	0.00	0.00	-1.20
E8	12/03/81	1446	1.00	14.20	18.50	7.80
E8	12/03/81	1446	1.50	14.40	18.50	7.50
E9	12/03/81	1522	1.00	13.20	16.80	10.80
E9	12/03/81	1522	1.80	13.20	16.80	10.90
E9	12/03/81	1522	2.40	13.20	16.80	10.70
E10	12/03/81	1602	0.50	13.30	16.70	9.50
E10	12/03/81	1602	0.90	13.30	16.70	9.20
M21	01/21/82	1028	1.00	25.90	9.80	9.50
M21	01/21/82	1028	1.50	26.10	9.60	9.50
M21	01/21/82	1028	4.50	27.20	9.70	8.30
M21	01/21/82	1028	5.50	28.30	10.50	7.20
M8	01/21/82	1131	1.00	25.40	10.10	8.70
M8	01/21/82	1131	3.90	28.20	9.30	7.80
M8	01/21/82	1131	6.90	29.60	10.20	7.20
M8	01/21/82	1131	7.90	29.60	10.30	4.40
M9	01/21/82	1212	1.00	26.30	10.00	9.00
M9	01/21/82	1212	2.10	28.00	9.80	7.80
M9	01/21/82	1212	5.10	30.40	10.30	8.00
M9	01/21/82	1212	8.10	31.50	10.80	7.50
M9	01/21/82	1212	9.10	32.30	10.60	7.30
NW	01/21/82	1222	1.00	26.70	10.30	8.50
NW	01/21/82	1222	2.10	29.30	10.00	7.90
NW	01/21/82	1222	5.10	30.40	10.30	7.60
NW	01/21/82	1222	8.10	31.40	10.70	8.10
NW	01/21/82	1222	9.10	31.70	10.70	8.10
DN	01/21/82	1246	1.00	25.30	10.30	9.60
DN	01/21/82	1246	2.10	29.00	9.90	8.50
DN	01/21/82	1246	5.10	30.90	10.10	8.30
DN	01/21/82	1246	8.10	31.70	10.60	7.80
DN	01/21/82	1246	9.10	31.90	10.60	7.70
NE	01/21/82	1306	1.00	25.80	10.80	9.80
NE	01/21/82	1306	2.10	27.70	9.90	8.90
NE	01/21/82	1306	5.10	31.00	10.20	8.50
NE	01/21/82	1306	8.10	31.70	10.90	7.40
NE	01/21/82	1306	9.10	31.80	10.60	7.40
DE	01/21/82	1321	1.00	25.50	10.20	10.10
DE	01/21/82	1321	2.40	30.30	10.10	8.80
DE	01/21/82	1321	5.40	31.50	10.60	8.30
DE	01/21/82	1321	8.40	31.80	10.80	7.90
DE	01/21/82	1321	9.40	31.80	10.70	7.50
M10A	01/21/82	1350	1.00	26.20	10.20	10.30
M10A	01/21/82	1350	2.40	28.50	10.10	9.00
M10A	01/21/82	1350	5.40	31.10	10.20	8.70
M10A	01/21/82	1350	8.40	32.00	10.70	8.10
M10A	01/21/82	1350	9.40	32.00	10.60	8.00
DW	01/21/82	1400	1.00	24.90	10.50	10.20
DW	01/21/82	1400	2.80	30.10	10.20	9.10
DW	01/21/82	1400	5.80	31.00	10.20	8.80
DW	01/21/82	1400	8.80	31.90	10.90	8.50
DW	01/21/82	1400	9.80	31.90	10.60	7.50
SW	01/21/82	1417	1.00	25.80	10.60	10.50
SW	01/21/82	1417	3.10	30.50	10.20	9.20
SW	01/21/82	1417	6.10	31.60	10.70	8.80
SW	01/21/82	1417	9.10	31.90	10.90	8.20
SW	01/21/82	1417	10.10	32.00	10.60	8.20
DS	01/21/82	1442	1.00	25.70	11.00	10.80
DS	01/21/82	1442	3.10	30.60	10.30	9.60
DS	01/21/82	1442	6.10	31.90	11.20	8.70
DS	01/21/82	1442	9.10	32.20	10.60	7.90
DS	01/21/82	1442	10.10	33.80	10.80	7.20

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
SE	01/21/82	1455	1.00	25.70	10.60	10.80
SE	01/21/82	1455	2.80	31.10	10.30	9.10
SE	01/21/82	1455	5.80	31.90	10.70	8.30
SE	01/21/82	1455	8.80	32.00	10.60	7.70
SE	01/21/82	1455	9.80	32.30	10.60	7.60
M10	01/21/82	1509	1.00	25.90	10.60	10.80
M10	01/21/82	1509	2.80	30.40	10.20	9.20
M10	01/21/82	1509	5.80	31.50	10.50	8.90
M10	01/21/82	1509	8.80	32.00	10.60	7.80
M10	01/21/82	1509	9.80	34.20	10.70	7.70
M11	01/21/82	1525	1.00	27.20	11.90	10.90
M11	01/21/82	1525	3.40	31.90	11.30	9.20
M11	01/21/82	1525	6.40	32.00	10.50	8.40
M11	01/21/82	1525	9.40	32.80	11.20	8.40
M11	01/21/82	1525	10.40	34.00	11.20	7.20
M12	01/21/82	1540	1.00	29.20	12.40	10.30
M12	01/21/82	1540	4.00	32.10	11.40	8.90
M12	01/21/82	1540	7.00	32.50	11.00	8.20
M12	01/21/82	1540	10.00	33.20	11.80	7.40
M12	01/21/82	1540	11.00	33.40	11.60	7.10
M13	01/21/82	1605	1.00	32.30	12.40	9.00
M13	01/21/82	1605	4.60	33.10	11.70	8.40
M13	01/21/82	1605	7.60	33.50	12.20	8.30
M13	01/21/82	1605	10.60	33.80	12.70	8.10
M13	01/21/82	1605	11.60	33.80	12.20	7.20
M22	01/21/82	1630	1.00	33.90	13.60	8.40
M22	01/21/82	1630	4.30	33.90	13.40	8.60
E5	01/11/82	0740	0.00	19.70	6.20	9.40
E5	01/11/82	0740	1.00	20.20	6.40	9.30
E5	01/11/82	0740	3.00	20.90	7.10	8.90
E5	01/11/82	0740	6.00	21.50	7.50	9.20
E5	01/11/82	0740	7.00	21.20	7.40	9.60
E4	01/11/82	0839	0.50	18.60	5.00	11.20
E4	01/11/82	0839	1.20	18.60	5.00	11.20
E2	01/11/82	1034	0.80	18.70	8.20	9.60
E2	01/11/82	1034	1.20	17.00	7.90	10.30
E6	01/11/82	1128	1.00	15.50	6.80	10.90
E6	01/11/82	1128	1.50	15.40	6.90	11.00
E6	01/11/82	1128	4.50	15.40	6.90	11.10
E6	01/11/82	1128	5.50	15.50	6.50	11.70
E1	01/11/82	1214	0.50	10.80	9.00	10.30
E1	01/11/82	1214	2.10	11.40	8.80	11.50
E7	01/11/82	1315	1.00	4.20	9.10	9.80
E7	01/11/82	1315	2.50	4.70	9.30	10.20
E7	01/11/82	1315	5.50	5.40	9.40	9.50
E8	01/11/82	1409	1.00	13.30	9.10	9.80
E8	01/11/82	1409	1.50	11.80	9.00	10.40
E8	01/11/82	1409	1.80	15.40	9.10	10.90

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
RDE	01/21/82	2035	5.40	31.20	10.20	7.60
RDE	01/21/82	2035	8.40	31.80	10.60	7.20
RDE	01/21/82	2035	9.40	32.60	10.90	7.20
M15	01/21/82	2049	1.00	28.70	10.80	9.60
M15	01/21/82	2049	2.80	31.30	10.20	8.30
M15	01/21/82	2049	5.80	31.60	10.40	8.20
M15	01/21/82	2049	8.80	32.10	10.70	7.70
M15	01/21/82	2049	9.80	32.80	11.30	7.80
M18	01/21/82	2113	1.00	26.40	10.80	10.30
M18	01/21/82	2113	2.80	31.00	10.30	8.60
M18	01/21/82	2113	5.80	31.60	10.50	8.40
M18	01/21/82	2113	8.80	32.00	10.70	7.90
M18	01/21/82	2113	9.80	32.30	10.70	7.90
M20	01/21/82	2135	1.00	28.70	11.60	9.90
M20	01/21/82	2135	2.80	31.70	11.90	9.00
M20	01/21/82	2135	5.80	32.00	10.90	8.30
M20	01/21/82	2135	8.80	32.30	10.70	7.40
M20	01/21/82	2135	9.80	32.30	10.70	7.50
M22	01/21/82	1630	7.30	33.80	12.70	8.40
M22	01/21/82	1630	10.30	33.70	11.80	7.50
M22	01/21/82	1630	11.30	33.80	11.90	7.20
M23	01/21/82	1652	1.00	33.80	13.20	8.50
M23	01/21/82	1652	3.40	33.70	12.50	8.70
M23	01/21/82	1652	6.40	33.90	12.50	8.40
M23	01/21/82	1652	9.40	34.00	12.60	8.10
M23	01/21/82	1652	10.40	34.10	12.60	7.90
M1	01/21/82	1750	1.00	29.00	11.30	10.20
M1	01/21/82	1750	2.40	30.40	10.30	9.00
M1	01/21/82	1750	5.40	30.70	10.30	8.50
M1	01/21/82	1750	8.40	30.90	10.40	8.30
M1	01/21/82	1750	9.40	31.00	10.40	7.50
M3	01/21/82	1814	1.00	25.70	10.80	10.70
M3	01/21/82	1814	2.40	29.60	10.40	9.60
M3	01/21/82	1814	5.40	30.70	10.30	8.30
M3	01/21/82	1814	8.40	31.70	11.00	7.50
M3	01/21/82	1814	9.40	33.10	10.70	7.30
M6	01/21/82	1830	1.00	26.80	10.50	10.70
M6	01/21/82	1830	2.80	30.60	10.30	9.40
M6	01/21/82	1830	5.80	30.90	10.20	8.90
M6	01/21/82	1830	8.80	31.80	10.80	8.40
M6	01/21/82	1830	9.80	34.10	10.90	7.30
RDW	01/21/82	1848	1.00	25.40	10.10	10.10
RDW	01/21/82	1848	2.80	30.80	10.30	9.10
RDW	01/21/82	1848	5.80	31.30	10.30	8.70
RDW	01/21/82	1848	8.80	32.00	10.70	7.90
RDW	01/21/82	1848	9.80	34.60	10.70	7.40
10M	01/21/82	1904	1.00	28.00	10.90	10.10
10M	01/21/82	1904	2.80	31.00	10.30	9.20
10M	01/21/82	1904	5.80	31.30	10.30	8.70
10M	01/21/82	1904	8.80	32.00	10.60	7.80
10M	01/21/82	1904	9.80	35.70	10.70	7.50
A10	01/21/82	2015	1.00	24.90	10.20	10.10
A10	01/21/82	2015	2.40	30.40	10.30	9.00
A10	01/21/82	2015	5.40	31.10	10.20	8.80
A10	01/21/82	2015	8.40	31.90	11.10	7.90
A10	01/21/82	2015	9.40	35.40	10.70	7.70
RDE	01/21/82	2035	1.00	26.70	10.80	9.90
RDE	01/21/82	2035	2.40	30.50	10.40	8.40

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M10	02/11/82	0840	5.80	31.50	11.20	9.40
M10	02/11/82	0840	8.80	31.50	11.20	9.20
M10	02/11/82	0840	9.80	35.70	11.30	8.90
M11	02/11/82	0857	1.00	31.70	11.40	9.30
M11	02/11/82	0857	3.40	31.70	11.40	9.10
M11	02/11/82	0857	6.40	31.70	11.40	9.00
M11	02/11/82	0857	9.40	31.70	11.40	8.80
M11	02/11/82	0857	10.40	32.20	11.40	8.80
M12	02/11/82	0910	1.00	31.80	11.50	9.00
M12	02/11/82	0910	4.00	31.80	11.50	9.10
M12	02/11/82	0910	7.00	31.80	11.50	9.10
M12	02/11/82	0910	10.00	31.80	11.50	9.00
M12	02/11/82	0910	11.00	31.80	11.50	9.00
M13	02/11/82	0930	1.00	32.00	11.60	9.00
M13	02/11/82	0930	1.60	32.00	11.60	9.00
M13	02/11/82	0930	4.60	32.00	11.60	8.90
M13	02/11/82	0930	7.60	32.00	11.60	8.90
M13	02/11/82	0930	10.60	32.00	11.60	8.70
M13	02/11/82	0930	11.60	32.00	11.60	8.70
M22	02/11/82	0950	1.00	32.30	11.90	9.00
M22	02/11/82	0950	4.30	32.30	11.90	8.80
M22	02/11/82	0950	7.30	32.30	11.90	8.80
M22	02/11/82	0950	10.30	32.30	11.90	8.70
M22	02/11/82	0950	11.30	32.30	11.90	8.70
M23	02/11/82	1011	1.00	32.30	11.90	9.20
M23	02/11/82	1011	3.40	32.30	11.90	8.80
M23	02/11/82	1011	6.40	32.20	11.90	8.70
M23	02/11/82	1011	9.40	32.30	11.90	8.70
M23	02/11/82	1011	10.40	32.30	11.90	8.70
M1	02/11/82	1103	1.00	30.60	10.70	9.10
M1	02/11/82	1103	2.40	30.60	10.70	9.40
M1	02/11/82	1103	5.40	30.60	10.70	9.40
M1	02/11/82	1103	8.40	30.80	10.80	9.10
M1	02/11/82	1103	9.40	30.80	10.80	9.10
M3	02/11/82	1121	1.00	31.60	11.30	9.20
M3	02/11/82	1121	2.40	31.60	11.30	9.10
M3	02/11/82	1121	5.40	31.60	11.30	9.00
M3	02/11/82	1121	8.40	31.70	11.30	9.00
M3	02/11/82	1121	9.40	31.70	11.30	9.00
M6	02/11/82	1135	1.00	31.50	11.30	9.20
M21	02/11/82	0631	1.00	29.10	9.70	10.20
M21	02/11/82	0631	1.50	29.10	9.70	10.20
M21	02/11/82	0631	4.50	29.40	9.90	9.80
M21	02/11/82	0631	5.50	29.70	10.40	9.50
M8	02/11/82	0650	1.00	30.80	10.80	9.90
M8	02/11/82	0650	3.90	30.80	10.70	9.30
M8	02/11/82	0650	6.90	30.90	10.70	8.90
M8	02/11/82	0650	7.90	30.90	10.70	9.00
M9	02/11/82	0700	1.00	31.10	10.90	9.00
M9	02/11/82	0700	2.10	31.10	11.00	8.90
M9	02/11/82	0700	5.10	31.10	11.00	8.90
M9	02/11/82	0700	8.10	31.40	11.20	8.70
M9	02/11/82	0700	9.10	31.70	11.40	8.60
DN	02/11/82	0712	1.00	31.30	11.10	8.80
DN	02/11/82	0712	2.10	31.30	11.10	9.10
DN	02/11/82	0712	5.10	31.30	11.10	9.10
DN	02/11/82	0712	8.10	31.50	11.20	8.80
DN	02/11/82	0712	9.10	32.50	11.40	8.80
DE	02/11/82	0724	1.00	31.40	11.10	9.00
DE	02/11/82	0724	2.40	31.40	11.20	9.00
DE	02/11/82	0724	5.40	31.40	11.20	8.90
DE	02/11/82	0724	8.40	31.40	11.20	8.60
DE	02/11/82	0724	9.40	33.00	11.40	8.50
M10A	02/11/82	0734	1.00	31.50	11.20	9.00
M10A	02/11/82	0734	2.40	31.50	11.20	9.30
M10A	02/11/82	0734	5.40	31.50	11.20	9.20
M10A	02/11/82	0734	8.40	31.50	11.20	9.20
M10A	02/11/82	0734	9.40	34.60	11.30	8.80

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
DW	02/11/82	0745	1.00	31.50	11.20	8.90
DW	02/11/82	0745	2.80	31.50	11.20	8.90
DW	02/11/82	0745	5.80	31.50	11.20	9.00
DW	02/11/82	0745	8.80	31.50	11.30	9.00
DW	02/11/82	0745	9.80	33.70	11.40	8.90
DS	02/11/82	0758	1.00	31.50	11.20	9.00
DS	02/11/82	0758	3.10	31.50	11.20	8.90
DS	02/11/82	0758	6.10	31.50	11.30	9.00
DS	02/11/82	0758	9.10	31.60	11.30	8.90
DS	02/11/82	0758	10.10	35.40	11.40	8.70
M10	02/11/82	0840	1.00	31.50	11.20	9.20
M10	02/11/82	0840	2.80	31.50	11.20	9.60
M6	02/11/82	1135	2.80	31.50	11.30	8.90
M6	02/11/82	1135	5.80	31.50	11.30	8.90
M6	02/11/82	1135	8.80	31.60	11.30	8.60
M6	02/11/82	1135	9.80	32.00	11.40	8.60
M10A	02/11/82	1150	1.00	31.30	11.30	9.10
M10A	02/11/82	1150	2.40	31.30	11.30	9.30
M10A	02/11/82	1150	5.40	31.50	11.30	9.10
M10A	02/11/82	1150	8.40	31.50	11.20	8.90
M10A	02/11/82	1150	9.40	33.70	11.30	8.80
M15	02/11/82	1201	1.00	31.50	11.40	8.80
M15	02/11/82	1201	2.80	31.50	11.40	9.00
M15	02/11/82	1201	5.80	31.50	11.30	8.80
M15	02/11/82	1201	8.80	31.50	11.20	8.70
M15	02/11/82	1201	9.80	32.90	11.40	8.60
M18	02/11/82	1226	1.00	31.40	11.30	8.90
M18	02/11/82	1226	2.80	31.40	11.30	9.00
M18	02/11/82	1226	5.80	31.40	11.30	8.90
M18	02/11/82	1226	8.80	31.50	11.30	8.70
M18	02/11/82	1226	9.80	31.50	11.30	8.70
M20	02/11/82	1245	1.00	31.40	11.40	8.90
M20	02/11/82	1245	2.80	31.40	11.40	9.30
M20	02/11/82	1245	5.80	31.40	11.30	9.30
M20	02/11/82	1245	8.80	31.40	11.30	9.20
M20	02/11/82	1245	9.80	31.40	11.20	9.20
E5	02/12/82	0735	1.00	29.40	10.20	10.10
E5	02/12/82	0735	3.00	29.40	10.20	9.80
E5	02/12/82	0735	6.00	29.50	10.20	9.40
E5	02/12/82	0735	7.00	29.50	10.20	9.80
E4	02/12/82	0826	0.50	21.40	9.30	9.20
E4	02/12/82	0826	0.90	21.40	9.30	9.20
E3	02/12/82	0847	0.20	22.90	10.00	10.40
E3	02/12/82	0847	0.60	22.90	10.00	10.40
E2	02/12/82	0947	0.80	19.40	10.20	9.00
E2	02/12/82	0947	1.20	19.50	10.20	9.20
E6	02/12/82	1019	1.00	18.10	10.60	8.30
E6	02/12/82	1019	1.50	18.20	10.70	8.30
E6	02/12/82	1019	4.50	18.20	10.60	8.60
E6	02/12/82	1019	5.50	18.20	10.60	8.80
E1	02/12/82	1148	0.50	13.00	10.70	8.70
E1	02/12/82	1148	2.10	13.00	10.60	8.80
E1	02/12/82	1148	3.70	13.00	10.60	8.80
E7	02/12/82	1205	1.00	3.60	10.90	8.10
E7	02/12/82	1205	2.50	3.70	10.90	8.60
E7	02/12/82	1205	5.50	6.90	10.60	8.50
E7	02/12/82	1205	6.50	7.70	10.70	8.40
E8	02/12/82	1258	1.00	11.60	11.80	8.40
E8	02/12/82	1258	1.50	11.70	11.70	8.40
E8	02/12/82	1258	1.80	13.20	11.40	7.90
E9	02/12/82	1337	1.00	12.00	10.90	9.30
E9	02/12/82	1337	1.80	12.00	10.20	9.50
E9	02/12/82	1337	2.40	12.00	10.00	9.50
E10	02/12/82	1409	0.50	12.90	11.60	9.10
E10	02/12/82	1409	0.90	12.90	11.50	9.20

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M21	03/12/82	0830	1.00	25.70	16.00	9.90
M21	03/12/82	0830	1.50	25.70	16.00	9.10
M21	03/12/82	0830	4.50	25.80	15.90	8.90
M21	03/12/82	0830	5.50	25.80	15.80	9.00
M8	03/12/82	0853	1.00	26.60	15.50	8.90
M8	03/12/82	0853	3.90	26.70	15.40	8.60
M8	03/12/82	0853	6.90	26.80	15.50	8.70
M8	03/12/82	0853	7.90	26.80	15.50	8.70
M9	03/12/82	0906	1.00	26.90	15.20	8.60
M9	03/12/82	0906	2.10	26.90	15.10	8.80
M9	03/12/82	0906	5.10	27.00	15.10	8.60
M9	03/12/82	0906	8.10	26.90	15.10	8.50
M9	03/12/82	0906	9.10	26.90	15.10	9.10
NW	03/12/82	0916	1.00	26.80	15.10	8.90
NW	03/12/82	0916	2.10	26.90	15.10	8.60
NW	03/12/82	0916	5.10	26.90	15.00	8.60
NW	03/12/82	0916	8.10	26.90	15.10	8.60
NW	03/12/82	0916	9.10	26.90	15.10	8.60
DN	03/12/82	0930	1.00	26.90	15.30	8.60
DN	03/12/82	0930	2.10	26.90	15.20	8.70
DN	03/12/82	0930	5.10	26.90	15.10	8.50
DN	03/12/82	0930	8.10	26.90	15.10	8.50
DN	03/12/82	0930	9.10	26.90	15.10	8.60
NE	03/12/82	0941	1.00	26.80	15.40	8.70
NE	03/12/82	0941	2.10	26.80	15.30	8.70
NE	03/12/82	0941	5.10	26.90	15.20	8.60
NE	03/12/82	0941	8.10	26.90	15.10	8.60
NE	03/12/82	0941	9.10	26.90	15.10	8.60
DE	03/12/82	0953	1.00	26.80	15.20	8.60
DE	03/12/82	0953	2.40	26.90	15.10	8.40
DE	03/12/82	0953	5.40	26.90	15.10	8.40
DE	03/12/82	0953	8.40	28.20	15.40	8.00
DE	03/12/82	0953	9.40	28.30	15.50	8.30
M10A	03/12/82	1005	1.00	26.80	15.40	8.80
M10A	03/12/82	1005	2.40	26.80	15.40	8.70
M10A	03/12/82	1005	5.40	26.80	15.10	8.60
M10A	03/12/82	1005	8.40	28.20	15.40	8.20
M10A	03/12/82	1005	9.40	32.90	15.30	8.00
DW	03/12/82	1021	1.00	26.80	15.30	8.90
DW	03/12/82	1021	2.80	26.80	15.10	8.70
DW	03/12/82	1021	5.80	26.80	15.10	7.80
DW	03/12/82	1021	8.80	27.70	15.10	8.30
DW	03/12/82	1021	9.80	30.30	15.40	8.00
SW	03/12/82	1035	1.00	26.90	15.50	8.70
SW	03/12/82	1035	3.10	26.80	15.10	9.20
SW	03/12/82	1035	6.10	26.90	15.10	8.60
SW	03/12/82	1035	9.10	28.80	15.60	8.20
SW	03/12/82	1035	10.10	30.60	15.50	8.10
DS	03/12/82	1045	1.00	26.80	15.80	9.30
DS	03/12/82	1045	3.10	26.70	15.10	8.70
DS	03/12/82	1045	6.10	26.80	15.10	8.50
DS	03/12/82	1045	9.10	28.90	15.70	8.00
DS	03/12/82	1045	10.10	31.40	15.50	8.20
SE	03/12/82	1058	1.00	26.70	15.70	8.90
SE	03/12/82	1058	2.80	26.80	15.30	8.70
SE	03/12/82	1058	5.80	26.80	15.20	8.40
SE	03/12/82	1058	8.80	28.60	13.60	8.00
SE	03/12/82	1058	9.80	28.70	15.70	8.00
M10	03/12/82	1108	1.00	26.80	15.60	9.10
M10	03/12/82	1108	2.80	26.80	15.40	8.60
M10	03/12/82	1108	5.80	26.90	15.10	8.30
M10	03/12/82	1108	8.80	29.10	15.30	8.10
M10	03/12/82	1108	9.80	31.40	15.40	8.10
M11	03/12/82	1121	1.00	26.70	15.70	8.70
M11	03/12/82	1121	3.40	26.70	15.00	8.70
M11	03/12/82	1121	6.40	28.00	15.30	8.30
M11	03/12/82	1121	9.40	29.40	15.40	7.80
M11	03/12/82	1121	10.40	29.80	15.40	7.20

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
M12	03/12/82	1135	1.00	26.70	15.50	8.80
M12	03/12/82	1135	4.00	27.40	15.00	8.20
M12	03/12/82	1135	7.00	29.90	15.90	7.80
M12	03/12/82	1135	10.00	30.20	15.90	7.60
M12	03/12/82	1135	11.00	30.20	15.80	7.70
M13	03/12/82	1153	1.00	29.10	16.30	8.10
M13	03/12/82	1153	4.60	30.40	15.90	8.00
M13	03/12/82	1153	7.60	30.40	15.80	7.60
M13	03/12/82	1153	10.60	30.50	15.80	7.50
M13	03/12/82	1153	11.60	30.50	15.80	7.50
M22	03/12/82	1210	1.00	29.90	16.10	8.10
M22	03/12/82	1210	4.30	30.20	15.70	7.60
M22	03/12/82	1210	7.30	30.80	15.60	7.50
M22	03/12/82	1210	10.30	31.30	15.50	7.20
M22	03/12/82	1210	11.30	31.30	15.50	7.40
M23	03/12/82	1230	1.00	30.40	16.40	8.30
M23	03/12/82	1230	3.40	30.50	16.10	7.70
M23	03/12/82	1230	6.40	30.50	15.90	8.00
M23	03/12/82	1230	9.40	31.00	15.60	7.70
M23	03/12/82	1230	10.40	31.00	15.60	7.40
M1	03/12/82	1322	1.00	26.80	15.60	10.00
M1	03/12/82	1322	2.40	26.90	15.40	10.10
M1	03/12/82	1322	5.40	27.00	15.20	9.70
M1	03/12/82	1322	8.40	27.90	15.40	9.30
M1	03/12/82	1322	9.40	28.10	15.40	9.30
M3	03/12/82	1340	1.00	26.80	15.90	10.00
M3	03/12/82	1340	2.40	26.80	15.60	9.20
M3	03/12/82	1340	5.40	26.90	15.10	9.20
M3	03/12/82	1340	8.40	28.90	15.50	8.50
M3	03/12/82	1340	9.40	28.90	15.50	8.60
M6	03/12/82	1355	1.00	26.70	15.90	9.70
M6	03/12/82	1355	2.80	26.80	15.50	9.50
M6	03/12/82	1355	5.80	26.90	15.20	8.60
M6	03/12/82	1355	8.80	28.90	15.50	8.30
M6	03/12/82	1355	9.80	29.30	15.30	8.10
DW	03/12/82	1405	1.00	26.70	16.10	9.30
DW	03/12/82	1405	2.80	26.70	15.80	9.30
DW	03/12/82	1405	5.80	26.80	15.30	8.40
DW	03/12/82	1405	8.80	27.80	15.20	8.30
DW	03/12/82	1405	9.80	30.80	15.30	8.10
M10	03/12/82	1430	1.00	26.70	16.10	9.80
M10	03/12/82	1430	2.80	26.70	15.80	9.40
M10	03/12/82	1430	5.80	26.80	15.40	9.00
M10	03/12/82	1430	8.80	27.60	15.10	8.30
M10	03/12/82	1430	9.80	30.00	15.20	8.20
M10A	03/12/82	1445	1.00	26.70	16.20	9.40
M10A	03/12/82	1445	2.40	26.60	15.80	9.10
M10A	03/12/82	1445	5.40	26.70	15.30	8.40
M10A	03/12/82	1445	8.40	26.90	15.20	8.40
M10A	03/12/82	1445	9.40	28.40	15.30	8.20
DE	03/12/82	1455	1.00	26.60	16.30	9.40
DE	03/12/82	1455	2.40	26.60	15.60	8.90

Table I-3. OVER THE SIDE DATA (Continued).

SITE	DATE	TIME (CST)	DEPTH (M)	SALINITY (PPT)	WATER TEMP (DEGREES C)	DISSOLVED OXYGEN (MG/L)
DE	03/12/82	1455	5.40	26.60	15.30	8.20
DE	03/12/82	1455	8.40	26.70	15.30	8.30
DE	03/12/82	1455	9.40	27.80	15.30	7.80
M15	03/12/82	1507	1.00	26.70	16.20	9.20
M15	03/12/82	1507	2.80	26.60	15.60	9.10
M15	03/12/82	1507	5.80	26.60	15.30	8.20
M15	03/12/82	1507	8.80	26.80	15.20	8.10
M15	03/12/82	1507	9.80	28.60	15.50	7.80
M18	03/12/82	1520	1.00	26.70	16.30	9.20
M18	03/12/82	1520	2.80	26.70	15.80	9.10
M18	03/12/82	1520	5.80	26.70	15.80	8.60
M18	03/12/82	1520	8.80	26.70	15.60	8.20
M18	03/12/82	1520	9.80	27.00	15.40	8.00
M20	03/12/82	1538	1.00	24.80	16.20	9.30
M20	03/12/82	1538	2.80	24.80	15.40	9.40
M20	03/12/82	1538	5.80	26.00	15.20	8.90
M20	03/12/82	1538	8.80	26.60	15.50	8.90
M20	03/12/82	1538	9.80	26.60	15.50	8.80
E5	03/13/82	0650	1.00	22.20	16.40	8.80
E5	03/13/82	0650	1.00	22.20	16.40	8.80
E5	03/13/82	0650	3.00	22.20	16.40	9.00
E5	03/13/82	0650	6.00	22.30	16.50	8.80
E10	03/13/82	1005	0.50	6.90	19.00	8.90
E10	03/13/82	1005	0.50	6.90	19.00	8.90
E10	03/13/82	1005	0.90	6.90	19.00	8.90
E9	03/13/82	1035	1.00	5.10	18.30	9.00
E9	03/13/82	1035	1.00	5.10	18.30	9.00
E9	03/13/82	1035	1.80	5.10	18.10	9.00
E9	03/13/82	1035	2.40	5.20	18.30	8.20
E8	03/13/82	1054	1.00	4.50	19.70	9.00
E8	03/13/82	1054	1.00	4.50	19.70	9.00
E8	03/13/82	1054	1.50	6.10	19.00	7.80
E8	03/13/82	1054	1.80	7.10	18.60	8.10
E7	03/13/82	1145	1.00	1.20	17.10	7.40
E7	03/13/82	1145	1.00	1.20	17.10	7.40
E7	03/13/82	1145	2.50	1.80	16.20	6.70
E7	03/13/82	1145	5.50	2.10	16.30	7.20
E1	03/13/82	1248	0.50	2.10	17.30	8.10
E1	03/13/82	1248	0.50	2.10	17.30	8.10
E1	03/13/82	1248	2.10	2.10	17.30	7.40
E6	03/13/82	1317	1.00	11.70	19.20	7.70
E6	03/13/82	1317	1.00	11.70	19.20	7.70
E6	03/13/82	1317	4.50	11.70	19.20	8.50
E6	03/13/82	1317	5.50	11.70	19.20	8.50
E2	03/13/82	1335	0.80	11.70	20.80	10.40
E2	03/13/82	1335	0.80	11.70	20.80	10.40
E2	03/13/82	1335	1.20	11.70	20.50	10.20
E2	03/13/82	1335	1.50	11.80	19.70	8.10
E3	03/13/82	1433	0.20	16.60	21.40	7.00
E3	03/13/82	1433	0.20	16.60	21.40	7.00
E3	03/13/82	1433	0.60	16.80	21.10	7.10
E4	03/13/82	1457	0.50	17.70	20.20	10.30
E4	03/13/82	1457	0.50	17.70	20.20	10.30
E4	03/13/82	1457	0.90	17.70	19.40	9.60

Table I-4. CHEMICAL OCEANOGRAPHY-SEDIMENTOLOGY

SITE	DATE	%SAND	%SILT	%CLAY	PORE WATER SALINITY (PPT)	%ORGANIC CARBON
E1	04/09/81	15.17	40.82	44.01	15.758	00.82
E2	04/09/81	05.14	41.92	52.93	21.661	00.83
E3	04/09/81	15.58	24.54	59.88	23.753	00.88
E4	04/09/81	24.41	22.26	53.33	23.318	00.93
E5	04/09/81	21.21	29.29	49.50	25.468	01.04
M1	04/10/81	23.04	31.16	45.80	999999	00.55
M3	04/10/81	14.39	30.73	54.87	29.179	00.63
M6	04/10/81	04.32	29.81	65.88	30.154	00.71
M9	04/10/81	01.08	22.00	76.91	28.598	00.80
M10	04/10/81	05.67	32.72	61.61	29.534	01.00
M20	04/10/81	06.67	26.39	66.93	29.348	00.78
M10A	04/10/81	00.31	16.46	83.23	29.148	00.73
M11	04/10/81	06.44	50.63	42.92	29.903	00.74
M15	04/10/81	03.04	30.28	66.68	29.310	00.75
M18	04/10/81	02.00	27.95	70.05	29.783	00.76
DE	05/21/81	08.06	37.11	54.84	31.376	00.67
DN	05/21/81	00.80	23.23	75.97	30.703	01.03
DS	05/21/81	02.53	23.77	73.72	31.443	00.86
DW	05/21/81	03.55	30.01	66.43	31.113	00.70
E1	05/22/81	07.33	47.55	45.09	17.143	00.75
E2	05/22/81	13.48	40.79	45.73	21.515	01.02
E3	05/22/81	02.90	28.92	68.18	26.527	00.94
E4	05/22/81	16.26	42.67	41.05	25.315	00.71
E5	05/22/81	29.91	42.83	30.18	24.542	00.54
M3	05/21/81	05.89	24.08	70.05	31.256	00.84
M6	05/21/81	09.07	24.32	66.62	30.809	00.79
M9	05/21/81	00.19	17.97	81.83	30.600	01.14
M10	05/21/81	06.75	26.70	66.56	30.882	00.78
M20	05/21/81	02.14	29.14	68.72	31.191	00.81
M10A	05/21/81	06.95	23.46	69.59	30.604	00.71
M21	05/21/81	00.69	18.42	80.89	28.821	01.11
M22	05/21/81	72.65	13.25	14.11	31.452	00.17
M15	05/21/81	05.50	29.28	65.22	30.870	00.74
M18	05/21/81	06.08	25.38	68.54	31.148	00.92
NE	05/21/81	01.74	36.96	61.28	30.751	00.76
NW	05/21/81	14.28	24.59	61.13	30.770	00.66
SE	05/21/81	09.12	33.70	57.19	30.955	00.96
DE	06/08/81	05.87	44.24	49.89	30.826	00.83
DN	06/08/81	03.47	25.71	70.84	30.038	01.11
DS	06/08/81	03.88	32.44	63.69	29.577	00.98
DW	06/08/81	05.36	38.20	56.43	23.101	00.57
E1	06/10/81	01.96	50.45	47.60	11.528	01.36
E2	06/10/81	11.80	38.50	49.70	17.459	01.10
E3	06/10/81	03.11	25.92	70.96	23.481	01.51
E4	06/10/81	09.73	44.97	45.31	22.915	00.76
E5	06/10/81	18.12	56.41	25.43	26.306	00.48
M3	06/08/81	24.81	30.75	44.43	29.296	00.77
M6	06/08/81	13.47	35.92	50.60	29.242	00.89
M10	06/08/81	42.24	23.10	37.25	29.685	00.63
M20	06/08/81	06.13	26.38	67.48	33.376	01.03
M10A	06/08/81	03.45	30.99	65.55	29.291	00.83
M21	06/08/81	00.90	27.12	71.97	27.151	01.19
M22	06/08/81	80.01	09.56	10.44	31.426	00.22
M15	06/08/81	04.30	28.16	67.55	29.227	01.13
M18	06/08/81	05.37	36.42	58.20	29.670	00.86
DE	07/02/81	03.78	30.01	66.22	30.529	01.04
DS	07/02/81	44.41	34.26	21.33	31.745	00.29
DW	07/02/81	01.51	24.37	74.11	30.618	01.03
E1	07/02/81	06.34	44.94	48.72	07.441	00.79
E2	07/02/81	07.82	44.95	47.22	09.597	01.14

Table I-4. CHEMICAL OCEANOGRAPHY-SEDIMENTOLOGY (Continued).

SITE	DATE	%SAND	%SILT	%CLAY	PORE WATER SALINITY (PPT)	%ORGANIC CARBON
E4	07/02/81	47.22	19.61	33.18	11.934	00.83
E5	07/02/81	45.66	37.78	16.56	14.801	01.02
M3	07/02/81	09.35	32.37	58.27	30.937	00.86
M10	07/02/81	08.44	37.88	53.67	30.908	00.64
M10A	07/02/81	08.10	26.07	65.83	30.742	00.62
M18	07/02/81	08.87	34.39	56.74	30.861	00.97
E1	08/08/81	12.19	52.08	35.72	03.404	01.04
E2	08/08/81	09.90	44.20	45.90	12.807	01.30
E3	08/08/81	39.97	30.04	29.98	15.419	00.59
E4	08/08/81	31.35	33.25	35.40	16.896	00.99
E5	08/08/81	57.53	21.41	21.06	22.161	00.66
M3	08/09/81	29.52	33.31	37.16	30.358	00.68
M10	08/09/81	17.23	34.08	48.68	32.472	00.64
M10A	08/09/81	09.78	32.11	57.12	32.345	00.68
M18	08/09/81	04.51	27.67	67.83	29.562	01.08
DE	08/09/81	04.85	35.26	59.91	30.600	00.99
DW	08/09/81	03.19	38.24	58.56	32.927	01.02
E1	09/10/81	10.60	50.20	39.10	06.385	00.84
E2	09/10/81	05.00	43.10	51.80	16.989	01.25
E3	09/10/81	06.20	32.30	61.40	18.174	01.19
E4	09/10/81	25.20	30.90	44.00	19.650	00.85
E5	09/10/81	05.10	37.70	57.20	21.959	00.37
M1	09/11/81	15.20	31.00	53.80	27.792	00.61
M3	09/11/81	27.50	24.50	48.10	27.948	00.48
M6	09/11/81	10.70	40.50	59.50	28.043	00.73
M9	09/11/81	43.20	22.90	33.70	27.463	00.97
M10	09/11/81	05.70	32.70	61.60	29.816	00.76
M10A	09/11/81	07.70	45.80	46.40	30.156	00.49
M11	09/11/81	15.90	31.80	52.30	28.411	00.96
M15	09/11/81	01.10	22.60	76.40	28.541	01.02
M18	09/11/81	02.50	29.70	67.70	27.982	01.02
M20	09/11/81	01.30	29.00	69.50	27.899	00.96
DN	09/11/81	07.00	36.80	56.10	27.948	00.84
DS	09/11/81	08.30	38.90	52.80	29.283	00.81
DE	09/11/81	06.90	27.40	65.70	28.185	00.91
DW	09/11/81	11.50	31.00	57.50	29.667	00.86
NE	09/11/81	08.60	31.40	60.00	27.481	00.86
NW	09/11/81	01.40	24.20	74.40	27.196	00.93
SE	09/11/81	04.60	24.20	71.20	28.442	00.81
SW	09/11/81	29.10	33.60	37.50	29.364	00.73
E1	10/03/81	07.86	51.00	41.16	08.270	01.05
E2	10/03/81	38.68	33.21	28.11	18.857	00.63
E3	10/03/81	01.54	28.89	69.57	20.046	01.42
E4	10/03/81	16.39	30.23	53.38	19.930	01.06
E5	10/02/81	35.61	33.22	31.17	21.933	01.92
M1	10/02/81	36.36	23.32	40.32	27.965	00.81
M3	10/02/81	11.40	29.25	59.35	28.205	00.92
M6	10/02/81	05.98	31.84	62.18	28.462	01.01
M9	10/02/81	10.42	51.03	38.55	27.010	01.21
M10	10/02/81	00.30	96.60	03.10	30.149	00.91
M10A	10/02/81	13.12	25.69	61.19	30.020	01.17
M11	10/02/81	26.20	38.28	35.52	29.075	00.85
M15	10/02/81	02.31	32.28	65.41	28.219	01.09
M18	10/02/81	22.12	31.12	46.76	28.335	01.19
M20	10/02/81	01.27	27.00	71.73	28.016	01.21
DN	10/02/81	09.64	30.75	59.61	28.131	01.19
DS	10/02/81	11.42	31.59	56.99	29.603	01.09
DE	10/02/81	01.89	27.31	70.80	28.001	01.19
DW	10/02/81	02.98	32.72	64.30	29.375	01.17
NE	10/02/81	00.32	24.38	75.30	27.997	01.13

Table I-4. CHEMICAL OCEANOGRAPHY-SEDIMENTOLOGY (Continued).

SITE	DATE	%SAND	%SILT	%CLAY	PORE WATER SALINITY (PPT)	%ORGANIC CARBON
NW	10/02/81	00.77	24.72	74.41	27.510	01.21
SE	10/02/81	10.50	34.52	54.98	30.365	00.86
SW	10/02/81	09.29	35.21	55.50	29.950	00.89
E1	11/12/81	04.20	52.91	42.89	08.951	00.97
E2	11/12/81	06.67	45.85	47.48	20.074	01.29
E3	11/12/81	53.33	22.88	23.79	20.841	00.50
E4	11/12/81	27.00	28.49	44.51	20.606	01.21
E5	11/12/81	08.46	24.68	66.86	23.772	01.28
M1	11/13/81	37.90	21.60	40.50	30.320	00.51
M3	11/13/81	26.49	29.38	44.13	30.503	00.72
M6	11/13/81	04.85	26.27	68.88	31.157	00.77
M9	11/13/81	01.51	25.18	73.31	30.668	01.07
M10	11/13/81	06.63	39.47	53.90	33.100	00.55
M10A	11/13/81	00.50	24.52	74.98	34.454	01.17
M11	11/13/81	12.92	38.38	48.70	31.797	00.78
M15	11/13/81	04.16	29.95	65.89	32.831	00.80
M18	11/13/81	00.70	30.20	69.10	30.460	01.20
M20	11/13/81	00.45	30.61	68.94	30.367	01.23
DN	11/13/81	01.66	22.91	75.43	31.747	01.32
DS	11/13/81	04.18	31.60	64.22	32.818	00.92
DE	11/13/81	10.39	21.73	67.58	31.292	01.27
DW	11/13/81	01.13	32.10	66.77	32.766	01.11
NE	11/13/81	01.05	26.70	72.85	30.995	01.43
NW	11/13/81	01.35	23.40	75.25	30.658	01.28
SE	11/13/81	02.69	28.88	68.43	31.806	01.35
SW	11/13/81	49.18	15.12	35.70	32.941	00.92
E1	12/03/81	10.38	49.25	40.37	10.929	00.91
E2	12/03/81	19.95	22.41	57.64	21.368	01.08
E3	12/03/81	08.99	57.83	33.18	22.169	01.42
E4	12/03/81	38.84	25.10	36.26	22.667	01.08
E5	12/03/81	35.47	29.25	35.28	24.340	00.83
M1	12/02/81	38.56	23.01	38.43	30.847	00.62
M3	12/02/81	13.59	30.30	56.11	30.986	00.57
M6	12/02/81	06.66	37.45	55.89	31.831	00.91
M9	12/02/81	01.88	24.03	74.09	30.927	00.94
M10	12/02/81	11.49	44.30	44.21	32.905	00.36
M10A	12/02/81	02.04	28.65	69.31	33.419	00.97
M11	12/02/81	14.86	41.17	43.67	31.914	00.65
M15	12/02/81	02.95	26.49	70.56	31.399	01.00
M18	12/02/81	00.71	28.63	70.66	30.476	00.95
M20	12/02/81	00.59	27.69	71.72	31.003	00.97
NW	12/02/81	04.47	23.09	72.44	31.470	01.06
DN	12/02/81	02.69	24.68	72.63	31.325	00.98
DW	12/02/81	03.56	31.07	65.37	32.673	00.83
SW	12/02/81	13.91	31.35	54.74	32.206	00.79
DE	12/02/81	04.85	24.82	70.33	31.483	01.07
NE	12/02/81	97.59	00.07	02.34	31.936	00.01
DS	12/02/81	05.58	34.35	60.07	32.698	00.93
SE	12/02/81	03.23	28.16	68.62	31.902	01.02
M1	01/06/82	13.72	39.05	47.23	30.488	00.58
M3	01/06/82	53.04	17.28	28.68	30.768	00.38
M6	01/06/82	05.46	23.86	70.68	30.928	00.84
M9	01/06/82	00.25	24.63	75.12	30.145	01.12
M10	01/06/82	06.51	32.08	61.41	31.406	00.45
M10A	01/06/82	00.26	30.23	69.51	31.770	00.95
M11	01/06/82	13.49	39.68	46.83	31.882	00.83
M15	01/06/82	04.29	29.51	65.20	30.920	00.84
M18	01/06/82	05.87	26.19	67.94	30.934	00.88
M20	01/06/82	02.48	28.98	68.54	30.614	01.05
DW	01/06/82	03.03	43.22	53.75	31.277	01.02
DE	01/06/82	01.25	25.71	72.94	31.079	00.98
DS	01/06/82	01.75	28.58	69.67	31.849	00.93
DN	01/06/82	25.69	25.75	48.56	30.887	01.07

Table I-4. CHEMICAL OCEANOGRAPHY-SEDIMENTOLOGY (Continued).

SITE	DATE	%SAND	%SILT	%CLAY	PORE WATER SALINITY (PPT)	%ORGANIC CARBON
SE	01/06/82	10.26	24.87	64.87	30.011	00.94
SW	01/06/82	01.05	28.99	69.96	31.968	01.03
NW	01/06/82	01.99	36.08	61.93	30.350	00.75
NE	01/06/82	72.77	13.22	14.01	30.042	00.17
E1	01/09/82	10.65	45.29	44.06	12.772	00.79
E2	01/09/82	05.93	44.64	49.43	18.456	01.02
E4	01/09/82	30.84	27.60	41.56	22.765	01.20
E5	01/09/82	19.34	34.07	46.59	25.053	00.85
M1	02/04/82	33.27	25.06	41.67	29.444	
M3	02/04/82	28.26	26.70	45.04	29.393	
M6	02/04/82	10.99	28.29	60.72	30.428	
M9	02/04/82	00.34	27.53	72.13	29.375	
M10	02/04/82	05.69	28.52	65.79	31.777	
M10A	02/04/82	00.46	25.51	74.03	30.713	
M11	02/04/82	15.42	31.08	53.50	30.803	
M15	02/04/82	11.04	36.68	52.28	30.538	
M18	02/04/82	05.47	33.38	61.15	29.886	
M20	02/04/82	02.76	27.12	70.12	30.054	
DW	02/04/82	00.67	24.47	74.86	31.453	
DE	02/04/82	17.24	40.41	42.35	30.169	
DS	02/04/82	03.52	31.47	64.91	30.189	
DN	02/04/82	13.71	28.12	58.17	29.825	
NW	02/04/82	04.64	31.83	63.53	29.996	
NE	02/04/82	01.52	25.97	72.51	29.558	
SW	02/04/82	00.32	27.98	71.70	30.689	
SE	02/04/82	07.31	31.79	60.90	30.585	
E1	02/08/82	16.29	45.39	38.32	14.367	
E2	02/08/82	11.38	38.79	49.83	18.671	
E3	02/08/82	02.89	29.18	67.93	22.263	
E4	02/08/82	24.94	27.51	47.55	23.482	
E5	02/08/82	21.88	27.59	50.53	25.068	
M1	03/03/82	08.11	23.41	68.48	29.250	00.64
M3	03/03/82	48.86	25.59	25.55	29.515	00.71
M6	03/03/82	17.30	24.96	57.74	29.775	00.80
M9	03/03/82	03.48	24.20	72.32	28.732	00.99
M10	03/03/82	02.37	14.68	82.95	30.312	00.88
M10A	03/03/82	10.31	25.74	63.95	30.655	01.12
M11	03/03/82	14.67	30.45	54.88	30.995	00.50
M15	03/03/82	06.53	25.19	68.28	29.754	01.06
M18	03/03/82	05.78	25.96	68.26	29.512	01.34
M20	03/03/82	13.50	24.55	61.95	29.421	01.18
NE	03/03/82	05.07	22.25	72.68	28.850	01.18
NW	03/03/82	00.75	17.86	81.39	29.143	01.20
DW	03/03/82	00.74	16.17	83.09	29.710	01.43
DS	03/03/82	01.92	23.76	74.32	30.174	01.04
DE	03/03/82	12.42	24.27	63.31	29.522	00.67
DN	03/03/82	01.76	15.17	83.07	28.916	00.86
SW	03/03/82	03.51	24.55	71.94	30.449	00.70
SE	03/03/82	09.61	23.08	67.31	29.921	00.72
E1	03/12/82	35.41	23.12	41.47	04.527	00.82
E2	03/12/82	28.64	36.93	34.43	11.369	00.73
E3	03/12/82	20.83	35.51	43.66	18.021	00.47
E4	03/12/82	38.05	21.62	40.33	18.526	01.05
E5	03/03/82	72.57	10.76	16.67	20.577	00.31

Table I-5. PHI SIZES
EACH COLUMN IN PER CENT

SITE	DATE	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-14
E1	04/09/81	00.37	00.65	03.96	10.19	17.81	14.62	06.09	02.30	04.38	00.22	39.41
E2	04/09/81	00.16	01.10	01.92	01.96	18.52	13.15	05.64	04.61	07.02	01.58	44.33
E3	04/09/81	00.05	00.13	02.76	12.64	10.66	04.56	07.44	01.88	09.79	02.08	48.01
E4	04/09/81	00.00	00.23	04.41	19.77	10.75	05.07	04.25	02.19	07.39	01.23	44.71
E5	04/09/81	01.18	05.98	10.64	03.41	13.78	06.79	06.30	02.42	07.82	00.69	40.99
M1	04/10/81	00.14	01.57	09.44	11.89	16.64	08.22	03.53	02.77	05.50	03.43	36.87
M3	04/10/81	00.65	01.32	05.18	07.24	15.30	09.54	04.07	01.82	08.63	06.88	39.36
M6	04/10/81	00.17	00.54	01.70	01.91	14.94	05.68	04.96	04.23	08.89	05.32	51.67
M10	04/10/81	01.05	00.71	01.54	02.37	14.97	08.59	01.91	07.25	08.47	01.64	48.50
M20	04/10/81	00.05	00.07	00.67	05.88	12.25	07.14	03.77	03.23	09.43	01.68	55.82
M10A	04/10/81	00.00	00.03	00.13	00.15	00.35	06.46	03.48	06.17	12.13	05.04	66.06
M11	04/10/81	00.03	00.64	02.76	03.01	33.03	09.89	05.53	02.18	10.15	01.01	31.86
M15	04/10/81	00.04	00.17	00.74	02.09	09.79	08.29	08.22	03.98	05.87	07.83	52.98
DE	05/21/81	00.82	00.22	00.11	06.91	17.74	07.89	06.59	04.89	05.87	04.83	44.14
DN	05/21/81	00.13	00.12	00.10	00.45	03.61	06.78	07.16	05.68	05.49	14.78	55.70
DS	05/21/81	00.02	00.22	00.13	02.16	06.50	07.83	06.78	02.66	07.20	12.65	53.87
DW	05/21/81	00.12	00.33	01.31	01.73	09.81	09.12	03.58	07.50	06.91	00.68	58.84
E1	05/22/81	00.21	01.02	02.31	03.79	22.57	08.11	12.16	04.71	06.30	04.00	34.79
E2	05/22/81	00.62	02.16	02.05	08.65	17.56	11.28	07.35	04.60	04.94	01.23	39.56
E3	05/22/81	00.01	00.03	00.02	02.84	06.53	06.61	07.60	08.18	07.77	01.74	58.67
E4	05/22/81	05.64	00.77	05.30	04.55	27.79	07.62	03.18	04.08	04.68	02.88	33.49
E5	05/22/81	00.36	04.33	06.19	16.09	36.89	02.25	01.44	02.25	03.57	01.50	25.11
M3	05/21/81	00.17	00.83	02.73	02.16	04.92	08.39	06.43	04.34	09.40	06.36	54.29
M6	05/21/81	00.02	00.47	06.33	02.25	09.10	05.55	05.97	03.70	09.46	06.26	50.90
M9	05/21/81	00.02	00.04	00.05	00.08	04.08	01.39	03.76	08.74	09.23	09.80	62.80
M10	05/21/81	00.21	05.42	00.35	00.77	08.90	06.77	06.92	04.11	06.85	07.76	51.95
M20	05/21/81	00.06	00.04	00.36	01.68	10.01	08.02	06.11	05.00	09.79	05.59	53.34
M10A	05/21/81	00.79	00.30	00.93	04.93	07.87	04.90	04.90	05.79	07.12	03.78	58.69
M21	05/21/81	00.01	00.10	00.02	00.56	02.53	03.25	05.69	06.95	11.01	06.14	63.74
M22	05/21/81	07.49	07.16	39.11	18.89	06.80	02.22	03.03	01.20	00.16	01.71	12.24
M15	05/21/81	00.13	00.25	00.17	04.95	11.91	09.46	07.18	00.73	06.46	05.55	53.21
M18	05/21/81	00.54	00.07	00.46	05.01	07.37	06.60	06.44	04.97	07.92	07.06	53.56
NE	05/21/81	00.09	00.09	00.14	01.42	10.74	10.21	15.38	00.63	06.93	07.18	47.17
NW	05/21/81	00.10	01.50	06.60	06.08	06.10	07.06	05.39	06.04	06.81	05.14	49.18
SE	05/21/81	07.00	00.40	00.37	01.35	12.53	03.95	09.19	08.03	03.68	07.08	46.43
DE	06/08/81	02.20	00.37	00.91	02.39	26.63	07.48	05.00	05.13	05.22	04.62	40.05
DN	06/08/81	00.03	00.18	00.62	02.64	05.36	07.40	06.66	06.29	07.71	06.97	56.16
DS	06/08/81	00.03	00.44	02.19	01.22	13.85	07.38	05.39	05.82	06.84	06.47	50.38
DW	06/08/81	00.08	00.26	01.11	03.91	19.44	09.14	02.96	06.66	06.45	04.49	45.49
E1	06/10/81	00.17	00.13	01.14	00.52	22.65	12.21	09.85	05.74	04.31	04.71	38.58
E2	06/10/81	00.55	02.38	04.46	04.41	15.59	09.43	07.99	05.49	06.01	03.99	39.70
E3	06/10/81	00.01	00.02	00.77	02.31	06.20	07.16	06.87	05.69	08.34	06.50	56.12
E4	06/10/81	00.22	00.84	07.57	01.10	31.01	05.76	04.72	03.48	04.72	03.43	37.16
E5	06/10/81	00.95	03.15	07.64	06.38	50.57	02.88	01.48	01.48	02.83	01.02	21.58
M3	06/08/81	01.81	03.04	14.06	05.90	15.55	06.86	04.17	04.17	04.76	06.03	33.64
M6	06/08/81	00.30	01.23	07.50	04.44	19.33	07.92	04.82	03.85	05.79	03.89	40.92
M10	06/08/81	00.24	00.53	02.42	39.05	14.06	05.53	03.51	02.67	04.01	04.01	26.56
M20	06/08/81	00.02	00.06	00.75	05.30	12.15	05.91	05.37	02.95	07.92	06.71	52.85
M10A	06/08/81	00.38	00.37	02.08	00.62	08.19	08.30	06.60	07.90	06.82	07.56	51.17
M21	06/08/81	00.01	00.02	00.06	00.81	09.52	05.55	04.92	07.13	08.14	08.83	55.00
M22	06/08/81	13.09	07.30	48.56	11.06	05.07	02.12	02.26	00.11	00.19	00.03	10.22
M15	06/08/81	00.10	00.13	01.15	02.92	10.98	06.94	05.12	05.12	06.20	06.60	54.75
M18	06/08/81	00.65	00.15	00.74	03.83	14.55	09.33	06.45	06.09	06.63	05.79	45.80
DE	07/02/81	00.16	00.11	00.51	03.00	10.83	08.74	06.61	03.83	08.87	05.70	51.65
DS	07/02/81	00.54	03.86	12.28	27.73	26.94	04.26	01.94	01.12	02.29	01.14	17.90
DW	07/02/81	00.01	00.09	00.42	00.99	05.41	07.31	07.79	03.86	10.70	06.89	56.52
E1	07/02/81	00.10	00.53	01.41	04.30	18.17	11.79	10.59	04.39	07.93	02.41	38.38
E2	07/02/81	00.89	01.03	02.43	03.47	19.27	13.31	07.85	04.52	06.70	02.53	37.99
E4	07/02/81	00.23	00.87	10.73	35.39	11.59	03.80	03.08	01.14	05.59	00.91	26.68
E5	07/02/81	00.36	01.91	04.17	39.22	33.88	02.69	01.21	00.00	02.72	12.08	01.76

Table I-5. PHI SIZES (Continued).
EACH COLUMN IN PER CENT

SITE	DATE	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-14
M3	07/02/81	01.74	01.58	00.99	05.04	14.70	07.39	05.48	04.80	07.48	04.72	46.07
M10	07/02/81	01.01	00.83	02.52	04.08	18.88	08.51	06.49	04.00	07.23	05.12	41.32
M10A	07/02/81	00.33	00.50	01.97	05.30	08.30	06.81	06.66	04.30	08.81	05.38	51.64
M18	07/02/81	01.05	00.34	01.11	06.37	14.51	10.82	04.87	04.19	07.39	04.82	44.53
E1	08/08/81	00.32	00.95	03.53	07.37	17.29	14.28	10.09	10.42	03.93	03.67	28.12
E2	08/08/81	00.69	01.01	03.23	04.97	11.37	12.22	08.18	12.43	04.30	05.02	36.58
E3	08/08/81	07.18	01.55	11.04	20.20	14.46	03.74	03.52	08.32	03.38	02.73	23.87
E4	08/08/81	00.40	00.74	07.46	22.75	15.70	05.11	04.26	08.18	03.48	03.78	28.14
E5	08/08/81	01.19	03.09	15.42	37.83	12.83	02.18	01.53	04.87	01.83	02.01	17.22
M3	08/09/81	01.85	04.20	14.33	09.14	17.18	05.45	03.20	07.48	03.74	04.60	28.82
M10	08/09/81	01.25	01.38	05.90	08.70	10.80	08.21	07.27	07.80	05.15	05.77	37.76
M10A	08/09/81	00.77	02.11	05.78	02.51	07.99	06.19	05.54	12.24	05.77	05.82	45.27
M18	08/09/81	00.15	00.12	00.98	03.26	07.12	09.52	06.24	04.79	08.32	06.05	53.46
DE	08/09/81	00.05	00.11	00.88	03.81	13.98	05.63	05.25	10.40	06.01	07.11	46.79
DW	08/09/81	00.36	00.28	00.97	01.58	13.00	07.76	04.81	12.67	05.95	07.33	45.28
E1	09/10/81	01.00	00.40	01.70	07.50	18.00	10.40	15.20	06.60	03.70	01.40	34.00
E2	09/10/81	00.60	00.20	00.90	03.30	18.00	14.10	03.80	07.20	05.20	03.10	43.50
E3	09/10/81	00.10	00.10	01.20	04.90	08.10	08.70	08.80	06.70	06.30	02.30	52.80
E4	09/10/81	00.30	00.60	05.40	18.90	15.30	06.10	05.30	04.20	04.40	01.30	38.30
E5	09/10/81	00.02	00.20	01.70	03.20	23.90	05.10	05.10	03.60	05.10	12.20	39.90
M1	09/11/81	00.80	01.30	04.20	08.90	12.20	07.30	05.50	06.00	05.70	03.60	44.50
M3	09/11/81	00.40	03.40	13.30	10.40	11.70	04.50	03.50	04.80	04.60	02.70	40.80
M6	09/11/81	00.70	01.50	03.90	04.60	20.00	09.50	05.90	05.10	04.90	03.40	40.50
M9	09/11/81	02.90	02.00	04.60	33.70	14.00	02.10	03.20	03.60	03.50	02.20	28.00
M10	09/11/81	00.20	00.50	01.70	03.30	13.80	07.10	05.80	06.00	06.70	04.30	50.60
M10A	09/11/81	01.30	01.70	01.20	03.50	30.40	06.90	04.90	03.60	04.30	06.10	36.00
M11	09/11/81	00.40	00.90	05.30	09.30	15.60	06.50	04.80	04.90	04.80	04.20	43.30
M15	09/11/81	00.10	00.10	00.50	00.40	06.20	05.10	06.30	05.00	08.30	10.90	57.20
M18	09/11/81	00.02	00.07	00.30	02.10	09.30	08.70	05.60	06.10	07.90	04.60	55.20
M20	09/11/81	00.02	00.08	00.40	00.80	07.20	07.30	07.30	07.20	06.70	05.60	57.20
DN	09/11/81	00.40	00.80	01.80	04.00	13.90	09.70	06.00	07.20	05.70	04.20	46.20
DS	09/11/81	01.30	00.60	02.10	04.30	19.40	09.20	04.90	05.40	05.50	03.90	43.40
DE	09/11/81	02.90	00.30	00.70	03.00	07.40	06.30	06.50	07.20	07.00	05.80	52.90
DW	09/11/81	00.10	01.10	03.30	07.00	19.10	01.40	05.20	05.30	05.90	03.80	47.80
NE	09/11/81	01.00	02.20	02.50	02.90	13.60	05.70	06.10	06.00	05.70	03.80	50.60
NW	09/11/81	00.10	00.10	00.60	00.60	06.00	04.90	05.40	07.90	08.70	04.90	60.80
SE	09/11/81	00.40	00.20	00.90	03.10	05.30	05.70	05.80	07.40	07.60	05.40	58.20
SW	09/11/81	02.20	03.00	13.40	10.50	23.00	01.50	05.10	04.00	03.40	02.50	31.60
M11	10/02/81	0.29	0.17	4.56	21.18	24.58	7.62	3.21	2.87	4.14	4.25	27.13
NW	10/02/81	0.03	0.12	0.31	0.31	2.84	7.40	7.08	7.49	7.31	11.15	55.96
M9	10/02/81	0.24	0.15	0.79	9.24	32.29	10.33	4.24	4.17	4.00	5.62	28.92
M15	10/02/81	0.52	0.30	0.75	0.74	11.49	7.84	4.97	7.97	6.64	10.29	48.48
M3	10/02/81	0.45	1.44	4.99	4.51	9.44	9.14	4.69	5.98	6.08	8.09	45.18
M1	10/02/81	1.87	4.09	15.69	14.70	10.65	5.08	3.51	4.08	4.43	5.80	30.09
DN	10/02/81	1.18	0.79	1.43	6.24	11.85	6.71	5.67	6.52	6.82	7.83	44.96
M6	10/02/81	0.39	1.04	2.92	1.63	11.87	7.20	6.38	6.38	5.53	10.98	45.67
M18	10/02/81	7.11	0.46	1.60	12.95	14.32	6.47	5.04	5.29	4.47	6.33	35.96
SW	10/02/81	0.81	0.70	2.26	5.52	19.03	4.49	4.79	6.90	5.85	7.76	41.89
DE	10/02/81	0.08	0.12	0.40	1.29	5.07	6.41	7.31	8.52	7.44	10.90	52.46
NE	10/02/81	0.01	0.04	0.15	0.13	3.26	5.33	6.93	8.85	7.85	11.45	56.01
M10A	10/02/81	0.77	1.30	4.12	6.93	5.81	7.48	6.06	6.34	6.72	9.20	45.26
M20	10/02/81	0.01	0.11	0.30	0.85	4.56	6.28	7.45	8.70	8.10	8.33	55.30
SE	10/02/81	0.59	0.74	2.70	6.47	14.74	8.71	5.25	5.82	5.85	8.01	41.12
M10	10/02/81	0.02	0.03	0.09	0.16	95.47	0.49	0.31	0.34	0.34	0.37	2.39
DS	10/02/81	0.95	1.03	2.72	6.72	13.19	6.88	5.58	5.94	2.77	11.22	43.00
DW	10/02/81	0.46	0.39	1.21	0.92	11.64	7.74	6.62	6.73	7.39	9.10	47.81
E5	10/02/81	1.18	5.19	11.94	17.30	12.50	10.83	4.44	5.44	2.85	4.11	24.21
E3	10/03/81	0.08	0.12	0.62	0.72	4.16	6.49	8.71	9.53	7.85	9.49	52.22
E4	10/03/81	0.85	2.07	5.22	8.25	9.99	7.87	6.29	6.09	6.31	6.17	40.89
E1	10/03/81	0.15	0.91	2.67	4.14	18.99	14.13	11.59	6.29	7.98	1.60	31.56
E2	10/03/81	0.85	8.14	11.94	17.76	16.18	7.98	6.32	2.72	2.95	3.47	21.70

Table I-5. PHI SIZES (Continued).
EACH COLUMN IN PER CENT

SITE	DATE	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-14
E5	11/12/81	0.25	1.45	2.57	4.19	7.85	3.86	5.99	6.99	7.25	6.92	52.69
E4	11/12/81	0.38	0.81	3.18	22.63	10.39	5.47	5.99	6.63	4.67	4.63	35.20
E1	11/12/81	0.68	0.80	2.64	0.08	16.63	16.25	11.57	8.45	4.91	3.31	34.67
E2	11/12/81	1.25	0.56	0.56	4.30	17.63	12.83	8.76	6.63	5.05	5.05	37.38
E3	11/12/81	15.48	1.17	8.64	28.04	12.17	4.44	3.70	2.57	2.79	2.03	18.96
M15	11/13/81	0.05	0.23	0.29	3.60	8.27	7.23	6.15	8.31	6.94	8.14	50.81
M18	11/13/81	0.10	0.14	0.43	0.02	5.94	7.85	6.39	10.02	7.45	8.96	52.69
M6	11/13/81	0.03	0.47	1.91	2.43	5.55	5.35	5.97	9.40	7.09	8.13	53.66
M20	11/13/81	0.04	0.09	0.28	0.05	7.18	7.69	6.22	9.52	7.55	6.40	54.99
M9	11/13/81	0.07	0.10	0.09	1.25	4.78	4.78	6.33	9.30	8.27	7.88	57.17
NE	11/13/81	0.07	0.22	1.36	0.13	5.83	5.68	6.46	8.54	8.31	8.28	55.12
NW	11/13/81	0.14	0.14	0.35	0.72	2.64	4.85	6.67	9.23	8.72	8.25	58.28
M11	11/13/81	0.17	1.66	4.02	7.08	22.76	5.66	4.24	5.72	4.45	5.10	39.15
M10A	11/13/81	0.02	0.02	0.08	0.39	2.83	6.30	7.28	8.11	8.41	9.54	57.03
DE	11/13/81	0.10	9.82	0.17	0.30	2.63	6.41	5.59	7.10	7.84	7.97	52.07
DN	11/13/81	0.12	0.09	0.27	1.18	2.95	4.00	6.65	9.31	9.01	8.48	57.93
SW	11/13/81	0.26	0.89	2.53	45.51	5.13	2.98	4.05	2.96	3.77	3.33	28.59
M3	11/13/81	1.36	3.21	2.79	19.12	14.82	5.12	3.61	5.84	4.33	4.24	35.56
DS	11/13/81	0.35	0.50	2.05	1.27	10.64	7.62	5.73	7.62	7.00	7.31	49.92
DW	11/13/81	0.07	0.33	0.39	0.35	10.94	8.05	7.62	5.49	7.62	7.02	52.12
M10	11/13/81	1.94	0.88	3.06	0.74	14.68	11.03	6.85	6.92	5.64	5.77	42.48
M1	11/13/81	0.58	3.98	2.80	30.54	9.77	4.68	3.55	3.60	4.42	3.86	32.21
SE	11/13/81	0.17	0.36	1.20	0.95	9.77	5.86	5.97	7.28	7.60	8.17	52.65
E3	12/03/81	0.01	0.05	0.57	0.04	4.58	4.85	13.35	5.24	8.37	9.30	53.63
E4	12/03/81	0.08	0.81	1.20	36.55	11.58	4.66	5.44	3.41	3.72	4.41	28.13
E1	12/03/81	0.63	1.01	1.18	7.55	20.32	13.80	8.69	6.44	4.72	4.64	31.01
E2	12/03/81	0.13	1.91	0.28	6.71	10.91	10.62	6.77	5.02	4.57	8.10	44.98
E5	12/03/81	1.54	5.67	13.29	14.98	18.85	3.29	3.17	3.95	3.61	4.55	27.12
M10A	12/02/81	0.03	0.40	1.35	0.21	7.10	5.83	6.96	7.58	8.20	10.57	51.77
M6	12/02/81	0.10	0.79	1.69	3.27	6.33	8.09	6.23	14.22	0.83	9.98	48.47
M3	12/02/81	1.73	3.41	8.19	0.26	12.83	5.49	5.56	6.42	5.43	7.00	43.68
NW	12/02/81	2.77	0.13	0.48	1.10	5.41	2.22	7.77	7.68	7.77	10.59	54.08
DN	12/02/81	1.26	0.37	0.69	0.38	5.12	5.12	6.43	8.00	8.10	11.52	53.01
DW	12/02/81	0.27	0.38	0.89	2.02	7.70	9.24	7.13	7.00	7.82	9.33	48.22
M10	12/02/81	1.90	1.93	4.45	3.21	30.93	3.77	3.85	5.75	4.31	5.86	34.03
M9	12/02/81	0.18	0.15	0.40	1.14	4.86	5.29	5.64	8.24	8.73	10.58	54.78
M11	12/02/81	0.73	1.76	4.79	7.59	25.27	6.80	4.39	4.71	4.99	4.99	33.99
M15	12/02/81	0.22	0.14	0.44	2.16	6.48	6.57	6.44	7.00	7.91	10.11	52.54
M18	12/02/81	0.04	0.14	0.44	0.09	7.75	6.80	7.36	6.72	7.99	10.10	52.57
SW	12/02/81	0.27	1.45	4.27	7.92	14.62	5.75	5.27	5.71	5.60	7.51	41.63
DE	12/02/81	1.99	0.15	0.56	2.14	6.85	5.01	5.16	7.79	7.84	10.97	51.52
NE	12/02/81	0.15	45.74	44.95	6.74	0.12	0.03	0.09	0.19	0.23	1.33	0.42
DS	12/02/81	0.39	0.90	2.48	1.81	14.84	6.32	6.39	6.79	6.25	8.41	45.41
SE	12/02/81	0.13	0.29	0.65	2.25	5.16	6.60	6.91	7.46	8.59	10.00	51.95
M20	12/02/81	0.04	0.11	0.25	0.19	4.64	6.62	7.80	8.63	7.84	10.56	53.32
M1	12/02/81	0.66	3.52	9.18	25.20	12.74	4.63	3.24	2.39	3.45	5.63	29.36
M1	01/06/82	0.10	0.96	5.59	7.07	12.39	18.41	3.99	4.26	6.08	4.79	36.36
M11	01/06/82	0.21	1.08	2.19	10.01	10.25	17.00	7.39	5.03	5.35	5.73	35.75
M9	01/06/82	0.01	0.01	0.12	0.10	2.77	4.92	7.31	9.63	8.83	9.88	56.41
M3	01/06/82	1.72	6.68	12.21	32.43	8.97	3.80	2.63	2.89	2.61	3.65	22.43
SE	01/06/82	0.43	1.06	2.52	6.24	9.38	4.09	4.89	6.52	8.18	7.51	49.18
M6	01/06/82	0.19	0.84	2.39	2.04	5.75	5.79	6.09	6.22	8.02	9.61	53.04
SW	01/06/82	0.04	0.06	0.27	0.68	5.94	8.40	7.52	7.13	7.79	8.54	53.63
NW	01/06/82	0.24	0.13	0.51	1.11	11.31	10.38	7.43	6.97	7.25	8.11	46.57
M18	01/06/82	0.64	0.24	0.86	4.13	7.42	5.40	6.47	6.90	7.12	9.39	51.44
M20	01/06/82	0.04	0.08	0.45	1.91	6.78	7.35	6.99	7.86	8.36	8.00	52.17
M15	01/06/82	0.17	0.19	0.80	3.14	8.95	7.64	5.80	8.13	6.66	9.23	49.31
DW	01/06/82	0.47	0.26	0.82	1.48	14.64	15.82	6.63	6.13	6.46	6.87	40.42
NE	01/06/82	0.11	12.62	27.00	33.05	10.17	0.88	1.43	0.73	1.22	1.96	10.83
M10	01/06/82	0.40	0.47	1.73	3.91	11.88	7.44	5.92	6.83	7.01	7.49	46.92
M10A	01/06/82	0.00	0.03	0.05	0.17	3.65	10.52	8.99	7.07	7.66	10.01	51.84
DE	01/06/82	0.00	0.05	0.38	0.81	7.25	5.71	5.47	7.39	8.64	9.55	54.75
DS	01/06/82	0.03	0.20	0.46	1.06	5.25	10.46	6.48	6.39	7.83	8.55	53.29
DN	01/06/82	3.50	1.30	0.41	20.48	12.26	4.85	4.11	4.52	5.37	4.89	38.30

Table I-5. PHI SIZES (Continued).
EACH COLUMN IN PER CENT

SITE	DATE	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-14
E2	01/11/82	0.18	0.67	0.28	4.80	13.89	14.31	9.61	6.83	5.49	6.10	37.84
E4	01/11/82	20.57	1.27	3.31	5.68	12.74	6.00	4.23	4.63	4.34	5.56	31.66
E1	01/11/82	0.26	1.51	2.59	6.28	11.31	15.36	11.35	7.27	4.99	5.28	33.80
E5	01/11/82	0.21	2.17	4.85	12.11	19.70	4.53	5.26	4.57	3.80	5.49	37.30
M1	02/03/82	0.81	3.66	14.07	14.73	10.57	6.47	3.85	4.18	3.88	5.79	32.00
M3	02/03/82	1.38	4.20	12.92	9.77	10.55	6.78	4.95	4.42	5.10	5.44	34.49
M6	02/03/82	0.67	2.24	4.48	3.60	7.46	8.00	5.86	6.96	5.62	8.90	46.20
M9	02/03/82	0.00	0.04	0.10	0.20	4.77	5.65	8.42	8.70	6.85	12.02	53.26
M10	02/03/82	1.00	0.70	1.30	2.70	7.65	7.28	6.85	6.75	7.31	10.09	48.39
M10A	02/03/82	0.05	0.03	0.13	0.25	3.58	7.34	6.32	8.27	7.34	11.94	54.74
M11	02/03/82	0.64	2.21	4.51	8.05	14.11	6.55	4.62	5.79	5.11	8.38	40.01
M15	02/03/82	3.23	0.70	1.65	5.46	13.77	11.97	5.74	5.20	5.03	7.97	39.28
M18	02/03/82	0.97	0.42	0.96	3.12	11.13	8.69	7.96	5.60	6.74	8.53	45.87
M20	02/03/82	0.05	0.25	0.56	1.90	5.90	6.25	8.02	6.96	6.53	11.16	52.42
DW	02/03/82	0.04	0.02	0.08	0.52	4.45	7.63	4.36	8.04	7.94	10.53	56.38
DE	02/03/82	0.12	0.44	1.61	15.06	22.85	7.73	5.42	4.41	3.46	6.07	32.82
DS	02/03/82	0.09	0.24	0.93	2.25	8.78	8.28	7.36	7.15	6.41	9.56	48.95
DN	02/03/82	4.22	1.36	2.26	5.87	9.22	6.52	6.55	5.82	7.87	6.00	44.31
NW	02/03/82	0.08	0.36	1.14	3.06	11.43	0.37	2.40	17.63	6.60	9.23	47.69
NE	02/03/82	0.04	0.13	0.27	1.08	5.83	5.43	8.37	6.33	7.17	11.03	54.31
SW	02/03/82	0.00	0.00	0.04	0.28	3.24	8.71	8.52	7.50	6.86	11.12	53.73
SE	02/03/82	0.14	0.72	1.13	5.32	10.46	9.06	5.59	6.68	6.42	9.10	45.38
E1	02/12/82	0.41	2.19	0.40	13.29	13.65	16.33	10.45	4.96	4.27	6.15	27.89
E2	02/12/82	0.78	2.28	4.08	4.24	12.56	12.05	7.84	6.34	4.88	8.08	36.87
E3	02/12/82	0.06	0.09	0.90	1.84	4.93	7.36	8.25	8.63	6.85	11.44	49.64
E4	02/12/82	0.60	2.24	6.15	15.95	8.93	6.69	4.91	6.98	3.98	7.14	36.44
E5	02/12/82	0.85	2.60	3.85	14.58	12.24	4.88	4.42	6.05	5.20	9.55	35.79
M1	03/03/82	0.20	1.35	2.31	4.25	7.57	10.18	5.65	7.18	6.81	6.88	47.61
M3	03/03/82	3.74	4.71	22.70	17.70	19.94	3.53	2.12	1.94	2.28	2.36	18.96
M6	03/03/82	1.40	2.83	7.56	5.50	14.07	6.15	4.74	2.61	8.36	6.25	40.52
M9	03/03/82	3.07	0.04	0.13	0.24	2.45	14.24	7.51	6.91	8.07	8.49	48.85
M10	03/03/82	0.16	0.24	0.64	1.34	4.82	2.95	6.91	8.45	8.17	10.54	55.79
M10A	03/03/82	0.07	0.24	7.53	2.47	12.67	6.62	6.45	7.06	5.51	8.78	42.60
M11	03/03/82	0.60	1.46	3.89	8.73	18.17	7.40	4.89	4.97	4.93	6.09	38.89
M15	03/03/82	0.60	0.56	1.34	4.02	10.54	7.74	6.91	6.43	6.70	6.40	48.75
M18	03/03/82	0.20	0.48	1.70	3.40	9.95	7.82	8.20	7.00	6.48	8.11	46.67
M20	03/03/82	0.78	1.24	2.65	8.83	12.71	5.49	6.34	5.59	6.22	6.19	43.96
NE	03/03/82	0.19	0.43	1.06	3.39	9.52	7.55	5.18	8.55	6.74	9.14	48.25
NW	03/03/82	0.08	0.05	0.21	0.41	4.92	6.11	6.82	7.47	8.59	9.17	56.16
DW	03/03/82	0.03	0.06	0.13	0.52	4.14	5.02	7.01	8.57	7.40	11.15	55.96
DS	03/03/82	0.09	0.16	0.49	1.18	5.83	12.34	5.59	7.49	7.36	9.90	49.57
DE	03/03/82	0.93	1.13	2.43	7.92	12.10	6.69	5.48	6.15	6.12	8.42	42.62
DN	03/03/82	0.17	0.16	0.35	1.08	3.92	4.75	6.50	8.51	8.94	8.94	56.69
SW	03/03/82	0.12	0.28	0.61	2.50	11.44	7.82	5.30	7.64	6.91	8.07	49.32
SE	03/03/82	0.41	0.94	2.39	5.87	11.30	6.82	4.96	6.32	7.74	6.63	46.62
E5	03/03/82	1.70	1.91	12.52	56.45	7.94	1.49	1.33	1.39	1.69	2.29	11.30
E1	03/12/82	14.39	0.74	7.93	12.36	12.10	5.31	5.71	4.34	4.52	7.78	24.82
E2	03/12/82	0.44	1.89	11.82	14.49	16.78	12.66	7.49	4.38	2.62	4.74	22.69
E3	03/12/82	1.87	3.50	6.73	8.73	18.24	10.00	7.26	5.65	4.56	5.50	27.94
E4	03/12/82	0.36	1.57	12.74	23.39	11.96	5.29	4.37	4.30	3.81	5.10	27.13

Table I-6. MAJOR IONS IN SEDIMENT SAMPLES

SITE	DATE	EH (MV)	PH	NA (G/L)	CA (G/L)	K (G/L)	MG (G/L)	CL (G/L)	SO4 (G/L)
DE	06/08/81	-023.00	07.20	09.30	0.380	0.350	01.10	18.00	02.38
DN	06/08/81	-058.00	06.90	08.60	0.370	0.300	01.04	17.10	02.15
DS	06/08/81	-018.00	06.70	09.20	0.380	0.320	01.09	17.20	02.20
DW	06/08/81	-108.00	06.80	09.20	0.380	0.320	01.06	17.90	02.10
E1	06/08/81	0012.00	06.40	04.20	0.170	0.090	01.16	06.70	00.80
E2	06/08/81	-058.00	06.70	05.80	0.240	0.160	00.64	09.90	01.15
E3	06/08/81	-009.00	07.50	07.30	0.290	0.230	00.82	13.50	01.40
E4	06/08/81	-033.00	07.20	07.30	0.300	0.230	00.84	13.30	01.65
E5	06/08/81	0037.00	07.10	08.10	0.340	0.260	00.97	15.30	01.90
M3	06/08/81	-011.00	07.20	10.50	0.360	0.300	01.06	16.80	01.92
M6	06/08/81	-013.00	06.80	08.80	0.370	0.310	01.06	17.00	01.90
M10	06/08/81	-028.00	06.80	09.10	0.370	0.340	01.04	17.20	02.20
M20	06/08/81	0002.00	07.10	09.90	0.380	0.360	01.26	19.40	02.28
M10A	06/08/81	-068.00	06.80	09.40	0.360	0.330	01.04	17.20	01.95
M21	06/08/81	0042.00	06.70	08.30	0.350	0.280	00.96	15.70	01.88
M22	06/08/81	0132.00	06.90	06.50	0.380	0.370	00.74	17.80	02.35
M15	06/08/81	0092.00	07.20	08.90	0.380	0.300	01.06	16.90	02.45
M18	06/08/81	0037.00	06.50	09.10	0.380	0.320	01.09	17.20	02.10
SE	09/11/81	-080.00	07.40	99999	0.290	0.230	99999	13.90	02.00
SW	09/11/81	-238.00	07.20	06.20	0.260	0.210	00.65	13.00	01.80
DW	09/11/81	-098.00	07.40	06.00	0.260	0.210	00.65	12.90	01.80
DE	09/11/81	-171.00	07.20	06.60	0.280	0.210	00.71	13.60	01.90
DN	09/11/81	-150.00	07.20	04.30	0.190	0.130	00.47	08.60	01.80
DS	09/11/81	-160.00	07.20	06.00	0.260	0.210	00.65	13.30	01.80
NE	09/11/81	-160.00	07.20	05.90	0.260	0.220	00.69	13.40	02.00
NW	09/11/81	-143.00	07.40	05.90	0.270	0.210	00.69	13.10	01.80
E1	09/10/81	-196.00	06.80	02.20	0.100	0.030	00.20	03.70	00.20
E2	09/10/81	-235.00	07.20	03.70	0.170	0.110	00.44	07.20	01.00
E3	09/10/81	-220.00	07.40	04.80	0.200	0.150	00.55	09.50	01.10
E4	09/10/81	-225.00	07.30	04.10	0.190	0.130	00.50	08.50	01.30
E5	09/10/81	-178.00	07.20	04.60	0.210	0.150	00.56	09.70	01.40
M1	09/11/81	-161.00	06.80	05.30	0.250	0.220	00.63	12.30	02.00
M3	09/11/81	-178.00	07.10	05.40	0.260	0.220	00.64	12.50	02.00
M9	09/11/81	-098.00	07.20	05.40	0.260	0.200	00.65	12.10	01.80
M10	09/11/81	-190.00	07.20	06.00	0.270	0.220	00.66	12.30	01.90
M15	09/11/81	-218.00	06.80	06.00	0.300	0.230	00.70	13.90	01.90
M6	09/11/81	-156.00	07.00	06.00	0.290	0.230	00.70	13.90	01.80
M18	09/11/81	-190.00	07.00	05.70	0.280	0.220	00.69	13.20	02.00
M20	09/11/81	-164.00	07.00	05.20	0.260	0.190	00.61	12.10	01.90
M11	09/11/81	-161.00	07.10	06.70	0.260	0.210	00.72	12.10	02.00
M10A	09/11/81	-256.00	07.30	05.40	0.250	0.200	00.61	14.90	01.90
M18	12/02/81	-213.00	07.50	09.60	0.380	0.340	01.12	18.30	02.80
DW	12/02/81	-101.00	07.50	10.00	0.380	0.340	01.06	18.90	02.60
M10A	12/02/81	-078.00	07.40	10.20	0.380	0.340	01.04	19.20	02.60
E2	12/02/81	-226.00	07.60	06.80	0.280	0.230	00.73	12.20	02.80
E1	12/02/81	-189.00	07.00	04.10	0.140	0.400	00.40	07.30	00.60
E4	12/02/81	-122.00	07.10	07.30	0.300	0.250	00.80	13.40	01.80
DS	12/02/81	-133.00	07.40	10.20	0.380	0.350	01.03	18.90	02.80
DN	12/02/81	-143.00	07.30	09.20	0.360	0.330	00.97	17.60	02.60
E5	12/02/81	-179.00	07.30	07.30	0.300	0.260	00.92	14.80	01.80
NE	12/02/81	0247.00	07.80	08.90	0.370	0.370	01.04	17.90	02.50
M10	12/02/81	-199.00	07.50	09.70	0.380	0.350	01.04	19.10	02.50
E3	12/02/81	-126.00	07.40	06.40	0.280	0.240	00.80	12.90	01.80
M3	12/02/81	-253.00	07.70	08.90	0.370	0.340	01.03	17.60	02.60
NW	12/02/81	-058.00	07.40	09.30	0.370	0.320	01.05	18.20	02.50
M1	12/02/81	-192.00	07.60	08.90	0.370	0.320	01.05	17.60	02.50
SE	12/02/81	-102.00	07.50	09.60	0.390	0.320	01.11	18.80	02.70
SW	12/02/81	-200.00	07.50	09.30	0.370	0.340	01.04	18.40	02.40

Table I-6. MAJOR IONS IN SEDIMENT SAMPLES (Continued).

SITE	DATE	EH (MV)	PH	NA (G/L)	CA (G/L)	K (G/L)	MG (G/L)	CL (G/L)	SO4 (G/L)
M20	12/02/81	-205.00	07.30	08.40	0.360	0.330	01.01	17.40	02.40
M15	12/02/81	-149.00	07.50	08.80	0.370	0.320	01.04	18.20	02.60
DE	12/02/81	-126.00	07.60	09.00	0.380	0.330	01.07	18.20	02.70
M11	12/02/81	-119.00	07.50	09.10	0.370	0.340	01.05	18.00	02.70
M6	12/02/81	0021.00	07.90	09.20	0.380	0.340	01.05	18.90	02.40
M9	12/02/81	-101.00	07.50	09.20	0.380	0.340	01.07	18.40	02.50
DE	03/12/82	0038.00	07.40	09.76	0.420	0.420	01.17	17.00	03.30
DN	03/12/82	0059.00	07.00	09.28	0.400	0.360	01.08	16.80	02.25
DS	03/12/82	0003.00	06.90	09.33	0.390	0.370	01.06	16.50	02.15
DW	03/12/82	-039.00	06.90	09.00	0.380	0.340	01.03	17.00	02.15
E1	03/13/82	-024.00	06.80	01.16	0.050	0.020	00.10	01.70	00.14
E2	03/13/82	-092.00	07.00	04.16	0.150	0.150	00.40	06.40	00.65
E3	03/13/82	-157.00	07.30	05.84	0.230	0.260	00.68	10.80	01.49
E4	03/13/82	-128.00	07.00	05.64	0.230	0.280	00.62	10.60	01.24
E5	03/13/82	-191.00	07.20	07.00	0.310	0.300	00.80	12.30	02.00
M1	03/12/82	-079.00	07.20	09.23	0.380	0.380	01.12	16.80	02.25
M3	03/12/82	-163.00	07.40	09.54	0.390	0.490	01.15	17.30	02.95
M6	03/12/82	-144.00	07.60	09.01	0.340	0.420	01.02	16.50	02.35
M9	03/12/82	0076.00	07.20	09.17	0.380	0.370	01.10	17.00	02.20
M10	03/12/82	0030.00	06.90	10.24	0.390	0.390	01.07	17.50	02.42
M20	03/12/82	-070.00	07.10	09.69	0.390	0.430	01.19	18.20	99999
M10A	03/12/82	0012.00	07.10	09.36	0.380	0.330	00.99	17.00	02.15
M11	03/12/82	-173.00	07.20	10.03	0.380	0.510	01.16	17.30	02.90
M15	03/12/82	-147.00	07.20	09.53	0.400	0.580	01.11	17.30	03.17
M18	03/12/82	-023.00	06.90	09.79	0.420	0.370	01.12	17.30	02.45
NE	03/12/82	-027.00	07.20	08.96	0.370	0.400	01.09	16.80	02.37
NW	03/12/82	0049.00	07.00	09.32	0.400	0.420	01.09	17.30	02.42
SE	03/12/82	-131.00	07.10	09.33	0.380	0.400	01.04	17.00	02.52
SW	03/12/82	0008.00	06.80	10.40	0.430	0.480	01.18	18.00	03.55

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY

SITE	DATE	INSTR WATER		D.O. (MG/L)	PH	NH3-N (MG/L)	NO2-N (MG/L)	NO3-N (MG/L)	TOT-P (MG/L)	O-P04 (MG/L)	SI02 (MG/L)	OIL& GREASE (MG/L)	TURB (NTU)
		DEPTH (M)	TEMP (C)										
E1	04/09/81	00.00	23.00	07.40	07.10	00.22	00.03	00.12	00.05	00.02	02.60	01.00	07.00
E1	04/09/81	04.88	23.00	08.60	07.10	00.14	00.03	00.12	00.11	00.04	02.40	01.00	28.00
E2	04/09/81	00.91	22.00	06.70	07.10	00.26	00.03	00.15	00.10	00.03	03.00	00.80	05.00
E3	04/09/81	00.61	21.00	07.70	07.00	00.04	00.03	00.07	00.14	00.04	02.30	01.20	07.00
E4	04/09/81	00.91	21.00	08.00	07.20	00.07	00.02	00.13	00.10	00.01	03.30	01.00	17.00
E5	04/09/81	00.00	21.00	07.40	07.10	00.10	00.02	00.13	00.10	00.07	02.80	00.80	22.00
E5	04/09/81	06.71	21.00	06.90	06.60	00.07	00.02	00.15	00.14	00.08	02.60	01.50	62.00
M1	04/10/81	00.00	22.00	06.00	07.00	00.03	-1.00	00.05	00.02	00.02	01.10	01.00	09.00
M1	04/10/81	09.75	22.00	05.10	07.20	00.08	-1.00	00.05	00.02	00.02	00.90	00.07	07.00
M3	04/10/81	00.00	22.00	09.40	07.50	-1.00	-1.00	00.02	00.01	00.01	00.08	02.00	02.40
M3	04/10/81	09.75	22.00	08.00	06.00	00.03	-1.00	00.02	00.08	00.03	01.00	01.20	24.00
M6	04/10/81	00.00	22.00	07.90	07.60	-1.00	-1.00	00.05	00.02	00.01	00.30	01.50	28.00
M6	04/10/81	09.75	22.00	06.20	07.60	00.03	-1.00	00.02	00.06	00.02	00.90	01.20	36.00
M9	04/10/81	00.00	23.00	07.20	07.20	-1.00	-1.00	00.11	00.03	00.03	02.30	01.00	06.60
M9	04/10/81	09.14	22.00	07.60	07.50	00.04	-1.00	00.03	00.05	00.03	00.90	01.00	09.00
M10	04/10/81	00.00	22.00	08.00	07.20	-1.00	-1.00	00.06	00.02	00.01	01.10	01.00	03.30
M10	04/10/81	09.45	22.00	08.00	07.40	00.03	-1.00	00.02	00.01	-1.00	00.60	01.20	04.00
M20	04/10/81	00.00	22.00	07.80	07.40	00.03	00.01	00.04	00.01	00.01	01.10	01.20	02.70
M20	04/10/81	10.06	22.00	07.80	07.20	00.02	00.01	00.04	00.01	-1.00	01.20	01.00	03.40
M10A	04/10/81	00.00	22.00	08.00	07.80	-1.00	00.01	00.11	00.03	00.02	01.50	00.90	04.20
M10A	04/10/81	09.75	22.00	07.90	07.70	-1.00	00.01	00.11	00.02	00.02	01.50	01.00	04.00
M11	04/10/81	00.00	22.00	07.40	07.20	-1.00	00.01	00.01	00.01	-1.00	00.90	00.80	01.80
M11	04/10/81	10.36	22.00	07.40	07.00	-1.00	-1.00	-1.00	00.02	-1.00	00.90	01.20	01.90
M21	04/10/81	05.79	22.00	07.00	08.14	99999	99999	99999	99999	99999	99999	99999	99999
M13	04/10/81	00.00	20.60	07.80	08.25	99999	99999	99999	99999	99999	99999	99999	99999
M23	04/10/81	00.00	19.80	07.55	08.20	99999	99999	99999	99999	99999	99999	99999	99999
M15	04/10/81	00.00	22.00	07.90	07.70	00.03	-1.00	00.01	00.02	00.02	01.60	00.80	04.40
M15	04/10/81	10.06	22.00	07.90	07.40	99999	99999	99999	99999	99999	99999	01.00	99999
M18	04/10/81	00.00	22.00	07.70	07.40	-1.00	00.01	00.07	-1.00	-1.00	01.40	01.10	04.00
M18	04/10/81	10.06	22.00	08.10	07.60	00.03	00.01	00.04	00.03	00.03	01.20	01.00	08.70
DE	05/21/81	00.00	25.00	09.00	08.60	00.02	00.02	00.08	00.02	-1.00	00.80	-1.00	01.00
DE	05/21/81	09.75	25.00	07.00	08.40	00.47	00.02	00.05	00.03	00.04	01.50	-1.00	13.00
DN	05/21/81	00.00	23.00	07.50	08.50	-1.00	00.02	00.21	00.03	00.01	01.00	-1.00	00.70
DN	05/21/81	09.45	23.70	04.60	08.40	00.45	00.02	00.06	00.05	00.02	01.70	-1.00	15.00
DS	05/21/81	00.00	23.00	07.20	08.50	00.14	00.02	00.19	00.02	-1.00	00.80	-1.00	01.00
DS	05/21/81	11.58	24.50	04.30	08.40	00.62	00.02	00.04	00.04	00.02	01.50	-1.00	09.00
DW	05/21/81	00.00	25.00	08.70	08.60	00.55	00.01	00.09	00.02	-1.00	00.90	-1.00	01.30
DW	05/21/81	09.75	25.00	04.40	08.40	00.50	00.01	00.06	00.06	00.06	02.40	-1.00	14.00
E1	05/22/81	00.00	24.80	06.70	99999	01.92	00.07	00.16	00.08	00.03	04.70	-1.00	25.00
E1	05/22/81	04.50	25.00	06.60	99999	01.93	00.03	00.20	00.09	00.04	05.10	-1.00	33.00
E2	05/22/81	00.00	23.00	07.30	99999	01.66	00.02	00.21	00.09	00.04	05.20	-1.00	11.00
E3	05/22/81	00.00	23.00	07.60	99999	00.20	00.02	00.02	00.06	00.02	02.00	-1.00	19.00
E4	05/22/81	00.00	23.00	07.90	99999	00.24	00.01	00.11	00.04	00.02	02.10	-1.00	12.00
E5	05/22/81	00.00	23.50	08.00	99999	00.20	00.01	00.12	00.03	00.02	01.40	-1.00	07.00
E5	05/22/81	07.62	23.00	08.00	99999	00.17	00.01	00.14	00.03	00.03	01.80	-1.00	14.00
M3	05/21/81	00.00	25.00	08.60	08.60	00.02	00.01	00.17	00.02	00.01	01.00	-1.00	00.70
M3	05/21/81	09.75	25.00	04.00	08.30	00.54	00.02	00.07	00.03	00.04	01.30	-1.00	07.00
M10	05/21/81	00.00	23.50	07.30	08.50	00.04	00.01	00.17	00.02	00.02	00.90	-1.00	01.60
M10	05/21/81	10.97	24.40	04.20	08.40	00.42	00.03	00.03	00.04	00.06	02.00	-1.00	27.00
M10A	05/21/81	00.00	23.10	07.60	08.50	00.05	00.01	00.17	00.02	00.01	01.00	-1.00	02.20
M10A	05/21/81	09.75	23.60	04.00	08.40	00.40	-1.00	00.09	00.06	00.05	01.30	-1.00	15.00
M21	05/21/81	00.00	22.80	05.10	08.40	00.09	00.02	00.16	00.02	00.03	01.20	-1.00	99999
M21	05/21/81	06.40	23.00	06.80	08.40	00.23	00.01	00.16	00.08	00.05	02.80	-1.00	99999
M22	05/21/81	00.00	24.50	09.00	08.60	-1.00	00.01	00.02	00.01	-1.00	00.50	-1.00	01.70
M22	05/21/81	12.50	24.50	05.00	08.40	00.25	00.01	00.02	00.05	00.03	02.00	-1.00	18.00
M18	05/21/81	00.00	99999	09.40	08.60	00.10	00.01	00.09	00.02	-1.00	00.80	-1.00	02.20
M18	05/21/81	09.75	99999	06.00	08.40	00.29	00.02	00.12	00.06	00.05	02.30	-1.00	24.00
NE	05/21/81	00.00	23.50	07.80	08.50	00.08	00.02	00.19	00.03	00.01	00.80	-1.00	01.20
NE	05/21/81	10.67	24.50	04.40	08.50	00.50	00.03	00.03	00.07	00.05	02.20	-1.00	17.00
NW	05/21/81	00.00	23.00	07.40	08.50	00.13	00.03	00.12	00.01	00.01	01.10	-1.00	00.80
NW	05/21/81	09.45	23.50	04.10	08.40	00.46	00.02	00.05	00.04	00.06	01.70	-1.00	18.00
SE	05/21/81	00.00	23.50	07.60	08.50	00.10	00.02	00.17	00.02	00.03	01.00	-1.00	01.00
SE	05/21/81	09.75	24.00	04.40	08.40	00.40	00.02	00.04	00.03	00.05	01.30	-1.00	11.00

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR WATER		D.O. (MG/L)	PH	NH3-N (MG/L)	NO2-N (MG/L)	NO3-N (MG/L)	TOT-P (MG/L)	O-PO4 (MG/L)	SIO2 (MG/L)	OIL& GREASE (MG/L)	TURB (NTU)
		DEPTH (M)	TEMP (C)										
DE	06/08/81	0.00	29.00	09.20	08.60	00.05	00.02	-1.00	00.02	00.02	01.30	-1.00	03.00
DE	06/08/81	8.00	28.00	04.70	08.40	00.13	00.02	00.03	00.02	00.04	01.70	-1.00	06.30
DN	06/08/81	0.00	28.50	07.30	08.50	00.05	00.02	-1.00	00.04	00.03	02.00	20.10	03.00
DN	06/08/81	8.80	28.00	05.40	08.40	00.17	00.02	00.04	00.10	00.08	04.40	-1.00	41.00
DS	06/08/81	0.00	29.00	07.80	08.50	00.04	00.02	00.11	00.03	00.03	01.60	-1.00	03.00
DS	06/08/81	8.00	28.00	05.00	08.40	00.16	00.02	00.04	00.07	00.08	03.30	-1.00	27.00
DW	06/08/81	0.00	29.00	08.70	08.30	00.03	00.02	-1.00	00.02	00.02	01.80	-1.00	03.00
DW	06/08/81	1.50	28.00	04.80	08.40	00.13	00.02	00.04	00.03	00.04	02.10	-1.00	10.00
E1	06/09/81	0.00	30.50	05.70	07.20	00.34	00.03	00.10	00.12	00.07	10.00	-1.00	43.00
E1	06/09/81	3.60	30.00	05.70	07.20	00.30	00.03	00.10	00.14	00.08	09.90	-1.00	39.00
E2	06/09/81	0.00	29.00	07.30	08.30	00.12	00.02	00.05	00.07	00.04	06.70	-1.00	15.00
E3	06/09/81	0.00	29.30	06.00	07.90	00.04	00.02	00.05	00.05	00.05	03.20	-1.00	18.00
E4	06/09/81	0.00	29.30	06.50	07.90	00.04	00.01	00.01	00.04	00.08	01.70	-1.00	24.00
E5	06/09/81	0.00	28.80	05.90	08.10	00.28	00.03	00.09	00.06	00.05	04.00	-1.00	07.50
E5	06/09/81	5.00	28.00	05.00	08.30	00.15	00.03	00.08	00.05	00.06	02.40	-1.00	08.00
M3	06/08/81	0.00	29.00	08.20	08.60	00.04	00.02	-1.00	00.01	00.03	01.60	-1.00	02.60
M3	06/08/81	10.00	28.00	06.40	08.30	00.11	00.02	00.03	00.03	00.05	02.50	-1.00	13.00
M10	06/08/81	0.00	29.00	07.80	08.50	00.04	00.02	-1.00	00.02	00.03	01.40	-1.00	03.00
M10	06/08/81	9.20	28.00	05.00	08.40	00.14	00.02	00.04	00.03	00.07	02.90	-1.00	21.00
M10A	06/08/81	0.00	28.50	07.30	08.50	00.07	00.02	-1.00	00.02	00.03	01.90	-1.00	03.00
M10A	06/08/81	9.00	28.00	05.60	08.50	00.16	00.02	00.04	00.04	00.06	03.20	-1.00	34.00
M21	06/08/81	0.00	28.50	06.80	08.50	00.07	00.02	00.10	00.05	00.04	01.60	-1.00	03.90
M21	06/08/81	5.50	28.00	04.10	08.40	00.18	00.03	00.11	00.02	00.10	09.50	-1.00	57.00
M22	06/08/81	0.00	28.00	07.90	08.50	00.21	00.02	00.03	00.02	00.03	01.30	-1.00	01.90
M22	06/08/81	10.50	27.50	05.30	08.30	00.15	00.01	00.02	00.02	00.03	01.80	-1.00	10.00
M18	06/08/81	0.00	29.50	09.50	08.60	00.02	00.02	00.16	00.02	00.02	01.60	-1.00	03.20
M18	06/08/81	9.50	28.00	04.70	08.40	00.17	00.02	00.04	00.02	00.04	02.10	-1.00	17.00
NE	06/08/81	0.00	28.50	07.40	08.50	00.06	00.02	-1.00	00.02	00.03	01.80	-1.00	03.40
NE	06/08/81	9.00	28.00	05.10	08.40	00.18	00.03	00.04	00.12	00.08	04.30	-1.00	50.00
NW	06/08/81	0.00	28.50	07.40	08.50	00.06	00.02	-1.00	00.03	00.04	01.80	-1.00	37.00
NW	06/08/81	8.00	28.00	06.00	08.40	00.13	00.03	00.07	00.08	00.10	04.40	-1.00	36.00
SE	06/08/81	0.00	29.00	07.60	08.50	00.06	00.03	-1.00	00.03	00.04	01.80	-1.00	02.70
SE	06/08/81	9.00	28.00	05.40	08.40	00.15	00.02	00.04	00.03	00.06	02.20	-1.00	17.00
DE	07/16/81	0.00	31.00	08.90	08.60	00.03	-1.00	-1.00	00.01	-1.00	01.10	-1.00	01.10
DE	07/16/81	10.00	29.50	03.00	08.10	00.24	00.03	-1.00	00.08	00.07	02.90	-1.00	02.40
DN	07/16/81	1.00	29.80	09.10	08.50	00.05	-1.00	-1.00	00.01	-1.00	01.10	-1.00	01.40
DN	07/16/81	9.20	29.00	01.90	07.80	00.18	00.07	00.03	00.04	00.04	03.30	-1.00	02.90
DS	07/16/81	1.00	32.30	08.40	08.40	00.01	-1.00	-1.00	00.01	-1.00	01.10	-1.00	01.00
DS	07/16/81	10.50	29.50	00.60	07.70	00.24	00.03	-1.00	00.12	00.12	04.90	-1.00	02.70
DW	07/16/81	0.00	31.00	08.20	08.40	00.03	00.01	-1.00	00.02	-1.00	01.10	00.80	02.20
DW	07/16/81	10.00	29.00	00.70	07.70	00.18	00.08	00.05	00.07	00.07	03.20	-1.00	02.30
E1	07/16/81	0.00	32.00	06.70	06.90	00.05	-1.00	-1.00	00.11	00.05	09.00	01.40	41.00
E1	07/16/81	3.00	32.50	04.50	07.10	00.15	-1.00	-1.00	00.24	00.21	12.10	-1.00	90.00
E2	07/16/81	0.00	31.50	08.10	08.70	00.03	-1.00	-1.00	00.07	00.03	07.50	00.70	14.00
E3	07/16/81	0.00	31.80	07.90	09.00	00.03	-1.00	-1.00	00.06	00.03	07.80	-1.00	10.00
E4	07/16/81	0.00	31.00	05.70	99999	00.08	-1.00	-1.00	00.05	00.02	08.10	01.40	11.00
E5	07/16/81	0.00	29.80	05.20	07.80	00.06	00.03	00.01	00.05	00.02	03.10	-1.00	09.30
E5	07/16/81	6.80	29.50	01.70	08.10	00.16	00.10	00.13	00.06	00.05	03.90	-1.00	10.00
M3	07/16/81	0.00	31.00	07.50	08.30	00.04	00.02	00.02	00.01	00.01	03.40	-1.00	04.00
M3	07/16/81	10.50	29.00	00.80	07.70	00.19	00.06	00.06	00.10	00.09	03.70	-1.00	02.90
M10	07/16/81	0.00	32.00	08.80	08.30	00.28	00.02	-1.00	00.01	00.01	01.30	-1.00	03.50
M10	07/16/81	10.00	29.50	00.50	07.70	00.01	-1.00	-1.00	00.14	00.13	04.90	-1.00	05.50
M10A	07/16/81	1.00	29.00	08.80	07.80	00.02	-1.00	-1.00	00.01	-1.00	01.20	-1.00	02.50
M10A	07/16/81	9.80	29.00	00.80	08.50	00.06	00.11	00.06	00.06	00.04	03.00	-1.00	02.00
M21	07/16/81	0.00	30.00	07.00	08.30	00.02	-1.00	-1.00	00.02	00.01	01.30	-1.00	03.70
M21	07/16/81	6.00	29.00	02.60	07.70	00.29	00.04	00.07	00.03	00.05	02.60	-1.00	09.00
M22	07/16/81	1.00	32.00	07.90	08.50	00.01	-1.00	-1.00	00.01	00.04	01.10	00.60	04.00
M22	07/16/81	12.20	30.00	02.20	07.90	00.23	00.01	-1.00	00.07	00.06	02.60	-1.00	03.60
M18	07/16/81	1.00	31.00	08.90	08.40	00.01	-1.00	-1.00	00.01	-1.00	03.50	-1.00	02.20
M18	07/16/81	10.50	30.00	00.70	07.90	00.16	00.06	00.04	00.08	00.08	04.10	-1.00	04.50
NE	07/16/81	0.00	32.00	09.00	08.60	00.02	-1.00	-1.00	00.01	-1.00	01.10	-1.00	01.50
NE	07/16/81	9.70	30.50	03.90	08.20	00.15	00.04	00.04	00.08	00.06	03.20	-1.00	29.00
NW	07/16/81	1.00	31.00	09.00	08.50	00.01	-1.00	-1.00	00.01	-1.00	01.10	-1.00	01.40
NW	07/16/81	9.30	29.50	01.30	07.70	00.10	00.08	00.05	00.05	00.05	03.10	-1.00	02.40
SE	07/16/81	0.00	31.50	09.10	08.40	00.02	-1.00	-1.00	00.01	00.01	01.10	-1.00	02.50
SE	07/16/81	10.00	29.50	00.60	07.80	00.40	00.02	-1.00	00.15	00.13	05.20	-1.00	03.00

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR WATER		D.O.	PH	NH3-N	NO2-N	NO3-N	TOT-P	O-PO4	SI02	OIL & GREASE	TURB
		DEPTH	TEMP										
		(M)	(C)	(MG/L)		(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(NTU)
DS	08/07/81	0.00	30.80	05.90	07.93	00.02	00.02	00.01	00.02	-1.00	01.10	-1.00	-1.00
DS	08/07/81	10.00	30.50	01.80	07.51	00.09	00.10	00.03	00.06	00.04	02.90	-1.00	02.00
DN	08/07/81	0.00	30.50	05.70	07.94	00.05	00.03	00.01	00.02	-1.00	01.10	-1.00	-1.00
DN	08/07/81	9.00	30.50	02.30	07.54	00.07	00.12	00.04	00.06	00.06	03.00	-1.00	07.00
DE	08/07/81	0.00	30.80	06.20	08.09	00.02	00.02	00.01	00.02	-1.00	01.00	-1.00	01.00
DE	08/07/81	9.70	30.50	99999	07.45	00.09	00.12	00.03	00.06	00.06	03.20	-1.00	02.00
DW	08/07/81	0.00	31.00	06.10	08.05	00.02	00.02	00.01	00.01	99999	01.30	-1.00	01.00
DW	08/07/81	9.60	31.00	02.00	07.53	00.11	00.10	00.03	00.07	00.06	02.90	-1.00	02.00
NE	08/07/81	0.00	31.00	05.90	07.90	00.03	00.03	00.01	-1.00	-1.00	01.30	-1.00	-1.00
NE	08/07/81	10.00	31.00	01.00	07.38	00.12	99999	99999	00.05	00.05	03.60	-1.00	02.00
NW	08/07/81	0.00	31.00	05.80	07.84	00.04	00.03	00.01	00.01	00.01	01.30	-1.00	01.00
NW	08/07/81	9.50	31.00	02.70	07.52	00.02	00.13	00.03	00.03	00.03	02.60	-1.00	06.00
SE	08/07/81	0.00	31.00	05.80	07.89	00.03	00.03	-1.00	-1.00	-1.00	01.30	-1.00	-1.00
SE	08/07/81	10.00	30.50	01.00	07.37	00.11	00.14	00.04	00.04	00.04	02.80	-1.00	01.00
M3	08/07/81	0.00	31.00	06.30	08.02	-1.00	00.02	00.01	-1.00	-1.00	01.90	-1.00	01.00
M3	08/07/81	9.10	31.00	02.40	07.71	00.02	00.09	00.03	00.03	00.03	02.10	-1.00	04.00
M10	08/07/81	0.00	31.00	05.80	07.93	-1.00	00.03	-1.00	00.03	00.03	01.20	-1.00	-1.00
M10	08/07/81	10.00	31.00	02.70	07.45	00.06	00.09	00.03	00.03	00.03	02.10	-1.00	01.00
M10A	08/07/81	0.00	31.00	05.60	07.86	00.02	00.03	-1.00	-1.00	-1.00	01.30	-1.00	-1.00
M10A	08/07/81	10.00	31.00	01.60	07.53	00.10	99999	99999	00.05	00.05	02.90	-1.00	02.00
M18	08/07/81	0.00	30.80	06.20	08.08	00.01	00.03	-1.00	00.02	-1.00	01.10	-1.00	01.00
M18	08/07/81	9.80	31.00	01.90	07.68	00.07	00.13	00.03	00.05	00.05	02.80	-1.00	01.00
M21	08/07/81	0.00	30.50	04.60	07.98	00.06	00.03	00.01	00.04	00.04	02.60	-1.00	14.00
M21	08/07/81	6.00	30.50	04.50	07.93	00.11	00.03	00.01	00.09	00.09	04.40	-1.00	15.00
M22	08/07/81	0.00	31.00	06.00	08.00	-1.00	00.01	-1.00	00.01	00.01	01.60	-1.00	01.00
M22	08/07/81	11.80	31.00	04.00	07.81	00.05	00.02	-1.00	00.02	00.01	01.30	-1.00	01.00
E1	08/06/81	0.00	32.00	05.80	06.88	-1.00	00.01	-1.00	00.06	00.02	09.30	-1.00	26.00
E1	08/06/81	5.00	31.00	06.20	06.82	00.01	00.01	-1.00	00.06	00.02	09.60	-1.00	31.00
E2	08/06/81	0.00	30.50	06.20	07.16	00.13	00.12	00.05	00.03	00.03	06.70	-1.00	08.00
E3	08/06/81	0.00	29.90	05.80	07.67	00.05	00.01	-1.00	00.04	00.02	06.40	-1.00	07.00
E4	08/06/81	0.00	29.00	06.20	07.74	00.11	00.01	-1.00	00.03	00.02	06.00	-1.00	07.00
E5	08/06/81	0.00	30.00	05.80	07.76	00.03	00.01	-1.00	00.04	00.03	05.30	-1.00	07.00
E5	08/06/81	6.00	31.00	05.40	07.72	00.06	00.01	-1.00	00.04	00.03	05.00	-1.00	09.00
E5	09/10/81	3.90	27.00	06.90	08.24	00.07	00.03	-1.00	00.05	00.02	01.70	-1.00	05.00
E5	09/10/81	0.00	27.00	09.50	08.21	00.08	00.03	00.01	00.02	00.02	01.50	-1.00	06.00
E4	09/10/81	0.00	26.00	06.00	08.14	00.05	00.01	-1.00	00.03	00.03	05.80	-1.00	18.00
E3	09/10/81	0.00	26.00	06.40	08.04	00.05	00.01	-1.00	00.02	00.02	05.30	-1.00	14.00
E2	09/10/81	0.00	26.50	06.10	08.14	00.45	00.08	00.03	00.02	00.02	04.70	-1.00	09.00
E1	09/10/81	0.00	27.50	04.50	07.41	00.04	00.01	-1.00	00.06	00.05	06.10	-1.00	02.00
E1	09/10/81	1.40	27.50	05.50	07.41	00.14	00.02	-1.00	00.04	00.04	09.70	-1.00	12.00
M21	09/11/81	6.00	28.00	05.90	08.12	00.19	00.02	00.01	00.02	00.02	04.80	-1.00	23.00
M21	09/11/81	0.00	28.00	06.40	08.10	-1.00	00.02	-1.00	00.03	00.03	02.70	-1.00	10.00
DN	09/11/81	9.30	29.20	01.30	07.74	00.16	00.12	00.07	00.06	00.02	00.70	-1.00	14.00
DN	09/11/81	0.00	28.50	06.70	08.08	00.08	00.02	-1.00	00.01	00.01	04.70	-1.00	02.00
NW	09/11/81	9.80	29.00	01.60	07.66	00.14	00.13	00.07	00.04	00.02	03.30	-1.00	08.00
NW	09/11/81	0.00	29.00	06.50	08.09	00.07	00.02	-1.00	-1.00	-1.00	00.50	-1.00	01.00
M10A	09/11/81	9.80	29.00	07.00	07.65	00.10	00.14	00.05	00.03	00.03	04.10	-1.00	06.00
M10A	09/11/81	0.00	29.00	01.50	08.05	00.05	00.01	-1.00	-1.00	-1.00	00.80	-1.00	01.00
SE	09/11/81	10.00	29.00	02.30	07.71	00.09	00.11	00.05	00.02	00.02	02.80	-1.00	04.00
SE	09/11/81	0.00	29.00	02.50	08.06	00.02	00.01	-1.00	00.01	00.01	00.80	-1.00	01.00
NE	09/11/81	9.80	29.00	01.80	07.60	00.06	00.12	00.05	00.03	00.03	03.20	-1.00	06.00
NE	09/11/81	0.00	29.00	06.50	08.05	00.05	00.01	-1.00	00.01	00.01	00.50	-1.00	02.00
M10	09/11/81	9.80	29.00	01.60	07.65	00.15	00.15	00.05	00.04	00.04	04.10	-1.00	08.00
M10	09/11/81	0.00	29.00	06.00	08.04	00.04	00.01	-1.00	-1.00	00.60	-1.00	02.00	02.00
DS	09/11/81	9.80	29.00	02.20	07.69	00.10	00.09	00.05	00.02	00.02	02.10	-1.00	02.00
DS	09/11/81	0.00	29.00	06.70	08.04	00.08	00.01	-1.00	-1.00	-1.00	00.40	-1.00	01.00
M22	09/11/81	11.50	29.50	07.40	07.90	00.03	00.01	-1.00	00.02	00.02	00.50	-1.00	02.00
M22	09/11/81	0.00	29.50	06.10	07.93	00.03	00.01	-1.00	00.06	00.01	00.60	-1.00	-1.00
M3	09/11/81	9.00	29.50	06.00	08.04	00.05	00.03	00.01	00.01	00.01	01.00	-1.00	06.00
M3	09/11/81	0.00	29.50	07.70	08.13	00.02	00.01	00.01	00.01	00.01	00.90	-1.00	01.00
DW	09/11/81	9.10	29.00	04.90	07.80	00.09	00.04	-1.00	00.02	00.02	01.30	-1.00	03.00
DW	09/11/81	0.00	29.50	07.40	08.13	-1.00	00.01	-1.00	-1.00	00.01	00.60	-1.00	01.00
DE	09/11/81	9.70	29.00	02.60	07.78	00.14	00.06	00.01	00.04	00.04	07.20	-1.00	15.00
DE	09/11/81	0.00	29.00	07.20	08.14	00.02	00.01	-1.00	00.01	00.01	00.40	-1.00	02.00
M18	09/11/81	9.50	29.00	05.20	07.84	00.08	00.03	-1.00	00.02	00.02	01.90	-1.00	05.00
M18	09/11/81	0.00	29.00	06.60	08.13	00.02	00.01	-1.00	00.01	00.01	00.50	-1.00	01.00

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR DEPTH (M)	WATER TEMP (C)	D.O. (MG/L)	PH	NH3-N (MG/L)	NO2-N (MG/L)	NO3-N (MG/L)	TOT-P (MG/L)	O-PO4 (MG/L)	SIO2 (MG/L)	OIL& GREASE (MG/L)	TURB (NTU)
M21	10/02/81	5.70	27.50	00.90	08.41	00.03	-1.00	-1.00	00.02	00.02	00.20	-1.00	04.00
M21	10/02/81	0.00	27.80	05.90	08.32	00.09	00.01	00.01	00.03	00.05	01.00	-1.00	07.00
NW	10/02/81	9.60	27.20	06.30	08.26	00.04	-1.00	-1.00	00.02	00.05	00.20	-1.00	02.00
NW	10/02/81	0.00	27.50	07.80	08.35	00.01	-1.00	-1.00	00.01	-1.00	-1.00	-1.00	-1.00
DW	10/02/81	9.30	27.50	07.00	08.20	00.03	-1.00	-1.00	00.02	00.02	-1.00	-1.00	02.00
DW	10/02/81	0.00	27.50	08.30	08.32	00.01	-1.00	-1.00	00.01	-1.00	00.20	-1.00	-1.00
M10	10/02/81	10.20	27.50	04.60	08.12	00.12	00.01	00.02	00.59	00.37	06.80	-1.00	125.0
M10	10/02/81	0.00	27.50	07.90	08.33	00.04	-1.00	00.01	00.01	00.01	00.30	-1.00	01.00
M10A	10/02/81	10.70	28.00	06.50	07.93	00.06	-1.00	-1.00	00.03	00.03	00.30	-1.00	02.00
M10A	10/02/81	0.00	27.50	08.10	08.28	00.11	00.01	-1.00	00.01	00.01	00.30	-1.00	-1.00
DN	10/02/81	9.30	27.50	05.20	07.88	00.12	-1.00	-1.00	00.20	00.16	02.30	-1.00	65.00
DN	10/02/81	0.00	27.50	08.00	08.19	00.02	-1.00	-1.00	00.01	00.01	00.20	-1.00	-1.00
NE	10/02/81	9.40	27.50	07.30	07.99	00.03	-1.00	-1.00	00.02	00.02	-1.00	-1.00	01.00
NE	10/02/81	0.00	27.50	08.10	08.21	00.02	-1.00	-1.00	00.02	-1.00	00.20	-1.00	-1.00
DE	10/02/81	9.70	27.50	07.10	07.87	00.03	-1.00	-1.00	00.03	-1.00	-1.00	-1.00	01.00
DE	10/02/81	0.00	27.50	08.10	08.15	00.01	-1.00	-1.00	00.01	-1.00	00.10	-1.00	-1.00
DS	10/02/81	10.20	27.50	06.80	07.80	00.02	-1.00	-1.00	00.03	00.02	00.30	-1.00	01.00
DS	10/02/81	0.00	28.00	08.10	08.11	00.01	-1.00	-1.00	00.01	-1.00	00.20	-1.00	01.00
SE	10/02/81	10.10	27.50	05.90	07.84	00.06	-1.00	-1.00	00.03	99999	00.60	-1.00	02.00
SE	10/02/81	0.00	27.50	07.90	08.19	00.01	-1.00	-1.00	00.01	99999	-1.00	-1.00	01.00
M22	10/02/81	12.30	28.00	05.80	07.82	00.01	-1.00	-1.00	00.03	00.02	00.90	-1.00	02.00
M22	10/02/81	0.00	28.00	07.30	08.03	-1.00	-1.00	-1.00	00.01	00.01	-1.00	-1.00	-1.00
M3	10/02/81	10.20	28.50	04.70	07.78	00.11	-1.00	-1.00	00.06	00.08	01.40	-1.00	10.00
M3	10/02/81	0.00	29.00	08.70	08.11	-1.00	-1.00	-1.00	00.02	00.01	00.40	-1.00	-1.00
M18	10/02/81	10.70	28.00	06.20	08.08	00.04	-1.00	-1.00	00.03	00.03	00.50	-1.00	03.00
M18	10/02/81	0.00	28.00	07.80	08.35	00.01	-1.00	-1.00	00.01	-1.00	00.50	-1.00	01.00
M10A	10/02/81	10.30	27.40	06.70	08.10	00.03	-1.00	-1.00	00.03	00.03	00.20	99999	06.00
M10A	10/02/81	0.00	28.10	08.70	08.30	-1.00	-1.00	-1.00	00.01	00.01	00.50	99999	-1.00
E5	10/03/81	7.30	24.00	99999	08.61	00.04	00.01	00.02	00.03	00.02	00.80	-1.00	12.00
E5	10/03/81	0.00	24.00	99999	08.63	00.04	00.01	00.01	00.03	00.02	00.50	-1.00	07.00
E4	10/03/81	0.00	25.00	06.60	08.21	00.09	00.02	-1.00	00.06	00.05	01.30	-1.00	27.00
E3	10/03/81	0.00	24.20	06.50	08.19	00.01	99999	99999	00.05	00.04	01.40	-1.00	19.00
E2	10/03/81	0.00	25.50	99999	08.12	00.20	00.06	00.02	00.04	00.05	02.00	-1.00	13.00
E1	10/03/81	2.80	26.00	06.60	07.51	00.03	00.13	00.03	00.04	00.05	03.80	-1.00	24.00
E1	10/03/81	0.00	26.00	06.80	07.66	00.02	00.11	00.02	00.04	00.04	03.80	-1.00	18.00
DS	11/12/81	0.00	19.20	07.80	07.98	-1.00	-1.00	-1.00	00.02	00.01	00.10	01.00	01.00
DS	11/12/81	10.10	19.70	06.80	07.93	00.01	-1.00	-1.00	00.04	00.03	00.40	-1.00	04.00
DN	11/12/81	0.00	18.90	08.20	08.13	-1.00	00.01	00.01	00.03	00.02	00.20	-1.00	02.00
DN	11/12/81	9.10	20.00	06.50	08.10	00.01	-1.00	-1.00	00.05	00.03	00.20	-1.00	02.00
DE	11/12/81	0.00	19.00	08.00	08.01	-1.00	-1.00	-1.00	00.03	00.01	00.10	-1.00	02.00
DE	11/12/81	9.40	20.00	07.90	07.98	-1.00	-1.00	-1.00	00.04	00.02	00.20	-1.00	02.00
DW	11/12/81	0.00	19.10	08.20	08.05	-1.00	-1.00	-1.00	00.03	00.02	00.10	-1.00	02.00
DW	11/12/81	9.80	19.30	07.90	08.00	-1.00	-1.00	-1.00	00.03	00.02	00.20	-1.00	02.00
NE	11/12/81	0.00	18.90	08.20	08.12	-1.00	-1.00	-1.00	00.03	00.01	00.10	-1.00	02.00
NE	11/12/81	9.10	20.20	06.00	07.95	00.02	-1.00	-1.00	00.09	00.06	01.00	-1.00	09.00
NW	11/12/81	0.00	18.70	09.60	08.09	-1.00	-1.00	-1.00	00.03	00.01	00.20	-1.00	04.00
NW	11/12/81	9.10	19.50	06.70	08.15	00.01	-1.00	-1.00	00.04	00.03	00.10	-1.00	02.00
SE	11/12/81	0.00	19.20	08.10	07.95	-1.00	-1.00	-1.00	00.02	00.01	-1.00	-1.00	02.00
SE	11/12/81	9.80	19.90	06.80	07.86	-1.00	-1.00	-1.00	00.03	00.03	00.40	-1.00	02.00
SW	11/12/81	0.00	19.30	08.30	07.99	-1.00	-1.00	-1.00	00.02	00.01	00.30	-1.00	02.00
SW	11/12/81	10.10	20.00	06.80	07.88	-1.00	-1.00	-1.00	00.03	00.03	00.40	-1.00	04.00
M3	11/12/81	0.00	19.40	08.20	08.36	-1.00	-1.00	-1.00	00.02	00.01	00.20	-1.00	01.00
M3	11/12/81	9.40	20.30	06.90	08.24	-1.00	-1.00	-1.00	00.04	00.03	00.40	-1.00	04.00
M10	11/12/81	0.00	19.30	08.00	07.99	-1.00	-1.00	-1.00	00.02	00.02	00.20	-1.00	01.00
M10	11/12/81	9.80	19.40	07.90	07.98	-1.00	-1.00	-1.00	00.02	00.02	00.30	-1.00	03.00
M10A	11/12/81	0.00	19.10	08.20	08.02	-1.00	-1.00	-1.00	00.02	00.01	00.20	-1.00	02.00
M10A	11/12/81	9.40	19.70	07.30	07.97	00.01	-1.00	-1.00	00.03	00.03	00.30	-1.00	03.00
M18	11/12/81	0.00	19.08	08.10	08.43	-1.00	-1.00	-1.00	00.02	00.01	00.20	-1.00	04.00
M18	11/12/81	9.80	19.81	05.80	08.27	00.02	00.01	-1.00	00.04	00.04	00.50	-1.00	02.00
M21	11/12/81	0.00	18.30	08.50	08.23	-1.00	-1.00	-1.00	00.03	00.02	00.30	01.00	02.00
M21	11/12/81	5.50	18.60	07.40	08.20	-1.00	-1.00	-1.00	00.04	00.04	00.20	-1.00	05.00
M22	11/12/81	0.00	19.91	07.60	08.13	-1.00	-1.00	-1.00	00.01	00.01	00.10	-1.00	03.00
M22	11/12/81	11.30	20.45	07.30	08.01	-1.00	-1.00	-1.00	00.04	00.03	00.40	-1.00	01.00

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR WATER		D.O. (MG/L)	PH	NH3-N (MG/L)	NO2-N (MG/L)	NO3-N (MG/L)	TOT-P (MG/L)	D-P04 (MG/L)	SI02 (MG/L)	OIL& GREASE (MG/L)	TURB (NTU)
		DEPTH (M)	TEMP (C)										
E1	11/11/81	0.00	18.50	08.00	07.24	00.06	00.03	00.08	00.05	00.05	05.00	-1.00	10.00
E1	11/11/81	4.70	18.20	07.70	07.51	00.07	00.02	00.08	00.07	00.06	05.00	-1.00	13.00
E2	11/11/81	0.00	16.70	07.80	06.62	99999	00.02	00.03	00.07	00.05	01.80	-1.00	09.00
E3	11/11/81	0.00	15.00	08.50	08.10	00.03	-1.00	-1.00	00.08	00.05	01.20	-1.00	15.00
E4	11/11/81	0.00	15.50	08.40	07.99	00.04	-1.00	-1.00	00.12	00.06	03.60	-1.00	40.00
E5	11/11/81	0.00	18.50	08.10	08.14	00.04	00.01	00.01	00.07	00.06	00.60	00.50	06.00
E5	11/11/81	7.00	18.40	07.80	08.48	00.04	00.01	00.01	00.06	00.04	00.70	-1.00	05.00
DE	12/02/81	0.00	18.80	07.20	08.30	00.05	-1.00	00.01	00.02	00.02	00.80	-1.00	03.00
DE	12/02/81	9.50	20.60	06.40	08.16	00.04	-1.00	00.01	00.01	00.01	00.60	-1.00	05.00
M10A	12/02/81	0.00	18.90	07.30	08.35	00.03	-1.00	00.01	00.01	00.01	00.70	-1.00	03.00
M10A	12/02/81	10.60	20.40	07.20	08.20	00.01	-1.00	-1.00	00.01	-1.00	00.70	-1.00	04.00
NE	12/02/81	0.00	18.80	07.10	08.29	00.03	-1.00	-1.00	00.01	00.01	00.80	-1.00	03.00
NE	12/02/81	9.30	20.50	06.40	08.11	00.03	-1.00	-1.00	00.01	00.01	00.70	-1.00	05.00
M22	12/02/81	0.00	19.40	08.00	08.52	-1.00	-1.00	00.01	-1.00	-1.00	00.50	01.80	02.00
M22	12/02/81	12.00	21.00	06.80	08.35	00.01	-1.00	-1.00	00.01	00.01	00.50	-1.00	07.00
M3	12/02/81	0.00	19.50	07.80	08.42	00.01	-1.00	-1.00	00.01	00.01	00.50	-1.00	03.00
M3	12/02/81	10.00	20.60	07.00	08.32	00.02	-1.00	-1.00	00.01	00.01	00.60	-1.00	05.00
M18	12/02/81	0.00	19.40	07.70	08.36	00.01	-1.00	-1.00	00.01	00.01	00.50	01.40	02.00
M18	12/02/81	10.00	20.70	06.40	08.18	00.02	-1.00	-1.00	00.01	00.01	00.50	11.70	03.00
DN	12/02/81	0.00	18.80	07.20	08.37	00.05	-1.00	00.01	00.01	00.01	00.50	09.70	03.00
DN	12/02/81	9.50	20.50	06.30	08.08	00.02	00.01	-1.00	00.01	00.01	00.50	-1.00	05.00
SE	12/02/81	0.00	18.90	07.30	08.29	00.02	00.01	-1.00	00.01	00.01	00.40	-1.00	02.00
SE	12/02/81	10.10	20.60	06.30	08.09	00.03	00.01	-1.00	00.01	00.01	00.60	-1.00	05.00
NW	12/02/81	0.00	18.80	07.30	08.40	00.03	00.01	-1.00	00.01	00.01	00.80	-1.00	03.00
NW	12/02/81	9.60	20.60	07.00	08.14	00.02	00.01	-1.00	00.01	00.01	00.20	-1.00	04.00
M10	12/02/81	0.00	19.00	07.40	08.13	00.02	-1.00	-1.00	00.01	00.01	00.60	-1.00	02.00
M10	12/02/81	9.70	20.60	06.80	07.42	00.01	-1.00	-1.00	00.01	00.01	00.40	01.40	03.00
DS	12/02/81	0.00	18.90	07.20	08.30	00.04	-1.00	-1.00	00.01	00.01	00.50	-1.00	02.00
DS	12/02/81	10.00	20.50	06.50	08.14	00.02	-1.00	-1.00	00.01	00.01	00.50	-1.00	04.00
DW	12/02/81	0.00	18.90	07.20	08.30	00.03	-1.00	-1.00	00.01	00.01	00.50	-1.00	03.00
DW	12/02/81	9.70	20.50	06.80	08.19	-1.00	-1.00	-1.00	-1.00	-1.00	00.20	-1.00	04.00
SW	12/02/81	0.00	18.90	07.30	08.30	00.02	-1.00	-1.00	00.01	00.01	00.60	-1.00	03.00
SW	12/02/81	10.60	20.60	06.60	08.16	00.03	-1.00	-1.00	00.01	00.01	00.10	-1.00	05.00
M21	12/02/81	0.00	19.50	05.90	08.80	00.04	00.01	00.02	00.01	00.01	00.70	-1.00	07.00
M21	12/02/81	10.40	20.40	06.30	08.97	00.02	00.01	-1.00	00.01	00.01	00.30	-1.00	14.00
E1	12/02/81	0.00	17.50	07.50	07.46	00.06	00.01	00.05	00.01	00.01	04.20	-1.00	18.00
E1	12/02/81	4.10	17.50	07.30	07.50	00.05	00.01	00.05	00.02	00.02	04.60	00.80	31.00
E2	12/02/81	0.00	16.40	09.30	08.43	00.02	00.01	00.02	00.01	00.01	01.20	-1.00	05.00
E3	12/02/81	0.00	15.00	08.50	08.54	-1.00	-1.00	-1.00	00.01	00.01	00.20	00.60	04.00
E4	12/02/81	0.00	15.90	07.70	08.45	00.01	-1.00	-1.00	00.02	00.02	00.20	-1.00	05.00
E5	12/02/81	0.00	18.30	06.20	08.48	00.04	-1.00	00.01	00.02	00.02	00.60	-1.00	05.00
E5	12/02/81	4.20	18.20	07.40	08.51	00.03	-1.00	00.02	00.03	00.03	00.70	04.10	23.00
DE	01/11/82	0.00	10.30	10.50	10.36	00.02	00.01	00.16	00.02	00.02	00.90	-1.00	03.00
DE	01/11/82	10.10	10.60	07.80	09.84	00.03	-1.00	00.01	00.07	00.07	01.10	-1.00	33.00
M10A	01/11/82	0.00	07.00	11.00	08.16	-1.00	-1.00	00.13	00.01	00.01	00.90	-1.00	02.00
M10A	01/11/82	10.50	10.00	07.90	08.16	-1.00	-1.00	00.01	00.01	00.01	00.40	09.60	02.00
NE	01/11/82	0.00	10.30	10.10	99999	-1.00	-1.00	00.15	99999	00.02	99999	-1.00	99999
NE	01/11/82	1.60	11.50	08.00	99999	-1.00	-1.00	00.01	00.02	00.02	00.40	09.60	09.00
M22	01/11/82	0.00	13.70	8.700	8.21	-1.00	-1.00	1.000	0.01	-1.00	1.00	-1.00	1.00
M22	01/11/82	0.00	13.70	08.10	08.21	-1.00	-1.00	-1.00	-1.00	-1.00	00.20	01.00	03.00
M3	01/11/82	0.00	10.70	10.60	08.27	-1.00	-1.00	00.11	00.01	00.01	00.80	-1.00	02.00
M3	01/11/82	10.30	10.60	08.20	08.18	-1.00	-1.00	-1.00	00.01	00.01	00.40	-1.00	04.00
M18	01/11/82	0.00	10.00	10.10	08.09	-1.00	-1.00	00.05	00.01	00.01	00.70	-1.00	02.00
M18	01/11/82	9.20	10.70	08.10	08.18	00.01	-1.00	-1.00	00.02	00.02	00.40	00.90	10.00
DN	01/11/82	0.00	10.20	10.40	99999	-1.00	-1.00	00.09	00.02	00.02	01.00	-1.00	04.00
DN	01/11/82	1.50	10.20	08.20	99999	00.02	-1.00	00.01	00.01	00.01	00.40	-1.00	04.00
SE	01/11/82	0.00	10.60	10.20	99999	-1.00	-1.00	00.08	00.01	00.01	00.90	00.60	06.00
SE	01/11/82	9.80	10.60	07.60	99999	00.07	-1.00	00.01	00.20	00.16	03.10	00.60	99.00
NW	01/11/82	0.00	09.90	10.40	09.92	-1.00	00.01	00.16	00.02	00.02	00.80	10.20	03.00
NW	01/11/82	1.50	10.70	09.10	10.33	-1.00	-1.00	-1.00	-1.00	-1.00	00.30	04.60	02.00
M10	01/11/82	0.00	10.10	10.40	07.40	-1.00	00.01	00.10	00.01	00.02	00.80	13.60	04.00
M10	01/11/82	10.30	10.70	07.80	05.15	-1.00	-1.00	-1.00	00.01	-1.00	00.40	00.80	02.00
DS	01/11/82	0.00	09.90	10.60	99999	-1.00	00.01	00.13	00.02	00.02	00.90	03.80	20.00
DS	01/11/82	1.00	11.70	07.50	04.83	00.02	-1.00	00.01	00.02	00.02	00.40	05.20	07.00
DW	01/11/82	0.00	10.10	08.20	07.96	-1.00	-1.00	00.11	00.02	00.02	00.90	00.60	04.00
DW	01/11/82	10.20	10.60	10.30	08.15	-1.00	-1.00	00.01	00.02	00.01	00.40	-1.00	03.00

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR WATER		D.O.	PH	NH3-N	NO2-N	NO3-N	TOT-P	O-PO4	SI02	OIL& GREASE	TURB
		DEPTH	TEMP										
		(M)	(C)	(MG/L)		(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(NTU)
SW	01/11/82	0.00	09.80	10.20	99999	-1.00	00.01	00.11	00.02	00.02	01.00	00.80	04.00
SW	01/11/82	1.80	10.20	08.10	99999	00.01	-1.00	-1.00	00.01	00.01	00.40	00.60	03.00
M21	01/11/82	0.00	09.40	10.10	08.23	-1.00	00.01	00.11	00.01	00.01	01.00	00.60	05.00
M21	01/11/82	13.00	10.60	09.10	08.19	-1.00	00.01	00.05	00.01	00.01	02.00	-1.00	41.00
E1	01/11/82	0.00	08.80	99999	09.90	00.29	00.02	00.07	00.29	00.09	08.70	-1.00	15.50
E1	01/11/82	1.40	09.00	99999	09.02	00.27	00.02	00.10	00.30	00.03	07.90	-1.00	14.00
E2	01/11/82	0.00	07.90	09.40	09.04	00.38	00.01	00.06	00.05	00.02	01.60	-1.00	09.00
E4	01/11/82	0.00	05.00	10.50	08.91	00.04	00.01	-1.00	00.14	00.01	03.10	-1.00	75.00
E5	01/11/82	0.00	06.20	10.50	08.53	00.07	00.01	00.01	00.04	00.02	02.40	-1.00	50.00
E5	01/11/82	8.80	07.40	09.60	08.44	00.11	00.01	-1.00	00.10	-1.00	02.30	-1.00	64.00
DE	02/08/82	00.00	11.39	08.50	08.31	-1.00	-1.00	-1.00	00.01	-1.00	00.40	12.40	03.00
DE	02/08/82	09.40	11.40	08.60	08.31	00.01	-1.00	-1.00	00.02	00.03	00.60	42.60	08.00
M10A	02/08/82	00.00	11.41	08.50	08.06	00.01	-1.00	-1.00	00.01	00.01	00.60	26.40	03.00
M10A	02/08/82	09.40	11.45	08.40	08.24	00.02	-1.00	-1.00	00.02	00.02	00.80	20.90	10.00
NE	02/08/82	00.00	11.34	08.60	08.27	00.03	-1.00	00.01	-1.00	-1.00	00.60	34.80	04.00
NE	02/08/82	09.10	11.33	08.40	08.29	00.03	-1.00	00.01	-1.00	-1.00	00.60	56.40	05.00
M3	02/08/82	99999	99999	08.90	99999	00.02	-1.00	00.02	-1.00	-1.00	00.30	10.00	03.00
M3	02/08/82	99999	99999	08.70	99999	-1.00	-1.00	-1.00	-1.00	00.01	00.40	26.40	04.00
M18	02/08/82	99999	99999	08.80	99999	-1.00	-1.00	-1.00	-1.00	-1.00	00.20	-1.00	04.00
M18	02/08/82	99999	99999	08.70	99999	00.02	-1.00	-1.00	00.02	00.02	00.60	-1.00	13.00
DN	02/08/82	00.00	11.28	08.80	08.24	00.01	-1.00	-1.00	-1.00	-1.00	00.40	-1.00	04.00
DN	02/08/82	09.10	11.39	08.70	08.27	00.02	-1.00	-1.00	-1.00	-1.00	00.40	-1.00	04.00
SE	02/08/82	00.00	11.50	08.90	06.54	00.01	-1.00	-1.00	00.01	-1.00	00.30	29.40	03.00
SE	02/08/82	09.80	11.51	08.80	06.29	00.04	-1.00	-1.00	00.02	00.02	00.60	63.00	15.00
NW	02/08/82	00.00	11.27	08.80	07.99	00.02	-1.00	-1.00	-1.00	-1.00	00.30	-1.00	03.00
NW	02/08/82	09.10	11.33	08.50	08.24	00.04	-1.00	-1.00	00.04	00.04	01.60	-1.00	37.00
M10	02/08/82	00.00	11.41	09.00	08.22	00.01	-1.00	-1.00	00.02	-1.00	00.40	-1.00	05.00
M10	02/08/82	09.80	11.39	08.80	08.31	00.01	-1.00	-1.00	00.01	00.01	00.50	19.00	11.00
DS	02/08/82	00.00	11.43	08.70	06.54	-1.00	-1.00	-1.00	00.01	-1.00	00.10	01.20	30.00
DS	02/08/82	10.10	11.44	08.40	06.53	00.02	-1.00	-1.00	00.02	00.02	00.60	-1.00	10.00
DW	02/08/82	00.00	11.42	08.60	08.32	00.02	-1.00	-1.00	-1.00	-1.00	00.30	-1.00	02.00
DW	02/08/82	09.80	11.49	08.40	08.32	00.03	-1.00	-1.00	00.04	00.02	01.00	-1.00	30.00
SW	02/08/82	00.00	11.50	08.30	08.34	00.01	-1.00	-1.00	-1.00	-1.00	00.90	28.80	02.00
SW	02/08/82	10.10	11.45	08.00	08.33	00.01	-1.00	-1.00	00.01	00.01	00.50	10.57	04.00
M21	02/08/82	00.00	09.66	08.80	08.07	00.03	-1.00	00.01	00.01	00.01	00.60	11.10	08.00
M21	02/08/82	05.50	09.68	08.60	08.23	00.04	-1.00	00.01	00.02	00.02	01.20	09.00	28.00
E1	02/12/82	00.00	10.70	09.20	07.92	00.11	00.01	00.10	00.02	00.02	01.60	14.80	20.00
E1	02/12/82	04.70	10.60	09.20	07.88	00.10	00.01	00.10	00.03	00.03	03.20	-1.00	21.00
E2	02/12/82	00.00	10.20	08.60	08.30	00.02	00.01	00.08	00.04	00.03	02.60	-1.00	09.00
E3	02/12/82	00.00	10.00	10.40	08.52	00.01	-1.00	-1.00	00.02	00.02	00.90	-1.00	08.00
E4	02/12/82	00.00	09.30	09.30	08.33	00.06	-1.00	00.02	00.04	00.02	01.80	11.40	17.00
E5	02/12/82	00.00	10.20	09.80	08.45	00.04	-1.00	-1.00	00.02	00.02	00.90	10.50	16.00
E5	02/12/82	07.00	10.20	09.60	08.45	00.04	-1.00	-1.00	00.03	00.03	00.50	11.40	22.00
DE	03/12/82	01.00	15.20	08.69	08.50	00.03	-1.00	00.02	00.02	-1.00	01.00	-1.00	01.00
DE	03/12/82	09.40	15.50	08.05	08.46	00.03	-1.00	00.04	-1.00	-1.00	00.60	00.90	03.80
M10A	03/12/82	01.00	15.40	08.97	08.49	-1.00	-1.00	00.02	00.02	-1.00	00.50	-1.00	03.50
M10A	03/12/82	09.40	15.30	08.00	08.44	00.03	-1.00	00.04	-1.00	-1.00	00.80	00.80	03.50
NE	03/12/82	01.00	15.40	08.80	08.54	00.03	-1.00	00.02	00.01	-1.00	01.10	01.10	04.20
NE	03/12/82	09.10	15.10	08.58	08.52	00.02	-1.00	00.03	-1.00	-1.00	00.90	-1.00	05.00
M22	03/12/82	01.00	16.10	08.07	08.32	-1.00	-1.00	00.02	00.01	-1.00	00.30	00.60	00.70
M22	03/12/82	11.30	15.50	07.27	08.27	00.03	00.01	00.01	-1.00	-1.00	00.50	00.60	02.40
M3	03/12/82	01.00	15.90	09.56	08.36	-1.00	00.01	-1.00	00.01	-1.00	00.70	-1.00	02.60
M3	03/12/82	09.40	15.50	08.28	08.32	00.03	00.01	00.03	-1.00	-1.00	00.60	00.60	06.50
M18	03/12/82	01.00	16.30	09.48	08.41	00.03	-1.00	00.01	00.01	-1.00	00.80	00.60	05.60
M18	03/12/82	09.80	15.40	08.19	08.32	00.03	-1.00	00.01	-1.00	00.01	01.20	00.70	10.00
DN	03/12/82	01.00	15.30	08.89	08.54	00.01	-1.00	00.03	00.01	-1.00	00.70	00.80	02.50
DN	03/12/82	09.10	15.10	08.61	08.53	00.02	-1.00	00.03	00.02	00.01	00.90	43.50	06.50
SE	03/12/82	01.00	15.70	09.09	08.46	00.02	-1.00	00.02	-1.00	-1.00	00.90	-1.00	04.00
SE	03/12/82	09.80	15.70	07.94	08.39	00.02	-1.00	00.04	-1.00	-1.00	00.60	00.60	02.20

Table I-7. CHEMICAL OCEANOGRAPHY-WATER QUALITY (Continued).

SITE	DATE	INSTR WATER		D.O. (MG/L)	PH	NH3-N (MG/L)	NO2-N (MG/L)	NO3-N (MG/L)	TOT-P (MG/L)	O-PO4 (MG/L)	SIO2 (MG/L)	OIL& GREASE (MG/L)	TURB (NTU)
		DEPTH (M)	TEMP (C)										
NW	03/12/82	01.00	15.10	08.78	08.56	00.02	00.01	00.02	-1.00	-1.00	00.50	-1.00	03.00
NW	03/12/82	09.10	15.10	08.51	08.53	00.03	00.01	00.03	00.01	-1.00	00.90	-1.00	07.20
M10	03/12/82	01.00	15.60	09.00	08.39	00.02	00.01	00.02	-1.00	-1.00	01.00	00.60	03.00
M10	03/12/82	09.80	15.40	07.92	08.34	00.02	00.01	00.02	00.01	-1.00	00.60	-1.00	02.60
DS	03/12/82	01.00	15.80	09.02	08.49	00.03	-1.00	00.02	-1.00	-1.00	00.80	00.60	04.20
DS	03/12/82	10.10	15.50	08.23	08.40	00.04	-1.00	00.03	-1.00	-1.00	00.50	00.60	03.00
DW	03/12/82	01.00	15.30	08.81	08.46	00.01	-1.00	00.02	-1.00	-1.00	00.60	00.80	02.00
DW	03/12/82	09.80	15.40	08.39	08.41	00.02	-1.00	00.04	00.02	-1.00	00.80	00.60	04.00
SW	03/12/82	01.00	15.50	08.48	08.48	00.03	-1.00	00.03	-1.00	-1.00	00.80	99999	02.60
SW	03/12/82	10.10	15.50	08.14	08.41	00.02	-1.00	00.03	00.02	-1.00	00.40	00.80	03.50
M21	03/12/82	01.00	16.00	08.41	08.79	00.01	00.01	-1.00	00.01	00.01	00.70	00.60	08.00
M21	03/12/82	05.50	15.80	08.19	08.70	00.03	-1.00	-1.00	00.01	00.01	00.90	-1.00	12.00
E1	03/13/82	00.50	17.30	07.89	07.22	00.18	00.01	00.06	00.04	00.03	06.80	-1.00	34.00
E1	03/13/82	02.10	17.30	07.88	07.31	00.21	00.01	00.07	00.05	00.01	07.10	00.60	40.00
E2	03/13/82	00.10	20.80	09.87	08.75	00.03	-1.00	00.01	00.02	-1.00	01.70	01.30	08.00
E3	03/13/82	00.10	21.40	08.01	08.08	-1.00	-1.00	-1.00	00.02	-1.00	01.00	01.00	08.30
E4	03/13/82	00.10	20.20	10.14	08.64	00.02	-1.00	-1.00	-1.00	-1.00	01.60	02.70	07.30
E5	03/13/82	01.00	16.40	08.80	08.55	00.05	-1.00	-1.00	-1.00	-1.00	04.40	-1.00	05.60
E5	03/13/82	03.00	16.50	08.04	08.47	00.03	-1.00	-1.00	-1.00	-1.00	00.80	00.60	14.00

Table I-8. MAJOR IONS IN WATER QUALITY SAMPLES

SITE	DATE	INSTR DEPTH (M)	NA (G/L)	CA (G/L)	K (G/L)	MG (G/L)	CL (G/L)	SO4 (G/L)
DE	06/08/81	00.00	08.20	0.310	0.260	01.04	13.30	01.70
DE	06/08/81	09.70	08.90	0.380	0.350	01.10	17.40	02.20
DN	06/08/81	00.00	06.70	0.290	0.240	00.80	12.70	01.60
DN	06/08/81	09.00	09.90	0.380	0.350	01.33	17.60	02.24
DS	06/08/81	00.00	07.00	0.290	0.240	00.78	12.30	01.61
DS	06/08/81	10.00	08.80	0.380	0.350	01.09	17.40	02.38
DW	06/08/81	00.00	07.20	0.290	0.250	00.80	11.60	01.75
DW	06/08/81	09.60	09.40	0.380	0.360	01.07	17.40	02.38
E1	06/08/81	05.00	02.20	0.100	0.050	00.20	02.00	00.66
E1	06/09/81	00.00	02.70	0.100	0.050	00.27	03.90	00.67
E2	06/08/81	00.00	05.50	0.210	0.160	00.57	10.80	01.17
E3	06/08/81	00.00	06.90	0.270	0.220	00.76	11.90	01.54
E4	06/08/81	00.00	06.70	0.280	0.280	00.81	12.60	01.57
E5	06/08/81	00.00	05.10	0.250	0.210	00.68	10.90	01.50
E5	06/08/81	06.00	08.10	0.350	0.320	01.05	16.80	02.24
M3	06/08/81	00.00	07.00	0.310	0.300	00.81	13.60	01.78
M3	06/08/81	09.10	07.80	0.370	0.340	00.96	16.80	02.24
M10	06/08/81	00.00	06.60	0.290	0.240	00.78	12.60	01.68
M10	06/08/81	10.00	08.20	0.370	0.350	01.04	17.40	02.24
M10A	06/08/81	00.00	06.30	0.280	0.240	00.72	12.70	01.60
M10A	06/08/81	10.00	08.90	0.370	0.380	01.03	16.90	02.24
M21	06/08/81	00.00	07.30	0.300	0.260	00.82	13.30	01.94
M21	06/08/81	06.00	08.20	0.340	0.310	00.92	14.90	02.03
M22	06/08/81	00.00	08.40	0.340	0.310	00.93	15.60	02.24
M22	06/08/81	11.80	09.50	0.390	0.370	01.18	18.90	02.45
M18	06/08/81	00.00	07.00	0.280	0.240	00.77	12.30	01.68
M18	06/08/81	09.80	08.20	0.380	0.360	00.90	17.40	02.22
NE	06/08/81	00.00	06.50	0.280	0.240	00.77	12.20	01.59
NE	06/08/81	10.00	10.10	0.370	0.340	01.30	16.80	02.28
NW	06/08/81	00.00	06.20	0.280	0.230	00.78	12.60	01.74
NW	06/08/81	09.50	08.90	0.360	0.330	01.50	17.10	02.26
SE	06/08/81	00.00	06.50	0.280	0.220	00.80	12.10	01.72
SE	06/08/81	10.00	07.10	0.380	0.340	00.82	17.60	02.27
DS	09/11/81	00.00	07.50	0.270	0.230	01.07	11.80	01.40
DS	09/11/81	09.80	06.70	0.280	0.210	00.78	11.60	01.60
DN	09/11/81	00.00	06.20	0.280	0.220	00.69	12.10	01.40
DN	09/11/81	09.30	06.90	0.300	0.250	00.69	13.30	01.50
DE	09/11/81	00.00	06.00	0.280	0.240	00.60	13.10	01.40
DE	09/11/81	09.70	05.50	0.260	0.210	00.63	11.20	01.40
DW	09/11/81	00.00	05.40	0.280	0.220	00.63	11.20	01.50
DW	09/11/81	09.10	05.90	0.280	0.220	00.63	12.00	01.40
NE	09/11/81	00.00	05.40	0.260	0.210	00.60	11.30	01.40
NE	09/11/81	09.80	06.30	0.290	0.250	00.74	12.90	01.50
NW	09/11/81	00.00	05.80	0.280	0.230	00.65	12.00	01.40
NW	09/11/81	09.80	06.00	0.280	0.220	00.62	11.90	01.40
SE	09/11/81	00.00	05.70	0.280	0.230	00.65	11.80	01.40
SE	09/11/81	10.00	06.30	0.300	0.250	00.70	12.90	01.50
M3	09/11/81	00.00	05.70	0.260	0.220	00.65	11.60	01.40
M3	09/11/81	09.00	05.30	0.240	0.200	00.60	10.60	01.30
M10	09/11/81	00.00	05.90	0.290	0.130	00.65	12.40	01.30
M10	09/11/81	09.80	06.30	0.260	0.240	00.69	12.80	01.50
M10A	09/11/81	00.00	06.00	0.260	0.230	00.66	12.40	01.40
M10A	09/11/81	09.80	06.20	0.280	0.240	00.66	12.90	01.40
M18	09/11/81	00.00	05.90	0.270	0.230	00.66	12.40	01.30
M18	09/11/81	09.50	06.00	0.260	0.230	00.66	12.80	01.50
M21	09/11/81	00.00	05.40	0.240	0.200	00.58	10.90	01.20
M21	09/11/81	06.00	05.40	0.240	0.210	00.60	11.90	01.20
M22	09/11/81	00.00	10.80	0.540	0.540	01.31	26.70	01.50
M22	09/11/81	11.50	06.60	0.290	0.270	99999	14.00	01.60

Table I-8. MAJOR IONS IN WATER QUALITY SAMPLES (Continued).

SITE	DATE	INSTR DEPTH (M)	NA (G/L)	CA (G/L)	K (G/L)	MG (G/L)	CL (G/L)	SO4 (G/L)
E1	09/10/81	00.00	02.50	0.080	0.050	00.74	00.80	00.20
E1	09/10/81	01.40	02.30	0.070	0.050	00.24	03.30	00.10
E2	09/10/81	00.00	04.40	0.190	0.110	00.19	08.40	00.70
E3	09/10/81	00.00	04.60	0.190	0.150	00.45	08.70	00.80
E4	09/10/81	00.00	04.60	0.200	0.160	00.46	08.70	00.80
E5	09/10/81	00.00	05.30	0.220	0.190	00.46	10.30	01.10
E5	09/10/81	03.90	04.90	0.210	0.180	00.55	09.60	01.10
DE	12/02/81	00.00	10.20	0.670	0.370	01.08	17.80	02.30
DE	12/02/81	09.50	11.00	0.440	0.430	01.22	21.60	02.60
M10A	12/02/81	00.00	09.50	0.410	0.370	01.14	18.70	02.50
M10A	12/02/81	10.60	10.10	0.390	0.350	01.04	19.50	02.70
NE	12/02/81	00.00	08.70	0.350	0.310	00.98	16.50	02.50
NE	12/02/81	09.30	09.50	0.390	0.360	01.06	18.20	02.70
M22	12/02/81	00.00	08.30	0.340	0.300	00.92	15.40	02.40
M22	12/02/81	12.00	10.10	0.420	0.420	01.16	19.80	03.00
M3	12/02/81	00.00	08.70	0.360	0.320	00.95	16.70	02.40
M3	12/02/81	10.00	09.60	0.390	0.380	01.05	18.80	02.60
M18	12/02/81	00.00	08.70	0.360	0.330	00.97	16.70	02.40
M18	12/02/81	10.00	09.30	00.37	00.36	01.05	17.70	02.30
DN	12/02/81	00.00	08.40	0.340	0.310	00.95	16.10	02.20
DN	12/02/81	09.50	09.30	0.390	0.350	01.05	18.80	02.60
SE	12/02/81	00.00	08.80	0.340	0.320	00.96	16.30	02.30
SE	12/02/81	10.10	09.50	0.370	0.370	01.04	20.40	02.60
NW	12/02/81	00.00	08.80	0.340	0.320	00.96	16.30	02.50
NW	12/02/81	09.60	09.50	0.370	0.350	01.02	18.30	02.60
M10	12/02/81	00.00	09.00	0.350	0.320	00.96	17.30	02.60
M10	12/02/81	09.70	10.20	0.380	0.370	01.16	18.80	02.60
DS	12/02/81	00.00	08.60	0.370	0.310	00.96	16.10	02.20
DS	12/02/81	10.00	09.60	0.390	0.360	01.06	18.60	02.80
DW	12/02/81	00.00	08.40	0.500	0.320	00.92	16.60	02.50
DW	12/02/81	09.70	09.70	0.390	0.370	01.08	18.80	02.80
SW	12/02/81	00.00	08.50	0.340	0.320	00.94	16.90	02.60
SW	12/02/81	10.60	09.20	0.370	0.360	01.06	18.10	02.90
M21	12/02/81	00.00	08.80	0.360	0.330	01.00	17.60	02.50
M21	12/02/81	10.40	09.30	0.370	0.360	01.02	18.30	02.50
E1	12/02/81	00.00	02.70	0.130	0.050	00.26	05.20	01.60
E1	12/02/81	04.10	02.50	0.120	0.060	00.26	04.90	01.60
E2	12/02/81	00.00	02.50	0.120	0.070	00.24	05.10	01.80
E3	12/02/81	00.00	02.50	0.110	0.110	00.26	04.90	02.00
E4	12/02/81	00.00	07.60	0.300	0.250	00.86	14.40	02.10
E5	12/02/81	00.00	08.60	0.640	0.360	00.98	17.00	02.60
E5	12/02/81	04.20	08.40	0.560	0.330	00.94	16.70	02.30
DE	03/12/82	01.00	07.70	0.320	0.300	00.96	15.50	02.35
DE	03/12/82	09.40	08.20	0.320	0.320	01.04	15.50	02.53
DN	03/12/82	01.00	07.50	0.300	0.280	00.92	14.30	02.45
DN	03/12/82	09.10	07.40	0.290	0.280	00.91	14.80	02.30
DS	03/12/82	01.00	07.90	0.310	0.300	00.97	15.50	02.58
DS	03/12/82	10.10	08.30	0.330	0.310	01.01	16.00	02.78
DW	03/12/82	01.00	07.80	0.310	0.300	00.98	15.30	02.40
DW	03/12/82	09.80	08.30	0.320	0.310	00.99	16.30	02.50
E1	03/13/82	00.50	01.60	0.050	0.030	00.14	02.20	00.36
E1	03/13/82	02.10	00.80	0.030	0.020	00.02	01.20	00.16
E2	03/13/82	00.10	03.30	0.130	0.120	00.33	06.40	01.07
E3	03/13/82	00.10	05.20	0.200	0.190	00.57	09.60	01.16
E4	03/13/82	00.10	05.10	0.210	0.200	00.60	10.10	01.52
E5	03/13/82	01.00	06.40	0.260	0.250	00.77	12.60	01.98
E5	03/13/82	03.00	06.90	0.280	0.280	00.84	14.30	02.26

Table I-8. MAJOR IONS IN WATER QUALITY SAMPLES (Continued).

SITE	DATE	INSTR DEPTH (M)	NA (G/L)	CA (G/L)	K (G/L)	MG (G/L)	CL (G/L)	SO4 (G/L)
M3	03/12/82	01.00	09.80	0.300	0.290	01.19	14.60	02.85
M3	03/12/82	09.40	07.80	0.310	0.290	00.95	14.80	02.70
M10	03/12/82	01.00	07.90	0.310	0.290	00.98	14.60	02.08
M10	03/12/82	09.80	08.60	0.320	0.310	00.98	16.80	02.35
M10A	03/12/82	01.00	07.20	0.290	0.280	00.93	13.60	02.48
M10A	03/12/82	09.40	07.50	0.300	0.300	00.97	14.10	02.40
M21	03/12/82	01.00	07.60	0.310	0.290	00.93	14.60	02.40
M21	03/12/82	05.50	07.50	0.320	0.290	00.90	15.10	02.31
M22	03/12/82	01.00	08.20	0.330	0.330	01.07	15.50	02.98
M22	03/12/82	11.30	08.60	0.330	0.330	01.11	15.80	02.75
M18	03/12/82	01.00	07.70	0.300	0.300	00.92	13.60	02.30
M18	03/12/82	09.80	07.60	0.300	0.290	00.92	14.60	02.40
NE	03/12/82	01.00	07.10	0.290	0.280	00.94	13.80	02.30
NE	03/12/82	09.10	07.50	0.300	0.290	00.98	14.30	02.25
NW	03/12/82	01.00	07.70	0.310	0.290	00.94	14.60	02.50
NW	03/12/82	09.10	09.30	0.310	0.300	01.15	15.30	02.36
SE	03/12/82	01.00	09.80	0.290	0.270	01.20	13.80	02.63
SE	03/12/82	09.80	07.90	0.300	0.290	00.96	14.30	02.50
SW	03/12/82	01.00	07.80	0.310	0.300	00.96	14.60	02.10
SW	03/12/82	10.10	08.60	0.330	0.310	01.02	15.80	02.65