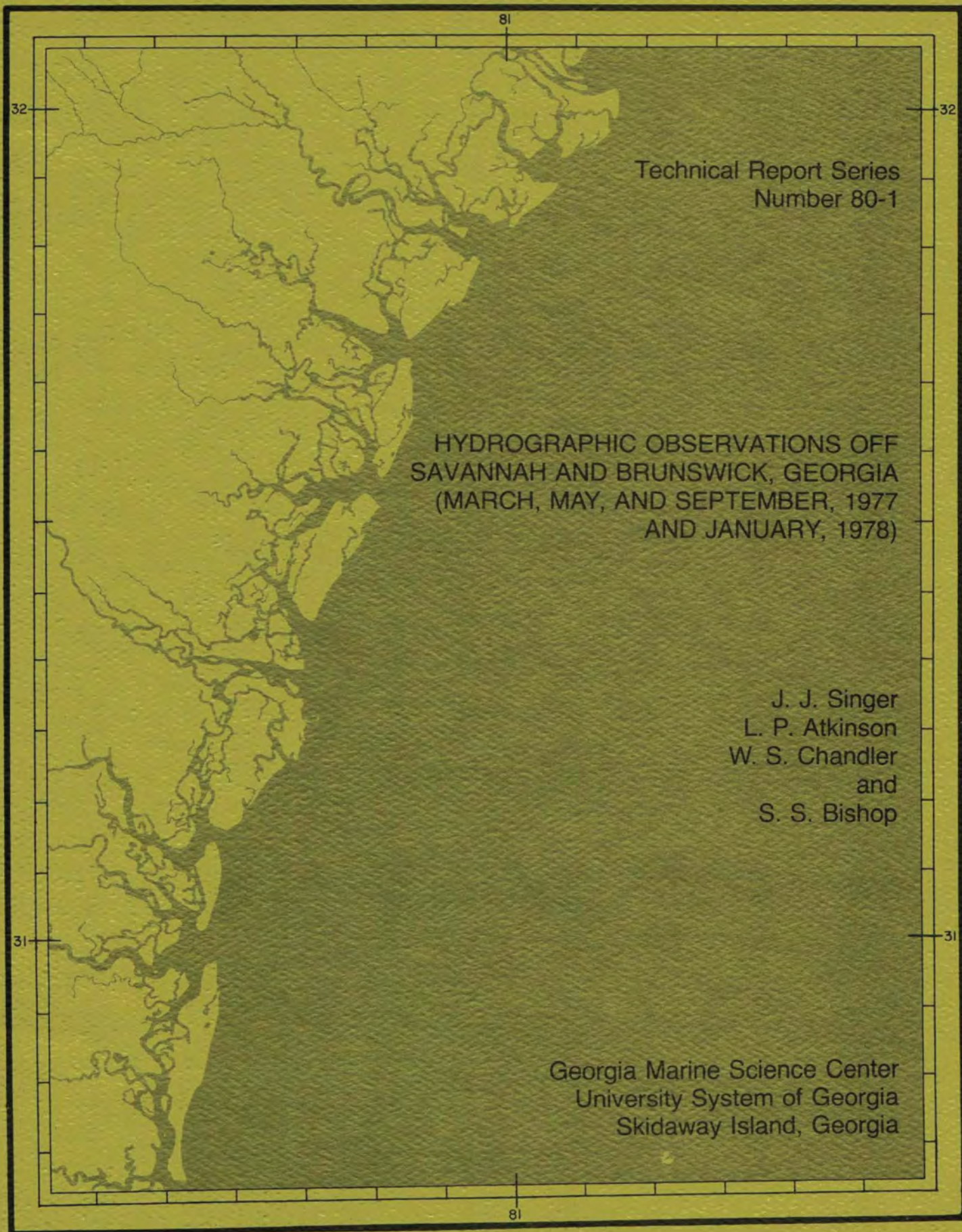




Technical Report Series
Number 80-1

HYDROGRAPHIC OBSERVATIONS OFF
SAVANNAH AND BRUNSWICK, GEORGIA
(MARCH, MAY, AND SEPTEMBER, 1977
AND JANUARY, 1978)

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and
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Georgia Marine Science Center
University System of Georgia
Skidaway Island, Georgia

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Special thanks go to the captains, mates and crews of the R/V Blue Fin and the R/V Columbus Iselin. Pat O'Malley directed nutrient analyses with the able assistance of Terry DeLoach, Paul Magid and Lynn Rubicam. Bob Redmond, Lori Knight and Dan McIntosh provided drafting and graphics assistance and Linda Land typed the text.

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ABSTRACT

Seasonal onshore-offshore sections were run in March, May and September, 1977 and January, 1978 off Savannah and Brunswick, Georgia. In each instance upwelling was observed at the shelf break with significant nutrient fluxes into the surface and/or shelf waters. There are indications that eddies may have been responsible for some of these observations.

INTRODUCTION

This report contains data obtained during the following seasonal Georgia Bight cruises:

Table 1. Georgia Bight Cruises.

<u>Cruise Number</u>	<u>Date</u>	<u>Sections</u>	<u>Parameters Sampled</u>
BF-14-77	3/8-9/77	2 XBT	$^{\circ}\text{C}$
BF-38-77	5/26-27/77	1 CTD/XBT	$^{\circ}\text{C}$, $^{\circ}/\text{oo}$, NO_3 , PO_4 , Si
BF-57-77	9/13-14/77	1 CTD/1 XBT	$^{\circ}\text{C}$, $^{\circ}/\text{oo}$, NO_3 , PO_4 , Si
CI-01-78	1/23-26/78	2 XBT	$^{\circ}\text{C}$, $^{\circ}/\text{oo}$, NO_3 , PO_4 , Si, Chl-a

These investigations were part of a larger multi-institutional Department of Energy program to understand event scale, physical, chemical and biological processes of the South Atlantic Bight, the continental shelf region from Cape Canaveral, Florida to Cape Hatteras, North Carolina. The studies reported here were concentrated in the Georgia Bight near Brunswick and Savannah, Georgia. The hydrographic data will be used to compare with data from moored instruments deployed by the University of Miami (Dr. Tom Lee). All data are presented in the Appendix and are on file with the National Oceanographic Data Center (NODC).

METHODS

SAMPLING

One or two onshore/offshore hydrographic sections were run during each cruise. These consisted of conductivity/temperature/depth (CTD) or expendable bathythermograph (XBT) casts along sections extending ESE of Savannah and Brunswick, Georgia. The stations were 10 to 20 kilometers apart and extended out to the shelf break (Figures 1-4).

At CTD stations, a General Oceanics Model 1015 Mark 5 Rosette multi-bottle array was used for water sampling. A Plessey Model 9400 CTD sensor system was attached below the array. Water sampling depths were determined from the temperature structure. Samples were taken near the surface, just above or below the thermocline, at the bottom and occasionally at other selected depths. Data are reported for temperature, salinity, nitrate, phosphate and silicate concentrations. Niskin bottle casts were also made at some but not all of the XBT stations.

CHEMICAL AND PHYSICAL PROCEDURES

Salinity samples were analyzed conductometrically using a Plessey Model 6230 N laboratory salinometer. Values obtained were used to calibrate the Plessey CTD system. A separate section of this report details the CTD calibration procedure. Temperature was determined with deep sea reversing thermometers, XBT's and the CTD system.

Nutrient samples were immediately frozen in 125 ml. polyethylene bottles and stored in the dark until thawed and analyzed ashore. Colorimetric determinations of the nutrient concentrations were made using a Bausch and Lomb Spectronic 88 Spectrophotometer. Silicate was determined by the method of Mullin and Riley (1955) as modified by Strickland and Parsons (1972), phosphate by the method of Murphy and Riley (1962) and nitrate by the cadmium column reduction technique of Gardner et al. (1976).

Chlorophyll-a was determined fluorometrically using the method of Yentsch and Menzel (1963) as described by Strickland and Parsons (1972).

XBT Data Acquisition and Processing

A Sippican Model LM3A handheld launcher and an MK2A-1 recorder were used for XBT casts. The temperature/depth plots were manually digitized and these data were placed in NODC format and merged with processed CTD data. Depths at which temperature is a whole or half degree are reported as are depths at which a significant mixed layer begins or ends.

CTD Data Acquisition and Processing

The CTD unit consisted of a Plessey Model 9400 CTD sensor system with a Model 8400 digital data logger and Kennedy Model 1600 incremental magnetic tape recorder for data acquisition and storage. A redundant 'YYY' plot was made of all casts using a Hewlett-Packard Model 7046 X-Y-Y recorder calibrated with a precision 10VDC source.

A second data acquisition system under development was also used during these cruises. It involved the addition of an HP 9825A Calculator to control the casts and to record the data on cartridge tape, and an HP 9862A Plotter to plot temperature during the cast and salinity immediately afterwards. This permitted immediate confirmation of data acquisition and its relative quality.

Details of the operation of these systems and the processing of data are presented in Chandler et al. (1978). A general outline of the magnetic tape data processing is presented in Table 2.

CTD and XBT Calibration

For primary calibration of temperature and salinity, a Niskin bottle equipped with paired protected deep sea reversing thermometers was tripped after a four-minute equilibration period at the maximum sample depth in mixed layers.

Additional salinity calibration data were collected from mixed layers during the upcast. At the bottom and at selected sampling depths, the CTD sampling rate was slowed and salinity calibration data were acquired before the bottles were tripped.

From analysis of these data (Tables 3 and 4), the following salinity offsets were applied to the CTD data from cruises BF-38-77 and BF-57-77. (Table 5).

Table 2. CTD Data Flow. Shipboard Acquisition to NODC Submitted.

Data Source/Disposition	Program	Data File
Tape from data logger	CTDRUN (Copies tape data to computer file)	CRUISE
	MAGREAD (Converts binary coded data to decimal)	BIRANG
Enter depth offset	CTDUNIT (Converts decimal units to engineering units)	LAG
	LAGFILT (Coarse filters and temperature lag)	LATCH
	DLATCH (Removes decreasing and repeated depths)	CTDATA
	CTDAVE5 (One meter average data)	AVE
	BROENK (Calculates salinity and sigma-t)	SGSA
	NODCFO (Converts to NODC format)	NODC
Type in headers on file HEAD	XBTMERG (Merges headers and XBT data)	NODC + HEAD
	NUTMERG (Merges NODC data with headers and chemical data)	FINAL
Submitted to NODC	CEMLIST (Calculates sigma-t specific volume anomaly, oxygen utilization, and creates technical report pages)	
	LIST (Creates station list)	TECHNICAL REPORT

Table 3. Cruise BF-38-77 Salinity Calibration Data.

Station No.	Depth (m)	Bottle ‰	CTD ‰	Difference Bottle-CTD (‰)
2C	14m	32.634	32.57	+ .06
3C	13m	32.738	32.68	+ .06
4C	14m	33.303	33.27	+ .03
5C	15m	33.869	33.81	+ .06
6C	24m	34.651	34.59	+ .06
7C	28m	35.456	35.42	+ .04
7C	16m	35.455	34.42	+ .04
8C	31m	35.810	35.75	+ .06
9C	34m	36.026	35.94	+ .09
10C	40m	36.095	36.02	+ .08
11C	41m	36.116	36.06	+ .06
13C	53m	36.316	36.27	+ .05
14C	74m	36.316	36.27	+ .05
16C	10m	32.513	32.45	+ .06

Table 4. Cruise BF-57-77 Salinity Calibration Data.

Station No.	Depth (m)	Bottle ‰	CTD ‰	Difference Bottle-CTD (‰)
1C	138m	36.191	36.074	+ .117
2C	16m	36.268	36.151	+ .117
3C	18m	32.218	36.101	+ .117
4C	22m	36.219	36.111	+ .108
5C	26m	36.229	36.126	+ .103
6C	28m	36.238	36.138	+ .100
7C	31m	36.250	36.154	+ .096
8C	33m	36.228	36.135	+ .093
9C	37m	36.327	36.218	+ .109
10C	40m	36.325	36.242	+ .083
12C	196m	35.034	35.015	+ .019

Table 5. CTD Salinity Offset Equation

Cruise	Date	Data Source	‰ Offset Equation
BF-38-77	5/26-27/77	HP-Cartridge	+0.06 ± 0.015
BF-57-77	9/13-14/77	Magnetic Tape	* $S = S_0 + .118 - 5.19 \times 10^{-4}D$

S_0 = Uncorrected CTD Salinity

D = Depth

* It was necessary to apply an additional correction of -0.11 ‰ to Station 16-C after processing.

The magnetic tape data were normally our primary data source at this stage in the development of our acquisition system. However, the HP cartridge data were used for cruise BF-38-77 because a defective frequency plug resulted in erroneous magnetic tape data. The absence of an apparent depth effect for this same cruise is attributed to the shallowness of the samplings (deepest was 74 meters). Here, the normal instabilities of the instrumentation prohibit the determination of any discernible depth relationship. (See CTD Error Analysis).

The temperature of the CTD system was checked against reversing thermometers (Tables 6 and 7). Since the CTD temperature sensor agreed with protected reversing thermometers within the range of accuracy ($\pm 0.02^\circ\text{C}$), no offset was applied (Table 8). A +2.29 meter depth offset was applied to both sets of CTD data.

Table 8. CTD Temperature Calibration Check.

Cruise	Date	Mean Difference Reversing Thermometer - CTD	Standard Deviation
BF-38-77	5/26-27/77	+0.018	.009
BF-57-77	9/13-14/77	+0.006	.010

The XBT system was checked for proper calibration before and during each cruise with a test canister and periodically with surface bucket and/or near bottom reversing thermometer readings. These indicated that the system operated within acceptable error ($\pm 0.1^\circ\text{C}$).

CTD Error Analysis

The Plessey Model 9400 CTD system has the following rated accuracy, resolution, and time constants (Table 9).

Table 6. Cruise BF-38-77. Temperature Calibration Data.

Station No.	Depth (m)	REVERSING THERMOMETER TEMPERATURE (°C)			CTD Temperature (°C)	Difference (°C)
		1	2	Ave		
2C	14m	24.17	24.15	24.160	24.14	+ .020
4C	14m	23.74	23.74	23.740	23.73	+ .010
5C	15m	23.48	23.45	23.465	23.43	+ .035
6C	24m	22.65	22.66	22.655	22.64	+ .015
10C	40m	23.90	23.88	23.890	23.88	+ .010
11C	41m	23.91	23.90	23.905	23.89	+ .015

Table 7. Cruise BF-57-77. Temperature Calibration Data.

Station No.	Depth (m)	REVERSING THERMOMETER TEMPERATURE (°C)			CTD Temperature (°C)	Difference (°C)
		1	2	Ave		
1C	14m	28.41	28.42	28.415	28.41	+ .005
2C	16m	28.24	28.22	28.230	28.22	+ .010
3C	18m	28.00	28.02	28.010	28.00	+ .010
4C	22m	27.91	27.93	27.920	27.92	0.000
5C	26m	27.81	27.81	27.810	27.78	+ .030
6C	28m	27.48	27.46	27.470	27.48	- .010
7C	31m	26.50	26.49	26.495	26.49	+ .005
8C	33m	25.48	25.48	25.480	25.48	0.000
9C	37m	24.59	24.58	24.585	24.59	- .005
10C	40m	23.85	23.85	23.850	23.84	+ .010
12C	196m	8.42	8.42	8.420	8.41	+ .010

Table 9. Specifications for Plessey Model 9400 CTD System

	Conductivity	Temperature	Depth
Accuracy	± 0.03 mmho/cm	$\pm 0.02^{\circ}\text{C}$	± 1.5 m
Resolution	0.0001 mmho/cm	0.0001 $^{\circ}\text{C}$	0.0012 m
Time Constant	0.1 sec	0.35 sec	0.1 sec

Since salinity is not measured directly, it must be calculated from the above parameters, resulting in the composite errors of the C, T and D sensors and the salinity equation.

By varying "real" C, T and D by the rated sensor accuracies in the Broenkow CTD salinity equation (see Chandler *et al.* 1978, and Tables 10 and 11) the maximum error attributable to each sensor can be determined. The composite maximum error is approximately $\pm 0.06^{\circ}/_{\text{oo}}$ for "real" data sets. However, the standard deviation of all mixed layer samples taken for salinity calibration implies greater accuracy, namely $\pm 0.02^{\circ}/_{\text{oo}}$ after offset. We believe this value is a more realistic measure of the quality of the data set.

METEOROLOGICAL CONDITIONS

Wind and temperature data from Savannah, Georgia are presented in Figures 5-8. These data were derived from the monthly summaries for the respective months (U.S. Department of Commerce: March 1977, May 1977, September 1977 and January 1978) and are plotted in GMT at three-hour intervals. Additional meteorological data, collected by the ships personnel, are presented with the hydrographic data.

Table 10. Broenkow's Salinity Equations.

$$\begin{aligned}
 R_Z &= 1 + .01\{(1.551 - .0453T + 59 \times 10^{-5}T^2) \\
 &\quad + \frac{1}{4}(35-S)(.043 - .0017T + 23 \times 10^{-6}T^2)\}(1.037 \times 10^{-3}Z \\
 &\quad - 32 \times 10^{-9}Z^2) \\
 A_T &= (676547 + 20131.5T + 99.89T^2 - .1943T^3 - .00672T^4) 10^{-6} \\
 R_T &= \frac{C(S,T,Z)}{R_Z A_T 42.896} \\
 \Delta_{15} &= R_T(R_T-1)(T-15) \{96.7 - 72R_T + 37.3R_T^2 \\
 &\quad - (.63 + .21R_T^2)(T-15)\}10^{-5} \\
 R_{15} &= R_T + \Delta_{15} \\
 S^{0/00} &= .08996 + 28.2972R_{15} + 12.80832R_{15}^2 - 10.67869R_{15}^3 \\
 &\quad + 5.98624R_{15}^4 - 1.32311R_{15}^5
 \end{aligned}$$

where: R = conductivity ratio

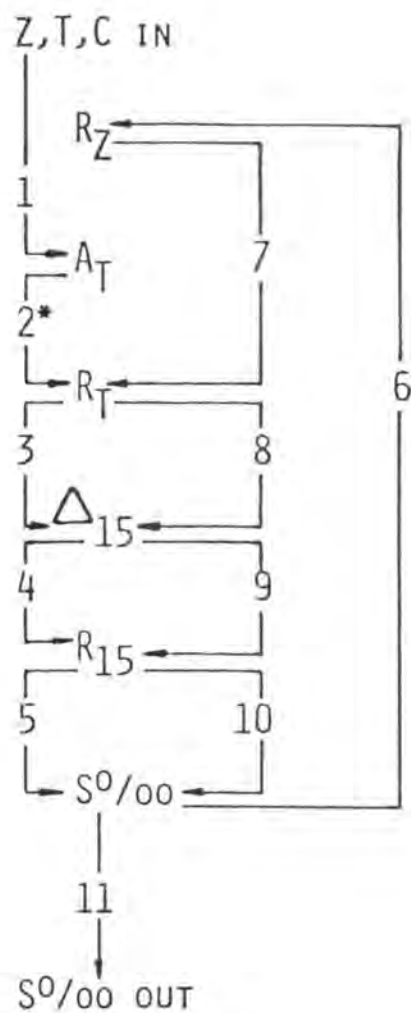
Z = depth (meters)

T = temperature ($^{\circ}\text{C}$)

C = measured conductivity (mmhos/cm)

S = salinity ($^{\circ}/00$)

Table 11. Flow Using Broenkow's Salinity Equation



*without the R_Z term

R_Z = pressure effect on conductivity

A_T = temperature effect

R_T = $R(S, t, p)$ conductivity ratio

Δ_{15} = t_{15} correction (International Oceanographic Tables, 1966)

R_{15} = $R(S, 15^\circ\text{C}, 0)$

RESULTS AND DISCUSSION

Savannah Section, 8-9 March 1977. (Figure 9)

Deep upwelling at the shelf break is indicated, and there is the appearance of cascading along the mid to outer shelf (stations 8X and 9X). This, however, may be due to by warmer offshore waters. No nutrient data were collected.

Brunswick Section, 9 March 1977. (Figure 9)

Upwelling is occurring at the shelf break. The 21°C lobe at stations 25X and 26X suggests that the upwelling may have resulted from an eddy. Note the differences in the vertical structure on the shelf between this section and the Savannah section, a horizontal distance of less than 60 nautical miles (111 kilometers). No nutrient data were collected.

Savannah Section, 26-27 May 1977. (Figures 10-11)

The temperature and sigma-t plots reveal an upwelling regime centered around station 13X/C. The nutrient data, however, reveal that significant nutrient concentrations did not occur in the surface waters because of the high temperatures.

The warm surface lobe at stations 11C and 12X with cooler waters at stations 13X/C and 14C, and then warmer waters again at station 15X suggest an eddy. A similar trend is seen in the density field where density increases and then decreases moving offshore at the shelf break.

Brunswick Section, 13-14 September 1977. (Figures 12-13).

A strong upwelling regime has been established at the shelf break with significant nutrient enrichment of the surface waters. The upwelling is evident in all parameters. Cooler, high nutrient waters are producing an "intrusion" on the shelf.

Savannah Section, 14 September 1977. (Figures 14-15)

Upwelling similar to that shown for the Brunswick section on 13-14 September is evident. However, nutrient concentrations in the shallower waters are not as great.

Savannah Section, 23-24 January, 1978. (Figures 16-17)

There is an overriding of shelf waters by warmer offshore waters with the 20°C isotherm roughly depicting the western wall of the Gulf Stream. Deep upwelling is apparent at the shelf break and high levels of nitrate, phosphate and silicate have reached the surface. In addition, there are extremely high chlorophyll concentrations in the surface waters at the shelf break, a further indication of strong upwelling.

Brunswick Section 24-25 January 1978. (Figures 18-19)

Strong upwelling at the shelf break is indicated by the nitrate and silicate data. This upwelling feature is less obvious in plots of the other parameters.

SUMMARY

Upwelling was observed at the shelf break during each of the cruises in March, May, September and January. This resulted in significant nutrient enrichment of surface and shelf waters. Nutrient concentrations as high as 5 μM nitrate, .2 μM phosphate and 2 μM silicate were observed in the top 30 m.

Gulf Stream eddies and meanders are probable explanations for at least some of the observed upwelling. However, confirmation will depend upon analysis of current meter data from moorings placed in the study area by the University of Miami (Dr. Tom Lee).

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FIGURES

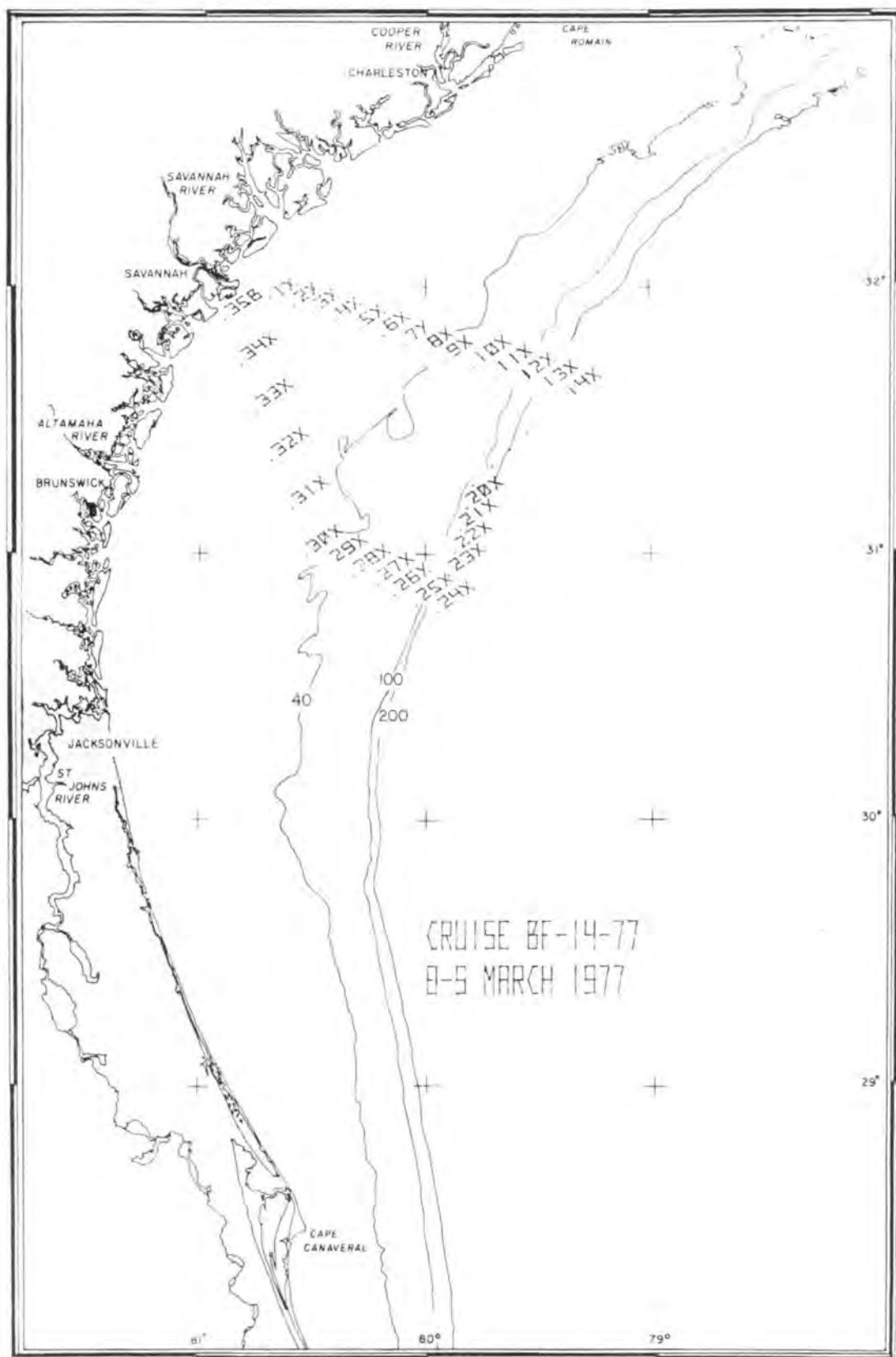


Figure 1. Station locations (March 1977)

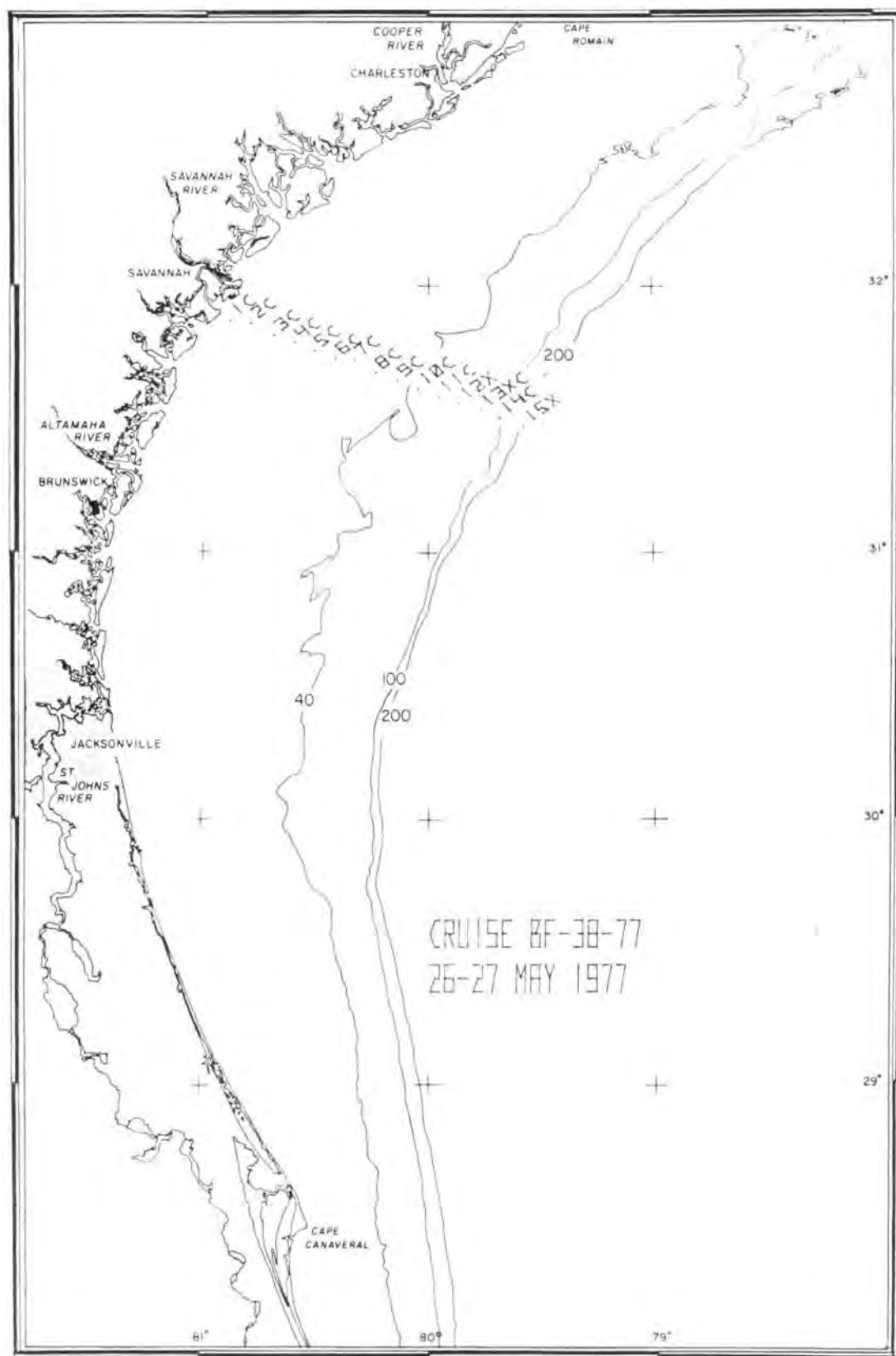


Figure 2. Station locations (May 1977)

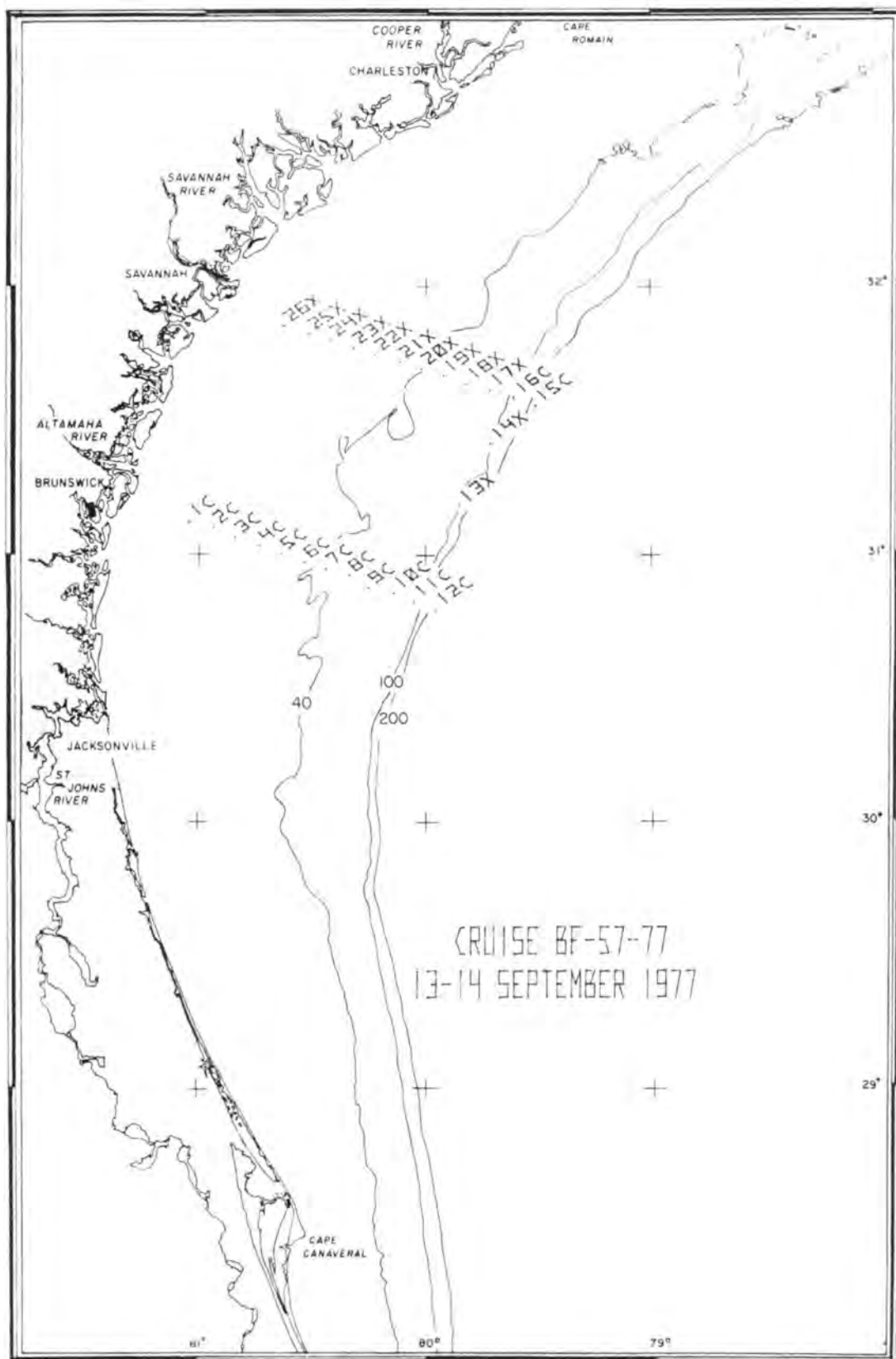


Figure 3. Station locations (September 1977)

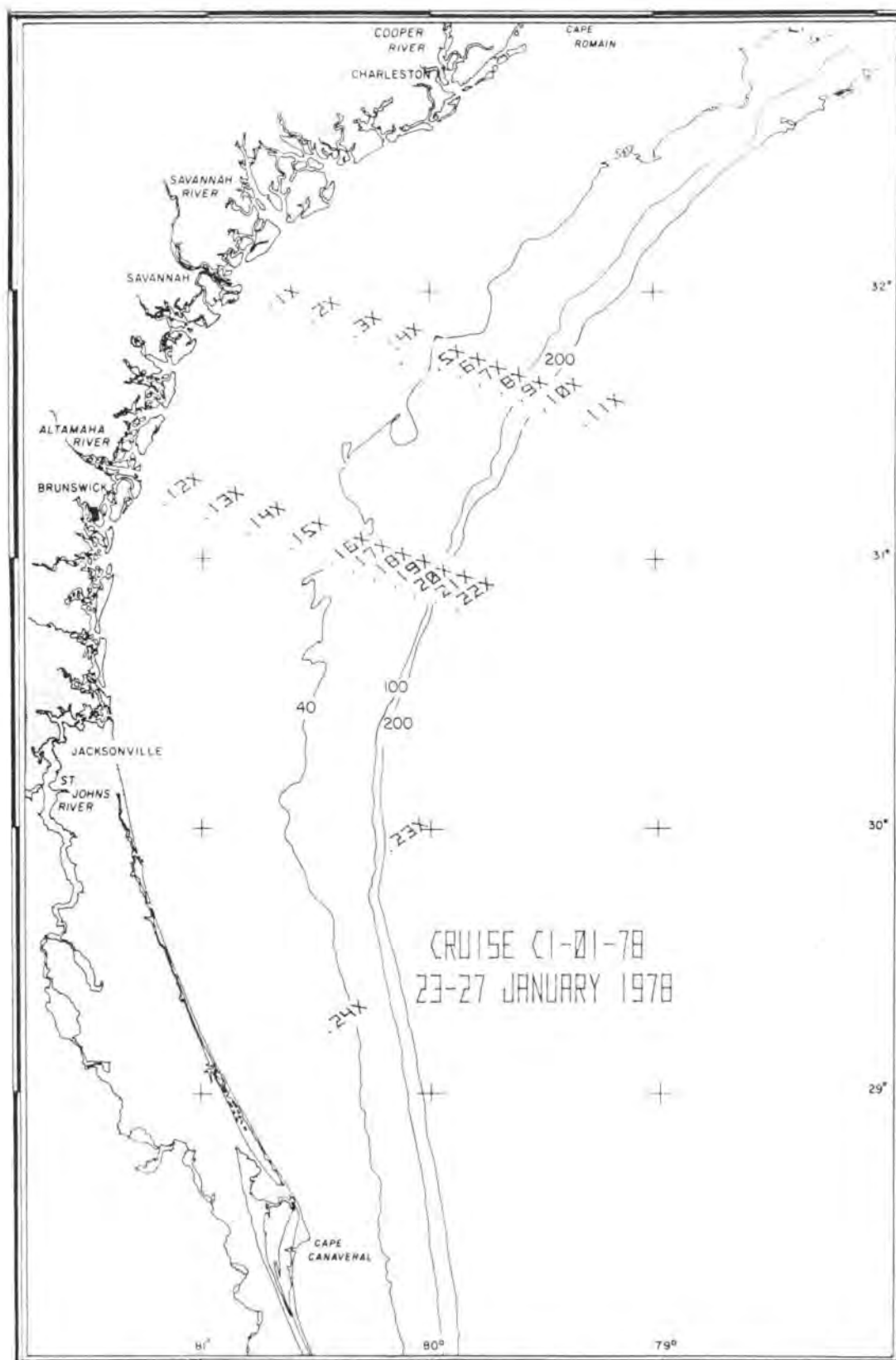


Figure 4. Station locations (January 1978)

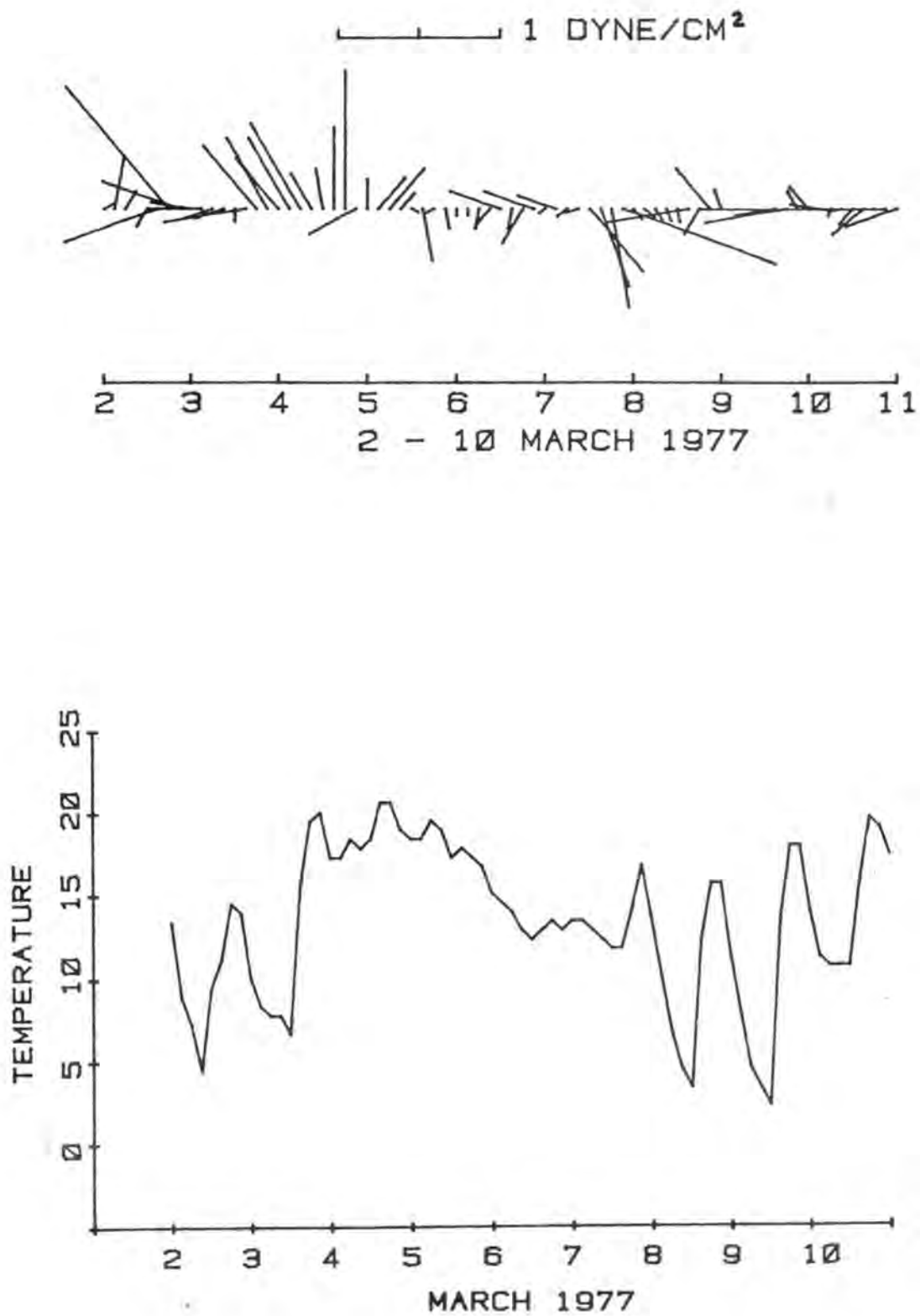


Figure 5. Meteorological Data from Savannah, Georgia (March 1977).

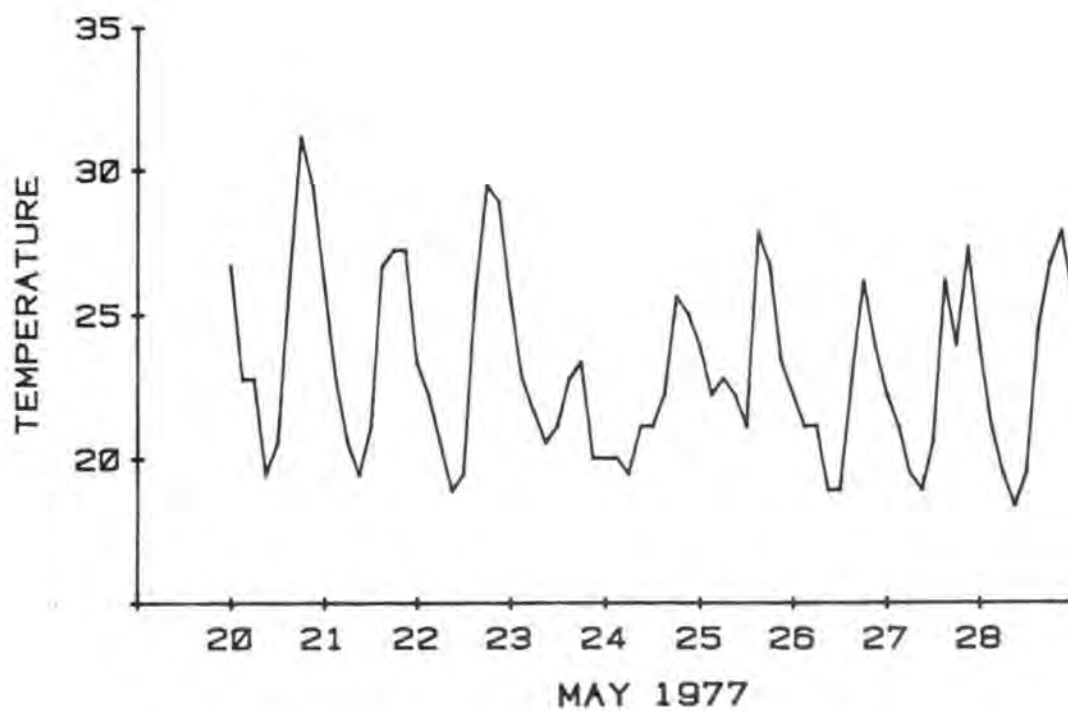
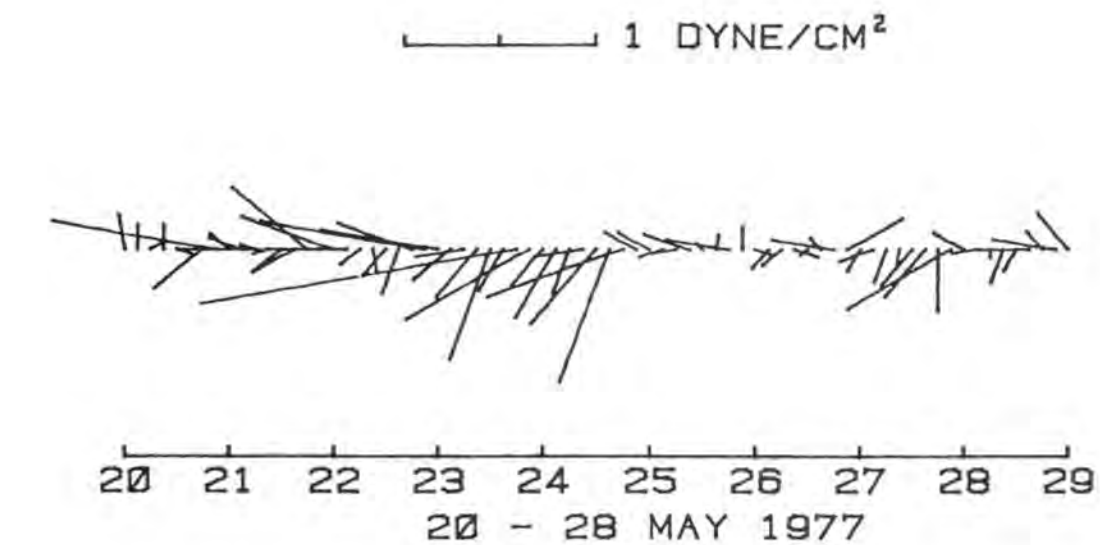


Figure 6. Meteorological Data from Savannah, Georgia (May 1977).

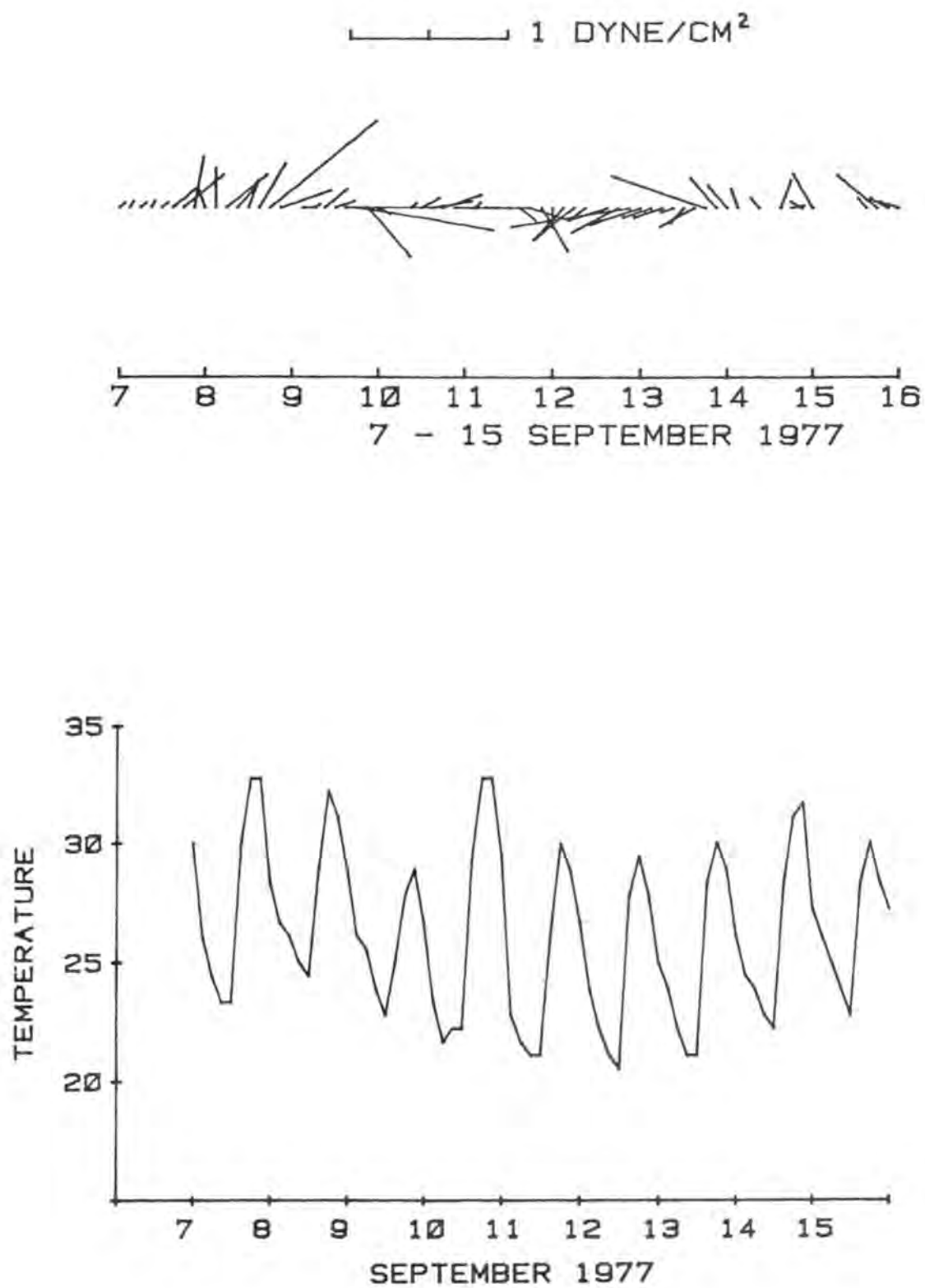


Figure 7. Meteorological Data from Savannah, Georgia (September 1977).

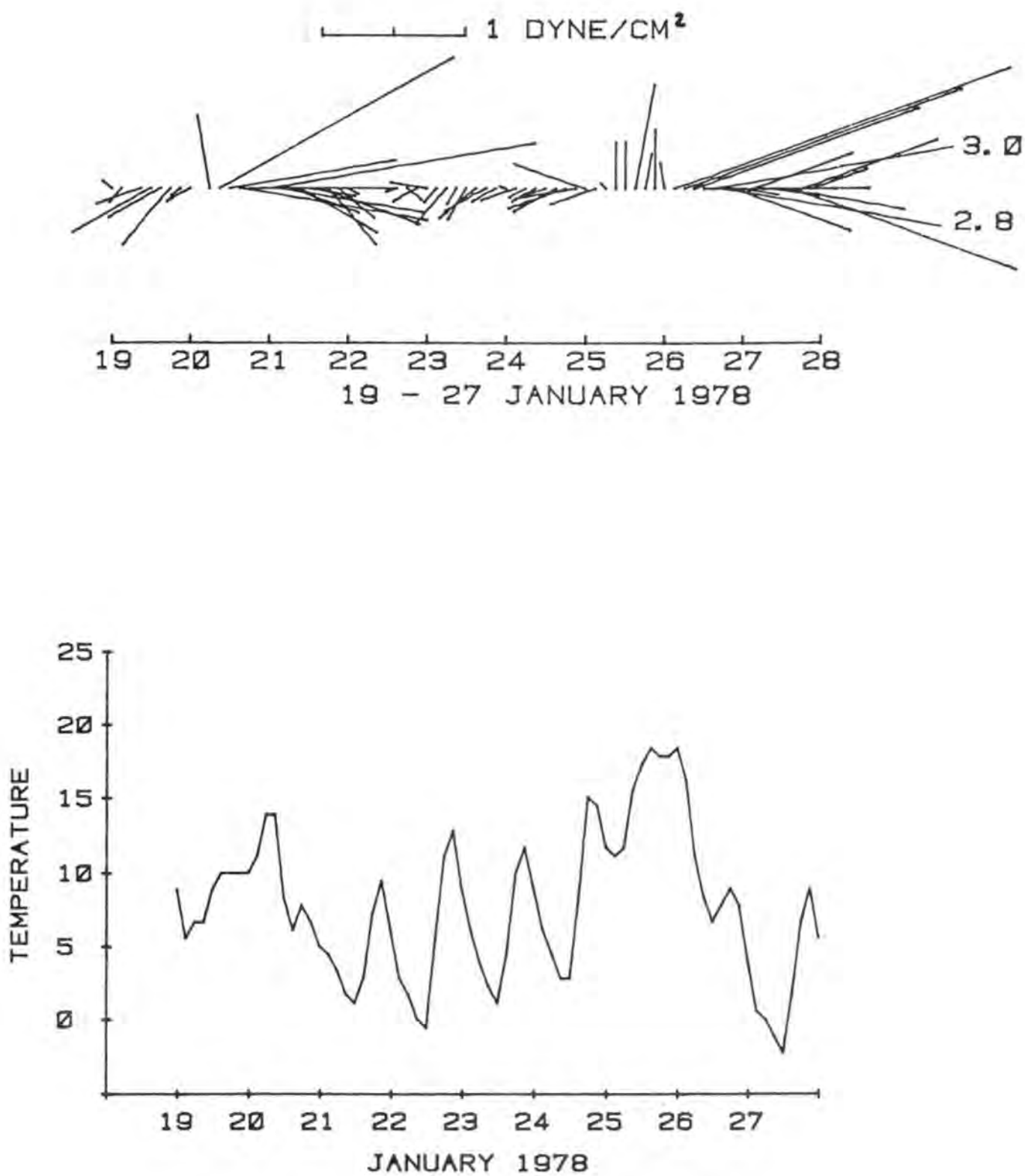


Figure 8. Meteorological Data from Savannah, Georgia (January 1978).

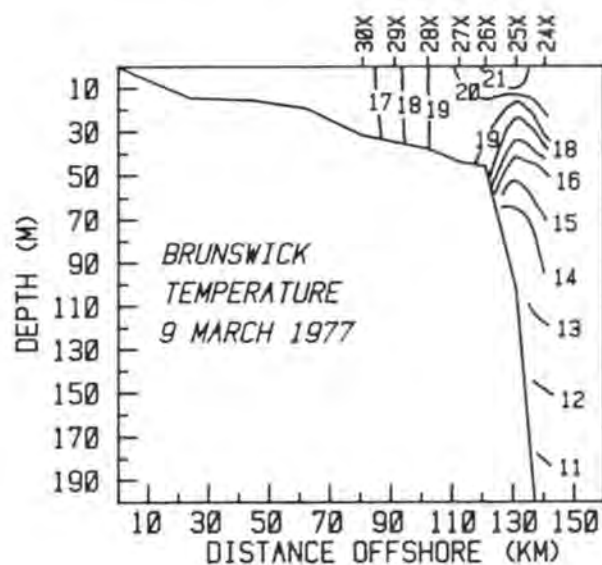
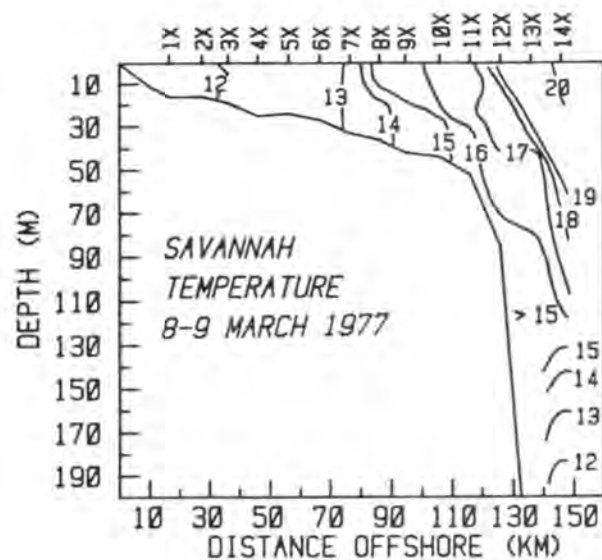


Figure 9. Vertical temperature structure for the Savannah and Brunswick sections, 8-9 March 1977.

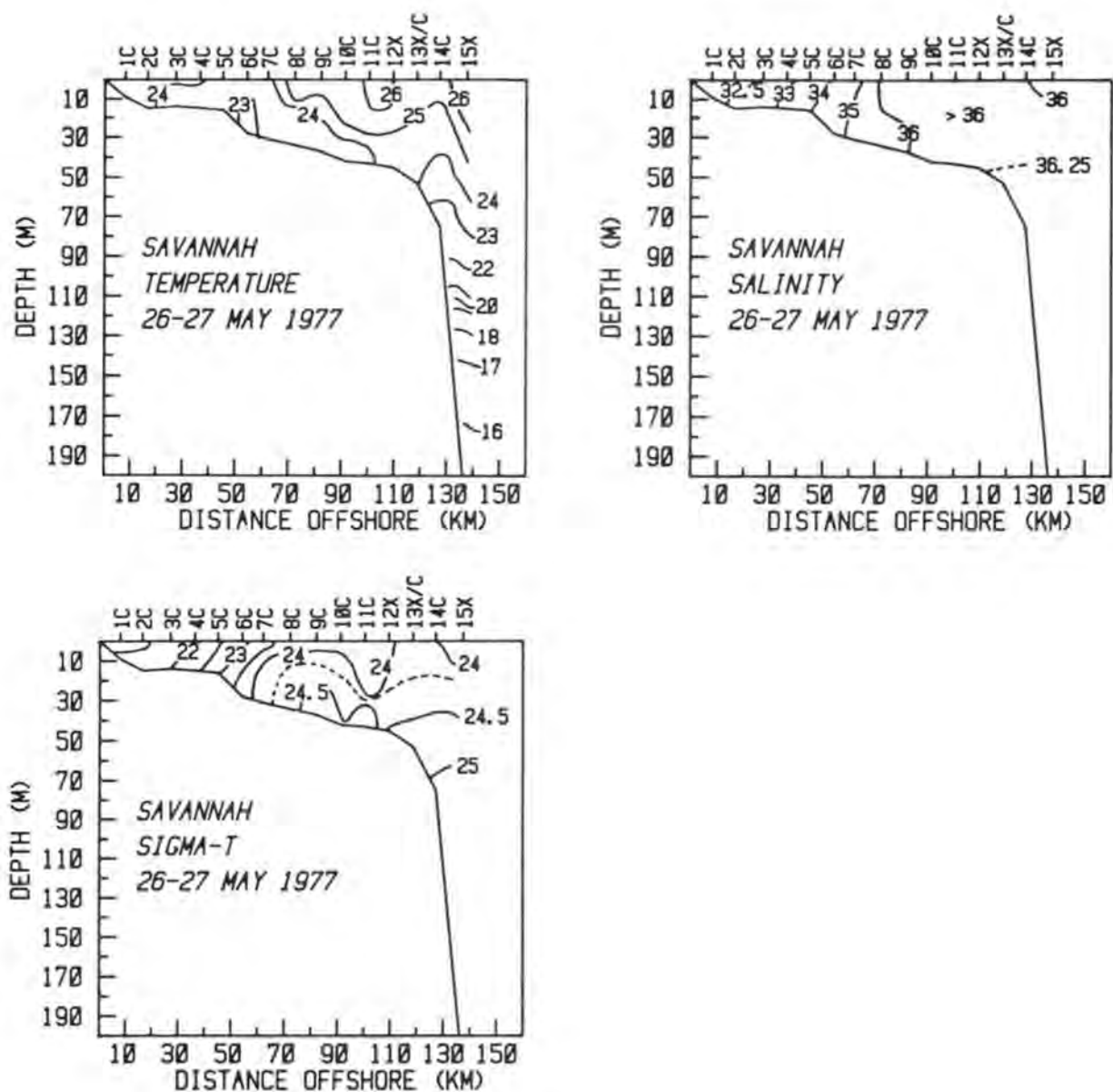


Figure 10. Vertical temperature, salinity and sigma-t structure for the Savannah section, 26-27 May 1977.

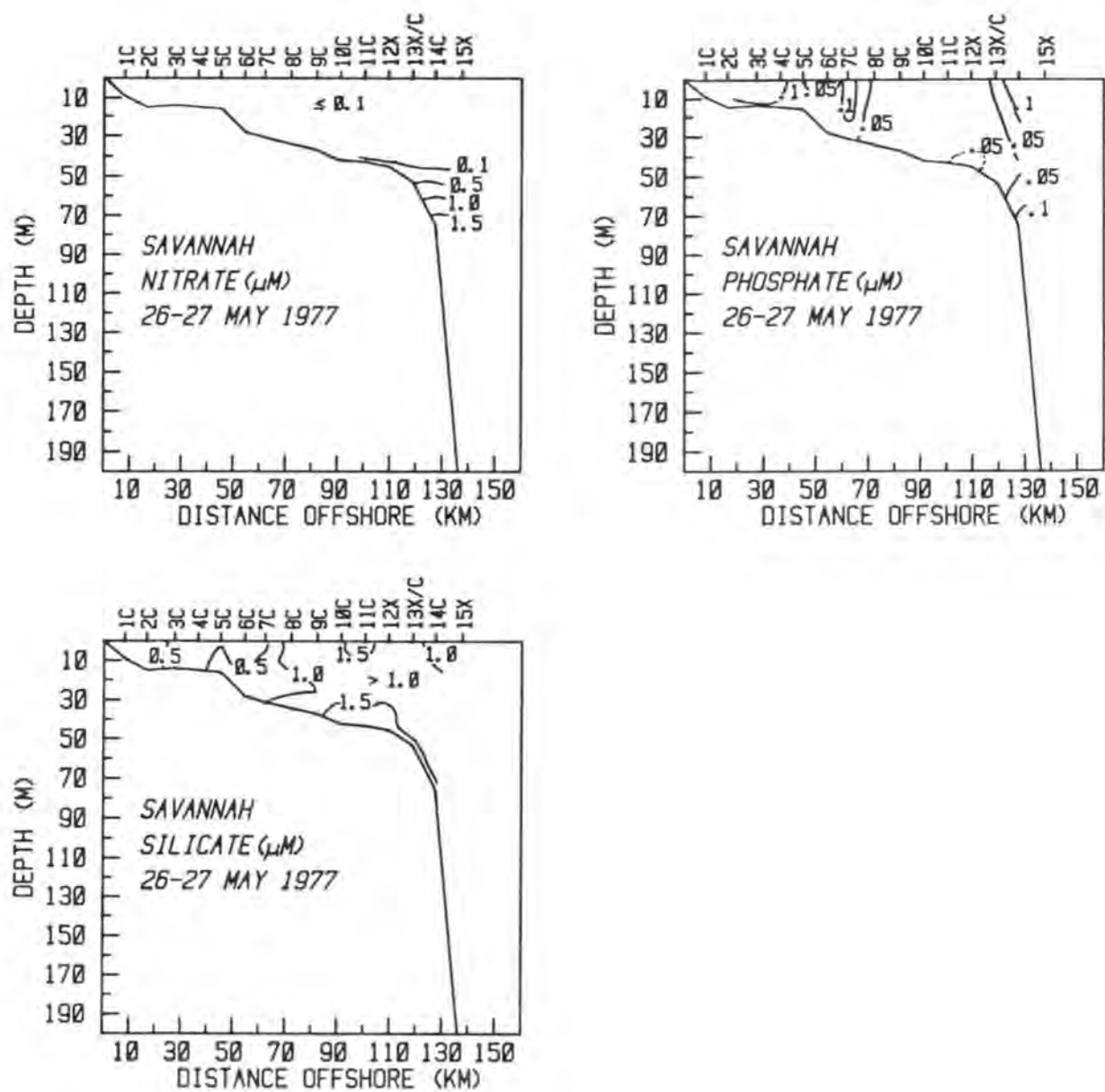


Figure 11. Vertical nitrate, phosphate and silicate structure for the Savannah section, 26-27 May 1977.

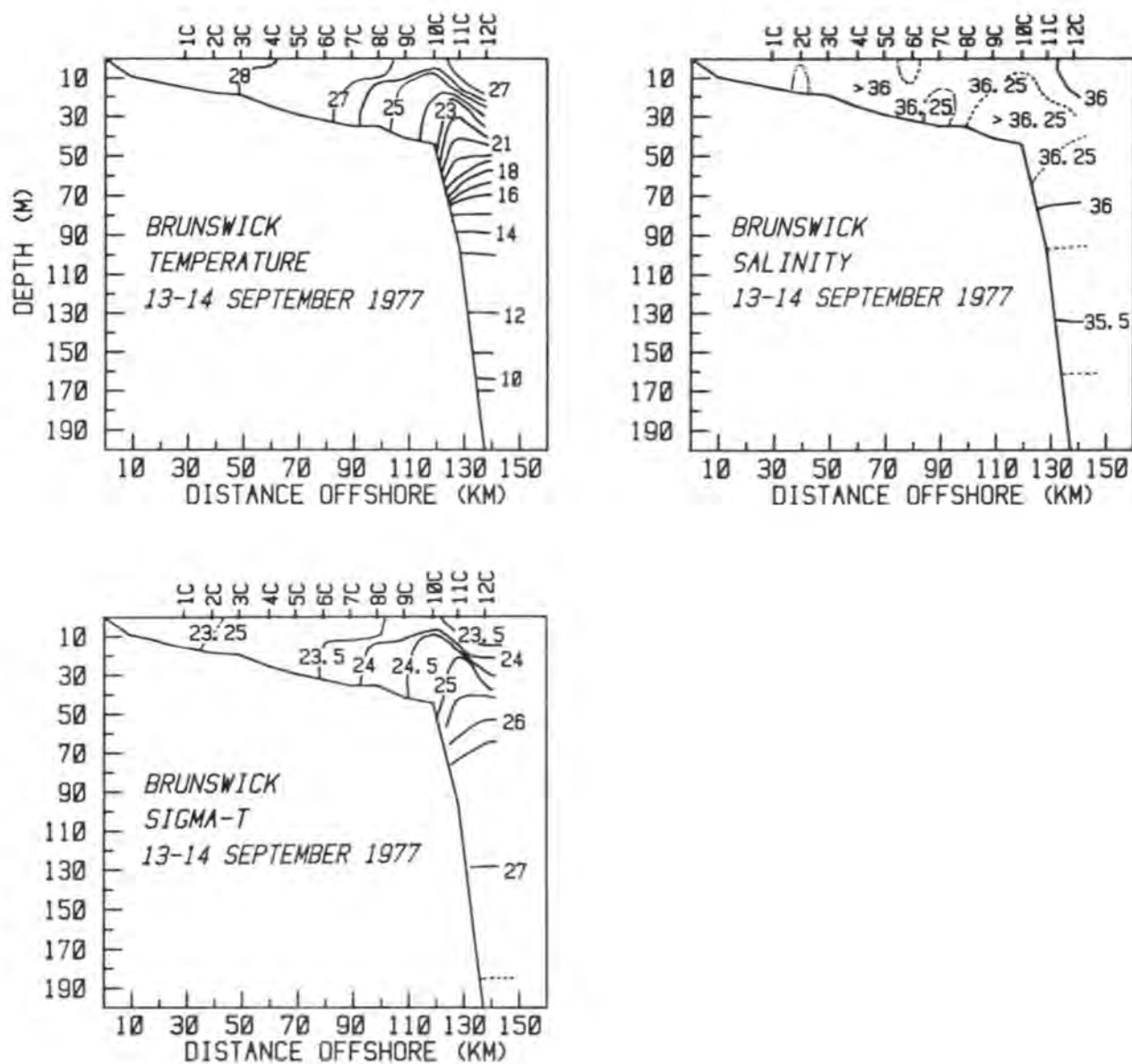


Figure 12. Vertical temperature, salinity and sigma-t structure for the Brunswick section, 13-14 September 1977.

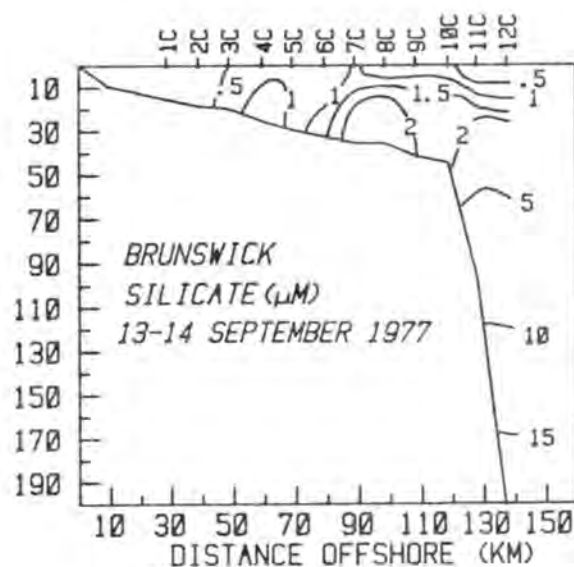
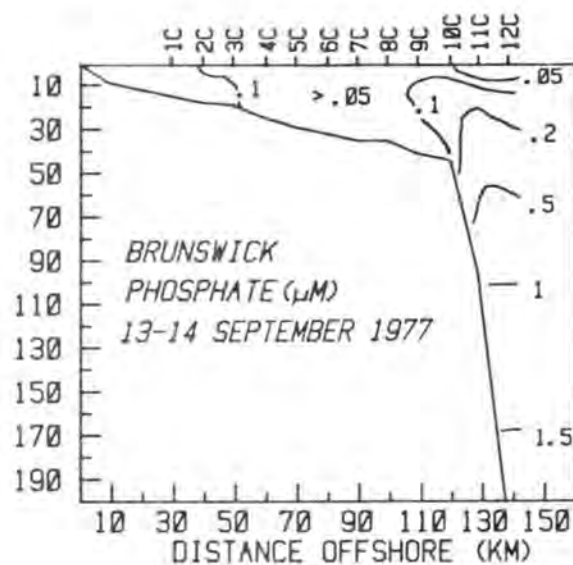
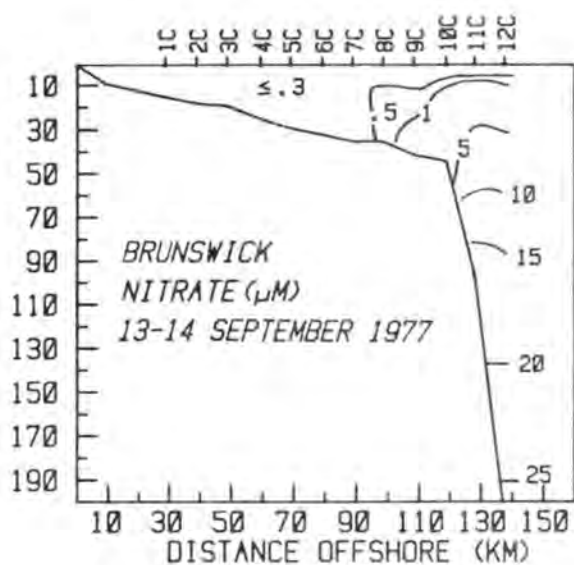


Figure 13. Vertical nitrate, phosphate and silicate structure for the Brunswick section, 13-14 September 1977.

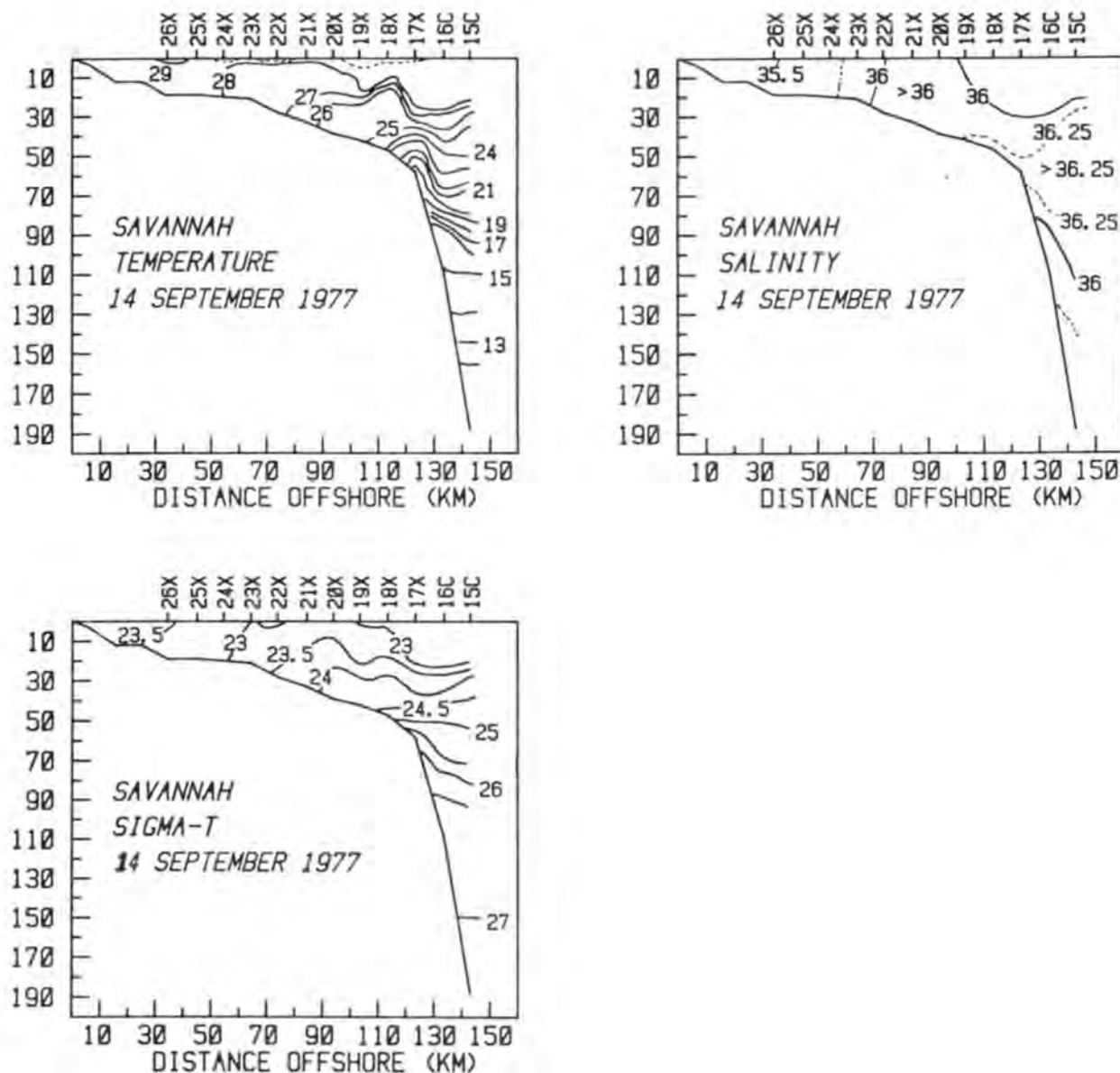


Figure 14. Vertical temperature, salinity and sigma-t structure for the Savannah section, 14 September 1977.

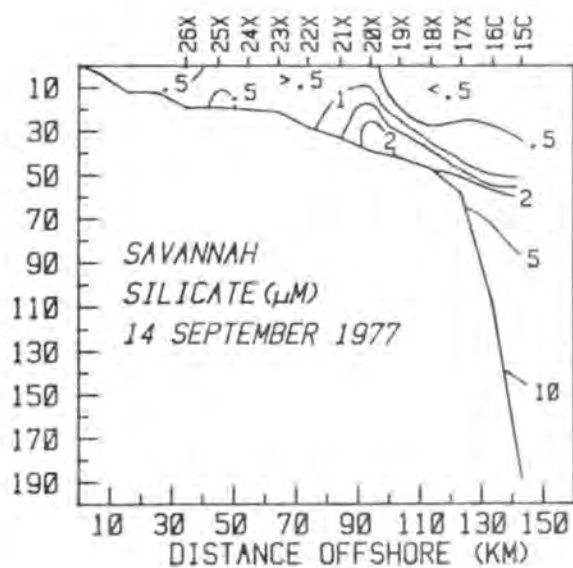
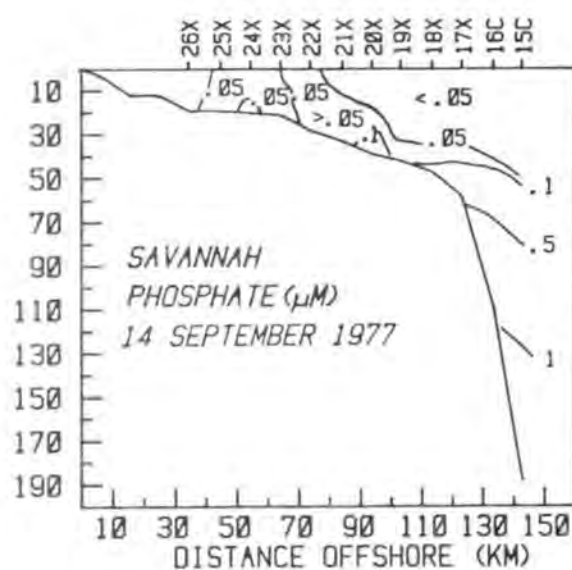
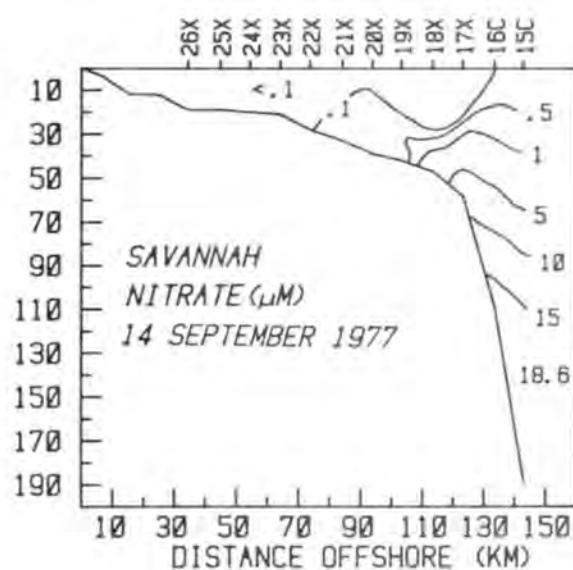


Figure 15. Vertical nitrate, phosphate and silicate structure for the Savannah section, 14 September 1977.

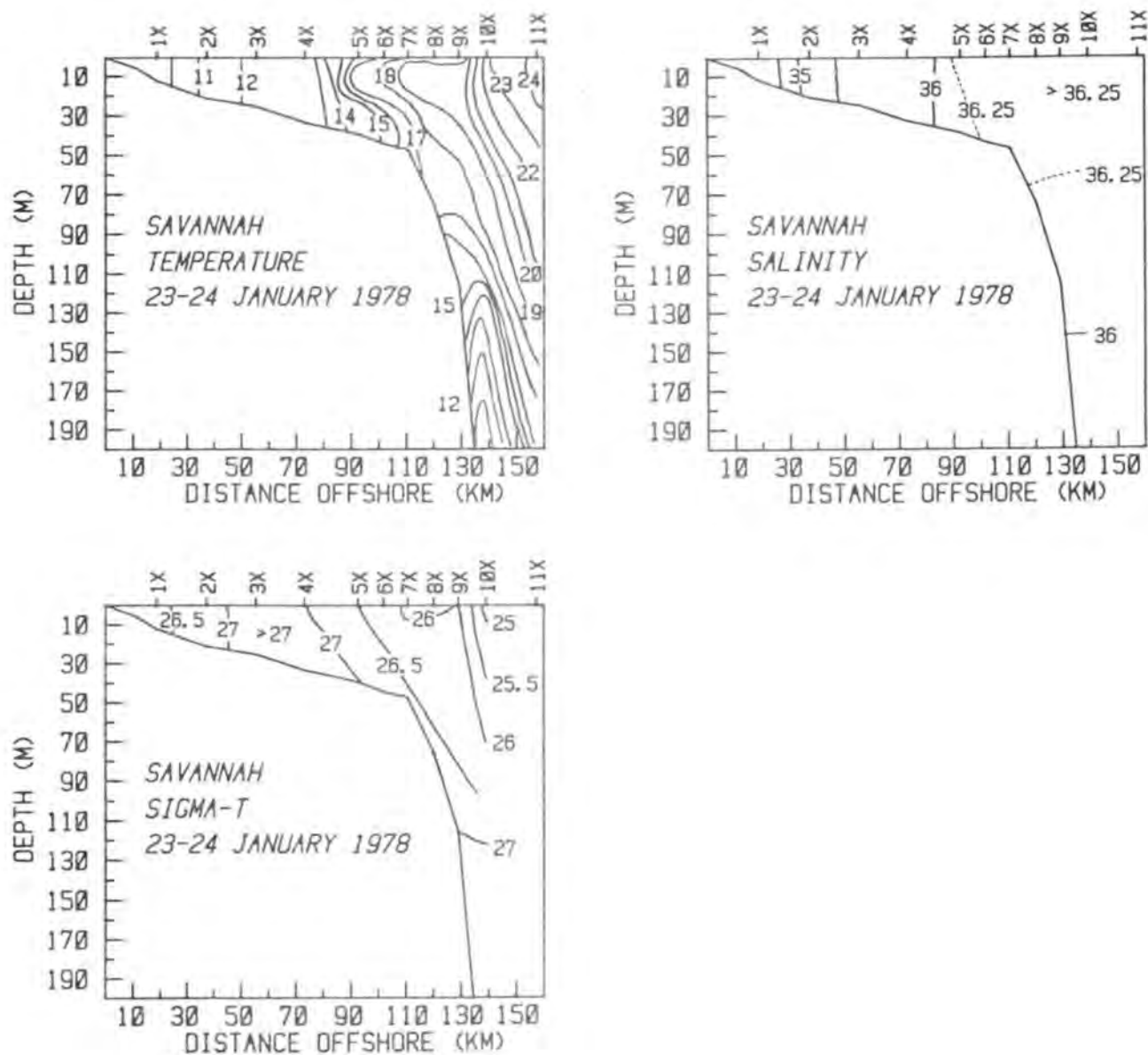


Figure 16. Vertical temperature, salinity and sigma-t structure for the Savannah section, 23-24 January, 1978.

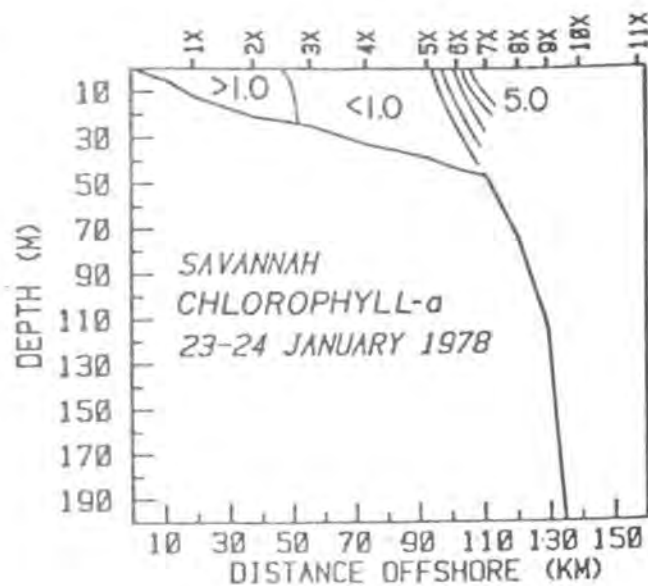
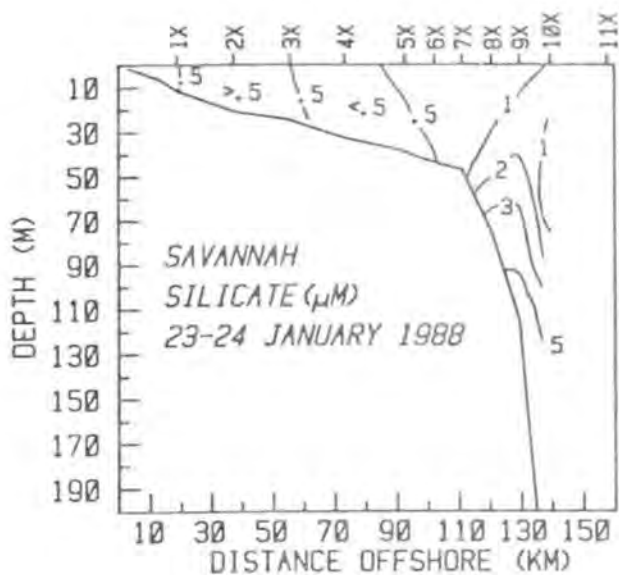
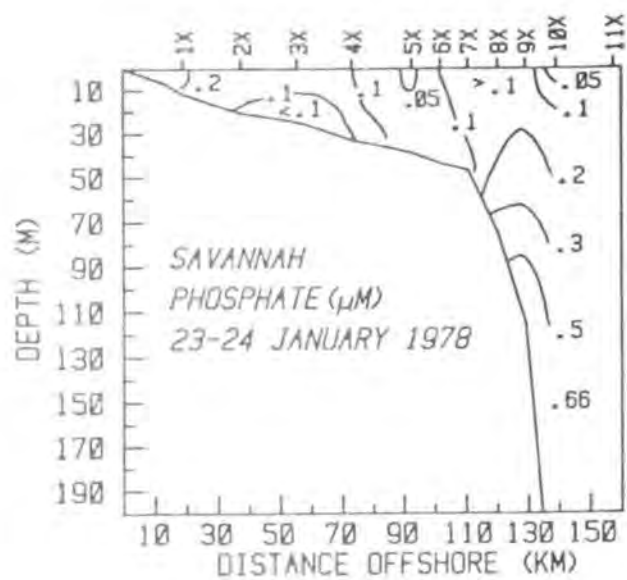
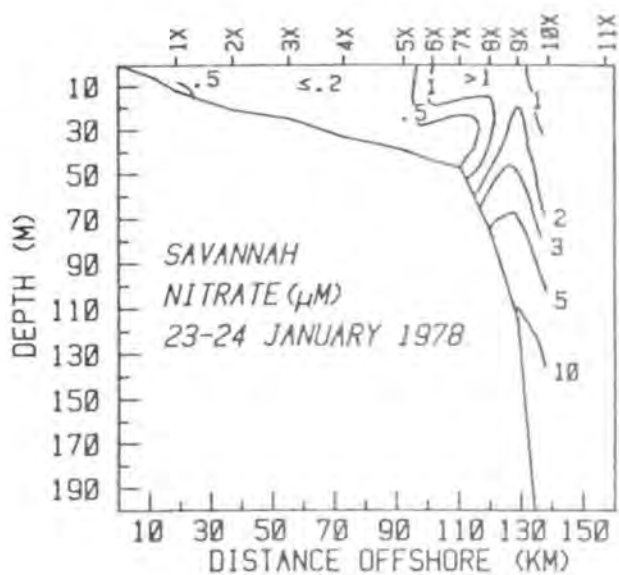


Figure 17. Vertical nitrate, phosphate, silicate and chlorophyll-a structure for the Savannah section, 23-24 January 1978.

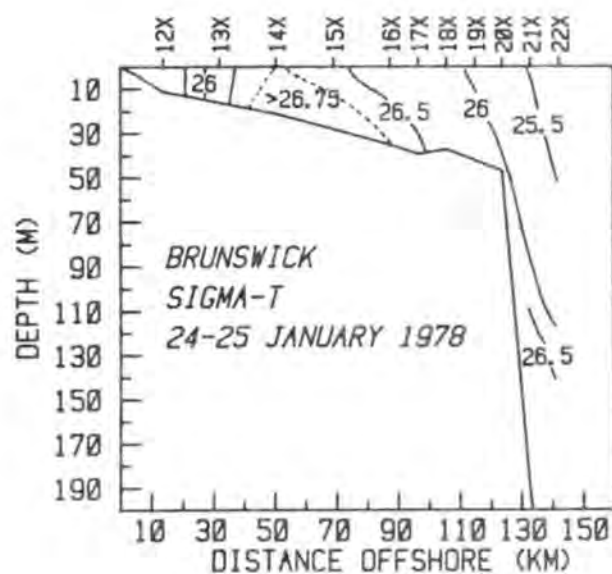
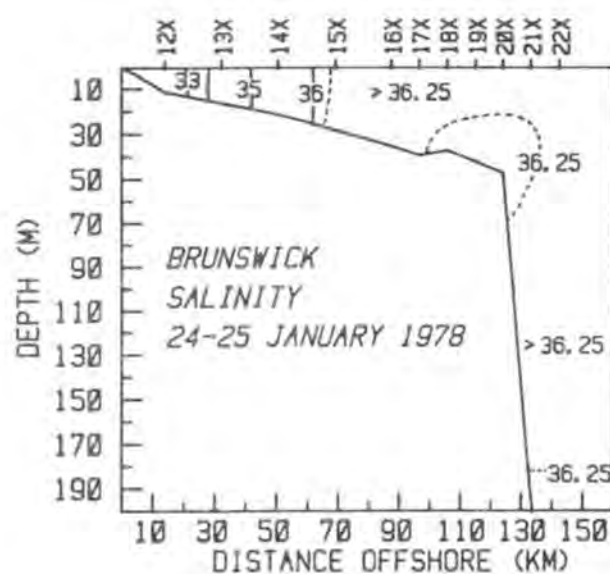
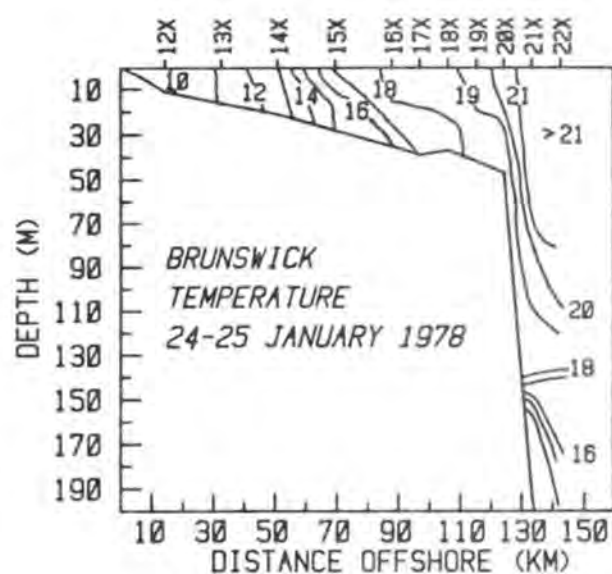


Figure 18. Vertical temperature, salinity and sigma-t structure for the Brunswick section, 24-25 January 1978.

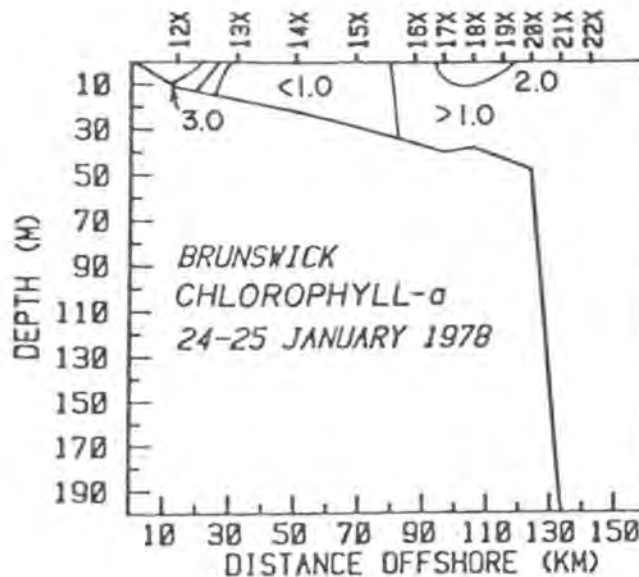
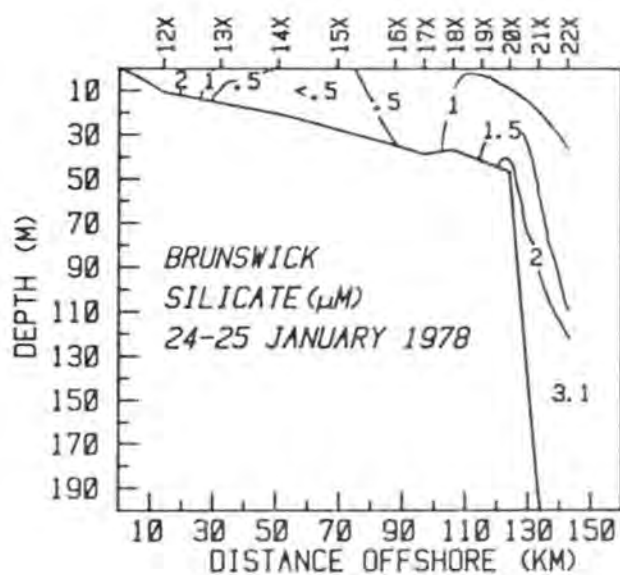
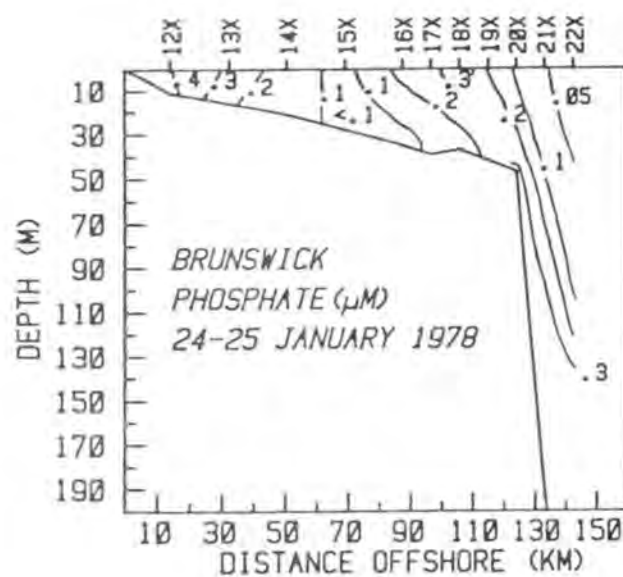
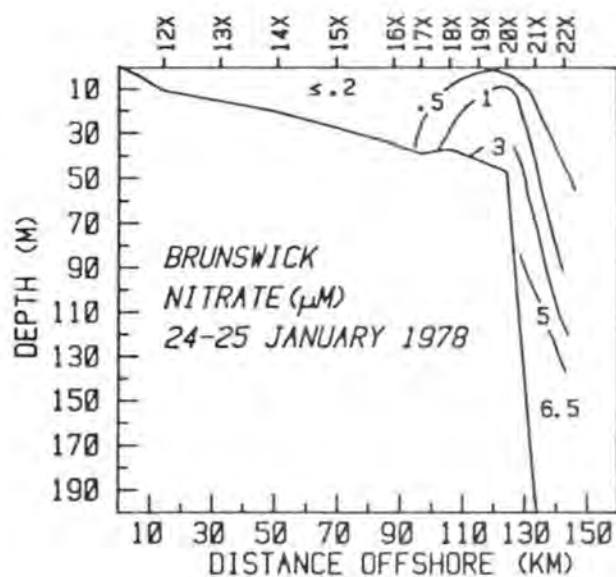


Figure 19. Vertical nitrate, phosphate, silicate and chlorophyll-a structure for the Brunswick section, 24-25 January 1978.

APPENDIX

Hydrographic Data

HYDROGRAPHIC DATA

Vertical profiles of salinity, temperature, sigma-t, DO and nutrients

The symbols used in the following listings are defined as follows:

Header Data: Times are GMT (EST + 5 or EDT + 4)
Latitude and Longitude are from Loran C

Weather Data: These data are taken from the ship's log.

Wind speed (knots)
Wind direction (degrees)
Air temperature (°C)
Weather (WMO code 4501)
Barometric pressure (mb)
Sea state (WMO 3700)
Wave direction (degrees)
Cloud type (not given)
Cloud amount (not given)
Visibility code (not given)

Observations: Z = Depth in meters
T = Temperature in °C
S = Salinity in ‰
D = Density in sigma-t units
SVA = Specific volume anomaly $\times 10^5$
O₂ = Dissolved oxygen in ml/liter
O₂' = Oxygen saturation in ml/liter
AOU = Apparent oxygen utilization in ml/liter
PO₄ = Phosphate concentration in $\mu\text{mole/liter}$
NO₃ = Nitrate concentration in $\mu\text{mole/liter}$
Si = Silicate concentration in $\mu\text{mole/liter}$

BF-14-77

8-9 March 1977

STATION SUMMARY FOR BLUE FIN CRUISE 14

CRUISE	STATION	LATITUDE	LONGITUDE	YR	MM	DAY	HOUR	DEPTH	CONSEC
							GMT	M	NUMBER
014	001X	31 57.2N	80 40.8W	77	3	8	16.2	16	1
014	002X	31 54.9N	80 34.3W	77	3	8	16.9	16	2
014	003X	31 53.4N	80 29.2W	77	3	8	17.5	19	3
014	004X	31 51.4N	80 23.4W	77	3	8	18.1	25	4
014	005X	31 49.6N	80 17.3W	77	3	8	18.8	24	5
014	006X	31 48.1N	80 11.0W	77	3	8	19.4	27	6
014	007X	31 45.8N	80 5.3W	77	3	8	20.0	33	7
014	008X	31 44.3N	79 59.4W	77	3	8	20.7	36	8
014	009X	31 42.4N	79 54.5W	77	3	8	21.3	42	9
014	010X	31 40.8N	79 47.6W	77	3	8	22.0	44	10
014	011X	31 38.7N	79 41.7W	77	3	8	23.0	52	11
014	012X	31 36.9N	79 35.8W	77	3	8	23.5	85	12
014	013X	31 35.2N	79 29.8W	77	3	9	1.0	252	13
014	014X	31 33.3N	79 23.9W	77	3	9	1.7	608	14
014	015X	31 29.7N	79 28.3W	77	3	9	4.5	563	15
014	016X	31 26.2N	79 33.6W	77	3	9	5.5	263	16
014	017X	31 22.4N	79 38.2W	77	3	9	6.3	260	17
014	018X	31 18.8N	79 42.9W	77	3	9	7.4	157	18
014	019X	31 14.6N	79 47.8W	77	3	9	8.2	79	19
014	020X	31 9.5N	79 49.5W	77	3	9	8.9	88	20
014	021X	31 4.5N	79 51.2W	77	3	9	9.5	108	21
014	022X	30 59.4N	79 52.5W	77	3	9	10.1	168	22
014	023X	30 54.2N	79 54.1W	77	3	9	10.7	234	23
014	024X	30 45.7N	79 57.0W	77	3	9	11.7	256	24
014	025X	30 47.5N	80 2.6W	77	3	9	13.0	102	25
014	026X	30 49.7N	80 8.3W	77	3	9	13.5	46	26
014	027X	30 52.2N	80 12.8W	77	3	9	14.1	44	27
014	028X	30 54.1N	80 19.0W	77	3	9	14.6	38	28
014	029X	30 56.5N	80 25.2W	77	3	9	15.2	35	29
014	030X	30 58.7N	80 31.3W	77	3	9	15.8	32	30
014	031X	31 9.8N	80 35.2W	77	3	9	17.3	28	31
014	032X	31 20.5N	80 40.4W	77	3	9	18.6	25	32
014	033X	31 31.4N	80 44.5W	77	3	9	19.9	21	33
014	034X	31 41.9N	80 48.4W	77	3	9	21.5	13	34
014	035B	31 51.7N	80 52.5W	77	3	9	22.7	4	35

BLUE FIN CRUISE 14 STA 1X 0/ 111/77 16.2 GMT CONSEC STA 1

LAT 31 57.2N LONG 80 40.8W DEPTH = 16M DIST LAST STA = 0.0KM

WEATHER DATA

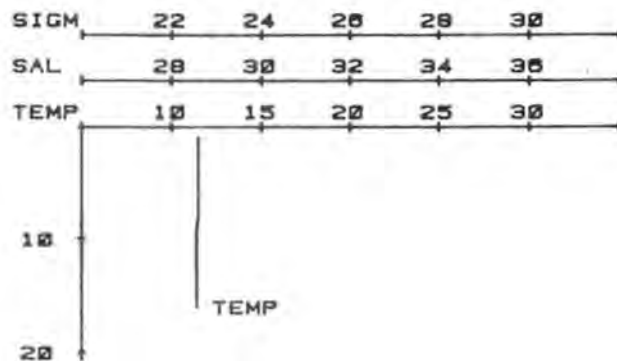
WIND SPEED = 18 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.8 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PD4	NO3	SI
1.0	11.50	-	-	-	-	-	-	-	-	-
8.5	11.50	-	-	-	-	-	-	-	-	-
9.0	11.40	-	-	-	-	-	-	-	-	-
16.0	11.40	-	-	-	-	-	0.13	00.1	03.1	-

STATION 001X



BLUE FIN CRUISE 14 STA 2X 0/ 111/77 16.9 GMT CONSEC STA 2

LAT 31 54.9N LONG 80 34.3W DEPTH = 16M DIST LAST STA = 11.1KM

WEATHER DATA

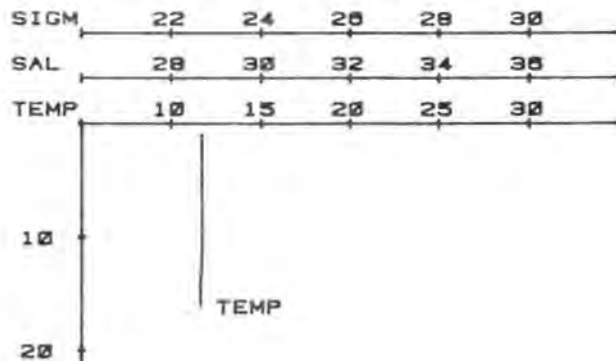
WIND SPEED = 18 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.8 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PD4	NO3	SI
1.0	11.70	-	-	-	-	-	-	-	-	-
11.0	11.70	-	-	-	-	-	-	-	-	-
14.0	11.60	-	-	-	-	-	-	-	-	-
16.0	11.60	-	-	-	-	-	-	-	-	-

STATION 002X



BLUE FIN CRUISE 14 STA 3X 0/ 111/77 17.5 GMT CONSEC STA 3

LAT 31 53.4N LONG 80 29.2W DEPTH = 19M DIST LAST STA = 8.3KM

WEATHER DATA

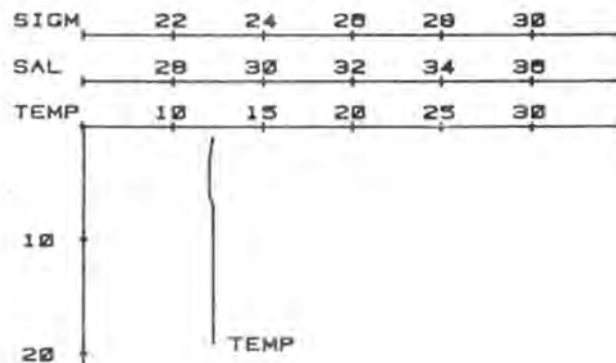
WIND SPEED = 18 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.8 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PD4	NO3	SI
1.0	12.20	-	-	-	-	-	-	-	-	-
2.0	12.10	-	-	-	-	-	-	-	-	-
3.0	12.00	-	-	-	-	-	-	-	-	-
4.0	12.00	-	-	-	-	-	-	-	-	-
7.0	12.20	-	-	-	-	-	-	-	-	-
19.0	12.20	-	-	-	-	-	-	-	-	-

STATION 003X



BLUE FIN CRUISE 14 STA 4X B/ 11/77 18.1 GMT CONSEC STA 4
LAT 31 51.4N LONG 80 23.4W DEPTH = 25M DIST LAST STA = 9.9KM

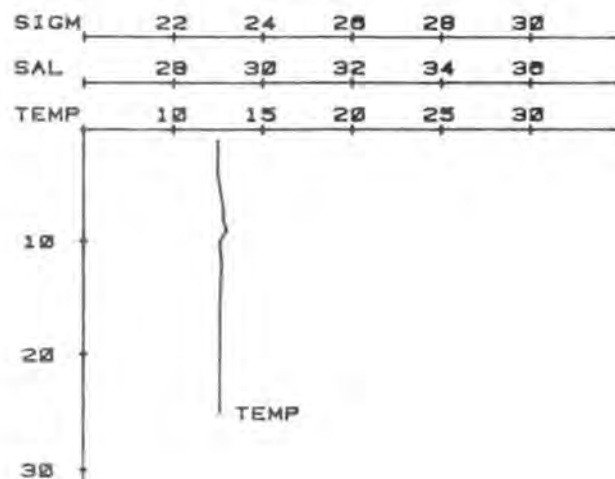
WEATHER DATA

WIND SPEED = 18 KTS SEA STATE = 3
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = 10 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	N03	SI
1.0	12.50	.	.	.	.	.	.	.	.	.
4.0	12.50	.	.	.	.	.	.	.	.	.
7.0	12.80	.	.	.	.	.	.	.	.	.
8.0	12.80	.	.	.	.	.	.	.	.	.
9.0	13.00	.	.	.	.	.	.	.	.	.
10.0	12.60	.	.	.	.	.	.	.	.	.
12.5	12.70	.	.	.	.	.	.	.	.	.
1A.0	12.60	.	.	.	.	.	.	.	.	.
25.0	12.60	.	.	.	.	.	0.04	00.1	00.9	.

STATION 004X



BLUE FIN CRUISE 14 STA 5X B/ 11/77 18.8 GMT CONSEC STA 5
LAT 31 49.6N LONG 80 17.3W DEPTH = 24M DIST LAST STA = 10.2KM

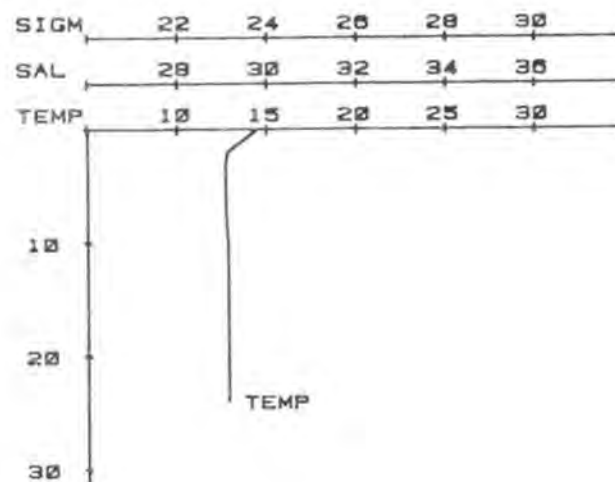
WEATHER DATA

WIND SPEED = 18 KTS SEA STATE = 4
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = 10 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	N03	SI
0.0	14.50	.	.	.	.	.	.	.	.	.
2.0	12.80	.	.	.	.	.	.	.	.	.
3.0	12.70	.	.	.	.	.	.	.	.	.
7.0	12.70	.	.	.	.	.	.	.	.	.
10.0	12.80	.	.	.	.	.	.	.	.	.
24.0	12.80	.	.	.	.	.	.	.	.	.

STATION 005X



BLUE FIN CRUISE 14 STA 6X B/ 111/77 19.4 GMT CONSEC STA 4
LAT 31 48.1N LONG 80 11.0W DEPTH = 27M DIST LAST STA = 10.3KM

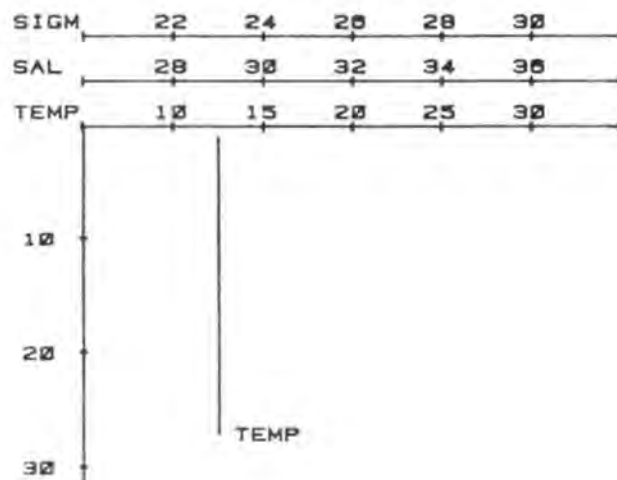
WEATHER DATA

WIND SPEED = 18 KTS SEA STATE = 4
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	OZ	OZ'	ADU	PD4	W03	SI
1.0	12.50	.	.	.	.	.	.	.	.	.
27.0	12.50	.	.	.	.	.	.	.	.	.

STATION 006X



BLUE FIN CRUISE 14 STA 7X B/ 111/77 20.0 GMT CONSEC STA 7
LAT 31 45.8N LONG 80 5.3W DEPTH = 33M DIST LAST STA = 9.9KM

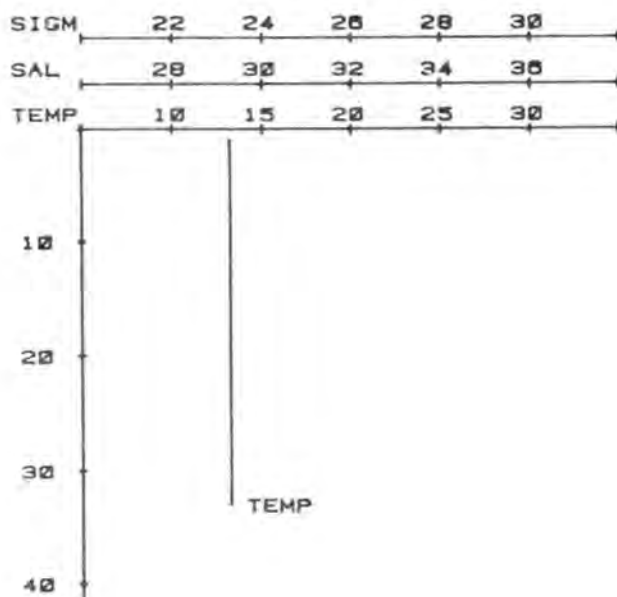
WEATHER DATA

WIND SPEED = 18 KTS SEA STATE = 4
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	OZ	OZ'	ADU	PD4	W03	SI
1.0	13.20	.	.	.	.	.	.	.	.	.
33.0	13.20	.	.	.	.	.	0.04	00.2	00.7	.

STATION 007X



BLUE FIN CRUISE 14 STA 8X 8/ 111/77 20.7 GMT CONSEC STA 8
LAT 31 44.3N LONG 79 59.4W DEPTH = 36M DIST LAST STA = 9.7KM

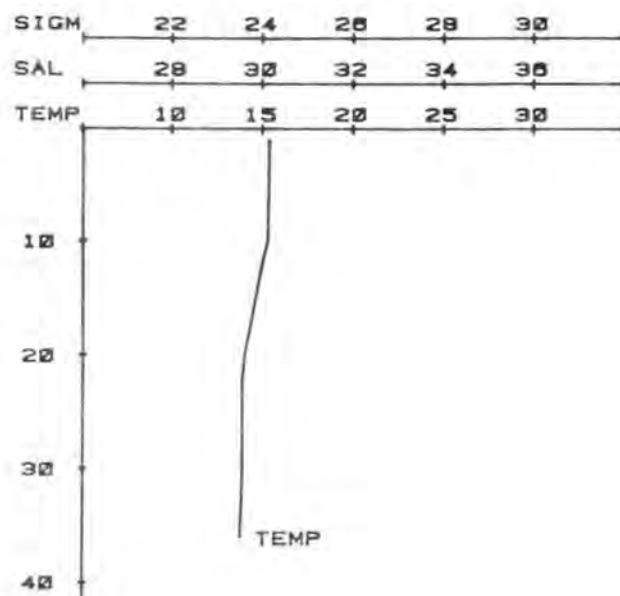
WEATHER DATA

WIND SPEED = 16 KTS SEA STATE = 3
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	D2	D2"	ADU	PD4	NO3	SI
1.0	15.40	-	-	-	-	-	-	-	-	-
10.0	15.30	-	-	-	-	-	-	-	-	-
12.5	15.00	-	-	-	-	-	-	-	-	-
14.0	14.50	-	-	-	-	-	-	-	-	-
20.0	14.00	-	-	-	-	-	-	-	-	-
22.0	13.90	-	-	-	-	-	-	-	-	-
30.0	13.90	-	-	-	-	-	-	-	-	-
36.0	13.80	-	-	-	-	-	-	-	-	-

STATION 008X



BLUE FIN CRUISE 14 STA 9X 8/ 111/77 21.3 GMT CONSEC STA 9
LAT 31 42.4N LONG 79 54.5W DEPTH = 42M DIST LAST STA = 8.5KM

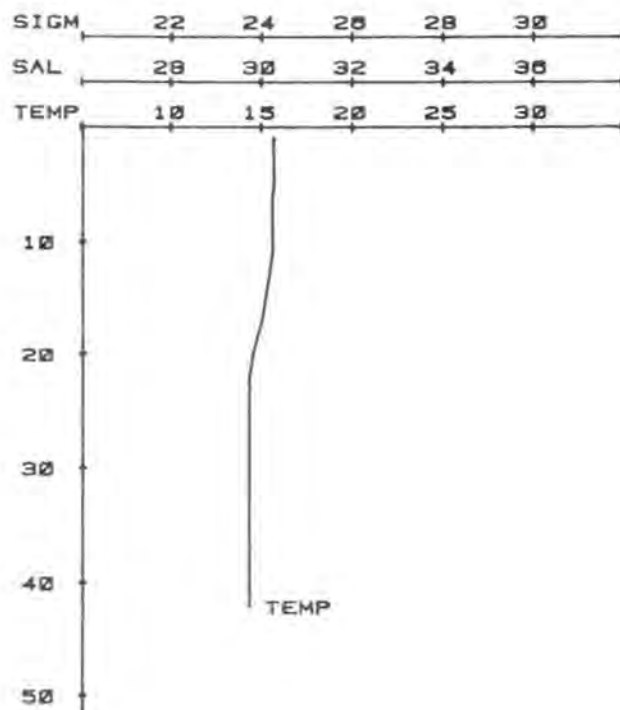
WEATHER DATA

WIND SPEED = 16 KTS SEA STATE = 3
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	D2	D2"	ADU	PD4	NO3	SI
1.0	15.70	-	-	-	-	-	-	-	-	-
5.5	15.70	-	-	-	-	-	-	-	-	-
6.0	15.60	-	-	-	-	-	-	-	-	-
11.0	15.60	-	-	-	-	-	-	-	-	-
12.5	15.50	-	-	-	-	-	-	-	-	-
17.0	15.00	-	-	-	-	-	-	-	-	-
20.0	14.50	-	-	-	-	-	-	-	-	-
22.0	14.30	-	-	-	-	-	-	-	-	-
42.0	14.30	-	-	-	-	-	-	-	-	-

STATION 009X



BLUE FIN CRUISE 14 STA 101 8/ 111/77 22.0 GMT CONSEC STA 10
LAT 31 40.8N LONG 79 47.6W DEPTH = 44M DIST LAST STA = 11.3KM

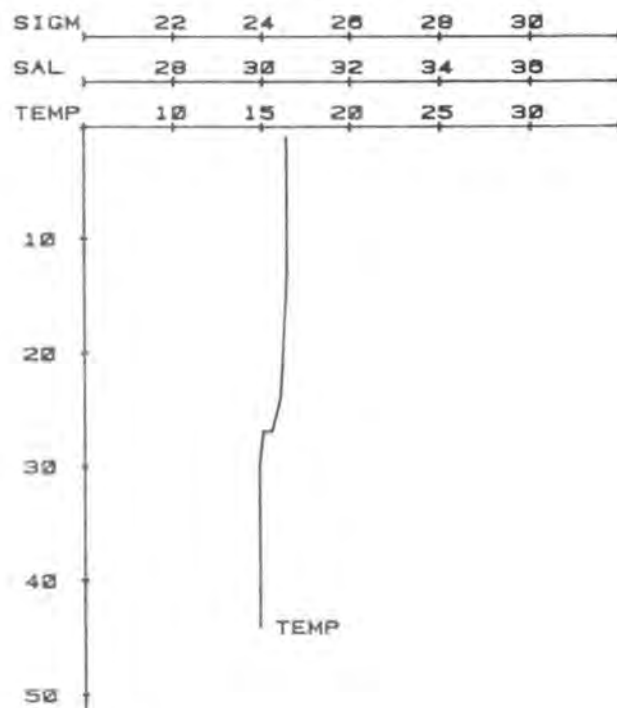
WEATHER DATA

WIND SPEED = 13 KTS SEA STATE = 3
WIND DIRECTION = 030 WAVE DIRECTION =
AIR TEMP = , C CLOUD TYPE =
WEATHER CODE = 10 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2"	AQU	PO4	NO3	SI
1.0	16.40	.	.	.	.	.	.	.	.	.
3.0	16.40	36.05	26.47	157	.	.	.	0.12	01.1	00.8
13.0	16.40	.	.	.	.	.	.	.	.	.
24.0	16.00	.	.	.	.	.	.	.	.	.
27.0	15.50	.	.	.	.	.	.	.	.	.
27.5	15.00	.	.	.	.	.	.	.	.	.
30.0	14.80	.	.	.	.	.	.	.	.	.
44.0	14.80	.	.	.	.	.	.	0.22	01.7	01.6

STATION 010X



BLUE FIN CRUISE 14 STA 111 8/ 111/77 23.0 GMT CONSEC STA 11
LAT 31 30.7N LONG 79 41.7W DEPTH = 52M DIST LAST STA = 10.1KM

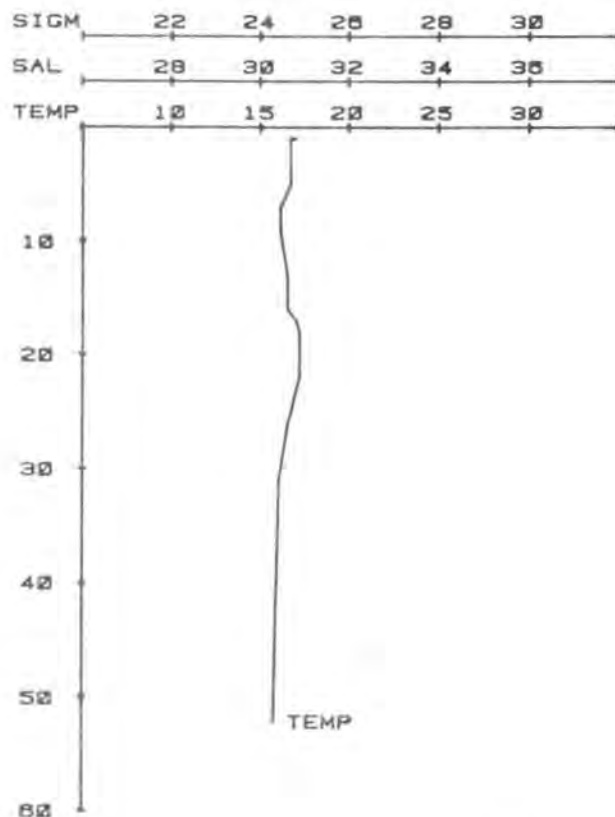
WEATHER DATA

WIND SPEED = 11 KTS SEA STATE = 3
WIND DIRECTION = 030 WAVE DIRECTION =
AIR TEMP = , C CLOUD TYPE =
WEATHER CODE = 10 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2"	AQU	PO4	NO3	SI
1.0	17.00	.	.	.	.	.	.	.	.	.
1.5	16.70	.	.	.	.	.	.	.	.	.
5.0	16.70	.	.	.	.	.	.	.	.	.
7.0	16.10	.	.	.	.	.	.	.	.	.
9.0	16.10	.	.	.	.	.	.	.	.	.
13.0	16.50	.	.	.	.	.	.	.	.	.
16.5	16.50	.	.	.	.	.	.	.	.	.
17.5	17.00	.	.	.	.	.	.	.	.	.
18.5	17.20	.	.	.	.	.	.	.	.	.
22.5	17.20	.	.	.	.	.	.	.	.	.
23.5	17.00	.	.	.	.	.	.	.	.	.
25.0	16.70	.	.	.	.	.	.	.	.	.
26.5	16.50	.	.	.	.	.	.	.	.	.
31.5	16.00	.	.	.	.	.	.	.	.	.
52.0	15.70	.	.	.	.	.	.	.	.	.

STATION 011X

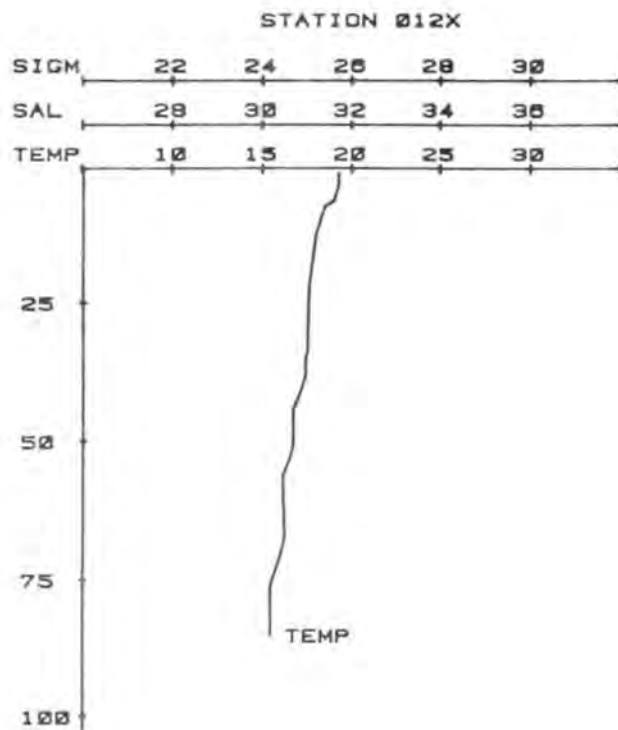


BLUE FIN CRUISE 14 STA 12X 8/ III/77 23.5 GMT CONSEC STA 12
LAT 31 34.9N LONG 79 35.8W DEPTH = 83M DIST LAST STA = 9.9KM

WEATHER DATA
WIND SPEED = 08 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	O2	O2'	AOU	P04	NO3	SI
1.0	19.30									
3.0	19.30	36.26	25.91	209				0.07	00.3	01.0
6.0	19.00									
7.5	18.50									
8.0	18.40									
12.5	18.00									
22.0	17.40									
34.5	17.50									
35.0	17.40									
38.5	17.40									
42.0	17.00							0.13	00.3	01.1
44.0	16.70									
50.0	16.70									
52.5	16.60									
53.0	16.50									
56.5	16.10									
67.5	16.20									
70.0	16.00									
75.0	15.50									
76.0	15.40									
85.0	15.40									

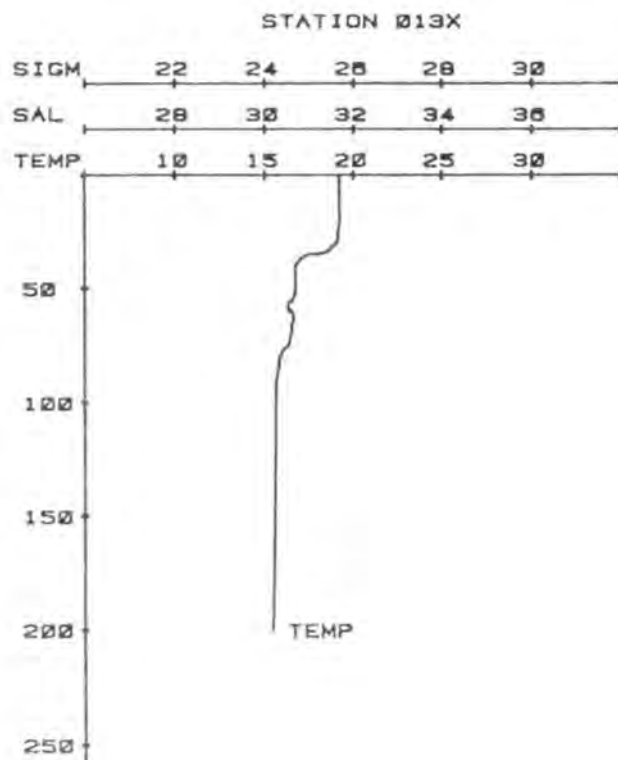


BLUE FIN CRUISE 14 STA 13X 9/ III/77 1.0 GMT CONSEC STA 13
LAT 31 35.2N LONG 79 29.8W DEPTH = 252M DIST LAST STA = 10.0KM

WEATHER DATA
WIND SPEED = 08 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	O2	O2'	AOU	P04	NO3	SI
1.0	19.20									
22.5	19.20									
25.5	19.10									
29.0	19.10									
30.0	19.00									
34.0	18.50									
35.0	18.00									
35.5	17.50									
37.0	17.00									
40.0	16.70									
52.0	16.70									
56.0	16.50									
56.5	16.30									
60.0	16.30									
60.5	16.50									
62.0	16.60									
64.5	16.60									
66.0	16.50									
69.0	16.50									
75.0	16.30									
77.0	16.00									
80.0	15.80									
91.0	15.60									
145.0	15.50									
200.0	15.40									



BLUE FIN CRUISE 14 STA 14X 9/ III/77 1.7 GMT CONSEC STA 14

LAT 31 33.3N LONG 79 23.9W DEPTH = 608M DIST LAST STA = 10.0KM

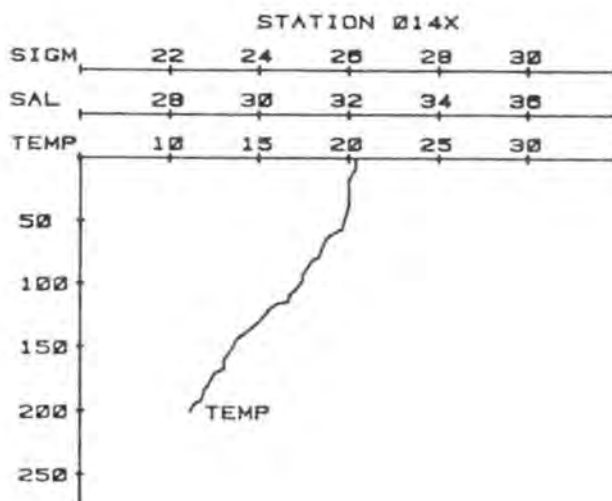
WEATHER DATA

WIND SPEED = 08 KTS
WIND DIRECTION = 030
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
1.0	20.40	36.21	25.59	241						
8.0	20.40									
17.5	20.00									
37.5	20.00									
57.0	19.60									
57.5	19.50									
61.5	19.00									
65.0	18.70									
71.0	18.50									
79.0	18.30									
81.5	18.00									
87.0	17.90									
91.5	17.50									
93.0	17.40									
97.0	17.40									
105.0	17.00									
108.0	16.70									
114.5	16.60									
115.0	16.50									
116.5	16.00									
121.0	15.50									
130.0	15.00									
136.0	14.50									
141.5	14.00									
144.0	13.70									
150.0	13.50									
160.0	13.00									
167.0	13.00									
170.0	12.50									
172.0	12.40									
182.0	12.00									
183.0	11.90									
192.5	11.70									
193.0	11.50									
195.0	11.30									
200.0	11.10									



BLUE FIN CRUISE 14 STA 15X 9/ III/77 4.5 GMT CONSEC STA 15

LAT 31 29.7N LONG 79 28.3W DEPTH = 563M DIST LAST STA = 9.6KM

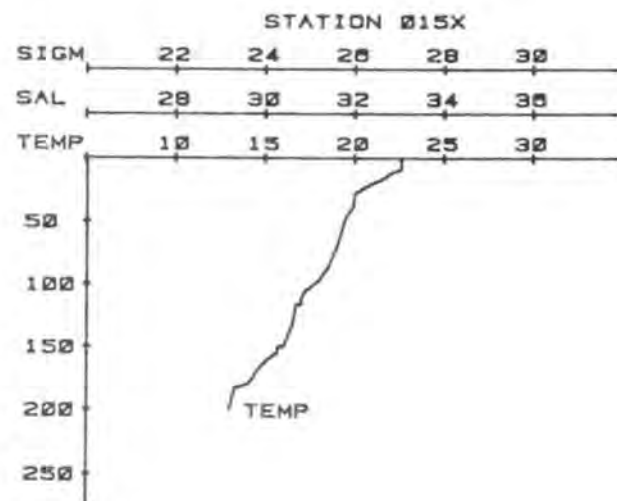
WEATHER DATA

WIND SPEED = 08 KTS
WIND DIRECTION = 030
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

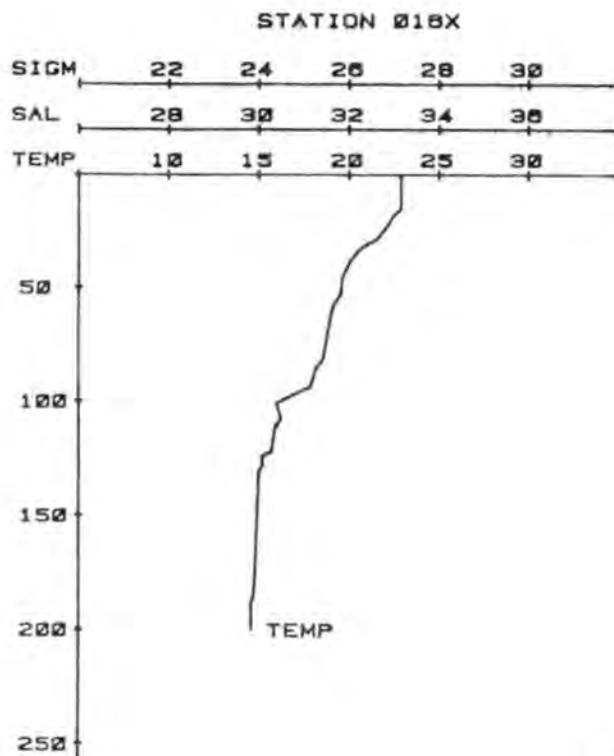
Z	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
1.0	22.60									
8.0	22.60									
9.0	22.50									
12.5	22.00									
17.0	21.50									
20.0	21.00									
24.5	20.30									
28.0	20.00									
39.5	19.90									
47.5	19.50									
71.5	19.00									
87.0	18.50									
97.5	18.00									
103.0	17.50									
106.0	17.20									
112.0	17.00									
116.0	17.00									
117.5	16.70									
132.0	16.50									
150.0	16.00									
150.5	15.70									
156.0	15.60									
156.5	15.50									
162.0	15.00									
170.0	14.50									
172.0	14.40									
175.0	14.30									
180.0	14.00									
182.5	13.50									
183.5	13.30									
200.0	13.00									



BLUE FIN CRUISE 14 STA 16X 9/ III/77 5.5 GMT CONSEC STA 14
LAT 31 26.2W LONG 79 33.6W DEPTH = 263M DIST LAST STA = 10.6KM

WEATHER DATA
WIND SPEED = 08 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB
SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

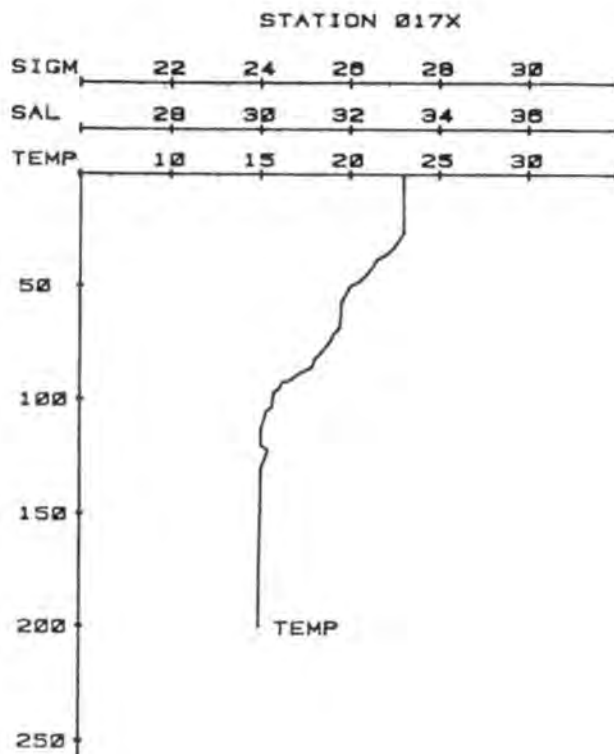
OBSERVATIONS										
I	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
1.0	22.90	.	.	.	.	.	.	.	.	.
15.0	22.90	.	.	.	.	.	.	.	.	.
18.5	22.50	.	.	.	.	.	.	.	.	.
24.0	22.00	.	.	.	.	.	.	.	.	.
29.0	21.50	.	.	.	.	.	.	.	.	.
31.5	21.00	.	.	.	.	.	.	.	.	.
34.0	20.50	.	.	.	.	.	.	.	.	.
39.0	20.00	.	.	.	.	.	.	.	.	.
46.5	19.60	.	.	.	.	.	.	.	.	.
53.0	19.50	.	.	.	.	.	.	.	.	.
58.0	19.10	.	.	.	.	.	.	.	.	.
61.0	19.00	.	.	.	.	.	.	.	.	.
82.0	18.50	.	.	.	.	.	.	.	.	.
86.5	18.10	.	.	.	.	.	.	.	.	.
89.0	18.00	.	.	.	.	.	.	.	.	.
94.0	17.80	.	.	.	.	.	.	.	.	.
95.5	17.50	.	.	.	.	.	.	.	.	.
97.0	17.00	.	.	.	.	.	.	.	.	.
99.5	16.50	.	.	.	.	.	.	.	.	.
101.0	16.00	.	.	.	.	.	.	.	.	.
107.0	16.20	.	.	.	.	.	.	.	.	.
108.0	16.20	.	.	.	.	.	.	.	.	.
110.0	16.00	.	.	.	.	.	.	.	.	.
111.0	15.90	.	.	.	.	.	.	.	.	.
122.0	15.70	.	.	.	.	.	.	.	.	.
124.0	15.70	.	.	.	.	.	.	.	.	.
128.0	15.20	.	.	.	.	.	.	.	.	.
131.0	15.00	.	.	.	.	.	.	.	.	.
177.0	14.80	.	.	.	.	.	.	.	.	.
187.0	14.70	.	.	.	.	.	.	.	.	.
188.0	14.60	.	.	.	.	.	.	.	.	.
200.0	14.60	.	.	.	.	.	.	.	.	.



BLUE FIN CRUISE 14 STA 17X 9/ III/77 6.3 GMT CONSEC STA 17
LAT 31 22.4W LONG 79 38.2W DEPTH = 260M DIST LAST STA = 10.1KM

WEATHER DATA
WIND SPEED = 08 KTS
WIND DIRECTION = 050
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1027.4 MB
SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
I	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
1.0	23.00	.	.	.	.	.	.	.	.	.
24.0	23.00	.	.	.	.	.	.	.	.	.
32.0	22.50	.	.	.	.	.	.	.	.	.
36.0	22.00	.	.	.	.	.	.	.	.	.
38.0	21.50	.	.	.	.	.	.	.	.	.
44.5	21.00	.	.	.	.	.	.	.	.	.
48.5	20.50	.	.	.	.	.	.	.	.	.
50.0	20.00	.	.	.	.	.	.	.	.	.
57.5	19.50	.	.	.	.	.	.	.	.	.
68.0	19.40	.	.	.	.	.	.	.	.	.
72.5	19.00	.	.	.	.	.	.	.	.	.
74.0	18.90	.	.	.	.	.	.	.	.	.
78.0	18.50	.	.	.	.	.	.	.	.	.
82.5	18.00	.	.	.	.	.	.	.	.	.
86.5	17.80	.	.	.	.	.	.	.	.	.
87.0	17.50	.	.	.	.	.	.	.	.	.
89.0	17.00	.	.	.	.	.	.	.	.	.
92.0	16.50	.	.	.	.	.	.	.	.	.
92.5	16.20	.	.	.	.	.	.	.	.	.
95.0	16.00	.	.	.	.	.	.	.	.	.
97.5	15.70	.	.	.	.	.	.	.	.	.
103.5	15.60	.	.	.	.	.	.	.	.	.
104.0	15.50	.	.	.	.	.	.	.	.	.
105.0	15.30	.	.	.	.	.	.	.	.	.
113.5	15.00	.	.	.	.	.	.	.	.	.
120.0	15.00	.	.	.	.	.	.	.	.	.
122.5	15.40	.	.	.	.	.	.	.	.	.
130.0	15.00	.	.	.	.	.	.	.	.	.
173.0	14.90	.	.	.	.	.	.	.	.	.
200.0	14.90	.	.	.	.	.	.	.	.	.



BLUE FIN CRUISE 14 STA 18X 9/ III/77 7.4 GMT CONSEC STA 18

LAT 31 18.0N LONG 79 42.9W DEPTH = 157M DIST LAST STA = 10.0KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 030

AIR TEMP = . C

WEATHER CODE = X0

BAROMETRIC PRESSURE = 1027.4 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

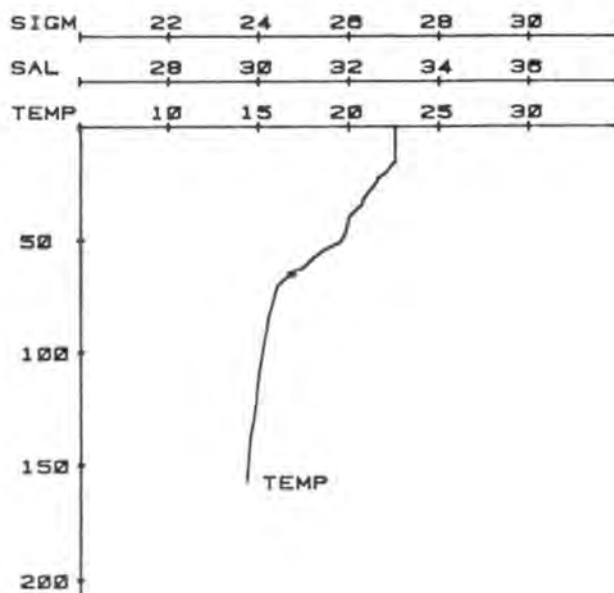
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	22.40	.	.	.	.	.	.	.	.	.
16.0	22.40	.	.	.	.	.	.	.	.	.
16.5	22.50	.	.	.	.	.	.	.	.	.
21.0	22.00	.	.	.	.	.	.	.	.	.
23.0	21.60	.	.	.	.	.	.	.	.	.
25.0	21.50	.	.	.	.	.	.	.	.	.
30.5	21.00	.	.	.	.	.	.	.	.	.
32.5	20.80	.	.	.	.	.	.	.	.	.
35.0	20.70	.	.	.	.	.	.	.	.	.
36.0	20.50	.	.	.	.	.	.	.	.	.
40.0	20.00	.	.	.	.	.	.	.	.	.
47.0	19.80	.	.	.	.	.	.	.	.	.
51.5	19.50	.	.	.	.	.	.	.	.	.
53.5	19.00	.	.	.	.	.	.	.	.	.
55.5	18.50	.	.	.	.	.	.	.	.	.
58.0	18.00	.	.	.	.	.	.	.	.	.
62.0	17.50	.	.	.	.	.	.	.	.	.
63.5	17.30	.	.	.	.	.	.	.	.	.
64.0	17.00	.	.	.	.	.	.	.	.	.
65.0	16.60	.	.	.	.	.	.	.	.	.
66.5	17.00	.	.	.	.	.	.	.	.	.
67.5	16.50	.	.	.	.	.	.	.	.	.
71.5	16.00	.	.	.	.	.	.	.	.	.
85.0	15.50	.	.	.	.	.	.	.	.	.
108.0	15.00	.	.	.	.	.	.	.	.	.
130.0	14.70	.	.	.	.	.	.	.	.	.
137.5	14.50	.	.	.	.	.	.	.	.	.
157.0	14.30	.	.	.	.	.	.	.	.	.

STATION 018X



BLUE FIN CRUISE 14 STA 19X 9/ III/77 8.2 GMT CONSEC STA 19

LAT 31 14.6N LONG 79 47.8W DEPTH = 79M DIST LAST STA = 11.0KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 030

AIR TEMP = . C

WEATHER CODE = X0

BAROMETRIC PRESSURE = 1027.1 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

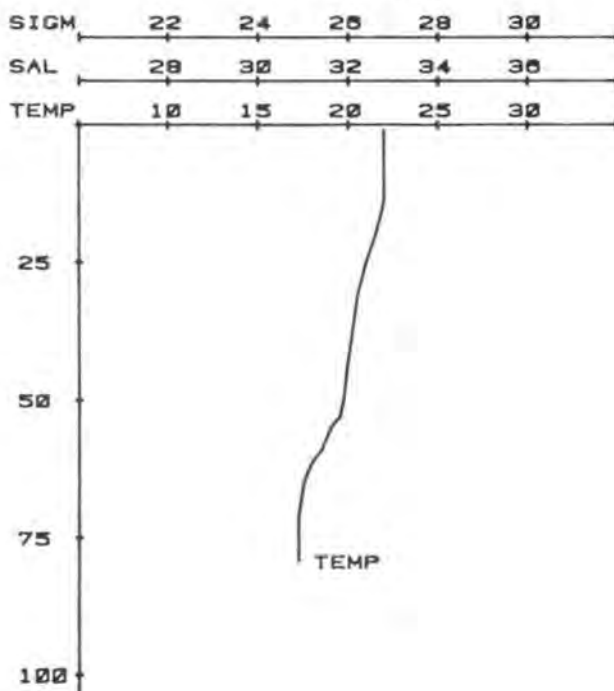
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	22.00	.	.	.	.	.	.	.	.	.
14.0	22.00	.	.	.	.	.	.	.	.	.
20.5	21.50	.	.	.	.	.	.	.	.	.
25.5	21.00	.	.	.	.	.	.	.	.	.
31.0	20.50	.	.	.	.	.	.	.	.	.
42.5	20.00	.	.	.	.	.	.	.	.	.
44.0	19.90	.	.	.	.	.	.	.	.	.
50.0	19.70	.	.	.	.	.	.	.	.	.
53.0	19.50	.	.	.	.	.	.	.	.	.
55.0	19.00	.	.	.	.	.	.	.	.	.
59.5	18.50	.	.	.	.	.	.	.	.	.
61.5	18.00	.	.	.	.	.	.	.	.	.
63.0	17.70	.	.	.	.	.	.	.	.	.
65.5	17.50	.	.	.	.	.	.	.	.	.
71.0	17.20	.	.	.	.	.	.	.	.	.
79.0	17.20	.	.	.	.	.	.	.	.	.

STATION 019X



BLUE FIN CRUISE 14 STA 20X 9/ III/77 8.9 GMT CONSEC STA 20

LAT 31 9.5N LONG 79 49.5W DEPTH = 88M DIST LAST STA = 9.8KM

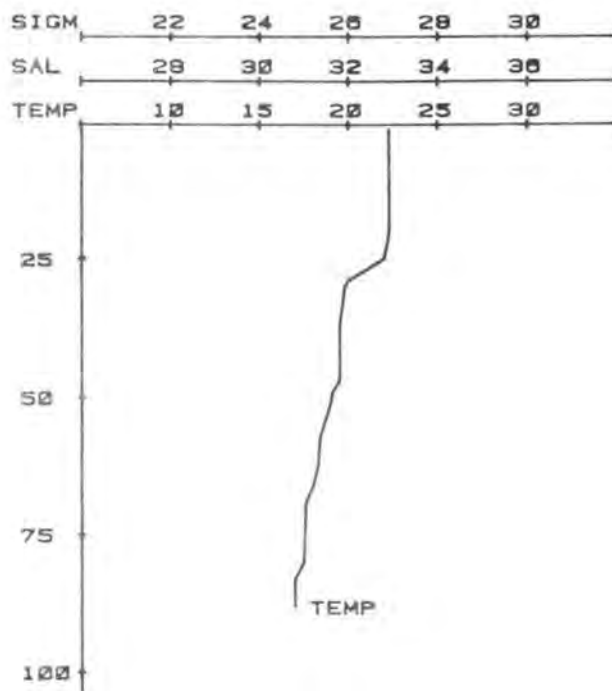
WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 3
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	Q2	Q2'	ADU	PD4	W03	SI
1.0	27.30	.	.	.	.	.	.	.	.	.
20.0	22.30	.	.	.	.	.	.	.	.	.
25.0	22.00	.	.	.	.	.	.	.	.	.
26.5	21.50	.	.	.	.	.	.	.	.	.
27.0	21.00	.	.	.	.	.	.	.	.	.
28.0	20.50	.	.	.	.	.	.	.	.	.
29.5	20.00	.	.	.	.	.	.	.	.	.
30.0	19.80	.	.	.	.	.	.	.	.	.
37.5	19.50	.	.	.	.	.	.	.	.	.
47.0	19.50	.	.	.	.	.	.	.	.	.
49.5	19.10	.	.	.	.	.	.	.	.	.
51.5	19.00	.	.	.	.	.	.	.	.	.
56.5	18.50	.	.	.	.	.	.	.	.	.
57.0	18.40	.	.	.	.	.	.	.	.	.
62.5	18.30	.	.	.	.	.	.	.	.	.
66.5	18.00	.	.	.	.	.	.	.	.	.
69.5	17.60	.	.	.	.	.	.	.	.	.
80.0	17.50	.	.	.	.	.	.	.	.	.
83.5	17.00	.	.	.	.	.	.	.	.	.
88.0	17.00	.	.	.	.	.	.	.	.	.

STATION 020X



BLUE FIN CRUISE 14 STA 21X 9/ III/77 9.5 GMT CONSEC STA 21

LAT 31 4.5N LONG 79 51.2W DEPTH = 108M DIST LAST STA = 9.7KM

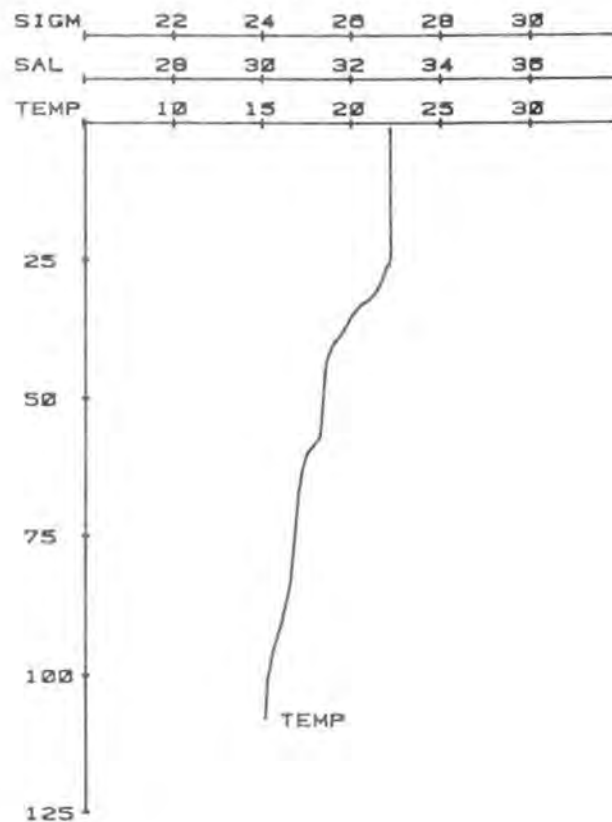
WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 3
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1027.0 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	Q2	Q2'	ADU	PD4	W03	SI
1.0	22.20	.	.	.	.	.	.	.	.	.
24.0	22.20	.	.	.	.	.	.	.	.	.
26.0	22.10	.	.	.	.	.	.	.	.	.
26.5	22.00	.	.	.	.	.	.	.	.	.
30.0	21.50	.	.	.	.	.	.	.	.	.
32.5	21.00	.	.	.	.	.	.	.	.	.
33.5	20.50	.	.	.	.	.	.	.	.	.
35.5	20.00	.	.	.	.	.	.	.	.	.
38.0	19.50	.	.	.	.	.	.	.	.	.
40.0	19.00	.	.	.	.	.	.	.	.	.
43.0	18.60	.	.	.	.	.	.	.	.	.
45.0	18.50	.	.	.	.	.	.	.	.	.
57.0	18.20	.	.	.	.	.	.	.	.	.
58.0	18.00	.	.	.	.	.	.	.	.	.
60.0	17.50	.	.	.	.	.	.	.	.	.
63.5	17.20	.	.	.	.	.	.	.	.	.
67.5	17.00	.	.	.	.	.	.	.	.	.
84.0	16.50	.	.	.	.	.	.	.	.	.
91.0	16.00	.	.	.	.	.	.	.	.	.
96.0	15.50	.	.	.	.	.	.	.	.	.
101.0	15.20	.	.	.	.	.	.	.	.	.
108.0	15.10	.	.	.	.	.	.	.	.	.

STATION 021X



BLUE FIN CRUISE 14 STA 22X 9/ 111/77 10.1 GMT CONSEC STA 22

LAT 30 59.4N LONG 79 52.5W DEPTH =168M DIST LAST STA = 9.7KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = X0

BAROMETRIC PRESSURE = 1027.0 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

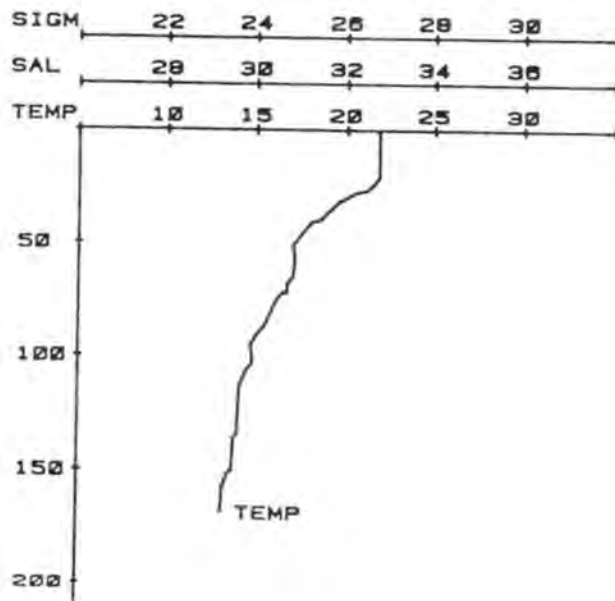
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	M03	SI
1.0	21.80	.	.	.	.	.	.	.	.	.
21.5	21.80	.	.	.	.	.	.	.	.	.
24.0	21.50	.	.	.	.	.	.	.	.	.
27.0	21.10	.	.	.	.	.	.	.	.	.
27.5	21.00	.	.	.	.	.	.	.	.	.
28.5	20.50	.	.	.	.	.	.	.	.	.
30.0	20.00	.	.	.	.	.	.	.	.	.
32.0	19.50	.	.	.	.	.	.	.	.	.
36.0	19.00	.	.	.	.	.	.	.	.	.
40.0	18.50	.	.	.	.	.	.	.	.	.
41.5	18.00	.	.	.	.	.	.	.	.	.
46.0	17.50	.	.	.	.	.	.	.	.	.
51.0	17.00	.	.	.	.	.	.	.	.	.
55.0	17.10	.	.	.	.	.	.	.	.	.
59.5	17.10	.	.	.	.	.	.	.	.	.
65.0	17.00	.	.	.	.	.	.	.	.	.
68.0	16.70	.	.	.	.	.	.	.	.	.
72.0	16.70	.	.	.	.	.	.	.	.	.
72.5	16.50	.	.	.	.	.	.	.	.	.
74.0	16.20	.	.	.	.	.	.	.	.	.
77.0	16.00	.	.	.	.	.	.	.	.	.
84.5	15.50	.	.	.	.	.	.	.	.	.
91.5	15.00	.	.	.	.	.	.	.	.	.
95.0	14.70	.	.	.	.	.	.	.	.	.
100.0	14.80	.	.	.	.	.	.	.	.	.
103.0	14.80	.	.	.	.	.	.	.	.	.
104.5	14.50	.	.	.	.	.	.	.	.	.
113.0	14.10	.	.	.	.	.	.	.	.	.
130.0	14.00	.	.	.	.	.	.	.	.	.
134.0	14.00	.	.	.	.	.	.	.	.	.
136.5	13.80	.	.	.	.	.	.	.	.	.
150.0	13.70	.	.	.	.	.	.	.	.	.
151.5	13.50	.	.	.	.	.	.	.	.	.
157.0	13.20	.	.	.	.	.	.	.	.	.
168.0	13.10	.	.	.	.	.	.	.	.	.

STATION 022X



BLUE FIN CRUISE 14 STA 23X 9/ 111/77 10.7 GMT CONSEC STA 23

LAT 30 54.2N LONG 79 54.1W DEPTH =234M DIST LAST STA = 10.0KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = X0

BAROMETRIC PRESSURE = 1027.0 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

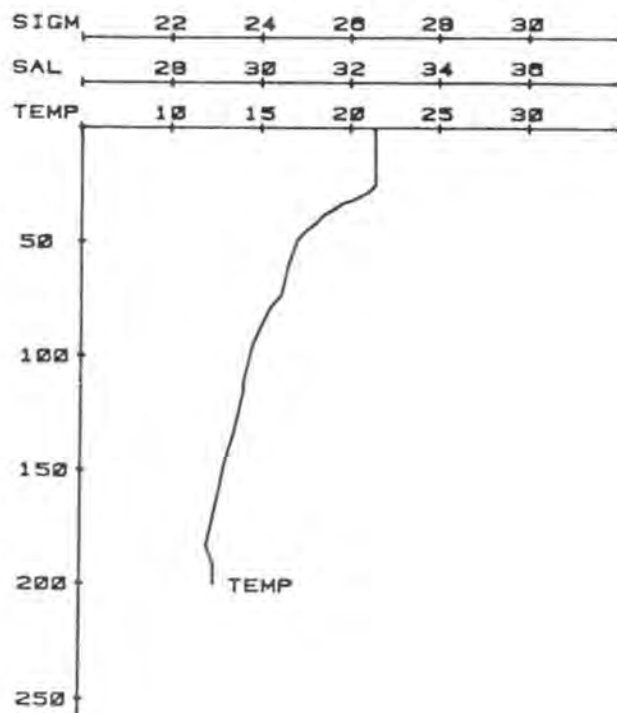
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	M03	SI
1.0	21.40	.	.	.	.	.	.	.	.	.
25.0	21.40	.	.	.	.	.	.	.	.	.
28.5	21.00	.	.	.	.	.	.	.	.	.
30.5	20.50	.	.	.	.	.	.	.	.	.
32.0	20.00	.	.	.	.	.	.	.	.	.
33.0	19.50	.	.	.	.	.	.	.	.	.
36.0	19.00	.	.	.	.	.	.	.	.	.
38.0	18.50	.	.	.	.	.	.	.	.	.
42.5	18.00	.	.	.	.	.	.	.	.	.
45.5	17.50	.	.	.	.	.	.	.	.	.
49.0	17.00	.	.	.	.	.	.	.	.	.
60.0	16.50	.	.	.	.	.	.	.	.	.
73.5	16.10	.	.	.	.	.	.	.	.	.
74.0	16.00	.	.	.	.	.	.	.	.	.
78.0	15.50	.	.	.	.	.	.	.	.	.
84.5	15.00	.	.	.	.	.	.	.	.	.
95.0	14.50	.	.	.	.	.	.	.	.	.
111.0	14.00	.	.	.	.	.	.	.	.	.
115.0	14.00	.	.	.	.	.	.	.	.	.
133.0	13.50	.	.	.	.	.	.	.	.	.
146.0	13.00	.	.	.	.	.	.	.	.	.
165.0	12.50	.	.	.	.	.	.	.	.	.
183.0	12.00	.	.	.	.	.	.	.	.	.
191.5	12.40	.	.	.	.	.	.	.	.	.
200.0	12.40	.	.	.	.	.	.	.	.	.

STATION 023X



BLUE FIN CRUISE 14 STA 24X 9/ III/77 11.7 GMT CONSEC STA 24

LAT 30 45.7N LONG 79 57.0W DEPTH =256M DIST LAST STA = 16.4KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1026.8 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

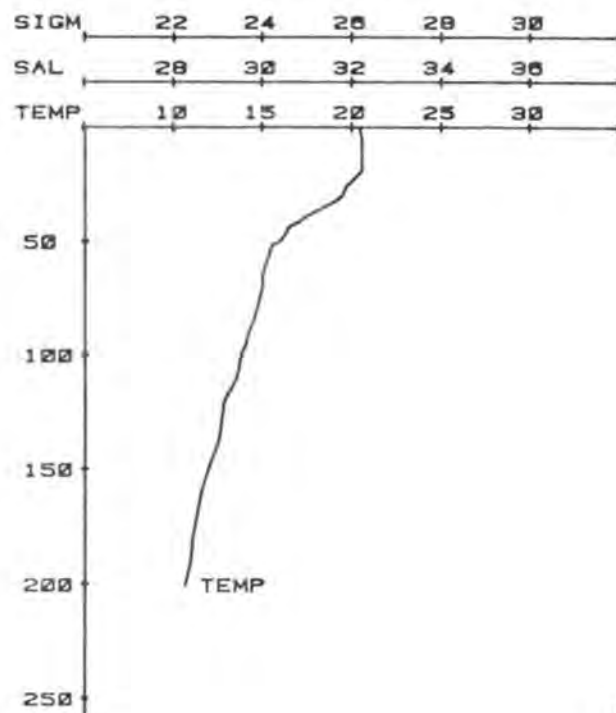
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	02	02'	AOU	P04	M03	SI
1.0	20.50	36.13	25.30	249	*	*	*	*	*	*
5.0	20.60	*	*	*	*	*	*	*	*	*
19.0	20.60	*	*	*	*	*	*	*	*	*
20.0	20.50	*	*	*	*	*	*	*	*	*
24.0	20.00	*	*	*	*	*	*	*	*	*
26.0	19.70	*	*	*	*	*	*	*	*	*
30.0	19.50	*	*	*	*	*	*	*	*	*
33.5	19.00	*	*	*	*	*	*	*	*	*
35.5	18.50	*	*	*	*	*	*	*	*	*
37.0	18.00	*	*	*	*	*	*	*	*	*
39.5	17.50	*	*	*	*	*	*	*	*	*
42.0	17.00	*	*	*	*	*	*	*	*	*
43.0	16.70	*	*	*	*	*	*	*	*	*
44.5	16.50	*	*	*	*	*	*	*	*	*
50.0	16.00	*	*	*	*	*	*	*	*	*
52.0	15.50	*	*	*	*	*	*	*	*	*
65.0	15.00	*	*	*	*	*	*	*	*	*
70.0	15.00	*	*	*	*	*	*	*	*	*
85.0	14.50	*	*	*	*	*	*	*	*	*
90.0	14.20	*	*	*	*	*	*	*	*	*
96.0	14.00	*	*	*	*	*	*	*	*	*
99.5	13.80	*	*	*	*	*	*	*	*	*
110.0	13.30	*	*	*	*	*	*	*	*	*
117.5	13.00	*	*	*	*	*	*	*	*	*
120.0	12.80	*	*	*	*	*	*	*	*	*
137.0	12.50	*	*	*	*	*	*	*	*	*
140.5	12.40	*	*	*	*	*	*	*	*	*
148.0	12.00	*	*	*	*	*	*	*	*	*
160.0	11.50	*	*	*	*	*	*	*	*	*
180.0	11.00	*	*	*	*	*	*	*	*	*
190.0	10.90	*	*	*	*	*	*	*	*	*
200.0	10.60	*	*	*	*	*	*	*	*	*

STATION 024X



BLUE FIN CRUISE 14 STA 25X 9/ III/77 13.0 GMT CONSEC STA 25

LAT 30 47.5N LONG 80 2.6W DEPTH =102M DIST LAST STA = 9.5KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1026.8 MB

SEA STATE = 2

WAVE DIRECTION =

CLOUD TYPE =

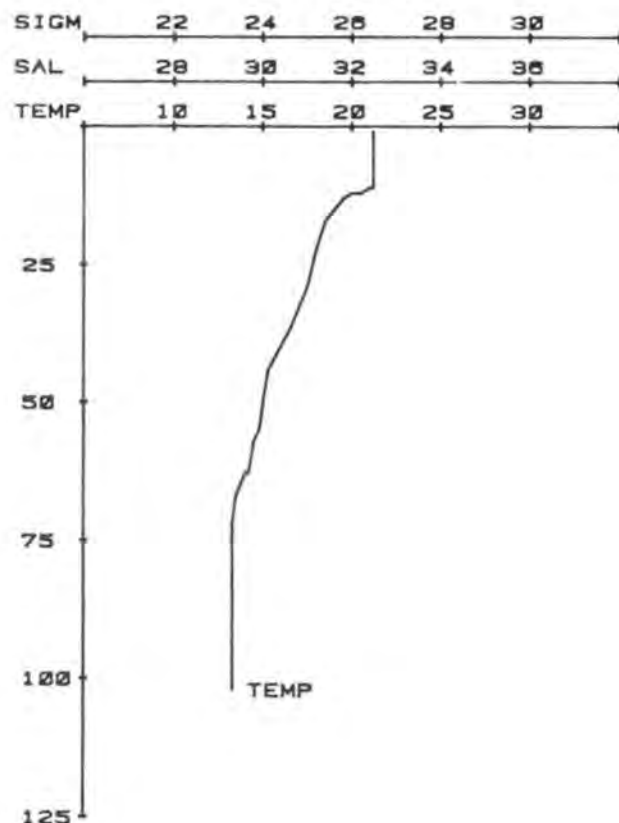
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	02	02'	AOU	P04	M03	SI
1.0	21.20	*	*	*	*	*	*	*	*	*
11.0	21.20	*	*	*	*	*	*	*	*	*
11.5	21.00	*	*	*	*	*	*	*	*	*
12.0	20.50	*	*	*	*	*	*	*	*	*
12.5	20.00	*	*	*	*	*	*	*	*	*
13.0	19.50	*	*	*	*	*	*	*	*	*
15.5	19.00	*	*	*	*	*	*	*	*	*
17.0	18.50	*	*	*	*	*	*	*	*	*
22.5	18.00	*	*	*	*	*	*	*	*	*
29.0	17.50	*	*	*	*	*	*	*	*	*
33.0	17.00	*	*	*	*	*	*	*	*	*
37.0	16.50	*	*	*	*	*	*	*	*	*
40.5	16.00	*	*	*	*	*	*	*	*	*
43.5	15.50	*	*	*	*	*	*	*	*	*
44.0	15.30	*	*	*	*	*	*	*	*	*
50.0	15.00	*	*	*	*	*	*	*	*	*
55.5	14.80	*	*	*	*	*	*	*	*	*
57.0	14.50	*	*	*	*	*	*	*	*	*
63.0	14.20	*	*	*	*	*	*	*	*	*
63.5	14.00	*	*	*	*	*	*	*	*	*
67.5	13.50	*	*	*	*	*	*	*	*	*
72.0	13.30	*	*	*	*	*	*	*	*	*
102.0	13.30	*	*	*	*	*	*	*	*	*

STATION 025X

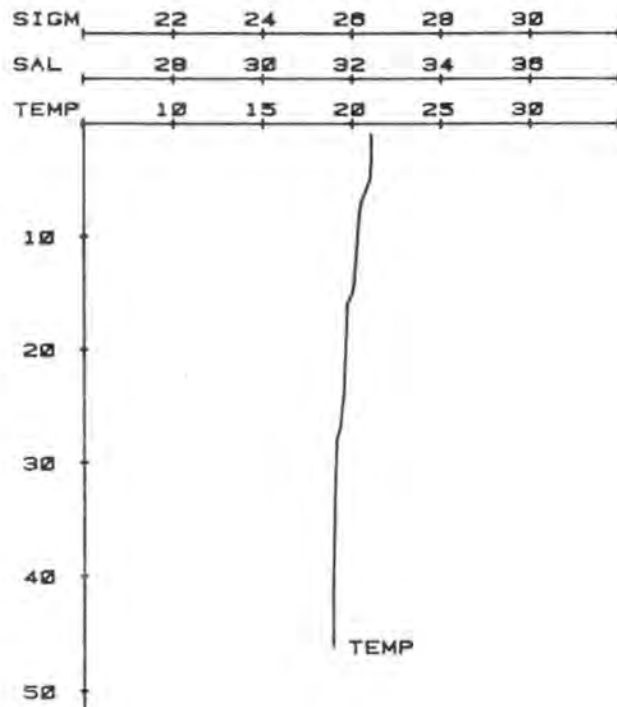


BLUE FIN CRUISE 14 STA 26X 9/ 111/77 13.5 GMT CONSEC STA 24
LAT 30 49.7N LONG 80 08.3W DEPTH = 46M DIST LAST STA = 9.9KM

WEATHER DATA
WIND SPEED = 08 KTS SEA STATE = 2
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	02	02'	ADU	P04	M03	SI
1.0	21.10	.	.	.	.	.	.	.	.	.
3.0	21.10	.	.	.	.	.	.	.	.	.
5.0	21.00	.	.	.	.	.	.	.	.	.
7.5	20.50	.	.	.	.	.	.	.	.	.
8.0	20.40	.	.	.	.	.	.	.	.	.
14.0	20.10	.	.	.	.	.	.	.	.	.
15.0	20.00	.	.	.	.	.	.	.	.	.
16.5	19.70	.	.	.	.	.	.	.	.	.
24.5	19.50	.	.	.	.	.	.	.	.	.
27.5	19.30	.	.	.	.	.	.	.	.	.
28.0	19.10	.	.	.	.	.	.	.	.	.
33.0	19.00	.	.	.	.	.	.	.	.	.
41.0	18.90	.	.	.	.	.	.	.	.	.
46.0	18.90	.	.	.	.	.	.	.	.	.

STATION 026X

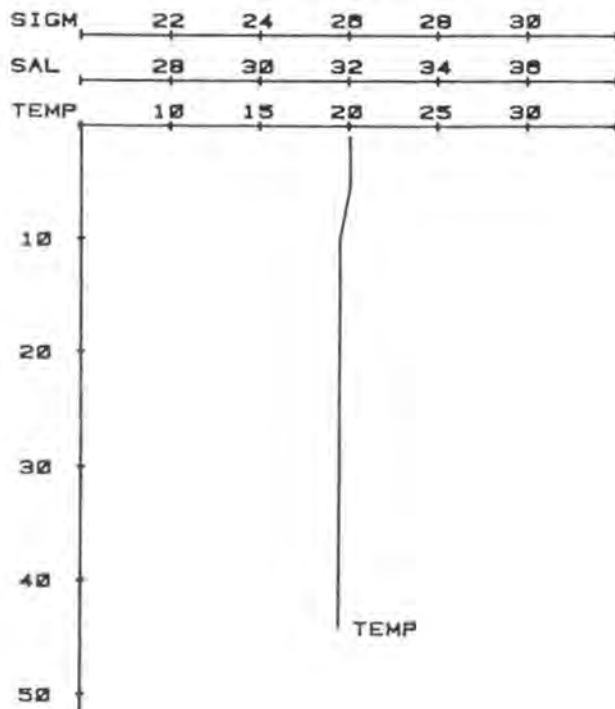


BLUE FIN CRUISE 14 STA 27X 9/ 111/77 14.1 GMT CONSEC STA 27
LAT 30 52.2N LONG 80 12.8W DEPTH = 44M DIST LAST STA = 8.5KM

WEATHER DATA
WIND SPEED = 08 KTS SEA STATE = 2
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	02	02'	ADU	P04	M03	SI
1.0	20.10	.	.	.	.	.	.	.	.	.
5.0	20.10	.	.	.	.	.	.	.	.	.
4.0	20.00	.	.	.	.	.	.	.	.	.
10.0	19.50	.	.	.	.	.	.	.	.	.
44.0	19.40	.	.	.	.	.	.	.	.	.

STATION 027X



BLUE FIN CRUISE 14 STA 28X 9/ 111/77 14.6 GMT CONSEC STA 28
LAT 30 54.1N LONG 80 19.0W DEPTH = 38M DIST LAST STA = 10.5KM

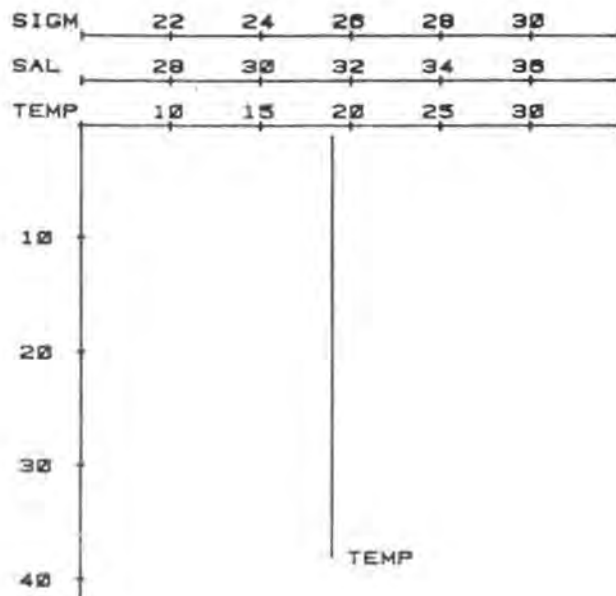
WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 2
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	H03	SI
1.0	19.00	-	-	-	-	-	-	-	-	-
38.0	19.00	-	-	-	-	-	-	-	-	-

STATION 028X



BLUE FIN CRUISE 14 STA 29X 9/ 111/77 15.2 GMT CONSEC STA 29
LAT 30 56.5N LONG 80 25.2W DEPTH = 35M DIST LAST STA = 10.8KM

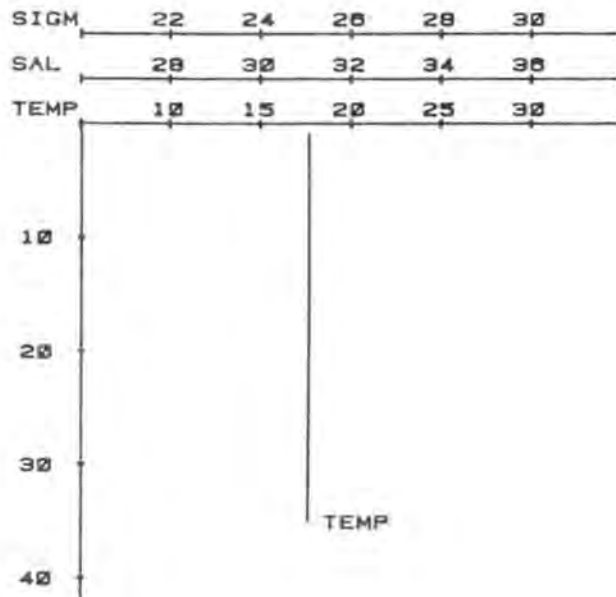
WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 2
WIND DIRECTION = 050 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	H03	SI
1.0	17.70	-	-	-	-	-	-	-	-	-
35.0	17.60	-	-	-	-	-	-	-	-	-

STATION 029X



BLUE FIN CRUISE 14 STA 30X 9/ 111/77 15.8 GRT CONSEC STA 30

LAT 30 58.7N LONG 80 31.3W DEPTH = 32M DIST LAST STA = 10.5KM

WEATHER DATA

WIND SPEED = 05 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = 11

BAROMETRIC PRESSURE = 1024.8 MB

SEA STATE = 2

WAVE DIRECTION =

CLOUD TYPE =

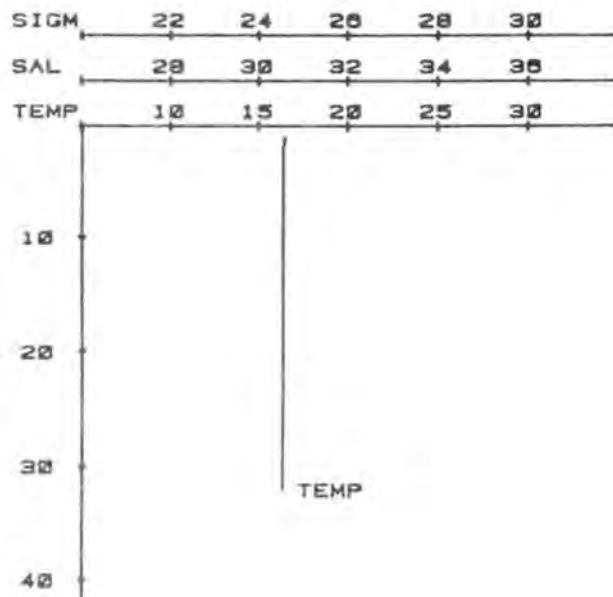
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	NO3	SI
1.0	14.50	.	.	.	.	.	.	.	.	.
2.5	14.40	.	.	.	.	.	.	.	.	.
32.0	14.30	.	.	.	.	.	.	.	.	.

STATION 030X



BLUE FIN CRUISE 14 STA 31X 9/ 111/77 12.3 GRT CONSEC STA 31

LAT 31 9.8N LONG 80 35.2W DEPTH = 28M DIST LAST STA = 21.5KM

WEATHER DATA

WIND SPEED = 05 KTS

WIND DIRECTION = 050

AIR TEMP = . C

WEATHER CODE = 11

BAROMETRIC PRESSURE = 1024.8 MB

SEA STATE = 2

WAVE DIRECTION =

CLOUD TYPE =

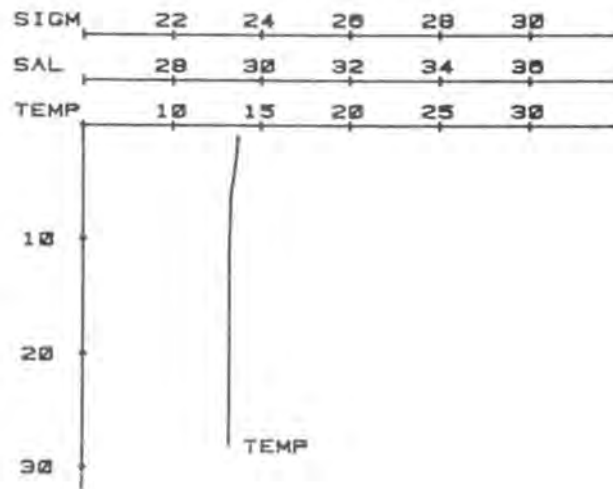
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	NO3	SI
1.0	13.70	.	.	.	.	.	.	.	.	.
4.0	13.50	.	.	.	.	.	.	.	.	.
8.0	13.30	.	.	.	.	.	.	.	.	.
11.0	13.20	.	.	.	.	.	.	.	.	.
28.0	13.20	.	.	.	.	.	.	.	.	.

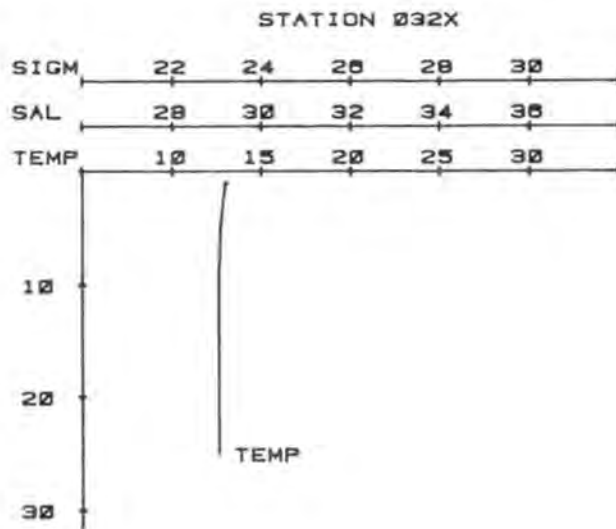
STATION 031X



BLUE FIN CRUISE 14 STA 32X 9/ III/77 18.6 GMT CONSEC STA 32
LAT 31 20.5N LONG 80 40.4W DEPTH = 25M DIST LAST STA = 21.5KM

WEATHER DATA
WIND SPEED = 05 KTS SEA STATE = 2
WIND DIRECTION = 030 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

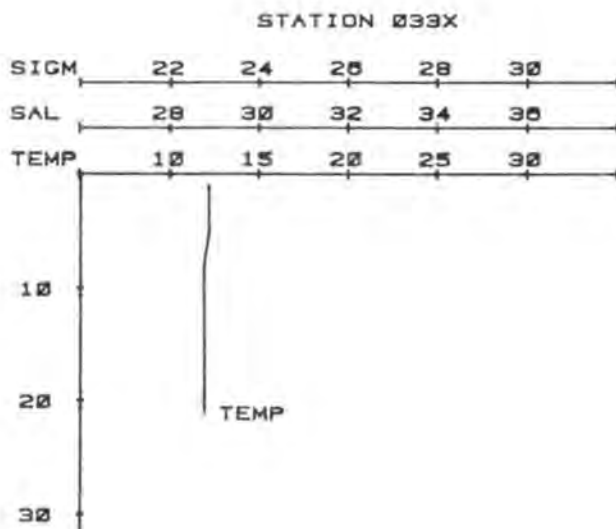
OBSERVATIONS											
Z	T	S	B	SVA	O2	O2'	AOU	PO4	NO3	SI	
1.0	13.10	.	.	.	.	.	.	.	.	.	.
1.5	13.00	.	.	.	.	.	.	.	.	.	.
5.0	12.70	.	.	.	.	.	.	.	.	.	.
9.0	12.60	.	.	.	.	.	.	.	.	.	.
25.0	12.60	.	.	.	.	.	.	.	.	.	.



BLUE FIN CRUISE 14 STA 33X 9/ III/77 19.9 GMT CONSEC STA 33
LAT 31 31.4N LONG 80 44.5W DEPTH = 21M DIST LAST STA = 21.2KM

WEATHER DATA
WIND SPEED = 05 KTS SEA STATE = 2
WIND DIRECTION = 030 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE =

OBSERVATIONS											
Z	T	S	B	SVA	O2	O2'	AOU	PO4	NO3	SI	
1.0	12.20	.	.	.	.	.	.	.	.	.	.
5.0	12.20	.	.	.	.	.	.	.	.	.	.
7.0	12.00	.	.	.	.	.	.	.	.	.	.
8.0	11.90	.	.	.	.	.	.	.	.	.	.
21.0	11.90	.	.	.	.	.	.	.	.	.	.



BLUE FIN CRUISE 14 STA 34X 9/ III/77 21.3 GMT CONSEC STA 34

LAT 31 41.9N LONG 80 48.4W DEPTH = 13M DIST LAST STA = 20.4KM

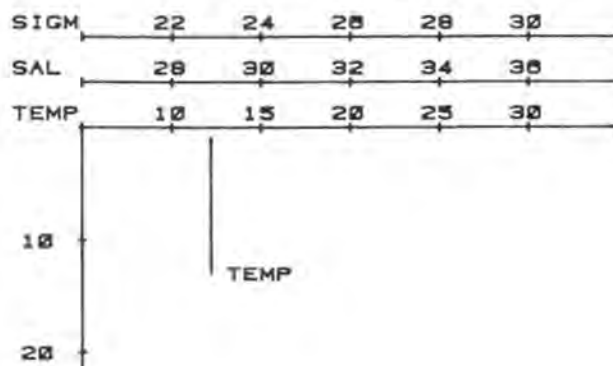
WEATHER DATA

WIND SPEED * 05 KTS SEA STATE * 2
WIND DIRECTION * 050 WAVE DIRECTION *
AIR TEMP * , C CLOUD TYPE *
WEATHER CODE * X1 CLOUD AMOUNT *
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
1.0	12.20	.	.	.	.	.	.	.	.	.
13.0	12.20	.	.	.	.	.	.	.	.	.

STATION 034X



BLUE FIN CRUISE 14 STA 35B 9/ III/77 22.7 GMT CONSEC STA 35

LAT 31 51.9N LONG 80 52.5W DEPTH = 4M DIST LAST STA = 19.6KM

WEATHER DATA

WIND SPEED * 05 KTS SEA STATE * 2
WIND DIRECTION * 050 WAVE DIRECTION *
AIR TEMP * , C CLOUD TYPE *
WEATHER CODE * X1 CLOUD AMOUNT *
BAROMETRIC PRESSURE = 1026.8 MB VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	M03	SI
0.0	12.60	29.09	21.92	590	.	.	.	.	.	.

BF-38-77

26-27 May 1977

STATION SUMMARY FOR BLUE FIN CRUISE 38

CRUISE	STATION	LATITUDE	LONGITUDE	YR	MM	DY	HOUR	DEPTH	CONSEC
							GMT	M	NUMBER
038	001C	31 51.9N	80 52.5W	77	5	26	13.6	9	1
038	002C	31 51.2N	80 47.1W	77	5	26	14.4	15	2
038	003C	31 48.5N	80 41.0W	77	5	26	15.2	14	3
038	004C	31 46.8N	80 35.6W	77	5	26	16.1	15	4
038	005C	31 45.0N	80 30.5W	77	5	26	17.2	16	5
038	006C	31 43.3N	80 25.0W	77	5	26	18.1	28	6
038	007C	31 42.8N	80 20.1W	77	5	26	19.0	31	7
038	008C	31 40.0N	80 14.6W	77	5	26	20.1	34	8
038	009C	31 38.2N	80 8.7W	77	5	26	21.3	37	9
038	010C	31 36.4N	80 3.3W	77	5	26	22.2	42	10
038	011C	31 34.6N	79 57.9W	77	5	26	23.3	43	11
038	012X	31 33.0N	79 52.5W	77	5	27	1.4	45	12
038	013X	31 31.3N	79 47.0W	77	5	27	2.4	53	13
038	013C	31 31.3N	79 47.0W	77	5	27	2.8	54	14
038	014C	31 29.7N	79 41.9W	77	5	27	3.7	75	15
038	015X	31 27.9N	79 35.8W	77	5	27	5.1	219	16

BLUE FIN CRUISE 38 STA 001C 26/ V/77 13.6 GMT CONSEC STA 1

LAT 31 51.9N LONG 80 52.5W DEPTH = 9M DIST LAST STA = 0.0KM

WEATHER DATA

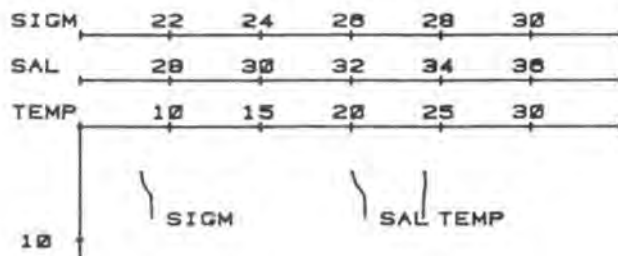
WIND SPEED = 10 KTS
WIND DIRECTION = 230
AIR TEMP = . C
WEATHER CODE = X2
BAROMETRIC PRESSURE = 1011.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AQU	P04	N03	SI
4.0	24.10	32.02	21.37	643	.	.	.	.	.	.
5.0	24.14	32.10	21.42	638	.	.	.	.	.	.
6.0	24.04	32.29	21.59	622	.	.	.	.	.	.
7.0	24.01	32.30	21.61	620	.	.	.	.	.	.
8.0	24.00	32.30	21.61	620	.	.	.	.	.	.

STATION 001C



BLUE FIN CRUISE 38 STA 002C 26/ V/77 14.4 GMT CONSEC STA 2

LAT 31 51.2N LONG 80 47.1W DEPTH = 15M DIST LAST STA = 8.6KM

WEATHER DATA

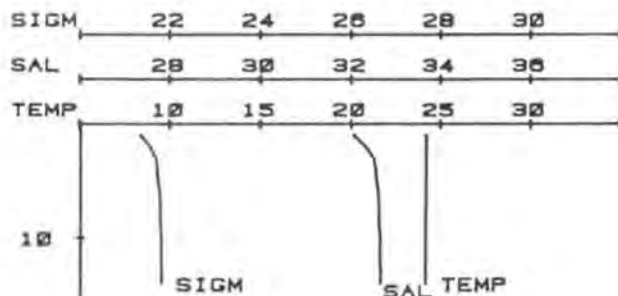
WIND SPEED = 10 KTS
WIND DIRECTION = 230
AIR TEMP = . C
WEATHER CODE = X2
BAROMETRIC PRESSURE = 1011.9 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AQU	P04	N03	SI
1.0	24.20	32.05	21.37	643	.	.	.	.	00.0	00.8
2.0	24.19	32.31	21.57	624	.	.	.	.	.	.
3.0	24.18	32.49	21.70	611	.	.	.	.	.	.
4.0	24.18	32.53	21.73	608	.	.	.	.	.	.
5.0	24.17	32.55	21.75	606	.	.	.	.	.	.
6.0	24.16	32.59	21.79	603	.	.	.	.	.	.
7.0	24.15	32.60	21.80	602	.	.	.	.	.	.
8.0	24.14	32.60	21.80	602	.	.	.	.	.	.
9.0	24.13	32.61	21.81	601	.	.	.	.	.	.
10.0	24.13	32.63	21.82	600	.	.	.	.	.	.
11.0	24.13	32.62	21.82	600	.	.	.	.	.	.
12.0	24.13	32.63	21.82	600	.	.	.	.	.	.
13.0	24.13	32.64	21.83	599	.	.	.	0.08	00.1	00.7
14.0	24.14	32.63	21.82	600	.	.	.	.	.	.

STATION 002C



BLUE FIN CRUISE 38 STA 003C 26/ V/77 15.2 GMT CONSEC STA 3

LAT 31 48.5N LONG 80 41.0W DEPTH = 14M DIST LAST STA = 10.8KM

WEATHER DATA

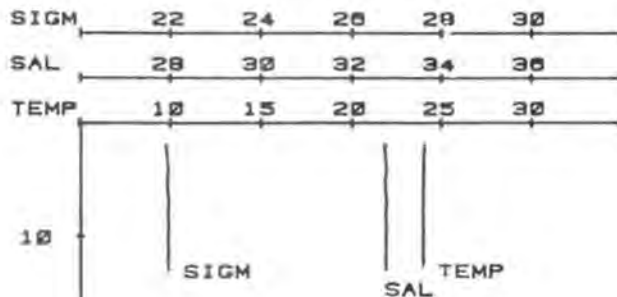
WIND SPEED = 12 KTS
WIND DIRECTION = 090
AIR TEMP = . C
WEATHER CODE = X2
BAROMETRIC PRESSURE = 1011.9 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AQU	P04	N03	SI
2.0	24.05	32.71	21.91	591	.	.	.	0.18	00.1	00.4
3.0	24.00	32.73	21.94	589	.	.	.	.	.	.
4.0	23.99	32.75	21.96	587	.	.	.	.	.	.
5.0	23.97	32.72	21.94	589	.	.	.	.	.	.
6.0	23.96	32.73	21.95	588	.	.	.	.	.	.
7.0	23.95	32.75	21.97	586	.	.	.	.	.	.
8.0	23.95	32.73	21.95	587	.	.	.	.	.	.
9.0	23.94	32.75	21.97	584	.	.	.	.	.	.
10.0	23.96	32.74	21.96	587	.	.	.	.	.	.
11.0	23.94	32.74	21.96	586	.	.	.	.	.	.
12.0	23.94	32.73	21.96	587	.	.	.	.	.	.
13.0	23.94	32.74	21.96	587	.	.	.	.	00.1	00.4

STATION 003C



BLUE FIN CRUISE 38 STA 004C 26/ V/77 16.1 GMT CONSEC STA 4
LAT 31 46.8N LONG 80 35.6W DEPTH = 15M DIST LAST STA = 9.1KM

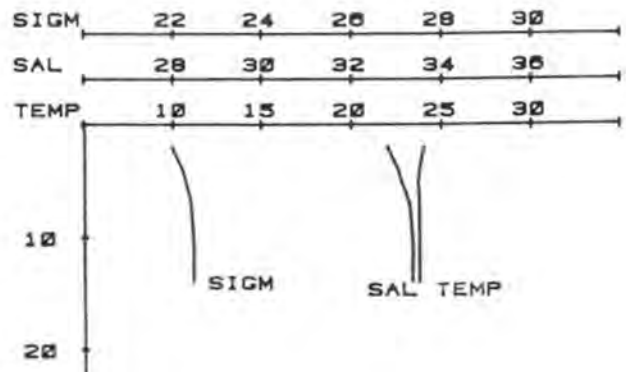
WEATHER DATA

WIND SPEED = 15 KTS SEA STATE = 3
WIND DIRECTION = 070 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X2 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1009.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	P04	W03	S1
2.0	24.01	32.79	21.98	585	-	-	-	0.11	00.1	00.0
3.0	23.87	32.90	22.10	573	-	-	-	-	-	-
4.0	23.75	33.02	22.23	561	-	-	-	-	-	-
5.0	23.68	33.08	22.30	554	-	-	-	-	-	-
6.0	23.72	33.19	22.37	548	-	-	-	-	-	-
7.0	23.74	33.26	22.41	543	-	-	-	-	-	-
8.0	23.74	33.29	22.44	541	-	-	-	-	-	-
9.0	23.74	33.31	22.45	540	-	-	-	-	-	-
10.0	23.74	33.33	22.47	538	-	-	-	-	-	-
11.0	23.73	33.34	22.48	537	-	-	-	-	-	-
12.0	23.73	33.33	22.47	538	-	-	-	-	-	-
13.0	23.73	33.33	22.47	538	-	-	-	0.09	00.0	00.4
14.0	23.73	33.32	22.46	539	-	-	-	-	-	-

STATION 004C



BLUE FIN CRUISE 38 STA 005C 26/ V/77 17.2 GMT CONSEC STA 5
LAT 31 45.0N LONG 80 30.5W DEPTH = 16M DIST LAST STA = 8.7KM

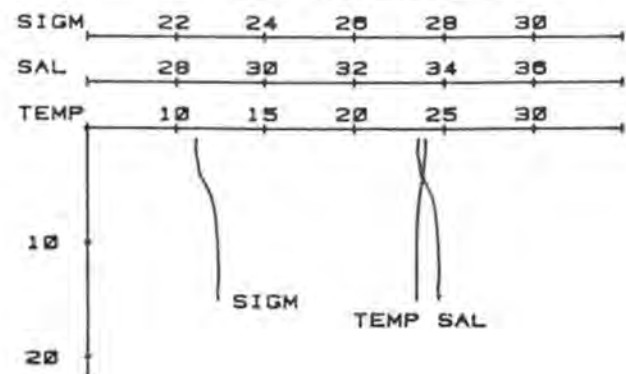
WEATHER DATA

WIND SPEED = 15 KTS SEA STATE = 3
WIND DIRECTION = 070 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1009.1 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	P04	W03	S1
1.0	23.97	33.41	22.46	539	-	-	-	0.05	00.0	00.8
2.0	23.94	33.39	22.45	539	-	-	-	-	-	-
3.0	23.88	33.44	22.51	534	-	-	-	-	-	-
4.0	23.84	33.47	22.54	531	-	-	-	-	-	-
5.0	23.70	33.61	22.69	517	-	-	-	-	-	-
6.0	23.59	33.73	22.81	505	-	-	-	-	-	-
7.0	23.53	33.79	22.88	499	-	-	-	-	-	-
8.0	23.49	33.82	22.91	496	-	-	-	-	-	-
9.0	23.46	33.84	22.93	494	-	-	-	-	-	-
10.0	23.44	33.86	22.95	492	-	-	-	-	-	-
11.0	23.43	33.87	22.96	491	-	-	-	-	-	-
12.0	23.43	33.88	22.97	490	-	-	-	-	-	-
13.0	23.43	33.88	22.97	490	-	-	-	-	-	-
14.0	23.43	33.85	22.95	492	-	-	-	-	-	-
15.0	23.43	33.87	22.96	491	-	-	-	0.08	00.1	00.6

STATION 005C



BLUE FIN CRUISE 38 STA 006C 26/ V/77 18.1 GMT CONSEC STA 4
LAT 31 43.3N LONG 80 25.0W DEPTH = 28M DIST LAST STA = 9.2KM

WEATHER DATA

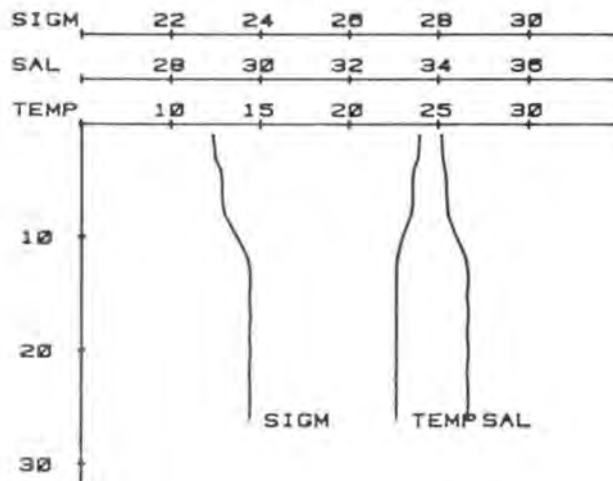
WIND SPEED * 15 KTS
WIND DIRECTION * 070
AIR TEMP * 28 C
WEATHER CODE * X1
BAROMETRIC PRESSURE = 1010.8 MB

SEA STATE * 3
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	23.98	34.08	22.95	492	*	*	*	0.04	00.0	00.2
2.0	23.92	34.08	22.98	489	*	*	*	*	*	*
3.0	23.87	34.09	23.00	487	*	*	*	*	*	*
4.0	23.61	34.14	23.12	476	*	*	*	*	*	*
5.0	23.56	34.17	23.15	472	*	*	*	*	*	*
6.0	23.57	34.17	23.15	473	*	*	*	*	*	*
7.0	23.56	34.19	23.17	471	*	*	*	*	*	*
8.0	23.47	34.21	23.21	467	*	*	*	*	*	*
9.0	23.22	34.30	23.35	454	*	*	*	*	*	*
10.0	23.00	34.39	23.48	441	*	*	*	*	*	*
11.0	22.82	34.51	23.62	428	*	*	*	*	*	*
12.0	22.68	34.61	23.74	417	*	*	*	*	*	*
13.0	22.65	34.65	23.78	413	*	*	*	*	*	*
14.0	22.64	34.66	23.79	412	*	*	*	*	*	*
15.0	22.64	34.63	23.77	414	*	*	*	*	*	*
16.0	22.64	34.65	23.78	413	*	*	*	*	*	*
17.0	22.64	34.66	23.79	412	*	*	*	*	*	*
18.0	22.64	34.63	23.77	414	*	*	*	*	*	*
19.0	22.64	34.64	23.77	414	*	*	*	*	*	*
20.0	22.64	34.66	23.79	412	*	*	*	*	*	*
21.0	22.64	34.64	23.77	414	*	*	*	*	*	*
22.0	22.63	34.63	23.77	414	*	*	*	*	*	*
23.0	22.64	34.65	23.78	413	*	*	*	*	*	*
24.0	22.64	34.65	23.78	413	*	*	*	0.09	00.1	00.7
25.0	22.64	34.65	23.78	413	*	*	*	*	*	*
26.0	22.64	34.64	23.77	414	*	*	*	*	*	*

STATION 006C



BLUE FIN CRUISE 38 STA 007C 26/ V/77 19.0 GMT CONSEC STA 7
LAT 31 42.8N LONG 80 20.1W DEPTH = 31M DIST LAST STA = 7.8KM

WEATHER DATA

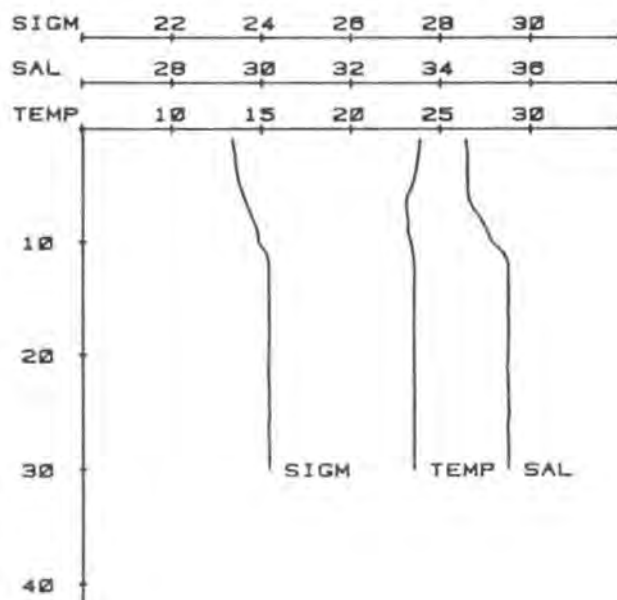
WIND SPEED * 08 KTS
WIND DIRECTION * 070
AIR TEMP * 28 C
WEATHER CODE * X1
BAROMETRIC PRESSURE = 1010.8 MB

SEA STATE * 3
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	23.88	34.56	23.35	453	*	*	*	*	*	*
2.0	23.78	34.59	23.41	448	*	*	*	0.12	00.0	00.3
3.0	23.70	34.59	23.43	446	*	*	*	*	*	*
4.0	23.58	34.59	23.46	443	*	*	*	*	*	*
5.0	23.42	34.60	23.52	438	*	*	*	*	*	*
6.0	23.10	34.61	23.62	428	*	*	*	*	*	*
7.0	23.08	34.72	23.71	420	*	*	*	*	*	*
8.0	23.18	34.90	23.82	409	*	*	*	*	*	*
9.0	23.15	35.02	23.92	400	*	*	*	*	*	*
10.0	23.35	35.13	23.94	398	*	*	*	*	*	*
11.0	23.45	35.39	24.11	382	*	*	*	*	*	*
12.0	23.51	35.49	24.17	376	*	*	*	*	*	*
13.0	23.51	35.48	24.16	377	*	*	*	*	*	*
14.0	23.50	35.49	24.17	376	*	*	*	*	*	*
15.0	23.50	35.49	24.17	376	*	*	*	*	*	*
16.0	23.49	35.48	24.16	376	*	*	*	0.13	00.0	00.9
17.0	23.49	35.49	24.17	376	*	*	*	*	*	*
18.0	23.49	35.49	24.17	376	*	*	*	*	*	*
19.0	23.49	35.48	24.16	377	*	*	*	*	*	*
20.0	23.49	35.48	24.16	377	*	*	*	*	*	*
21.0	23.49	35.46	24.15	378	*	*	*	*	*	*
22.0	23.49	35.48	24.16	377	*	*	*	*	*	*
23.0	23.50	35.49	24.17	376	*	*	*	*	*	*
24.0	23.50	35.49	24.17	376	*	*	*	*	*	*
25.0	23.48	35.50	24.18	375	*	*	*	*	*	*
26.0	23.48	35.47	24.16	377	*	*	*	*	*	*
27.0	23.48	35.48	24.17	377	*	*	*	*	*	*
28.0	23.47	35.49	24.18	376	*	*	*	0.06	00.0	00.9
29.0	23.47	35.49	24.18	376	*	*	*	*	*	*
30.0	23.48	35.49	24.17	376	*	*	*	*	*	*

STATION 007C

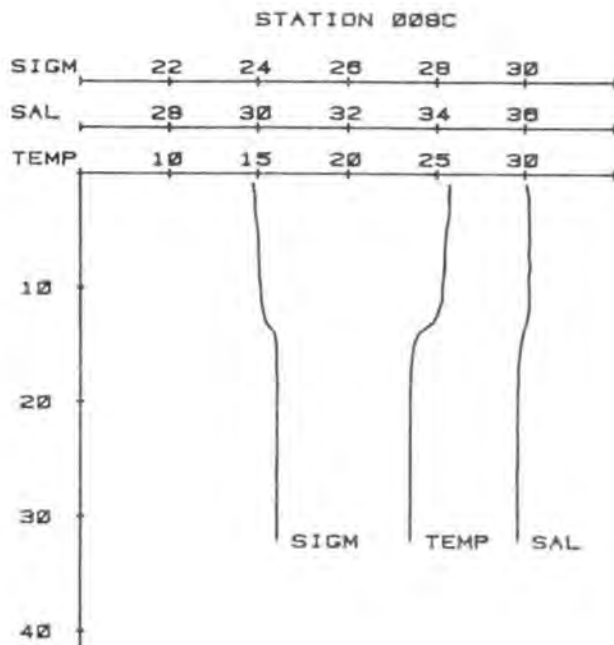


BLUE FIN CRUISE 38 STA 008C 26/ V/77 20.1 GNT CONSEC STA 8
LAT 31 40.0N LONG 80 14.6W DEPTH = 14M DIST LAST STA = 10.1KM

WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 3
WIND DIRECTION = 070 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1010.8 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	D2	D2'	ADU	P04	M03	SI
1.0	25.72	36.03	23.91	400	.	.	.	.	.	.
2.0	25.68	36.08	23.96	396	.	.	.	0.04	00.0	01.3
3.0	25.69	36.08	23.95	396	.	.	.	.	.	.
4.0	25.64	36.09	23.98	394	.	.	.	.	.	.
5.0	25.50	36.09	24.02	390	.	.	.	.	.	.
6.0	25.44	36.09	24.04	388	.	.	.	.	.	.
7.0	25.40	36.07	24.04	388	.	.	.	.	.	.
8.0	25.41	36.10	24.05	387	.	.	.	.	.	.
9.0	25.34	36.07	24.05	387	.	.	.	.	.	.
10.0	25.26	36.08	24.09	384	.	.	.	.	.	.
11.0	25.26	36.09	24.09	383	.	.	.	.	.	.
12.0	25.06	36.07	24.14	379	.	.	.	.	.	.
13.0	24.78	36.02	24.19	374	.	.	.	.	.	.
14.0	23.92	35.94	24.39	355	.	.	.	.	.	.
15.0	23.64	35.89	24.43	351	.	.	.	.	.	.
16.0	23.56	35.86	24.43	351	.	.	.	.	.	.
17.0	23.50	35.83	24.43	352	.	.	.	.	.	.
18.0	23.46	35.84	24.45	350	.	.	.	.	.	.
19.0	23.44	35.82	24.44	351	.	.	.	.	.	.
20.0	23.44	35.82	24.44	351	.	.	.	.	.	.
21.0	23.44	35.82	24.44	351	.	.	.	.	.	.
22.0	23.43	35.81	24.43	351	.	.	.	.	.	.
23.0	23.43	35.82	24.44	351	.	.	.	.	.	.
24.0	23.43	35.82	24.44	351	.	.	.	.	.	.
25.0	23.43	35.82	24.44	351	.	.	.	.	.	.
26.0	23.43	35.80	24.42	352	.	.	.	.	.	.
27.0	23.43	35.81	24.43	351	.	.	.	.	.	.
28.0	23.43	35.81	24.43	351	.	.	.	.	.	.
29.0	23.43	35.81	24.43	351	.	.	.	.	.	.
30.0	23.43	35.82	24.44	351	.	.	.	.	.	.
31.0	23.43	35.82	24.44	351	.	.	.	0.04	00.0	01.4
32.0	23.43	35.81	24.43	352	.	.	.	.	.	.

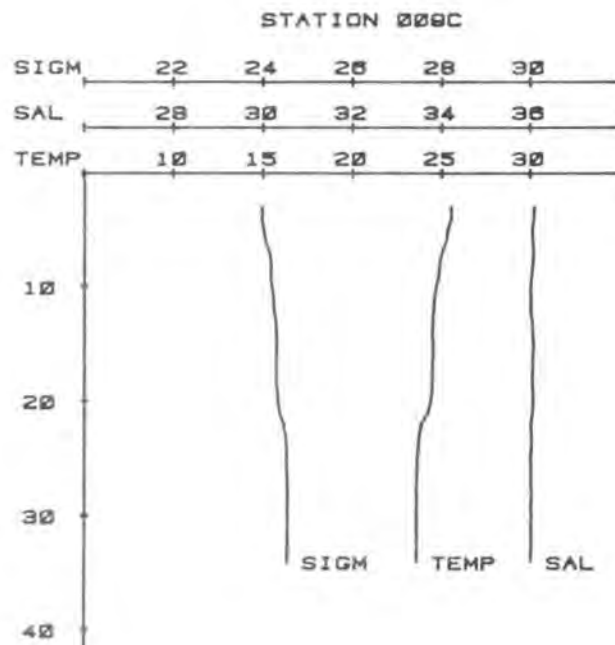


BLUE FIN CRUISE 38 STA 009C 26/ V/77 21.3 GNT CONSEC STA 9
LAT 31 38.2N LONG 80 8.7W DEPTH = 37M DIST LAST STA = 9.9KM

WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 3
WIND DIRECTION = 070 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1010.2 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	B	SVA	D2	D2'	ADU	P04	M03	SI
3.0	25.56	36.07	23.99	393	.	.	.	.	.	.
4.0	25.55	36.06	23.98	393	.	.	.	.	.	.
5.0	25.34	36.03	24.02	389	.	.	.	.	.	.
6.0	25.25	36.05	24.07	385	.	.	.	.	.	.
7.0	24.97	36.06	24.16	377	.	.	.	.	.	.
8.0	24.84	36.04	24.18	374	.	.	.	.	.	.
9.0	24.81	36.01	24.17	376	.	.	.	.	.	.
10.0	24.64	35.99	24.21	372	.	.	.	.	.	.
11.0	24.55	36.00	24.24	369	.	.	.	.	.	.
12.0	24.50	35.99	24.25	368	.	.	.	.	.	.
13.0	24.46	36.03	24.29	364	.	.	.	.	.	.
14.0	24.44	36.04	24.31	363	.	.	.	.	.	.
15.0	24.42	36.06	24.31	362	.	.	.	.	.	.
16.0	24.46	36.04	24.30	364	.	.	.	.	.	.
17.0	24.44	36.04	24.31	363	.	.	.	.	.	.
18.0	24.42	36.02	24.30	364	.	.	.	.	.	.
19.0	24.39	36.04	24.32	362	.	.	.	.	.	.
20.0	24.34	36.05	24.34	360	.	.	.	.	.	.
21.0	24.18	36.03	24.38	356	.	.	.	.	.	.
22.0	23.80	36.00	24.47	348	.	.	.	.	.	.
23.0	23.68	36.01	24.51	344	.	.	.	.	.	.
24.0	23.61	36.01	24.53	342	.	.	.	.	.	.
25.0	23.57	35.99	24.53	342	.	.	.	.	.	.
26.0	23.55	36.00	24.54	341	.	.	.	.	.	.
27.0	23.53	36.00	24.55	341	.	.	.	0.05	00.0	01.0
28.0	23.53	36.01	24.55	340	.	.	.	.	.	.
29.0	23.53	36.00	24.55	341	.	.	.	.	.	.
30.0	23.53	36.01	24.55	340	.	.	.	.	.	.
31.0	23.53	36.00	24.55	341	.	.	.	.	.	.
32.0	23.53	36.01	24.55	340	.	.	.	.	.	.
33.0	23.53	36.00	24.55	341	.	.	.	.	.	.
34.0	23.53	36.00	24.55	341	.	.	.	0.04	00.1	01.4



BLUE FIN CRUISE 38 STA 010C 26/ V/77 22.2 GMT CONSEC STA 10

LAT 31 36.4N LONG 80 3.3W DEPTH = 42M DIST LAST STA = 9.2KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 070

AIR TEMP = . C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1010.2 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

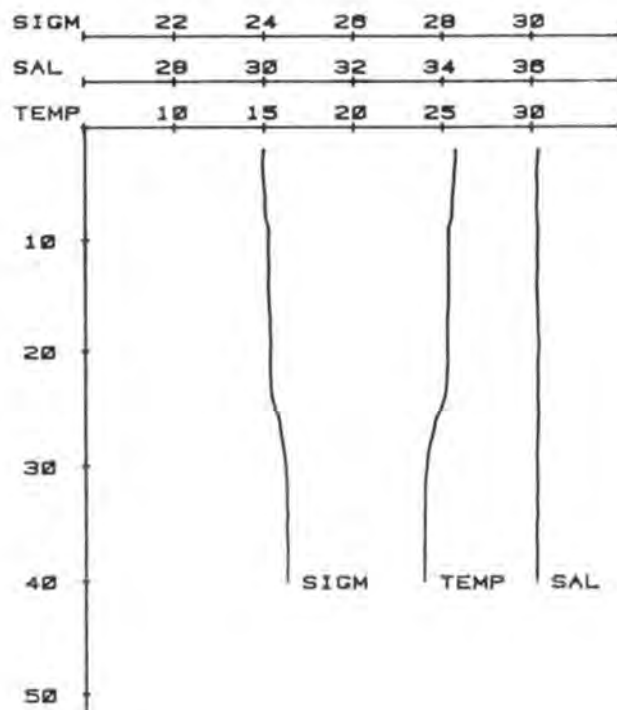
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	DZ	DZ"	AOU	PO4	NO3	SI
2.0	25.22	36.13	23.98	393	-	-	-	-	00.1	01.1
3.0	25.71	36.10	23.96	395	-	-	-	-	-	-
4.0	25.64	36.09	23.98	394	-	-	-	-	-	-
5.0	25.61	36.10	23.99	392	-	-	-	-	-	-
6.0	25.53	36.10	24.02	390	-	-	-	-	-	-
7.0	25.50	36.09	24.02	390	-	-	-	-	-	-
8.0	25.47	36.10	24.04	388	-	-	-	-	-	-
9.0	25.31	36.12	24.10	382	-	-	-	-	-	-
10.0	25.32	36.11	24.09	383	-	-	-	-	-	-
11.0	25.30	36.10	24.09	383	-	-	-	-	-	-
12.0	25.29	36.11	24.10	382	-	-	-	-	-	-
13.0	25.28	36.10	24.09	383	-	-	-	-	-	-
14.0	25.28	36.09	24.09	384	-	-	-	-	-	-
15.0	25.27	36.10	24.10	383	-	-	-	-	-	-
16.0	25.26	36.11	24.11	382	-	-	-	-	-	-
17.0	25.21	36.12	24.13	380	-	-	-	-	-	-
18.0	25.21	36.12	24.13	380	-	-	-	-	-	-
19.0	25.22	36.14	24.14	379	-	-	-	-	-	-
20.0	25.22	36.13	24.14	379	-	-	-	-	-	-
21.0	25.21	36.11	24.12	380	-	-	-	-	-	-
22.0	25.19	36.12	24.14	379	-	-	-	-	-	-
23.0	25.16	36.12	24.15	378	-	-	-	-	-	-
24.0	25.06	36.11	24.17	376	-	-	-	-	-	-
25.0	24.86	36.13	24.25	369	-	-	-	-	-	-
26.0	24.53	36.12	24.34	360	-	-	-	-	-	-
27.0	24.43	36.11	24.36	358	-	-	-	-	-	-
28.0	24.25	36.10	24.41	354	-	-	-	-	-	-
29.0	24.09	36.09	24.45	350	-	-	-	-	-	-
30.0	24.04	36.10	24.47	348	-	-	-	-	-	-
31.0	23.96	36.10	24.49	346	-	-	-	-	-	-
32.0	23.92	36.10	24.51	344	-	-	-	00.0	01.5	-
33.0	23.93	36.09	24.50	346	-	-	-	-	-	-
34.0	23.90	36.10	24.51	344	-	-	-	-	-	-
35.0	23.90	36.08	24.50	345	-	-	-	-	-	-
36.0	23.89	36.08	24.50	345	-	-	-	-	-	-
37.0	23.88	36.09	24.51	344	-	-	-	-	-	-
38.0	23.88	36.09	24.51	344	-	-	-	-	-	-
39.0	23.88	36.08	24.50	345	-	-	-	-	-	-
40.0	23.88	36.08	24.50	345	-	-	-	0.04	00.0	01.7

STATION 010C



BLUE FIN CRUISE 38 STA 011C 26/ V/77 23.3 GMT CONSEC STA 11

LAT 31 34.6N LONG 79 57.9W DEPTH = 43M DIST LAST STA = 9.2KM

WEATHER DATA

WIND SPEED * 08 KTS

WIND DIRECTION * 070

AIR TEMP * - C

WEATHER CODE * X1

BAROMETRIC PRESSURE * 1010.2 MB

SEA STATE * 3

WAVE DIRECTION *

CLOUD TYPE *

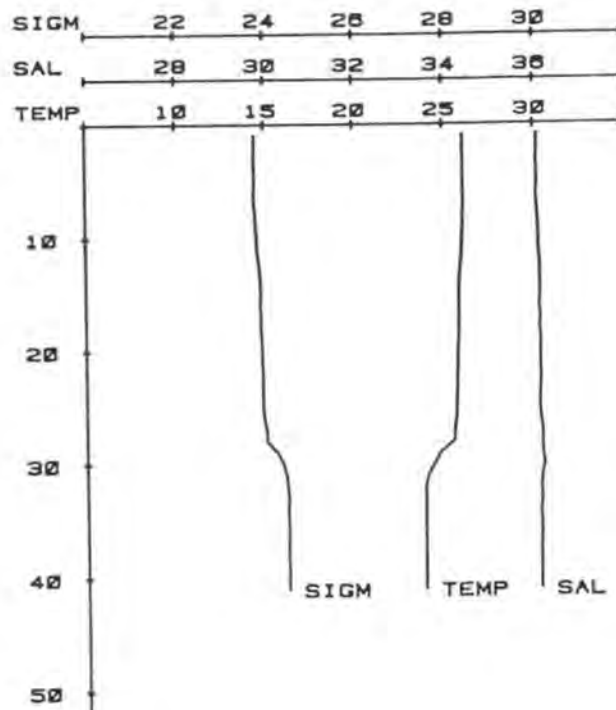
CLOUD AMOUNT *

VISIBILITY CODE *

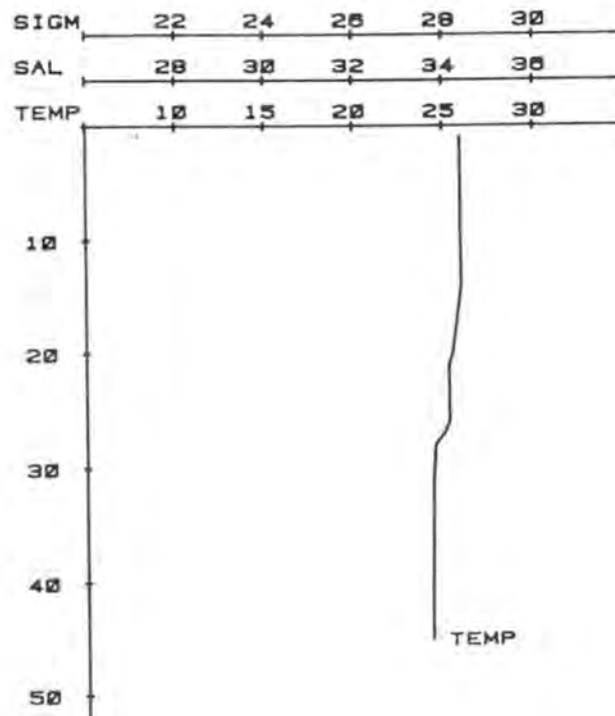
OBSERVATIONS

Z	T	S	D	SVA	02	02'	ADU	PD4	N03	SI
1.0	24.13	36.07	23.81	410	*	*	*	*	00.0	01.7
2.0	24.13	36.07	23.81	410	*	*	*	*	*	*
3.0	24.13	36.06	23.80	411	*	*	*	*	*	*
4.0	24.13	36.07	23.81	410	*	*	*	*	*	*
5.0	24.13	36.07	23.81	410	*	*	*	*	*	*
6.0	24.13	36.06	23.80	411	*	*	*	*	*	*
7.0	24.14	36.07	23.80	410	*	*	*	*	*	*
8.0	24.10	36.09	23.83	408	*	*	*	*	*	*
9.0	24.10	36.10	23.84	407	*	*	*	*	*	*
10.0	24.06	36.11	23.86	405	*	*	*	*	*	*
11.0	24.02	36.10	23.86	405	*	*	*	*	*	*
12.0	25.99	36.13	23.90	402	*	*	*	*	*	*
13.0	25.92	36.13	23.92	400	*	*	*	*	*	*
14.0	25.86	36.13	23.94	398	*	*	*	*	*	*
15.0	25.85	36.13	23.94	398	*	*	*	*	*	*
16.0	25.84	36.11	23.93	399	*	*	*	0.04	00.0	01.3
17.0	25.84	36.13	23.94	398	*	*	*	*	*	*
18.0	25.83	36.12	23.94	398	*	*	*	*	*	*
19.0	25.81	36.14	23.96	396	*	*	*	*	*	*
20.0	25.78	36.13	23.96	396	*	*	*	*	*	*
21.0	25.77	36.13	23.97	396	*	*	*	*	*	*
22.0	25.75	36.14	23.98	394	*	*	*	*	*	*
23.0	25.73	36.13	23.98	394	*	*	*	*	*	*
24.0	25.70	36.12	23.98	394	*	*	*	*	*	*
25.0	25.68	36.11	23.98	395	*	*	*	*	*	*
26.0	25.66	36.14	24.01	392	*	*	*	*	*	*
27.0	25.57	36.17	24.06	387	*	*	*	*	*	*
28.0	25.55	36.17	24.06	386	*	*	*	*	*	*
29.0	24.77	36.17	24.30	364	*	*	*	*	*	*
30.0	24.45	36.21	24.43	352	*	*	*	*	*	*
31.0	24.07	36.15	24.50	345	*	*	*	*	*	*
32.0	23.92	36.13	24.53	342	*	*	*	*	*	*
33.0	23.92	36.15	24.54	341	*	*	*	*	*	*
34.0	23.91	36.12	24.52	343	*	*	*	0.05	00.0	01.3
35.0	23.90	36.13	24.53	342	*	*	*	*	*	*
36.0	23.90	36.13	24.53	342	*	*	*	*	*	*
37.0	23.90	36.12	24.53	343	*	*	*	*	*	*
38.0	23.90	36.12	24.53	343	*	*	*	*	*	*
39.0	23.89	36.12	24.53	342	*	*	*	*	*	*
40.0	23.89	36.11	24.52	343	*	*	*	*	*	*
41.0	23.89	36.12	24.53	343	*	*	*	0.04	00.1	01.8

STATION 011C



STATION 012X



BLUE FIN CRUISE 38 STA 012I 27/ V/77 1.4 GMT CONSEC STA 12

LAT 31 33.0N LONG 79 52.3W DEPTH = 45M DIST LAST STA = 9.0KM

WEATHER DATA

WIND SPEED * 08 KTS

WIND DIRECTION * 070

AIR TEMP * - C

WEATHER CODE * X1

BAROMETRIC PRESSURE * 1010.2 MB

SEA STATE * 3

WAVE DIRECTION *

CLOUD TYPE *

CLOUD AMOUNT *

VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	02	02'	ADU	PD4	N03	SI
1.0	24.00	36.15	23.91	400	*	*	*	*	00.0	01.3
14.5	24.00	*	*	*	*	*	*	*	*	*
20.5	25.50	*	*	*	*	*	*	*	*	*
21.5	25.30	*	*	*	*	*	*	*	*	*
24.5	25.30	*	*	*	*	*	*	*	*	*
27.0	25.00	*	*	*	*	*	*	*	*	*
28.0	24.50	*	*	*	*	*	*	*	*	*
31.0	24.40	36.17	24.42	353	*	*	*	*	00.0	01.5
42.0	24.30	36.17	24.45	351	*	*	*	0.07	00.1	01.6
45.0	24.30	*	*	*	*	*	*	*	*	*

BLUE FIN CRUISE 38 STA 013X 27/ V/77 2.4 GMT CONSEC STA 13

LAT 31 31.3N LONG 79 47.0W DEPTH = 53M DIST LAST STA = 9.2KM

WEATHER DATA

WIND SPEED = 08 KTS

WIND DIRECTION = 070

AIR TEMP * , C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1010.2 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

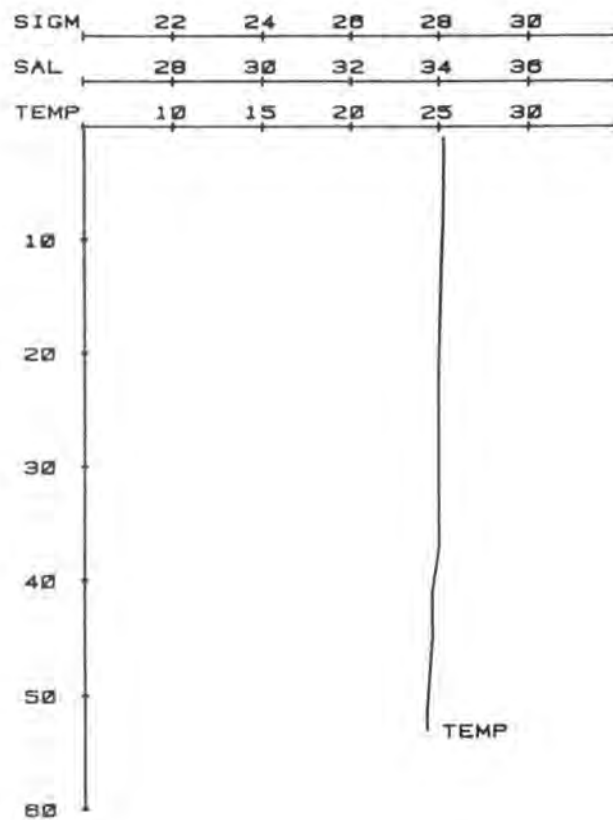
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	P04	NO3	SI
1.0	25.30	*	*	*	*	*	*	*	*	*
9.0	25.20	*	*	*	*	*	*	*	*	*
12.0	25.10	*	*	*	*	*	*	*	*	*
17.0	25.00	*	*	*	*	*	*	*	*	*
22.0	24.90	*	*	*	*	*	*	*	*	*
37.0	24.90	*	*	*	*	*	*	*	*	*
41.0	24.50	*	*	*	*	*	*	*	*	*
45.0	24.50	*	*	*	*	*	*	*	*	*
47.0	24.40	*	*	*	*	*	*	*	*	*
51.0	24.20	*	*	*	*	*	*	*	*	*
53.0	24.20	*	*	*	*	*	*	*	*	*

STATION 013X



BLUE FIN CRUISE 38 STA 013C 27/ 9/77 2.8 GRT CONSEC STA 14

LAT 31 31.3N LONG 79 47.0W DEPTH = 34M DIST LAST STA = 0.0KM

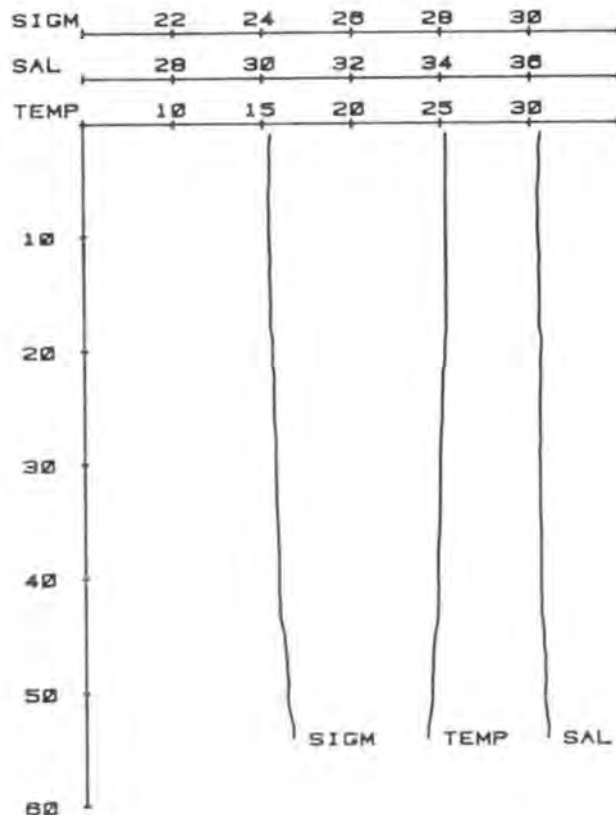
WEATHER DATA

WIND SPEED = 08 KTS SEA STATE = 3
WIND DIRECTION = 070 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1010.2 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	Q2	Q2"	ADU	PD4	HD3	SI
1.0	25.28	36.22	24.19	374	.	.	.	0.05	00.0	01.1
2.0	25.28	36.18	24.16	377	.	.	.	.	.	.
3.0	25.28	36.19	24.16	376	.	.	.	.	.	.
4.0	25.28	36.19	24.16	376	.	.	.	.	.	.
5.0	25.26	36.18	24.16	376	.	.	.	.	.	.
6.0	25.26	36.15	24.14	378	.	.	.	.	.	.
7.0	25.26	36.16	24.15	378	.	.	.	.	.	.
8.0	25.26	36.17	24.15	377	.	.	.	.	.	.
9.0	25.26	36.16	24.15	378	.	.	.	.	.	.
10.0	25.26	36.17	24.15	377	.	.	.	.	.	.
11.0	25.26	36.18	24.16	377	.	.	.	.	.	.
12.0	25.26	36.20	24.18	375	.	.	.	.	.	.
13.0	25.26	36.18	24.16	377	.	.	.	.	.	.
14.0	25.26	36.19	24.17	376	.	.	.	.	.	.
15.0	25.24	36.19	24.18	375	.	.	.	.	.	.
16.0	25.24	36.19	24.18	375	.	.	.	.	.	.
17.0	25.24	36.18	24.17	376	.	.	.	.	.	.
18.0	25.24	36.18	24.17	376	.	.	.	.	.	.
19.0	25.19	36.23	24.22	371	.	.	.	.	.	.
20.0	25.17	36.22	24.22	371	.	.	.	.	.	.
21.0	25.15	36.20	24.21	372	.	.	.	.	.	.
22.0	25.04	36.21	24.25	368	.	.	.	.	.	.
23.0	25.04	36.20	24.24	369	.	.	.	.	.	.
24.0	25.00	36.19	24.25	369	.	.	.	.	.	.
25.0	24.99	36.19	24.25	368	.	.	.	.	.	.
26.0	24.98	36.19	24.25	368	.	.	.	.	.	.
27.0	24.93	36.19	24.27	367	.	.	.	.	.	.
28.0	24.90	36.20	24.29	365	.	.	.	.	.	.
29.0	24.88	36.18	24.28	366	.	.	.	.	.	.
30.0	24.87	36.19	24.29	365	.	.	.	.	.	.
31.0	24.87	36.19	24.29	365	.	.	.	.	.	.
32.0	24.86	36.19	24.29	365	.	.	.	.	.	.
33.0	24.85	36.19	24.29	365	.	.	.	.	.	.
34.0	24.83	36.19	24.30	364	.	.	.	.	.	.
35.0	24.82	36.20	24.31	363	.	.	.	.	.	.
36.0	24.79	36.21	24.33	362	.	.	.	.	.	.
37.0	24.75	36.20	24.33	361	.	.	.	.	.	.
38.0	24.72	36.20	24.34	360	.	.	.	.	.	.
39.0	24.72	36.20	24.34	360	.	.	.	.	.	.
40.0	24.72	36.20	24.34	361	.	.	.	.	.	.
41.0	24.74	36.20	24.34	361	.	.	.	0.04	00.0	01.3
42.0	24.71	36.21	24.35	360	.	.	.	.	.	.
43.0	24.70	36.20	24.35	360	.	.	.	.	.	.
44.0	24.66	36.24	24.39	358	.	.	.	.	.	.
45.0	24.51	36.24	24.45	350	.	.	.	.	.	.
46.0	24.45	36.26	24.47	349	.	.	.	.	.	.
47.0	24.41	36.29	24.50	345	.	.	.	.	.	.
48.0	24.39	36.28	24.50	346	.	.	.	.	.	.
49.0	24.34	36.30	24.53	343	.	.	.	.	.	.
50.0	24.34	36.27	24.51	345	.	.	.	.	.	.
51.0	24.32	36.28	24.52	344	.	.	.	.	.	.
52.0	24.21	36.31	24.58	338	.	.	.	.	.	.
53.0	24.10	36.35	24.64	332	.	.	.	0.00	00.2	01.5
54.0	24.06	36.33	24.64	333	.	.	.	.	.	.

STATION 013C



BLUE FIN CRUISE 38 STA 014C 27/ V/77 3.7 GMT CONSEC STA 15

LAT 31 29.7N LONG 79 41.9W DEPTH = 75M DIST LAST STA = 8.6KM

WEATHER DATA

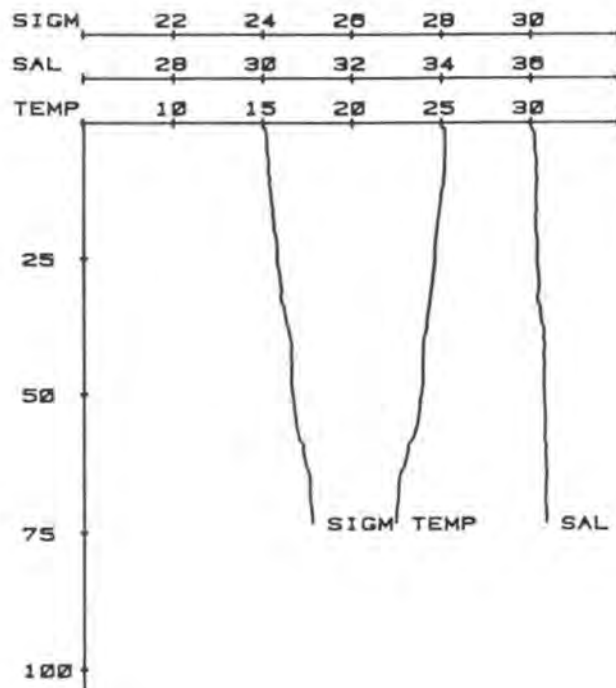
WIND SPEED * 08 KTS
WIND DIRECTION * 070
AIR TEMP * . C
WEATHER CODE * X1
BAROMETRIC PRESSURE * 1010.5 MB

SEA STATE * 3
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	25.19	36.01	24.05	386	.	.	.	.	.	.
2.0	25.20	36.07	24.10	382	.	.	.	0.15	00.0	00.9
3.0	25.20	36.07	24.10	382	.	.	.	.	.	.
4.0	25.20	36.08	24.10	382	.	.	.	.	.	.
5.0	25.20	36.08	24.10	382	.	.	.	.	.	.
6.0	25.19	36.10	24.12	380	.	.	.	.	.	.
7.0	25.18	36.12	24.14	378	.	.	.	.	.	.
8.0	25.17	36.11	24.14	379	.	.	.	.	.	.
9.0	25.16	36.10	24.13	379	.	.	.	.	.	.
10.0	25.11	36.13	24.17	376	.	.	.	.	.	.
11.0	25.12	36.11	24.15	377	.	.	.	.	.	.
12.0	25.04	36.11	24.18	375	.	.	.	.	.	.
13.0	24.95	36.10	24.20	373	.	.	.	.	.	.
14.0	24.94	36.10	24.20	373	.	.	.	.	.	.
15.0	24.90	36.11	24.22	371	.	.	.	.	.	.
16.0	24.85	36.12	24.24	369	.	.	.	.	.	.
17.0	24.82	36.09	24.23	370	.	.	.	.	.	.
18.0	24.75	36.10	24.26	368	.	.	.	.	.	.
19.0	24.74	36.10	24.26	367	.	.	.	.	.	.
20.0	24.71	36.10	24.27	367	.	.	.	.	.	.
21.0	24.64	36.13	24.31	362	.	.	.	.	.	.
22.0	24.62	36.14	24.33	361	.	.	.	.	.	.
23.0	24.59	36.14	24.34	360	.	.	.	.	.	.
24.0	24.59	36.13	24.33	361	.	.	.	.	.	.
25.0	24.58	36.13	24.33	361	.	.	.	.	.	.
26.0	24.56	36.13	24.34	360	.	.	.	.	.	.
27.0	24.52	36.15	24.36	358	.	.	.	.	.	.
28.0	24.47	36.16	24.39	356	.	.	.	.	.	.
29.0	24.47	36.17	24.39	355	.	.	.	.	.	.
30.0	24.41	36.17	24.41	353	.	.	.	.	.	.
31.0	24.36	36.17	24.43	352	.	.	.	.	.	.
32.0	24.34	36.13	24.40	354	.	.	.	.	.	.
33.0	24.29	36.13	24.42	353	.	.	.	.	.	.
34.0	24.26	36.20	24.48	347	.	.	.	.	.	.
35.0	24.21	36.20	24.50	346	.	.	.	.	.	.
36.0	24.15	36.21	24.52	343	.	.	.	.	.	.
37.0	24.14	36.22	24.53	342	.	.	.	.	.	.
38.0	24.12	36.28	24.58	337	.	.	.	.	.	.
39.0	24.04	36.28	24.61	335	.	.	.	.	.	.
40.0	23.95	36.27	24.63	333	.	.	.	.	.	.
41.0	23.93	36.30	24.65	331	.	.	.	.	.	.
42.0	23.93	36.28	24.64	332	.	.	.	.	.	.
43.0	23.91	36.27	24.64	332	.	.	.	.	.	.
44.0	23.91	36.29	24.65	331	.	.	.	.	.	.
45.0	23.91	36.28	24.65	332	.	.	.	0.04	00.1	01.3
46.0	23.91	36.28	24.65	332	.	.	.	.	.	.
47.0	23.91	36.28	24.65	332	.	.	.	.	.	.
48.0	23.91	36.28	24.65	332	.	.	.	.	.	.
49.0	23.86	36.28	24.66	331	.	.	.	.	.	.
50.0	23.83	36.29	24.68	329	.	.	.	.	.	.
51.0	23.75	36.29	24.70	327	.	.	.	.	.	.
52.0	23.74	36.30	24.71	326	.	.	.	.	.	.
53.0	23.72	36.31	24.72	325	.	.	.	.	.	.
54.0	23.66	36.31	24.74	323	.	.	.	.	.	.
55.0	23.62	36.31	24.75	322	.	.	.	.	.	.
56.0	23.54	36.30	24.77	320	.	.	.	.	.	.
57.0	23.45	36.31	24.80	317	.	.	.	.	.	.
58.0	23.34	36.29	24.82	316	.	.	.	.	.	.
59.0	23.10	36.33	24.92	306	.	.	.	.	.	.
60.0	23.09	36.32	24.92	307	.	.	.	.	.	.
61.0	23.02	36.32	24.94	305	.	.	.	.	.	.
62.0	22.94	36.33	24.97	302	.	.	.	.	.	.
63.0	22.87	36.33	24.99	300	.	.	.	.	.	.
64.0	22.67	36.34	25.05	294	.	.	.	.	.	.
65.0	22.60	36.33	25.07	292	.	.	.	.	.	.
66.0	22.55	36.32	25.07	292	.	.	.	.	.	.
67.0	22.55	36.32	25.07	292	.	.	.	.	.	.
68.0	22.54	36.32	25.08	292	.	.	.	.	.	.
69.0	22.52	36.31	25.07	292	.	.	.	.	.	.
70.0	22.48	36.33	25.10	289	.	.	.	.	.	.
71.0	22.43	36.33	25.11	288	.	.	.	.	.	.
72.0	22.42	36.34	25.12	287	.	.	.	.	.	.
73.0	22.40	36.33	25.12	287	.	.	.	0.12	01.7	01.5

STATION 014C



BLUE FIN CRUISE 38 STA 015X 27/ V/77 S.1 GMT CONSEC STA 14
 LAT 31 27.9N LONG 79 35.8W DEPTH =219M DIST LAST STA = 10.2KM

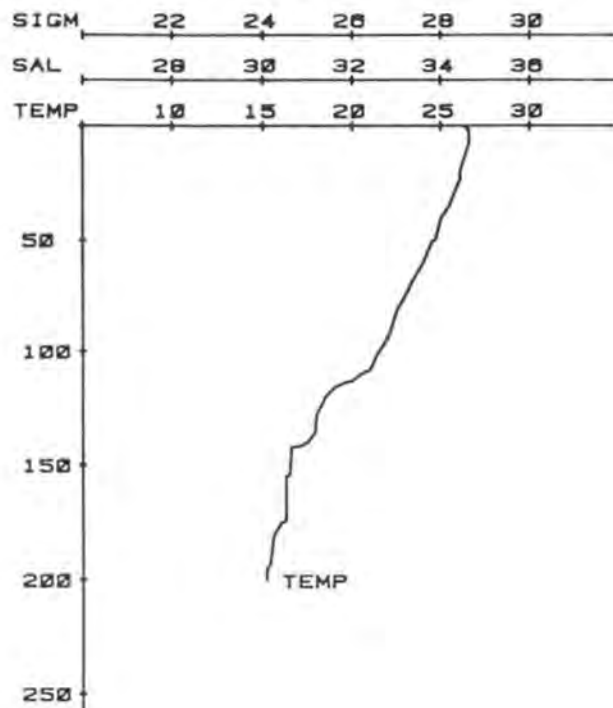
WEATHER DATA

WIND SPEED * 27 KTS SEA STATE * 3
 WIND DIRECTION * VARIABLE WAVE DIRECTION *
 AIR TEMP * . C CLOUD TYPE *
 WEATHER CODE * X9 CLOUD AMOUNT *
 BAROMETRIC PRESSURE * 1010.2 MB VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	D2	D2'	AOU	PD4	NO3	SI
1.0	26.50	35.58	23.32	456	*	*	*	*	*	*
2.0	26.60	*	*	*	*	*	*	*	*	*
8.5	26.60	*	*	*	*	*	*	*	*	*
10.0	26.50	*	*	*	*	*	*	*	*	*
20.0	26.10	*	*	*	*	*	*	*	*	*
24.0	26.10	*	*	*	*	*	*	*	*	*
25.0	26.00	*	*	*	*	*	*	*	*	*
35.0	25.50	*	*	*	*	*	*	*	*	*
41.0	25.00	*	*	*	*	*	*	*	*	*
50.0	24.70	*	*	*	*	*	*	*	*	*
51.0	24.50	*	*	*	*	*	*	*	*	*
60.0	24.00	*	*	*	*	*	*	*	*	*
67.0	23.50	*	*	*	*	*	*	*	*	*
75.0	23.00	*	*	*	*	*	*	*	*	*
82.5	22.50	*	*	*	*	*	*	*	*	*
94.0	22.00	*	*	*	*	*	*	*	*	*
100.0	21.50	*	*	*	*	*	*	*	*	*
101.0	21.40	*	*	*	*	*	*	*	*	*
108.0	21.00	*	*	*	*	*	*	*	*	*
110.0	20.50	*	*	*	*	*	*	*	*	*
113.5	20.00	*	*	*	*	*	*	*	*	*
114.5	19.50	*	*	*	*	*	*	*	*	*
116.0	19.00	*	*	*	*	*	*	*	*	*
120.0	18.50	*	*	*	*	*	*	*	*	*
128.0	18.00	*	*	*	*	*	*	*	*	*
136.0	17.90	*	*	*	*	*	*	*	*	*
140.0	17.50	*	*	*	*	*	*	*	*	*
142.0	17.00	*	*	*	*	*	*	*	*	*
142.5	16.60	*	*	*	*	*	*	*	*	*
154.0	16.50	*	*	*	*	*	*	*	*	*
155.0	16.30	*	*	*	*	*	*	*	*	*
174.0	16.30	*	*	*	*	*	*	*	*	*
175.0	16.00	*	*	*	*	*	*	*	*	*
180.0	15.60	*	*	*	*	*	*	*	*	*
185.0	15.50	*	*	*	*	*	*	*	*	*
193.0	15.40	*	*	*	*	*	*	*	*	*
195.0	15.20	*	*	*	*	*	*	*	*	*
200.0	15.20	*	*	*	*	*	*	*	*	*

STATION 015X



BF-57-77

13-14 September 1977

STATION SUMMARY FOR BLUE FIN CRUISE 57

CRUISE	STATION	LATITUDE		LONGITUDE		YR	MM	DY	HOUR	DEPTH	CONSEC
									GMT	M	NUMBER
057	1C	31	7.4N	81	1.8W	77	9	13	19.7	15	1
057	2C	31	5.9N	80	55.6W	77	9	13	20.9	18	2
057	3C	31	3.7N	80	50.0W	77	9	13	22.0	19	3
057	4C	31	1.8N	80	43.6W	77	9	13	23.1	25	4
057	5C	31	0.0N	80	38.0W	77	9	14	.1	29	5
057	6C	30	58.0N	80	32.0W	77	9	14	1.0	32	6
057	7C	30	56.4N	80	26.2W	77	9	14	1.8	35	7
057	8C	30	54.9N	80	20.4W	77	9	14	2.6	35	8
057	9C	30	52.1N	80	15.2W	77	9	14	3.5	41	9
057	10C	30	50.9N	80	8.7W	77	9	14	4.3	44	10
057	11C	30	49.0N	80	3.4W	77	9	14	5.1	96	11
057	12C	30	47.2N	79	57.7W	77	9	14	6.5	207	12
057	13X	31	10.2N	79	51.6W	77	9	14	9.6	85	13
057	14X	31	24.0N	79	43.4W	77	9	14	11.5	115	14
057	15C	31	32.4N	79	31.8W	77	9	14	12.7	188	15
057	16C	31	34.2N	79	37.3W	77	9	14	14.0	109	16
057	17X	31	35.9N	79	43.5W	77	9	14	16.2	58	17
057	18X	31	37.4N	79	49.5W	77	9	14	17.4	47	18
057	19X	31	39.2N	79	55.6W	77	9	14	18.4	42	19
057	20X	31	40.9N	80	1.2W	77	9	14	19.5	39	20
057	21X	31	42.4N	80	7.0W	77	9	14	20.3	33	21
057	22X	31	44.1N	80	13.4W	77	9	14	21.1	28	22
057	23X	31	45.6N	80	19.2W	77	9	14	21.7	21	23
057	24X	31	47.4N	80	25.0W	77	9	14	22.4	20	24
057	25X	31	48.9N	80	30.8W	77	9	14	23.0	19	25
057	26X	31	50.7N	80	37.1W	77	9	14	23.6	19	26

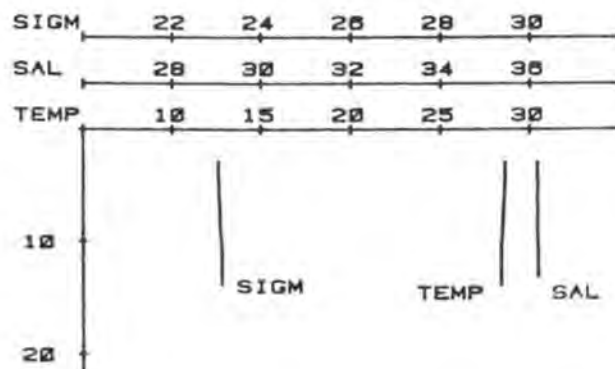
BLUE FIN CRUISE 57 STA 1C 13/ 1X/77 19.7 GRT CONSEC STA 1
LAT 31 7.4N LONG 81 1.8W DEPTH = 15M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED = 10 KTS SEA STATE = 2
WIND DIRECTION = 090 WAVE DIRECTION =
AIR TEMP = 26.6 C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1018.6 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	ADU	PO4	NO3	SI
3.0	28.62	36.16	23.07	480	-	-	-	0.17	00.0	00.2
4.0	28.62	36.16	23.07	481	-	-	-	-	-	-
5.0	28.59	36.17	23.09	479	-	-	-	-	-	-
6.0	28.56	36.18	23.09	479	-	-	-	-	-	-
7.0	28.52	36.17	23.11	477	-	-	-	-	-	-
8.0	28.50	36.17	23.12	476	-	-	-	-	-	-
9.0	28.48	36.17	23.12	476	-	-	-	-	-	-
10.0	28.41	36.18	23.15	473	-	-	-	-	-	-
11.0	28.40	36.19	23.16	472	-	-	-	-	-	-
12.0	28.40	36.19	23.16	472	-	-	-	-	-	-
13.0	28.40	36.19	23.16	472	-	-	-	0.20	00.1	00.4
14.0	28.40	36.19	23.16	472	-	-	-	-	-	-

STATION 001C



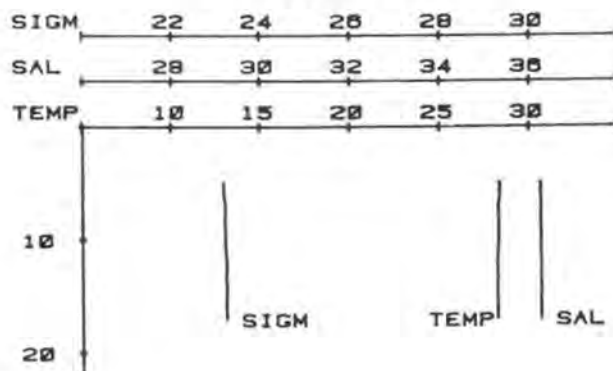
BLUE FIN CRUISE 57 STA 2C 13/ 1X/77 20.9 GRT CONSEC STA 2
LAT 31 5.9N LONG 80 55.6W DEPTH = 18M DIST LAST STA = 10.2KM

WEATHER DATA

WIND SPEED = 10 KTS SEA STATE = 2
WIND DIRECTION = 090 WAVE DIRECTION =
AIR TEMP = 28.4 C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1018.6 MB VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	ADU	PO4	NO3	SI
3.0	28.40	36.25	23.21	467	-	-	-	0.09	00.0	00.2
4.0	28.40	36.25	23.21	467	-	-	-	-	-	-
5.0	28.39	36.25	23.21	467	-	-	-	-	-	-
6.0	28.36	36.25	23.22	466	-	-	-	-	-	-
7.0	28.29	36.26	23.25	463	-	-	-	-	-	-
8.0	28.30	36.25	23.24	464	-	-	-	-	-	-
9.0	28.29	36.26	23.25	463	-	-	-	-	-	-
10.0	28.29	36.26	23.25	463	-	-	-	-	-	-
11.0	28.26	36.26	23.26	462	-	-	-	-	-	-
12.0	28.22	36.27	23.28	460	-	-	-	-	-	-
13.0	28.24	36.28	23.27	462	-	-	-	-	-	-
14.0	28.22	36.27	23.28	460	-	-	-	-	-	-
15.0	28.22	36.26	23.28	461	-	-	-	0.12	00.0	00.4
16.0	28.22	36.26	23.28	461	-	-	-	-	-	-
17.0	28.22	36.26	23.28	461	-	-	-	-	-	-

STATION 002C



BLUE FIN CRUISE 57 STA 3C 13/ 1X/77 22.0 GMT CONSEC STA 3

LAT 31 3.7N LONG 80 50.0W DEPTH = 19M DIST LAST STA = 9.8NM

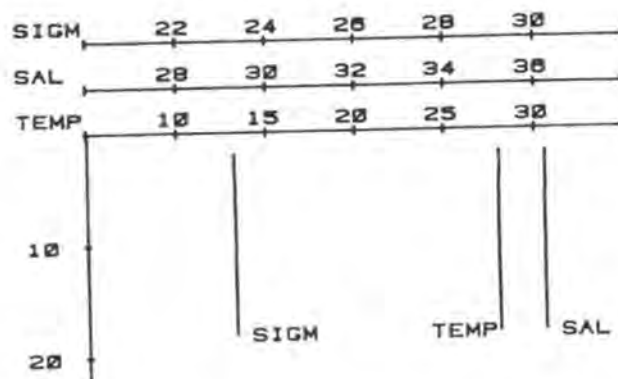
WEATHER DATA

WIND SPEED = 10 KTS
WIND DIRECTION = 090
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	O2	O2'	AQU	PO4	NO3	SI
2.0	28.09	36.22	23.29	459	-	-	-	0.09	00.0	00.3
3.0	28.09	36.22	23.29	459	-	-	-	-	-	-
4.0	28.06	36.22	23.30	458	-	-	-	-	-	-
5.0	28.03	36.22	23.31	458	-	-	-	-	-	-
6.0	28.03	36.21	23.30	458	-	-	-	-	-	-
7.0	28.01	36.21	23.31	458	-	-	-	-	-	-
8.0	28.01	36.21	23.31	458	-	-	-	-	-	-
9.0	28.01	36.21	23.31	458	-	-	-	-	-	-
10.0	28.01	36.22	23.32	457	-	-	-	-	-	-
11.0	28.01	36.21	23.31	458	-	-	-	-	-	-
12.0	28.00	36.21	23.31	458	-	-	-	-	-	-
13.0	28.00	36.21	23.31	458	-	-	-	-	-	-
14.0	28.00	36.21	23.31	458	-	-	-	-	-	-
15.0	28.00	36.21	23.31	458	-	-	-	-	-	-
16.0	28.00	36.21	23.31	458	-	-	-	-	-	-
17.0	28.00	36.21	23.31	458	-	-	-	-	-	-
18.0	28.00	36.21	23.31	458	-	-	-	0.11	00.0	00.6

STATION 003C



BLUE FIN CRUISE 57 STA 4C 13/ 1X/77 23.1 GMT CONSEC STA 4

LAT 31 1.8N LONG 80 43.6W DEPTH = 25M DIST LAST STA = 10.8NM

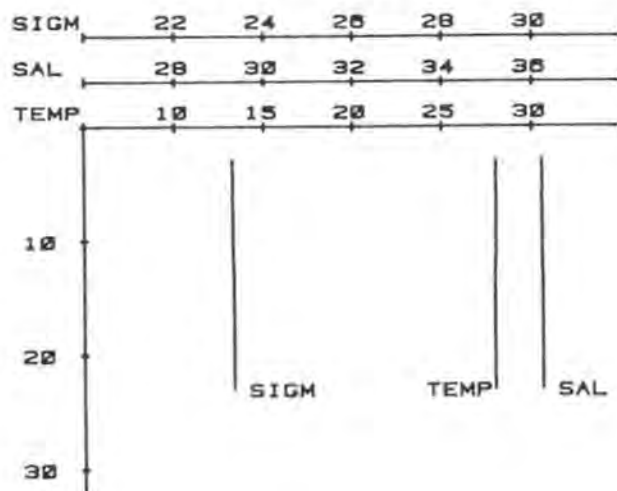
WEATHER DATA

WIND SPEED = 10 KTS
WIND DIRECTION = 090
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.4 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	O2	O2'	AQU	PO4	NO3	SI
3.0	27.00	36.21	23.31	457	-	-	-	0.08	00.1	00.8
4.0	27.98	36.21	23.32	457	-	-	-	-	-	-
5.0	27.98	36.21	23.32	457	-	-	-	-	-	-
6.0	27.99	36.20	23.31	458	-	-	-	-	-	-
7.0	27.98	36.21	23.32	457	-	-	-	-	-	-
8.0	27.98	36.21	23.32	457	-	-	-	-	-	-
9.0	27.97	36.21	23.32	457	-	-	-	-	-	-
10.0	27.97	36.21	23.32	457	-	-	-	-	-	-
11.0	27.96	36.21	23.32	458	-	-	-	-	-	-
12.0	27.94	36.21	23.33	454	-	-	-	-	-	-
13.0	27.92	36.22	23.35	454	-	-	-	-	-	-
14.0	27.92	36.22	23.35	454	-	-	-	-	-	-
15.0	27.92	36.22	23.35	455	-	-	-	-	-	-
16.0	27.91	36.22	23.35	454	-	-	-	-	-	-
17.0	27.91	36.22	23.35	454	-	-	-	-	-	-
18.0	27.91	36.22	23.35	454	-	-	-	-	-	-
19.0	27.91	36.22	23.35	454	-	-	-	-	-	-
20.0	27.91	36.22	23.35	454	-	-	-	-	-	-
21.0	27.91	36.22	23.35	454	-	-	-	0.06	00.3	01.5
22.0	27.91	36.22	23.35	455	-	-	-	-	-	-
23.0	27.91	36.22	23.35	455	-	-	-	-	-	-

STATION 004C



BLUE FIN CRUISE 57 STA 5C 14/ 1X/77 .1 GMT CONSEC STA 5

LAT 31 0.0N LONG 80 38.0W DEPTH = 29M DIST LAST STA = 9.5KM

WEATHER DATA

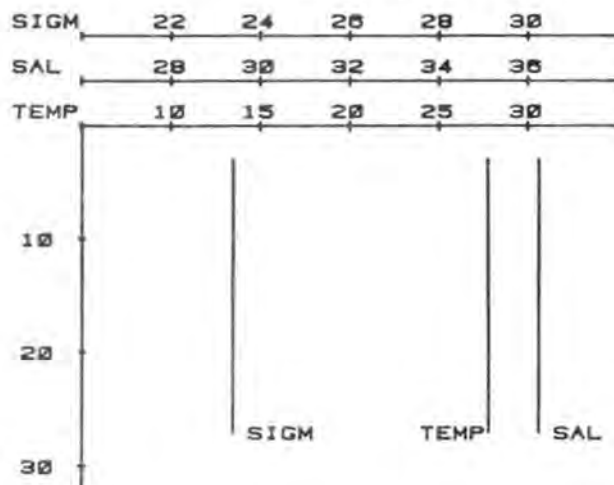
WIND SPEED = 8 KTS
WIND DIRECTION = 090
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.6 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	ADU	PO4	NO3	SI
3.0	27.78	36.24	23.41	448	-	-	-	0.07	00.0	00.8
4.0	27.78	36.24	23.41	448	-	-	-	-	-	-
5.0	27.78	36.24	23.41	448	-	-	-	-	-	-
6.0	27.78	36.24	23.41	448	-	-	-	-	-	-
7.0	27.78	36.24	23.41	448	-	-	-	-	-	-
8.0	27.78	36.24	23.41	448	-	-	-	-	-	-
9.0	27.78	36.24	23.41	448	-	-	-	-	-	-
10.0	27.78	36.24	23.41	449	-	-	-	-	-	-
11.0	27.78	36.24	23.41	449	-	-	-	-	-	-
12.0	27.78	36.24	23.41	449	-	-	-	-	-	-
13.0	27.78	36.23	23.40	449	-	-	-	-	-	-
14.0	27.78	36.23	23.40	449	-	-	-	-	-	-
15.0	27.78	36.23	23.40	449	-	-	-	-	-	-
16.0	27.78	36.23	23.40	449	-	-	-	-	-	-
17.0	27.78	36.23	23.40	450	-	-	-	-	-	-
18.0	27.78	36.23	23.40	450	-	-	-	-	-	-
19.0	27.78	36.23	23.40	450	-	-	-	-	-	-
20.0	27.78	36.23	23.40	450	-	-	-	-	-	-
21.0	27.78	36.23	23.40	450	-	-	-	-	-	-
22.0	27.78	36.23	23.40	450	-	-	-	-	-	-
23.0	27.78	36.23	23.40	450	-	-	-	-	-	-
24.0	27.78	36.23	23.40	450	-	-	-	-	-	-
25.0	27.78	36.23	23.40	450	-	-	-	-	-	-
26.0	27.78	36.23	23.40	450	-	-	-	0.07	00.0	00.8
27.0	27.78	36.23	23.40	450	-	-	-	-	-	-

STATION 005C



BLUE FIN CRUISE 57 STA 6C 14/ 1X/77 1.0 GMT CONSEC STA 6

LAT 30 58.0N LONG 80 32.0W DEPTH = 32M DIST LAST STA = 10.2KM

WEATHER DATA

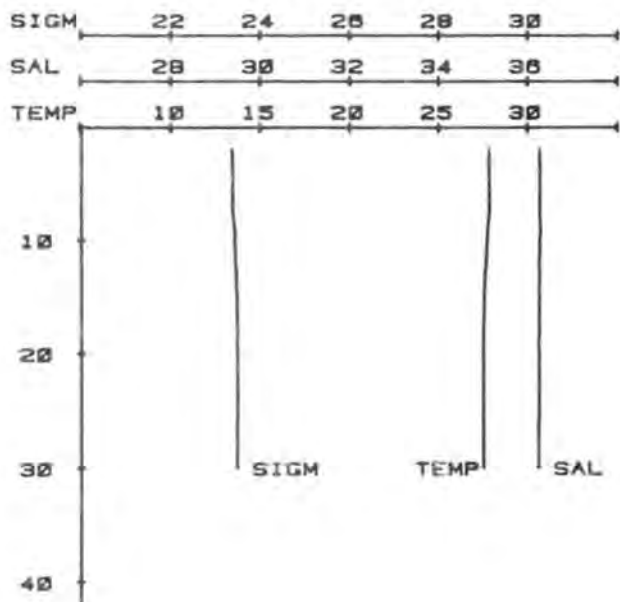
WIND SPEED = 11 KTS
WIND DIRECTION = 110
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	ADU	PO4	NO3	SI
2.0	27.88	36.26	23.39	450	-	-	-	0.09	00.0	00.6
3.0	27.87	36.27	23.40	449	-	-	-	-	-	-
4.0	27.87	36.27	23.40	449	-	-	-	-	-	-
5.0	27.87	36.27	23.40	449	-	-	-	-	-	-
6.0	27.87	36.27	23.40	449	-	-	-	-	-	-
7.0	27.87	36.26	23.39	450	-	-	-	-	-	-
8.0	27.82	36.27	23.42	448	-	-	-	-	-	-
9.0	27.76	36.28	23.44	445	-	-	-	-	-	-
10.0	27.73	36.28	23.44	446	-	-	-	-	-	-
11.0	27.68	36.26	23.45	444	-	-	-	-	-	-
12.0	27.66	36.25	23.45	444	-	-	-	-	-	-
13.0	27.60	36.26	23.48	442	-	-	-	-	-	-
14.0	27.58	36.25	23.48	442	-	-	-	-	-	-
15.0	27.54	36.25	23.49	441	-	-	-	-	-	-
16.0	27.53	36.25	23.50	440	-	-	-	-	-	-
17.0	27.52	36.25	23.50	440	-	-	-	-	-	-
18.0	27.50	36.25	23.51	439	-	-	-	-	-	-
19.0	27.50	36.24	23.50	440	-	-	-	-	-	-
20.0	27.50	36.25	23.51	439	-	-	-	-	-	-
21.0	27.50	36.25	23.51	440	-	-	-	-	-	-
22.0	27.50	36.25	23.51	440	-	-	-	-	-	-
23.0	27.50	36.25	23.51	440	-	-	-	-	-	-
24.0	27.50	36.25	23.51	440	-	-	-	-	-	-
25.0	27.50	36.25	23.51	440	-	-	-	-	-	-
26.0	27.50	36.24	23.50	440	-	-	-	-	-	-
27.0	27.50	36.24	23.50	441	-	-	-	0.08	00.2	01.3
28.0	27.50	36.24	23.50	441	-	-	-	-	-	-
29.0	27.50	36.24	23.50	441	-	-	-	-	-	-
30.0	27.49	36.24	23.50	440	-	-	-	-	-	-

STATION 006C



BLUE FIN CRUISE 57 STA 7C 14/ 1X/77 1.8 GMT CONSEC STA 7

LAT 30 56.4N LONG 80 26.2W DEPTH = 35M DIST LAST STA = 9.7KM

WEATHER DATA

WIND SPEED = 11 KTS

WIND DIRECTION = 110

AIR TEMP = 1. C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

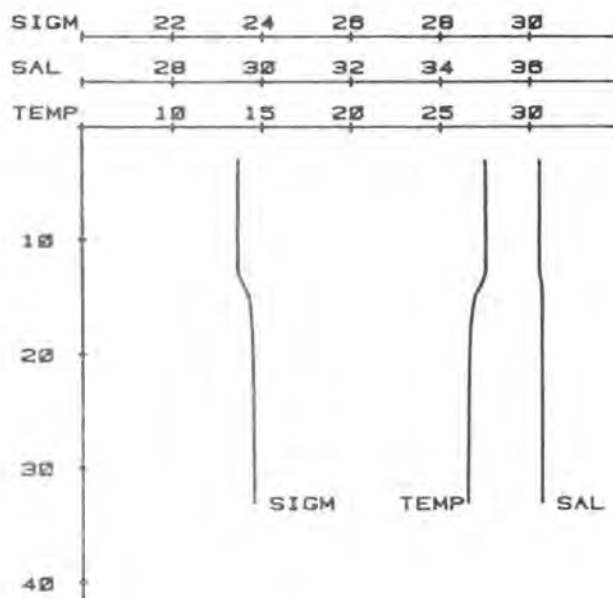
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
3.0	27.50	36.21	23.48	442	-	-	-	0.06	00.0	01.1
4.0	27.51	36.21	23.47	442	-	-	-	-	-	-
5.0	27.51	36.21	23.47	442	-	-	-	-	-	-
6.0	27.51	36.21	23.47	442	-	-	-	-	-	-
7.0	27.51	36.21	23.47	442	-	-	-	-	-	-
8.0	27.51	36.21	23.47	442	-	-	-	-	-	-
9.0	27.51	36.20	23.46	443	-	-	-	-	-	-
10.0	27.51	36.20	23.46	443	-	-	-	-	-	-
11.0	27.50	36.21	23.48	442	-	-	-	-	-	-
12.0	27.50	36.20	23.47	443	-	-	-	-	-	-
13.0	27.49	36.21	23.48	442	-	-	-	-	-	-
14.0	27.24	36.26	23.60	430	-	-	-	-	-	-
15.0	26.88	36.27	23.72	419	-	-	-	-	-	-
16.0	26.76	36.27	23.76	415	-	-	-	-	-	-
17.0	26.68	36.26	23.78	413	-	-	-	-	-	-
18.0	26.62	36.26	23.80	412	-	-	-	-	-	-
19.0	26.60	36.26	23.80	411	-	-	-	-	-	-
20.0	26.58	36.26	23.81	411	-	-	-	-	-	-
21.0	26.56	36.26	23.82	410	-	-	-	0.07	00.1	02.7
22.0	26.56	36.26	23.82	410	-	-	-	-	-	-
23.0	26.54	36.26	23.82	409	-	-	-	-	-	-
24.0	26.53	36.26	23.82	409	-	-	-	-	-	-
25.0	26.53	36.26	23.82	409	-	-	-	-	-	-
26.0	26.53	36.26	23.82	409	-	-	-	-	-	-
27.0	26.53	36.26	23.82	409	-	-	-	-	-	-
28.0	26.52	36.26	23.83	409	-	-	-	-	-	-
29.0	26.51	36.26	23.83	409	-	-	-	-	-	-
30.0	26.50	36.26	23.83	409	-	-	-	-	-	-
31.0	26.50	36.26	23.83	409	-	-	-	0.06	00.2	02.4
32.0	26.50	36.26	23.83	409	-	-	-	-	-	-
33.0	26.50	36.26	23.83	409	-	-	-	-	-	-

STATION 007C



BLUE FIN CRUISE 57 STA 8C 14/ 1X/77 2.6 GMT CONSEC STA 8

LAT 30 54.9N LONG 80 20.4W DEPTH = 35M DIST LAST STA = 9.6KM

WEATHER DATA

WIND SPEED = 11 KTS

WIND DIRECTION = 110

AIR TEMP = 1. C

WEATHER CODE = X1

BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 3

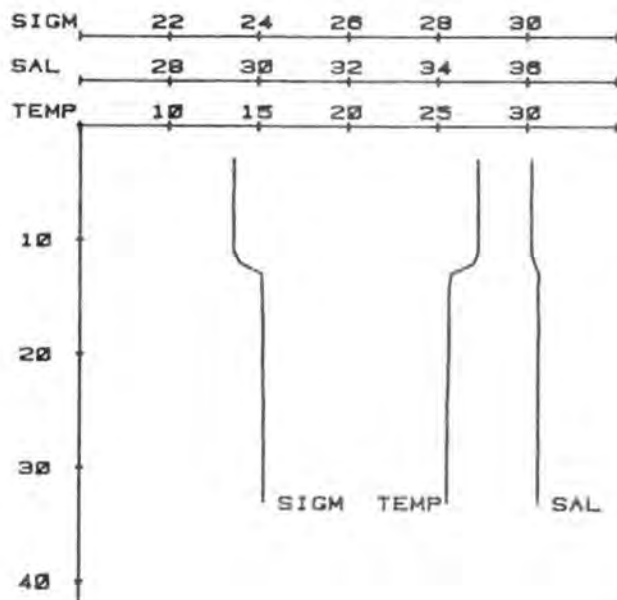
WAVE DIRECTION =

CLOUD TYPE =

CLOUD AMOUNT =

VISIBILITY CODE =

STATION 008C



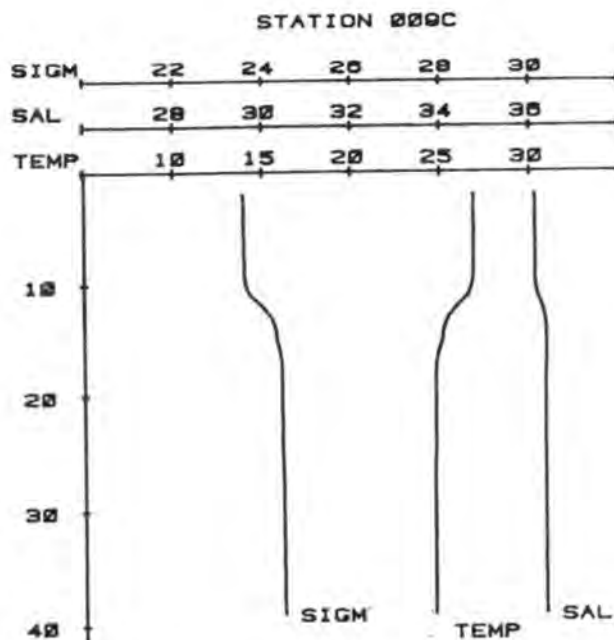
OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
3.0	27.26	36.09	23.46	443	-	-	-	0.07	00.0	00.7
4.0	27.26	36.09	23.46	443	-	-	-	-	-	-
5.0	27.26	36.09	23.46	443	-	-	-	-	-	-
6.0	27.27	36.08	23.45	444	-	-	-	-	-	-
7.0	27.27	36.08	23.45	444	-	-	-	-	-	-
8.0	27.26	36.09	23.46	443	-	-	-	-	-	-
9.0	27.26	36.09	23.46	443	-	-	-	-	-	-
10.0	27.26	36.08	23.46	444	-	-	-	-	-	-
11.0	27.24	36.09	23.47	443	-	-	-	-	-	-
12.0	27.00	36.16	23.60	430	-	-	-	-	-	-
13.0	25.71	36.26	24.08	384	-	-	-	-	-	-
14.0	25.62	36.23	24.09	384	-	-	-	-	-	-
15.0	25.60	36.24	24.10	382	-	-	-	-	-	-
16.0	25.60	36.24	24.10	382	-	-	-	0.08	00.8	02.5
17.0	25.59	36.25	24.11	381	-	-	-	-	-	-
18.0	25.59	36.25	24.11	381	-	-	-	-	-	-
19.0	25.59	36.24	24.10	382	-	-	-	-	-	-
20.0	25.58	36.24	24.11	382	-	-	-	-	-	-
21.0	25.56	36.24	24.11	381	-	-	-	-	-	-
22.0	25.56	36.24	24.11	381	-	-	-	-	-	-
23.0	25.54	36.24	24.12	381	-	-	-	-	-	-
24.0	25.51	36.24	24.13	380	-	-	-	-	-	-
25.0	25.51	36.24	24.13	380	-	-	-	-	-	-
26.0	25.52	36.24	24.13	380	-	-	-	-	-	-
27.0	25.52	36.24	24.13	381	-	-	-	-	-	-
28.0	25.50	36.25	24.14	379	-	-	-	-	-	-
29.0	25.50	36.24	24.13	380	-	-	-	-	-	-
30.0	25.50	36.24	24.13	380	-	-	-	-	-	-
31.0	25.50	36.24	24.13	380	-	-	-	-	-	-
32.0	25.49	36.24	24.14	380	-	-	-	-	-	-
33.0	25.49	36.24	24.14	380	-	-	-	0.09	00.6	02.4

BLUE FIN CRUISE 57 STA 9C 14/ 1X/77 3.5 GRT CONSEC STA 9
 LAT 30 52.1N LONG 80 13.2W DEPTH = 41M DIST LAST STA = 9.8NM

WEATHER DATA
 WIND SPEED = 11 KTS
 WIND DIRECTION = 110
 AIR TEMP = . C
 WEATHER CODE = X1
 BAROMETRIC PRESSURE = 1017.3 MB
 SEA STATE = 3
 WAVE DIRECTION =
 CLOUD TYPE =
 CLOUD AMOUNT =
 VISIBILITY CODE =

OBSERVATIONS									
Z	T	S	B	SVA	O2	O2'	ADU	PD4	HO3
2.0	26.94	36.11	23.58	432				0.09	00.0
3.0	26.91	36.12	23.60	430					
4.0	26.92	36.11	23.59	431					
5.0	26.92	36.11	23.59	431					
6.0	26.90	36.12	23.60	430					
7.0	26.91	36.11	23.59	431					
8.0	26.88	36.12	23.61	429					
9.0	26.88	36.11	23.60	430					
10.0	26.80	36.12	23.63	427					
11.0	26.58	36.17	23.74	417					
12.0	25.94	36.27	24.02	390					
13.0	25.40	36.33	24.23	370					
14.0	25.17	36.35	24.32	362					
15.0	25.09	36.35	24.34	359					
16.0	24.87	36.35	24.41	353					
17.0	24.74	36.34	24.44	350					
18.0	24.71	36.33	24.44	350					
19.0	24.71	36.33	24.44	350			0.12	00.8	01.8
20.0	24.71	36.33	24.44	350					
21.0	24.70	36.32	24.44	351					
22.0	24.68	36.33	24.45	349					
23.0	24.68	36.32	24.44	350					
24.0	24.68	36.32	24.44	350					
25.0	24.66	36.32	24.45	350					
26.0	24.63	36.32	24.46	349					
27.0	24.62	36.32	24.46	348					
28.0	24.62	36.32	24.46	349					
29.0	24.63	36.32	24.46	349					
30.0	24.62	36.32	24.46	349					
31.0	24.62	36.32	24.46	349					
32.0	24.62	36.32	24.46	349					
33.0	24.60	36.32	24.47	348					
34.0	24.61	36.31	24.46	349					
35.0	24.60	36.32	24.47	348					
36.0	24.60	36.32	24.47	348					
37.0	24.60	36.31	24.46	349			0.06	01.5	02.0
38.0	24.60	36.32	24.47	348					
39.0	24.59	36.32	24.47	348					



BLUE FIN CRUISE 57 STA 10C 14/ 1X/77 4.3 GAT CONSEC STA 10

LAT 30 50.9N LONG 80 8.7W DEPTH = 44M DIST LAST STA = 10.6KM

WEATHER DATA

WIND SPEED = 11 KTS

WIND DIRECTION = 110

AIR TEMP = . C

WEATHER CODE = 21

BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 3

WAVE DIRECTION =

CLOUD TYPE =

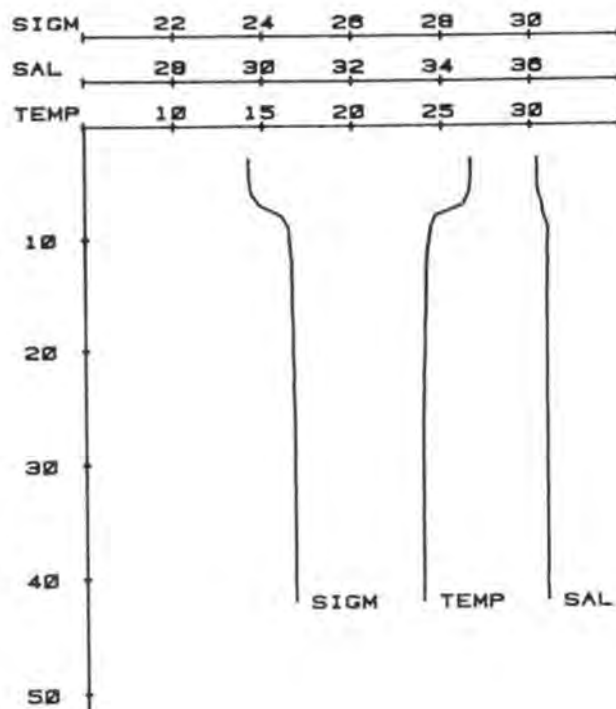
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	02	02'	WOU	P04	N03	SI
3.0	26.63	36.13	23.69	421	*	*	*	0.06	00.0	00.7
4.0	26.63	36.14	23.70	420	*	*	*	*	*	*
5.0	26.60	36.14	23.71	419	*	*	*	*	*	*
6.0	26.52	36.16	23.75	415	*	*	*	*	*	*
7.0	26.17	36.25	23.93	398	*	*	*	*	*	*
8.0	24.61	36.28	24.44	350	*	*	*	*	*	*
9.0	24.36	36.38	24.59	336	*	*	*	*	*	*
10.0	24.27	36.37	24.61	334	*	*	*	*	*	*
11.0	24.18	36.36	24.63	332	*	*	*	*	*	*
12.0	24.12	36.37	24.65	330	*	*	*	*	*	*
13.0	24.10	36.36	24.65	330	*	*	*	*	*	*
14.0	24.08	36.36	24.66	330	*	*	*	*	*	*
15.0	24.06	36.35	24.65	330	*	*	*	*	*	*
16.0	24.06	36.35	24.65	330	*	*	*	0.13	01.9	01.8
17.0	24.03	36.35	24.66	329	*	*	*	*	*	*
18.0	24.00	36.35	24.67	328	*	*	*	*	*	*
19.0	24.00	36.35	24.67	328	*	*	*	*	*	*
20.0	23.99	36.35	24.67	328	*	*	*	*	*	*
21.0	23.97	36.35	24.68	327	*	*	*	*	*	*
22.0	23.92	36.35	24.70	326	*	*	*	*	*	*
23.0	23.94	36.34	24.68	327	*	*	*	*	*	*
24.0	23.91	36.34	24.69	327	*	*	*	*	*	*
25.0	23.90	36.35	24.70	326	*	*	*	*	*	*
26.0	23.88	36.35	24.71	325	*	*	*	*	*	*
27.0	23.88	36.35	24.71	325	*	*	*	*	*	*
28.0	23.88	36.35	24.71	325	*	*	*	*	*	*
29.0	23.87	36.34	24.70	326	*	*	*	*	*	*
30.0	23.88	36.34	24.70	326	*	*	*	*	*	*
31.0	23.87	36.34	24.70	326	*	*	*	*	*	*
32.0	23.87	36.35	24.71	325	*	*	*	*	*	*
33.0	23.87	36.34	24.70	326	*	*	*	*	*	*
34.0	23.86	36.34	24.71	326	*	*	*	*	*	*
35.0	23.86	36.34	24.71	326	*	*	*	*	*	*
36.0	23.86	36.34	24.71	326	*	*	*	*	*	*
37.0	23.86	36.34	24.71	326	*	*	*	*	*	*
38.0	23.86	36.34	24.71	326	*	*	*	*	*	*
39.0	23.86	36.34	24.71	326	*	*	*	*	*	*
40.0	23.86	36.33	24.70	327	*	*	*	0.09	02.0	01.8
41.0	23.84	36.34	24.71	325	*	*	*	*	*	*
42.0	23.84	36.34	24.71	325	*	*	*	*	*	*

STATION 010C



BLUE FIN CRUISE 57 STA 11C 14/ 11/77 5.1 GHT CONSEC STA 11
LAT 30 49.0N LONG 80 3.4W DEPTH = 96M DIST LAST STA = 9.1KM

WEATHER DATA

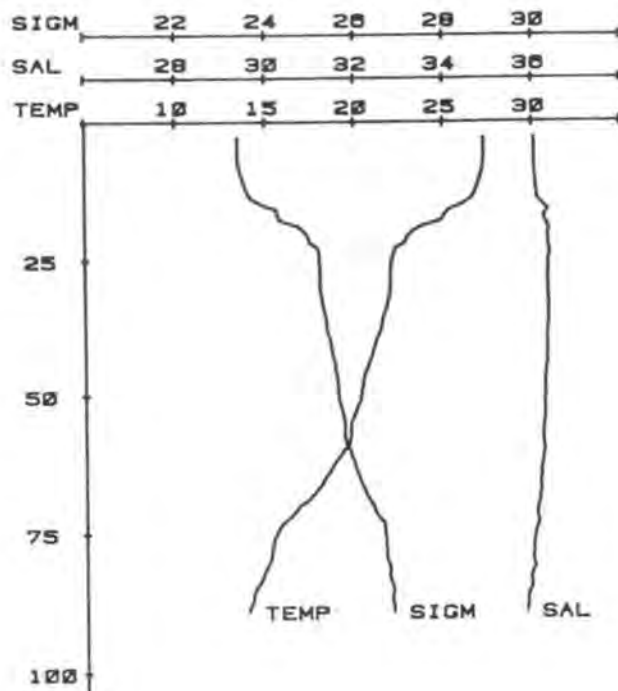
WIND SPEED = 11 KTS
WIND DIRECTION = 110
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
3.0	27.32	36.04	23.41	448	.	.	.	0.01	00.1	00.6
4.0	27.32	36.04	23.41	448	.	.	.	.	.	.
5.0	27.32	36.04	23.41	448	.	.	.	.	.	.
6.0	27.32	36.04	23.41	448	.	.	.	.	.	.
7.0	27.29	36.04	23.42	448	.	.	.	.	.	.
8.0	27.27	36.05	23.43	446	.	.	.	.	.	.
9.0	27.20	36.06	23.46	443	.	.	.	.	.	.
10.0	27.11	36.07	23.50	440	.	.	.	.	.	.
11.0	27.01	36.08	23.54	436	.	.	.	.	.	.
12.0	26.90	36.09	23.58	432	.	.	.	.	.	.
13.0	26.77	36.10	23.63	428	.	.	.	.	.	.
14.0	26.59	36.12	23.70	421	.	.	.	.	.	.
15.0	26.12	36.22	23.92	399	.	.	.	.	.	.
16.0	25.36	36.36	24.27	367	.	.	.	.	.	.
17.0	25.06	36.26	24.28	365	.	.	.	.	.	.
18.0	24.91	36.28	24.34	359	.	.	.	.	.	.
19.0	23.80	36.37	24.75	321	.	.	.	.	.	.
20.0	23.26	36.35	24.89	307	.	.	.	.	.	.
21.0	22.96	36.35	24.98	299	.	.	.	.	.	.
22.0	22.84	36.35	25.01	296	.	.	.	.	.	.
23.0	22.29	36.38	25.19	279	.	.	.	.	.	.
24.0	22.20	36.39	25.23	274	.	.	.	.	.	.
25.0	22.09	36.35	25.23	274	.	.	.	.	.	.
26.0	22.04	36.35	25.24	274	.	.	.	.	.	.
27.0	22.02	36.35	25.25	274	.	.	.	.	.	.
28.0	22.02	36.34	25.24	275	.	.	.	.	.	.
29.0	22.01	36.34	25.24	274	.	.	.	.	.	.
30.0	22.00	36.34	25.24	274	.	.	.	.	.	.
31.0	21.99	36.35	25.25	273	.	.	.	.	.	.
32.0	21.91	36.34	25.27	272	.	.	.	.	.	.
33.0	21.86	36.36	25.30	269	.	.	.	0.29	06.1	02.9
34.0	21.79	36.35	25.31	268	.	.	.	.	.	.
35.0	21.67	36.35	25.34	265	.	.	.	.	.	.
36.0	21.56	36.35	25.37	262	.	.	.	.	.	.
37.0	21.50	36.34	25.38	261	.	.	.	.	.	.
38.0	21.47	36.33	25.38	261	.	.	.	.	.	.
39.0	21.32	36.32	25.42	258	.	.	.	.	.	.
40.0	21.17	36.33	25.47	253	.	.	.	.	.	.
41.0	21.10	36.32	25.48	252	.	.	.	.	.	.
42.0	20.99	36.32	25.51	249	.	.	.	.	.	.
43.0	20.94	36.31	25.52	249	.	.	.	.	.	.
44.0	20.76	36.32	25.57	243	.	.	.	.	.	.
45.0	20.70	36.29	25.57	244	.	.	.	.	.	.
46.0	20.54	36.28	25.60	241	.	.	.	.	.	.
47.0	20.46	36.27	25.62	239	.	.	.	.	.	.
48.0	20.42	36.27	25.63	238	.	.	.	.	.	.
49.0	20.37	36.27	25.64	237	.	.	.	.	.	.
50.0	20.30	36.26	25.65	236	.	.	.	.	.	.
51.0	20.28	36.26	25.66	236	.	.	.	.	.	.
52.0	20.12	36.26	25.70	232	.	.	.	.	.	.
53.0	20.00	36.26	25.73	229	.	.	.	.	.	.
54.0	19.89	36.26	25.76	226	.	.	.	0.46	09.4	04.4
55.0	19.74	36.24	25.78	224	.	.	.	.	.	.
56.0	19.74	36.22	25.77	225	.	.	.	.	.	.
57.0	19.72	36.22	25.77	225	.	.	.	.	.	.
58.0	19.66	36.22	25.78	224	.	.	.	.	.	.
59.0	19.62	36.24	25.82	221	.	.	.	.	.	.
60.0	19.33	36.25	25.90	213	.	.	.	.	.	.
61.0	19.12	36.21	25.92	211	.	.	.	.	.	.
62.0	18.86	36.21	25.99	204	.	.	.	.	.	.
63.0	18.66	36.17	26.01	202	.	.	.	.	.	.
64.0	18.50	36.18	26.06	198	.	.	.	.	.	.
65.0	18.26	36.16	26.10	194	.	.	.	.	.	.
66.0	18.10	36.15	26.14	190	.	.	.	.	.	.
67.0	17.86	36.17	26.21	183	.	.	.	.	.	.
68.0	17.58	36.13	26.25	180	.	.	.	.	.	.
69.0	17.26	36.13	26.33	172	.	.	.	.	.	.
70.0	16.76	36.09	26.42	164	.	.	.	.	.	.
71.0	16.58	36.07	26.44	161	.	.	.	.	.	.
72.0	16.29	36.08	26.52	154	.	.	.	.	.	.
73.0	15.89	36.11	26.63	143	.	.	.	.	.	.
74.0	15.63	36.05	26.65	142	.	.	.	.	.	.
75.0	15.50	36.02	26.65	141	.	.	.	.	.	.

STATION 011C



STA 11C 14/ 11/77 5.1 GHT CONSEC STA 11 (CONTINUED)

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
76.0	15.33	36.00	26.68	139	.	.	.	.	.	.
77.0	15.30	35.98	26.67	140	.	.	.	.	.	.
78.0	15.23	35.99	26.69	138	.	.	.	.	.	.
79.0	15.20	35.97	26.68	139	.	.	.	.	.	.
80.0	15.12	35.98	26.71	136	.	.	.	.	.	.
81.0	14.96	36.01	26.77	131	.	.	.	.	.	.
82.0	14.81	35.95	26.75	132	.	.	.	.	.	.
83.0	14.70	35.92	26.76	132	.	.	.	.	.	.
84.0	14.54	35.94	26.81	127	.	.	.	.	.	.
85.0	14.31	35.92	26.84	124	.	.	.	.	.	.
86.0	14.19	35.85	26.81	127	.	.	.	.	.	.
87.0	14.18	35.84	26.81	127	.	.	.	.	15.8	08.1
88.0	14.01	35.84	26.84	124	.	.	.	.	.	.
89.0	13.93	35.82	26.84	124	.	.	.	.	.	.

BLUE FIN CRUISE 57 STA 12C 14/ 1X/77 6.5 GMT CONSEC STA 12

LAT 30 47.2N LONG 79 57.7W DEPTH =207M DIST LAST STA = 9.7KM

WEATHER DATA

WIND SPEED * 11 KTS

WIND DIRECTION * 110

AIR TEMP * , C

WEATHER CODE * X1

BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE * 3

WAVE DIRECTION *

CLOUD TYPE *

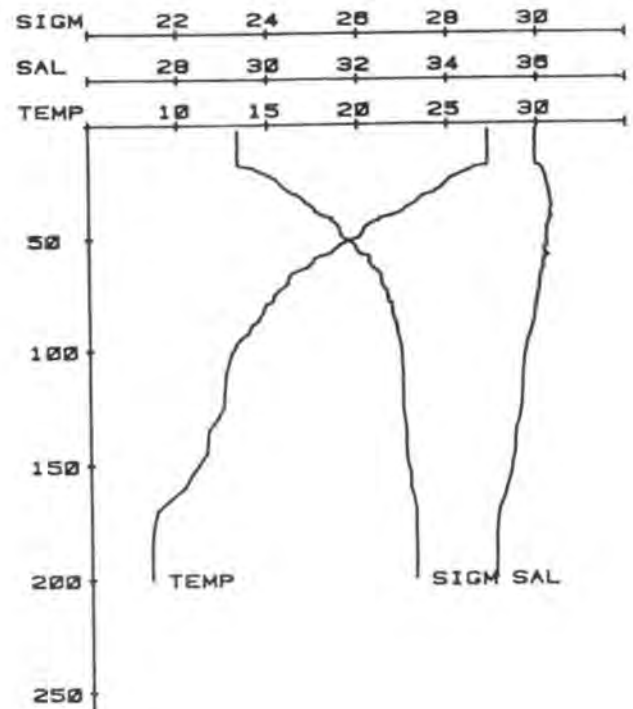
CLOUD AMOUNT *

VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
3.0	27.26	35.95	23.36	453	.	.	.	0.01	00.1	00.1
4.0	27.26	35.95	23.36	453	.	.	.	.	.	.
5.0	27.26	35.95	23.36	453	.	.	.	.	.	.
6.0	27.26	35.95	23.36	453	.	.	.	.	.	.
7.0	27.26	35.94	23.35	454	.	.	.	.	.	.
8.0	27.26	35.95	23.36	453	.	.	.	.	.	.
9.0	27.26	35.95	23.36	453	.	.	.	.	.	.
10.0	27.26	35.95	23.36	453	.	.	.	.	.	.
11.0	27.26	35.95	23.36	453	.	.	.	.	.	.
12.0	27.26	35.94	23.35	454	.	.	.	.	.	.
13.0	27.26	35.94	23.35	454	.	.	.	.	.	.
14.0	27.26	35.95	23.36	453	.	.	.	.	.	.
15.0	27.26	35.95	23.36	453	.	.	.	.	.	.
16.0	27.26	35.95	23.36	453	.	.	.	.	.	.
17.0	27.26	35.95	23.36	453	.	.	.	.	.	.
18.0	27.22	35.97	23.39	451	.	.	.	.	.	.
19.0	26.49	36.08	23.70	421	.	.	.	.	.	.
20.0	26.30	36.11	23.78	413	.	.	.	.	.	.
21.0	25.98	36.13	23.90	402	.	.	.	.	.	.
22.0	25.68	36.16	24.02	391	.	.	.	.	.	.
23.0	25.39	36.17	24.11	382	.	.	.	.	.	.
24.0	25.09	36.19	24.22	371	.	.	.	.	.	.
25.0	25.00	36.20	24.26	368	.	.	.	.	.	.
26.0	24.87	36.21	24.30	364	.	.	.	.	.	.
27.0	24.70	36.22	24.36	358	.	.	.	.	.	.
28.0	24.60	36.25	24.42	353	.	.	.	.	.	.
29.0	24.34	36.24	24.49	346	.	.	.	.	.	.
30.0	24.20	36.27	24.55	340	.	.	.	.	.	.
31.0	23.71	36.28	24.70	326	.	.	.	.	.	.
32.0	23.48	36.27	24.76	320	.	.	.	.	.	.
33.0	23.32	36.29	24.83	314	.	.	.	.	.	.
34.0	23.21	36.28	24.85	312	.	.	.	.	.	.
35.0	22.99	36.31	24.94	303	.	.	.	.	.	.
36.0	22.78	36.31	25.00	298	.	.	.	.	.	.
37.0	22.56	36.31	25.06	292	.	.	.	.	.	.
38.0	22.47	36.28	25.06	291	.	.	.	.	.	.
39.0	22.22	36.30	25.15	283	.	.	.	.	.	.
40.0	21.89	36.28	25.23	276	.	.	.	.	.	.
41.0	21.20	36.32	25.45	255	.	.	.	.	.	.
42.0	21.17	36.26	25.41	258	.	.	.	.	.	.
43.0	20.80	36.25	25.51	249	.	.	.	0.29	06.8	03.4
44.0	20.61	36.25	25.56	245	.	.	.	.	.	.
45.0	20.40	36.21	25.59	242	.	.	.	.	.	.
46.0	20.32	36.21	25.61	240	.	.	.	.	.	.
47.0	20.26	36.21	25.62	239	.	.	.	.	.	.
48.0	20.20	36.20	25.63	238	.	.	.	.	.	.
49.0	20.13	36.20	25.65	236	.	.	.	.	.	.
50.0	19.94	36.20	25.70	231	.	.	.	.	.	.
51.0	19.53	36.20	25.81	221	.	.	.	.	.	.
52.0	19.27	36.20	25.88	215	.	.	.	.	.	.
53.0	19.00	36.20	25.95	208	.	.	.	.	.	.
54.0	18.87	36.20	25.98	205	.	.	.	.	.	.
55.0	18.70	36.15	25.98	205	.	.	.	.	.	.
56.0	18.58	36.16	26.02	201	.	.	.	.	.	.
57.0	18.38	36.16	26.07	196	.	.	.	.	.	.
58.0	17.88	36.25	26.27	178	.	.	.	.	.	.
59.0	17.59	36.15	26.26	178	.	.	.	.	.	.
60.0	17.54	36.13	26.26	179	.	.	.	.	.	.
61.0	17.49	36.12	26.26	178	.	.	.	.	.	.
62.0	17.34	36.12	26.30	175	.	.	.	.	.	.
63.0	17.27	36.13	26.32	172	.	.	.	.	.	.
64.0	16.96	36.11	26.38	167	.	.	.	.	.	.
65.0	16.63	36.09	26.45	161	.	.	.	.	.	.
66.0	16.36	36.07	26.50	156	.	.	.	.	.	.
67.0	16.23	36.06	26.52	154	.	.	.	.	.	.
68.0	16.20	36.05	26.52	154	.	.	.	.	.	.
69.0	16.16	36.04	26.52	154	.	.	.	.	.	.
70.0	16.11	36.04	26.53	153	.	.	.	.	.	.
71.0	16.09	36.04	26.53	153	.	.	.	.	.	.
72.0	15.96	36.02	26.55	151	.	.	.	.	.	.
73.0	15.80	36.03	26.59	147	.	.	.	.	.	.
74.0	15.63	36.03	26.63	143	.	.	.	.	.	.
75.0	15.49	36.01	26.65	142	.	.	.	.	.	.

STATION 012C



STA 12C 14/ 1X/77 6.5 GMT CONSEC STA 12 (CONTINUED)

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
76.0	15.37	35.98	26.65	141	.	.	.	.	.	.
77.0	15.30	35.98	26.67	140	.	.	.	.	.	.
78.0	15.30	35.98	26.67	140	.	.	.	.	.	.
79.0	15.19	35.95	26.67	140	.	.	.	.	.	.
80.0	14.92	35.98	26.75	132	.	.	.	.	.	.
81.0	14.82	35.94	26.75	133	.	.	.	.	.	.
82.0	14.78	35.94	26.75	132	.	.	.	.	.	.
83.0	14.73	35.93	26.76	132	.	.	.	.	.	.
84.0	14.69	35.92	26.76	132	.	.	.	.	.	.
85.0	14.62	35.92	26.77	130	.	.	.	.	.	.
86.0	14.51	35.91	26.79	129	.	.	.	.	.	.
87.0	14.46	35.91	26.80	128	.	.	.	.	.	.
88.0	14.30	35.90	26.83	125	.	.	.	.	.	.
89.0	14.11	35.87	26.85	124	.	.	.	.	.	.
90.0	14.02	35.86	26.86	122	.	.	.	.	.	.
91.0	13.99	35.84	26.85	123	.	.	.	.	.	.
92.0	13.90	35.83	26.86	122	.	.	.	.	.	.
93.0	13.86	35.83	26.87	121	.	.	.	.	.	.

STA 12C 14/ 1X/77 4.5 GMT CONSEC STA 12 (CONTINUED)

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	ADU	P04	N03	SI
94.0	13.63	35.80	26.89	119	-	-	-	-	-	-
95.0	13.48	35.77	26.90	118	-	-	-	-	-	-
96.0	13.37	35.74	26.92	117	-	-	-	-	-	-
97.0	13.24	35.73	26.92	117	-	-	-	-	-	-
98.0	13.20	35.73	26.93	116	-	-	-	-	-	-
99.0	13.10	35.74	26.96	113	-	-	-	-	-	-
100.0	13.07	35.72	26.95	114	-	-	-	-	-	-
101.0	12.96	35.70	26.95	113	-	-	-	-	-	-
105.0	12.80	35.67	26.96	113	-	-	-	1.01	18.7	09.1
110.0	12.62	35.64	26.97	112	-	-	-	-	-	-
115.0	12.57	35.63	26.98	111	-	-	-	-	-	-
120.0	12.52	35.62	26.98	111	-	-	-	-	-	-
125.0	12.46	35.60	26.98	112	-	-	-	-	-	-
130.0	12.12	35.56	27.01	109	-	-	-	1.21	19.5	10.9
135.0	11.62	35.48	27.05	105	-	-	-	-	-	-
139.0	11.58	35.46	27.04	106	-	-	-	-	-	-
145.0	11.51	35.45	27.04	106	-	-	-	-	-	-
150.0	11.08	35.39	27.08	103	-	-	-	-	-	-
154.0	10.89	35.37	27.13	97	-	-	-	-	-	-
160.0	10.27	35.27	27.13	98	-	-	-	-	-	-
165.0	9.50	35.20	27.21	90	-	-	-	-	-	-
170.0	8.74	35.09	27.24	86	-	-	-	-	-	-
175.0	8.56	35.05	27.24	87	-	-	-	-	-	-
180.0	8.46	35.03	27.24	87	-	-	-	-	-	-
185.0	8.41	35.03	27.25	86	-	-	-	-	-	-
190.0	8.41	35.03	27.25	86	-	-	-	-	-	-
195.0	8.41	35.02	27.24	87	-	-	-	1.71	25.4	18.2
200.0	8.41	35.02	27.24	87	-	-	-	-	-	-

BLUE FIN CRUISE 57 STA 13X 14/ 1X/77 9.6 GMT CONSEC STA 13

LAT 31 10.2W LONG 79 51.6W DEPTH = 85M DIST LAST STA = 43.7KM

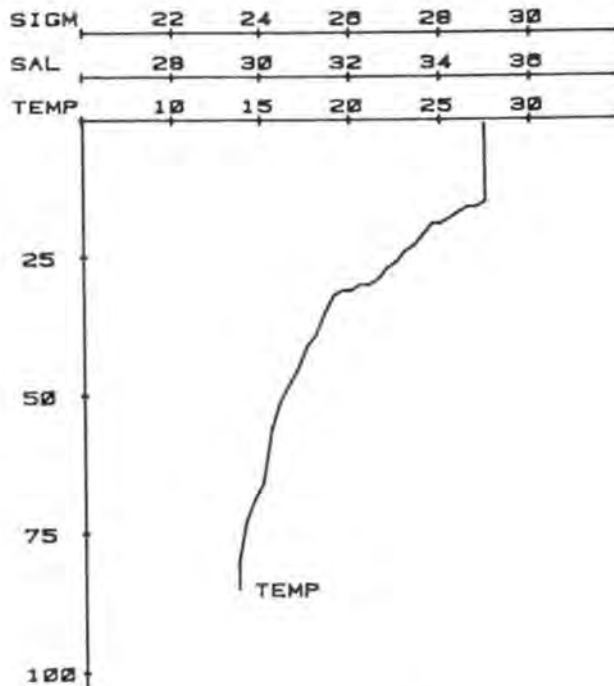
WEATHER DATA

WIND SPEED = 11 KTS
WIND DIRECTION = 110
AIR TEMP = 27.5 C
WEATHER CODE = 81
BAROMETRIC PRESSURE = 1017.3 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	ADU	P04	N03	SI
1.0	27.50	-	-	-	-	-	-	-	-	-
15.0	27.50	-	-	-	-	-	-	-	-	-
16.0	27.00	-	-	-	-	-	-	-	-	-
16.5	26.50	-	-	-	-	-	-	-	-	-
17.5	26.00	-	-	-	-	-	-	-	-	-
18.5	25.50	-	-	-	-	-	-	-	-	-
19.0	25.00	-	-	-	-	-	-	-	-	-
19.5	24.50	-	-	-	-	-	-	-	-	-
21.0	24.00	-	-	-	-	-	-	-	-	-
23.0	23.50	-	-	-	-	-	-	-	-	-
24.5	23.00	-	-	-	-	-	-	-	-	-
26.0	22.50	-	-	-	-	-	-	-	-	-
27.0	22.00	-	-	-	-	-	-	-	-	-
29.0	21.50	-	-	-	-	-	-	-	-	-
30.0	21.00	-	-	-	-	-	-	-	-	-
30.5	20.50	-	-	-	-	-	-	-	-	-
31.0	20.00	-	-	-	-	-	-	-	-	-
31.5	19.50	-	-	-	-	-	-	-	-	-
32.5	19.00	-	-	-	-	-	-	-	-	-
35.0	18.50	-	-	-	-	-	-	-	-	-
39.0	18.00	-	-	-	-	-	-	-	-	-
41.0	17.50	-	-	-	-	-	-	-	-	-
45.0	17.00	-	-	-	-	-	-	-	-	-
48.0	16.50	-	-	-	-	-	-	-	-	-
51.0	16.00	-	-	-	-	-	-	-	-	-
56.0	15.50	-	-	-	-	-	-	-	-	-
66.0	15.00	-	-	-	-	-	-	-	-	-
69.0	14.50	-	-	-	-	-	-	-	-	-
73.0	14.00	-	-	-	-	-	-	-	-	-
80.0	13.60	-	-	-	-	-	-	-	-	-
85.0	13.60	-	-	-	-	-	-	-	-	-

STATION 013X



BLUE FIN CRUISE 57 STA 14X 14/ 1X/77 11.5 GHT CONSEC STA 14

LAT 31 24.0N LONG 79 43.4W DEPTH =115M DIST LAST STA = 28.7KM

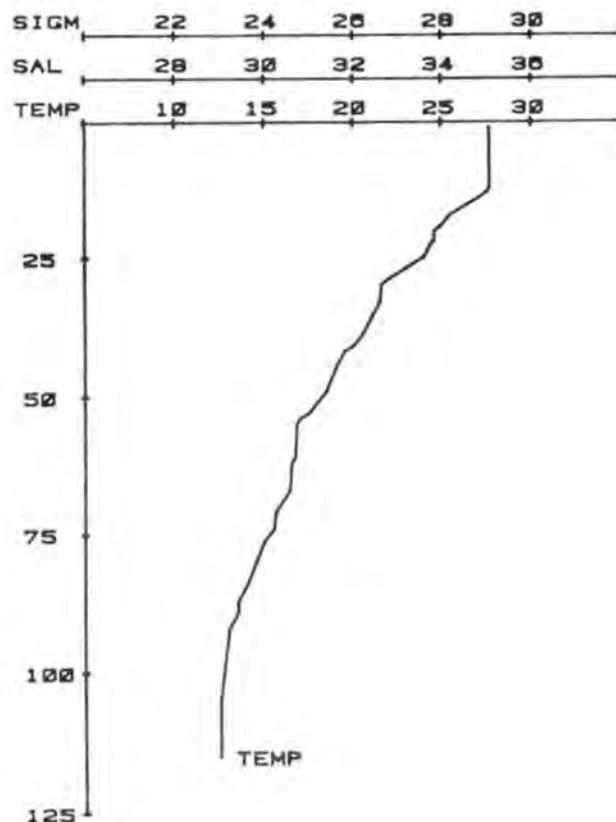
WEATHER DATA

WIND SPEED = 13 KTS SEA STATE = 3
WIND DIRECTION = 140 WAVE DIRECTION =
AIR TEMP = 26.0 C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	M03	SI
1.0	27.70	x	x	x	x	x	x	x	x	x
12.0	27.70	x	x	x	x	x	x	x	x	x
13.0	27.50	x	x	x	x	x	x	x	x	x
14.0	27.00	x	x	x	x	x	x	x	x	x
15.0	26.50	x	x	x	x	x	x	x	x	x
16.5	26.00	x	x	x	x	x	x	x	x	x
17.5	25.50	x	x	x	x	x	x	x	x	x
19.0	25.00	x	x	x	x	x	x	x	x	x
20.0	24.60	x	x	x	x	x	x	x	x	x
22.0	24.60	x	x	x	x	x	x	x	x	x
22.5	24.50	x	x	x	x	x	x	x	x	x
25.0	24.00	x	x	x	x	x	x	x	x	x
26.0	23.50	x	x	x	x	x	x	x	x	x
27.0	23.00	x	x	x	x	x	x	x	x	x
28.0	22.50	x	x	x	x	x	x	x	x	x
29.5	22.00	x	x	x	x	x	x	x	x	x
30.5	21.60	x	x	x	x	x	x	x	x	x
33.0	21.50	x	x	x	x	x	x	x	x	x
36.5	21.00	x	x	x	x	x	x	x	x	x
39.0	20.50	x	x	x	x	x	x	x	x	x
41.5	20.00	x	x	x	x	x	x	x	x	x
42.5	19.50	x	x	x	x	x	x	x	x	x
45.0	19.00	x	x	x	x	x	x	x	x	x
49.0	18.50	x	x	x	x	x	x	x	x	x
51.5	18.00	x	x	x	x	x	x	x	x	x
53.0	17.50	x	x	x	x	x	x	x	x	x
54.0	17.00	x	x	x	x	x	x	x	x	x
55.0	16.80	x	x	x	x	x	x	x	x	x
61.0	16.70	x	x	x	x	x	x	x	x	x
62.5	16.50	x	x	x	x	x	x	x	x	x
67.0	16.40	x	x	x	x	x	x	x	x	x
69.0	16.00	x	x	x	x	x	x	x	x	x
71.5	15.60	x	x	x	x	x	x	x	x	x
74.0	15.50	x	x	x	x	x	x	x	x	x
76.0	15.00	x	x	x	x	x	x	x	x	x
80.0	14.50	x	x	x	x	x	x	x	x	x
84.0	14.00	x	x	x	x	x	x	x	x	x
87.0	13.50	x	x	x	x	x	x	x	x	x
89.0	13.50	x	x	x	x	x	x	x	x	x
92.5	13.00	x	x	x	x	x	x	x	x	x
105.0	12.50	x	x	x	x	x	x	x	x	x
115.0	12.50	x	x	x	x	x	x	x	x	x

STATION 014X



BLUE FIN CRUISE 57 STA 15C 14/ 11/77 12.7 GMT CONSEC STA 15

LAT 31 32.4N LONG 79 31.8W DEPTH = 188M DIST LAST STA = 24.1KM

WEATHER DATA

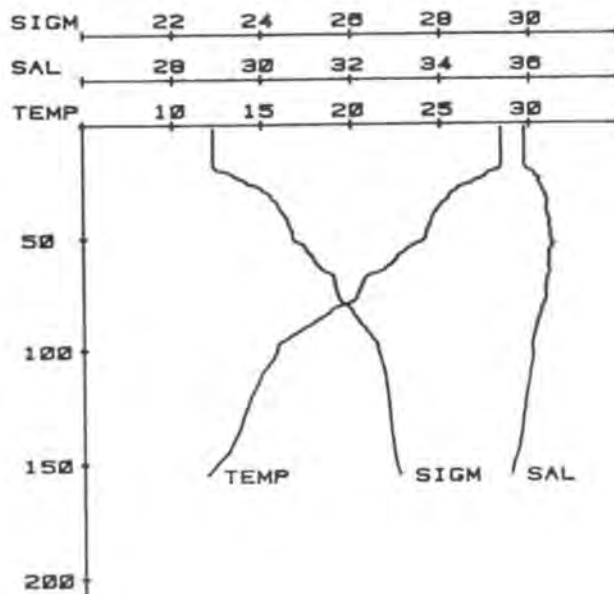
WIND SPEED = 13 KTS
WIND DIRECTION = 140
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1017.9 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
2.0	28.41	35.88	22.93	494	.	.	.	0.02	00.1	00.0
3.0	28.41	35.88	22.93	494	.	.	.	.	.	.
4.0	28.41	35.88	22.93	494	.	.	.	.	.	.
5.0	28.41	35.88	22.93	494	.	.	.	.	.	.
6.0	28.41	35.88	22.93	494	.	.	.	.	.	.
7.0	28.41	35.88	22.93	494	.	.	.	.	.	.
8.0	28.41	35.88	22.93	494	.	.	.	.	.	.
9.0	28.41	35.88	22.93	494	.	.	.	.	.	.
10.0	28.41	35.88	22.93	494	.	.	.	.	.	.
11.0	28.41	35.88	22.93	494	.	.	.	.	.	.
12.0	28.41	35.88	22.93	494	.	.	.	.	.	.
13.0	28.41	35.88	22.93	494	.	.	.	.	.	.
14.0	28.41	35.88	22.93	494	.	.	.	.	.	.
15.0	28.41	35.88	22.93	494	.	.	.	.	.	.
16.0	28.41	35.88	22.93	494	.	.	.	.	.	.
17.0	28.41	35.88	22.93	494	.	.	.	.	.	.
18.0	28.41	35.88	22.93	495	.	.	.	.	.	.
19.0	28.36	35.90	22.96	492	.	.	.	.	.	.
20.0	29.27	35.93	23.01	487	.	.	.	.	.	.
21.0	27.89	36.05	23.23	466	.	.	.	.	.	.
22.0	27.58	36.10	23.37	453	.	.	.	.	.	.
23.0	27.51	36.12	23.40	449	.	.	.	.	.	.
24.0	27.28	36.22	23.55	435	.	.	.	.	.	.
25.0	26.90	36.19	23.65	426	.	.	.	.	.	.
26.0	26.76	36.19	23.70	421	.	.	.	.	.	.
27.0	26.76	36.24	23.90	403	.	.	.	.	.	.
28.0	25.98	36.27	24.01	392	.	.	.	.	.	.
29.0	25.88	36.28	24.04	388	.	.	.	.	.	.
30.0	25.64	36.32	24.15	378	.	.	.	.	.	.
31.0	25.50	36.36	24.22	371	.	.	.	.	.	.
32.0	25.44	36.34	24.23	371	.	.	.	.	.	.
33.0	25.38	36.37	24.27	367	.	.	.	.	.	.
34.0	25.21	36.40	24.34	360	.	.	.	.	.	.
35.0	25.06	36.38	24.37	357	.	.	.	.	.	.
36.0	24.97	36.38	24.40	355	.	.	.	.	.	.
37.0	24.86	36.37	24.43	352	.	.	.	.	.	.
38.0	24.77	36.37	24.45	350	.	.	.	.	.	.
39.0	24.67	36.38	24.49	346	.	.	.	.	.	.
40.0	24.59	36.40	24.53	342	.	.	.	.	.	.
41.0	24.50	36.41	24.57	339	.	.	.	.	.	.
42.0	24.48	36.44	24.60	336	.	.	.	.	.	.
43.0	24.44	36.45	24.62	335	.	.	.	.	.	.
44.0	24.39	36.44	24.62	334	.	.	.	.	.	.
45.0	24.32	36.44	24.64	332	.	.	.	.	.	.
46.0	24.27	36.44	24.66	331	.	.	.	.	.	.
47.0	24.20	36.47	24.70	326	.	.	.	0.04	01.1	00.7
48.0	24.17	36.46	24.70	326	.	.	.	.	.	.
49.0	24.16	36.47	24.71	325	.	.	.	.	.	.
50.0	24.13	36.46	24.72	325	.	.	.	.	.	.
51.0	24.06	36.47	24.74	323	.	.	.	.	.	.
52.0	23.90	36.49	24.81	317	.	.	.	.	.	.
53.0	23.52	36.55	24.96	302	.	.	.	.	.	.
54.0	23.32	36.49	24.98	300	.	.	.	.	.	.
55.0	23.12	36.48	25.03	296	.	.	.	.	.	.
56.0	22.98	36.43	25.03	295	.	.	.	.	.	.
57.0	22.80	36.43	25.08	290	.	.	.	.	.	.
58.0	22.59	36.44	25.15	284	.	.	.	.	.	.
59.0	22.54	36.43	25.16	283	.	.	.	.	.	.
60.0	22.44	36.44	25.19	280	.	.	.	.	.	.
61.0	22.33	36.43	25.22	278	.	.	.	.	.	.
62.0	22.23	36.43	25.25	275	.	.	.	.	.	.
63.0	22.04	36.42	25.29	271	.	.	.	.	.	.
64.0	21.88	36.43	25.35	266	.	.	.	.	.	.
65.0	21.76	36.44	25.39	262	.	.	.	.	.	.
66.0	21.41	36.45	25.49	252	.	.	.	.	.	.
67.0	20.98	36.44	25.60	241	.	.	.	.	.	.
68.0	20.80	36.40	25.62	240	.	.	.	.	.	.
69.0	20.70	36.38	25.63	238	.	.	.	.	.	.
70.0	20.63	36.37	25.65	237	.	.	.	.	.	.
71.0	20.62	36.36	25.64	238	.	.	.	.	.	.
72.0	20.58	36.37	25.66	236	.	.	.	.	.	.
73.0	20.47	36.35	25.67	235	.	.	.	.	.	.
74.0	20.44	36.35	25.68	234	.	.	.	.	.	.
75.0	20.38	36.35	25.70	233	.	.	.	.	.	.

STATION 015C



STA 15C 14/ 11/77 12.7 GMT CONSEC STA 15 (CONTINUED)

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
76.0	20.33	36.35	25.71	231	.	.	.	.	.	.
77.0	20.28	36.36	25.73	229	.	.	.	.	.	.
78.0	20.22	36.35	25.74	229	.	.	.	.	.	.
79.0	20.10	36.36	25.78	225	.	.	.	.	.	.
80.0	19.78	36.31	25.83	220	.	.	.	.	.	.
81.0	19.40	36.32	25.93	210	.	.	.	.	.	.
82.0	19.01	36.25	25.98	206	.	.	.	.	.	.
83.0	18.88	36.26	26.02	202	.	.	.	.	.	.
84.0	18.80	36.26	26.04	200	.	.	.	.	.	.
85.0	18.62	36.22	26.06	199	.	.	.	.	.	.
86.0	18.40	36.22	26.11	193	.	.	.	.	.	.
87.0	18.18	36.18	26.14	191	.	.	.	.	.	.
88.0	17.97	36.17	26.18	187	.	.	.	.	.	.
89.0	17.80	36.15	26.21	184	.	.	.	.	.	.
90.0	17.53	36.15	26.28	178	.	.	.	.	.	.
91.0	17.29	36.13	26.32	174	.	.	.	.	.	.
92.0	17.09	36.10	26.34	171	.	.	.	.	.	.
93.0	16.89	36.11	26.40	166	.	.	.	.	.	.
94.0	16.62	36.08	26.44	162	.	.	.	.	.	.
95.0	16.48	36.07	26.47	160	.	.	.	.	.	.
96.0	16.26	36.07	26.52	155	.	.	.	.	.	.
97.0	15.98	36.04	26.56	151	.	.	.	.	.	.
98.0	15.87	36.04	26.59	149	.	.	.	.	.	.
99.0	15.86	36.04	26.59	148	.	.	.	.	.	.
100.0	15.83	36.04	26.59	148	.	.	.	.	.	.
101.0	15.81	36.06	26.61	146	.	.	.	.	.	.
104.0	15.60	36.05	26.66	142	.	.	.	.	.	.
110.0	15.00	35.99	26.74	134	.	.	.	.	.	.
115.0	14.74	35.96	26.78	131	.	.	.	.	.	.
120.0	14.38	35.90	26.81	128	.	.	.	.	.	.
125.0	14.14	35.87	26.84	125	.	.	.	.	.	.
130.0	13.90	35.83	26.86	123	.	.	.	.	.	.
135.0	13.70	35.80	26.88	122	.	.	.	.	.	.
140.0	13.38	35.76	26.91	118	.	.	.	.	.	.
145.0	13.06	35.71	26.94	116	.	.	.	.	.	.
150.0	12.42	35.61	26.99	111	.	.	.	.	.	.
155.0	11.90	35.57	27.06	104	.	.	.	.	.	.

BLUE FIN CRUISE 57 STA 016C 14/ 18/77 14.0 GMT CONSEC STA 16
LAT 31 34.2N LONG 79 37.3W DEPTH = 109M DIST LAST STA = 9.3KM

WEATHER DATA

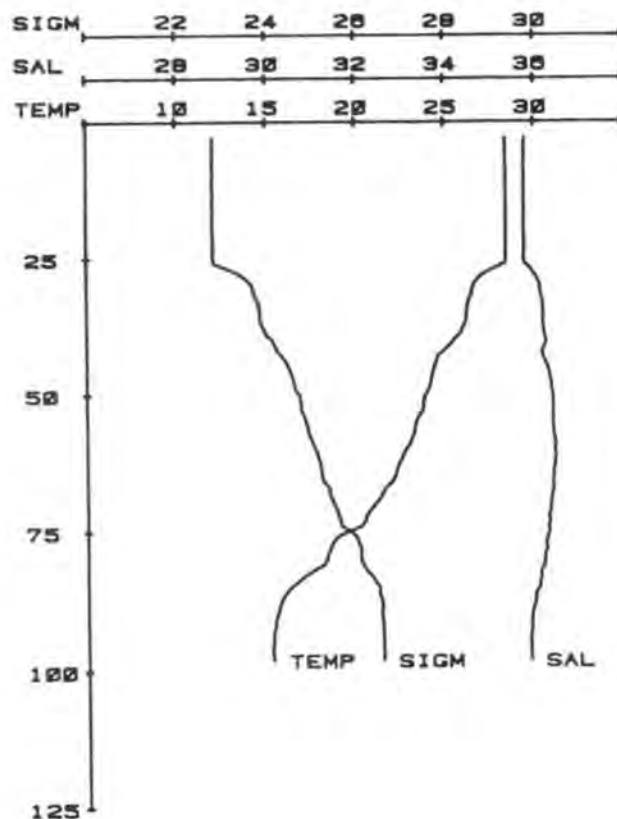
WIND SPEED * 13 KTS
WIND DIRECTION * 140
AIR TEMP * * C
WEATHER CODE * 10
BAROMETRIC PRESSURE * 1017.9 MB

SEA STATE * 3
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	D2	D2'	ADU	P04	M03	S1
3.0	28.46	35.79	22.84	502	*	*	*	0.01	00.1	00.1
4.0	28.46	35.78	22.84	503	*	*	*	*	*	*
5.0	28.46	35.78	22.84	503	*	*	*	*	*	*
6.0	28.46	35.78	22.84	503	*	*	*	*	*	*
7.0	28.46	35.78	22.84	503	*	*	*	*	*	*
8.0	28.46	35.77	22.83	504	*	*	*	*	*	*
9.0	28.46	35.78	22.84	503	*	*	*	*	*	*
10.0	28.46	35.78	22.84	503	*	*	*	*	*	*
11.0	28.46	35.77	22.83	504	*	*	*	*	*	*
12.0	28.46	35.77	22.83	504	*	*	*	*	*	*
13.0	28.46	35.78	22.84	503	*	*	*	*	*	*
14.0	28.46	35.77	22.83	504	*	*	*	*	*	*
15.0	28.46	35.77	22.83	504	*	*	*	*	*	*
16.0	28.46	35.78	22.84	503	*	*	*	*	*	*
17.0	28.46	35.77	22.83	504	*	*	*	*	*	*
18.0	28.46	35.77	22.83	504	*	*	*	*	*	*
19.0	28.46	35.77	22.83	504	*	*	*	*	*	*
20.0	28.46	35.77	22.83	504	*	*	*	*	*	*
21.0	28.44	35.78	22.84	503	*	*	*	*	*	*
22.0	28.44	35.78	22.84	503	*	*	*	*	*	*
23.0	28.44	35.78	22.84	503	*	*	*	*	*	*
24.0	28.44	35.77	22.84	504	*	*	*	*	*	*
25.0	28.44	35.77	22.84	504	*	*	*	*	*	*
26.0	28.40	35.79	22.86	501	*	*	*	*	*	*
27.0	27.78	35.92	23.17	472	*	*	*	*	*	*
28.0	27.23	35.99	23.40	450	*	*	*	*	*	*
29.0	26.88	36.07	23.57	434	*	*	*	*	*	*
30.0	26.63	36.12	23.69	423	*	*	*	*	*	*
31.0	26.53	36.13	23.73	419	*	*	*	*	*	*
32.0	26.48	36.14	23.75	417	*	*	*	*	*	*
33.0	26.32	36.18	23.83	409	*	*	*	*	*	*
34.0	26.26	36.19	23.86	406	*	*	*	*	*	*
35.0	26.22	36.19	23.87	405	*	*	*	*	*	*
36.0	26.20	36.19	23.88	405	*	*	*	*	*	*
37.0	26.14	36.19	23.90	403	*	*	*	*	*	*
38.0	25.98	36.21	23.96	397	*	*	*	*	*	*
39.0	25.84	36.22	24.01	392	*	*	*	*	*	*
40.0	25.50	36.26	24.15	379	*	*	*	*	*	*
41.0	25.28	36.23	24.19	375	*	*	*	*	*	*
42.0	24.94	36.17	24.25	369	*	*	*	*	*	*
43.0	24.60	36.18	24.36	359	*	*	*	*	*	*
44.0	24.49	36.24	24.44	351	*	*	*	*	*	*
45.0	24.38	36.30	24.52	344	*	*	*	*	*	*
46.0	24.30	36.33	24.57	339	*	*	*	*	*	*
47.0	24.23	36.35	24.60	334	*	*	*	*	*	*
48.0	24.17	36.38	24.64	332	*	*	*	*	*	*
49.0	24.09	36.37	24.66	331	*	*	0.11	01.5	00.9	*
50.0	23.88	36.41	24.75	322	*	*	*	*	*	*
51.0	23.76	36.41	24.78	319	*	*	*	*	*	*
52.0	23.76	36.41	24.79	318	*	*	*	*	*	*
53.0	23.72	36.41	24.80	317	*	*	*	*	*	*
54.0	23.50	36.40	24.86	312	*	*	*	*	*	*
55.0	23.37	36.40	24.90	308	*	*	*	*	*	*
56.0	23.28	36.42	24.94	304	*	*	*	*	*	*
57.0	23.24	36.42	24.95	303	*	*	*	*	*	*
58.0	23.10	36.45	25.01	297	*	*	*	*	*	*
59.0	22.99	36.46	25.05	294	*	*	*	*	*	*
60.0	22.78	36.45	25.10	289	*	*	*	*	*	*
61.0	22.62	36.46	25.16	284	*	*	*	*	*	*
62.0	22.50	36.45	25.19	281	*	*	*	*	*	*
63.0	22.34	36.44	25.22	277	*	*	*	*	*	*
64.0	22.23	36.41	25.23	277	*	*	*	*	*	*
65.0	22.16	36.41	25.25	275	*	*	*	*	*	*
66.0	21.97	36.39	25.29	271	*	*	*	*	*	*
67.0	21.82	36.42	25.41	260	*	*	*	*	*	*
68.0	21.47	36.37	25.41	259	*	*	*	*	*	*
69.0	21.29	36.36	25.46	255	*	*	*	*	*	*
70.0	21.02	36.34	25.52	250	*	*	*	*	*	*
71.0	20.76	36.33	25.58	244	*	*	*	*	*	*
72.0	20.54	36.30	25.62	240	*	*	*	*	*	*
73.0	20.46	36.32	25.65	237	*	*	*	*	*	*
74.0	20.27	36.29	25.68	234	*	*	*	*	*	*
75.0	19.52	36.31	25.90	214	*	*	*	*	*	*
76.0	18.90	36.26	26.02	202	*	*	*	*	*	*
77.0	18.62	36.23	26.07	198	*	*	*	*	*	*
78.0	18.50	36.25	26.11	193	*	*	*	*	*	*
79.0	18.37	36.20	26.11	194	*	*	*	*	*	*

STATION 016C



STA 016C 14/ 18/77 14.0 GMT CONSEC STA 16 (CONTINUED)

OBSERVATIONS

Z	T	S	B	SVA	D2	D2'	ADU	P04	M03	S1
80.0	18.30	36.19	26.12	193	*	*	*	*	*	*
81.0	18.12	36.20	26.17	188	*	*	*	*	*	*
82.0	17.54	36.11	26.24	181	*	*	*	*	*	*
83.0	17.04	36.12	26.37	169	*	*	*	*	*	*
84.0	16.46	36.09	26.44	162	*	*	*	*	*	*
85.0	16.28	36.08	26.52	154	*	*	*	*	*	*
86.0	16.00	35.99	26.52	155	*	*	*	*	*	*
87.0	15.78	35.98	26.56	151	*	*	*	*	*	*
88.0	15.44	35.97	26.58	148	*	*	*	*	*	*
89.0	15.57	35.92	26.56	151	*	*	*	*	*	*
90.0	15.48	35.90	26.57	150	*	*	*	*	*	*
91.0	15.38	35.90	26.59	148	*	*	*	*	*	*
92.0	15.36	35.90	26.59	148	*	*	*	*	*	*
93.0	15.28	35.88	26.60	147	*	*	*	*	*	*
94.0	15.27	35.87	26.59	148	*	*	*	*	*	*
95.0	15.26	35.88	26.60	147	*	*	0.92	16.0	09.1	*
96.0	15.22	35.87	26.60	147	*	*	*	*	*	*
97.0	15.23	35.88	26.61	146	*	*	*	*	*	*
98.0	15.30	35.88	26.59	148	*	*	*	*	*	*

BLUE FIN CRUISE 57 STA 017X 14/ 11/77 16.2 GMT CONSEC STA 17

LAT 31 35.9N LONG 79 43.5W DEPTH = 58M DIST LAST STA = 10.3KM

WEATHER DATA

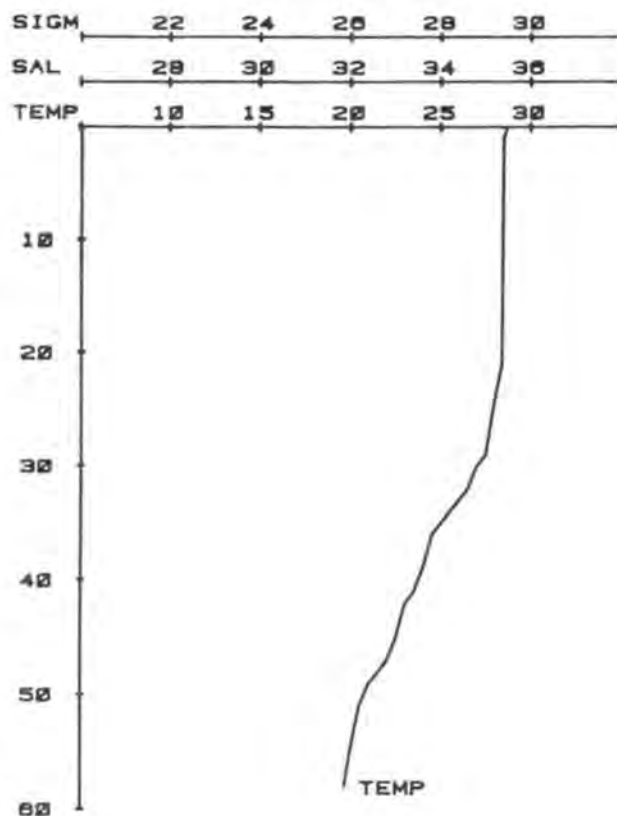
WIND SPEED = 08 KTS
WIND DIRECTION = 140
AIR TEMP = , C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1017.6 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	02	02'	AOU	PD4	M03	SI
0.0	28.70									
1.0	28.50	35.78	22.82	504				0.01	00.0	00.0
21.0	28.40	35.85	22.91	496				0.03	00.0	00.1
24.0	28.00									
29.0	27.50									
30.0	27.00									
32.0	26.50									
33.0	26.00									
34.0	25.50									
35.5	25.00									
36.5	24.50									
39.0	24.00									
41.0	23.50									
42.5	23.00									
45.0	22.50									
47.0	22.00									
48.0	21.50									
49.0	21.00									
51.5	20.50									
55.5	20.00									
58.0	19.70	36.29	25.83	219				0.46	07.5	04.0

STATION 017X



BLUE FIN CRUISE 57 STA 18X 14/ 1X/77 17.4 GMT CONSEC STA 18

LAT 31 37.4N LONG 79 49.5W DEPTH = 47M DIST LAST STA = 9.9KM

WEATHER DATA

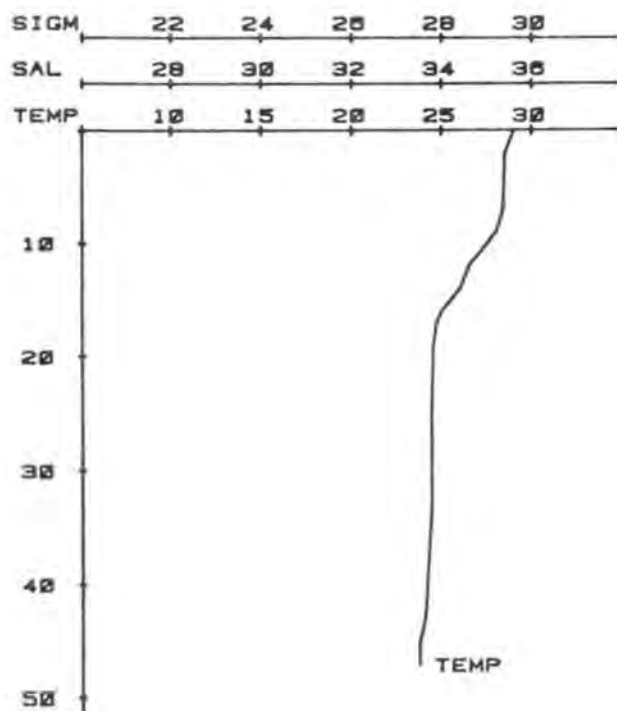
WIND SPEED = 8 KTS
WIND DIRECTION = 140
AIR TEMP = , C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1018.6 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	02	02'	AOU	PD4	M03	SI
0.0	29.00									
2.0	28.50	35.84	22.87	500				0.00	00.1	00.4
7.0	28.40									
9.5	28.00									
10.5	27.50									
11.5	27.00									
12.5	26.50									
14.0	26.00									
15.0	25.50									
16.0	25.00									
17.5	24.70									
19.5	24.50									
24.0	24.40									
27.0	24.40	36.00	24.29	365				0.01	00.0	00.5
33.0	24.40									
43.0	24.00									
45.0	23.70	36.29	24.71	325				0.12	02.0	01.8
47.0	23.70									

STATION 018X



BLUE FIN CRUISE 57 STA 19X 14/ 1X/77 18.4 GMT CONSEC STA 19

LAT 31 39.2N LONG 79 55.6W DEPTH = 42M DIST LAST STA = 10.2KM

WEATHER DATA

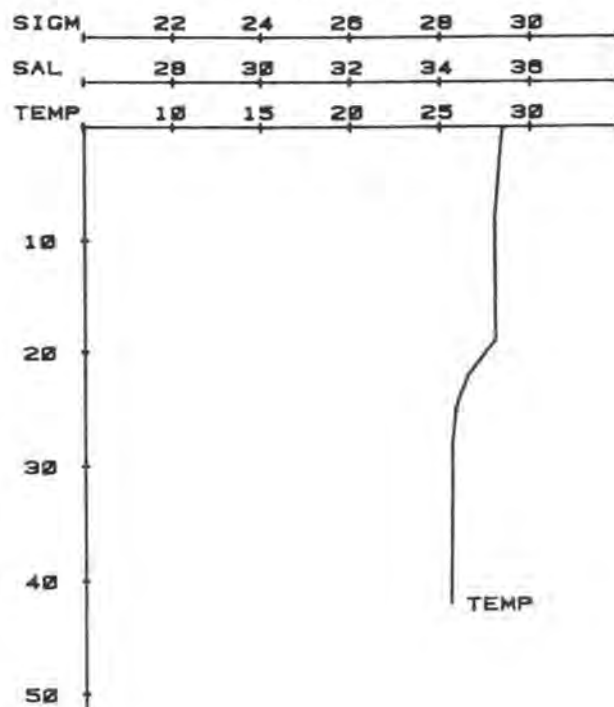
WIND SPEED = 2 KTS
WIND DIRECTION = VARIABLE
AIR TEMP = C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1018.4 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	N03	SI
0.0	28.70	.	.	.	.	.	.	.	.	.
0.5	28.50	.	.	.	.	.	.	.	.	.
1.0	28.40	35.96	22.99	488	.	.	.	0.03	00.0	00.2
8.0	28.00	.	.	.	.	.	.	.	.	.
18.0	28.00	36.04	23.18	470	.	.	.	0.02	00.0	00.1
19.0	28.00	.	.	.	.	.	.	.	.	.
20.5	27.50	.	.	.	.	.	.	.	.	.
21.5	27.00	.	.	.	.	.	.	.	.	.
22.5	26.50	.	.	.	.	.	.	.	.	.
24.0	26.00	.	.	.	.	.	.	.	.	.
25.0	25.80	.	.	.	.	.	.	.	.	.
28.0	25.60	.	.	.	.	.	.	.	.	.
31.0	25.60	36.23	24.09	384	.	.	.	0.03	00.3	01.8
42.0	25.53	36.25	24.13	381	.	.	.	0.09	00.2	01.7

STATION 010X



BLUE FIN CRUISE 57 STA 20X 14/ 1X/77 19.5 GMT CONSEC STA 20

LAT 31 40.9N LONG 80 1.2W DEPTH = 39M DIST LAST STA = 9.4KM

WEATHER DATA

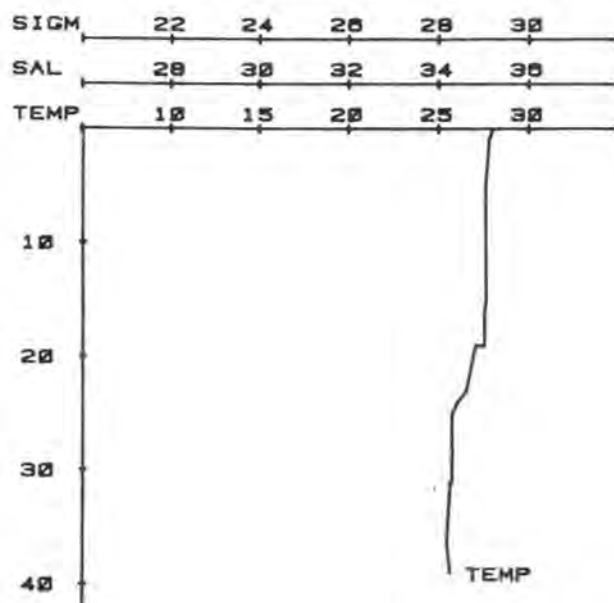
WIND SPEED = 2 KTS
WIND DIRECTION = VARIABLE
AIR TEMP = C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1018.4 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	P04	N03	SI
0.0	28.40	.	.	.	.	.	.	.	.	.
0.5	28.00	.	.	.	.	.	.	.	.	.
1.0	27.80	36.14	23.32	456	.	.	.	0.00	00.0	00.4
3.0	27.70	.	.	.	.	.	.	.	.	.
5.0	27.60	.	.	.	.	.	.	.	.	.
15.0	27.60	.	.	.	.	.	.	.	.	.
16.0	27.50	.	.	.	.	.	.	.	.	.
19.0	27.50	.	.	.	.	.	.	.	.	.
19.5	27.00	.	.	.	.	.	.	.	.	.
23.0	26.50	.	.	.	.	.	.	.	.	.
24.0	26.00	.	.	.	.	.	.	.	.	.
25.5	25.70	.	.	.	.	.	.	.	.	.
27.5	25.70	36.23	24.06	387	.	.	.	0.10	00.4	02.2
31.0	25.70	.	.	.	.	.	.	.	.	.
31.5	25.60	.	.	.	.	.	.	.	.	.
36.0	25.46	36.23	24.14	380	.	.	.	0.12	00.3	02.3
39.0	25.60	.	.	.	.	.	.	.	.	.

STATION 020X



BLUE FIN CRUISE 57 STA 21X 14/ 1X/77 20.3 GMT CONSEC STA 21
LAT 31 42.4N LONG 80 7.0W DEPTH = 33M DIST LAST STA = 9.6KM

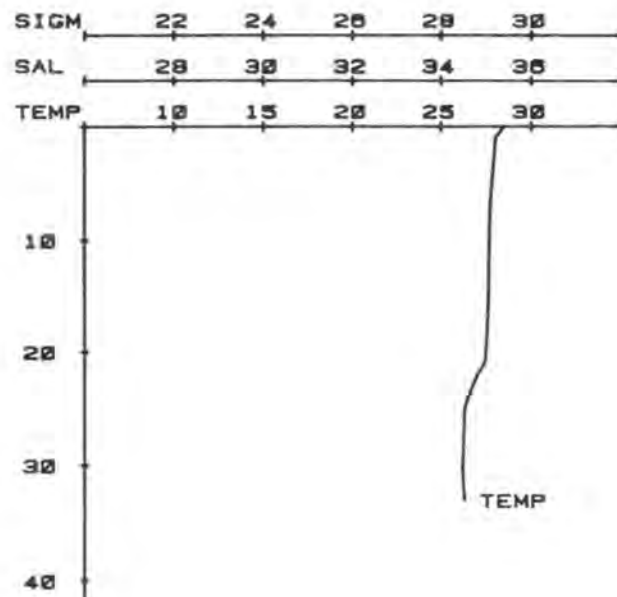
WEATHER DATA

WIND SPEED = 2 KTS SEA STATE = 2
WIND DIRECTION = VARIABLE WAVE DIRECTION =
AIR TEMP = , C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1018.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	28.50	.	.	.	.	.	.	.	.	.
1.0	28.00	36.13	23.25	463	.	.	.	0.03	00.0	00.6
7.0	27.70	.	.	.	.	.	.	.	.	.
16.5	27.60	.	.	.	.	.	.	.	.	.
19.0	27.50	.	.	.	.	.	.	.	.	.
21.5	27.40	.	.	.	.	.	.	.	.	.
22.0	27.00	.	.	.	.	.	.	.	.	.
24.0	26.50	.	.	.	.	.	.	.	.	.
25.0	26.30	.	.	.	.	.	.	.	.	.
30.0	26.28	36.19	23.85	407	.	.	.	0.08	00.2	01.4
33.0	26.30	.	.	.	.	.	.	.	.	.

STATION 021X



BLUE FIN CRUISE 57 STA 22X 14/ 1X/77 21.1 GMT CONSEC STA 22
LAT 31 44.1N LONG 80 13.4W DEPTH = 28M DIST LAST STA = 10.6KM

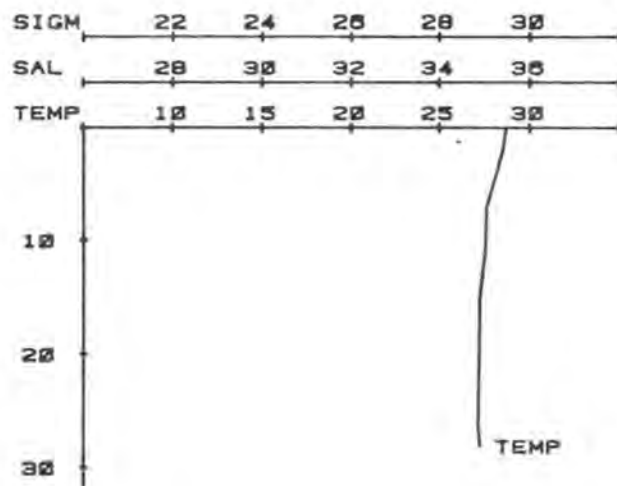
WEATHER DATA

WIND SPEED = 2 KTS SEA STATE = 2
WIND DIRECTION = VARIABLE WAVE DIRECTION =
AIR TEMP = , C CLOUD TYPE =
WEATHER CODE = X0 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	28.70	.	.	.	.	.	.	.	.	.
2.0	28.50	35.99	22.98	489	.	.	.	0.06	00.0	00.8
7.0	27.60	.	.	.	.	.	.	.	.	.
11.5	27.50	.	.	.	.	.	.	.	.	.
15.0	27.20	.	.	.	.	.	.	.	.	.
26.0	27.18	36.11	23.50	440	.	.	.	0.06	00.1	00.9
28.0	27.20	.	.	.	.	.	.	.	.	.

STATION 022X



BLUE FIN CRUISE 57 STA 231 14/ 11/77 21.7 GRT CONSEC STA 23

LAT 31 45.6N LONG 80 19.2W DEPTH = 21M DIST LAST STA = 9.6KM

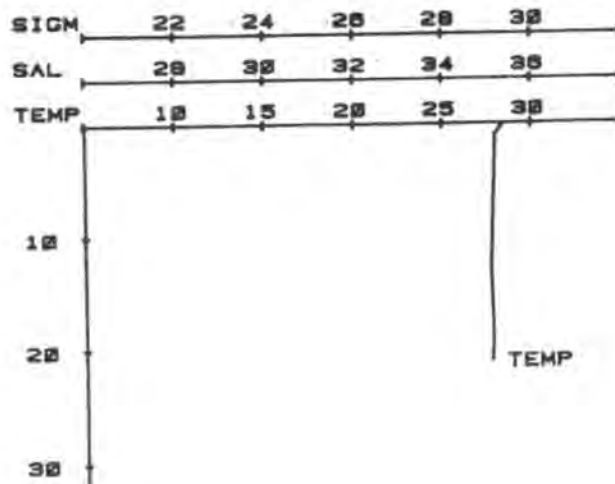
WEATHER DATA

WIND SPEED = 2 KTS SEA STATE = 2
WIND DIRECTION = VARIABLE WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.6 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	28.50	.	.	.	.	.	.	.	.	.
1.0	28.00	35.81	23.01	484	.	.	.	0.05	00.0	00.7
13.0	27.70	.	.	.	.	.	.	.	.	.
19.0	27.83	35.90	23.13	475	.	.	.	0.03	00.0	00.7
21.0	27.70	.	.	.	.	.	.	.	.	.

STATION 023X



BLUE FIN CRUISE 57 STA 24X 14/ 11/77 22.4 GRT CONSEC STA 24

LAT 31 47.4N LONG 80 25.0W DEPTH = 20M DIST LAST STA = 9.7KM

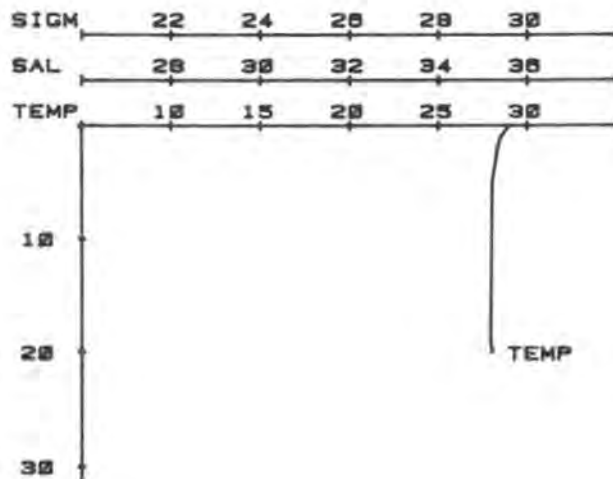
WEATHER DATA

WIND SPEED = 3 KTS SEA STATE = 2
WIND DIRECTION = 110 WAVE DIRECTION =
AIR TEMP = . C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.4 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	29.00	.	.	.	.	.	.	.	.	.
1.0	28.50	35.67	22.74	512	.	.	.	0.03	00.0	00.5
2.5	28.30	.	.	.	.	.	.	.	.	.
5.0	28.00	.	.	.	.	.	.	.	.	.
19.0	27.94	35.72	22.94	491	.	.	.	0.04	00.0	00.7
20.0	28.00	.	.	.	.	.	.	.	.	.

STATION 024X



BLUE FIN CRUISE 57 STA 25X 14/ 1X/77 23.0 GMT CONSEC STA 25

LAT 31 48.9N LONG 80 30.8W DEPTH = 19M DIST LAST STA = 9.5KM

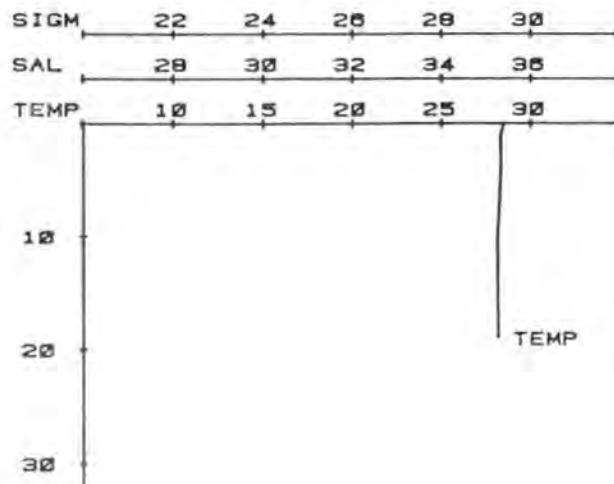
WEATHER DATA

WIND SPEED = 3 KTS SEA STATE = 2
WIND DIRECTION = 110 WAVE DIRECTION =
AIR TEMP = 26.0 C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	28.50	-	-	-	-	-	-	-	-	-
1.0	28.30	35.85	22.94	492	-	-	-	0.03	00.0	00.8
4.0	28.30	-	-	-	-	-	-	-	-	-
10.0	28.10	-	-	-	-	-	-	-	-	-
19.0	28.10	35.84	23.00	488	-	-	-	0.03	00.0	00.3

STATION 025X



BLUE FIN CRUISE 57 STA 26X 14/ 1X/77 23.6 GMT CONSEC STA 26

LAT 31 50.7N LONG 80 37.1W DEPTH = 19M DIST LAST STA = 10.5KM

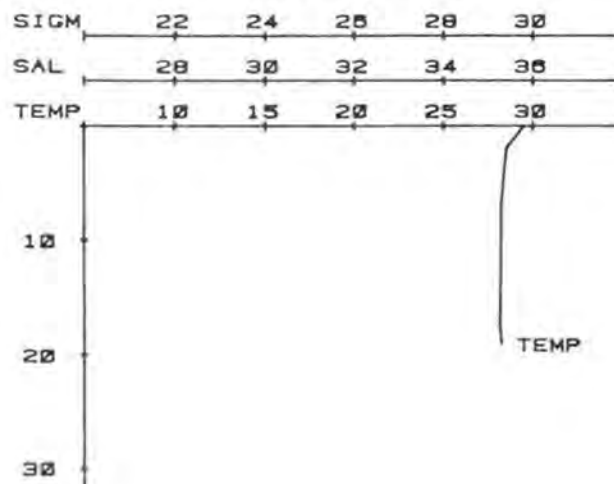
WEATHER DATA

WIND SPEED = 3 KTS SEA STATE = 2
WIND DIRECTION = 110 WAVE DIRECTION =
AIR TEMP = 26.0 C CLOUD TYPE =
WEATHER CODE = X1 CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1017.3 MB VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	29.50	-	-	-	-	-	-	-	-	-
1.0	29.00	35.43	22.39	545	-	-	-	0.08	00.0	00.2
2.5	28.50	-	-	-	-	-	-	-	-	-
5.0	28.30	-	-	-	-	-	-	-	-	-
7.0	28.20	-	-	-	-	-	-	-	-	-
17.0	28.11	35.68	22.88	499	-	-	-	0.06	00.0	00.9
19.0	28.20	-	-	-	-	-	-	-	-	-

STATION 026X



CI-01-78

23-26 January 1978

STATION SUMMARY FOR ISELIN CRUISE CI-01

CRUISE	STATION	LATITUDE		LONGITUDE		YR	MN	DAY	HOUR	DEPTH	CONSEC
									GMT	M	NUMBER
001	1X	31	56.5N	80	41.0W	78	1	23	20.9	12	1
001	2X	31	52.7N	80	30.1W	78	1	23	23.7	21	2
001	3X	31	49.3N	80	19.3W	78	1	24	1.7	25	3
001	4X	31	46.7N	80	8.5W	78	1	24	3.4	33	4
001	5X	31	41.9N	79	57.5W	78	1	24	5.1	39	5
001	6X	31	40.1N	79	52.0W	78	1	24	6.1	44	6
001	7X	31	38.2N	79	46.9W	78	1	24	7.6	47	7
001	8X	31	36.4N	79	41.3W	78	1	24	8.8	75	8
001	9X	31	34.7N	79	36.0W	78	1	24	9.3	115	9
001	10X	31	32.6N	79	30.1W	78	1	24	10.7	269	10
001	11X	31	29.0N	79	19.4W	78	1	24	13.1	475	11
001	12X	31	11.7N	81	8.9W	78	1	24	22.2	11	12
001	13X	31	8.5N	80	58.0W	78	1	24	23.5	16	13
001	14X	31	5.0N	80	47.2W	78	1	25	.7	21	14
001	15X	31	1.5N	80	36.2W	78	1	25	2.0	28	15
001	16X	30	58.0N	80	25.4W	78	1	25	3.0	35	16
001	17X	30	56.4N	80	20.0W	78	1	25	3.8	39	17
001	18X	30	54.6N	80	14.6W	78	1	25	4.3	37	18
001	19X	30	52.9N	80	9.1W	78	1	25	5.1	42	19
001	20X	30	51.0N	80	4.0W	78	1	25	5.5	47	20
001	21X	30	49.5N	79	58.5W	78	1	25	6.3	193	21
001	22X	30	47.8N	79	53.0W	78	1	25	7.0	288	22
001	23X	29	54.2N	80	10.5W	78	1	26	.2	338	23
001	24X	29	13.2N	80	26.5W	78	1	26	15.7	30	24

ISELIN CRUISE CI-01 STA 1X 23/ 1/78 20.9 GMT CONSEC STA 1

LAT 31 56.5N LONG 80 41.0W DEPTH = 12M DIST LAST STA = 0.0KM

WEATHER DATA

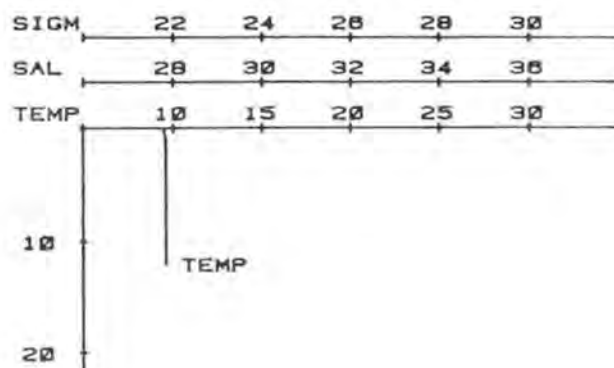
WIND SPEED =
WIND DIRECTION =
AIR TEMP = 8.0
WEATHER CODE =
BAROMETRIC PRESSURE = MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	N03	SI
0.0	9.40	.	.	.	.	.	.	.	.	.
0.5	9.50	.	.	.	.	.	.	.	.	.
1.0	9.60	.	.	.	.	.	.	.	.	.
2.0	9.60	34.13	26.35	168	.	.	.	0.21	00.0	00.5
12.0	9.60	.	.	.	.	.	.	0.19	00.6	00.5

STATION 001X



ISELIN CRUISE CI-01 STA 2X 23/ 1/78 23.7 GMT CONSEC STA 2

LAT 31 52.7N LONG 80 30.1W DEPTH = 21M DIST LAST STA = 18.5KM

WEATHER DATA

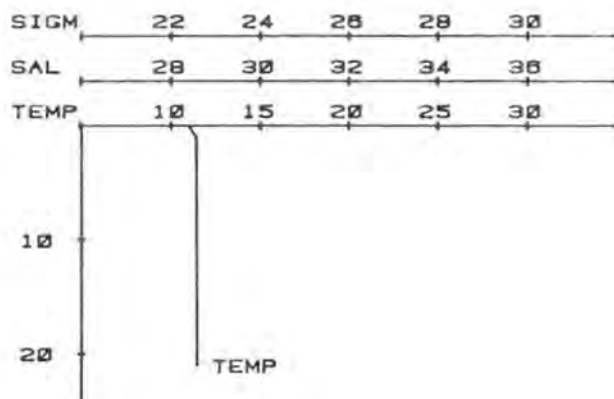
WIND SPEED = 12 KTS
WIND DIRECTION = 020
AIR TEMP = 08.3C
WEATHER CODE =
BAROMETRIC PRESSURE = 1028.8 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	N03	SI
0.0	11.00	.	.	.	.	.	.	.	.	.
1.0	11.40	.	.	.	.	.	.	.	.	.
2.0	11.40	35.27	26.92	113	.	.	.	0.11	00.1	00.6
17.0	11.40	.	.	.	.	.	.	0.10	00.2	00.6
21.0	11.40	.	.	.	.	.	.	.	.	.

STATION 002X



ISELIN CRUISE CI-01 STA 3X 24/ 1/78 1.7 GMT CONSEC STA 3

LAT 31 49.3N LONG 80 19.3W DEPTH = 25M DIST LAST STA = 18.1KM

WEATHER DATA

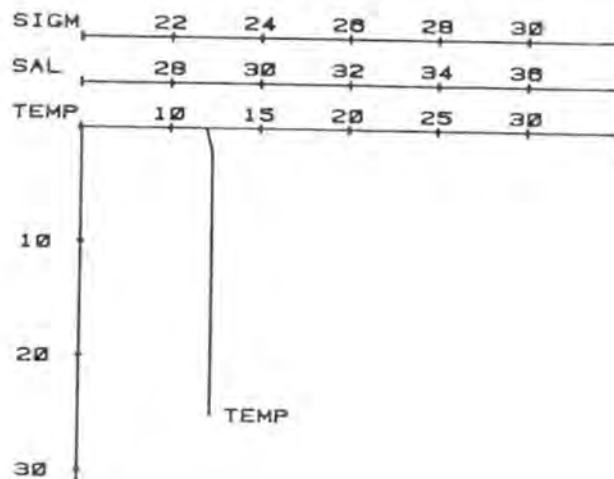
WIND SPEED = 14 KTS
WIND DIRECTION = 030
AIR TEMP = 08.9C
WEATHER CODE =
BAROMETRIC PRESSURE = 1027.9 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AOU	P04	N03	SI
0.0	12.00	.	.	.	.	.	.	.	.	.
2.0	12.30	35.74	27.12	95	.	.	.	0.14	00.0	00.5
18.0	12.30	.	.	.	.	.	.	0.07	00.1	00.6
25.0	12.30	.	.	.	.	.	.	.	.	.

STATION 003X



ISELIN CRUISE CI-01 STA 42 24/ 1/78 3.4 GMT CONSEC STA 4

LAT 31 46.7N LONG 80 8.5W DEPTH = 33M DIST LAST STA = 17.7KM

WEATHER DATA

WIND SPEED = 14 KTS

WIND DIRECTION = 030

AIR TEMP = C

WEATHER CODE =

BAROMETRIC PRESSURE = 1027.6 MB

SEA STATE =

WAVE DIRECTION =

CLOUD TYPE =

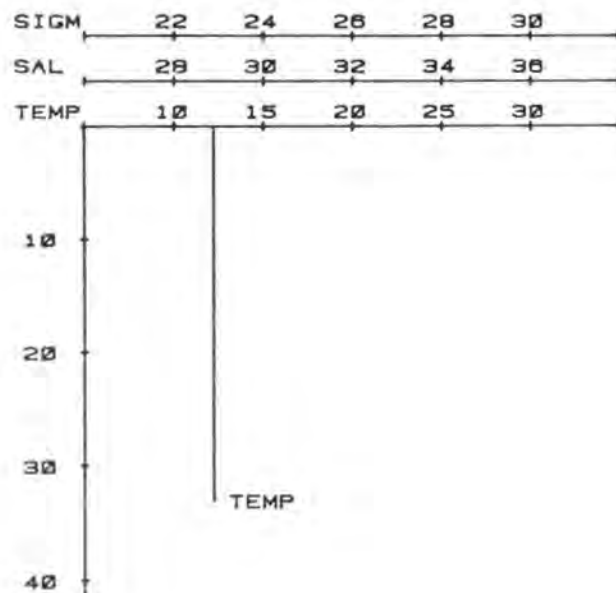
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	12.00	-	-	-	-	-	-	-	-	-
0.5	12.20	-	-	-	-	-	-	-	-	-
2.0	12.20	35.63	27.05	101	-	-	-	0.10	00.1	00.3
19.0	12.20	-	-	-	-	-	-	0.11	00.0	00.1
33.0	12.20	-	-	-	-	-	-	-	-	-

STATION 004X



ISELIN CRUISE CI-01 STA 5X 24/ 1/78 5.1 GMT CONSEC STA 5

LAT 31 41.9N LONG 79 57.5W DEPTH = 39M DIST LAST STA = 19.5KM

WEATHER DATA

WIND SPEED = 15 KTS

WIND DIRECTION = 030

AIR TEMP = C

WEATHER CODE =

BAROMETRIC PRESSURE = MB

SEA STATE =

WAVE DIRECTION =

CLOUD TYPE =

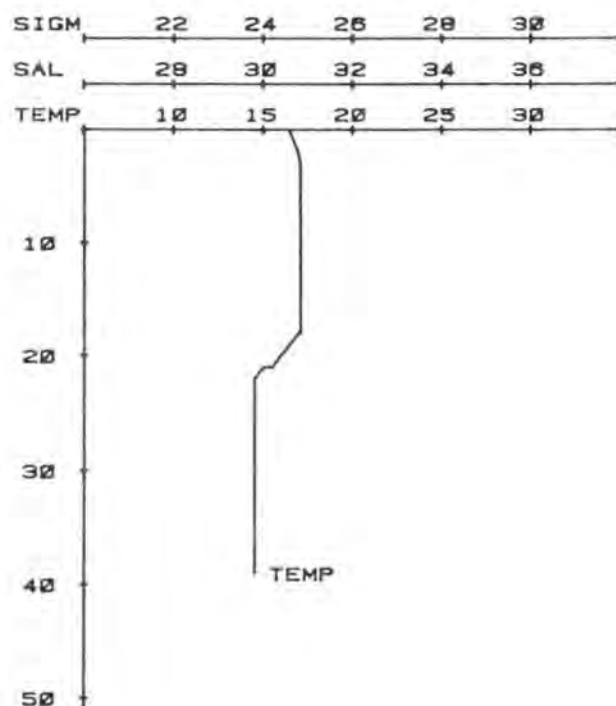
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	14.50	-	-	-	-	-	-	-	-	-
0.5	16.50	-	-	-	-	-	-	-	-	-
2.5	17.00	36.35	26.56	148	-	-	-	0.04	00.0	00.6
3.0	17.10	-	-	-	-	-	-	-	-	-
18.0	17.10	-	-	-	-	-	-	-	-	-
18.5	17.00	-	-	-	-	-	-	-	-	-
19.5	16.50	-	-	-	-	-	-	-	-	-
20.0	16.00	-	-	-	-	-	-	-	-	-
21.0	15.50	-	-	-	-	-	-	-	-	-
21.5	15.00	-	-	-	-	-	-	-	-	-
22.5	14.50	-	-	-	-	-	-	-	-	-
38.0	14.50	36.20	27.02	106	-	-	-	0.09	00.0	00.3
39.0	14.50	-	-	-	-	-	-	-	-	-

STATION 005X



ISELIN CRUISE CI-01 STA 6X 24/ 1/78 6.1 GMT CONSEC STA 6
LAT 31 40.1N LONG 79 52.0W DEPTH = 44M DIST LAST STA = 9.3KM

WEATHER DATA

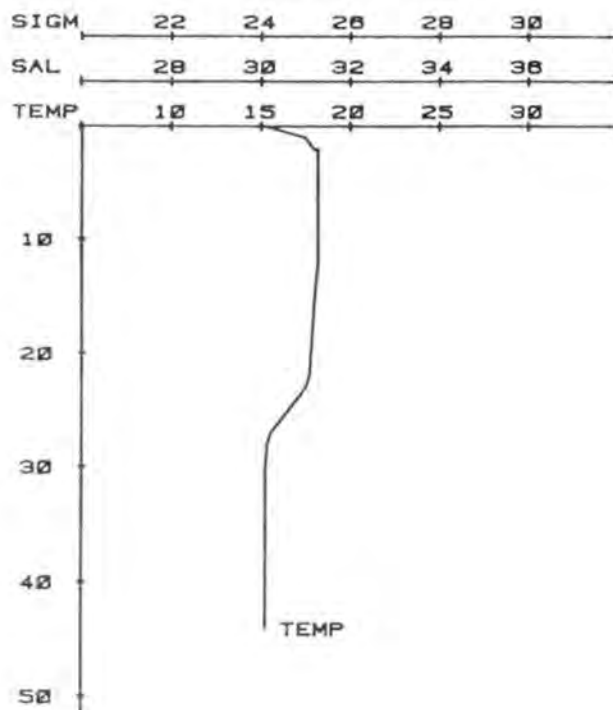
WIND SPEED = 15 KTS
WIND DIRECTION = 030
AIR TEMP = 13.3C
WEATHER CODE =
BAROMETRIC PRESSURE = 1026.4 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	ADU	P04	N03	SI
0.0	15.20	-	-	-	-	-	-	-	-	-
1.0	17.50	-	-	-	-	-	-	-	-	-
2.0	18.00	-	-	-	-	-	-	-	-	-
2.5	18.20	-	-	-	-	-	-	-	-	-
12.5	18.20	-	-	-	-	-	-	-	-	-
15.0	18.00	-	-	-	-	-	-	-	-	-
22.0	17.70	-	-	-	-	-	-	-	-	-
23.0	17.50	-	-	-	-	-	-	-	-	-
24.0	17.00	-	-	-	-	-	-	-	-	-
25.0	16.50	-	-	-	-	-	-	-	-	-
26.0	16.00	-	-	-	-	-	-	-	-	-
27.0	15.50	-	-	-	-	-	-	-	-	-
28.0	15.30	-	-	-	-	-	-	-	-	-
30.0	15.20	-	-	-	-	-	-	-	-	-
44.0	15.20	-	-	-	-	-	-	-	-	-

STATION 006X



ISELIN CRUISE CI-01 STA 7X 24/ 1/78 7.6 GMT CONSEC STA 7
LAT 31 38.2N LONG 79 46.9W DEPTH = 47M DIST LAST STA = 8.8KM

WEATHER DATA

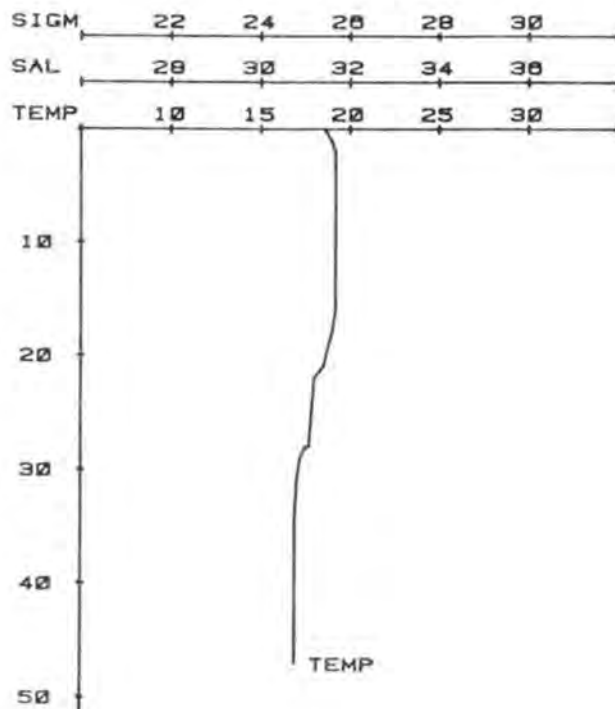
WIND SPEED = 15 KTS
WIND DIRECTION = 030
AIR TEMP = 14.4C
WEATHER CODE =
BAROMETRIC PRESSURE = 1026.0 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	ADU	P04	N03	SI
0.0	18.60	-	-	-	-	-	-	-	-	-
1.0	19.00	-	-	-	-	-	-	-	-	-
2.0	19.70	36.30	25.97	204	-	-	-	0.18	02.0	00.7
16.5	19.20	-	-	-	-	-	-	-	-	-
18.5	19.00	-	-	-	-	-	-	-	-	-
21.5	18.50	-	-	-	-	-	-	-	-	-
22.5	18.00	-	-	-	-	-	-	-	-	-
28.0	17.70	-	-	-	-	-	-	-	-	-
28.5	17.50	-	-	-	-	-	-	-	-	-
29.0	17.20	-	-	-	-	-	-	-	-	-
31.0	17.00	-	-	-	-	-	-	-	-	-
34.0	16.90	-	-	-	-	-	-	-	-	-
44.0	16.90	36.35	26.58	147	-	-	-	0.08	00.2	00.7
47.0	16.90	-	-	-	-	-	-	-	-	-

STATION 007X



ISELIN CRUISE C1-01 STA BX 24/ 1/78 8.8 GMT CONSEC STA 8

LAT 31 38.4N LONG 79 41.3W DEPTH = 75M DIST LAST STA = 9.4KM

WEATHER DATA

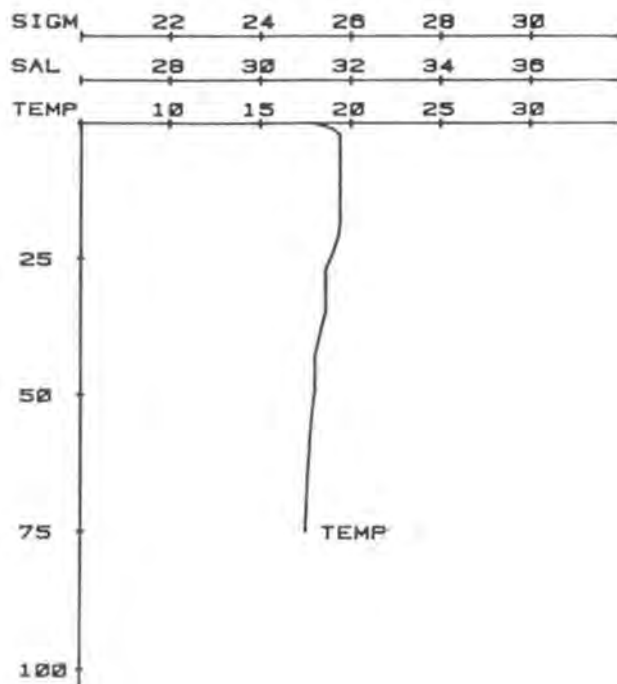
WIND SPEED = 16 KTS
WIND DIRECTION = 030
AIR TEMP = 15.0C
WEATHER CODE =
BAROMETRIC PRESSURE = 1025.8 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	AOU	P04	N03	SI
0.0	18.00	*	*	*	*	*	*	*	*	*
1.0	19.00	*	*	*	*	*	*	*	*	*
2.0	19.40	*	*	*	*	*	*	*	*	*
18.5	19.40	*	*	*	*	*	*	*	*	*
21.5	19.30	*	*	*	*	*	*	*	*	*
24.5	19.00	*	*	*	*	*	*	*	*	*
27.0	18.60	*	*	*	*	*	*	*	*	*
35.0	18.60	*	*	*	*	*	*	*	*	*
36.5	18.50	*	*	*	*	*	*	*	*	*
43.0	18.00	*	*	*	*	*	*	*	*	*
49.0	18.00	*	*	*	*	*	*	*	*	*
55.0	17.80	*	*	*	*	*	*	*	*	*
65.0	17.60	*	*	*	*	*	*	*	*	*
74.0	17.50	*	*	*	*	*	*	*	*	*
75.0	17.50	*	*	*	*	*	*	*	*	*

STATION 008X



ISELIN CRUISE C1-01 STA 9X 24/ 1/78 9.3 GMT CONSEC STA 9

LAT 31 34.7N LONG 79 36.0W DEPTH = 115M DIST LAST STA = 8.9KM

WEATHER DATA

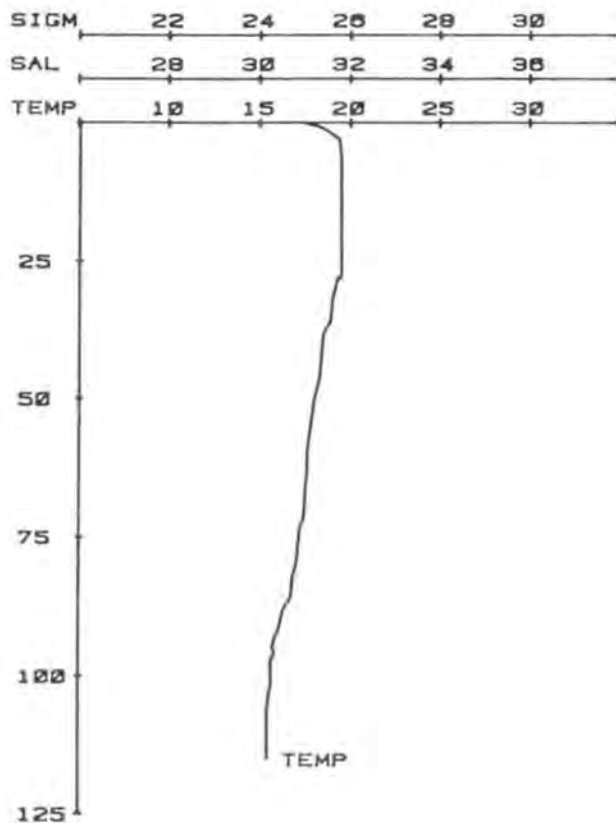
WIND SPEED = 16 KTS
WIND DIRECTION = 030
AIR TEMP = 15.0C
WEATHER CODE =
BAROMETRIC PRESSURE = 1025.8 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	AOU	P04	N03	SI
0.0	17.40	*	*	*	*	*	*	*	*	*
1.0	18.50	*	*	*	*	*	*	*	*	*
2.0	19.00	36.28	26.01	200	*	*	0.16	01.4	00.5	*
3.0	19.40	*	*	*	*	*	*	*	*	*
6.0	19.50	*	*	*	*	*	*	*	*	*
28.0	19.50	*	*	*	*	*	*	*	*	*
28.5	19.30	*	*	*	*	*	*	*	*	*
32.0	19.00	*	*	*	*	*	*	*	*	*
36.0	18.90	*	*	*	*	*	*	*	*	*
38.0	18.50	*	*	*	*	*	*	*	*	*
46.0	18.30	*	*	*	*	*	*	*	*	*
50.5	18.00	*	*	*	*	*	*	*	*	*
55.0	17.80	36.25	26.29	176	*	*	0.25	03.4	02.7	*
60.0	17.60	*	*	*	*	*	*	*	*	*
63.0	17.60	*	*	*	*	*	*	*	*	*
67.0	17.50	*	*	*	*	*	*	*	*	*
72.5	17.40	*	*	*	*	*	*	*	*	*
73.0	17.20	*	*	*	*	*	*	*	*	*
80.0	17.00	*	*	*	*	*	*	*	*	*
82.5	16.80	*	*	*	*	*	*	*	*	*
86.5	16.70	*	*	*	*	*	*	*	*	*
87.0	16.50	*	*	*	*	*	*	*	*	*
88.0	16.30	*	*	*	*	*	*	*	*	*
92.5	16.00	*	*	*	*	*	*	*	*	*
93.0	15.80	*	*	*	*	*	*	*	*	*
95.0	15.70	*	*	*	*	*	*	*	*	*
96.0	15.80	36.11	26.66	142	*	*	0.60	09.4	05.4	*
97.0	15.60	*	*	*	*	*	*	*	*	*
98.0	15.60	*	*	*	*	*	*	*	*	*
102.0	15.60	*	*	*	*	*	*	*	*	*
103.0	15.50	*	*	*	*	*	*	*	*	*
106.0	15.40	*	*	*	*	*	*	*	*	*
115.0	15.40	*	*	*	*	*	*	*	*	*

STATION 009X



ISELIN CRUISE C1-01 STA 101 24/ 1/78 10.2 GMT CONSEC STA 10

LAT 31 32.6N LONG 79 30.1W DEPTH = 269M DIST LAST STA = 10.1KM

WEATHER DATA

WIND SPEED = 15 KTS

WIND DIRECTION = 030

AIR TEMP = . C

WEATHER CODE =

BAROMETRIC PRESSURE =

MB

SEA STATE *

WAVE DIRECTION *

CLOUD TYPE *

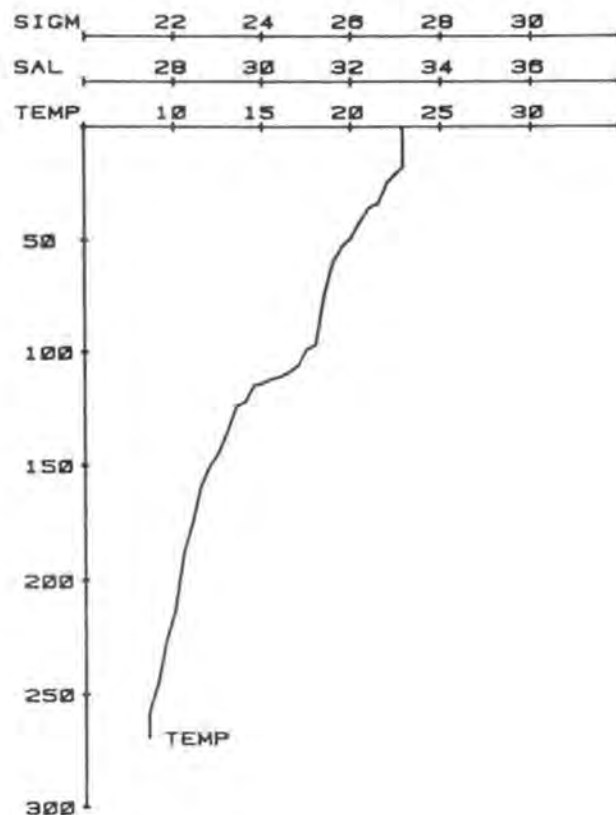
CLOUD AMOUNT *

VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	D2	D2'	AOU	PD4	N03	SI
0.0	22.80	-	-	-	-	-	-	-	-	-
2.0	22.90	36.32	24.97	299	-	-	-	0.04	00.2	01.1
18.0	22.90	-	-	-	-	-	-	-	-	-
21.0	22.50	-	-	-	-	-	-	-	-	-
25.0	22.00	-	-	-	-	-	-	-	-	-
34.0	21.50	-	-	-	-	-	-	-	-	-
36.0	21.00	-	-	-	-	-	-	-	-	-
42.0	20.50	-	-	-	-	-	-	-	-	-
49.0	20.00	-	-	-	-	-	-	-	-	-
53.0	19.50	-	-	-	-	-	-	-	-	-
60.0	19.00	-	-	-	-	-	-	-	-	-
75.0	18.50	36.23	26.10	195	-	-	-	0.27	02.2	00.8
97.0	18.00	-	-	-	-	-	-	-	-	-
99.0	17.50	-	-	-	-	-	-	-	-	-
106.0	17.00	-	-	-	-	-	-	-	-	-
109.0	16.50	-	-	-	-	-	-	-	-	-
111.0	16.00	-	-	-	-	-	-	-	-	-
112.0	15.50	-	-	-	-	-	-	-	-	-
114.0	15.00	-	-	-	-	-	-	-	-	-
115.0	14.50	-	-	-	-	-	-	-	-	-
122.0	14.00	-	-	-	-	-	-	-	-	-
124.0	13.50	-	-	-	-	-	-	-	-	-
135.0	13.00	-	-	-	-	-	-	-	-	-
144.0	12.50	-	-	-	-	-	-	-	-	-
150.0	12.00	35.98	27.36	76	-	-	-	0.66	10.8	06.4
159.0	11.50	-	-	-	-	-	-	-	-	-
175.0	11.00	-	-	-	-	-	-	-	-	-
188.0	10.50	-	-	-	-	-	-	-	-	-
213.0	10.00	-	-	-	-	-	-	-	-	-
226.0	9.50	-	-	-	-	-	-	-	-	-
245.0	9.00	-	-	-	-	-	-	-	-	-
258.0	8.50	-	-	-	-	-	-	-	-	-
265.0	8.50	35.69	27.75	40	-	-	-	1.14	19.4	10.4
269.0	8.50	-	-	-	-	-	-	-	-	-

STATION 010X



ISELIN CRUISE CI-01 STA 11X 24/ 1/78 13.1 GMT CONSEC STA 11

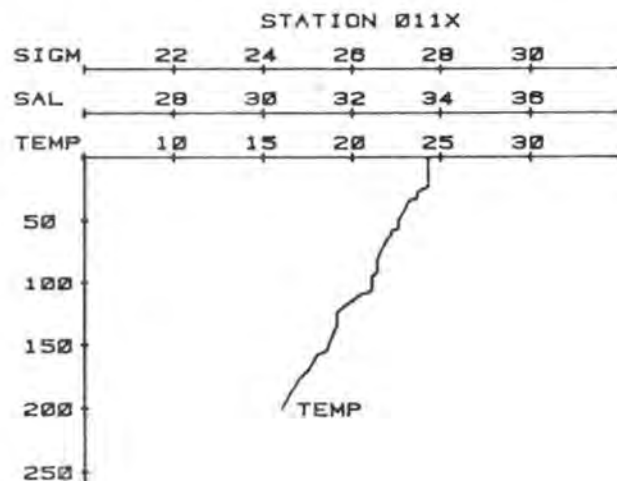
LAT 31 29.0N LONG 79 19.4W DEPTH = 475M DIST LAST STA = 18.2KM

WEATHER DATA

WIND SPEED * 15 KTS
WIND DIRECTION = 020
AIR TEMP * 17.8C
WEATHER CODE *
BAROMETRIC PRESSURE = 1024.0 MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS										
Z	T	S	D	SVA	02	02"	AOU	P04	W03	SI
0.0	24.40	*	*	*	*	*	*	*	*	*
1.0	24.30	*	*	*	*	*	*	*	*	*
23.0	24.30	*	*	*	*	*	*	*	*	*
25.5	24.00	*	*	*	*	*	*	*	*	*
27.0	23.70	*	*	*	*	*	*	*	*	*
33.0	23.60	*	*	*	*	*	*	*	*	*
33.5	23.50	*	*	*	*	*	*	*	*	*
34.5	23.20	*	*	*	*	*	*	*	*	*
40.0	23.00	*	*	*	*	*	*	*	*	*
50.0	22.60	*	*	*	*	*	*	*	*	*
56.5	22.60	*	*	*	*	*	*	*	*	*
57.0	22.50	*	*	*	*	*	*	*	*	*
58.5	22.20	*	*	*	*	*	*	*	*	*
61.5	22.20	*	*	*	*	*	*	*	*	*
64.0	22.00	*	*	*	*	*	*	*	*	*
77.0	21.50	*	*	*	*	*	*	*	*	*
82.0	21.40	*	*	*	*	*	*	*	*	*
91.0	21.40	*	*	*	*	*	*	*	*	*
95.0	21.10	*	*	*	*	*	*	*	*	*
106.0	21.10	*	*	*	*	*	*	*	*	*
108.0	21.00	*	*	*	*	*	*	*	*	*
110.5	20.50	*	*	*	*	*	*	*	*	*
115.0	20.00	*	*	*	*	*	*	*	*	*
120.0	19.50	*	*	*	*	*	*	*	*	*
125.0	19.10	*	*	*	*	*	*	*	*	*
136.0	19.10	*	*	*	*	*	*	*	*	*
138.0	19.00	*	*	*	*	*	*	*	*	*
155.0	18.50	*	*	*	*	*	*	*	*	*
158.0	18.00	*	*	*	*	*	*	*	*	*
170.0	17.50	*	*	*	*	*	*	*	*	*
177.0	17.00	*	*	*	*	*	*	*	*	*
186.0	16.50	*	*	*	*	*	*	*	*	*
200.0	16.00	*	*	*	*	*	*	*	*	*



ISELIN CRUISE CI-01 STA 12X 24/ 1/78 22.2 GMT CONSEC STA 12

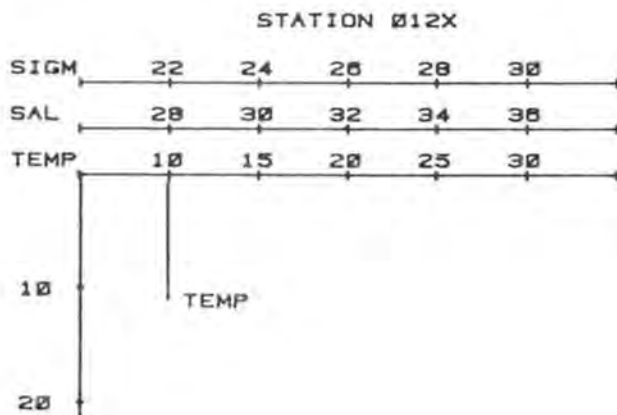
LAT 31 11.7N LONG 81 8.9W DEPTH = 11M DIST LAST STA = 176.3KM

WEATHER DATA

WIND SPEED * 12 KTS
WIND DIRECTION = 030
AIR TEMP * 11.7C
WEATHER CODE *
BAROMETRIC PRESSURE = 1018.4 MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS										
Z	T	S	D	SVA	02	02"	AOU	P04	W03	SI
0.0	10.00	*	*	*	*	*	*	*	*	*
1.0	9.90	*	*	*	*	*	*	*	*	*
2.0	9.90	32.18	24.79	317	*	*	0.39	00.1	02.6	*
11.0	9.90	32.18	24.79	317	*	*	0.41	00.2	02.8	*



ISELIN CRUISE C1-01 STA 13X 24/ 1/78 23.5 GAT CONSEC STA 13

LAT 31 8.5N LONG 80 58.0W DEPTH = 16M DIST LAST STA = 18.3KM

WEATHER DATA

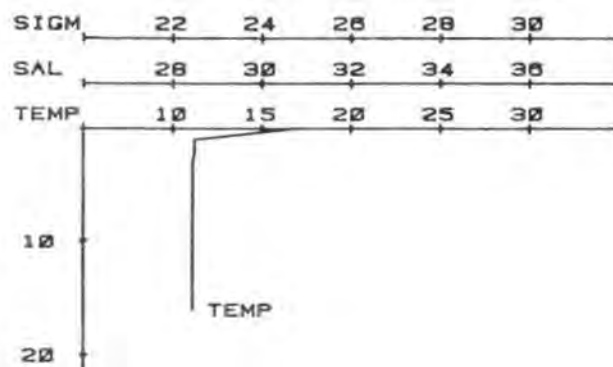
WIND SPEED *
WIND DIRECTION *
AIR TEMP * 15.6
WEATHER CODE *
BAROMETRIC PRESSURE * MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	DZ	DZ'	AQU	PO4	NO3	SI
0.0	17.00	-	-	-	-	-	-	-	-	-
1.0	11.20	-	-	-	-	-	-	-	-	-
2.0	11.20	34.54	26.39	164	-	-	0.28	00.1	00.7	-
3.0	11.10	-	-	-	-	-	-	-	-	-
13.0	11.10	34.54	26.41	162	-	-	0.21	00.1	00.2	-
16.0	11.10	-	-	-	-	-	-	-	-	-

STATION 013X



ISELIN CRUISE C1-01 STA 14X 25/ 1/78 27 GAT CONSEC STA 14

LAT 31 5.0N LONG 80 47.2W DEPTH = 21M DIST LAST STA = 18.3KM

WEATHER DATA

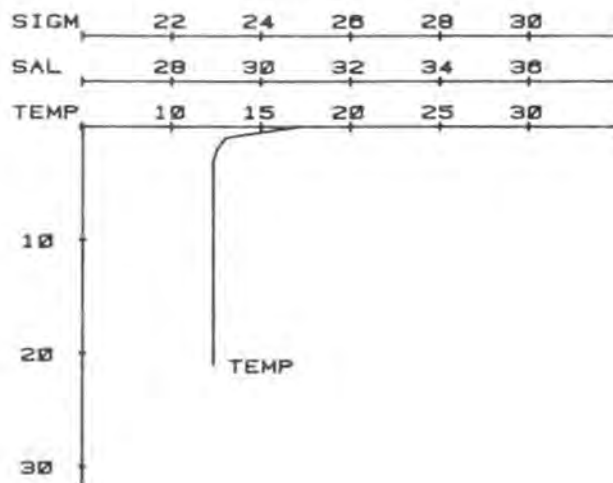
WIND SPEED = 9 KTS
WIND DIRECTION = 120
AIR TEMP = 15.6C
WEATHER CODE =
BAROMETRIC PRESSURE = 1015.8 MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	D	SVA	DZ	DZ'	AQU	PO4	NO3	SI
0.0	17.20	-	-	-	-	-	-	-	-	-
1.0	13.00	35.54	26.82	123	-	-	0.13	00.0	00.5	-
2.0	12.50	-	-	-	-	-	-	-	-	-
3.0	12.30	-	-	-	-	-	-	-	-	-
16.0	12.30	35.54	26.96	110	-	-	0.14	00.0	00.4	-
21.0	12.30	-	-	-	-	-	-	-	-	-

STATION 014X



ISELIN CRUISE CI-01 STA 15X 25/ 1/78 2.0 GMT CONSEC STA 15

LAT 31 1.5N LONG 80 36.2W DEPTH = 28M DIST LAST STA = 18.6KM

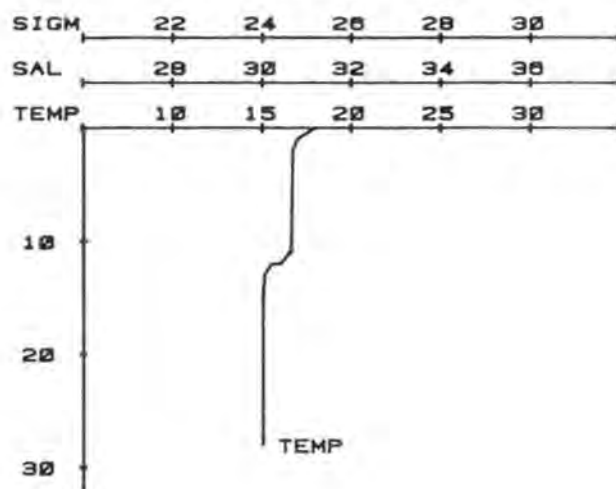
WEATHER DATA

WIND SPEED =
WIND DIRECTION =
AIR TEMP = 18.9C
WEATHER CODE =
BAROMETRIC PRESSURE = MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	AQU	PO4	NO3	SI
0.0	18.00	.	.	.	.	.	.	.	.	.
1.0	17.00	.	.	.	.	.	.	.	.	.
2.0	16.70	36.29	26.58	144	.	.	0.08	00.1	00.4	.
11.0	16.60	.	.	.	.	.	.	.	.	.
11.5	16.50	.	.	.	.	.	.	.	.	.
12.0	16.00	.	.	.	.	.	.	.	.	.
12.5	15.50	.	.	.	.	.	.	.	.	.
13.0	15.10	.	.	.	.	.	.	.	.	.
15.0	15.00	.	.	.	.	.	.	.	.	.
24.0	15.00	36.30	26.98	109	.	.	0.07	00.1	00.3	.
28.0	15.00	.	.	.	.	.	.	.	.	.

STATION 015X



ISELIN CRUISE CI-01 STA 16X 25/ 1/78 3.0 GMT CONSEC STA 16

LAT 30 58.0N LONG 80 25.4W DEPTH = 35M DIST LAST STA = 18.3KM

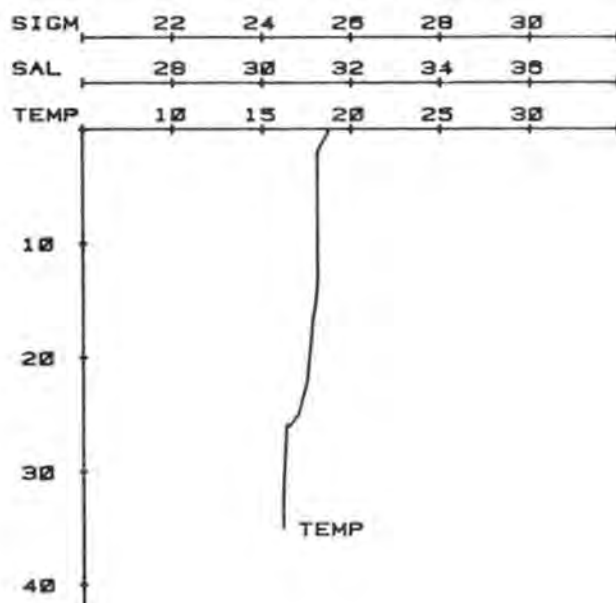
WEATHER DATA

WIND SPEED = 14 KTS
WIND DIRECTION = 170
AIR TEMP = 18.9C
WEATHER CODE =
BAROMETRIC PRESSURE = 1014.9 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS										
Z	T	S	D	SVA	D2	D2'	AQU	PO4	NO3	SI
0.0	18.80	.	.	.	.	.	.	.	.	.
2.0	18.10	36.32	26.27	174	.	.	0.22	00.2	00.7	.
13.0	18.10	.	.	.	.	.	.	.	.	.
15.0	18.00	.	.	.	.	.	.	.	.	.
17.0	17.80	.	.	.	.	.	.	.	.	.
22.5	17.50	.	.	.	.	.	.	.	.	.
25.0	17.00	.	.	.	.	.	.	.	.	.
26.0	16.50	.	.	.	.	.	.	.	.	.
26.5	16.30	.	.	.	.	.	.	.	.	.
32.0	16.10	36.32	26.75	131	.	.	0.07	00.0	00.5	.
35.0	16.10	.	.	.	.	.	.	.	.	.

STATION 016X



ISELIN CRUISE C1-01 STA 17X 25/ 1/78 3.8 GMT CONSEC STA 17
LAT 30 56.4N LONG 80 20.0W DEPTH = 39M DIST LAST STA = 9.1KM

WEATHER DATA

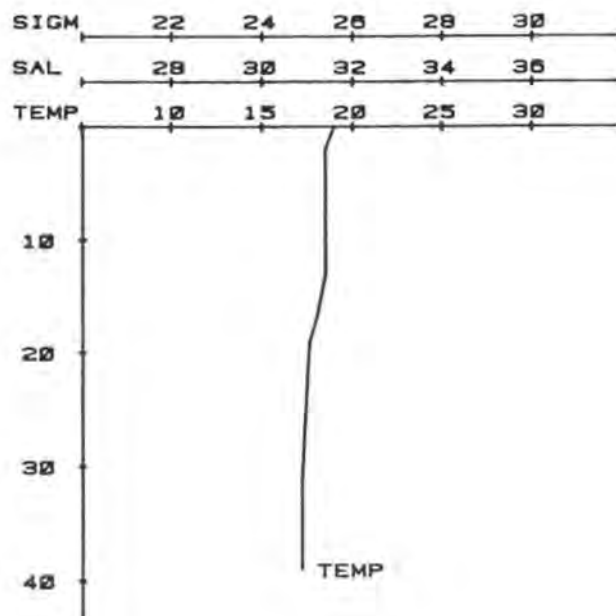
WIND SPEED = 16 KTS
WIND DIRECTION = 160
AIR TEMP = 19.4C
WEATHER CODE =
BAROMETRIC PRESSURE = 1014.1 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	19.00	.	.	.	.	.	.	.	.	.
2.0	18.50	.	.	.	.	.	.	.	.	.
13.0	18.50	.	.	.	.	.	.	.	.	.
17.0	18.00	.	.	.	.	.	.	.	.	.
19.0	17.60	.	.	.	.	.	.	.	.	.
22.5	17.50	.	.	.	.	.	.	.	.	.
31.0	17.20	.	.	.	.	.	.	.	.	.
39.0	17.20	.	.	.	.	.	.	.	.	.

STATION 017X



ISELIN CRUISE C1-01 STA 18X 25/ 1/78 4.3 GMT CONSEC STA 18
LAT 30 54.6N LONG 80 14.6W DEPTH = 37M DIST LAST STA = 9.2KM

WEATHER DATA

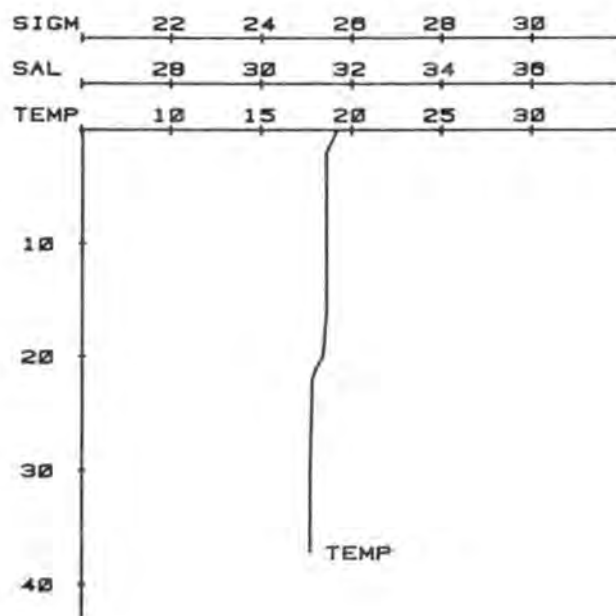
WIND SPEED = 16 KTS
WIND DIRECTION = 160
AIR TEMP = 19.4C
WEATHER CODE =
BAROMETRIC PRESSURE = 1014.1 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
0.0	19.20	.	.	.	.	.	.	.	.	.
2.0	18.60	36.31	26.13	189	.	.	.	0.34	00.4	01.0
16.0	18.60	.	.	.	.	.	.	.	.	.
18.0	18.50	.	.	.	.	.	.	.	.	.
20.0	18.40	.	.	.	.	.	.	.	.	.
21.5	18.00	.	.	.	.	.	.	.	.	.
22.0	17.80	.	.	.	.	.	.	.	.	.
30.0	17.70	.	.	.	.	.	.	.	.	.
34.0	17.70	36.23	26.30	174	.	.	.	0.16	01.1	01.0
37.0	17.70	.	.	.	.	.	.	.	.	.

STATION 018X



ISELIN CRUISE CI-01 STA 19X 25/ 1/78 5.1 GMT CONSEC STA 19

LAT 30 52.9N LONG 80 9.1W DEPTH = 42M DIST LAST STA = 9.3KM

WEATHER DATA

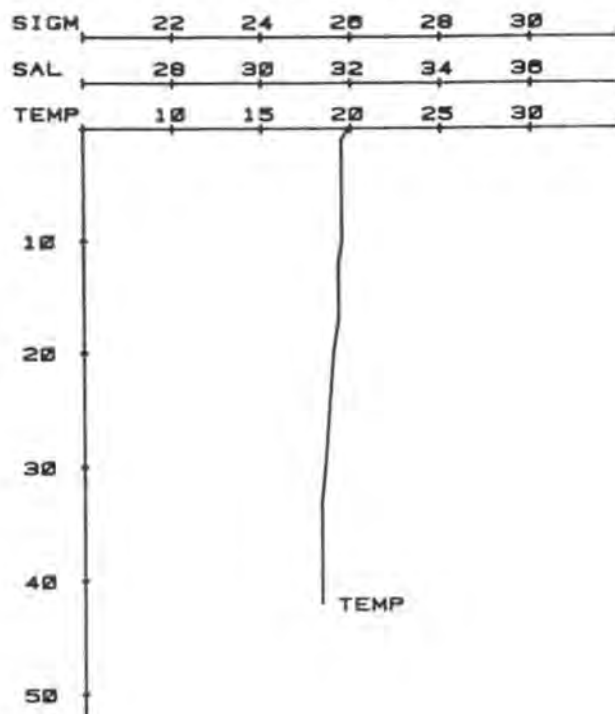
WIND SPEED *
WIND DIRECTION *
AIR TEMP = 19.4C
WEATHER CODE *
BAROMETRIC PRESSURE = MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	19.90	*	*	*	*	*	*	*	*	*
1.0	19.50	*	*	*	*	*	*	*	*	*
10.0	19.50	*	*	*	*	*	*	*	*	*
12.0	19.30	*	*	*	*	*	*	*	*	*
17.0	19.30	*	*	*	*	*	*	*	*	*
20.0	19.00	*	*	*	*	*	*	*	*	*
30.0	18.50	*	*	*	*	*	*	*	*	*
33.0	18.30	*	*	*	*	*	*	*	*	*
42.0	18.30	*	*	*	*	*	*	*	*	*

STATION 010X



ISELIN CRUISE CI-01 STA 20X 25/ 1/78 5.5 GMT CONSEC STA 20

LAT 30 51.0N LONG 80 4.0W DEPTH = 47M DIST LAST STA = 8.8KM

WEATHER DATA

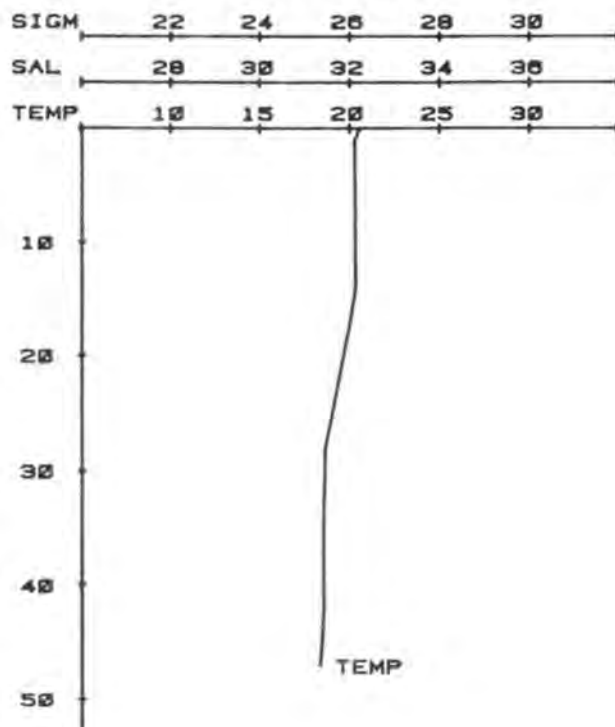
WIND SPEED = 16 KTS
WIND DIRECTION = 170
AIR TEMP = 19.4C
WEATHER CODE *
BAROMETRIC PRESSURE = 1014.0 MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	ADU	PO4	NO3	SI
0.0	20.40	*	*	*	*	*	*	*	*	*
1.0	20.30	36.32	25.70	230	*	*	*	0.08	00.5	00.8
14.0	20.30	*	*	*	*	*	*	*	*	*
17.5	20.00	*	*	*	*	*	*	*	*	*
21.0	19.50	*	*	*	*	*	*	*	*	*
25.0	19.00	*	*	*	*	*	*	*	*	*
28.0	18.60	*	*	*	*	*	*	*	*	*
35.0	18.50	*	*	*	*	*	*	*	*	*
42.0	18.50	*	*	*	*	*	*	*	*	*
45.0	18.40	36.16	26.07	196	*	*	*	0.30	04.1	02.1
47.0	18.30	*	*	*	*	*	*	*	*	*

STATION 020X



ISELIN CRUISE C1-01 STA 21X 25/ 1/78 6.3 GRT CONSEC STA 21

LAT 30 49.5N LONG 79 58.5W DEPTH = 193M DIST LAST STA = 9.2KM

WEATHER DATA

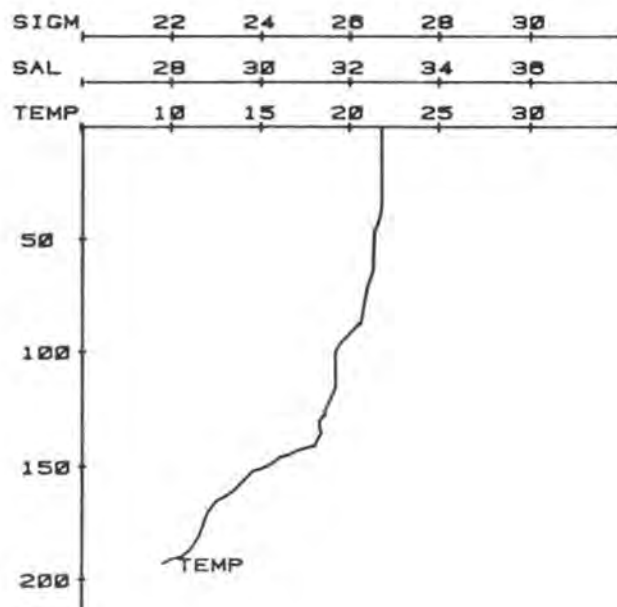
WIND SPEED * 16 KTS
WIND DIRECTION * 170
AIR TEMP * 19.4C
WEATHER CODE *
BAROMETRIC PRESSURE * 1014.0 MB

SEA STATE *
WAVE DIRECTION *
CLOUD TYPE *
CLOUD AMOUNT *
VISIBILITY CODE *

OBSERVATIONS

Z	T	S	B	SVA	O2	O2'	AQU	PO4	NO3	SI
0.0	21.80	*	*	*	*	*	*	*	*	*
35.0	21.80	*	*	*	*	*	*	*	*	*
40.0	21.70	*	*	*	*	*	*	*	*	*
45.0	21.50	*	*	*	*	*	*	*	*	*
46.0	21.40	*	*	*	*	*	*	*	*	*
65.0	21.30	*	*	*	*	*	*	*	*	*
72.0	21.00	*	*	*	*	*	*	*	*	*
88.0	20.60	*	*	*	*	*	*	*	*	*
88.5	20.50	*	*	*	*	*	*	*	*	*
92.0	20.00	*	*	*	*	*	*	*	*	*
96.5	19.50	*	*	*	*	*	*	*	*	*
100.0	19.20	*	*	*	*	*	*	*	*	*
116.0	19.20	*	*	*	*	*	*	*	*	*
119.0	19.00	*	*	*	*	*	*	*	*	*
126.0	18.60	*	*	*	*	*	*	*	*	*
128.0	18.60	*	*	*	*	*	*	*	*	*
128.5	18.50	*	*	*	*	*	*	*	*	*
130.0	18.30	*	*	*	*	*	*	*	*	*
133.0	18.30	*	*	*	*	*	*	*	*	*
135.0	18.40	*	*	*	*	*	*	*	*	*
141.0	18.00	*	*	*	*	*	*	*	*	*
142.5	17.50	*	*	*	*	*	*	*	*	*
143.0	17.00	*	*	*	*	*	*	*	*	*
145.0	16.50	*	*	*	*	*	*	*	*	*
146.0	16.00	*	*	*	*	*	*	*	*	*
149.0	15.50	*	*	*	*	*	*	*	*	*
151.0	15.00	*	*	*	*	*	*	*	*	*
152.5	14.50	*	*	*	*	*	*	*	*	*
156.0	14.00	*	*	*	*	*	*	*	*	*
160.0	13.50	*	*	*	*	*	*	*	*	*
163.0	13.00	*	*	*	*	*	*	*	*	*
165.0	12.50	*	*	*	*	*	*	*	*	*
170.0	12.00	*	*	*	*	*	*	*	*	*
181.5	11.50	*	*	*	*	*	*	*	*	*
187.0	11.00	*	*	*	*	*	*	*	*	*
190.0	10.50	*	*	*	*	*	*	*	*	*
191.5	10.00	*	*	*	*	*	*	*	*	*
193.0	9.50	*	*	*	*	*	*	*	*	*

STATION 021X



ISELIN CRUISE CI-01 STA 22X 23/ 1/78 7.0 GMT CONSEC STA 22

LAT 30 47.8N LONG 79 53.0W DEPTH 288M DIST LAST STA = 9.3KM

WEATHER DATA

WIND SPEED = 19 KTS

WIND DIRECTION = 160

AIR TEMP = 19.40

WEATHER CODE =

BAROMETRIC PRESSURE =

MB

SEA STATE =

WAVE DIRECTION =

CLOUD TYPE =

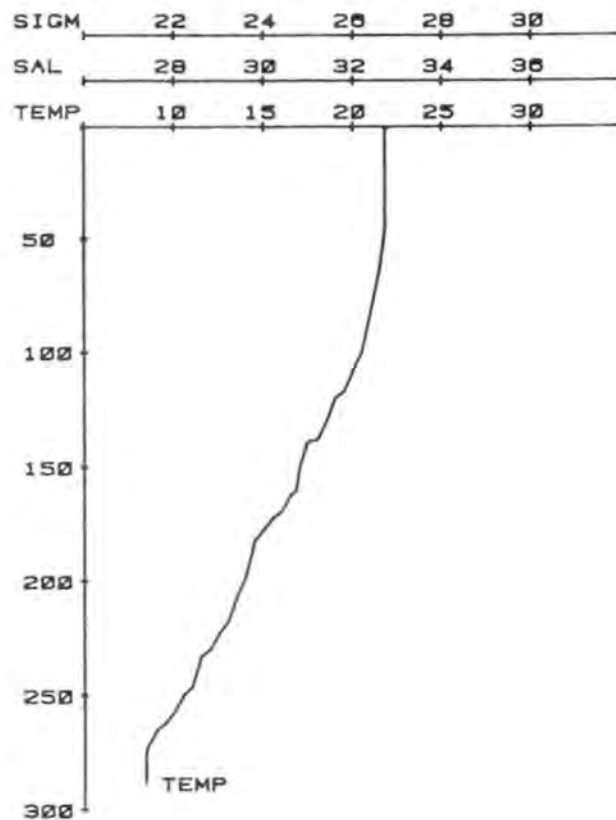
CLOUD AMOUNT =

VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PD4	N03	SI
0.0	22.20	-	-	-	-	-	-	-	-	-
1.0	21.80	-	-	-	-	-	-	-	-	-
2.0	21.80	36.35	25.31	267	-	-	-	0.03	00.0	00.9
46.0	21.80	-	-	-	-	-	-	-	-	-
64.0	21.50	-	-	-	-	-	-	-	-	-
82.0	21.00	-	-	-	-	-	-	-	-	-
100.0	20.50	36.44	25.73	230	-	-	-	0.08	01.1	01.2
108.0	20.00	-	-	-	-	-	-	-	-	-
117.0	19.50	-	-	-	-	-	-	-	-	-
120.0	19.00	-	-	-	-	-	-	-	-	-
130.0	18.50	-	-	-	-	-	-	-	-	-
138.0	18.00	-	-	-	-	-	-	-	-	-
139.0	17.50	-	-	-	-	-	-	-	-	-
140.0	17.40	-	-	-	-	-	-	-	-	-
150.0	17.00	36.49	26.67	143	-	-	-	0.38	06.5	03.1
160.0	16.80	-	-	-	-	-	-	-	-	-
162.0	16.50	-	-	-	-	-	-	-	-	-
169.0	16.00	-	-	-	-	-	-	-	-	-
172.0	15.50	-	-	-	-	-	-	-	-	-
177.0	15.00	-	-	-	-	-	-	-	-	-
182.0	14.50	-	-	-	-	-	-	-	-	-
198.0	14.00	-	-	-	-	-	-	-	-	-
207.0	13.50	-	-	-	-	-	-	-	-	-
218.0	13.00	-	-	-	-	-	-	-	-	-
223.0	12.50	-	-	-	-	-	-	-	-	-
230.0	12.00	-	-	-	-	-	-	-	-	-
233.0	11.50	-	-	-	-	-	-	-	-	-
246.0	11.00	-	-	-	-	-	-	-	-	-
250.0	10.50	-	-	-	-	-	-	-	-	-
257.0	10.00	-	-	-	-	-	-	-	-	-
262.0	9.50	-	-	-	-	-	-	-	-	-
265.0	9.00	-	-	-	-	-	-	-	-	-
272.0	8.50	-	-	-	-	-	-	-	-	-
274.0	8.40	-	-	-	-	-	-	-	-	-
280.0	8.40	35.53	27.64	51	-	-	-	1.26	19.9	11.0
288.0	8.40	-	-	-	-	-	-	-	-	-

STATION 022X



ISELIN CRUISE CI-01 STA 23X 26/ 1/78 .2 GMT CONSEC STA 23

LAT 29 34.2N LONG 80 10.5W DEPTH = 110M DIST LAST STA = 103.2KM

WEATHER DATA

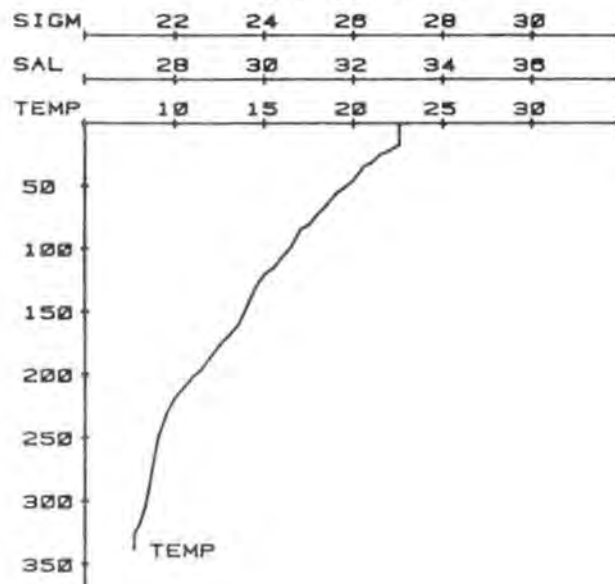
WIND SPEED =
WIND DIRECTION =
AIR TEMP = 10.0
WEATHER CODE =
BAROMETRIC PRESSURE = 1013.4 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	P04	N03	SI
0.0	23.20									
1.0	22.60									
2.0	22.60	36.21	24.97	299						
17.0	22.60									
18.0	22.50									
22.0	22.00									
25.0	21.50									
32.0	21.00									
34.0	20.60									
36.0	20.50									
45.0	20.00									
51.0	19.50									
58.0	19.00									
64.0	18.50									
71.0	18.00									
80.0	17.50									
84.0	17.00									
97.0	16.50									
115.0	15.50									
120.0	15.00									
130.0	14.50									
145.0	14.00									
160.0	13.50									
168.0	13.00									
175.0	12.50									
184.0	12.00									
194.0	11.50									
196.0	11.40	35.17	26.85	126				1.56	22.0	16.6
201.0	11.00									
209.0	10.50									
217.0	10.00									
230.0	9.50									
250.0	9.00									
290.0	8.50									
305.0	8.30									
318.0	8.00									
326.0	7.70									
338.0	7.70									

STATION 023X



ISELIN CRUISE CI-01 STA 24X 26/ 1/78 15.7 GMT CONSEC STA 24

LAT 29 13.2N LONG 80 26.5W DEPTH = 30M DIST LAST STA = 80.2KM

WEATHER DATA

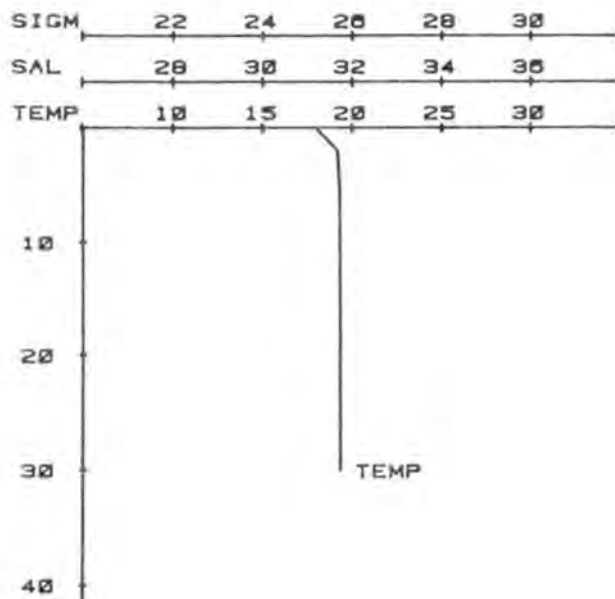
WIND SPEED = 21 KTS
WIND DIRECTION = 260
AIR TEMP = 12.20
WEATHER CODE =
BAROMETRIC PRESSURE = 1013.4 MB

SEA STATE =
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	P04	N03	SI
0.0	18.00									
2.0	19.20	36.30	25.97	204				0.14	01.1	01.1
5.0	19.30									
26.0	19.30							0.12	01.0	01.1
30.0	19.30									

STATION 024X



Chlorophyll Data

Chlorophyll Data
Savannah Section
(23-24 January 1978)

Station	Depth (m)	Chl-a (mg/m ³)
1X	2	1.35
	12	1.36
2X	2	1.18
	17	1.32
3X	2	0.73
	18	0.75
4X	2	0.91
	19	0.88
5X	2	1.03
	38	0.81
7X	2	5.67
	44	0.96
9X	2	4.38
	98	0.59

Chlorophyll Data
 Brunswick Section
 (24-25 January 1978)

Station	Depth (m)	Chl-a (mg/m ³)
12X	2	4.25
	11	3.35
13X	2	0.81
	13	0.90
14X	2	0.78
	16	0.81
15X	2	0.46
	24	0.73
16X	2	1.38
	32	1.37
18X	2	2.72
	34	1.06
20X	2	1.34
	45	1.94

