



**CTD/O₂, LADCP AND XBT MEASUREMENTS COLLECTED ABOARD
THE *R/V SEWARD JOHNSON*, FEBRUARY-MARCH 1999: NORTH
BRAZIL CURRENT RINGS EXPERIMENT CRUISE 2 (NBC-2)**

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Miami, Florida
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CONTENTS

1.	Introduction	1
2.	Standards and Pre-Cruise Calibrations	2
2.1	Conductivity	2
2.2	Temperature	3
2.3	Pressure	3
2.4	Oxygen	4
3.	Data Acquisition	5
3.1	Data Acquisition/System Problems	5
3.2	Salinity Analyses	5
3.3	Oxygen Analyses	6
4.	At Sea Processing of CTD Data	6
5.	Post-Cruise Calibrations	7
5.1	Conductivity	7
5.2	Temperature	8
5.3	Oxygen	8
6.	Lowered Acoustic Doppler Current Profiler	9
7.	Expendable Bathythermograph Data	9
8.	Final Data Presentation	10
9.	Acknowledgments	10
10.	References	10
	Figures and Tables	11
	FIGURES:	
1	CTD station locations made on the R/V SEWARD JOHNSON from February 06 to March 09, 1999.	12
2	Calibrated CTD-bottle conductivity differences plotted against station number and pressure.	16
3	Calibrated CTD-bottle salinity differences plotted against station number and pressure.	17
4	Calibrated CTD-bottle oxygen differences plotted against station number and pressure.	18
5	XBT Drop locations	19
	TABLES:	
1	CTD/LADCP cast summary	13
2	Oxygen values rejected by OXFITMR	15
3	XBT drop summary	20
	Hydrographic Data	
	CTD Data Appendix A	
	Tables and Profile Plots	23
	LADCP Data Appendix B	
	Profile Plots	185
	XBT Data Appendix C	
	Profile plots	267

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CTD/O₂, LADCP, and XBT measurements collected aboard the *R/V SEWARD JOHNSON*, February-March 1999: North Brazil Current Rings Experiment Cruise 2 (NBC-2)

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Abstract. Summaries of Conductivity-Temperature-Depth (CTD/O₂), Lowered Acoustic Doppler Current Profiler (LADCP), and Expendable Bathythermograph (XBT) measurements and hydrographic data acquired on an oceanographic research cruise during the winter of 1999 aboard the Harbor Branch Oceanographic Institution ship *R/V SEWARD JOHNSON* are presented. Data acquisition and processing systems are described, and calibration procedures are documented. Station location, CTD/O₂, LADCP, XBT summary data listings, and profiles are included for each station.

1. Introduction

North Brazil Current rings are large (400 km diameter) anticyclones that pinch off from the North Brazil Current (NBC) retroflection in the western tropical Atlantic near 8°N, translate northwestward along the coast of South America, and decay through topographic interaction near the passages of the southeastern Caribbean. Advection within translating NBC rings has been proposed as one of several important pathways for the transport of South Atlantic upper-ocean water across the equatorial-tropical gyre boundary and into the North Atlantic subtropical gyre. Such transport is required to complete the Meridional Overturning Cell (MOC) in the Atlantic forced by the high-latitude production and southward export of North Atlantic Deep Water.

The mechanisms which contribute to NBC ring formation, and the structure and dynamics of the rings themselves, are not well understood. The specific objectives of the cruise are to:

1. Obtain a thorough description of the spatial and temporal evolution of the North Brazil Current retroflection and the separation of rings from the retroflection;
2. Determine the physical structure of the rings after separation from the NBC, including their sizes, vertical structure, horizontal swirl velocities, and the volume of South Atlantic water they trap and transport; and
3. Determine the rates of translation, decay, and mixing with resident North Atlantic waters as the rings move northwestward from their generation point toward the Caribbean Sea.

To accomplish these objectives, several complementary measurement techniques were employed during a previous cruise (NBC-1). Primary elements of the observing strategy included: (1) an Inverted Echo Sounder (IES) array placed within TOPEX/GEOSAT-2 track lines to optimally monitor the evolution of the NBC retroflection and ring generation events; (2) moored current and temperature-salinity measurements along the ring translation corridor to determine the transport and water mass characteristics of the rings; (3) detailed shipboard CTD/LADCP surveys and (4) deployments of surface drifters and subsurface RAFOS floats in selected rings to track their propagation and decay at various stages of their life cycle. This report describes the CTD/LADCP survey data and additional XBT profile data collected during the second cruise of this project (NBC-2), which took place from February 6 to March 9, 1999 aboard the *SEWARD JOHNSON*.

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A total of 81 hydrographic stations were occupied during two legs of this cruise. Figure 1 shows station locations for legs 1 and 2. Table 1 provides a summary of CTD/LADCP cast information. At each station, profiles of temperature, salinity (conductivity) and dissolved oxygen concentration were collected to a depth of 2000 m or to within approximately 10 m of the bottom at shallower depths. LADCP measurements were taken concurrently with CTD/O₂ stations. Water samples for calibration of the salinity and dissolved oxygen profiles were collected at each station.

2. Standards and Pre-Cruise Calibrations

The CTD/O₂ system is a real-time data acquisition system with the data from a Sea Bird Electronics, Inc. (SBE) 9plus underwater unit transmitted via a conducting cable to a SBE 11plus deck unit. The serial data from the underwater unit is sent to the deck unit in RS-232 NRZ format. The deck unit decodes the serial data and sends it to a personal computer for display and storage in a disk file using Sea-Bird SEASOFT software.

The SBE 911plus system transmits data from primary and auxiliary sensors in the form of binary numbers equivalent to the frequency or voltage outputs from those sensors. These are referred to as the raw data. The SBE software performs the calculations required to convert raw data to engineering units.

The SBE 911plus system is electrically and mechanically compatible with the standard, unmodified carousel water sampler, also made by Sea-Bird Electronics, Inc. A modem and carousel interface allows the 911plus system to control the operations of the carousel directly without interrupting the flow of data from the CTD.

The SBE 9plus underwater unit is configured with dual standard modular temperature (SBE 3) and conductivity (SBE 4) sensors, which are mounted near the lower end cap. The conductivity cell entrance is co-planar with the tip of the temperature sensor probe. The pressure sensor is mounted inside the underwater unit main housing. A centrifugal pump module flushes water through sensor tubing at a constant rate independent of the CTD's motion to improve dynamic performance. Dual dissolved oxygen sensors are added to the pumped sensor configuration following the temperature-conductivity (TC) pair.

2.1 Conductivity

The flow-through conductivity-sensing element is a glass tube (cell) with three platinum electrodes. The resistance measured between the center electrode and the end electrode pair is determined by the cell geometry and the specific conductance of the fluid within the cell, and controls the output frequency of a Wein Bridge circuit. The sensor has a frequency output of approximately 3 to 12kHz corresponding to conductivity from 0 to 7 Siemens/meter (0 to 70 mmho/cm). The SBE 4 has a typical accuracy/stability of ± 0.0003 S/m and resolution of 0.00004 S/m at 24 scans per second.

Two conductivity sensors were used during NBC-2 (serial numbers 1374 and 1387). Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington. The following coefficients were entered into SEASOFT using the software module SEACON:

s/n 1374		s/n 1387	
January 19, 1999		January 19, 1999	
<i>g</i>	= -4.27388542e+00	<i>g</i>	= -4.05073805e+00
<i>h</i>	= 5.21836847e-01	<i>h</i>	= 4.61157764e-01
<i>i</i>	= -1.53707669e-04	<i>i</i>	= -6.92975591e-05
<i>j</i>	= 3.71920371e-05	<i>j</i>	= 2.68244316e-05
<i>ctcor</i>	= 3.2500e-06	<i>ctcor</i>	= 3.2500e-06
<i>cpcor</i>	= -9.5700e-08	<i>cpcor</i>	= -9.5700e-08

Conductivity calibration certificates show an equation containing the appropriate pressure-dependent correction term to account for the effect of hydrostatic loading (pressure) on the conductivity cell:

$$C \text{ (S/m)} = (g + hf^2 + if^3 + jf^4) / [10 (1 + ctc \cdot t + cpc \cdot p)]$$

where g , h , i , j , ctc , and cpc are the calibration coefficients shown above, f is the instrument frequency (kHz), t is the water temperature (degrees Celsius), and p is the water pressure (dbar). SEASOFT automatically implements this equation.

2.2 Temperature

The temperature-sensing element is a glass-coated thermistor bead; pressure protected by a stainless steel tube. The sensor output frequency ranges from 5-13 kHz, corresponding to temperatures ranging from -5 to 35°C. The output frequency is inversely proportional to the square root of the thermistor resistance, which controls the output of a patented Wein Bridge circuit. The thermistor resistance is exponentially related to temperature. The SBE 3 thermometer has a typical accuracy/stability of $\pm 0.004^\circ\text{C}$ per year and a resolution of 0.0003°C at 24 samples per second. The SBE 3 thermometer has a fast response time of 0.070 seconds.

The two temperature sensors used during NBC-2 were s/n 1701 and 1075. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington. The following coefficients were entered into SEASOFT using SEACON:

s/n 1701	s/n 1075
January 12, 1999	January 12, 1999
$g = 4.78995715\text{e-}03$	$g = 4.81081561\text{e-}03$
$h = 6.52955449\text{e-}04$	$h = 6.68763171\text{e-}04$
$i = 1.80809061\text{e-}05$	$i = 2.50451194\text{e-}05$
$j = 9.48099234\text{e-}07$	$j = 1.97005533\text{e-}06$
$f_0 = 1000.0$	$f_0 = 1000.0$

Temperature (ITS-90) is computed according to

$$T [^\circ\text{C}] = [1 / (g + h \ln(f_0/f) + i \ln^2(f_0/f) + j \ln^3(f_0/f))] - 273.15$$

where g , h , i , j and f_0 are the calibration coefficients above and f is the instrument frequency (Hz). SEASOFT automatically implements this equation and converts between ITS-90 and IPTS-68 temperature scales as desired.

2.3 Pressure

The Paroscientific series 4000 Digiquartz high pressure transducer uses a quartz crystal resonator whose frequency of oscillation varies with pressure induced stress, measuring changes in pressure as small as 0.01 parts per million with an absolute range of 0 to 10,000 psia (0 to 6885 dbar). Repeatability, hysteresis, and pressure conformance are 0.002% FS. The nominal pressure frequency (0 to full scale) is 34 to 38 kHz. The nominal temperature frequency is 172 kHz $\pm$ 50 ppm/ $^\circ\text{C}$.

The pressure sensor utilized during NBC-2 was s/n 58808. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington. The following coefficients were entered into SEASOFT using the module SEACON:

s/n 58808
 May 31, 1996
 $c1 = -4.53844e+04$
 $c2 = -1.963440e-01$
 $c3 = 1.278040e-02$
 $d1 = 3.779600e-02$
 $d2 = 0$
 $t1 = 3.010293e+01$
 $t2 = -2.932600e-04$
 $t3 = 3.610820e-06$
 $t4 = 3.748630e-09$

Pressure coefficients are first formulated into

$$\begin{aligned}
 c &= c_1 + c_2 U + c_3 U^2 \\
 d &= d_1 + d_2 U \\
 t0 &= t1 + t2 * U + t3 * U^2 + t4 * U^3
 \end{aligned}$$

where U is temperature in degrees Celsius. Pressure is computed according to

$$P(\text{psia}) = c (1 - (t0^2 / t^2)) (1 - d (1 - (t0^2 / t^2)))$$

where t is pressure period (μs). SEASOFT automatically implements this equation.

2.4 Oxygen

The SBE 13Y dissolved oxygen sensor (Yellow Springs Instrument (YSI)) uses a polarographic type element. Oxygen sensors determine the dissolved oxygen concentration by counting the number of oxygen molecules per second (flux) that diffuse through a membrane. By knowing the flux of oxygen and the geometry of the diffusion path, the concentration of oxygen can be computed. The permeability of the membrane to oxygen is a function of temperature and ambient pressure. The interface electronics output voltages are proportional to membrane current (oxygen current) and membrane temperature (oxygen temperature). Oxygen temperature is used for internal temperature compensation. Initial computation of dissolved oxygen in engineering units is done in the software. The range for dissolved oxygen is 0 to $670 \mu\text{mol/kg}$; nominal accuracy is $4.45 \mu\text{mol/kg}$; resolution is $0.4 \mu\text{mol/kg}$. Response times are roughly 2 seconds at 25°C and 5 seconds at 0°C .

Oxygen sensors 130433 and 230531 were used during NBC-2. The following oxygen calibrations were entered into SEASOFT using SEACON:

s/n 130433	s/n 230531
September 9, 1998	August 31, 1998
$m = 1.0048e-5$	$m = 1.0059e-5$
$b = -4.8229e-9$	$b = -1.6094e-8$
$soc = .0785$	$soc = 0.0887$
$boc = -.0083$	$boc = -0.0209$
$tcor = -0.033$	$tcor = -0.033$
$pcor = 1.50e-4$	$pcor = 1.50e-4$
$\tau = 2.0$	$\tau = 2.0$
$wt = 0.85$	$wt = .85$
$k = 6.5742$	$k = 6.5121$
$c = -1.4886$	$c = -1.7991$

The use of these constants in linear equations of the form $I = mV + b$ and $T = kV + c$ yield sensor membrane current and temperature (with maximum error of about 0.5°C) as a function of sensor output voltage.

3. Data Acquisition

CTD/O₂ measurements were made using a SBE 9plus CTD with dual sensor configuration. Each set of sensors included a temperature, conductivity, and dissolved oxygen sensor. The sets were placed as mirror images to each other mounted low in the CTD main housing with the intakes approximately 6-8 inches apart. The TC pairs were monitored for calibration drift and shifts by examining the differences between the two pairs on each CTD and comparing CTD salinity values with bottle salinity measurements.

AOML's SBE 9plus CTD/O₂ s/n 09P10779-0363 (sampling rate 24Hz) was mounted in a 24-position frame and employed as the primary package. Auxiliary sensors included a lowered acoustic doppler current profiler (LADCP) and a Simrad altimeter. Water samples were collected using a SBE bottle carousel and 10-liter Niskin bottles. Data from the primary sensor package was used for all final data in this report.

The package entered the water from the starboard side of the ship and was held within 5 meters of the surface for 1 minute in order to activate the pump. The package was lowered at a rate of 30 m/min to 100 m and 60 m/min generally to within 10 meters of the bottom, slowing on the approach. The altimeter monitored the position of the package relative to the bottom.

Upon completion of the cast, sensors were flushed repeatedly and stored with a dilute Triton-X solution in the plumbing. Niskin bottles were then sampled for oxygen and salinity.

A SBE 11plus deck unit received the data signal from the CTD. Digitized data were forwarded to a personal computer equipped with SEASOFT acquisition and processing software version 4.234. Preliminary temperature, salinity, and oxygen profiles were displayed in real time. Raw data files were archived to SyQuest 230mb removable drives.

3.1 Data Acquisition/System Problems

Data acquisition problems incurred during the cruise were due to data flow interruption to the carousel. No bottle data was sacrificed due to the data interruption; therefore all data for this cruise are complete. The performance of the temperature and conductivity sensors was outstanding. The performance of oxygen sensor 230531 began to deteriorate after station 052 due to a defective sensor membrane. Oxygen data from station 053 through station 081 are from oxygen sensor 130433.

3.2 Salinity Analyses

Bottle salinity analyses were performed in the ship's temperature-controlled salinity laboratory using a Guildline Model 8400B inductive autosalinometer, and a dedicated PC. Software allowed the user to standardize the autosal and perform a second standardization using a fresher standard (30 PSS) for a linearity check. IAPSO Standard Seawater was used as the standard. The autosal was standardized before each case of 24 samples was analyzed. The software limits set required that each successive reading be within ± 0.002 PSS or the program would reject that reading and seek another. Stable room temperature and high performance of the autosalinometer allowed these limits to be strictly set.

Duplicate samples were taken from the deepest bottle on several casts. Bottle salinities were compared with preliminary CTD salinity values to monitor CTD conductivity cell performance and drift. The expected precision of the autosal was 0.001 PSS, with an accuracy of ± 0.0003 PSS.

3.3 Oxygen Analyses

Bottle oxygen analyses were also performed in the ship's temperature-controlled salinity laboratory using a photometric automatic Winkler method titrator with a Carpenter modification, and a dedicated PC. The water samples were drawn (without air bubbles) from Niskin bottles immediately upon arrival on deck. Manganese sulfate (or chloride) was added to the sample, followed by the addition of an alkaline sodium hydroxide-sodium iodide solution. These solutions "pickled" the sample, causing it to precipitate and react with the dissolved oxygen in the water sample. The sample was then dissolved and photometrically titrated to an end point with a standardized sodium thiosulphate solution. The content of oxygen value was calculated utilizing the volume of the water sample bottle and the amount of added thiosulphate. Automated titrating systems can attain a precision of about $\pm 4.46 \mu\text{mol/kg}$ (Friederich *et al.*, 1991).

4. At Sea Processing of CTD Data

SEASOFT consists of modular menu-driven routines for acquisition, display, processing, and archiving of oceanographic data acquired with SBE equipment. The software is designed to work with a PC. Raw data are acquired from the instruments and are stored in an unmodified format. The conversion module DATCNV uses the instrument configuration and pre-cruise factory calibration coefficients to create a converted engineering unit data file that is utilized by all SEASOFT post processing modules. Unless otherwise noted, all calibration parameters given are factory default values recommended by Sea Bird Electronics, Inc. The following is the SEASOFT processing module sequence and specifications used in the reduction of CTD/O₂ data from this cruise:

- DATCNV converted the raw data to pressure, temperature, conductivity, oxygen current, and oxygen temperature, and computed salinity, the time rate of change of oxygen current, and preliminary oxygen. DATCNV also extracted bottle information where scans were marked with a bottle confirmation bit during acquisition.
- ROSSUM created a summary of the bottle data. Bottle position, date, and time were output automatically. Pressure, temperature, conductivity, salinity, oxygen current, oxygen temperature, time rate of change of oxygen current, and preliminary oxygen values were averaged over a 2 second interval from 5 to 3 seconds prior to the confirm bit. ROSSUM computed potential temperature and sigma-theta.
- WILDEDIT marked extreme outliers in the data files. The first pass of WILDEDIT obtained an accurate estimate of the true standard deviation of the data. The data were read in blocks of 200 scans. Data greater than two standard deviations were flagged. The second pass computed a standard deviation over the same 200 scans excluding the flagged values. Values greater than 16 standard deviations were marked as bad values.
- SPLIT grouped data into up cast (pressure decreasing) and down cast (pressure increasing) files.
- FILTER performed a low-pass filter on pressure data with a time constant of 0.15 seconds. In order to produce no time shift, the filter first ran forward and then backwards through the data file.
- ALIGNCTD aligned conductivity, temperature, and oxygen in time relative to pressure to ensure that all calculations were made using measurements from the same parcel of water, which minimized salinity spiking and density errors. The SBE 11plus deck unit has factory settings to advance the primary conductivity cell; therefore, ALIGNCTD was not performed on this cell. The secondary conductivity cell, however, is not advanced in the deck unit and so was advanced 0.073 seconds in the ALIGNCTD module. Since the SBE3 temperature sensor response is fast, (0.06 seconds), it was unnecessary to advance temperature relative to pressure. Oxygen sensors s/n 130433 and s/n 230531 were advanced 3 seconds in ALIGNCTD.

- CELLTM used a recursive filter to remove conductivity cell thermal mass effects from measured conductivity. Both conductivity cells were epoxy coated; the thermal anomaly amplitude (α) and time constant ($1/\beta$) were 0.03 and 9.0, respectively for each sensor.
- DERIVE was used to re-compute the time rate of change of oxygen current (dox/dt) and oxygen ($\mu\text{mol/kg}$) with a time window size of 2 seconds.
- LOOPEDIT marked data scans where the CTD package was moving less than a minimum velocity of 0.25 m/s or travelling backwards due to ship roll.
- BINAVER averaged the data into 1 decibar (dbar) pressure bins starting at 1 dbar with no surface bin. The center value of the first bin was set to equal the bin size. The bin minimum and maximum values were the center value plus or minus half the bin size. Scans with pressure values greater than the minimum and less than or equal to the maximum were averaged. Scans were interpolated so that a data record existed for every decibar. The number of points averaged in each bin was added to the variables listed in the data file.
- DERIVE recomputed salinity and calculated other oceanographic parameters (e.g. density, etc.).

5. Post-Cruise Calibrations

Post cruise sensor calibrations were done at Sea-Bird Electronics, Inc. during April 1999. The secondary temperature/conductivity pair T1075/C1387 was selected for final data reduction for all stations. In addition to the SEASOFT processing modules, several programs obtained from the Pacific Marine Environmental Laboratory (PMEL) were used to further reduce the CTD/O₂ data:

- FILLSFC was used to copy the first good value of salinity, potential temperature, oxygen, and oxygen current back to the surface. FILLSFC then back-calculated temperature and conductivity and zeroed dox/dt of oxygen current for those records.
- DESPIKE1 removed spikes from primary oxygen current and oxygen temperature data, as well as removing spikes from the primary conductivity sensor. Data were linearly interpolated over despiked records. Conductivity was back calculated, and sigma-theta and potential temperature were recomputed for the interpolated records.
- DESPIKE2 removed spikes from secondary sensors in the same method as DESPIKE1.
- Package slowdown and reversals due to ship roll can move mixed water in tow in front of the CTD sensors. This mixture can create artificial density inversions and other artifacts. In addition to SEASOFT module LOOPEDIT, the PMEL program DELOOP computed values of density locally referenced between every 1 dbar of pressure to compute $N^2 = (-g/\rho)(dp/dz)$ and linearly interpolated measured parameters over those records where $N^2 \leq -1.0e-05s^{-2}$.
- FILTDOC applied a median filter of width 5 dbar to the time rate of change in oxygen current (doc/dt).

5.1 Conductivity

Conductivity slope and bias, along with a linear pressure term (modified beta), were computed by a least-squares minimization of CTD and bottle conductivity differences. The function minimized was

$$BC - m * CC - b - \beta * CP$$

where BC is bottle conductivity (S/m), CC is pre-cruise calibrated CTD conductivity (S/m), CP is the CTD pressure (dbar), m is the conductivity slope, b is the bias (S/m), and β is a linear pressure term (S/m/dbar). The final conductivity (S/m) is

$$m * CC + b + \beta * CP$$

The slope term m is a linear station dependent fit for the entire cruise. For s/n 1387 a series of fits were made, with each fit eliminating bottle values for locations having a residual between CTD and bottle conductivity greater than three standard deviations. The procedure was repeated with the remaining bottle values until no more bottle values were eliminated.

For s/n 1387, the slope correction range was from 1.0002 to 1.0005, and the bias applied was -.0012. Of the 807 bottles, 80% were retained in the fit with a standard deviation of 0.0004 S/m. The PMEL program CALCTD applied these calibrations.

CTD-bottle conductivity differences were plotted against station number, for up cast data, to show the stability of the calibrated CTD conductivities relative to the bottle conductivities (Figure 2, upper panel). CTD-bottle conductivity differences were also plotted against pressure, for up cast data (Figure 2, lower panel).

After the final CTD conductivity was determined by CALCTD, final salinity values were computed. Salinity values were determined according to the UNESCO 1983 polynomial (Fofonoff and Millard, 1983). The standard deviation of the bottle salinity differences was ± 0.003 . CTD-bottle salinity differences plotted against station number (Figure 3, upper panel) and pressure (Figure 3, lower panel) are shown.

5.2 Temperature

The pre-cruise calibration of T1075 was the mean of two post-cruise calibrations, and was within $0.05e^{-3}^{\circ}\text{C}$ of the overall drift trajectory over the duration of the cruise, as determined by the calibration history of the sensor. The pressure correction for this sensor was determined by Sea Bird to be zero. However, a bias of $-0.6e^{-3}^{\circ}\text{C}$ was applied to the temperature data in program CALCTD to account for the effect of viscous heating on SBE 3 sensors. An adjustment of $-0.6e^{-3}^{\circ}\text{C}$ resulted in errors of no more than $\pm 0.15e^{-3}^{\circ}\text{C}$ from this effect for the full range of oceanographic temperature and salinity.

5.3 Oxygen

Oxygen samples collected during CTD/O₂ profiles were used for post measurement calibration. Due to a potential hysteresis problem with oxygen sensors, the PMEL program OXDWNP replaced up-profile Niskin sample data with corresponding processed down-profile CTD/O₂ data at common pressure levels. Oxygen saturation values were computed according to Benson and Krausse (1984) in units of $\mu\text{mol/kg}$.

The algorithm used for converting oxygen sensor current and probe temperature measurements as described by Owens and Millard (1985) required a non-linear least squares regression technique in order to determine the best fit coefficients of the model for oxygen sensor behavior to the water sample observations. The Woods Hole Oceanographic Institution (WHOI) program OXFITMR employed the Numerical Recipe (Press *et al.*, 1986) Fortran routines of MRQMIN, MRQCOF, GAUSSJ, and COVSRT to perform non-linear least squares regressions using the Levenberg-Marquardt method. A Fortran subroutine, FOXY, described the oxygen model with the derivatives of the model with respect to six coefficients in the following order: oxygen current slope, temperature correction, pressure correction, weight, oxygen current bias, and oxygen current lag.

Program OXFITMR read the data for a group of stations. The data were edited to remove imprecise points where values were less than zero or greater than 1.2 times the saturation value. The routine varied the six (or fewer) parameters of the model in such a way as to produce the best least

squares fit between the calibration oxygen values and the computed values. Individual differences between the calibration oxygen values and the computed values (residuals) were then compared with the standard deviation of the residuals. Any residuals exceeding a factor of 2.8 standard deviations were rejected. A factor of 2.8 had a 0.5% chance of rejecting a valid oxygen value for a normally distributed set of residuals. The iterative fitting process was continued until none of the data failed the edit criteria. Coefficients were applied using the AOML program CALIBOXY for plotting in Matlab.

By plotting the oxygen residuals versus station, appropriate station groupings for further refinements of fitting were obtained by looking for abrupt station-to-station changes in the residuals. For each grouping, one set of coefficients was determined by fitting bottles from the entire water column. Pressure correction, weight, and lag coefficients were fixed within a reasonable range from output of full water column group fits. Final coefficients were applied to downcast data using the AOML program CALCTDOX2. An overall correction (3rd order polynomial fit) was applied to final oxygen data to bring the standard deviation near the nominal WOCE standard accuracy of 0.5% for discrete oxygen titrations.

CTD-bottle oxygen differences were plotted against station number to show the stability of the calibrated CTD oxygen values relative to bottle oxygen values (Figure 4, upper panel). CTD-bottle oxygen differences were also plotted against pressure to show the fit (Figure 4, lower panel) through the water column. The standard deviation of the oxygen differences was $\pm 3.09 \mu\text{mol/kg}$. Oxygen sensor 230531 was selected for final data reduction for stations 001-052 and sensor 130433 was used for stations 053-081. Of the 929 bottles, 95% were retained in the fit and had a standard deviation of $3.09 \mu\text{mol/kg}$. Table 2 shows the bottle oxygen values that were not used by the OXFITMR FORTRAN program to calculate the standard deviation.

6. Lowered Acoustic Doppler Current Profiler

An RD Instruments 300 kHz Broadband ADCP (SN 207) was mounted in downward-looking mode near the center of the CTD/carousel frame. Velocity profiles were internally recorded during CTD casts, and post-processed using AOML-developed software to create velocity shear profiles. Absolute velocities were calculated by referencing shear profiles using ship drift obtained from P-code global positioning system (GPS) positions obtained at the beginning and end of each cast. The shear profile processing methods were similar to those described in Fischer and Visbeck (1993); see also Wilson (1994) for an analysis of the performance of the 300 kHz broadband ADCP in lowered applications. Significant setup parameters were:

Mode 1
25, 8 m bins
1 ping / sec
1 ping / ensemble
 2 m s^{-1} fixed ambiguity velocity
Narrow Bandwidth

Velocity data were averaged into 10 m bins for presentation. The first valid bin was at 20 m; values plotted at 10 m and the surface were repeated from 20 m. The deepest bin was approximately 100 m below the maximum cast depth, or within 15 m of the bottom. Depth-averaged errors were estimated to be less than 1 cm s^{-1} . Profiles shown were based on all shear profiles derived from up and downcasts. Positions and times listed are midpoints of start-down and at-surface values used in processing. Due to equipment problems during station 057, there is no data available for this cast.

7. Expendable Bathythermograph Data

Temperature profiles were measured successfully at 96 stations (Table 3) using type T-7 XBT probes. Locations of XBT drops are shown in Figure 5 and are also given in Table 3. The launches are listed in sequential order; probes that failed are not listed. The probes were launched from the stern of the vessel while underway. Deployment procedures included noting the time (Z), location, depth (m),

thermosalinograph temperature (°C) and salinity, and engine intake water temperature (°C). The data were acquired on an AOML supplied SEASIV PC running SEAS4 software. The underway XBT autolauncher was engineered and manufactured at NOAA/AOML in Miami, FL.

The output of the acquired data is in ASCII format. Each file is run through a series of AOML created post-processing programs to produce data containing a header of date, time, latitude, and longitude, as well as column data of depth (m) and temperature (°C). Each XBT file was quality controlled according to standard AOML quality controlled procedures (Daneshzadeh, *et al.*, 1994).

8. Final Data Presentation

AOML Matlab program DATAREPORT processed the finalized CTD/O₂ data and computed ITS-90 temperature, ITS-90 potential temperature and dynamic height. The final calibrated data files were used to produce the tables and station profile plots presented in Appendix A for each CTD station. The table on the left is in "standard depths" and its corresponding profile plot is shown on the facing page. Bottle salinity values with an " * " were not used in the final calibration of conductivity data. Niskin bottle depths are presented on the right side of the profile plot. Bottle salinity and oxygen values are plotted as points in the three smaller plots. LADCP profile plots showing U and V components are presented in Appendix B. The final quality controlled XBT data were used to produce profile plots displayed in Appendix C.

9. Acknowledgments

The assistance of Captain Vince Seiler and the crew of the *RV SEWARD JOHNSON* are gratefully acknowledged. Marine Technician Donald Cucciarra provided high quality oxygen and salinity samples and analysis documentation. The scientific participation from Brazil was extremely helpful in all aspects of the cruise.

This research was carried out [in part] under the auspices of the Cooperative Institute for Marine and Atmospheric Studies (CIMAS), a Joint Institute of the University of Miami and the National Oceanic and Atmospheric Administration (NOAA), cooperative agreement #NA67RJ0149. The National Science Foundation and NOAA provided funding for the North Brazil Current Ring Survey.

10. References

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FIGURES AND TABLES

Figure 1: NBC-2 CTD/LADCP Station Locations

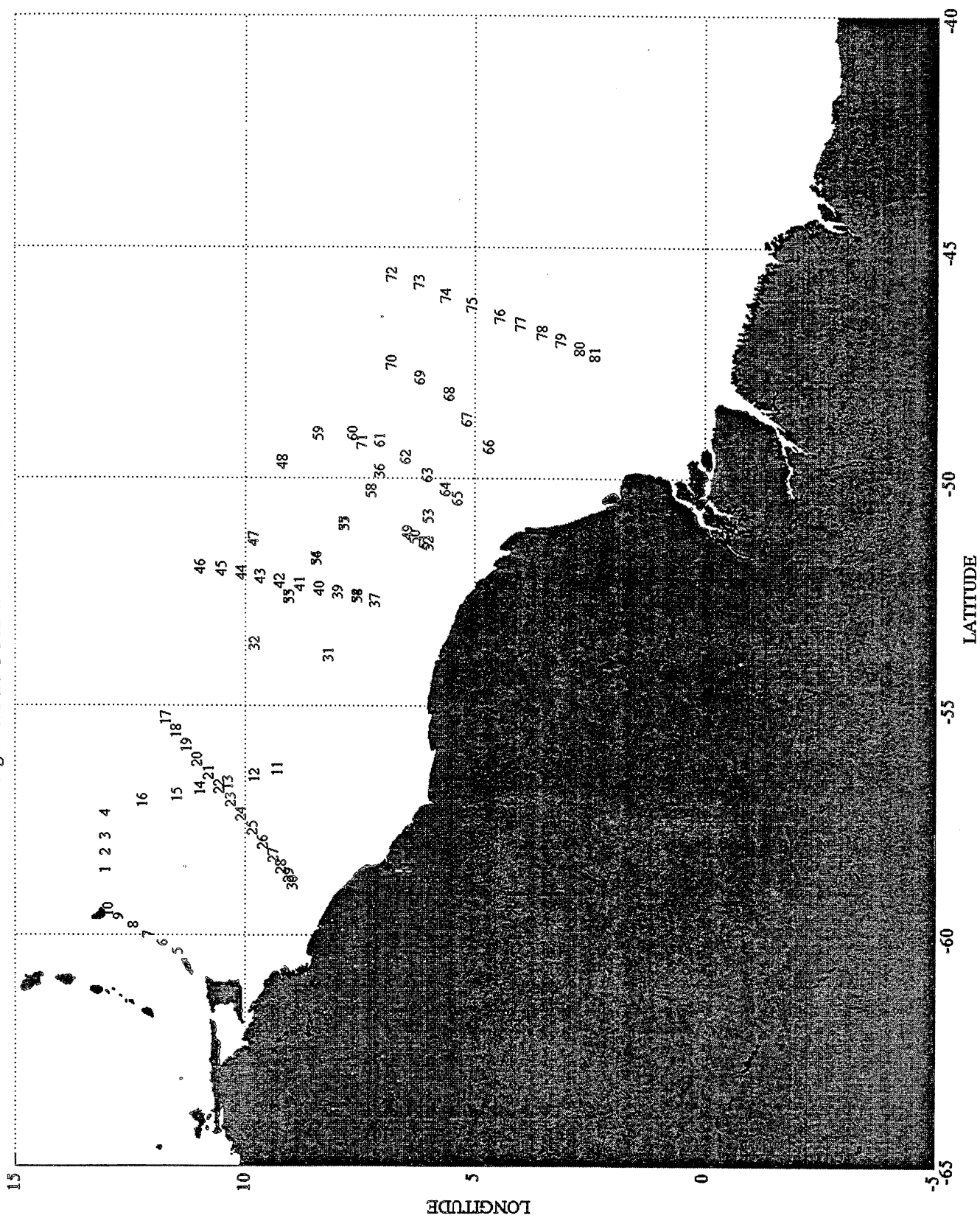


Table 1: CTD/LADCP Cast Summary

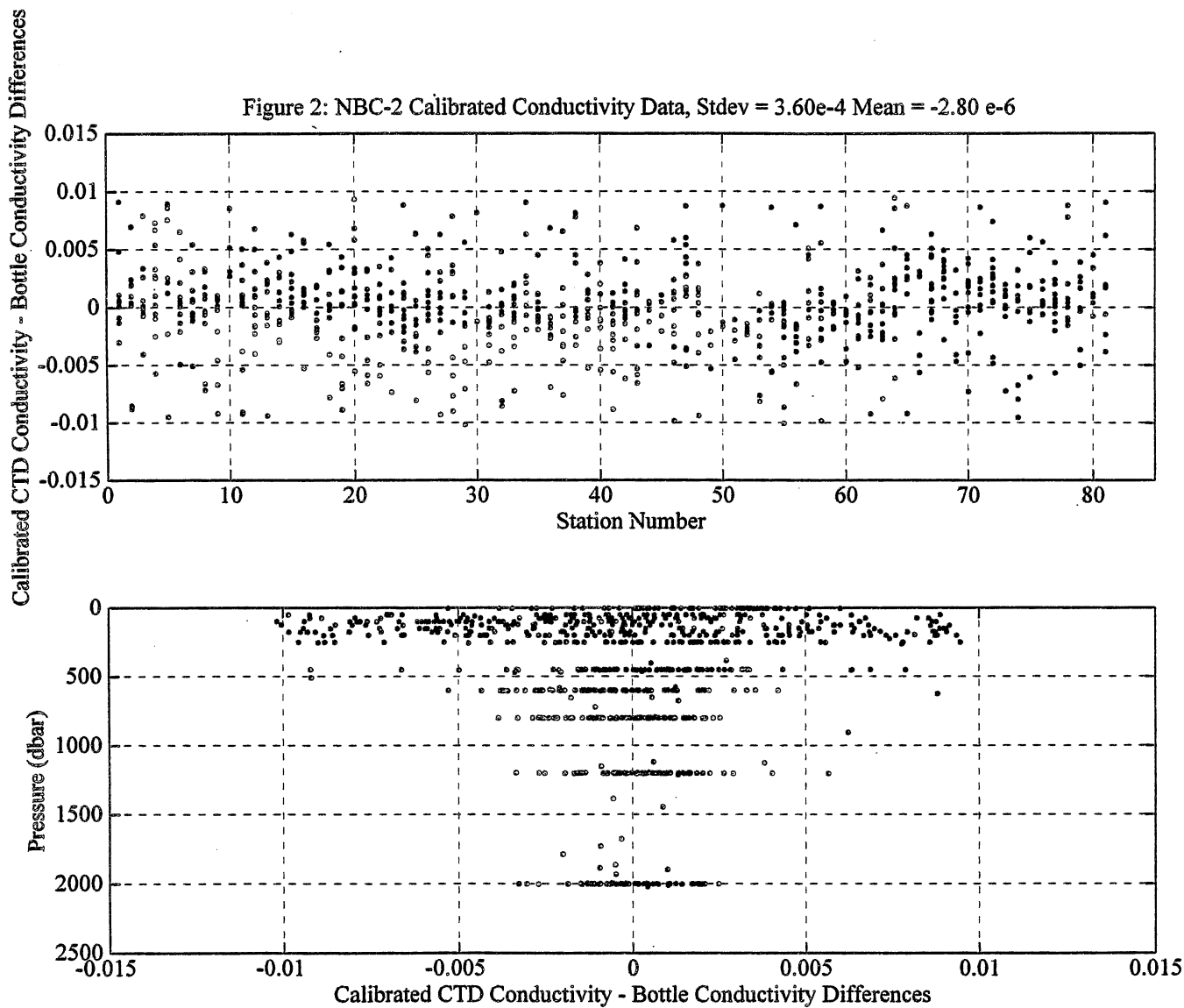
Station	Date	Time (Z)	Latitude		Longitude	Depth (m)
			N	W		
1	2/6/99	0010	13.001	58.748	2002	
2	2/7/99	0407	13.001	58.365	1998	
3	2/7/99	0752	13.002	58.001	2001	
4	2/7/99	1211	13.000	57.495	2001	
5	2/8/99	0705	11.392	60.500	575	
6	2/8/99	0958	11.716	60.334	1384	
7	2/8/99	1321	12.050	60.132	1932	
8	2/8/99	2014	12.383	59.933	1865	
9	2/8/99	2351	12.719	59.750	1119	
10	2/9/99	0235	12.931	59.597	384	
11	2/11/99	0503	9.249	56.537	2002	
12	2/11/99	1015	9.751	56.667	2001	
13	2/11/99	1547	10.334	56.832	1998	
14	2/11/99	2137	10.922	56.965	2001	
15	2/12/99	0218	11.416	57.098	1999	
16	2/12/99	0830	12.184	57.234	2002	
17	2/12/99	2049	11.665	55.417	2001	
18	2/13/99	0014	11.433	55.716	2002	
19	2/13/99	0348	11.200	56.017	2003	
20	2/13/99	0718	10.976	56.320	2001	
21	2/13/99	1048	10.733	56.617	2000	
22	2/13/99	1419	10.501	56.917	2003	
23	2/13/99	1759	10.265	57.216	2001	
24	2/13/99	2200	10.032	57.519	2000	
25	2/14/99	0135	9.798	57.817	2001	
26	2/14/99	0507	9.566	58.120	2002	
27	2/14/99	0917	9.334	58.416	1998	
28	2/14/99	1230	9.166	58.667	1898	
29	2/14/99	1525	8.996	58.838	1214	
30	2/14/99	1738	8.919	59.002	209	
31	2/16/99	0558	8.140	54.036	1151	
32	2/16/99	1315	9.744	53.779	1994	
33	2/16/99	2224	8.999	52.752	2000	
34	2/17/99	0545	8.411	51.912	2002	
35	2/17/99	1220	7.800	51.149	1999	
36	2/17/99	2116	7.001	50.001	2003	
37	2/18/99	1345	7.115	52.834	471	
38	2/18/99	1628	7.501	52.742	1126	
39	2/18/99	2154	7.927	52.651	1940	
40	2/19/99	0222	8.351	52.567	2001	
41	2/19/99	0620	8.781	52.474	2001	
42	2/19/99	1031	9.204	52.398	2003	
43	2/19/99	1549	9.617	52.315	2001	
44	2/19/99	1945	10.038	52.227	2002	
45	2/19/99	2350	10.477	52.149	2003	
46	2/20/99	0405	10.912	52.090	2002	

Table 1: CTD/LADCP Cast Summary

Station	Date	Time (Z)	Latitude	Longitude	Depth (m)
			N	W	
47	2/20/99	1214	9.763	51.487	2002
48	2/20/99	2344	9.153	49.810	2002
49	2/21/99	1825	6.420	51.340	2001
50	2/21/99	2108	6.250	51.435	2003
51	2/21/99	2358	6.050	51.542	1786
52	2/22/99	0157	5.963	51.595	651
53	2/25/99	0151	5.948	51.000	2002
54	2/25/99	2130	7.504	52.737	1121
55	2/26/99	1154	9.001	52.750	2001
56	2/26/99	1929	8.400	51.916	2003
57	2/27/99	0223	7.799	51.152	2000
58	2/27/99	0943	7.200	50.434	2004
59	2/27/99	2113	8.363	49.181	2000
60	2/28/99	0252	7.597	49.184	2001
61	2/28/99	0747	7.003	49.332	1999
62	2/28/99	1310	6.448	49.708	2001
63	2/28/99	1817	5.977	50.098	2000
64	2/28/99	2311	5.583	50.400	2001
65	3/1/99	0254	5.319	50.598	506
66	3/1/99	1735	4.645	49.484	2002
67	3/2/99	0104	5.107	48.885	2000
68	3/2/99	0630	5.498	48.321	2004
69	3/2/99	1237	6.133	47.983	2001
70	3/2/99	1844	6.752	47.652	2000
71	3/3/99	0051	7.400	49.367	2000
72	3/3/99	1149	6.764	45.745	2001
73	3/3/99	1653	6.169	45.915	2000
74	3/4/99	0334	5.586	46.199	2002
75	3/4/99	1211	5.002	46.401	2001
76	3/4/99	1806	4.417	46.652	2001
77	3/4/99	2222	3.968	46.817	2000
78	3/5/99	0231	3.495	47.002	1725
79	3/5/99	0617	3.079	47.150	1676
80	3/5/99	1006	2.667	47.333	1444
81	3/5/99	1319	2.331	47.467	905

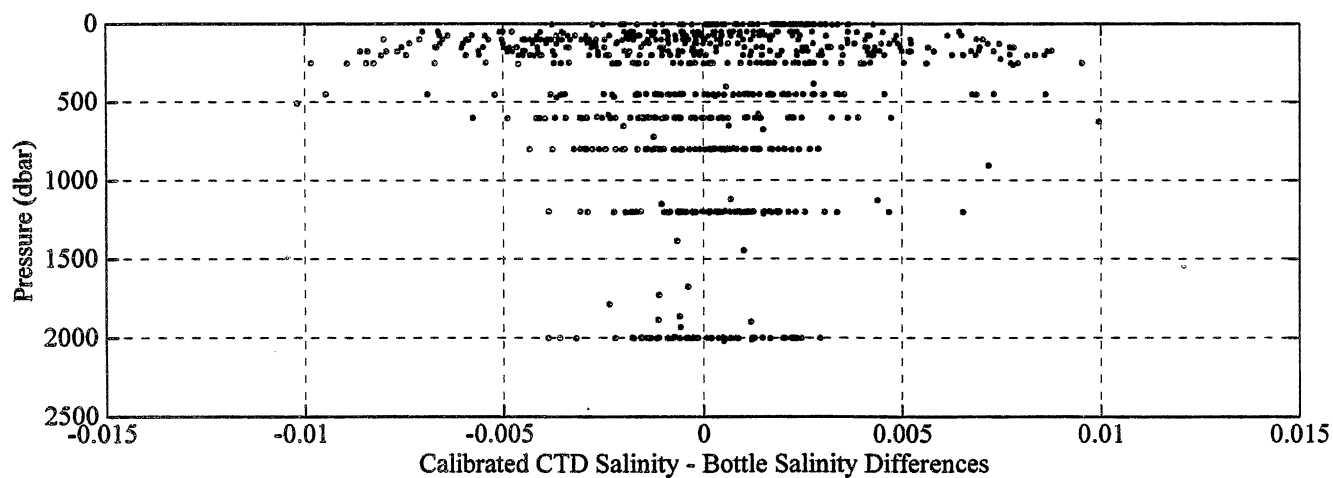
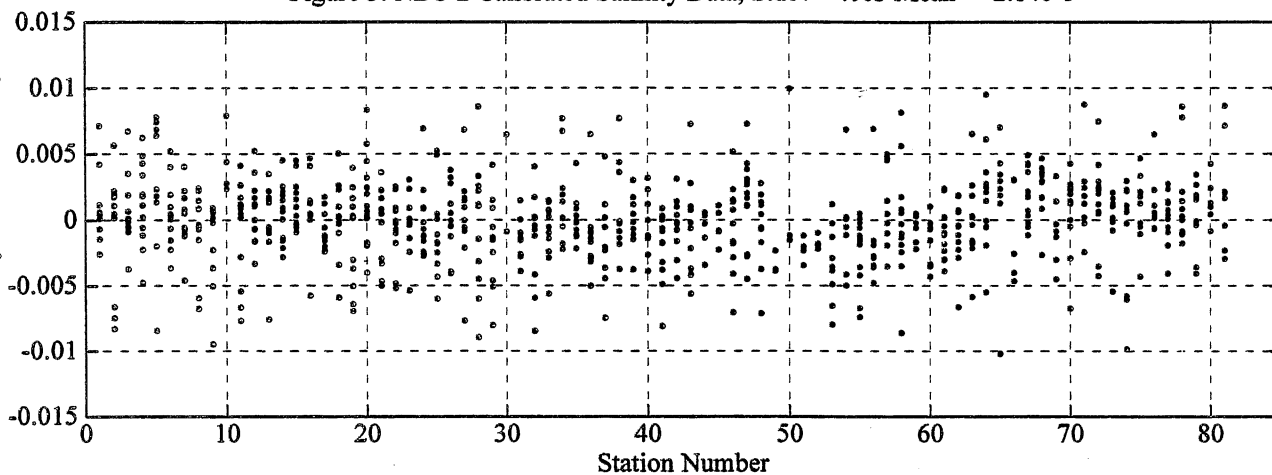
Table 2: Oxygen values rejected by OXFITMR

Station	Pressure
7	124.0
12	124.0
12	176.0
13	50.0
13	1199.0
21	196.0
23	100.0
27	151.0
28	1202.0
31	100.0
32	124.0
37	149.0
38	124.0
39	1885.0
39	1201.0
39	453.0
40	3.0
40	1199.0
42	1153.0
47	101.0
48	99.0
55	175.0
56	101.0
58	3.0
60	150.0
60	124.0
61	601.0
61	452.0
61	202.0
61	250.0
62	801.0
63	1200.0
64	250.0
66	74.0
66	51.0
68	17.0
70	102.0
71	75.0
71	98.0
72	1055.0
72	51.0
73	76.0
73	50.0
74	1199.0
77	149.0
78	800.0
80	1201.0



Calibrated CTD Salinity - Bottle Salinity Differences

Figure 3: NBC-2 Calibrated Salinity Data, Stdev = .003 Mean = -2.14e-6



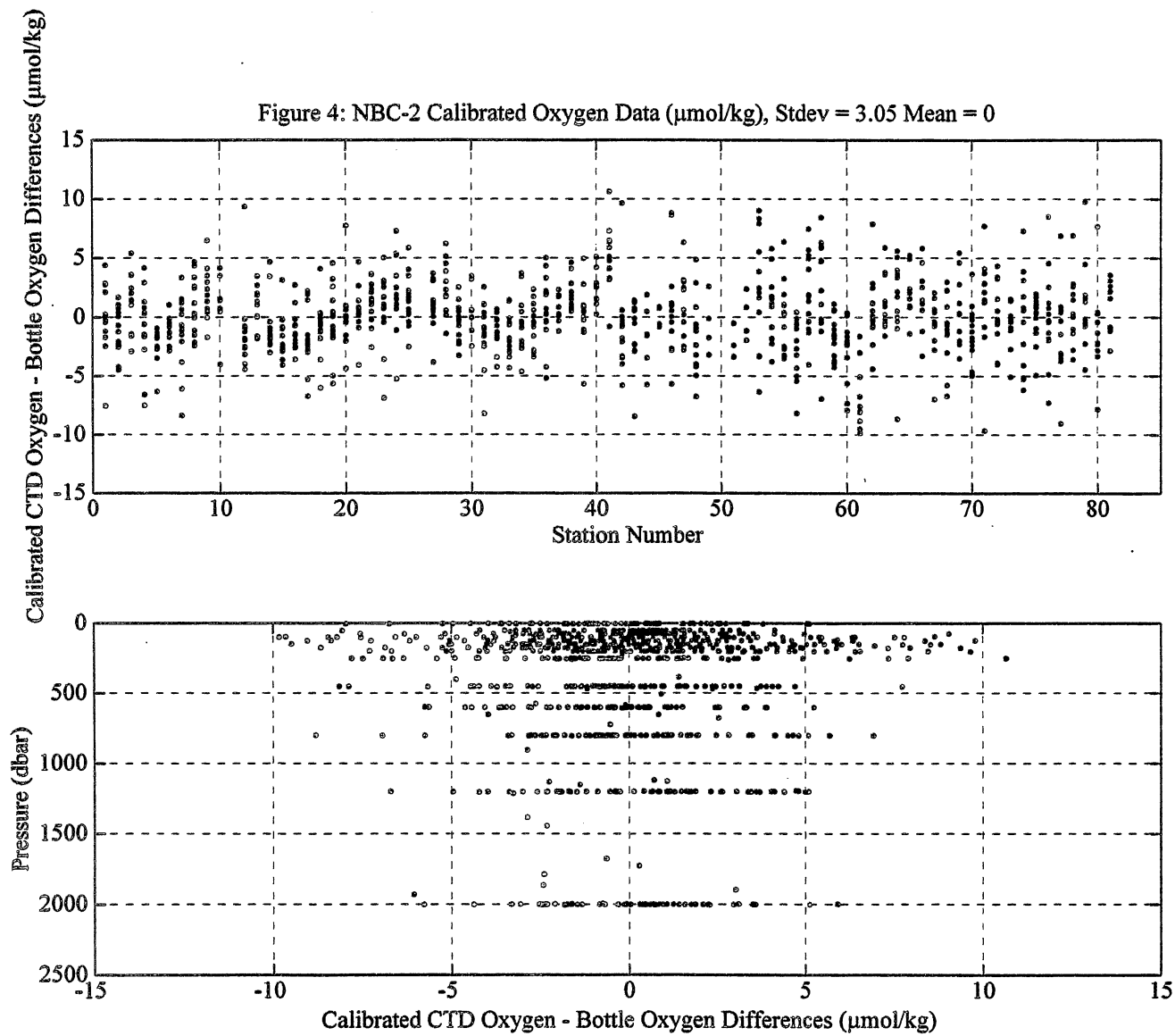


Figure 5: NBC-2 XBT Drop Locations



Table 3: XBT Data Summary

Drop #	Date	Time (Z)	Latitude	Longitude
			N	W
1	06 02 1999	21 04	12.995	-59.160
2	07 02 1999	02 59	13.002	-58.550
3	07 02 1999	06 45	13.010	-58.187
4	07 02 1999	06 54	13.008	-58.162
5	07 02 1999	10 15	13.000	-57.837
6	07 02 1999	14 49	12.928	-57.673
7	07 02 1999	14 54	12.920	-57.688
8	07 02 1999	16 58	12.735	-58.060
9	07 02 1999	19 01	12.547	-58.433
10	07 02 1999	20 59	12.367	-58.780
11	07 02 1999	23 00	12.200	-59.147
12	08 02 1999	01 04	12.003	-59.492
13	08 02 1999	02 59	11.818	-59.800
14	08 02 1999	04 59	11.610	-60.145
15	08 02 1999	08 52	11.552	-60.418
17	08 02 1999	12 16	11.900	-60.223
18	08 02 1999	15 47	12.178	-60.057
19	08 02 1999	22 43	12.550	-59.843
20	09 02 1999	02 08	12.873	-59.638
21	09 02 1999	04 58	12.658	-59.447
22	09 02 1999	06 59	12.343	-59.277
23	09 02 1999	09 00	12.025	-59.102
24	09 02 1999	11 00	11.710	-58.937
25	09 02 1999	12 59	11.407	-58.765
26	09 02 1999	15 00	11.162	-58.547
27	09 02 1999	16 55	10.967	-58.295
28	09 02 1999	19 06	10.752	-58.005
29	09 02 1999	20 57	10.597	-57.760
30	09 02 1999	22 03	10.543	-57.622
31	09 02 1999	22 11	10.535	-57.600
32	09 02 1999	23 02	10.500	-57.480
33	09 02 1999	23 58	10.462	-57.347
35	10 02 1999	01 04	10.410	-57.182
36	10 02 1999	01 57	10.368	-57.052
37	10 02 1999	02 57	10.328	-56.903
39	10 02 1999	04 06	10.277	-56.737
40	10 02 1999	05 00	10.233	-56.605
41	10 02 1999	06 00	10.192	-56.462
42	10 02 1999	07 00	10.150	-56.332
44	10 02 1999	07 58	10.105	-56.185
45	10 02 1999	09 00	10.053	-56.022
46	10 02 1999	10 00	10.002	-55.855
47	10 02 1999	11 00	9.960	-55.702
48	10 02 1999	12 00	9.913	-55.535
49	10 02 1999	12 59	9.863	-55.368
50	10 02 1999	14 00	9.812	-55.205
51	10 02 1999	15 15	9.752	-55.007
52	10 02 1999	17 08	9.480	-55.262
53	10 02 1999	18 56	9.220	-55.528
54	10 02 1999	21 01	8.907	-55.845
56	10 02 1999	23 37	8.505	-56.245
57	11 02 1999	00 12	8.418	-56.333

Table 3: XBT Data Summary

Drop #	Date	Time (Z)	Latitude	Longitude
			N	W
58	11 02 1999	02 45	8.865	-56.440
59	11 02 1999	08 44	9.505	-56.600
73	25 02 1999	09 13	6.775	-51.902
74	25 02 1999	14 20	7.372	-52.185
75	26 02 1999	04 52	7.783	-52.568
76	26 02 1999	06 36	8.090	-52.613
77	26 02 1999	08 21	8.407	-52.658
78	26 02 1999	10 01	8.700	-52.707
79	26 02 1999	15 02	8.832	-52.518
80	26 02 1999	17 32	8.583	-52.172
81	26 02 1999	22 46	8.195	-51.658
82	27 02 1999	00 32	8.003	-51.412
83	27 02 1999	05 10	7.677	-50.997
84	27 02 1999	06 45	7.497	-50.790
85	27 02 1999	08 11	7.345	-50.608
86	27 02 1999	12 42	7.523	-50.428
87	27 02 1999	15 34	7.882	-50.102
88	27 02 1999	17 28	8.048	-49.785
89	27 02 1999	19 19	8.213	-49.473
90	28 02 1999	00 04	8.107	-49.180
91	28 02 1999	01 28	7.840	-49.182
92	28 02 1999	06 06	7.287	-49.260
93	28 02 1999	11 16	6.733	-49.522
94	28 02 1999	16 30	6.213	-49.913
96	28 02 1999	22 19	5.733	-50.292
97	01 03 1999	01 46	5.455	-50.498
98	01 03 1999	12 44	4.592	-49.917
99	01 03 1999	14 22	4.627	-49.675
100	01 03 1999	22 41	4.883	-49.205
101	02 03 1999	04 27	5.307	-48.595
102	02 03 1999	10 18	5.810	-48.152
103	02 03 1999	16 25	6.448	-47.820
104	02 03 1999	22 46	7.080	-47.515
105	03 03 1999	04 45	7.240	-46.940
106	03 03 1999	07 06	7.075	-46.535
107	03 03 1999	09 42	6.900	-46.088
108	03 03 1999	15 00	6.480	-45.827
109	03 03 1999	20 29	5.863	-46.065
110	04 03 1999	10 18	5.293	-46.297
111	04 03 1999	16 20	4.717	-46.523
112	04 03 1999	21 04	4.185	-46.737
113	05 03 1999	01 06	3.747	-46.913
114	05 03 1999	05 06	3.287	-47.077
115	05 03 1999	08 55	2.867	-47.247

HYDROGRAPHIC DATA

APPENDIX A

CTD DATA

NBC-2 R/V SEWARD JOHNSON
CTD Station 1 (99001)
Latitude 13.001N Longitude 58.748W
06-Feb-1999 00:10Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	26.321	26.321	35.382	209.5	0.005	23.223
10	26.322	26.319	35.396	208.6	0.046	23.235
20	26.323	26.319	35.399	208.9	0.093	23.238
30	26.338	26.331	35.416	208.8	0.139	23.247
40	26.343	26.334	35.432	208.9	0.185	23.260
50	26.380	26.368	35.480	209.1	0.232	23.286
60	26.372	26.359	35.483	208.9	0.278	23.291
70	26.362	26.346	35.486	208.9	0.324	23.298
80	27.007	26.989	36.373	209.2	0.369	23.764
90	26.590	26.569	37.039	207.9	0.407	24.401
100	25.617	25.595	37.204	205.2	0.440	24.833
110	24.394	24.370	37.267	188.4	0.470	25.256
120	23.226	23.201	37.202	178.7	0.495	25.555
130	22.385	22.359	37.102	172.2	0.520	25.723
140	21.279	21.252	37.015	170.1	0.542	25.968
150	20.782	20.754	36.939	164.3	0.562	26.048
160	19.637	19.607	36.709	152.2	0.582	26.179
170	19.174	19.143	36.632	147.7	0.601	26.242
180	18.201	18.170	36.441	138.3	0.618	26.343
190	17.579	17.546	36.387	143.1	0.635	26.456
200	17.162	17.128	36.323	144.0	0.652	26.508
250	14.039	14.003	35.754	126.2	0.724	26.778
300	11.405	11.367	35.311	121.8	0.787	26.958
350	9.998	9.957	35.077	120.7	0.843	27.027
400	9.341	9.296	34.970	121.4	0.898	27.055
450	8.477	8.429	34.849	122.8	0.952	27.098
500	8.010	7.959	34.798	124.0	1.004	27.129
550	7.587	7.532	34.762	123.9	1.054	27.164
600	7.146	7.088	34.719	126.4	1.104	27.194
650	6.989	6.926	34.738	125.1	1.152	27.231
700	6.422	6.357	34.661	128.7	1.199	27.247
750	5.984	5.917	34.632	131.6	1.244	27.281
800	5.655	5.585	34.615	136.2	1.289	27.309
900	5.380	5.303	34.662	141.9	1.373	27.381
1000	5.377	5.291	34.764	154.5	1.452	27.464
1500	4.120	3.998	34.995	261.1	1.730	27.795
2000	3.619	3.457	34.975	268.6	1.957	27.837

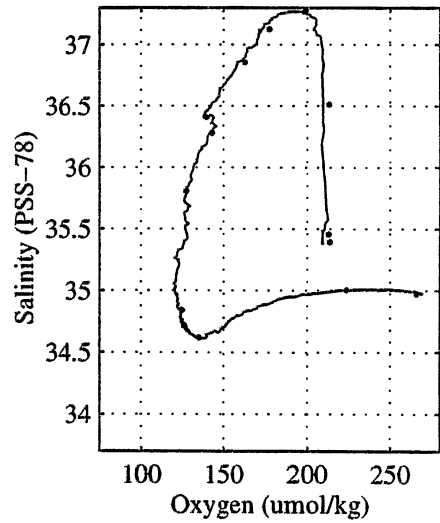
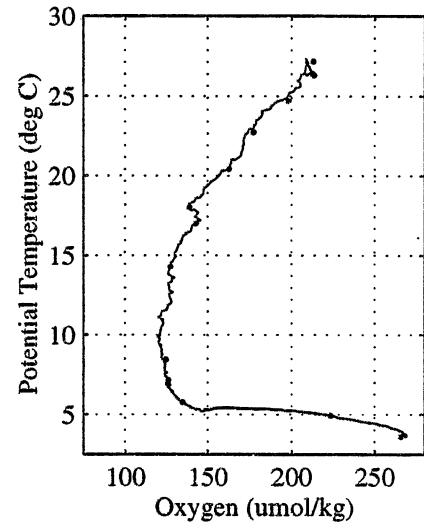
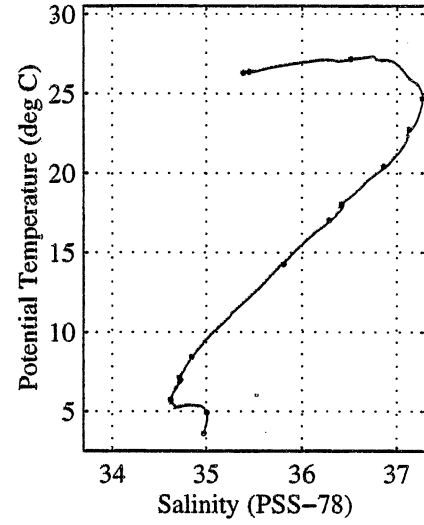
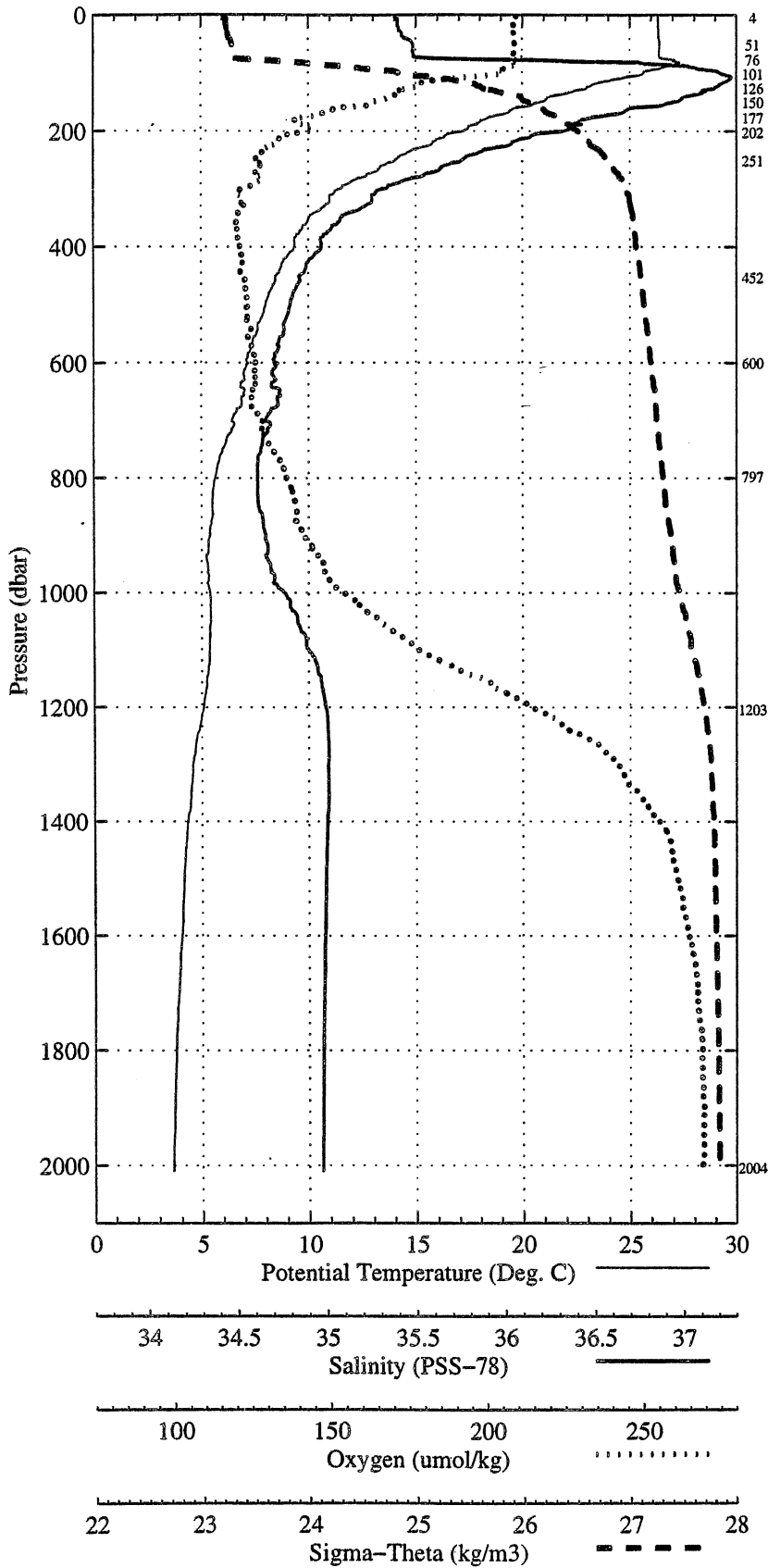
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
2004	24	3.620	3.457	34.974	265.8
1204	1	4.932	4.829	35.005	223.3
797	2	5.763	5.693	34.619	134.6
600	3	7.164	7.105	34.712	126.0
452	4	8.441	8.393	34.843	124.3
251	5	14.295	14.258	35.807*	127.1
202	6	17.024	16.990	36.281	142.8
177	12	18.037	18.006	36.413	138.8
150	13	20.423	20.394	36.857*	163.0
126	14	22.747	22.721	37.127	177.6
102	15	24.693	24.671	37.267	198.1
77	16	27.154	27.137	36.512*	212.9
51	17	26.372	26.360	35.456	212.5
5	18	26.307	26.306	35.394	213.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 1 (99001)

Latitude 13.001 N Longitude 58.748 W

06-Feb-1999 00:10 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 2 (99002)
Latitude 13.001N Longitude 58.365W
07-Feb-1999 04:07Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.128	26.128	34.712	213.3	0.005	22.778
10	26.127	26.125	34.714	209.3	0.051	22.781
20	26.126	26.122	34.715	209.5	0.101	22.784
30	26.282	26.276	35.086	209.7	0.152	23.016
40	26.516	26.507	35.421	208.0	0.199	23.197
50	26.547	26.536	35.491	207.4	0.245	23.241
60	26.546	26.533	35.492	207.5	0.292	23.244
70	26.929	26.913	36.033	206.4	0.338	23.531
80	26.233	26.215	36.947	205.7	0.376	24.443
90	25.361	25.341	37.208	199.1	0.409	24.914
100	24.852	24.830	37.253	193.2	0.439	25.105
110	24.287	24.264	37.261	182.7	0.467	25.284
120	23.704	23.679	37.244	181.5	0.494	25.446
130	23.149	23.122	37.205	177.3	0.519	25.581
140	22.321	22.293	37.115	170.4	0.543	25.752
150	21.567	21.538	37.042	167.3	0.565	25.910
160	20.368	20.338	36.899	166.7	0.585	26.130
170	19.811	19.780	36.827	167.8	0.604	26.224
180	18.878	18.846	36.679	165.9	0.622	26.354
190	18.034	18.001	36.543	172.9	0.639	26.464
200	17.413	17.379	36.431	169.0	0.655	26.531
250	13.852	13.815	35.737	131.2	0.727	26.804
300	12.042	12.002	35.400	122.4	0.790	26.907
350	10.491	10.449	35.150	116.9	0.849	26.999
400	9.828	9.782	35.065	117.7	0.905	27.049
450	8.842	8.793	34.904	121.2	0.959	27.084
500	8.698	8.644	34.914	121.8	1.012	27.116
550	7.930	7.874	34.807	123.9	1.063	27.150
600	7.165	7.107	34.719	127.1	1.113	27.191
650	6.734	6.673	34.686	126.9	1.161	27.224
700	6.168	6.105	34.623	130.5	1.208	27.249
750	6.347	6.278	34.691	131.9	1.254	27.282
800	6.579	6.504	34.770	134.7	1.298	27.315
900	6.480	6.395	34.851	145.2	1.384	27.395
1000	5.433	5.346	34.768	154.8	1.463	27.461
1500	3.973	3.853	34.987	264.4	1.742	27.803
2000	3.580	3.419	34.973	269.7	1.967	27.839

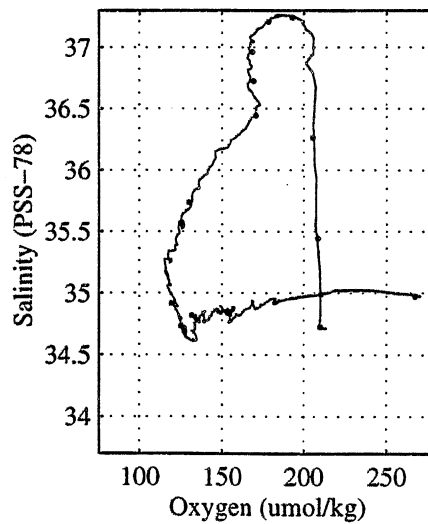
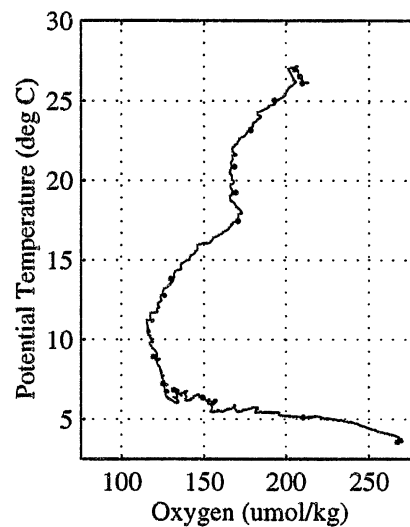
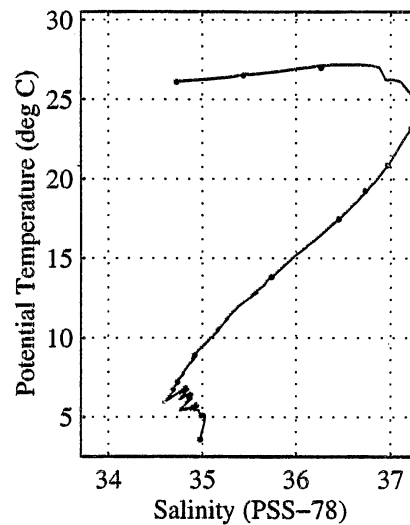
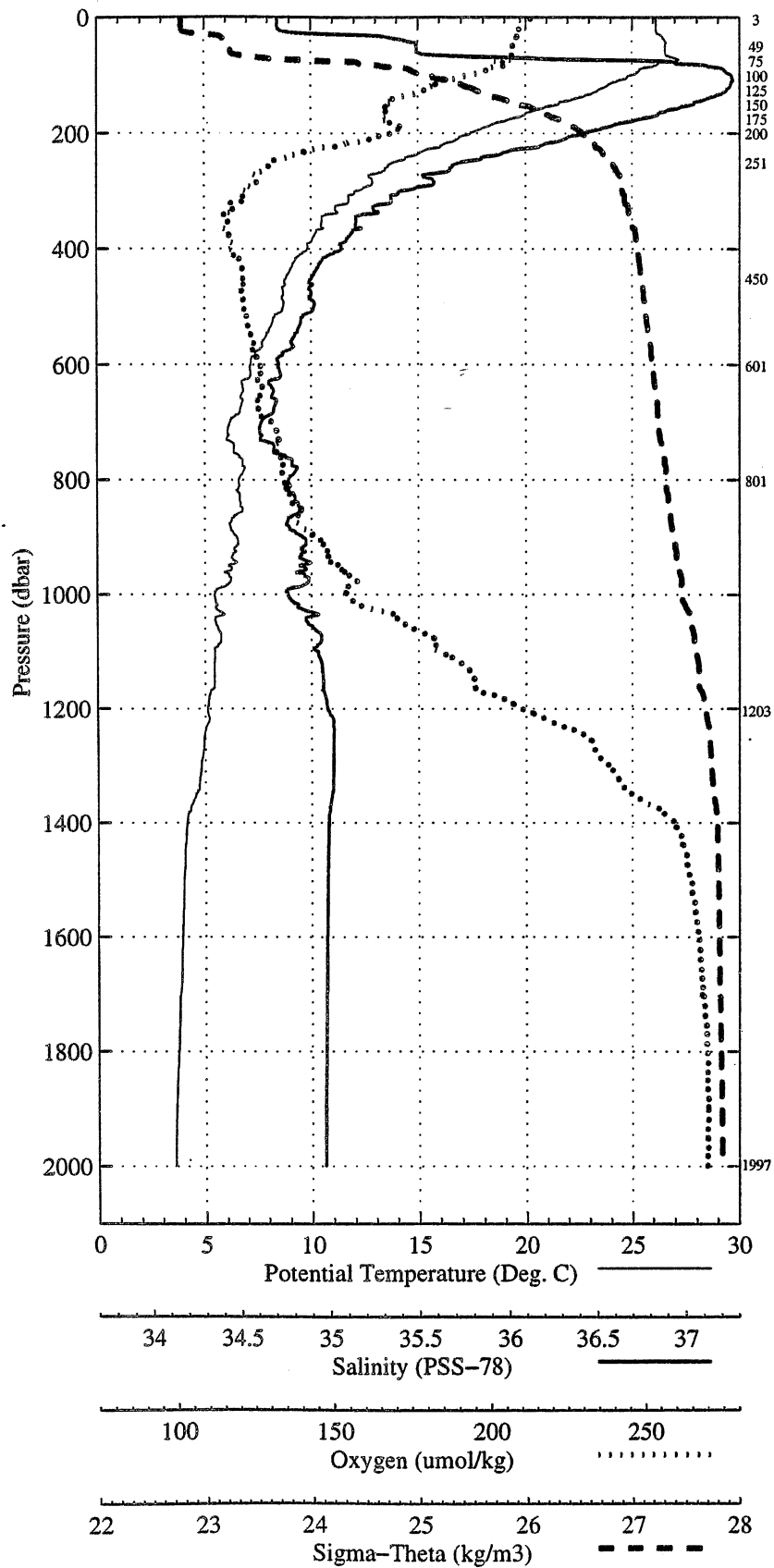
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1997	24	3.582	3.420	34.973	267.3
1203	1	5.100	4.996	34.988	210.3
801	2	6.834	6.757	34.817	131.7
602	3	7.235	7.176	34.732	124.9
451	4	8.933	8.883	34.917	119.1
251	5	13.821	13.784	35.737	129.8
200	6	17.468	17.434	36.445	170.7
175	12	19.253	19.221	36.725*	169.4
151	13	20.874	20.845	36.962	168.8
126	14	23.173	23.147	37.210	178.5
101	15	25.025	25.003	37.244*	192.9
75	16	26.973	26.955	36.262*	205.3
50	17	26.514	26.503	35.442*	208.3
4	18	26.092	26.091	34.726	209.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 2 (99002)

Latitude 13.001 N Longitude 58.365 W

07-Feb-1999 04:07 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 3 (99003)
Latitude 13.002N Longitude 58.001W
07-Feb-1999 07:52Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.083	26.082	34.363	211.7	0.005	22.529
10	26.102	26.100	34.365	207.6	0.053	22.526
20	26.124	26.120	34.371	207.5	0.106	22.525
30	26.404	26.397	34.984	208.0	0.159	22.901
40	26.599	26.590	35.518	205.2	0.206	23.243
50	26.555	26.544	35.520	204.7	0.252	23.260
60	26.573	26.559	35.541	204.5	0.298	23.272
70	26.950	26.934	36.080	201.8	0.344	23.560
80	26.852	26.834	36.737	202.9	0.384	24.088
90	25.414	25.394	36.902	184.4	0.420	24.666
100	24.973	24.951	37.227	194.9	0.451	25.049
110	24.265	24.242	37.280	185.7	0.479	25.305
120	23.612	23.587	37.255	178.6	0.505	25.482
130	22.587	22.561	37.173	176.8	0.529	25.720
140	21.555	21.528	37.068	171.2	0.551	25.932
150	20.747	20.718	36.962	167.3	0.572	26.074
160	19.421	19.391	36.746	159.4	0.591	26.264
170	18.794	18.764	36.656	160.1	0.609	26.357
180	18.349	18.317	36.583	162.6	0.626	26.415
190	17.973	17.940	36.518	161.8	0.642	26.459
200	17.496	17.462	36.428	153.5	0.658	26.508
250	14.962	14.924	35.947	138.1	0.733	26.728
300	13.956	13.913	35.844	139.7	0.800	26.868
350	11.971	11.925	35.480	136.3	0.861	26.986
400	10.053	10.006	35.126	122.6	0.917	27.058
450	8.892	8.843	34.936	119.7	0.970	27.101
500	8.625	8.571	34.932	120.6	1.022	27.142
550	7.821	7.764	34.814	122.7	1.073	27.171
600	7.782	7.721	34.854	122.1	1.122	27.210
650	7.361	7.296	34.813	123.6	1.169	27.239
700	6.885	6.818	34.763	125.2	1.216	27.266
750	6.096	6.028	34.657	129.0	1.261	27.287
800	5.930	5.858	34.663	132.6	1.306	27.314
900	5.546	5.467	34.674	139.1	1.391	27.371
1000	5.455	5.367	34.730	144.8	1.471	27.428
1500	4.346	4.221	35.005	255.7	1.777	27.780
2000	3.473	3.313	34.976	265.3	2.005	27.852

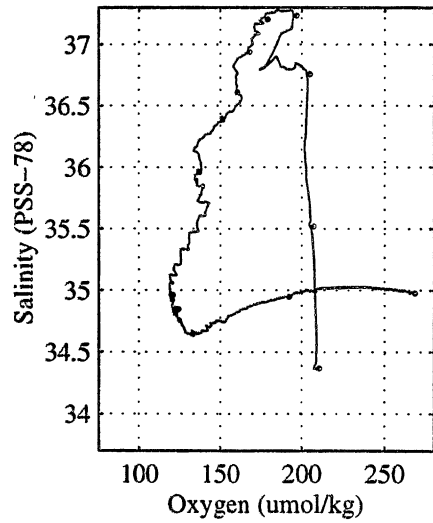
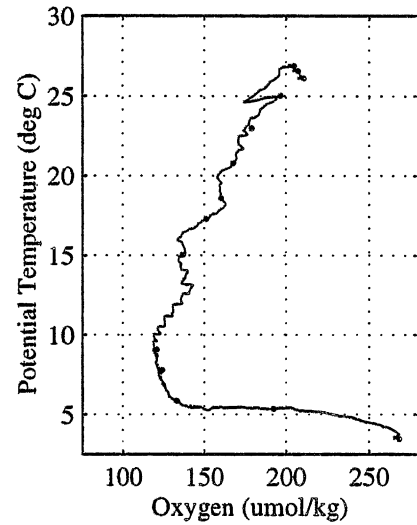
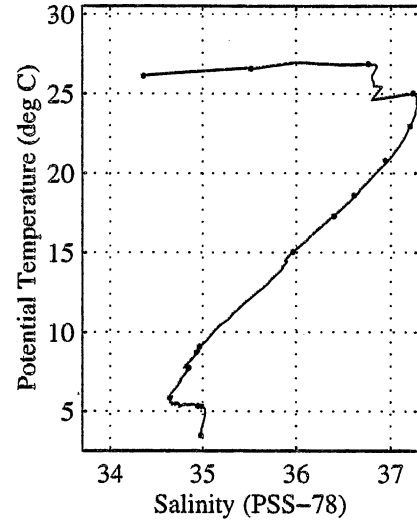
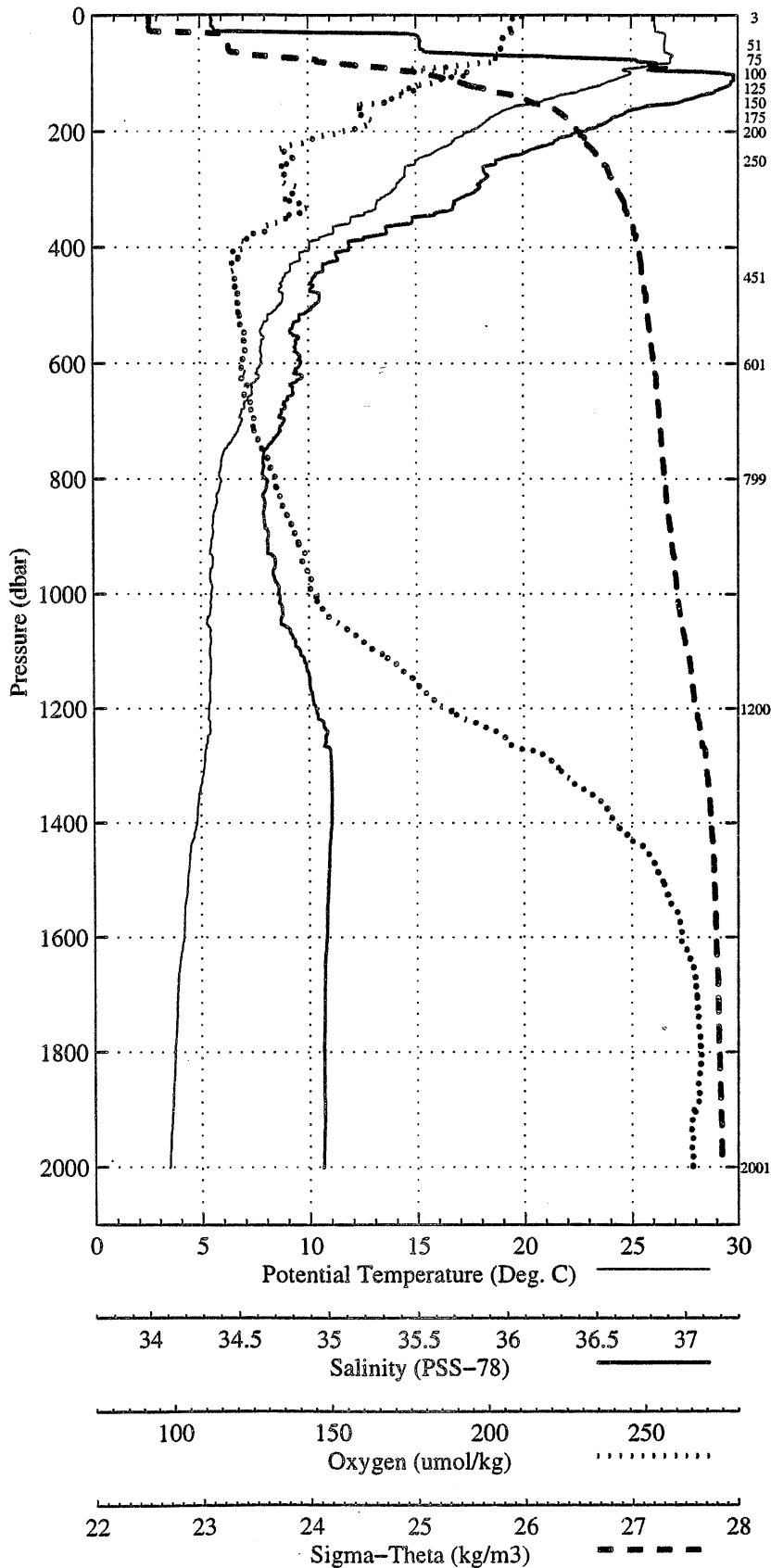
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.465	3.305	34.976	268.2
1201	1	5.340	5.235	34.947	192.4
800	2	5.837	5.766	34.644	133.3
602	3	7.782	7.721	34.846	124.3
451	4	9.085	9.035	34.963	121.0
250	5	15.044	15.006	35.966	136.8
201	6	17.287	17.253	36.396*	151.1
175	12	18.598	18.567	36.610	160.5
150	13	20.804	20.775	36.940*	168.1
125	14	22.976	22.950	37.204	179.1
100	15	25.021	24.999	37.237*	196.6
76	16	26.863	26.846	36.758*	204.8
51	17	26.554	26.543	35.519	207.2
4	18	26.111	26.110	34.368	210.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 3 (99003)

Latitude 13.002 N Longitude 58.001 W

07-Feb-1999 07:52 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 4 (99004)
Latitude 13.000N Longitude 57.495W
07-Feb-1999 12:11Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.078	26.078	33.971	221.5	0.006	22.235
10	26.078	26.076	33.974	209.8	0.056	22.238
20	26.264	26.259	34.993	208.9	0.111	22.950
30	26.374	26.368	35.428	207.6	0.158	23.245
40	26.377	26.368	35.468	207.7	0.204	23.276
50	26.463	26.452	35.528	207.5	0.251	23.295
60	26.523	26.509	35.597	206.9	0.296	23.330
70	26.366	26.350	35.957	207.7	0.341	23.652
80	26.606	26.588	36.250	205.9	0.383	23.799
90	25.852	25.832	36.712	192.5	0.422	24.386
100	24.827	24.805	36.908	179.4	0.456	24.852
110	23.278	23.255	36.844	161.2	0.484	25.266
120	22.620	22.596	36.917	161.5	0.510	25.514
130	22.877	22.850	37.194	174.4	0.535	25.651
140	21.913	21.885	37.078	169.6	0.558	25.839
150	21.388	21.358	37.021	167.6	0.580	25.944
160	20.536	20.505	36.913	166.0	0.600	26.096
170	19.696	19.664	36.770	164.4	0.619	26.211
180	18.889	18.857	36.621	154.8	0.638	26.307
190	18.580	18.546	36.583	152.5	0.655	26.357
200	18.069	18.034	36.493	148.1	0.672	26.417
250	16.470	16.429	36.272	154.9	0.751	26.637
300	14.511	14.466	35.919	138.1	0.821	26.809
350	12.259	12.213	35.508	126.0	0.884	26.953
400	11.385	11.333	35.403	123.5	0.943	27.038
450	9.977	9.924	35.172	125.7	0.997	27.109
500	8.407	8.354	34.906	123.9	1.049	27.155
550	7.510	7.455	34.766	124.3	1.099	27.178
600	6.999	6.942	34.714	126.1	1.147	27.210
650	6.778	6.717	34.727	127.0	1.194	27.251
700	6.520	6.455	34.726	127.8	1.240	27.285
750	6.248	6.180	34.722	130.1	1.284	27.319
800	5.634	5.564	34.651	135.4	1.327	27.340
900	5.337	5.260	34.676	143.1	1.409	27.397
1000	5.196	5.110	34.742	154.1	1.485	27.468
1500	4.540	4.414	35.009	244.2	1.791	27.763
2000	3.610	3.448	34.981	266.3	2.027	27.843

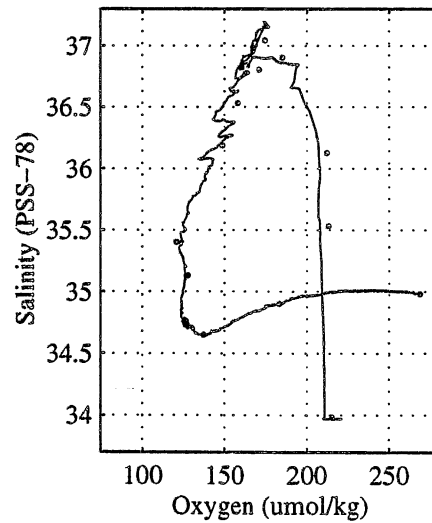
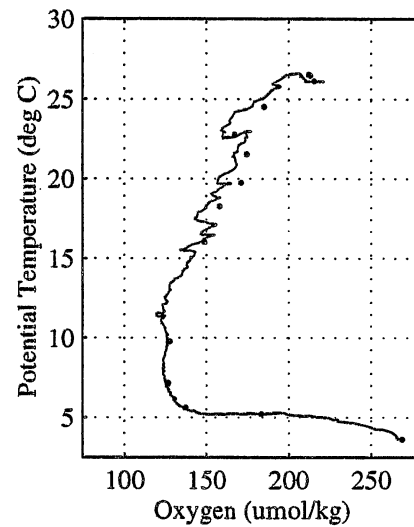
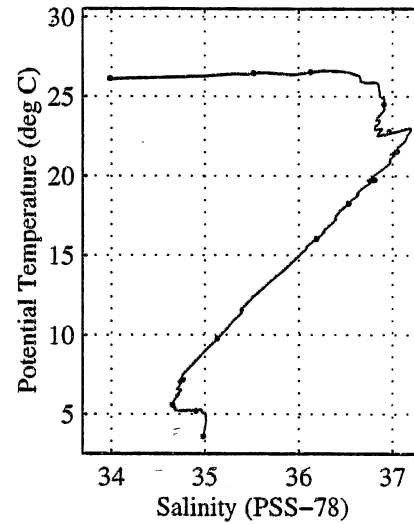
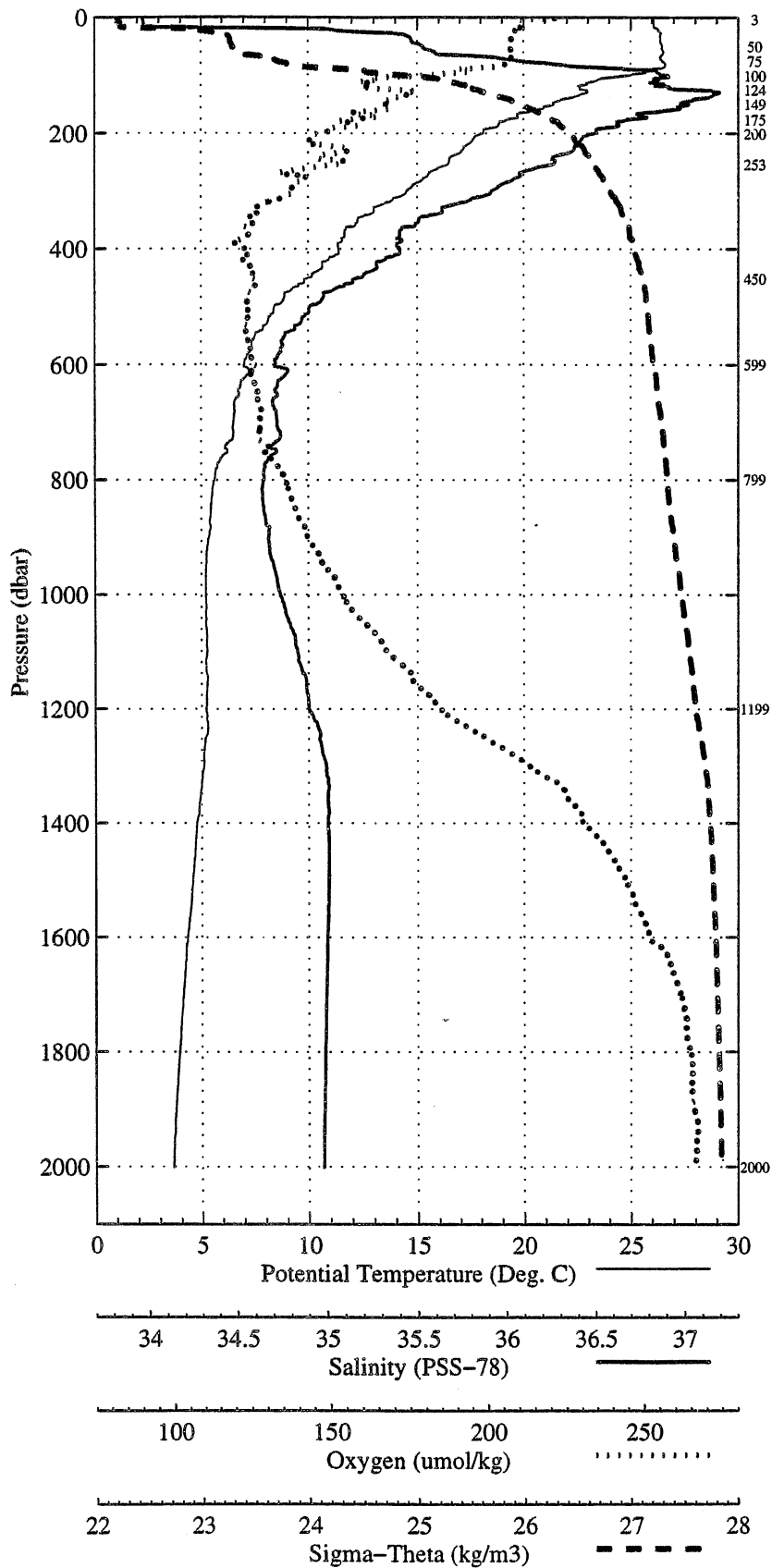
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.610	3.448	34.982	269.0
1199	1	5.215	5.110	34.902	183.9
799	2	5.612	5.543	34.649	137.2
600	3	7.171	7.113	34.759	126.7
451	4	9.772	9.720	35.132	127.6
254	5	16.045	16.005	36.187	148.6
201	6	18.275	18.240	36.533	158.2
176	12	19.759	19.727	36.804	171.5
150	13	21.551	21.521	37.044	175.1
125	14	22.779	22.754	36.961*	167.7
101	15	24.506	24.485	36.905*	185.5
75	16	26.531	26.514	36.126	212.0
50	17	26.456	26.445	35.532	213.0
3	18	26.120	26.119	33.983	215.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 4 (99004)

Latitude 13.000 N Longitude 57.495 W

07-Feb-1999 12:11 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 5 (99005)
Latitude 11.392N Longitude 60.500W
08-Feb-1999 07:05Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.681	26.681	35.654	207.3	0.005	23.314
10	26.691	26.688	35.654	204.9	0.046	23.313
20	26.693	26.689	35.655	205.0	0.091	23.314
30	26.694	26.687	35.655	205.1	0.137	23.315
40	26.694	26.685	35.656	205.1	0.183	23.317
50	26.520	26.509	35.700	202.7	0.228	23.407
60	25.386	25.373	35.918	194.3	0.271	23.927
70	23.567	23.552	36.101	172.1	0.309	24.613
80	20.261	20.246	36.510	152.0	0.334	25.854
90	18.474	18.458	36.472	146.4	0.353	26.291
100	18.200	18.182	36.435	144.2	0.371	26.332
110	18.023	18.003	36.414	143.9	0.388	26.360
120	17.695	17.674	36.368	142.3	0.404	26.407
130	17.388	17.366	36.332	141.6	0.421	26.455
140	17.030	17.007	36.266	138.6	0.437	26.491
150	16.264	16.240	36.140	139.7	0.452	26.576
160	15.865	15.840	36.074	139.5	0.467	26.617
170	15.690	15.663	36.046	140.0	0.482	26.637
180	15.560	15.532	36.027	140.4	0.496	26.652
190	15.426	15.396	36.003	140.1	0.511	26.665
200	15.251	15.220	35.971	139.5	0.525	26.680
250	14.682	14.645	35.867	136.9	0.596	26.728
300	11.462	11.424	35.308	126.3	0.659	26.945
350	9.960	9.919	35.086	121.2	0.716	27.040
400	8.690	8.647	34.921	120.4	0.770	27.119
450	7.914	7.868	34.818	122.1	0.820	27.157
500	7.044	6.996	34.716	124.1	0.868	27.202
550	6.673	6.622	34.684	125.5	0.915	27.228

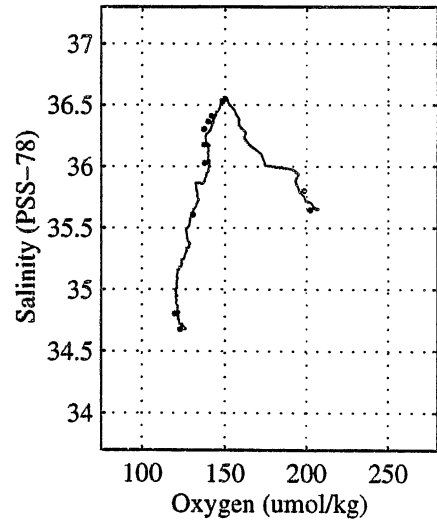
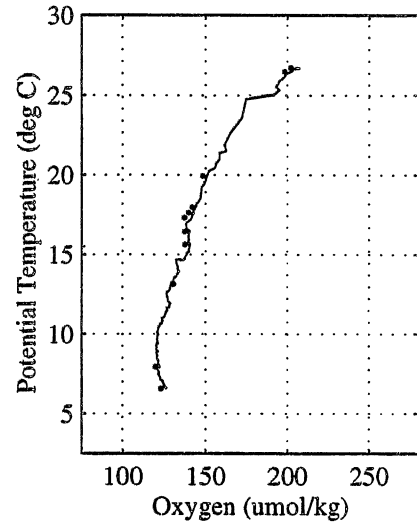
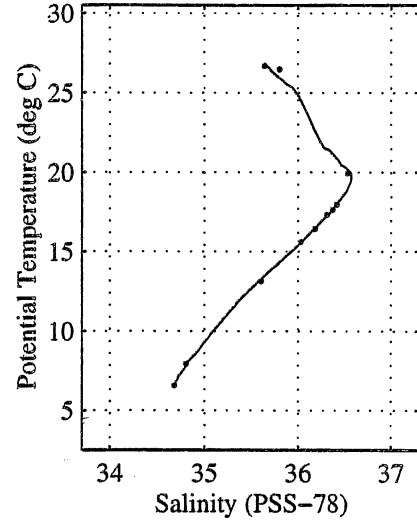
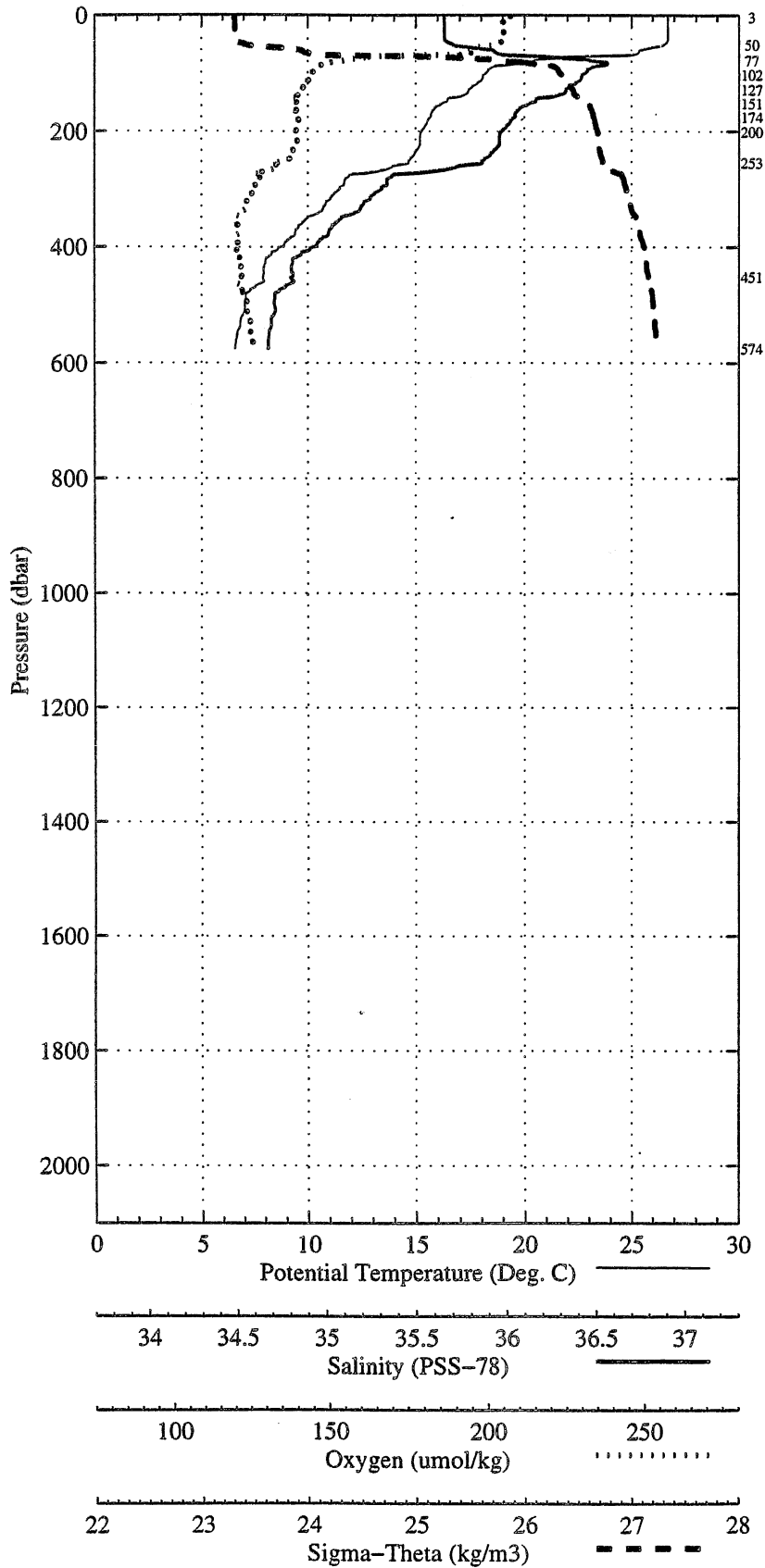
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
575	24	6.587	6.533	34.679	123.0
451	1	7.944	7.898	34.803	119.8
254	2	13.150	13.114	35.608*	130.4
201	3	15.629	15.598	36.027	137.6
175	4	16.446	16.418	36.177	137.3
151	5	17.321	17.296	36.303	137.2
128	6	17.645	17.624	36.366	139.7
102	12	17.969	17.951	36.410	141.7
78	13	19.931	19.917	36.529*	148.2
51	14	26.473	26.461	35.803	198.3
3	15	26.703	26.703	35.646	202.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 5 (99005)

Latitude 11.392 N Longitude 60.500 W

08-Feb-1999 07:05 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 6 (99006)
Latitude 11.716N Longitude 60.334W
08-Feb-1999 09:58Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.460	26.459	35.374	208.7	0.005	23.173
10	26.538	26.536	35.377	204.9	0.047	23.152
20	26.539	26.535	35.378	204.8	0.094	23.154
30	26.541	26.534	35.379	205.0	0.141	23.156
40	26.548	26.539	35.383	205.1	0.189	23.157
50	26.558	26.547	35.387	205.0	0.236	23.159
60	27.037	27.024	36.027	198.4	0.283	23.491
70	26.260	26.244	36.668	190.0	0.323	24.222
80	25.142	25.124	36.806	180.1	0.358	24.676
90	24.154	24.135	36.915	167.1	0.389	25.059
100	21.665	21.645	36.725	151.8	0.416	25.636
110	20.964	20.943	36.719	149.3	0.439	25.826
120	19.083	19.061	36.299	144.0	0.460	26.006
130	17.849	17.826	36.078	153.7	0.480	26.147
140	18.236	18.212	36.334	141.7	0.498	26.249
150	17.085	17.060	36.176	141.4	0.516	26.409
160	17.705	17.677	36.418	146.8	0.532	26.446
170	17.384	17.355	36.367	144.6	0.549	26.487
180	16.942	16.912	36.282	142.5	0.564	26.528
190	16.496	16.465	36.214	144.3	0.580	26.582
200	16.074	16.042	36.136	143.6	0.595	26.620
250	12.725	12.690	35.528	128.3	0.663	26.871
300	10.663	10.626	35.184	119.5	0.722	26.993
350	9.573	9.533	35.029	118.8	0.777	27.061
400	8.841	8.797	34.923	118.3	0.831	27.098
450	8.091	8.044	34.826	119.8	0.882	27.137
500	7.566	7.516	34.773	122.8	0.932	27.174
550	7.203	7.150	34.732	123.0	0.980	27.195
600	6.784	6.727	34.702	124.7	1.028	27.230
650	6.419	6.359	34.680	127.6	1.074	27.261
700	6.033	5.971	34.671	130.8	1.119	27.305
750	5.701	5.636	34.672	135.3	1.161	27.347
800	5.463	5.395	34.704	142.0	1.201	27.402
900	5.444	5.366	34.810	157.4	1.275	27.491
1000	5.595	5.507	34.964	184.9	1.341	27.597

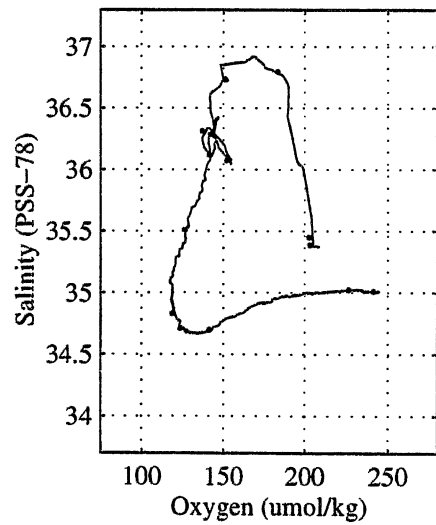
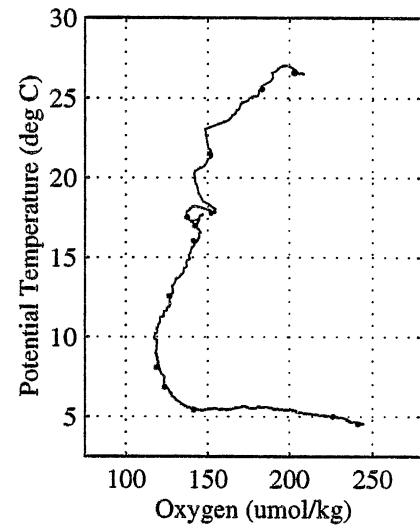
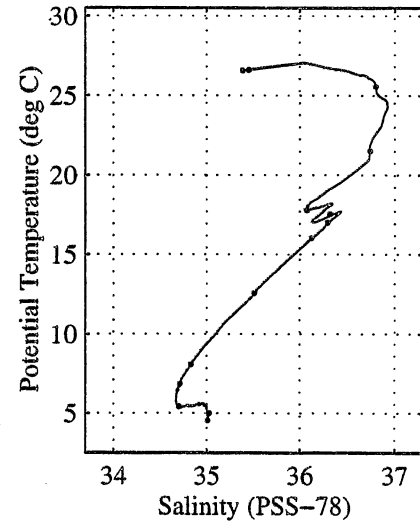
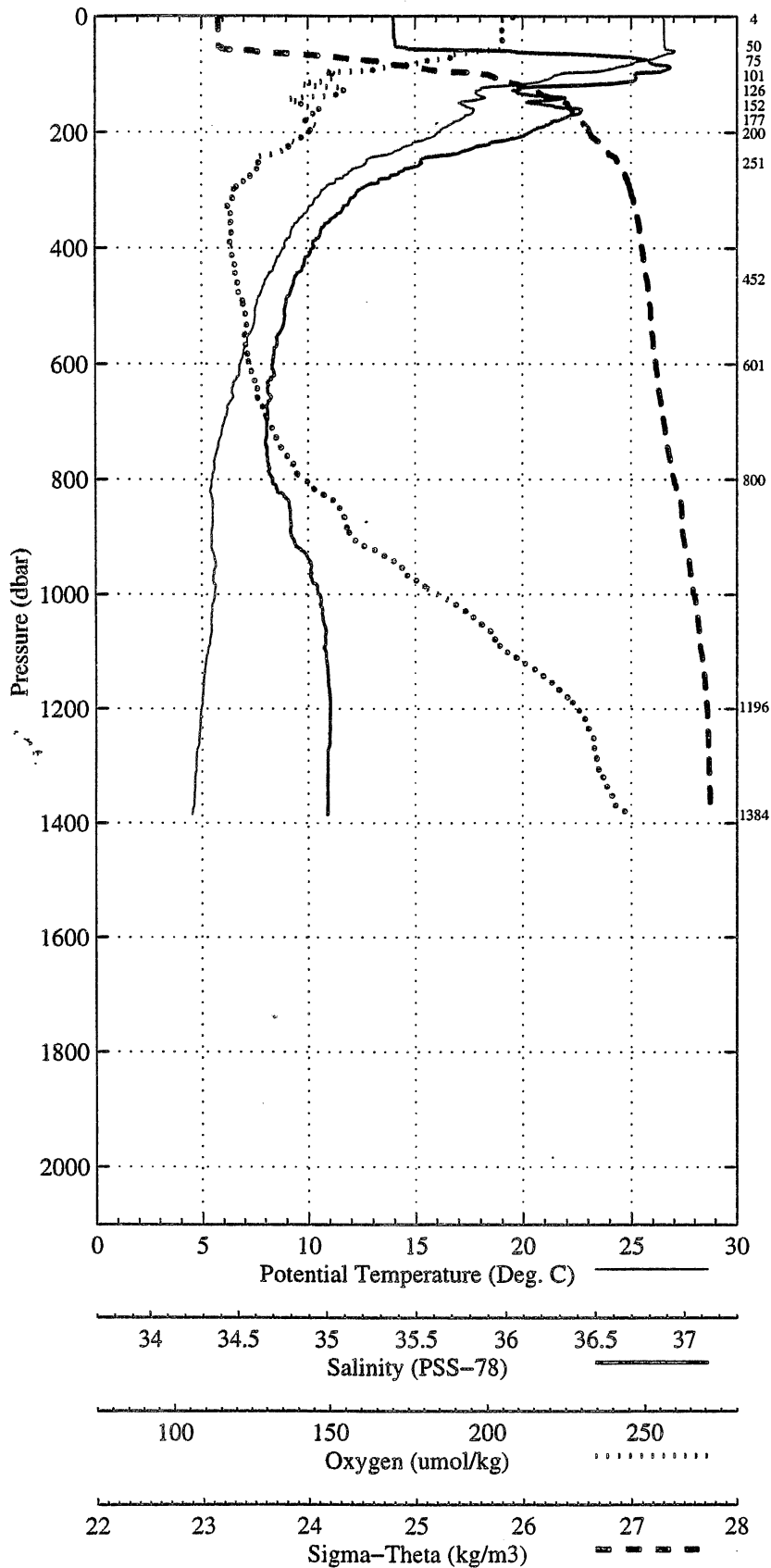
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1385	24	4.546	4.430	35.011	241.1
1196	1	4.993	4.890	35.024	226.1
800	2	5.434	5.365	34.699	141.3
602	3	6.857	6.800	34.711	123.6
453	4	8.092	8.045	34.831	118.5
252	5	12.559	12.525	35.509	126.4
200	6	16.034	16.002	36.119	141.4
177	12	17.003	16.973	36.287	142.0
153	13	17.549	17.524	36.313*	137.2
127	14	17.795	17.774	36.074	151.9
101	15	21.520	21.500	36.734	151.0
75	16	25.554	25.537	36.796	183.1
51	17	26.603	26.591	35.450*	202.6
4	18	26.559	26.558	35.387	203.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 6 (99006)

Latitude 11.716 N Longitude 60.334 W

08-Feb-1999 09:58 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 7 (99007)
Latitude 12.050N Longitude 60.132W
08-Feb-1999 13:21Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.710	26.710	35.572	200.9	0.005	23.243
10	26.661	26.659	35.572	204.1	0.046	23.260
20	26.661	26.656	35.572	204.0	0.092	23.261
30	26.664	26.657	35.572	204.2	0.138	23.262
40	26.664	26.655	35.571	204.2	0.185	23.263
50	26.666	26.655	35.571	204.3	0.231	23.264
60	26.667	26.653	35.571	204.2	0.277	23.265
70	26.669	26.654	35.573	204.3	0.324	23.267
80	26.831	26.813	35.709	204.7	0.370	23.320
90	26.829	26.808	36.844	199.9	0.411	24.177
100	25.038	25.016	36.809	180.4	0.446	24.713
110	22.430	22.408	36.702	145.4	0.476	25.404
120	19.716	19.694	36.250	153.9	0.500	25.803
130	18.435	18.412	36.153	150.8	0.521	26.060
140	18.028	18.004	36.274	144.2	0.540	26.254
150	17.765	17.739	36.302	137.7	0.558	26.342
160	17.098	17.071	36.227	145.5	0.574	26.447
170	16.738	16.710	36.218	143.8	0.590	26.526
180	16.285	16.256	36.169	136.9	0.605	26.595
190	15.659	15.629	36.058	140.3	0.620	26.654
200	15.402	15.371	36.012	140.2	0.634	26.677
250	13.246	13.211	35.643	131.8	0.702	26.856
300	11.663	11.624	35.360	123.7	0.763	26.948
350	10.321	10.279	35.146	119.2	0.820	27.026
400	9.282	9.238	34.978	117.5	0.875	27.070
450	8.313	8.266	34.852	119.5	0.927	27.125
500	7.727	7.676	34.791	122.0	0.977	27.165
550	7.236	7.182	34.737	122.8	1.026	27.194
600	6.936	6.879	34.723	124.8	1.074	27.225
650	6.632	6.572	34.710	126.0	1.121	27.257
700	6.268	6.205	34.686	128.5	1.166	27.287
750	5.761	5.696	34.652	133.2	1.209	27.324
800	5.479	5.411	34.677	139.1	1.250	27.379
900	5.524	5.446	34.800	151.0	1.328	27.473
1000	5.365	5.278	34.911	176.5	1.396	27.582
1500	4.085	3.964	34.992	260.1	1.658	27.796

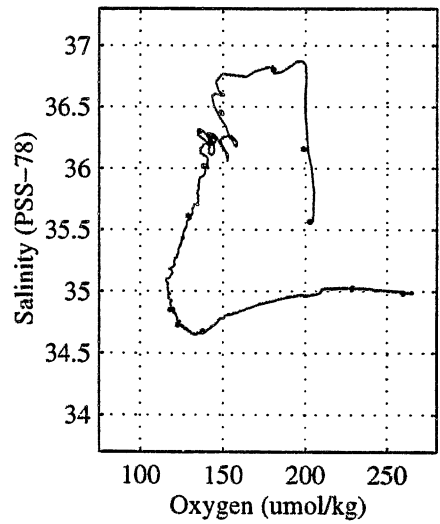
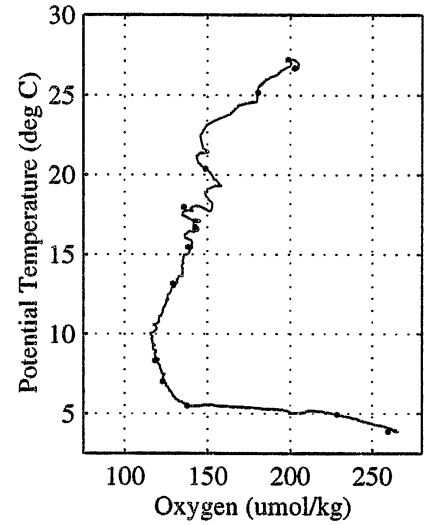
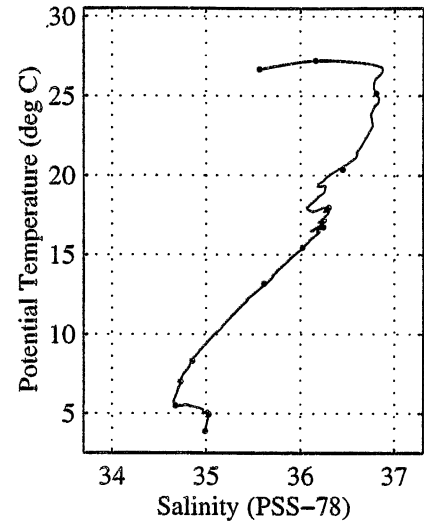
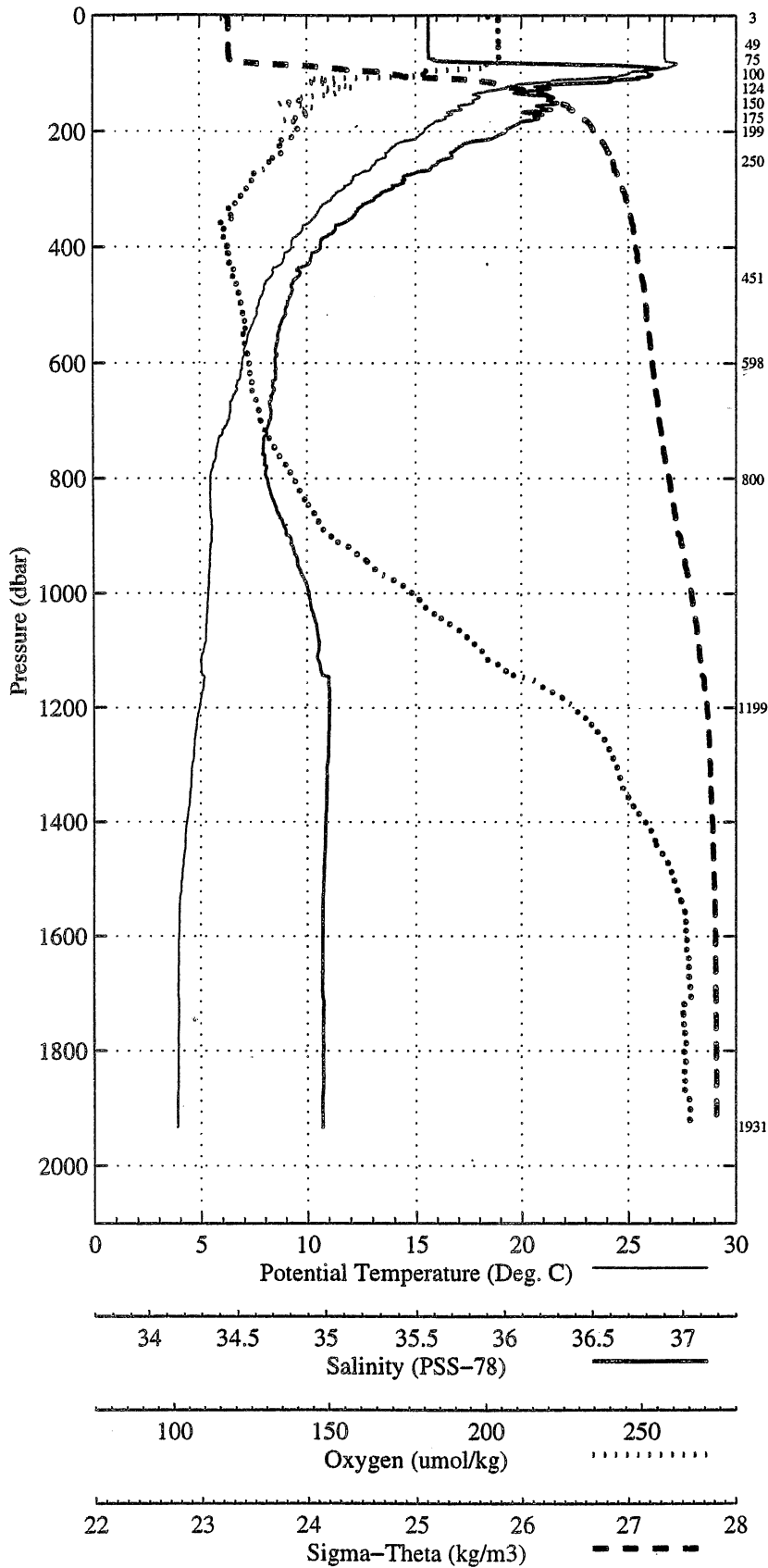
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1931	24	3.872	3.713	34.985	259.6
1200	1	4.942	4.840	35.026	228.7
801	2	5.484	5.415	34.675	137.6
599	3	7.004	6.947	34.729	122.6
452	4	8.325	8.277	34.852	118.2
250	5	13.175	13.140	35.612	129.0
199	6	15.443	15.412	36.017	138.2
176	12	16.741	16.712	36.238	142.1
151	13	17.968	17.942	36.301*	135.7
125	14	20.372	20.348	36.451*	148.6
100	15	25.155	25.133	36.804	180.4
75	16	27.215	27.197	36.159*	198.6
49	17	26.671	26.660	35.565	202.6
3	18	26.688	26.687	35.569*	202.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 7 (99007)

Latitude 12.050 N Longitude 60.132 W

08-Feb-1999 13:21 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 8 (99008)
Latitude 12.383N Longitude 59.933W
08-Feb-1999 20:14Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.526	26.526	35.490	208.0	0.005	23.240
10	26.605	26.602	35.534	206.3	0.046	23.250
20	26.570	26.565	35.529	206.3	0.093	23.258
30	26.562	26.555	35.527	206.3	0.139	23.261
40	26.555	26.545	35.527	206.0	0.185	23.264
50	26.554	26.542	35.528	206.0	0.231	23.267
60	26.589	26.575	35.551	207.0	0.278	23.275
70	27.429	27.413	36.495	205.3	0.322	23.718
80	25.948	25.930	36.874	191.4	0.360	24.478
90	25.370	25.350	36.937	185.4	0.394	24.706
100	24.400	24.379	36.971	175.9	0.425	25.029
110	23.515	23.492	37.045	163.2	0.454	25.350
120	21.740	21.716	36.916	153.6	0.478	25.762
130	20.501	20.476	36.894	162.2	0.499	26.087
140	20.279	20.253	36.866	161.3	0.519	26.127
150	19.504	19.476	36.763	158.3	0.537	26.254
160	18.996	18.967	36.673	155.2	0.555	26.318
170	18.301	18.271	36.565	154.4	0.572	26.412
180	17.239	17.209	36.384	151.6	0.589	26.535
190	16.674	16.642	36.288	152.7	0.604	26.596
200	16.216	16.184	36.198	150.5	0.619	26.636
250	13.608	13.572	35.694	124.6	0.688	26.821
300	10.192	10.156	34.978	142.4	0.750	26.915
350	9.992	9.951	35.020	134.6	0.808	26.983
400	9.970	9.923	35.081	112.5	0.865	27.037
450	8.582	8.534	34.856	120.1	0.919	27.087
500	7.770	7.719	34.754	123.3	0.972	27.130
550	7.653	7.597	34.790	122.3	1.022	27.177
600	6.828	6.771	34.692	124.7	1.071	27.215
650	6.363	6.303	34.659	126.4	1.117	27.252
700	6.090	6.027	34.647	129.0	1.162	27.279
750	5.777	5.711	34.638	132.5	1.206	27.311
800	5.345	5.277	34.611	139.0	1.249	27.342
900	5.297	5.221	34.706	146.7	1.330	27.425
1000	5.344	5.258	34.852	166.5	1.402	27.538
1500	4.146	4.024	34.996	259.5	1.663	27.793

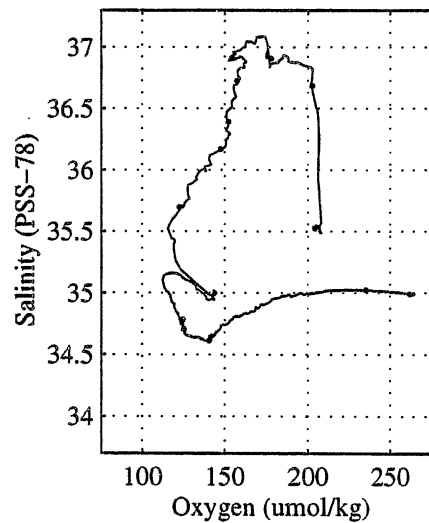
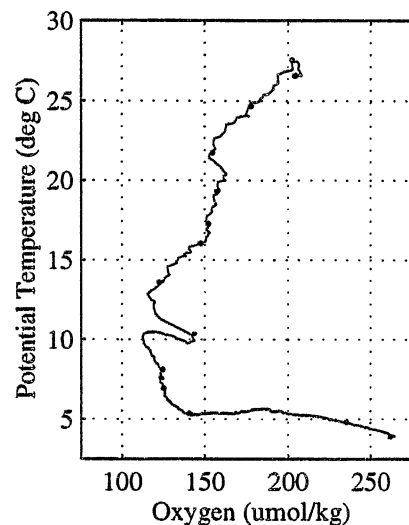
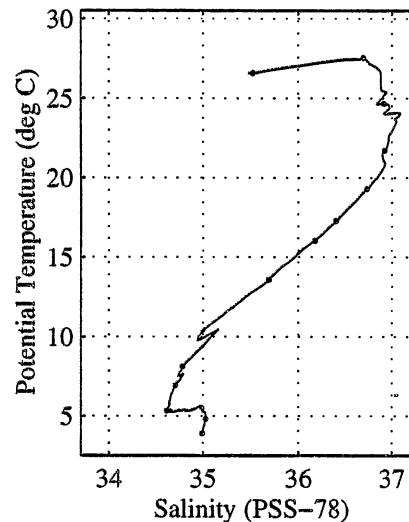
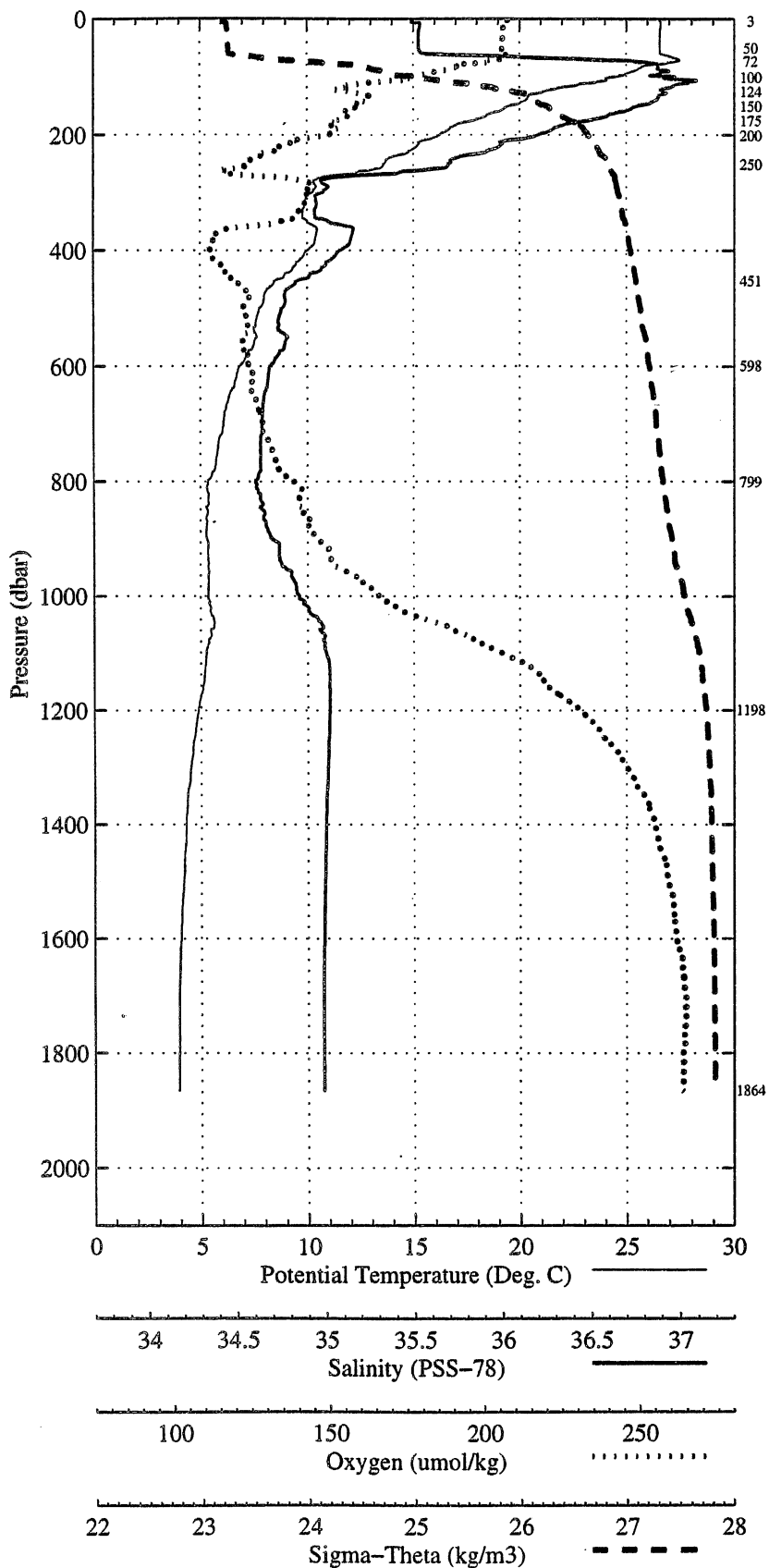
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1864	24	3.914	3.760	34.988	262.2
1198	1	4.821	4.720	35.023	235.0
800	2	5.349	5.281	34.614	140.6
599	3	6.936	6.879	34.705	125.1
452	4	8.107	8.061	34.782	124.4
251	5	13.591	13.555	35.696	122.3
201	6	16.048	16.015	36.169	147.5
175	12	17.290	17.260	36.393	152.1
150	13	19.314	19.287	36.728	157.4
125	14	21.733	21.708	36.916	154.6
100	15	24.659	24.637	36.906*	178.0
73	16	27.533	27.516	36.687*	202.4
50	17	26.566	26.554	35.525	204.1
3	18	26.580	26.579	35.531	204.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 8 (99008)

Latitude 12.383 N Longitude 59.933 W

08-Feb-1999 20:14 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 9 (99009)
Latitude 12.719N Longitude 59.750W
08-Feb-1999 23:51Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	26.399	26.399	35.214	209.5	0.005	23.072
10	26.407	26.404	35.220	206.2	0.048	23.076
20	26.415	26.410	35.328	205.8	0.096	23.156
30	26.552	26.546	35.613	205.2	0.142	23.328
40	26.561	26.551	35.636	204.7	0.187	23.345
50	26.560	26.549	35.642	204.4	0.233	23.351
60	26.580	26.566	35.661	204.0	0.278	23.360
70	26.799	26.783	35.997	205.3	0.323	23.545
80	26.564	26.546	37.056	205.7	0.362	24.421
90	25.888	25.868	37.188	202.8	0.395	24.735
100	25.458	25.436	37.243	196.2	0.427	24.912
110	24.702	24.678	37.236	186.0	0.457	25.140
120	23.418	23.393	37.143	166.9	0.484	25.454
130	21.969	21.943	37.054	163.8	0.508	25.805
140	21.333	21.306	36.981	160.2	0.530	25.928
150	19.934	19.906	36.797	155.3	0.550	26.166
160	19.193	19.164	36.697	150.9	0.568	26.285
170	18.187	18.157	36.542	149.5	0.585	26.423
180	17.468	17.437	36.416	147.1	0.601	26.505
190	17.113	17.081	36.353	146.8	0.617	26.542
200	16.151	16.119	36.152	136.3	0.632	26.615
250	14.096	14.059	35.748	124.0	0.704	26.761
300	11.721	11.682	35.354	120.7	0.766	26.933
350	10.544	10.502	35.167	114.2	0.825	27.003
400	10.177	10.130	35.125	111.3	0.882	27.036
450	9.490	9.438	35.025	111.1	0.937	27.075
500	7.988	7.936	34.776	121.2	0.991	27.116
550	7.375	7.321	34.708	124.9	1.042	27.151
600	7.042	6.984	34.718	123.1	1.091	27.207
650	6.712	6.650	34.695	126.0	1.138	27.235
700	6.154	6.091	34.649	128.9	1.184	27.272
750	5.824	5.758	34.656	132.0	1.228	27.320
800	5.255	5.187	34.602	139.7	1.270	27.346
900	5.246	5.170	34.655	145.8	1.351	27.391
1000	5.363	5.277	34.758	151.7	1.429	27.461

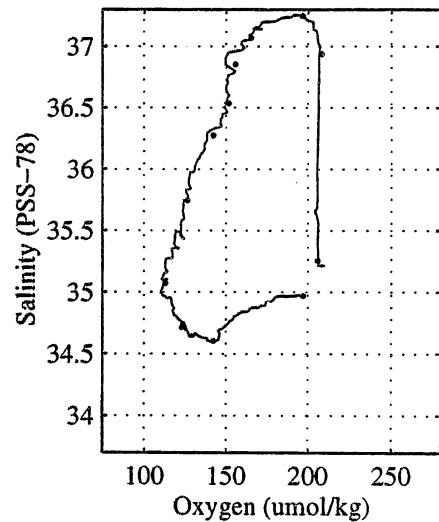
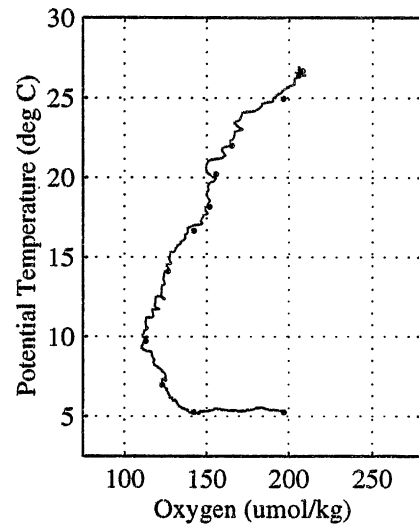
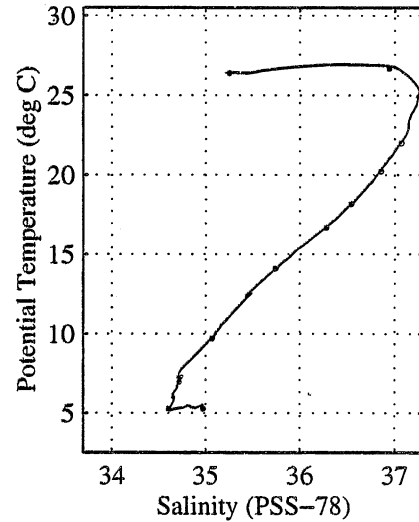
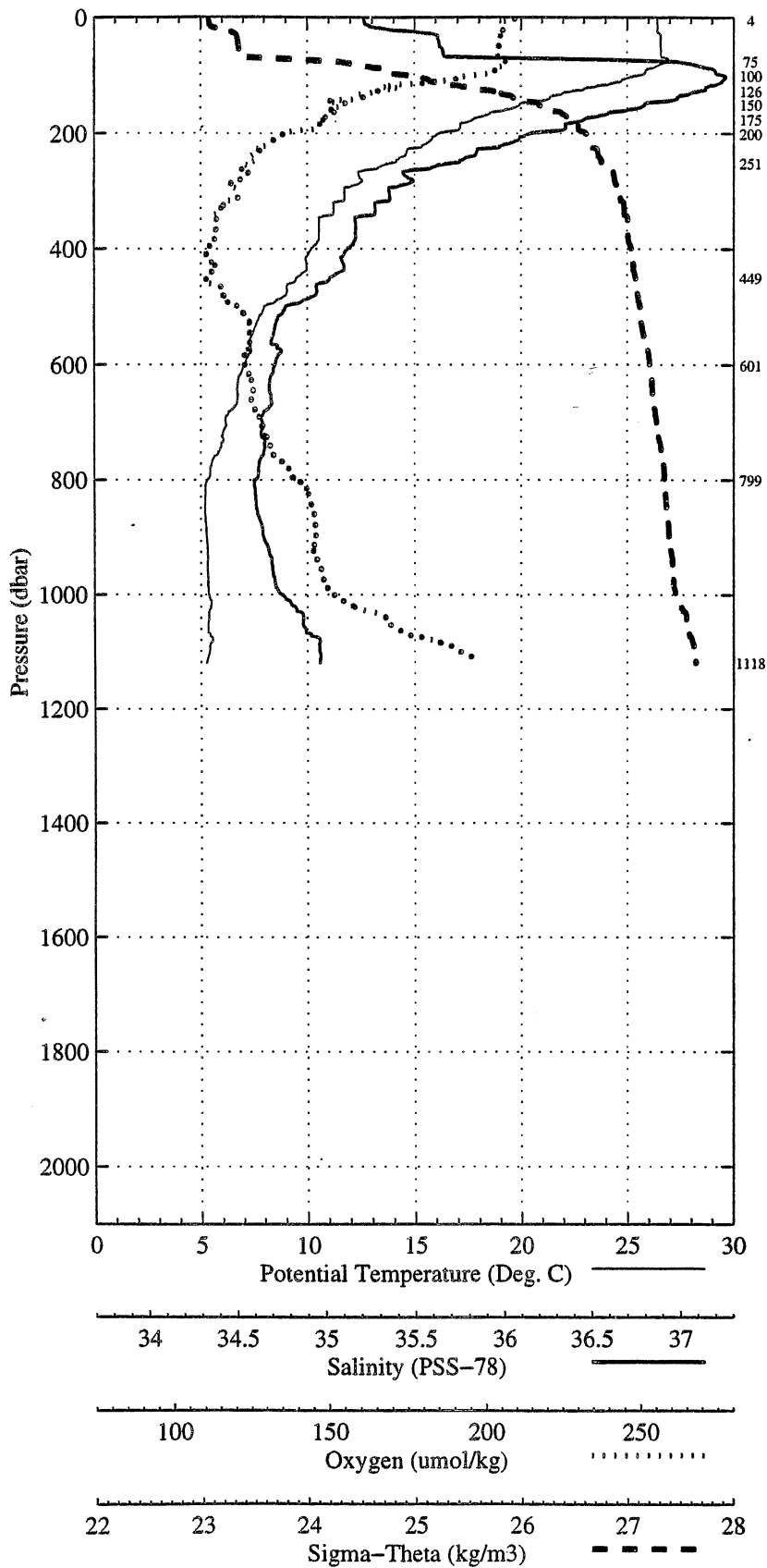
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
1119	24	5.260	5.163	34.970	197.0
800	1	5.272	5.205	34.605	142.2
601	2	6.978	6.920	34.716	122.9
450	3	9.715	9.663	35.070	112.7
251	4	14.110	14.073	35.746	126.2
201	5	16.671	16.638	36.275*	142.2
175	6	18.162	18.131	36.537	151.6
150	12	20.220	20.192	36.853*	155.6
127	13	22.017	21.992	37.068	165.5
101	14	24.951	24.929	37.250	196.6
76	15	26.681	26.664	36.938*	208.0
5	16	26.384	26.383	35.257	205.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 9 (99009)

Latitude 12.719 N Longitude 59.750 W

08-Feb-1999 23:51 Z



NBC-2 R/V SEWARD JOHNSON
 CTD Station 10 (99010)
 Latitude 12.931N Longitude 59.597W
 09-Feb-1999 02:35Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.218	26.218	35.295	208.3	0.005	23.190
10	26.294	26.292	35.301	205.2	0.047	23.172
20	26.423	26.419	35.468	205.7	0.094	23.258
30	26.577	26.570	35.665	203.9	0.139	23.360
40	26.568	26.559	35.672	203.8	0.184	23.369
50	26.550	26.538	35.671	203.7	0.230	23.376
60	26.541	26.527	35.672	203.6	0.275	23.381
70	26.653	26.637	35.753	205.3	0.320	23.408
80	26.613	26.595	37.074	202.1	0.360	24.419
90	24.954	24.934	37.196	191.2	0.392	25.030
100	23.685	23.664	37.132	175.3	0.421	25.365
110	23.022	23.000	37.098	166.6	0.446	25.534
120	22.190	22.166	37.040	159.3	0.470	25.730
130	21.139	21.114	36.857	151.1	0.492	25.885
140	20.907	20.880	36.834	152.8	0.514	25.933
150	20.440	20.411	36.755	142.6	0.535	26.000
160	19.167	19.138	36.580	139.3	0.554	26.202
170	18.834	18.803	36.591	149.1	0.573	26.298
180	18.241	18.209	36.499	149.1	0.590	26.378
190	18.055	18.021	36.486	152.4	0.607	26.415
200	17.797	17.763	36.449	153.2	0.624	26.451
250	13.890	13.854	35.714	125.7	0.699	26.778
300	12.364	12.324	35.458	115.6	0.763	26.891
350	10.752	10.709	35.197	111.4	0.823	26.990

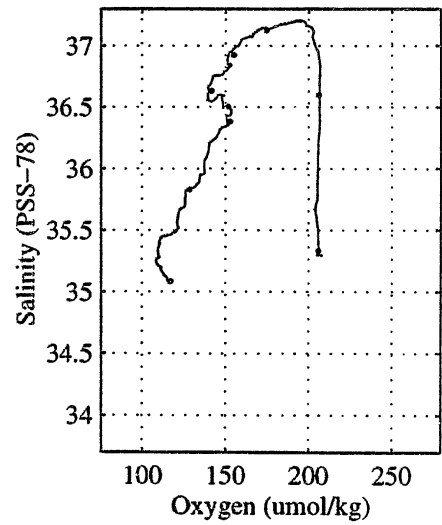
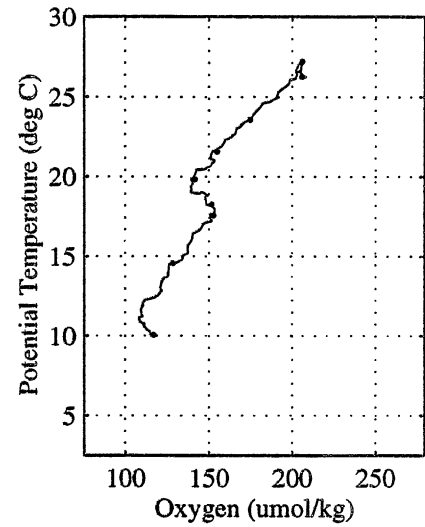
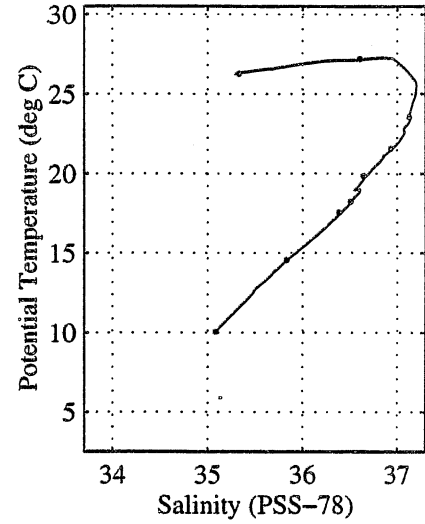
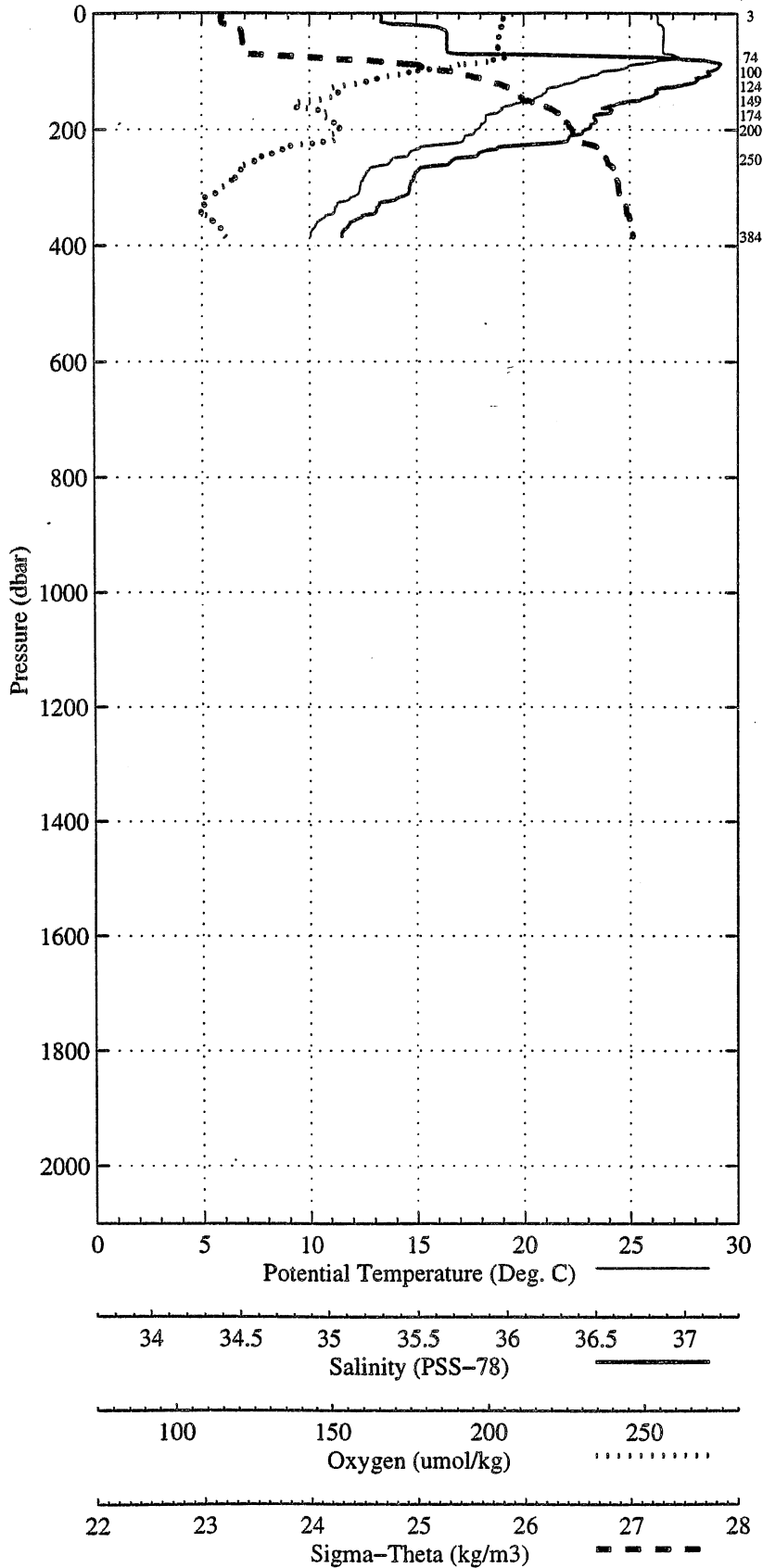
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
384	24	10.053	10.007	35.083	117.1
251	1	14.568	14.530	35.830	128.6
200	2	17.557	17.523	36.381*	152.6
175	3	18.245	18.215	36.502	151.5
150	4	19.832	19.804	36.632*	141.5
125	5	21.573	21.548	36.926*	154.9
100	6	23.571	23.550	37.127	174.8
75	12	27.200	27.182	36.599*	206.0
4	13	26.268	26.267	35.332*	205.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 10 (99010)

Latitude 12.931 N Longitude 59.597 W

09-Feb-1999 02:35 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 11 (99011)
Latitude 9.249N Longitude 56.537W
11-Feb-1999 05:03Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.946	26.946	36.033	195.8	0.004	23.516
10	26.954	26.951	36.037	202.8	0.044	23.517
20	26.967	26.963	36.059	203.0	0.087	23.531
30	26.986	26.979	36.236	202.4	0.130	23.660
40	26.963	26.954	36.272	202.6	0.173	23.695
50	26.866	26.854	36.324	202.6	0.214	23.768
60	26.755	26.741	36.357	200.5	0.256	23.829
70	26.545	26.529	36.382	199.1	0.296	23.916
80	26.483	26.465	36.387	197.6	0.336	23.941
90	26.110	26.089	36.400	188.0	0.376	24.070
100	25.440	25.418	36.410	184.4	0.413	24.287
110	24.958	24.934	36.406	180.8	0.449	24.433
120	23.362	23.337	36.392	175.1	0.483	24.900
130	22.242	22.216	36.310	173.5	0.512	25.162
140	21.385	21.358	36.256	169.5	0.540	25.361
150	20.420	20.392	36.231	164.7	0.565	25.606
160	19.239	19.210	36.208	157.9	0.588	25.899
170	18.749	18.719	36.295	147.2	0.609	26.092
180	17.229	17.198	36.163	135.0	0.628	26.368
190	14.933	14.904	35.732	138.3	0.644	26.565
200	13.761	13.732	35.541	142.7	0.658	26.668
250	10.781	10.751	35.040	148.1	0.724	26.858
300	9.867	9.832	34.888	153.0	0.785	26.900
350	9.474	9.434	34.840	153.9	0.845	26.929
400	8.989	8.945	34.780	156.4	0.905	26.962
450	8.906	8.857	34.775	156.0	0.963	26.973
500	9.016	8.961	34.849	143.7	1.022	27.016
550	8.137	8.080	34.715	152.6	1.078	27.047
600	7.832	7.771	34.678	153.5	1.134	27.064
650	7.914	7.846	34.729	139.8	1.189	27.094
700	7.364	7.294	34.717	128.5	1.241	27.165
750	6.692	6.621	34.638	133.5	1.291	27.195
800	6.222	6.149	34.613	134.6	1.340	27.238
900	5.320	5.244	34.558	145.3	1.431	27.305
1000	5.189	5.104	34.624	144.9	1.516	27.375
1500	4.540	4.414	35.014	246.2	1.740	27.766
2000	3.375	3.216	34.969	267.1	1.970	27.855

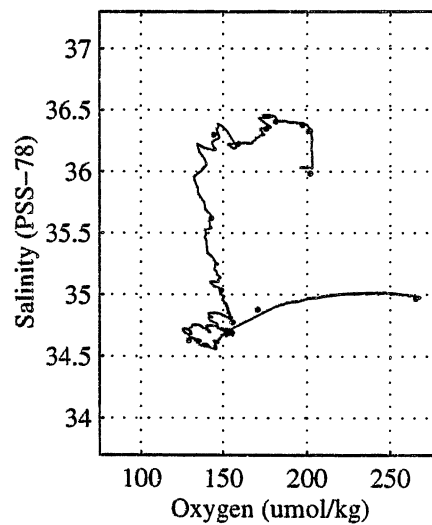
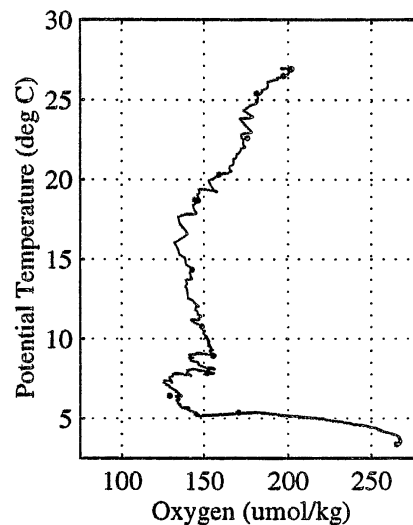
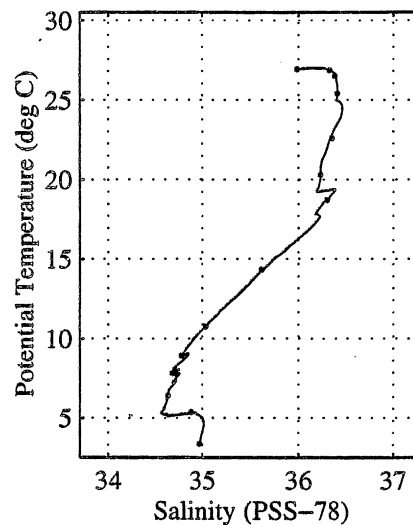
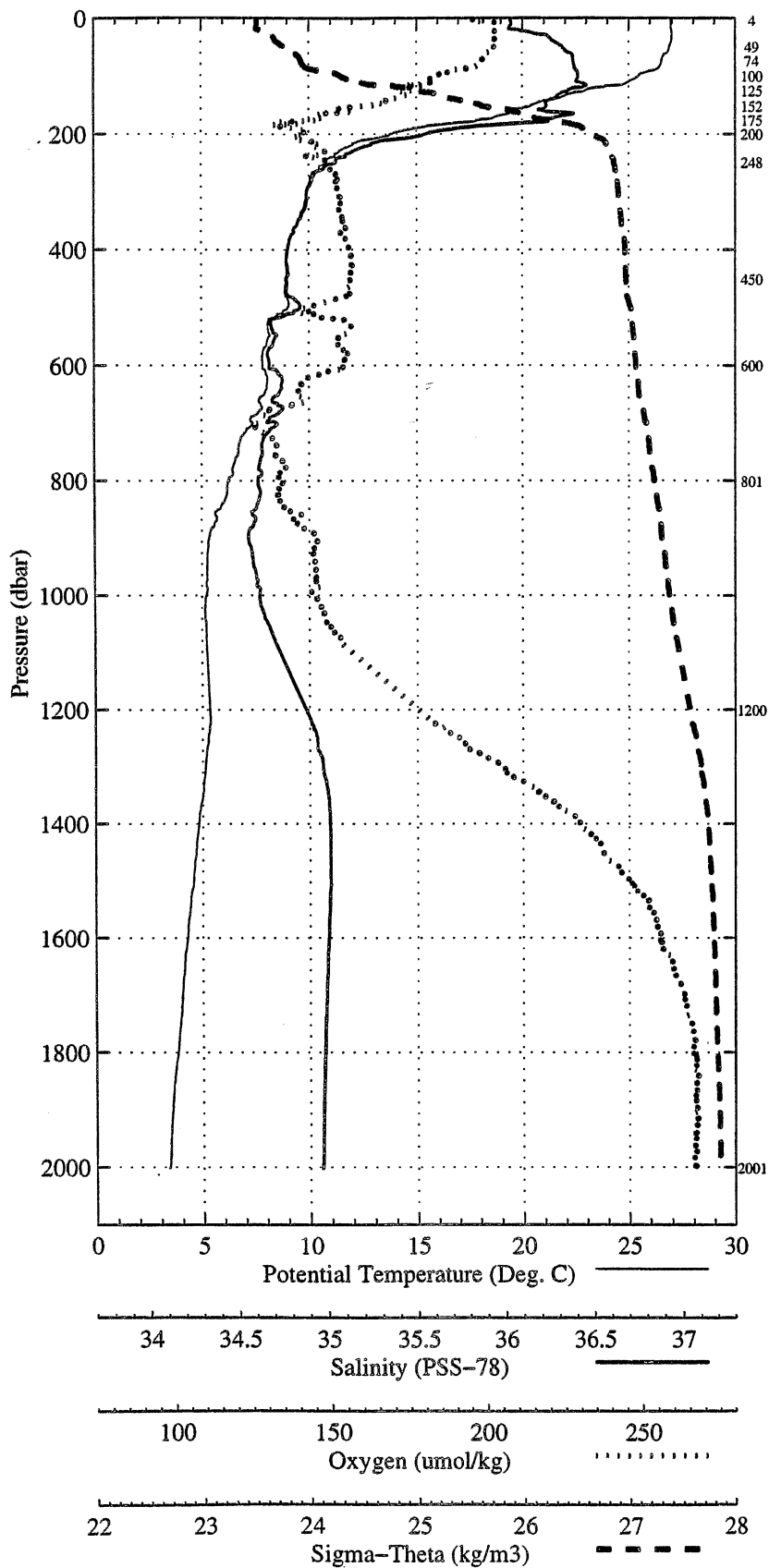
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.372	3.214	34.968	265.2
1201	1	5.370	5.264	34.878	170.7
801	2	6.413	6.338	34.630	129.0
601	3	7.833	7.772	34.678	152.0
451	4	8.926	8.877	34.775	155.7
249	5	10.754	10.724	35.036	148.6
200	6	14.338	14.308	35.620*	142.6
176	12	18.726	18.695	36.298	144.3
152	13	20.313	20.284	36.225	159.2
125	14	22.605	22.579	36.349*	176.0
101	15	25.389	25.367	36.406	181.6
74	16	26.499	26.482	36.377	197.2
50	17	26.870	26.859	36.325	201.0
4	18	26.925	26.924	35.983	201.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 11 (99011)

Latitude 9.249 N Longitude 56.537 W

11-Feb-1999 05:03 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 12 (99012)
Latitude 9.751N Longitude 56.667W
11-Feb-1999 10:15Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.831	26.831	36.276	204.3	0.004	23.736
10	26.853	26.851	36.276	202.6	0.042	23.729
20	26.856	26.852	36.278	202.6	0.083	23.731
30	26.859	26.852	36.284	202.5	0.125	23.737
40	26.850	26.841	36.313	202.7	0.167	23.763
50	26.828	26.816	36.334	202.9	0.208	23.787
60	26.794	26.780	36.357	202.7	0.249	23.817
70	26.758	26.742	36.375	202.8	0.290	23.844
80	26.735	26.717	36.386	202.6	0.331	23.861
90	26.204	26.184	36.392	192.5	0.372	24.035
100	25.584	25.562	36.399	183.7	0.409	24.235
110	25.079	25.055	36.405	181.7	0.446	24.396
120	24.131	24.106	36.438	174.2	0.480	24.709
130	21.086	21.061	36.229	167.5	0.509	25.422
140	20.432	20.405	36.212	163.8	0.534	25.587
150	19.825	19.797	36.210	159.6	0.558	25.748
160	19.268	19.239	36.195	157.1	0.580	25.882
170	18.834	18.804	36.267	149.4	0.601	26.049
180	16.324	16.295	35.871	144.9	0.620	26.357
190	15.205	15.176	35.714	150.3	0.637	26.491
200	13.813	13.784	35.533	146.4	0.652	26.651
250	11.376	11.344	35.122	149.4	0.720	26.814
300	10.250	10.214	34.946	149.2	0.783	26.879
350	9.479	9.439	34.831	155.2	0.844	26.921
400	8.979	8.935	34.775	156.9	0.904	26.959
450	8.624	8.576	34.738	158.4	0.962	26.988
500	8.549	8.495	34.732	158.4	1.020	26.996
550	8.709	8.649	34.793	150.6	1.078	27.022
600	8.594	8.529	34.837	130.9	1.134	27.075
650	7.945	7.878	34.758	130.0	1.188	27.112
700	7.432	7.362	34.704	131.2	1.241	27.145
750	7.085	7.012	34.681	130.1	1.293	27.176
800	6.451	6.377	34.627	132.9	1.342	27.219
900	5.275	5.199	34.578	143.7	1.431	27.327
1000	5.023	4.939	34.616	150.2	1.515	27.387
1500	4.574	4.448	35.011	243.0	1.831	27.761
2000	3.638	3.476	34.979	267.2	2.065	27.839

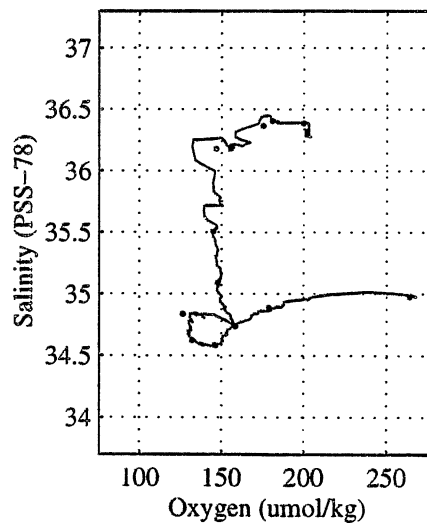
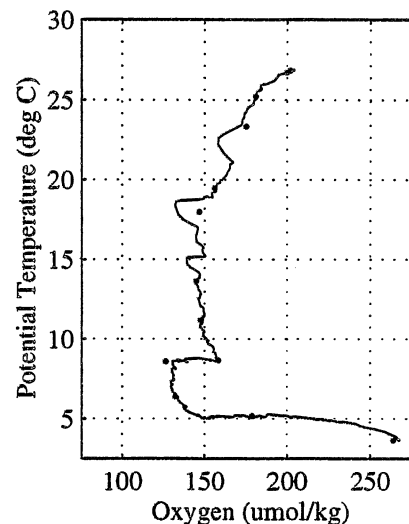
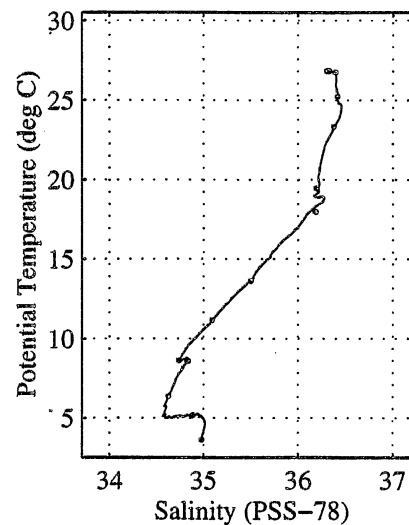
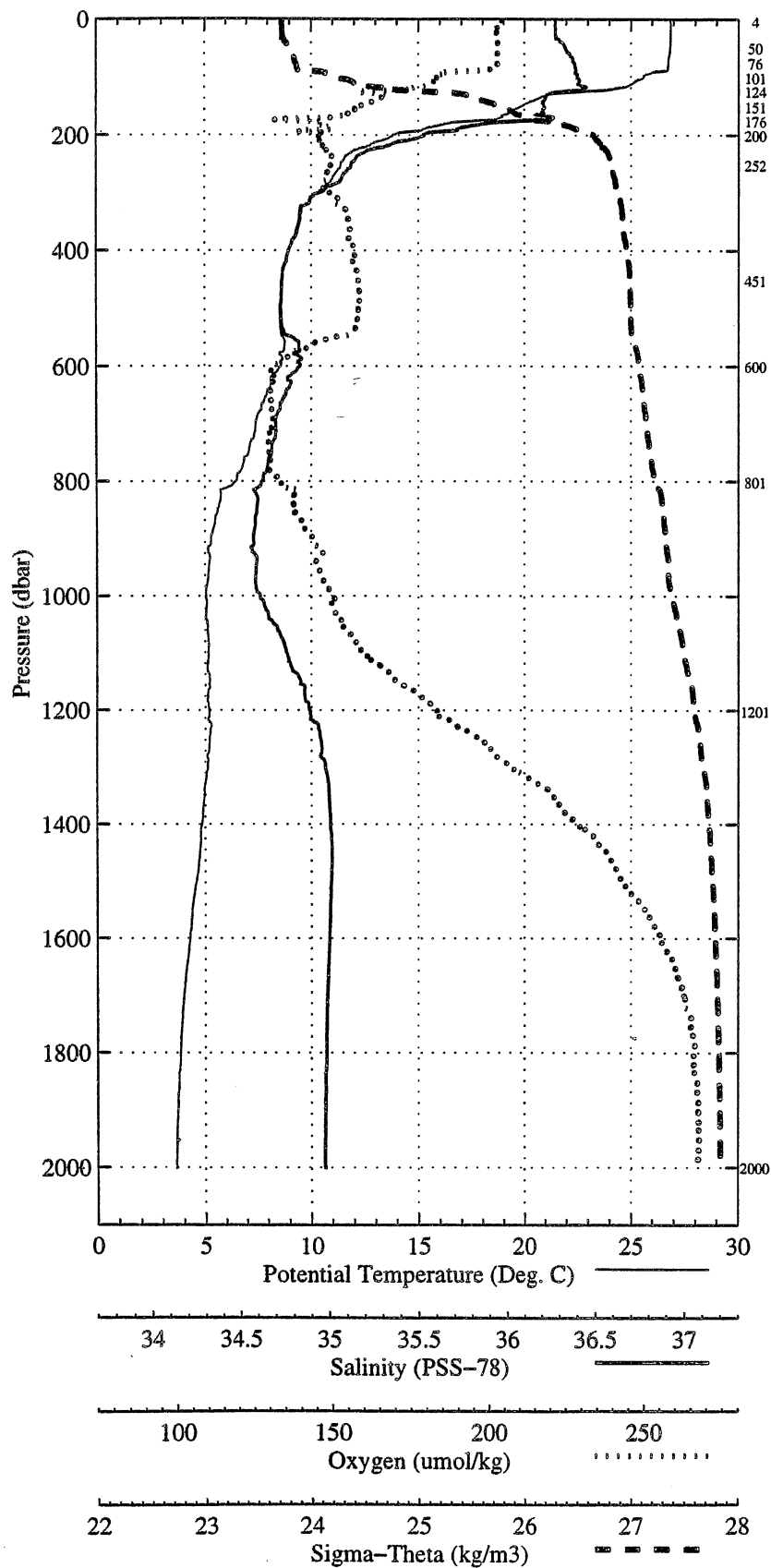
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.641	3.478	34.978	264.1
1202	1	5.174	5.069	34.888	179.0
801	2	6.375	6.301	34.623	132.0
601	3	8.587	8.522	34.837	126.4
452	4	8.645	8.596	34.737	158.5
252	5	11.175	11.143	35.091	147.5
201	6	13.634	13.605	35.505	144.9
176	12	17.975	17.944	36.177*	146.6
152	13	19.456	19.429	36.184	156.0
125	14	23.340	23.315	36.366	175.5
101	15	25.207	25.185	36.406	181.0
76	16	26.723	26.705	36.387	199.7
50	17	26.830	26.819	36.323	201.8
5	18	26.825	26.824	36.295	201.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 12 (99012)

Latitude 9.751 N Longitude 56.667 W

11-Feb-1999 10:15 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 13 (99013)
Latitude 10.334N Longitude 56.832W
11-Feb-1999 15:47Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.697	26.697	36.410	204.0	0.004	23.880
10	26.673	26.671	36.413	201.4	0.040	23.891
20	26.656	26.652	36.413	201.4	0.080	23.897
30	26.653	26.646	36.413	201.6	0.120	23.900
40	26.654	26.645	36.413	201.8	0.161	23.901
50	26.655	26.644	36.413	201.9	0.201	23.902
60	26.656	26.642	36.413	201.9	0.241	23.903
70	26.656	26.640	36.413	201.9	0.281	23.905
80	26.657	26.639	36.413	201.7	0.322	23.906
90	26.646	26.625	36.413	201.1	0.362	23.911
100	25.771	25.749	36.404	179.6	0.401	24.180
110	25.273	25.249	36.411	181.2	0.438	24.341
120	24.973	24.946	36.439	178.6	0.474	24.455
130	24.095	24.067	36.380	168.5	0.508	24.676
140	21.729	21.701	36.266	167.9	0.538	25.273
150	20.928	20.899	36.255	165.1	0.565	25.487
160	20.212	20.182	36.278	156.3	0.589	25.698
170	19.703	19.671	36.356	146.5	0.612	25.893
180	17.454	17.424	36.099	144.5	0.631	26.264
190	16.373	16.343	35.923	139.3	0.649	26.387
200	15.366	15.335	35.774	143.4	0.665	26.502
250	11.480	11.448	35.161	145.3	0.734	26.825
300	10.815	10.778	35.066	144.2	0.798	26.874
350	9.856	9.815	34.907	150.8	0.859	26.918
400	9.376	9.331	34.862	146.7	0.919	26.964
450	8.850	8.801	34.815	143.9	0.976	27.013
500	8.358	8.305	34.737	150.0	1.033	27.030
550	8.488	8.429	34.801	145.2	1.089	27.062
600	8.120	8.058	34.774	130.9	1.143	27.098
650	7.308	7.244	34.697	128.2	1.196	27.156
700	6.821	6.754	34.660	130.1	1.246	27.194
750	6.389	6.319	34.626	133.4	1.295	27.225
800	5.496	5.428	34.580	137.7	1.341	27.300
900	5.295	5.218	34.635	143.0	1.426	27.370
1000	5.025	4.941	34.711	155.0	1.504	27.463
1500	4.384	4.259	35.005	249.0	1.805	27.776
2000	3.753	3.589	34.981	265.7	2.042	27.829

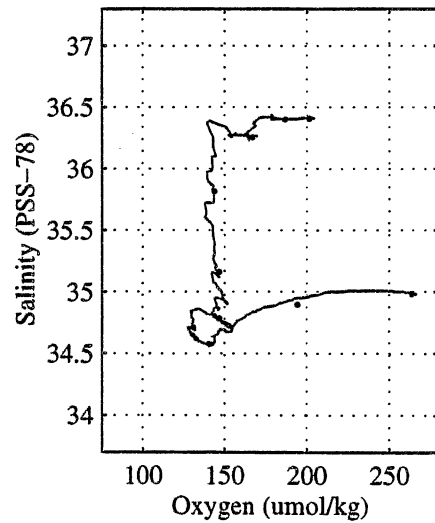
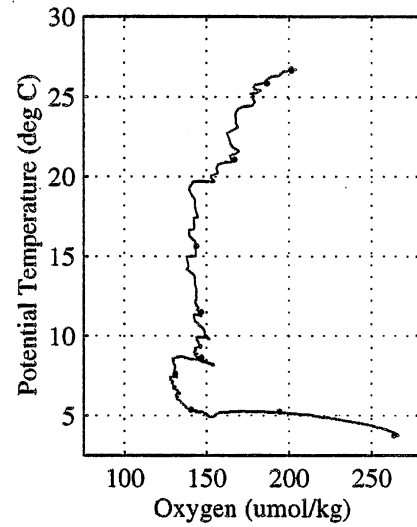
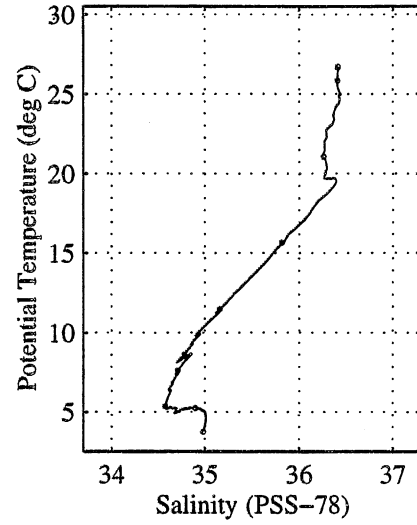
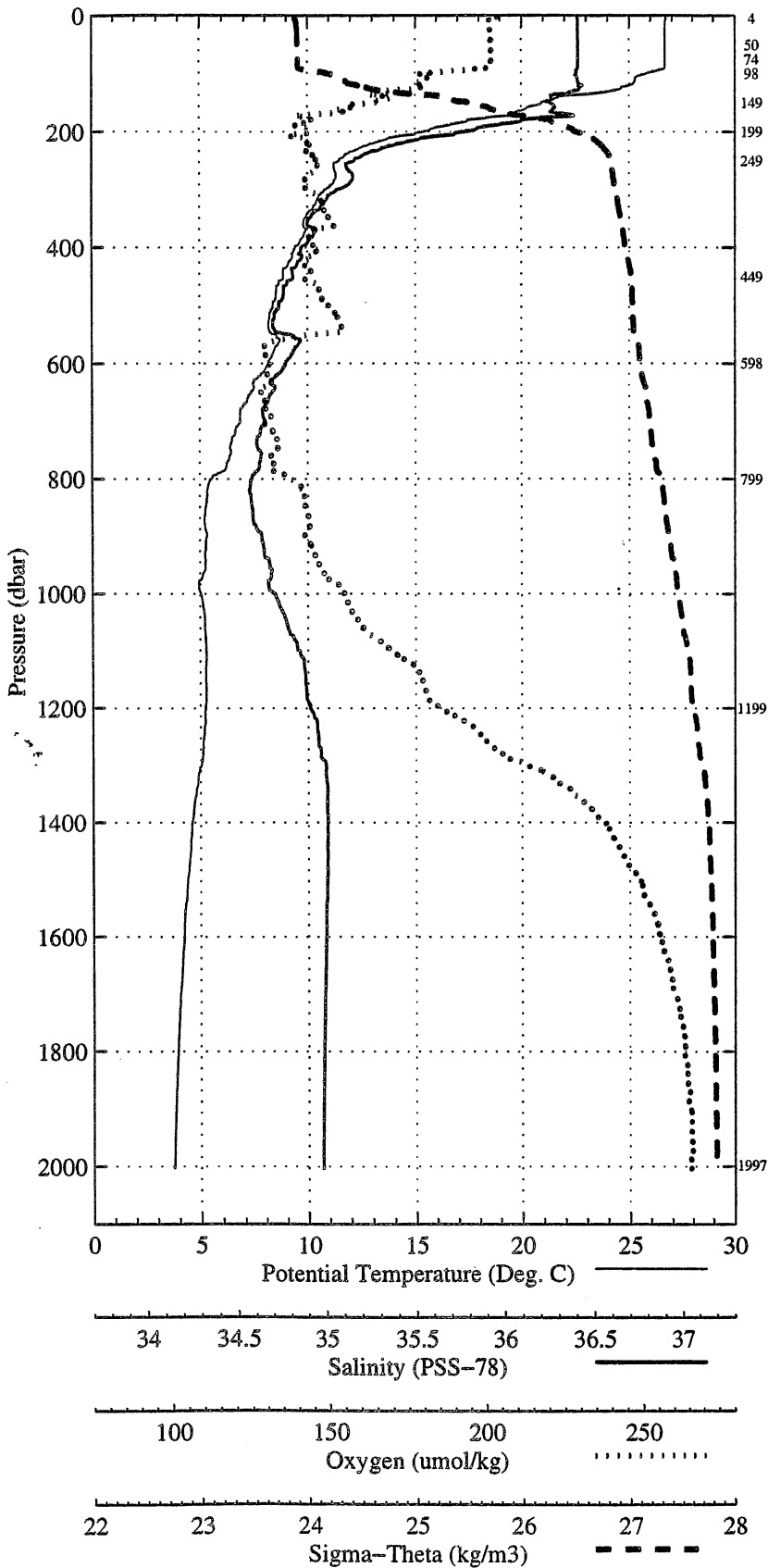
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1997	24	3.754	3.590	34.981	263.7
1199	1	5.247	5.142	34.896	194.1
800	2	5.370	5.302	34.574	140.6
599	3	7.626	7.565	34.711	130.8
450	4	8.639	8.590	34.783	146.8
250	5	11.495	11.463	35.159	146.6
199	6	15.649	15.617	35.814	143.7
149	12	21.073	21.044	36.254	167.2
99	13	25.830	25.808	36.401	186.8
75	14	26.654	26.637	36.406	201.5
50	15	26.657	NaN	NaN*	NaN
4	16	26.717	26.716	36.408	201.4

NBC-2 R/V SEWARD JOHNSON

CTD Station 13 (99013)

Latitude 10.334 N Longitude 56.832 W

11-Feb-1999 15:47 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 14 (99014)
Latitude 10.922N Longitude 56.965W
11-Feb-1999 21:37Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.786	26.786	36.407	204.8	0.004	23.849
10	26.830	26.828	36.407	203.9	0.041	23.836
20	26.833	26.829	36.408	203.8	0.081	23.837
30	26.834	26.827	36.407	204.1	0.122	23.838
40	26.836	26.827	36.407	204.1	0.163	23.839
50	26.840	26.829	36.407	204.0	0.203	23.839
60	26.834	26.820	36.407	204.0	0.244	23.842
70	26.833	26.817	36.408	203.6	0.285	23.844
80	26.833	26.815	36.407	203.7	0.326	23.846
90	26.832	26.811	36.408	203.4	0.367	23.848
100	26.825	26.802	36.407	203.5	0.408	23.851
110	26.352	26.327	36.386	191.5	0.449	23.986
120	24.884	24.857	36.395	176.8	0.486	24.450
130	23.790	23.763	36.355	171.6	0.520	24.748
140	22.311	22.283	36.352	160.3	0.550	25.175
150	21.060	21.031	36.351	157.3	0.577	25.524
160	19.093	19.064	36.262	149.5	0.600	25.978
170	18.522	18.492	36.284	142.5	0.620	26.142
180	17.208	17.178	36.131	139.6	0.638	26.349
190	15.719	15.689	35.886	139.3	0.654	26.508
200	13.956	13.927	35.539	146.8	0.669	26.626
250	12.246	12.213	35.224	153.9	0.740	26.729
300	11.724	11.685	35.146	152.7	0.808	26.770
350	11.480	11.436	35.245	136.0	0.873	26.895
400	10.531	10.483	35.171	116.6	0.933	27.011
450	8.731	8.683	34.868	127.0	0.988	27.073
500	7.699	7.649	34.712	129.2	1.041	27.107
550	7.475	7.420	34.710	128.7	1.092	27.139
600	7.040	6.982	34.684	127.6	1.143	27.180
650	6.505	6.445	34.636	129.2	1.191	27.215
700	6.245	6.182	34.636	129.1	1.238	27.250
750	5.954	5.888	34.627	131.0	1.284	27.280
800	5.523	5.454	34.603	137.6	1.328	27.316
900	4.933	4.859	34.606	149.4	1.411	27.387
1000	5.022	4.938	34.698	153.5	1.488	27.453
1500	4.330	4.206	35.005	252.2	1.789	27.781
2000	3.757	3.593	34.981	266.8	2.025	27.829

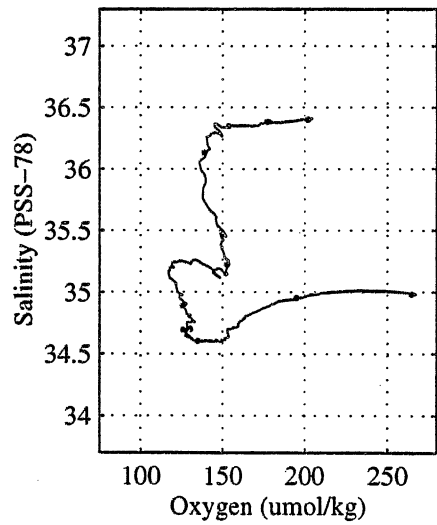
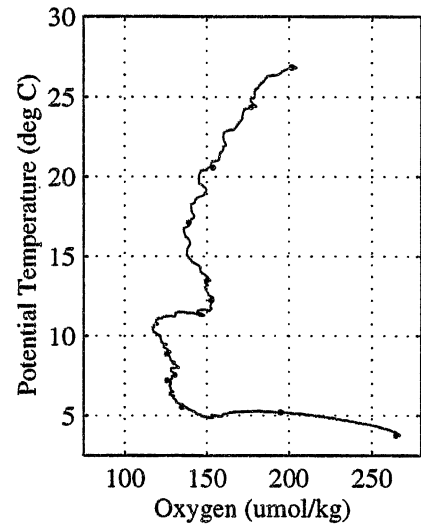
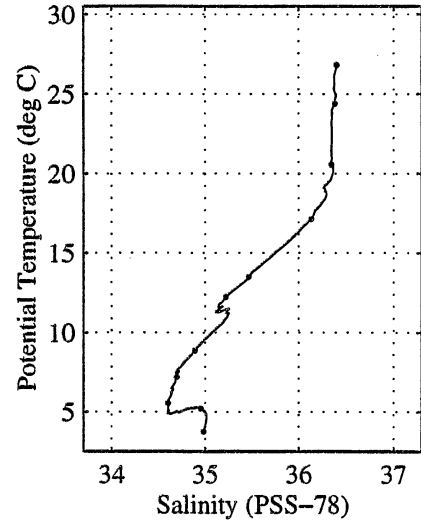
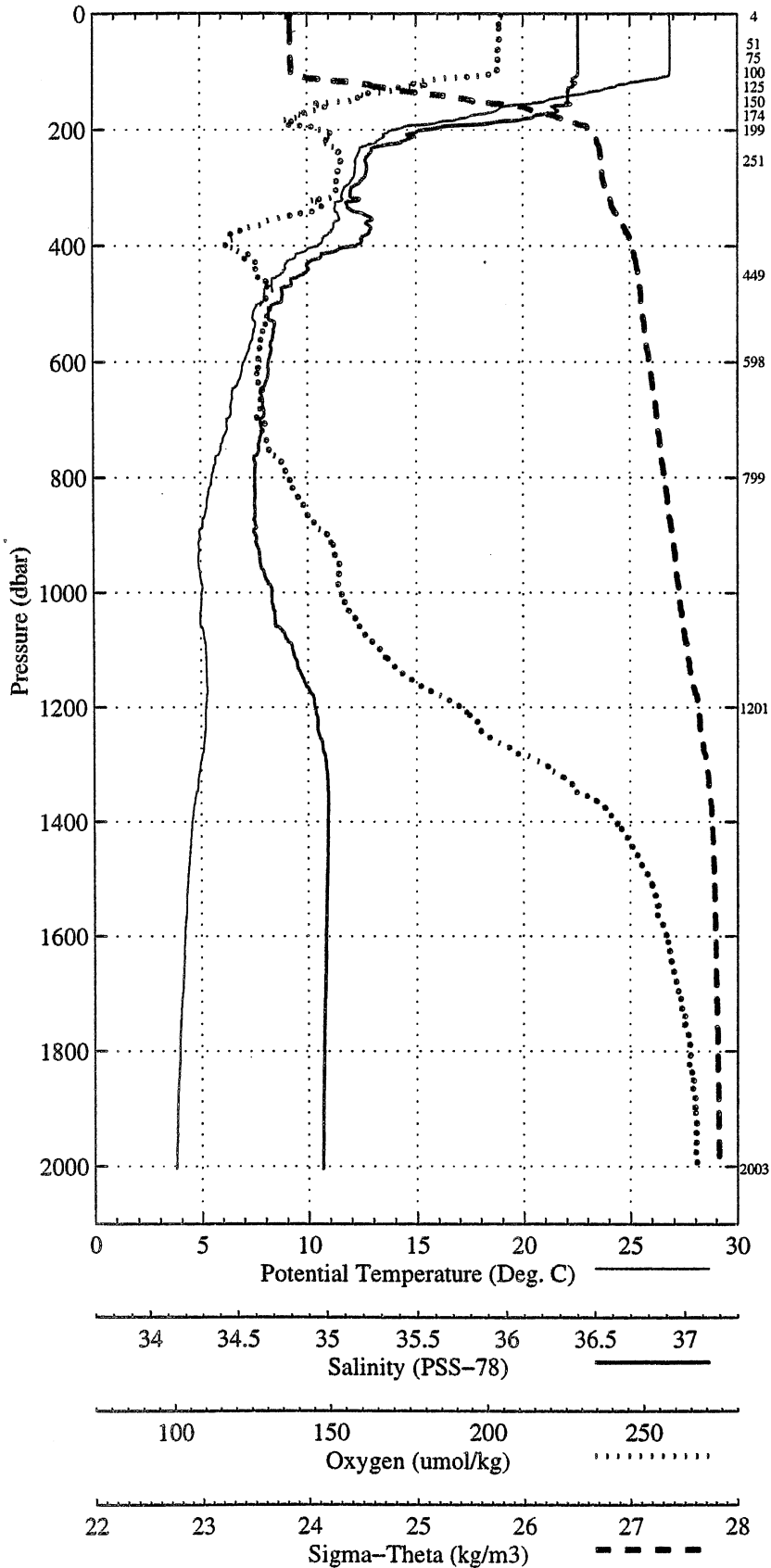
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2003	24	3.757	3.592	34.982	264.4
1201	1	5.202	5.098	34.953	194.9
800	2	5.543	5.474	34.603	134.8
599	3	7.206	7.148	34.695	126.0
449	4	8.876	8.826	34.889	125.6
252	5	12.237	12.204	35.222	152.6
200	6	13.507	13.479	35.467	150.0
174	12	17.133	17.104	36.132*	138.8
151	13	20.585	20.556	36.348*	153.7
125	14	24.375	24.348	36.382	177.2
100	15	26.830	26.807	36.400	201.5
75	16	26.839	26.822	36.401	201.5
51	17	26.839	26.828	36.401	201.7
4	18	26.825	26.824	36.402	202.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 14 (99014)

Latitude 10.922 N Longitude 56.965 W

11-Feb-1999 21:37 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 15 (99015)
Latitude 11.416N Longitude 57.098W
12-Feb-1999 02:18Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.017	27.016	35.214	204.1	0.005	22.875
10	26.979	26.976	35.272	204.4	0.049	22.933
20	27.078	27.074	35.495	204.6	0.098	23.071
30	27.169	27.162	35.736	204.2	0.145	23.225
40	27.180	27.171	36.027	203.8	0.191	23.442
50	27.161	27.149	36.061	203.9	0.235	23.475
60	27.190	27.177	36.084	203.4	0.279	23.484
70	27.125	27.109	36.234	197.4	0.323	23.620
80	26.331	26.313	36.337	195.4	0.364	23.952
90	26.016	25.995	36.358	190.7	0.403	24.068
100	24.737	24.715	36.343	170.8	0.440	24.452
110	23.364	23.341	36.284	170.6	0.473	24.817
120	22.451	22.426	36.467	165.2	0.503	25.221
130	21.735	21.709	36.612	155.7	0.530	25.534
140	20.516	20.490	36.611	148.2	0.553	25.868
150	19.271	19.244	36.489	145.4	0.573	26.105
160	18.716	18.687	36.427	146.7	0.593	26.201
170	18.207	18.178	36.391	142.4	0.611	26.302
180	17.378	17.348	36.295	146.4	0.628	26.433
190	16.362	16.332	36.081	141.7	0.644	26.510
200	14.916	14.886	35.819	141.7	0.659	26.637
250	12.556	12.522	35.480	122.9	0.727	26.868
300	11.264	11.226	35.265	125.2	0.788	26.948
350	10.422	10.380	35.152	118.2	0.845	27.012
400	8.509	8.466	34.832	128.3	0.900	27.077
450	8.019	7.973	34.770	126.7	0.952	27.105
500	7.471	7.422	34.709	128.5	1.003	27.137
550	7.233	7.179	34.705	128.9	1.053	27.169
600	6.851	6.794	34.670	128.6	1.103	27.195
650	6.411	6.352	34.640	129.4	1.150	27.231
700	5.987	5.924	34.601	133.5	1.196	27.255
750	5.730	5.665	34.591	135.8	1.241	27.279
800	5.585	5.516	34.599	136.6	1.286	27.305
900	5.412	5.335	34.638	141.2	1.371	27.358
1000	5.124	5.039	34.678	150.5	1.452	27.426
1500	4.760	4.631	35.017	237.8	1.776	27.745
2000	3.585	3.424	34.980	266.3	2.018	27.844

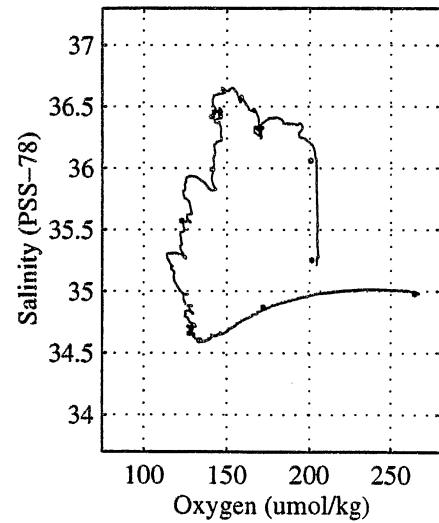
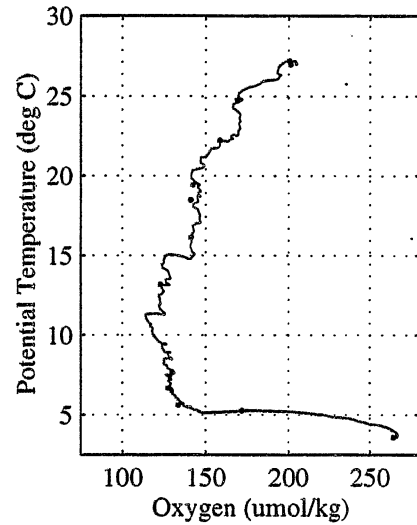
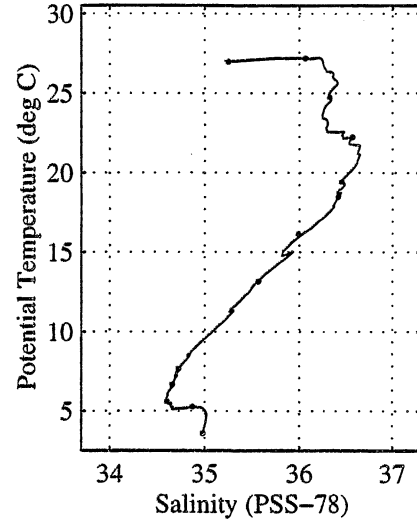
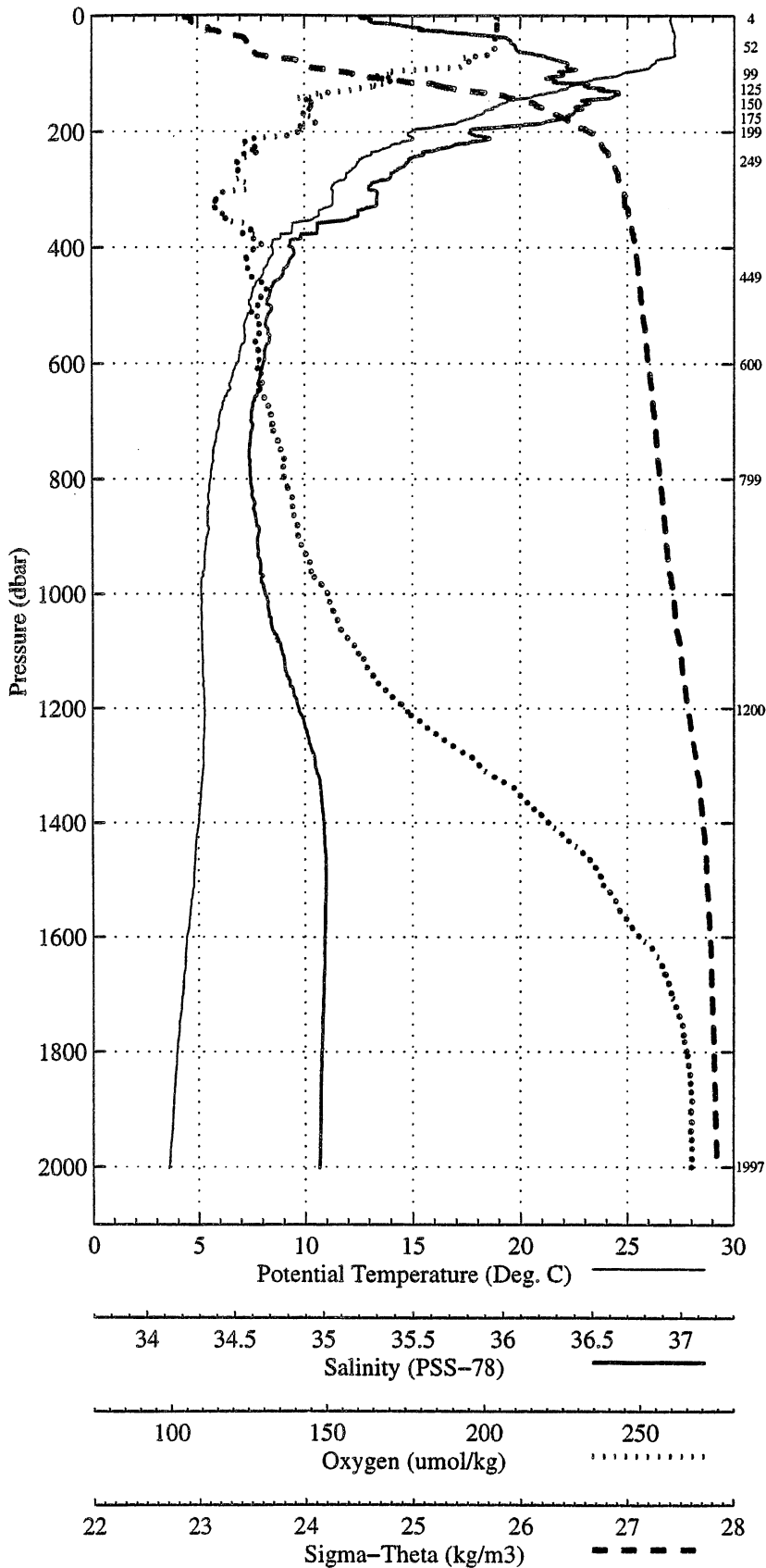
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1998	1	3.592	3.430	34.980	264.2
1201	2	5.275	5.170	34.868	172.1
800	3	5.616	5.547	34.599	133.6
601	4	6.676	6.619	34.658	127.5
449	5	7.675	7.630	34.721	129.7
250	6	13.174	13.139	35.570	122.7
200	12	16.148	16.116	35.989*	141.1
175	13	18.491	18.460	36.417	141.0
150	14	19.440	19.413	36.455	142.3
126	15	22.227	22.202	36.573*	158.5
99	16	24.748	24.726	36.322	169.1
53	17	27.181	27.169	36.061	200.4
4	18	26.981	26.980	35.253	201.2

NBC-2 R/V SEWARD JOHNSON

CTD Station 15 (99015)

Latitude 11.416 N Longitude 57.098 W

12-Feb-1999 02:18 Z



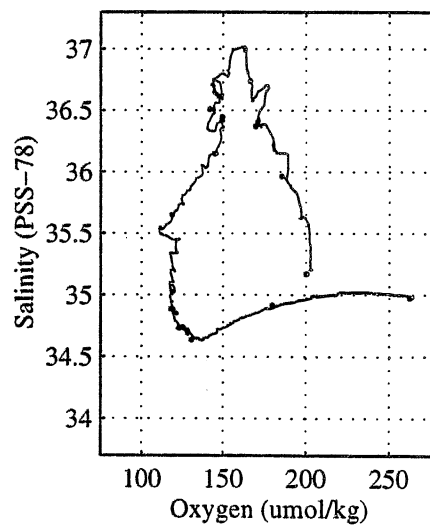
NBC-2 R/V SEWARD JOHNSON
CTD Station 16 (99016)
Latitude 12.184N Longitude 57.234W
12-Feb-1999 08:30Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.827	26.826	35.204	203.4	0.005	22.929
10	26.825	26.823	35.203	202.3	0.049	22.930
20	26.834	26.829	35.209	202.4	0.099	22.933
30	27.073	27.066	35.491	202.0	0.147	23.070
40	26.854	26.845	35.869	191.4	0.194	23.427
50	26.504	26.492	36.150	187.2	0.236	23.752
60	25.981	25.968	36.180	181.0	0.277	23.941
70	25.811	25.795	36.370	173.3	0.316	24.138
80	24.738	24.721	36.440	170.8	0.352	24.522
90	24.243	24.224	36.640	170.6	0.385	24.824
100	23.667	23.646	36.849	163.9	0.415	25.155
110	22.979	22.957	36.895	153.8	0.442	25.392
120	21.641	21.617	36.754	143.9	0.467	25.667
130	20.591	20.567	36.711	142.7	0.489	25.924
140	19.549	19.523	36.631	146.4	0.509	26.140
150	18.788	18.761	36.542	144.3	0.528	26.270
160	18.202	18.174	36.445	142.6	0.545	26.344
170	17.641	17.612	36.367	145.6	0.562	26.424
180	17.411	17.381	36.415	149.8	0.578	26.517
190	16.991	16.959	36.344	148.1	0.594	26.565
200	16.061	16.029	36.166	146.0	0.609	26.646
250	13.488	13.452	35.671	119.9	0.677	26.828
300	12.074	12.034	35.453	122.8	0.738	26.943
350	10.675	10.632	35.204	119.6	0.796	27.009
400	9.850	9.803	35.076	117.7	0.852	27.053
450	9.021	8.972	34.946	118.8	0.905	27.089
500	8.396	8.343	34.869	119.3	0.958	27.128
550	7.474	7.419	34.743	124.0	1.008	27.165
600	7.196	7.138	34.729	125.4	1.058	27.194
650	7.077	7.014	34.750	125.5	1.106	27.229
700	6.697	6.631	34.717	126.8	1.153	27.256
750	6.322	6.253	34.696	128.9	1.198	27.288
800	5.867	5.796	34.645	133.3	1.243	27.307
900	5.457	5.379	34.653	139.7	1.328	27.365
1000	5.390	5.303	34.722	147.7	1.409	27.429
1500	4.469	4.343	35.010	246.9	1.723	27.771
2000	3.509	3.349	34.978	264.5	1.954	27.849

Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.507	3.347	34.977	262.5
1201	1	5.313	5.207	34.915	179.8
801	2	5.822	5.751	34.637	130.5
600	3	7.151	7.093	34.733	123.0
450	4	8.632	8.583	34.886	118.0
252	5	13.428	13.392	35.649*	118.7
201	6	15.945	15.913	36.150	145.0
176	12	17.592	17.562	36.446*	149.5
151	13	18.862	18.835	36.510*	142.0
125	14	21.061	21.037	36.615	147.4
100	15	23.976	23.954	36.740*	166.3
75	16	25.659	25.642	36.371	169.7
50	17	26.429	26.418	35.963*	185.4
6	18	26.802	26.801	35.171	200.2

CTD Station 16 (99016)

12-Feb-1999 08:30 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 17 (99017)
Latitude 11.665N Longitude 55.417W
12-Feb-1999 20:49Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.312	26.312	36.039	205.9	0.004	23.722
10	26.309	26.306	36.038	208.8	0.042	23.723
20	26.283	26.278	36.038	208.9	0.083	23.732
30	26.179	26.173	36.063	209.2	0.125	23.786
40	26.180	26.171	36.076	209.2	0.166	23.797
50	26.196	26.184	36.112	209.1	0.207	23.820
60	26.204	26.191	36.126	209.1	0.248	23.829
70	26.196	26.180	36.129	208.9	0.289	23.836
80	26.193	26.175	36.132	208.8	0.330	23.840
90	26.388	26.367	36.637	206.6	0.370	24.162
100	24.252	24.230	36.983	180.1	0.403	25.083
110	23.148	23.126	37.182	180.1	0.429	25.561
120	22.430	22.405	37.165	171.8	0.453	25.757
130	21.450	21.424	37.026	169.7	0.475	25.929
140	20.415	20.389	36.854	160.9	0.495	26.081
150	19.792	19.764	36.724	153.4	0.515	26.148
160	18.955	18.926	36.582	147.3	0.534	26.259
170	17.671	17.642	36.302	141.6	0.551	26.366
180	16.666	16.636	36.063	141.2	0.568	26.425
190	15.955	15.925	35.944	143.7	0.584	26.499
200	15.960	15.929	36.025	138.7	0.600	26.561
250	14.937	14.899	35.969	139.8	0.673	26.751
300	12.685	12.644	35.536	123.6	0.737	26.889
350	11.225	11.181	35.333	120.8	0.797	27.010
400	9.882	9.836	35.081	123.3	0.852	27.051
450	8.227	8.180	34.821	124.9	0.906	27.114
500	7.491	7.442	34.723	127.2	0.957	27.145
550	7.069	7.016	34.698	126.1	1.006	27.186
600	6.689	6.633	34.682	128.8	1.054	27.227
650	6.270	6.211	34.668	129.1	1.100	27.271
700	6.002	5.940	34.658	130.8	1.144	27.298
750	5.669	5.604	34.648	135.0	1.187	27.333
800	5.570	5.501	34.667	138.2	1.229	27.361
900	5.415	5.338	34.714	141.5	1.309	27.418
1000	5.175	5.090	34.770	158.3	1.384	27.493
1500	4.498	4.373	35.007	245.0	1.682	27.766
2000	3.606	3.444	34.978	265.6	1.919	27.841

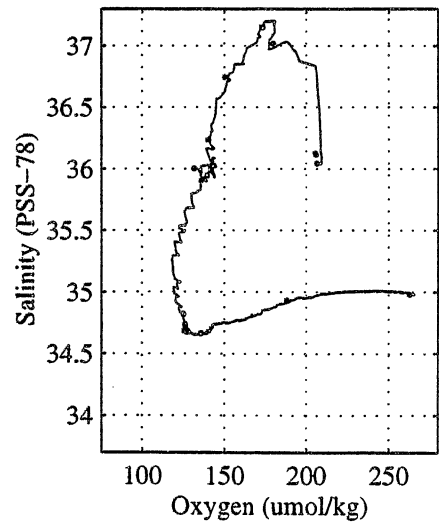
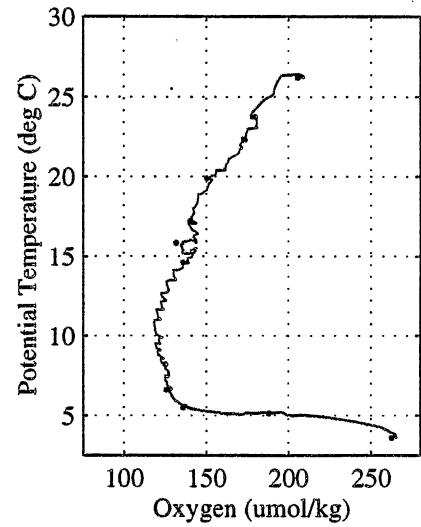
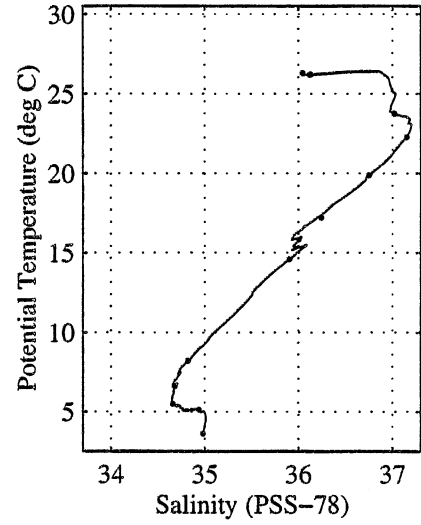
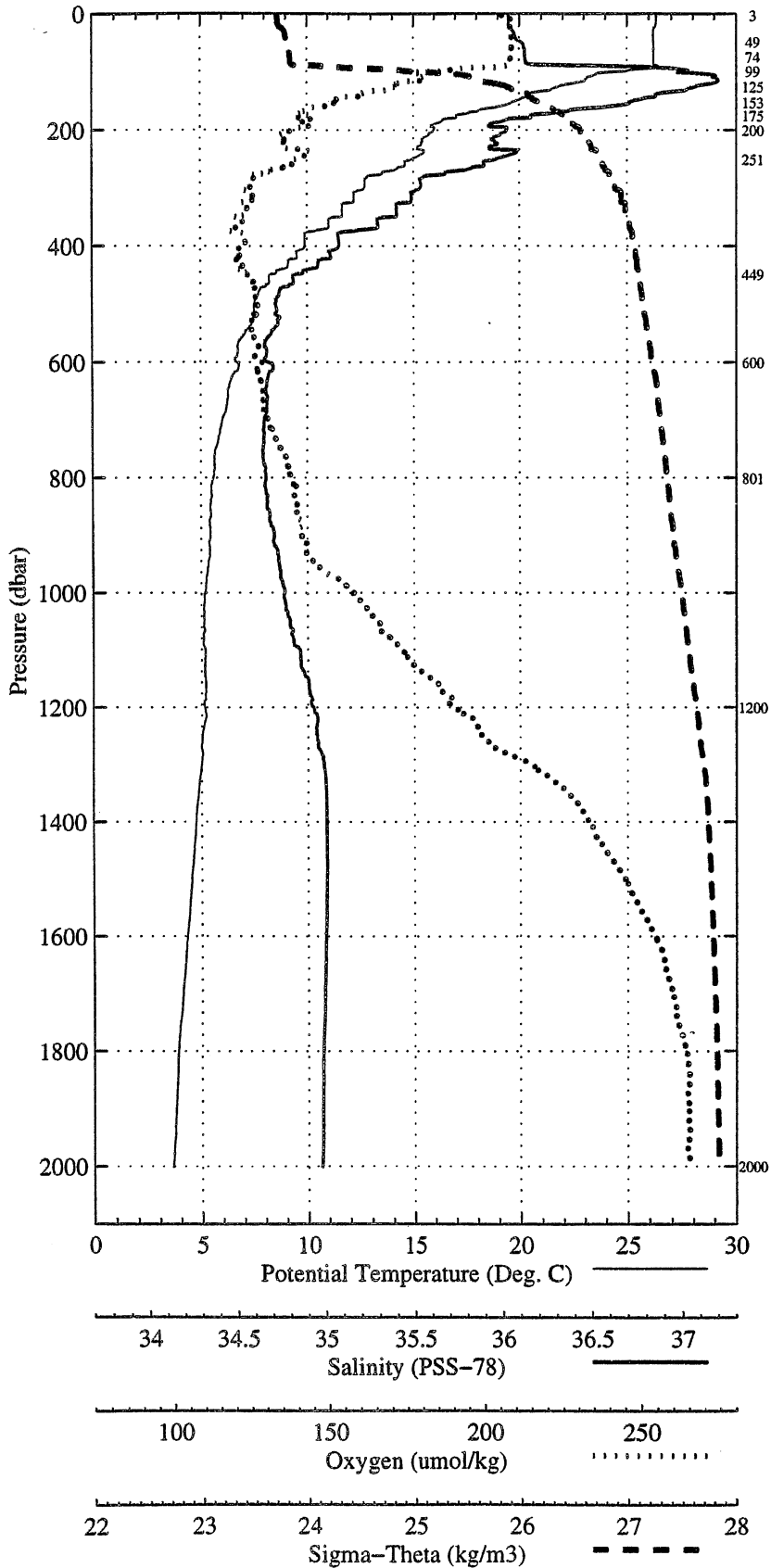
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.606	3.444	34.979	262.6
1200	1	5.138	5.035	34.934	188.2
801	2	5.505	5.436	34.664	135.8
601	3	6.618	6.562	34.684	125.9
449	4	8.213	8.166	34.819	125.3
251	5	14.603	14.566	35.902	136.0
200	6	15.832	15.800	36.001	131.8
175	12	17.208	17.179	36.237*	140.1
153	13	19.874	19.845	36.746*	150.2
126	14	22.287	22.262	37.150*	173.5
99	15	23.737	23.716	37.018	179.8
75	16	26.200	26.183	36.125	205.4
49	17	26.198	26.187	36.115	205.8
3	18	26.290	26.289	36.044	206.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 17 (99017)

Latitude 11.665 N Longitude 55.417 W

12-Feb-1999 20:49 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 18 (99018)
Latitude 11.433N Longitude 55.716W
13-Feb-1999 00:14Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	26.150	26.150	35.117	208.3	0.005	23.077
10	26.230	26.228	35.115	208.7	0.048	23.052
20	26.231	26.227	35.194	208.7	0.096	23.112
30	26.305	26.298	35.427	208.0	0.143	23.266
40	26.285	26.276	35.427	208.1	0.189	23.274
50	26.246	26.235	35.456	207.8	0.235	23.309
60	26.203	26.190	35.536	208.0	0.280	23.384
70	26.270	26.255	35.701	207.3	0.325	23.490
80	26.544	26.525	36.506	203.8	0.367	24.012
90	25.712	25.692	37.035	196.4	0.402	24.674
100	24.871	24.849	37.157	186.3	0.433	25.027
110	23.774	23.751	37.100	171.2	0.462	25.315
120	22.509	22.484	37.027	161.3	0.487	25.629
130	21.278	21.253	36.846	150.1	0.510	25.839
140	20.477	20.450	36.716	144.6	0.531	25.959
150	19.797	19.770	36.670	144.8	0.551	26.106
160	19.311	19.282	36.626	146.9	0.570	26.200
170	18.312	18.282	36.435	139.9	0.589	26.310
180	17.818	17.787	36.342	136.2	0.606	26.362
190	17.207	17.175	36.233	134.8	0.623	26.428
200	16.523	16.491	36.179	139.5	0.639	26.549
250	14.100	14.063	35.733	131.4	0.710	26.748
300	11.734	11.695	35.284	129.1	0.775	26.875
350	10.344	10.302	35.087	126.4	0.836	26.976
400	9.203	9.159	34.906	127.7	0.893	27.026
450	8.272	8.225	34.785	129.1	0.948	27.078
500	7.367	7.318	34.695	128.3	0.999	27.141
550	6.768	6.717	34.648	128.6	1.049	27.188
600	6.330	6.275	34.624	130.1	1.096	27.227
650	5.818	5.761	34.595	133.7	1.141	27.270
700	5.424	5.365	34.593	137.3	1.185	27.317
750	5.154	5.092	34.609	141.8	1.226	27.362
800	5.047	4.981	34.637	145.6	1.266	27.398
900	5.077	5.002	34.717	153.6	1.341	27.460
1000	5.138	5.053	34.795	162.9	1.412	27.517
1500	4.492	4.366	35.009	244.8	1.707	27.768
2000	3.592	3.431	34.980	264.5	1.942	27.843

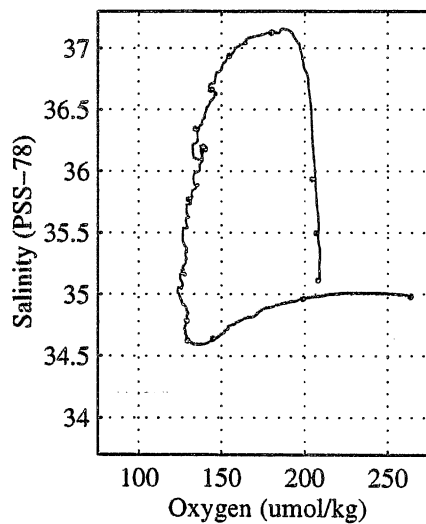
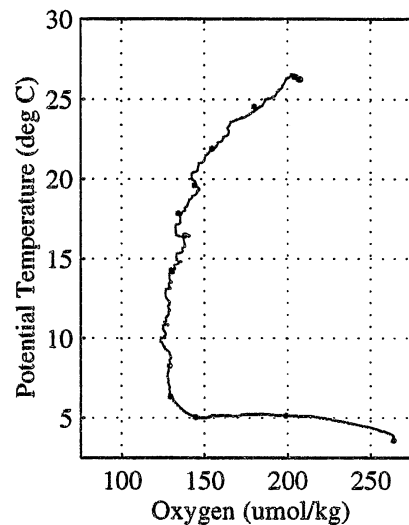
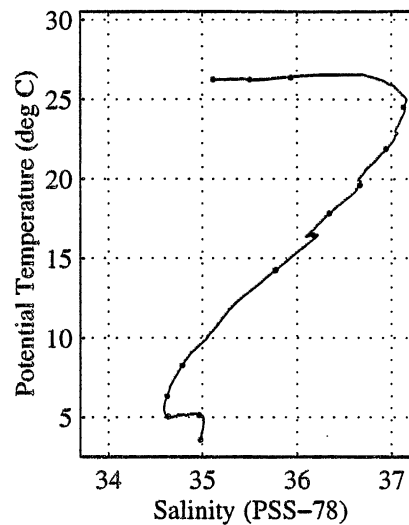
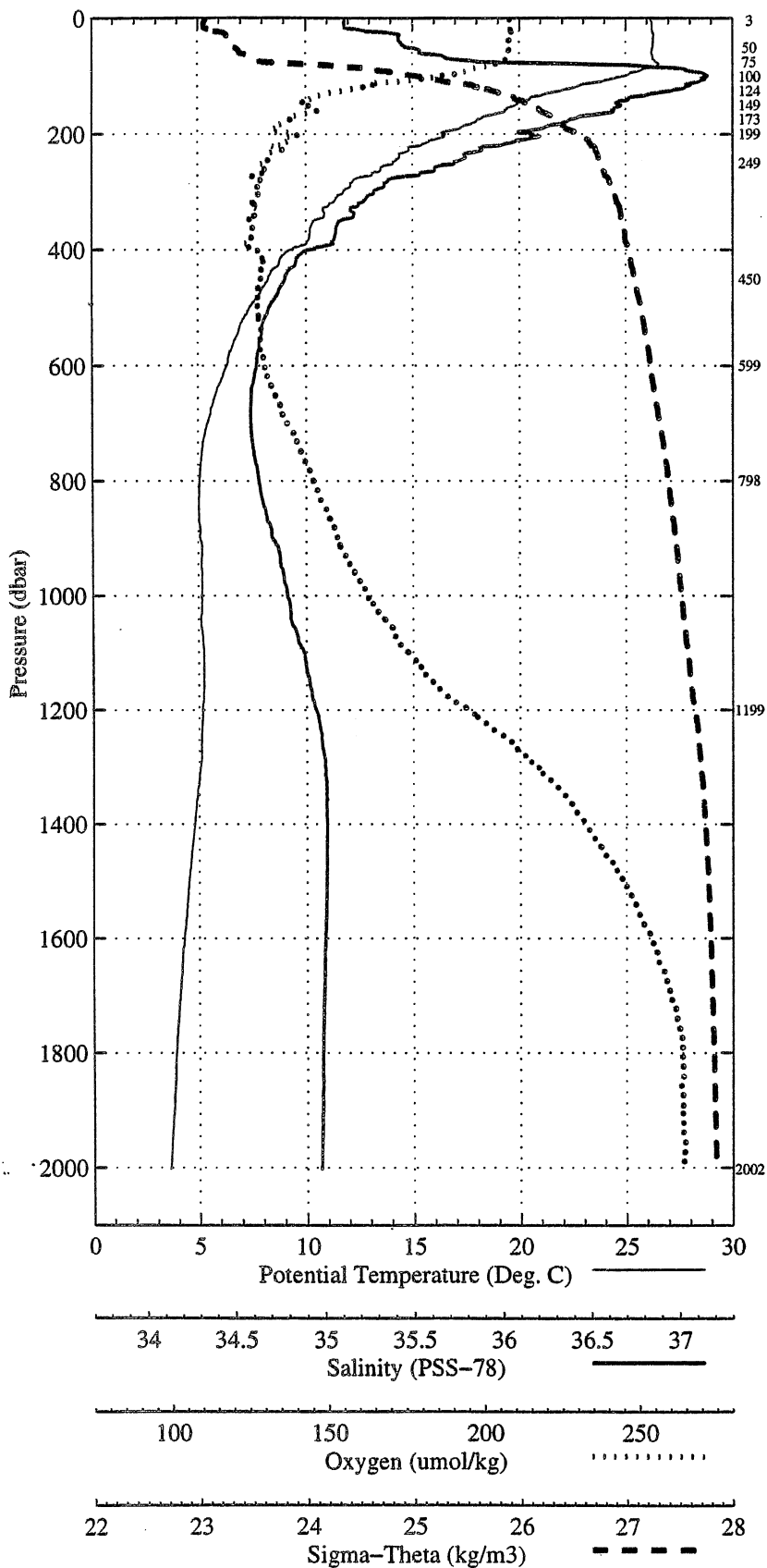
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
2002	24	3.592	3.430	34.980	263.8
1199	1	5.151	5.047	34.963	198.8
799	2	5.043	4.977	34.639	144.7
599	3	6.338	6.284	34.624	129.5
450	4	8.270	8.223	34.784	128.9
249	5	14.263	14.226	35.768	130.0
199	6	16.458	16.426	36.165	138.2
174	12	17.844	17.814	36.343	134.3
150	13	19.612	19.584	36.660	144.1
125	14	21.902	21.878	36.938*	154.6
101	15	24.519	24.497	37.124	180.0
75	16	26.380	26.363	35.932*	204.3
50	17	26.240	26.229	35.499*	206.8
4	18	26.236	26.236	35.114	207.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 18 (99018)

Latitude 11.433 N Longitude 55.716 W

13-Feb-1999 00:14 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 19 (99019)
Latitude 11.200N Longitude 56.017W
13-Feb-1999 03:48Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.970	26.970	35.638	201.5	0.005	23.210
10	26.934	26.932	35.642	202.0	0.046	23.226
20	26.993	26.989	35.713	202.5	0.093	23.262
30	27.079	27.072	35.847	202.3	0.139	23.337
40	27.135	27.126	36.032	201.5	0.184	23.460
50	27.107	27.096	36.091	201.5	0.228	23.515
60	26.906	26.892	36.182	196.4	0.271	23.650
70	26.718	26.703	36.183	193.3	0.313	23.711
80	26.435	26.416	36.238	184.2	0.355	23.844
90	24.732	24.712	36.281	177.6	0.393	24.405
100	24.224	24.203	36.223	177.2	0.428	24.515
110	23.910	23.887	36.335	179.0	0.462	24.695
120	23.849	23.824	36.956	155.5	0.492	25.185
130	22.374	22.348	36.810	149.6	0.519	25.504
140	21.765	21.738	36.810	148.6	0.543	25.677
150	21.382	21.353	36.899	162.2	0.566	25.853
160	21.176	21.144	36.976	157.8	0.587	25.969
170	19.617	19.585	36.772	159.7	0.607	26.233
180	19.108	19.075	36.702	161.4	0.625	26.313
190	18.640	18.606	36.625	158.8	0.642	26.375
200	17.826	17.792	36.478	156.7	0.659	26.466
250	15.222	15.183	36.035	144.0	0.734	26.739
300	12.848	12.807	35.589	131.3	0.800	26.897
350	10.536	10.494	35.160	120.2	0.860	26.999
400	9.761	9.714	35.046	119.8	0.916	27.045
450	9.100	9.050	34.970	120.0	0.970	27.095
500	7.888	7.837	34.794	122.1	1.022	27.144
550	7.534	7.479	34.770	122.2	1.072	27.178
600	6.909	6.852	34.699	124.9	1.120	27.210
650	6.346	6.287	34.651	127.3	1.167	27.248
700	5.957	5.895	34.624	131.0	1.213	27.277
750	5.612	5.548	34.608	135.6	1.257	27.307
800	5.450	5.381	34.624	136.9	1.299	27.340
900	5.230	5.153	34.675	145.6	1.380	27.409
1000	5.212	5.127	34.771	156.6	1.455	27.489
1500	4.593	4.466	35.012	241.7	1.758	27.759
2000	3.665	3.502	34.983	264.0	1.997	27.839

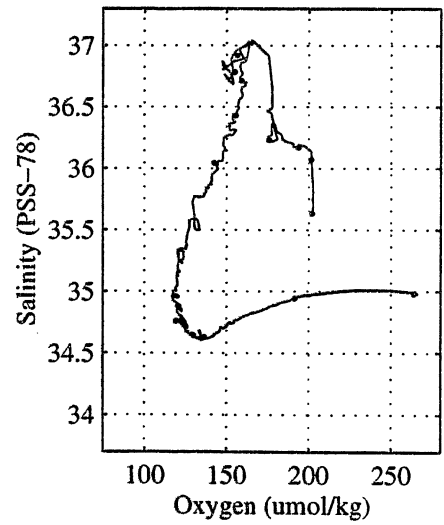
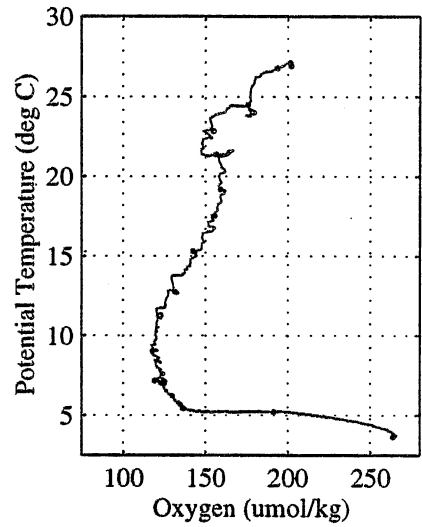
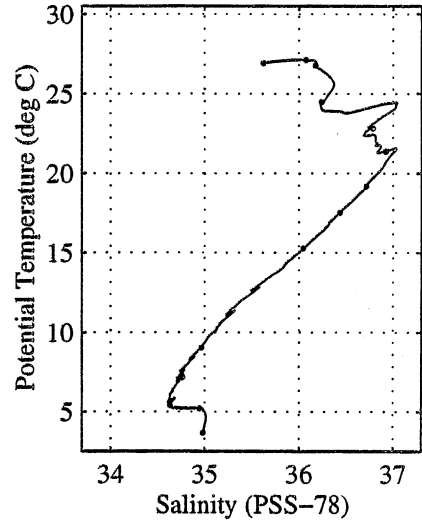
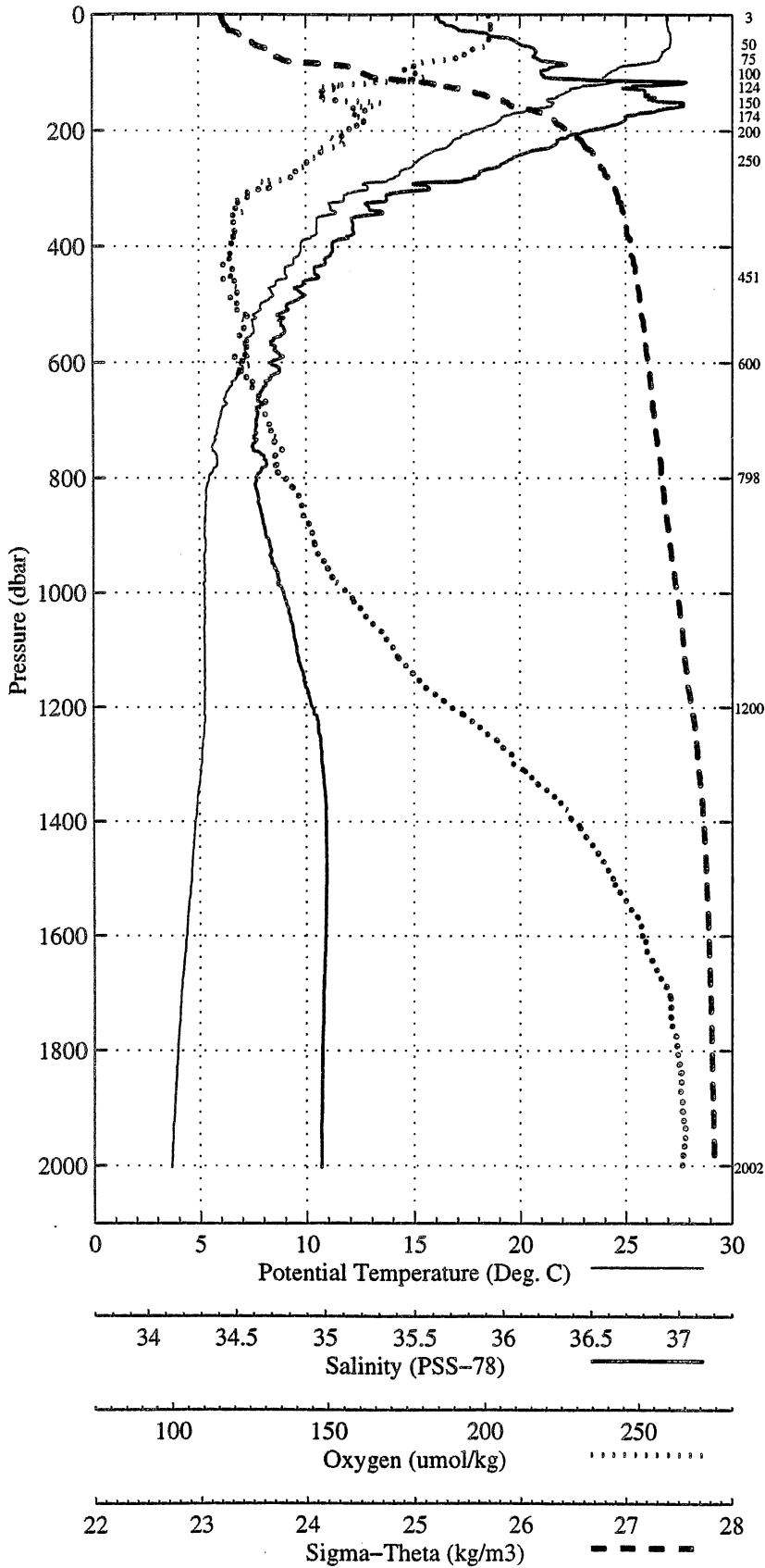
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.663	3.500	34.981	263.7
1200	1	5.205	5.100	34.944	191.6
798	2	5.419	5.351	34.626	136.2
601	3	7.171	7.113	34.760	118.9
451	4	9.038	8.988	34.963	117.6
250	5	15.293	15.254	36.043	142.3
201	6	17.538	17.504	36.431	155.2
174	12	19.182	19.151	36.714*	159.0
150	13	21.372	21.343	36.920*	156.3
124	14	22.840	22.815	36.783*	154.7
101	15	24.482	24.460	36.232	175.9
75	16	26.772	26.754	36.169	193.7
50	17	27.116	27.105	36.072	201.4
4	18	26.905	26.904	35.633	201.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 19 (99019)

Latitude 11.200 N Longitude 56.017 W

13-Feb-1999 03:48 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 20 (99020)
Latitude 10.976N Longitude 56.320W
13-Feb-1999 07:18Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	26.838	26.838	36.353	203.2	0.004	23.791
10	26.866	26.863	36.352	202.1	0.041	23.783
20	26.869	26.864	36.352	202.1	0.082	23.784
30	26.870	26.863	36.352	202.2	0.123	23.785
40	26.877	26.868	36.353	202.0	0.165	23.784
50	26.879	26.867	36.353	202.2	0.206	23.785
60	26.883	26.869	36.353	202.1	0.247	23.786
70	26.880	26.864	36.353	202.0	0.289	23.788
80	26.879	26.861	36.354	202.1	0.330	23.791
90	26.857	26.836	36.358	201.6	0.372	23.802
100	26.390	26.367	36.370	186.2	0.413	23.961
110	25.238	25.214	36.358	180.7	0.451	24.312
120	23.578	23.553	36.306	176.7	0.485	24.772
130	22.290	22.264	36.258	169.3	0.515	25.108
140	21.259	21.232	36.313	159.2	0.543	25.439
150	19.665	19.637	36.287	153.1	0.566	25.848
160	18.997	18.968	36.237	149.6	0.588	25.984
170	18.608	18.577	36.253	146.7	0.608	26.096
180	17.959	17.927	36.191	141.5	0.627	26.211
190	16.289	16.258	36.005	145.3	0.644	26.469
200	15.663	15.632	35.898	146.3	0.660	26.531
250	14.491	14.454	35.805	129.2	0.735	26.721
300	12.227	12.187	35.427	121.3	0.801	26.893
350	9.764	9.723	34.939	137.6	0.860	26.959
400	9.378	9.333	34.944	127.8	0.917	27.028
450	8.750	8.701	34.876	117.0	0.972	27.076
500	7.585	7.535	34.707	130.1	1.024	27.120
550	7.068	7.015	34.657	132.0	1.075	27.154
600	6.873	6.816	34.679	126.4	1.125	27.199
650	6.484	6.423	34.654	128.3	1.172	27.232
700	6.083	6.021	34.635	130.2	1.218	27.270
750	5.700	5.634	34.619	134.4	1.262	27.305
800	5.495	5.426	34.626	137.5	1.305	27.336
900	5.246	5.170	34.679	145.2	1.386	27.410
1000	5.191	5.106	34.762	157.3	1.462	27.485
1500	4.471	4.345	35.009	244.7	1.763	27.770
2000	3.690	3.527	34.983	262.8	2.000	27.837

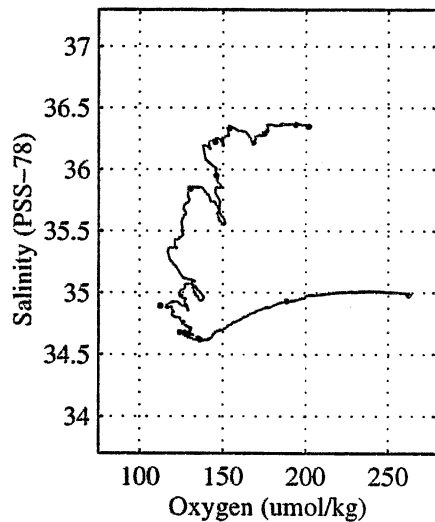
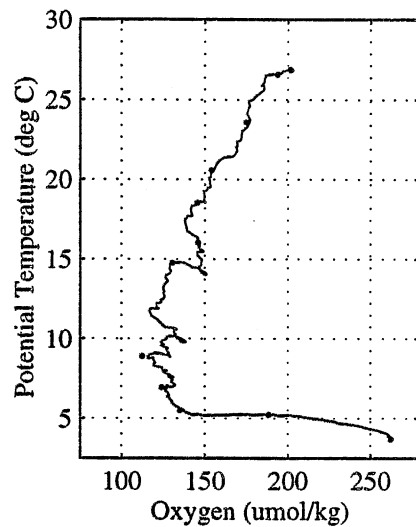
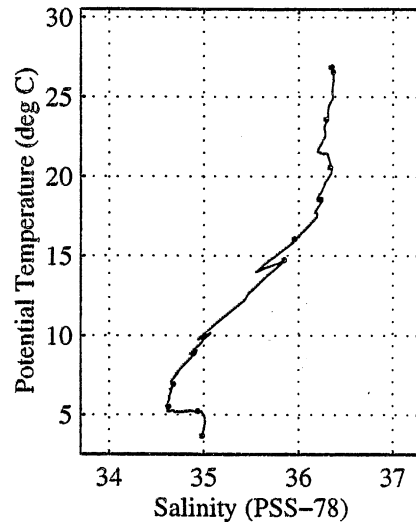
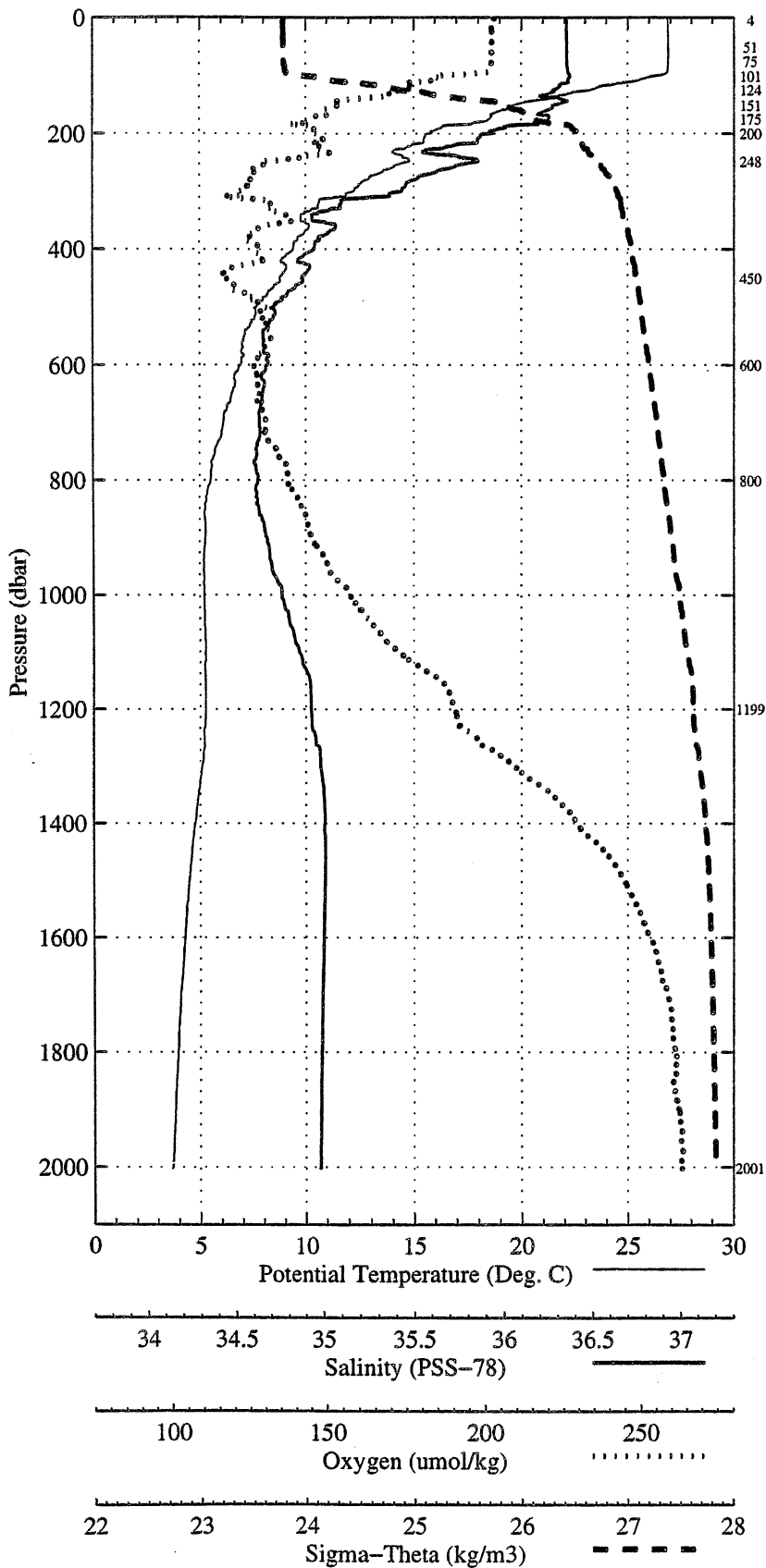
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
2001	24	3.685	3.522	34.981	262.2
1200	1	5.234	5.130	34.932	188.4
801	2	5.503	5.434	34.628	135.2
600	3	6.934	6.877	34.679	124.3
450	4	8.898	8.849	34.893	112.4
248	5	14.750	14.713	35.841	130.6
200	6	16.055	16.023	35.952	145.8
175	12	18.542	18.511	36.221	145.3
151	13	20.579	20.550	36.334	153.9
125	14	23.575	23.549	36.293	175.0
101	15	26.563	26.540	36.368	193.5
76	16	26.878	26.861	36.349	201.3
51	17	26.871	26.859	36.350	201.4
5	18	26.855	26.854	36.349	201.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 20 (99020)

Latitude 10.976 N Longitude 56.320 W

13-Feb-1999 07:18 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 21 (99021)
Latitude 10.733N Longitude 56.617W
13-Feb-1999 10:48Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.776	26.776	36.413	202.1	0.004	23.856
10	26.779	26.777	36.414	202.1	0.040	23.857
20	26.783	26.778	36.414	202.1	0.081	23.858
30	26.791	26.784	36.414	202.0	0.121	23.857
40	26.792	26.783	36.414	202.1	0.162	23.858
50	26.796	26.785	36.414	202.1	0.203	23.858
60	26.797	26.784	36.414	202.3	0.243	23.859
70	26.798	26.782	36.414	202.2	0.284	23.860
80	26.799	26.780	36.414	202.1	0.325	23.862
90	26.805	26.784	36.414	202.4	0.365	23.861
100	26.801	26.778	36.414	202.2	0.406	23.864
110	25.035	25.011	36.373	180.5	0.445	24.385
120	24.407	24.381	36.375	178.0	0.480	24.578
130	23.691	23.664	36.400	177.0	0.513	24.811
140	22.369	22.340	36.354	168.3	0.543	25.160
150	20.909	20.880	36.274	161.5	0.570	25.506
160	20.160	20.130	36.373	151.4	0.594	25.784
170	19.578	19.547	36.494	137.7	0.615	26.031
180	17.974	17.943	36.228	138.2	0.635	26.236
190	16.280	16.249	35.985	138.6	0.652	26.456
200	15.039	15.009	35.762	138.4	0.668	26.565
250	12.634	12.600	35.307	150.2	0.740	26.718
300	11.966	11.927	35.215	148.2	0.808	26.778
350	11.090	11.046	35.172	132.9	0.873	26.910
400	10.045	9.998	35.082	122.0	0.931	27.025
450	8.488	8.440	34.806	129.7	0.986	27.062
500	8.151	8.099	34.786	124.8	1.040	27.099
550	7.612	7.557	34.718	129.5	1.092	27.126
600	6.974	6.917	34.659	127.5	1.143	27.169
650	6.762	6.701	34.677	126.5	1.192	27.214
700	6.357	6.293	34.660	127.8	1.239	27.255
750	5.628	5.563	34.603	134.1	1.283	27.302
800	5.536	5.467	34.623	134.7	1.326	27.329
900	5.112	5.037	34.621	143.9	1.408	27.379
1000	5.017	4.934	34.699	152.6	1.486	27.454
1500	4.285	4.161	35.002	251.3	1.781	27.784
2000	3.718	3.555	34.979	265.7	2.015	27.831

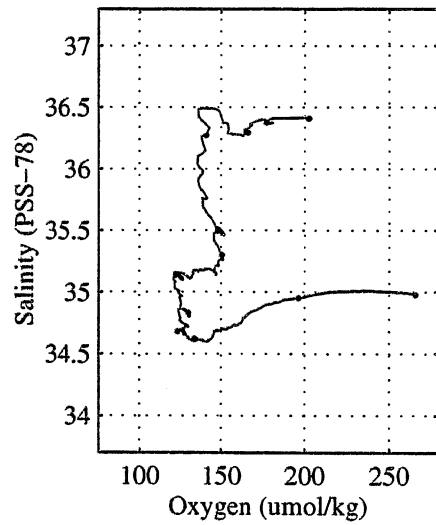
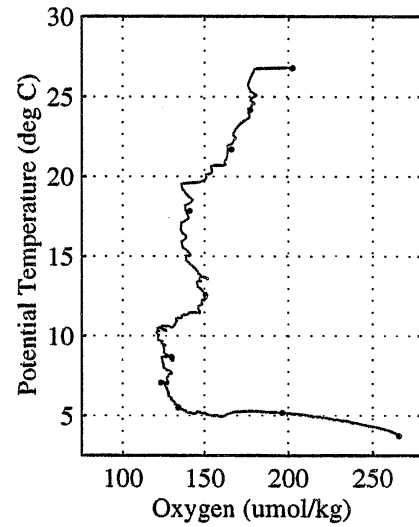
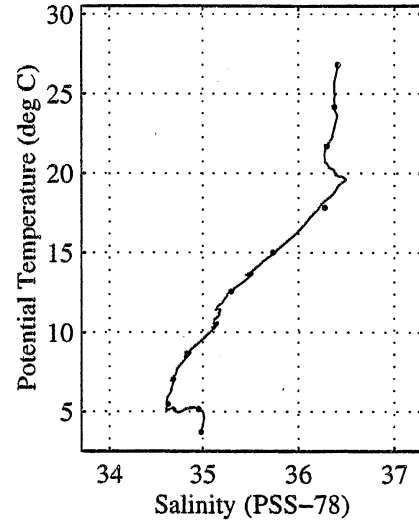
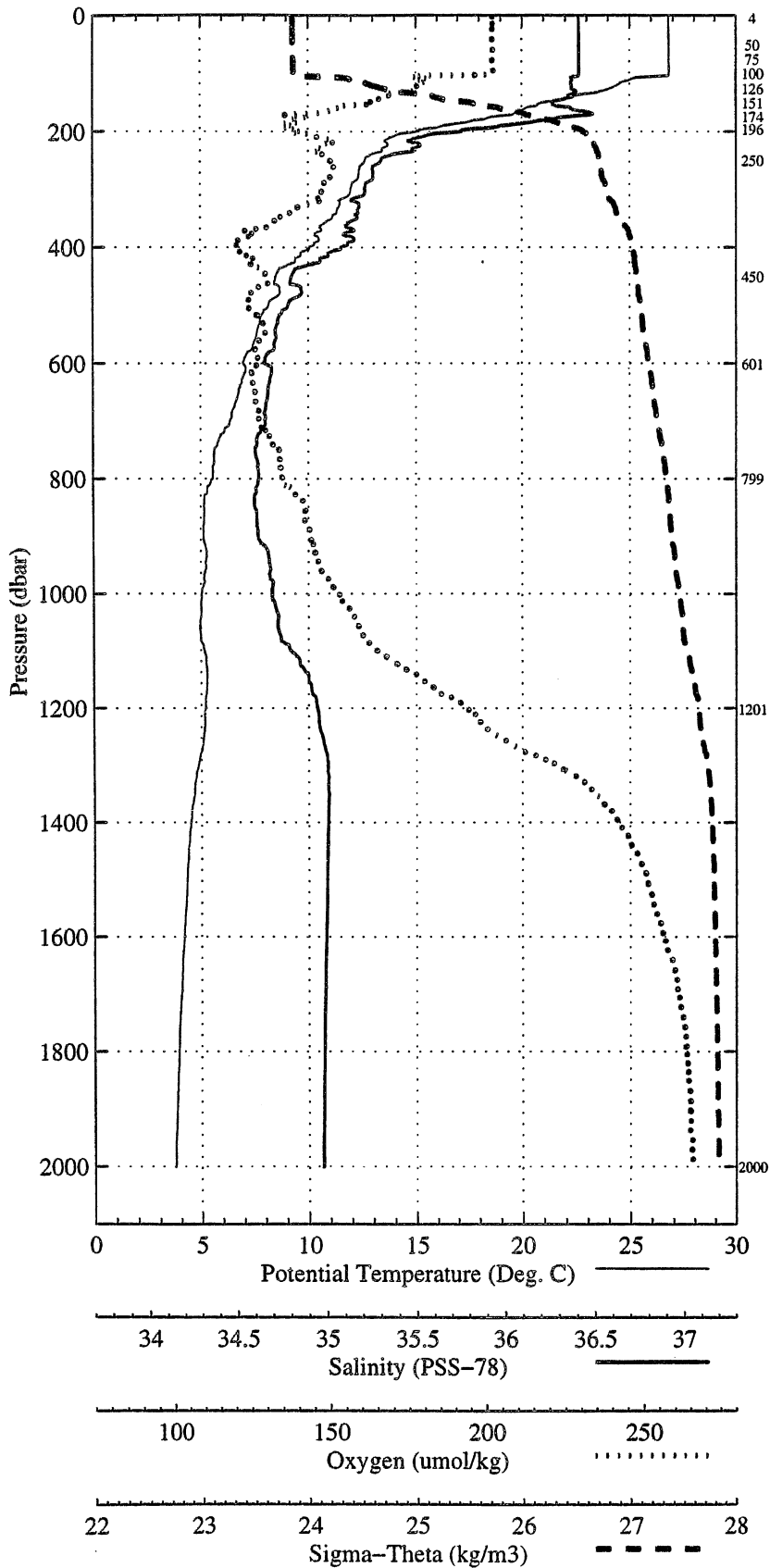
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.719	3.555	34.979	265.9
1202	1	5.172	5.068	34.952	196.2
800	2	5.478	5.410	34.623	133.7
601	3	7.053	6.996	34.680	123.1
451	4	8.670	8.622	34.832	129.9
250	5	12.566	12.532	35.300*	150.4
196	6	15.023	14.993	35.732*	NaN
175	12	17.842	17.812	36.273*	140.8
151	13	21.698	21.668	36.294	166.3
126	14	24.167	24.140	36.375	177.4
101	15	26.801	26.778	36.409	202.2
76	16	26.805	26.788	36.410	202.0
51	17	26.801	26.789	36.410	202.4
5	18	26.791	26.790	36.410	202.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 21 (99021)

Latitude 10.733 N Longitude 56.617 W

13-Feb-1999 10:48 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 22 (99022)
Latitude 10.501N Longitude 56.917W
13-Feb-1999 14:19Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.802	26.802	36.424	200.5	0.004	23.856
10	26.800	26.798	36.423	201.7	0.040	23.858
20	26.797	26.793	36.423	202.0	0.081	23.860
30	26.760	26.753	36.422	201.9	0.121	23.872
40	26.759	26.750	36.422	201.9	0.162	23.874
50	26.760	26.749	36.422	202.0	0.202	23.876
60	26.760	26.747	36.422	201.7	0.243	23.877
70	26.761	26.745	36.423	201.9	0.283	23.879
80	26.750	26.731	36.422	201.4	0.324	23.883
90	25.669	25.649	36.406	182.9	0.364	24.212
100	25.300	25.278	36.405	181.2	0.400	24.327
110	24.909	24.885	36.399	179.7	0.436	24.443
120	24.711	24.685	36.397	179.7	0.471	24.503
130	23.828	23.800	36.374	176.3	0.505	24.751
140	22.499	22.470	36.304	172.4	0.535	25.085
150	20.824	20.796	36.257	160.9	0.562	25.517
160	20.217	20.187	36.320	154.4	0.587	25.729
170	19.343	19.312	36.280	148.6	0.609	25.928
180	18.805	18.773	36.330	143.5	0.629	26.106
190	18.396	18.363	36.279	142.9	0.649	26.171
200	17.514	17.480	36.158	139.9	0.668	26.297
250	13.645	13.609	35.522	140.4	0.746	26.681
300	11.344	11.306	35.175	136.7	0.812	26.864
350	10.609	10.566	35.063	139.1	0.875	26.910
400	9.743	9.697	34.947	136.0	0.935	26.970
450	9.011	8.961	34.858	135.2	0.992	27.021
500	8.539	8.485	34.816	130.9	1.048	27.064
550	7.886	7.830	34.738	130.9	1.102	27.102
600	7.535	7.475	34.720	126.0	1.154	27.140
650	6.797	6.736	34.643	129.5	1.205	27.182
700	6.341	6.277	34.611	131.6	1.253	27.218
750	6.162	6.094	34.623	131.3	1.300	27.251
800	5.410	5.342	34.584	138.5	1.346	27.314
900	5.233	5.157	34.637	142.8	1.429	27.378
1000	5.026	4.942	34.692	152.6	1.507	27.448
1500	4.370	4.245	35.005	247.4	1.801	27.777
2000	3.727	3.563	34.980	264.9	2.038	27.831

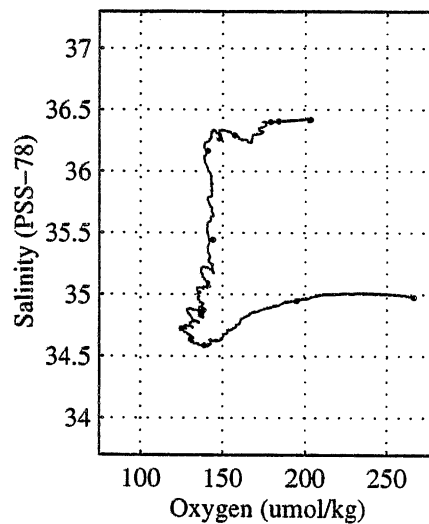
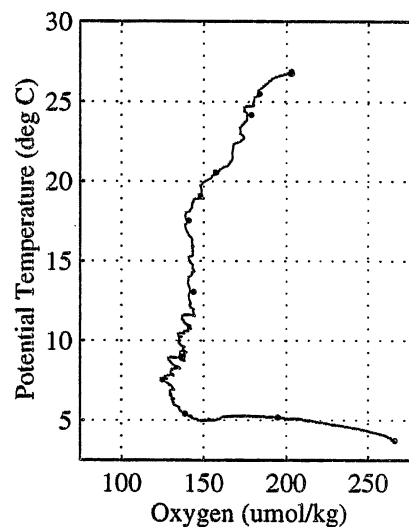
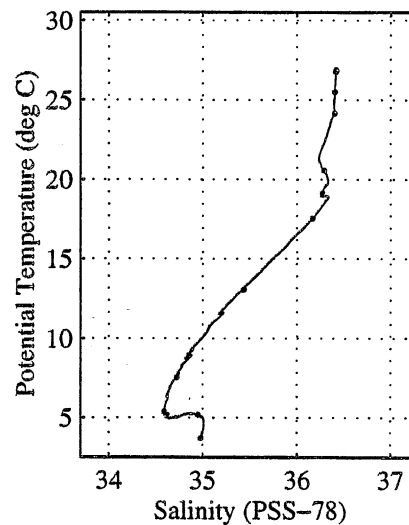
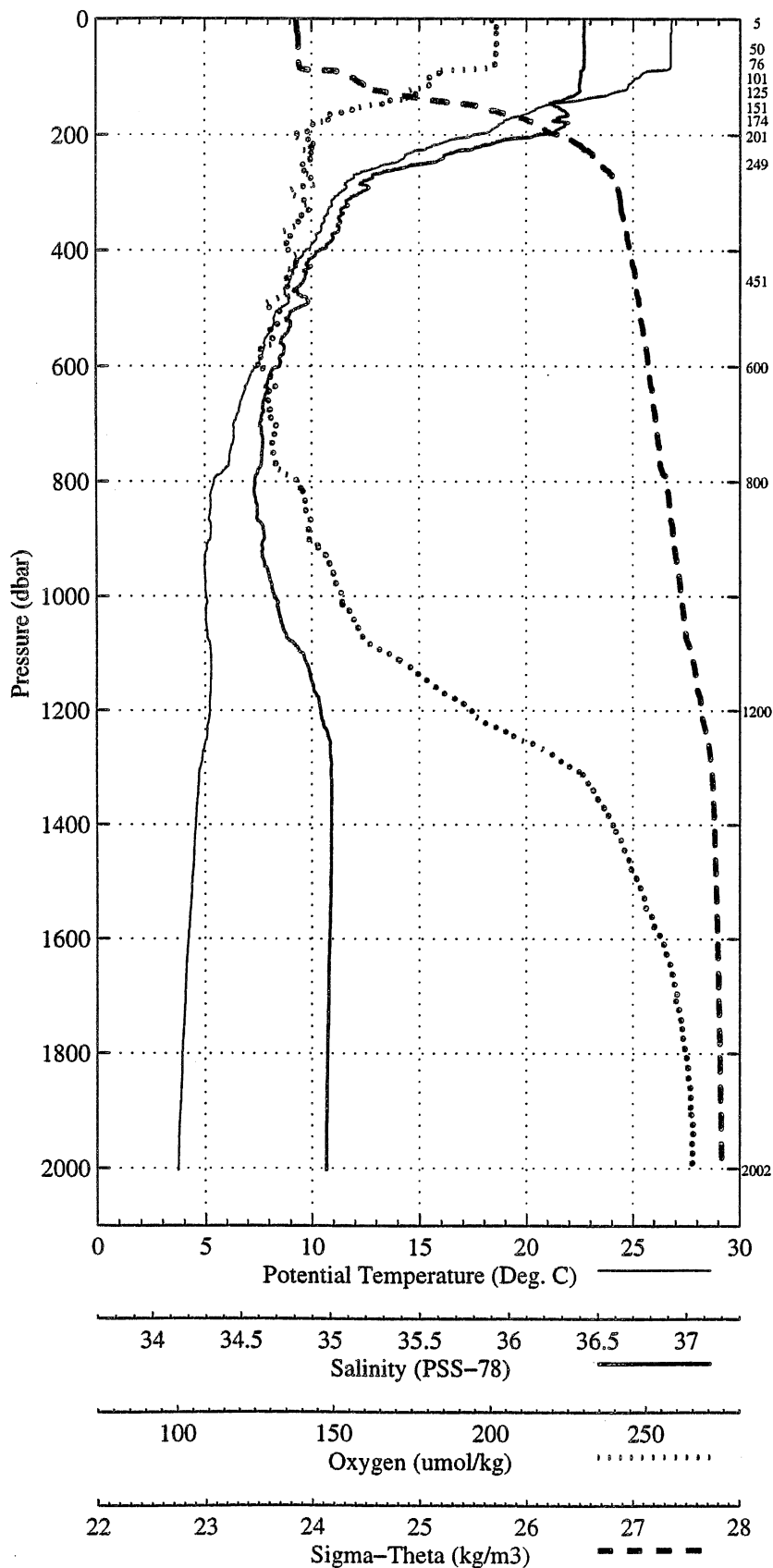
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.725	3.562	34.977	266.3
1200	1	5.186	5.082	34.948	194.6
800	2	5.405	5.337	34.586	138.6
601	3	7.552	7.492	34.723	124.9
452	4	8.957	8.907	34.853	137.2
249	5	13.067	13.032	35.441*	143.9
201	6	17.544	17.509	36.165*	140.8
174	12	19.121	19.089	36.267	147.8
151	13	20.564	20.535	36.292	157.1
125	14	24.163	24.136	36.401*	178.8
101	15	25.497	25.475	36.404	183.8
76	16	26.766	26.748	36.417	202.5
51	17	26.766	26.754	36.420	203.1
6	18	26.883	26.882	36.420	202.9

NBC-2 R/V SEWARD JOHNSON

CTD Station 22 (99022)

Latitude 10.501 N Longitude 56.917 W

13-Feb-1999 14:19 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 23 (99023)
Latitude 10.265N Longitude 57.216W
13-Feb-1999 17:59Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.882	26.882	36.424	199.6	0.004	23.831
10	26.809	26.807	36.423	201.3	0.041	23.854
20	26.679	26.675	36.420	202.1	0.081	23.896
30	26.672	26.665	36.420	202.3	0.121	23.899
40	26.669	26.660	36.421	202.3	0.161	23.902
50	26.668	26.656	36.421	202.3	0.201	23.904
60	26.666	26.652	36.421	202.2	0.241	23.907
70	26.664	26.648	36.421	202.1	0.282	23.908
80	26.665	26.647	36.421	202.2	0.322	23.910
90	26.665	26.644	36.422	202.0	0.362	23.911
100	26.659	26.636	36.422	201.7	0.403	23.915
110	25.654	25.629	36.406	182.0	0.442	24.219
120	24.810	24.784	36.429	180.3	0.478	24.497
130	23.846	23.819	36.417	176.2	0.512	24.779
140	22.213	22.185	36.293	169.1	0.542	25.158
150	20.722	20.693	36.212	166.2	0.569	25.509
160	20.253	20.223	36.193	163.6	0.594	25.622
170	19.689	19.657	36.159	155.1	0.617	25.746
180	18.289	18.257	36.135	152.0	0.639	26.087
190	17.860	17.828	36.116	150.2	0.658	26.179
200	17.160	17.126	36.103	138.1	0.676	26.340
250	11.739	11.706	35.202	143.9	0.749	26.809
300	10.628	10.591	35.035	144.5	0.812	26.883
350	10.128	10.086	34.976	142.1	0.873	26.926
400	9.649	9.603	34.931	139.1	0.932	26.973
450	8.973	8.924	34.832	142.2	0.990	27.007
500	8.330	8.277	34.749	144.5	1.047	27.043
550	7.934	7.878	34.709	146.9	1.102	27.072
600	7.920	7.859	34.760	130.4	1.156	27.115
650	6.763	6.701	34.627	135.6	1.207	27.174
700	6.555	6.490	34.640	129.4	1.256	27.214
750	6.083	6.016	34.594	134.3	1.304	27.239
800	5.726	5.656	34.572	137.3	1.350	27.266
900	5.209	5.133	34.599	142.5	1.437	27.351
1000	4.978	4.895	34.645	150.1	1.518	27.415
1500	4.333	4.209	35.005	249.0	1.825	27.781
2000	3.703	3.539	34.980	264.3	2.060	27.833

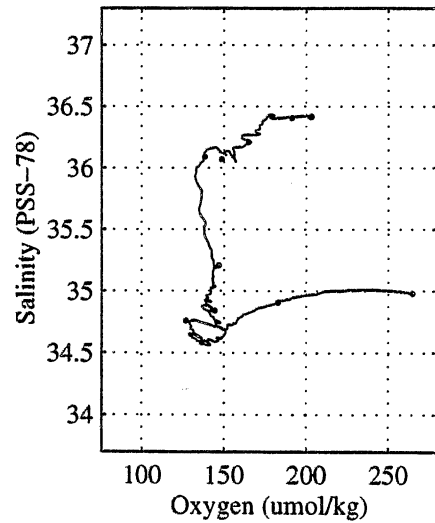
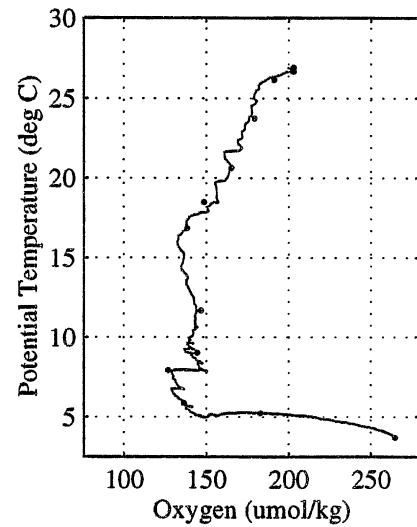
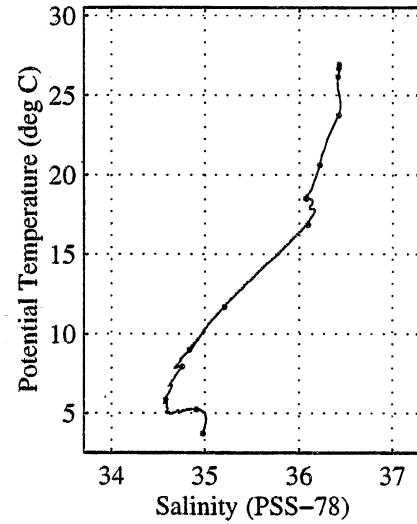
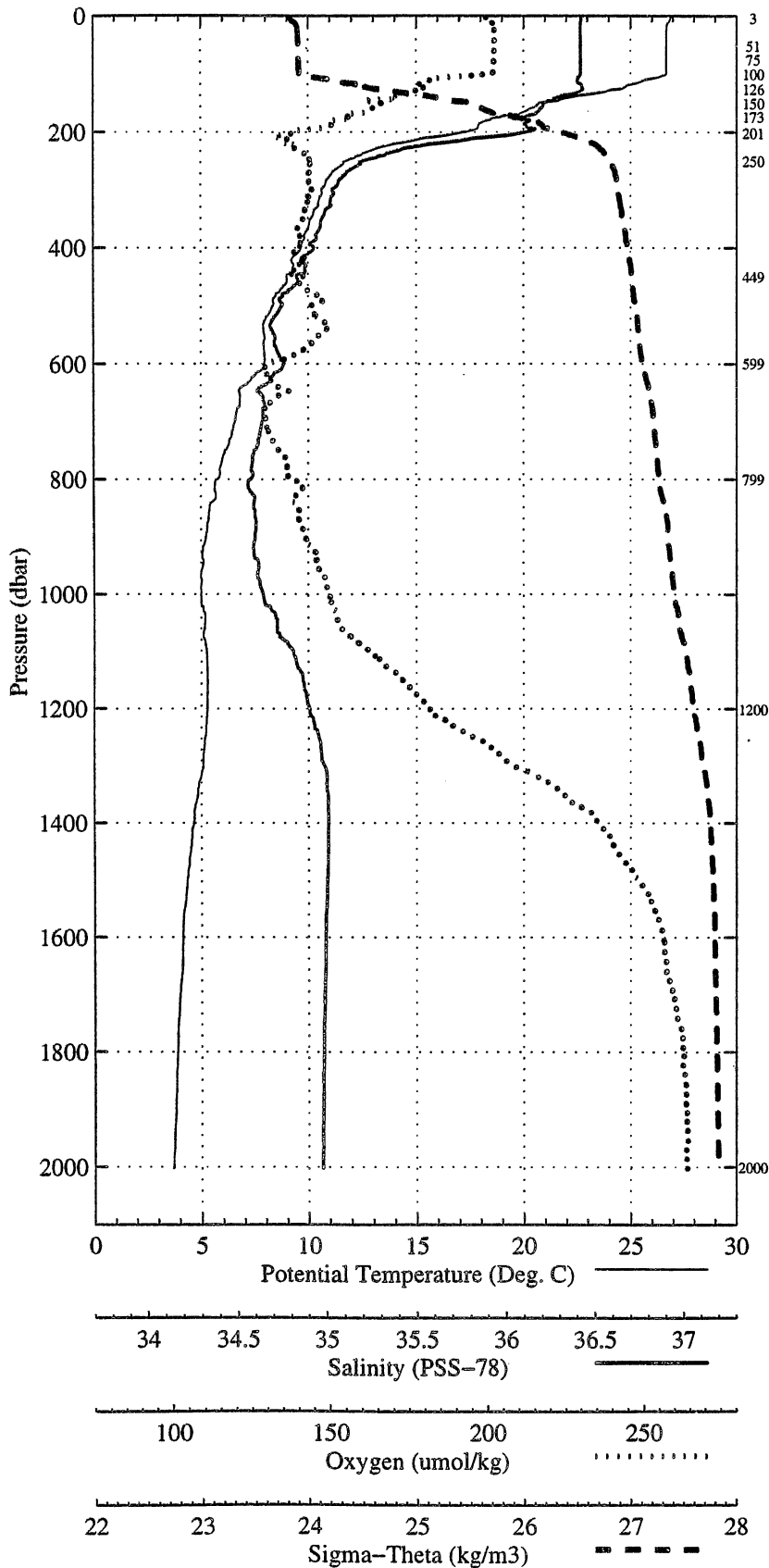
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.702	3.539	34.980	264.7
1201	1	5.236	5.131	34.908	182.9
800	2	5.865	5.794	34.583	136.6
600	3	7.940	7.879	34.760	126.9
449	4	9.018	8.968	34.840	144.5
250	5	11.686	11.654	35.208*	146.7
202	6	16.861	16.827	36.090*	138.4
174	12	18.496	18.465	36.069*	148.5
150	13	20.608	20.579	36.210	165.0
126	14	23.732	23.706	36.417*	179.3
100	15	26.146	26.123	36.407	191.3
75	16	26.667	26.650	36.416	202.4
51	17	26.668	26.656	36.416	203.0
4	18	26.926	26.925	36.421	203.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 23 (99023)

Latitude 10.265 N Longitude 57.216 W

13-Feb-1999 17:59 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 24 (99024)
Latitude 10.032N Longitude 57.519W
13-Feb-1999 22:00Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.848	26.848	36.398	201.3	0.004	23.822
10	26.836	26.833	36.393	202.0	0.041	23.824
20	26.807	26.802	36.391	202.0	0.081	23.833
30	26.736	26.729	36.388	202.4	0.122	23.855
40	26.732	26.723	36.389	202.4	0.163	23.858
50	26.728	26.716	36.389	202.5	0.203	23.861
60	26.725	26.711	36.390	202.3	0.244	23.864
70	26.721	26.705	36.391	202.0	0.284	23.867
80	26.661	26.643	36.399	200.7	0.325	23.894
90	26.289	26.269	36.404	192.3	0.365	24.017
100	25.617	25.595	36.406	182.9	0.403	24.230
110	24.837	24.814	36.412	179.5	0.439	24.474
120	24.075	24.050	36.429	177.7	0.473	24.719
130	23.105	23.078	36.363	175.2	0.505	24.954
140	22.372	22.344	36.314	172.9	0.535	25.129
150	21.481	21.452	36.266	168.9	0.563	25.343
160	21.095	21.064	36.248	166.7	0.589	25.436
170	20.475	20.443	36.220	161.9	0.615	25.584
180	19.022	18.990	36.207	152.1	0.637	25.956
190	18.492	18.459	36.203	151.0	0.657	26.089
200	17.791	17.757	36.195	141.6	0.676	26.258
250	13.484	13.448	35.527	136.4	0.755	26.718
300	10.936	10.899	35.079	143.0	0.821	26.863
350	10.071	10.030	34.928	148.6	0.883	26.898
400	10.007	9.960	34.969	139.6	0.944	26.943
450	9.126	9.076	34.860	137.9	1.003	27.005
500	8.630	8.577	34.821	133.3	1.059	27.053
550	8.085	8.028	34.752	137.2	1.114	27.084
600	7.545	7.485	34.712	129.2	1.167	27.132
650	7.114	7.051	34.674	128.6	1.218	27.164
700	6.747	6.681	34.656	131.1	1.268	27.201
750	6.222	6.154	34.605	133.0	1.316	27.230
800	5.596	5.527	34.552	141.9	1.362	27.266
900	5.393	5.316	34.602	138.9	1.451	27.332
1000	5.034	4.950	34.626	146.8	1.535	27.394
1500	4.568	4.441	35.012	239.2	1.858	27.762
2000	3.608	3.446	34.980	262.2	2.093	27.842

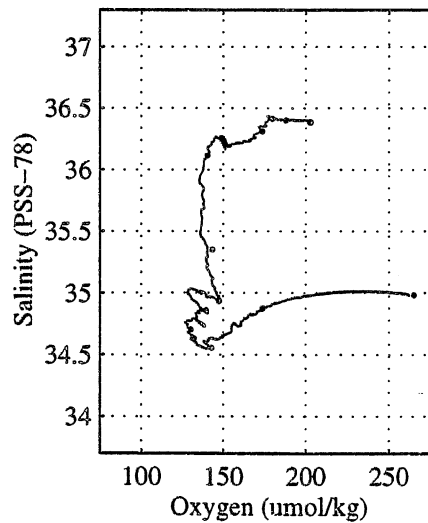
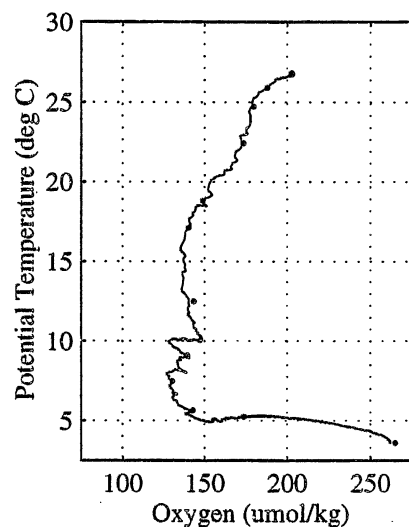
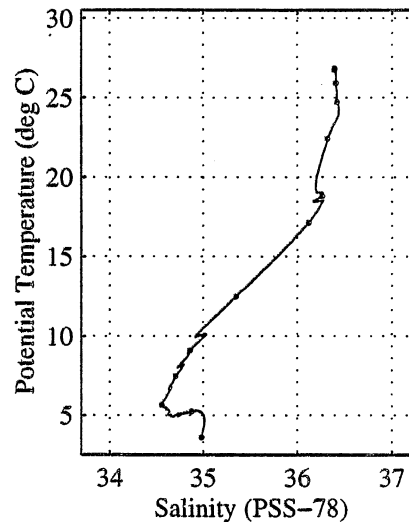
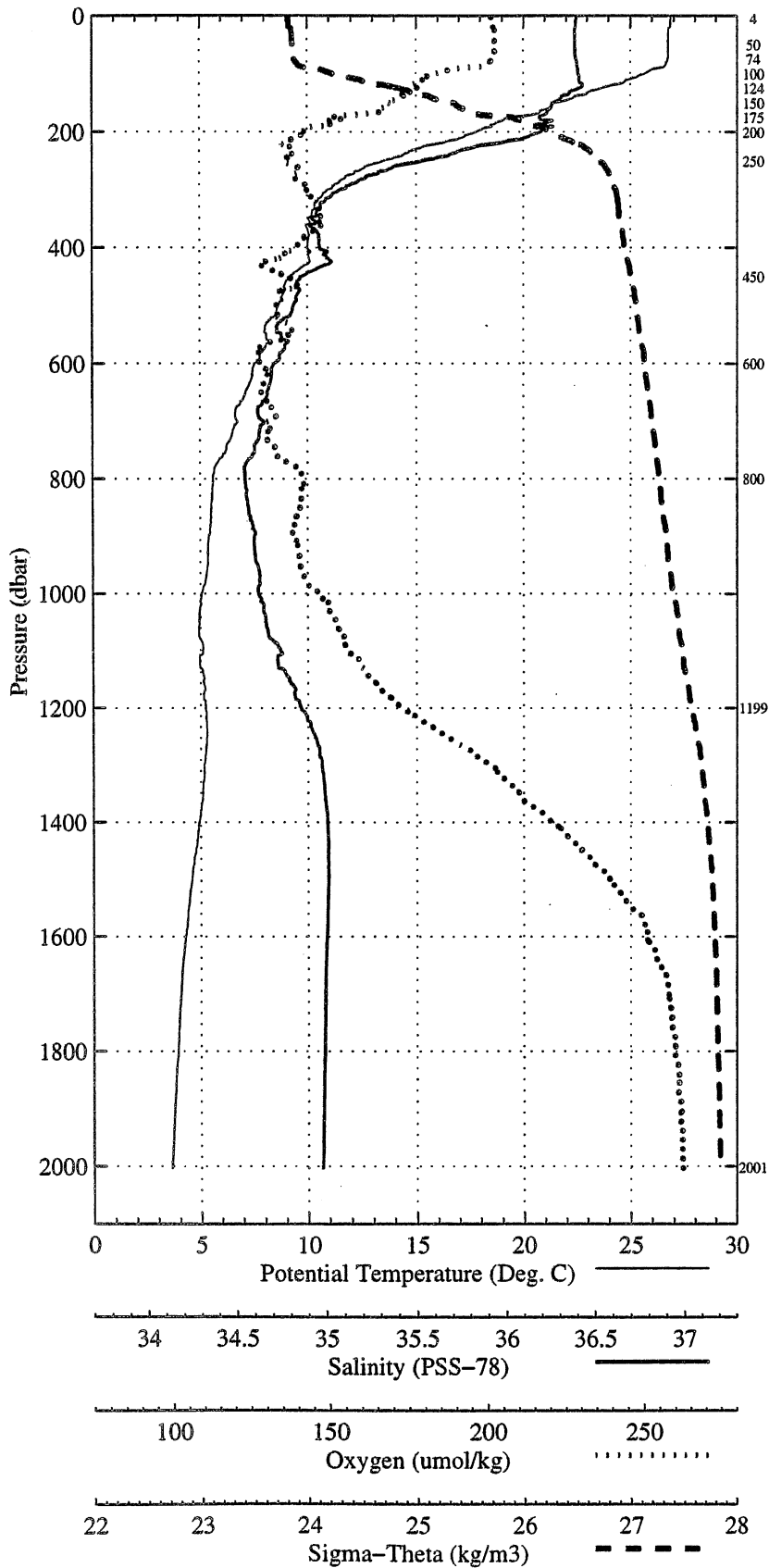
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.606	3.444	34.981	265.1
1199	1	5.249	5.145	34.873	173.9
800	2	5.640	5.570	34.554	142.7
600	3	7.485	7.425	34.702	130.1
450	4	9.095	9.045	34.859	139.3
251	5	12.493	12.459	35.351	143.3
201	6	17.130	17.096	36.116	140.1
175	12	18.812	18.781	36.256*	148.7
150	13	22.434	22.404	36.312	173.6
125	14	24.712	24.685	36.413	179.7
100	15	25.902	25.880	36.403	187.9
75	16	26.725	26.708	36.386	202.5
50	17	26.731	26.720	36.383	202.8
5	18	26.817	26.816	36.389	202.9

NBC-2 R/V SEWARD JOHNSON

CTD Station 24 (99024)

Latitude 10.032 N Longitude 57.519 W

13-Feb-1999 22:00 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 25 (99025)
Latitude 9.798N Longitude 57.817W
14-Feb-1999 01:35Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.071	27.071	36.221	201.1	0.004	23.617
10	27.073	27.070	36.219	200.9	0.043	23.616
20	27.083	27.078	36.230	201.2	0.085	23.623
30	27.034	27.027	36.249	201.1	0.128	23.654
40	26.966	26.957	36.244	201.4	0.170	23.674
50	26.948	26.937	36.247	201.5	0.213	23.684
60	26.917	26.904	36.312	201.7	0.255	23.744
70	26.888	26.872	36.335	201.5	0.296	23.772
80	26.856	26.838	36.361	201.4	0.338	23.803
90	25.935	25.915	36.412	186.0	0.377	24.134
100	25.839	25.817	36.419	185.2	0.415	24.171
110	25.562	25.538	36.416	181.1	0.453	24.256
120	25.141	25.115	36.423	180.0	0.489	24.392
130	24.865	24.836	36.430	179.0	0.525	24.483
140	23.783	23.753	36.428	173.8	0.559	24.807
150	22.904	22.873	36.353	168.7	0.590	25.007
160	21.385	21.354	36.274	155.6	0.618	25.377
170	19.898	19.867	36.347	148.6	0.641	25.835
180	19.113	19.081	36.336	146.0	0.662	26.032
190	18.220	18.187	36.231	140.6	0.682	26.178
200	17.014	16.981	36.084	141.4	0.700	26.360
250	11.473	11.441	35.129	146.0	0.775	26.801
300	11.038	11.001	35.068	148.5	0.840	26.836
350	11.430	11.385	35.289	124.4	0.902	26.939
400	9.565	9.520	34.984	122.3	0.960	27.028
450	8.716	8.667	34.864	124.3	1.015	27.073
500	7.897	7.846	34.745	126.3	1.068	27.105
550	6.802	6.750	34.586	145.7	1.119	27.134
600	6.840	6.783	34.604	143.6	1.170	27.145
650	6.877	6.815	34.668	128.0	1.220	27.191
700	6.485	6.420	34.655	127.4	1.268	27.234
750	6.064	5.997	34.620	130.2	1.315	27.261
800	5.782	5.712	34.596	135.3	1.360	27.279
900	5.625	5.546	34.632	137.8	1.449	27.328
1000	5.392	5.305	34.694	142.8	1.533	27.407
1500	4.466	4.341	35.011	245.8	1.856	27.772
2000	3.537	3.376	34.978	261.9	2.087	27.847

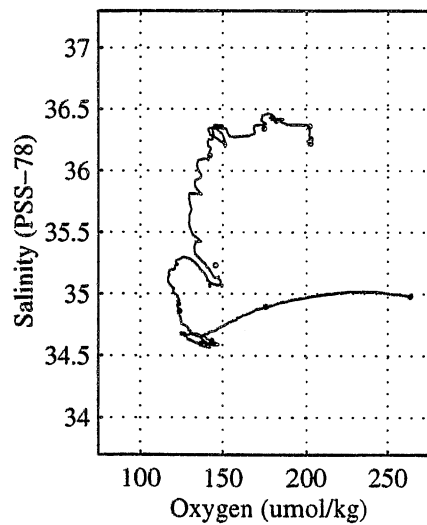
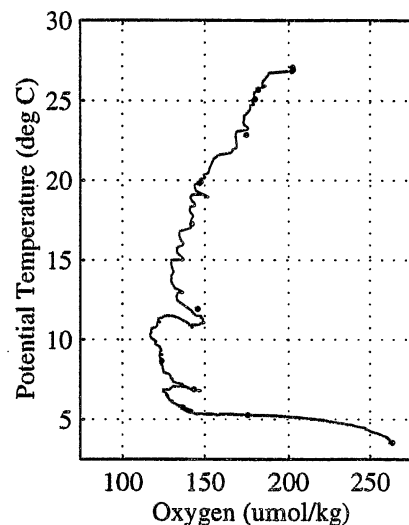
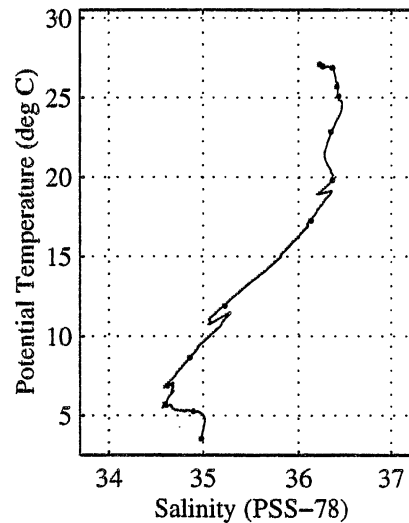
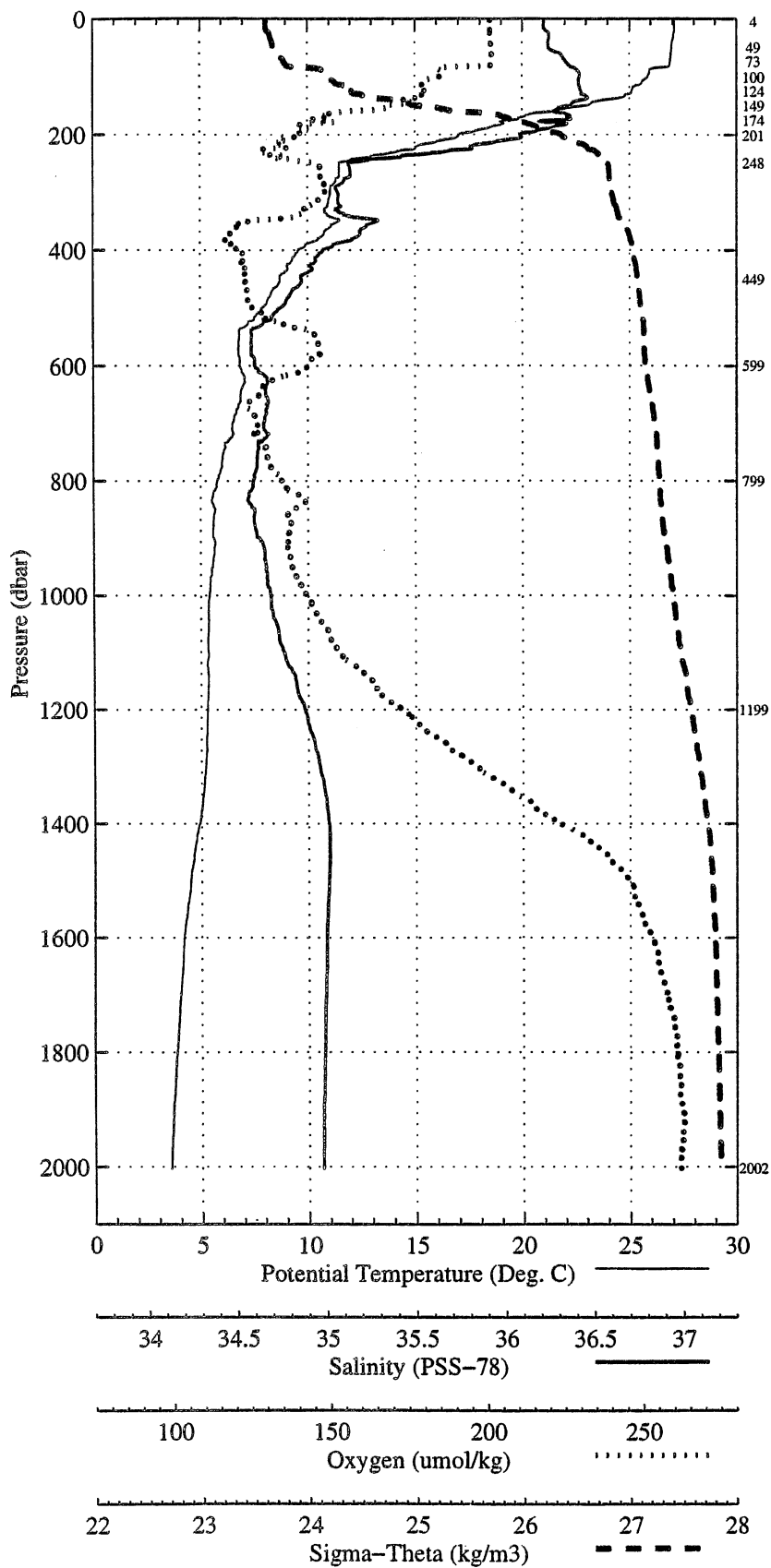
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.537	3.376	34.980	263.6
1200	1	5.274	5.169	34.894	176.2
800	2	5.747	5.677	34.596	136.7
600	3	6.890	6.833	34.619	143.2
450	4	8.659	8.611	34.859	123.5
249	5	11.921	11.888	35.232	145.5
201	6	17.259	17.225	36.124*	142.0
175	12	19.826	19.793	36.357	146.5
150	13	22.855	22.824	36.344	175.2
125	14	25.084	25.057	36.429	180.3
101	15	25.690	25.667	36.408	182.3
74	16	26.845	26.828	36.361	201.8
50	17	26.945	26.933	36.256	202.5
5	18	27.075	27.074	36.221	202.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 25 (99025)

Latitude 9.798 N Longitude 57.817 W

14-Feb-1999 01:35 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 26 (99026)
Latitude 9.566N Longitude 58.120W
14-Feb-1999 05:07Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.997	26.996	35.961	200.8	0.004	23.445
10	26.989	26.986	35.961	200.5	0.044	23.449
20	26.988	26.983	35.960	200.7	0.089	23.450
30	26.992	26.985	35.961	201.0	0.133	23.451
40	26.982	26.973	36.277	200.9	0.176	23.694
50	26.937	26.925	36.296	200.8	0.218	23.724
60	26.882	26.868	36.359	200.4	0.260	23.790
70	26.816	26.800	36.368	200.0	0.301	23.820
80	26.787	26.769	36.369	199.5	0.342	23.831
90	26.516	26.495	36.383	192.5	0.383	23.929
100	25.601	25.579	36.410	183.5	0.421	24.237
110	25.233	25.208	36.423	180.5	0.458	24.363
120	24.956	24.930	36.444	179.1	0.494	24.464
130	24.272	24.244	36.426	176.2	0.528	24.659
140	23.783	23.753	36.368	174.3	0.561	24.761
150	22.474	22.443	36.309	168.3	0.592	25.097
160	21.242	21.211	36.343	155.2	0.620	25.469
170	20.402	20.370	36.367	141.1	0.644	25.716
180	19.131	19.098	36.355	148.8	0.665	26.042
190	19.132	19.098	36.495	142.6	0.685	26.149
200	18.523	18.487	36.482	138.0	0.704	26.296
250	14.469	14.432	35.782	132.1	0.783	26.708
300	12.084	12.044	35.405	120.7	0.848	26.903
350	11.211	11.166	35.308	113.0	0.907	26.993
400	9.947	9.900	35.103	115.0	0.963	27.058
450	8.309	8.262	34.848	119.2	1.016	27.122
500	7.480	7.431	34.746	121.0	1.066	27.165
550	7.186	7.133	34.738	121.6	1.115	27.201
600	6.681	6.625	34.679	123.9	1.162	27.225
650	6.584	6.523	34.708	124.3	1.209	27.262
700	6.246	6.182	34.681	125.6	1.254	27.285
750	6.019	5.951	34.674	128.9	1.298	27.310
800	5.809	5.739	34.657	132.5	1.341	27.323
900	5.457	5.380	34.663	138.5	1.424	27.373
1000	5.195	5.110	34.691	148.2	1.504	27.428
1500	4.383	4.259	35.008	249.0	1.810	27.779
2000	3.407	3.249	34.973	261.9	2.039	27.855

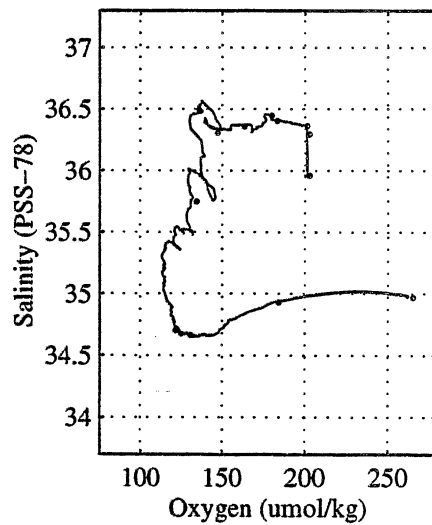
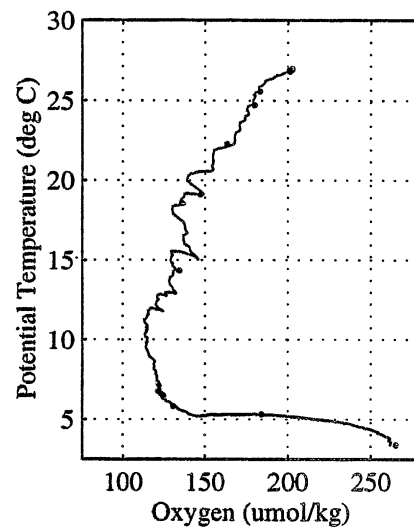
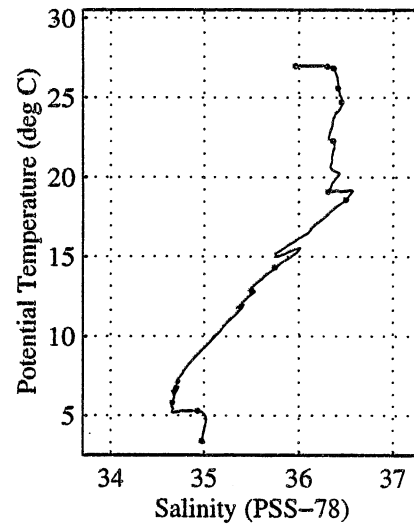
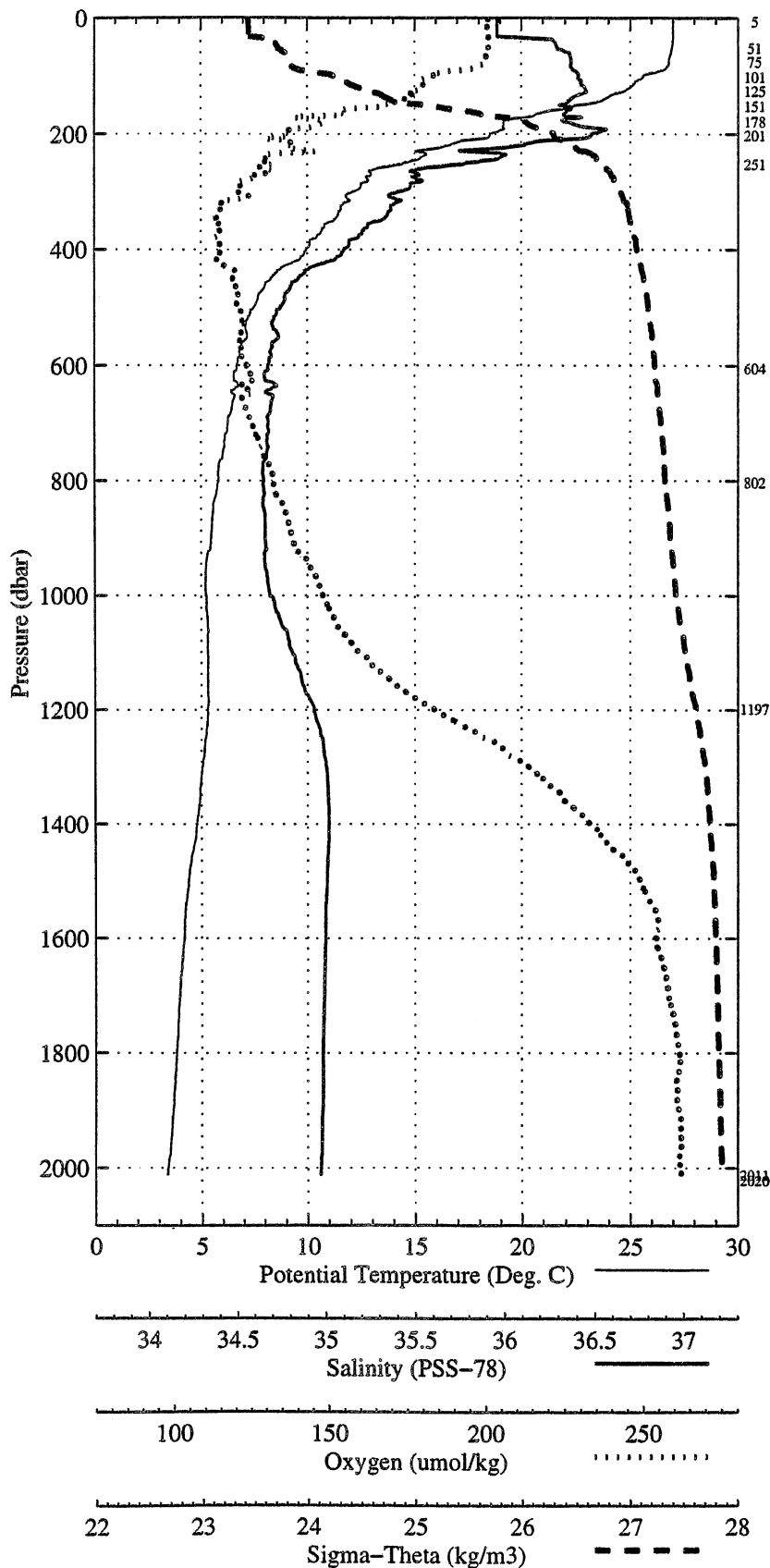
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2012	24	3.392	3.233	34.971	265.1
2021	1	3.378	3.218	34.971	265.2
1197	2	5.308	5.203	34.929	184.4
802	3	5.817	5.746	34.662	130.8
604	4	6.758	6.701	34.703	121.7
252	5	14.332	14.295	35.748	134.5
202	6	18.597	18.561	36.494	135.8
178	12	19.123	19.091	36.307	147.1
151	13	22.272	22.241	36.358*	163.6
125	14	24.709	24.682	36.445	180.2
101	15	25.569	25.546	36.405	183.5
75	16	26.809	26.791	36.362	201.3
52	17	26.939	26.927	36.296	202.5
6	18	26.980	26.979	35.961	202.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 26 (99026)

Latitude 9.566 N Longitude 58.120 W

14-Feb-1999 05:07 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 27 (99027)
Latitude 9.334N Longitude 58.416W
14-Feb-1999 09:17Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.875	26.874	35.606	203.1	0.005	23.217
10	26.859	26.856	35.605	202.3	0.046	23.222
20	26.906	26.901	35.637	202.6	0.093	23.233
30	26.980	26.973	35.718	202.1	0.139	23.271
40	26.855	26.845	35.920	202.2	0.184	23.466
50	26.950	26.939	36.047	200.9	0.228	23.532
60	27.059	27.045	36.175	198.8	0.272	23.595
70	27.082	27.066	36.241	198.3	0.315	23.639
80	26.877	26.859	36.327	195.1	0.357	23.771
90	26.587	26.566	36.343	193.0	0.398	23.877
100	25.931	25.908	36.356	186.4	0.437	24.094
110	25.111	25.087	36.357	178.3	0.475	24.350
120	24.353	24.327	36.346	175.8	0.510	24.573
130	23.253	23.226	36.335	166.5	0.543	24.890
140	22.697	22.669	36.342	165.3	0.573	25.057
150	22.459	22.429	36.749	164.0	0.601	25.435
160	21.463	21.432	36.757	147.5	0.626	25.723
170	20.763	20.731	36.771	143.4	0.648	25.927
180	19.413	19.380	36.533	144.8	0.669	26.104
190	18.588	18.555	36.480	141.4	0.688	26.277
200	17.493	17.459	36.298	139.9	0.705	26.409
250	12.055	12.022	35.291	138.6	0.779	26.818
300	9.910	9.875	34.981	133.7	0.840	26.965
350	9.445	9.405	35.008	119.3	0.896	27.065
400	7.798	7.758	34.780	121.7	0.947	27.143
450	7.134	7.091	34.722	120.8	0.996	27.194
500	6.311	6.266	34.624	127.1	1.042	27.227
550	5.604	5.558	34.526	143.6	1.087	27.239
600	5.532	5.481	34.517	147.4	1.132	27.241
650	5.558	5.502	34.525	147.0	1.178	27.246
700	5.483	5.424	34.514	149.3	1.223	27.247
750	5.930	5.863	34.628	135.7	1.269	27.284
800	5.489	5.420	34.613	134.9	1.312	27.327
900	5.234	5.158	34.646	142.6	1.395	27.385
1000	5.148	5.064	34.712	150.4	1.473	27.450
1500	4.349	4.225	35.007	248.0	1.771	27.781
2000	3.380	3.222	34.968	263.4	1.996	27.854

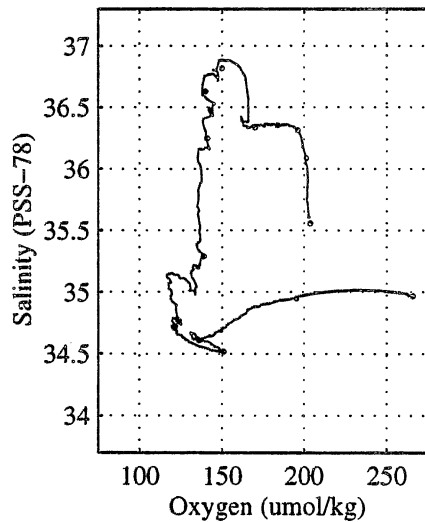
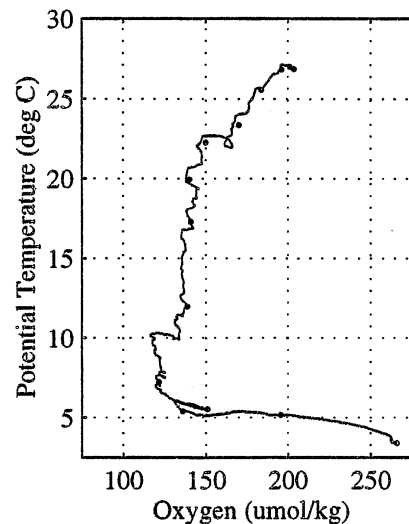
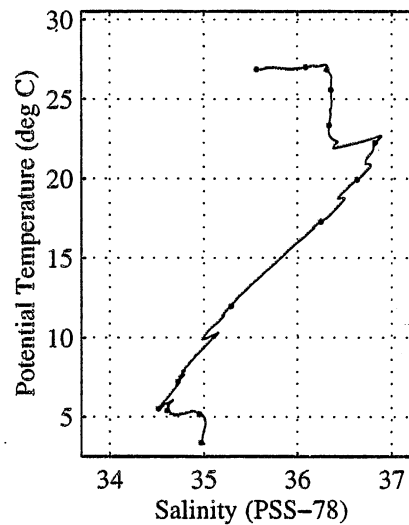
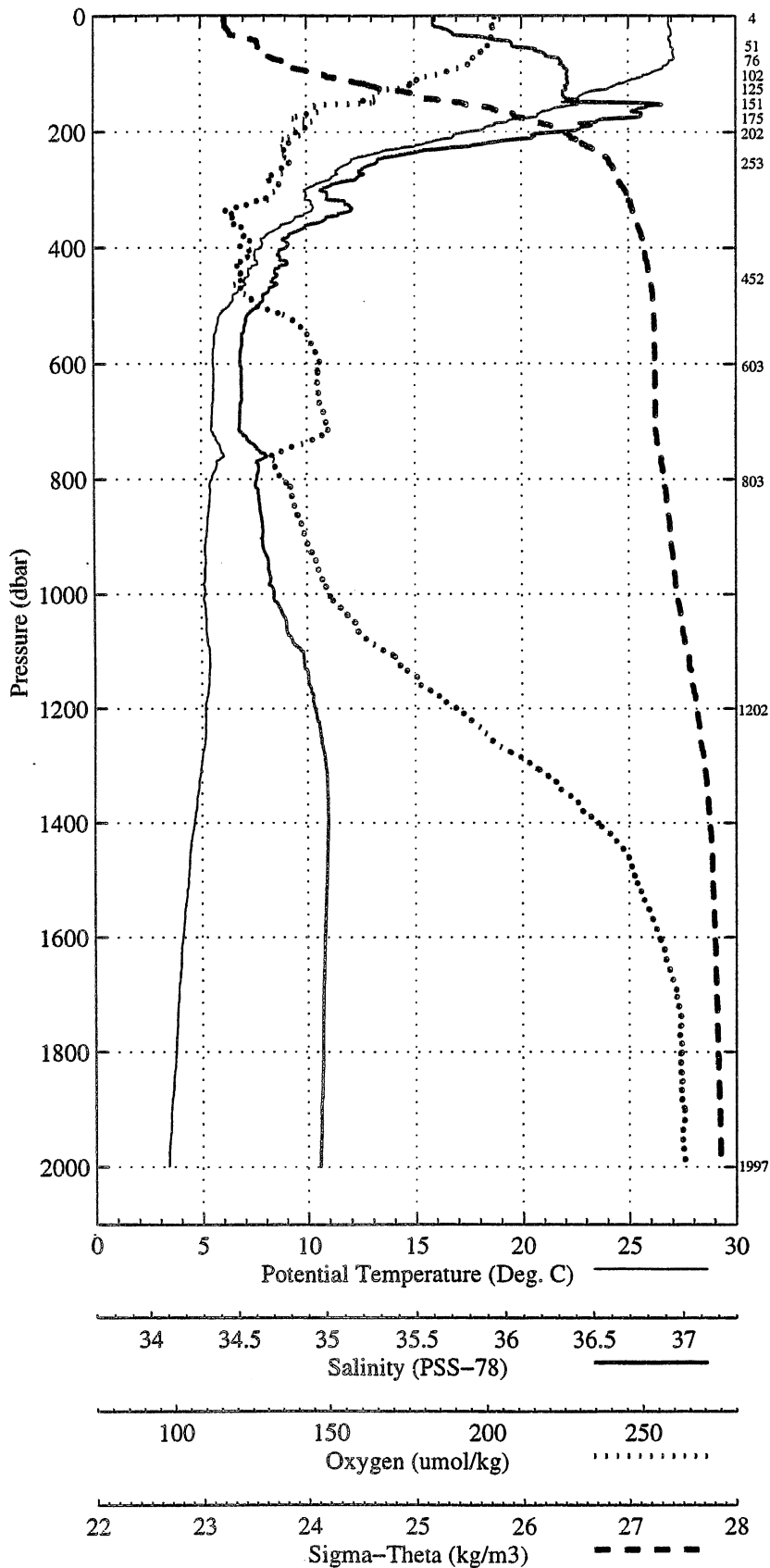
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1998	24	3.390	3.232	34.968	265.9
1202	1	5.163	5.059	34.950	195.2
804	2	5.401	5.333	34.608	136.0
604	3	5.526	5.475	34.517	150.8
452	4	7.228	7.184	34.723	121.5
254	5	11.976	11.943	35.288	138.5
202	6	17.298	17.264	36.249*	140.7
176	12	19.942	19.909	36.630	139.8
151	13	22.258	22.228	36.820*	149.9
125	14	23.358	23.332	36.335	169.9
102	15	25.557	25.534	36.355	183.6
76	16	26.834	26.817	36.313	196.0
51	17	26.988	26.976	36.087*	201.3
4	18	26.858	26.858	35.557	203.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 27 (99027)

Latitude 9.334 N Longitude 58.416 W

14-Feb-1999 09:17 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 28 (99028)
Latitude 9.166N Longitude 58.667W
14-Feb-1999 12:30Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.908	26.907	34.840	201.4	0.005	22.629
10	26.910	26.908	34.838	201.9	0.052	22.628
20	26.914	26.909	34.847	202.2	0.104	22.635
30	26.976	26.969	36.071	201.8	0.150	23.539
40	27.031	27.022	36.205	201.4	0.194	23.624
50	27.035	27.024	36.257	201.0	0.236	23.663
60	26.849	26.835	36.255	199.8	0.278	23.723
70	26.727	26.711	36.324	198.4	0.320	23.815
80	26.159	26.141	36.328	190.6	0.360	23.999
90	25.153	25.133	36.323	182.7	0.398	24.309
100	23.681	23.660	36.344	171.7	0.433	24.768
110	23.440	23.417	36.905	157.3	0.462	25.266
120	22.381	22.357	36.752	149.2	0.489	25.456
130	22.024	21.998	36.922	148.4	0.514	25.688
140	21.012	20.985	36.755	144.1	0.537	25.844
150	19.586	19.558	36.596	147.7	0.557	26.105
160	18.572	18.544	36.460	139.9	0.576	26.262
170	17.022	16.994	36.181	135.2	0.593	26.430
180	16.130	16.101	36.054	133.5	0.609	26.543
190	15.582	15.552	35.967	130.9	0.624	26.602
200	14.996	14.966	35.863	127.7	0.639	26.653
250	11.444	11.412	35.266	126.6	0.704	26.913
300	10.781	10.744	35.238	115.3	0.761	27.014
350	9.454	9.415	35.030	113.7	0.815	27.081
400	8.089	8.048	34.805	119.5	0.867	27.120
450	7.234	7.190	34.698	121.3	0.917	27.160
500	6.883	6.836	34.680	124.5	0.965	27.196
550	6.435	6.384	34.644	125.6	1.012	27.229
600	6.150	6.096	34.629	127.9	1.057	27.254
650	5.962	5.904	34.614	129.3	1.102	27.267
700	5.668	5.607	34.603	132.6	1.147	27.296
750	5.437	5.373	34.606	134.3	1.190	27.327
800	5.281	5.214	34.618	138.7	1.231	27.356
900	5.180	5.104	34.688	145.8	1.310	27.425
1000	5.221	5.136	34.808	157.8	1.383	27.518
1500	4.160	4.038	34.998	253.6	1.663	27.793

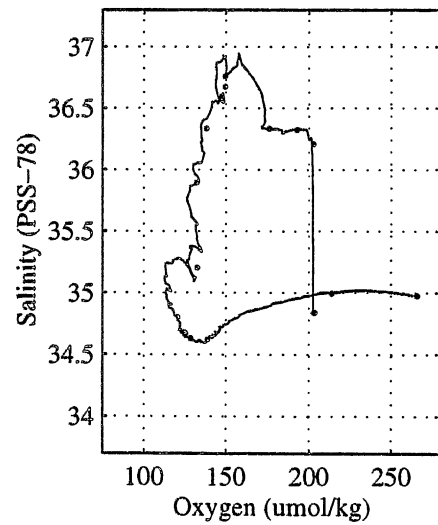
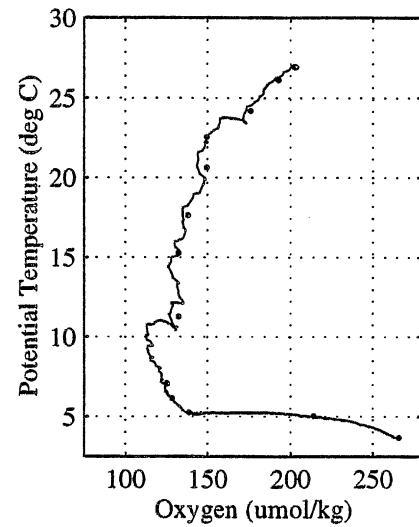
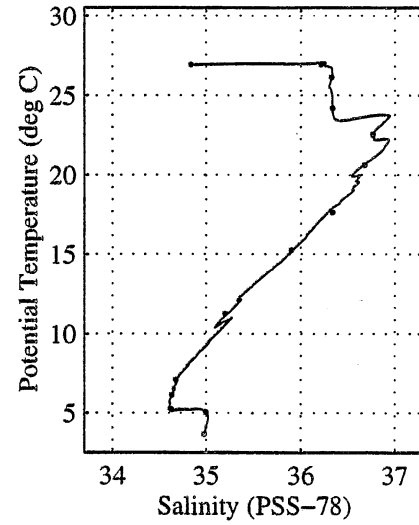
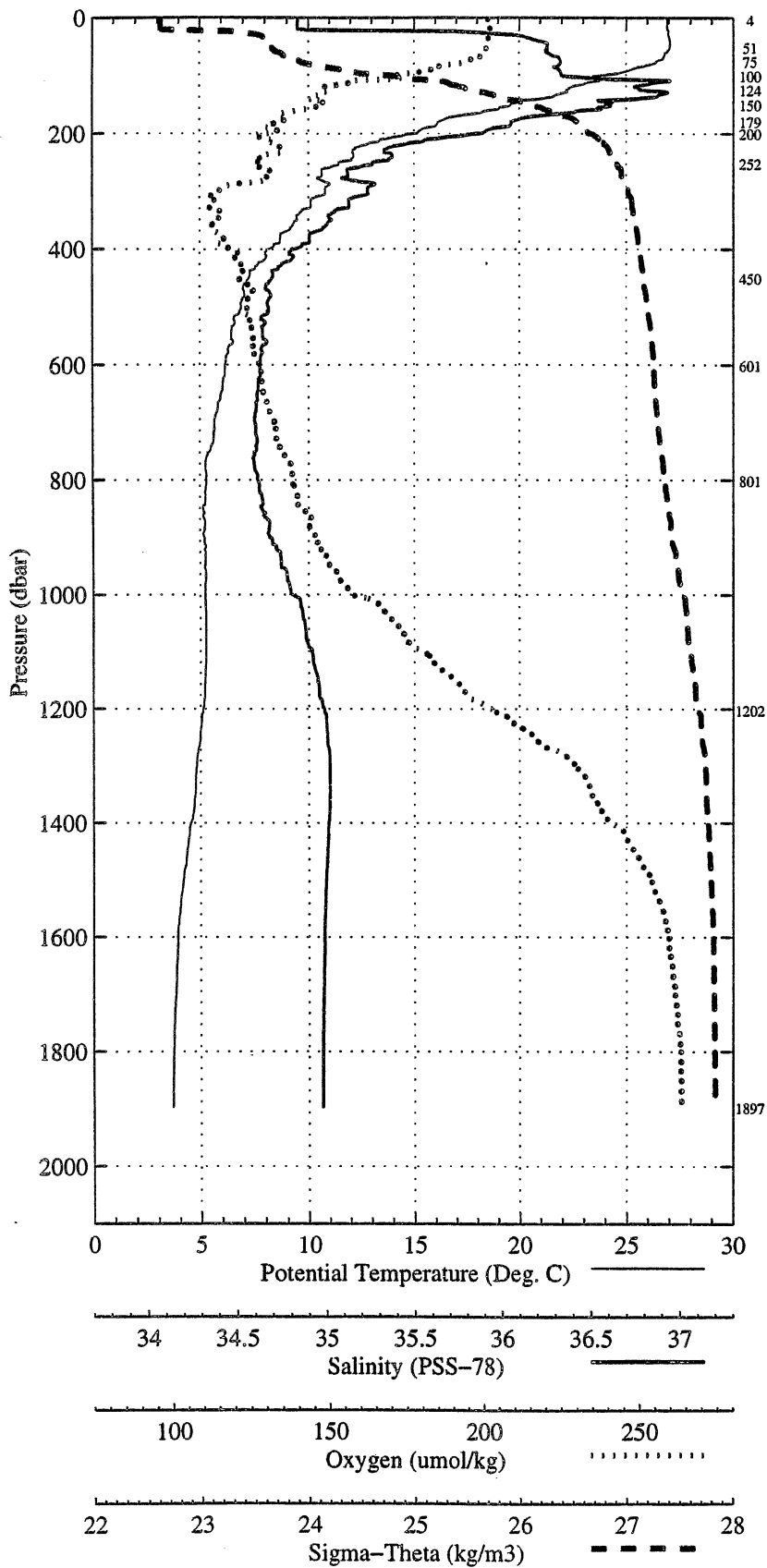
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1898	24	3.667	3.514	34.976	265.9
1203	1	5.042	4.939	34.995	213.8
801	2	5.253	5.186	34.623	138.6
601	3	6.140	6.086	34.630	128.4
451	4	7.098	7.055	34.673	125.1
252	5	11.261	11.230	35.203	132.4
200	6	15.273	15.242	35.895*	132.0
180	12	17.644	17.613	36.336*	138.1
151	13	20.637	20.609	36.675*	149.4
125	14	22.541	22.515	36.760	149.4
101	15	24.186	24.164	36.334	176.3
76	16	26.127	26.110	36.325	192.8
51	17	26.936	26.924	36.210	202.4
4	18	26.927	26.927	34.838	203.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 28 (99028)

Latitude 9.166 N Longitude 58.667 W

14-Feb-1999 12:30 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 29 (99029)
Latitude 8.996N Longitude 58.838W
14-Feb-1999 15:25Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	26.623	26.623	34.849	200.7	0.005	22.726
10	26.545	26.542	34.873	201.1	0.051	22.770
20	26.486	26.481	34.897	201.2	0.102	22.808
30	26.448	26.441	34.948	200.5	0.152	22.860
40	27.032	27.023	35.832	197.4	0.200	23.343
50	27.219	27.207	36.300	197.1	0.243	23.636
60	26.822	26.808	36.292	189.6	0.285	23.759
70	26.095	26.079	36.326	186.8	0.326	24.016
80	23.991	23.974	36.403	174.6	0.361	24.718
90	23.246	23.227	36.810	158.5	0.391	25.248
100	21.961	21.941	36.850	149.0	0.417	25.648
110	20.796	20.774	36.671	145.9	0.440	25.836
120	20.021	19.999	36.594	152.2	0.461	25.986
130	19.884	19.859	36.676	144.8	0.481	26.086
140	18.853	18.828	36.537	139.2	0.500	26.248
150	17.771	17.745	36.320	122.1	0.517	26.354
160	16.624	16.598	36.178	122.6	0.534	26.522
170	16.045	16.018	36.104	124.6	0.549	26.601
180	15.145	15.117	35.946	122.4	0.563	26.682
190	14.460	14.432	35.817	126.0	0.577	26.733
200	14.013	13.984	35.737	125.2	0.591	26.767
250	11.986	11.953	35.411	115.0	0.653	26.924
300	9.640	9.605	34.992	123.3	0.710	27.019
350	8.866	8.828	34.907	118.5	0.764	27.079
400	8.168	8.126	34.819	119.0	0.816	27.119
450	7.508	7.464	34.741	120.5	0.865	27.156
500	6.995	6.947	34.688	123.0	0.914	27.187
550	6.743	6.691	34.689	123.7	0.961	27.223
600	6.225	6.171	34.635	126.0	1.007	27.249
650	5.792	5.736	34.604	131.0	1.052	27.280
700	5.875	5.813	34.655	131.2	1.095	27.312
750	5.686	5.621	34.652	132.6	1.138	27.333
800	5.368	5.300	34.665	137.4	1.179	27.383
900	5.252	5.175	34.739	148.5	1.256	27.457
1000	5.303	5.216	34.841	164.5	1.327	27.534

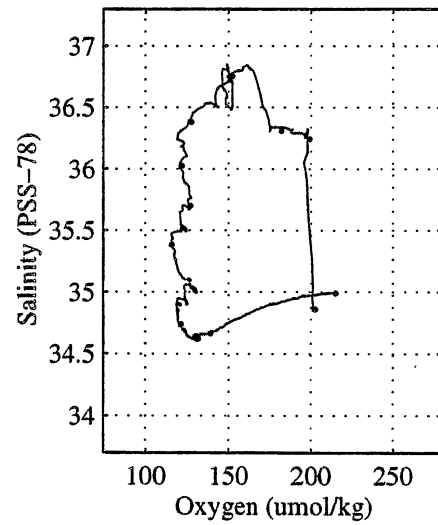
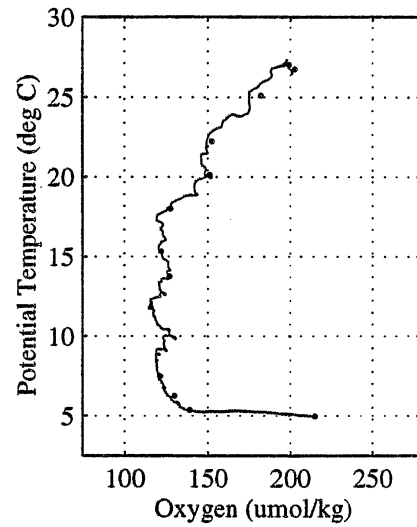
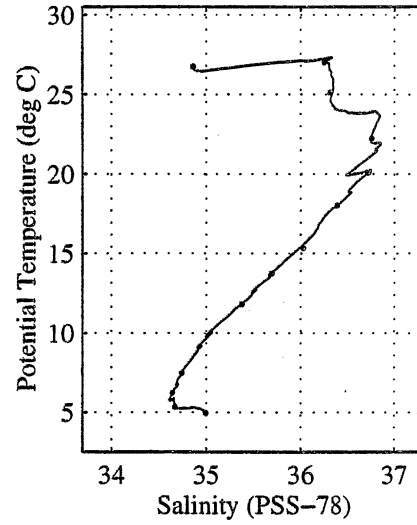
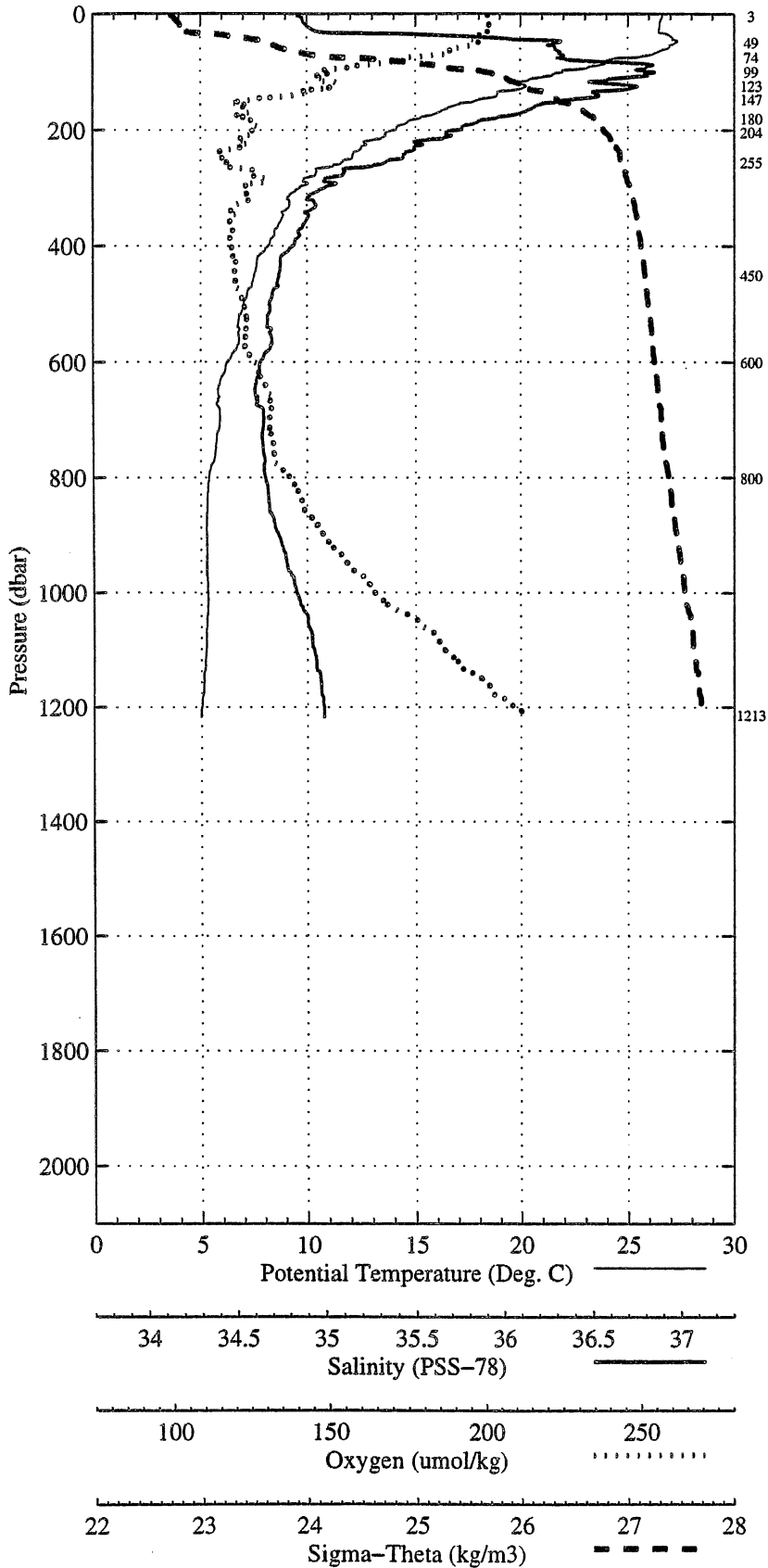
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
1213	24	4.973	4.869	34.991	214.4
801	1	5.365	5.297	34.663	139.1
600	2	6.245	6.190	34.639	129.7
450	3	7.476	7.431	34.737	121.1
256	4	11.825	11.792	35.387	115.5
204	5	13.757	13.728	35.701*	126.8
180	6	15.336	15.308	36.025*	121.6
147	12	18.016	17.991	36.380*	127.3
124	13	20.095	20.071	36.721	150.7
100	14	22.238	22.218	36.753	152.4
75	15	25.111	25.095	36.309	182.4
50	16	27.010	26.998	36.244	199.0
4	17	26.756	26.755	34.862	202.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 29 (99029)

Latitude 8.996 N Longitude 58.838 W

14-Feb-1999 15:25 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 30 (99030)
Latitude 8.919N Longitude 59.002W
14-Feb-1999 17:38Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.738	26.737	35.119	210.1	0.005	22.893
10	26.605	26.603	35.184	202.3	0.049	22.986
20	26.528	26.523	35.266	201.4	0.098	23.073
30	26.482	26.476	35.275	200.4	0.145	23.096
40	26.526	26.516	35.437	198.5	0.193	23.206
50	26.326	26.314	36.113	181.1	0.237	23.780
60	25.110	25.097	36.472	172.3	0.276	24.431
70	23.573	23.558	36.759	156.4	0.308	25.111
80	22.026	22.010	36.871	150.4	0.334	25.643
90	20.072	20.055	36.478	151.5	0.356	25.881
100	19.735	19.717	36.512	147.6	0.377	25.997
110	19.266	19.246	36.532	142.7	0.397	26.136
120	18.180	18.159	36.325	141.5	0.415	26.254
130	17.044	17.022	36.185	138.9	0.432	26.425
140	16.381	16.358	36.085	138.2	0.449	26.505
150	15.445	15.421	35.928	137.3	0.464	26.599
160	15.336	15.312	35.909	138.2	0.479	26.610
170	15.161	15.135	35.876	137.1	0.493	26.624
180	13.999	13.973	35.642	136.7	0.508	26.695
190	13.406	13.379	35.537	139.0	0.521	26.738
200	13.030	13.002	35.468	138.9	0.535	26.761

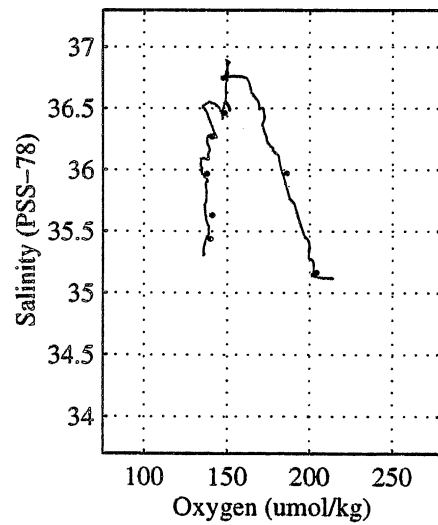
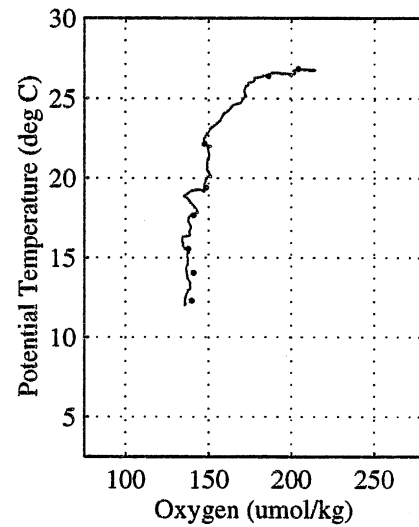
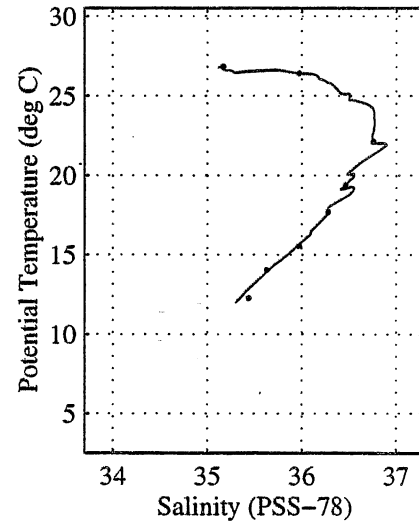
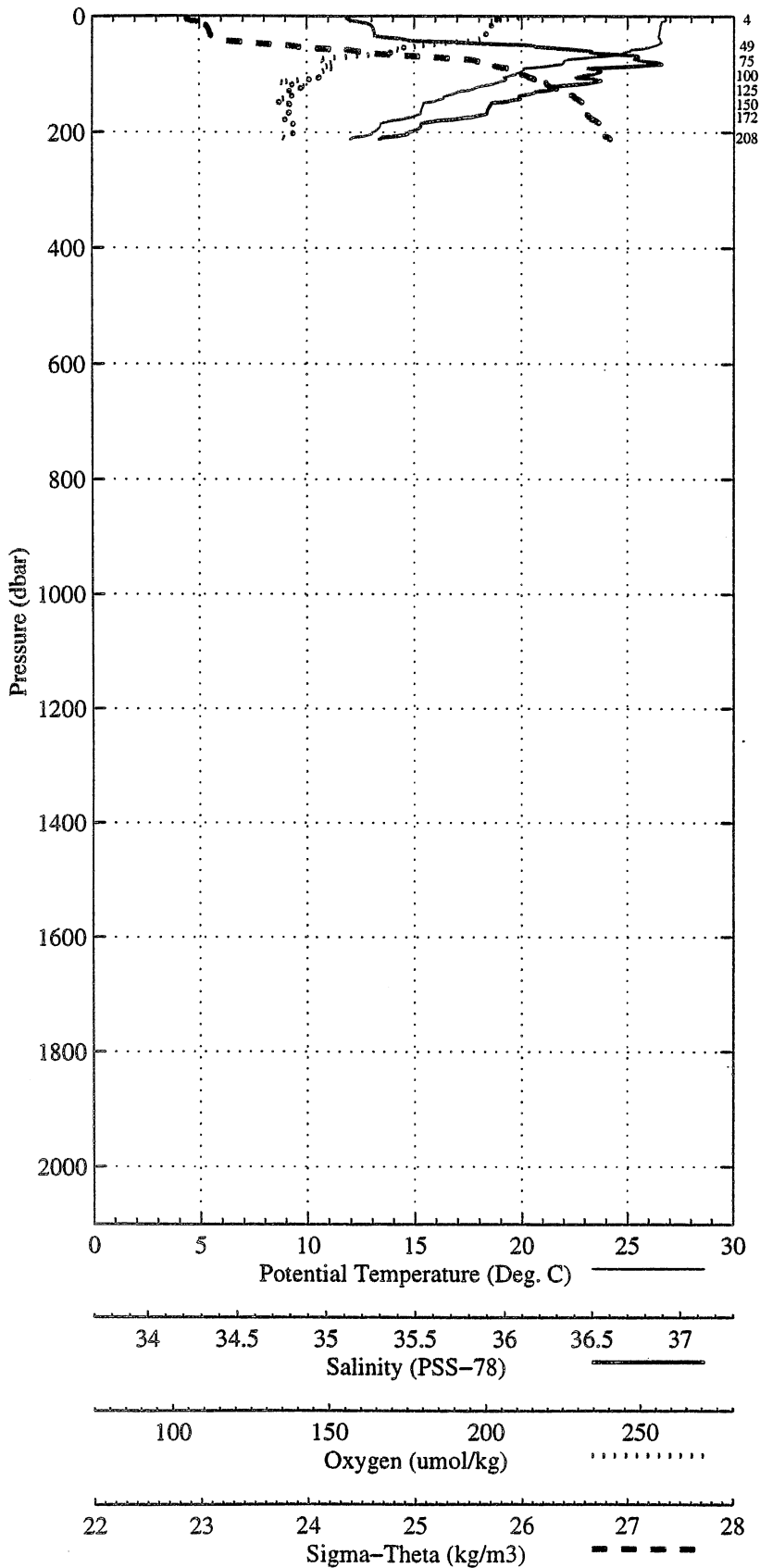
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
209	24	12.287	12.259	35.438*	139.9
173	1	14.049	14.024	35.631*	141.0
151	2	15.563	15.540	35.968*	137.9
126	3	17.688	17.667	36.271*	140.9
101	4	19.407	19.389	36.462*	148.2
75	5	22.148	22.133	36.750	147.5
50	6	26.402	26.391	35.970	186.1
4	12	26.836	26.835	35.164*	204.1

NBC-2 R/V SEWARD JOHNSON

CTD Station 30 (99030)

Latitude 8.919 N Longitude 59.002 W

14-Feb-1999 17:38 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 31 (99031)
Latitude 8.140N Longitude 54.036W
16-Feb-1999 05:58Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS μ 78	Oxygen μ mol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	μ 27.271	27.270	33.964	206.1	0.006	21.854
10	27.279	27.277	33.964	206.0	0.060	21.852
20	27.239	27.234	35.361	204.8	0.116	22.919
30	27.170	27.163	35.980	203.6	0.162	23.408
40	27.162	27.153	36.092	203.7	0.206	23.496
50	27.170	27.158	36.193	202.6	0.250	23.571
60	27.134	27.120	36.192	202.3	0.293	23.584
70	27.035	27.019	36.310	199.1	0.336	23.706
80	25.420	25.402	36.299	181.8	0.376	24.207
90	22.265	22.247	36.252	148.9	0.409	25.106
100	20.957	20.938	36.285	159.8	0.436	25.496
110	19.983	19.963	36.320	151.1	0.459	25.785
120	19.256	19.235	36.314	145.7	0.481	25.972
130	18.663	18.640	36.223	148.6	0.502	26.056
140	17.550	17.526	36.101	145.0	0.521	26.239
150	16.422	16.398	35.982	143.5	0.538	26.418
160	15.922	15.897	35.915	143.2	0.555	26.482
170	14.276	14.251	35.619	145.1	0.570	26.619
180	14.405	14.379	35.710	144.3	0.584	26.662
190	14.334	14.306	35.736	138.5	0.599	26.698
200	13.963	13.934	35.681	132.5	0.612	26.734
250	11.722	11.690	35.286	130.3	0.678	26.877
300	10.032	9.997	35.029	126.8	0.737	26.981
350	8.771	8.734	34.840	131.2	0.793	27.041
400	8.014	7.973	34.749	131.2	0.846	27.087
450	6.980	6.937	34.668	127.3	0.896	27.172
500	6.792	6.746	34.663	127.9	0.944	27.195
550	6.516	6.466	34.641	129.3	0.991	27.215
600	6.260	6.206	34.626	129.6	1.038	27.238
650	6.073	6.015	34.641	127.6	1.083	27.274
700	5.850	5.788	34.669	130.3	1.126	27.326
750	5.254	5.191	34.610	138.6	1.168	27.351
800	5.125	5.059	34.629	143.3	1.208	27.382
900	4.998	4.923	34.701	153.4	1.285	27.456
1000	5.023	4.939	34.833	171.6	1.354	27.560

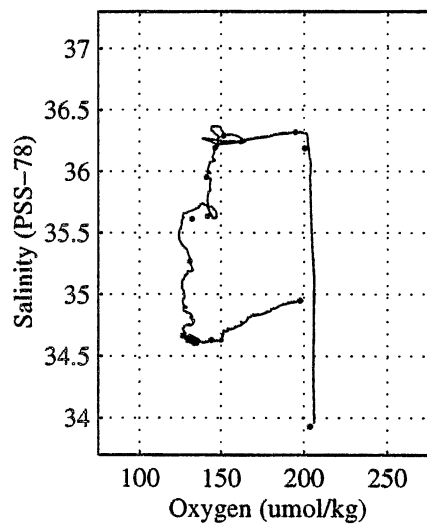
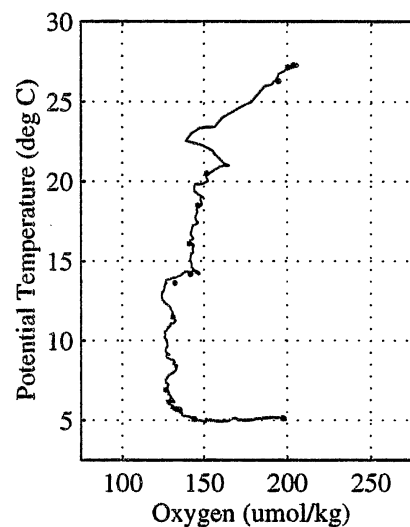
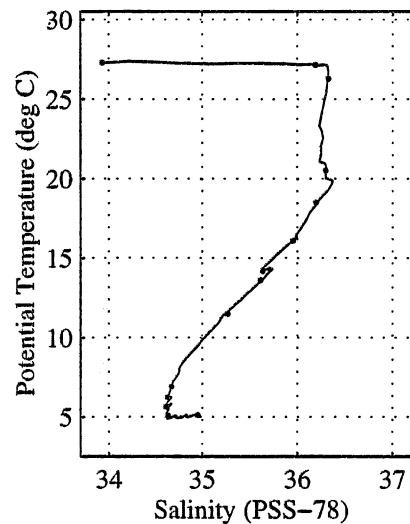
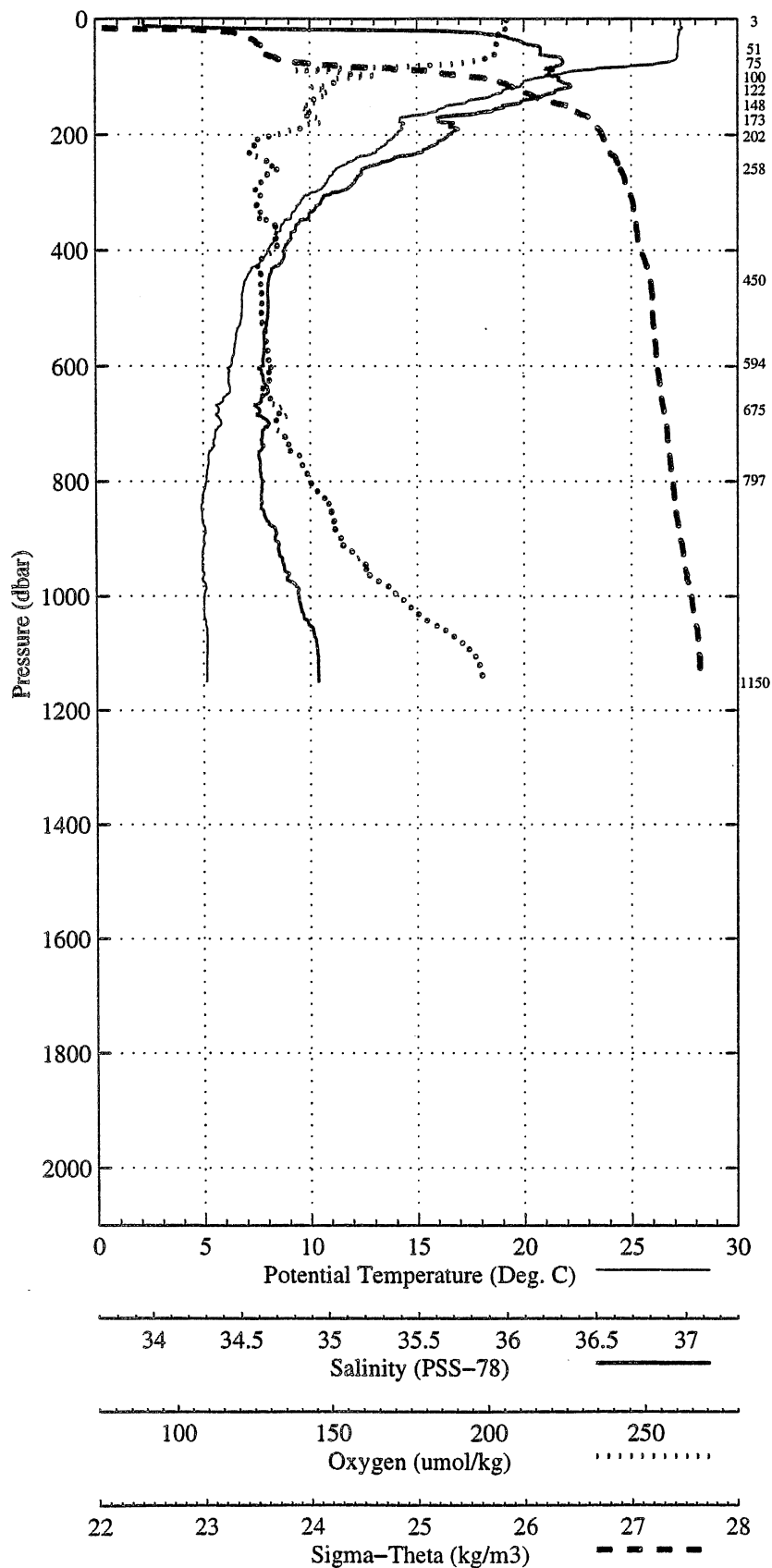
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μ mol/kg
1150	24	5.130	5.031	34.950	197.3
798	1	5.085	5.019	34.630	144.1
675	2	μ 5.660	5.602	34.605	135.0
595	3	6.234	6.180	34.626	129.8
451	4	6.907	6.864	34.666	126.4
258	5	11.498	11.465	35.269*	130.7
202	6	13.622	13.593	35.612	132.1
174	12	14.179	14.153	35.636*	141.7
148	13	16.096	16.072	35.952	141.1
122	14	18.500	18.478	36.191	146.4
100	15	20.507	20.488	36.291	151.6
75	16	26.278	26.261	36.319*	194.6
51	17	27.151	27.140	36.186	200.3
4	18	27.290	27.289	33.930*	203.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 31 (99031)

Latitude 8.140 N Longitude 54.036 W

16-Feb-1999 05:58 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 32 (99032)
Latitude 9.744N Longitude 53.779W
16-Feb-1999 13:15Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.273	27.272	36.105	202.4	0.004	23.465
10	27.267	27.264	36.106	203.5	0.044	23.469
20	27.263	27.258	36.110	203.7	0.088	23.475
30	27.248	27.241	36.134	204.0	0.132	23.499
40	27.202	27.193	36.175	204.4	0.176	23.546
50	27.132	27.120	36.229	204.6	0.219	23.611
60	27.046	27.032	36.294	205.0	0.262	23.689
70	26.840	26.824	36.334	207.2	0.304	23.787
80	26.792	26.774	36.348	206.5	0.345	23.814
90	26.662	26.642	36.349	202.7	0.386	23.858
100	25.947	25.925	36.306	190.0	0.426	24.052
110	24.295	24.272	36.233	162.8	0.464	24.503
120	21.559	21.535	36.079	161.8	0.495	25.176
130	19.317	19.294	36.421	157.0	0.519	26.039
140	19.272	19.246	36.676	152.6	0.538	26.247
150	18.474	18.448	36.565	147.5	0.556	26.367
160	17.429	17.402	36.407	147.8	0.572	26.506
170	16.410	16.382	36.198	138.3	0.587	26.588
180	15.417	15.389	35.994	130.4	0.602	26.659
190	14.259	14.231	35.764	131.1	0.616	26.735
200	13.883	13.854	35.697	127.1	0.630	26.764
250	11.510	11.478	35.281	94.4	0.692	26.913
300	10.371	10.336	35.111	95.1	0.751	26.987
350	9.587	9.547	35.004	104.7	0.807	27.039
400	8.931	8.887	34.919	111.0	0.861	27.080
450	7.729	7.684	34.734	120.9	0.913	27.119
500	7.565	7.516	34.729	120.4	0.964	27.140
550	7.137	7.084	34.703	122.6	1.013	27.181
600	6.875	6.818	34.718	120.4	1.061	27.230
650	6.395	6.336	34.684	123.2	1.107	27.268
700	6.216	6.152	34.694	123.0	1.152	27.300
750	5.755	5.690	34.661	131.0	1.195	27.332
800	5.480	5.411	34.658	136.3	1.236	27.364
900	5.332	5.256	34.739	144.2	1.315	27.448
1000	5.282	5.196	34.837	159.7	1.387	27.533
1500	4.349	4.225	35.005	254.0	1.671	27.779
2000	3.526	3.365	34.972	267.4	1.900	27.844

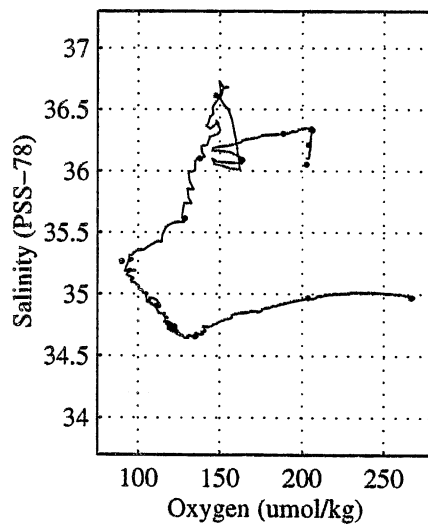
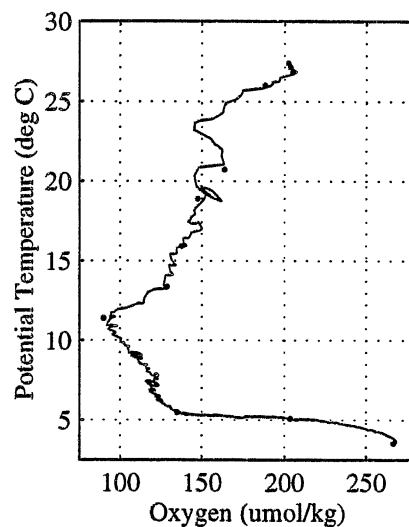
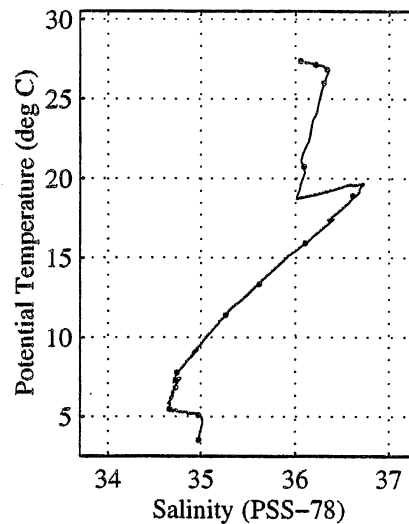
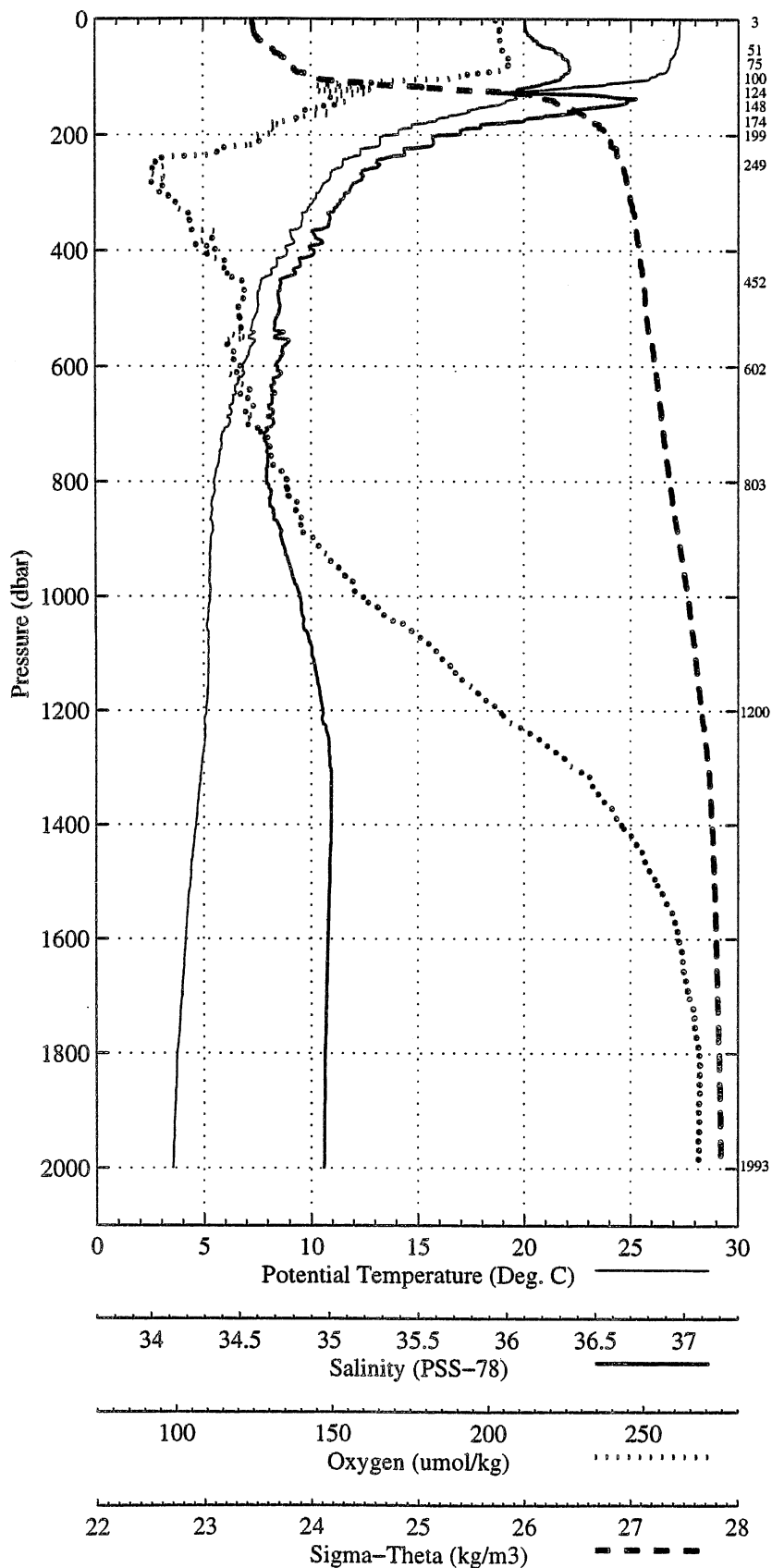
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1994	24	3.531	3.371	34.974	266.4
1200	1	5.099	4.996	34.969	203.2
803	2	5.475	5.406	34.657	134.7
603	3	6.839	6.781	34.726	119.0
452	4	7.779	7.734	34.736	121.9
250	5	11.395	11.363	35.264	89.7
200	6	13.363	13.335	35.614*	128.4
175	12	15.930	15.902	36.101*	137.4
149	13	18.902	18.876	36.611	147.5
125	14	20.735	20.712	36.089*	163.8
101	15	25.996	25.973	36.303	188.1
76	16	26.829	26.811	36.339	204.7
51	17	27.134	27.122	36.216	203.4
4	18	27.377	27.376	36.055	202.2

NBC-2 R/V SEWARD JOHNSON

CTD Station 32 (99032)

Latitude 9.744 N Longitude 53.779 W

16-Feb-1999 13:15 Z

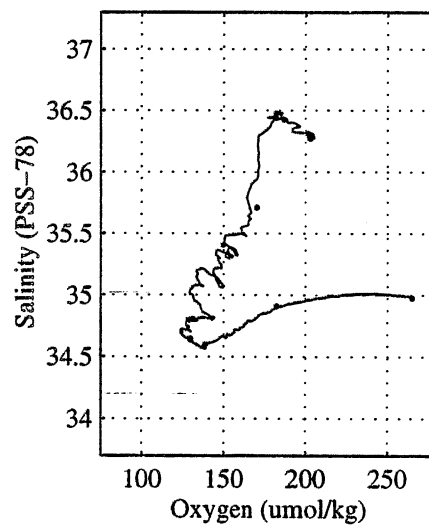
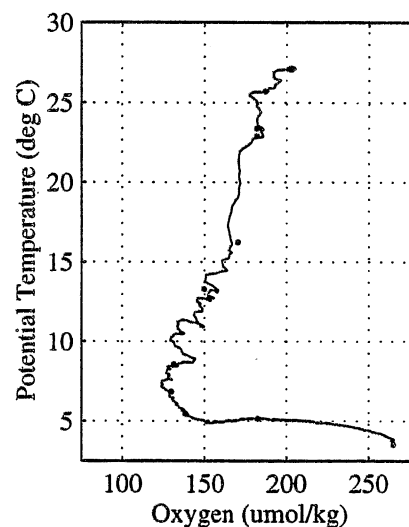
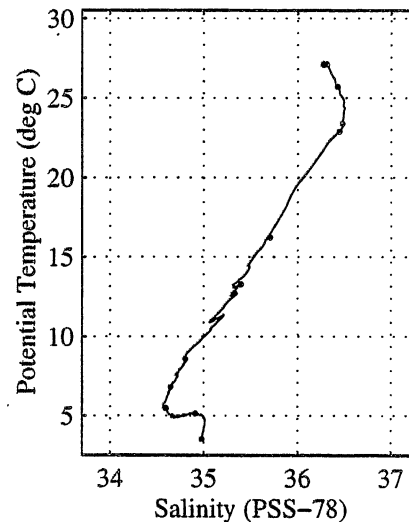
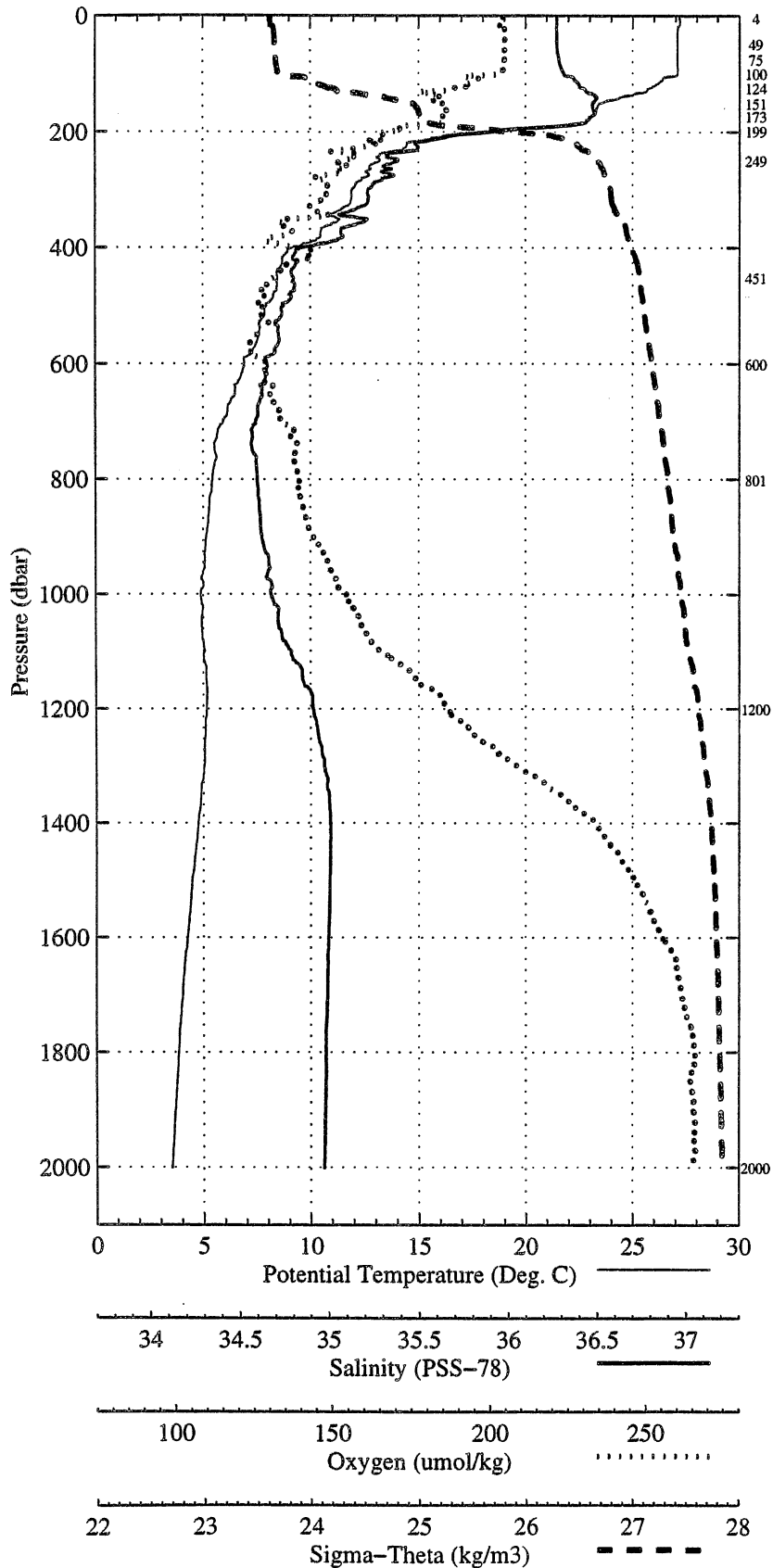


NBC-2 R/V SEWARD JOHNSON
CTD Station 33 (99033)
Latitude 8.999N Longitude 52.752W
16-Feb-1999 22:24Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.174	27.174	36.276	204.3	0.004	23.626
10	27.191	27.188	36.276	204.4	0.043	23.621
20	27.093	27.088	36.273	204.7	0.085	23.652
30	27.081	27.074	36.274	204.8	0.128	23.658
40	27.075	27.066	36.274	205.0	0.170	23.662
50	27.073	27.061	36.275	204.8	0.213	23.665
60	27.074	27.060	36.278	204.8	0.255	23.668
70	27.078	27.062	36.283	204.9	0.298	23.672
80	27.080	27.062	36.288	204.7	0.340	23.677
90	27.083	27.063	36.299	204.5	0.383	23.685
100	27.081	27.058	36.313	203.8	0.425	23.698
110	26.372	26.347	36.371	195.7	0.466	23.968
120	25.996	25.969	36.399	192.9	0.505	24.109
130	25.640	25.612	36.437	179.7	0.543	24.250
140	24.369	24.339	36.498	184.7	0.578	24.685
150	23.500	23.469	36.475	183.6	0.610	24.927
160	23.294	23.261	36.476	185.9	0.641	24.989
170	23.240	23.205	36.479	184.5	0.671	25.008
180	22.872	22.835	36.443	185.9	0.701	25.088
190	21.939	21.901	36.296	171.9	0.730	25.243
200	18.505	18.470	35.897	167.3	0.755	25.852
250	13.206	13.171	35.385	153.4	0.837	26.665
300	11.915	11.876	35.219	148.5	0.905	26.791
350	11.330	11.286	35.203	138.5	0.971	26.890
400	9.133	9.088	34.849	138.9	1.031	26.994
450	8.453	8.405	34.801	132.0	1.086	27.063
500	7.944	7.893	34.749	127.8	1.140	27.100
550	7.562	7.507	34.718	126.2	1.192	27.133
600	6.889	6.832	34.655	128.5	1.242	27.178
650	6.451	6.391	34.624	131.1	1.291	27.213
700	5.891	5.830	34.590	134.4	1.337	27.258
750	5.518	5.454	34.572	138.5	1.382	27.290
800	5.416	5.348	34.600	139.3	1.425	27.325
900	5.120	5.044	34.625	144.1	1.508	27.381
1000	4.871	4.788	34.676	154.3	1.585	27.452
1500	4.448	4.323	35.007	246.8	1.890	27.770
2000	3.518	3.357	34.975	265.8	2.123	27.847

Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.518	3.358	34.976	265.3
1200	1	5.152	5.049	34.909	182.6
802	2	5.457	5.388	34.597	138.4
601	3	6.829	6.772	34.645	129.8
452	4	8.570	8.522	34.804	131.3
250	5	13.290	13.255	35.409	149.6
199	6	16.239	16.207	35.712*	170.8
174	12	22.894	22.858	36.442	182.2
151	13	23.382	23.351	36.475	182.2
125	14	25.696	25.669	36.425	187.2
100	15	27.087	27.064	36.310	201.4
75	16	27.081	27.064	36.281	202.3
50	17	27.077	27.065	36.272	202.8
5	18	27.149	27.148	36.274	202.6

NBC-2 R/V SEWARD JOHNSON
 CTD Station 33 (99033)
 Latitude 8.999 N Longitude 52.752 W
 16-Feb-1999 22:24 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 34 (99034)
Latitude 8.411N Longitude 51.912W
17-Feb-1999 05:45Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.077	27.077	36.325	204.8	0.004	23.694
10	27.143	27.140	36.326	203.3	0.042	23.674
20	27.145	27.141	36.327	203.5	0.084	23.676
30	27.129	27.122	36.322	203.6	0.127	23.679
40	27.101	27.092	36.313	203.7	0.169	23.683
50	27.096	27.084	36.311	203.9	0.211	23.684
60	27.094	27.080	36.311	203.6	0.253	23.686
70	27.096	27.080	36.313	203.6	0.296	23.689
80	27.104	27.085	36.319	203.4	0.338	23.692
90	27.105	27.084	36.319	203.3	0.381	23.694
100	27.102	27.079	36.321	202.9	0.423	23.697
110	26.930	26.905	36.350	192.9	0.465	23.776
120	25.210	25.184	36.316	179.5	0.505	24.290
130	23.310	23.283	36.277	174.9	0.538	24.829
140	19.584	19.559	36.048	162.7	0.566	25.686
150	18.664	18.638	36.336	138.2	0.587	26.143
160	16.656	16.630	36.060	138.5	0.604	26.423
170	14.340	14.315	35.637	138.3	0.620	26.619
180	13.648	13.622	35.520	144.7	0.635	26.674
190	13.125	13.098	35.415	146.7	0.649	26.701
200	12.550	12.523	35.297	146.6	0.662	26.724
250	11.169	11.137	35.079	149.1	0.728	26.818
300	9.739	9.704	34.877	151.3	0.791	26.912
350	9.206	9.167	34.850	145.7	0.849	26.980
400	7.903	7.863	34.683	152.5	0.905	27.051
450	7.990	7.944	34.747	134.7	0.958	27.091
500	7.327	7.278	34.674	125.4	1.010	27.130
550	6.904	6.852	34.643	126.3	1.060	27.165
600	6.458	6.403	34.591	136.6	1.109	27.185
650	6.448	6.388	34.633	130.7	1.157	27.220
700	6.090	6.028	34.605	132.6	1.204	27.245
750	5.603	5.538	34.572	138.3	1.250	27.280
800	5.364	5.297	34.574	143.9	1.293	27.311
900	5.035	4.960	34.609	144.8	1.377	27.378
1000	4.802	4.720	34.626	152.2	1.456	27.420
1500	4.781	4.652	35.005	231.1	1.793	27.734
2000	3.698	3.535	34.982	265.3	2.041	27.835

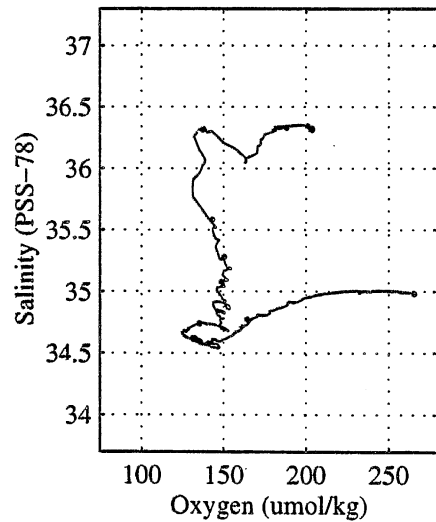
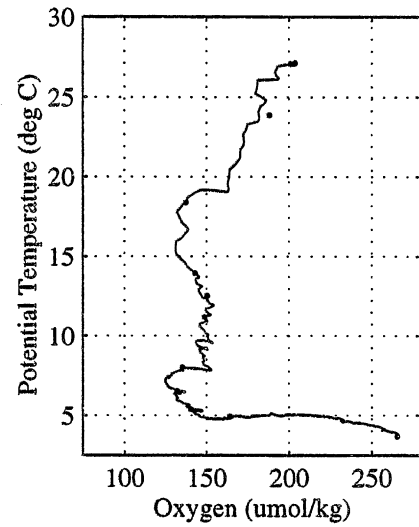
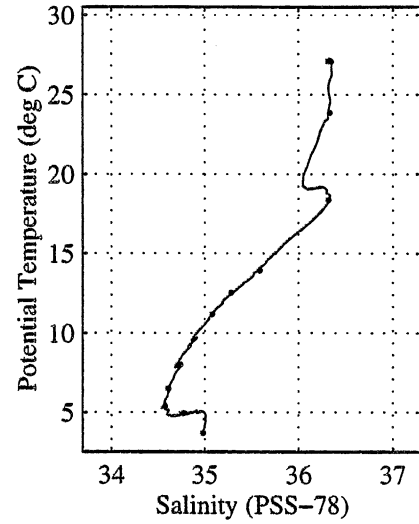
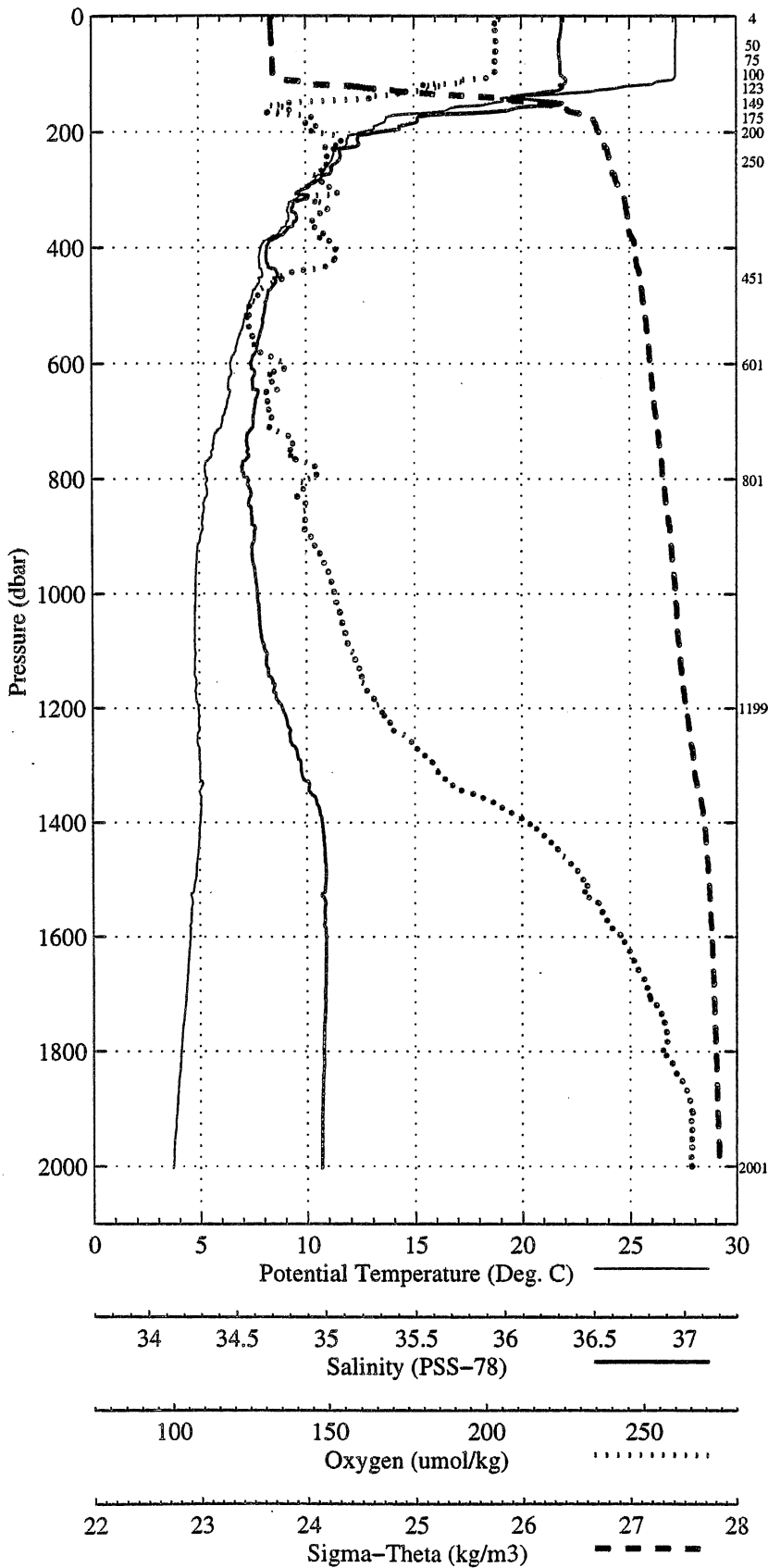
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.692	3.529	34.981	265.5
1199	1	4.937	4.836	34.772	164.4
802	2	5.386	5.318	34.576	140.6
601	3	6.516	6.460	34.611	132.1
452	4	8.015	7.969	34.740	135.3
250	5	11.181	11.150	35.078	148.7
200	6	12.530	12.503	35.281*	150.3
175	12	13.938	13.912	35.583	143.1
150	13	18.387	18.361	36.317	137.4
124	14	23.866	23.840	36.331*	188.0
101	15	27.073	27.050	36.345*	200.9
75	16	27.108	27.091	36.316	203.0
50	17	27.105	27.094	36.312	203.5
4	18	27.136	27.135	36.325	203.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 34 (99034)

Latitude 8.411 N Longitude 51.912 W

17-Feb-1999 05:45 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 35 (99035)
Latitude 7.800N Longitude 51.149W
17-Feb-1999 12:20Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m/kg	SigTh kg/m ³
1	26.334	26.334	36.269	205.9	0.004	23.888
10	26.327	26.324	36.269	207.4	0.040	23.891
20	26.327	26.322	36.270	207.4	0.080	23.894
30	26.317	26.311	36.276	207.4	0.120	23.903
40	26.259	26.250	36.307	207.0	0.160	23.946
50	26.248	26.237	36.321	206.9	0.200	23.962
60	26.226	26.213	36.321	207.0	0.239	23.970
70	26.302	26.286	36.376	206.6	0.279	23.989
80	26.066	26.048	36.356	201.8	0.318	24.049
90	23.267	23.248	36.611	163.4	0.352	25.090
100	21.116	21.097	36.564	142.8	0.378	25.666
110	20.687	20.666	36.851	154.6	0.400	26.002
120	19.193	19.171	36.645	149.4	0.419	26.241
130	18.298	18.275	36.522	147.4	0.436	26.377
140	16.475	16.453	36.188	131.3	0.452	26.563
150	15.589	15.566	36.031	125.0	0.467	26.646
160	14.837	14.813	35.891	116.1	0.481	26.706
170	13.320	13.297	35.596	107.5	0.494	26.800
180	12.809	12.784	35.505	103.6	0.507	26.833
190	12.313	12.288	35.419	99.2	0.520	26.865
200	11.702	11.676	35.304	92.2	0.532	26.892
250	10.549	10.518	35.136	91.5	0.590	26.974
300	9.860	9.825	35.054	104.9	0.646	27.030
350	7.874	7.839	34.726	132.1	0.699	27.088
400	7.317	7.278	34.670	134.4	0.750	27.125
450	6.704	6.663	34.606	137.2	0.799	27.161
500	6.537	6.491	34.610	133.9	0.848	27.187
550	6.315	6.265	34.612	130.4	0.895	27.219
600	6.111	6.057	34.606	131.0	0.941	27.241
650	5.849	5.792	34.599	131.6	0.986	27.269
700	5.493	5.434	34.570	136.9	1.030	27.290
750	5.367	5.303	34.586	139.4	1.073	27.319
800	5.228	5.161	34.590	140.8	1.115	27.340
900	4.963	4.889	34.610	149.3	1.197	27.388
1000	4.987	4.903	34.691	153.7	1.274	27.451
1500	4.781	4.652	34.962	216.3	1.604	27.699
2000	3.837	3.672	34.986	261.6	1.865	27.825

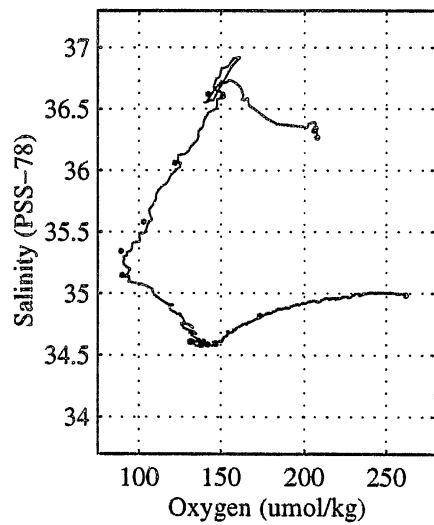
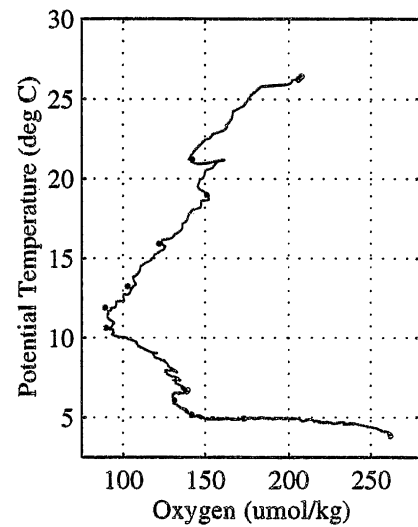
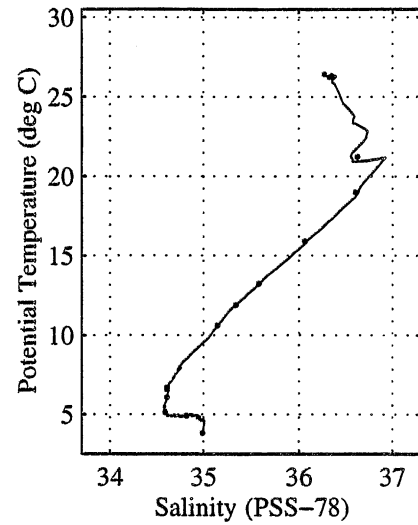
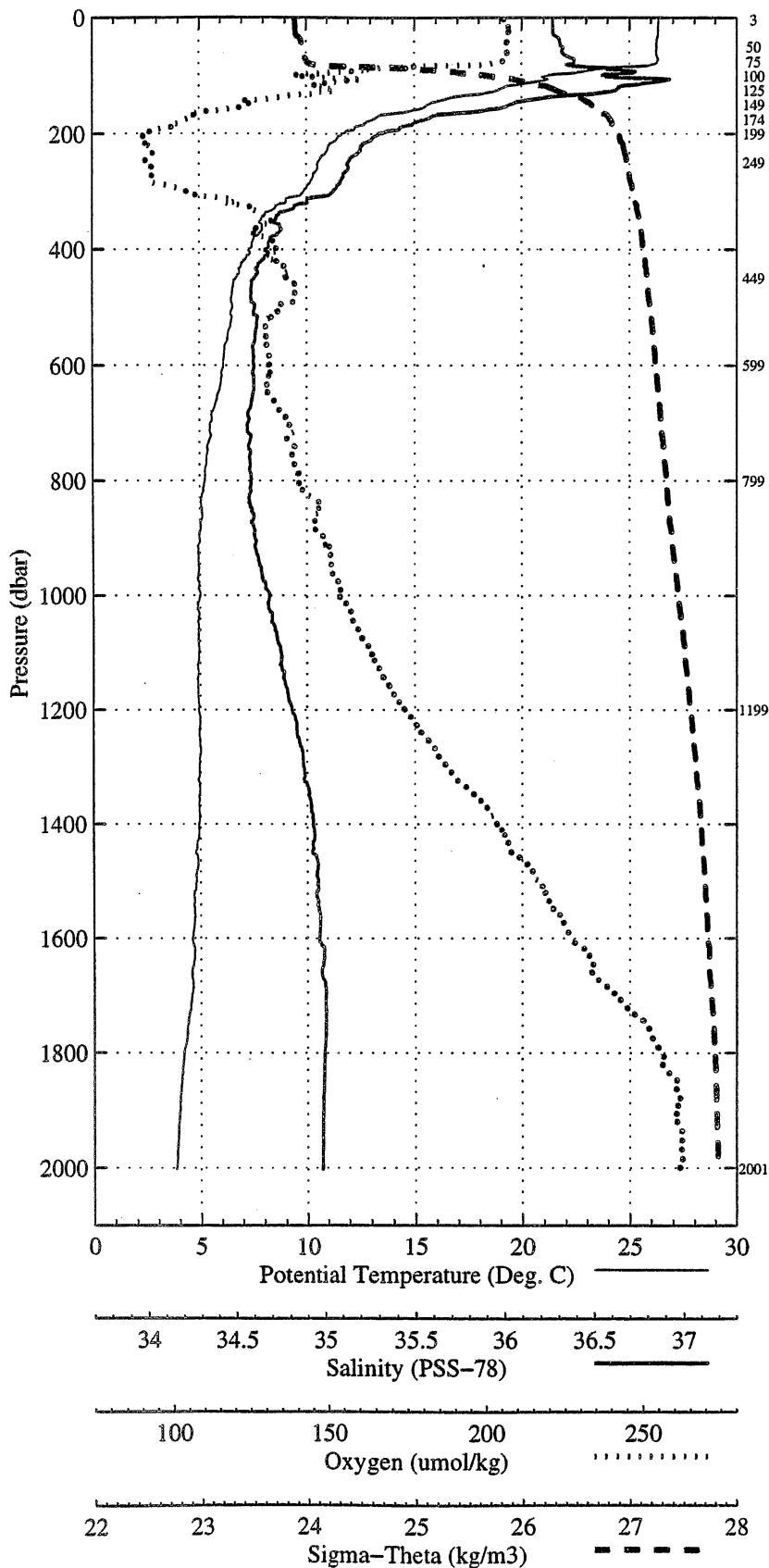
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.833	3.668	34.986	261.9
1199	1	4.935	4.833	34.818	173.3
800	2	5.166	5.099	34.585	141.7
599	3	6.075	6.022	34.605	131.3
449	4	6.700	6.659	34.607	139.3
250	5	10.628	10.597	35.148	89.9
200	6	11.905	11.879	35.343	89.2
175	12	13.250	13.226	35.581	102.7
150	13	15.900	15.876	36.059*	121.9
125	14	18.997	18.975	36.602*	150.8
101	15	21.221	21.201	36.619*	142.0
75	16	26.228	26.211	36.324	205.7
50	17	26.321	26.309	36.344	206.5
3	18	26.414	26.414	36.267	207.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 35 (99035)

Latitude 7.800 N Longitude 51.149 W

17-Feb-1999 12:20 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 36 (99036)
Latitude 7.001N Longitude 50.001W
17-Feb-1999 21:16Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.738	26.738	35.888	207.6	0.004	23.473
10	26.737	26.735	35.888	208.6	0.044	23.474
20	26.662	26.658	35.888	208.6	0.088	23.499
30	26.616	26.609	35.889	209.0	0.132	23.517
40	26.650	26.641	35.932	208.7	0.176	23.540
50	26.638	26.627	36.072	207.7	0.219	23.651
60	26.464	26.451	36.248	204.8	0.260	23.840
70	26.264	26.248	36.380	198.4	0.300	24.003
80	25.632	25.614	36.416	187.1	0.339	24.230
90	24.393	24.374	36.479	177.1	0.374	24.657
100	23.241	23.220	36.495	174.6	0.406	25.012
110	22.734	22.712	36.774	156.0	0.433	25.372
120	20.621	20.599	36.577	136.9	0.458	25.812
130	19.930	19.905	36.655	139.2	0.479	26.058
140	18.755	18.730	36.503	144.0	0.498	26.247
150	17.988	17.962	36.448	152.7	0.515	26.399
160	16.938	16.912	36.257	150.0	0.532	26.508
170	15.450	15.423	35.947	139.5	0.547	26.615
180	14.617	14.590	35.791	134.6	0.561	26.678
190	14.008	13.980	35.701	134.2	0.575	26.740
200	13.029	13.001	35.508	134.7	0.588	26.793
250	10.557	10.527	35.091	132.1	0.649	26.937
300	9.136	9.103	34.888	129.7	0.706	27.020
350	8.269	8.232	34.781	129.8	0.760	27.073
400	7.455	7.416	34.689	133.3	0.811	27.121
450	7.081	7.038	34.676	128.3	0.861	27.164
500	6.680	6.633	34.659	125.9	0.909	27.207
550	6.032	5.984	34.593	131.3	0.955	27.240
600	5.588	5.537	34.566	137.2	0.999	27.274
650	5.449	5.394	34.588	136.2	1.042	27.309
700	5.228	5.170	34.588	139.9	1.084	27.336
750	5.086	5.024	34.600	144.1	1.125	27.362
800	5.101	5.034	34.632	144.9	1.164	27.387
900	4.936	4.861	34.679	153.2	1.241	27.445
1000	4.957	4.873	34.772	164.3	1.312	27.518
1500	4.655	4.527	34.995	234.3	1.607	27.739
2000	3.661	3.499	34.979	262.7	1.851	27.836

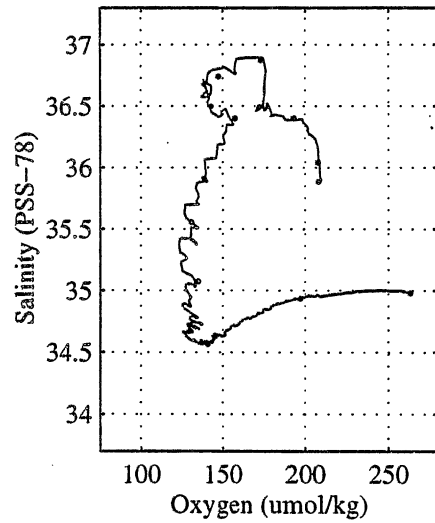
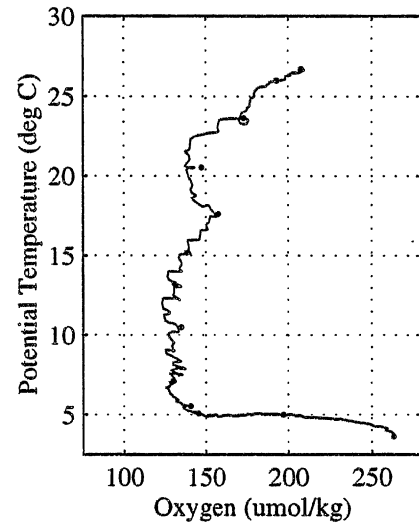
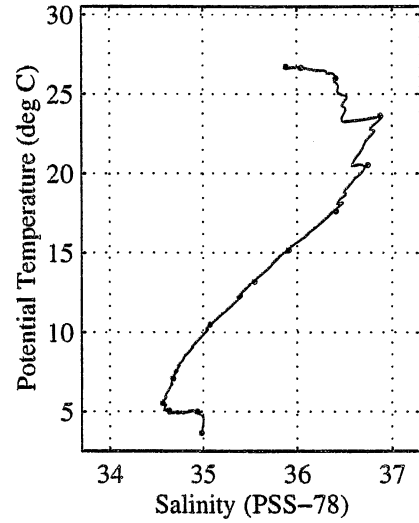
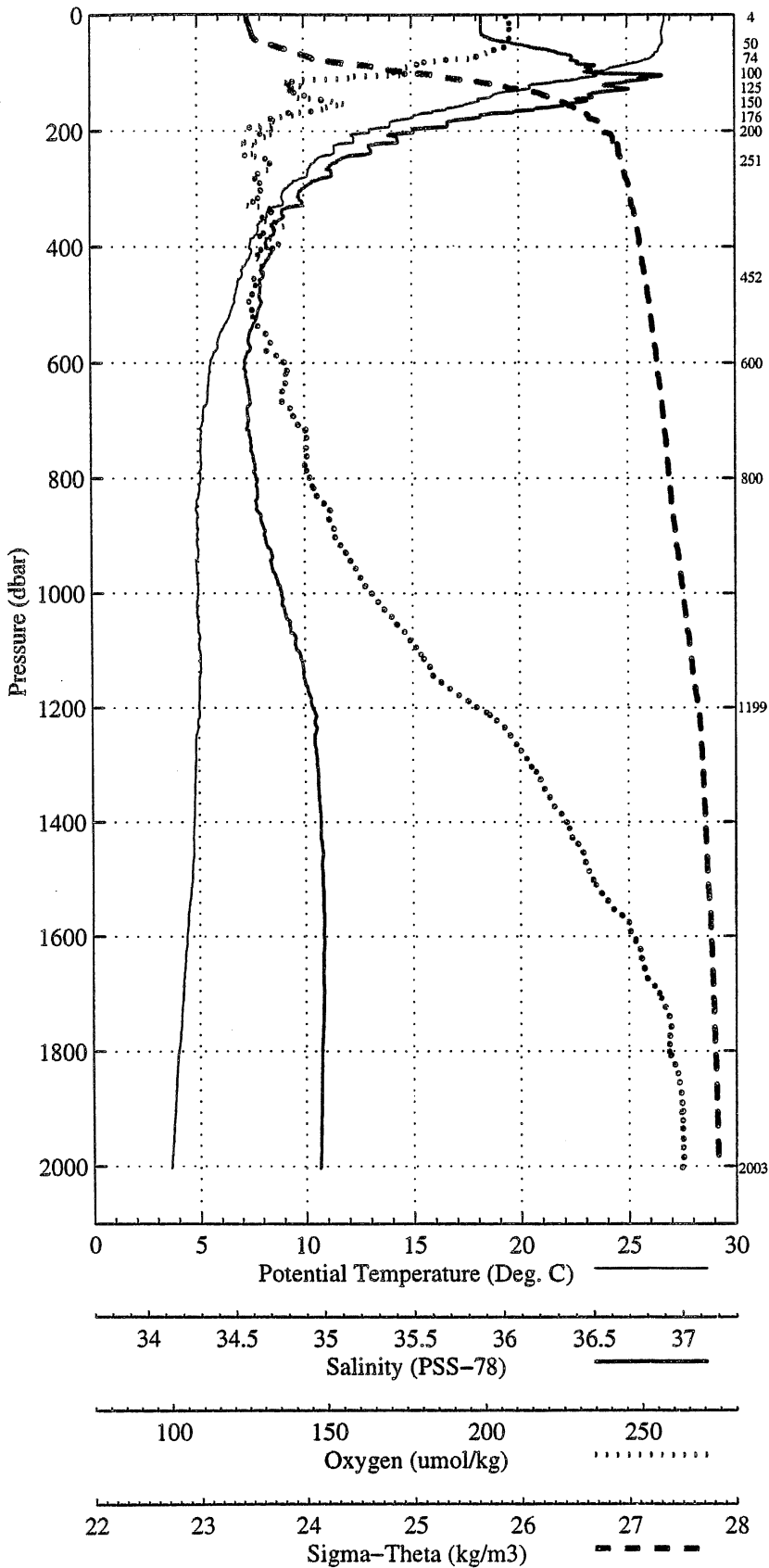
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2003	24	3.648	3.485	34.981	263.2
1199	1	4.995	4.893	34.934	196.9
800	2	5.061	4.995	34.634	145.1
601	3	5.526	5.475	34.566	140.5
453	4	7.091	7.048	34.675	129.7
251	5	10.479	10.449	35.074	134.7
201	6	13.196	13.168	35.554	130.5
176	12	15.170	15.143	35.910	138.2
151	13	17.615	17.589	36.402*	157.7
126	14	20.533	20.509	36.740*	147.1
101	15	23.640	23.618	36.873	173.5
75	16	25.985	25.968	36.402*	193.2
50	17	26.650	26.638	36.042	207.4
4	18	26.705	26.704	35.887	207.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 36 (99036)

Latitude 7.001 N Longitude 50.001 W

17-Feb-1999 21:16 Z



NBC-2 R/V SEWARD JOHNSON
 CTD Station 37 (99037)
 Latitude 7.115N Longitude 52.834W
 23-Feb-1999 14:50Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.314	27.313	36.340	202.2	0.004	23.629
10	27.268	27.266	36.355	203.2	0.042	23.656
20	27.255	27.250	36.357	203.5	0.085	23.663
30	27.259	27.252	36.360	203.5	0.127	23.666
40	27.272	27.263	36.370	203.4	0.170	23.671
50	27.250	27.239	36.365	203.5	0.212	23.676
60	27.237	27.223	36.361	203.6	0.254	23.678
70	27.226	27.210	36.357	203.6	0.297	23.680
80	27.204	27.185	36.349	204.0	0.339	23.683
90	27.157	27.136	36.338	202.3	0.382	23.691
100	26.456	26.433	36.404	191.0	0.423	23.966
110	24.542	24.518	36.403	177.8	0.460	24.558
120	21.314	21.290	36.286	177.6	0.490	25.402
130	19.892	19.868	36.184	182.7	0.514	25.708
140	19.351	19.326	36.105	171.0	0.537	25.789
150	17.237	17.211	35.811	161.8	0.558	26.093
160	14.497	14.473	35.417	170.3	0.576	26.415
170	12.918	12.895	35.228	167.7	0.592	26.596
180	12.317	12.293	35.172	164.8	0.607	26.671
190	12.050	12.025	35.152	163.2	0.621	26.708
200	11.554	11.528	35.085	160.6	0.634	26.749
250	10.582	10.552	34.975	154.9	0.699	26.843
300	10.436	10.400	35.018	143.8	0.761	26.903
350	9.558	9.518	34.905	142.7	0.821	26.966
400	8.601	8.559	34.795	139.3	0.878	27.035
450	7.880	7.834	34.747	127.8	0.931	27.107

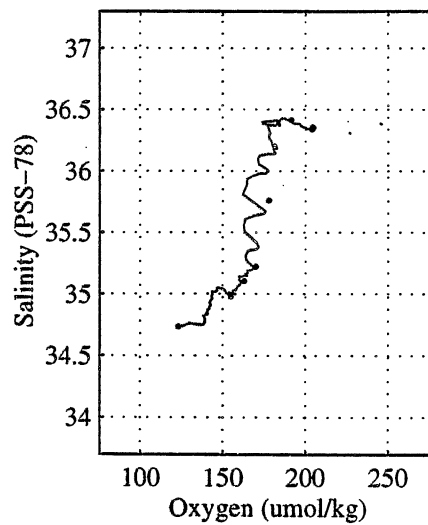
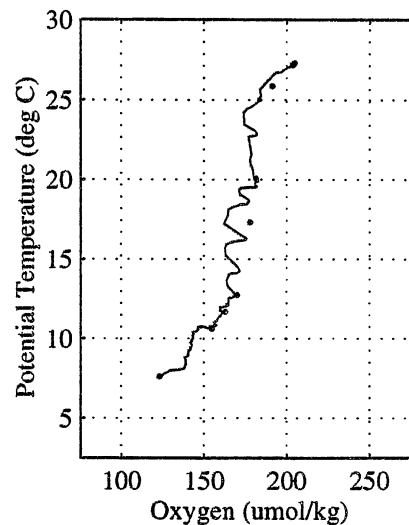
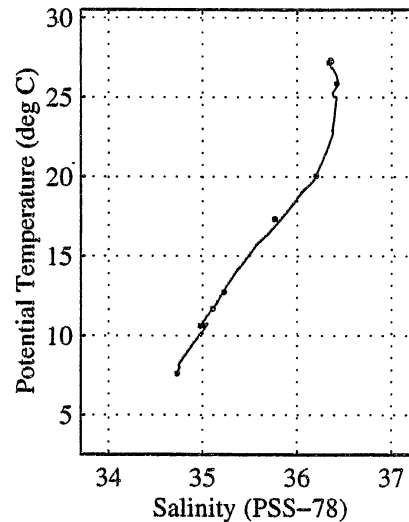
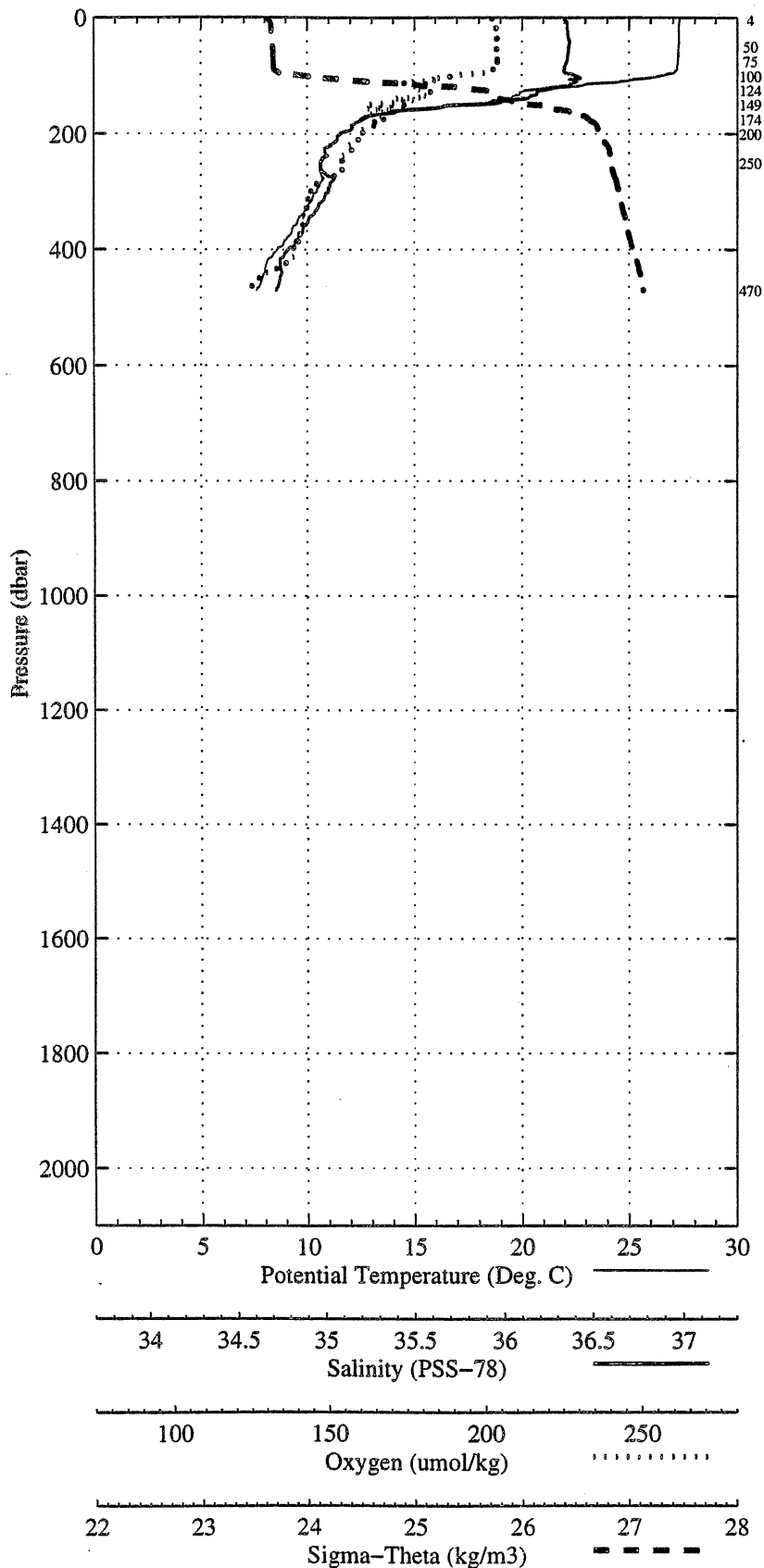
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
470	24	7.616	7.569	34.732	123.4
251	1	10.607	10.576	34.978	154.7
200	2	11.687	11.661	35.104	162.6
175	3	12.746	12.722	35.222	169.8
150	4	17.332	17.307	35.760*	177.7
125	5	20.078	20.054	36.198	181.2
101	6	25.858	25.835	36.415	191.3
75	12	27.190	27.173	36.339	203.8
50	13	27.254	27.243	36.358	204.3
4	14	27.316	27.315	36.353	204.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 37 (99037)

Latitude 7.115 N Longitude 52.834 W

23-Feb-1999 14:50 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 38 (99038)
Latitude 7.501N Longitude 52.742W
18-Feb-1999 16:28Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.495	27.494	36.346	203.3	0.004	23.575
10	27.250	27.248	36.338	203.6	0.043	23.649
20	27.214	27.210	36.340	203.9	0.085	23.663
30	27.228	27.221	36.358	203.9	0.127	23.674
40	27.214	27.204	36.369	203.9	0.170	23.689
50	27.200	27.188	36.371	204.1	0.212	23.696
60	27.201	27.188	36.372	203.9	0.254	23.698
70	27.197	27.181	36.372	203.6	0.296	23.701
80	27.196	27.177	36.374	203.2	0.339	23.704
90	27.143	27.122	36.375	201.7	0.381	23.723
100	25.875	25.853	36.408	192.3	0.422	24.151
110	24.927	24.903	36.411	183.1	0.458	24.447
120	23.320	23.295	36.373	173.2	0.491	24.898
130	20.884	20.859	36.233	174.2	0.519	25.480
140	19.622	19.597	36.115	177.1	0.543	25.727
150	18.511	18.484	35.994	169.3	0.565	25.920
160	17.472	17.445	35.882	166.9	0.585	26.092
170	16.241	16.214	35.741	162.7	0.604	26.275
180	15.505	15.477	35.668	154.7	0.622	26.388
190	14.149	14.121	35.481	149.9	0.638	26.540
200	12.958	12.931	35.322	147.0	0.652	26.663
250	11.061	11.030	35.026	143.8	0.720	26.797
300	10.457	10.421	34.958	146.4	0.784	26.853
350	10.071	10.030	34.977	142.0	0.846	26.936
400	9.030	8.986	34.825	137.9	0.904	26.991
450	8.529	8.481	34.779	130.8	0.961	27.035
500	7.828	7.778	34.716	126.6	1.015	27.091
550	7.263	7.210	34.666	126.5	1.067	27.134
600	6.848	6.792	34.633	127.7	1.118	27.166
650	6.474	6.414	34.626	129.1	1.166	27.212
700	6.126	6.063	34.632	129.1	1.213	27.262
750	5.598	5.533	34.578	136.2	1.258	27.285
800	5.381	5.313	34.588	136.7	1.301	27.320
900	5.053	4.978	34.709	151.3	1.382	27.456
1000	5.037	4.953	34.847	172.7	1.452	27.569

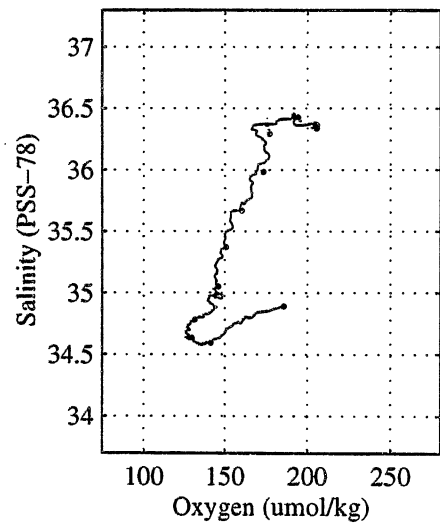
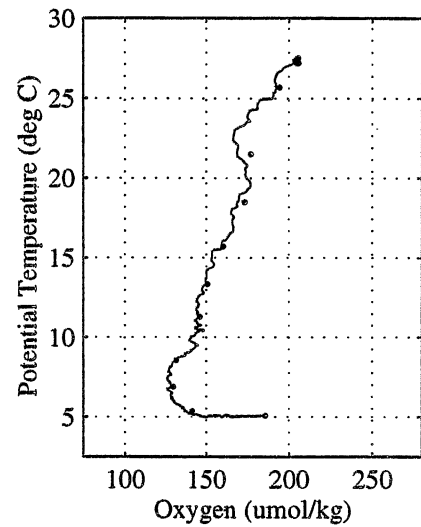
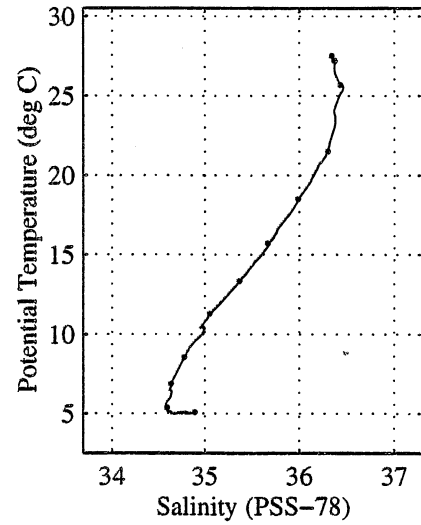
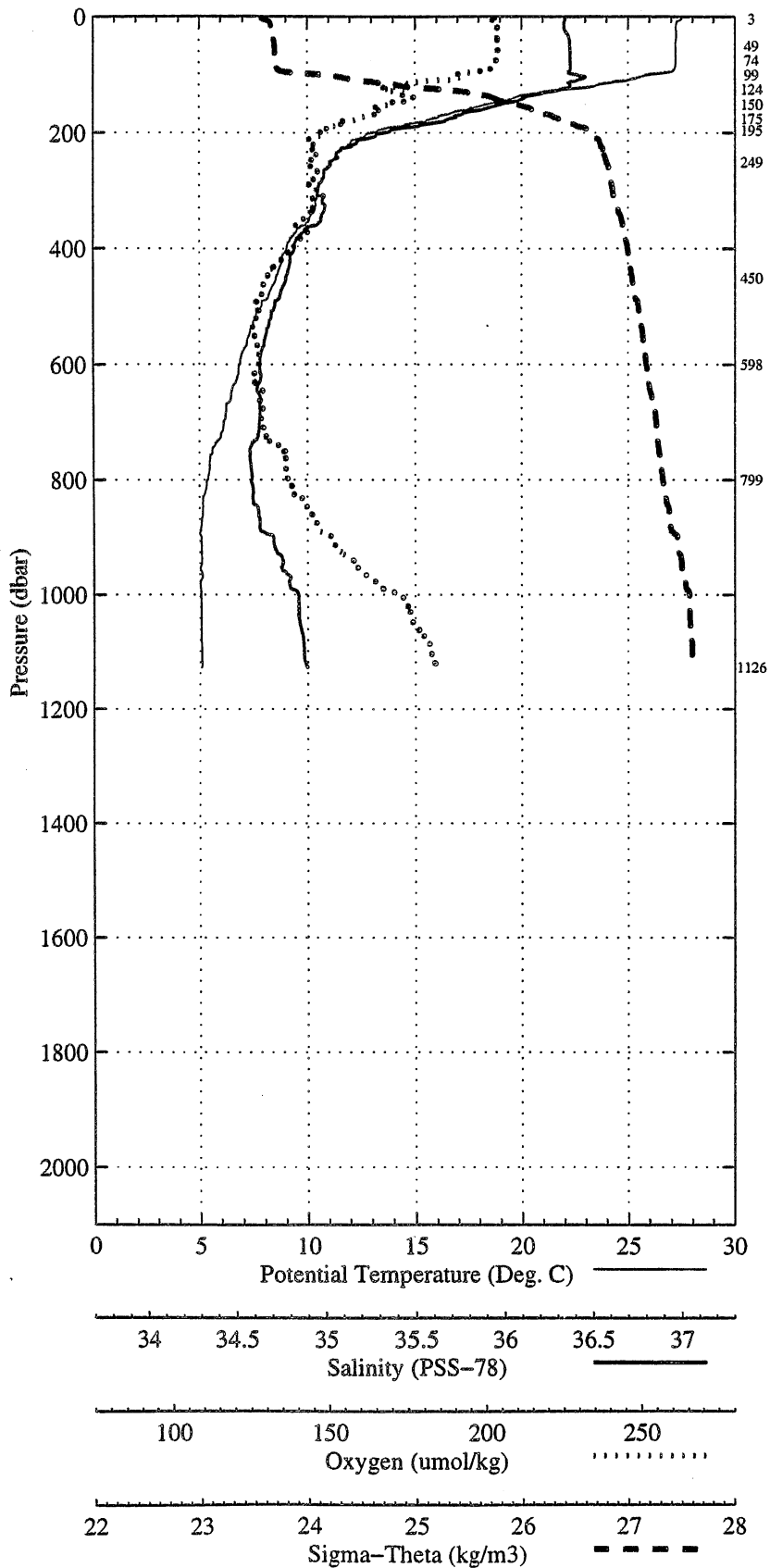
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1126	24	5.078	4.982	34.891	185.9
799	1	5.373	5.306	34.591	141.3
599	2	6.881	6.824	34.634	129.6
450	3	8.557	8.509	34.781	131.5
250	4	11.281	11.250	35.051	146.0
195	5	13.344	13.316	35.371	150.7
175	6	15.716	15.688	35.667*	160.4
150	12	18.496	18.470	35.984*	173.4
124	13	21.501	21.477	36.292	177.2
100	14	25.687	25.665	36.428*	194.1
74	15	27.203	27.186	36.370	204.6
50	16	27.207	27.195	36.366	205.6
3	17	27.511	27.511	36.338	205.4

NBC-2 R/V SEWARD JOHNSON

CTD Station 38 (99038)

Latitude 7.501 N Longitude 52.742 W

18-Feb-1999 16:28 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 39 (99039)
Latitude 7.927N Longitude 52.651W
18-Feb-1999 21:54Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.360	27.360	36.291	202.8	0.004	23.577
10	27.192	27.190	36.289	202.5	0.043	23.631
20	27.136	27.132	36.291	203.6	0.085	23.652
30	27.126	27.119	36.292	203.6	0.128	23.658
40	27.115	27.106	36.291	203.6	0.170	23.662
50	27.112	27.100	36.293	203.6	0.213	23.665
60	27.103	27.089	36.293	203.9	0.255	23.670
70	27.099	27.082	36.296	203.4	0.298	23.675
80	27.110	27.092	36.311	203.4	0.340	23.684
90	27.111	27.090	36.324	202.3	0.383	23.695
100	27.017	26.994	36.358	199.8	0.425	23.752
110	26.363	26.338	36.338	191.8	0.466	23.947
120	24.364	24.339	36.298	183.3	0.503	24.533
130	23.448	23.421	36.272	184.2	0.536	24.785
140	20.710	20.683	36.175	168.5	0.564	25.483
150	17.703	17.677	35.936	160.7	0.586	26.076
160	16.454	16.428	35.793	154.4	0.605	26.265
170	15.514	15.487	35.763	140.2	0.623	26.458
180	14.161	14.134	35.608	143.2	0.637	26.635
190	13.293	13.266	35.454	145.2	0.652	26.697
200	12.992	12.965	35.398	146.1	0.665	26.714
250	11.609	11.577	35.187	146.3	0.731	26.821
300	10.832	10.795	35.076	142.9	0.795	26.879
350	9.871	9.831	34.912	148.3	0.856	26.919
400	9.951	9.904	34.991	133.4	0.916	26.970
450	8.627	8.579	34.810	136.5	0.973	27.044
500	7.894	7.843	34.736	129.2	1.027	27.097
550	7.712	7.657	34.751	120.2	1.079	27.137
600	6.994	6.937	34.689	122.9	1.129	27.190
650	6.636	6.576	34.663	124.8	1.177	27.219
700	6.156	6.093	34.628	128.7	1.224	27.255
750	5.831	5.765	34.617	131.0	1.269	27.288
800	5.580	5.510	34.617	133.4	1.312	27.320
900	5.139	5.063	34.612	142.3	1.396	27.369
1000	5.014	4.930	34.662	150.0	1.476	27.425
1500	4.365	4.241	35.004	250.5	1.762	27.777

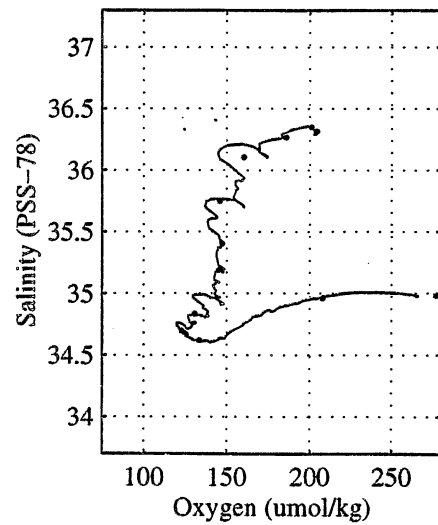
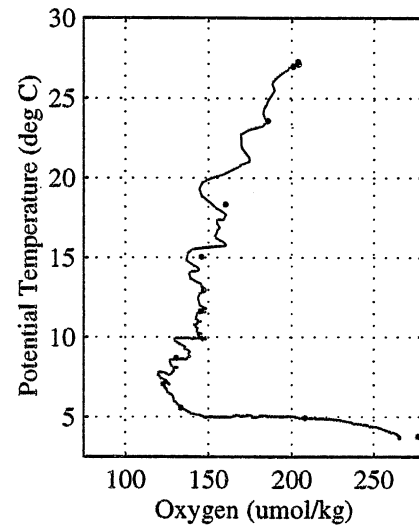
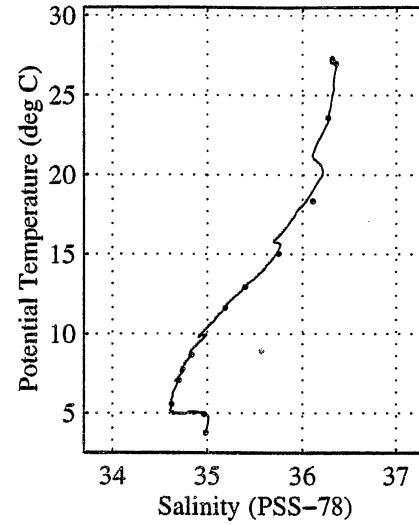
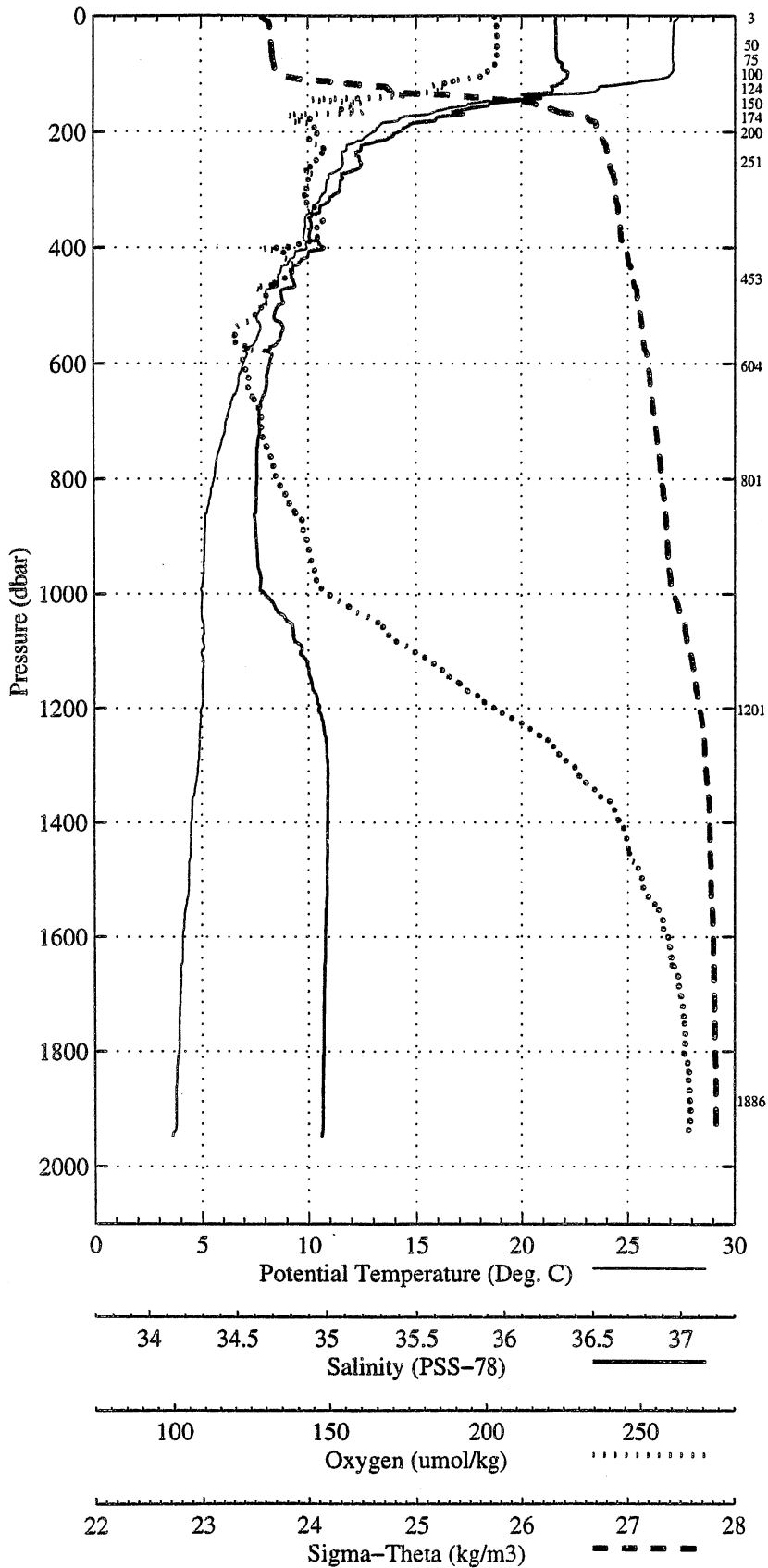
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1886	24	3.771	3.618	34.981	277.1
1202	1	4.926	4.824	34.962	207.7
802	2	5.571	5.501	34.618	133.3
604	3	7.070	7.012	34.697	122.7
453	4	8.696	8.647	34.834	130.4
251	5	11.635	11.603	35.190	145.1
201	6	12.959	12.931	35.402*	146.9
175	12	15.047	15.021	35.748*	145.7
150	13	18.348	18.322	36.107*	160.4
125	14	23.587	23.561	36.268	185.6
100	15	26.961	26.938	36.351	200.8
75	18	27.129	27.112	36.316	204.1
50	19	27.111	27.099	36.313*	204.0
3	20	27.277	27.277	36.313*	203.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 39 (99039)

Latitude 7.927 N Longitude 52.651 W

18-Feb-1999 21:54 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 40 (99040)
Latitude 8.351N Longitude 52.567W
19-Feb-1999 02:22Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.144	27.143	36.258	204.0	0.004	23.622
10	27.180	27.178	36.263	202.4	0.043	23.615
20	27.156	27.151	36.262	202.5	0.085	23.624
30	27.087	27.080	36.262	203.0	0.128	23.648
40	27.082	27.073	36.266	202.9	0.171	23.653
50	27.084	27.072	36.279	202.9	0.213	23.664
60	27.091	27.077	36.296	202.8	0.255	23.676
70	27.110	27.094	36.318	202.3	0.298	23.688
80	27.118	27.099	36.327	202.2	0.340	23.694
90	27.128	27.108	36.337	202.1	0.383	23.700
100	27.116	27.093	36.342	201.0	0.425	23.709
110	25.830	25.806	36.380	190.9	0.466	24.145
120	25.530	25.503	36.430	189.2	0.503	24.277
130	25.073	25.044	36.481	183.1	0.539	24.458
140	22.894	22.865	36.274	162.6	0.573	24.949
150	19.394	19.367	36.076	171.7	0.598	25.758
160	19.031	19.002	36.071	168.1	0.620	25.848
170	17.923	17.894	36.007	149.4	0.641	26.078
180	15.282	15.254	35.659	142.3	0.659	26.431
190	14.016	13.988	35.491	140.2	0.675	26.576
200	13.084	13.056	35.371	143.8	0.690	26.675
250	10.876	10.845	35.016	141.8	0.756	26.822
300	10.278	10.242	34.963	143.2	0.819	26.888
350	9.686	9.646	34.902	144.6	0.879	26.942
400	9.306	9.261	34.872	141.7	0.937	26.983
450	8.908	8.859	34.862	130.9	0.994	27.041
500	8.295	8.242	34.804	123.9	1.048	27.091
550	7.602	7.547	-34.721	127.5	1.100	27.130
600	7.141	7.083	-34.702	121.9	1.151	27.180
650	6.481	6.421	34.627	129.6	1.199	27.211
700	6.011	5.949	34.586	133.0	1.246	27.240
750	5.664	5.599	34.569	134.5	1.292	27.270
800	5.483	5.414	34.571	140.2	1.337	27.294
900	5.128	5.053	34.586	144.5	1.422	27.349
1000	5.085	5.001	34.651	147.0	1.504	27.408
1500	4.534	4.408	35.007	240.3	1.823	27.761
2000	3.576	3.415	34.979	262.9	2.058	27.844

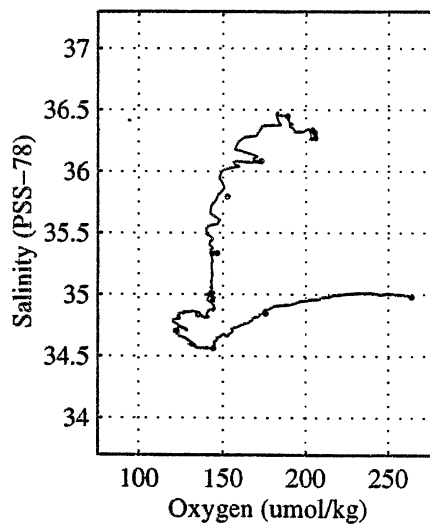
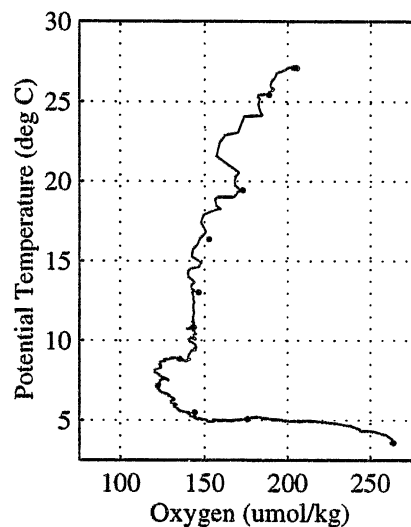
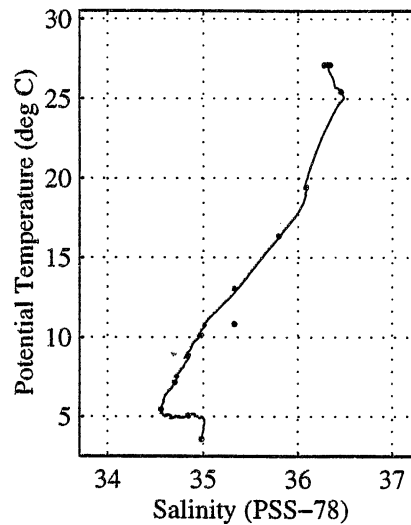
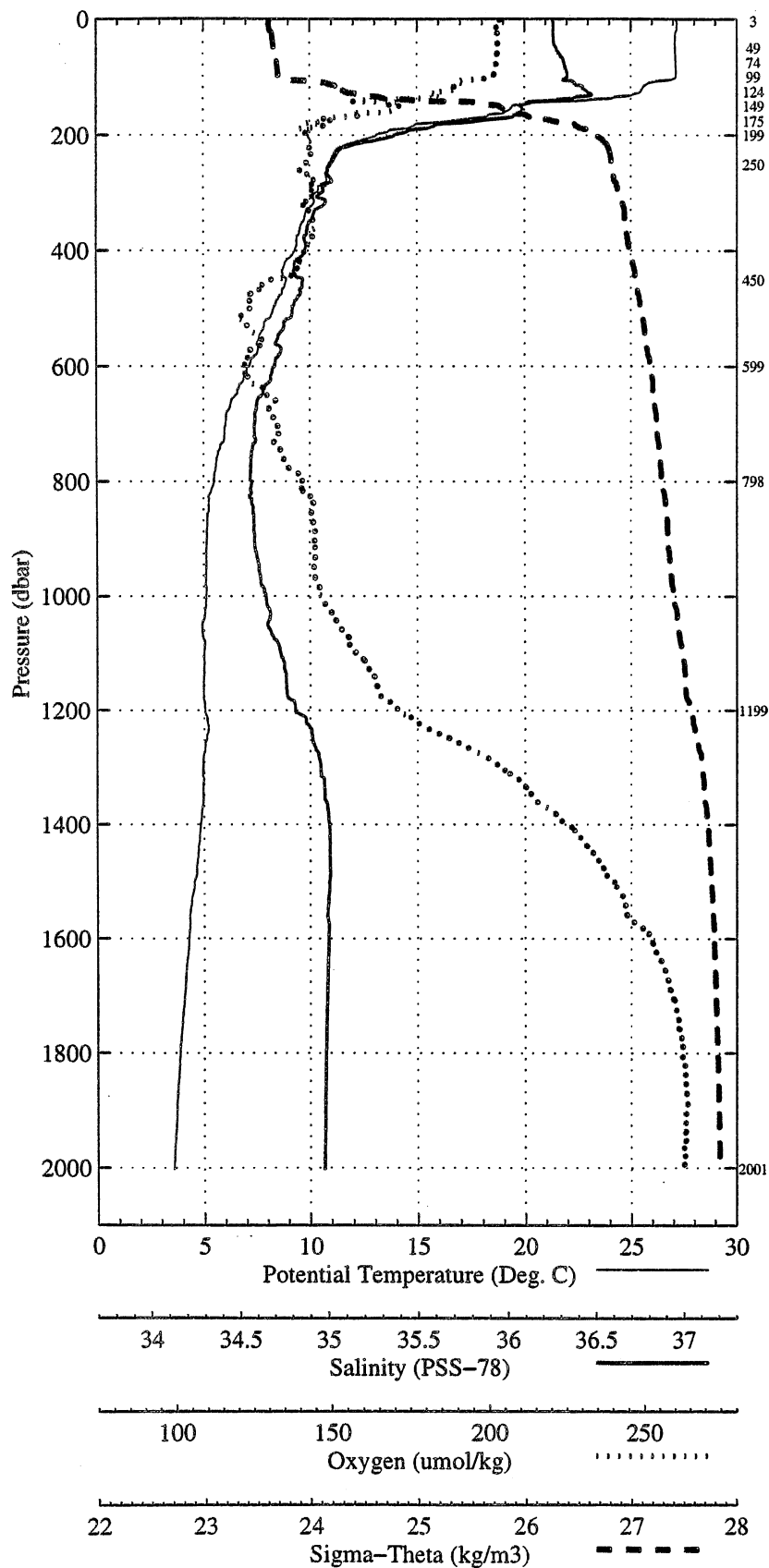
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.577	3.415	34.980	264.2
1200	1	5.064	4.961	34.845	175.9
799	2	5.480	5.412	34.563	144.0
599	3	7.156	7.098	34.704	122.4
450	4	8.846	8.797	34.838	135.2
251	5	10.839	10.809	35.333*	143.4
200	6	13.019	12.992	35.334*	146.4
176	12	16.357	16.328	35.793*	152.6
150	13	19.437	19.409	36.083	173.2
125	14	25.418	25.390	36.449	188.8
99	15	27.107	27.084	36.337	203.8
75	16	27.113	27.096	36.313	205.3
50	17	27.088	27.076	36.271	205.6
3	18	27.148	NaN	NaN*	NaN

NBC-2 R/V SEWARD JOHNSON

CTD Station 40 (99040)

Latitude 8.351 N Longitude 52.567 W

19-Feb-1999 02:22 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 41 (99041)
Latitude 8.781N Longitude 52.474W
19-Feb-1999 06:20Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.257	27.257	36.346	196.6	0.004	23.651
10	27.270	27.268	36.343	197.8	0.042	23.646
20	27.238	27.234	36.340	198.0	0.085	23.656
30	27.235	27.229	36.341	198.1	0.127	23.659
40	27.234	27.225	36.343	197.9	0.170	23.662
50	27.235	27.223	36.344	198.0	0.212	23.665
60	27.235	27.222	36.348	197.9	0.255	23.669
70	27.233	27.217	36.358	197.7	0.297	23.678
80	27.231	27.212	36.375	197.6	0.340	23.694
90	27.211	27.191	36.375	197.6	0.382	23.702
100	26.400	26.377	36.370	187.0	0.423	23.958
110	25.911	25.887	36.375	185.8	0.463	24.116
120	25.334	25.308	36.387	182.1	0.500	24.305
130	24.807	24.778	36.423	182.6	0.536	24.495
140	24.635	24.605	36.490	181.1	0.570	24.599
150	23.763	23.731	36.392	178.5	0.603	24.787
160	20.732	20.701	36.141	171.1	0.632	25.453
170	19.281	19.251	36.070	164.5	0.657	25.784
180	16.629	16.600	35.767	162.1	0.677	26.206
190	15.480	15.450	35.652	154.5	0.694	26.382
200	14.941	14.911	35.595	154.5	0.711	26.458
250	12.108	12.076	35.257	131.8	0.784	26.782
300	10.504	10.468	34.990	146.8	0.847	26.870
350	9.712	9.672	34.893	143.0	0.909	26.931
400	9.142	9.097	34.841	136.0	0.968	26.985
450	8.799	8.750	34.813	130.4	1.025	27.019
500	8.255	8.203	34.761	126.3	1.081	27.064
550	7.998	7.941	34.728	125.8	1.135	27.077
600	7.725	7.664	34.717	128.4	1.189	27.110
650	7.464	7.399	34.705	125.4	1.241	27.139
700	6.857	6.790	34.636	129.5	1.292	27.170
750	6.530	6.460	34.624	129.3	1.342	27.205
800	5.942	5.871	34.598	130.8	1.390	27.260
900	5.156	5.080	34.616	139.9	1.476	27.370
1000	4.968	4.885	34.676	149.0	1.555	27.441
1500	4.630	4.502	35.011	235.9	1.860	27.755
2000	3.636	3.474	34.981	260.4	2.100	27.840

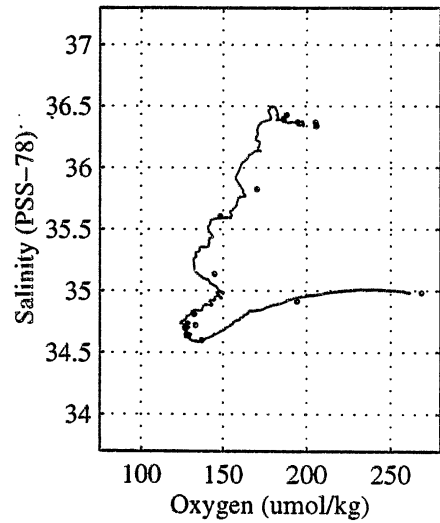
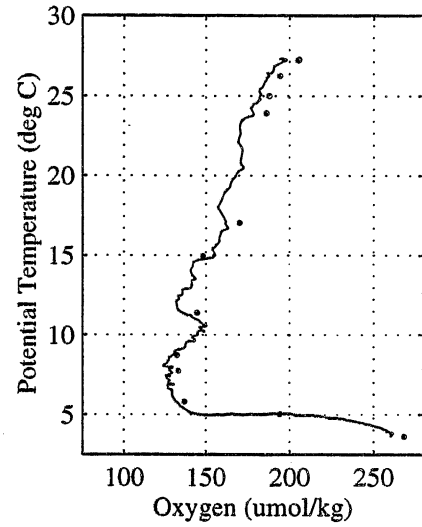
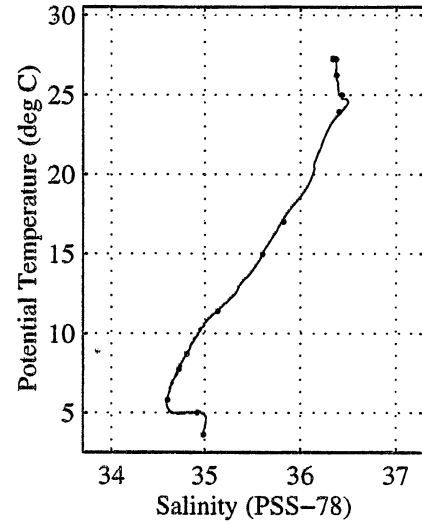
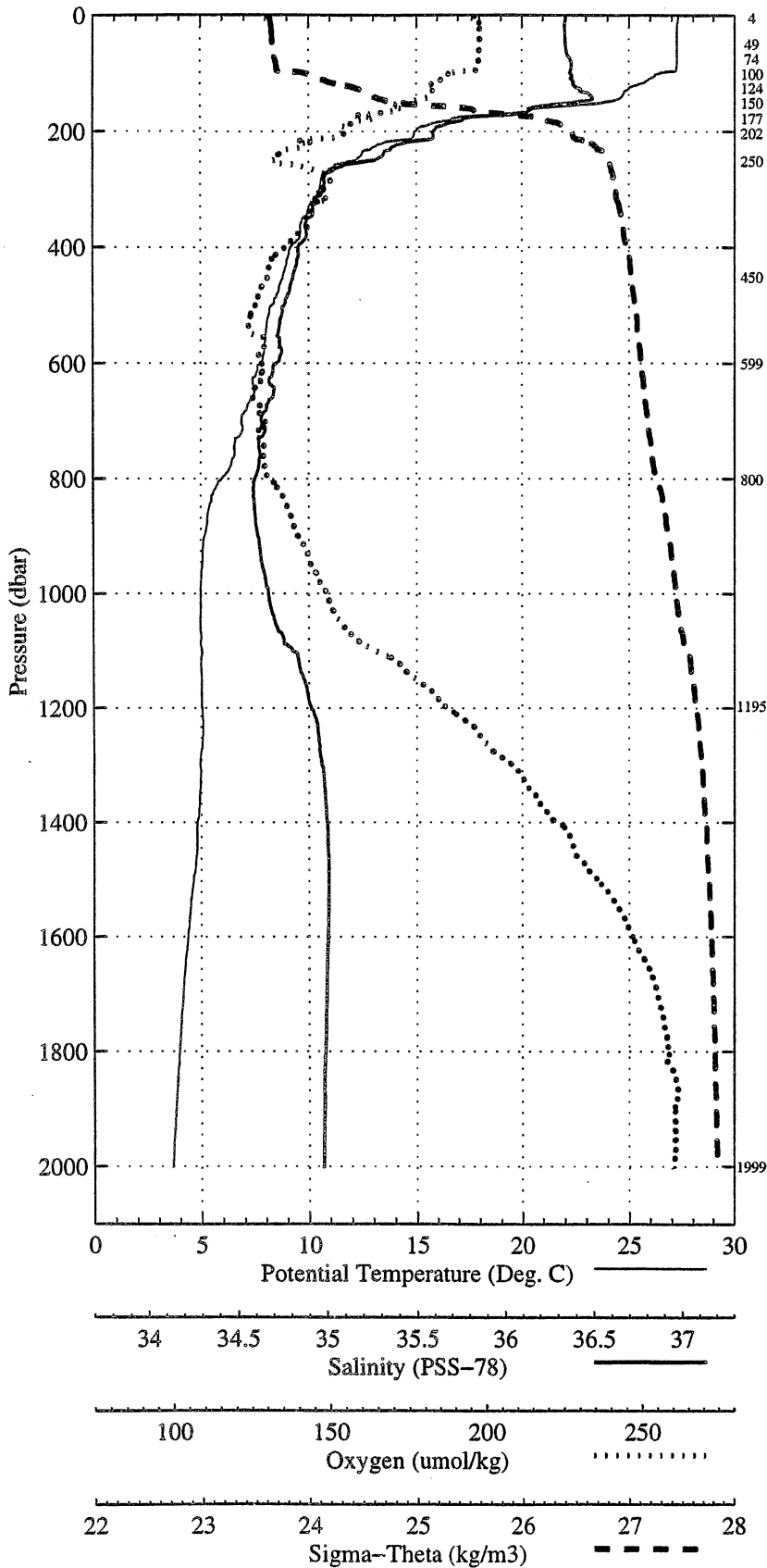
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.636	3.474	34.983	268.4
1196	1	5.033	4.931	34.915	194.1
801	2	5.816	5.746	34.597	136.9
600	3	7.744	7.683	34.720	133.3
450	4	8.720	8.671	34.809	132.3
250	5	11.394	11.362	35.137*	144.6
203	6	14.958	14.927	35.606	148.1
177	12	17.030	17.000	35.825	170.3
150	13	23.914	23.883	36.400*	186.4
125	14	24.990	24.962	36.430	188.2
101	15	26.233	26.210	36.371	194.4
75	16	27.234	27.216	36.369	205.0
49	17	27.234	27.223	36.338	205.4
4	18	27.273	27.272	36.339	205.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 41 (99041)

Latitude 8.781 N Longitude 52.474 W

19-Feb-1999 06:20 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 42 (99042)
Latitude 9.204N Longitude 52.398W
19-Feb-1999 10:31Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.162	27.162	36.288	199.7	0.004	23.638
10	27.156	27.154	36.285	197.8	0.042	23.639
20	27.164	27.159	36.285	197.9	0.085	23.638
30	27.165	27.158	36.285	197.9	0.128	23.639
40	27.160	27.151	36.285	198.0	0.170	23.642
50	27.152	27.141	36.285	197.9	0.213	23.646
60	27.108	27.095	36.292	197.9	0.255	23.667
70	27.100	27.084	36.305	197.7	0.298	23.682
80	27.103	27.084	36.312	197.5	0.340	23.688
90	27.109	27.088	36.327	196.5	0.383	23.698
100	27.011	26.988	36.309	193.9	0.425	23.718
110	26.150	26.125	36.385	186.4	0.466	24.049
120	25.735	25.708	36.437	182.5	0.504	24.219
130	25.528	25.499	36.428	181.9	0.541	24.278
140	25.087	25.056	36.465	179.4	0.578	24.443
150	24.703	24.670	36.508	179.4	0.613	24.594
160	24.147	24.113	36.506	179.1	0.646	24.760
170	23.343	23.308	36.460	178.0	0.678	24.964
180	22.209	22.173	36.268	170.7	0.707	25.145
190	19.863	19.827	35.996	168.9	0.733	25.578
200	17.240	17.207	35.759	166.8	0.755	26.057
250	11.775	11.743	35.115	157.1	0.829	26.734
300	11.489	11.451	35.163	147.4	0.896	26.827
350	10.745	10.702	35.110	130.4	0.958	26.923
400	9.433	9.388	34.941	125.3	1.016	27.016
450	8.335	8.287	34.769	132.7	1.072	27.057
500	7.795	7.745	34.712	130.3	1.126	27.093
550	7.595	7.539	34.714	125.1	1.178	27.125
600	6.809	6.753	34.628	129.9	1.229	27.167
650	6.519	6.459	34.614	129.7	1.278	27.197
700	6.250	6.187	34.593	131.4	1.326	27.216
750	5.855	5.789	34.564	136.2	1.373	27.243
800	5.399	5.331	34.560	138.7	1.418	27.295
900	5.014	4.940	34.589	145.0	1.503	27.365
1000	4.923	4.840	34.657	146.7	1.583	27.431
1500	4.648	4.520	35.009	234.2	1.902	27.751
2000	3.650	3.487	34.981	258.4	2.143	27.839

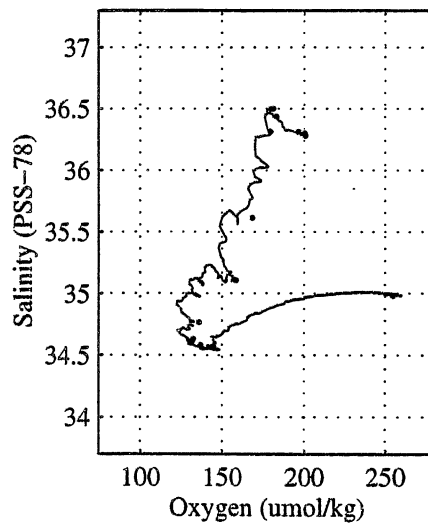
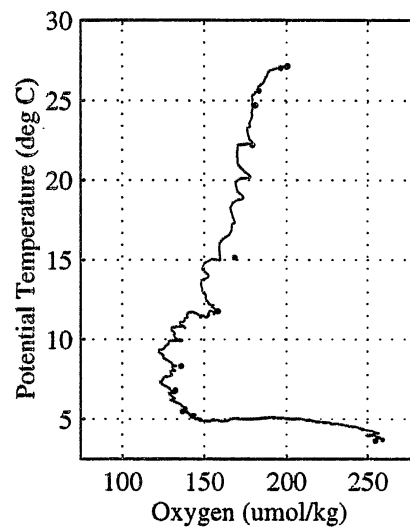
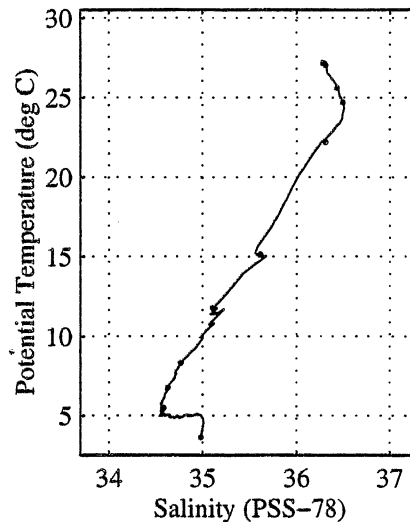
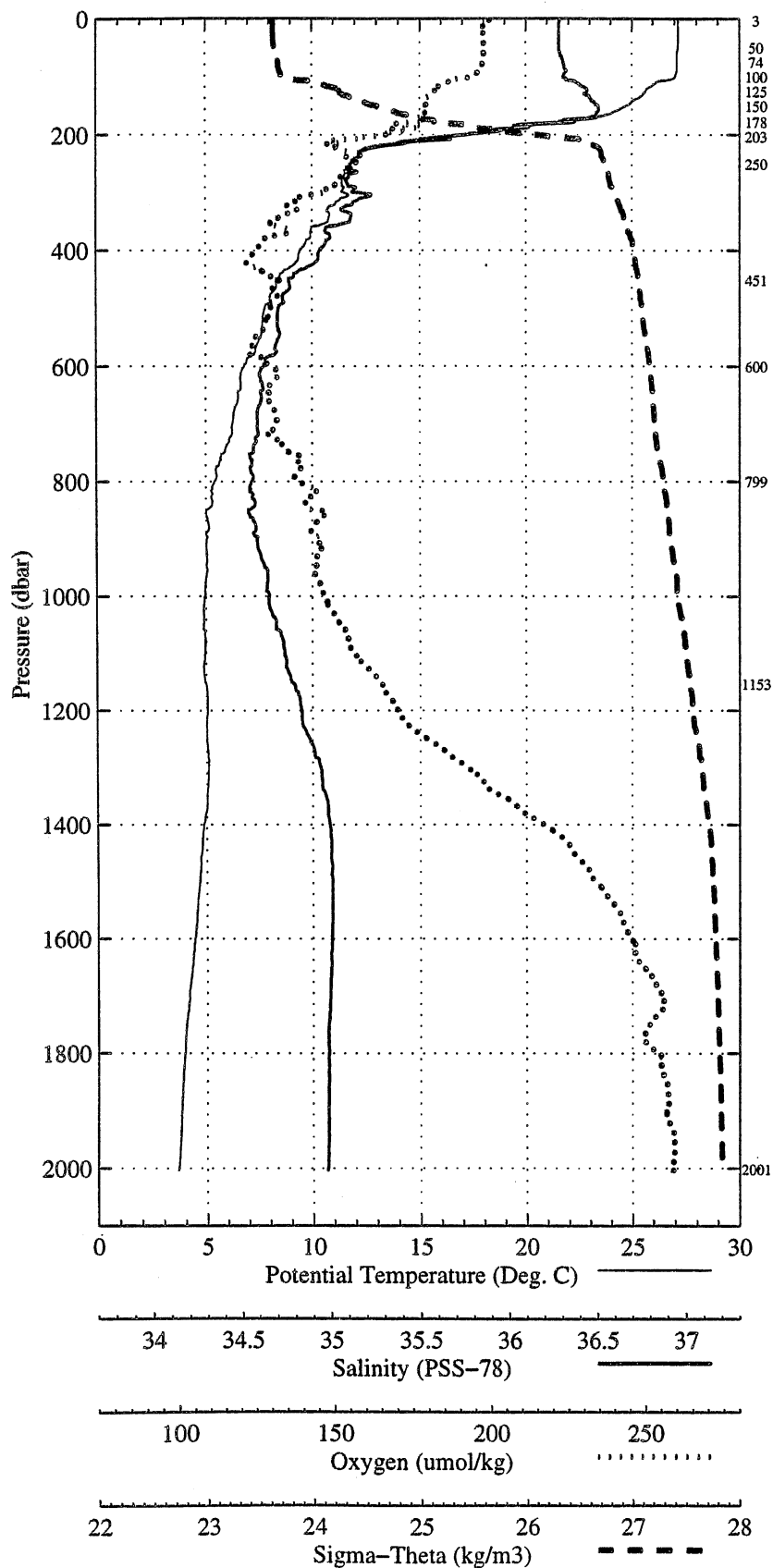
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.642	3.480	34.981	254.7
1153	1	4.983	NaN	NaN*	NaN
800	2	5.485	5.417	34.581	136.8
600	3	6.786	6.729	34.630	132.5
451	4	8.319	8.271	34.766	135.9
251	5	11.763	11.731	35.107	158.2
203	6	15.144	15.113	35.615*	168.6
178	12	22.205	22.169	36.313*	179.4
151	13	24.689	24.656	36.500	181.2
125	14	25.606	25.578	36.435	183.2
100	15	27.012	26.989	36.312	196.3
75	16	27.104	27.087	36.302	200.0
50	17	27.147	27.135	36.279	200.5
3	19	27.155	27.154	36.281	200.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 42 (99042)

Latitude 9.204 N Longitude 52.398 W

19-Feb-1999 10:31 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 43 (99043)
Latitude 9.617N Longitude 52.315W
19-Feb-1999 15:49Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.346	27.346	36.343	194.7	0.004	23.620
10	27.263	27.260	36.342	197.7	0.043	23.648
20	27.230	27.225	36.341	198.1	0.085	23.659
30	27.217	27.210	36.339	198.4	0.127	23.664
40	27.196	27.187	36.335	198.4	0.170	23.669
50	27.168	27.157	36.331	198.3	0.212	23.676
60	27.164	27.150	36.331	198.6	0.254	23.679
70	27.161	27.145	36.332	198.2	0.297	23.682
80	27.163	27.144	36.334	198.2	0.339	23.685
90	27.166	27.145	36.337	197.8	0.382	23.687
100	27.166	27.143	36.342	197.3	0.424	23.693
110	27.131	27.105	36.344	195.9	0.467	23.707
120	26.017	25.990	36.375	184.8	0.507	24.084
130	25.420	25.391	36.407	182.0	0.545	24.296
140	24.612	24.582	36.496	180.0	0.580	24.610
150	23.941	23.909	36.481	180.1	0.613	24.801
160	23.500	23.466	36.453	179.4	0.645	24.911
170	23.240	23.205	36.452	180.0	0.676	24.987
180	22.835	22.798	36.455	180.1	0.706	25.108
190	21.926	21.888	36.286	172.5	0.734	25.239
200	19.011	18.975	36.069	157.4	0.760	25.856
250	13.381	13.345	35.473	139.4	0.842	26.697
300	10.915	10.878	35.099	136.4	0.907	26.882
350	9.779	9.738	34.943	134.1	0.968	26.959
400	9.162	9.118	34.891	127.7	1.025	27.021
450	8.127	8.081	34.751	131.3	1.080	27.073
500	7.390	7.341	34.683	126.9	1.132	27.129
550	7.047	6.994	34.676	122.7	1.182	27.172
600	6.508	6.453	34.621	125.9	1.230	27.202
650	6.102	6.044	34.591	126.2	1.278	27.232
700	5.844	5.783	34.583	129.2	1.324	27.258
750	5.489	5.425	34.566	132.0	1.368	27.289
800	5.445	5.377	34.595	134.4	1.412	27.318
900	5.128	5.053	34.617	139.6	1.496	27.374
1000	5.336	5.250	34.757	141.2	1.574	27.463
1500	4.479	4.354	34.987	229.8	1.880	27.752
2000	3.618	3.456	34.980	256.7	2.119	27.842

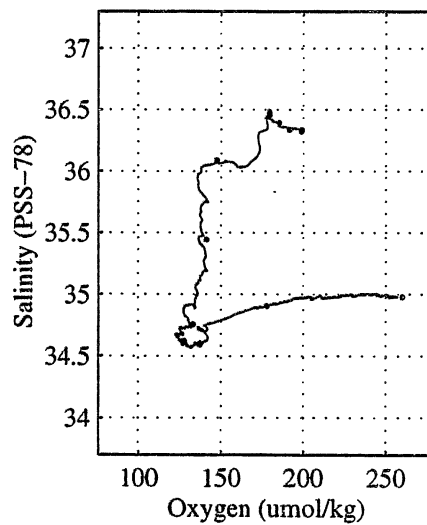
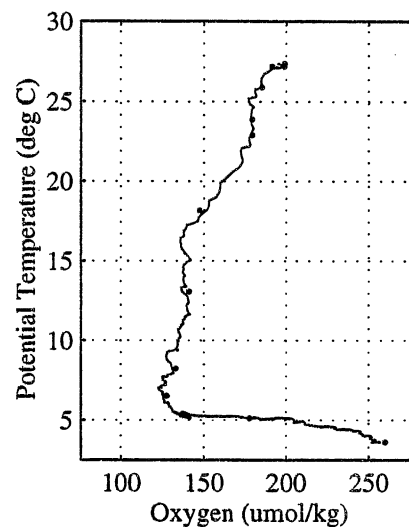
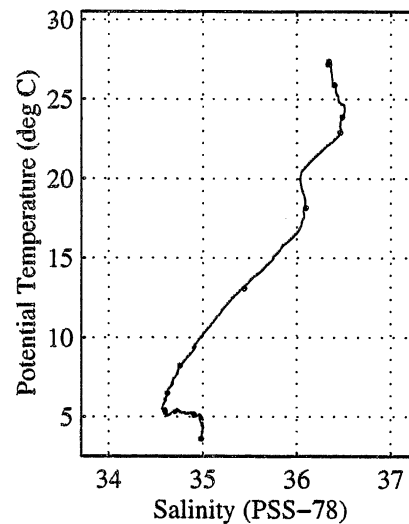
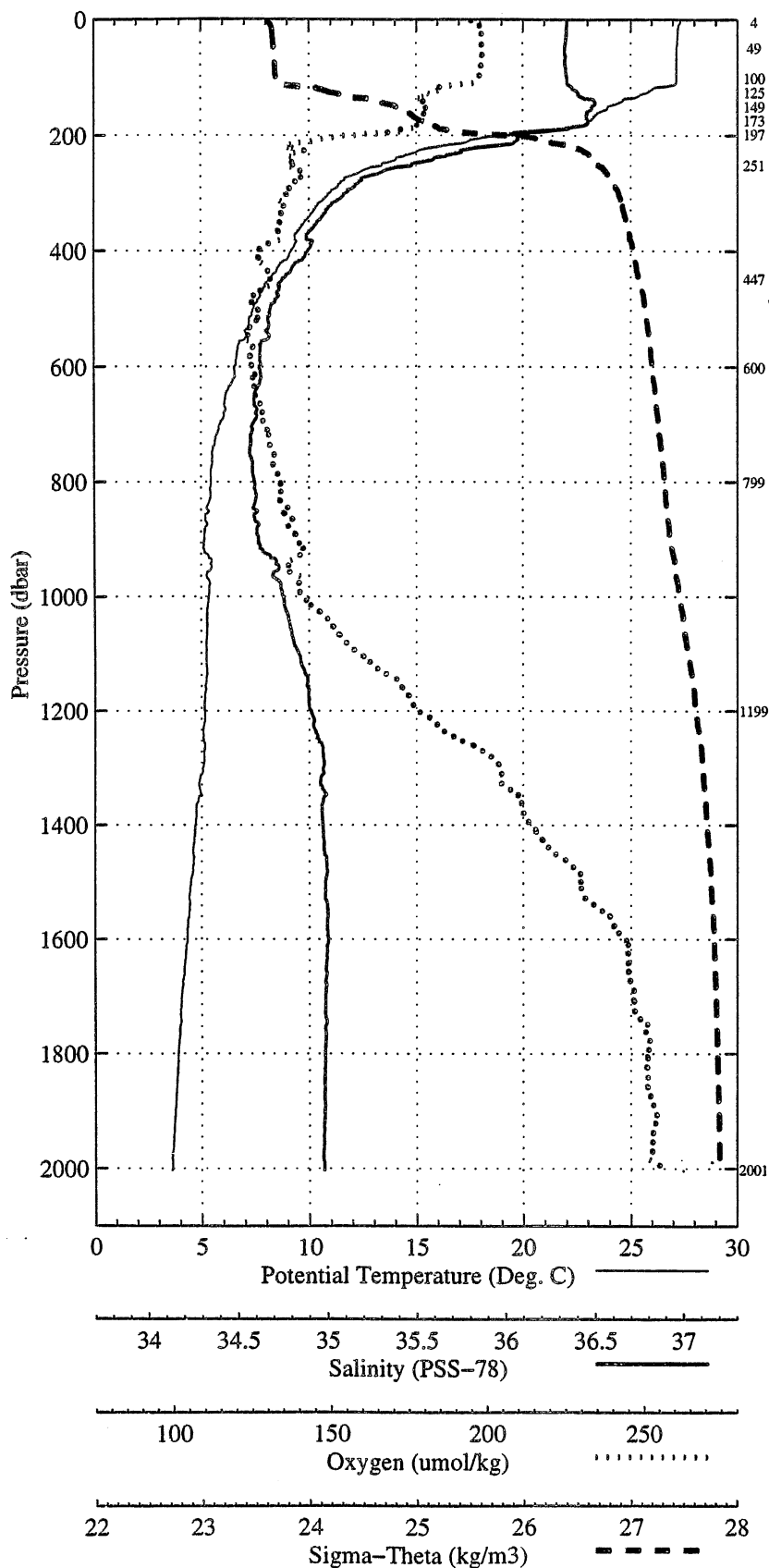
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	1	3.612	3.450	34.981	260.1
1199	2	5.125	5.022	34.905	178.1
800	3	5.409	5.341	34.592	137.1
601	4	6.507	6.452	34.622	127.5
448	5	8.236	8.189	34.756	133.0
251	6	13.081	13.046	35.444*	140.9
198	12	18.163	18.128	36.089	147.3
174	13	22.904	22.869	36.455	179.7
150	14	23.870	23.838	36.475	179.5
125	15	25.888	25.860	36.393	185.5
101	16	27.172	27.148	36.338	191.7
49	17	27.182	27.170	36.323	198.6
4	18	27.362	27.361	36.337	199.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 43 (99043)

Latitude 9.617 N Longitude 52.315 W

19-Feb-1999 15:49 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 44 (99044)
Latitude 10.038N Longitude 52.227W
19-Feb-1999 19:45Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.375	27.374	36.285	251.7	0.004	23.567
10	27.371	27.369	36.290	166.1	0.043	23.574
20	27.358	27.353	36.292	197.2	0.086	23.581
30	27.276	27.269	36.290	196.8	0.129	23.608
40	27.267	27.258	36.291	197.0	0.172	23.613
50	27.264	27.252	36.293	197.4	0.215	23.617
60	27.264	27.250	36.296	197.8	0.258	23.621
70	27.266	27.249	36.303	197.8	0.301	23.627
80	27.276	27.257	36.315	197.6	0.344	23.634
90	27.282	27.261	36.319	197.4	0.387	23.636
100	27.283	27.260	36.322	197.1	0.430	23.640
110	27.269	27.243	36.322	196.2	0.473	23.646
120	27.261	27.233	36.327	196.0	0.516	23.654
130	26.864	26.834	36.351	187.3	0.559	23.800
140	25.057	25.026	36.377	179.3	0.597	24.386
150	24.076	24.044	36.394	179.2	0.631	24.695
160	23.819	23.785	36.479	180.7	0.663	24.837
170	23.732	23.696	36.482	176.4	0.695	24.867
180	21.860	21.824	36.255	167.8	0.725	25.232
190	19.484	19.449	36.154	148.6	0.750	25.798
200	18.134	18.099	36.233	133.9	0.770	26.202
250	13.090	13.055	35.446	133.0	0.848	26.735
300	11.600	11.561	35.316	109.8	0.912	26.925
350	10.384	10.342	35.116	118.7	0.971	26.991
400	9.888	9.841	35.060	90.1	1.027	27.034
450	9.353	9.302	35.003	86.0	1.082	27.080
500	8.691	8.637	34.912	106.1	1.135	27.116
550	8.085	8.028	34.834	109.0	1.187	27.148
600	7.487	7.427	34.778	111.9	1.237	27.192
650	6.854	6.792	34.710	116.7	1.285	27.227
700	6.602	6.537	34.705	118.0	1.332	27.258
750	6.273	6.204	34.694	121.1	1.378	27.294
800	6.044	5.972	34.686	122.9	1.422	27.318
900	5.419	5.341	34.681	131.4	1.506	27.391
1000	5.279	5.193	34.759	143.1	1.583	27.472
1500	4.409	4.284	34.992	233.2	1.882	27.763
2000	3.626	3.464	34.980	256.1	2.119	27.841

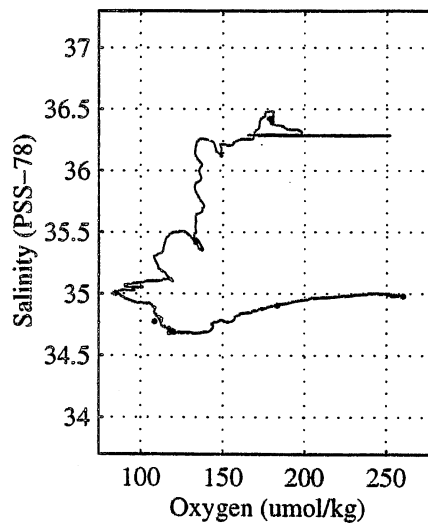
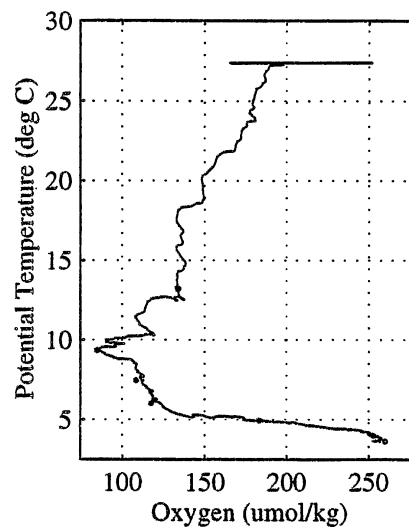
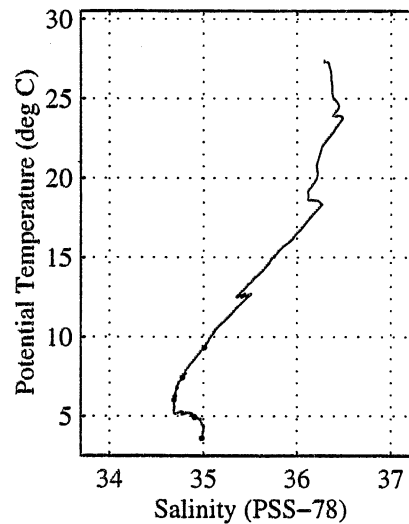
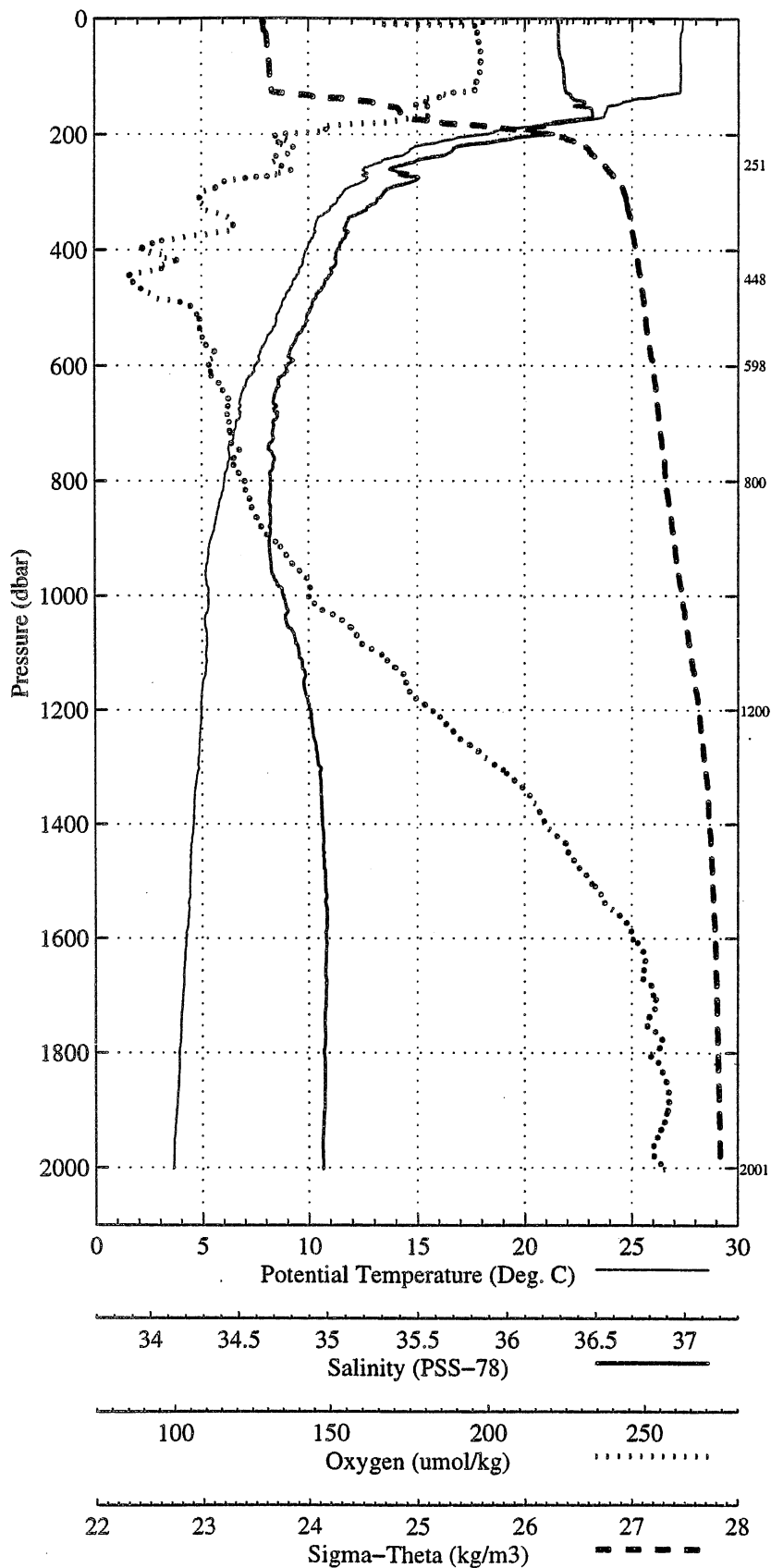
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.625	3.463	34.981	260.0
1200	1	4.936	4.834	34.904	183.1
801	2	6.016	5.944	34.686	117.6
598	3	7.449	7.390	34.775	108.4
449	4	9.335	9.285	35.004	84.9
251	5	13.212	NaN	NaN*	134.1

NBC-2 R/V SEWARD JOHNSON

CTD Station 44 (99044)

Latitude 10.038 N Longitude 52.227 W

19-Feb-1999 19:45 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 45 (99045)
Latitude 10.477N Longitude 52.149W
19-Feb-1999 23:50Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.474	27.473	36.266	188.5	0.004	23.521
10	27.523	27.521	36.274	198.6	0.044	23.513
20	27.529	27.525	36.273	200.1	0.087	23.512
30	27.537	27.529	36.278	200.4	0.131	23.514
40	27.542	27.533	36.291	200.6	0.175	23.523
50	27.545	27.533	36.305	201.0	0.219	23.535
60	27.548	27.534	36.324	200.8	0.262	23.550
70	27.487	27.470	36.352	200.4	0.306	23.592
80	27.299	27.280	36.307	200.9	0.349	23.620
90	27.284	27.263	36.308	200.6	0.392	23.628
100	27.289	27.266	36.314	200.4	0.435	23.632
110	27.190	27.164	36.350	199.2	0.478	23.692
120	27.192	27.165	36.354	198.6	0.520	23.696
130	26.781	26.751	36.337	195.8	0.563	23.817
140	24.279	24.250	36.300	168.5	0.602	24.562
150	22.652	22.621	36.289	160.7	0.634	25.031
160	21.015	20.984	36.183	151.7	0.662	25.409
170	19.257	19.226	36.166	153.4	0.686	25.863
180	17.567	17.536	36.104	135.5	0.706	26.241
190	16.264	16.233	35.904	145.3	0.723	26.397
200	15.912	15.880	36.015	135.6	0.739	26.564
250	13.423	13.387	35.612	105.5	0.810	26.796
300	11.802	11.763	35.374	104.7	0.872	26.933
350	10.636	10.593	35.194	111.0	0.931	27.008
400	9.965	9.918	35.102	115.0	0.986	27.054
450	9.146	9.096	34.980	114.6	1.040	27.096
500	8.390	8.337	34.874	112.0	1.092	27.132
550	7.684	7.629	34.793	114.7	1.143	27.174
600	7.159	7.100	34.745	115.8	1.191	27.212
650	6.867	6.805	34.746	113.3	1.238	27.254
700	6.573	6.507	34.745	115.2	1.283	27.294
750	5.910	5.844	34.661	128.8	1.327	27.313
800	5.744	5.673	34.679	129.7	1.370	27.349
900	4.988	4.913	34.630	146.2	1.450	27.401
1000	5.070	4.985	34.740	154.2	1.526	27.481
1500	4.582	4.455	35.006	240.7	1.824	27.756
2000	3.671	3.509	34.983	260.8	2.064	27.839

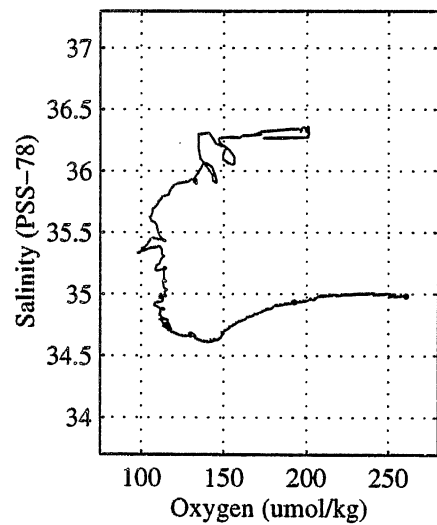
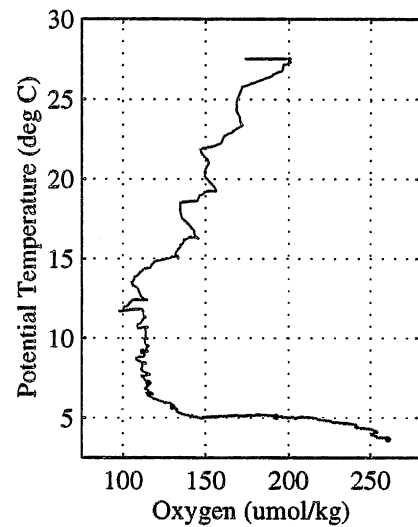
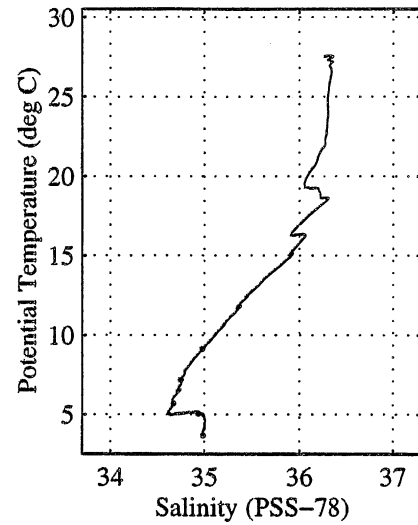
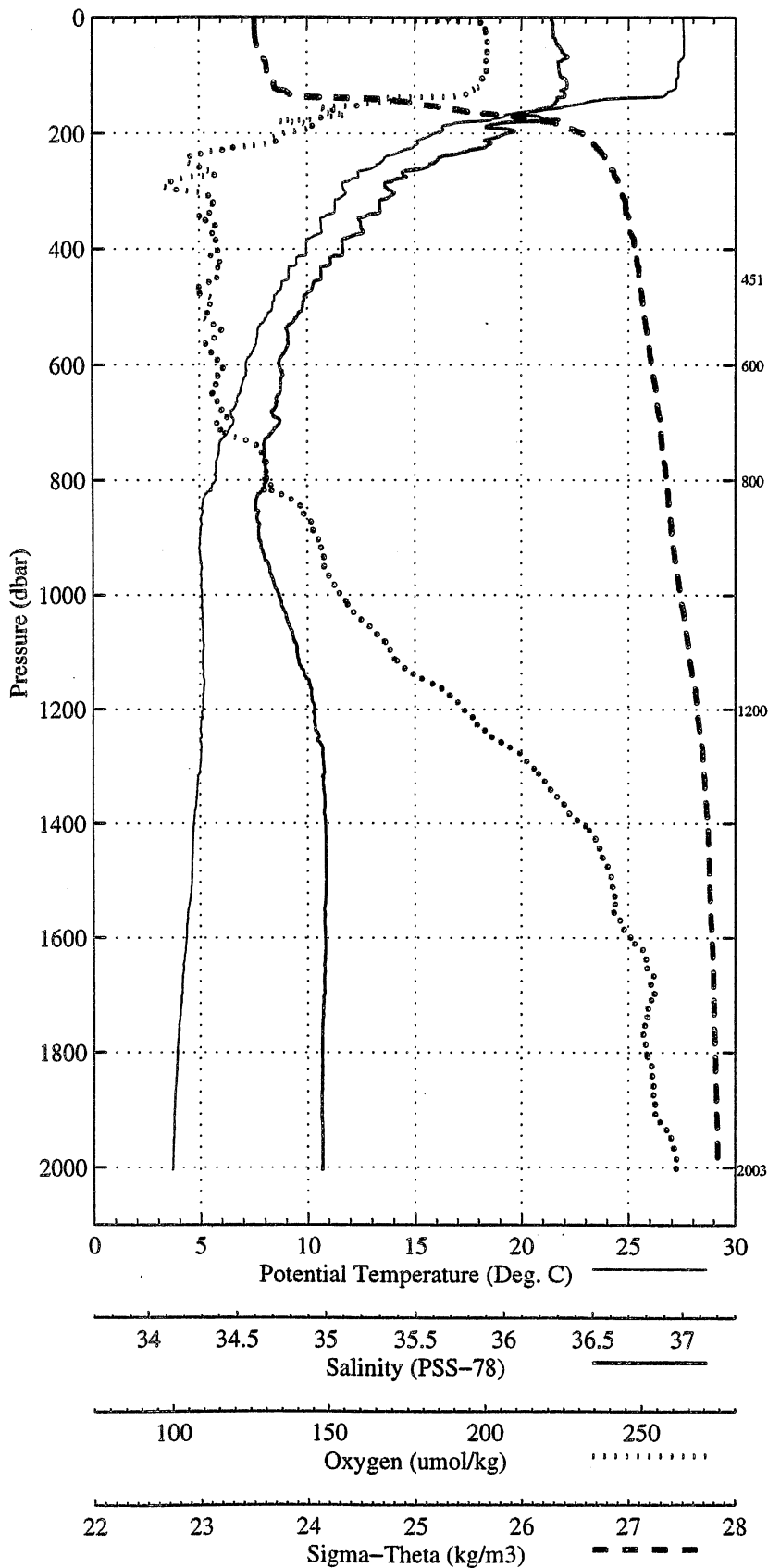
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2004	1	3.665	3.502	34.983	260.6
1201	2	5.064	4.961	34.935	192.4
801	3	5.684	5.614	34.670	130.2
600	4	7.183	7.124	34.749	115.2
451	5	9.145	9.095	34.976	111.9

NBC-2 R/V SEWARD JOHNSON

CTD Station 45 (99045)

Latitude 10.477 N Longitude 52.149 W

19-Feb-1999 23:50 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 46 (99046)
Latitude 10.912N Longitude 52.090W
20-Feb-1999 04:05Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.160	27.160	35.277	203.1	0.005	22.877
10	27.210	27.207	35.312	200.1	0.050	22.889
20	27.202	27.198	36.005	199.9	0.097	23.415
30	27.216	27.209	36.261	199.6	0.141	23.605
40	27.188	27.179	36.293	199.4	0.184	23.640
50	27.175	27.164	36.303	198.7	0.226	23.653
60	27.132	27.118	36.304	198.2	0.269	23.669
70	27.085	27.069	36.304	197.5	0.311	23.685
80	26.889	26.870	36.302	194.6	0.354	23.748
90	25.607	25.587	36.292	178.3	0.394	24.146
100	23.575	23.554	36.232	161.9	0.429	24.714
110	22.388	22.366	36.214	155.2	0.460	25.045
120	20.251	20.229	36.135	153.5	0.486	25.574
130	18.961	18.938	36.155	150.9	0.509	25.928
140	19.132	19.107	36.580	139.0	0.529	26.209
150	17.953	17.927	36.416	140.3	0.546	26.383
160	17.580	17.552	36.365	142.3	0.563	26.436
170	16.669	16.641	36.194	134.3	0.579	26.524
180	16.279	16.250	36.144	126.2	0.594	26.577
190	15.876	15.846	36.086	123.6	0.609	26.626
200	15.464	15.433	36.011	120.0	0.624	26.663
250	12.566	12.532	35.493	113.7	0.690	26.876
300	11.361	11.323	35.317	114.4	0.750	26.970
350	9.896	9.855	35.088	112.4	0.806	27.053
400	9.259	9.215	35.011	105.5	0.859	27.099
450	8.262	8.215	34.862	110.8	0.910	27.140
500	7.790	7.739	34.810	114.4	0.960	27.171
550	7.602	7.547	34.829	106.5	1.009	27.215
600	6.860	6.803	34.744	115.8	1.055	27.252
650	5.957	5.900	34.628	126.1	1.100	27.279
700	5.699	5.638	34.614	129.1	1.144	27.301
750	5.320	5.257	34.591	134.9	1.187	27.329
800	5.053	4.987	34.583	141.1	1.228	27.354
900	5.042	4.967	34.666	145.1	1.307	27.423
1000	4.844	4.761	34.699	154.5	1.382	27.473
1500	4.339	4.215	34.988	236.6	1.684	27.767
2000	3.643	3.481	34.982	260.6	1.921	27.840

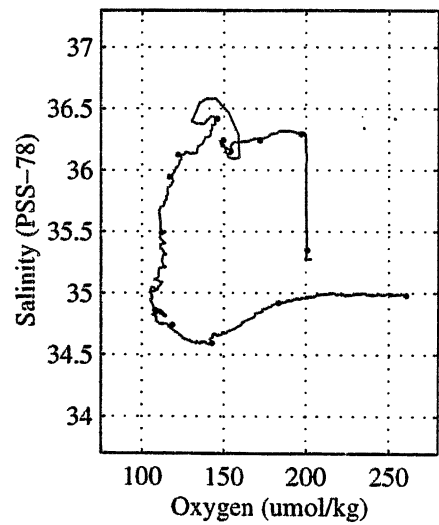
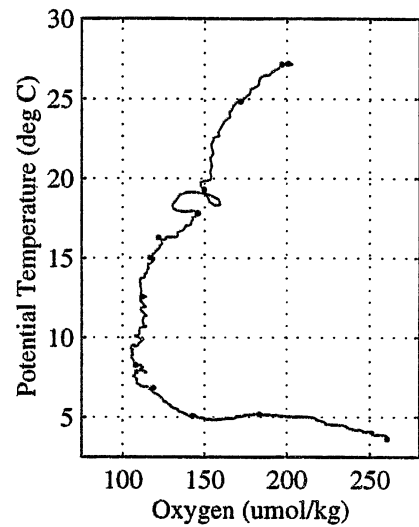
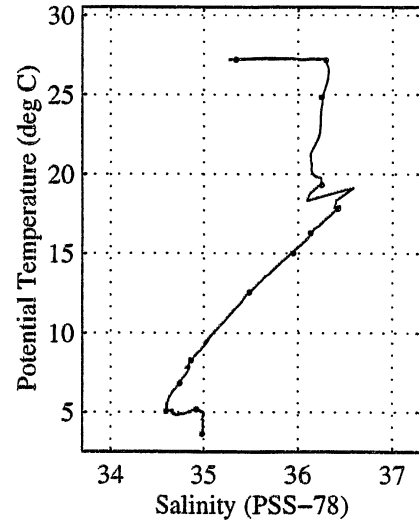
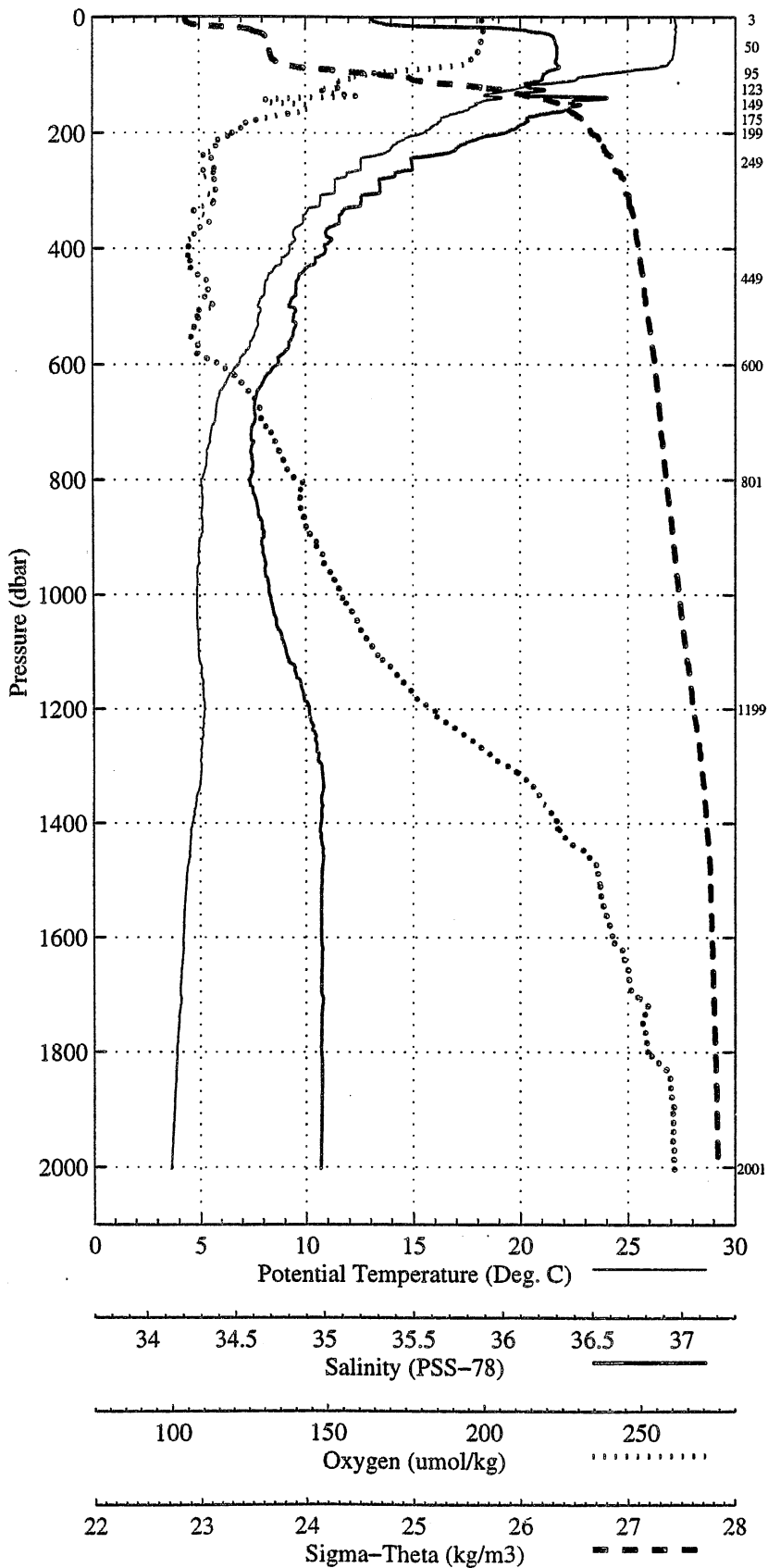
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.644	3.481	34.982	260.5
1199	1	5.180	5.076	34.918	183.4
802	2	5.072	5.006	34.592	142.4
601	3	6.829	6.772	34.742	118.4
450	4	8.267	8.220	34.862	107.7
249	5	12.569	12.535	35.491	111.6
200	6	15.021	14.991	35.945*	116.5
175	13	16.277	16.249	36.125	121.7
150	14	17.827	17.801	36.416	145.8
123	15	19.314	19.291	36.243	149.6
96	16	24.824	24.803	36.241*	172.3
51	17	27.150	27.138	36.290	197.0
4	19	27.202	27.202	35.348	200.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 46 (99046)

Latitude 10.912 N Longitude 52.090 W

20-Feb-1999 04:05 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 47 (99047)
Latitude 9.763N Longitude 51.487W
20-Feb-1999 12:14Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.433	27.432	36.346	201.1	0.004	23.595
10	27.438	27.436	36.352	198.1	0.043	23.598
20	27.440	27.435	36.351	198.2	0.086	23.599
30	27.441	27.434	36.351	198.2	0.129	23.600
40	27.429	27.420	36.352	198.1	0.172	23.606
50	27.430	27.419	36.352	198.1	0.215	23.607
60	27.437	27.423	36.352	198.2	0.258	23.607
70	27.431	27.415	36.352	198.1	0.301	23.610
80	27.419	27.401	36.351	198.1	0.344	23.615
90	27.416	27.395	36.351	198.1	0.387	23.617
100	27.355	27.331	36.345	197.9	0.430	23.634
110	27.227	27.201	36.339	197.0	0.473	23.672
120	27.090	27.063	36.349	193.4	0.516	23.725
130	26.002	25.973	36.383	187.7	0.556	24.097
140	24.547	24.517	36.340	173.2	0.593	24.512
150	23.091	23.060	36.751	155.2	0.624	25.255
160	21.488	21.457	36.616	139.7	0.649	25.609
170	19.847	19.816	36.450	127.2	0.672	25.927
180	19.076	19.043	36.539	132.6	0.692	26.197
190	18.009	17.976	36.396	127.9	0.710	26.357
200	16.996	16.962	36.240	125.1	0.726	26.484
250	12.646	12.612	35.488	100.4	0.797	26.856
300	11.252	11.214	35.250	93.6	0.858	26.939
350	10.366	10.324	35.116	93.3	0.917	26.994
400	9.656	9.610	35.015	99.3	0.973	27.038
450	9.187	9.137	34.977	92.9	1.028	27.086
500	8.671	8.617	34.916	97.5	1.080	27.122
550	8.098	8.041	34.853	107.0	1.132	27.161
600	7.702	7.642	34.817	110.4	1.182	27.193
650	7.280	7.216	34.775	111.0	1.230	27.221
700	6.890	6.823	34.755	110.2	1.277	27.259
750	6.517	6.447	34.725	114.7	1.323	27.286
800	6.298	6.224	34.731	115.7	1.367	27.321
900	5.493	5.415	34.692	132.2	1.451	27.392
1000	5.219	5.133	34.748	148.7	1.528	27.470
1500	4.469	4.343	35.010	243.8	1.833	27.771
2000	3.652	3.490	34.980	259.0	2.069	27.838

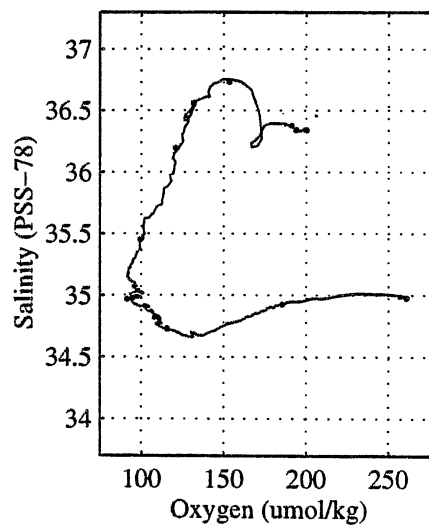
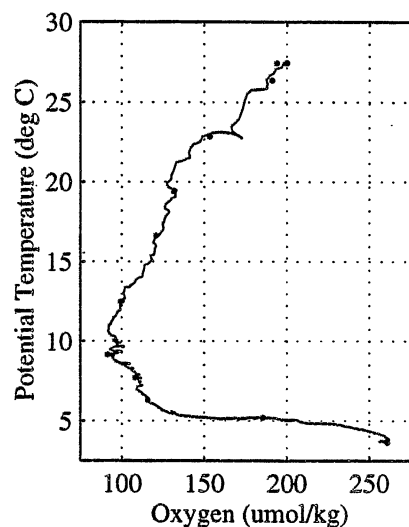
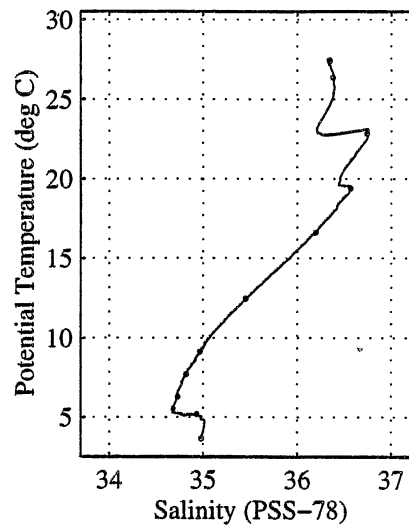
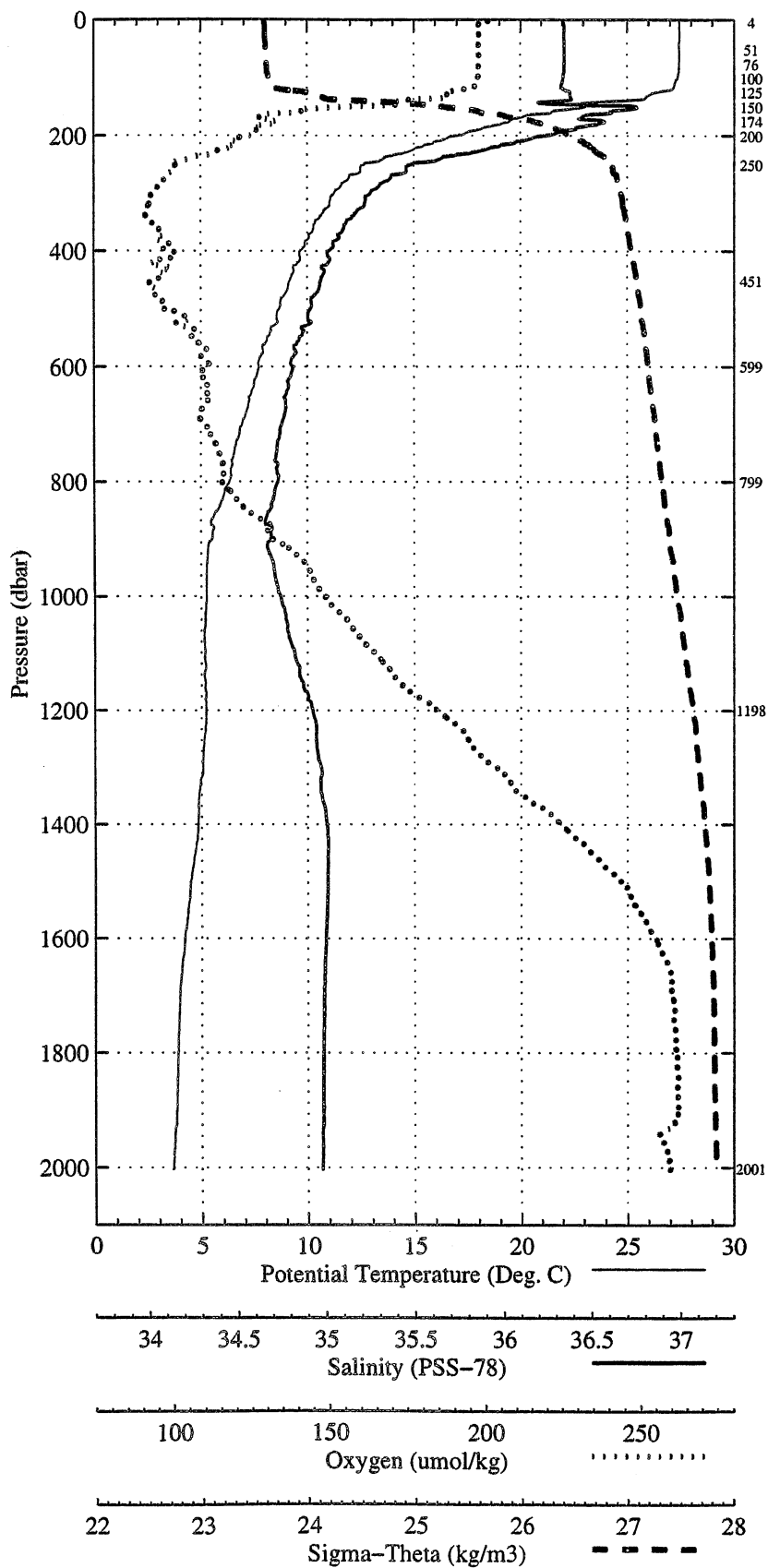
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.651	3.488	34.978	261.0
1199	1	5.199	5.095	34.926	185.5
800	2	6.287	6.213	34.727	115.6
599	3	7.707	7.646	34.821	108.0
451	4	9.144	9.094	34.968	91.2
251	5	12.472	12.438	35.452	99.2
201	6	16.639	16.606	36.194	120.7
175	12	19.392	19.360	36.560	131.6
151	13	22.836	22.805	36.733	153.3
125	14	26.358	26.330	36.377	191.1
101	15	27.380	27.357	36.344	NaN
76	16	27.440	27.422	36.343	193.8
52	17	27.445	27.433	36.342	199.8
4	18	27.443	27.442	36.342	200.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 47 (99047)

Latitude 9.763 N Longitude 51.487 W

20-Feb-1999 12:14 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 48 (99048)
Latitude 9.153N Longitude 49.810W
20-Feb-1999 23:44Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	25.904	25.904	36.218	215.5	0.004	23.985
10	25.900	25.897	36.219	212.0	0.039	23.988
20	25.904	25.900	36.219	212.2	0.078	23.988
30	25.852	25.845	36.234	212.4	0.117	24.018
40	25.782	25.773	36.250	213.0	0.156	24.053
50	25.813	25.801	36.317	212.0	0.195	24.095
60	25.804	25.790	36.316	211.4	0.233	24.099
70	25.804	25.788	36.316	211.2	0.272	24.100
80	25.789	25.771	36.319	209.9	0.310	24.108
90	25.111	25.091	36.247	194.0	0.348	24.264
100	21.622	21.602	36.164	141.4	0.379	25.221
110	19.728	19.708	36.088	132.5	0.404	25.676
120	19.093	19.071	36.345	127.0	0.426	26.038
130	17.473	17.451	36.029	110.2	0.445	26.202
140	15.510	15.488	35.766	105.1	0.462	26.459
150	14.638	14.616	35.667	105.4	0.478	26.576
160	14.151	14.128	35.637	109.0	0.492	26.658
170	13.748	13.724	35.627	117.5	0.506	26.736
180	13.283	13.257	35.569	124.8	0.520	26.787
190	12.376	12.350	35.400	128.0	0.533	26.837
200	11.971	11.945	35.333	132.1	0.545	26.864
250	10.405	10.375	35.092	130.6	0.604	26.964
300	9.518	9.484	34.959	128.3	0.660	27.013
350	9.065	9.027	34.921	117.8	0.714	27.059
400	8.434	8.391	34.836	120.4	0.767	27.092
450	8.116	8.069	34.804	116.3	0.819	27.117
500	7.582	7.533	34.743	117.3	0.870	27.149
550	7.189	7.135	34.703	122.2	0.920	27.174
600	6.781	6.724	34.675	124.1	0.968	27.209
650	6.478	6.418	34.659	125.6	1.015	27.237
700	6.176	6.113	34.641	127.5	1.061	27.263
750	5.849	5.783	34.622	129.6	1.107	27.290
800	5.595	5.525	34.625	131.0	1.150	27.324
900	5.479	5.401	34.673	132.3	1.234	27.378
1000	5.191	5.106	34.716	145.6	1.313	27.448
1500	4.585	4.459	34.988	229.7	1.629	27.741
2000	3.603	3.441	34.976	258.2	1.870	27.840

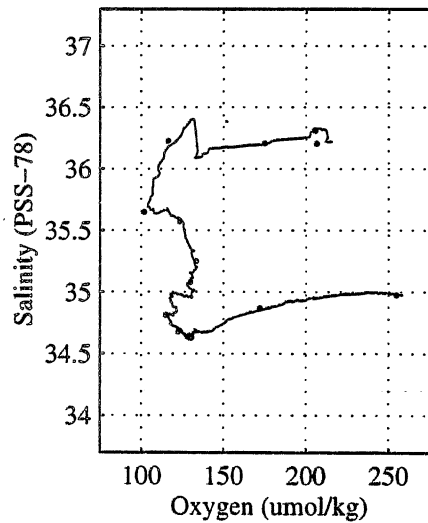
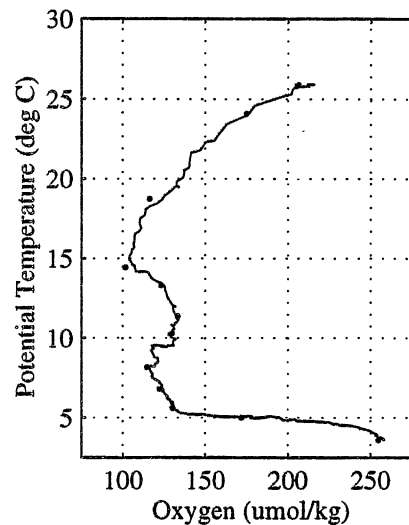
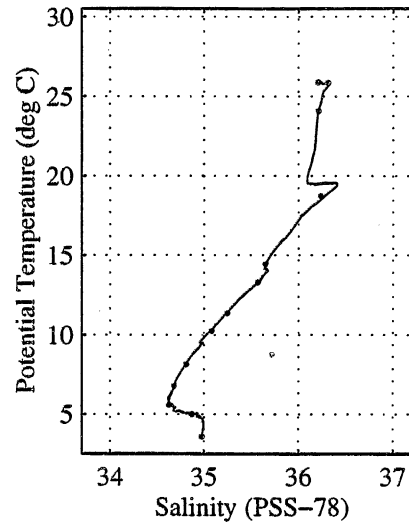
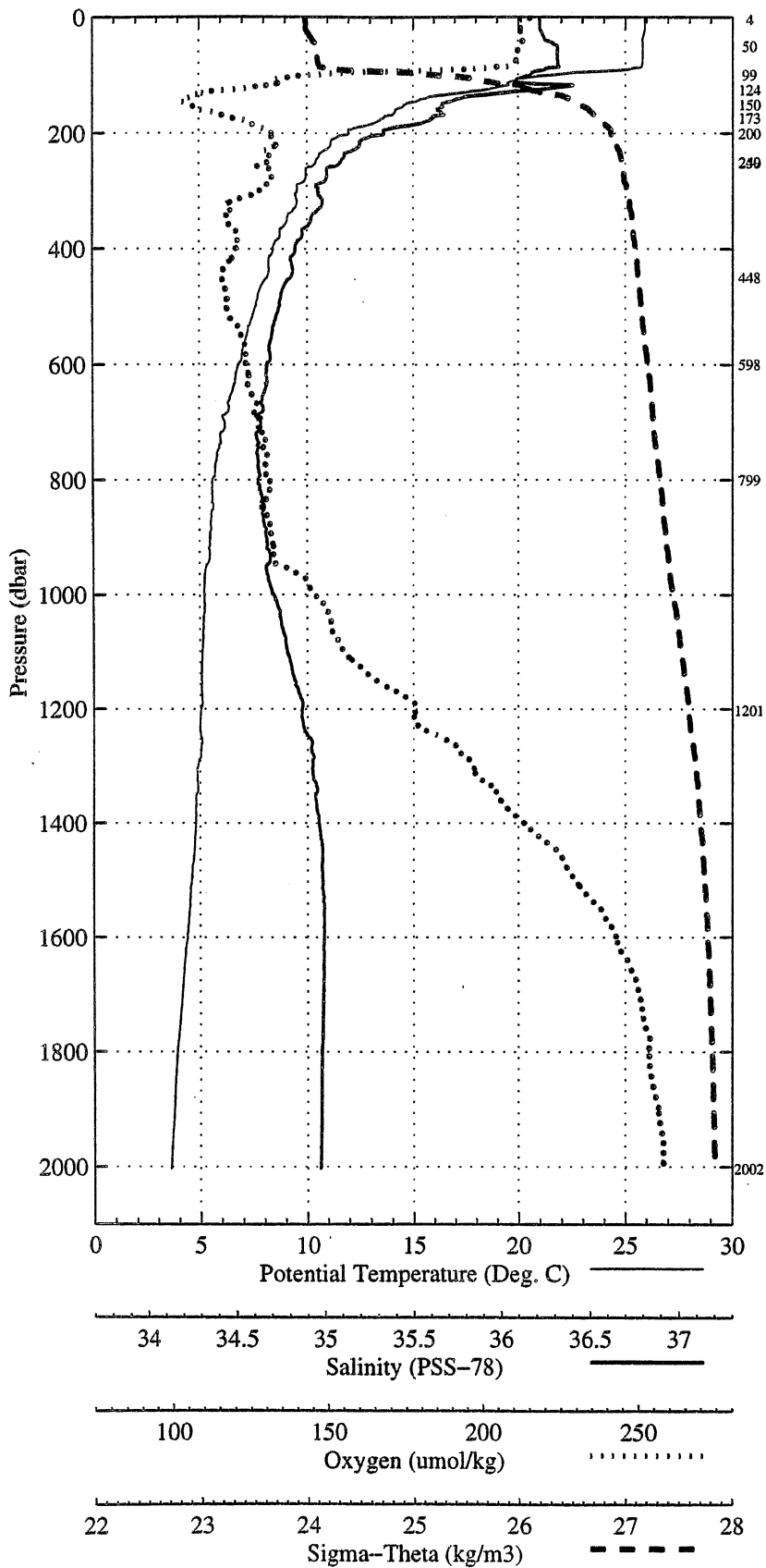
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2003	24	3.600	3.438	34.976	254.8
1202	1	4.996	4.894	34.869	172.2
800	2	5.603	5.534	34.627	130.1
599	3	6.793	6.737	34.678	122.2
449	4	8.158	8.111	34.810	114.7
251	5	10.259	10.229	35.078*	129.8
200	12	11.372	11.347	35.249	133.3
174	13	13.303	13.279	35.572	123.1
151	14	14.431	14.409	35.648	101.4
125	15	18.739	18.716	36.226*	116.1
99	16	24.089	24.067	36.206	175.1
50	17	25.840	25.828	36.309	205.5
4	18	25.882	25.881	36.203	206.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 48 (99048)

Latitude 9.153 N Longitude 49.810 W

20-Feb-1999 23:44 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 49 (99049)
Latitude 6.420N Longitude 51.340W
21-Feb-1999 18:25Z

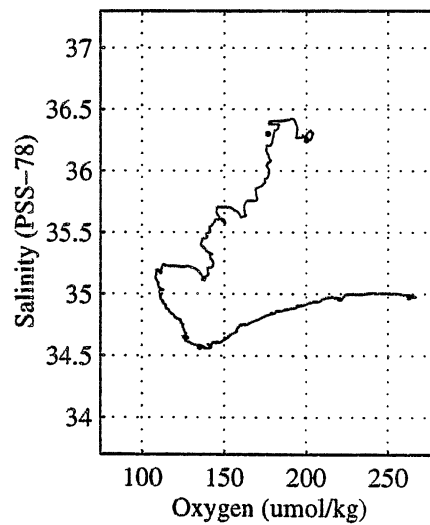
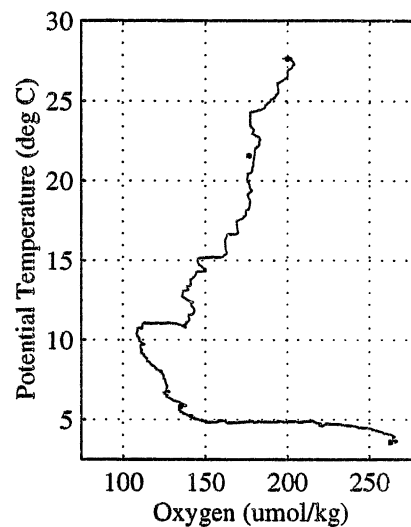
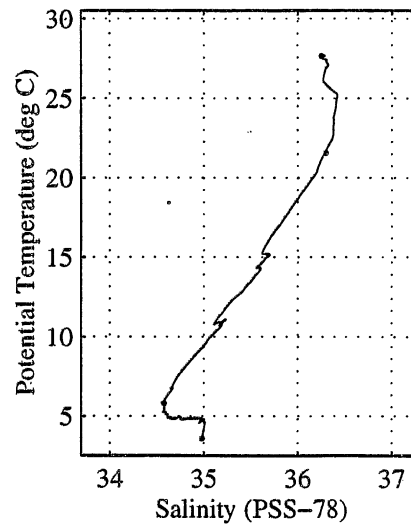
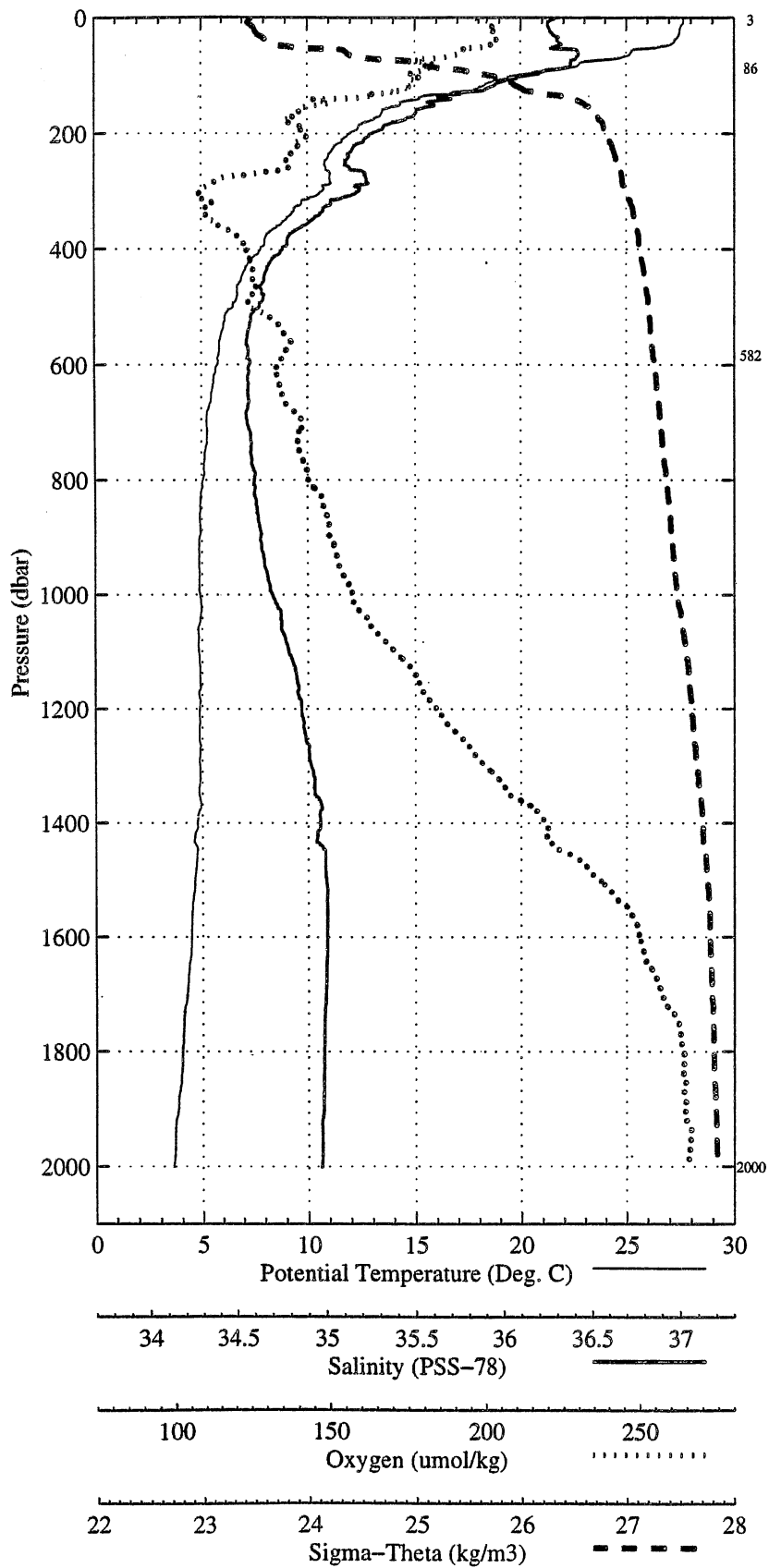
Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.650	27.650	36.292	197.2	0.004	23.484
10	27.640	27.638	36.249	201.7	0.044	23.456
20	27.498	27.493	36.259	202.7	0.088	23.511
30	27.449	27.442	36.281	203.2	0.132	23.545
40	27.244	27.235	36.304	203.8	0.175	23.630
50	26.604	26.593	36.283	200.0	0.217	23.820
60	25.209	25.196	36.421	191.9	0.254	24.361
70	24.571	24.556	36.407	186.3	0.290	24.547
80	22.727	22.710	36.378	182.9	0.320	25.069
90	21.246	21.229	36.255	179.5	0.349	25.393
100	19.751	19.733	36.125	177.3	0.373	25.697
110	18.662	18.642	35.997	177.3	0.396	25.881
120	18.032	18.011	35.922	175.1	0.417	25.982
130	16.685	16.664	35.760	170.2	0.436	26.183
140	15.203	15.182	35.702	153.5	0.454	26.479
150	14.320	14.298	35.606	148.0	0.469	26.598
160	13.495	13.472	35.508	141.1	0.483	26.695
170	13.382	13.358	35.492	138.8	0.497	26.706
180	12.730	12.706	35.398	135.7	0.510	26.765
190	12.356	12.331	35.322	142.5	0.524	26.781
200	11.928	11.902	35.256	143.0	0.537	26.812
250	10.815	10.785	35.114	137.3	0.599	26.909
300	10.660	10.624	35.186	108.5	0.657	26.995
350	8.952	8.913	34.919	112.6	0.711	27.075
400	7.853	7.812	34.763	123.6	0.763	27.122
450	6.944	6.901	34.661	126.0	0.812	27.171
500	6.541	6.495	34.633	125.8	0.859	27.204
550	5.937	5.889	34.566	136.3	0.906	27.230
600	5.769	5.717	34.578	133.6	0.951	27.262
650	5.466	5.411	34.569	134.9	0.994	27.292
700	5.235	5.176	34.565	141.8	1.037	27.317
750	5.150	5.088	34.585	140.8	1.079	27.344
800	5.046	4.980	34.605	143.6	1.119	27.372
900	4.868	4.794	34.640	150.2	1.197	27.422
1000	4.882	4.799	34.703	157.3	1.272	27.473
1500	4.607	4.480	35.002	236.9	1.580	27.750
2000	3.581	3.420	34.975	265.6	1.822	27.840
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	
2000	35	3.580	3.418	34.978	262.6	
583	2	5.817	5.767	34.568	134.8	
86	3	21.565	21.548	36.299*	177.0	
3	4	27.638	27.637	36.249	199.9	

NBC-2 R/V SEWARD JOHNSON

CTD Station 49 (99049)

Latitude 6.420 N Longitude 51.340 W

21-Feb-1999 18:25 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 50 (99050)
Latitude 6.250N Longitude 51.435W
21-Feb-1999 21:08Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.702	27.701	36.150	209.8	0.005	23.360
10	27.735	27.732	36.150	201.0	0.045	23.351
20	27.656	27.651	36.165	200.7	0.090	23.389
30	27.606	27.599	36.202	201.7	0.135	23.435
40	27.580	27.570	36.245	201.6	0.179	23.477
50	26.632	26.621	36.296	202.1	0.222	23.821
60	24.793	24.780	36.420	188.5	0.259	24.488
70	23.678	23.663	36.389	183.9	0.292	24.799
80	22.577	22.561	36.357	183.0	0.322	25.096
90	21.829	21.811	36.348	179.9	0.350	25.302
100	20.355	20.337	36.215	174.4	0.375	25.605
110	19.152	19.132	36.081	177.0	0.398	25.820
120	18.436	18.414	35.985	177.6	0.419	25.929
130	17.842	17.819	35.903	174.7	0.440	26.015
140	15.969	15.947	35.644	166.2	0.459	26.261
150	14.267	14.244	35.467	159.8	0.476	26.502
160	13.060	13.038	35.311	155.5	0.491	26.631
170	12.226	12.203	35.199	154.0	0.505	26.710
180	11.465	11.442	35.080	147.4	0.518	26.761
190	11.266	11.242	35.049	146.9	0.531	26.774
200	11.097	11.073	35.035	144.4	0.544	26.795
250	10.560	10.529	34.977	146.0	0.608	26.848
300	10.052	10.017	34.954	143.5	0.670	26.920
350	9.079	9.041	34.869	127.8	0.727	27.015
400	8.328	8.286	34.794	127.0	0.781	27.076
450	7.636	7.591	34.722	127.4	0.833	27.122
500	6.884	6.837	34.648	129.8	0.883	27.171
550	6.455	6.405	34.625	127.9	0.931	27.211
600	5.866	5.814	34.573	133.9	0.977	27.246
650	5.479	5.424	34.547	143.3	1.022	27.273
700	5.419	5.360	34.578	138.3	1.065	27.306
750	5.236	5.173	34.579	140.2	1.108	27.328
800	5.096	5.030	34.585	141.8	1.149	27.351
900	4.898	4.824	34.627	148.4	1.229	27.408
1000	4.812	4.730	34.696	156.6	1.304	27.474
1500	4.520	4.393	35.006	242.1	1.608	27.763

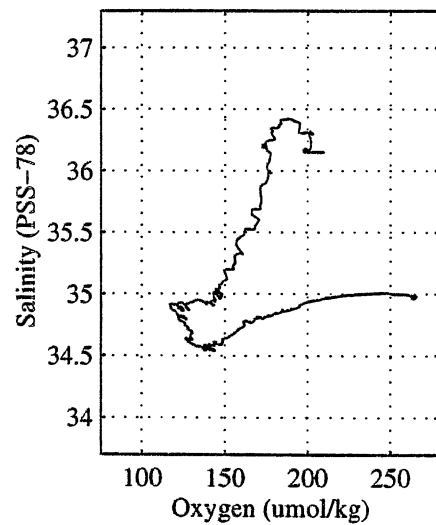
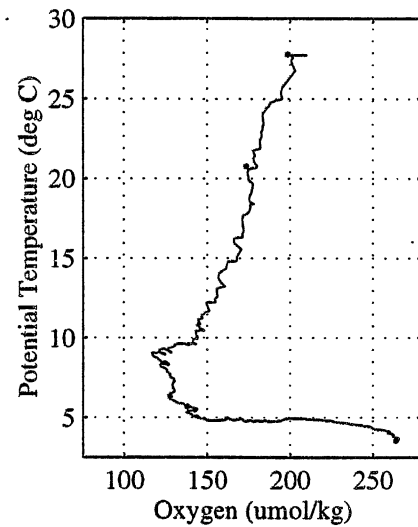
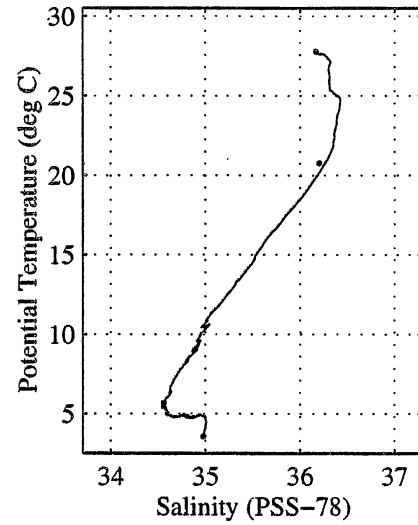
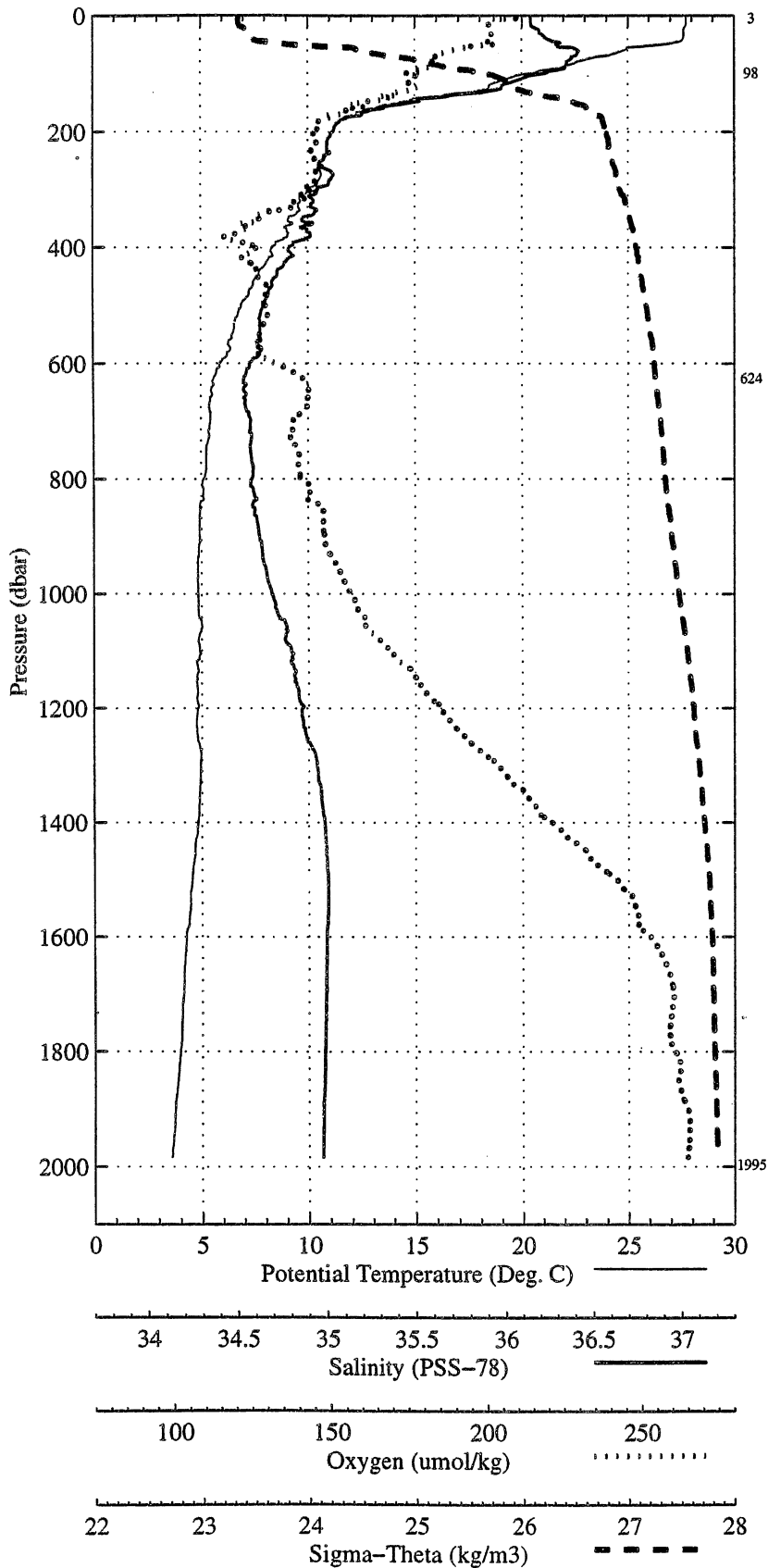
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1996	24	3.564	3.404	34.977	263.8
625	1	5.680	5.627	34.559	138.0
98	2	20.777	20.758	36.201*	173.7
4	3	27.762	27.761	36.164	198.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 50 (99050)

Latitude 6.250 N Longitude 51.435 W

21-Feb-1999 21:08 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 51 (99051)
Latitude 6.050N Longitude 51.542W
21-Feb-1999 23:58Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.915	27.914	35.934	202.5	0.005	23.127
10	27.915	27.912	35.938	199.4	0.047	23.132
20	27.872	27.868	35.957	199.6	0.095	23.162
30	27.768	27.761	36.003	200.1	0.141	23.232
40	27.232	27.223	36.293	201.3	0.187	23.625
50	25.740	25.728	36.305	195.5	0.227	24.109
60	23.589	23.576	36.436	186.4	0.261	24.860
70	23.165	23.150	36.444	183.2	0.291	24.992
80	21.919	21.904	36.367	181.1	0.319	25.290
90	20.692	20.675	36.264	181.1	0.345	25.551
100	19.743	19.724	36.162	178.0	0.369	25.727
110	19.203	19.183	36.081	178.8	0.391	25.807
120	18.887	18.866	36.033	175.5	0.414	25.852
130	15.363	15.343	35.533	171.4	0.433	26.312
140	13.704	13.684	35.329	167.9	0.450	26.512
150	12.233	12.213	35.148	165.4	0.464	26.668
160	11.679	11.659	35.086	165.3	0.478	26.725
170	11.551	11.530	35.077	163.7	0.491	26.743
180	11.382	11.359	35.065	161.2	0.505	26.765
190	11.365	11.341	35.080	157.2	0.518	26.780
200	11.057	11.032	35.037	155.8	0.531	26.804
250	10.184	10.155	34.957	142.2	0.593	26.897
300	9.631	9.597	34.919	133.2	0.652	26.963
350	8.851	8.813	34.824	130.1	0.709	27.017
400	8.112	8.071	34.748	125.3	0.763	27.072
450	7.326	7.283	34.681	122.1	0.815	27.134
500	6.732	6.686	34.632	124.4	0.864	27.178
550	6.398	6.348	34.620	124.6	0.911	27.214
600	6.005	5.952	34.593	131.5	0.958	27.244
650	5.814	5.757	34.590	134.7	1.002	27.266
700	5.475	5.415	34.584	136.1	1.046	27.304
750	5.265	5.202	34.594	137.8	1.089	27.337
800	5.135	5.068	34.619	139.6	1.129	27.373
900	4.970	4.896	34.672	148.1	1.207	27.436
1000	4.924	4.841	34.766	161.8	1.279	27.517
1500	4.504	4.378	35.002	242.2	1.574	27.761

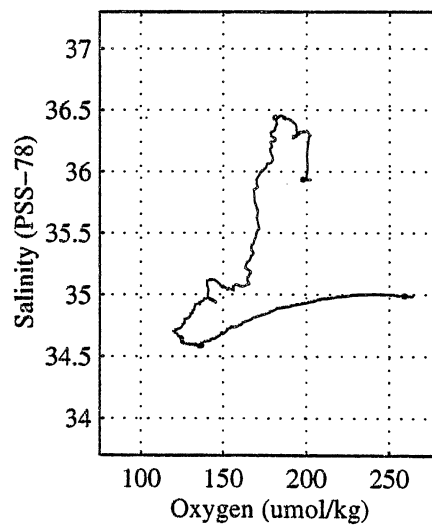
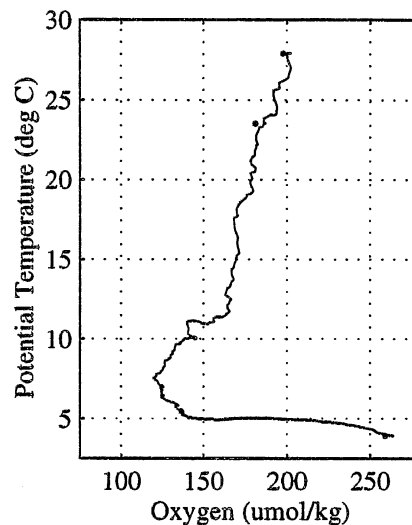
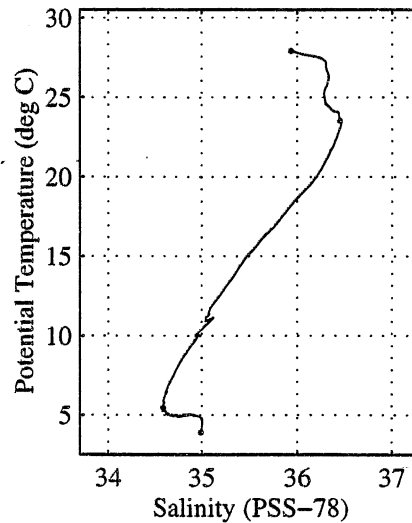
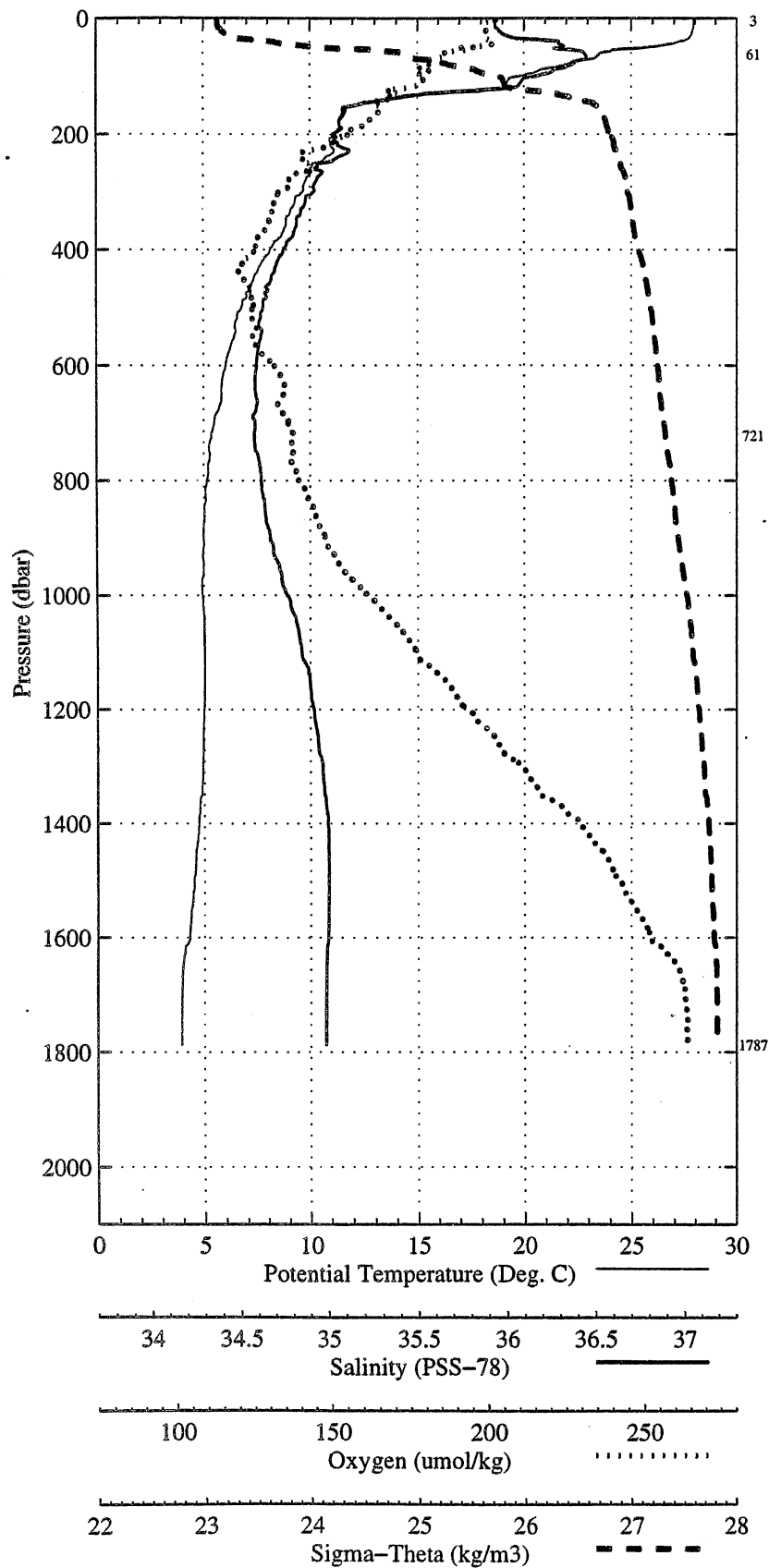
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1787	24	3.921	3.775	34.988	259.2
721	1	5.451	5.390	34.589	136.6
62	2	23.524	23.511	36.437	181.1
4	3	27.905	27.904	35.936	197.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 51 (99051)

Latitude 6.050 N Longitude 51.542 W

21-Feb-1999 23:58 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 52 (99052)
Latitude 5.963N Longitude 51.595W
22-Feb-1999 01:57Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	28.149	28.149	34.714	200.1	0.006	22.133
10	28.163	28.160	34.720	198.7	0.057	22.135
20	28.095	28.091	35.386	198.1	0.112	22.659
30	27.922	27.915	35.914	197.4	0.161	23.115
40	27.542	27.533	36.237	200.0	0.207	23.483
50	26.113	26.102	36.253	197.4	0.249	23.953
60	24.050	24.037	36.393	193.7	0.285	24.691
70	23.210	23.195	36.445	184.8	0.316	24.979
80	22.167	22.151	36.389	181.7	0.345	25.237
90	20.494	20.477	36.236	180.4	0.370	25.583
100	20.060	20.041	36.190	180.3	0.394	25.665
110	18.798	18.779	36.004	174.1	0.417	25.851
120	17.944	17.924	35.889	177.2	0.438	25.978
130	16.217	16.196	35.629	169.8	0.458	26.192
140	12.998	12.978	35.235	165.0	0.475	26.584
150	12.331	12.311	35.169	166.3	0.489	26.665
160	11.916	11.895	35.124	165.0	0.503	26.710
170	11.746	11.724	35.103	164.2	0.517	26.727
180	11.486	11.464	35.072	163.0	0.530	26.751
190	11.444	11.420	35.068	162.1	0.543	26.756
200	11.346	11.321	35.057	161.4	0.557	26.766
250	10.920	10.889	35.046	151.1	0.622	26.838
300	10.239	10.203	34.975	145.5	0.684	26.904
350	9.170	9.131	34.843	142.0	0.743	26.981
400	8.336	8.294	34.773	134.2	0.798	27.058
450	7.725	7.680	34.718	125.2	0.851	27.107
500	7.251	7.202	34.684	131.9	0.902	27.149
550	6.932	6.880	34.659	132.2	0.951	27.174
600	6.214	6.160	34.612	131.7	0.999	27.233
650	6.100	6.042	34.611	132.2	1.045	27.248

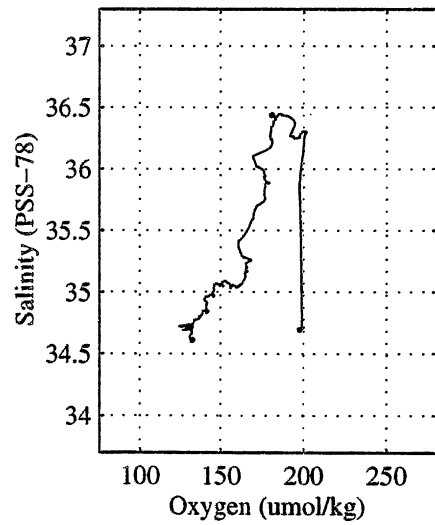
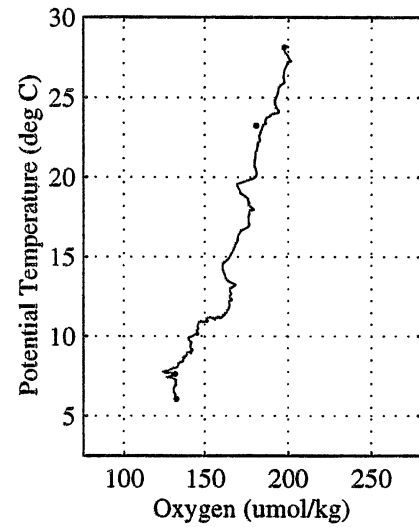
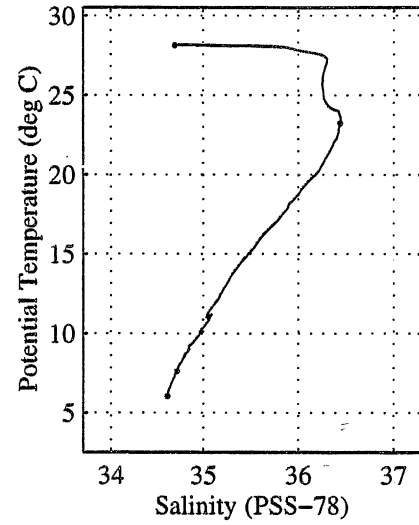
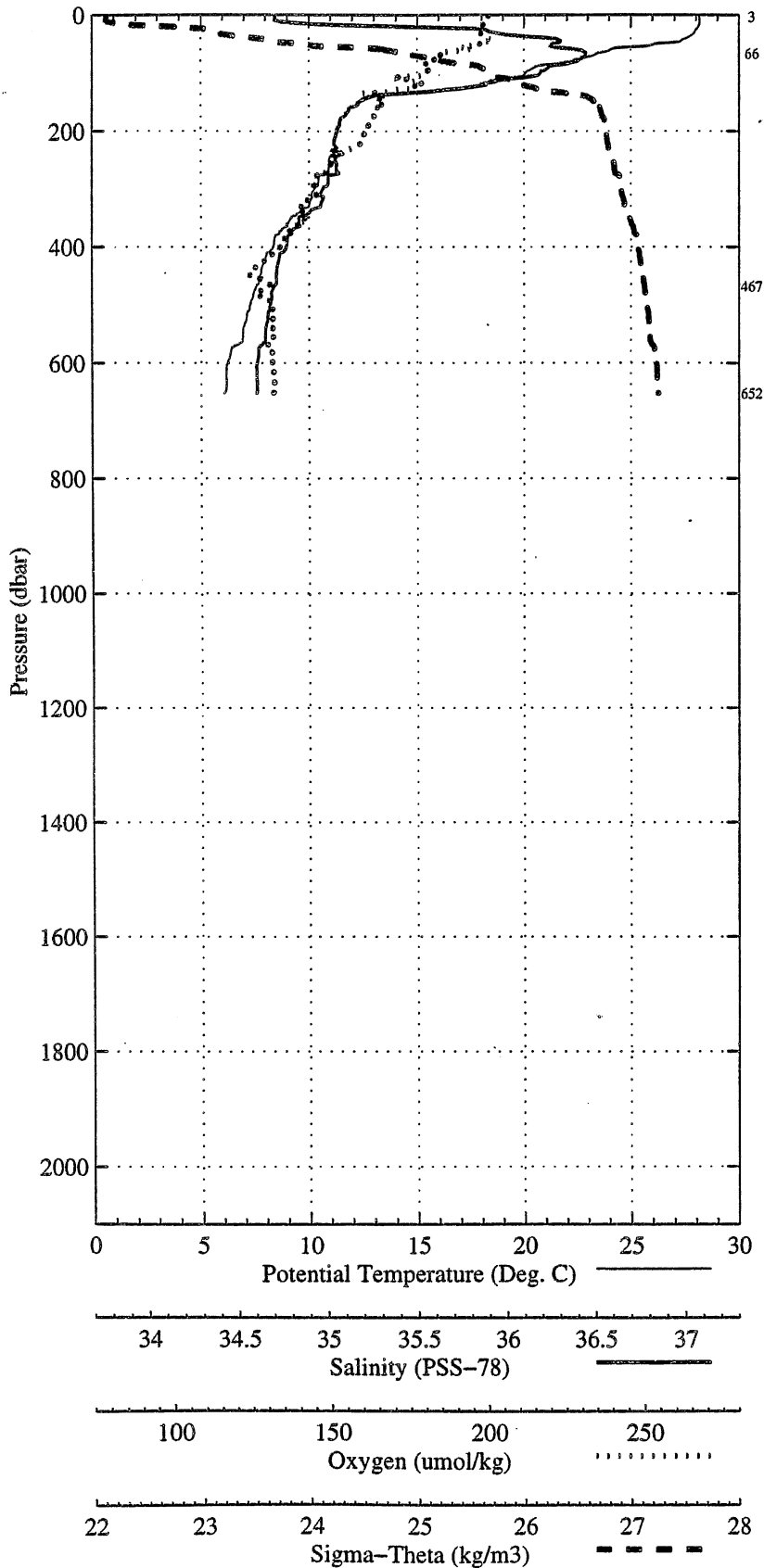
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
653	24	6.053	5.995	34.612	132.3
467	1	7.633	7.586	34.716	131.6
67	2	23.227	23.213	36.439	180.7
3	3	28.132	28.131	34.696	197.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 52 (99052)

Latitude 5.963 N Longitude 51.595 W

22-Feb-1999 01:57 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 53 (99053)
Latitude 5.948N Longitude 51.000W
25-Feb-1999 01:51Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.756	27.756	33.956	212.4	0.006	21.692
10	27.746	27.744	34.131	203.6	0.061	21.827
20	27.599	27.595	36.010	192.3	0.114	23.291
30	27.180	27.173	36.251	188.6	0.158	23.609
40	27.147	27.138	36.267	187.7	0.200	23.634
50	27.127	27.116	36.297	185.0	0.243	23.663
60	26.885	26.871	36.249	182.8	0.285	23.707
70	25.899	25.884	36.227	178.0	0.326	24.003
80	22.459	22.443	35.994	171.4	0.361	24.854
90	18.574	18.558	35.886	173.2	0.387	25.817
100	18.398	18.380	35.983	163.9	0.409	25.936
110	17.091	17.073	35.825	156.8	0.428	26.136
120	15.655	15.637	35.633	153.2	0.447	26.323
130	14.169	14.150	35.398	162.0	0.463	26.468
140	13.490	13.470	35.311	163.1	0.479	26.543
150	13.191	13.170	35.267	163.5	0.494	26.570
160	12.782	12.760	35.211	161.3	0.509	26.609
170	12.175	12.153	35.157	152.2	0.523	26.687
180	11.569	11.546	35.080	150.1	0.537	26.742
190	10.966	10.942	35.003	149.8	0.550	26.793
200	10.860	10.836	34.998	149.5	0.563	26.809
250	10.193	10.164	34.948	140.6	0.625	26.889
300	9.592	9.558	34.885	137.3	0.685	26.942
350	8.905	8.866	34.811	130.5	0.742	26.998
400	8.209	8.167	34.748	125.3	0.797	27.057
450	7.682	7.637	34.704	122.7	0.850	27.102
500	6.993	6.945	34.642	123.5	0.901	27.151
550	6.422	6.371	34.604	124.4	0.950	27.198
600	6.081	6.028	34.596	127.3	0.997	27.237
650	5.691	5.635	34.586	131.0	1.041	27.278
700	5.353	5.294	34.570	134.0	1.085	27.307
750	5.180	5.117	34.578	137.0	1.127	27.335
800	4.930	4.865	34.595	141.6	1.168	27.377
900	4.913	4.839	34.664	148.9	1.245	27.436
1000	4.966	4.882	34.770	157.9	1.318	27.517
1500	4.473	4.347	35.004	237.9	1.614	27.766
2000	3.597	3.436	34.974	265.7	1.849	27.838

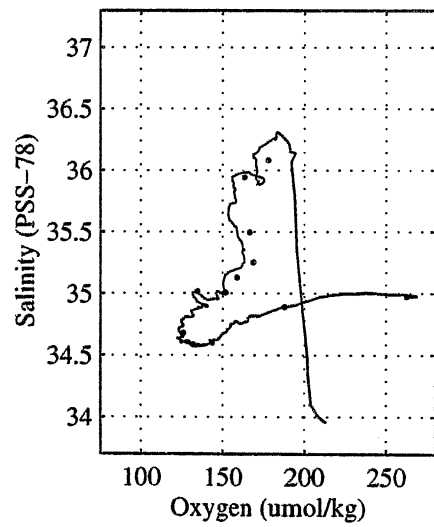
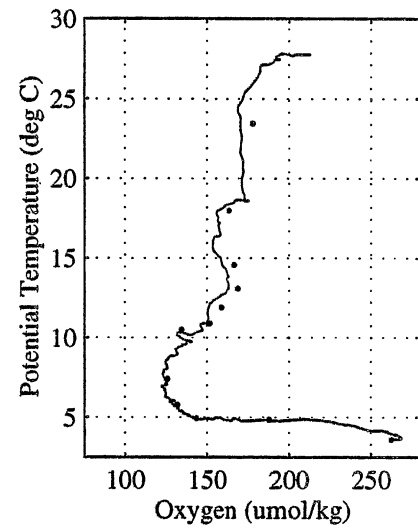
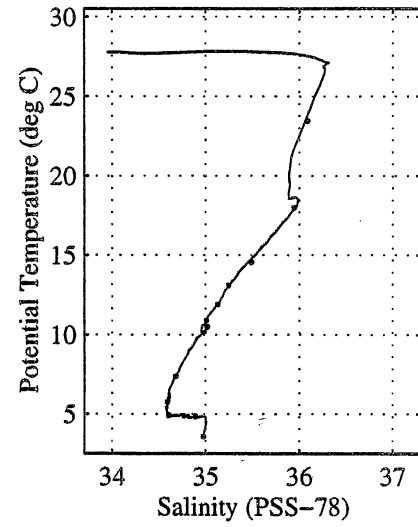
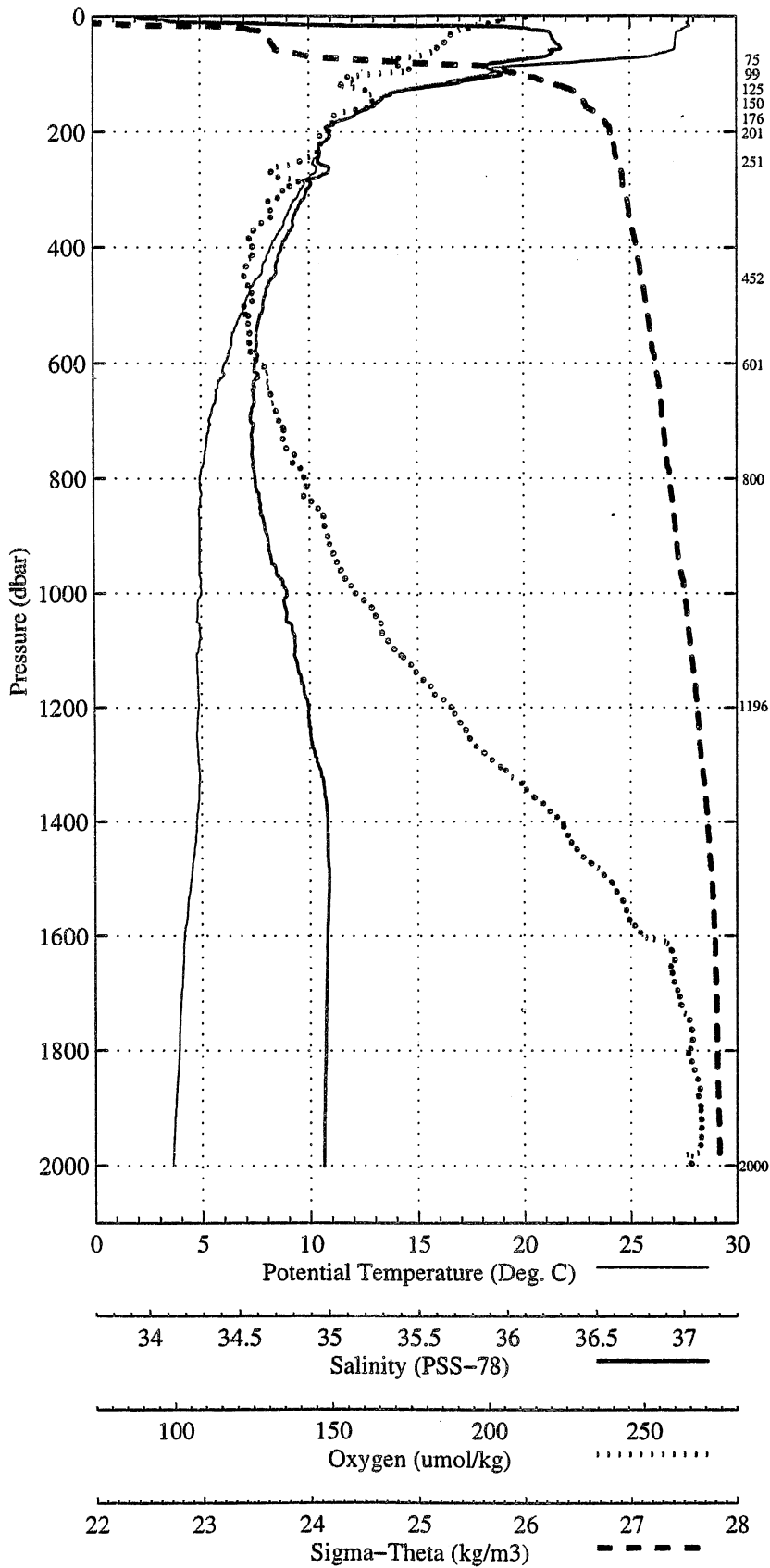
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.598	3.436	34.975	262.4
1197	1	4.846	4.745	34.892	188.2
801	2	4.934	4.869	34.600	143.3
602	3	5.777	5.725	34.586	131.6
452	4	7.407	7.363	34.679	125.4
252	5	10.501	10.470	35.017*	134.2
201	6	10.890	10.866	35.007	151.6
177	12	11.898	11.875	35.128	158.8
151	13	13.098	13.077	35.252	169.1
126	14	14.566	14.547	35.496*	167.0
100	15	17.993	17.975	35.943	163.6
75	16	23.452	23.436	36.082*	178.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 53 (99053)

Latitude 5.948 N Longitude 51.000 W

25-Feb-1999 01:51 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 54 (99054)
Latitude 7.504N Longitude 52.737W
25-Feb-1999 21:30Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen umol/kg	DynHt m3/kg	SigTh kg/m3
1	26.451	26.451	36.231	μ04.7	0.004	23.822
10	26.458	26.455	36.228	206.1	0.041	23.820
20	26.422	26.418	36.228	205.4	0.082	23.832
30	26.229	26.222	36.283	206.1	0.122	23.936
40	25.926	25.917	36.289	202.9	0.161	24.037
50	25.666	25.655	36.239	203.9	0.200	24.081
60	25.643	25.629	36.253	202.8	0.238	24.101
70	25.644	25.629	36.262	201.9	0.276	24.108
80	25.762	25.744	36.321	201.3	0.315	24.118
90	25.593	25.573	36.295	196.6	0.353	24.152
100	22.994	22.974	36.450	141.5	0.387	25.049
110	20.381	20.361	36.441	125.5	0.412	25.772
120	19.485	19.463	36.471	132.4	0.433	26.033
130	18.301	18.279	36.487	133.3	0.452	26.349
140	17.348	17.324	36.329	130.9	0.468	26.463
150	16.440	16.416	36.160	130.5	0.484	26.550
160	14.449	14.425	35.741	130.0	0.499	26.675
170	13.713	13.688	35.557	132.2	0.513	26.689
180	13.014	12.989	35.437	133.2	0.527	26.739
190	12.651	12.625	35.394	131.5	0.540	26.779
200	12.039	12.013	35.288	131.2	0.553	26.816
250	10.114	10.085	35.017	123.5	0.613	26.956
300	9.334	9.301	34.904	127.5	0.670	27.000
350	9.080	9.041	34.914	114.9	0.724	27.051
400	7.936	7.896	34.756	120.1	0.777	27.104
450	7.616	7.572	34.736	118.0	0.828	27.137
500	6.879	6.832	34.641	126.9	0.877	27.165
550	6.428	6.378	34.603	128.9	0.926	27.197
600	6.128	6.075	34.580	130.8	0.973	27.218
650	5.852	5.795	34.570	133.5	1.019	27.246
700	5.479	5.420	34.537	140.9	1.064	27.266
750	5.435	5.371	34.563	139.4	1.109	27.293
800	5.262	5.195	34.571	138.7	1.152	27.320
900	5.059	4.984	34.595	144.8	1.235	27.365
1000	5.025	4.941	34.690	150.4	1.315	27.446

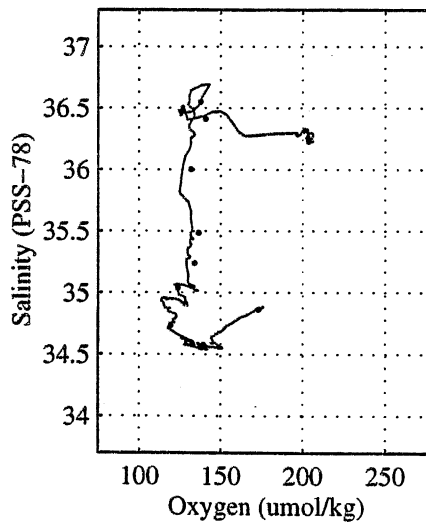
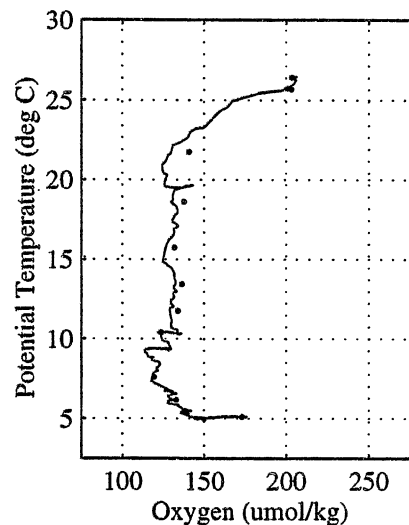
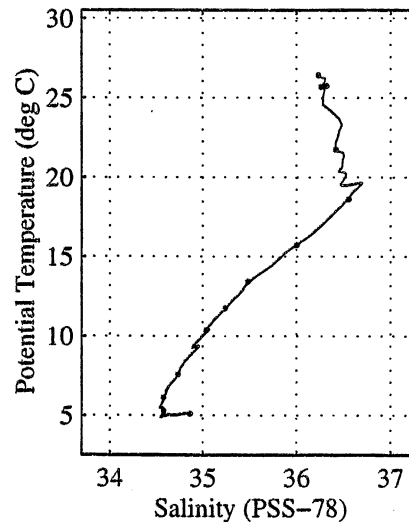
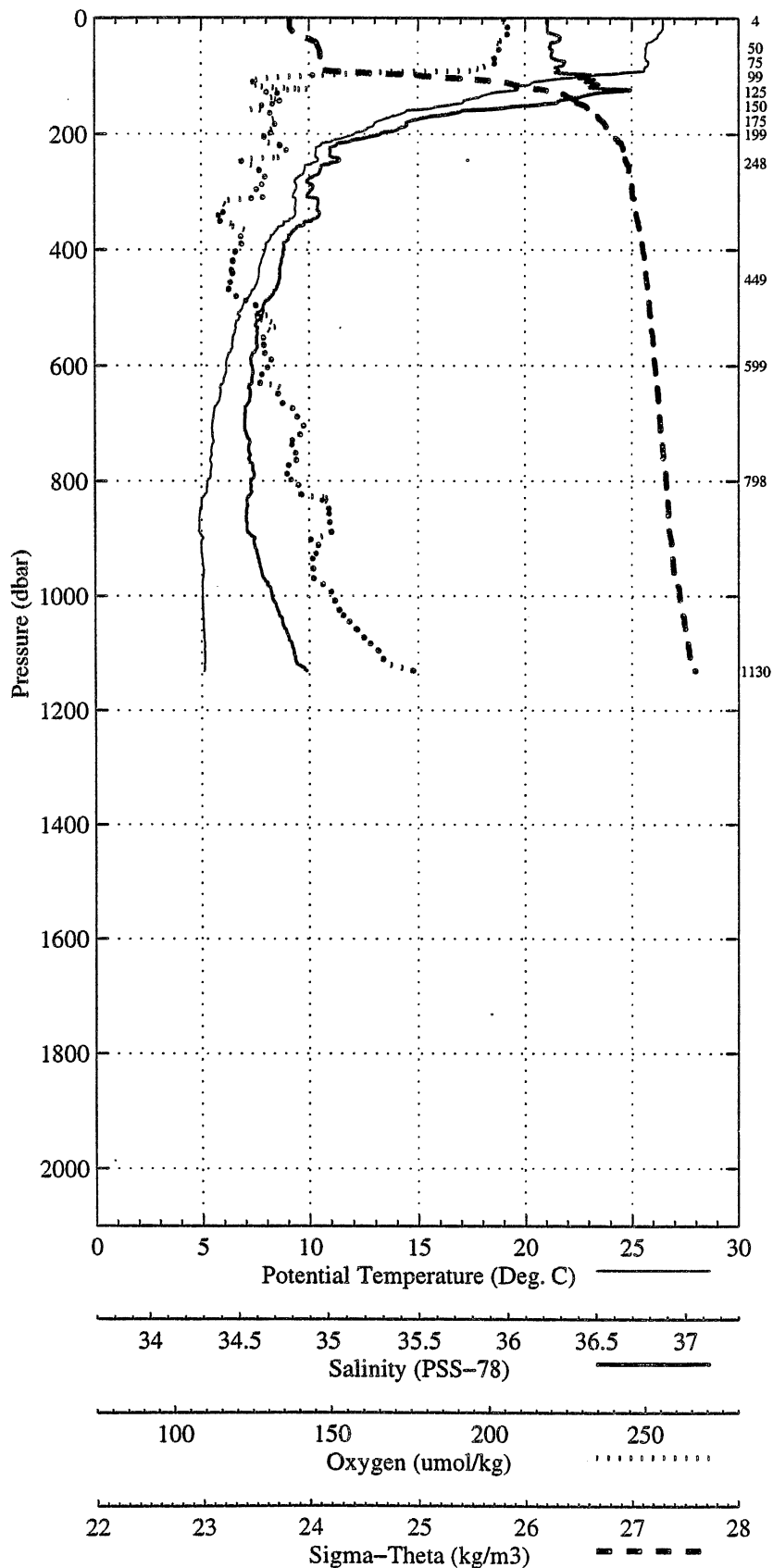
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1131	24	5.105	5.008	34.862*	173.0
799	1	5.299	5.232	34.576	139.3
599	2	6.156	6.102	34.576	132.9
450	3	7.601	7.556	34.732	119.2
249	4	10.396	10.366	35.038*	123.7
199	5	11.747	11.722	35.241	133.9
176	6	13.438	13.413	35.486*	136.5
151	12	15.740	15.716	36.003	131.8
126	13	18.623	18.601	36.550*	137.7
100	14	21.747	21.727	36.412	140.7
75	15	25.745	25.728	36.316	201.1
50	16	25.683	25.672	36.258*	203.1
4	17	26.409	26.408	36.227	203.4

NBC-2 R/V SEWARD JOHNSON

CTD Station 54 (99054)

Latitude 7.504 N Longitude 52.737 W

25-Feb-1999 21:30 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 55 (99055)
Latitude 9.001N Longitude 52.750W
26-Feb-1999 11:54Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.154	27.154	36.317	195.2	0.004	23.663
10	27.136	27.133	36.322	203.2	0.042	23.674
20	27.139	27.135	36.322	203.1	0.084	23.674
30	27.140	27.133	36.322	202.8	0.127	23.676
40	27.141	27.131	36.322	202.9	0.169	23.677
50	27.145	27.133	36.322	202.6	0.211	23.677
60	27.145	27.131	36.322	202.4	0.254	23.679
70	27.148	27.131	36.322	202.2	0.296	23.679
80	27.150	27.131	36.323	201.9	0.339	23.680
90	27.150	27.129	36.323	201.7	0.381	23.682
100	27.145	27.122	36.323	201.4	0.424	23.685
110	27.140	27.115	36.323	199.9	0.466	23.688
120	25.855	25.829	36.387	186.5	0.506	24.144
130	25.762	25.733	36.402	187.9	0.544	24.186
140	25.203	25.173	36.410	177.6	0.581	24.365
150	23.360	23.329	36.418	177.3	0.615	24.925
160	22.414	22.382	36.339	161.3	0.645	25.138
170	18.617	18.587	35.919	146.7	0.671	25.838
180	15.735	15.707	35.548	137.1	0.691	26.243
190	13.195	13.169	35.258	157.4	0.707	26.565
200	12.724	12.697	35.210	158.9	0.722	26.622
250	12.035	12.002	35.165	153.0	0.793	26.724
300	10.773	10.736	34.998	139.0	0.859	26.829
350	10.373	10.331	34.977	140.0	0.923	26.885
400	9.525	9.480	34.889	138.1	0.983	26.961
450	8.990	8.940	34.841	135.2	1.041	27.011
500	8.420	8.367	34.787	128.8	1.097	27.059
550	7.617	7.562	34.717	126.7	1.150	27.124
600	7.189	7.130	34.685	123.4	1.201	27.161
650	6.787	6.726	34.648	126.9	1.251	27.188
700	6.162	6.098	34.610	128.4	1.299	27.240
750	5.697	5.631	34.569	131.8	1.345	27.266
800	5.546	5.477	34.582	133.3	1.389	27.296
900	5.193	5.117	34.609	139.6	1.474	27.361
1000	5.011	4.928	34.644	146.7	1.555	27.411
1500	4.567	4.440	35.009	236.5	1.870	27.760
2000	3.569	3.408	34.977	260.7	2.106	27.843

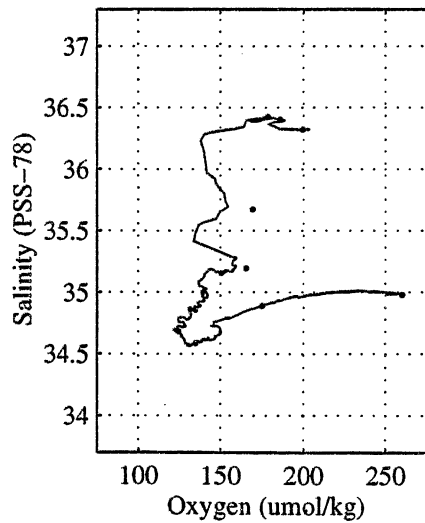
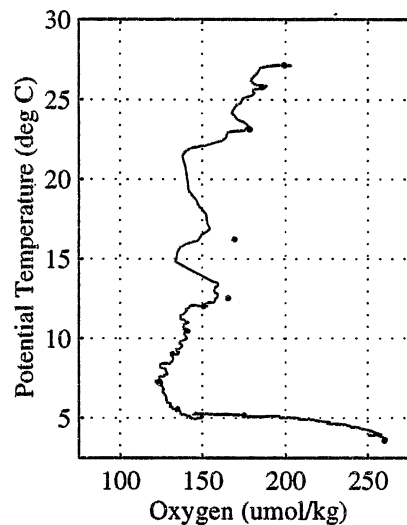
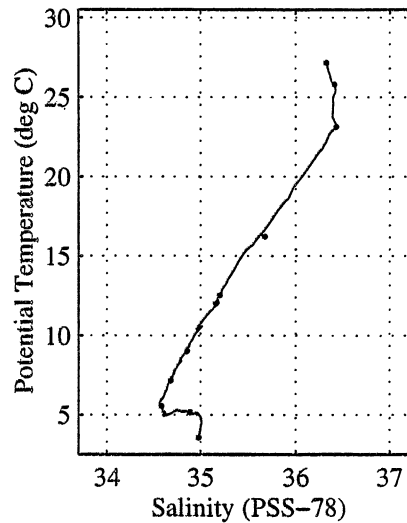
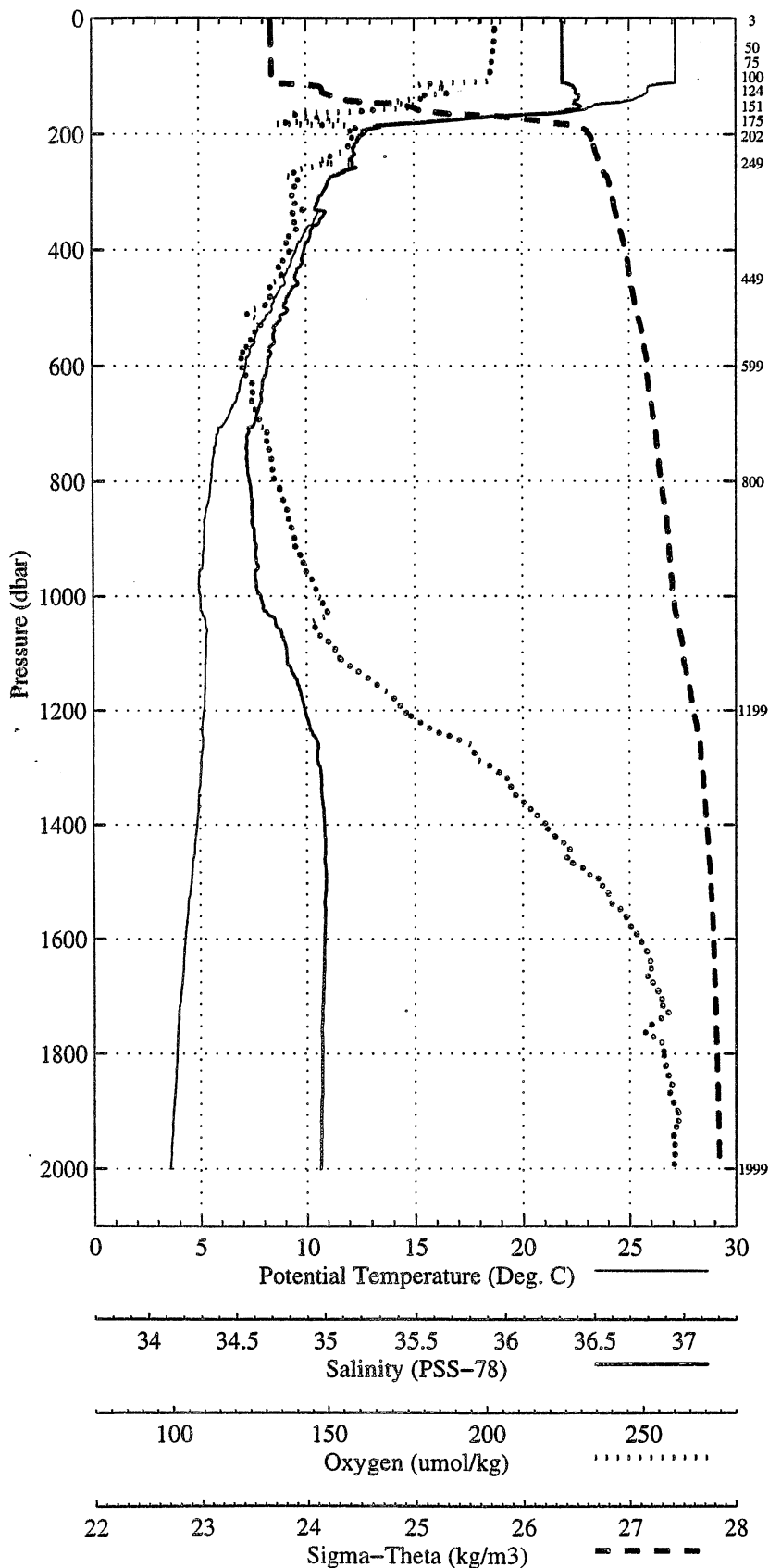
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.570	3.408	34.978	259.9
1199	1	5.162	5.058	34.890	175.0
800	2	5.550	5.481	34.585	135.2
600	3	7.170	7.112	34.684	124.6
449	4	9.028	8.979	34.857	132.1
249	5	12.010	11.977	35.155	150.5
203	6	12.545	12.518	35.195	165.3
176	12	16.229	16.200	35.673*	169.3
151	13	23.129	23.098	36.427	178.4
124	14	25.785	25.757	36.407	185.9
101	15	27.154	27.131	36.321	199.0
76	16	27.153	27.135	36.321	199.0
50	17	27.146	27.134	36.321	199.2
4	18	27.140	27.140	36.322	199.4

NBC-2 R/V SEWARD JOHNSON

CTD Station 55 (99055)

Latitude 9.001 N Longitude 52.750 W

26-Feb-1999 11:54 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 56 (99056)
Latitude 8.400N Longitude 51.916W
26-Feb-1999 19:29Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen umol/kg	DynHt m3/kg	SigTh kg/m3
1	27.052	27.051	35.93μ	196.2	0.004	23.407
10	27.080	27.078	35.935	202.4	0.045	23.400
20	26.979	26.974	35.935	203.3	0.089	23.434
30	26.954	26.948	35.952	204.3	0.134	23.456
40	26.987	26.978	36.205	204.6	0.178	23.638
50	26.769	26.758	36.233	203.7	0.220	23.730
60	26.736	26.723	36.279	199.6	0.261	23.776
70	26.425	26.409	36.309	192.5	0.302	23.899
80	25.868	25.851	36.253	184.0	0.342	24.034
90	24.442	24.423	36.230	166.5	0.379	24.454
100	22.839	22.818	36.302	170.1	0.412	24.982
110	21.538	21.517	36.588	129.9	0.439	25.568
120	19.665	19.643	36.551	133.9	0.461	26.047
130	18.404	18.381	36.406	127.8	0.480	26.261
140	17.152	17.128	36.225	135.0	0.497	26.431
150	14.406	14.383	35.646	138.2	0.512	26.610
160	13.623	13.600	35.523	139.5	0.527	26.680
170	12.714	12.691	35.372	139.6	0.540	26.749
180	11.803	11.779	35.209	144.4	0.553	26.799
190	11.438	11.414	35.162	141.8	0.566	26.830
200	11.213	11.188	35.136	141.8	0.579	26.852
250	9.948	9.920	34.995	132.3	0.638	26.967
300	8.722	8.690	34.799	137.1	0.694	27.015
350	8.163	8.127	34.747	127.4	0.748	27.062
400	7.616	7.577	34.679	140.3	0.800	27.090
450	7.292	7.248	34.664	129.3	0.851	27.126
500	7.041	6.993	34.655	123.4	0.901	27.155
550	6.702	6.651	34.627	128.6	0.951	27.180
600	6.438	6.383	34.620	127.9	0.999	27.210
650	5.847	5.790	34.568	133.5	1.045	27.245
700	5.664	5.603	34.571	134.9	1.090	27.271
750	5.385	5.322	34.565	139.0	1.134	27.301
800	5.306	5.238	34.570	140.4	1.177	27.314
900	5.102	5.027	34.593	142.4	1.262	27.358
1000	4.891	4.809	34.619	150.4	1.342	27.404
1500	4.751	4.622	34.996	223.0	1.680	27.730
2000	3.619	3.457	34.978	260.1	1.924	27.840

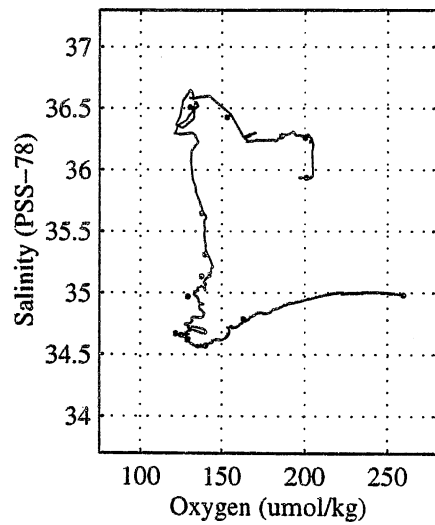
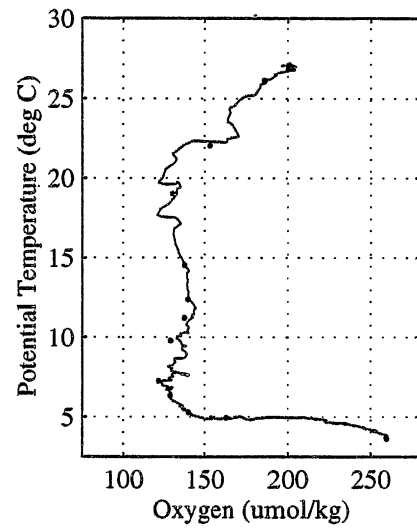
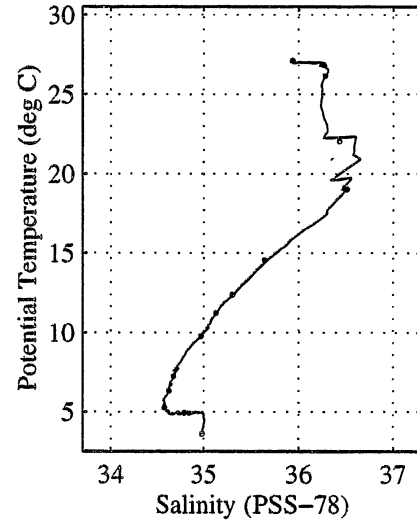
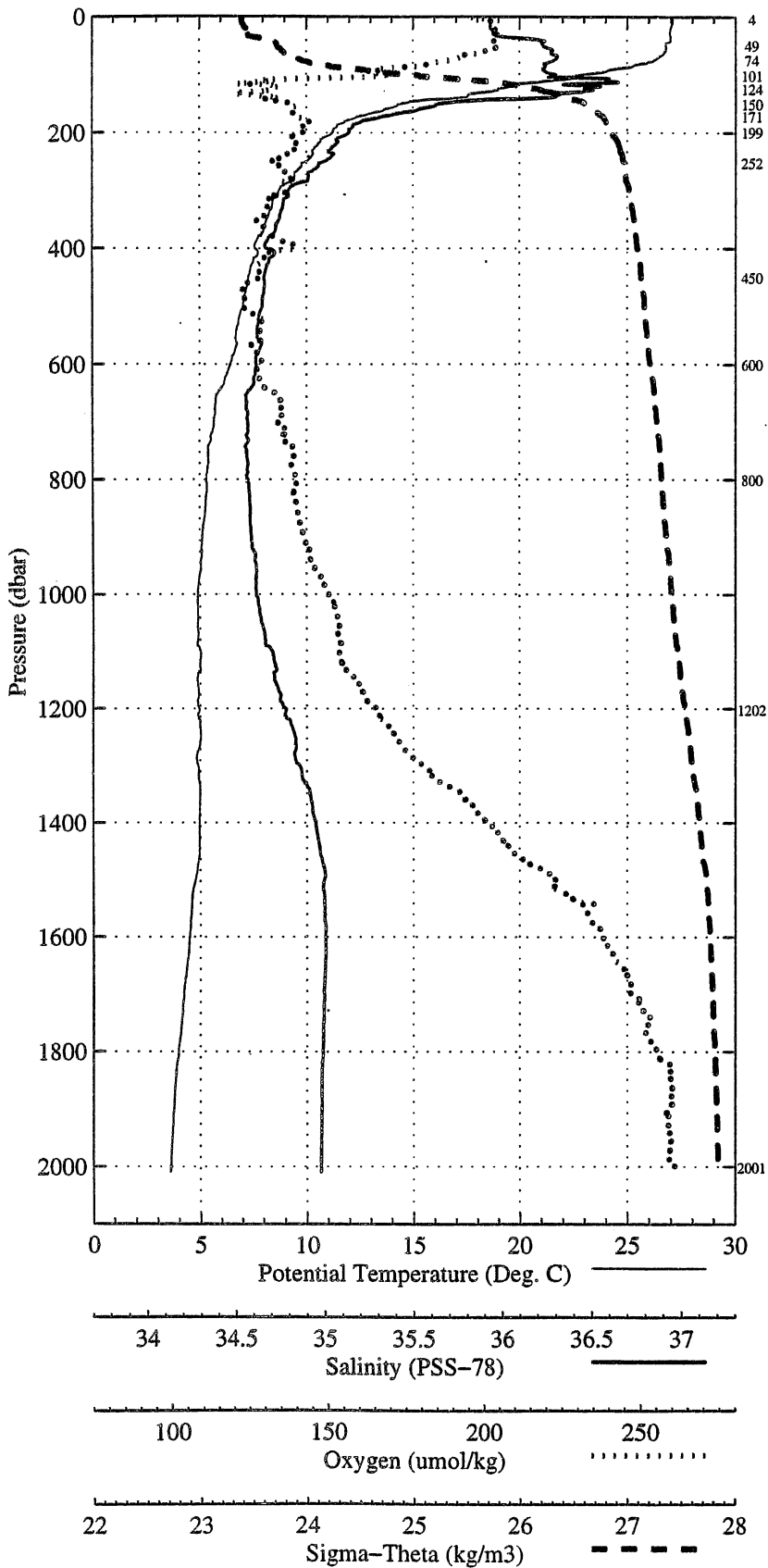
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.617	3.455	34.982	259.5
1202	1	4.944	4.842	34.787	163.3
800	2	5.283	5.215	34.573	139.9
601	3	6.333	6.279	34.618	128.4
450	4	7.263	7.220	34.670	121.2
252	5	9.785	9.756	34.969	128.7
199	6	11.231	11.206	35.133	137.3
171	12	12.382	12.359	35.312	139.5
150	13	14.544	14.521	35.649*	137.3
124	14	19.033	19.011	36.509*	130.0
101	15	22.049	22.028	36.428*	153.2
74	16	26.129	26.112	36.274*	186.4
50	17	26.824	26.812	36.260	200.0
4	18	27.085	27.084	35.935	200.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 56 (99056)

Latitude 8.400 N Longitude 51.916 W

26-Feb-1999 19:29 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 57 (99057)
Latitude 7.799N Longitude 51.152W
27-Feb-1999 02:23Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.516	27.516	36.239	199.6	0.004	23.487
10	27.522	27.520	36.239	197.5	0.044	23.487
20	27.521	27.516	36.241	197.9	0.088	23.490
30	27.527	27.520	36.241	198.0	0.132	23.489
40	27.519	27.510	36.249	198.0	0.176	23.500
50	27.488	27.476	36.272	198.0	0.220	23.528
60	26.523	26.510	36.373	200.7	0.262	23.915
70	26.471	26.456	36.382	201.1	0.302	23.940
80	25.754	25.736	36.227	200.8	0.341	24.049
90	22.160	22.142	36.241	139.1	0.375	25.128
100	21.192	21.173	36.401	129.7	0.402	25.520
110	18.476	18.457	36.195	114.4	0.423	26.079
120	16.987	16.968	35.943	99.7	0.442	26.252
130	15.185	15.165	35.712	101.7	0.459	26.490
140	14.398	14.378	35.608	106.3	0.474	26.582
150	13.424	13.402	35.488	101.9	0.489	26.694
160	12.562	12.541	35.368	101.6	0.502	26.775
170	12.138	12.116	35.303	103.9	0.515	26.807
180	11.644	11.621	35.233	109.7	0.528	26.847
190	11.167	11.143	35.165	113.4	0.540	26.883
200	10.987	10.962	35.137	112.8	0.552	26.894
250	10.091	10.062	35.009	103.6	0.610	26.954
300	9.480	9.446	34.943	95.3	0.667	27.007
350	8.824	8.786	34.867	99.0	0.722	27.055
400	8.345	8.303	34.823	104.5	0.774	27.096
450	7.770	7.724	34.761	110.5	0.826	27.134
500	7.707	7.657	34.822	109.7	0.875	27.193
550	6.684	6.633	34.681	118.0	0.923	27.224
600	5.973	5.921	34.603	124.9	0.968	27.256
650	5.602	5.547	34.582	129.0	1.012	27.286
700	5.466	5.407	34.593	129.9	1.055	27.312
750	5.285	5.222	34.600	132.9	1.097	27.339
800	5.212	5.145	34.636	135.5	1.138	27.378
900	4.773	4.700	34.635	146.2	1.216	27.428
1000	4.836	4.754	34.712	153.1	1.289	27.484
1500	4.678	4.550	34.962	213.3	1.604	27.711
2000	3.787	3.622	34.983	259.0	1.861	27.828

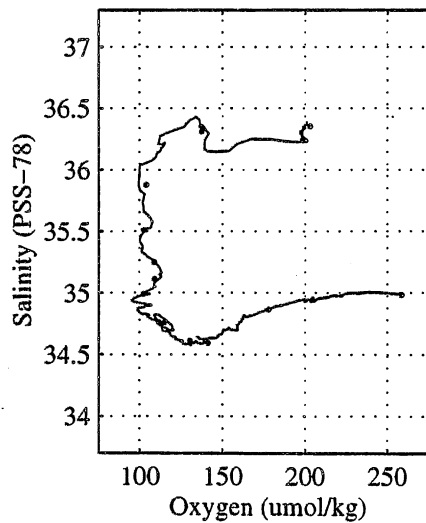
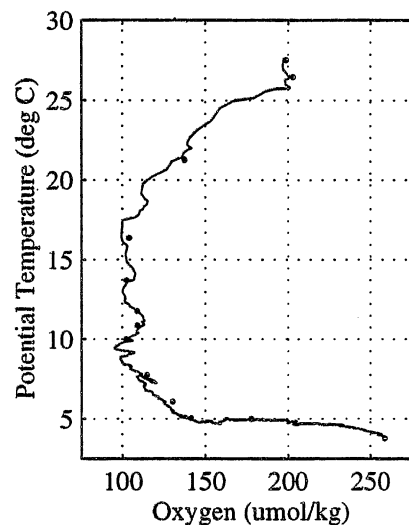
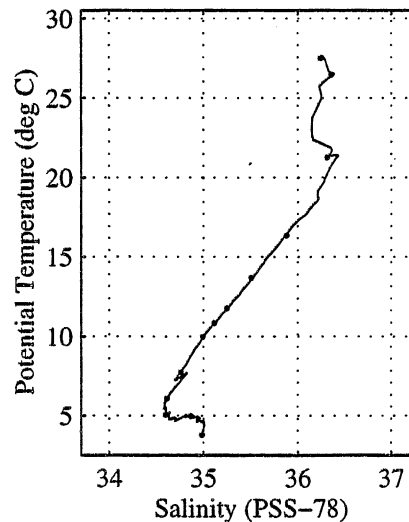
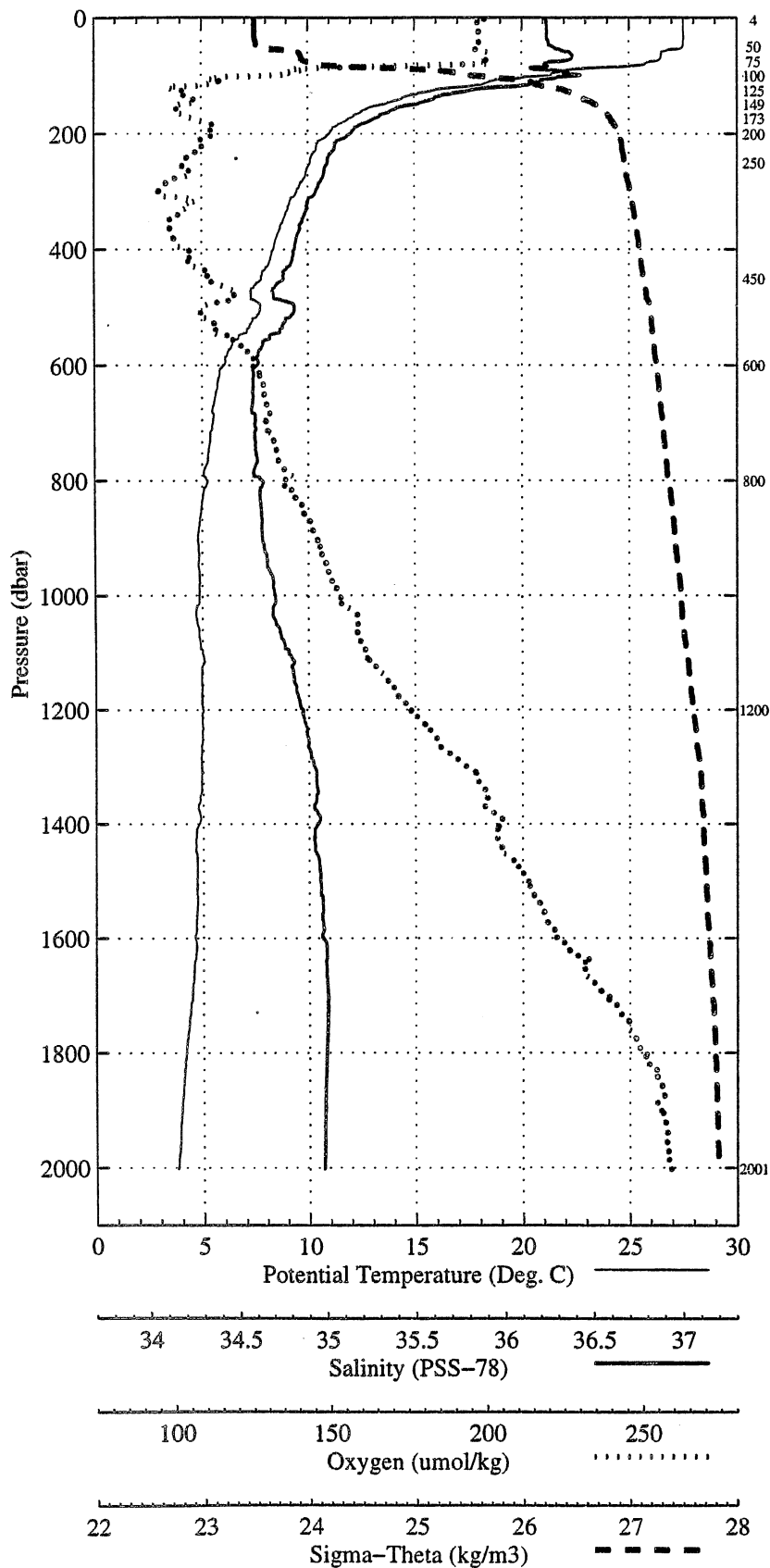
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.786	3.621	34.984	258.8
1200	1	4.978	4.876	34.865	178.0
800	2	5.054	4.988	34.592	141.2
601	3	6.088	6.035	34.609	130.2
451	4	7.749	7.703	34.758	114.7
250	5	9.982	9.953	34.992	102.4
201	6	10.853	10.829	35.111	108.9
174	12	11.774	11.752	35.246	108.6
149	13	13.680	13.658	35.509*	102.4
126	14	16.370	16.350	35.877*	103.8
100	15	21.262	21.243	36.310*	137.3
75	16	26.462	26.445	36.354*	203.0
50	17	27.521	27.509	36.249*	198.4
4	18	27.513	27.512	36.240	198.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 57 (99057)

Latitude 7.799 N Longitude 51.152 W

27-Feb-1999 02:23 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 58 (99058)
Latitude 7.200N Longitude 50.434W
27-Feb-1999 09:43Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.541	27.541	36.332	195.1	0.004	23.549
10	27.584	27.582	36.334	198.7	0.043	23.538
20	27.587	27.583	36.334	199.0	0.087	23.538
30	27.586	27.579	36.334	199.2	0.130	23.540
40	27.590	27.580	36.334	199.1	0.174	23.541
50	27.592	27.580	36.334	199.3	0.218	23.542
60	27.593	27.579	36.335	199.1	0.261	23.543
70	27.593	27.576	36.335	199.2	0.305	23.545
80	27.558	27.539	36.334	198.9	0.349	23.557
90	26.822	26.801	36.339	192.3	0.392	23.799
100	25.430	25.408	36.449	188.1	0.430	24.320
110	23.148	23.125	36.234	172.5	0.465	24.842
120	20.305	20.282	36.005	171.8	0.493	25.461
130	19.138	19.114	36.015	172.4	0.517	25.775
140	18.284	18.259	35.953	166.6	0.538	25.945
150	17.805	17.779	35.899	165.7	0.559	26.023
160	17.301	17.274	36.107	141.7	0.578	26.306
170	16.909	16.881	36.103	136.7	0.596	26.398
180	16.462	16.433	36.179	125.8	0.611	26.562
190	15.307	15.278	35.940	113.8	0.626	26.642
200	13.927	13.898	35.666	117.7	0.640	26.731
250	11.093	11.062	35.199	114.7	0.703	26.925
300	9.965	9.930	35.012	102.3	0.761	26.980
350	9.112	9.074	34.901	105.7	0.817	27.035
400	8.588	8.546	34.846	106.4	0.871	27.076
450	7.943	7.897	34.786	104.5	0.923	27.128
500	7.568	7.518	34.762	107.3	0.974	27.166
550	7.074	7.021	34.724	108.9	1.022	27.206
600	6.411	6.356	34.662	117.5	1.069	27.247
650	6.053	5.996	34.660	119.3	1.113	27.292
700	5.635	5.574	34.637	124.5	1.156	27.327
750	5.539	5.475	34.672	125.5	1.197	27.366
800	4.984	4.919	34.619	139.0	1.237	27.390
900	4.809	4.736	34.676	149.8	1.312	27.457
1000	4.899	4.816	34.758	157.4	1.384	27.514
1500	4.537	4.411	34.958	215.0	1.683	27.723
2000	3.719	3.556	34.982	254.8	1.936	27.833

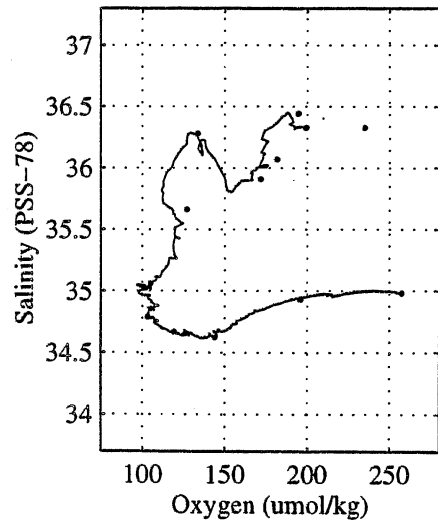
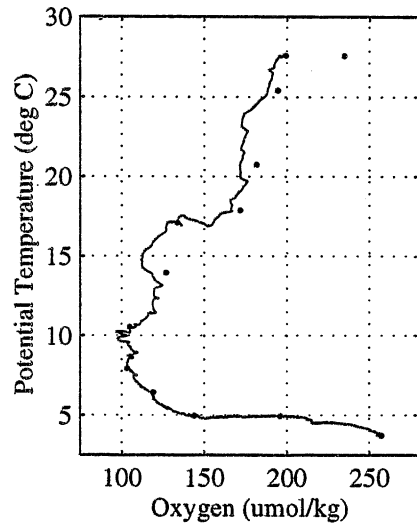
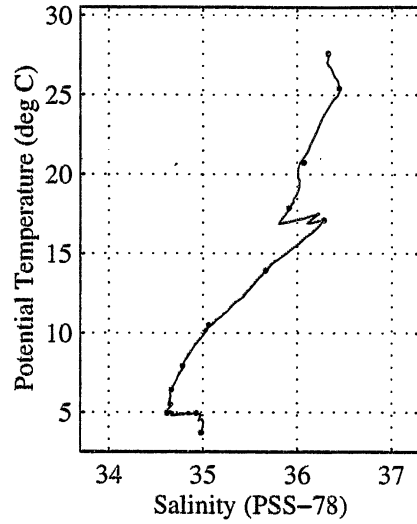
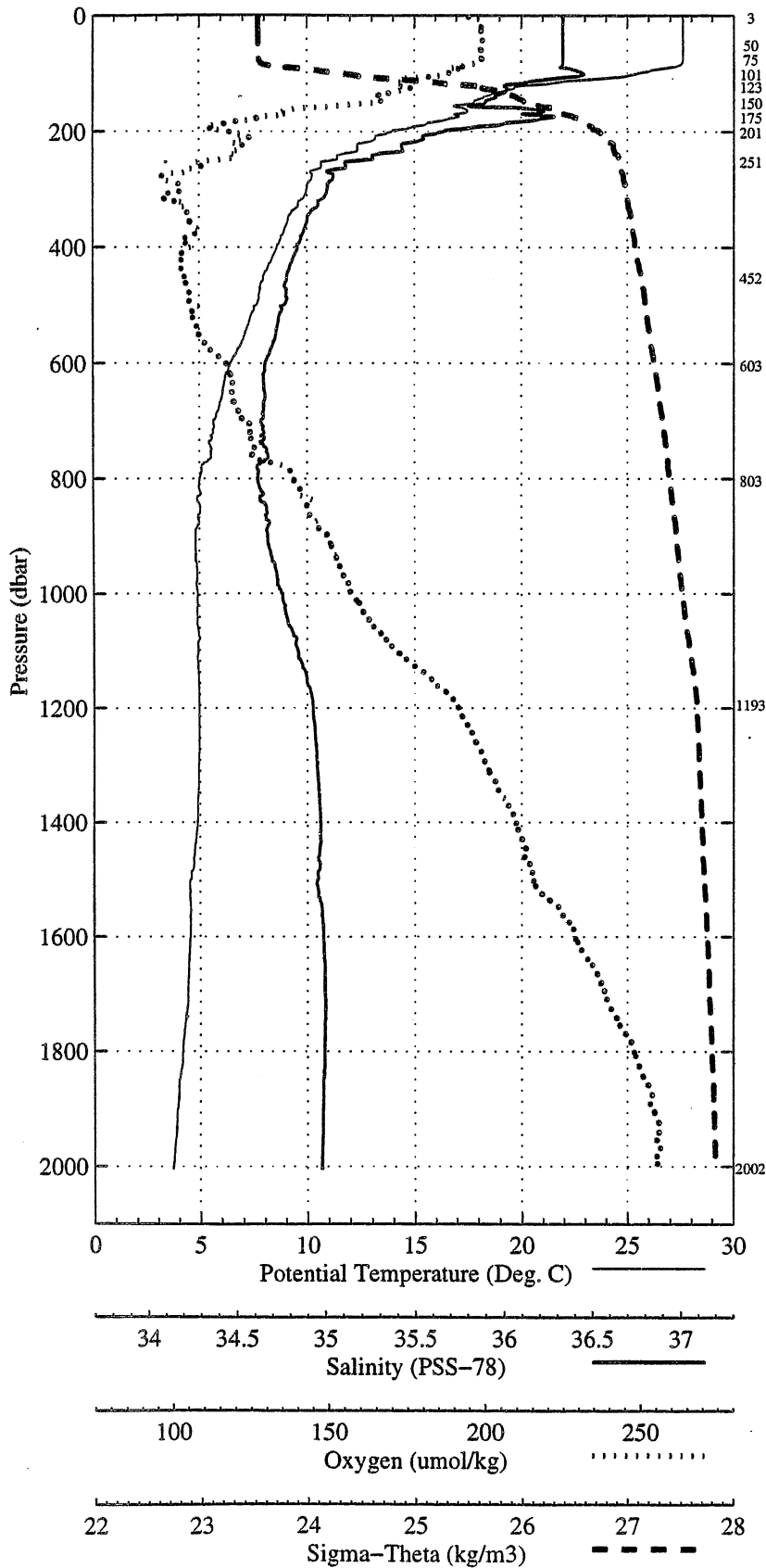
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2003	24	3.716	3.552	34.982	257.2
1194	1	4.949	4.848	34.930	195.8
804	2	4.971	4.905	34.623	143.9
603	3	6.430	6.375	34.668	119.1
452	4	7.931	7.885	34.788	103.0
252	5	10.521	10.490	35.060	104.8
201	6	13.941	13.912	35.663	127.1
176	12	17.112	17.082	36.282	133.8
151	13	17.883	17.857	35.907	171.8
123	14	20.746	20.722	36.069*	181.7
101	15	25.409	25.386	36.444	194.5
76	16	27.596	27.578	36.328	198.9
51	17	27.589	27.577	36.328	199.2
4	18	27.571	27.570	36.329	234.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 58 (99058)

Latitude 7.200 N Longitude 50.434 W

27-Feb-1999 09:43 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 59 (99059)
Latitude 8.363N Longitude 49.181W
27-Feb-1999 21:13Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.543	27.543	36.230	200.5	0.004	23.471
10	27.548	27.546	36.231	198.9	0.044	23.472
20	27.547	27.543	36.233	199.8	0.088	23.475
30	27.558	27.551	36.233	200.6	0.132	23.474
40	27.534	27.525	36.232	200.8	0.177	23.482
50	26.967	26.955	36.279	201.4	0.220	23.701
60	26.544	26.531	36.298	205.1	0.261	23.852
70	26.490	26.474	36.304	205.4	0.301	23.875
80	26.404	26.386	36.322	205.0	0.342	23.917
90	25.575	25.555	36.292	179.7	0.381	24.156
100	22.381	22.361	36.332	155.3	0.414	25.135
110	20.078	20.057	36.481	135.3	0.438	25.884
120	19.193	19.171	36.408	134.1	0.458	26.060
130	18.189	18.166	36.286	132.6	0.477	26.223
140	16.797	16.774	36.078	136.6	0.495	26.402
150	15.981	15.957	35.993	134.7	0.511	26.528
160	15.171	15.146	35.852	134.5	0.526	26.603
170	14.292	14.267	35.702	133.4	0.540	26.679
180	13.595	13.569	35.586	133.6	0.554	26.736
190	12.690	12.664	35.446	130.3	0.567	26.812
200	12.235	12.208	35.371	133.5	0.580	26.843
250	10.598	10.567	35.095	136.4	0.640	26.933
300	9.515	9.481	34.959	130.1	0.697	27.013
350	8.440	8.403	34.797	131.3	0.752	27.059
400	7.639	7.599	34.691	136.2	0.804	27.097
450	7.258	7.214	34.665	133.5	0.855	27.131
500	7.078	7.030	34.662	133.4	0.905	27.155
550	6.691	6.640	34.622	135.5	0.954	27.177
600	6.378	6.323	34.606	134.5	1.002	27.207
650	6.251	6.192	34.613	131.4	1.049	27.230
700	5.853	5.792	34.586	134.0	1.095	27.259
750	5.520	5.456	34.577	136.9	1.140	27.293
800	5.128	5.061	34.555	144.2	1.183	27.323
900	5.119	5.043	34.632	143.3	1.265	27.387
1000	4.935	4.852	34.686	151.3	1.343	27.453
1500	4.707	4.579	34.991	222.4	1.664	27.730
2000	3.628	3.466	34.980	261.0	1.910	27.840

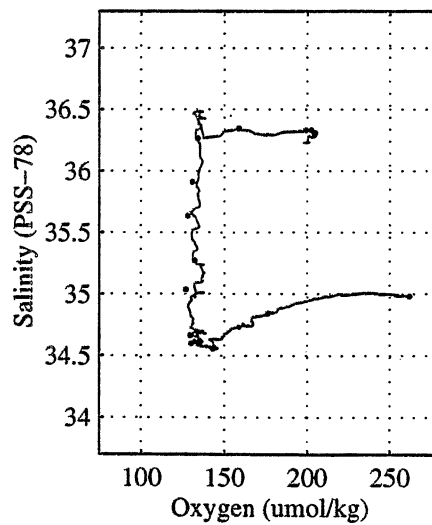
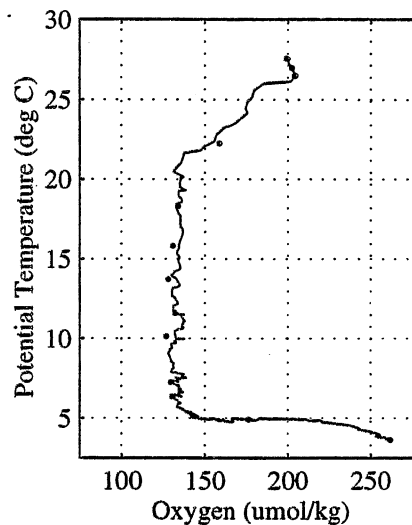
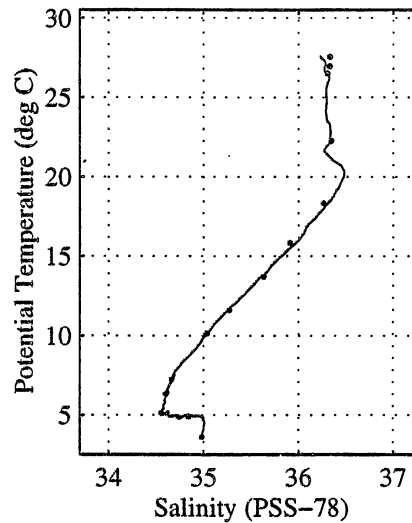
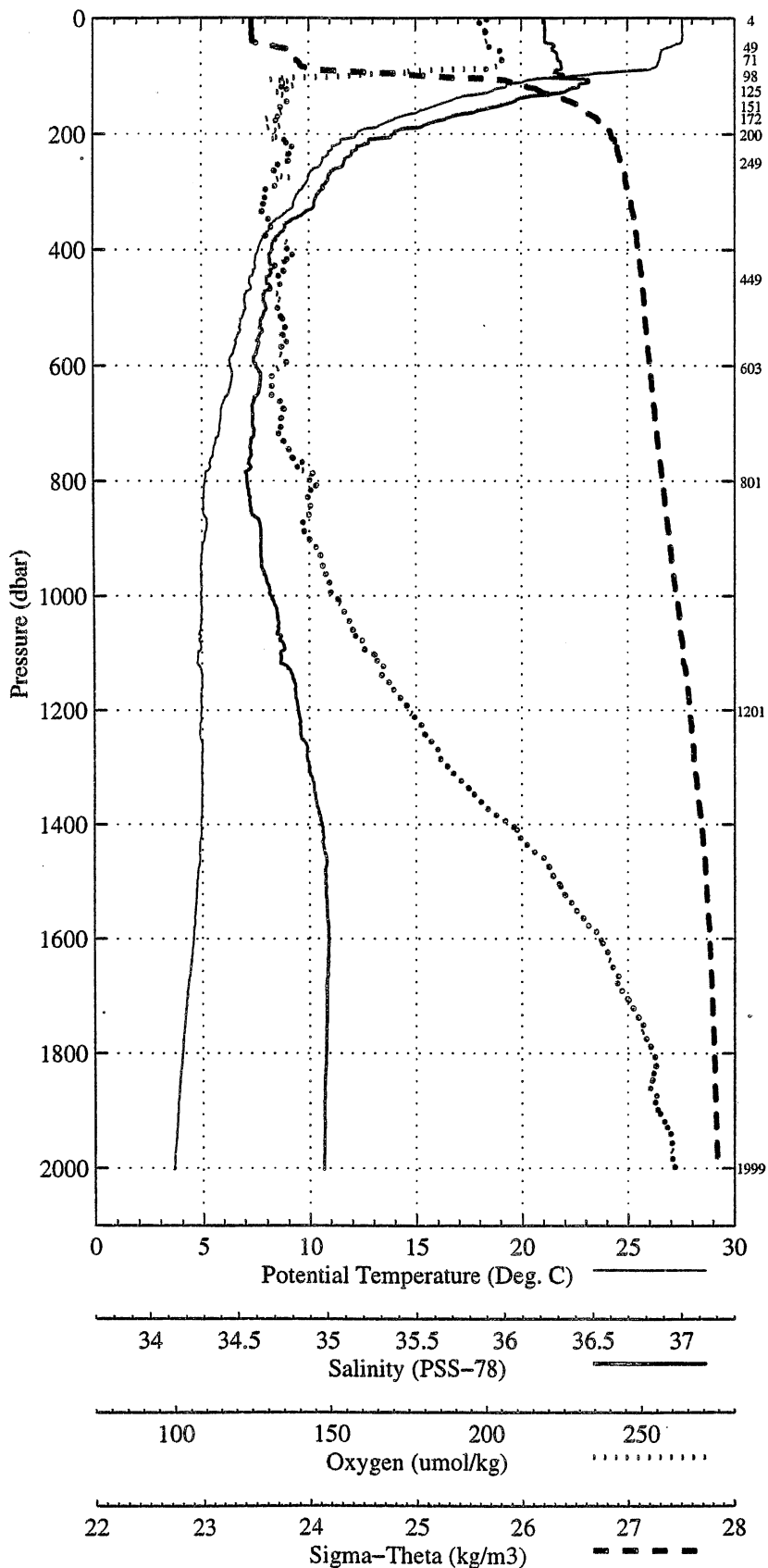
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.629	3.467	34.982	261.6
1202	1	4.910	4.809	34.843	176.1
801	2	5.154	5.087	34.556	143.0
603	3	6.353	6.298	34.601	130.2
450	4	7.255	7.212	34.664	129.3
250	5	10.146	10.117	35.036	126.6
201	6	11.604	11.578	35.272*	132.0
173	12	13.726	13.701	35.636*	127.9
151	13	15.827	15.803	35.911*	130.7
126	14	18.311	18.289	36.264*	133.9
99	15	22.255	22.236	36.347*	158.6
71	16	26.482	26.466	36.308*	203.8
50	17	26.954	26.943	36.332*	202.3
4	18	27.541	27.540	36.333*	199.1

NBC-2 R/V SEWARD JOHNSON

CTD Station 59 (99059)

Latitude 8.363 N Longitude 49.181 W

27-Feb-1999 21:13 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 60 (99060)
Latitude 7.597N Longitude 49.184W
28-Feb-1999 02:52Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m/kg	SigTh kg/m ³
1	27.520	27.520	36.333	201.0	0.004	23.557
10	27.572	27.570	36.334	198.6	0.043	23.542
20	27.572	27.567	36.335	198.8	0.087	23.544
30	27.575	27.568	36.335	199.6	0.130	23.544
40	27.579	27.570	36.335	200.1	0.174	23.545
50	27.582	27.571	36.335	200.5	0.217	23.546
60	27.581	27.567	36.336	200.8	0.261	23.548
70	27.578	27.562	36.338	200.7	0.305	23.552
80	27.571	27.552	36.341	200.9	0.348	23.558
90	27.349	27.329	36.368	198.0	0.392	23.652
100	26.636	26.613	36.389	192.8	0.434	23.898
110	25.454	25.430	36.402	189.1	0.472	24.279
120	25.338	25.311	36.405	188.7	0.509	24.318
130	22.177	22.151	36.285	180.3	0.540	25.160
140	22.077	22.049	36.278	183.8	0.569	25.185
150	21.779	21.749	36.226	175.5	0.597	25.230
160	20.569	20.539	36.329	167.5	0.623	25.641
170	18.804	18.773	36.202	114.1	0.644	26.007
180	17.091	17.061	36.026	108.1	0.663	26.296
190	15.563	15.533	35.809	111.2	0.680	26.485
200	14.911	14.880	35.761	111.8	0.696	26.593
250	11.367	11.335	35.248	121.2	0.761	26.914
300	10.177	10.142	35.085	125.2	0.819	27.000
350	8.839	8.801	34.893	120.9	0.873	27.072
400	7.863	7.822	34.749	130.5	0.925	27.109
450	7.176	7.132	34.670	135.6	0.976	27.147
500	6.800	6.753	34.655	131.1	1.024	27.188
550	6.441	6.391	34.626	131.1	1.072	27.213
600	5.967	5.914	34.596	135.2	1.118	27.252
650	5.592	5.536	34.580	138.4	1.162	27.285
700	5.370	5.311	34.580	139.9	1.205	27.313
750	5.118	5.056	34.577	143.0	1.247	27.341
800	4.991	4.926	34.585	146.2	1.288	27.362
900	4.804	4.731	34.609	152.2	1.367	27.404
1000	4.871	4.788	34.689	155.8	1.443	27.462
1500	4.683	4.555	35.006	228.9	1.759	27.745
2000	3.557	3.396	34.977	258.8	1.997	27.844

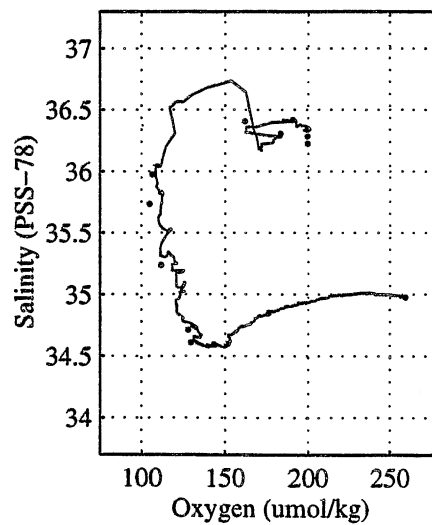
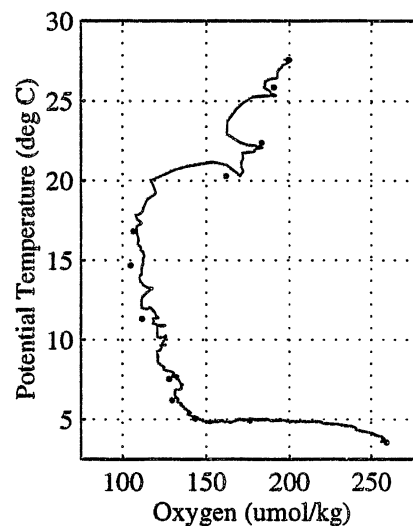
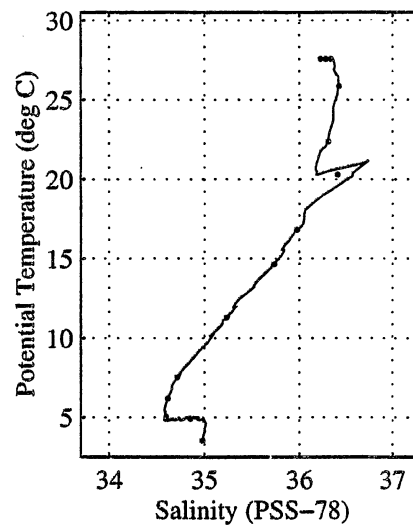
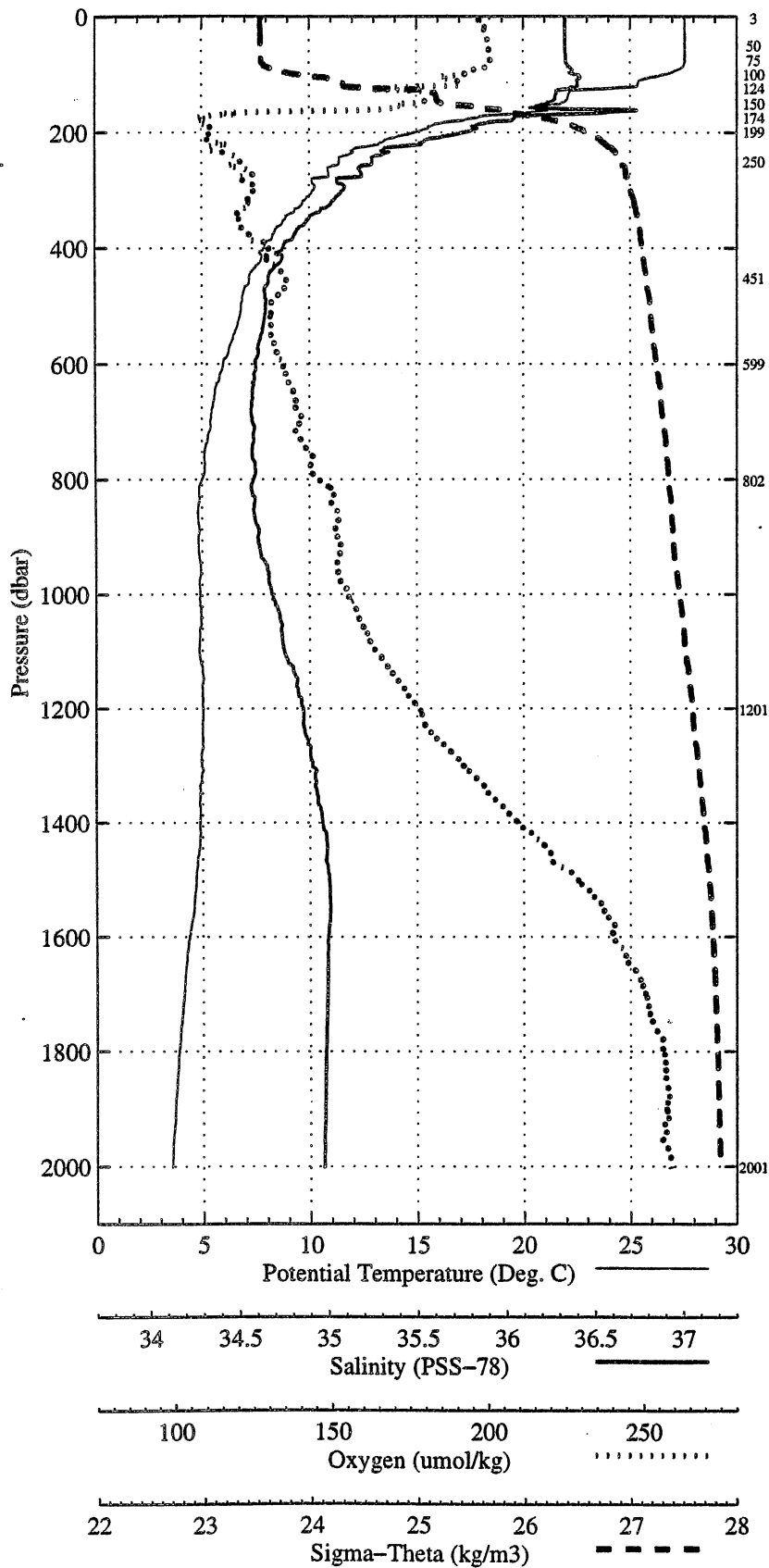
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.551	3.390	34.977	259.3
1202	1	4.924	4.822	34.851	176.4
803	2	5.045	4.977	36.285	143.3
600	3	6.197	6.142	36.226	129.5
452	4	7.536	7.492	34.594	127.8
251	5	11.318	11.287	34.611	111.3
199	6	14.673	14.643	34.712	104.5
174	12	16.827	16.799	35.238	106.3
151	13	20.291	20.262	35.736	162.1
124	14	22.370	22.345	35.974*	183.6
100	15	25.853	25.831	36.406*	190.7
76	16	27.562	27.544	36.307	199.1
51	17	27.573	27.561	36.419*	199.3
4	18	27.561	27.560	36.337*	199.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 60 (99060)

Latitude 7.597 N Longitude 49.184 W

28-Feb-1999 02:52 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 61 (99061)
Latitude 7.003N Longitude 49.332W
28-Feb-1999 07:47Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.350	27.350	36.138	208.7	0.004	23.465
10	27.349	27.347	36.144	208.1	0.044	23.471
20	27.352	27.347	36.144	208.4	0.088	23.472
30	27.357	27.350	36.146	207.9	0.132	23.473
40	27.358	27.349	36.146	207.4	0.177	23.474
50	27.364	27.352	36.149	207.5	0.221	23.476
60	27.366	27.352	36.154	207.7	0.265	23.481
70	27.243	27.227	36.235	206.8	0.309	23.583
80	26.456	26.437	36.378	200.2	0.351	23.944
90	25.774	25.754	36.419	195.9	0.390	24.190
100	25.183	25.161	36.496	196.4	0.426	24.432
110	24.888	24.864	36.510	196.9	0.461	24.534
120	24.726	24.700	36.506	195.7	0.495	24.581
130	23.147	23.121	36.469	195.2	0.526	25.023
140	22.974	22.945	36.492	197.5	0.556	25.092
150	22.484	22.453	36.411	195.7	0.585	25.172
160	21.652	21.621	36.292	191.8	0.613	25.317
170	19.807	19.775	36.083	186.7	0.639	25.657
180	16.110	16.082	35.636	171.3	0.659	26.226
190	13.991	13.964	35.374	183.1	0.676	26.490
200	13.526	13.498	35.316	184.6	0.692	26.543
250	11.896	11.863	35.114	177.2	0.765	26.711
300	11.801	11.762	35.334	124.0	0.831	26.902
350	11.099	11.055	35.243	123.2	0.891	26.963
400	9.839	9.793	35.065	126.0	0.948	27.047
450	8.132	8.086	34.781	144.5	1.002	27.096
500	7.978	7.926	34.816	130.3	1.053	27.148
550	7.199	7.146	34.719	134.2	1.103	27.185
600	6.189	6.135	34.609	143.0	1.150	27.234
650	5.727	5.671	34.583	147.3	1.195	27.271
700	5.394	5.335	34.581	148.2	1.238	27.311
750	5.085	5.024	34.568	153.9	1.280	27.337
800	5.037	4.972	34.596	153.6	1.321	27.366
900	4.841	4.767	34.627	158.3	1.400	27.415
1000	4.853	4.770	34.688	163.1	1.475	27.464
1500	4.631	4.503	34.996	234.9	1.788	27.743
2000	3.550	3.389	34.976	261.5	2.029	27.845

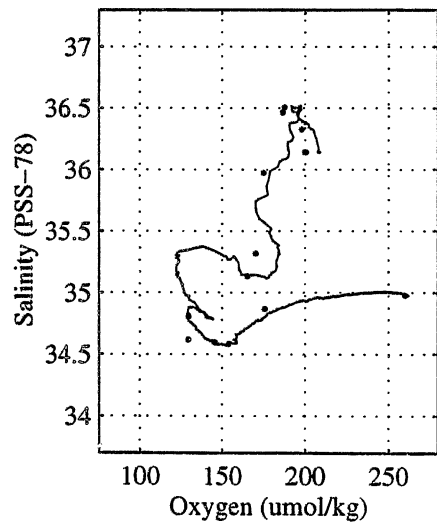
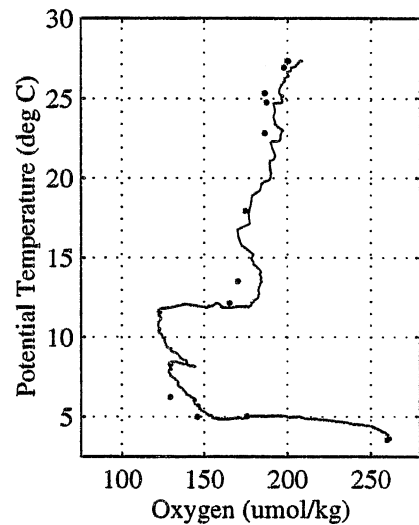
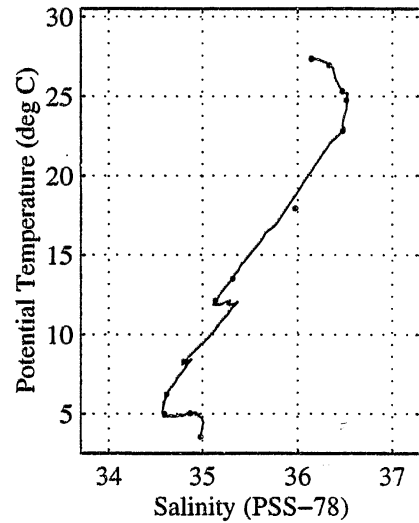
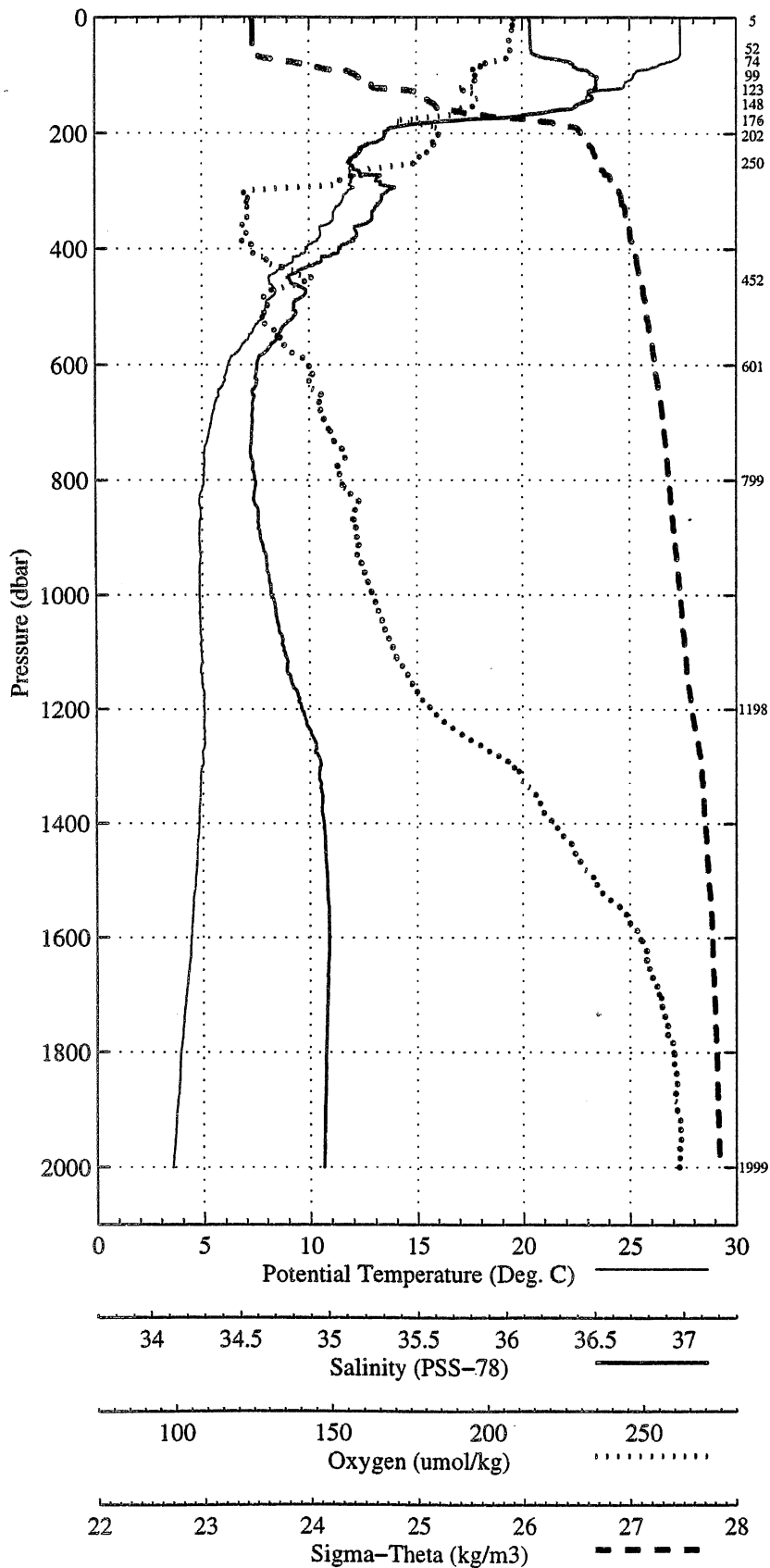
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1999	24	3.552	3.391	34.977	259.9
1198	1	5.038	4.935	34.868	175.9
799	2	4.977	4.912	34.594	145.8
602	3	6.243	6.189	34.617	129.4
452	4	8.290	8.243	34.802	129.5
250	5	12.138	12.105	35.134	165.3
203	6	13.519	13.490	35.319	170.5
176	12	17.942	17.911	35.974*	175.1
148	13	22.835	22.804	36.469*	186.6
123	14	24.743	24.716	36.507	187.6
99	15	25.322	25.300	36.464	186.6
75	16	26.938	26.920	36.327	197.8
52	17	27.359	27.347	36.141	199.8
5	18	27.340	27.339	36.141	200.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 61 (99061)

Latitude 7.003 N Longitude 49.332 W

28-Feb-1999 07:47 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 62 (99062)
Latitude 6.448N Longitude 49.708W
28-Feb-1999 13:10Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.458	27.458	36.178	198.2	0.004	23.460
10	27.449	27.447	36.178	200.5	0.044	23.465
20	27.451	27.446	36.178	200.2	0.088	23.465
30	27.450	27.443	36.178	200.1	0.133	23.467
40	27.451	27.442	36.178	199.9	0.177	23.468
50	27.453	27.441	36.181	199.7	0.221	23.471
60	27.454	27.440	36.185	199.6	0.266	23.475
70	27.071	27.055	36.326	198.7	0.309	23.706
80	26.419	26.400	36.398	190.7	0.350	23.970
90	25.911	25.891	36.522	193.3	0.388	24.225
100	25.780	25.758	36.566	191.7	0.425	24.300
110	25.592	25.567	36.576	191.5	0.462	24.368
120	24.484	24.458	36.545	185.7	0.497	24.684
130	24.161	24.133	36.535	184.8	0.529	24.774
140	23.450	23.421	36.536	187.4	0.560	24.986
150	23.188	23.157	36.530	188.1	0.590	25.059
160	22.406	22.373	36.460	186.1	0.619	25.232
170	21.503	21.470	36.323	184.6	0.646	25.383
180	19.683	19.650	36.040	166.0	0.672	25.657
190	13.815	13.787	35.328	167.0	0.690	26.492
200	13.252	13.224	35.281	168.0	0.706	26.571
250	11.511	11.479	35.076	159.9	0.776	26.753
300	9.978	9.943	34.876	162.5	0.841	26.871
350	9.088	9.049	34.828	143.6	0.900	26.982
400	7.924	7.883	34.674	153.2	0.956	27.041
450	7.543	7.498	34.649	147.5	1.010	27.079
500	7.341	7.292	34.684	119.5	1.062	27.136
550	6.691	6.640	34.626	125.4	1.112	27.181
600	6.331	6.276	34.616	129.1	1.159	27.221
650	5.941	5.883	34.593	132.1	1.205	27.253
700	5.772	5.711	34.616	132.1	1.250	27.293
750	5.507	5.443	34.614	133.3	1.293	27.325
800	5.190	5.123	34.607	139.9	1.335	27.357
900	4.971	4.897	34.646	146.8	1.414	27.415
1000	4.930	4.847	34.718	155.5	1.489	27.479
1500	4.610	4.483	34.999	231.2	1.793	27.747
2000	3.652	3.490	34.980	263.3	2.036	27.838

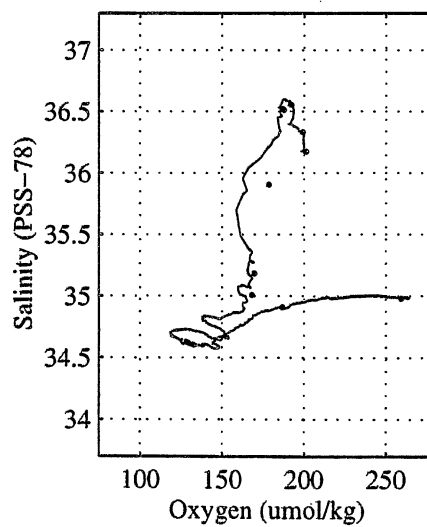
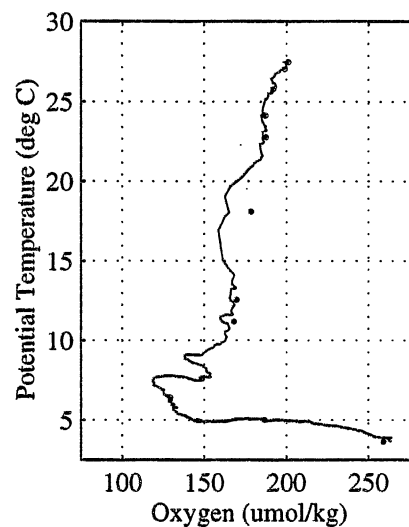
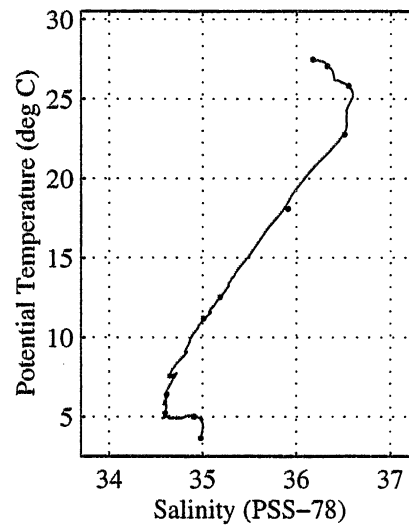
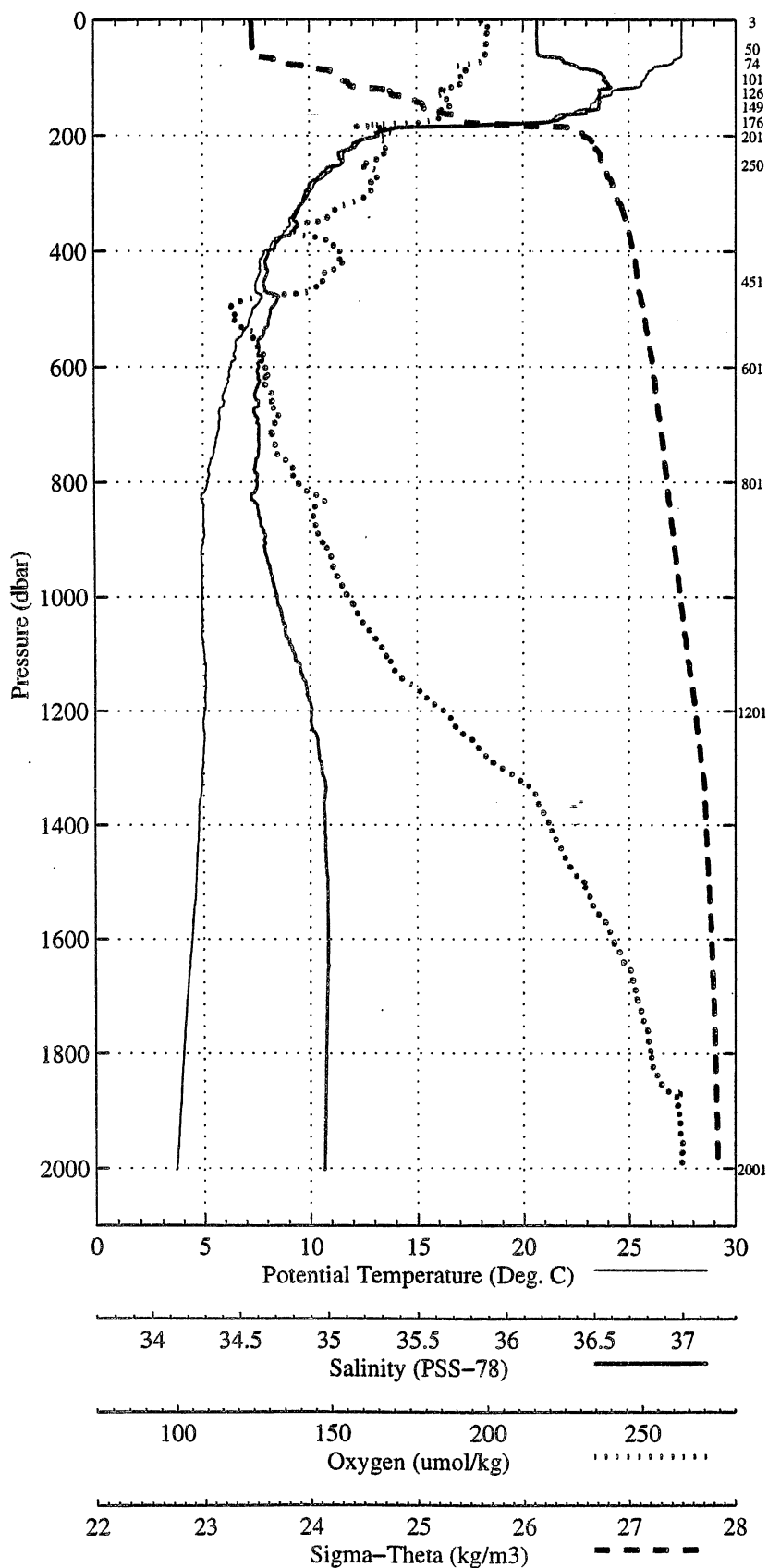
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.645	3.483	34.980	259.1
1201	1	5.008	4.906	34.909	186.8
802	2	5.224	5.157	34.604	NaN
602	3	6.407	6.352	34.620	129.8
452	4	7.598	7.553	34.656	148.6
251	5	11.182	11.151	35.008	168.3
201	6	12.552	12.525	35.185	169.8
176	12	18.100	18.069	35.905*	178.7
149	13	22.771	22.741	36.514*	187.7
126	14	24.120	NaN	NaN*	187.4
102	15	25.793	25.771	36.554	192.1
75	16	27.041	27.023	36.332	199.0
50	17	27.459	27.447	36.174	200.7
4	18	27.456	27.455	36.174	201.1

NBC-2 R/V SEWARD JOHNSON

CTD Station 62 (99062)

Latitude 6.448 N Longitude 49.708 W

28-Feb-1999 13:10 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 63 (99063)
Latitude 5.977N Longitude 50.098W
28-Feb-1999 18:17Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.401	27.401	36.129	196.2	0.004	23.441
10	27.408	27.406	36.127	199.5	0.044	23.439
20	27.413	27.408	36.129	199.6	0.089	23.441
30	27.416	27.409	36.130	199.4	0.133	23.442
40	27.418	27.409	36.135	199.2	0.178	23.447
50	27.420	27.408	36.139	199.3	0.222	23.450
60	27.416	27.402	36.167	198.9	0.267	23.474
70	27.258	27.242	36.322	197.7	0.311	23.643
80	26.928	26.909	36.336	195.9	0.353	23.761
90	26.303	26.283	36.492	194.3	0.393	24.079
100	25.783	25.761	36.510	191.3	0.430	24.257
110	25.128	25.104	36.532	185.5	0.467	24.477
120	23.903	23.878	36.454	183.3	0.500	24.788
130	23.381	23.354	36.487	185.9	0.531	24.968
140	22.305	22.276	36.478	185.7	0.561	25.272
150	21.192	21.163	36.329	183.5	0.587	25.471
160	19.842	19.812	36.115	180.1	0.612	25.671
170	18.165	18.135	35.882	173.1	0.635	25.922
180	14.733	14.706	35.442	167.4	0.654	26.384
190	12.336	12.311	35.147	165.6	0.669	26.649
200	12.068	12.042	35.134	162.8	0.683	26.691
250	10.638	10.608	34.962	160.6	0.749	26.822
300	9.235	9.201	34.823	148.5	0.810	26.953
350	8.594	8.557	34.777	138.4	0.866	27.020
400	8.064	8.023	34.731	133.5	0.920	27.066
450	7.168	7.125	34.606	148.9	0.973	27.097
500	7.255	7.206	34.680	134.7	1.024	27.145
550	6.675	6.623	34.632	120.9	1.074	27.187
600	6.132	6.078	34.595	128.3	1.121	27.230
650	5.754	5.698	34.572	130.7	1.167	27.260
700	5.410	5.351	34.541	140.7	1.211	27.277
750	5.316	5.253	34.576	141.4	1.255	27.317
800	5.187	5.121	34.587	138.9	1.297	27.342
900	4.863	4.789	34.604	148.8	1.377	27.394
1000	4.918	4.835	34.688	152.8	1.454	27.457
1500	4.455	4.330	34.984	230.7	1.752	27.752
2000	3.822	3.657	34.986	255.0	2.003	27.827

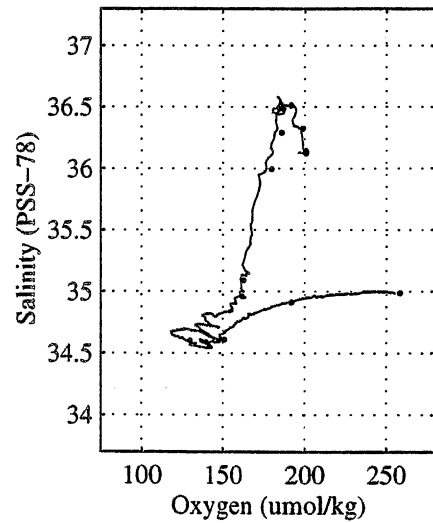
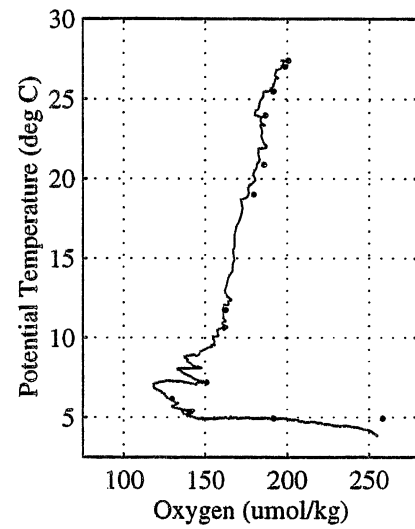
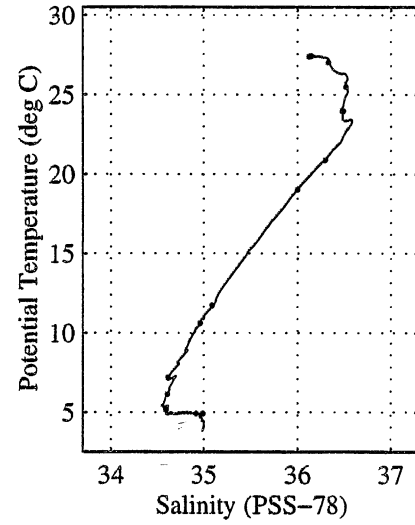
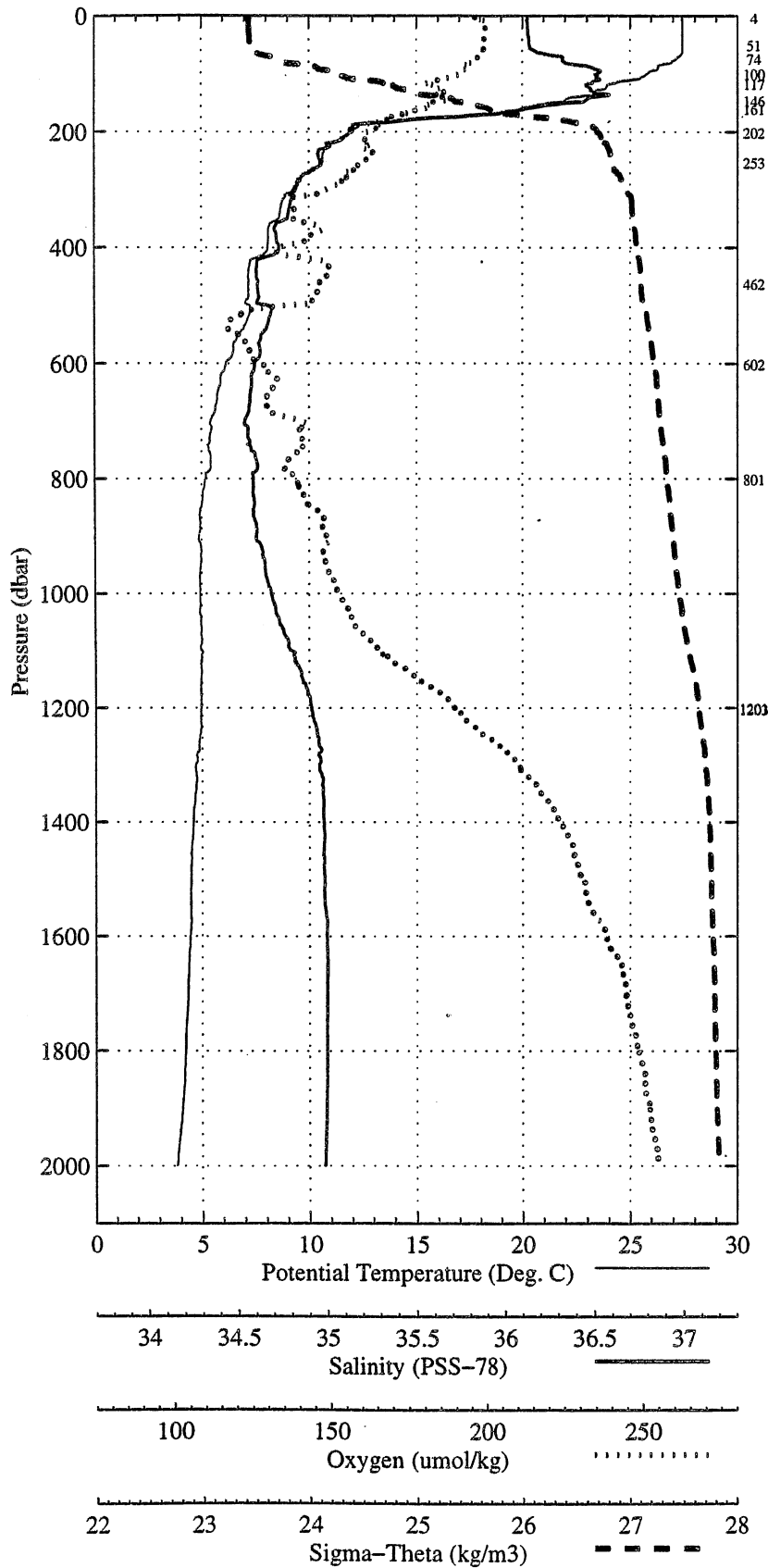
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1201	24	4.933	4.831	34.987*	258.1
1203	1	4.931	4.829	34.913	191.8
801	2	5.155	5.088	34.587	139.5
602	3	6.151	6.097	34.600	129.4
463	4	7.201	7.157	34.610	150.9
253	5	10.620	10.590	34.960	161.8
202	6	11.742	11.716	35.090	163.1
161	12	19.023	18.994	35.995*	180.0
147	13	20.879	20.851	36.290*	186.1
118	14	23.968	23.943	36.484	186.9
101	15	25.495	25.473	36.511	191.6
74	16	27.015	26.998	36.324	198.5
51	17	27.420	27.408	36.143	200.6
4	18	27.400	27.399	36.121	200.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 63 (99063)

Latitude 5.977 N Longitude 50.098 W

28-Feb-1999 18:17 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 64 (99064)
Latitude 5.583N Longitude 50.400W
28-Feb-1999 23:11Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.508	27.507	36.079	199.7	0.005	23.369
10	27.525	27.523	36.098	198.4	0.045	23.380
20	27.550	27.545	36.131	198.6	0.090	23.398
30	27.566	27.559	36.156	198.6	0.135	23.413
40	27.598	27.589	36.214	198.4	0.179	23.447
50	27.607	27.595	36.248	198.4	0.224	23.471
60	27.581	27.567	36.279	198.3	0.268	23.505
70	27.122	27.106	36.298	199.9	0.311	23.669
80	27.006	26.987	36.368	197.8	0.353	23.760
90	26.104	26.083	36.391	188.0	0.393	24.065
100	25.499	25.477	36.467	186.1	0.431	24.313
110	24.587	24.563	36.460	179.6	0.466	24.587
120	21.746	21.723	36.356	181.8	0.496	25.335
130	19.932	19.908	36.114	177.7	0.521	25.644
140	17.614	17.590	35.782	165.7	0.543	25.979
150	15.159	15.136	35.466	168.4	0.562	26.307
160	14.514	14.491	35.446	170.4	0.579	26.433
170	14.543	14.517	35.461	169.5	0.595	26.439
180	14.197	14.170	35.510	152.9	0.611	26.551
190	12.658	12.632	35.230	158.7	0.626	26.650
200	12.155	12.128	35.144	161.3	0.640	26.682
250	10.637	10.607	34.976	154.7	0.706	26.833
300	9.440	9.406	34.841	149.9	0.767	26.933
350	8.413	8.376	34.742	144.0	0.824	27.020
400	7.637	7.598	34.665	143.4	0.878	27.076
450	6.941	6.899	34.600	143.7	0.930	27.124
500	7.092	7.044	34.680	119.9	0.979	27.168
550	6.503	6.452	34.620	123.9	1.027	27.200
600	5.978	5.925	34.596	128.8	1.073	27.250
650	5.586	5.530	34.570	136.7	1.118	27.278
700	5.489	5.430	34.591	136.0	1.162	27.308
750	5.229	5.167	34.586	138.6	1.204	27.335
800	5.193	5.126	34.637	139.1	1.245	27.381
900	4.825	4.752	34.653	149.1	1.322	27.437
1000	4.843	4.760	34.716	156.0	1.394	27.487
1500	4.538	4.412	35.003	233.9	1.692	27.758
2000	3.566	3.405	34.975	259.7	1.929	27.842

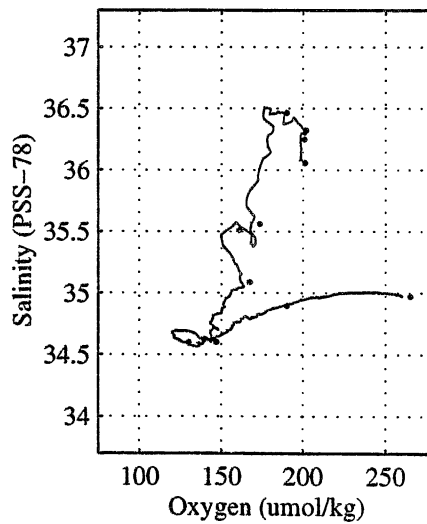
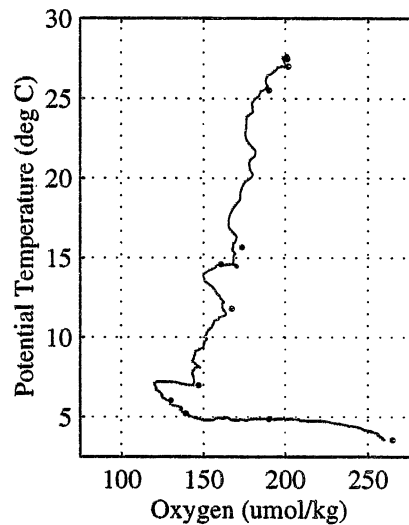
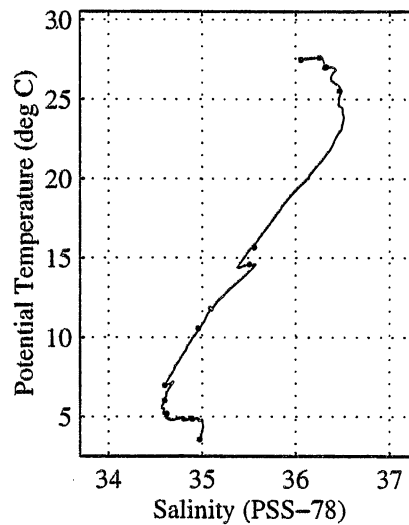
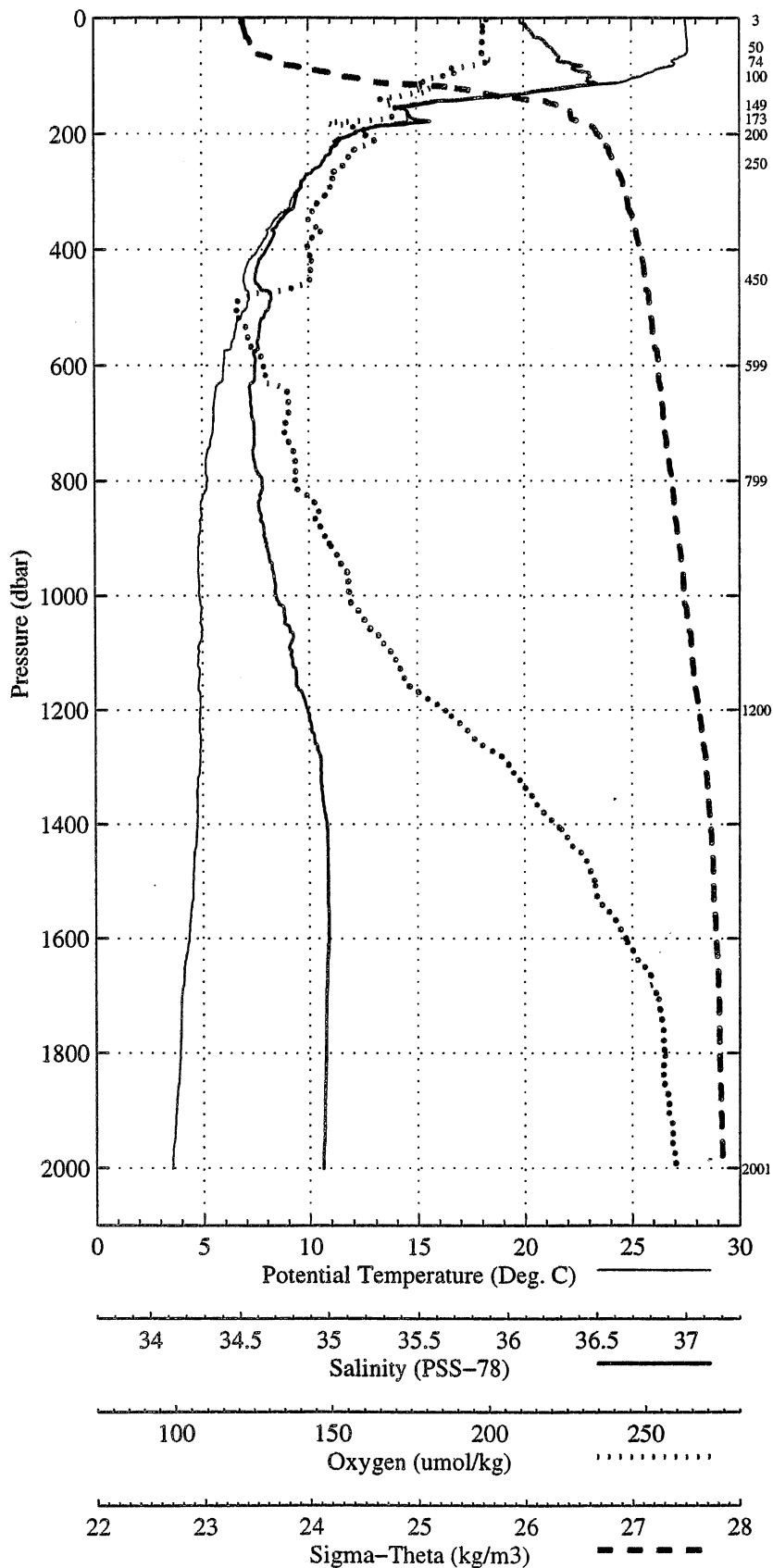
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.567	3.405	34.973	265.0
1200	1	4.857	4.755	34.894	190.2
800	2	5.198	5.131	34.622	139.3
600	3	6.025	5.972	34.601	130.1
451	4	6.987	6.944	34.601	146.9
250	5	10.556	10.526	34.955	NaN
200	6	11.801	11.775	35.087	167.4
173	12	14.601	14.575	35.511	160.5
149	13	15.675	15.652	35.561	173.5
101	15	25.515	25.493	36.465	190.2
75	16	27.011	26.993	36.324	201.8
50	17	27.613	27.602	36.249	200.7
4	19	27.481	27.480	36.057	201.1

NBC-2 R/V SEWARD JOHNSON

CTD Station 64 (99064)

Latitude 5.583 N Longitude 50.400 W

28-Feb-1999 23:11 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 65 (99065)
Latitude 5.319N Longitude 50.598W
01-Mar-1999 02:54Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$	DynHt m^3/kg	SigTh kg/m^3
1	27.591	27.591	36.242	203.7	0.004	23.465
10	27.600	27.598	36.242	197.8	0.044	23.463
20	27.626	27.621	36.263	198.0	0.088	23.472
30	27.637	27.630	36.311	197.9	0.132	23.506
40	27.602	27.593	36.316	198.1	0.176	23.523
50	27.541	27.530	36.318	198.3	0.220	23.546
60	27.407	27.393	36.320	198.2	0.263	23.592
70	27.034	27.017	36.322	197.0	0.306	23.716
80	26.485	26.467	36.327	194.2	0.347	23.895
90	23.428	23.409	36.346	185.2	0.383	24.843
100	21.840	21.821	36.156	182.8	0.412	25.154
110	18.252	18.233	35.726	157.3	0.439	25.776
120	15.421	15.402	35.474	170.0	0.458	26.253
130	15.284	15.264	35.516	165.8	0.475	26.316
140	13.599	13.579	35.303	163.3	0.492	26.514
150	12.981	12.961	35.244	167.2	0.507	26.595
160	12.803	12.781	35.228	165.4	0.521	26.619
170	12.282	12.260	35.176	158.4	0.535	26.681
180	11.826	11.803	35.109	158.5	0.549	26.716
190	11.471	11.447	35.070	157.4	0.563	26.753
200	11.393	11.368	35.067	155.9	0.576	26.765
250	10.349	10.319	34.963	146.6	0.640	26.874
300	9.756	9.721	34.900	144.0	0.700	26.927
350	8.694	8.656	34.801	135.1	0.757	27.023
400	7.757	7.717	34.716	126.5	0.811	27.099
450	7.146	7.102	34.673	121.6	0.861	27.153
500	6.748	6.701	34.649	122.6	0.910	27.190

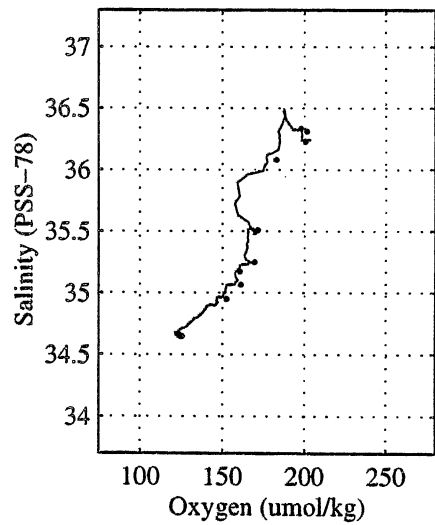
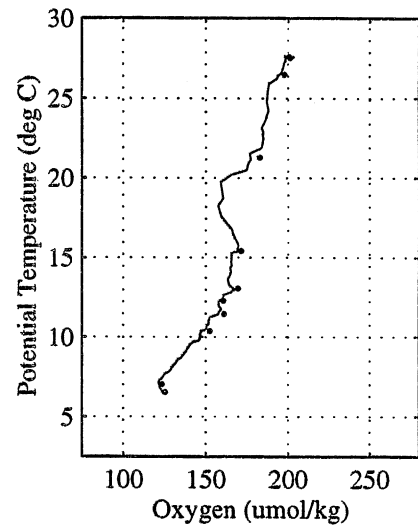
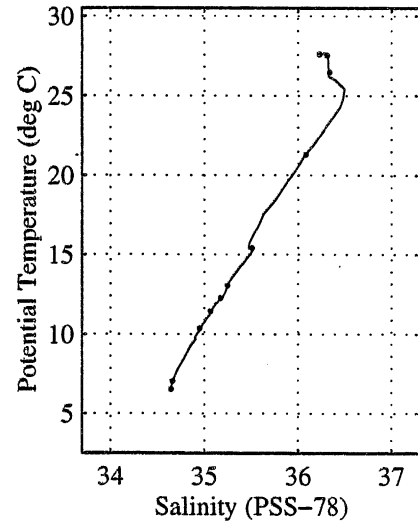
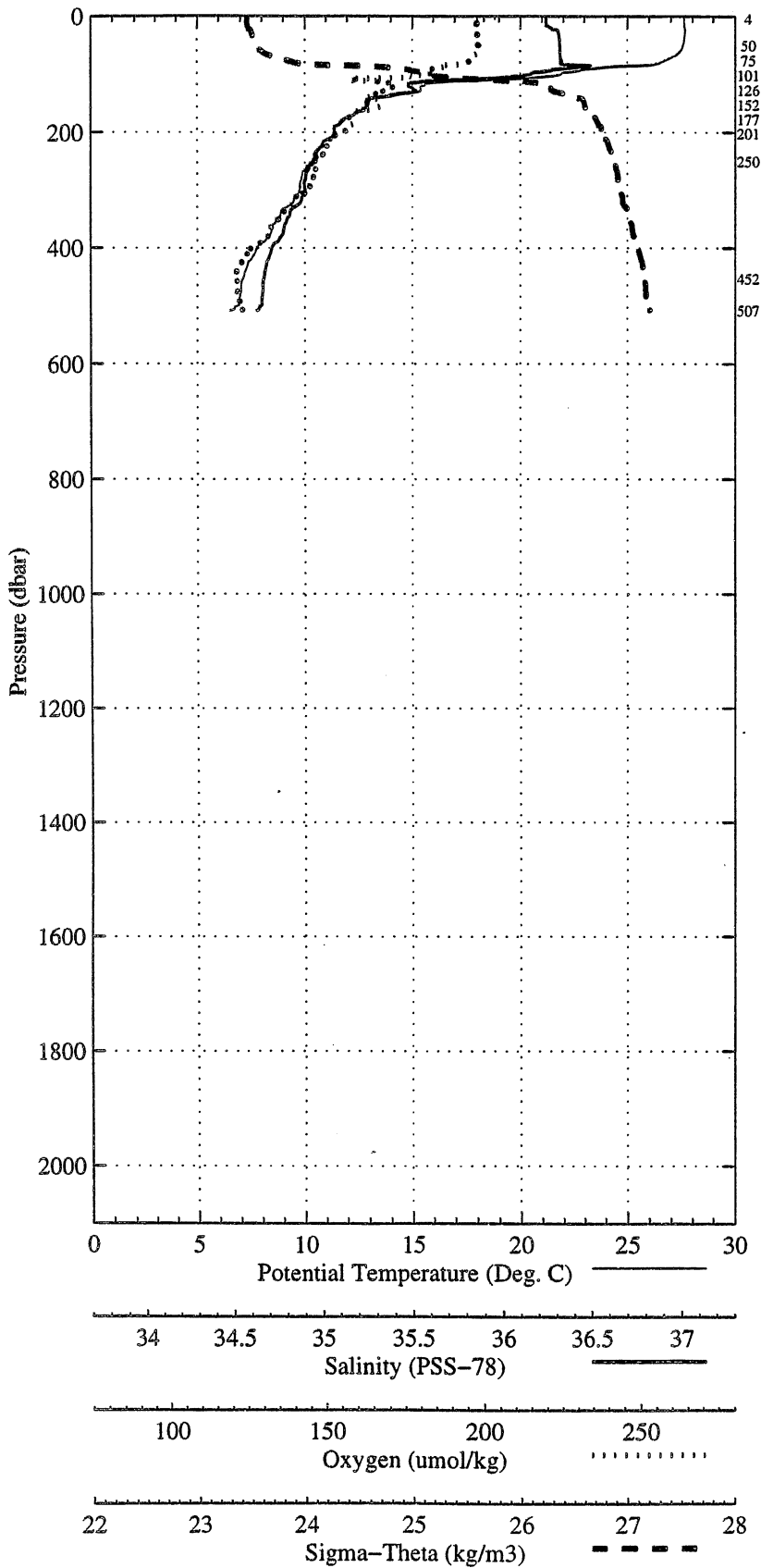
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen $\mu\text{mol/kg}$
508	24	6.543	6.496	34.648	125.6
453	1	7.041	6.998	34.665	123.6
250	2	10.374	10.344	34.949	152.3
202	3	11.443	11.417	35.065	161.1
177	4	12.274	12.251	35.171	160.6
152	5	13.050	13.029	35.247	169.7
127	6	15.407	15.387	35.507*	171.5
101	12	21.304	21.284	36.081	182.7
75	13	26.477	26.459	36.336*	197.6
50	14	27.524	27.512	36.310	201.2
4	16	27.600	27.599	36.227	200.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 65 (99065)

Latitude 5.319 N Longitude 50.598 W

01-Mar-1999 02:54 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 66 (99066)
Latitude 4.645N Longitude 49.484W
01-Mar-1999 17:35Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.663	27.662	36.215	197.7	0.004	23.421
10	27.654	27.652	36.213	199.3	0.045	23.424
20	27.616	27.612	36.217	199.6	0.089	23.441
30	27.581	27.574	36.219	199.7	0.133	23.455
40	27.574	27.564	36.222	199.7	0.178	23.462
50	27.564	27.552	36.232	199.8	0.222	23.474
60	27.493	27.479	36.276	199.6	0.266	23.531
70	27.432	27.416	36.315	199.8	0.310	23.582
80	27.380	27.361	36.327	199.1	0.353	23.609
90	27.188	27.167	36.338	196.9	0.396	23.681
100	26.771	26.748	36.366	193.7	0.438	23.837
110	25.348	25.323	36.451	185.9	0.477	24.349
120	24.658	24.632	36.457	189.0	0.512	24.565
130	23.650	23.623	36.425	178.7	0.545	24.843
140	22.556	22.528	36.360	170.6	0.575	25.111
150	20.169	20.141	36.220	182.9	0.602	25.664
160	18.460	18.432	35.990	175.4	0.624	25.930
170	14.769	14.743	35.470	168.4	0.643	26.397
180	13.432	13.406	35.305	168.3	0.659	26.553
190	13.374	13.347	35.310	167.2	0.674	26.569
200	12.986	12.958	35.256	162.8	0.689	26.606
250	11.230	11.199	35.049	150.9	0.758	26.783
300	10.358	10.322	34.947	146.2	0.822	26.861
350	9.033	8.994	34.780	156.9	0.883	26.953
400	8.599	8.557	34.747	153.0	0.941	26.997
450	8.045	7.999	34.705	149.4	0.996	27.049
500	7.465	7.415	34.677	139.4	1.050	27.113
550	7.327	7.273	34.688	127.9	1.101	27.142
600	6.617	6.561	34.638	125.4	1.150	27.201
650	6.191	6.132	34.615	126.7	1.198	27.239
700	5.838	5.776	34.608	131.4	1.243	27.279
750	5.258	5.195	34.557	136.5	1.287	27.309
800	4.899	4.834	34.528	151.3	1.329	27.328
900	5.192	5.116	34.631	142.2	1.411	27.378
1000	4.954	4.871	34.684	152.1	1.489	27.449
1500	4.487	4.361	35.001	232.5	1.797	27.762
2000	3.688	3.525	34.982	261.7	2.034	27.836

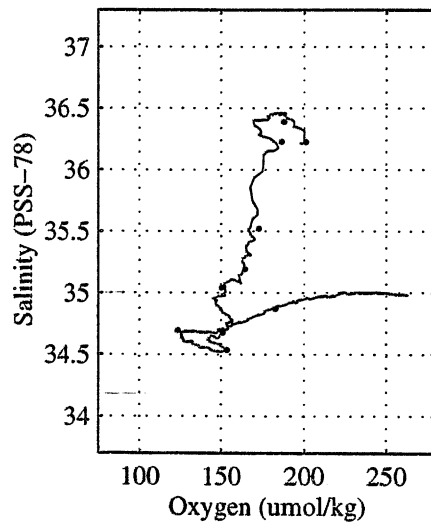
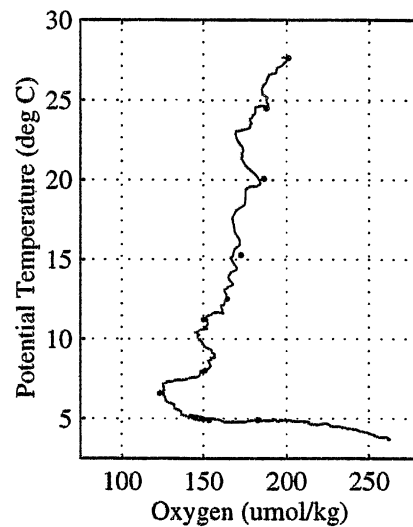
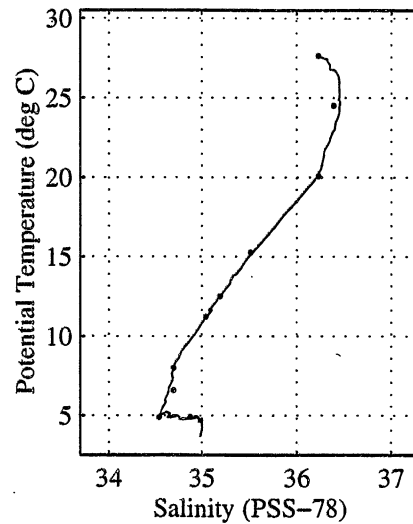
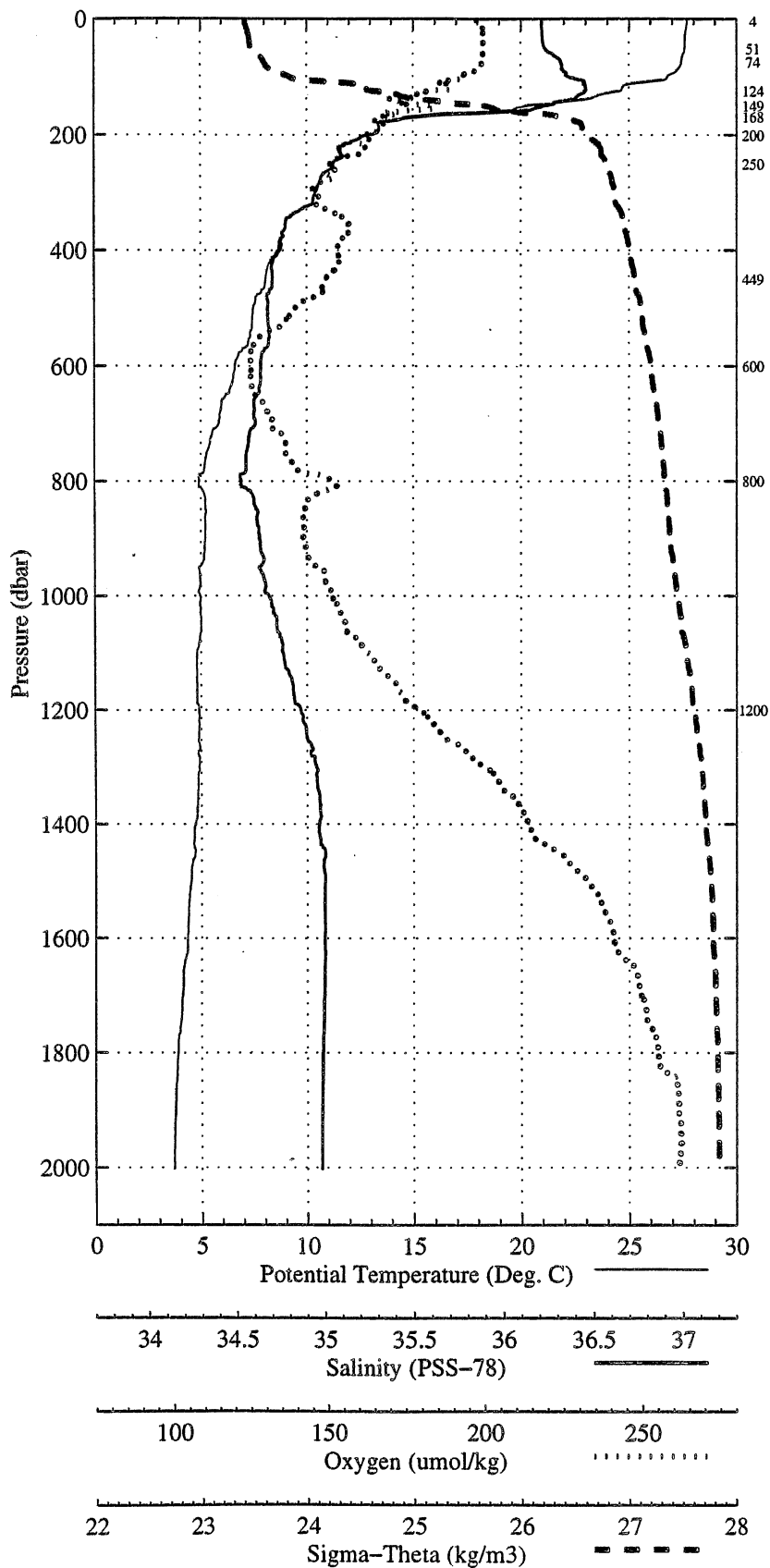
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1200	1	4.907	4.806	34.872	183.0
800	2	4.895	4.830	34.537	153.5
600	3	6.596	6.540	34.696*	123.3
450	4	8.005	7.959	34.695	150.9
250	5	11.235	11.204	35.041	150.3
201	6	12.523	12.496	35.194	164.7
169	12	15.271	15.245	35.522*	173.0
150	13	20.088	20.060	36.228	186.7
124	14	24.502	24.475	36.390*	188.2
74	20	27.363	NaN	NaN*	NaN
51	17	27.563	NaN	NaN*	NaN
4	18	27.635	27.634	36.226*	201.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 66 (99066)

Latitude 4.645 N Longitude 49.484 W

01-Mar-1999 17:35 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 67 (99067)
Latitude 5.107N Longitude 48.885W
02-Mar-1999 01:04Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	27.458	27.457	36.130	198.0	0.004	23.424
10	27.465	27.463	36.136	198.9	0.045	23.427
20	27.468	27.463	36.141	199.3	0.089	23.432
30	27.476	27.469	36.147	199.5	0.134	23.435
40	27.435	27.425	36.252	199.1	0.178	23.529
50	27.262	27.250	36.346	199.0	0.221	23.657
60	27.071	27.057	36.455	198.5	0.263	23.802
70	27.054	27.038	36.454	198.2	0.304	23.809
80	27.040	27.022	36.465	197.8	0.345	23.822
90	26.531	26.510	36.482	194.4	0.385	24.000
100	25.715	25.692	36.496	189.8	0.423	24.268
110	25.248	25.224	36.513	185.6	0.460	24.425
120	23.389	23.364	36.433	185.0	0.492	24.923
130	22.740	22.714	36.392	184.2	0.522	25.081
140	17.070	17.047	35.754	174.2	0.546	26.088
150	14.514	14.491	35.435	172.9	0.564	26.424
160	13.626	13.603	35.334	168.5	0.580	26.534
170	13.120	13.097	35.272	168.5	0.595	26.590
180	12.944	12.919	35.252	167.6	0.610	26.610
190	12.868	12.842	35.244	166.9	0.625	26.619
200	12.706	12.678	35.222	166.0	0.639	26.635
250	10.987	10.956	35.009	156.2	0.709	26.797
300	9.578	9.544	34.841	156.6	0.772	26.911
350	8.961	8.923	34.775	156.8	0.831	26.960
400	8.422	8.380	34.719	156.9	0.888	27.002
450	7.926	7.880	34.665	156.9	0.944	27.036
500	7.801	7.750	34.664	150.6	0.999	27.054
550	7.561	7.506	34.645	148.3	1.053	27.076
600	7.106	7.048	34.608	148.2	1.106	27.112
650	6.704	6.643	34.577	148.1	1.158	27.142
700	6.218	6.155	34.611	132.7	1.207	27.234
750	5.468	5.404	34.527	147.2	1.253	27.261
800	5.572	5.503	34.606	139.3	1.298	27.312
900	5.042	4.967	34.620	145.6	1.381	27.386
1000	4.682	4.601	34.642	157.3	1.458	27.446
1500	4.545	4.418	35.007	233.9	1.762	27.760
2000	3.594	3.433	34.980	258.8	1.993	27.843

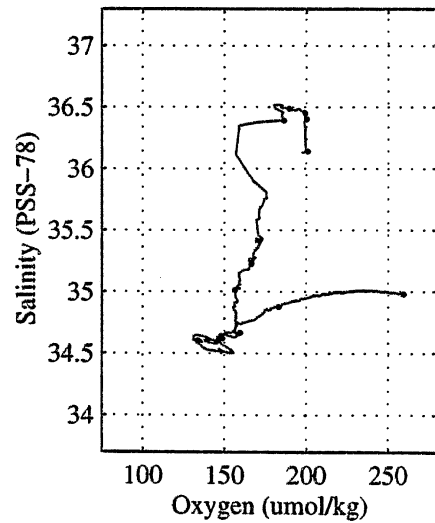
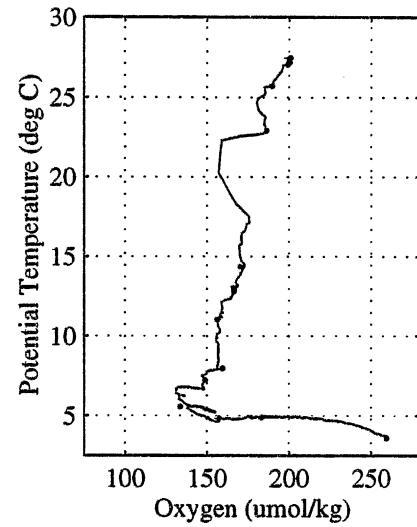
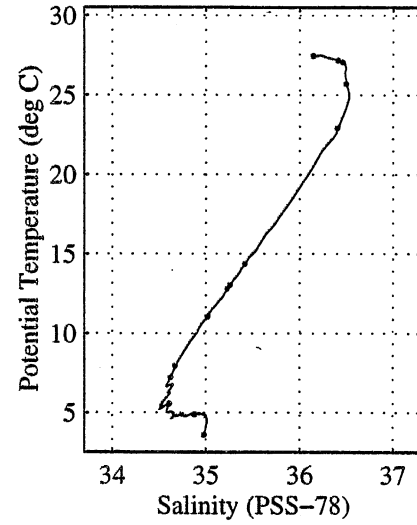
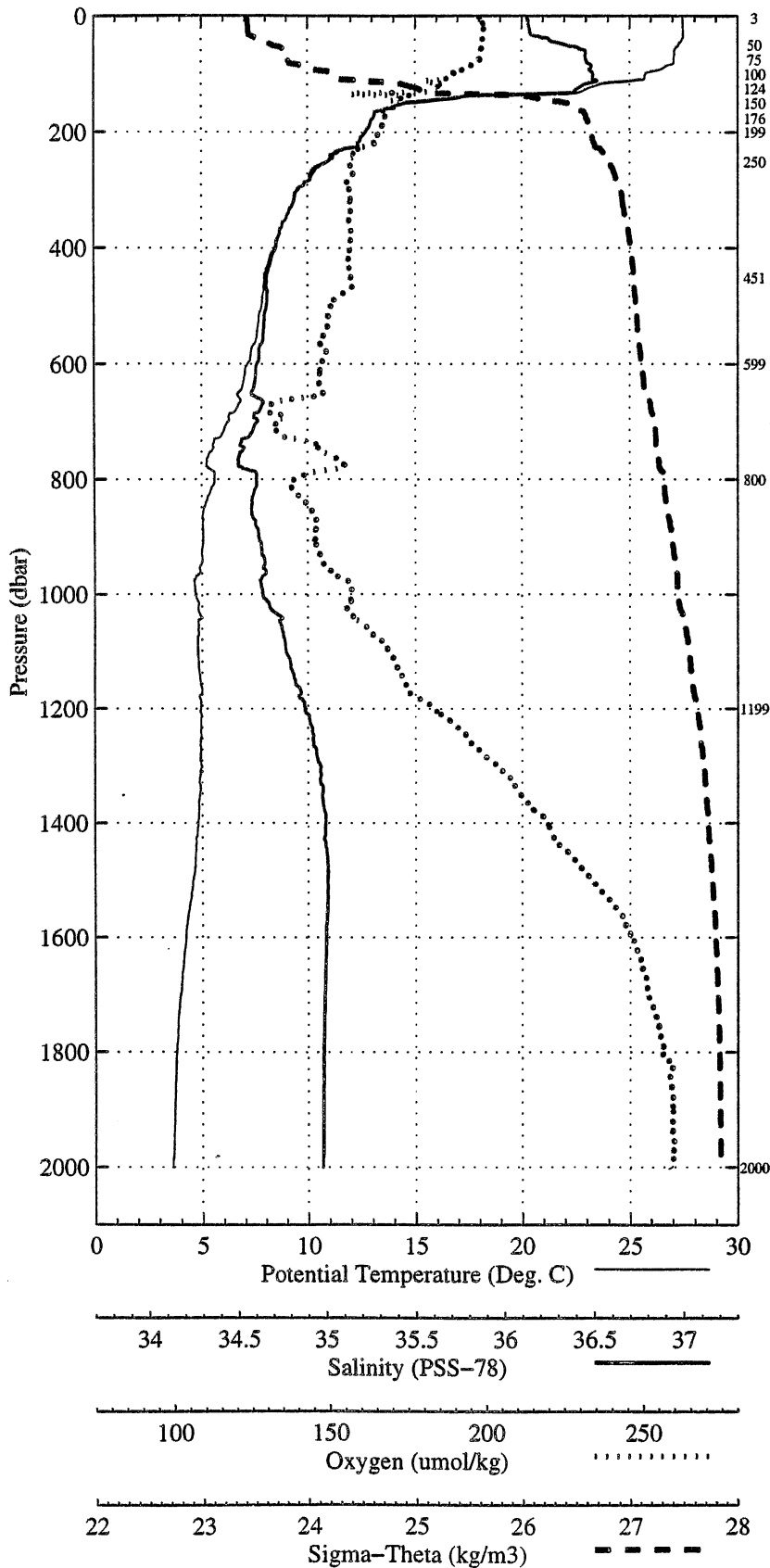
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.595	3.434	34.979	259.6
1200	1	4.886	4.784	34.877	183.3
800	2	5.574	5.505	34.605	133.5
600	3	7.225	7.166	34.619	148.6
451	4	7.957	7.911	34.666	159.4
251	5	11.053	11.022	35.015	156.2
200	6	12.803	12.775	35.224	166.3
176	12	13.040	13.015	35.256	166.0
150	13	14.361	14.339	35.416*	170.3
125	14	22.927	22.901	36.392	186.3
100	15	25.705	25.682	36.487	189.5
75	16	27.047	27.030	36.453	199.1
50	17	27.170	27.159	36.402*	200.1
4	18	27.458	27.457	36.139	200.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 67 (99067)

Latitude 5.107 N Longitude 48.885 W

02-Mar-1999 01:04 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 68 (99068)
Latitude 5.498N Longitude 48.321W
02-Mar-1999 06:30Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.352	27.351	36.246	199.5	0.004	23.546
10	27.358	27.356	36.246	198.6	0.043	23.545
20	27.363	27.358	36.246	198.4	0.087	23.545
30	27.364	27.357	36.246	198.7	0.130	23.546
40	27.367	27.357	36.247	198.8	0.174	23.547
50	27.362	27.350	36.250	198.7	0.217	23.553
60	27.345	27.331	36.259	198.7	0.261	23.567
70	27.291	27.275	36.287	198.4	0.304	23.606
80	27.072	27.053	36.344	196.7	0.347	23.722
90	26.650	26.629	36.390	194.2	0.388	23.892
100	25.457	25.435	36.441	184.2	0.427	24.306
110	24.532	24.509	36.495	183.8	0.462	24.630
120	23.779	23.754	36.505	186.0	0.494	24.863
130	22.595	22.568	36.377	183.1	0.525	25.112
140	14.663	14.642	35.414	165.8	0.549	26.375
150	13.055	13.034	35.229	168.8	0.565	26.568
160	12.956	12.934	35.246	166.3	0.580	26.602
170	12.259	12.236	35.156	165.9	0.594	26.669
180	11.934	11.911	35.119	165.3	0.608	26.703
190	11.919	11.895	35.120	164.7	0.622	26.707
200	11.835	11.809	35.109	164.0	0.636	26.716
250	11.457	11.425	35.060	162.2	0.704	26.750
300	9.953	9.918	34.911	147.3	0.767	26.902
350	8.666	8.629	34.740	157.8	0.825	26.980
400	8.413	8.371	34.721	155.2	0.882	27.005
450	8.139	8.093	34.700	153.9	0.938	27.032
500	7.788	7.737	34.659	153.7	0.993	27.052
550	7.522	7.467	34.643	150.3	1.047	27.080
600	7.339	7.280	34.650	142.7	1.101	27.113
650	6.800	6.739	34.640	127.4	1.152	27.180
700	6.166	6.103	34.614	133.0	1.200	27.243
750	5.732	5.666	34.580	134.8	1.246	27.271
800	5.310	5.242	34.560	141.2	1.290	27.306
900	5.116	5.041	34.626	143.4	1.374	27.383
1000	4.883	4.800	34.682	153.8	1.451	27.456
1500	4.540	4.413	34.996	231.1	1.762	27.752
2000	3.473	3.313	34.975	258.3	2.001	27.851

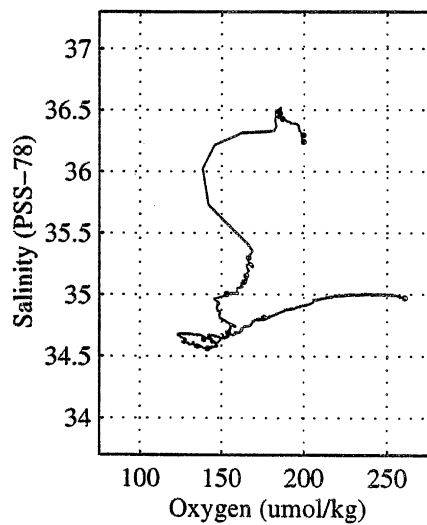
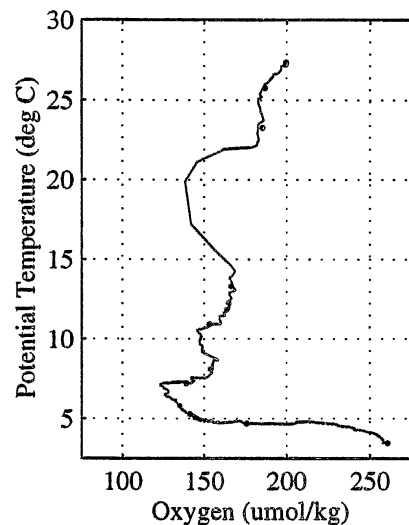
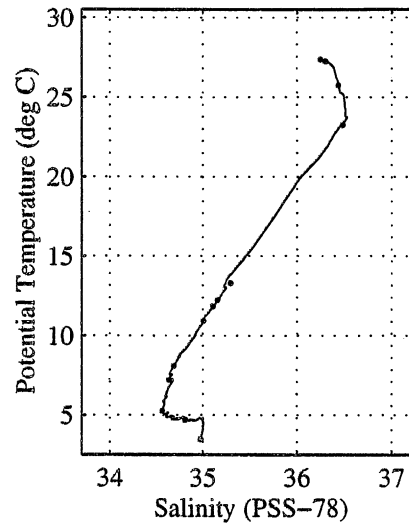
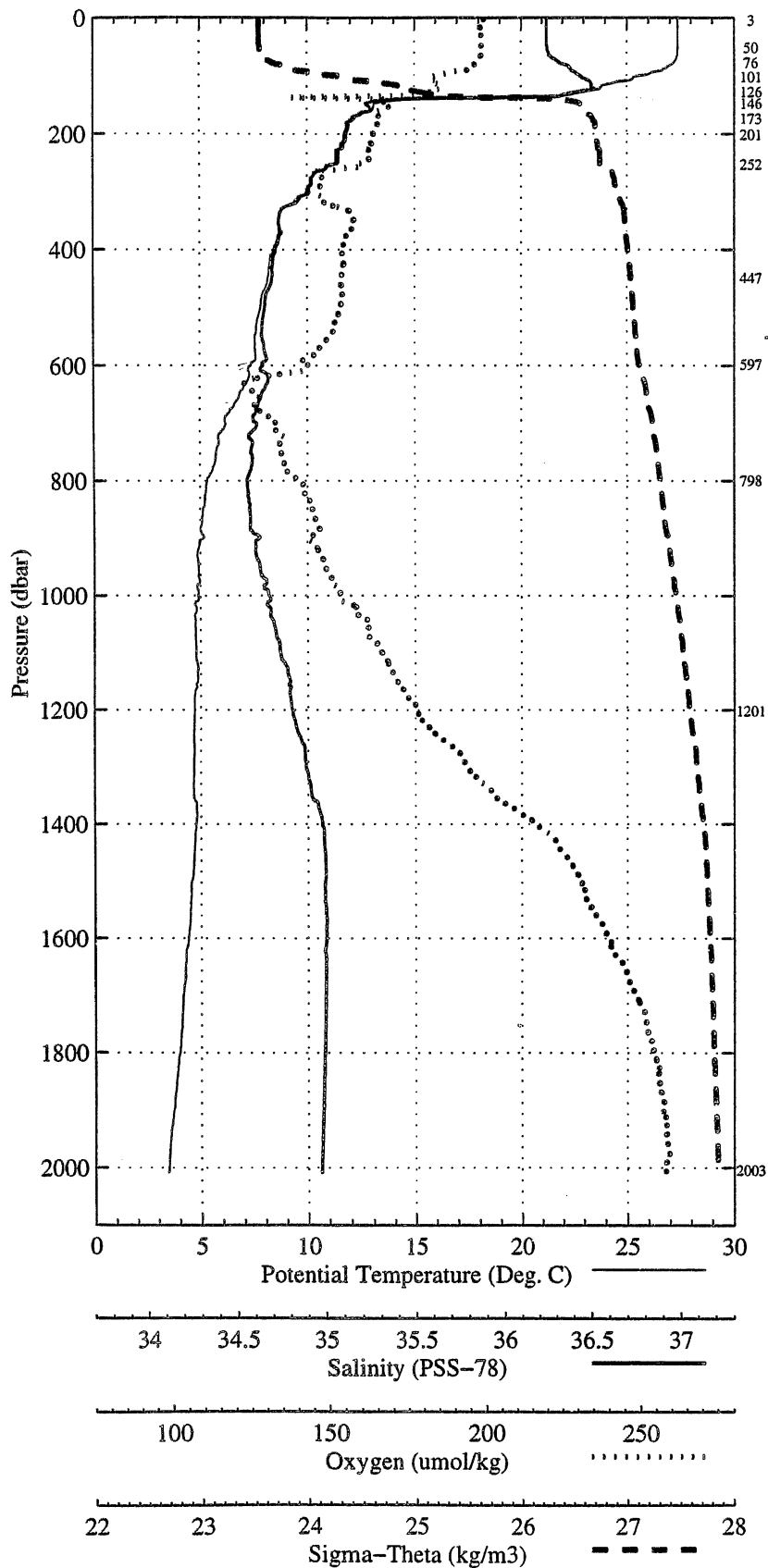
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2004	24	3.470	3.310	34.974	260.7
1201	1	4.695	4.595	34.810	175.8
799	2	5.268	5.201	34.561	141.5
597	3	7.204	7.145	34.635	139.2
448	4	8.097	8.051	34.690	153.8
252	5	10.925	10.894	35.004	153.0
201	6	11.850	11.824	35.102	163.9
173	12	12.245	12.222	35.151	165.0
147	13	13.312	13.291	35.297	166.4
127	14	23.253	23.226	36.472*	185.3
102	15	25.747	25.724	36.429	187.0
77	16	27.241	27.223	36.294	199.4
51	17	27.367	NaN	NaN*	NaN
4	18	27.352	27.351	36.242	199.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 68 (99068)

Latitude 5.498 N Longitude 48.321 W

02-Mar-1999 06:30 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 69 (99069)
Latitude 6.133N Longitude 47.983W
02-Mar-1999 12:37Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.503	27.503	36.353	197.1	0.004	23.577
10	27.514	27.512	36.353	197.8	0.043	23.575
20	27.514	27.510	36.354	197.9	0.086	23.577
30	27.517	27.510	36.354	198.0	0.129	23.578
40	27.517	27.508	36.353	198.1	0.173	23.579
50	27.519	27.507	36.354	198.2	0.216	23.580
60	27.522	27.508	36.354	198.2	0.259	23.580
70	27.522	27.506	36.354	198.2	0.303	23.582
80	27.524	27.505	36.354	198.2	0.346	23.583
90	27.525	27.504	36.354	198.4	0.389	23.584
100	26.882	26.859	36.380	190.4	0.433	23.812
110	25.693	25.669	36.530	194.5	0.471	24.302
120	22.962	22.937	36.358	183.0	0.504	24.991
130	21.340	21.314	36.243	183.1	0.533	25.362
140	21.243	21.215	36.772	157.8	0.557	25.793
150	19.437	19.409	36.551	140.8	0.578	26.109
160	16.259	16.233	35.872	140.9	0.596	26.372
170	13.417	13.393	35.301	166.4	0.612	26.552
180	12.766	12.742	35.222	168.4	0.627	26.622
190	12.493	12.468	35.192	167.4	0.641	26.653
200	12.260	12.234	35.189	160.9	0.655	26.696
250	10.634	10.603	34.990	147.5	0.721	26.845
300	9.778	9.744	34.906	145.8	0.783	26.929
350	10.139	10.097	35.071	127.8	0.841	26.998
400	9.619	9.573	35.029	117.5	0.897	27.055
450	9.116	9.066	34.971	115.9	0.951	27.093
500	8.070	8.018	34.829	118.2	1.003	27.145
550	6.644	6.593	34.638	129.2	1.052	27.196
600	6.204	6.150	34.616	131.1	1.099	27.238
650	5.777	5.721	34.593	135.3	1.144	27.273
700	5.432	5.373	34.570	142.9	1.187	27.298
750	5.214	5.151	34.582	141.0	1.230	27.333
800	5.035	4.969	34.589	143.4	1.271	27.361
900	4.894	4.820	34.648	151.8	1.350	27.426
1000	4.880	4.797	34.724	159.3	1.424	27.489
1500	4.540	4.414	34.994	231.1	1.725	27.751
2000	3.620	3.458	34.980	256.5	1.966	27.841

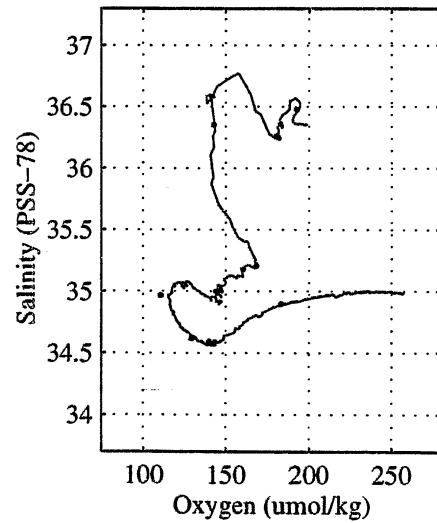
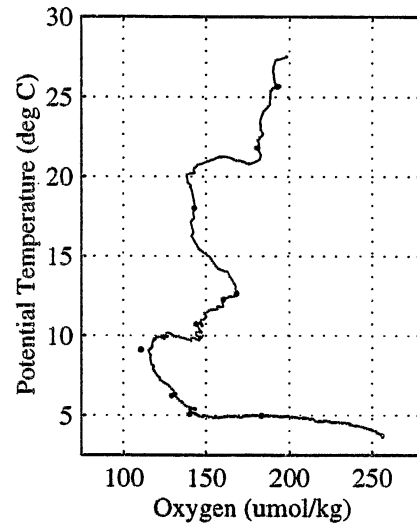
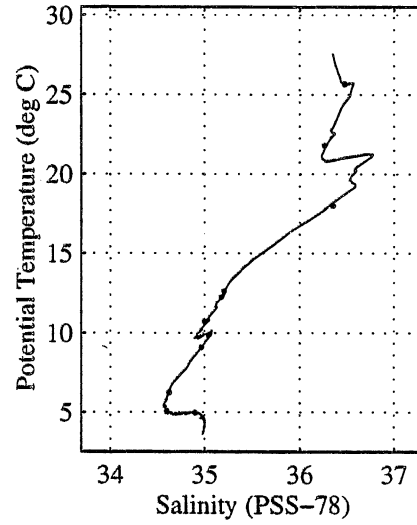
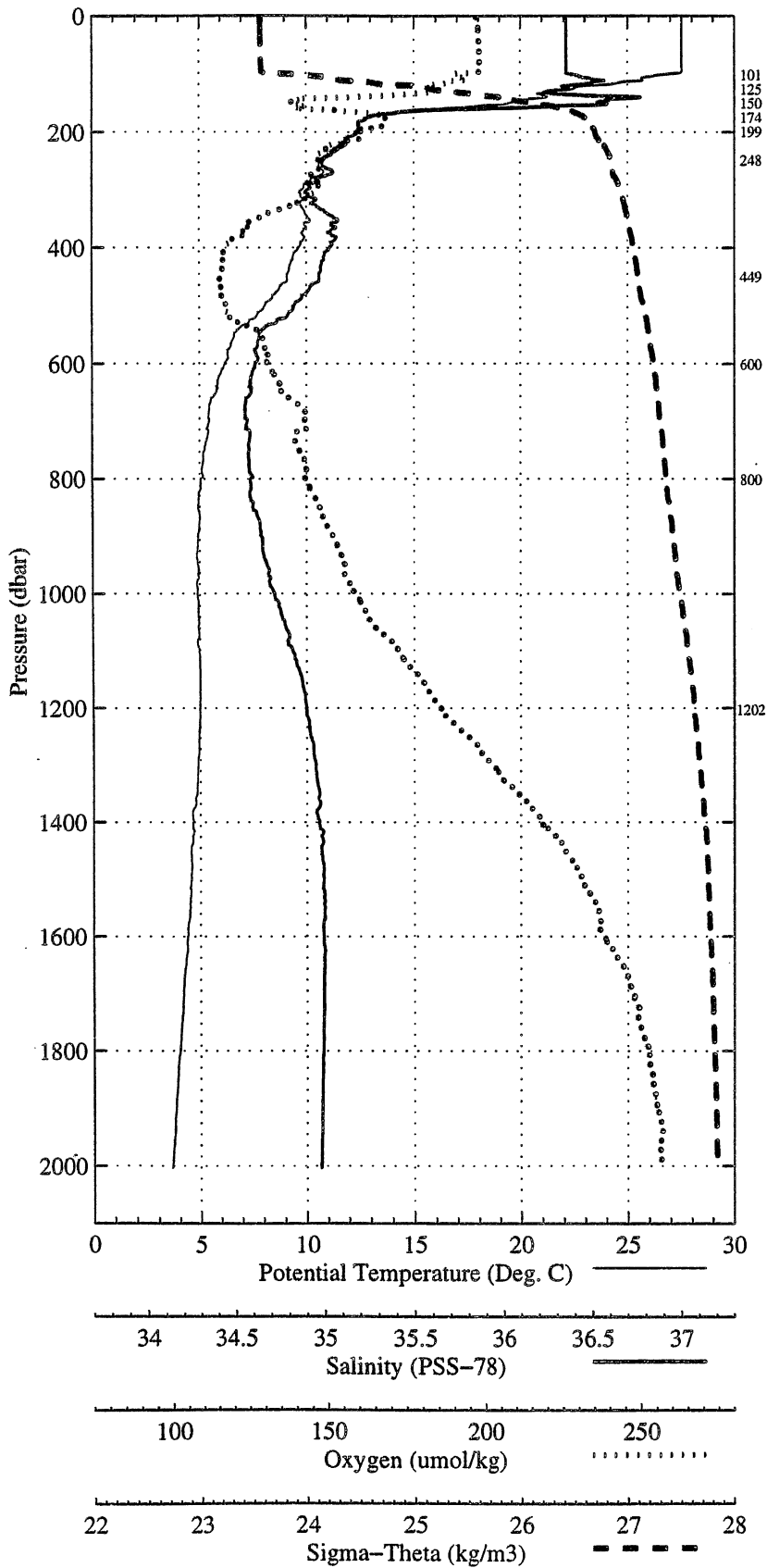
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1202	1	4.975	4.873	34.897	183.4
801	2	5.084	5.018	34.591	139.7
601	3	6.232	6.178	34.619	129.0
450	4	9.113	9.063	34.965	110.2
248	5	10.732	10.701	34.999*	143.9
200	6	12.263	12.236	35.178	160.4
175	12	12.652	12.629	35.205	168.6
150	13	18.013	17.987	36.353*	142.6
126	14	21.802	21.778	36.264*	181.2
102	15	25.652	25.630	36.478	192.6

NBC-2 R/V SEWARD JOHNSON

CTD Station 69 (99069)

Latitude 6.133 N Longitude 47.983 W

02-Mar-1999 12:37 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 70 (99070)
Latitude 6.752N Longitude 47.652W
02-Mar-1999 18:44Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.404	27.404	36.275	204.4	0.004	23.550
10	27.392	27.390	36.270	202.7	0.043	23.552
20	27.367	27.362	36.266	202.3	0.087	23.559
30	27.228	27.221	36.273	201.6	0.130	23.610
40	26.442	26.433	36.356	204.9	0.171	23.925
50	26.399	26.388	36.356	205.5	0.211	23.940
60	26.360	26.346	36.351	205.8	0.251	23.951
70	26.281	26.265	36.340	205.9	0.290	23.968
80	26.076	26.058	36.303	205.2	0.330	24.006
90	25.259	25.239	36.306	195.2	0.368	24.263
100	22.311	22.291	36.333	141.9	0.402	25.156
110	19.837	19.817	36.451	141.6	0.426	25.924
120	18.293	18.272	36.328	123.9	0.445	26.228
130	17.049	17.028	36.165	121.6	0.463	26.408
140	15.637	15.616	35.950	120.3	0.478	26.572
150	14.590	14.568	35.771	125.9	0.493	26.667
160	13.223	13.201	35.531	128.6	0.507	26.769
170	12.668	12.645	35.433	131.4	0.520	26.805
180	11.698	11.674	35.255	134.3	0.532	26.854
190	11.190	11.166	35.170	136.0	0.544	26.883
200	11.140	11.115	35.180	133.6	0.556	26.900
250	9.568	9.540	34.924	131.9	0.615	26.976
300	8.947	8.914	34.843	133.7	0.670	27.015
350	8.434	8.398	34.797	128.1	0.725	27.060
400	7.615	7.576	34.688	136.1	0.777	27.097
450	7.131	7.088	34.657	131.5	0.828	27.143
500	6.886	6.838	34.653	124.3	0.877	27.175
550	6.427	6.377	34.616	128.0	0.925	27.207
600	6.256	6.202	34.614	126.6	0.971	27.229
650	5.853	5.796	34.579	131.4	1.017	27.253
700	5.804	5.743	34.610	130.5	1.062	27.284
750	5.551	5.487	34.612	132.7	1.106	27.318
800	5.121	5.055	34.574	139.4	1.148	27.339
900	4.952	4.878	34.613	146.8	1.229	27.391
1000	4.784	4.702	34.679	156.9	1.306	27.464
1500	4.554	4.427	34.985	224.6	1.610	27.742
2000	3.681	3.518	34.981	255.4	1.854	27.837

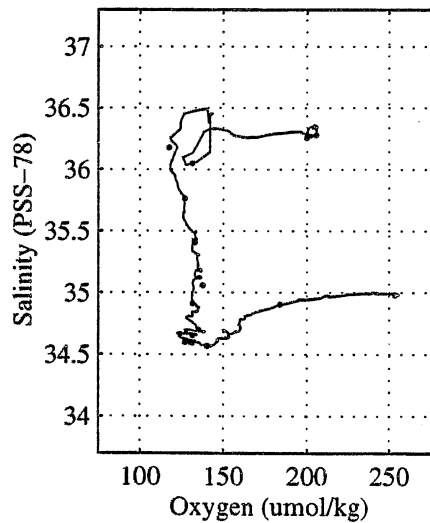
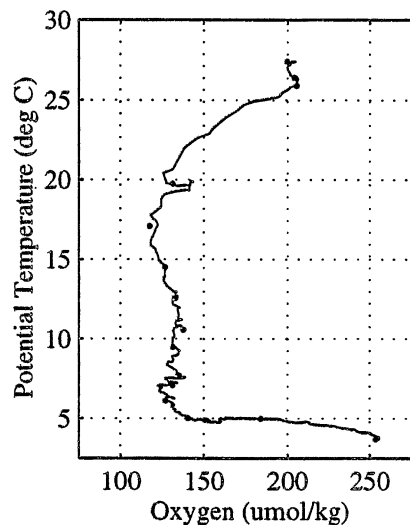
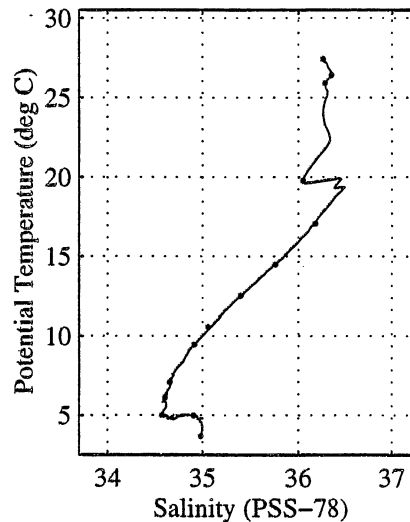
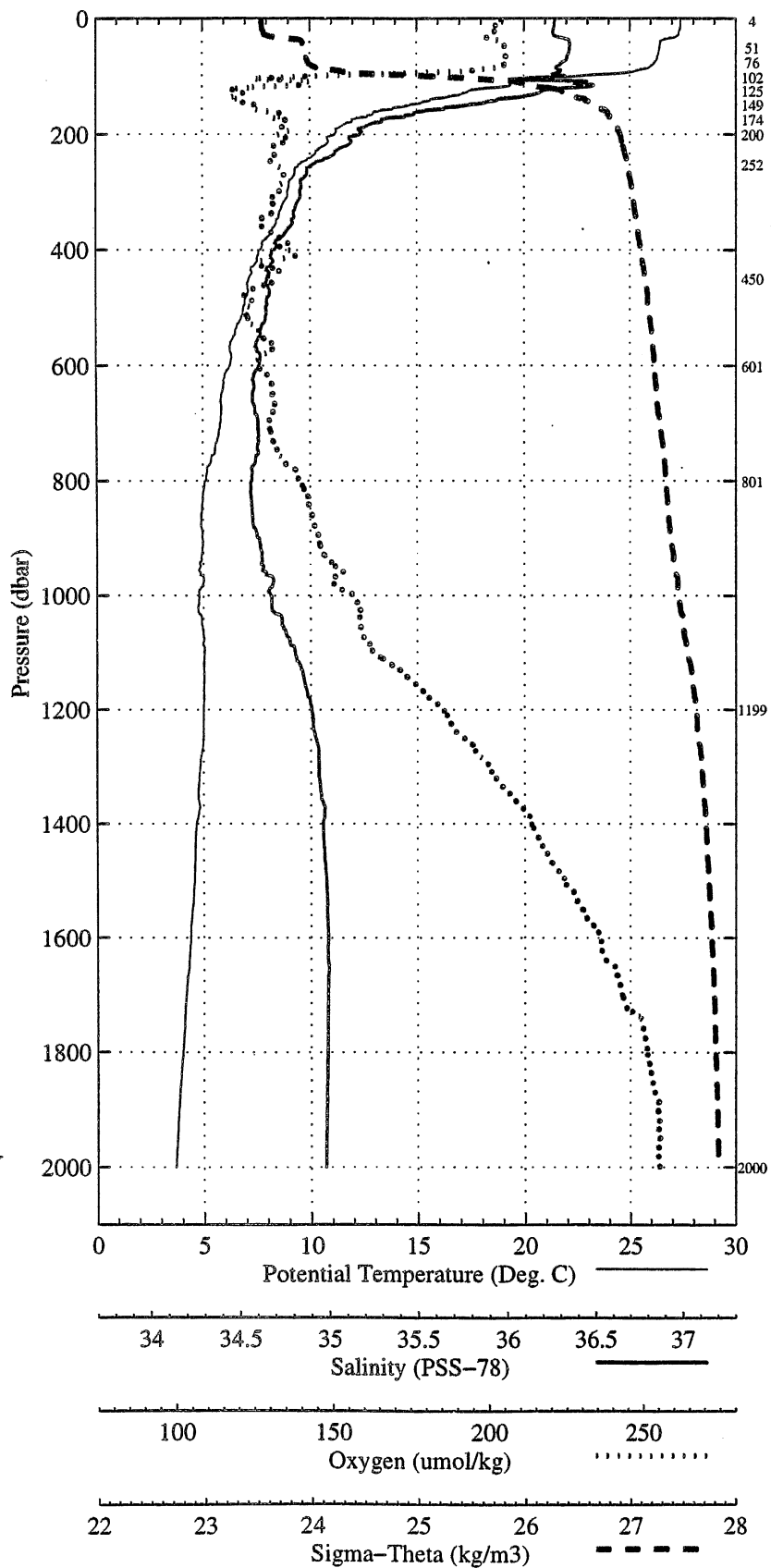
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.680	3.518	34.980	253.4
1200	1	4.987	4.885	34.904	184.2
801	2	5.030	4.964	34.567	140.2
601	3	6.112	6.059	34.598	126.8
450	4	7.083	7.040	34.649	131.2
253	5	9.473	9.444	34.912	131.4
200	6	10.573	10.549	35.057	137.6
175	12	12.550	12.526	35.407	132.9
150	13	14.502	14.480	35.764	126.5
125	14	17.080	17.059	36.177*	117.2
102	15	19.757	19.738	36.047*	131.2
76	16	25.901	25.884	36.279	205.1
51	17	26.395	26.383	36.347	204.1
5	18	27.407	27.406	36.257	199.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 70 (99070)

Latitude 6.752 N Longitude 47.652 W

02-Mar-1999 18:44 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 71 (99071)
Latitude 7.400N Longitude 49.367W
03-Mar-1999 00:51Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.109	26.109	36.377	206.9	0.004	24.041
10	26.120	26.118	36.378	204.3	0.039	24.039
20	26.120	26.116	36.379	204.2	0.077	24.041
30	26.098	26.092	36.375	204.0	0.116	24.047
40	26.043	26.034	36.373	204.0	0.155	24.064
50	26.032	26.021	36.373	204.2	0.193	24.068
60	26.013	25.999	36.369	203.6	0.232	24.073
70	22.053	22.039	36.339	134.8	0.267	25.230
80	19.103	19.089	36.256	126.2	0.290	25.964
90	16.848	16.833	35.935	118.1	0.309	26.277
100	16.663	16.647	36.131	127.5	0.326	26.471
110	15.084	15.068	35.861	123.4	0.341	26.625
120	14.242	14.224	35.687	126.6	0.355	26.675
130	12.935	12.917	35.445	129.0	0.369	26.759
140	12.110	12.091	35.292	131.6	0.382	26.802
150	11.717	11.698	35.214	135.1	0.394	26.817
160	10.718	10.699	35.043	138.4	0.407	26.867
170	10.493	10.473	35.005	139.2	0.419	26.878
180	10.277	10.255	34.974	140.0	0.431	26.892
190	10.154	10.132	34.952	139.6	0.443	26.896
200	9.973	9.949	34.920	140.8	0.455	26.903
250	9.615	9.586	34.900	136.3	0.513	26.948
300	8.945	8.912	34.825	129.7	0.570	27.001
350	8.624	8.587	34.825	125.9	0.625	27.053
400	7.779	7.739	34.719	118.1	0.677	27.098
450	7.281	7.238	34.680	118.9	0.728	27.140
500	6.812	6.765	34.645	119.6	0.777	27.178
550	6.102	6.053	34.550	137.9	0.825	27.197
600	6.193	6.139	34.607	128.3	0.872	27.231
650	5.882	5.825	34.591	126.7	0.917	27.259
700	5.376	5.317	34.556	130.2	0.961	27.293
750	5.198	5.136	34.557	133.3	1.004	27.316
800	5.050	4.985	34.559	135.7	1.046	27.335
900	4.850	4.777	34.581	140.0	1.128	27.377
1000	4.780	4.698	34.631	147.4	1.207	27.426
1500	4.694	4.566	34.985	220.8	1.530	27.727
2000	3.653	3.491	34.978	251.4	1.776	27.836

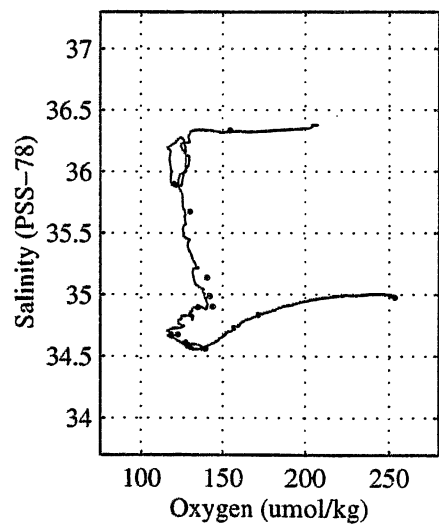
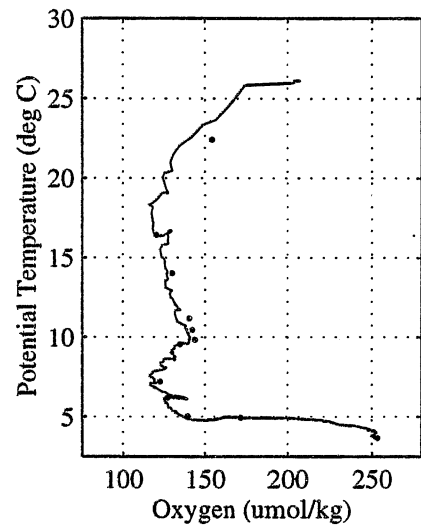
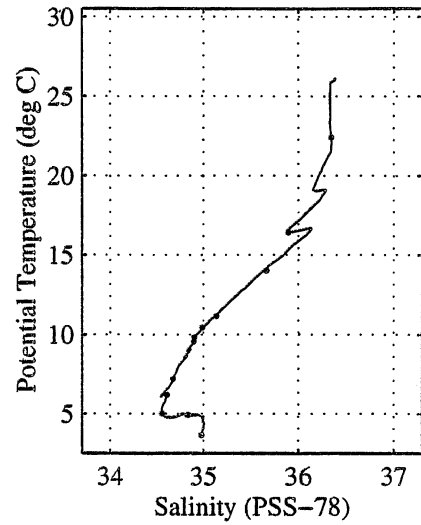
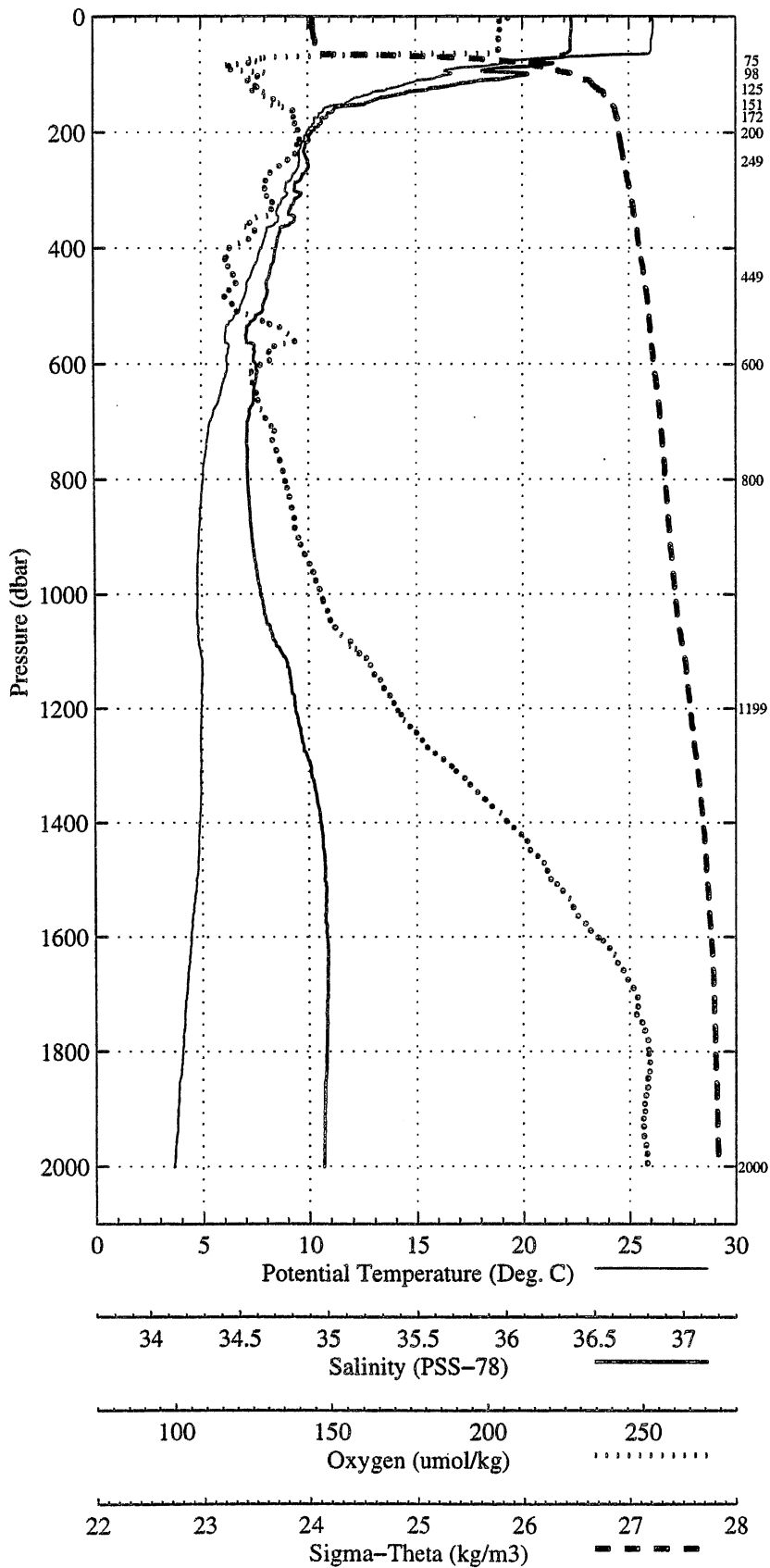
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.653	3.491	34.976	253.2
1199	1	4.931	4.829	34.834	171.9
801	2	5.026	4.960	34.559	139.5
600	3	6.197	6.143	34.611	127.3
449	4	7.205	7.162	34.675	122.6
250	5	9.542	9.514	34.897	134.9
200	6	9.844	9.821	34.900	143.8
172	12	10.440	10.420	34.985	142.3
151	13	11.168	11.150	35.135*	140.4
125	14	14.021	14.003	35.673*	130.1
98	15	16.428	16.412	35.897*	120.4
75	16	22.418	22.403	36.336*	154.2

NBC-2 R/V SEWARD JOHNSON

CTD Station 71 (99071)

Latitude 7.400 N Longitude 49.367 W

03-Mar-1999 00:51 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 72 (99072)
Latitude 6.764N Longitude 45.745W
03-Mar-1999 11:49Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m³/kg	SigTh kg/m³
1	26.477	26.477	36.312	196.9	0.004	23.875
10	26.491	26.489	36.320	201.2	0.040	23.878
20	26.492	26.488	36.320	201.2	0.080	23.880
30	26.487	26.480	36.320	201.4	0.121	23.883
40	26.466	26.457	36.321	201.3	0.161	23.891
50	26.470	26.458	36.321	201.3	0.201	23.892
60	23.404	23.392	36.715	163.9	0.239	25.125
70	22.050	22.036	36.780	149.4	0.265	25.566
80	20.482	20.467	36.631	135.6	0.288	25.886
90	18.334	18.318	36.447	130.3	0.307	26.306
100	15.240	15.224	35.816	125.8	0.323	26.556
110	12.698	12.683	35.345	138.7	0.337	26.728
120	11.716	11.701	35.191	146.2	0.350	26.798
130	11.532	11.516	35.159	147.4	0.363	26.808
140	11.353	11.336	35.122	148.7	0.376	26.813
150	11.347	11.328	35.121	149.3	0.388	26.814
160	11.028	11.008	35.064	149.6	0.401	26.828
170	10.839	10.818	35.028	149.9	0.413	26.834
180	10.749	10.727	35.013	150.0	0.426	26.839
190	10.700	10.677	35.009	149.7	0.438	26.845
200	10.601	10.577	34.999	146.6	0.451	26.855
250	9.848	9.819	34.901	144.8	0.512	26.911
300	9.524	9.490	34.929	132.9	0.570	26.988
350	8.766	8.728	34.847	125.9	0.625	27.048
400	7.880	7.840	34.726	126.3	0.678	27.089
450	7.424	7.380	34.689	126.4	0.729	27.127
500	6.878	6.831	34.635	126.6	0.779	27.161
550	6.651	6.600	34.629	126.7	0.828	27.188
600	6.289	6.235	34.607	127.7	0.876	27.219
650	5.979	5.921	34.589	130.7	0.922	27.245
700	5.750	5.689	34.579	134.9	0.967	27.267
750	5.531	5.467	34.582	138.1	1.012	27.296
800	5.141	5.074	34.561	145.1	1.055	27.326
900	5.088	5.013	34.666	146.2	1.136	27.418
1000	4.879	4.796	34.723	157.6	1.210	27.489
1500	4.374	4.250	34.991	235.7	1.503	27.766
2000	3.603	3.441	34.978	255.6	1.737	27.841

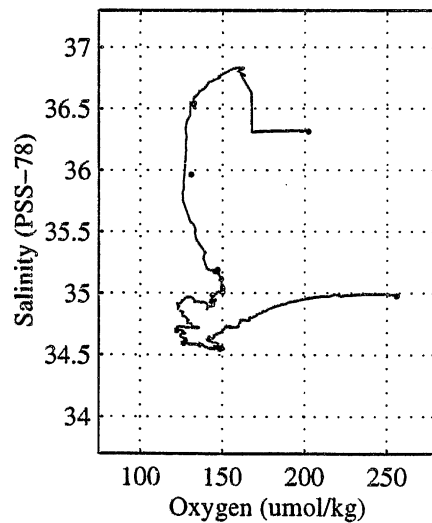
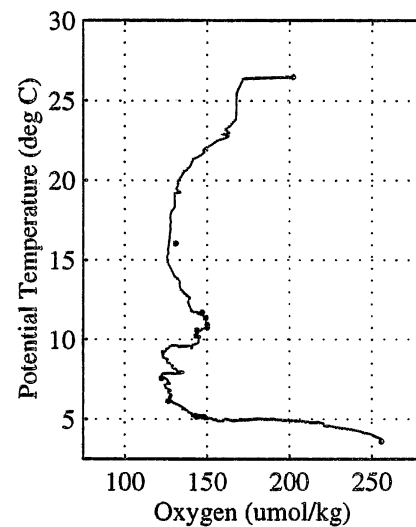
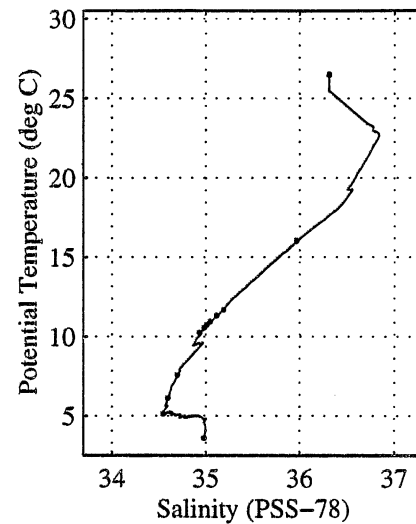
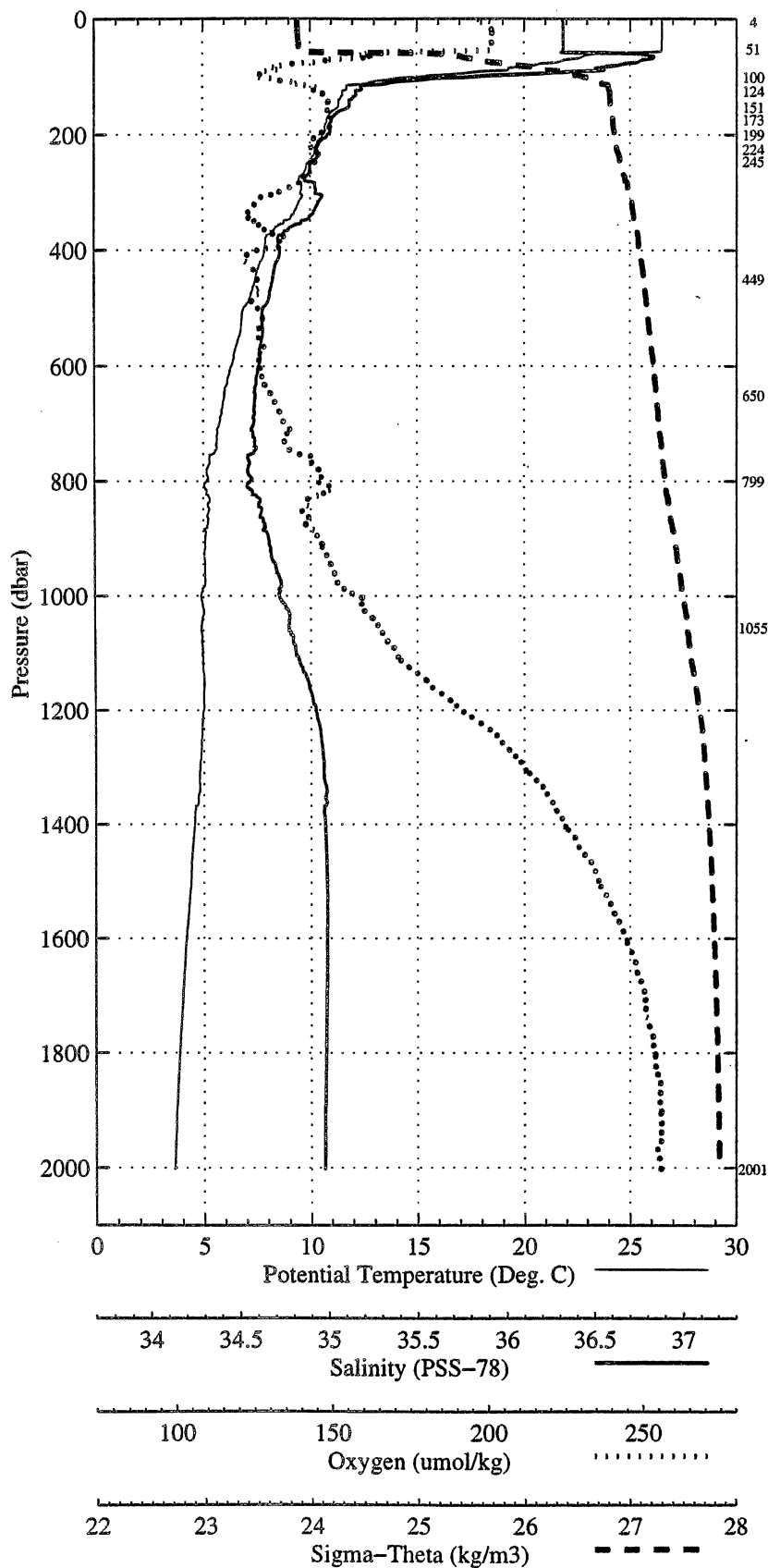
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.603	3.441	34.976	255.7
1055	1	4.927	NaN	NaN*	NaN
800	2	5.136	5.070	34.546	148.2
651	3	6.136	6.077	34.595	126.5
450	4	7.577	7.533	34.698	122.3
246	5	10.234	10.205	34.932	143.5
225	6	10.572	10.545	34.981	143.9
200	12	10.749	10.724	35.006	149.9
173	13	10.943	10.922	35.043	149.9
152	14	11.349	11.330	35.113	149.0
124	15	11.709	11.693	35.189	146.9
100	16	16.043	16.027	35.962	131.0
51	17	26.454	26.442	36.315	NaN
5	18	26.482	26.480	36.314	202.0

NBC-2 R/V SEWARD JOHNSON

CTD Station 72 (99072)

Latitude 6.764 N Longitude 45.745 W

03-Mar-1999 11:49 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 73 (99073)
Latitude 6.169N Longitude 45.915W
03-Mar-1999 16:53Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	26.593	26.592	36.349	196.0	0.004	23.866
10	26.592	26.590	36.331	201.5	0.040	23.854
20	26.535	26.530	36.329	201.9	0.081	23.873
30	26.518	26.511	36.330	202.1	0.121	23.880
40	26.513	26.504	36.329	202.3	0.161	23.883
50	26.507	26.495	36.330	202.2	0.202	23.886
60	25.797	25.783	36.341	195.8	0.242	24.120
70	23.713	23.699	36.209	183.5	0.278	24.652
80	21.775	21.759	36.673	141.3	0.306	25.564
90	20.474	20.457	36.635	134.9	0.328	25.893
100	18.729	18.712	36.465	134.5	0.348	26.221
110	17.311	17.292	36.291	125.4	0.365	26.440
120	16.491	16.471	36.157	128.0	0.381	26.534
130	15.318	15.298	35.956	115.6	0.395	26.648
140	13.755	13.734	35.659	112.0	0.409	26.757
150	13.112	13.091	35.543	112.2	0.422	26.800
160	12.159	12.138	35.373	124.3	0.435	26.857
170	11.642	11.620	35.275	122.0	0.447	26.880
180	10.775	10.753	35.111	128.5	0.459	26.911
190	10.476	10.453	35.056	131.9	0.471	26.921
200	10.356	10.332	35.040	132.5	0.482	26.930
250	9.100	9.072	34.861	133.6	0.539	27.003
300	8.380	8.348	34.768	127.8	0.593	27.044
350	7.763	7.727	34.707	128.7	0.645	27.089
400	7.512	7.473	34.692	123.2	0.697	27.115
450	7.126	7.083	34.668	120.1	0.746	27.152
500	6.740	6.694	34.644	123.4	0.795	27.187
550	6.262	6.213	34.604	124.7	0.842	27.219
600	5.947	5.894	34.577	129.7	0.888	27.239
650	5.665	5.610	34.556	133.8	0.934	27.258
700	5.467	5.408	34.557	136.0	0.978	27.283
750	5.266	5.204	34.553	136.6	1.021	27.305
800	5.120	5.054	34.567	139.8	1.064	27.333
900	4.873	4.800	34.590	145.3	1.145	27.382
1000	4.823	4.740	34.669	152.6	1.223	27.452
1500	4.452	4.326	34.996	235.7	1.522	27.762
2000	3.556	3.395	34.977	257.1	1.758	27.845

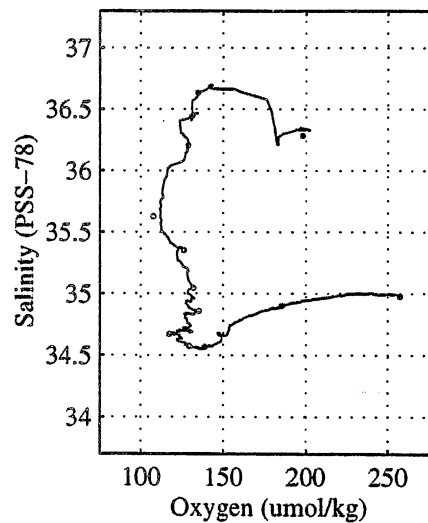
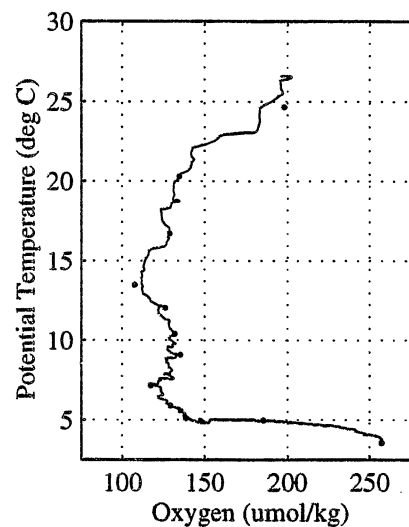
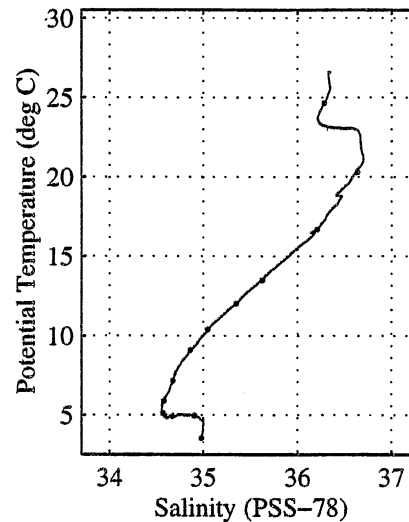
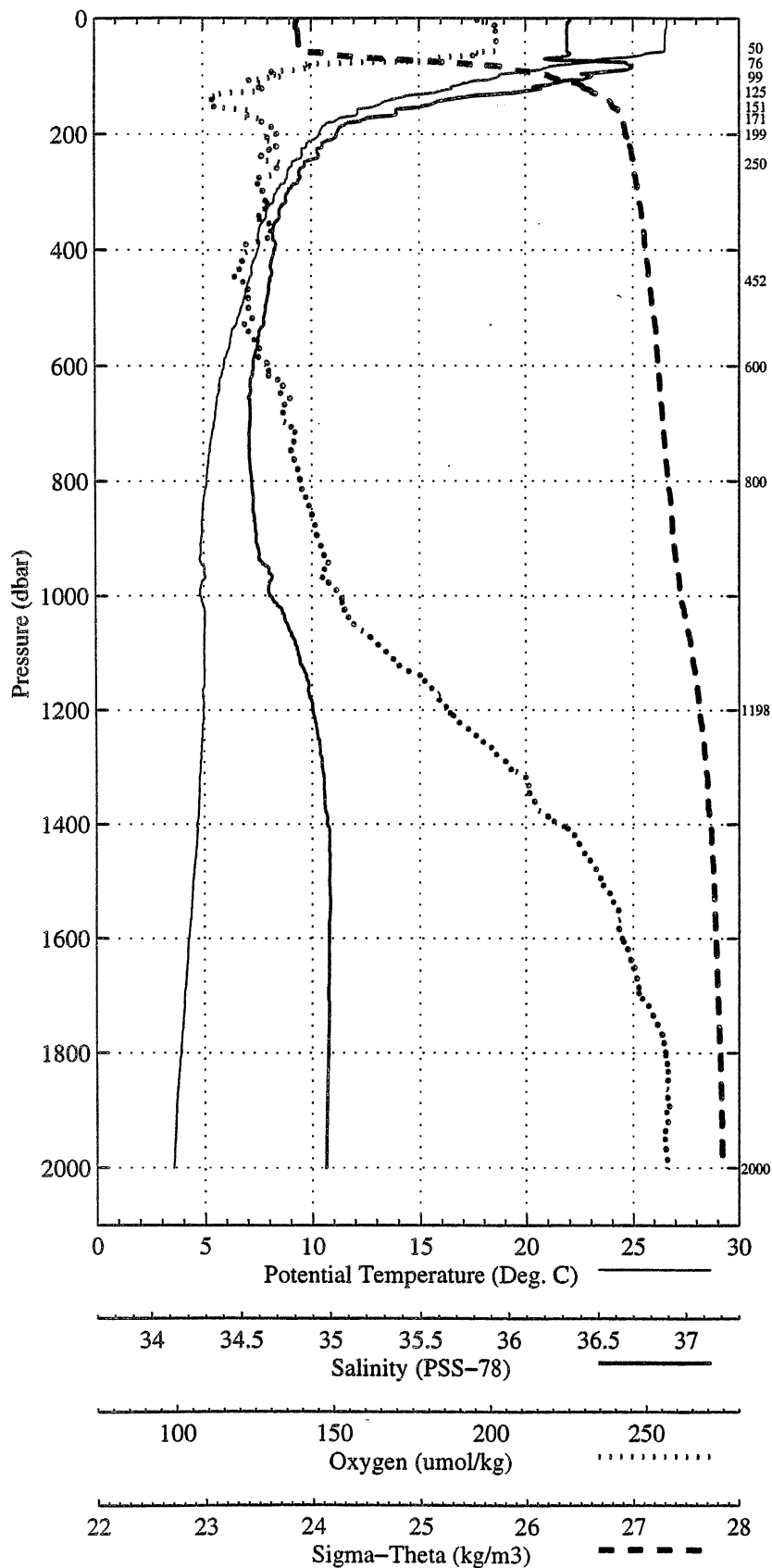
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.556	3.395	34.977	257.3
1199	1	4.965	4.863	34.900	185.6
800	2	5.110	5.043	34.566	138.4
601	3	5.890	5.838	34.574	129.1
452	4	7.166	7.123	34.672	117.2
250	5	9.099	9.071	34.857	135.0
199	6	10.401	10.378	35.045	131.6
172	12	12.026	12.003	35.352*	125.8
152	13	13.497	13.475	35.629*	107.5
126	14	16.708	16.687	36.206*	128.5
100	15	20.309	20.291	36.631*	134.3
76	16	24.651	24.635	36.284	197.9
50	17	26.511	NaN	NaN*	NaN

NBC-2 R/V SEWARD JOHNSON

CTD Station 73 (99073)

Latitude 6.169 N Longitude 45.915 W

03-Mar-1999 16:53 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 74 (99074)
Latitude 5.586N Longitude 46.199W
04-Mar-1999 03:34Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.515	27.515	36.312	203.5	0.004	23.543
10	27.512	27.510	36.313	197.9	0.043	23.545
20	27.523	27.518	36.313	197.5	0.087	23.544
30	27.521	27.514	36.313	197.3	0.130	23.546
40	27.522	27.512	36.313	197.6	0.174	23.547
50	27.525	27.514	36.313	197.4	0.217	23.547
60	27.466	27.452	36.316	196.2	0.261	23.570
70	26.702	26.686	36.339	196.9	0.303	23.834
80	26.419	26.401	36.308	200.0	0.344	23.902
90	25.949	25.929	36.281	199.3	0.383	24.030
100	23.498	23.477	36.364	162.0	0.419	24.837
110	20.618	20.597	36.351	125.5	0.446	25.640
120	18.919	18.897	36.243	123.2	0.468	26.005
130	18.554	18.531	36.435	131.4	0.487	26.245
140	17.532	17.508	36.279	125.8	0.504	26.380
150	16.552	16.528	36.180	130.6	0.520	26.539
160	15.391	15.366	35.994	127.6	0.535	26.663
170	14.514	14.488	35.831	119.6	0.549	26.731
180	13.826	13.800	35.699	115.6	0.562	26.776
190	13.372	13.346	35.630	117.7	0.575	26.817
200	12.528	12.501	35.484	112.7	0.588	26.874
250	10.288	10.258	35.104	113.4	0.647	26.994
300	8.633	8.602	34.829	126.6	0.701	27.053
350	7.794	7.759	34.721	126.0	0.753	27.096
400	7.380	7.341	34.681	124.1	0.804	27.125
450	6.870	6.827	34.639	124.7	0.853	27.165
500	6.321	6.276	34.583	131.5	0.901	27.193
550	6.083	6.034	34.590	126.4	0.948	27.230
600	5.717	5.665	34.564	130.2	0.993	27.256
650	5.477	5.422	34.562	132.8	1.037	27.285
700	5.231	5.172	34.552	136.0	1.080	27.307
750	5.041	4.980	34.554	138.6	1.122	27.331
800	4.988	4.922	34.579	141.6	1.163	27.358
900	4.816	4.743	34.621	147.4	1.243	27.412
1000	4.775	4.693	34.697	155.0	1.317	27.479
1500	4.436	4.311	34.986	231.7	1.616	27.756
2000	3.605	3.444	34.980	255.8	1.852	27.842

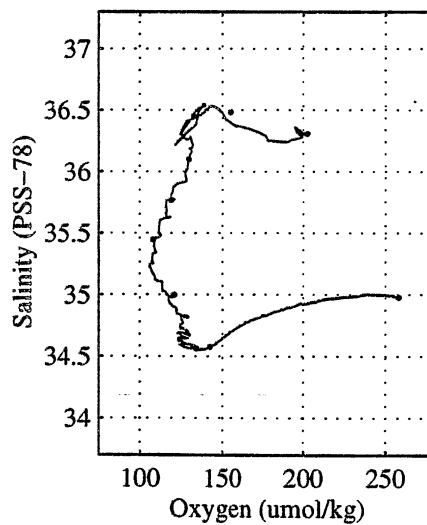
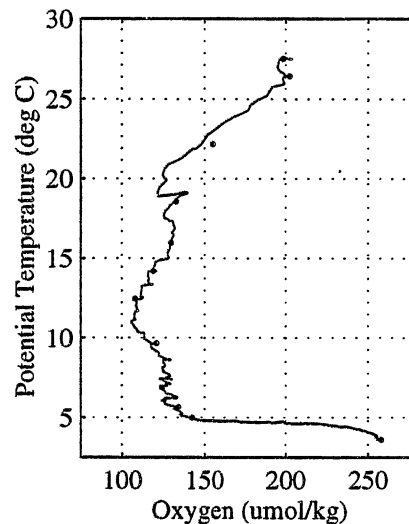
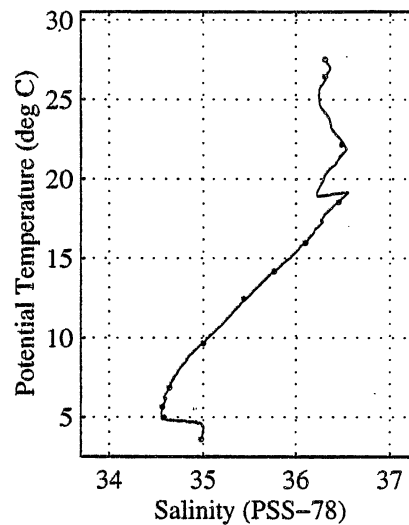
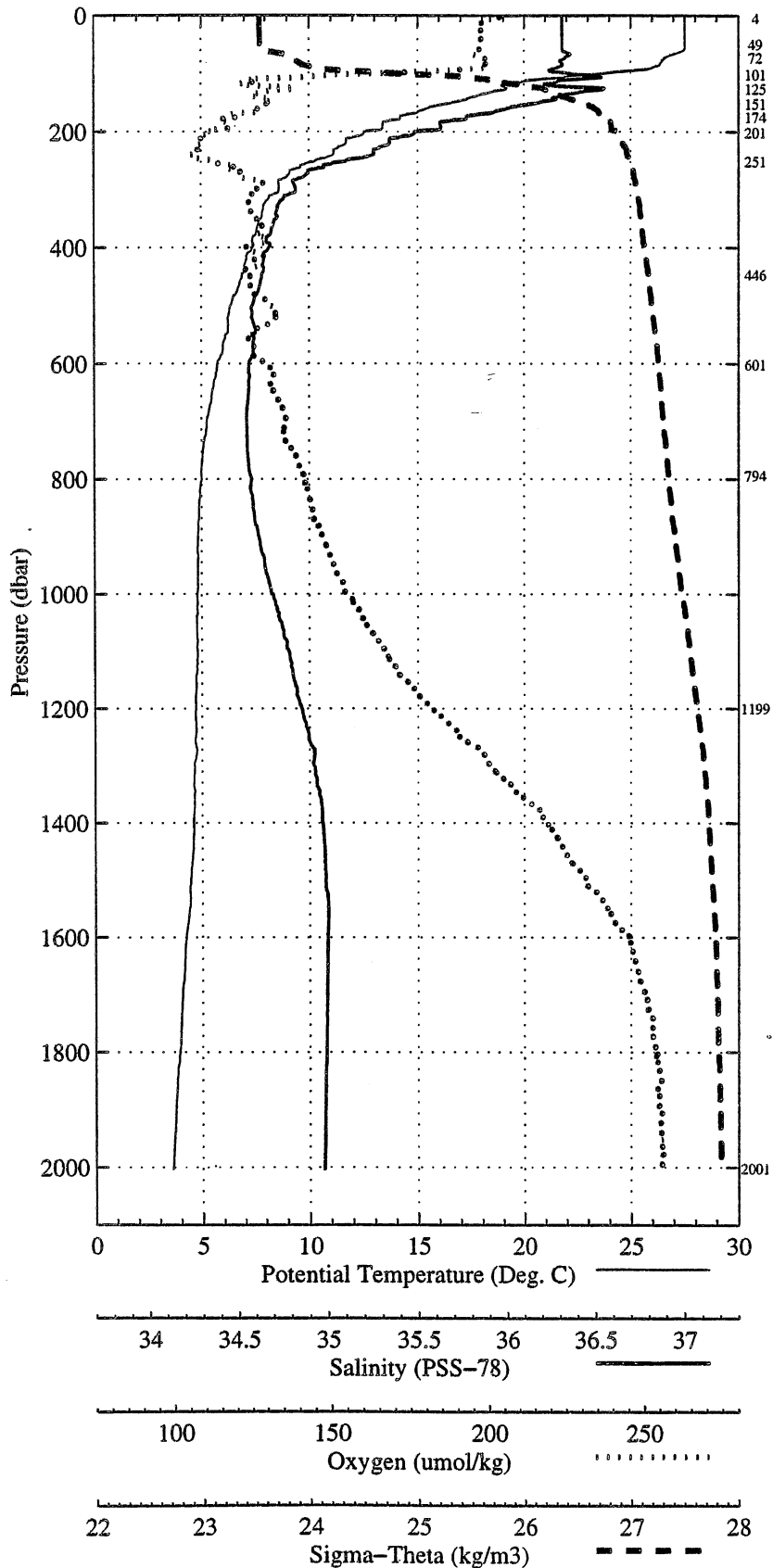
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2002	24	3.605	3.443	34.978	258.0
1200	1	4.688	NaN	NaN*	NaN
794	2	4.986	4.921	34.576	142.1
602	3	5.660	5.609	34.561	133.8
446	4	6.865	6.824	34.638	124.0
251	5	9.657	9.629	34.999	120.7
201	6	12.455	12.428	35.447*	107.8
174	12	14.191	14.165	35.767	118.8
151	13	15.979	15.955	36.098	129.3
126	14	18.556	18.534	36.451*	132.4
101	15	22.172	22.151	36.483*	155.1
73	16	26.424	26.407	36.307	202.3
50	17	27.513	27.502	36.308	198.5
5	18	27.503	27.502	36.308	198.4

NBC-2 R/V SEWARD JOHNSON

CTD Station 74 (99074)

Latitude 5.586 N Longitude 46.199 W

04-Mar-1999 03:34 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 75 (99075)
Latitude 5.002N Longitude 46.401W
04-Mar-1999 12:11Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.398	27.398	36.095	198.2	0.004	23.417
10	27.442	27.440	36.095	199.7	0.045	23.404
20	27.442	27.437	36.096	199.3	0.089	23.406
30	27.447	27.440	36.100	198.9	0.134	23.409
40	27.476	27.466	36.179	198.2	0.179	23.461
50	27.508	27.497	36.260	198.0	0.223	23.513
60	27.549	27.535	36.311	197.5	0.267	23.540
70	27.562	27.546	36.336	197.3	0.311	23.556
80	27.555	27.537	36.340	196.9	0.354	23.563
90	27.538	27.517	36.345	196.9	0.398	23.573
100	27.523	27.500	36.353	195.8	0.441	23.585
110	26.048	26.023	36.406	174.2	0.483	24.097
120	23.911	23.886	36.404	167.7	0.516	24.748
130	20.307	20.283	36.352	130.3	0.544	25.726
140	19.274	19.249	36.495	127.3	0.565	26.108
150	17.729	17.704	36.308	127.3	0.584	26.355
160	17.195	17.168	36.314	135.2	0.600	26.490
170	16.178	16.151	36.125	128.1	0.615	26.586
180	15.168	15.140	35.937	119.4	0.630	26.671
190	14.549	14.521	35.824	114.9	0.644	26.719
200	13.499	13.470	35.627	111.5	0.658	26.789
250	11.658	11.625	35.327	109.4	0.720	26.921
300	10.514	10.478	35.166	108.1	0.778	27.006
350	8.581	8.543	34.847	117.9	0.832	27.077
400	7.490	7.451	34.702	125.1	0.884	27.126
450	6.878	6.836	34.652	123.5	0.933	27.173
500	6.372	6.327	34.593	131.2	0.980	27.195
550	6.026	5.978	34.569	132.9	1.027	27.221
600	5.830	5.778	34.571	131.3	1.073	27.248
650	5.573	5.518	34.563	130.9	1.117	27.274
700	5.310	5.251	34.563	135.5	1.161	27.306
750	5.099	5.037	34.568	139.0	1.203	27.335
800	4.945	4.879	34.574	142.5	1.244	27.359
900	4.782	4.709	34.623	148.7	1.323	27.417
1000	4.763	4.681	34.692	156.5	1.397	27.477
1500	4.312	4.188	34.995	239.3	1.686	27.776
2000	3.670	3.507	34.983	257.8	1.925	27.839

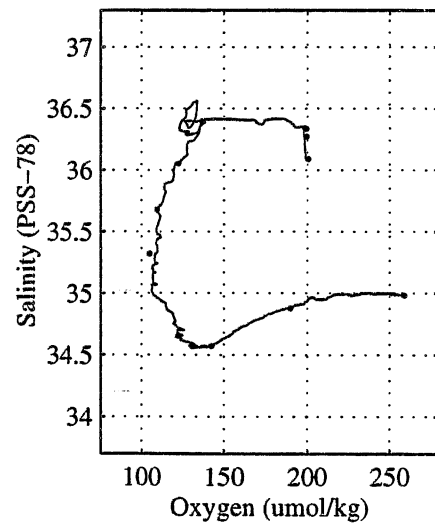
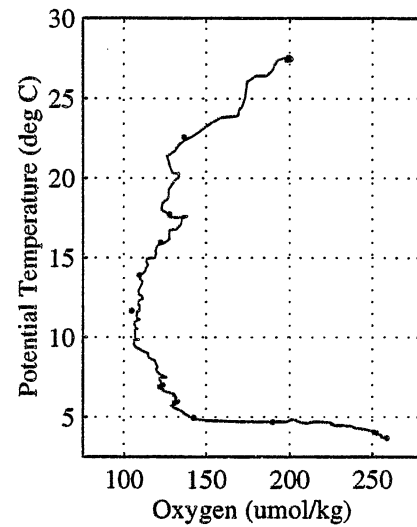
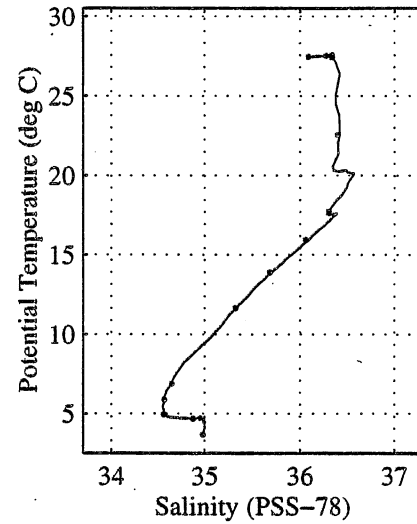
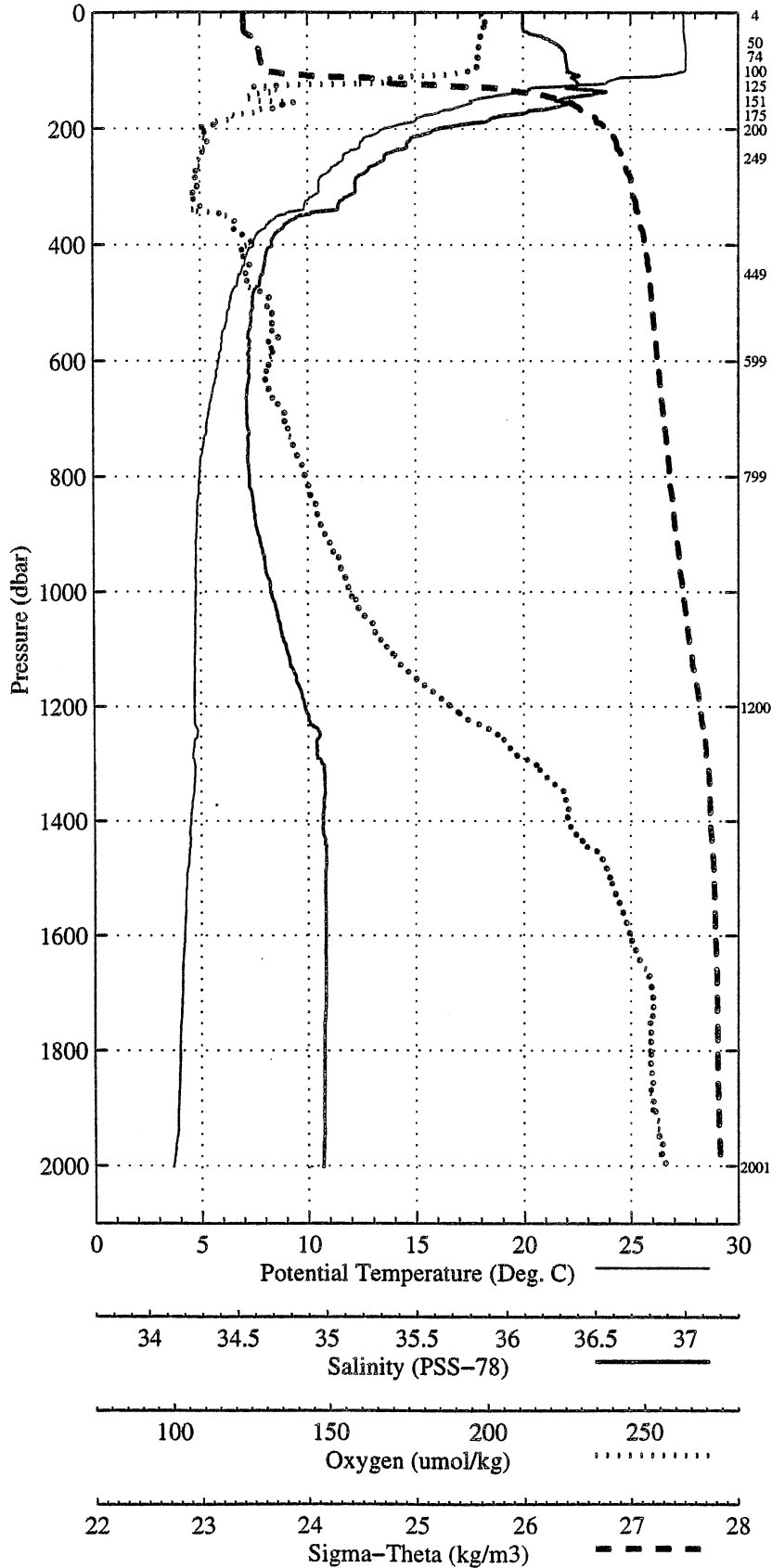
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.670	3.507	34.981	258.7
1201	1	4.675	4.576	34.878	189.7
799	2	4.954	4.889	34.571	142.5
599	3	5.874	5.821	34.573	131.1
450	4	6.896	6.854	34.653	122.4
250	5	11.663	11.631	35.322	104.8
201	6	13.899	13.870	35.679*	109.5
176	12	15.943	15.915	36.055*	122.8
151	13	17.726	17.700	36.300	128.1
125	14	22.557	22.532	36.395	137.1
100	15	27.418	27.395	36.339	198.4
75	16	27.564	27.546	36.334	199.2
51	17	27.524	27.512	36.274*	199.4
4	18	27.457	27.456	36.088	200.3

NBC-2 R/V SEWARD JOHNSON

CTD Station 75 (99075)

Latitude 5.002 N Longitude 46.401 W

04-Mar-1999 12:11 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 76 (99076)
Latitude 4.417N Longitude 46.652W
04-Mar-1999 18:06Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.504	27.504	36.145	196.1	0.004	23.421
10	27.519	27.516	36.147	199.7	0.045	23.418
20	27.497	27.492	36.147	200.3	0.089	23.427
30	27.469	27.462	36.149	200.6	0.134	23.439
40	27.467	27.458	36.151	200.4	0.178	23.443
50	27.468	27.457	36.152	200.2	0.223	23.445
60	27.471	27.457	36.154	199.8	0.267	23.447
70	27.477	27.460	36.160	199.7	0.312	23.451
80	27.487	27.469	36.195	199.5	0.357	23.475
90	27.480	27.459	36.257	199.0	0.401	23.526
100	27.433	27.409	36.261	198.6	0.445	23.546
110	27.094	27.068	36.372	195.8	0.488	23.740
120	24.965	24.939	36.504	180.8	0.528	24.507
130	22.707	22.680	36.579	164.4	0.558	25.233
140	18.816	18.791	36.196	151.9	0.582	25.997
150	16.711	16.686	35.802	152.9	0.602	26.212
160	15.167	15.143	35.576	160.3	0.619	26.390
170	14.175	14.150	35.432	161.8	0.636	26.496
180	13.707	13.681	35.377	159.4	0.651	26.551
190	12.814	12.788	35.272	156.9	0.666	26.652
200	11.901	11.875	35.144	153.6	0.680	26.730
250	10.808	10.778	35.007	151.8	0.745	26.827
300	10.311	10.276	34.947	150.5	0.808	26.870
350	9.927	9.887	34.934	144.7	0.870	26.927
400	8.761	8.718	34.807	133.6	0.928	27.019
450	7.921	7.875	34.728	129.7	0.982	27.086
500	7.117	7.069	34.663	127.4	1.034	27.151
550	6.612	6.561	34.633	126.2	1.083	27.196
600	6.122	6.069	34.580	130.9	1.130	27.219
650	5.822	5.766	34.568	136.5	1.176	27.248
700	5.455	5.396	34.563	135.3	1.221	27.289
750	5.168	5.105	34.565	139.3	1.263	27.326
800	4.936	4.871	34.570	143.5	1.305	27.357
900	4.795	4.722	34.639	150.7	1.383	27.429
1000	4.758	4.676	34.717	159.9	1.455	27.497
1500	4.434	4.309	35.002	239.4	1.746	27.768
2000	3.615	3.453	34.982	262.4	1.980	27.843

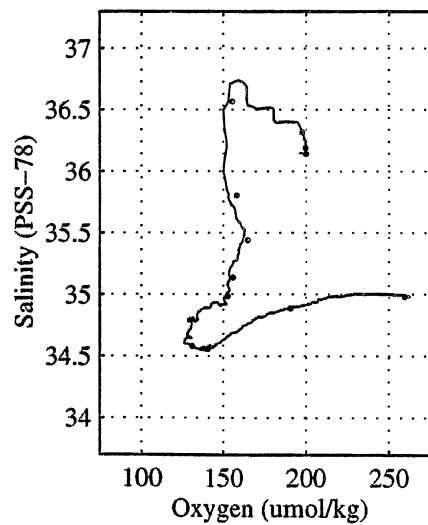
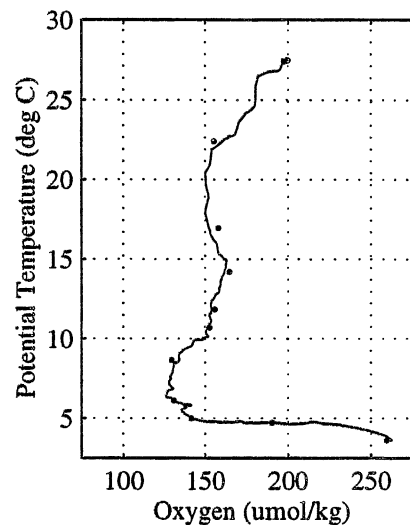
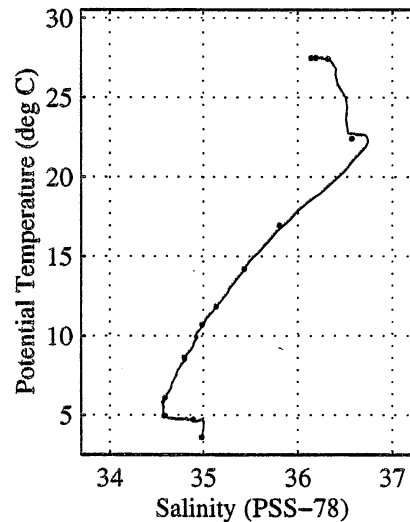
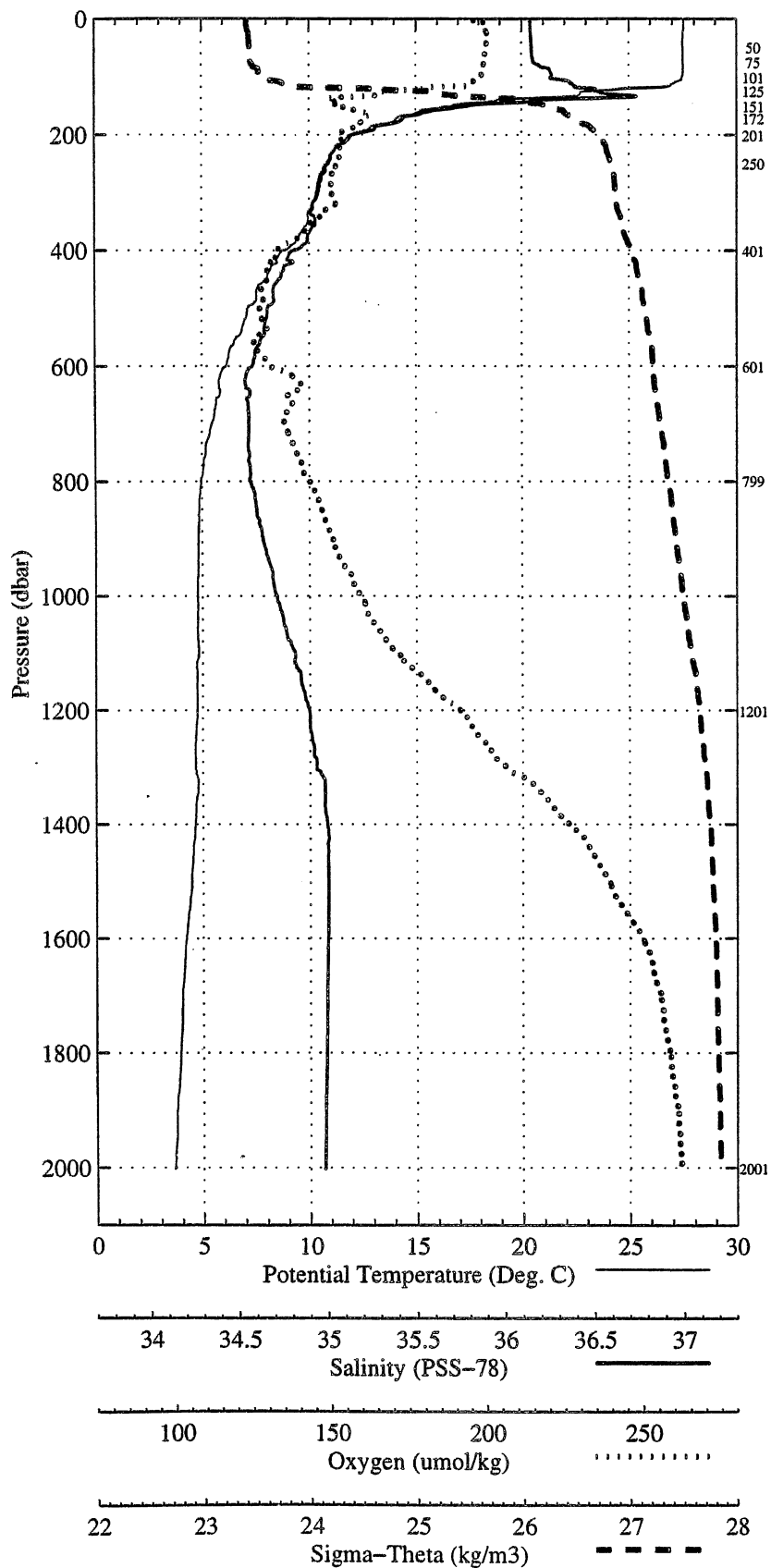
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2001	24	3.615	3.453	34.980	259.6
1202	1	4.720	4.620	34.887	190.5
800	2	4.980	4.914	34.570	141.2
601	3	6.112	6.058	34.579	130.4
401	4	8.632	8.589	34.791	129.0
251	5	10.687	10.656	34.983	152.5
202	6	11.836	11.810	35.135	155.6
172	12	14.215	14.190	35.439	164.9
151	13	16.948	16.923	35.804*	158.0
125	14	22.399	22.374	36.567*	155.3
102	15	27.412	27.388	36.316*	197.4
75	16	27.489	27.472	36.188*	199.3
50	17	27.471	27.460	36.142	199.8

NBC-2 R/V SEWARD JOHNSON

CTD Station 76 (99076)

Latitude 4.417 N Longitude 46.652 W

04-Mar-1999 18:06 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 77 (99077)
Latitude 3.968N Longitude 46.817W
04-Mar-1999 22:22Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.374	27.373	36.099	204.6	0.004	23.428
10	27.424	27.422	36.099	200.4	0.045	23.413
20	27.416	27.412	36.099	200.2	0.089	23.417
30	27.412	27.405	36.100	199.9	0.134	23.421
40	27.409	27.400	36.120	200.0	0.179	23.438
50	27.451	27.440	36.166	200.0	0.223	23.460
60	27.522	27.508	36.284	199.6	0.267	23.528
70	27.531	27.514	36.339	199.1	0.311	23.568
80	27.418	27.399	36.341	197.8	0.354	23.607
90	27.373	27.352	36.339	197.8	0.397	23.622
100	27.281	27.257	36.347	197.2	0.440	23.660
110	27.134	27.109	36.356	195.7	0.483	23.715
120	26.594	26.567	36.395	191.4	0.524	23.918
130	26.057	26.027	36.411	183.3	0.564	24.101
140	22.317	22.289	36.452	159.5	0.595	25.249
150	16.933	16.908	35.788	148.0	0.617	26.148
160	13.756	13.733	35.355	155.6	0.633	26.523
170	13.009	12.985	35.277	157.8	0.648	26.616
180	12.458	12.434	35.224	154.9	0.663	26.684
190	12.052	12.027	35.172	152.8	0.676	26.723
200	11.762	11.736	35.132	152.3	0.690	26.747
250	10.773	10.742	34.992	151.1	0.756	26.821
300	10.295	10.260	34.939	149.1	0.819	26.866
350	9.719	9.679	34.901	143.6	0.880	26.937
400	8.695	8.652	34.795	134.4	0.938	27.020
450	8.165	8.118	34.759	128.5	0.993	27.074
500	7.278	7.229	34.666	131.5	1.045	27.130
550	6.974	6.921	34.655	125.0	1.095	27.166
600	6.301	6.246	34.604	125.1	1.143	27.215
650	5.756	5.700	34.541	137.2	1.190	27.235
700	5.510	5.450	34.558	135.8	1.235	27.279
750	5.155	5.093	34.562	138.1	1.278	27.325
800	4.763	4.699	34.549	146.1	1.319	27.359
900	4.713	4.640	34.600	156.8	1.399	27.407
1000	5.015	4.931	34.757	158.8	1.472	27.500
1500	4.352	4.227	34.998	240.3	1.766	27.774
2000	3.556	3.395	34.979	263.4	2.000	27.846

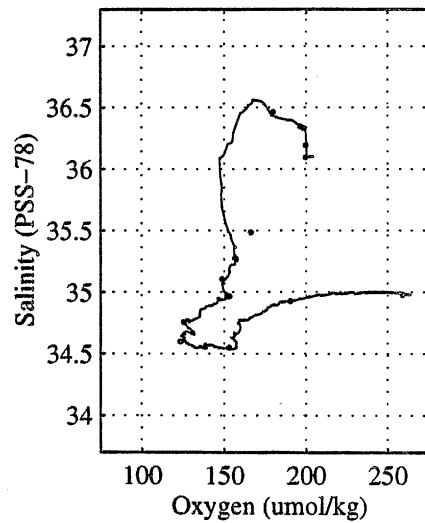
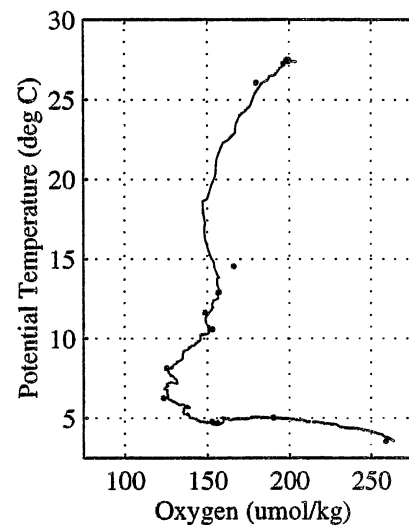
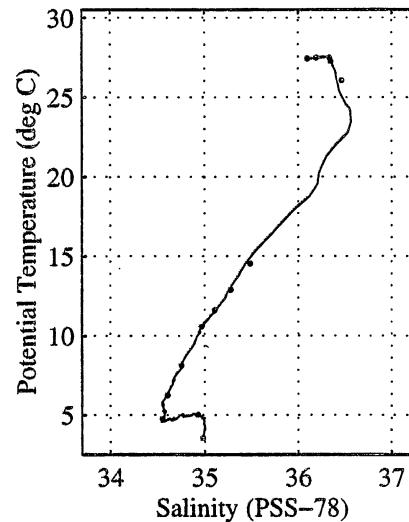
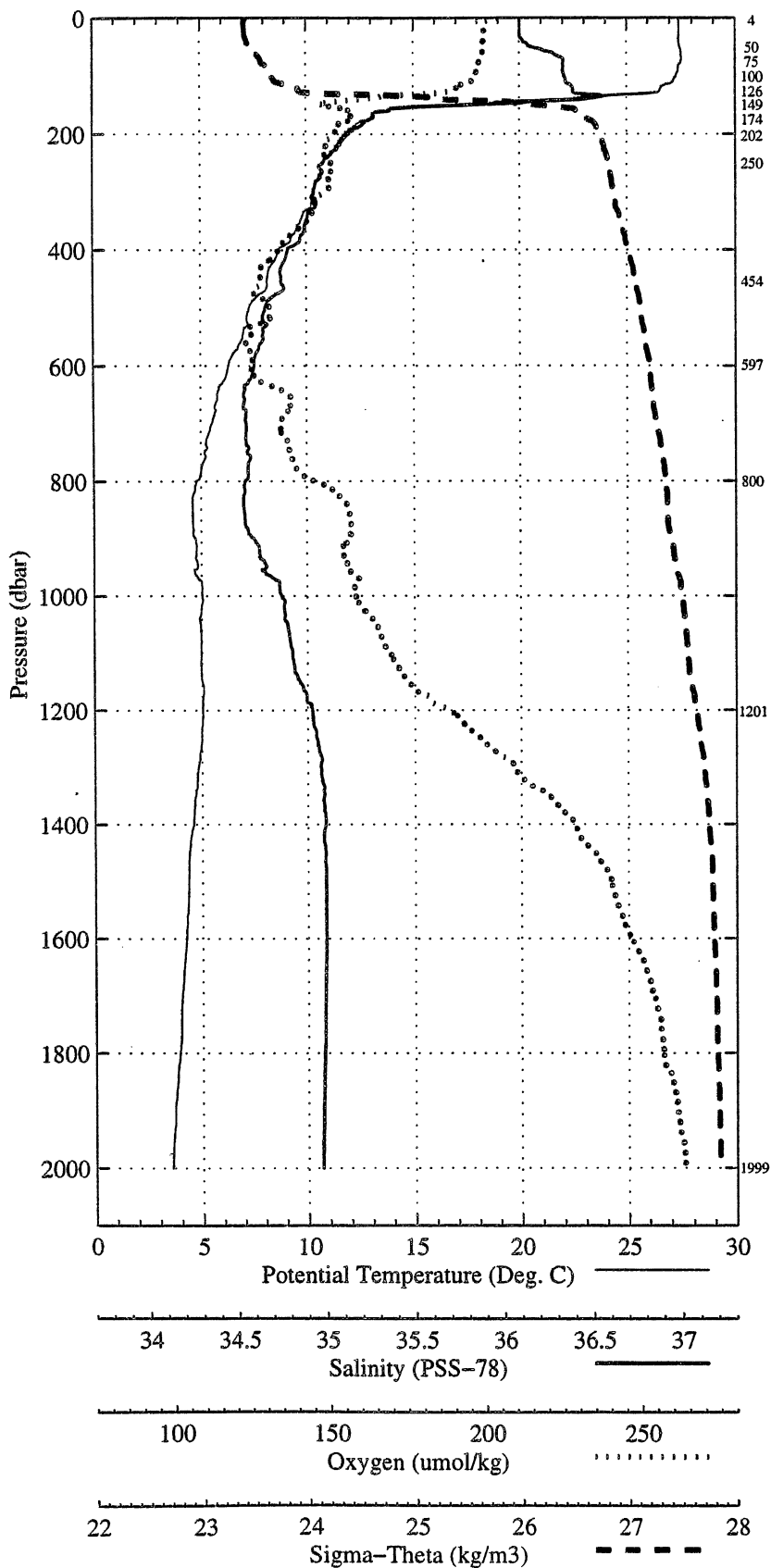
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
2000	24	3.559	3.398	34.978	259.0
1202	1	5.026	4.923	34.926	190.0
800	2	4.778	4.713	34.549	152.8
598	3	6.256	6.202	34.599	123.3
454	4	8.125	8.078	34.755	125.2
250	5	10.588	10.558	34.966	152.9
203	6	11.611	11.585	35.105	148.6
175	12	12.900	12.876	35.277	156.4
149	13	14.539	14.517	35.484*	165.9
126	14	26.053	26.025	36.462*	179.6
101	15	27.259	27.236	36.345	196.2
75	16	27.487	27.470	36.332	198.0
51	17	27.485	27.473	36.191	199.5
4	18	27.412	27.411	36.094	199.5

NBC-2 R/V SEWARD JOHNSON

CTD Station 77 (99077)

Latitude 3.968 N Longitude 46.817 W

04-Mar-1999 22:22 Z

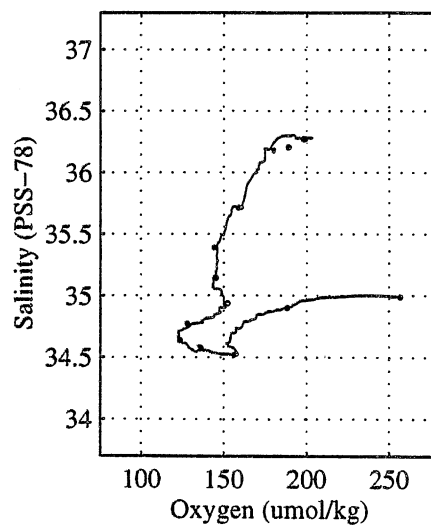


NBC-2 R/V SEWARD JOHNSON
CTD Station 79 (99079)
Latitude 3.079N Longitude 47.150W
05-Mar-1999 06:17Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.330	27.329	36.281	203.4	0.004	23.579
10	27.357	27.354	36.281	198.3	0.043	23.572
20	27.366	27.361	36.281	198.3	0.086	23.570
30	27.367	27.360	36.281	198.3	0.130	23.572
40	27.366	27.357	36.281	198.2	0.173	23.573
50	27.376	27.365	36.281	198.1	0.216	23.572
60	27.374	27.360	36.282	198.1	0.260	23.574
70	27.377	27.361	36.282	198.1	0.303	23.575
80	27.381	27.362	36.282	198.0	0.346	23.575
90	27.384	27.363	36.281	197.9	0.390	23.575
100	27.357	27.333	36.281	197.7	0.434	23.585
110	26.451	26.426	36.281	193.2	0.476	23.876
120	26.189	26.162	36.292	193.2	0.516	23.968
130	21.647	21.621	36.182	180.4	0.550	25.231
140	18.996	18.971	36.025	170.8	0.575	25.820
150	17.799	17.774	35.896	164.0	0.597	26.022
160	15.952	15.927	35.721	157.4	0.615	26.326
170	14.619	14.593	35.561	151.1	0.631	26.500
180	13.096	13.071	35.375	146.1	0.646	26.675
190	12.540	12.514	35.286	146.1	0.660	26.717
200	12.128	12.102	35.204	145.7	0.674	26.734
250	10.724	10.693	34.989	149.9	0.739	26.828
300	10.041	10.006	34.908	151.0	0.802	26.886
350	9.380	9.341	34.850	145.6	0.862	26.952
400	8.965	8.921	34.815	139.0	0.920	26.993
450	8.460	8.412	34.771	132.9	0.976	27.039
500	7.758	7.707	34.717	124.6	1.030	27.102
550	7.139	7.086	34.671	122.9	1.081	27.156
600	6.680	6.624	34.626	124.1	1.131	27.183
650	6.080	6.022	34.590	135.8	1.178	27.233
700	5.913	5.851	34.581	135.4	1.224	27.249
750	5.224	5.162	34.555	139.5	1.268	27.311
800	4.849	4.785	34.524	151.5	1.311	27.330
900	4.704	4.632	34.532	157.8	1.393	27.354
1000	4.892	4.809	34.694	154.5	1.471	27.464
1500	4.257	4.133	34.999	243.3	1.764	27.785

Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1676	24	3.875	3.740	34.988	256.5
1199	1	4.909	4.808	34.900	188.4
800	2	4.844	4.780	34.523	156.3
602	3	6.731	6.675	34.638	123.6
452	4	8.456	8.408	34.768	128.0
247	5	10.348	10.319	34.936	152.1
201	6	11.754	11.728	35.142	145.1
176	12	13.265	13.240	35.389*	144.6
151	13	16.098	16.074	35.713	159.0
124	14	22.612	22.587	36.205*	188.9
100	15	27.317	27.293	36.273	197.8
75	16	27.378	27.361	36.273	198.8

05-Mar-1999 06:17 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 80 (99080)
Latitude 2.667N Longitude 47.333W
05-Mar-1999 10:06Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ³ /kg	SigTh kg/m ³
1	27.403	27.403	36.239	201.7	0.004	23.524
10	27.410	27.408	36.237	198.1	0.044	23.522
20	27.414	27.410	36.237	198.2	0.087	23.522
30	27.419	27.412	36.238	198.1	0.131	23.522
40	27.419	27.409	36.238	198.1	0.175	23.524
50	27.420	27.409	36.238	198.0	0.219	23.525
60	27.422	27.408	36.238	197.9	0.262	23.526
70	27.423	27.407	36.238	197.9	0.306	23.527
80	27.425	27.407	36.238	197.9	0.350	23.528
90	27.428	27.407	36.238	197.9	0.394	23.529
100	27.422	27.399	36.238	197.8	0.438	23.532
110	27.428	27.403	36.238	197.9	0.482	23.531
120	26.721	26.694	36.221	192.2	0.526	23.747
130	24.342	24.314	36.200	187.9	0.563	24.466
140	18.996	18.971	36.022	179.5	0.592	25.818
150	16.635	16.610	35.759	176.2	0.611	26.196
160	14.771	14.747	35.501	167.3	0.629	26.420
170	13.961	13.936	35.392	165.5	0.645	26.509
180	13.432	13.406	35.316	163.5	0.661	26.561
190	13.316	13.289	35.301	163.4	0.676	26.573
200	13.211	13.183	35.288	163.1	0.691	26.585
250	11.922	11.890	35.115	160.6	0.763	26.706
300	10.245	10.209	34.940	150.5	0.827	26.875
350	9.880	9.839	34.903	148.9	0.889	26.910
400	8.827	8.784	34.819	138.5	0.947	27.018
450	7.674	7.629	34.681	137.1	1.002	27.085
500	7.073	7.025	34.599	150.3	1.054	27.107
550	6.934	6.882	34.593	149.4	1.105	27.122
600	6.611	6.556	34.572	146.2	1.156	27.149
650	6.511	6.451	34.563	147.3	1.207	27.157
700	5.864	5.803	34.537	146.6	1.256	27.220
750	5.196	5.134	34.519	149.5	1.302	27.286
800	4.873	4.808	34.546	153.0	1.344	27.345
900	4.944	4.870	34.627	151.5	1.425	27.403
1000	4.947	4.863	34.749	156.9	1.501	27.501

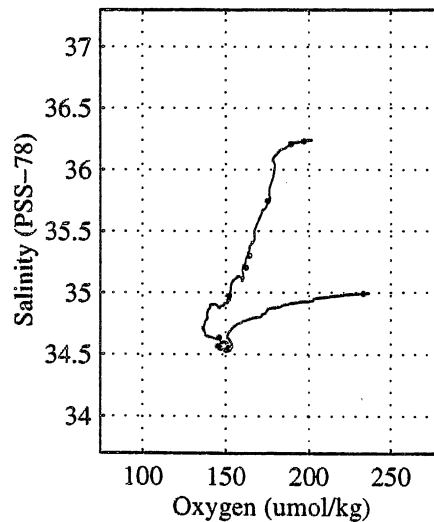
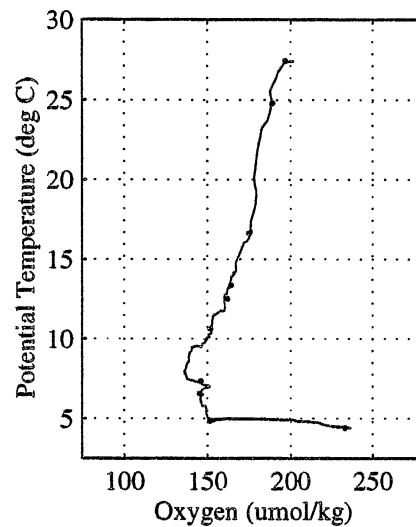
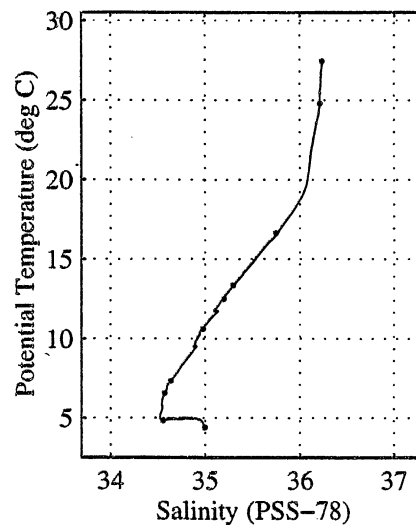
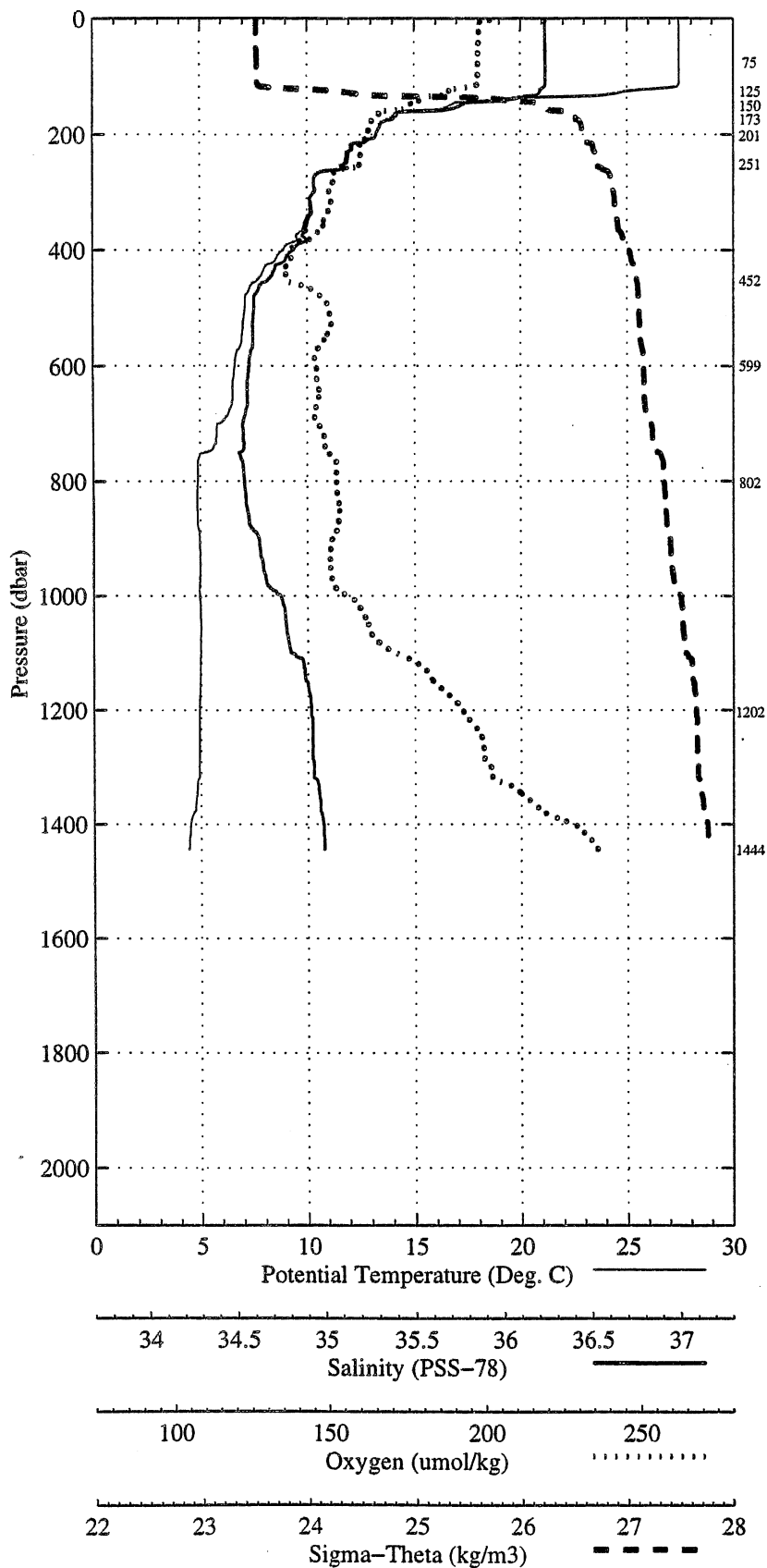
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
1445	24	4.406	4.286	34.993	232.9
1203	1	4.920	NaN	NaN*	NaN
802	2	4.840	4.775	34.553	151.4
600	3	6.568	6.513	34.566	145.2
452	4	7.335	7.291	34.636	146.0
251	5	10.630	10.599	34.975*	151.8
201	6	12.507	12.480	35.203*	162.4
173	12	13.368	13.344	35.301	164.4
150	13	16.647	16.623	35.744*	175.4
126	14	24.783	24.756	36.209*	189.0
76	16	27.435	27.417	36.231	196.7

NBC-2 R/V SEWARD JOHNSON

CTD Station 80 (99080)

Latitude 2.667 N Longitude 47.333 W

05-Mar-1999 10:06 Z



NBC-2 R/V SEWARD JOHNSON
CTD Station 81 (99081)
Latitude 2.331N Longitude 47.467W
05-Mar-1999 13:19Z

Pressure dbar	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg	DynHt m ² /kg	SigTh kg/m ³
1	27.583	27.583	36.192	199.6	0.004	23.430
10	27.626	27.624	36.196	198.1	0.045	23.420
20	27.618	27.613	36.196	198.3	0.089	23.424
30	27.620	27.613	36.196	198.3	0.134	23.425
40	27.613	27.604	36.196	198.2	0.178	23.429
50	27.617	27.605	36.197	198.1	0.223	23.430
60	27.605	27.591	36.197	198.0	0.268	23.436
70	27.530	27.514	36.198	196.8	0.313	23.462
80	25.960	25.943	36.127	190.6	0.355	23.910
90	23.929	23.910	36.047	186.3	0.392	24.468
100	21.866	21.846	35.913	182.5	0.425	24.962
110	20.033	20.012	35.819	179.8	0.453	25.390
120	16.724	16.704	35.748	174.8	0.476	26.164
130	15.232	15.212	35.558	172.3	0.494	26.360
140	14.148	14.127	35.403	167.3	0.510	26.477
150	13.595	13.574	35.337	165.1	0.526	26.542
160	12.990	12.968	35.252	164.3	0.541	26.599
170	12.856	12.833	35.236	163.9	0.555	26.615
180	12.171	12.147	35.138	163.8	0.570	26.673
190	11.790	11.765	35.095	164.1	0.584	26.713
200	11.610	11.584	35.075	163.3	0.597	26.732
250	11.215	11.184	35.028	160.7	0.665	26.770
300	10.467	10.431	34.941	159.1	0.730	26.838
350	9.159	9.120	34.797	157.1	0.791	26.946
400	8.631	8.589	34.741	155.7	0.849	26.988
450	8.029	7.983	34.680	154.7	0.906	27.032
500	7.253	7.205	34.618	150.2	0.960	27.096
550	6.992	6.940	34.599	150.0	1.011	27.118
600	6.735	6.679	34.580	149.5	1.063	27.139
650	6.382	6.322	34.559	147.4	1.113	27.170
700	5.048	4.991	34.535	150.9	1.160	27.314
750	4.797	4.737	34.556	154.2	1.200	27.360
800	4.788	4.724	34.557	155.3	1.240	27.363
900	4.784	4.711	34.582	157.6	1.321	27.385

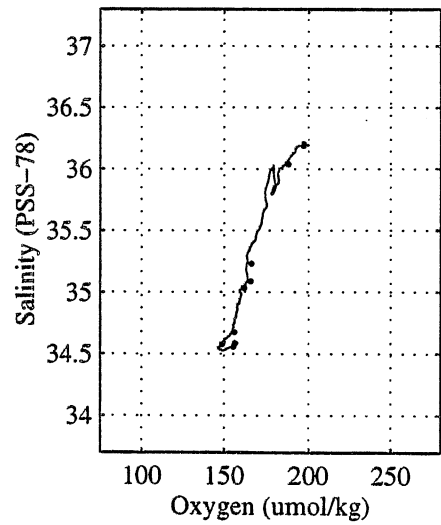
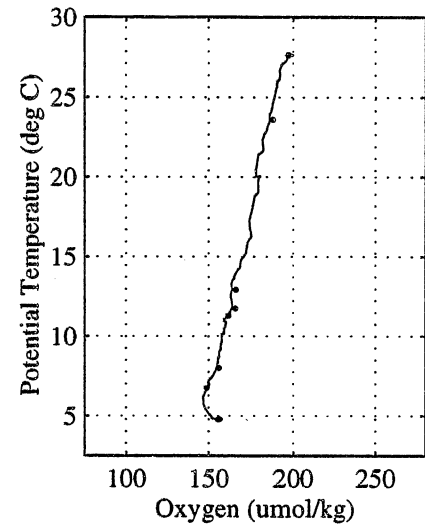
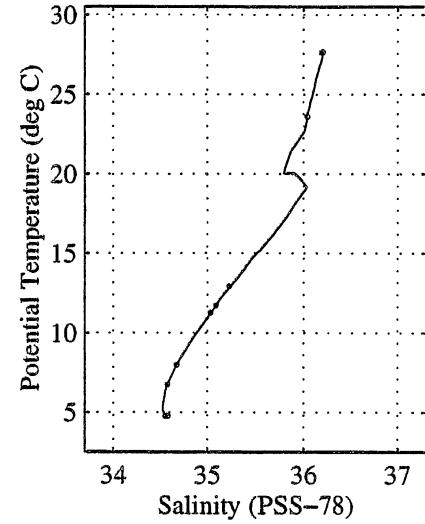
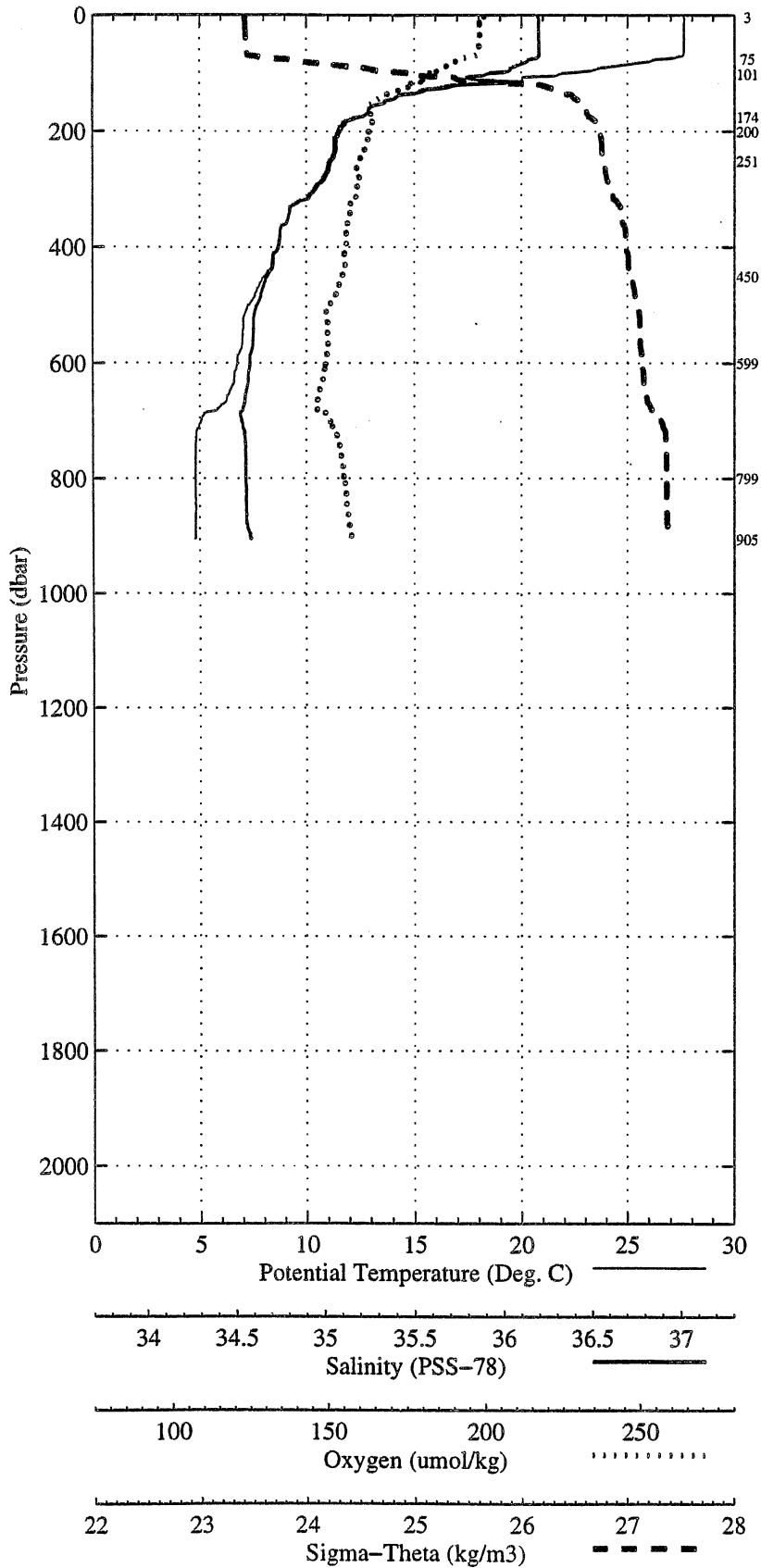
Pressure dbar	Niskin	Temp90 Deg C	PoTemp90 Deg C	Salinity PSS-78	Oxygen μmol/kg
906	24	4.784	4.711	34.584	156.2
799	1	4.793	4.728	34.555	155.5
600	2	6.752	6.696	34.578	148.7
450	3	8.003	7.957	34.675	156.1
251	4	11.270	11.239	35.031	162.1
200	5	11.740	11.715	35.089	166.1
175	6	12.910	12.886	35.229	166.4
101	14	23.600	23.579	36.038	188.2
75	15	27.609	27.591	36.189	196.8
4	18	27.659	27.658	36.202*	196.9

NBC-2 R/V SEWARD JOHNSON

CTD Station 81 (99081)

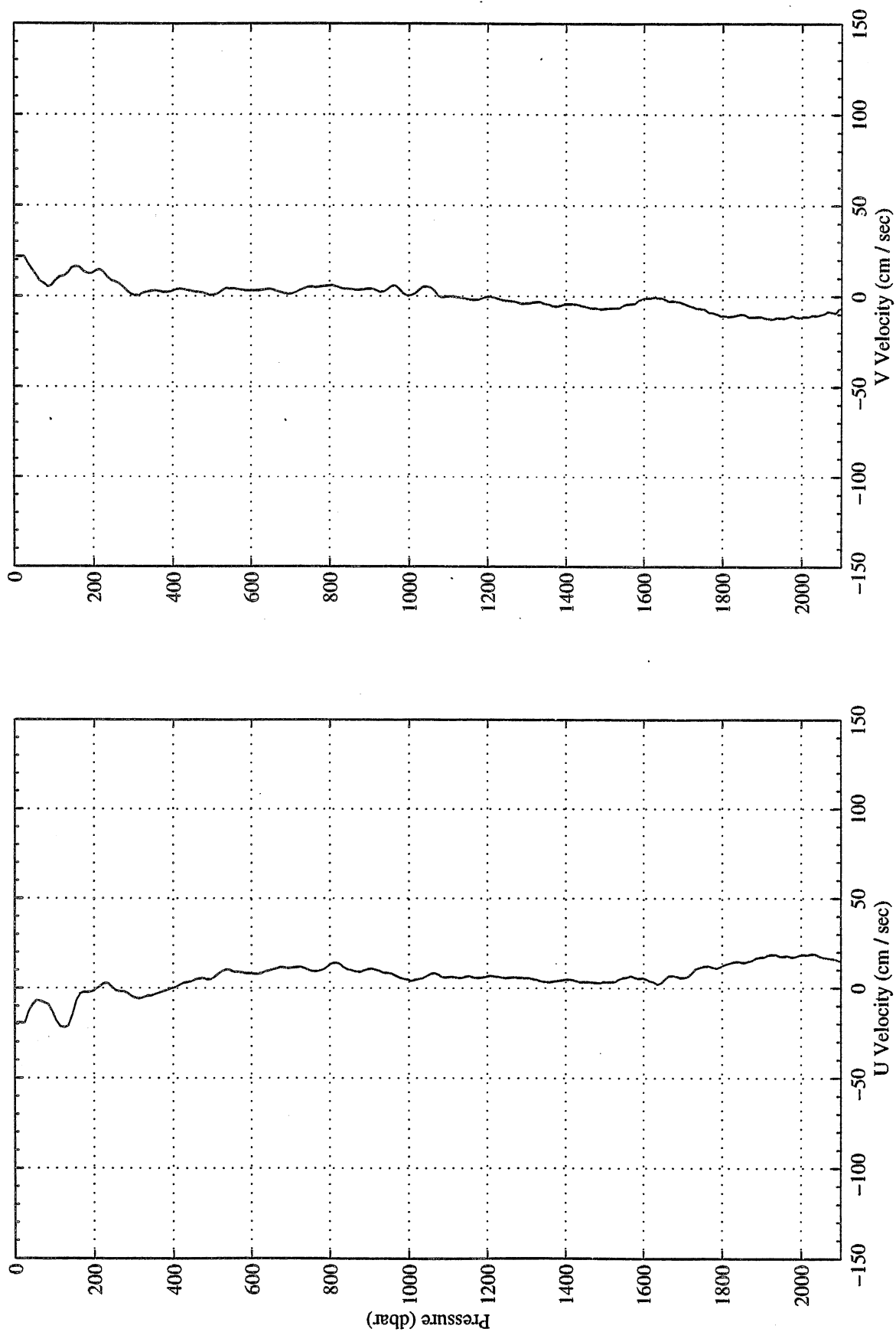
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05-Mar-1999 13:19 Z

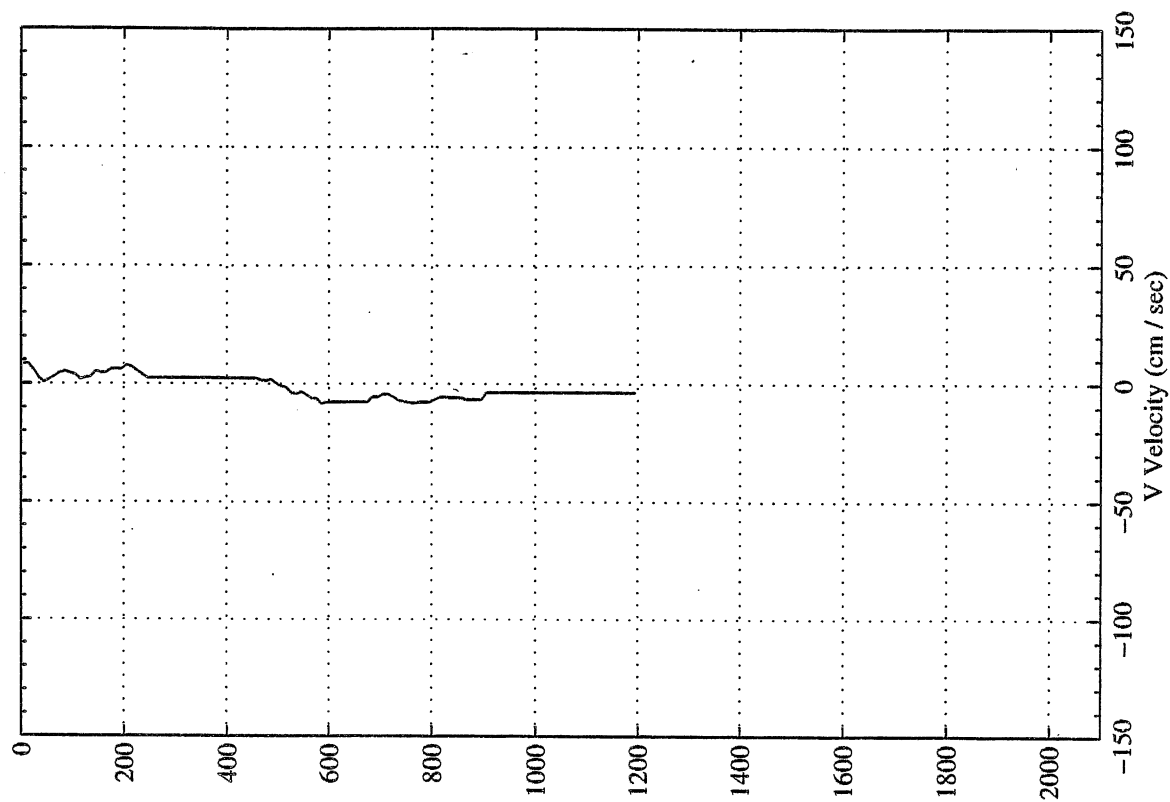
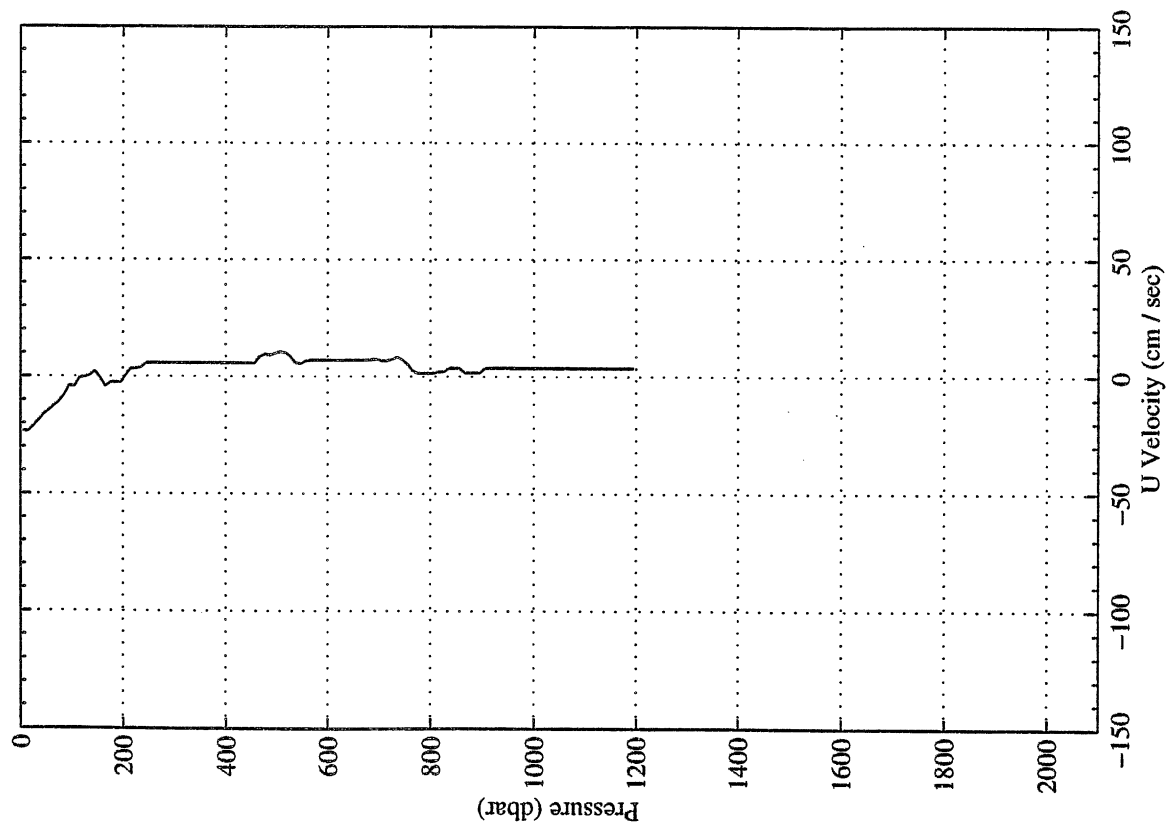


APPENDIX B
LADCP DATA

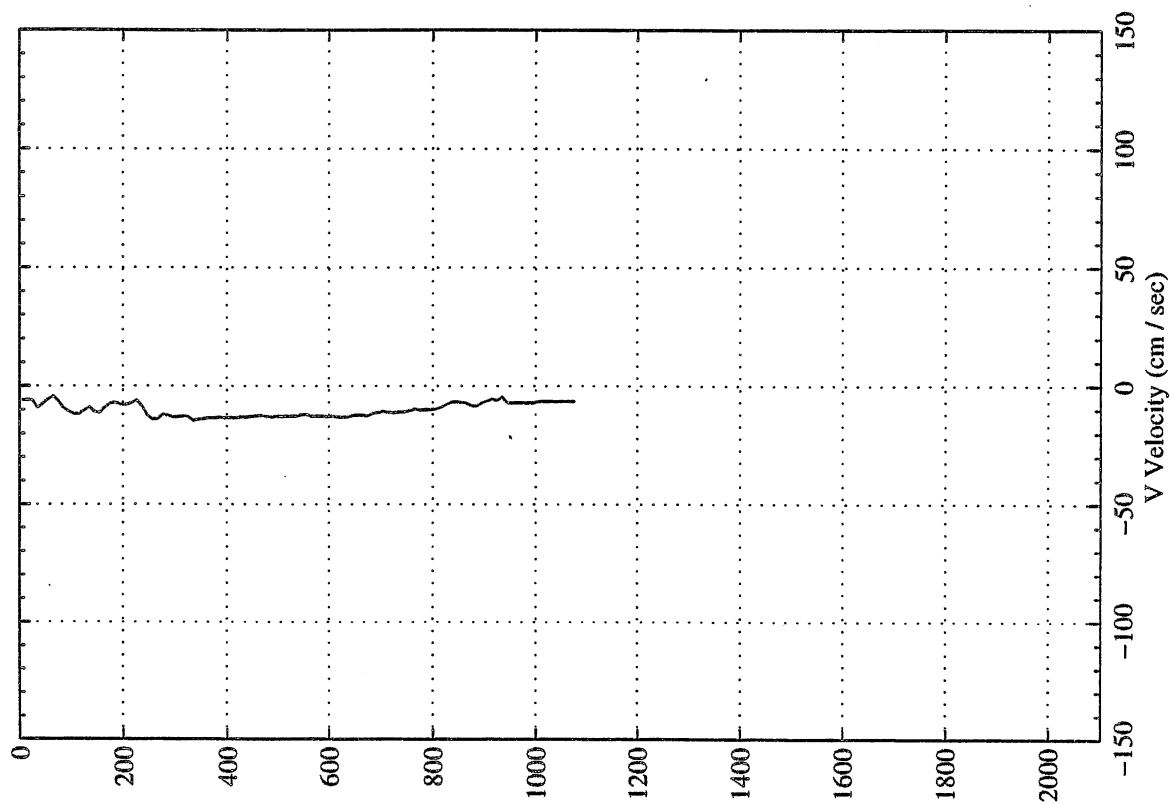
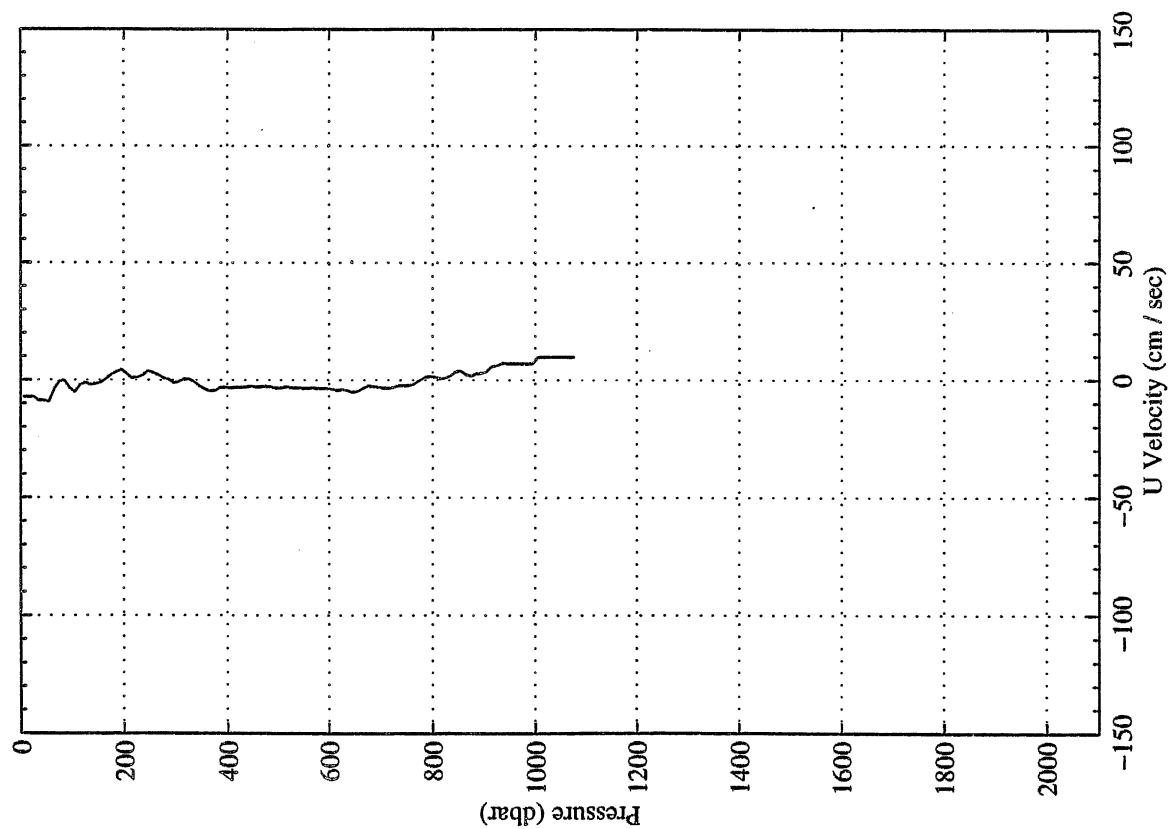
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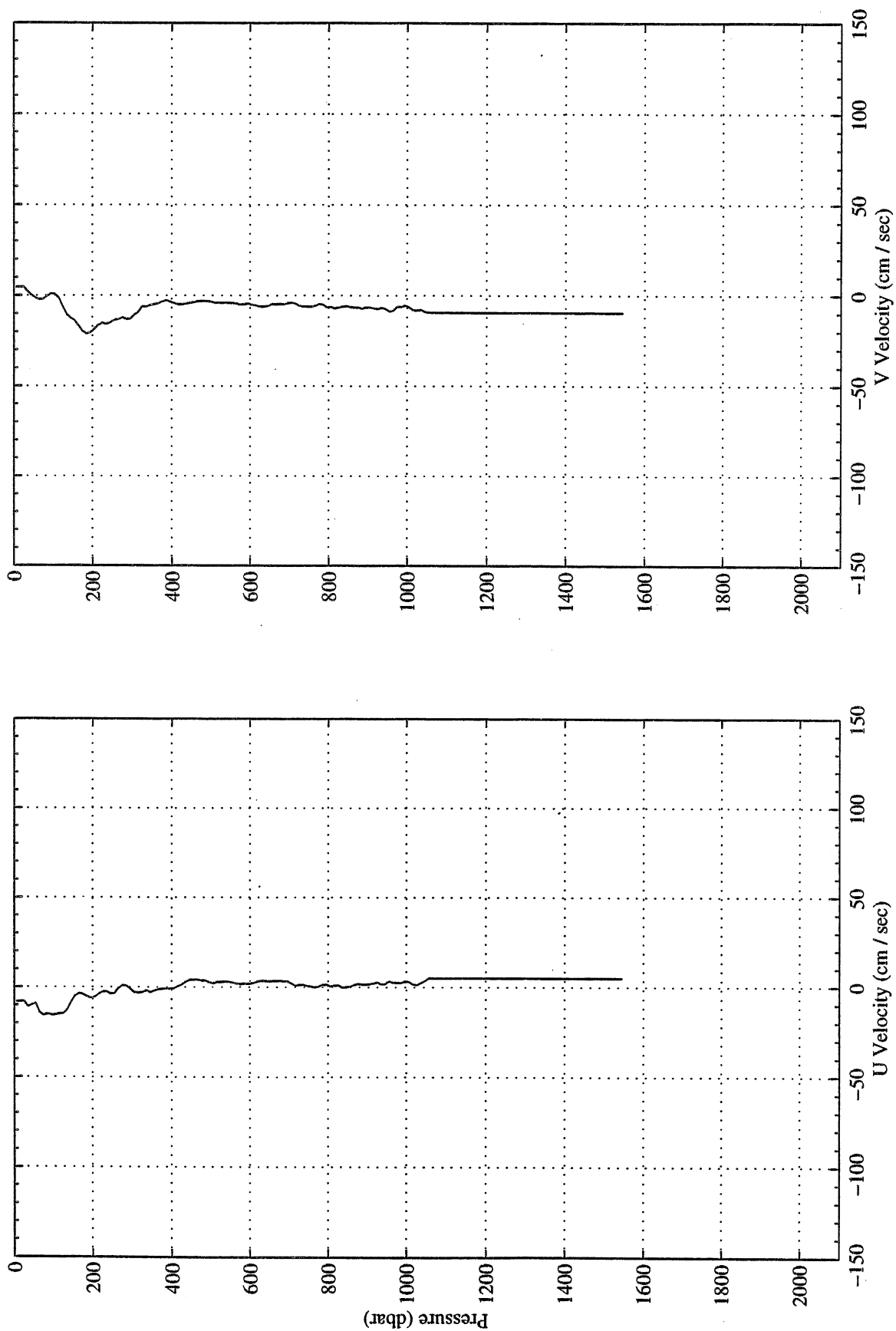
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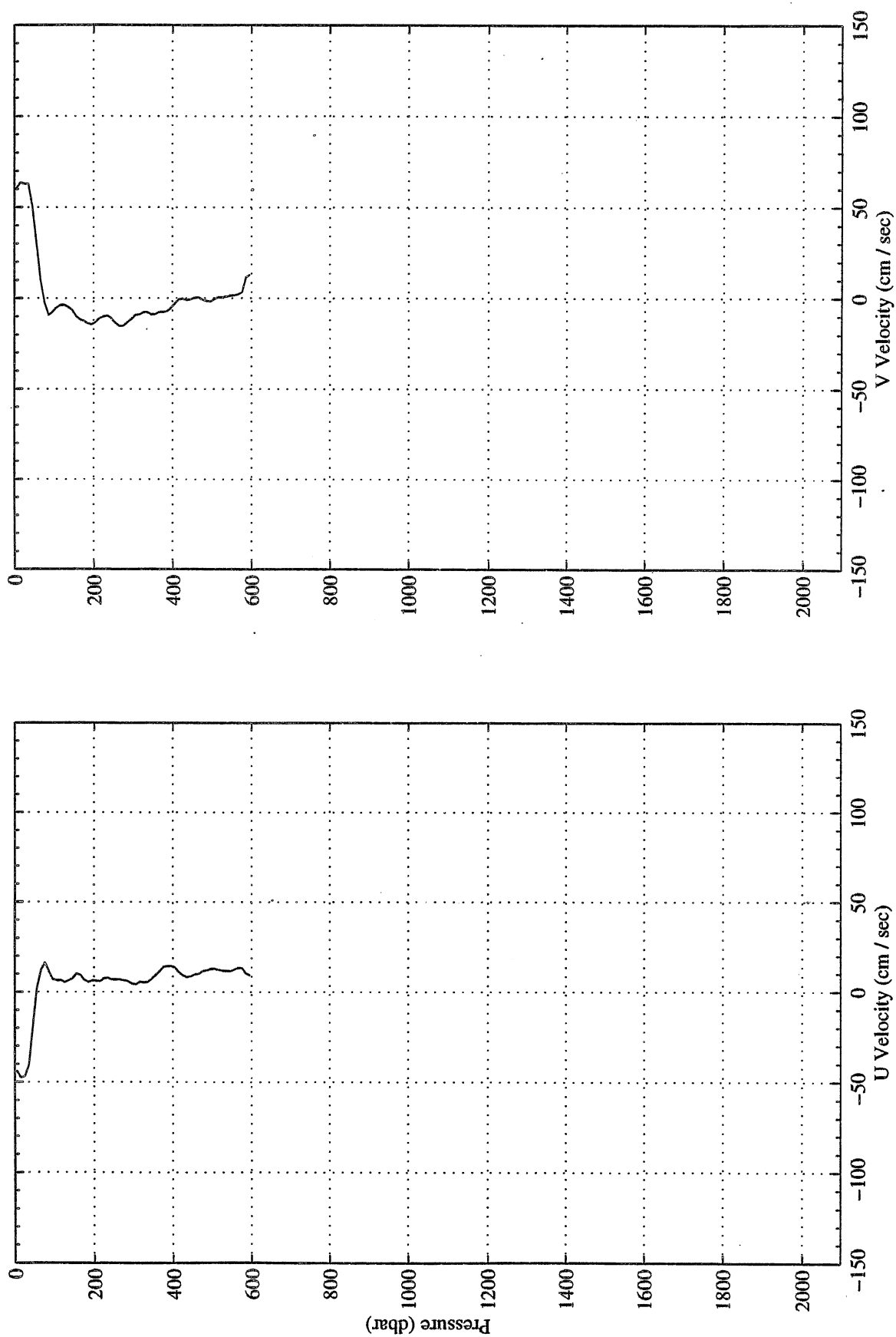
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07-Feb-1999 08:32 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 4 (99004)
Latitude 13.009 N Longitude 57.496 W
07-Feb-1999 12:54 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 5 (99005)
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08-Feb-1999 07:31 Z

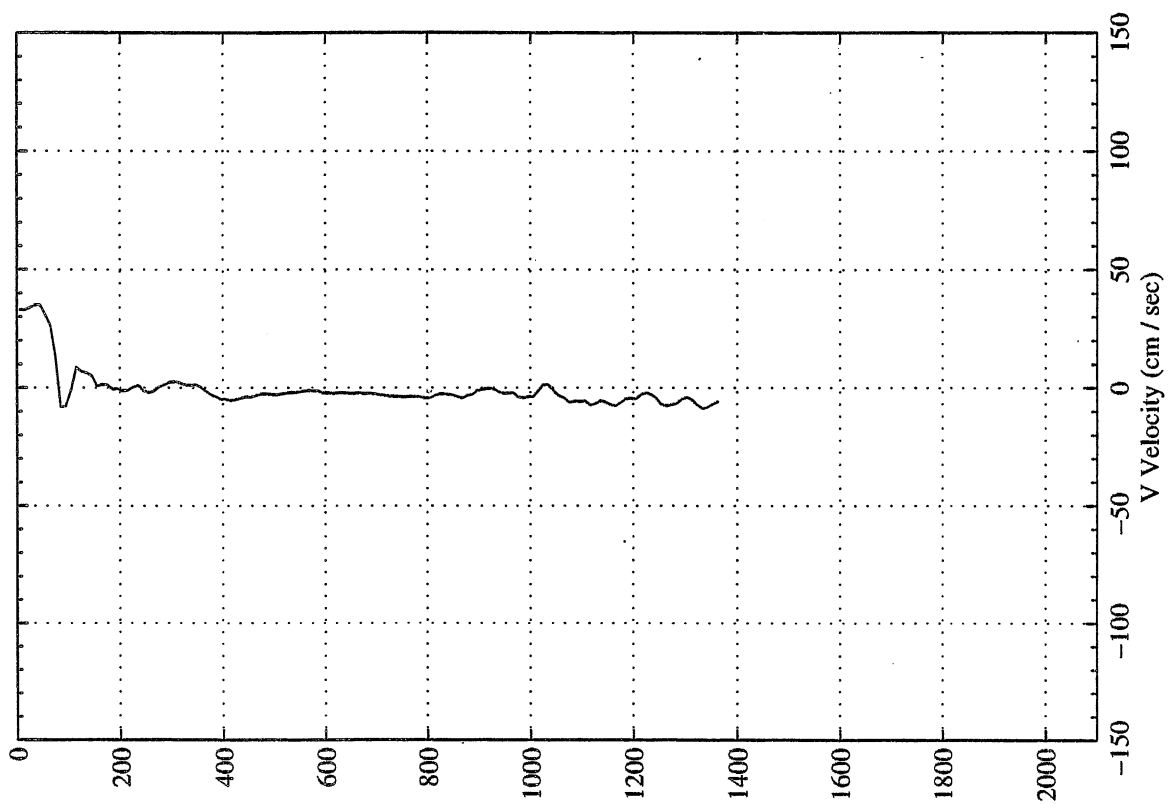
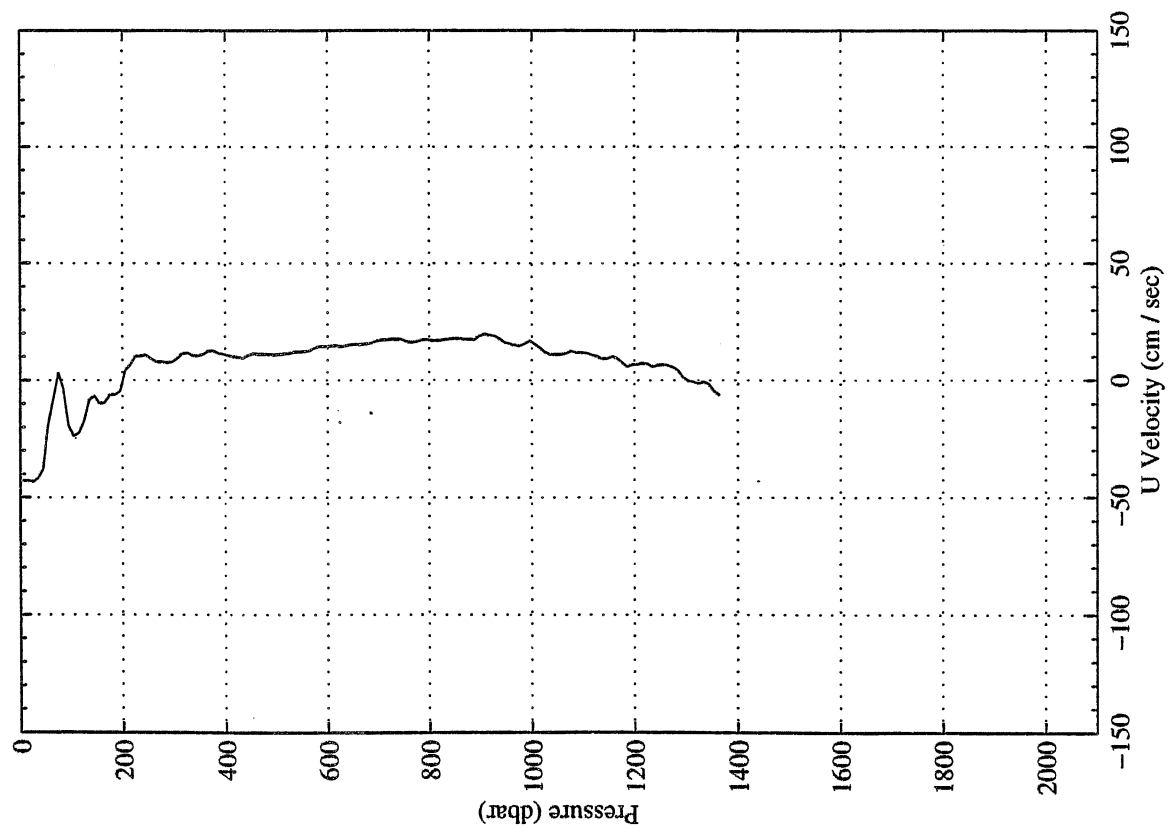


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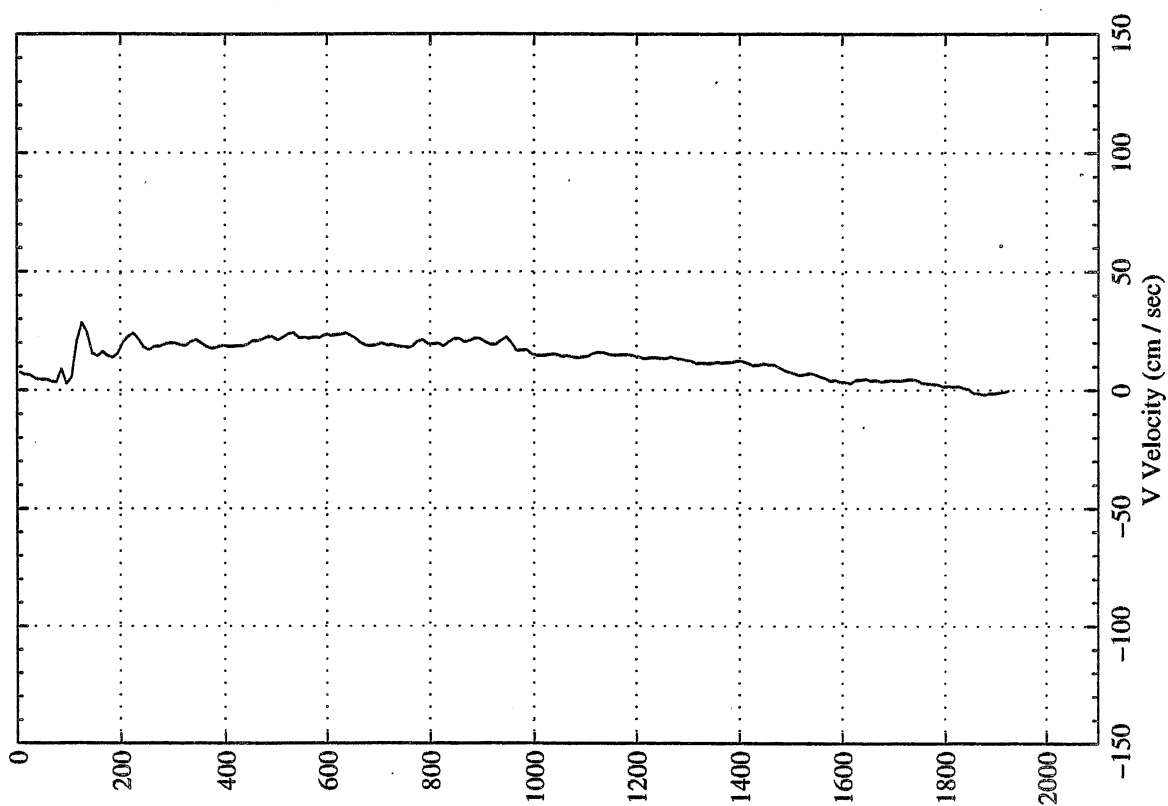
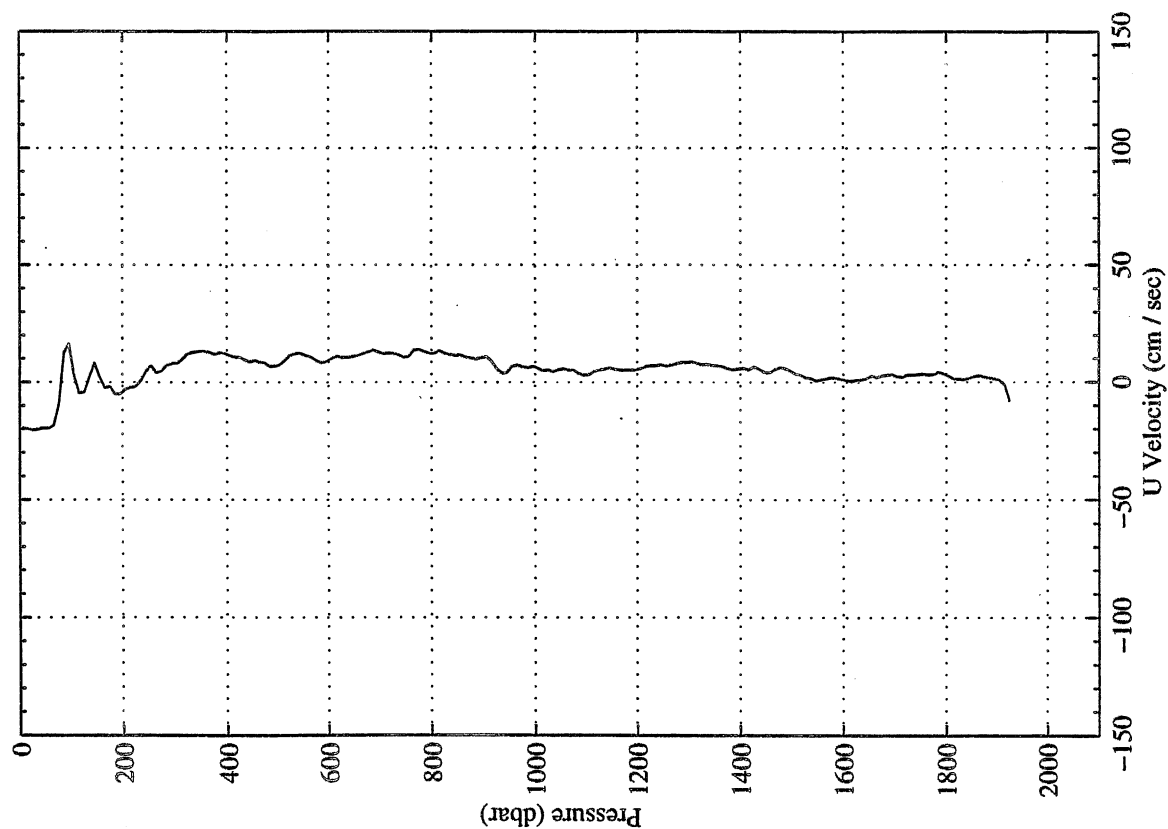
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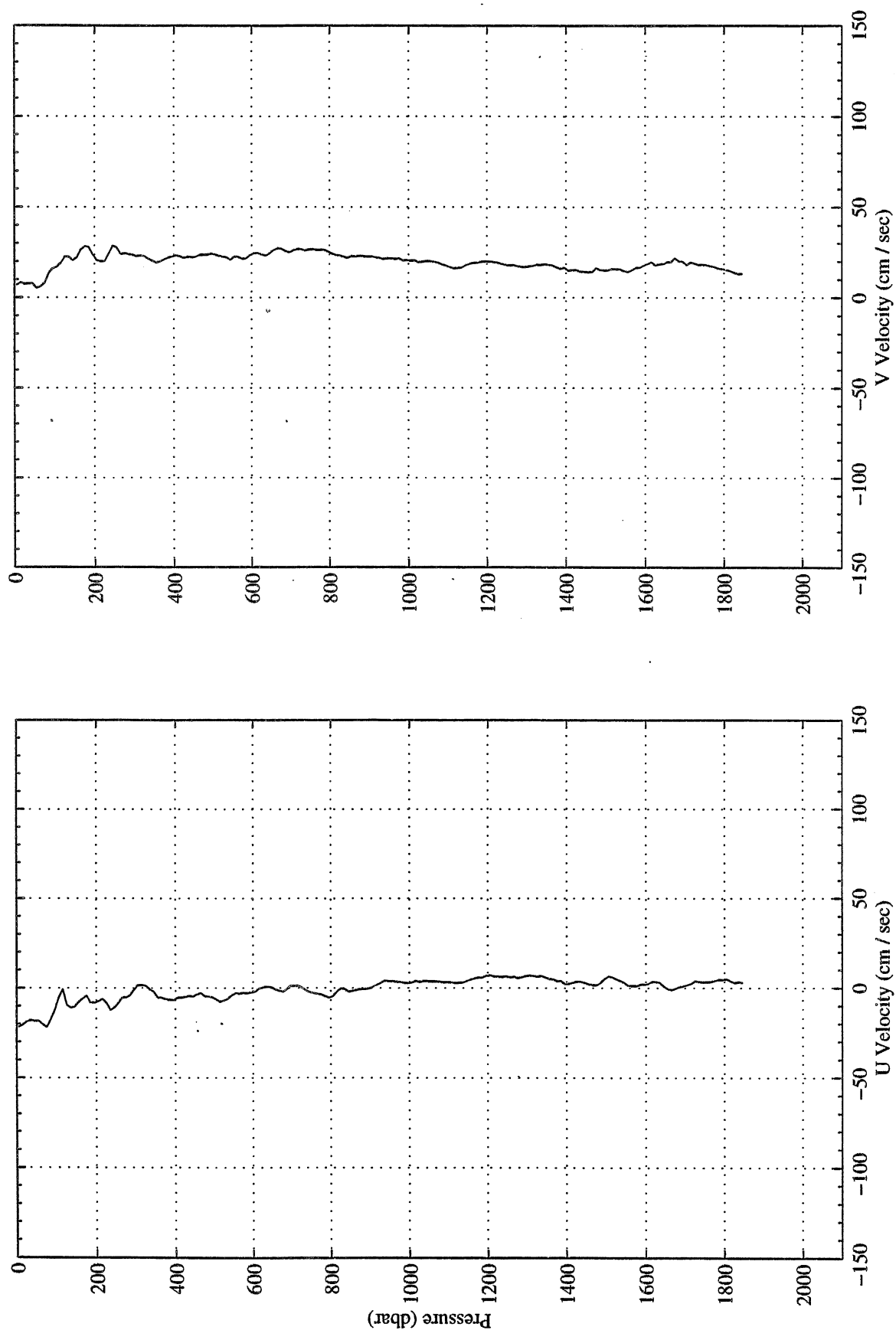
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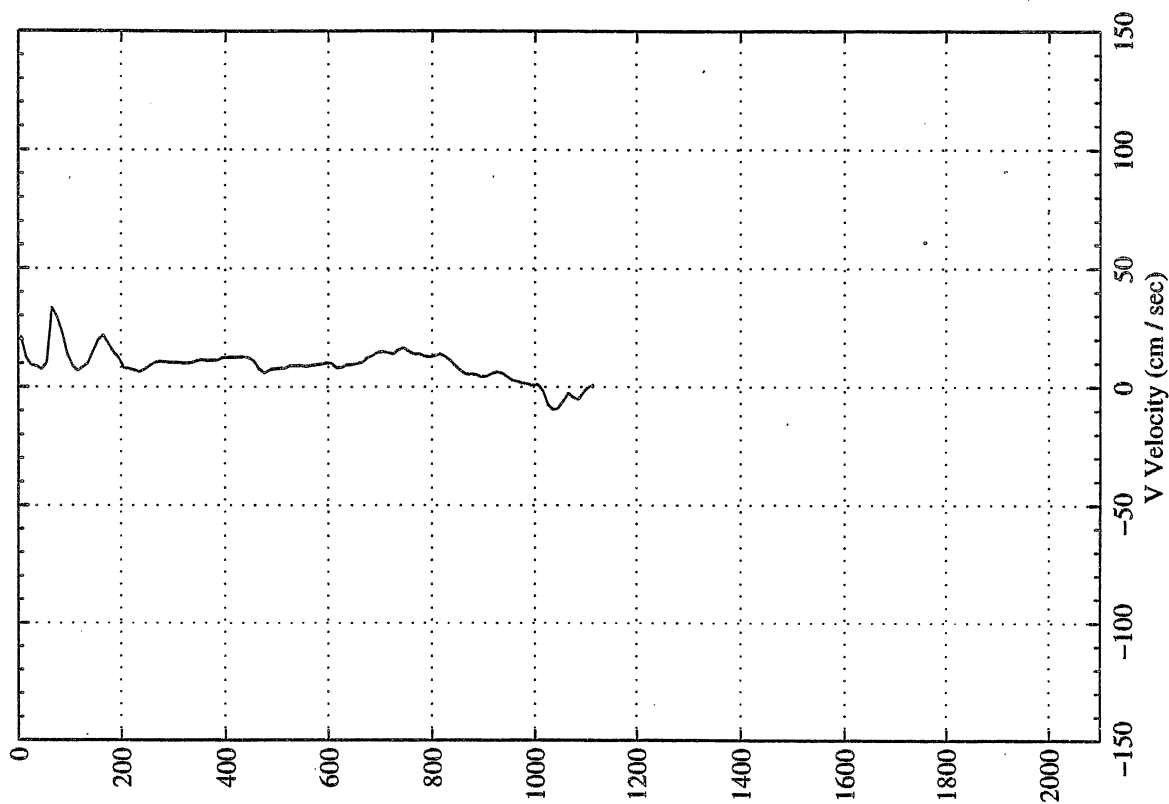
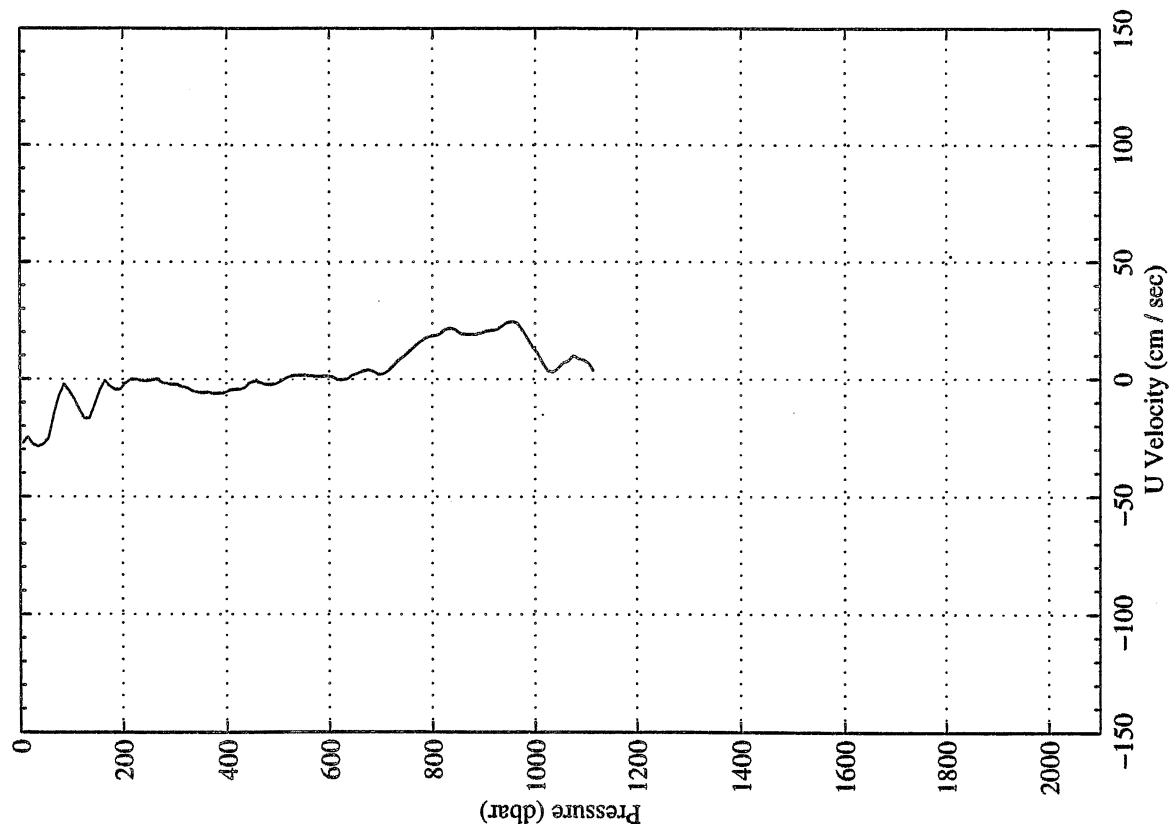
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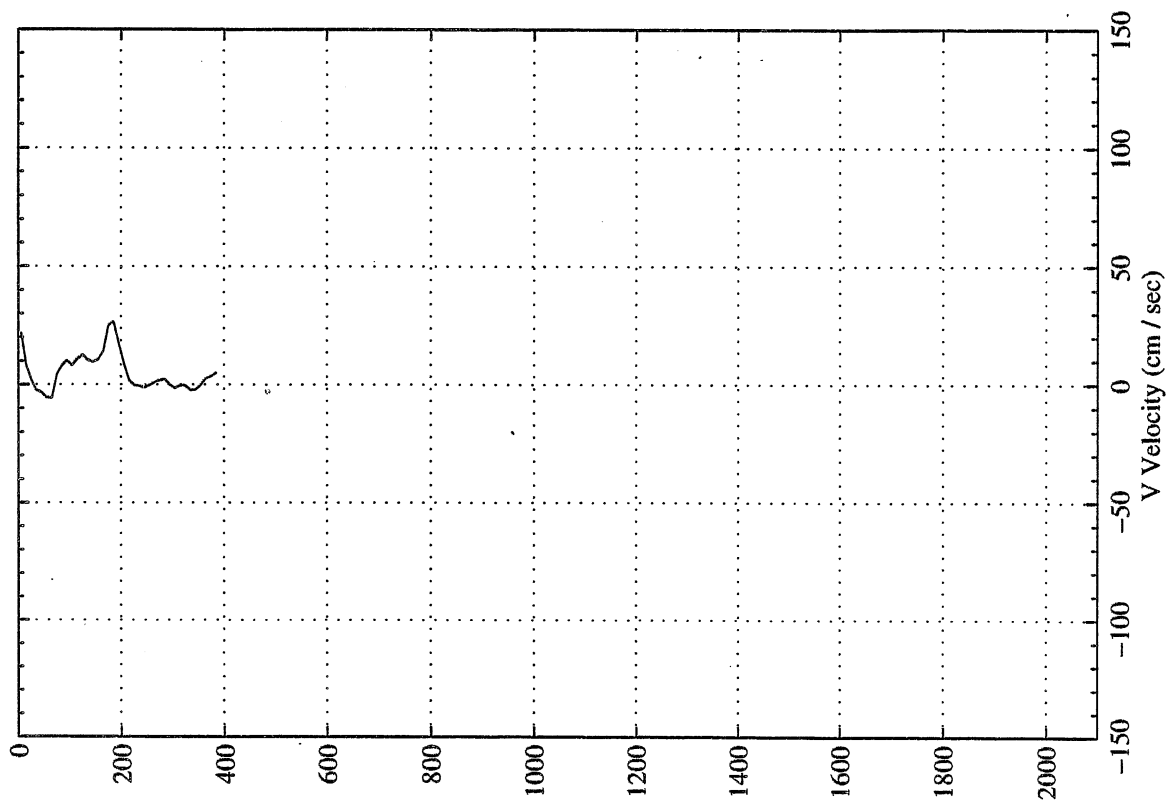
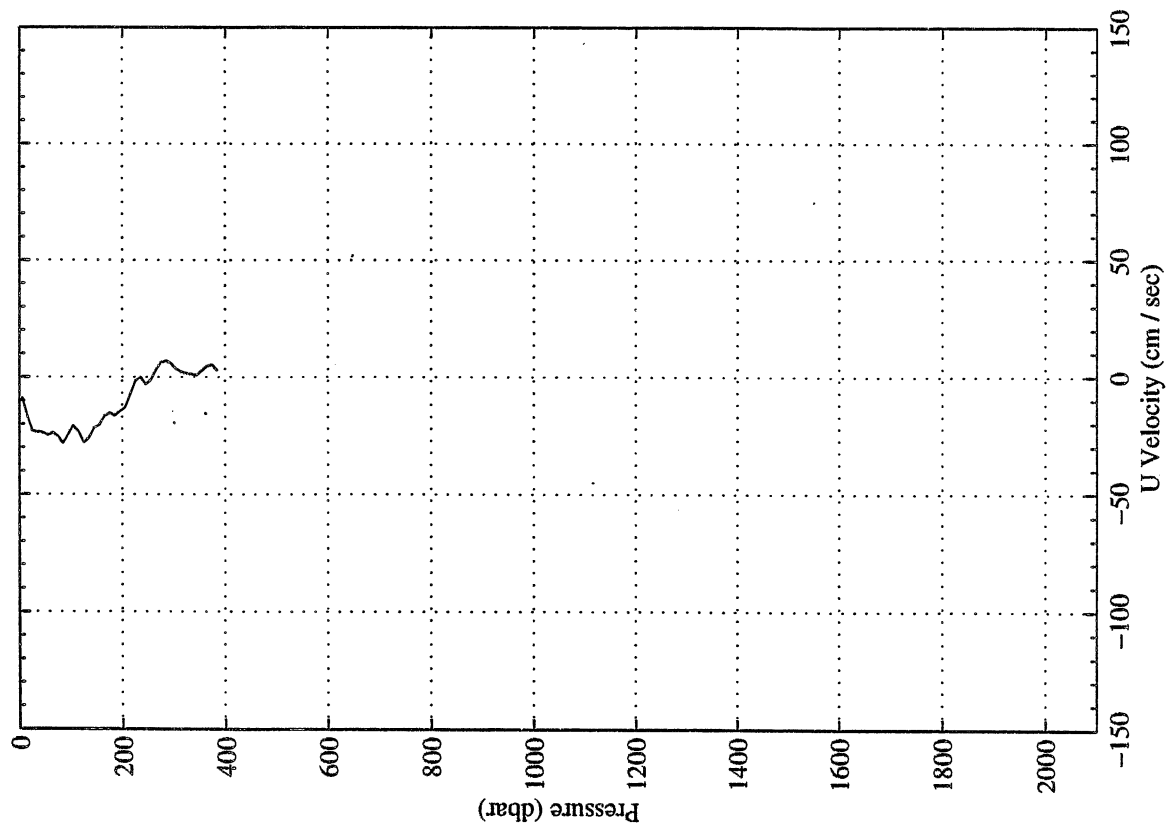
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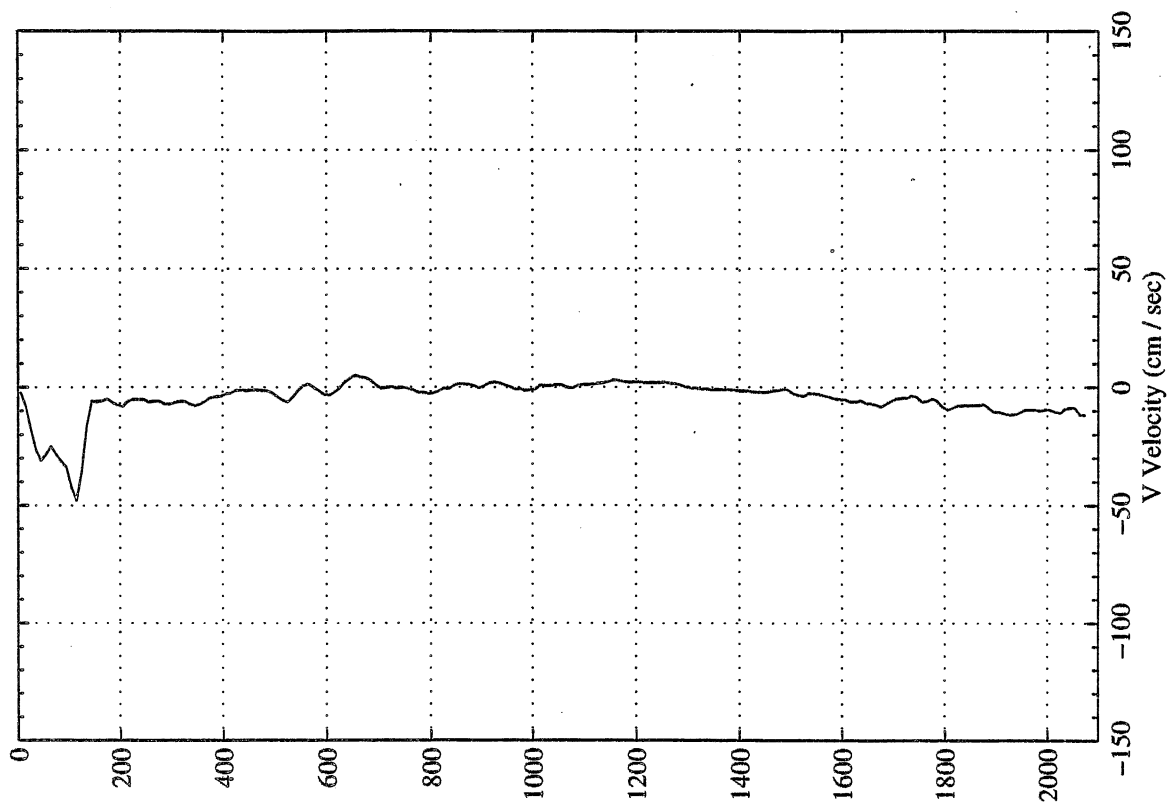
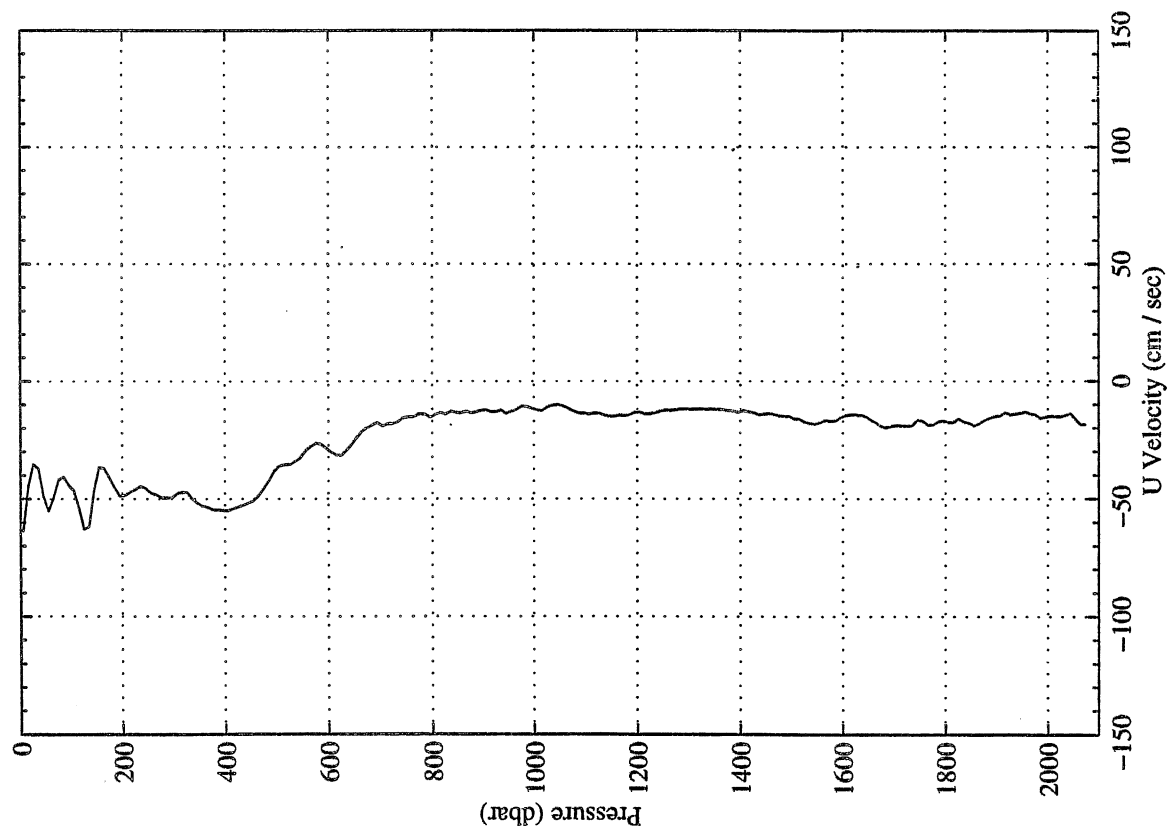
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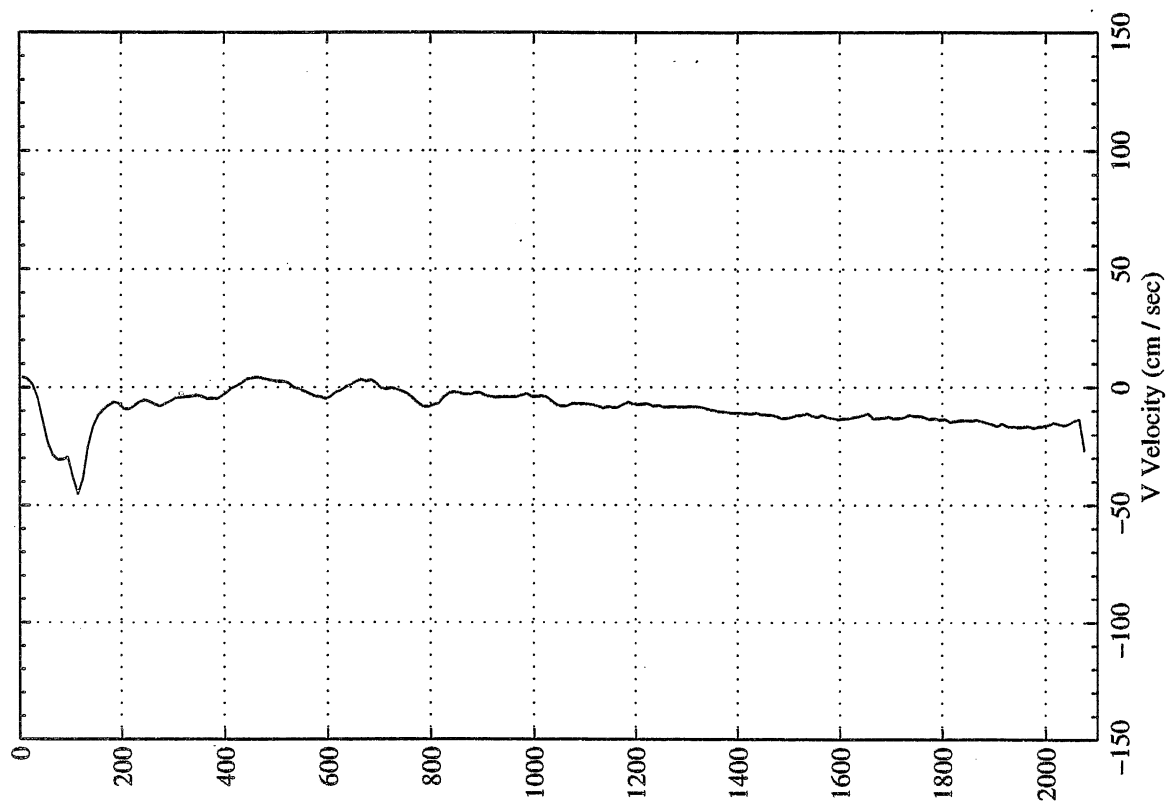
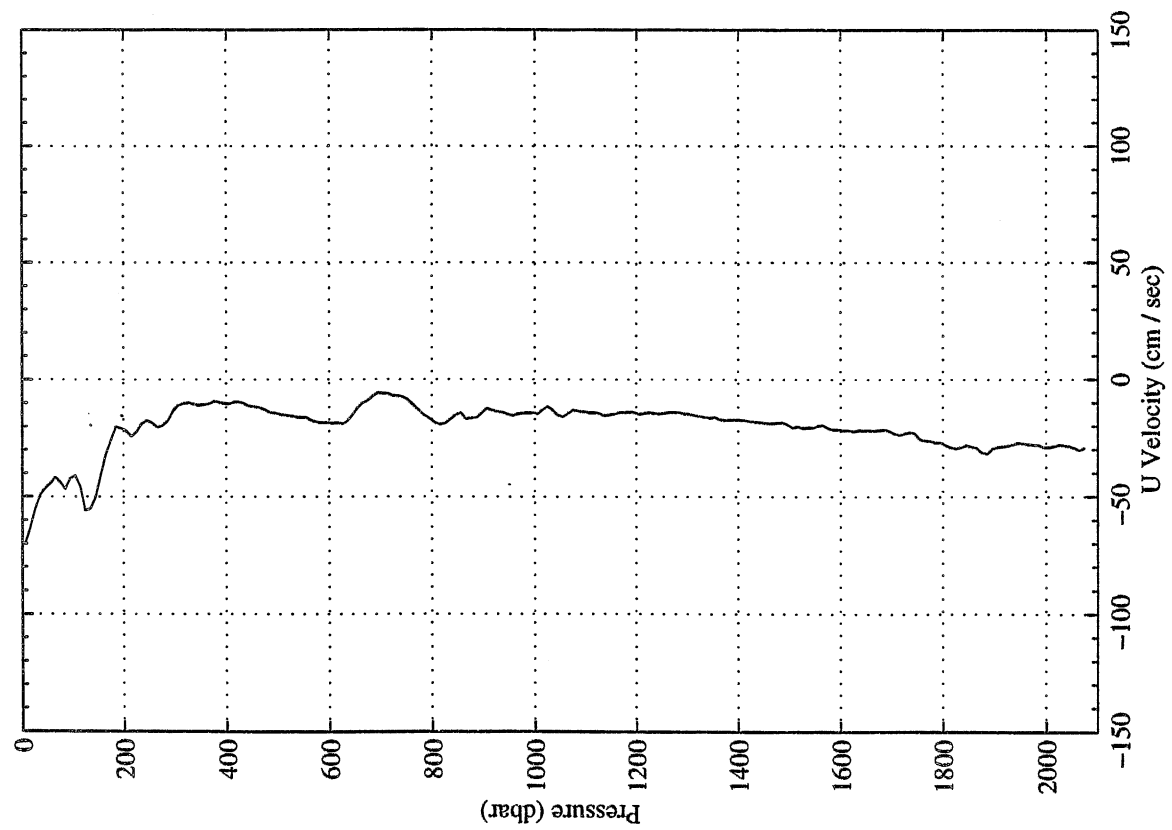
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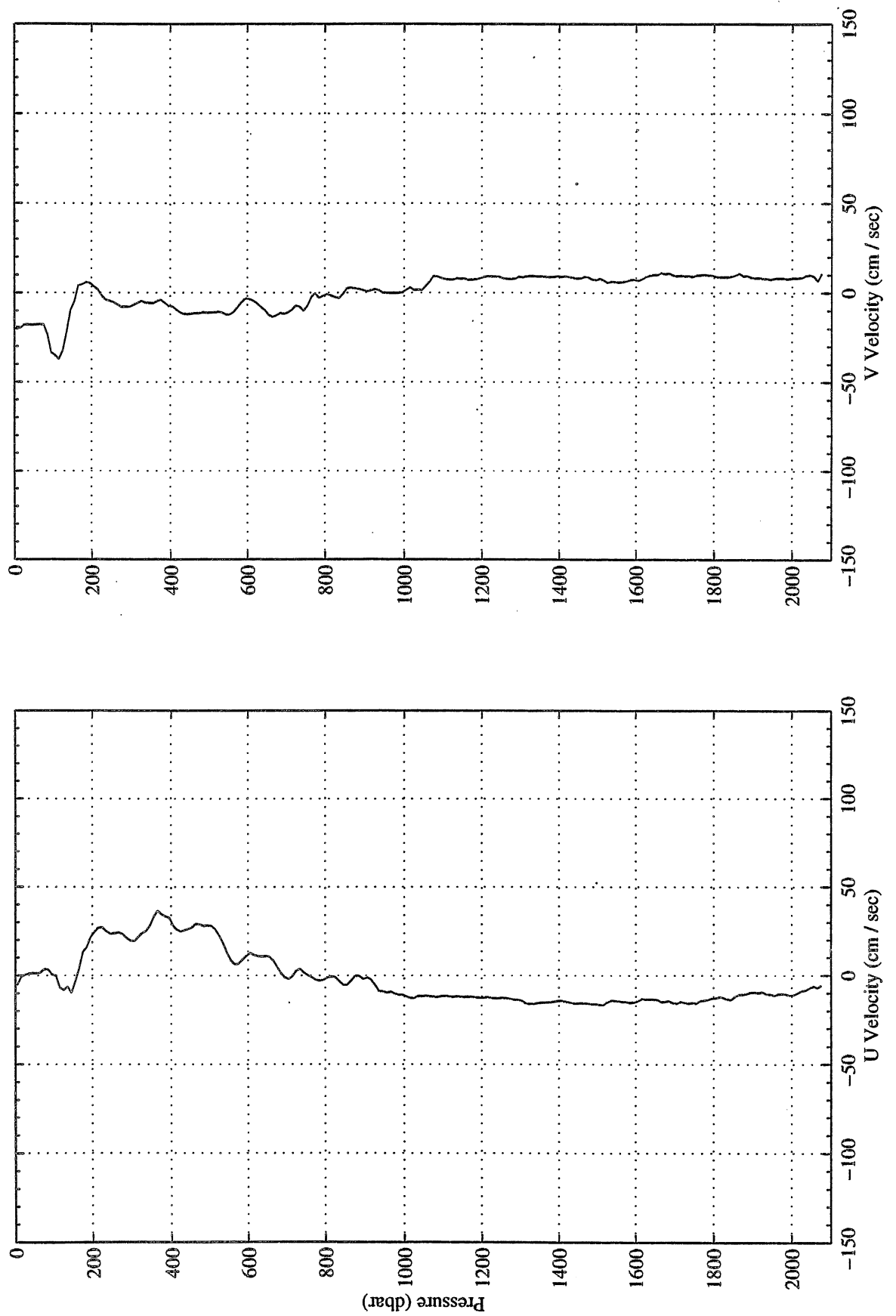
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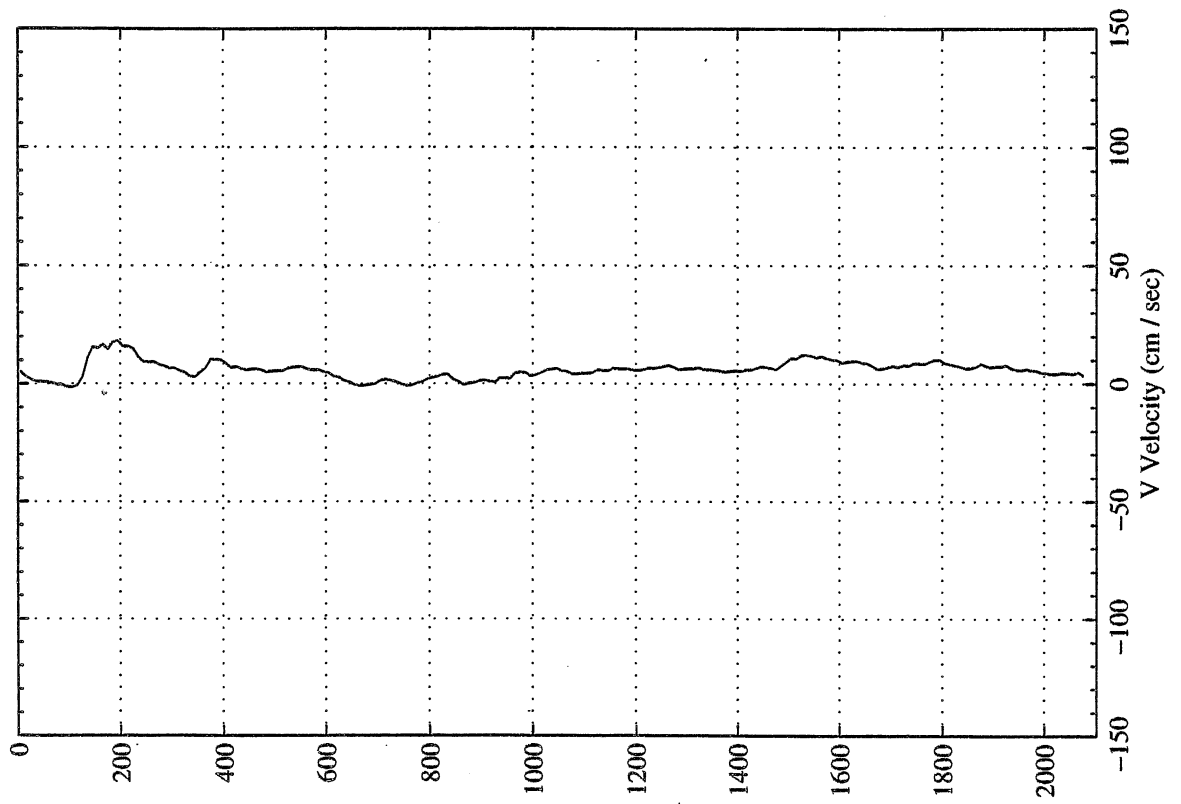
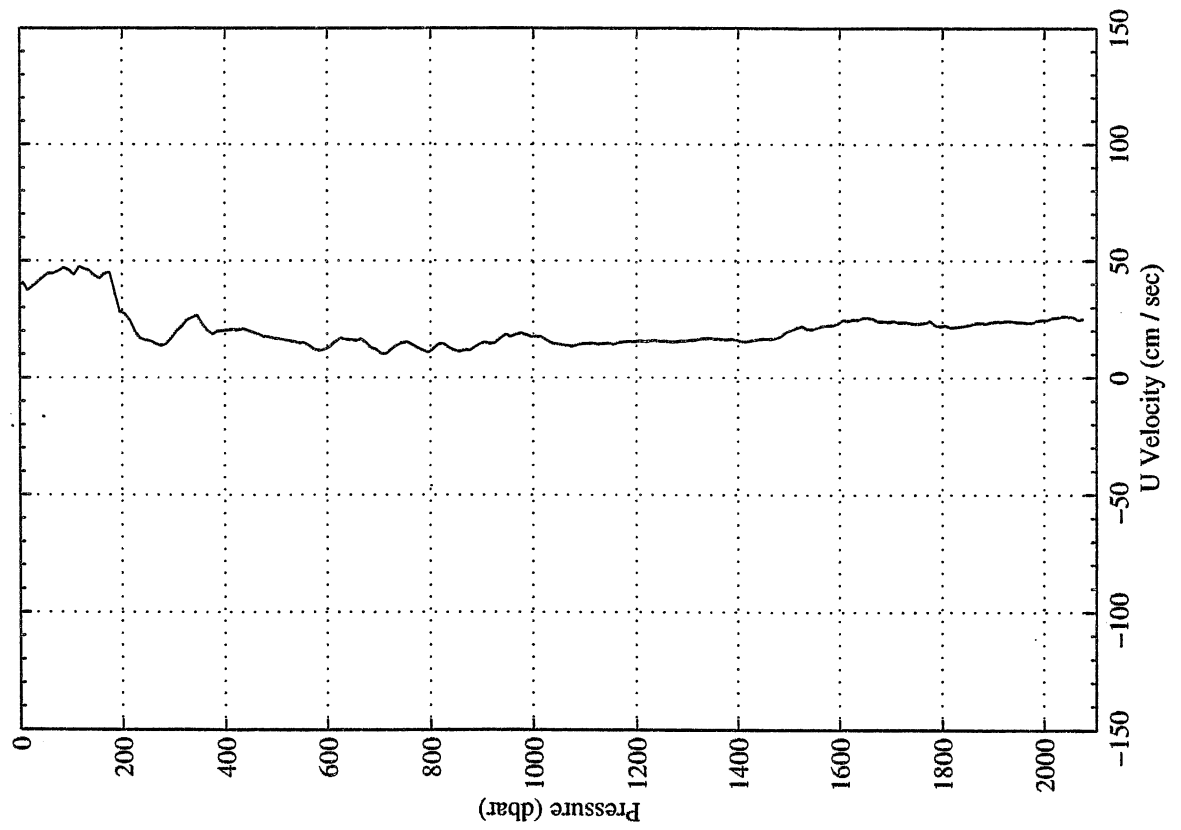
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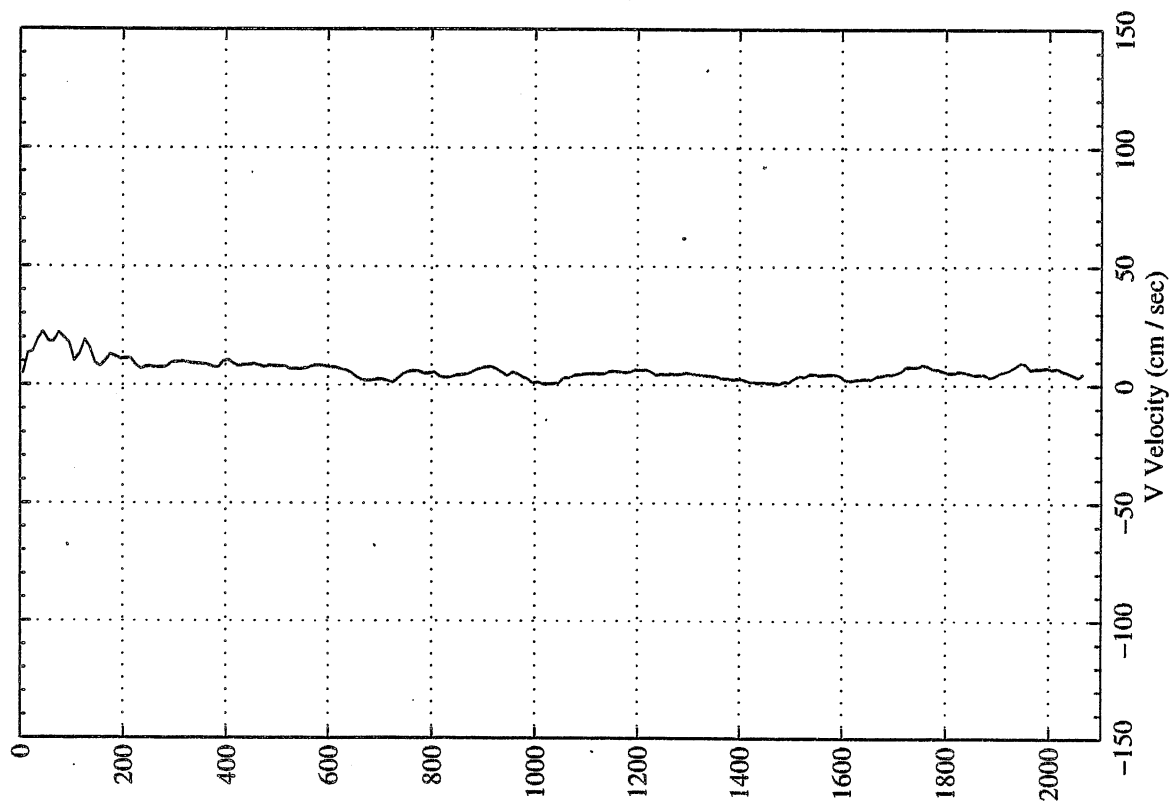
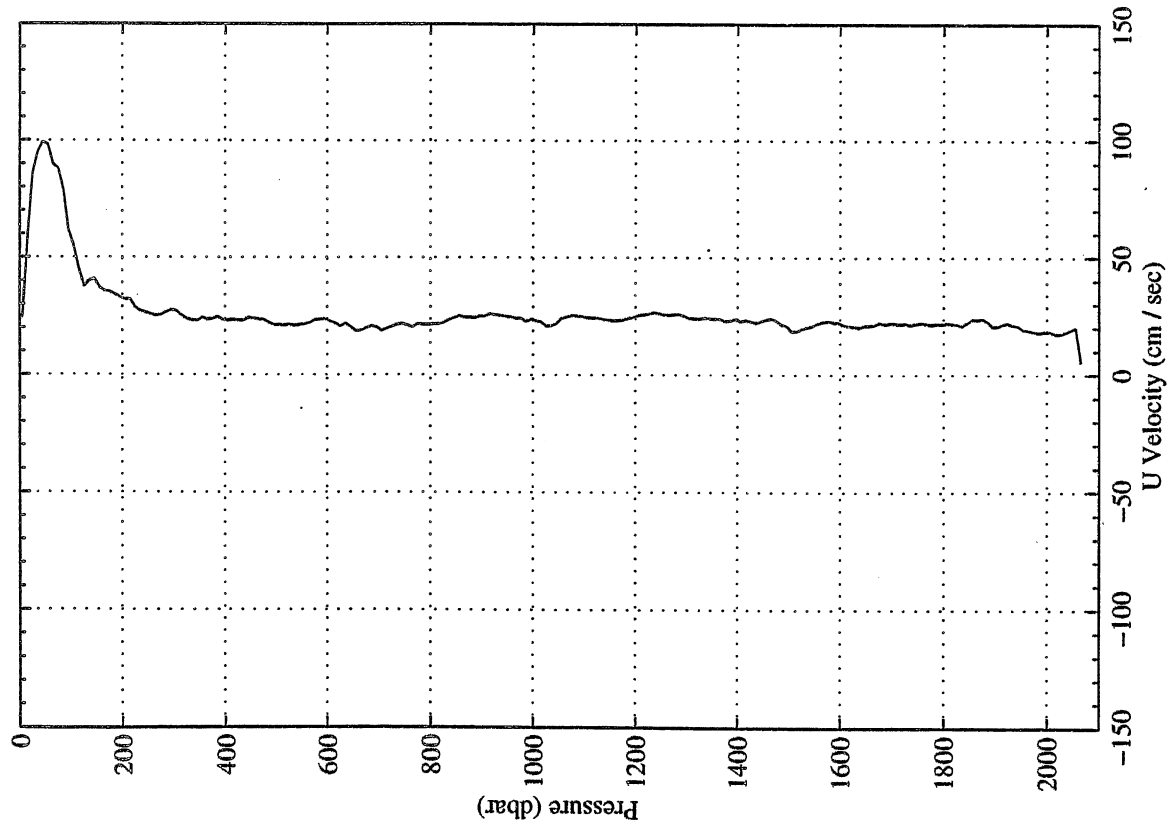
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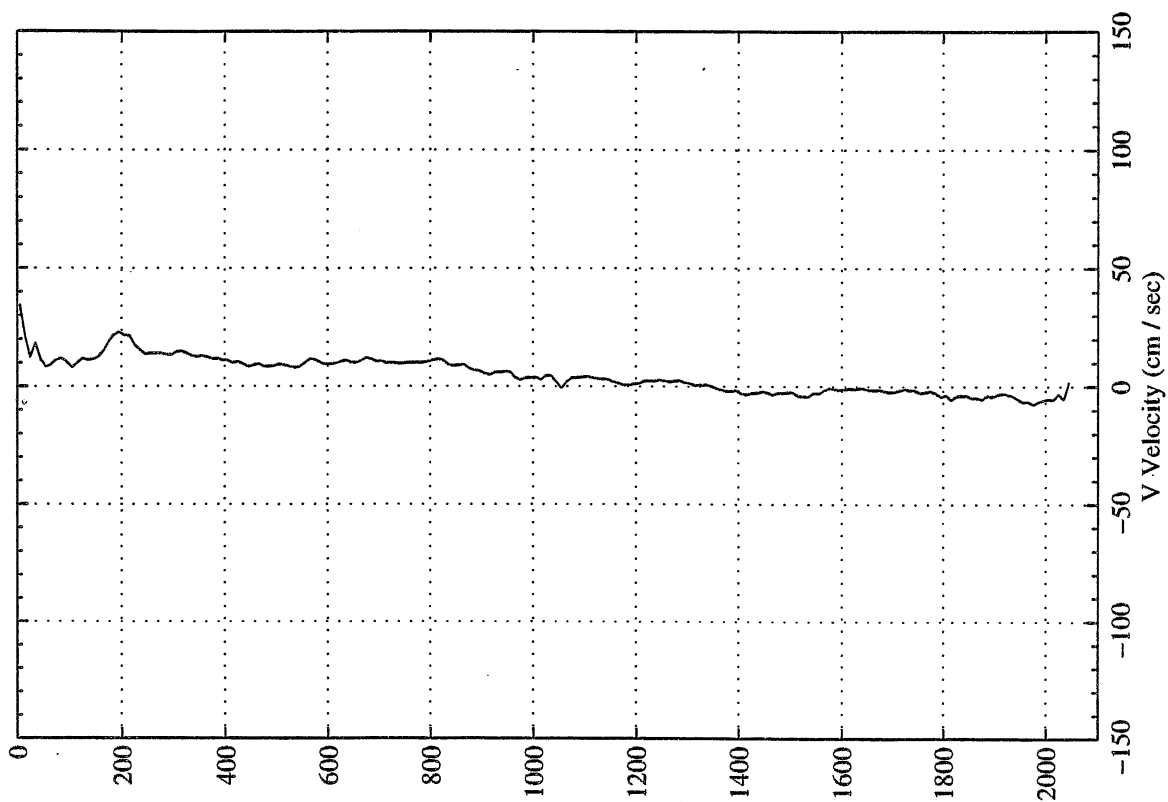
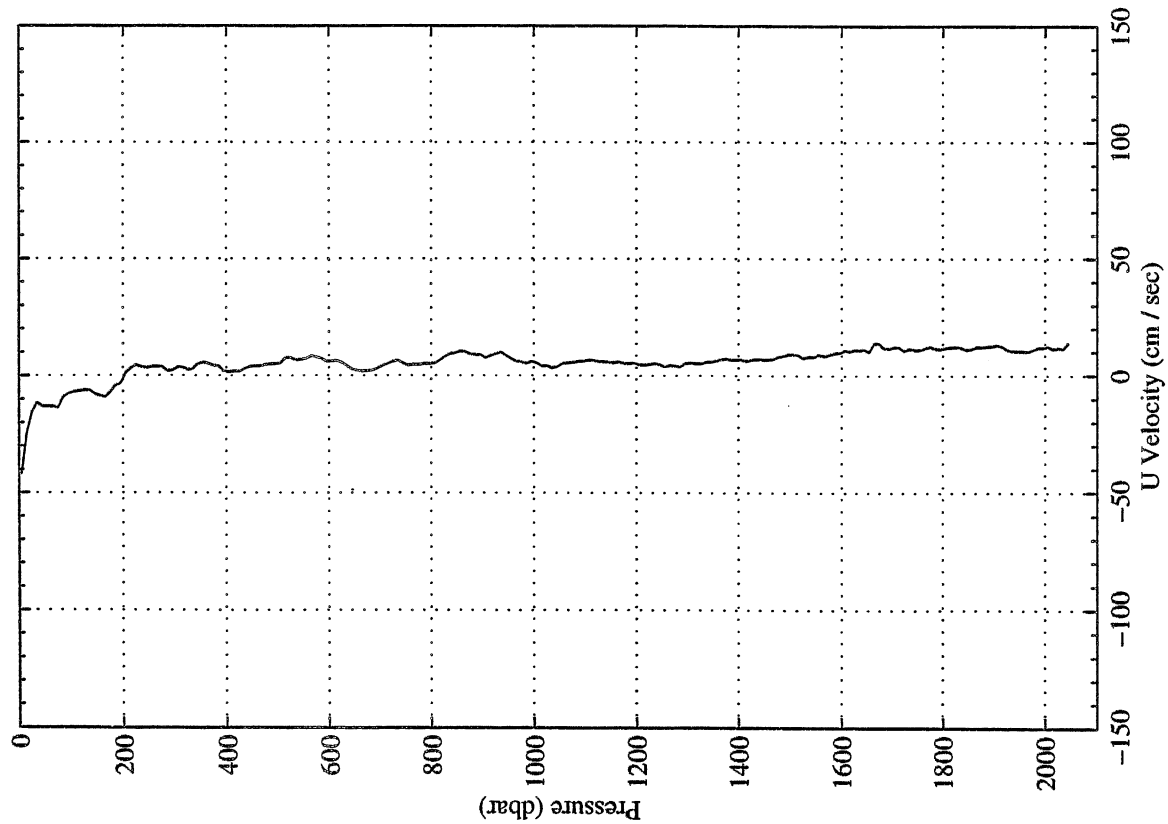
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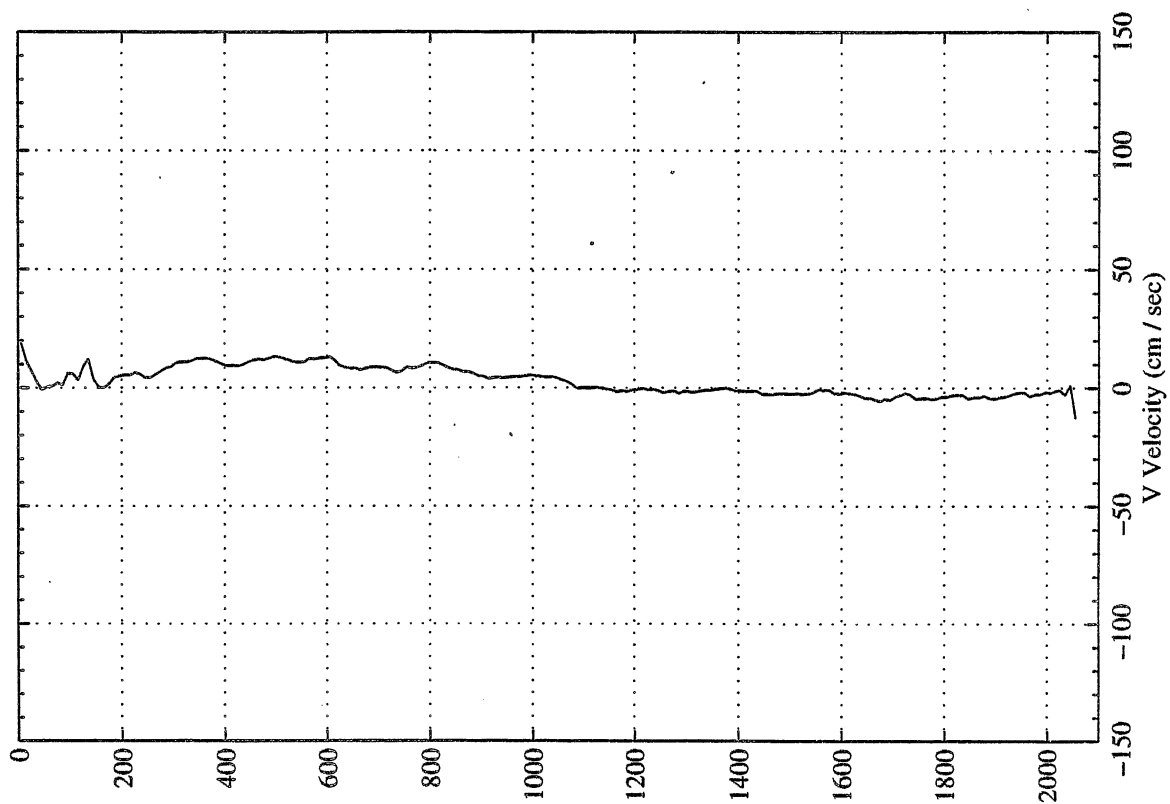
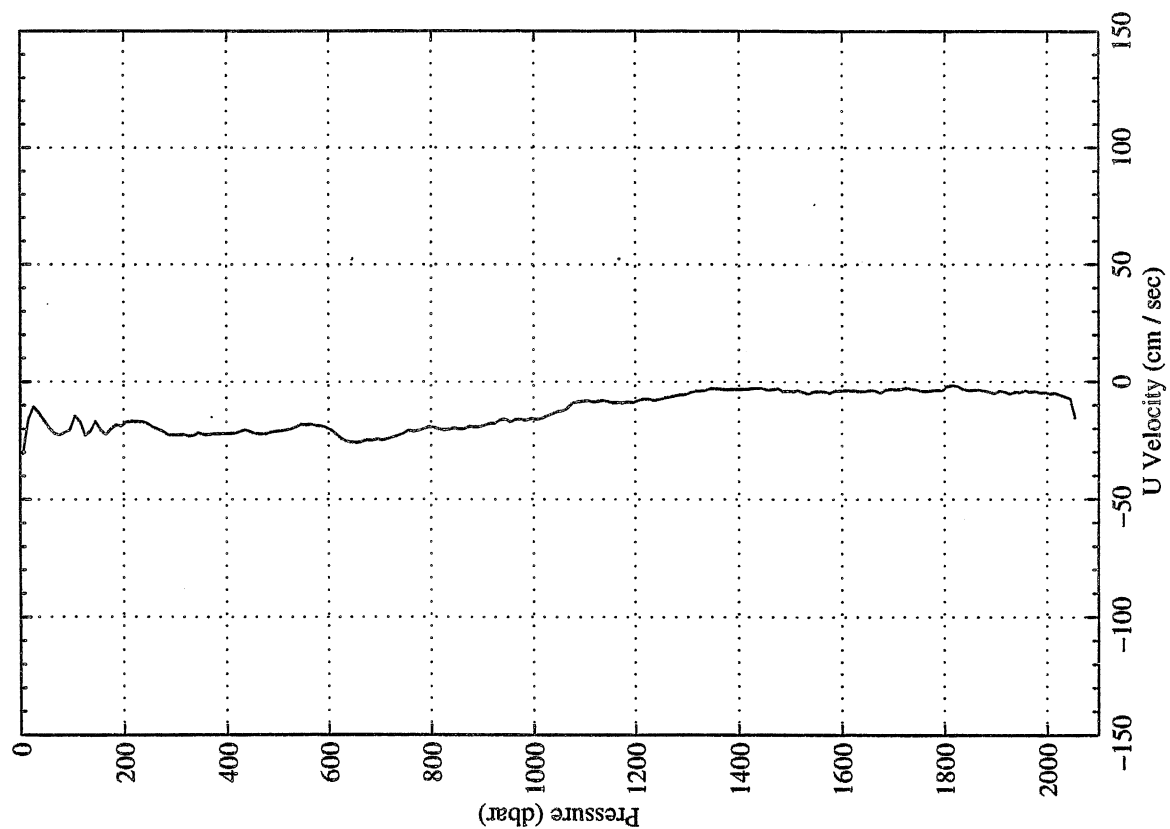
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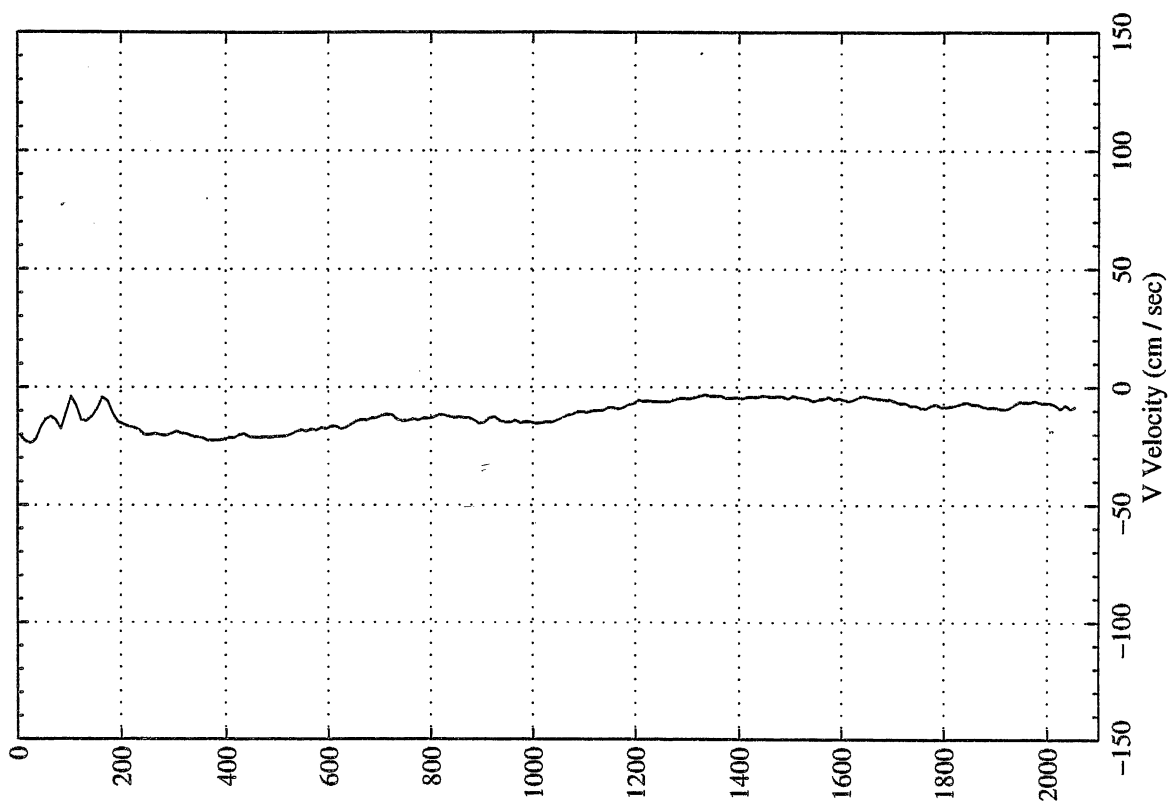
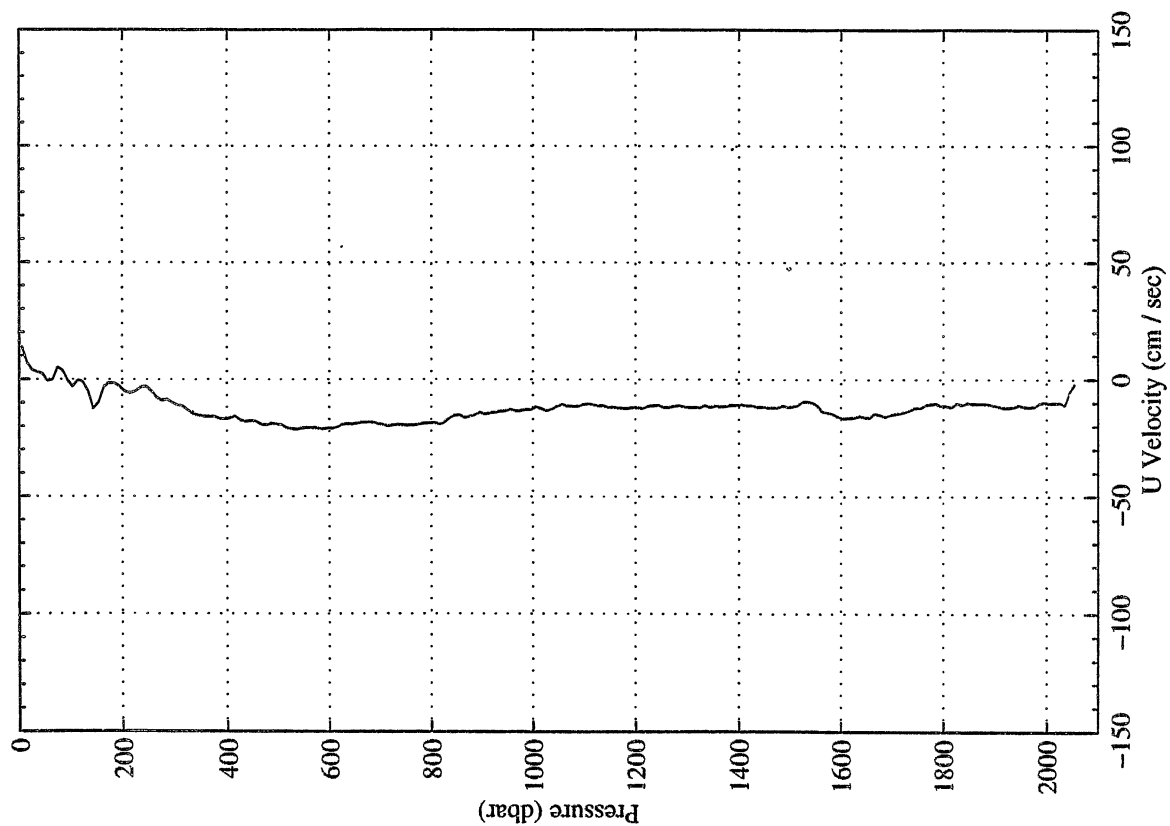
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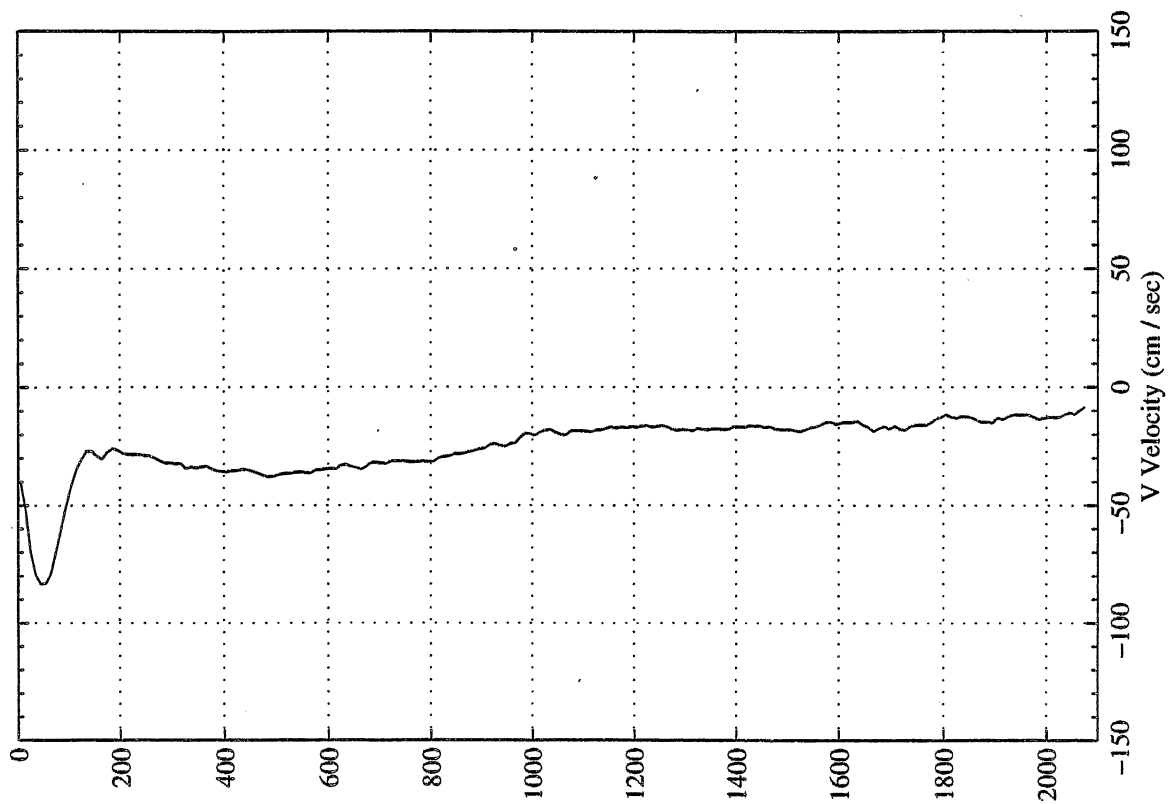
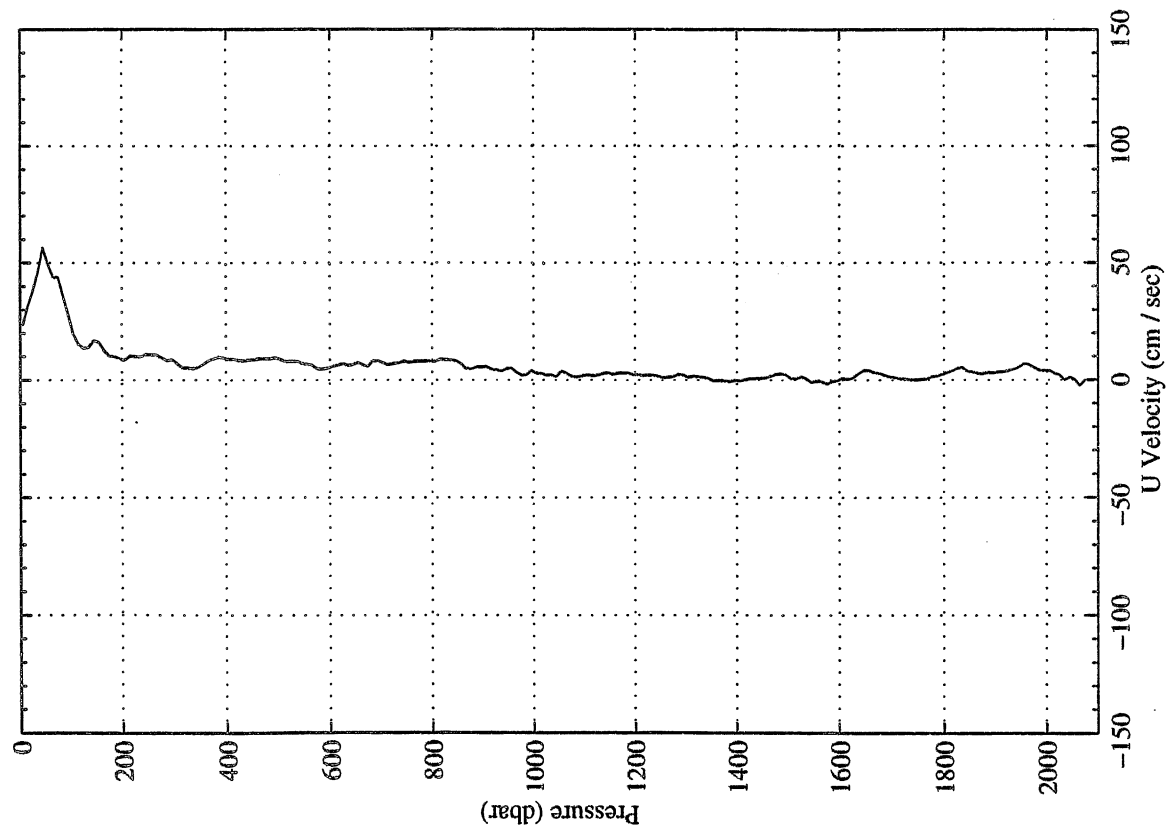
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 12-Feb--1999 21:27 Z



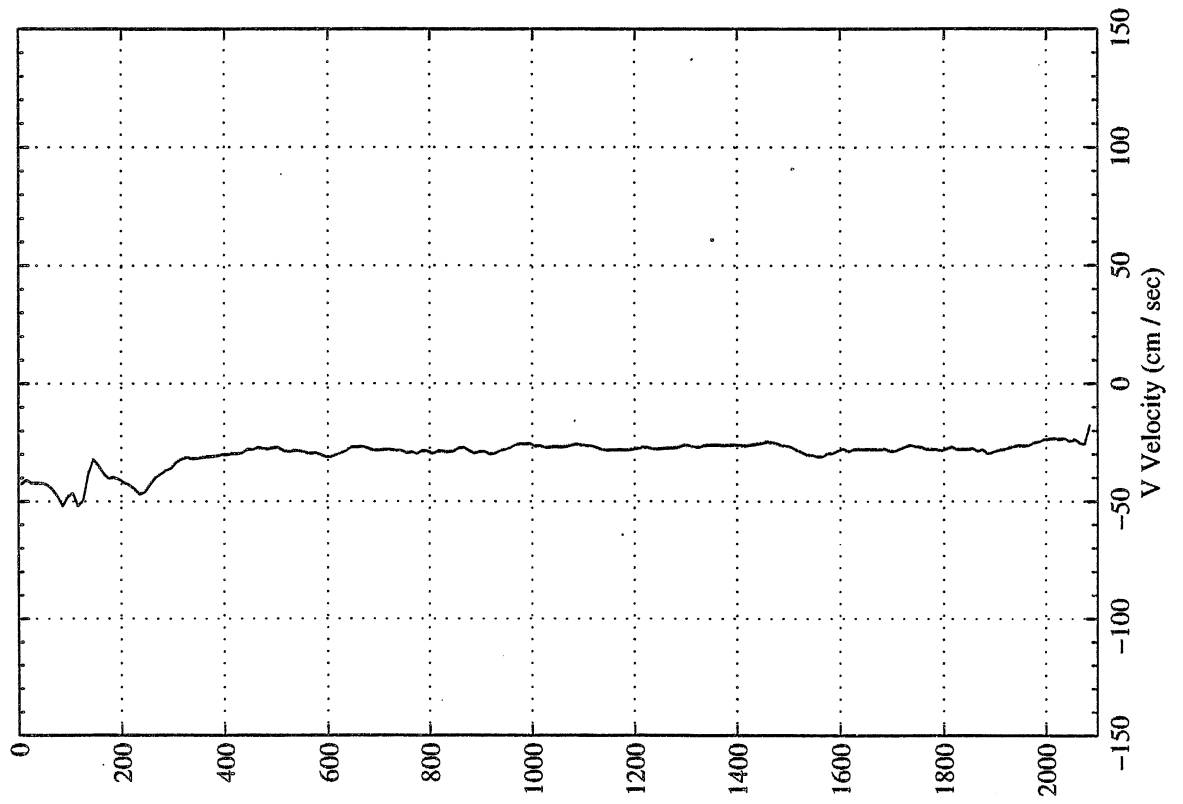
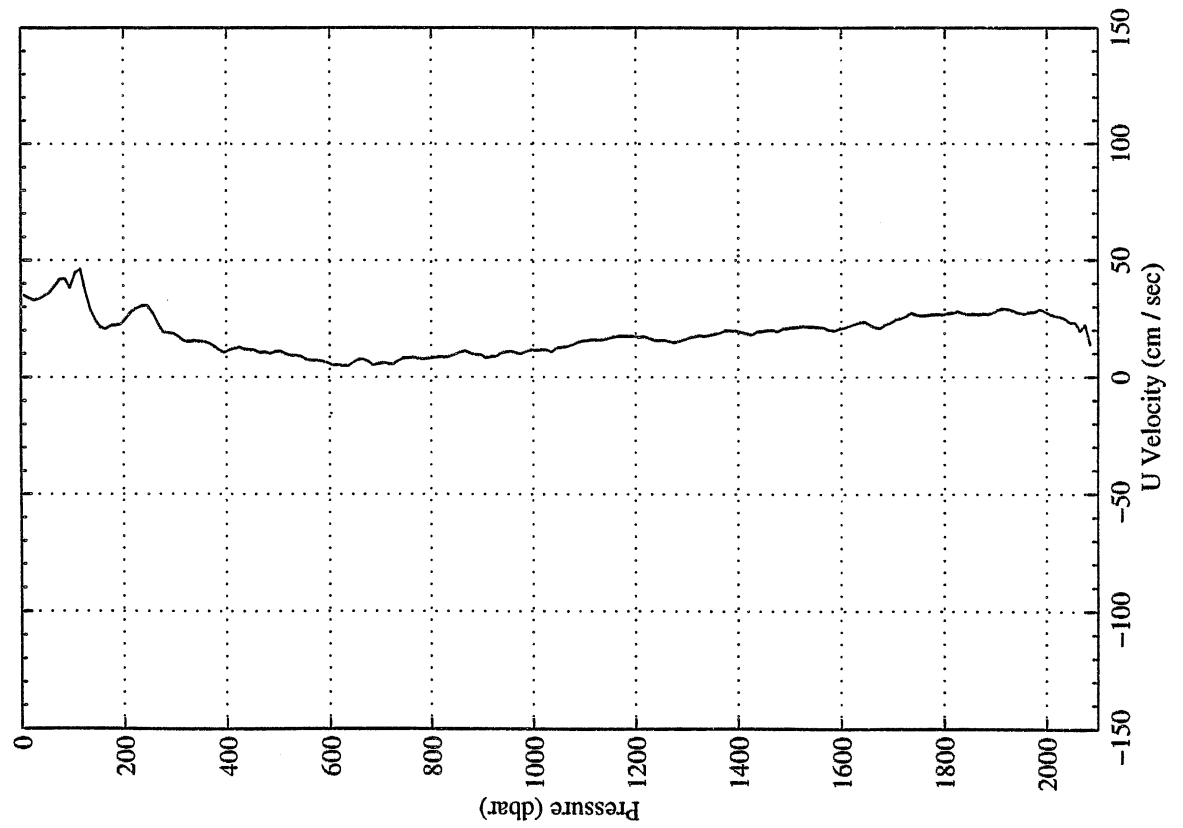
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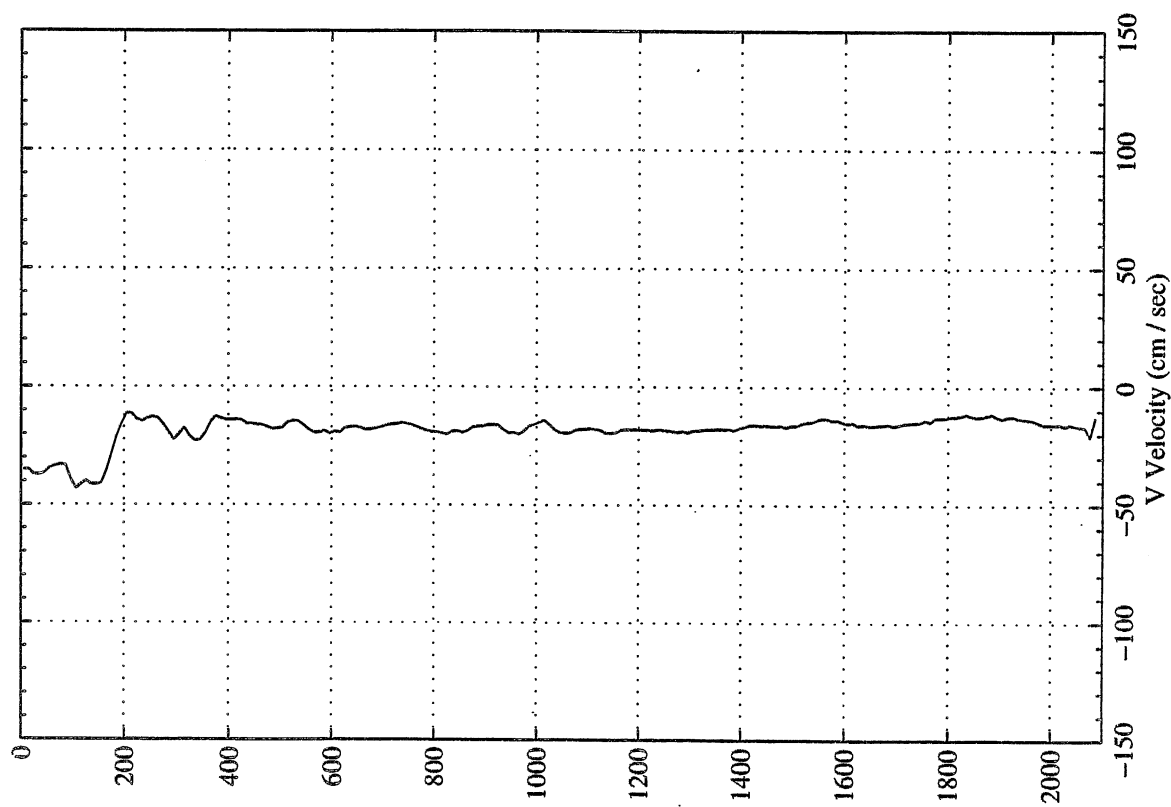
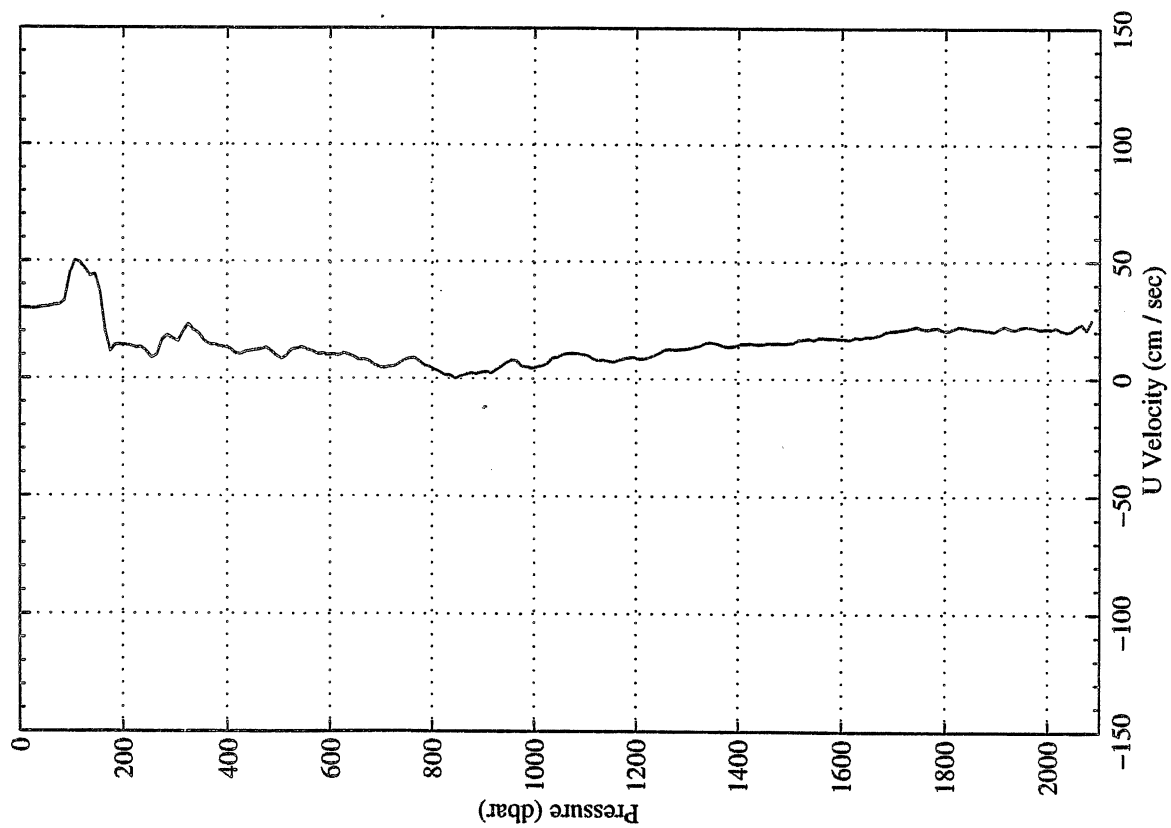
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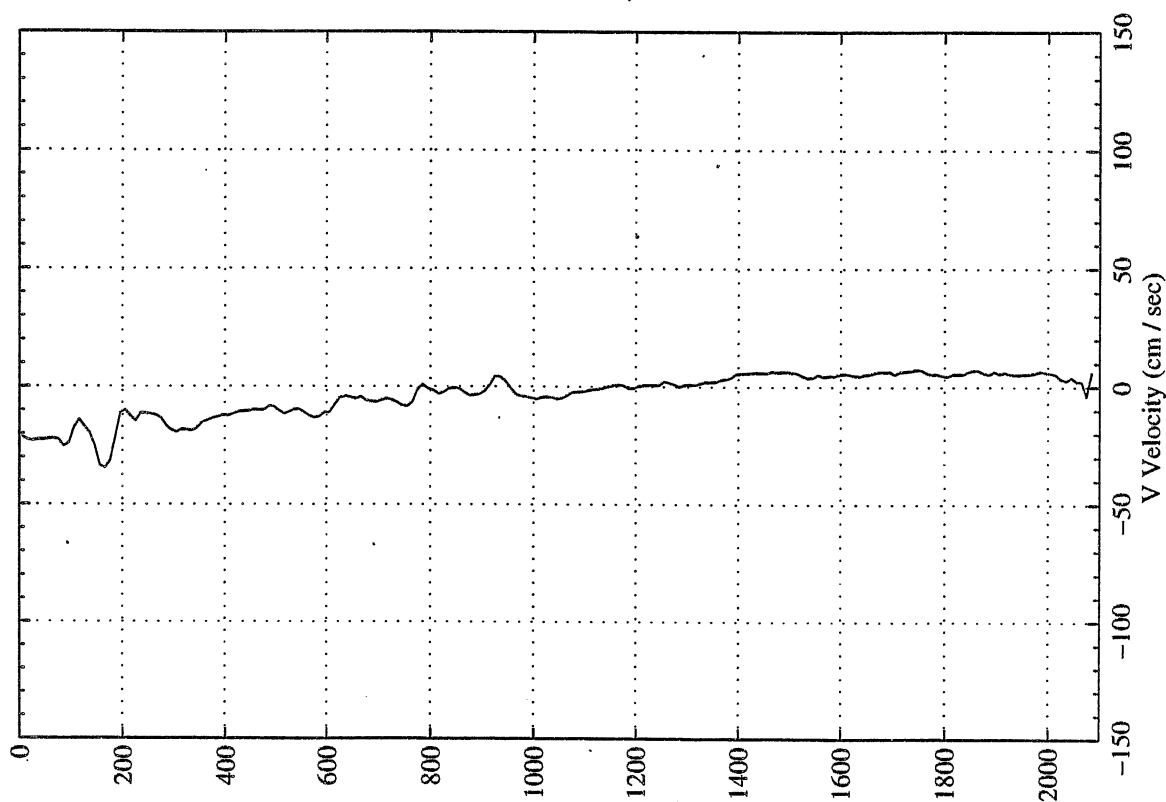
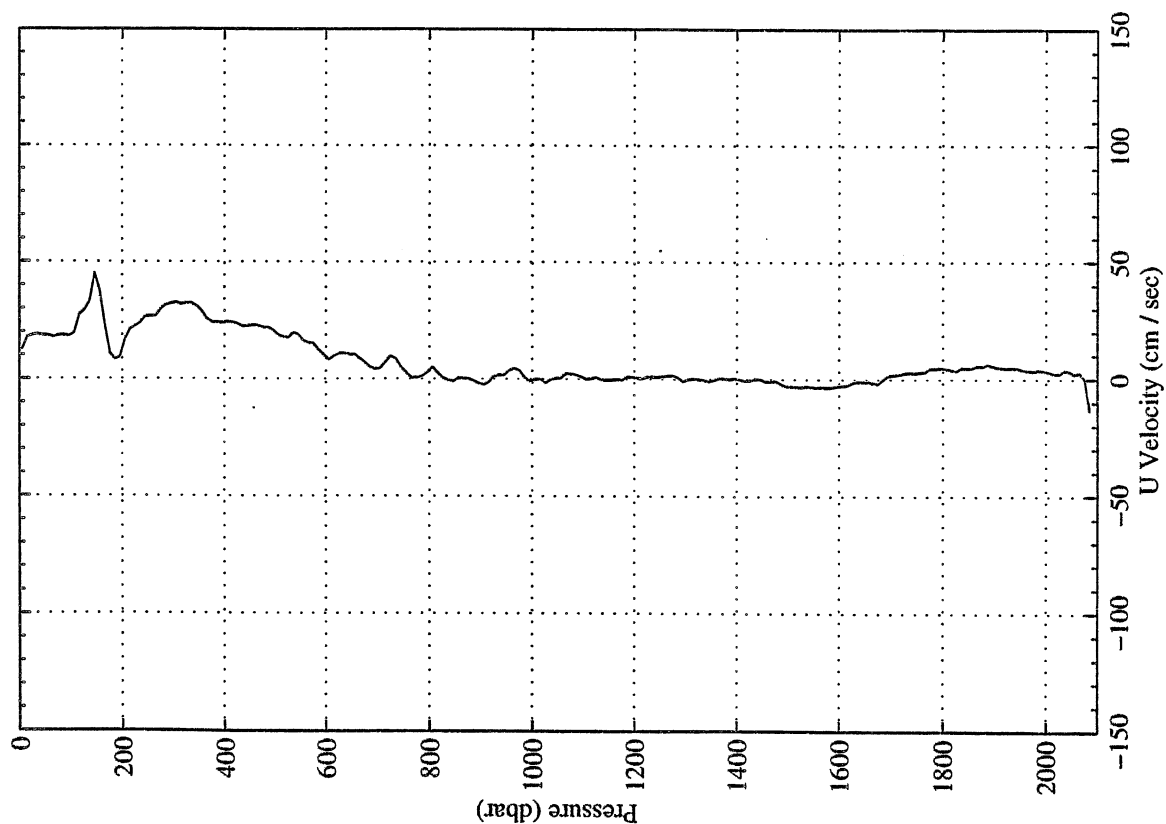
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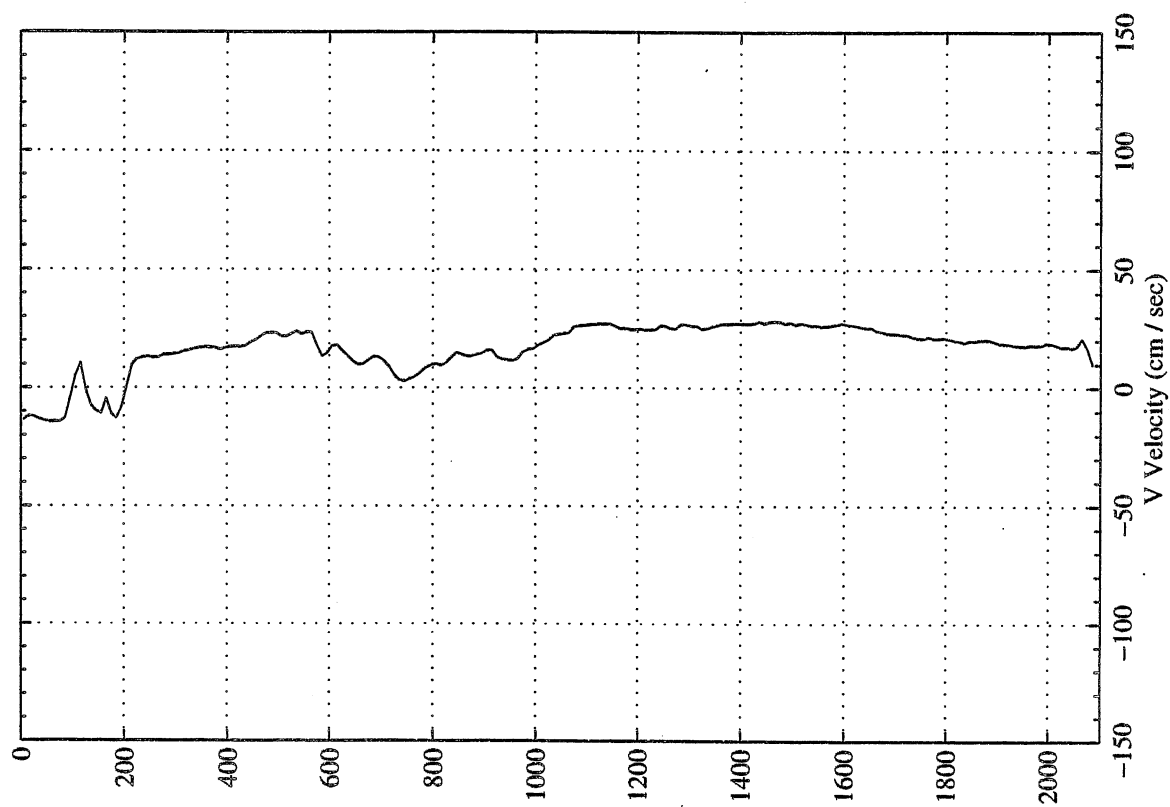
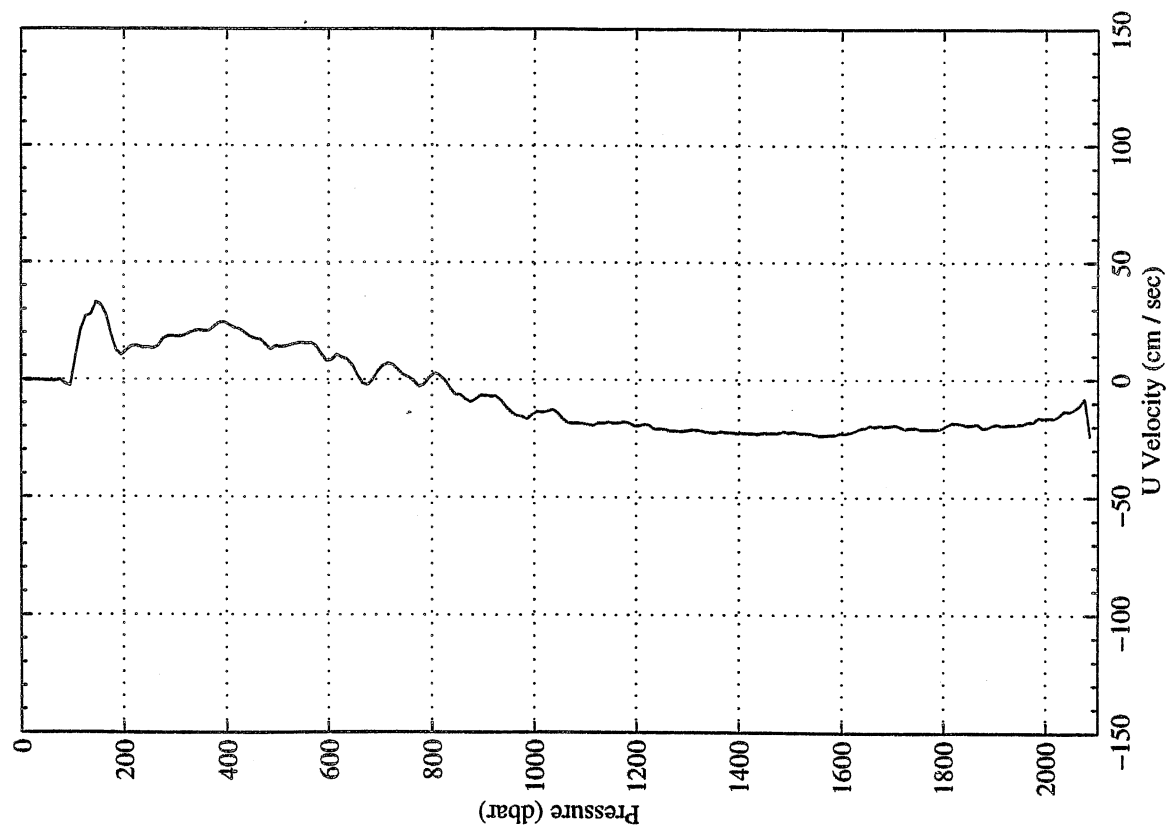
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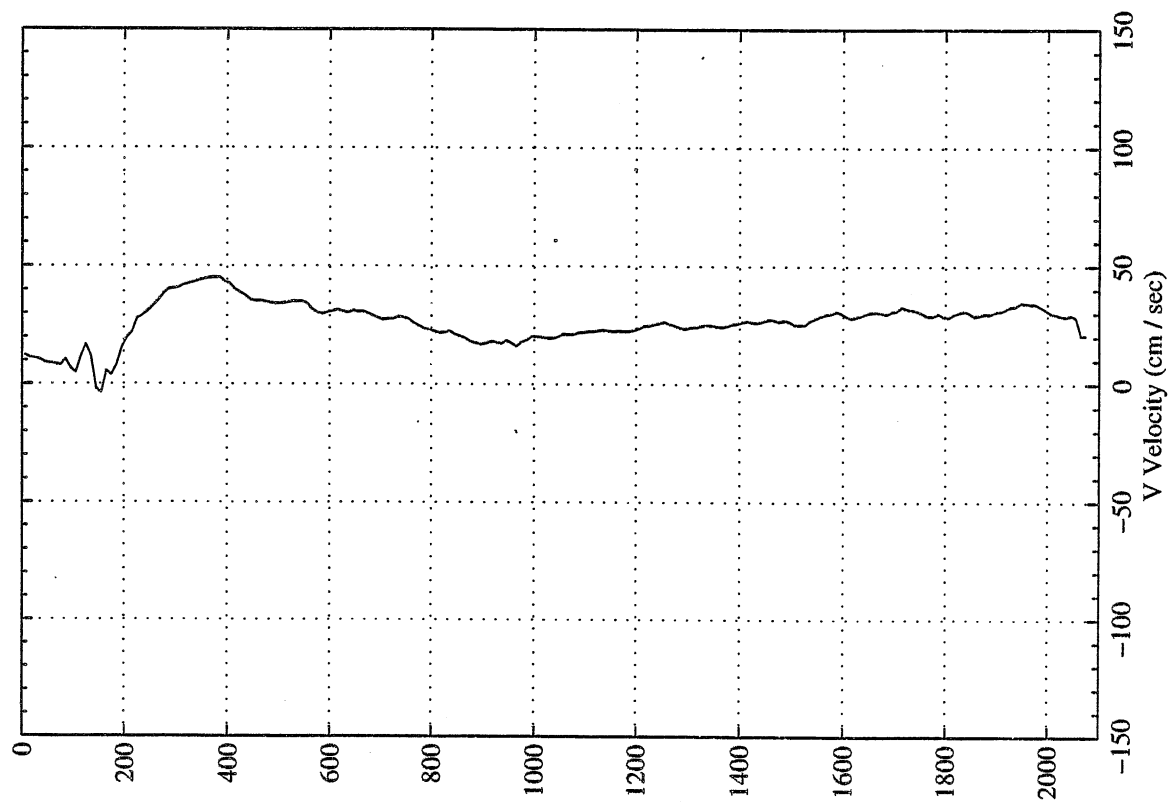
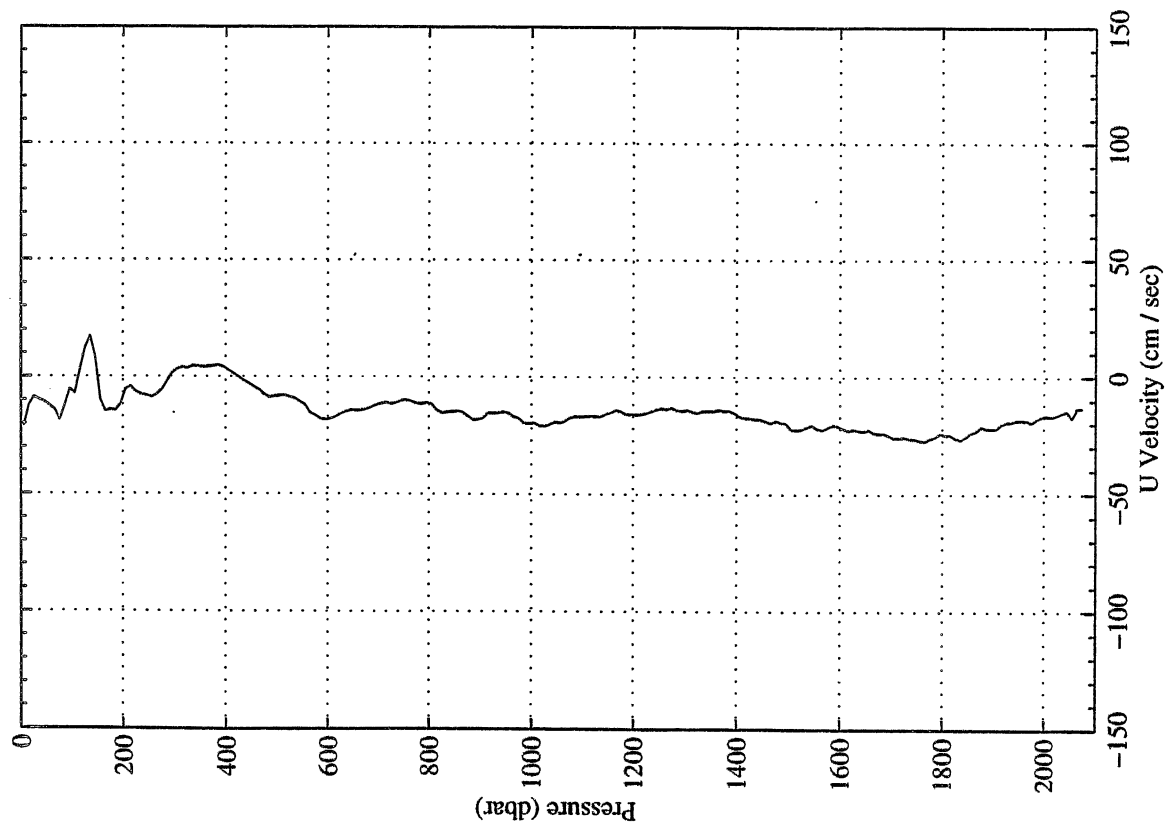
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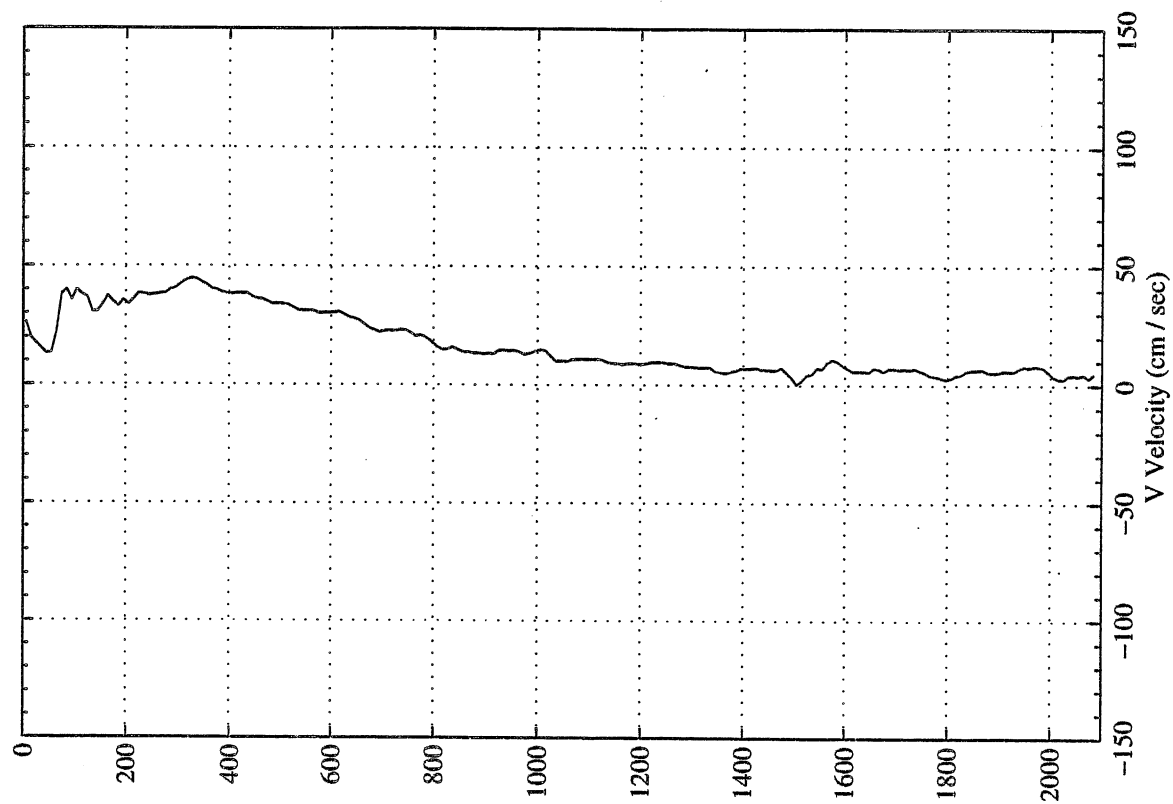
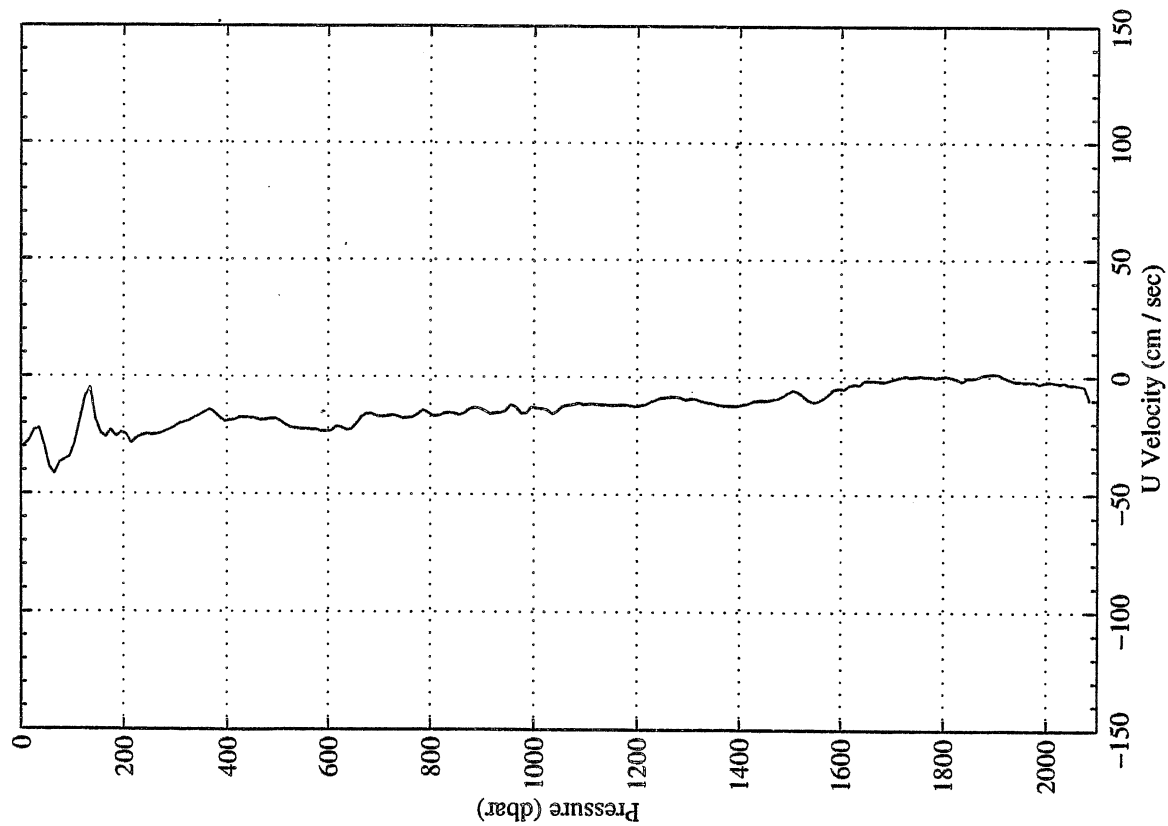
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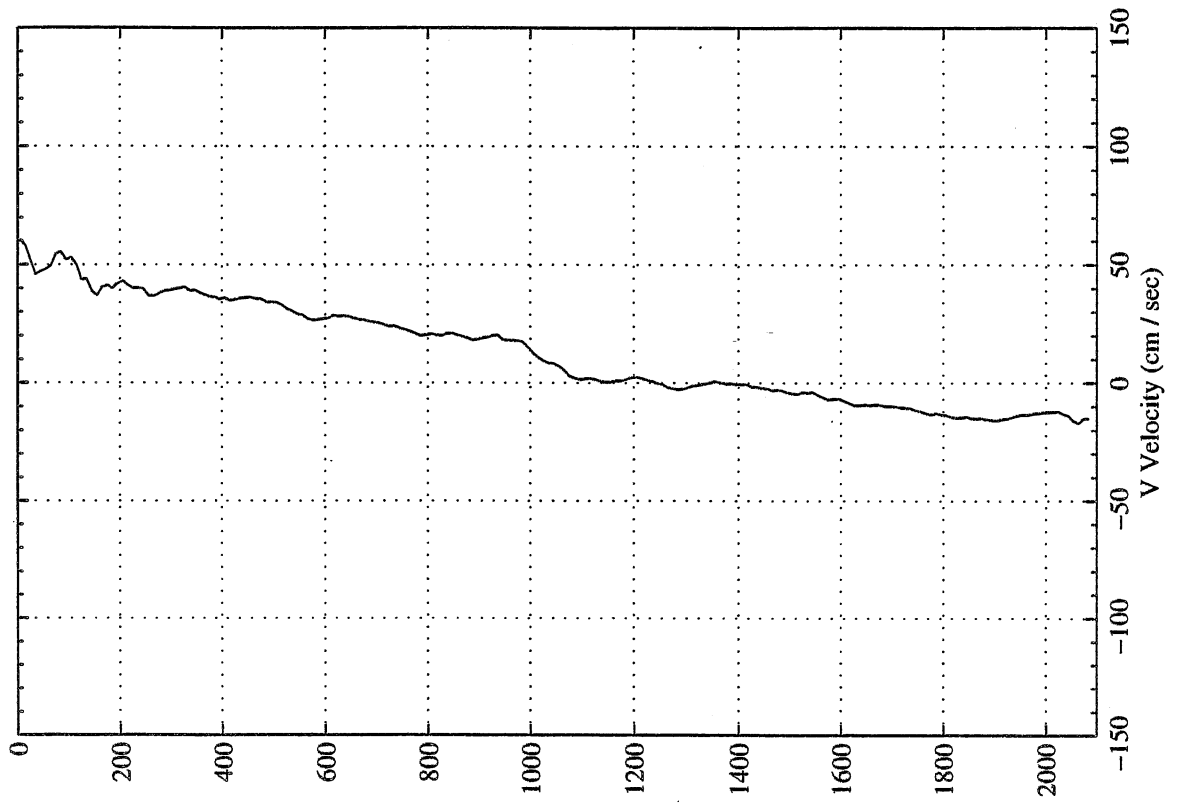
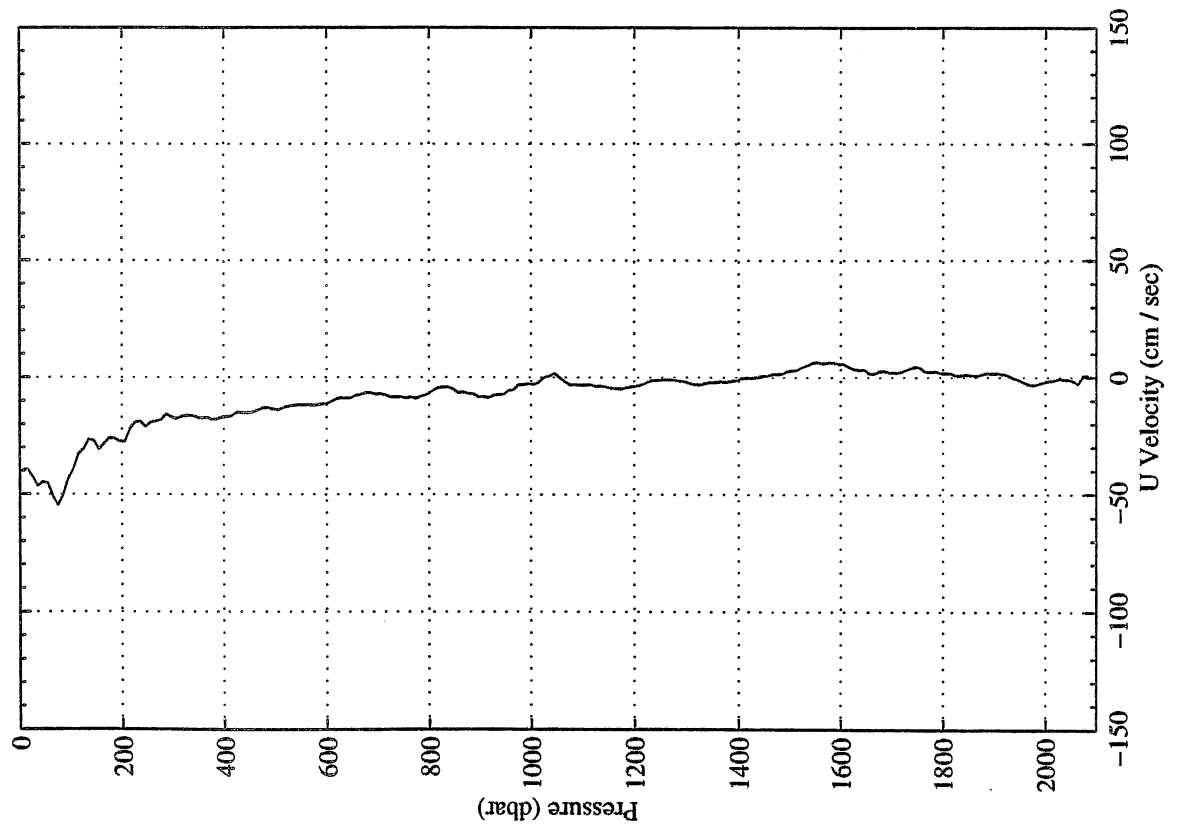
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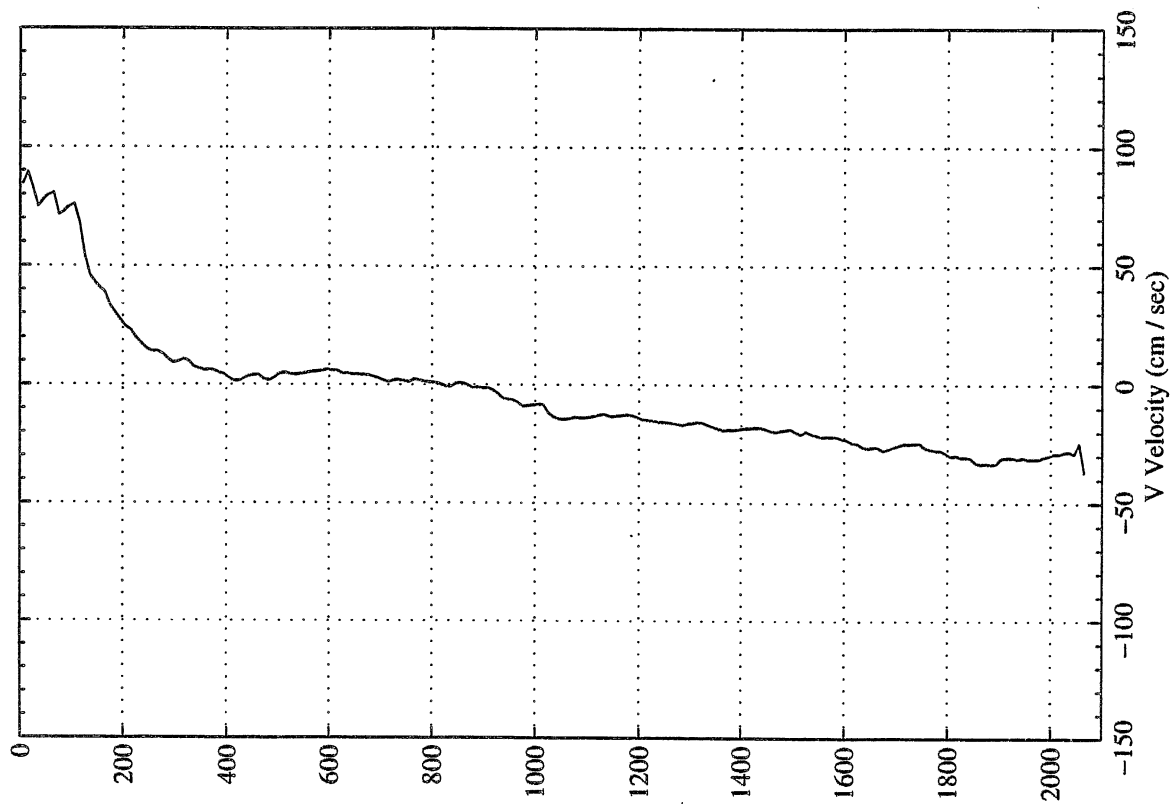
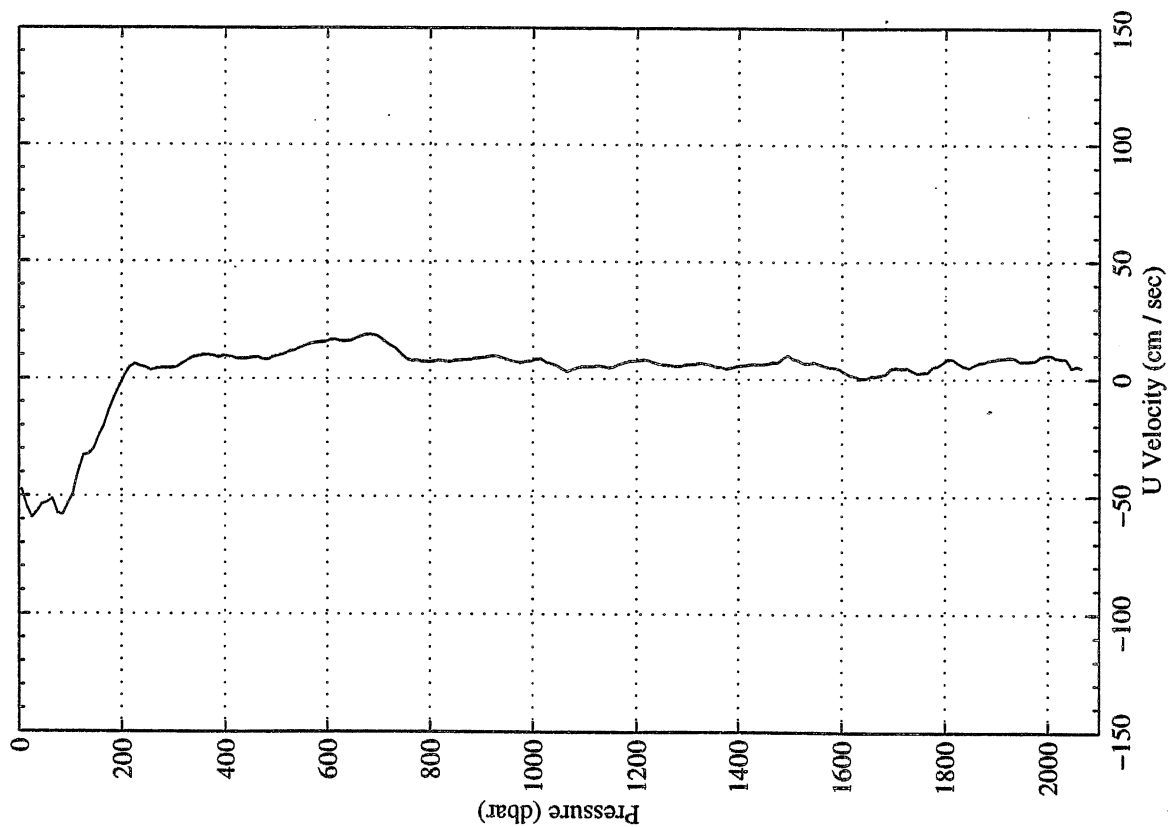
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LADCP Station 26 (99026)
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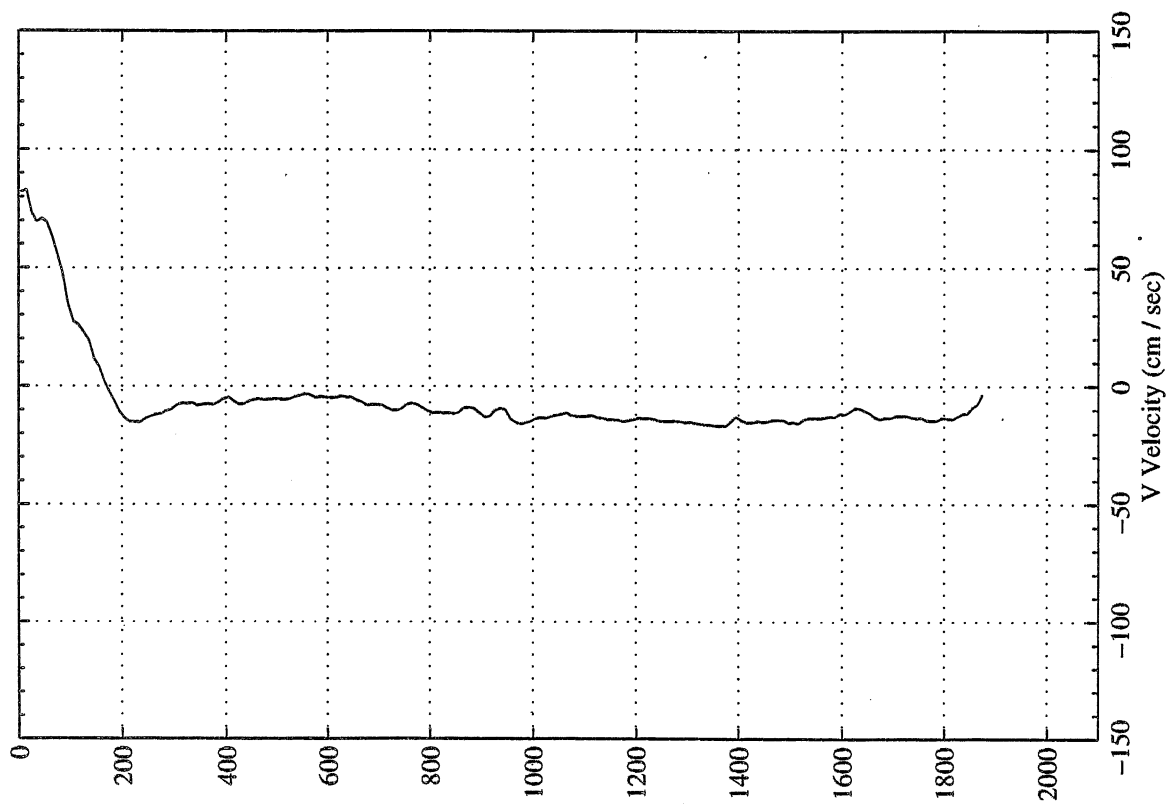
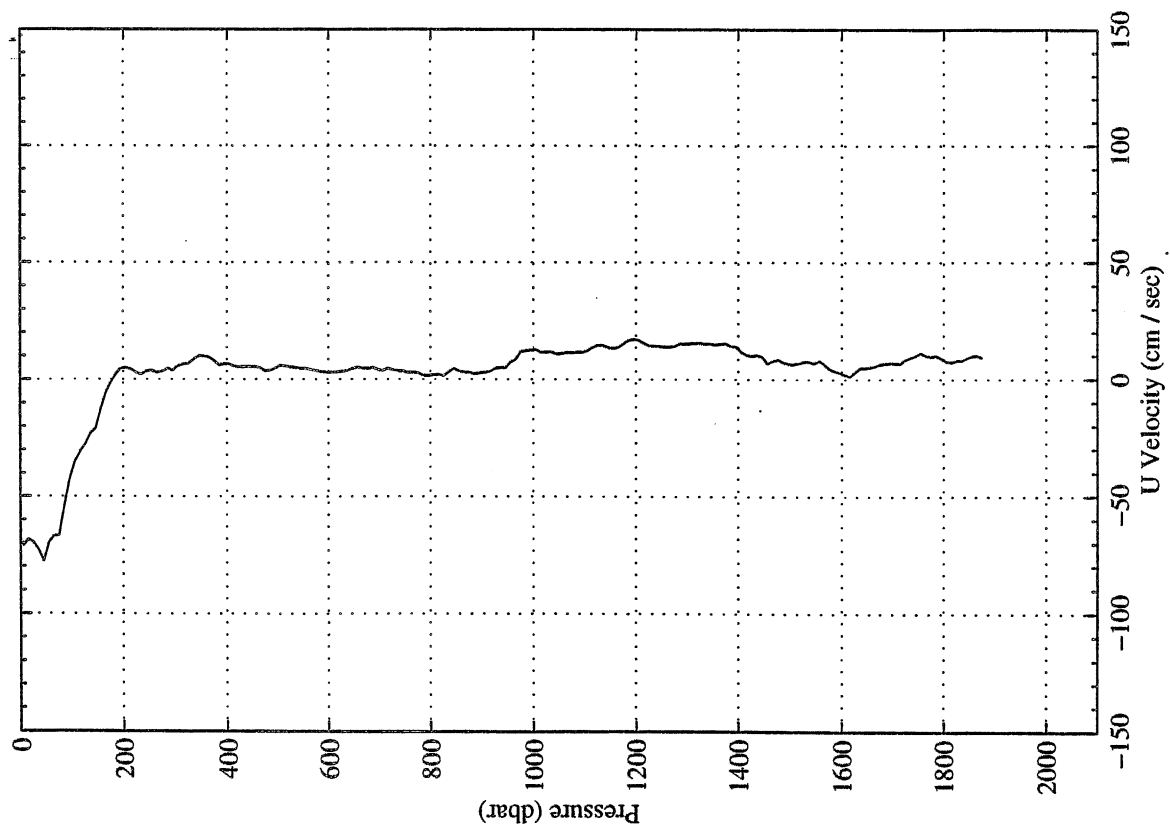


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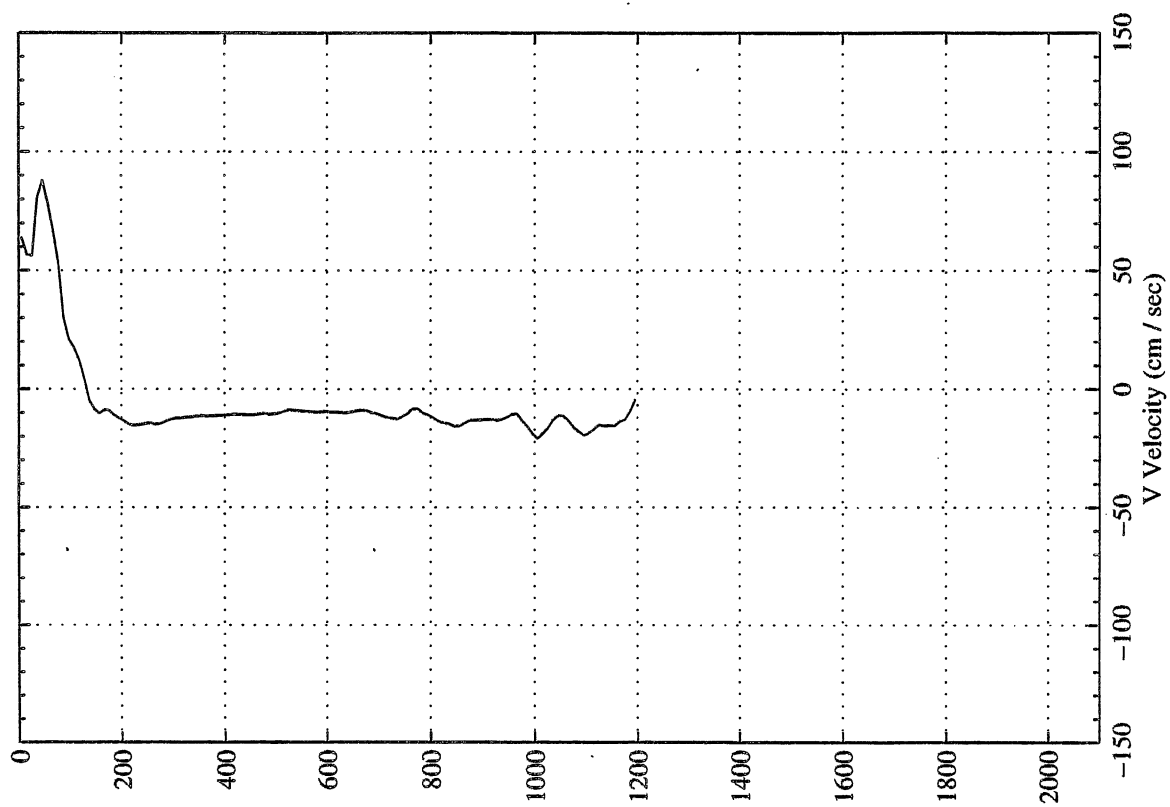
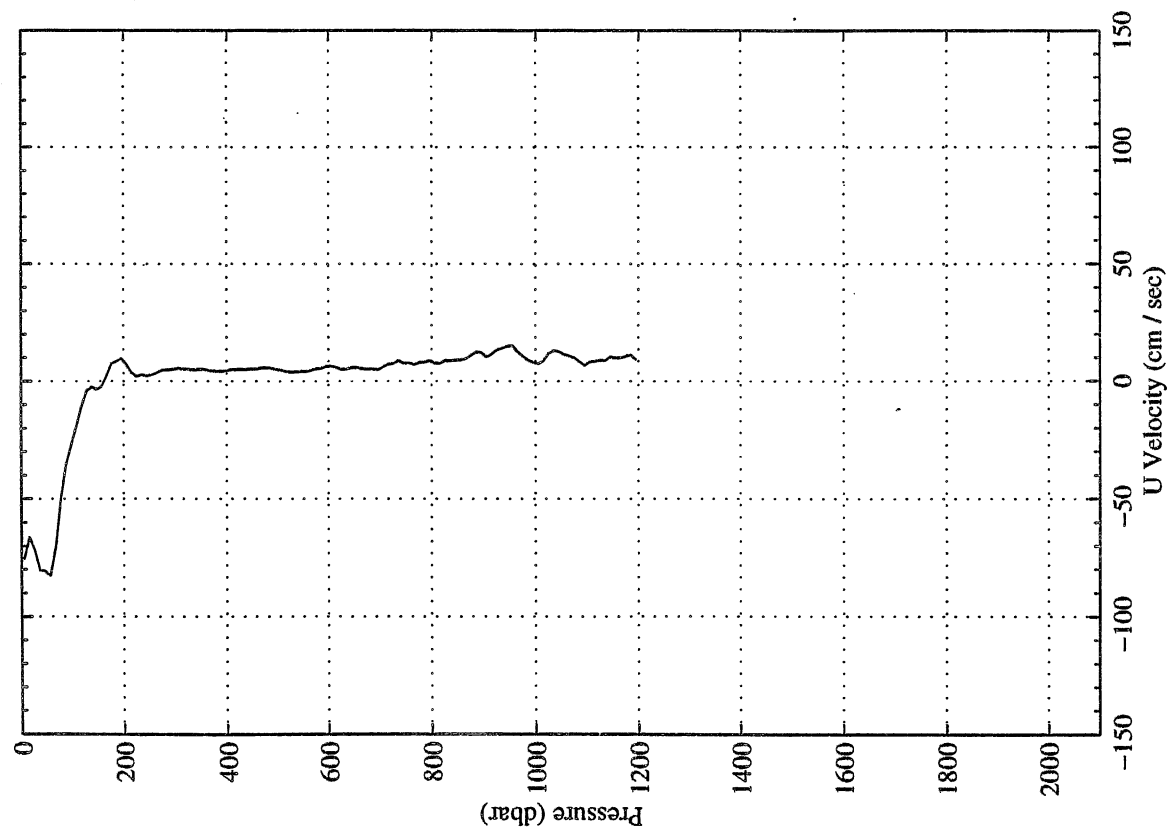
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Latitude 9.180 N Longitude 58.674 W

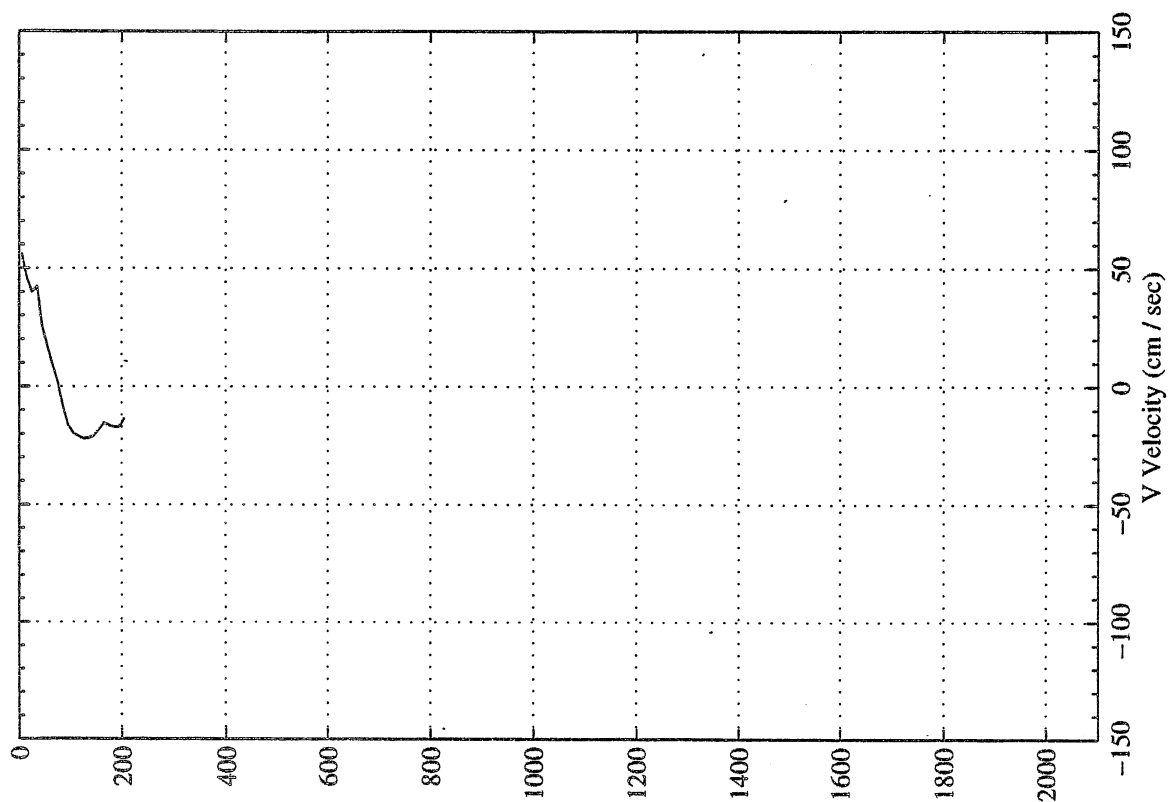
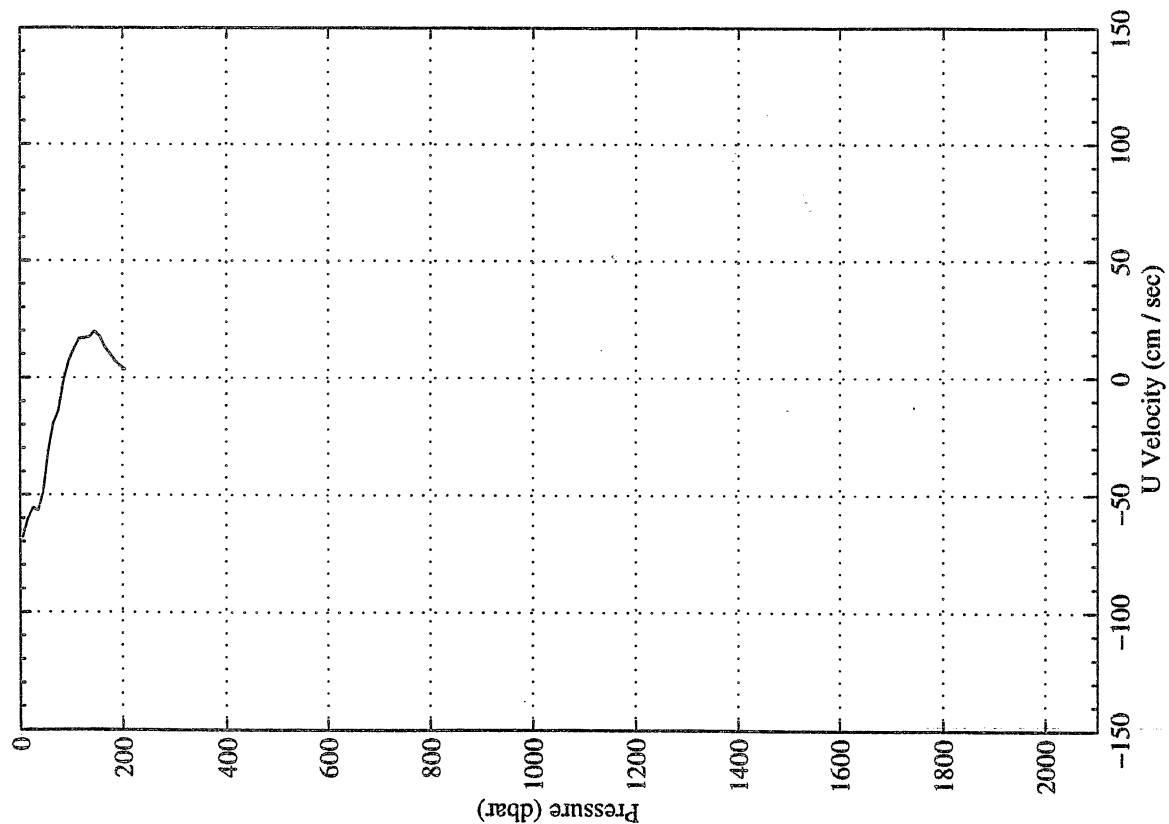
14-Feb-1999 13:11 Z



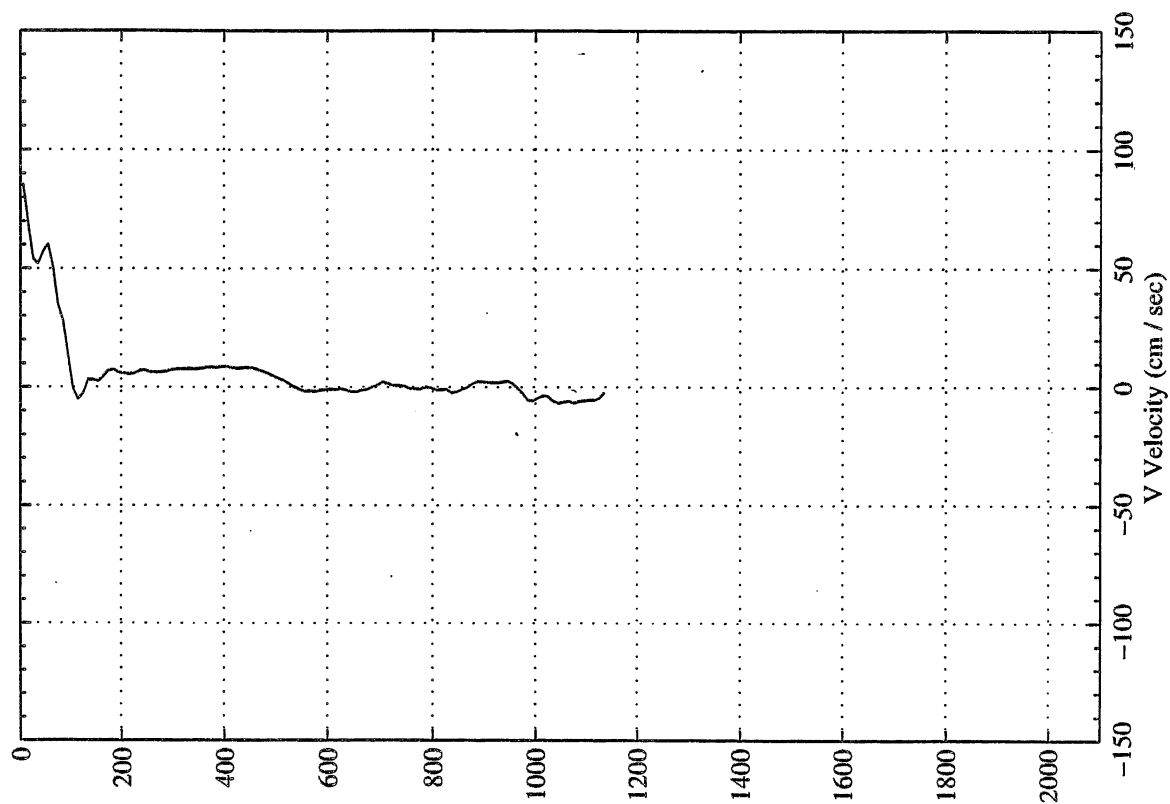
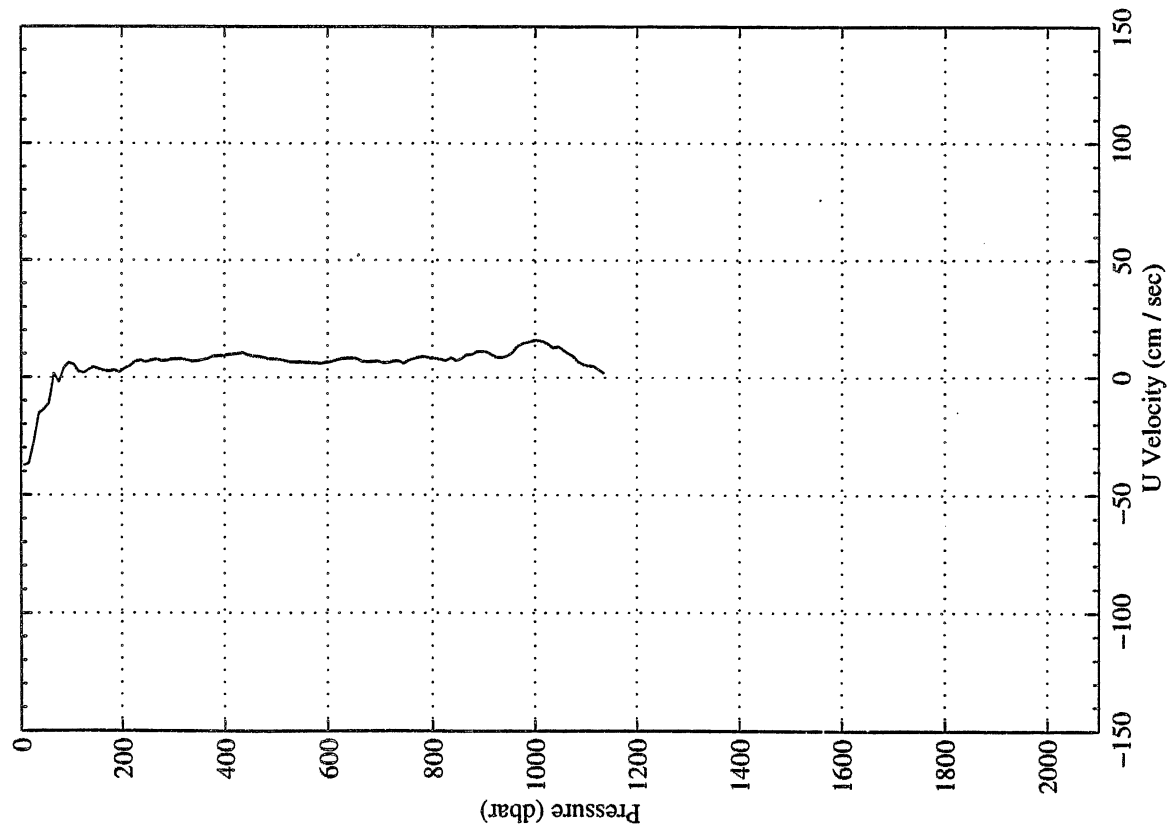
NBC-2 R/V SEWARD JOHNSON
LADCP Station 29 (99029)
Latitude 9.007 N Longitude 58.842 W
14-Feb-1999 15:53 Z



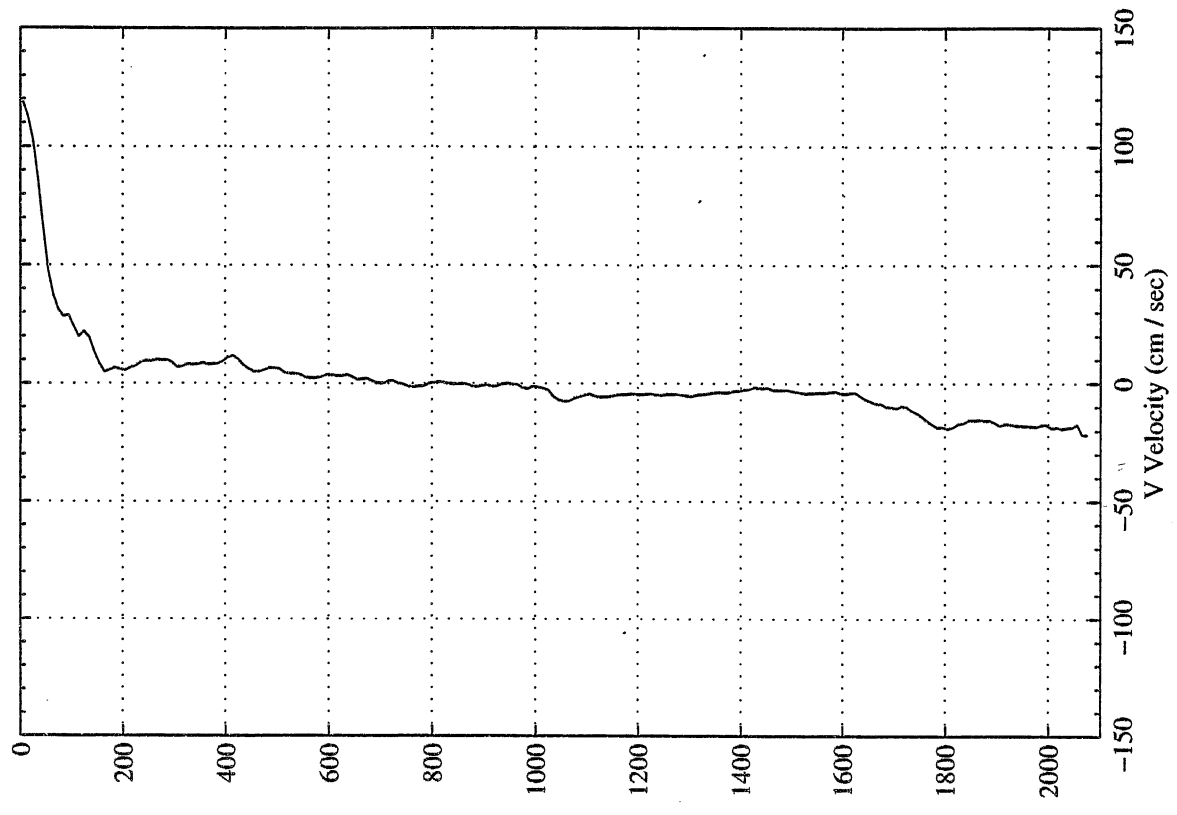
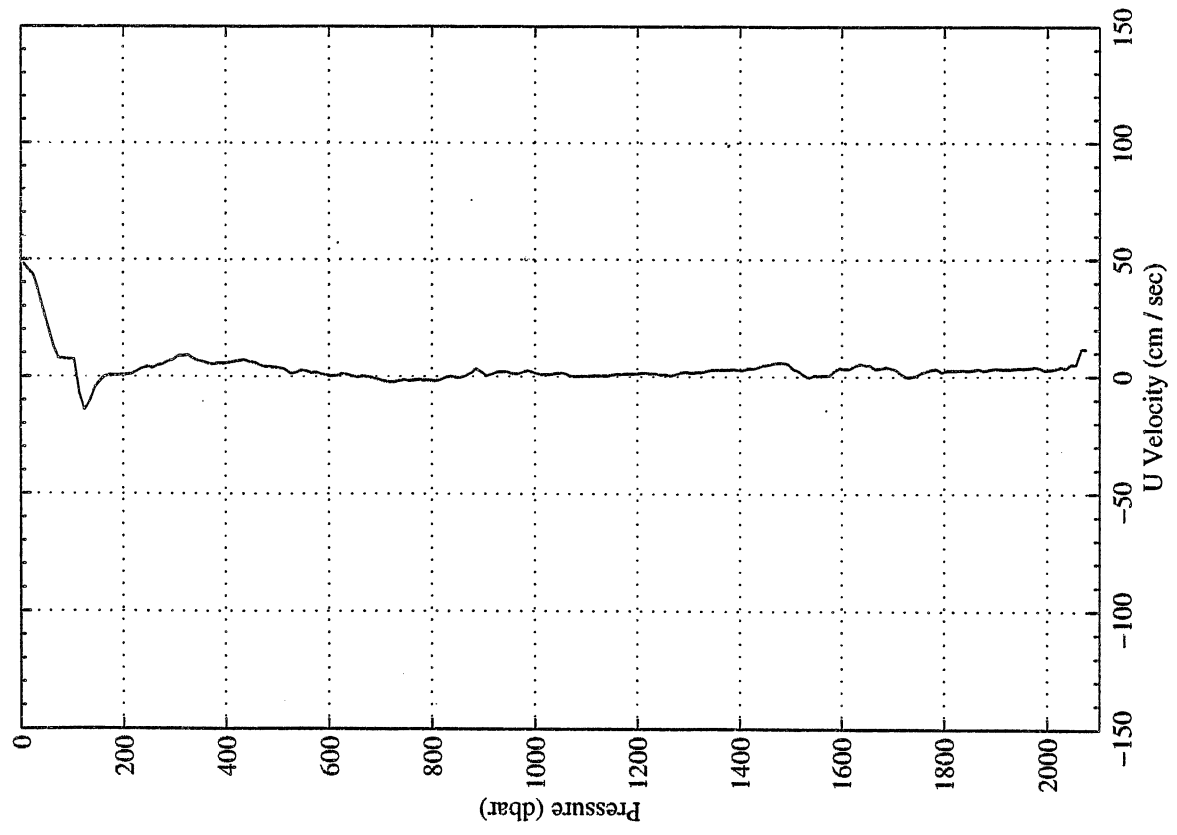
NBC-2 R/V SEWARD JOHNSON
LADCP Station 30 (99030)
Latitude 8.929 N Longitude 59.006 W
14-Feb-1999 17:46 Z



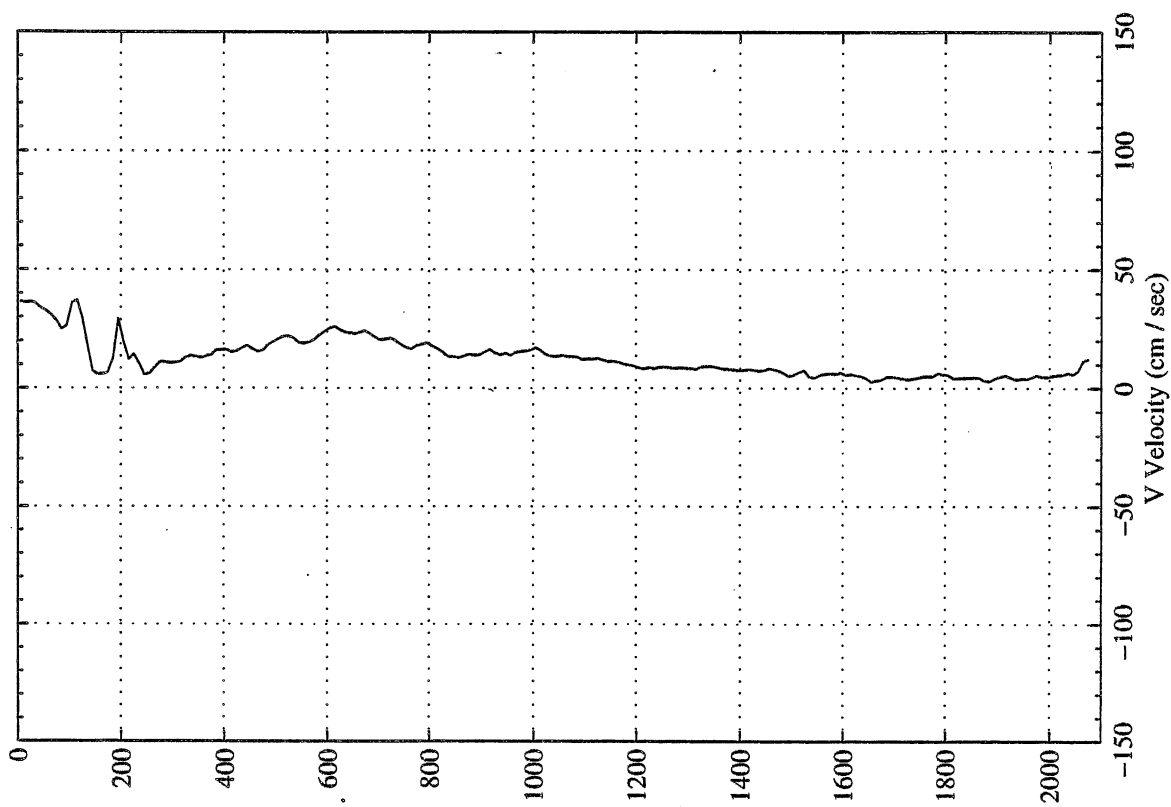
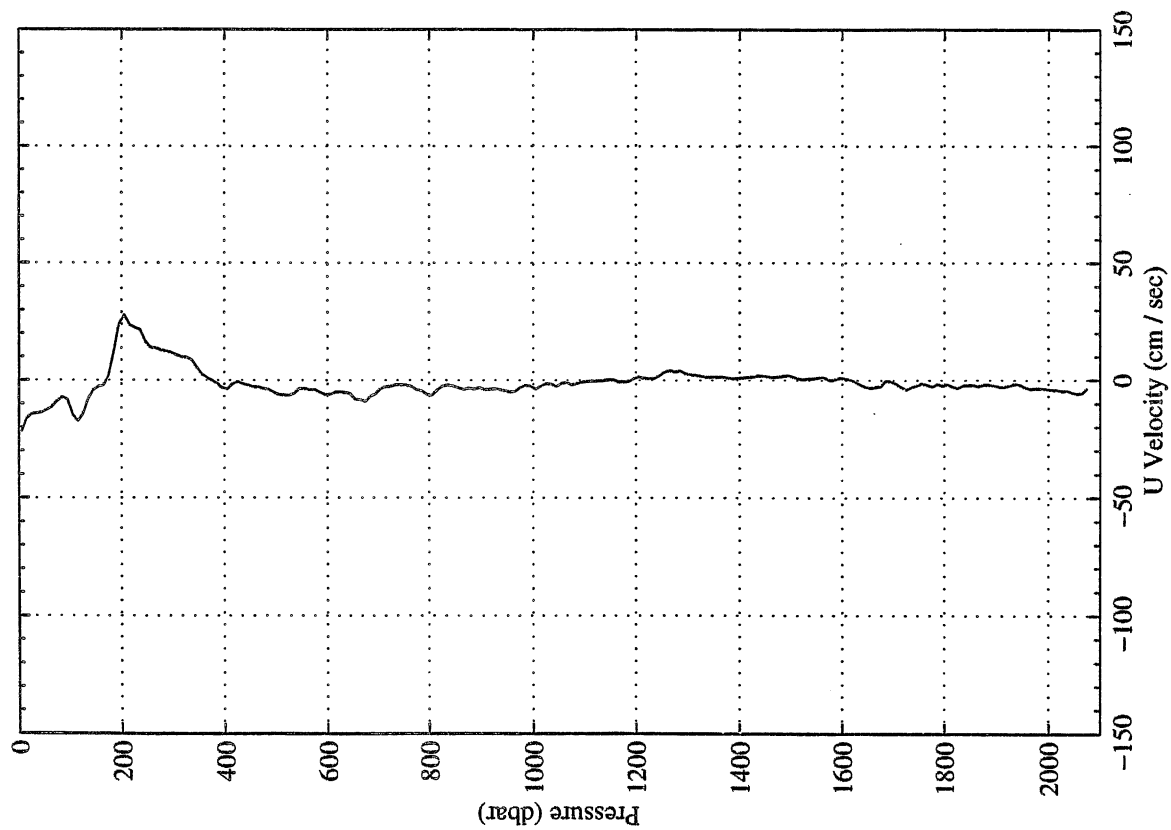
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LADCP Station 31 (99031)
Latitude 8.154 N Longitude 54.038 W
16-Feb-1999 05:27 Z



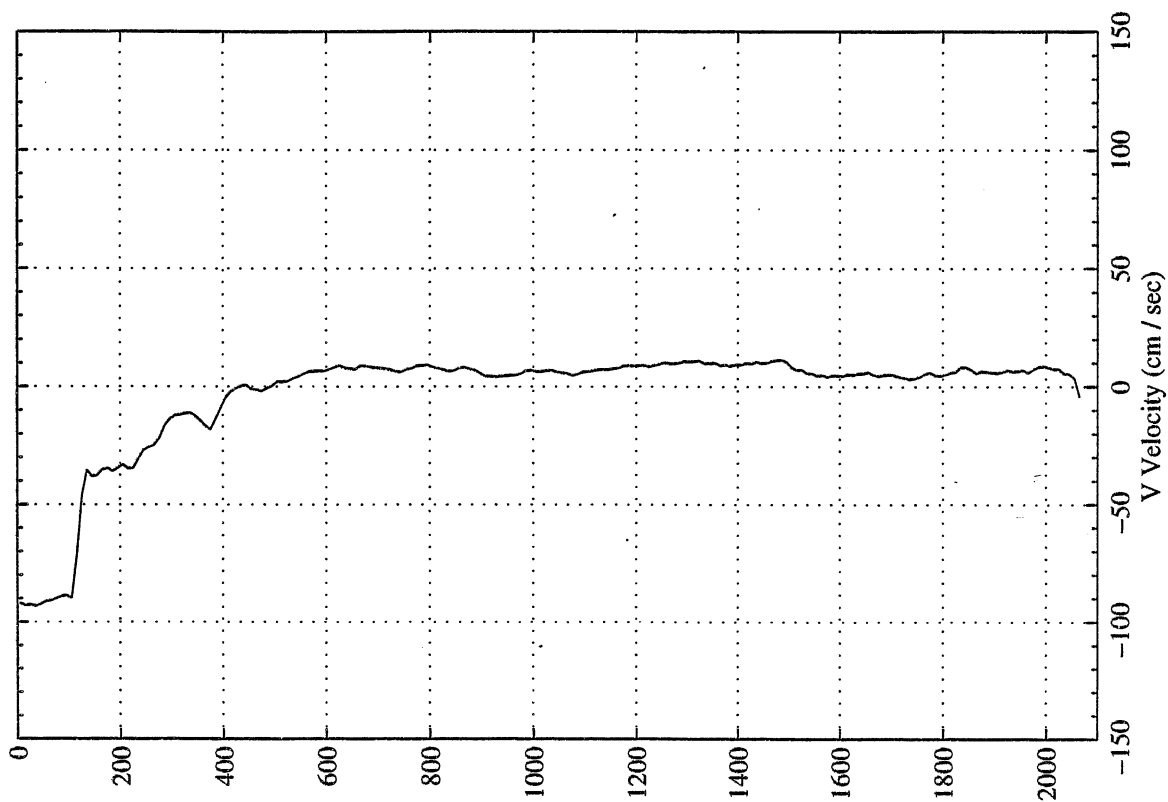
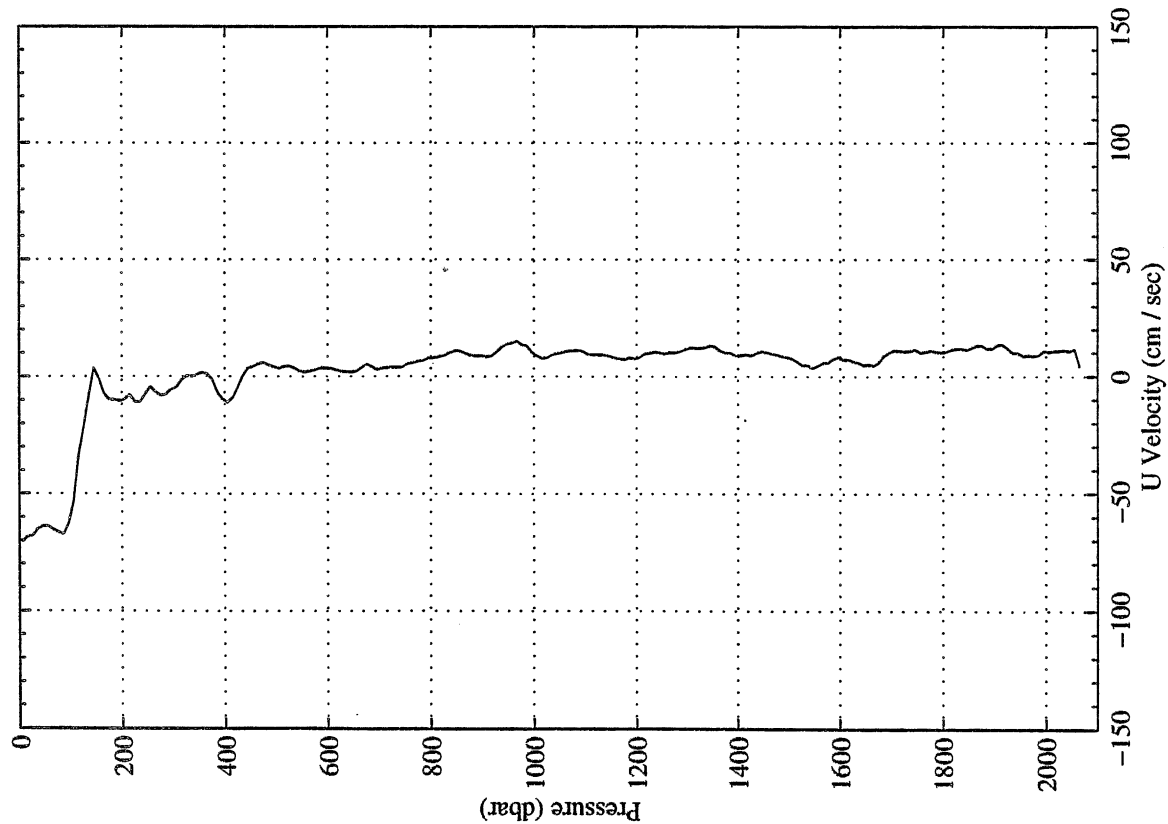
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LADCP Station 32 (99032)
Latitude 9.764 N Longitude 53.768 W
16-Feb-1999 14:03 Z



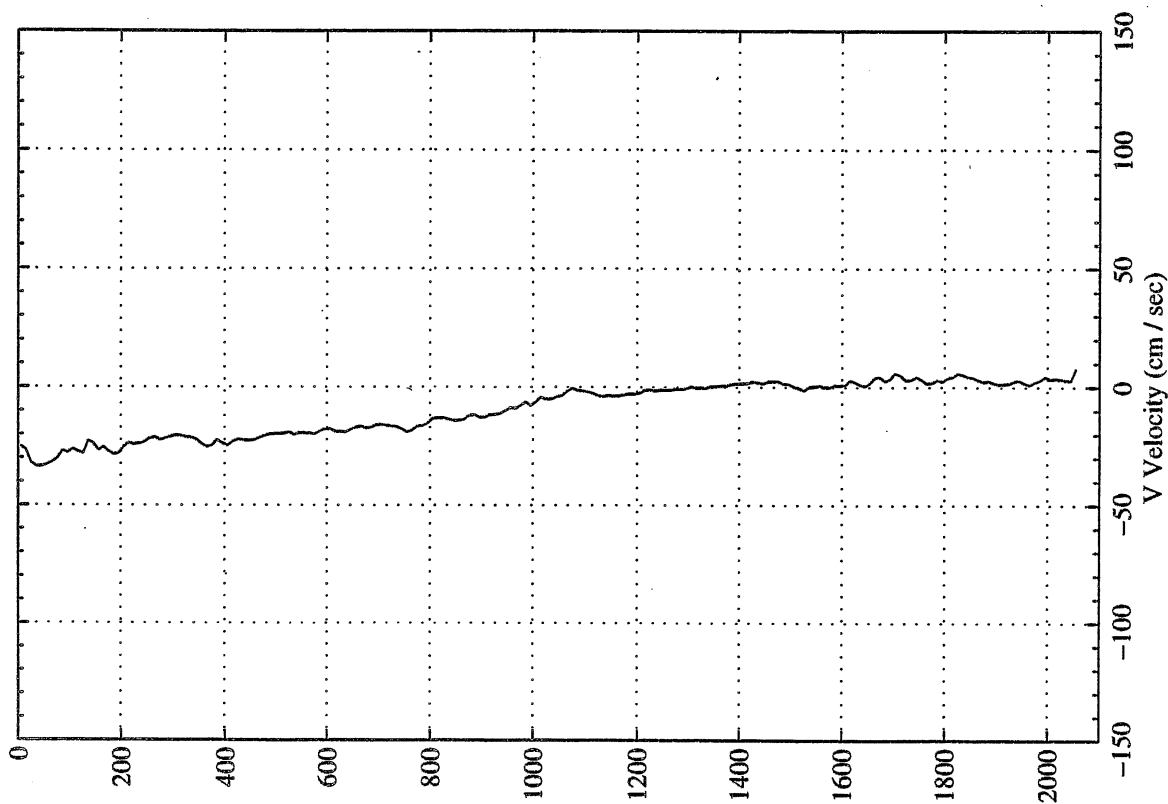
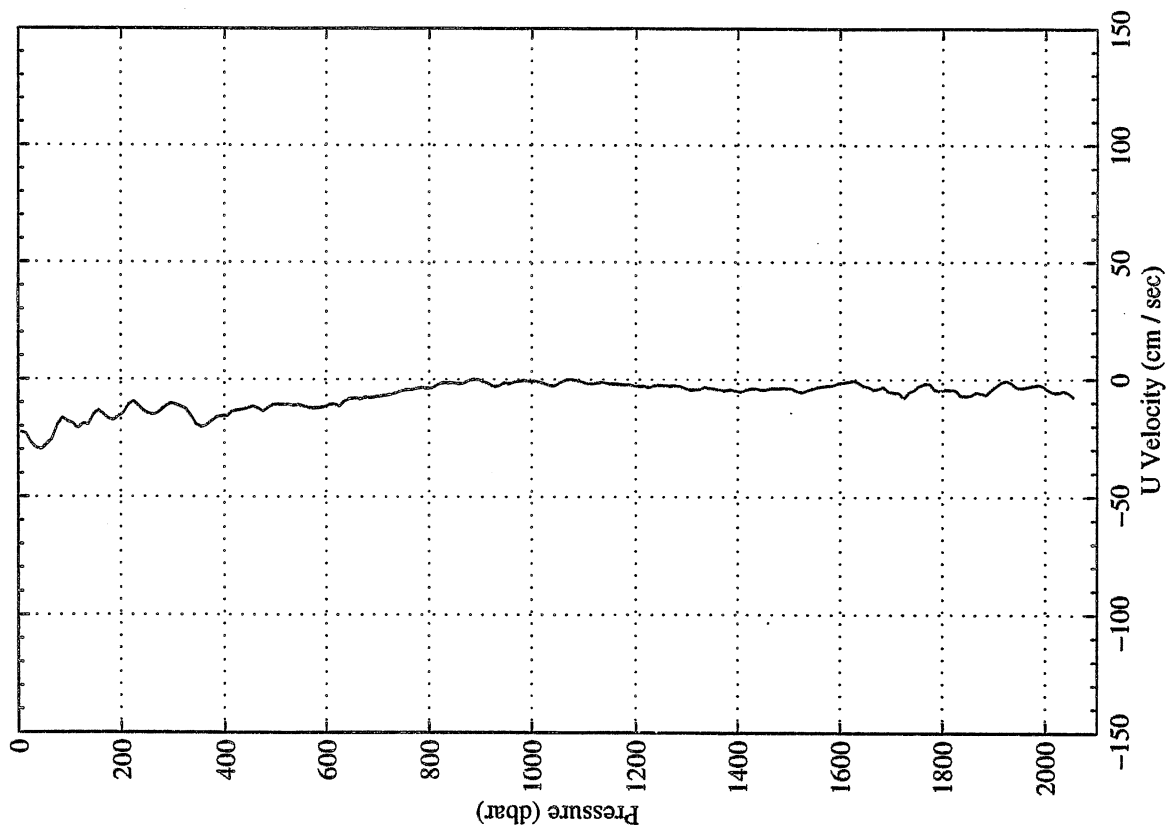
NBC-2 R/V SEWARD JOHNSON
LADCP Station 33 (99033)
Latitude 9.012 N Longitude 52.754 W
16-Feb-1999 23:03 Z



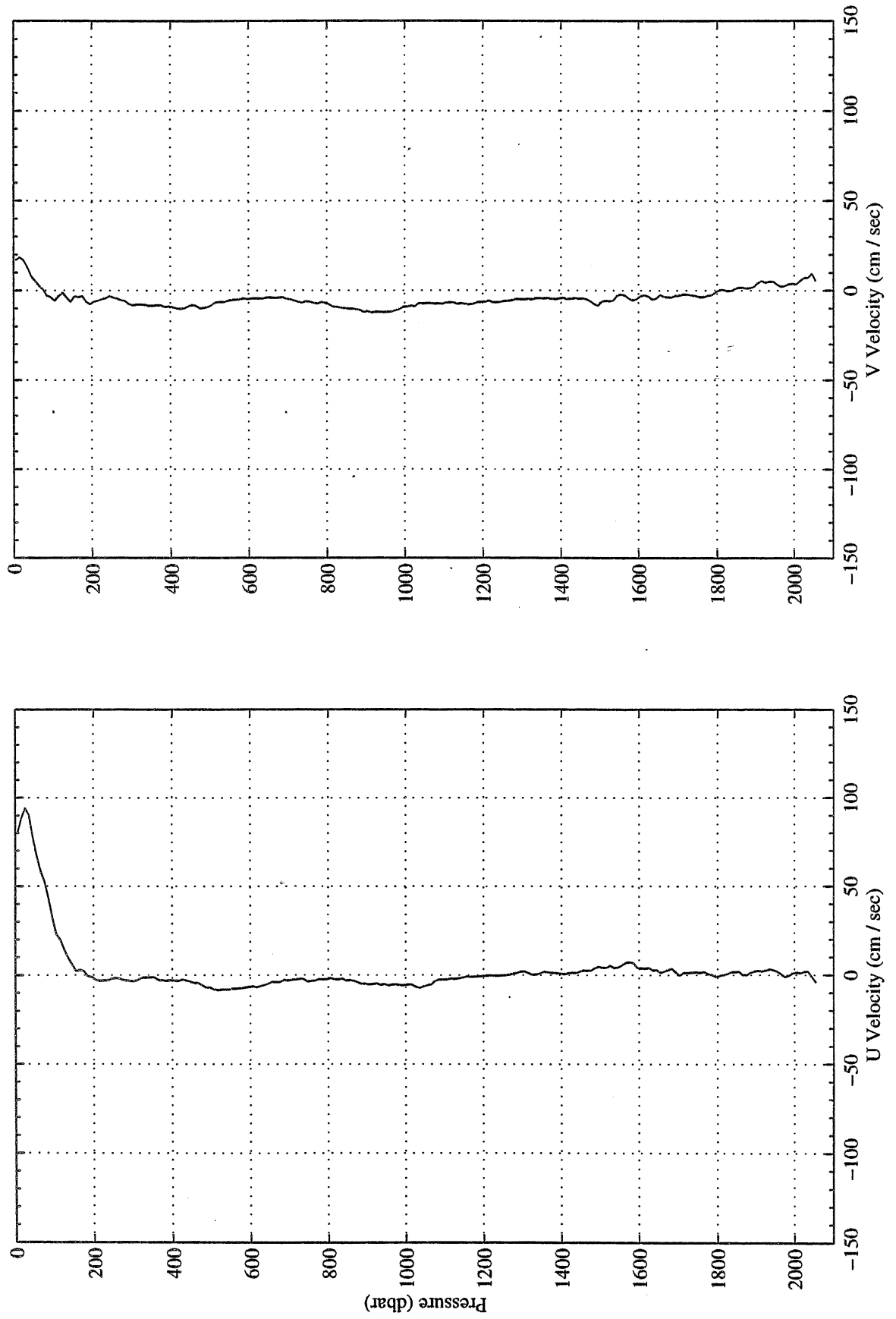
NBC-2 R/V SEWARD JOHNSON
LADCP Station 34 (99034)
Latitude 8.401 N Longitude 51.915 W
17-Feb-1999 06:25 Z



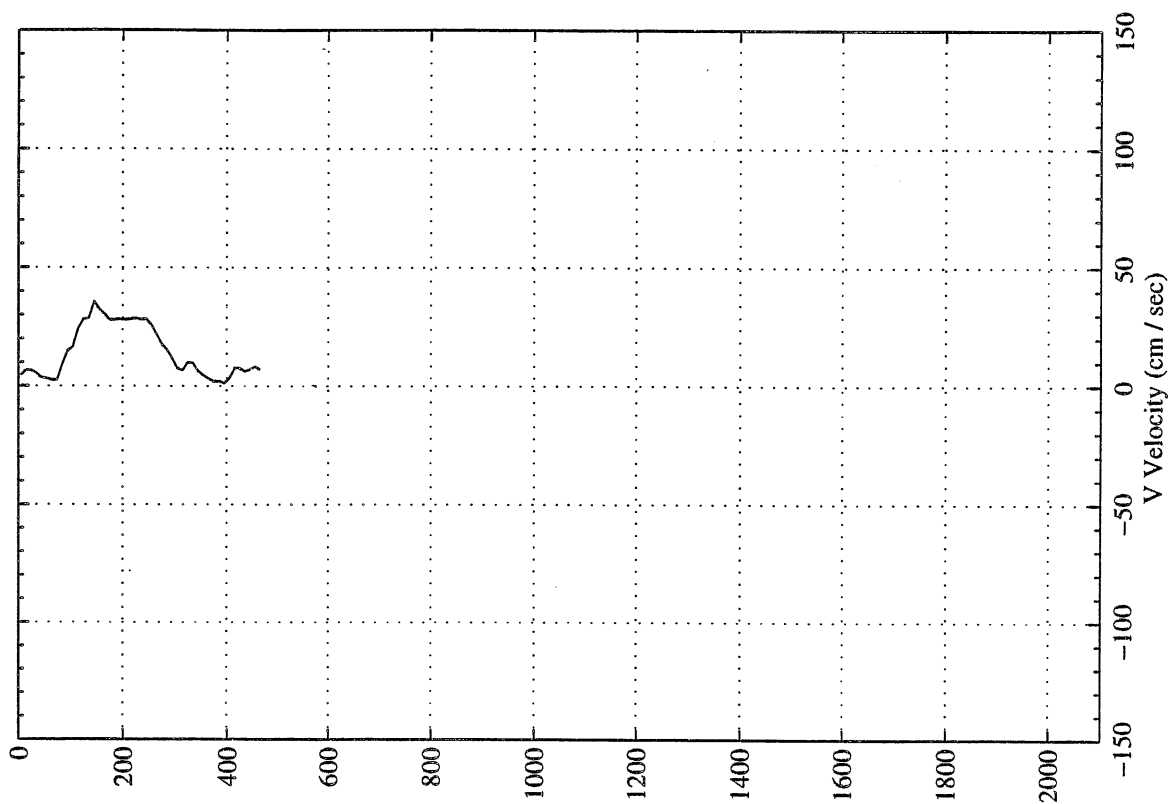
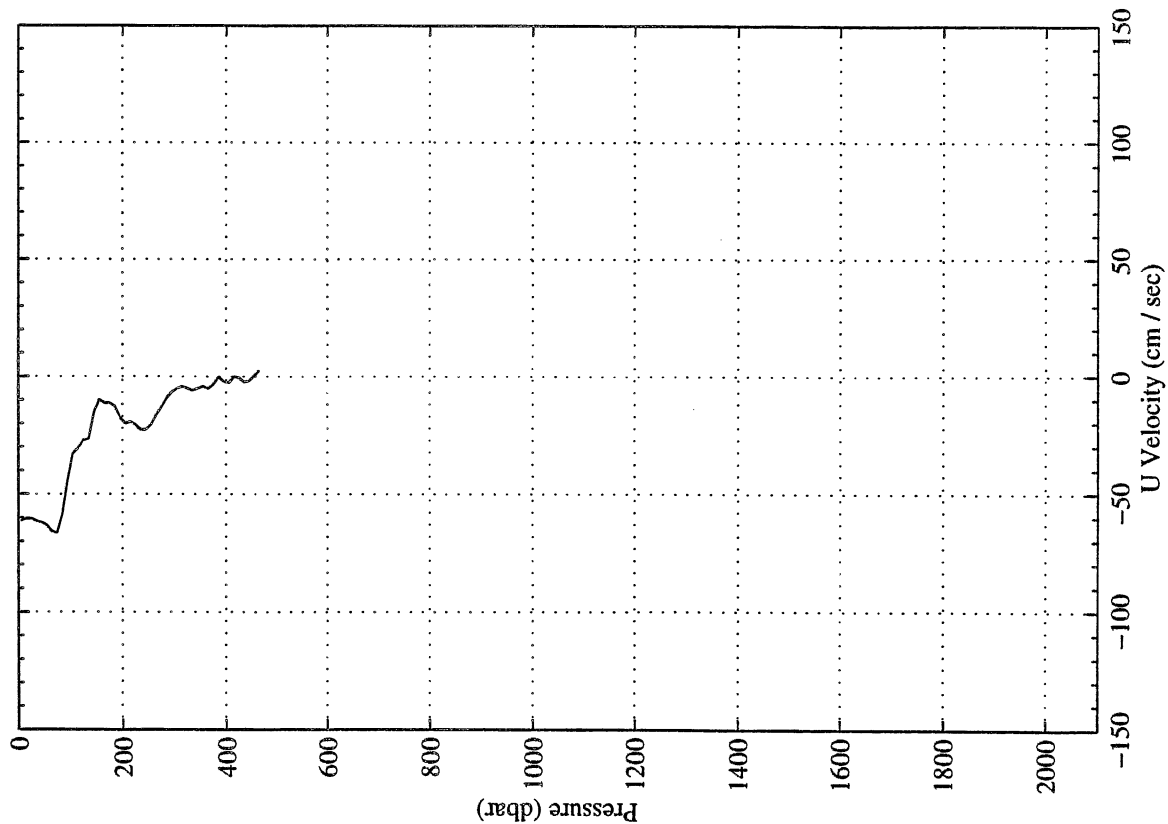
NBC-2 R/V SEWARD JOHNSON
LADCP Station 35 (99035)
Latitude 7.797 N Longitude 51.153 W
17-Feb-1999 13:02 Z



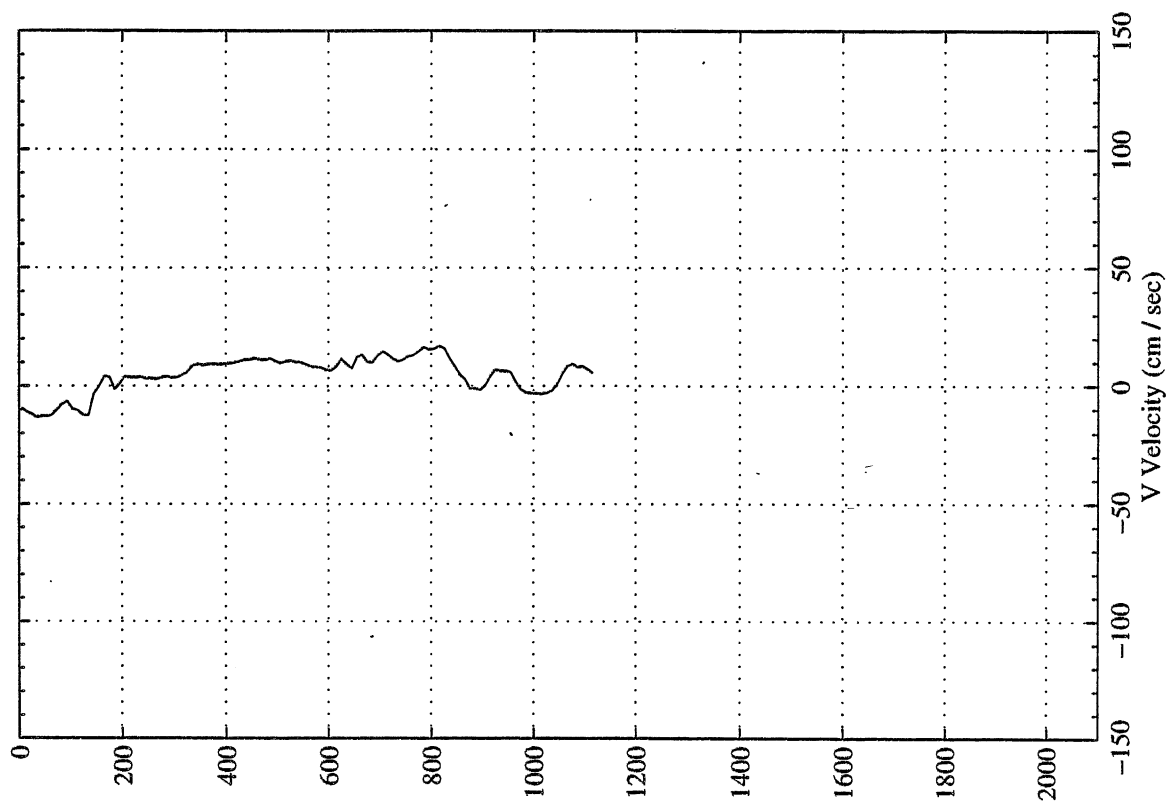
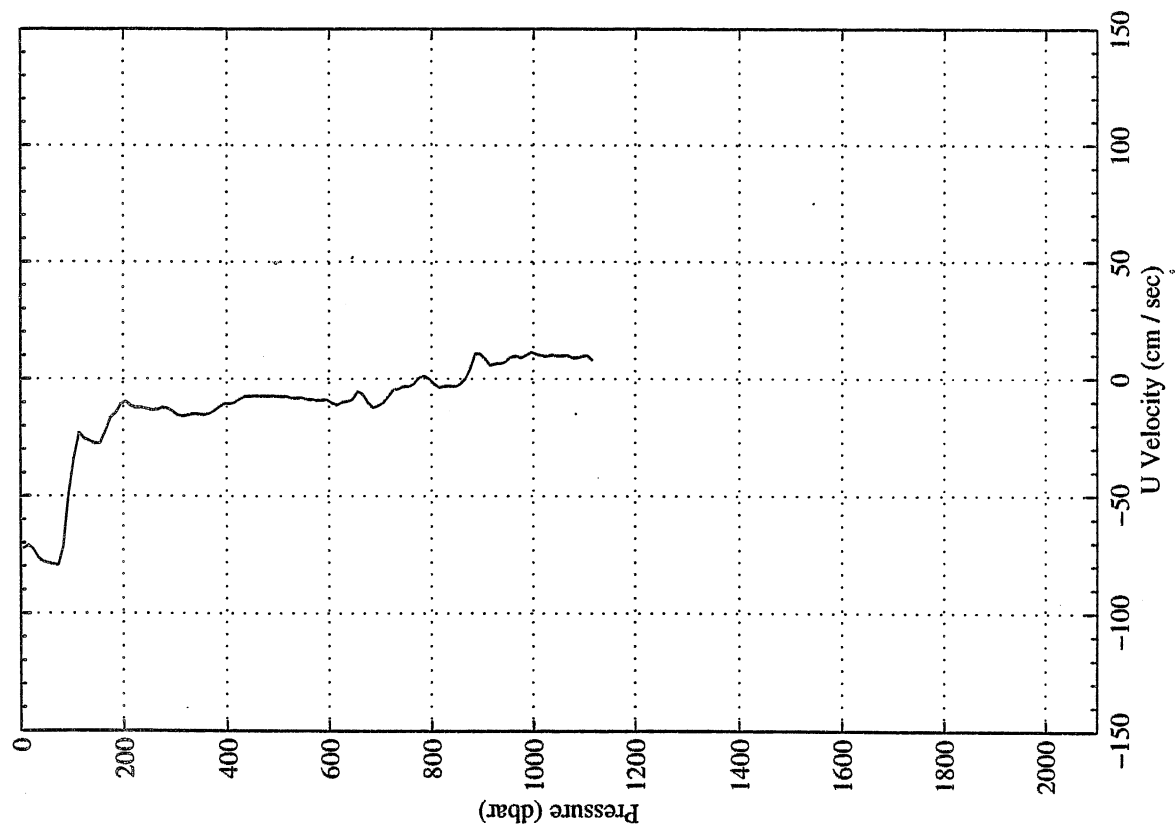
NBC-2 R/V SEWARD JOHNSON
LADCP Station 36 (99036)
Latitude 7.005 N Longitude 49.987 W
17-Feb-1999 21:57 Z



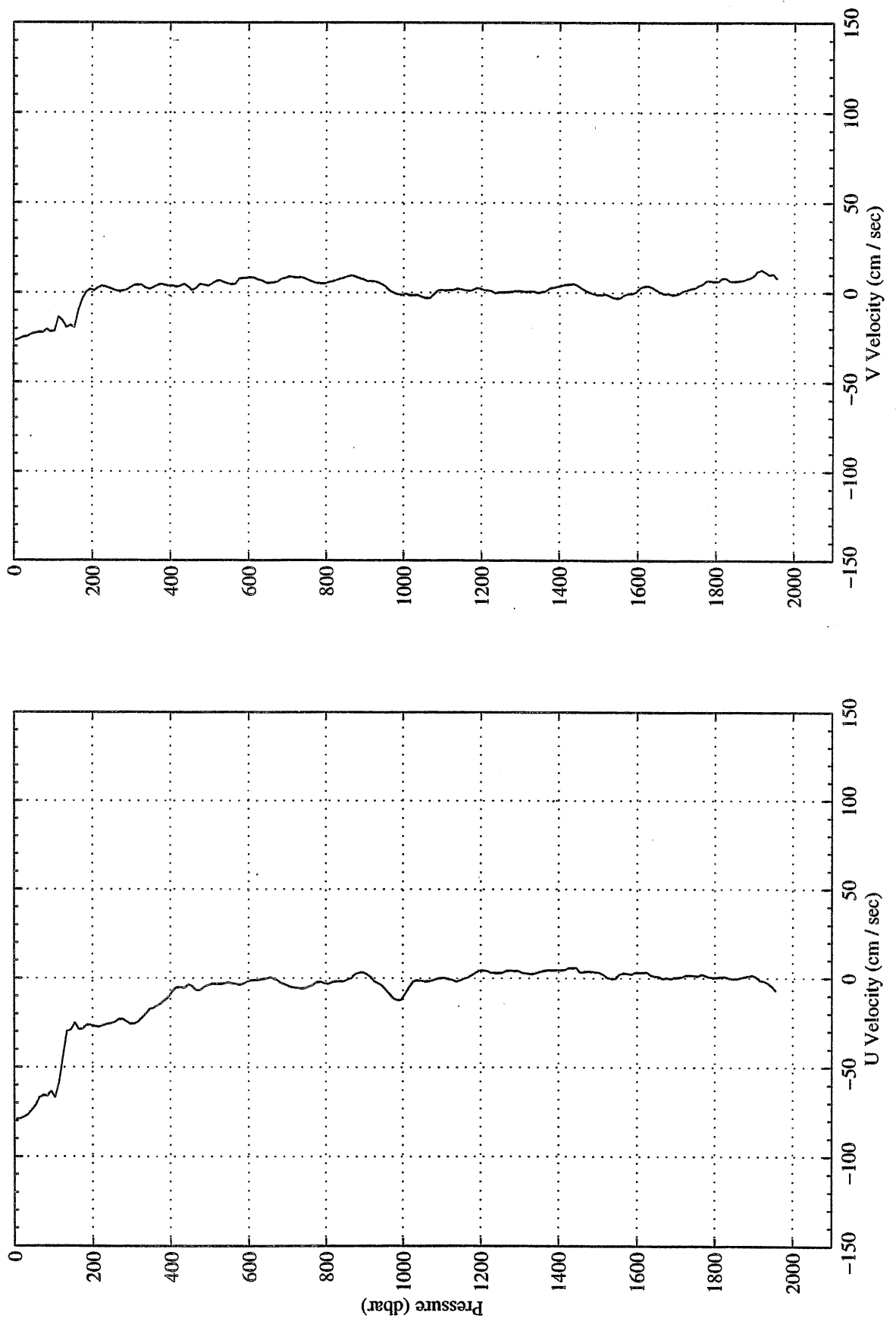
NBC-2 R/V SEWARD JOHNSON
LADCP Station 37 (99037)
Latitude 7.119 N Longitude 52.838 W
18-Feb-1999 13:53 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 38 (99038)
Latitude 7.504 N Longitude 52.746 W
18-Feb-1999 16:52 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 39 (99039)
Latitude 7.920 N Longitude 52.674 W
18-Feb-1999 22:43 Z

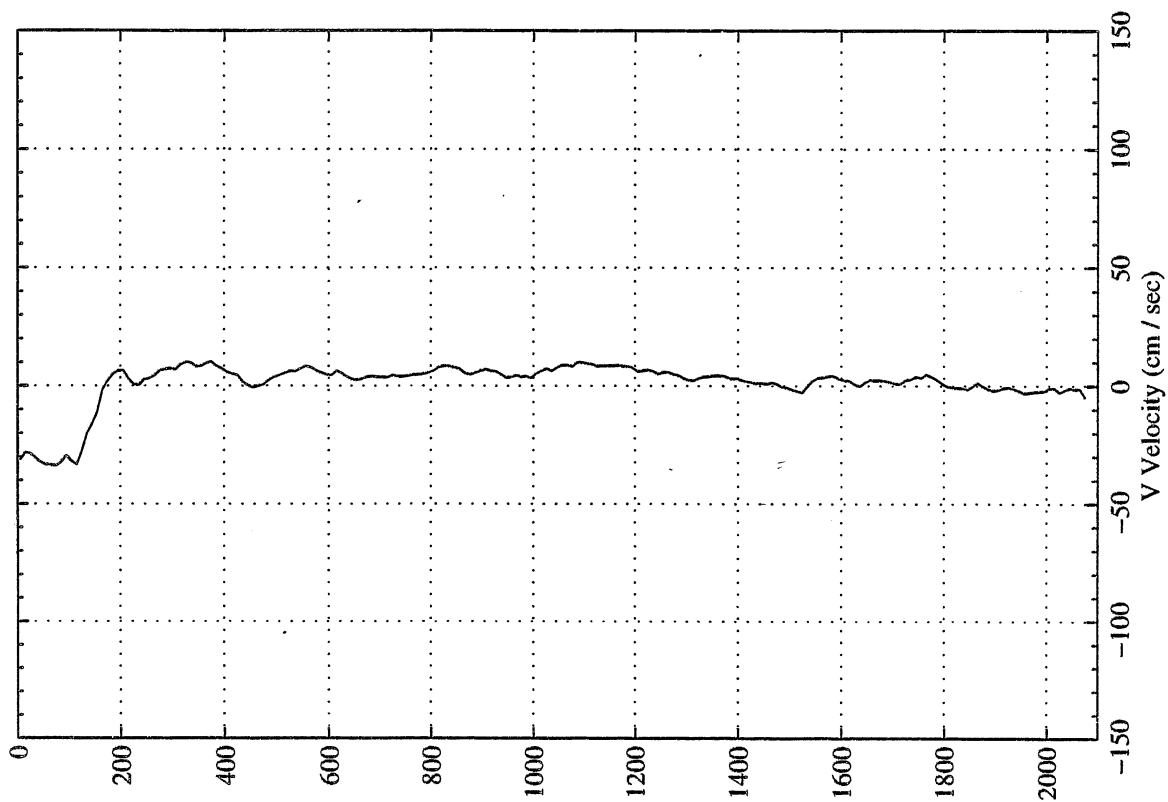
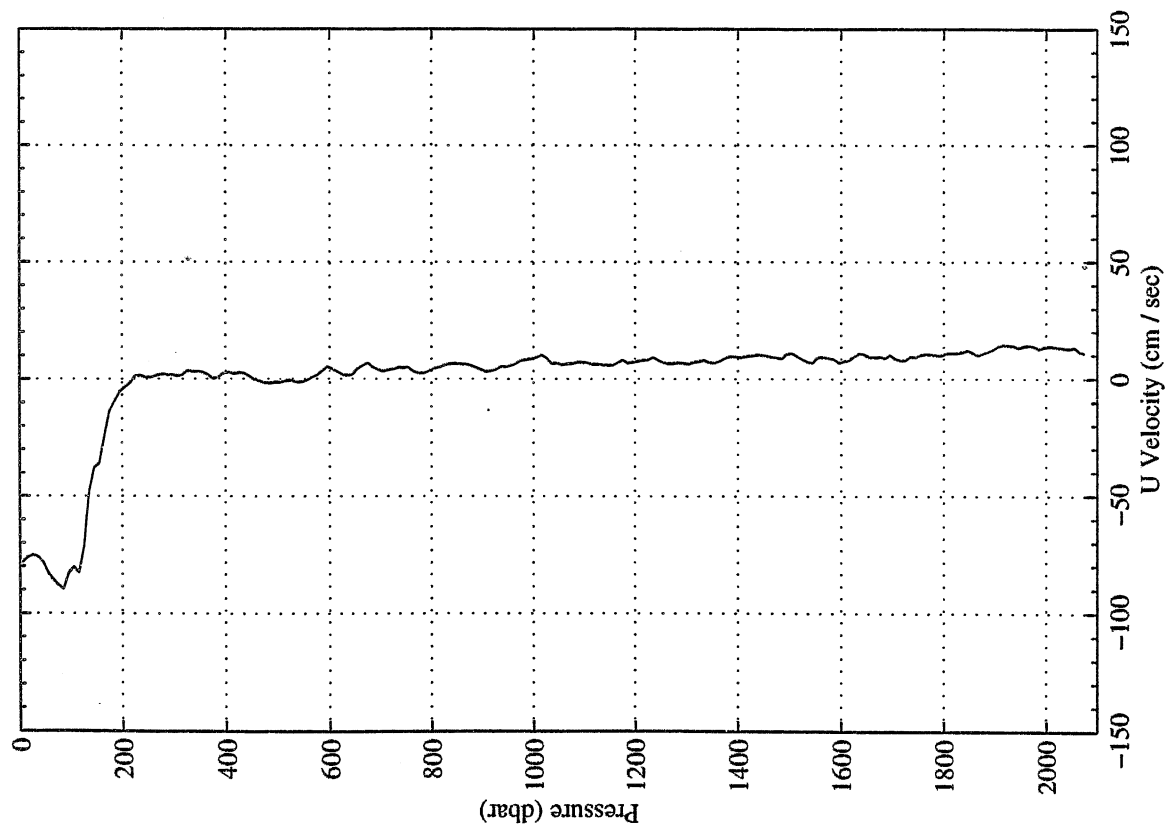


NBC-2 R/V SEWARD JOHNSON

LADCP Station 40 (99040)

Latitude 8.355 N Longitude 52.574 W

19-Feb-1999 03:01 Z

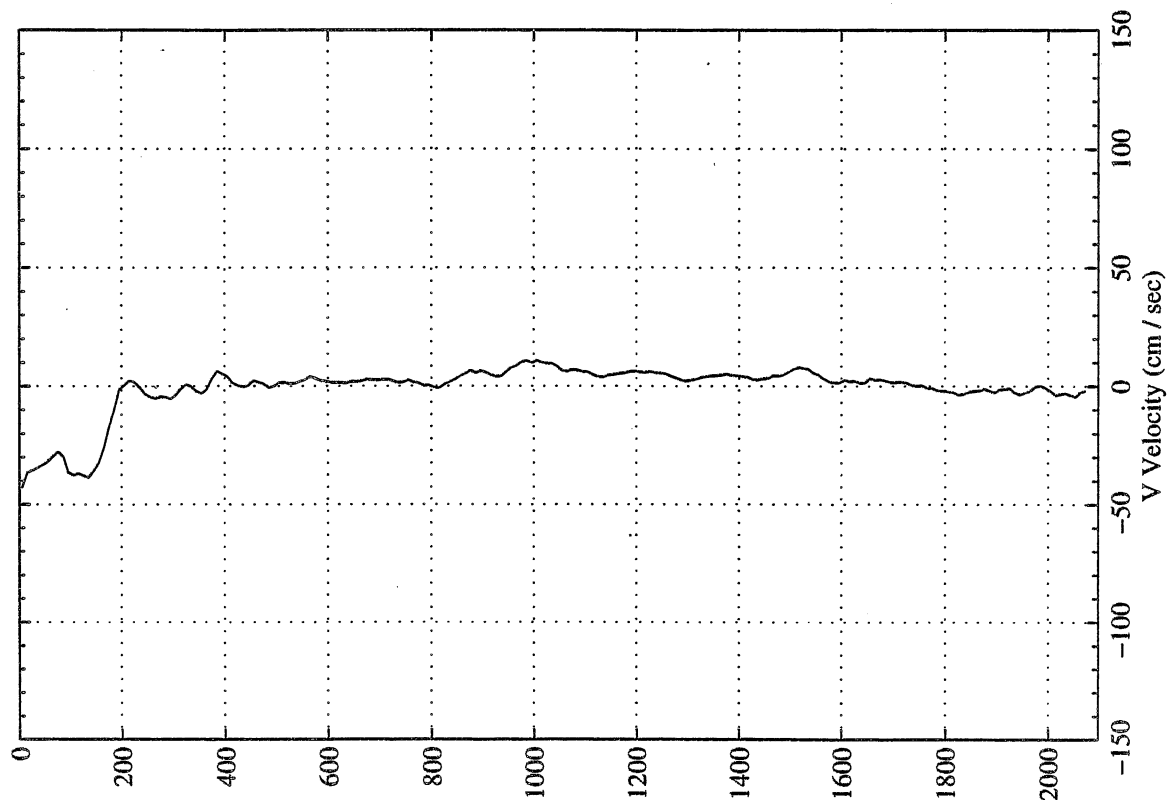
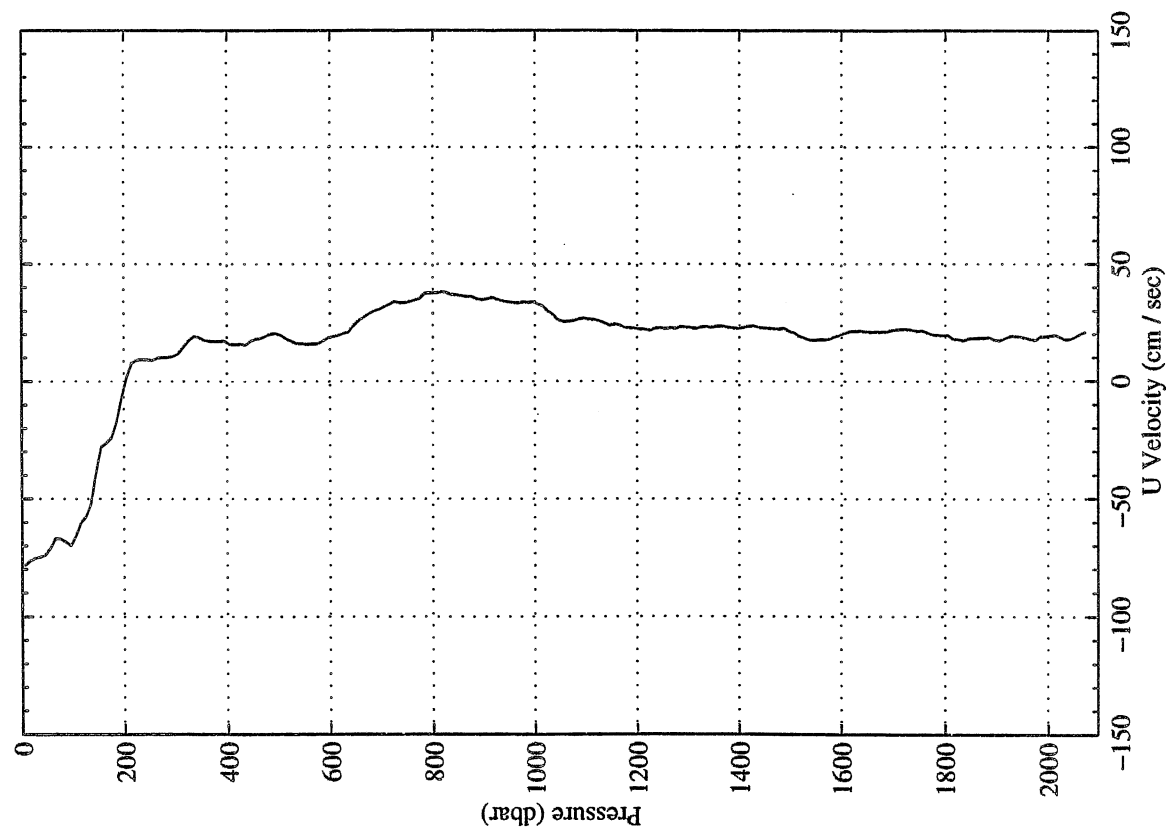


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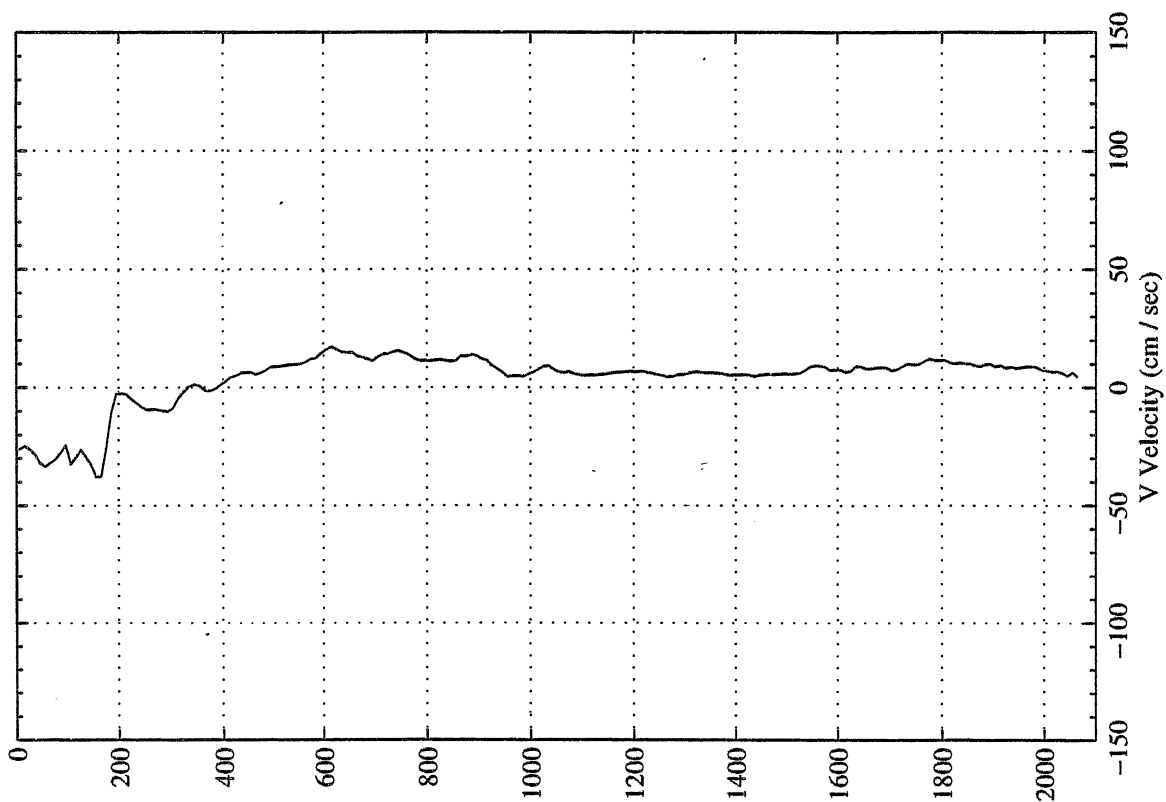
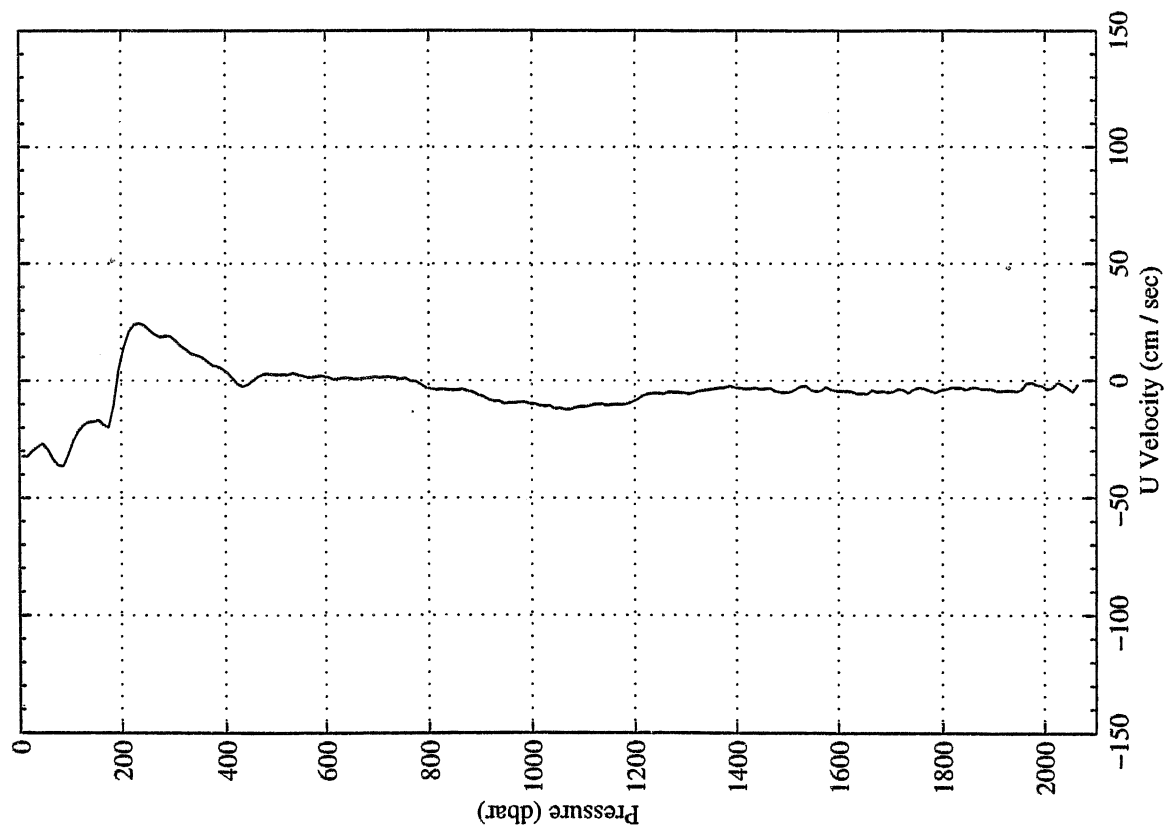
LADCP Station 41 (99041)

Latitude 8.781 N Longitude 52.482 W

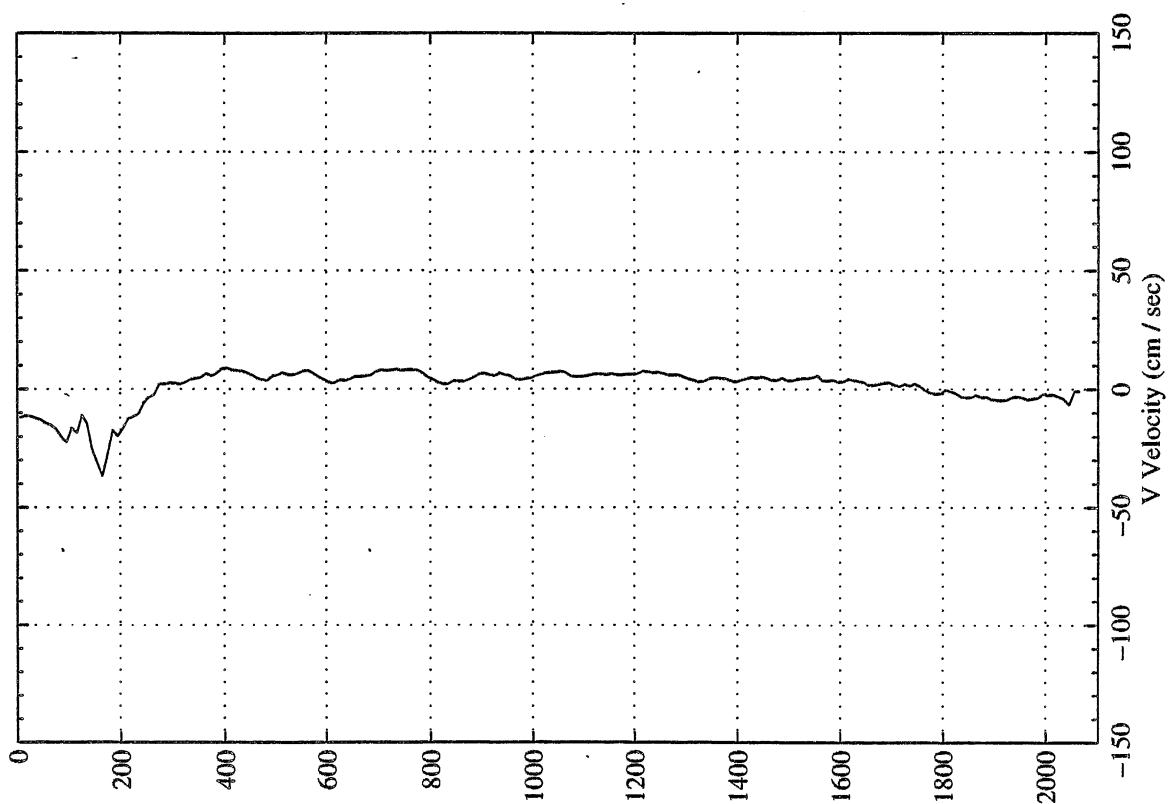
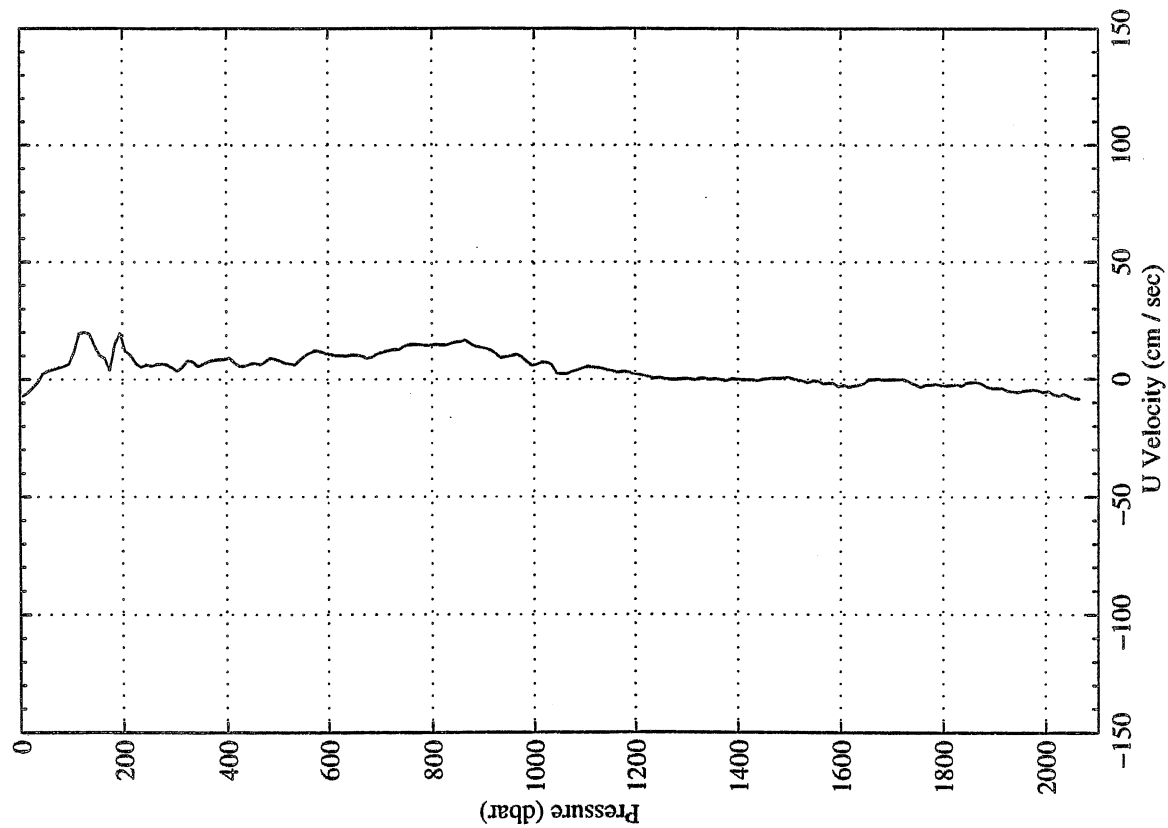
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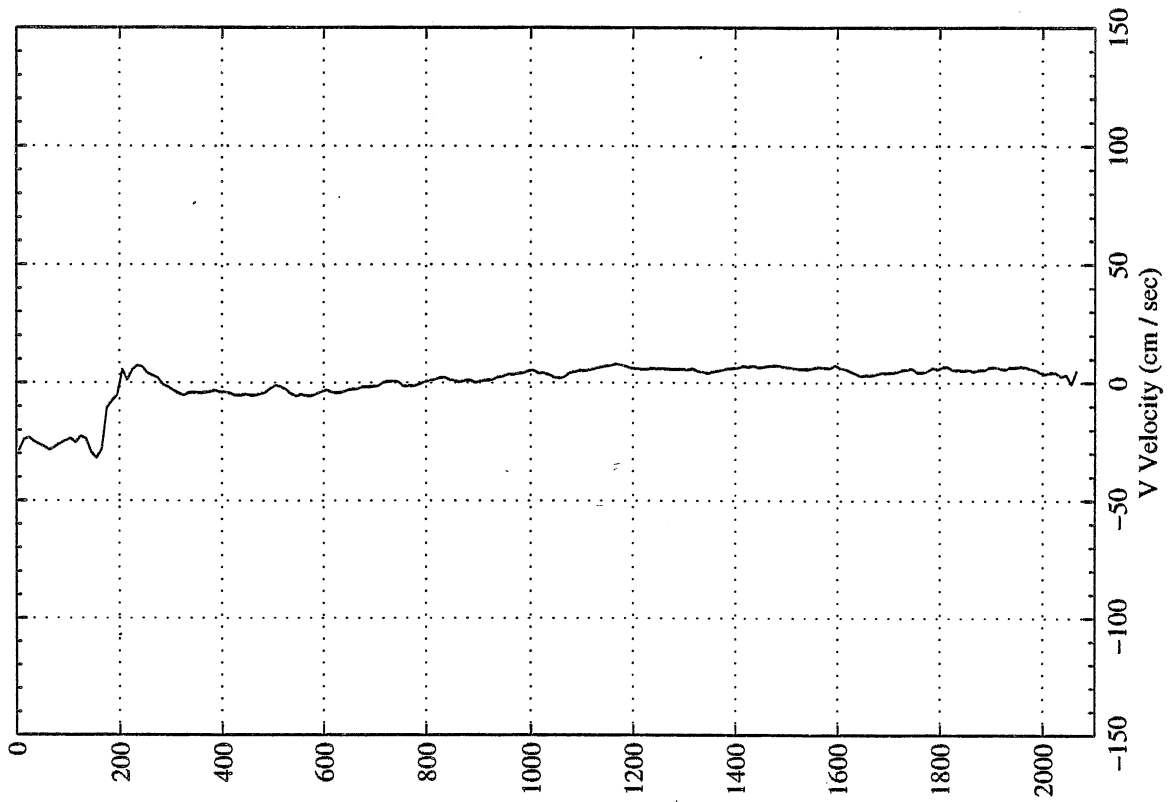
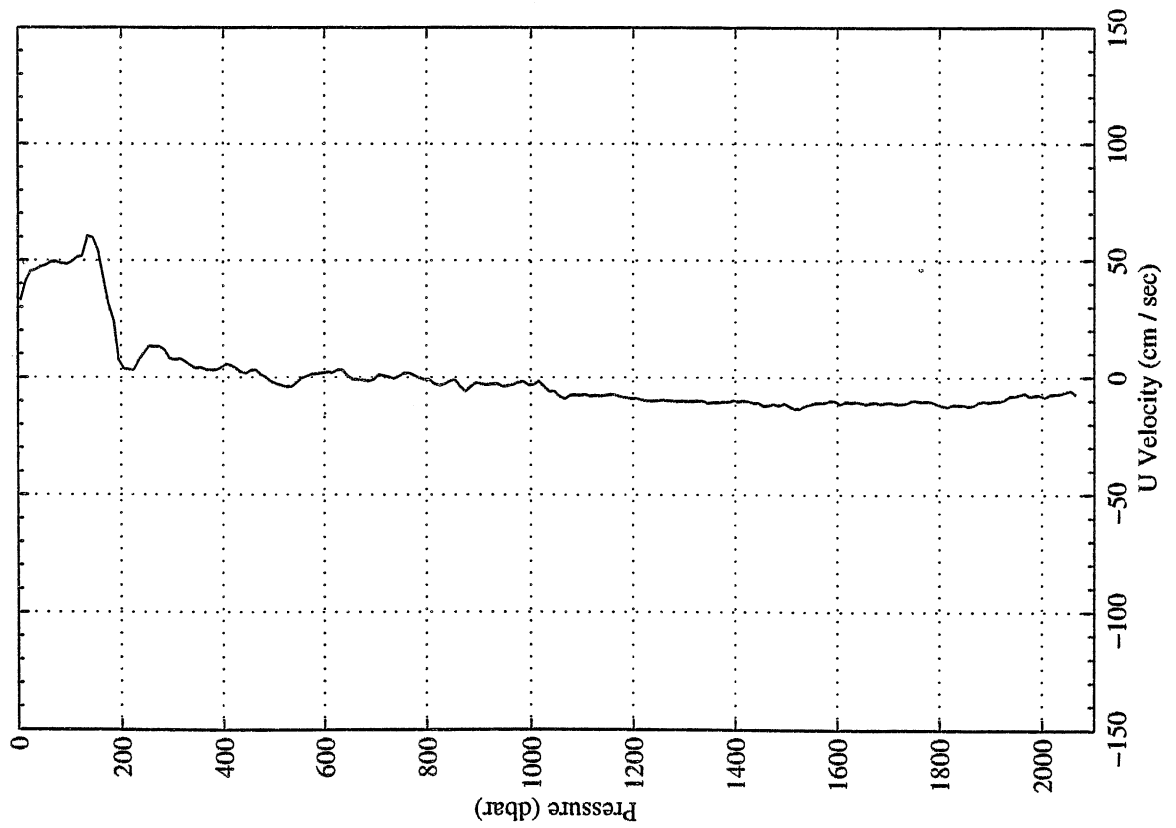
NBC-2 R/V SEWARD JOHNSON
LADCP Station 42 (99042)
Latitude 9.199 N Longitude 52.407 W
19-Feb-1999 11:10 Z



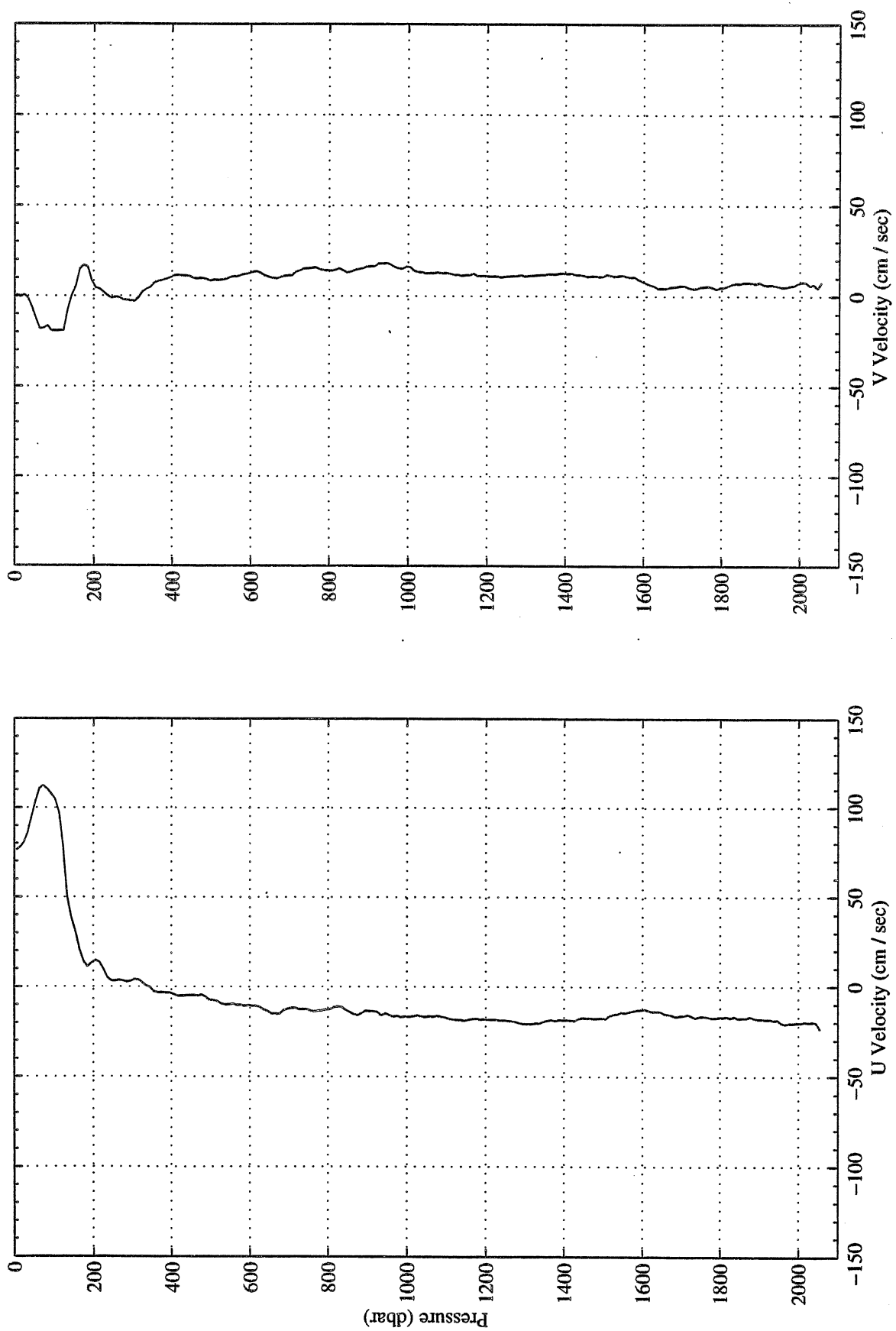
NBC-2 R/V SEWARD JOHNSON
 LADCP Station 43 (99043)
 Latitude 9.633 N Longitude 52.313 W
 19-Feb-1999 16:27 Z



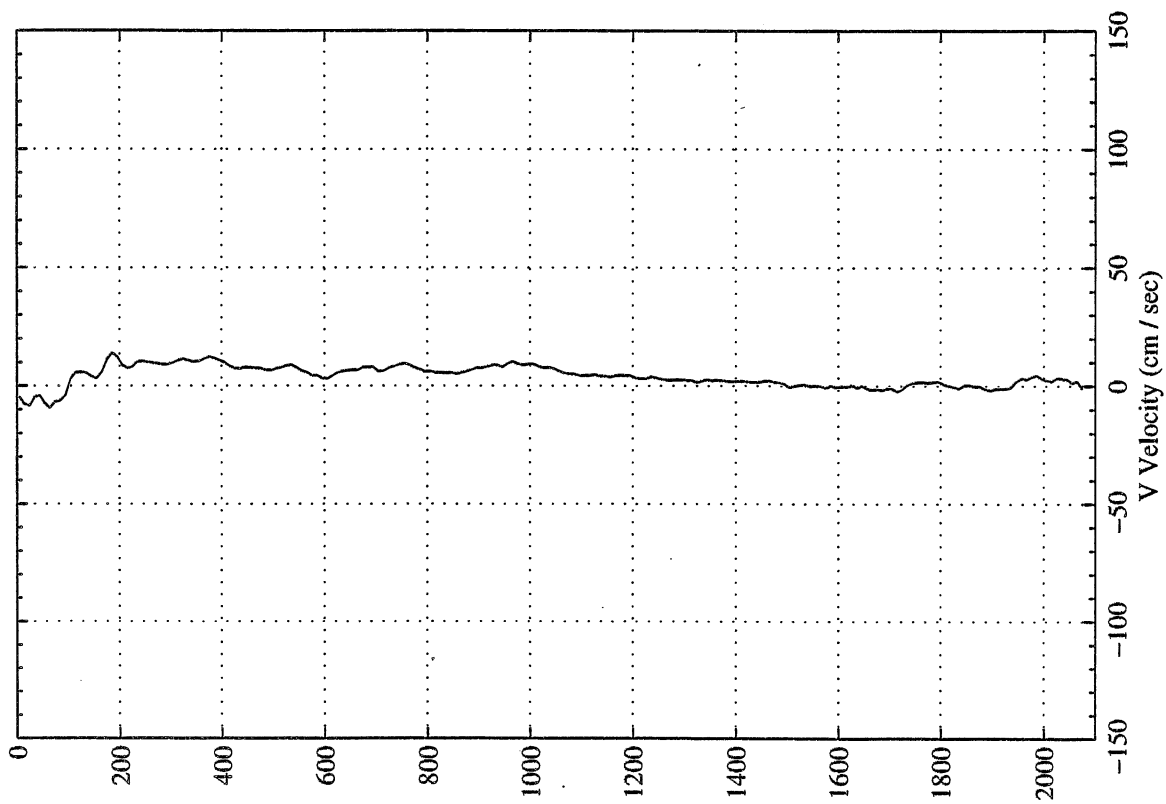
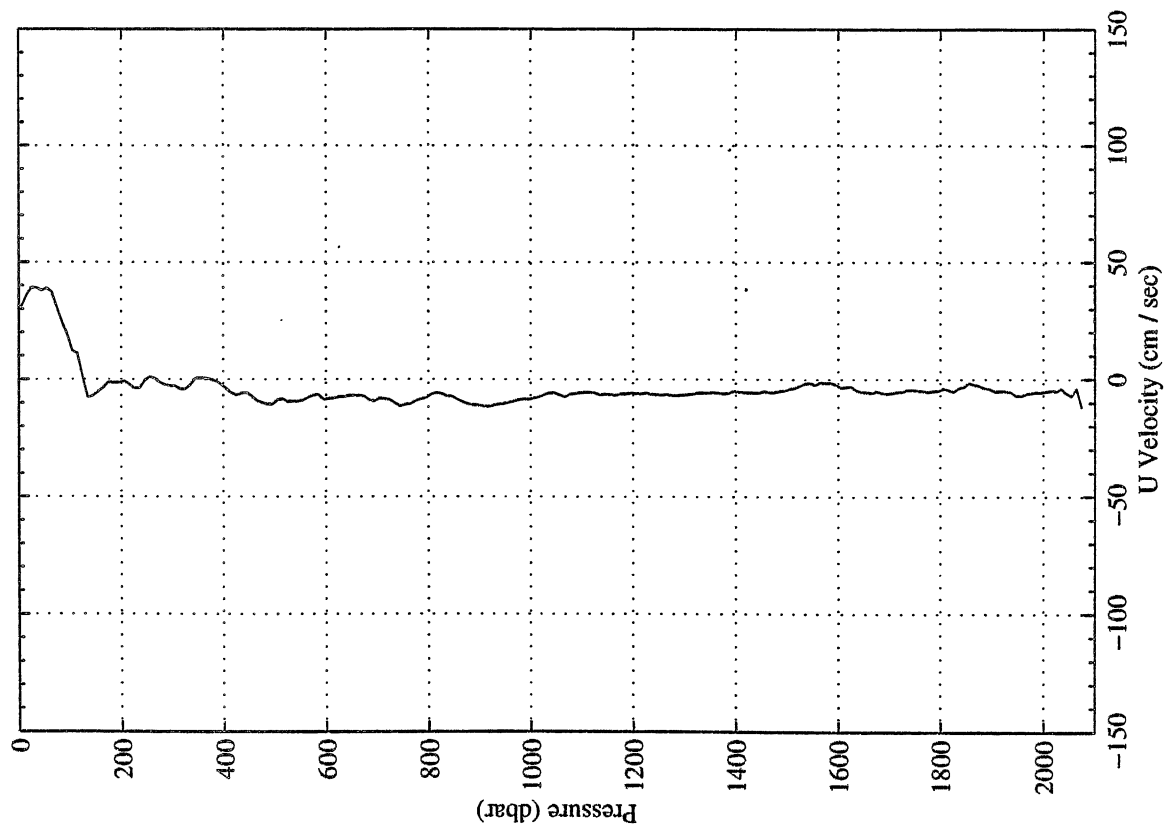
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LADCP Station 44 (99044)
Latitude 10.054 N Longitude 52.221 W
19-Feb-1999 20:25 Z



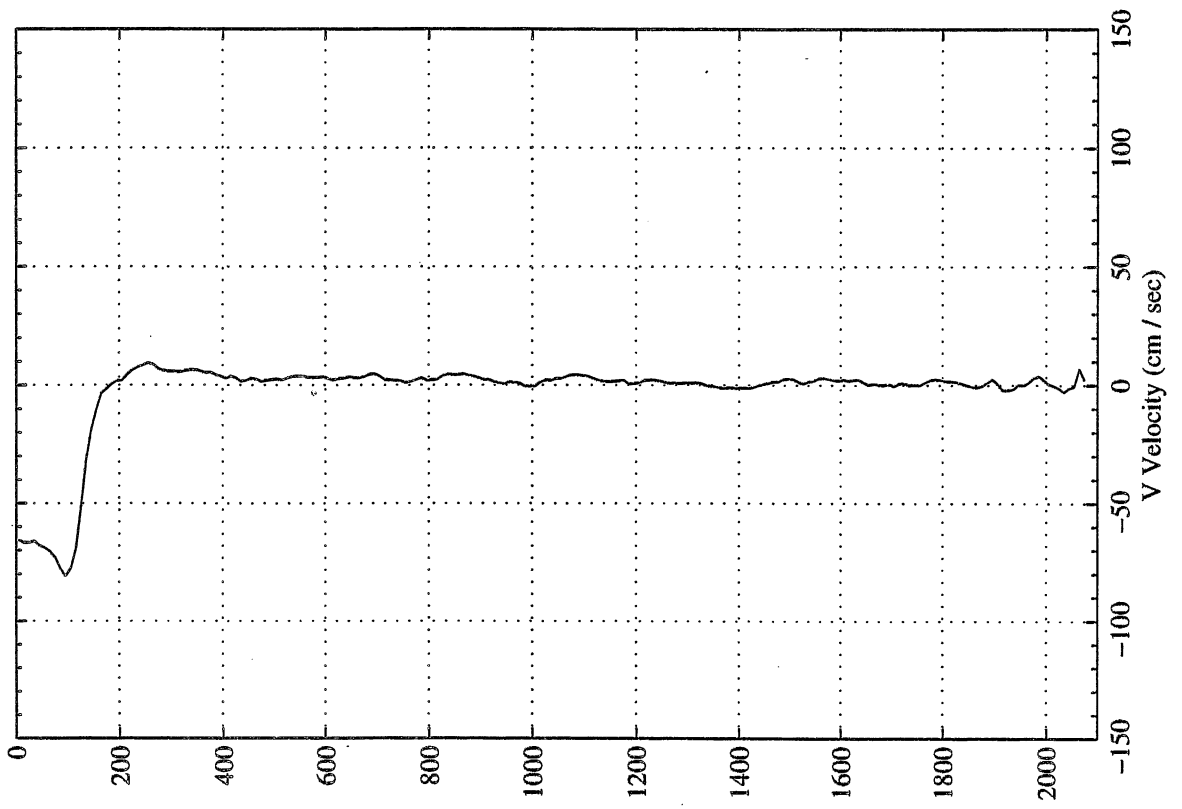
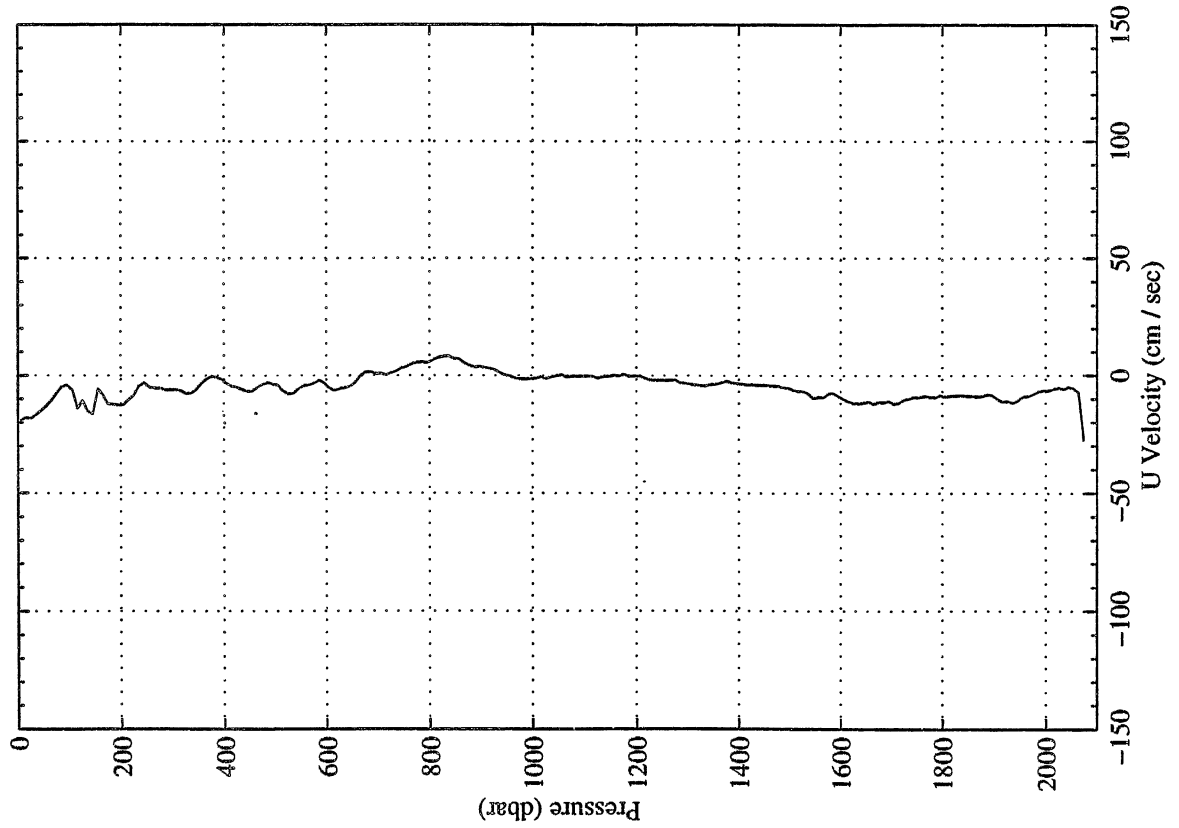
NBC-2 R/V SEWARD JOHNSON
LADCP Station 45 (99045)
Latitude 10.478 N Longitude 52.139 W
20-Feb-1999 00:30 Z



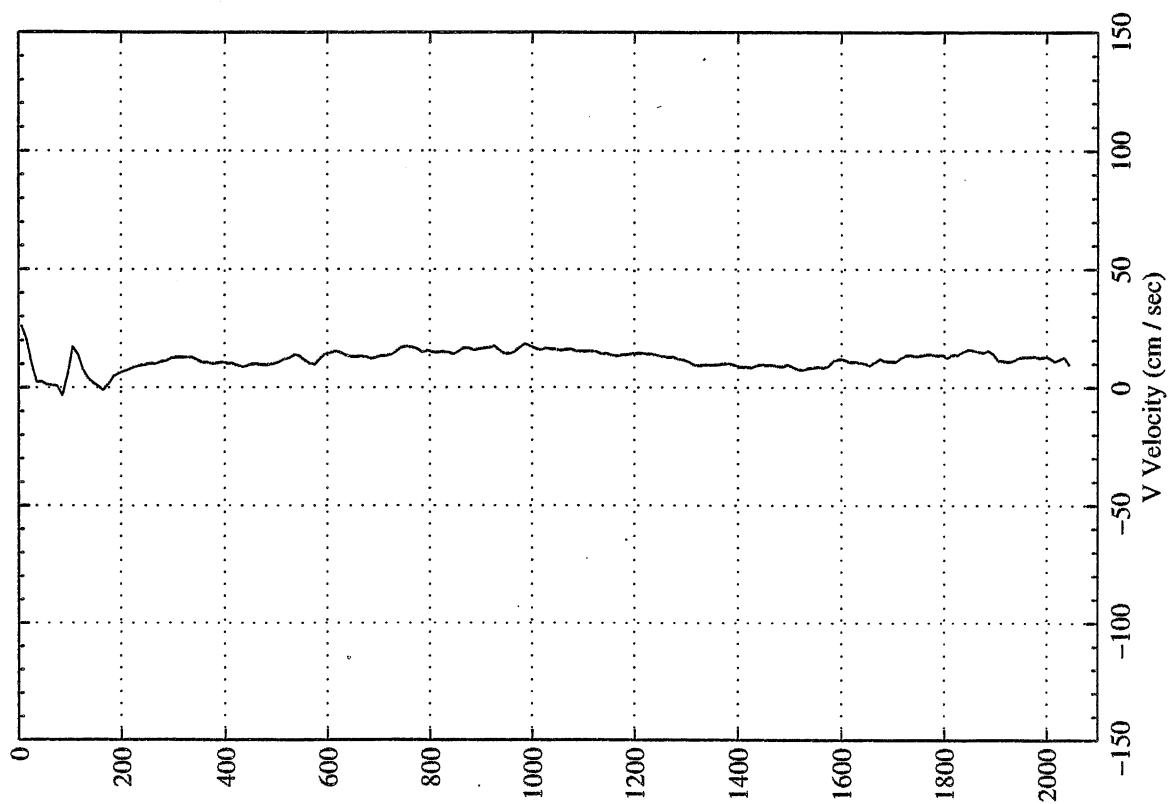
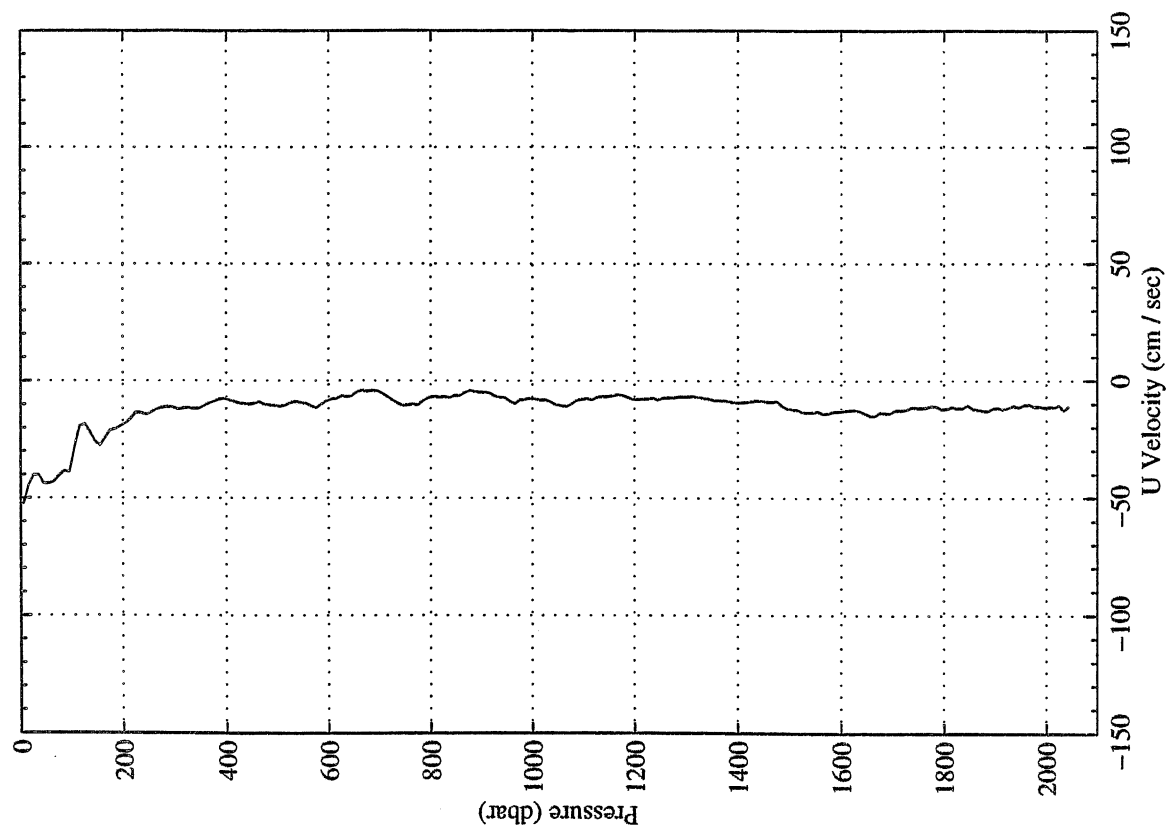
NBC-2 R/V SEWARD JOHNSON
LADCP Station 46 (99046)
Latitude 10.913 N Longitude 52.092 W
20-Feb-1999 04:43 Z



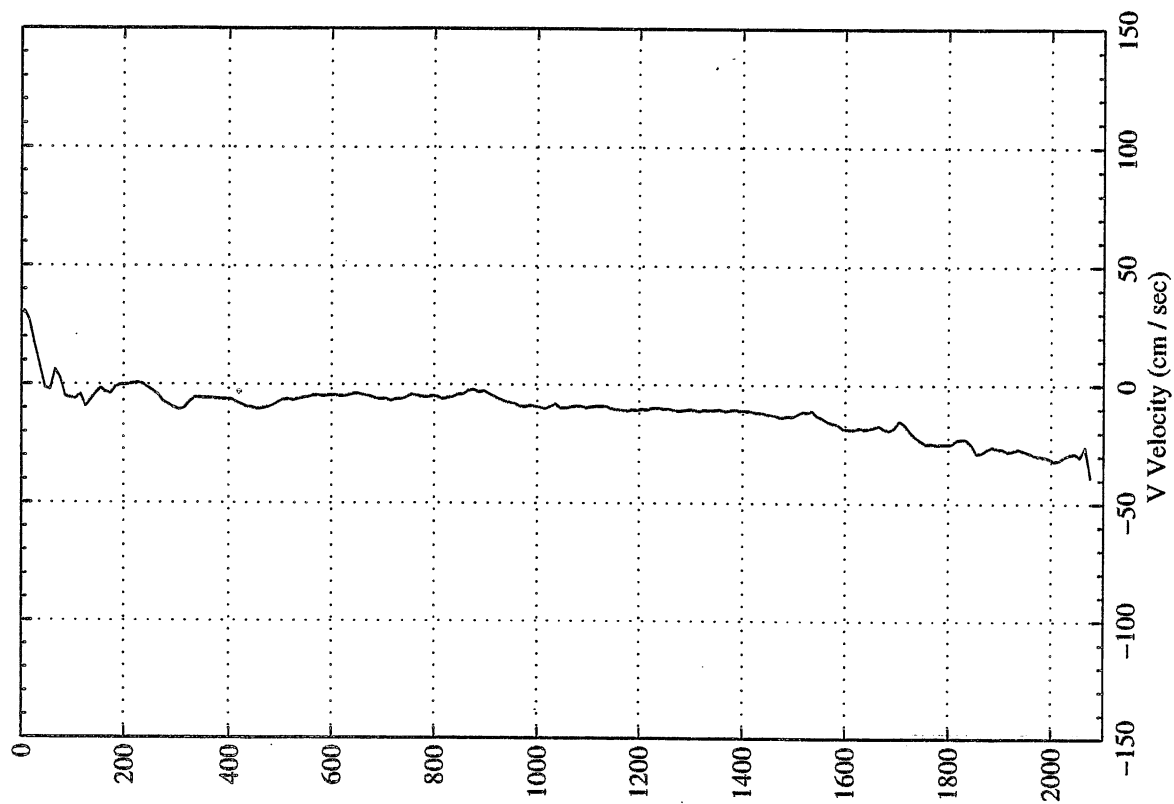
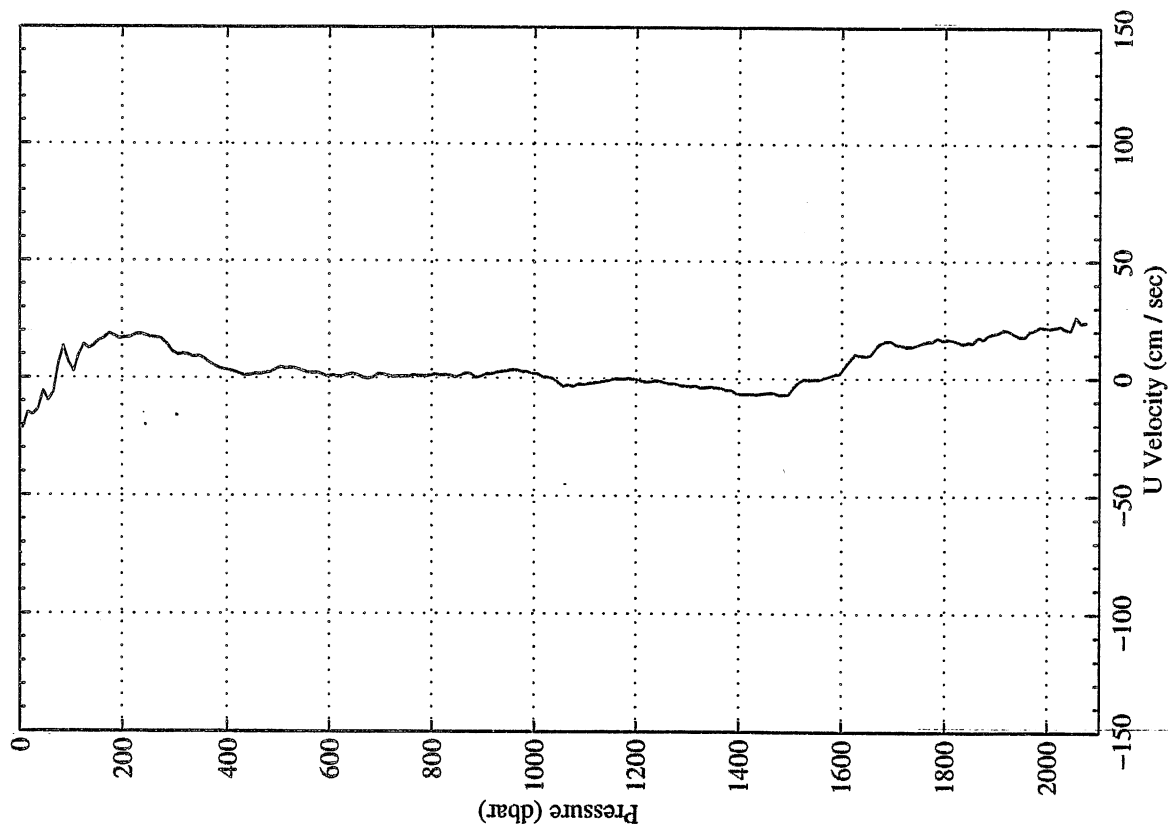
NBC-2 R/V SEWARD JOHNSON
LADCP Station 47 (99047)
Latitude 9.756 N Longitude 51.487 W
20-Feb-1999 12:53 Z



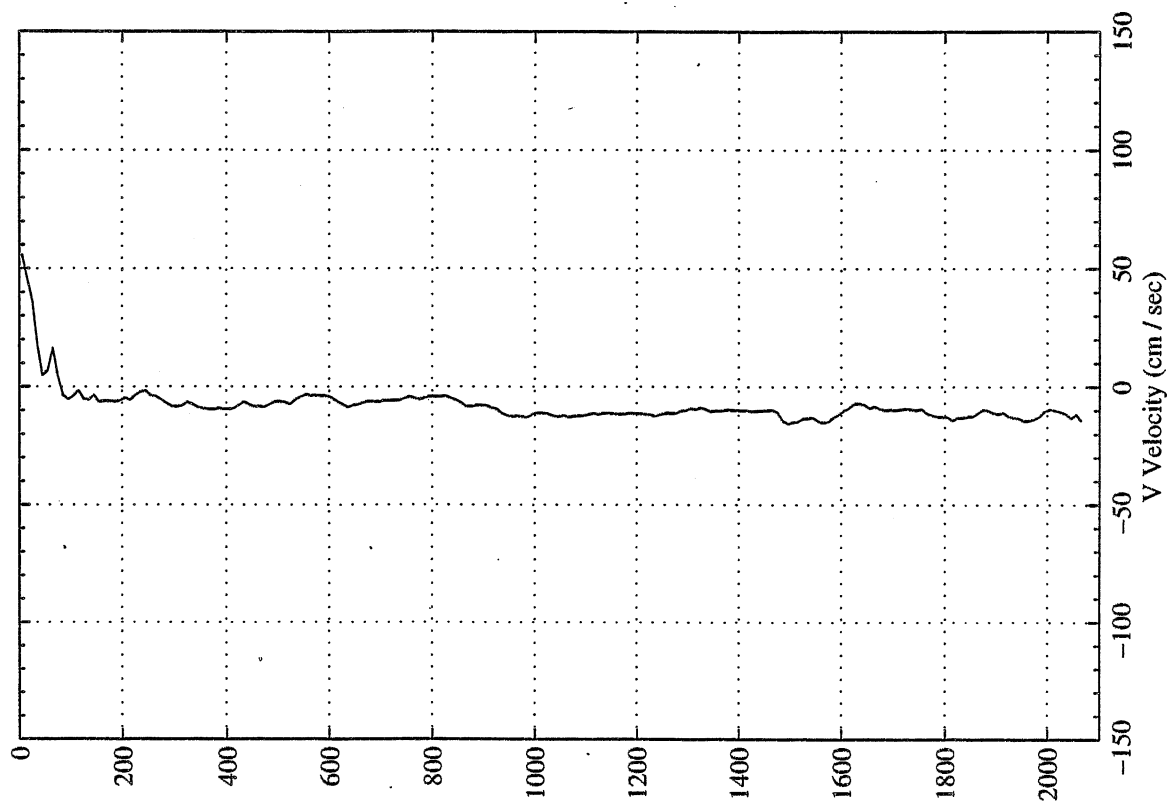
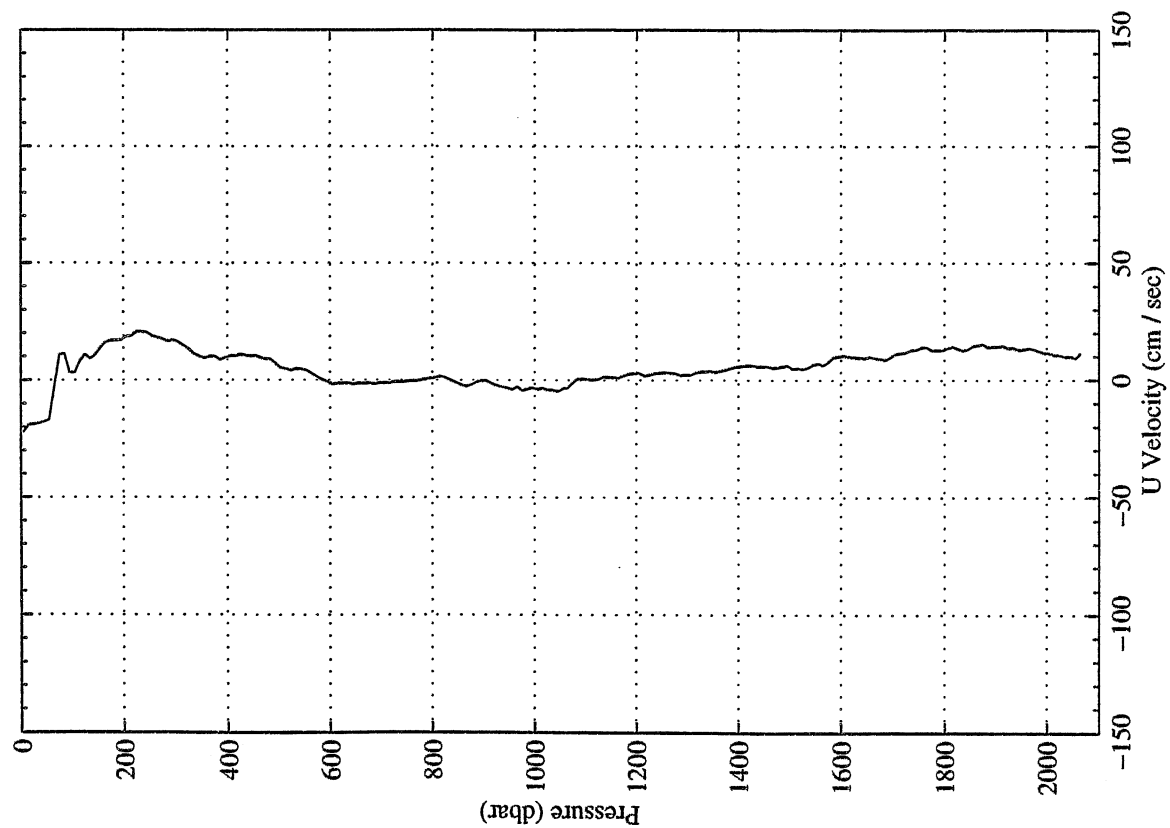
NBC-2 R/V SEWARD JOHNSON
LADCP Station 48 (99048)
Latitude 9.160 N Longitude 49.815 W
21-Feb-1999 00:25 Z



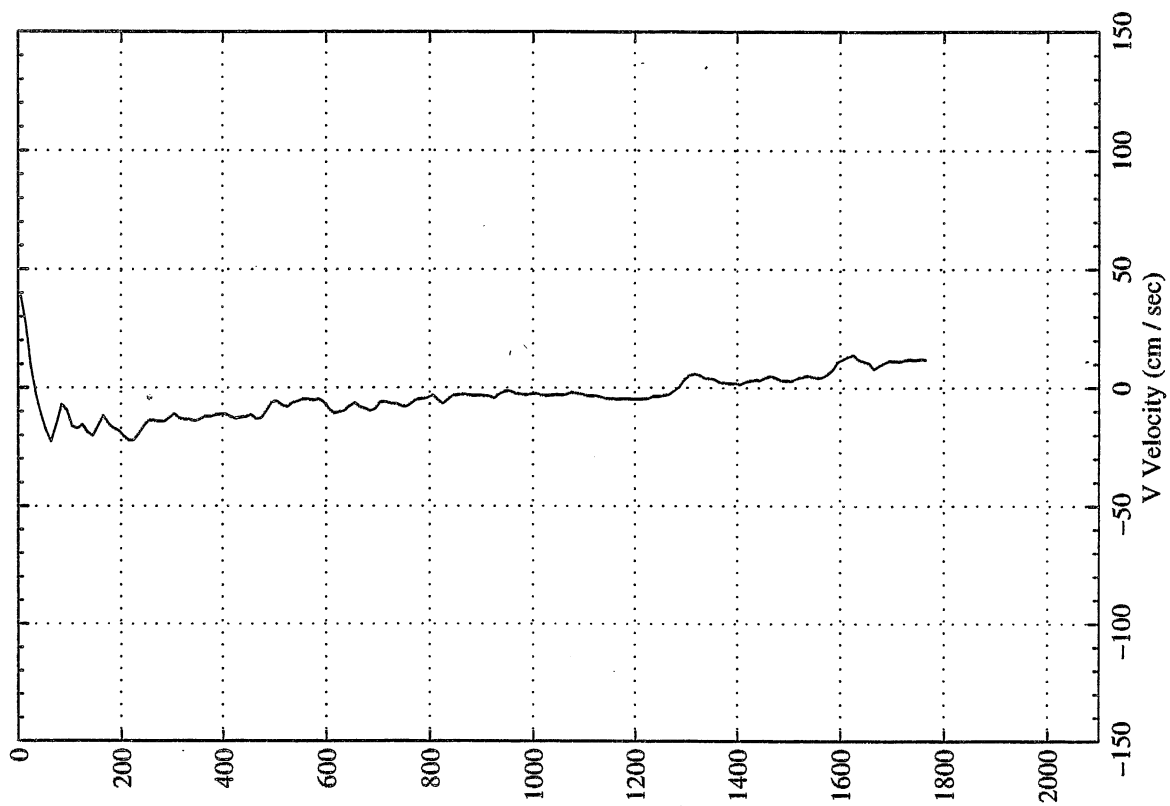
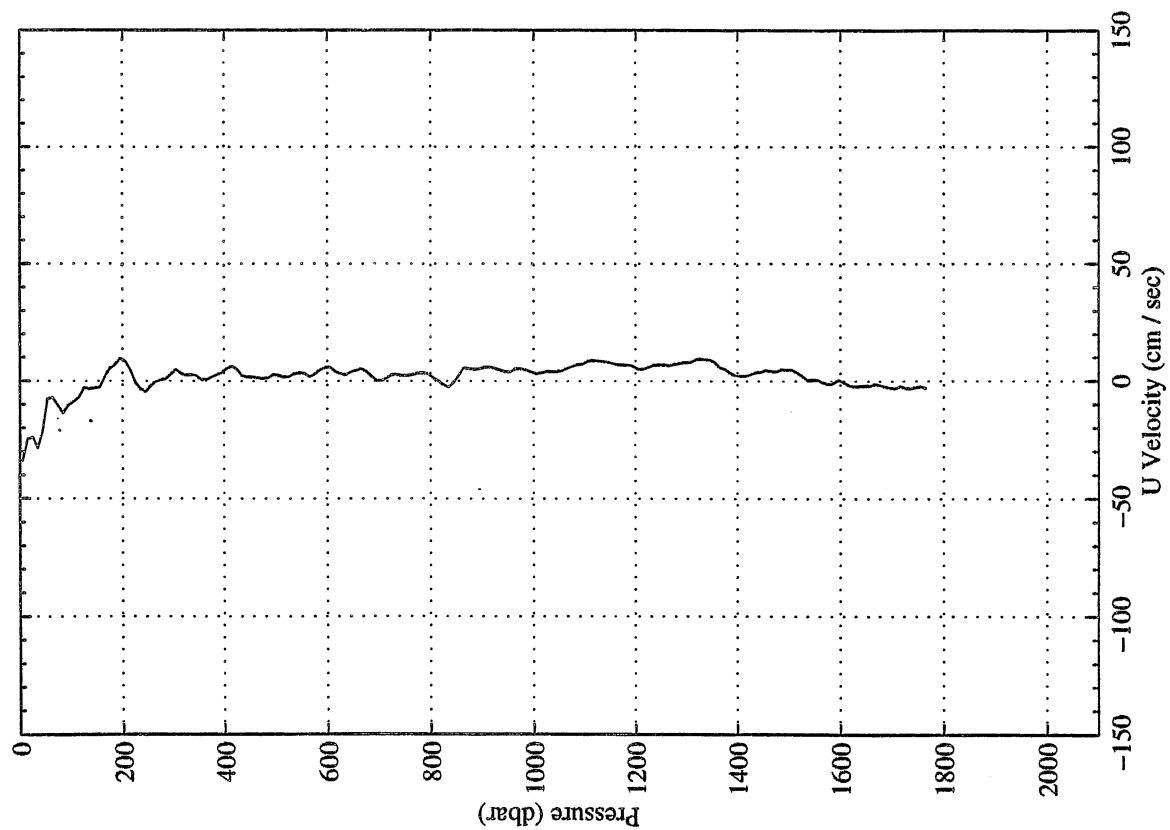
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LADCP Station 49 (99049)
Latitude 6.426 N Longitude 51.341 W
21-Feb-1999 19:02 Z



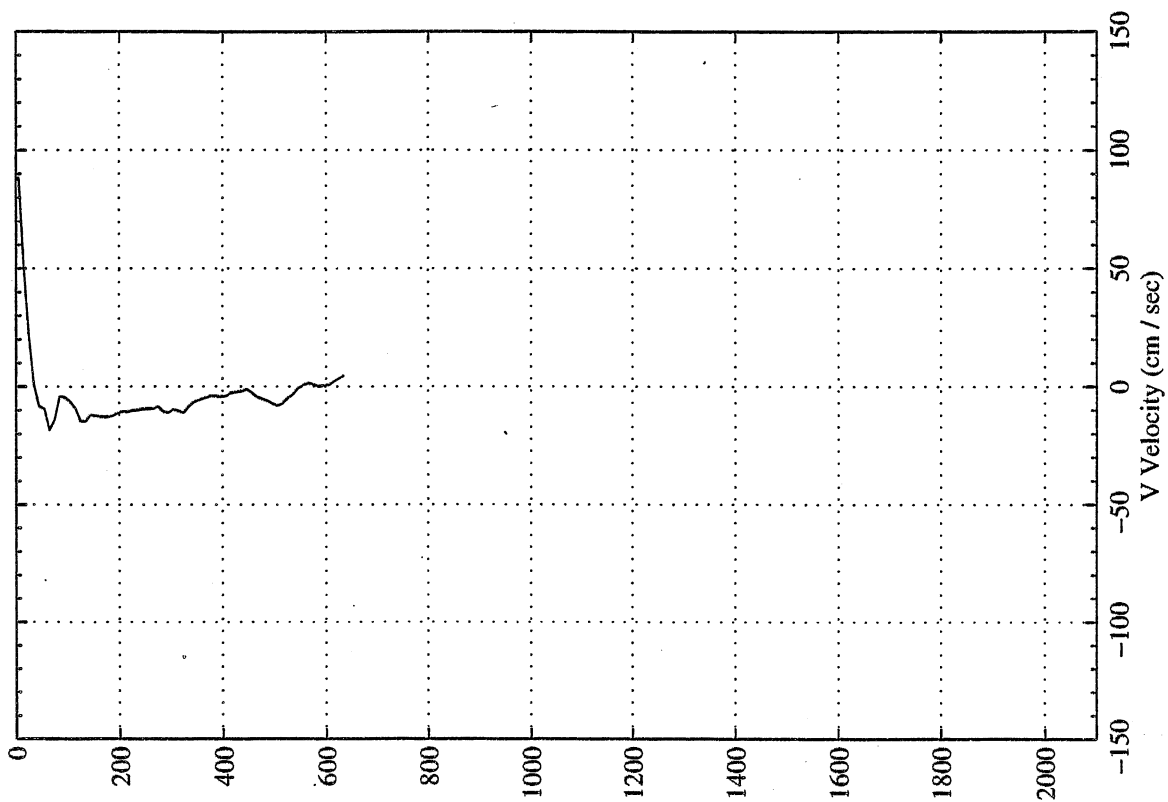
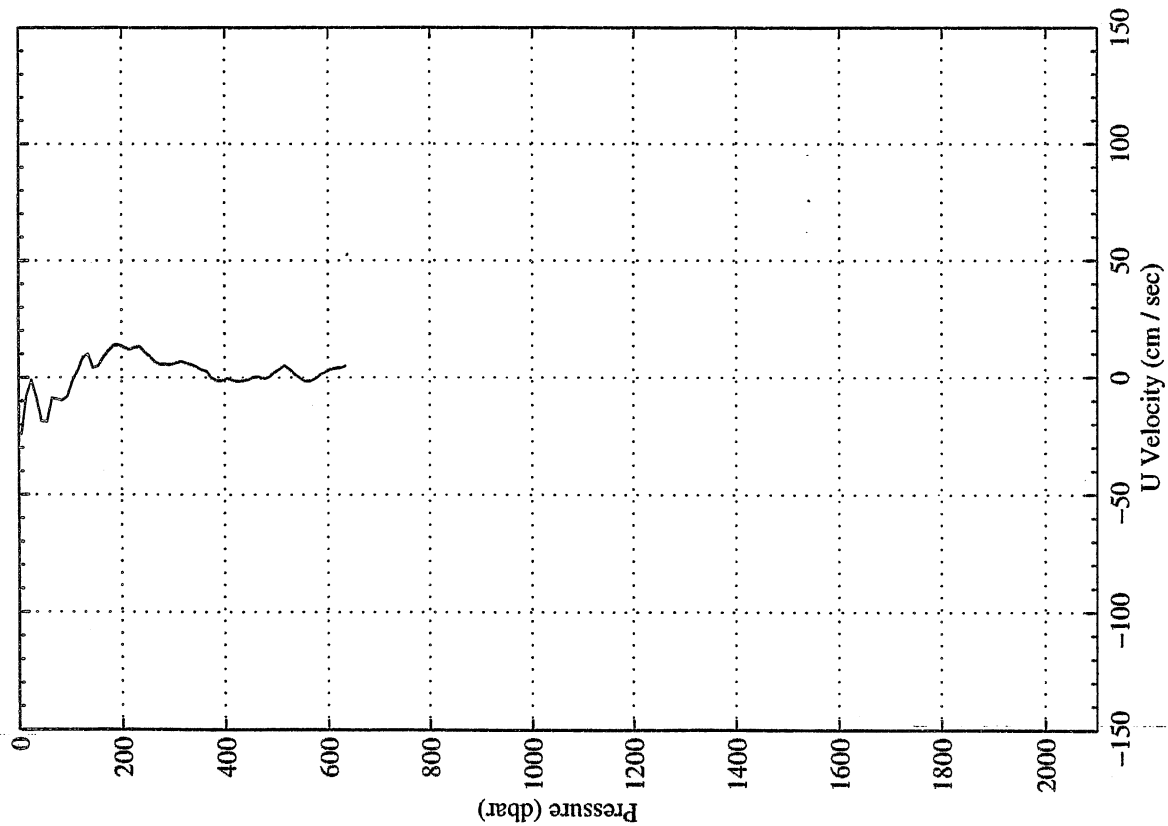
NBC-2 R/V SEWARD JOHNSON
LADCP Station 50 (99050)
Latitude 6.258 N Longitude 51.435 W
21-Feb-1999 21:45 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 51 (99051)
Latitude 6.053 N Longitude 51.548 W
22-Feb-1999 00:30 Z



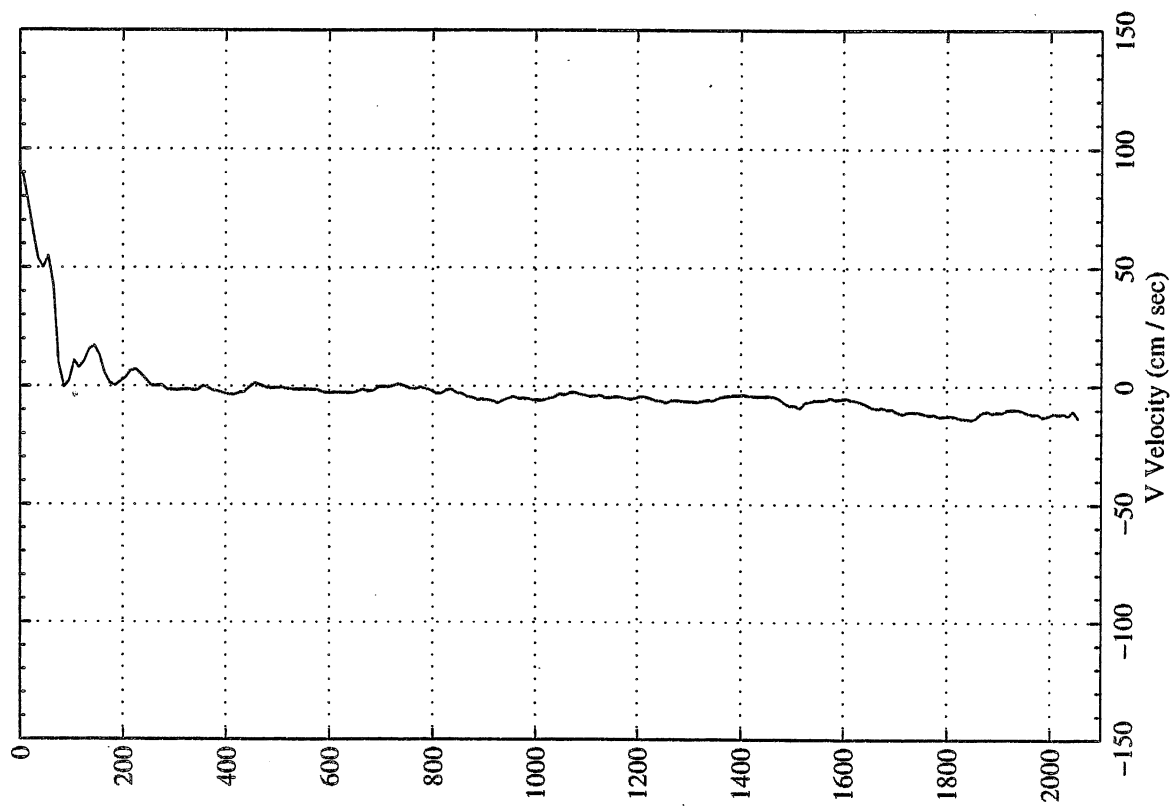
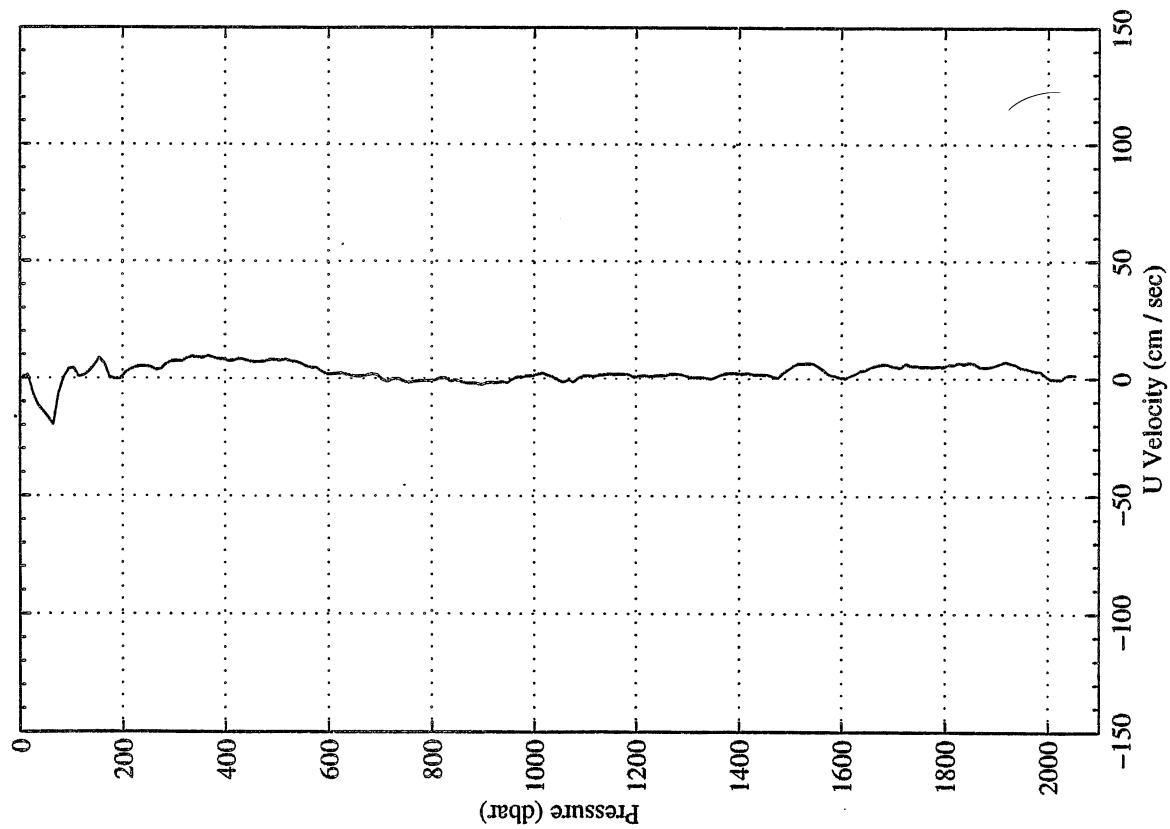
NBC-2 R/V SEWARD JOHNSON
LADCP Station 52 (99052)
Latitude 5.969 N Longitude 51.597 W
22-Feb-1999 02:12 Z



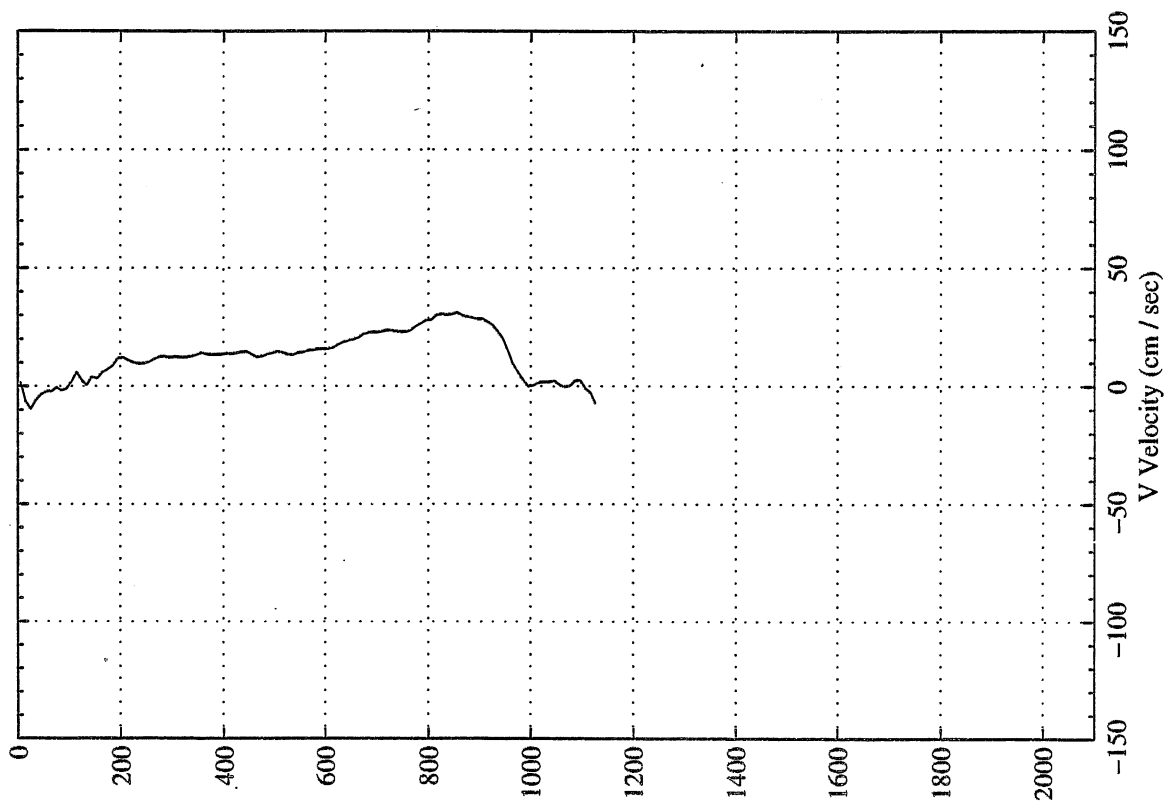
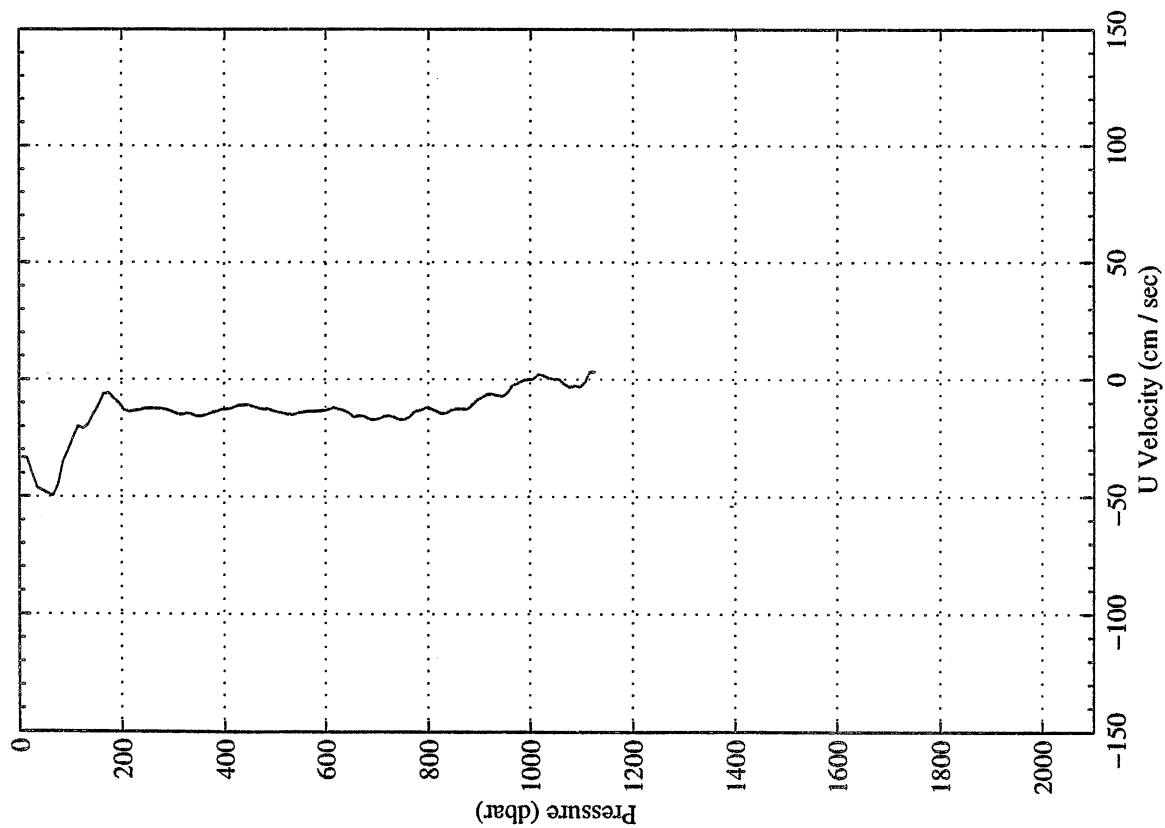
NBC-2 R/V SEWARD JOHNSON

LADCP Station 53 (99053)

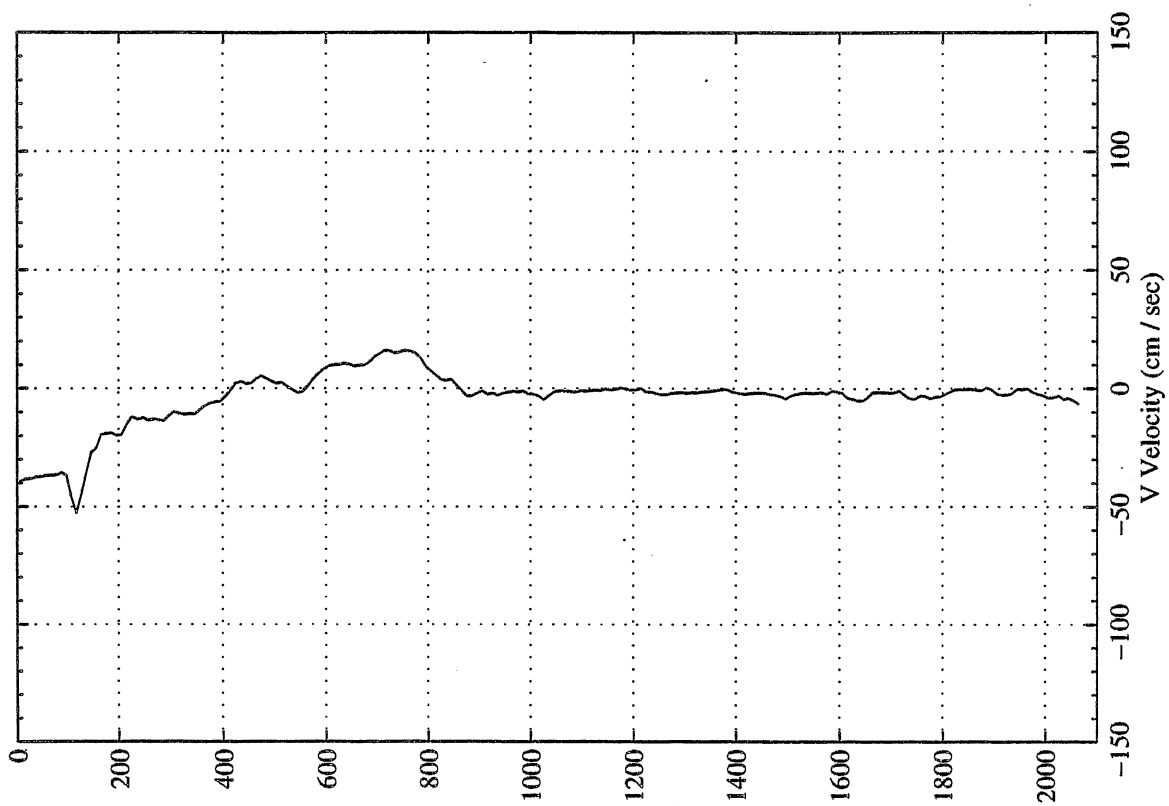
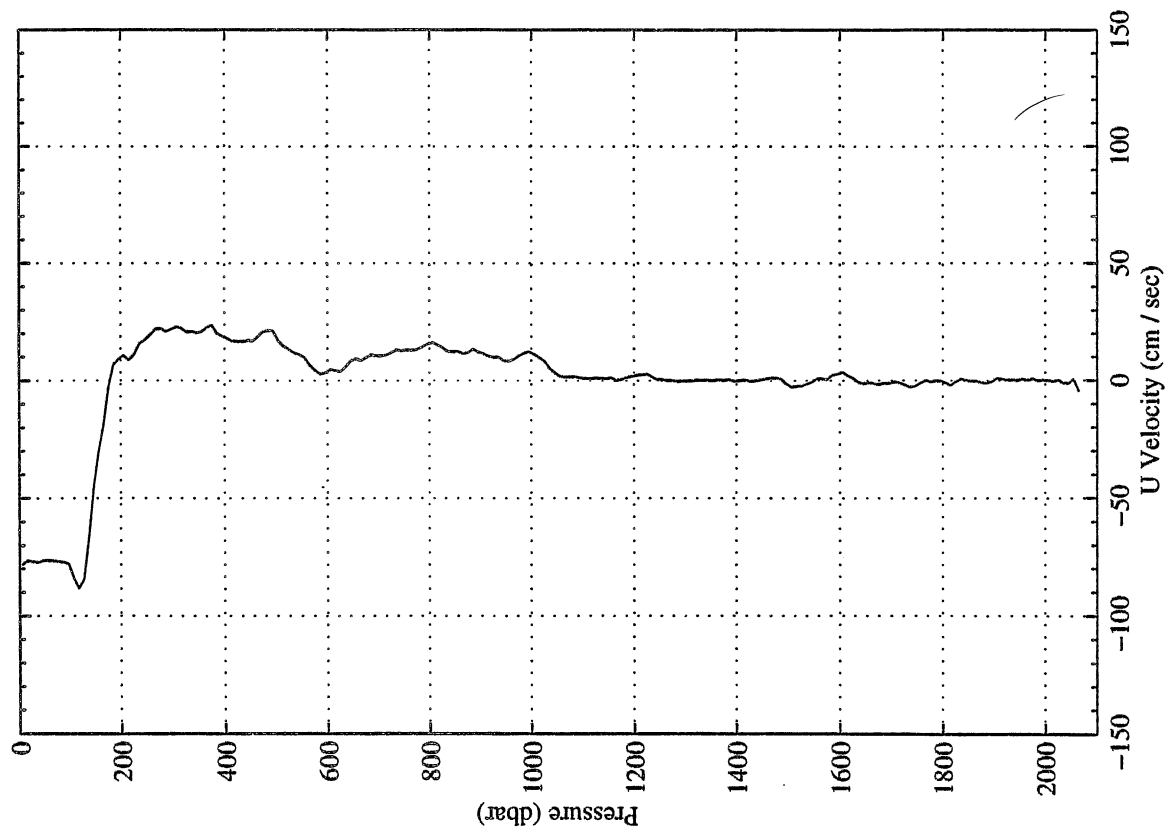
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25-Feb-1999 02:32 Z



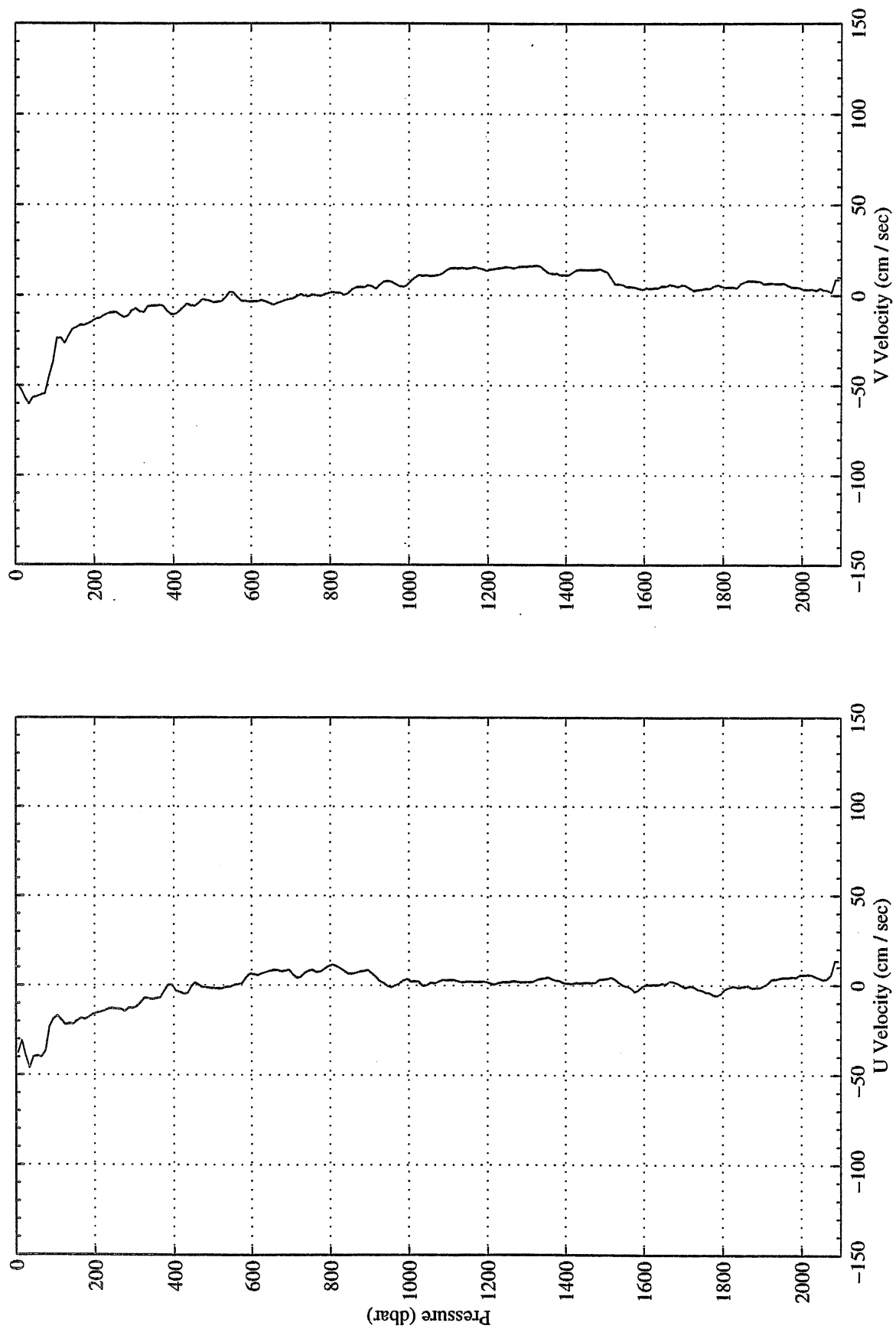
NBC-2 R/V SEWARD JOHNSON
LADCP Station 54 (99054)
Latitude 7.505 N Longitude 52.745 W
25-Feb-1999 21:54 Z



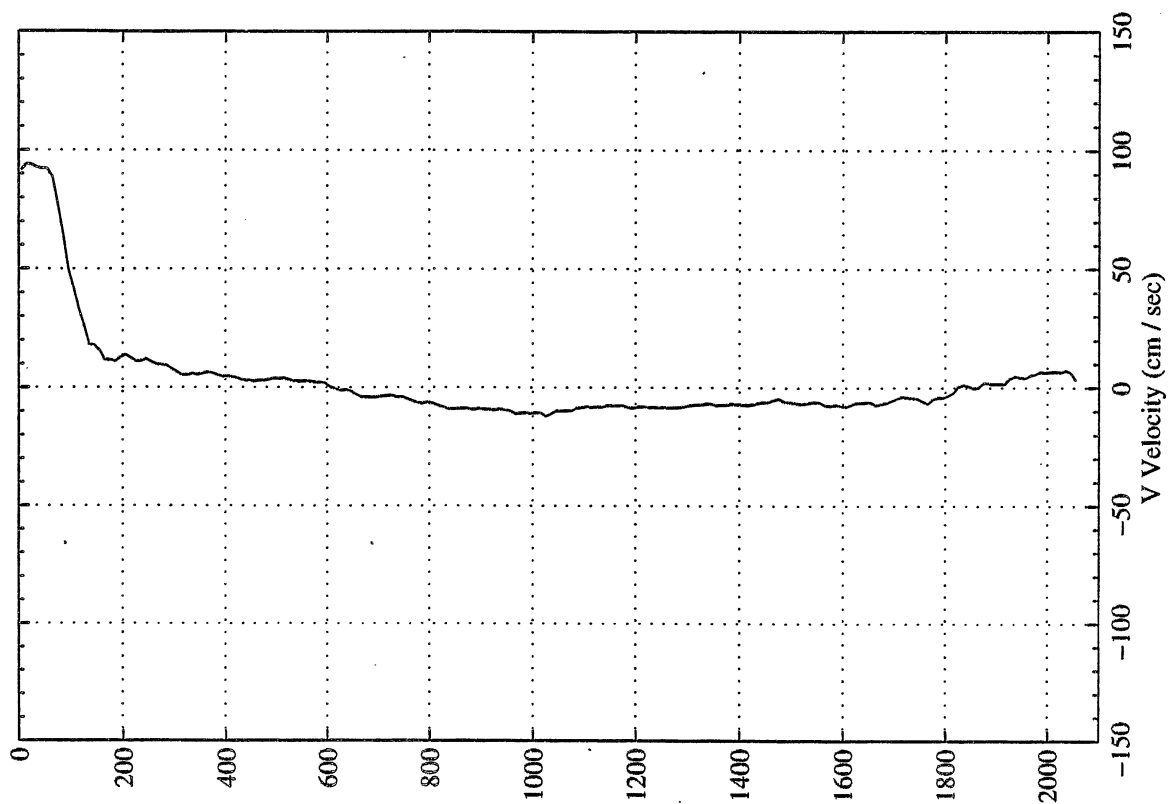
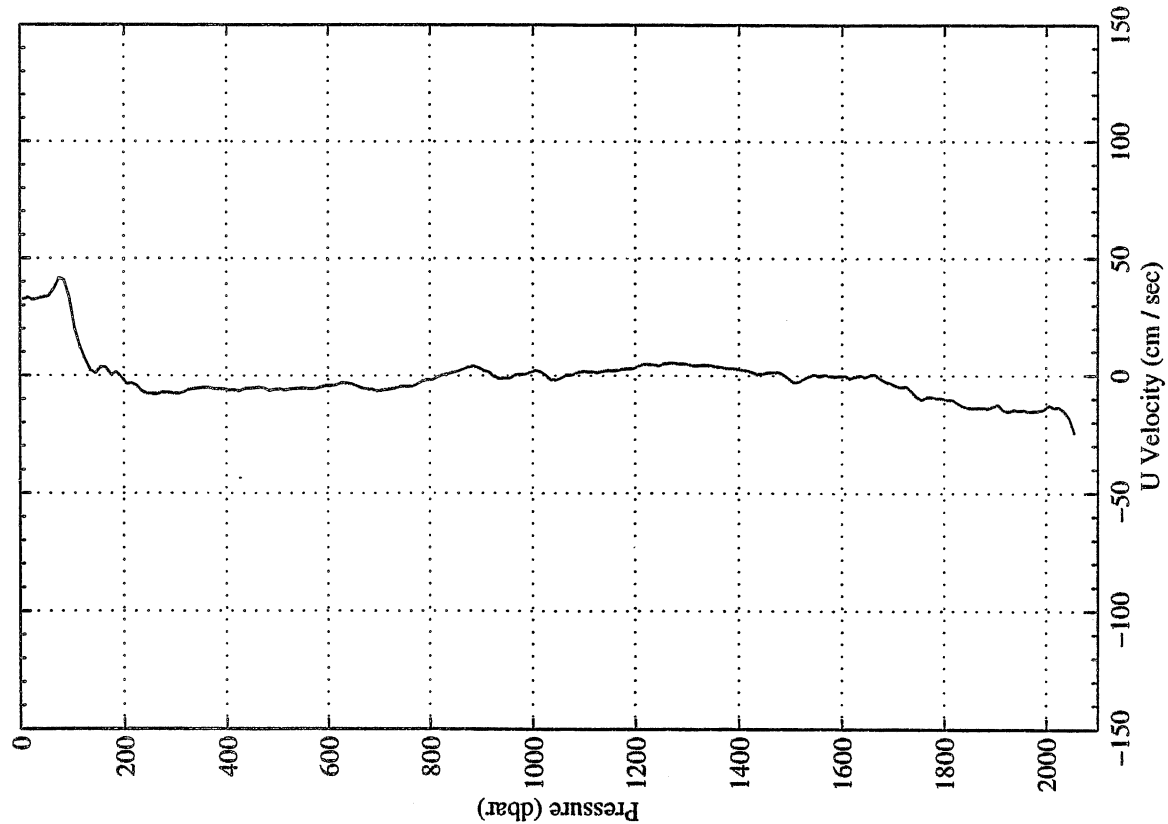
NBC-2 R/V SEWARD JOHNSON
LADCP Station 55 (99055)
Latitude 9.003 N Longitude 52.757 W
26-Feb-1999 12:31 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 56 (99056)
Latitude 8.394 N Longitude 51.924 W
26-Feb-1999 20:07 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 58 (99058)
Latitude 7.220 N Longitude 50.427 W
27-Feb-1999 10:26 Z

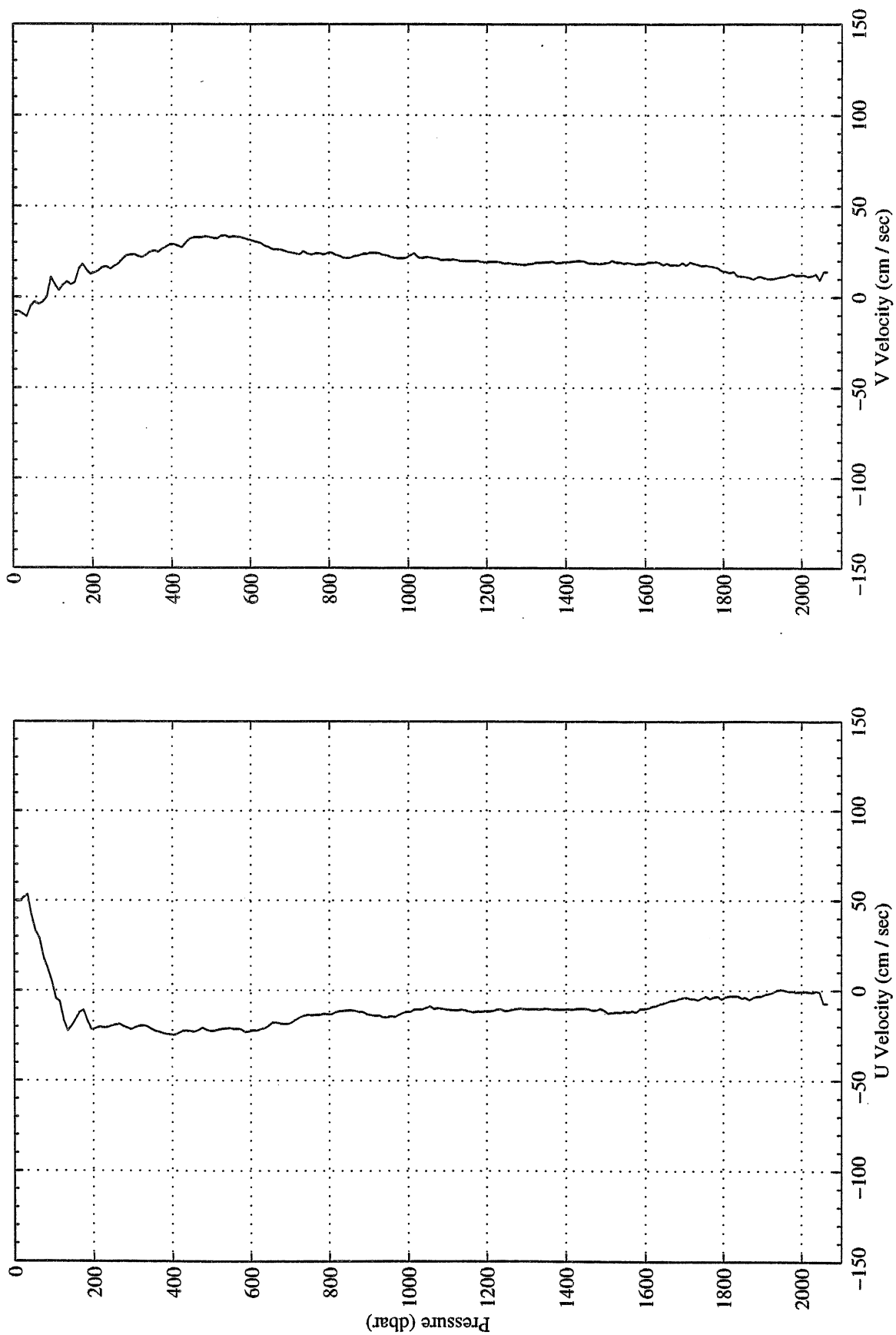


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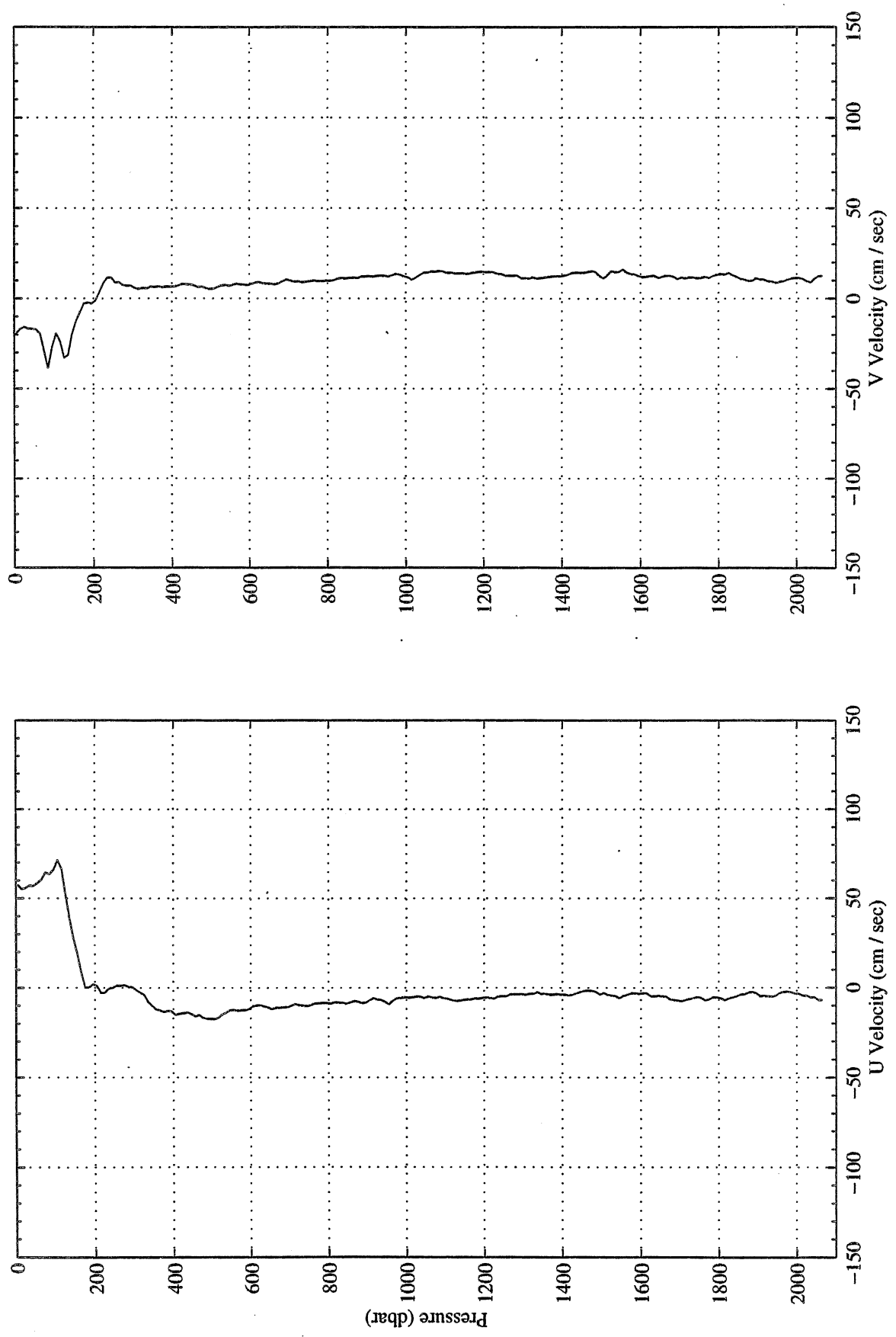
LADCP Station 59 (99059)

Latitude 8.364 N Longitude 49.180 W

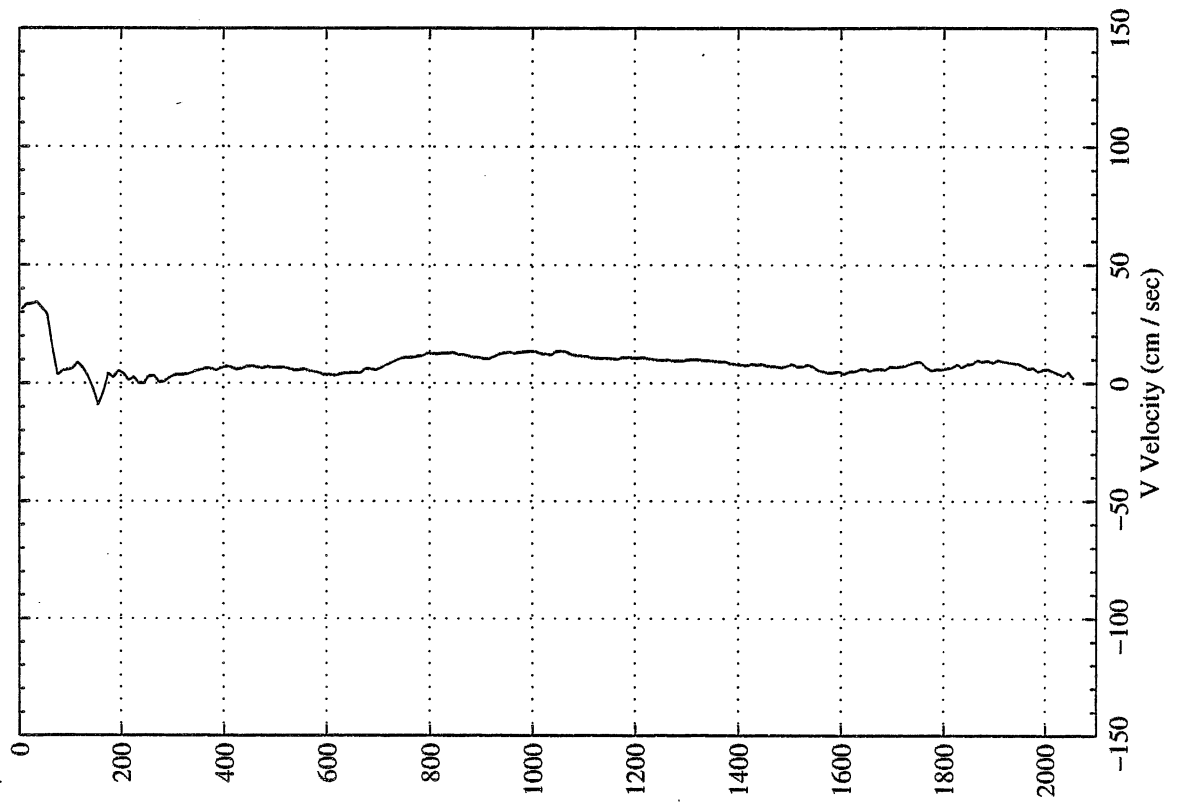
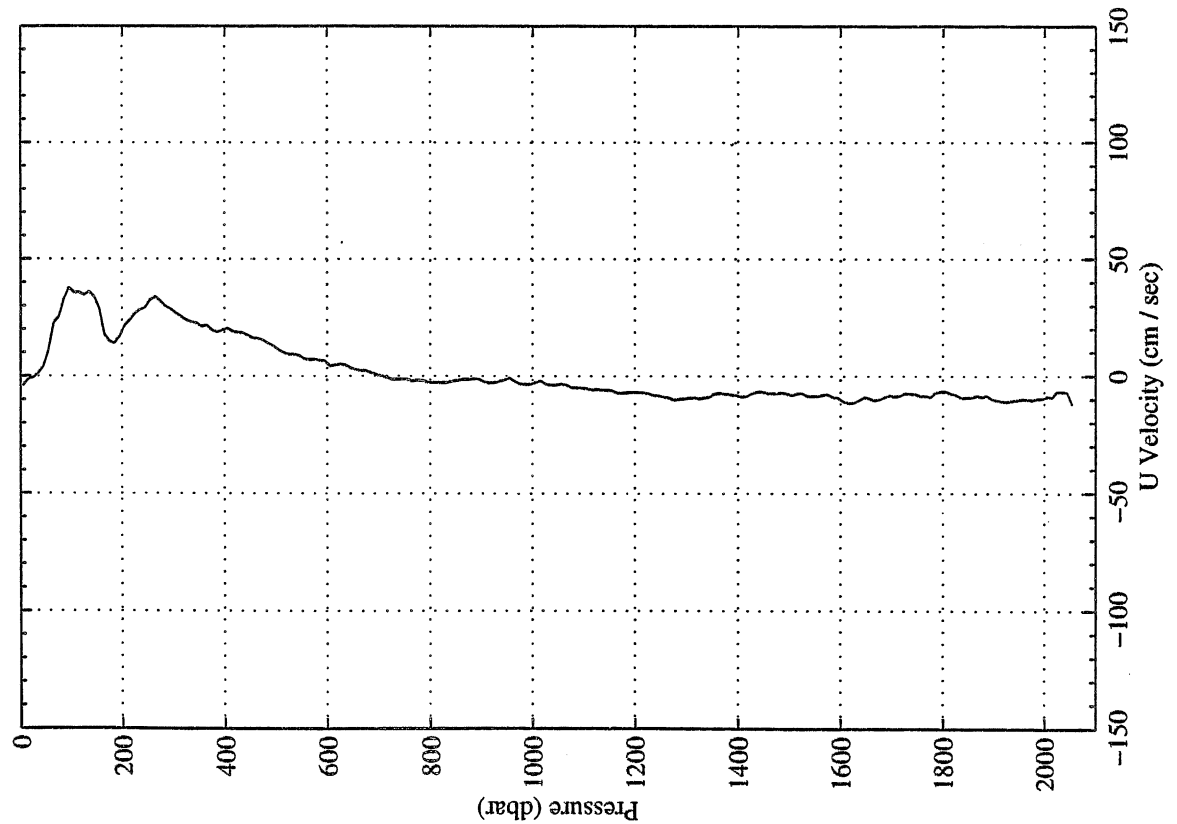
27-Feb-1999 21:50 Z



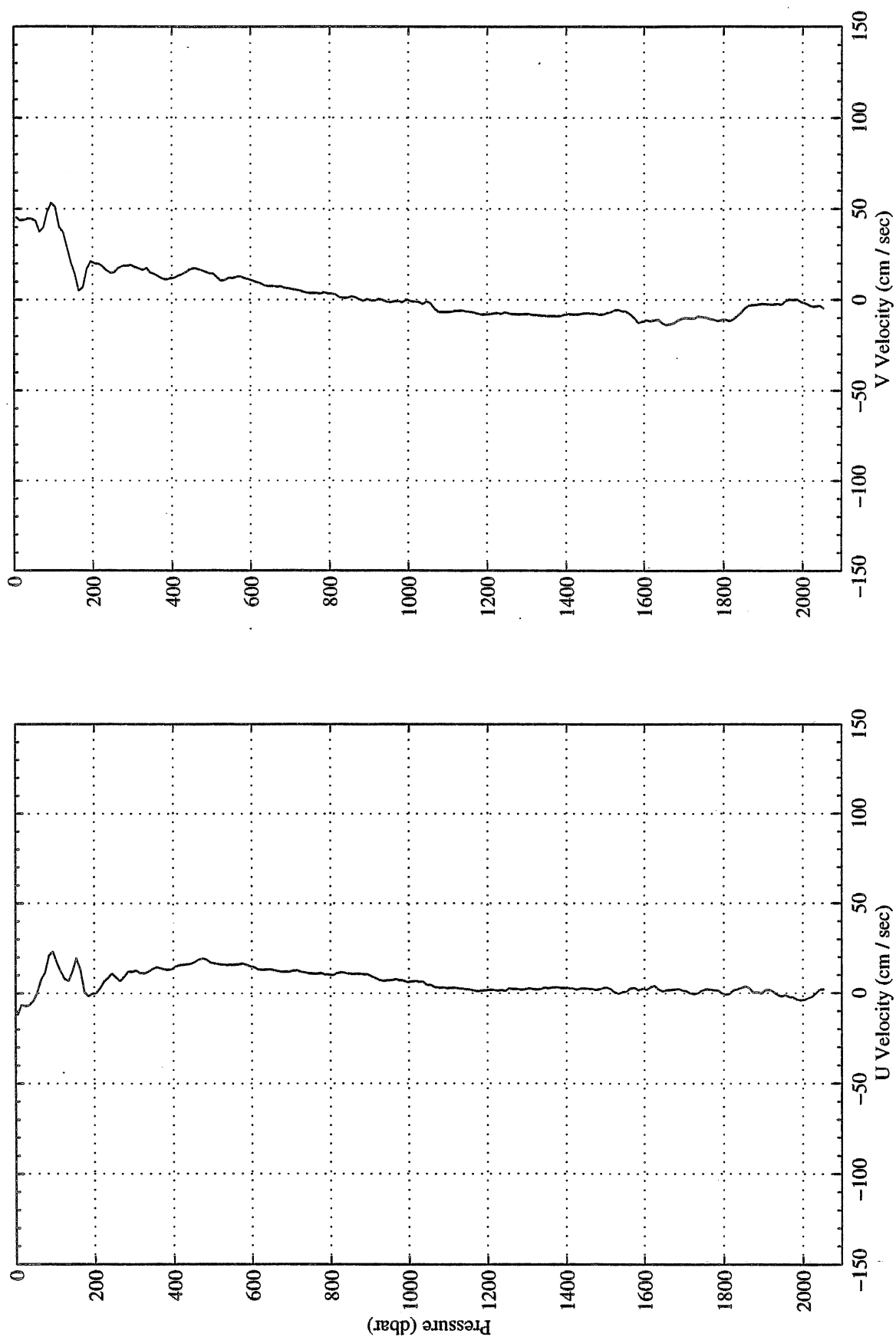
NBC-2 R/V SEWARD JOHNSON
LADCP Station 60 (99060)
Latitude 7.594 N Longitude 49.181 W
28-Feb-1999 03:33 Z



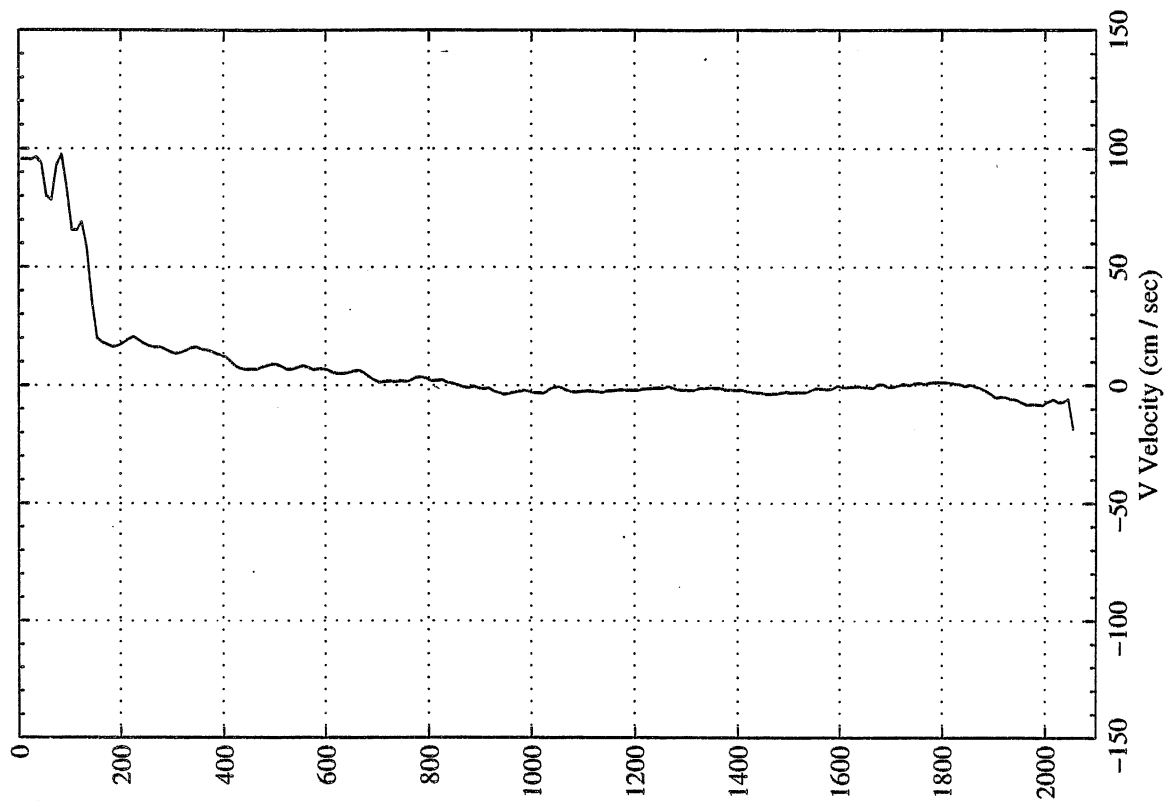
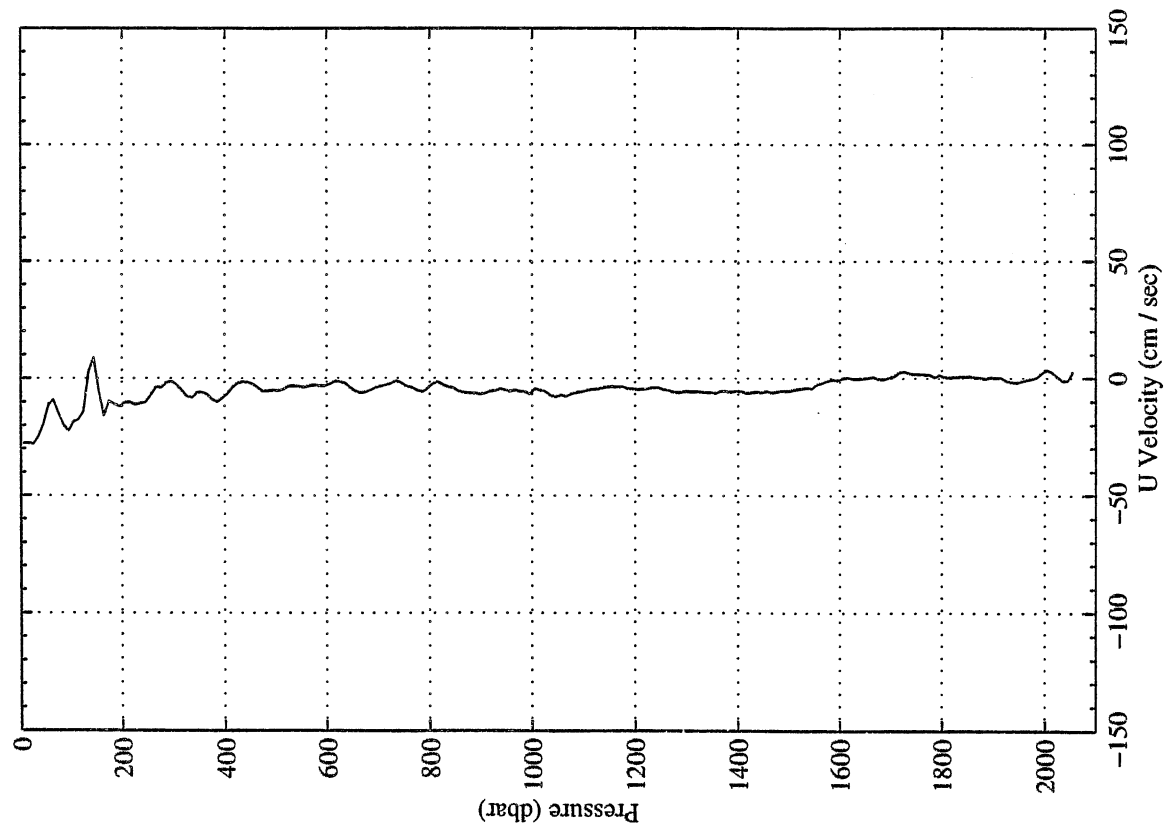
NBC-2 R/V SEWARD JOHNSON
LADCP Station 61 (99061)
Latitude 7.011 N Longitude 49.331 W
28-Feb-1999 08:26 Z



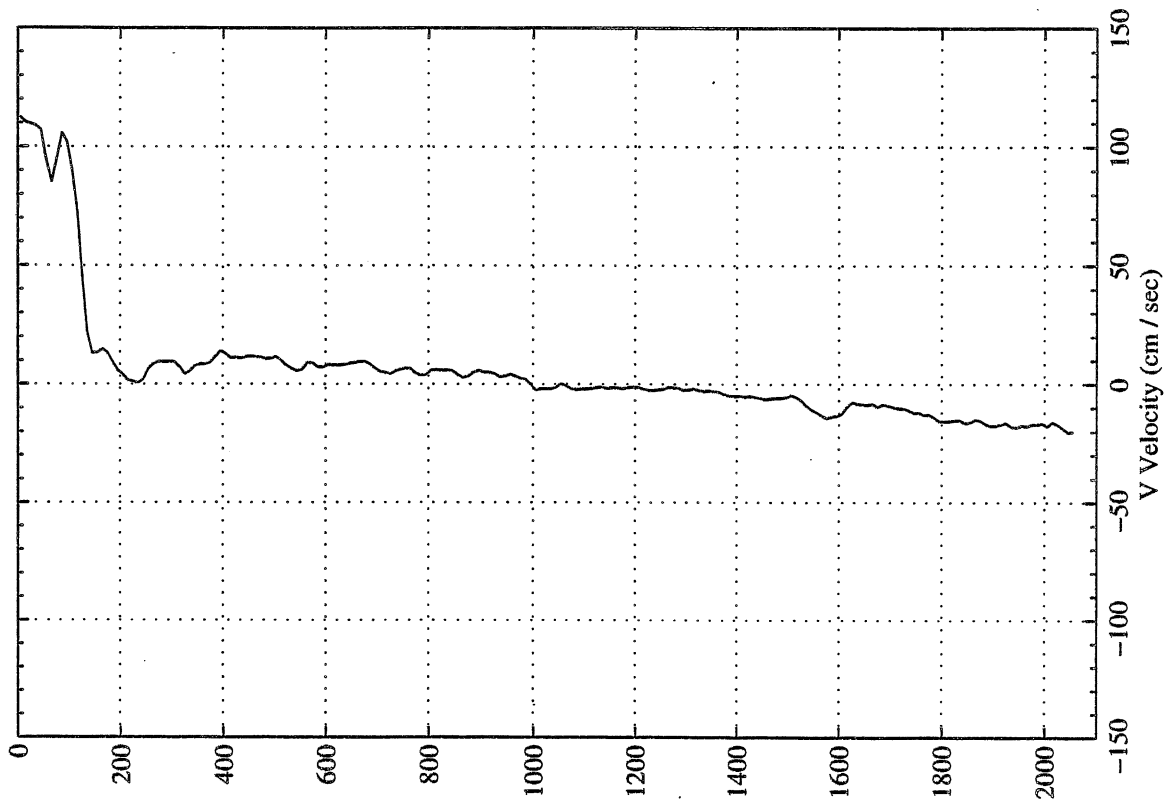
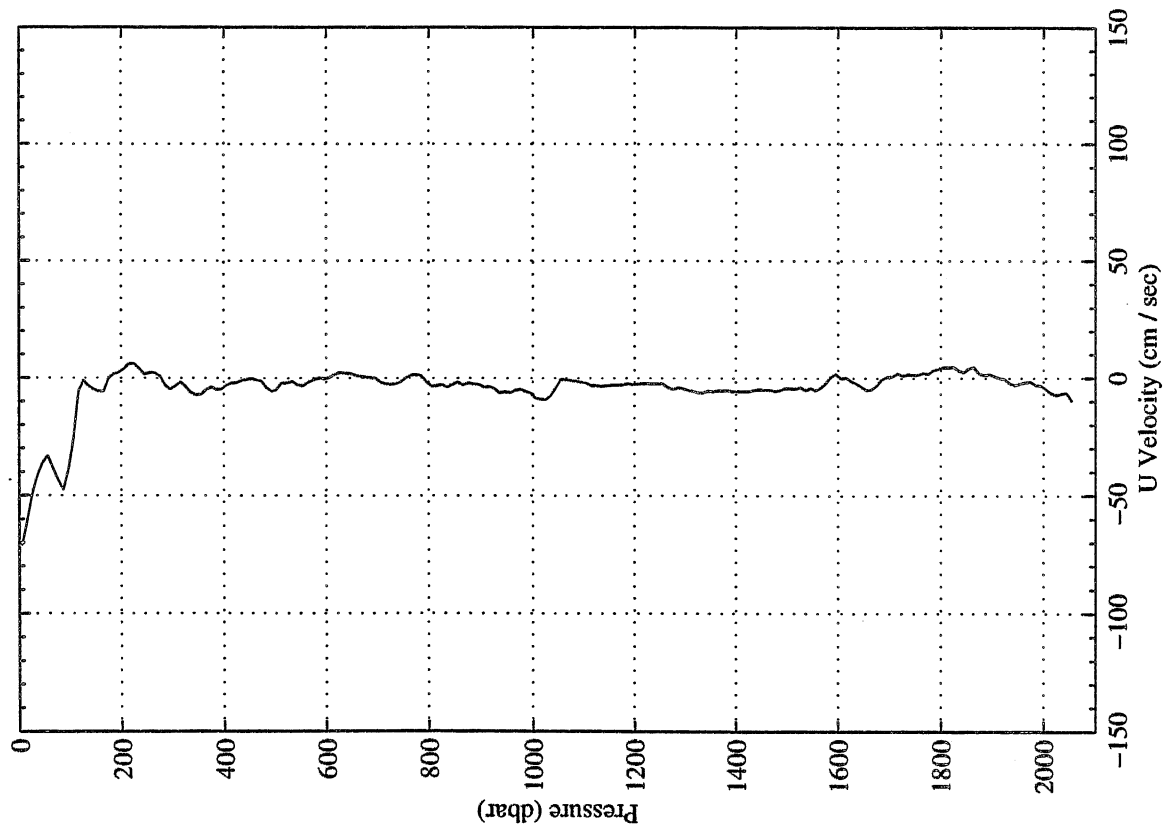
NBC-2 R/V SEWARD JOHNSON
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Latitude 6.471 N Longitude 49.706 W
28-Feb-1999 13:50 Z



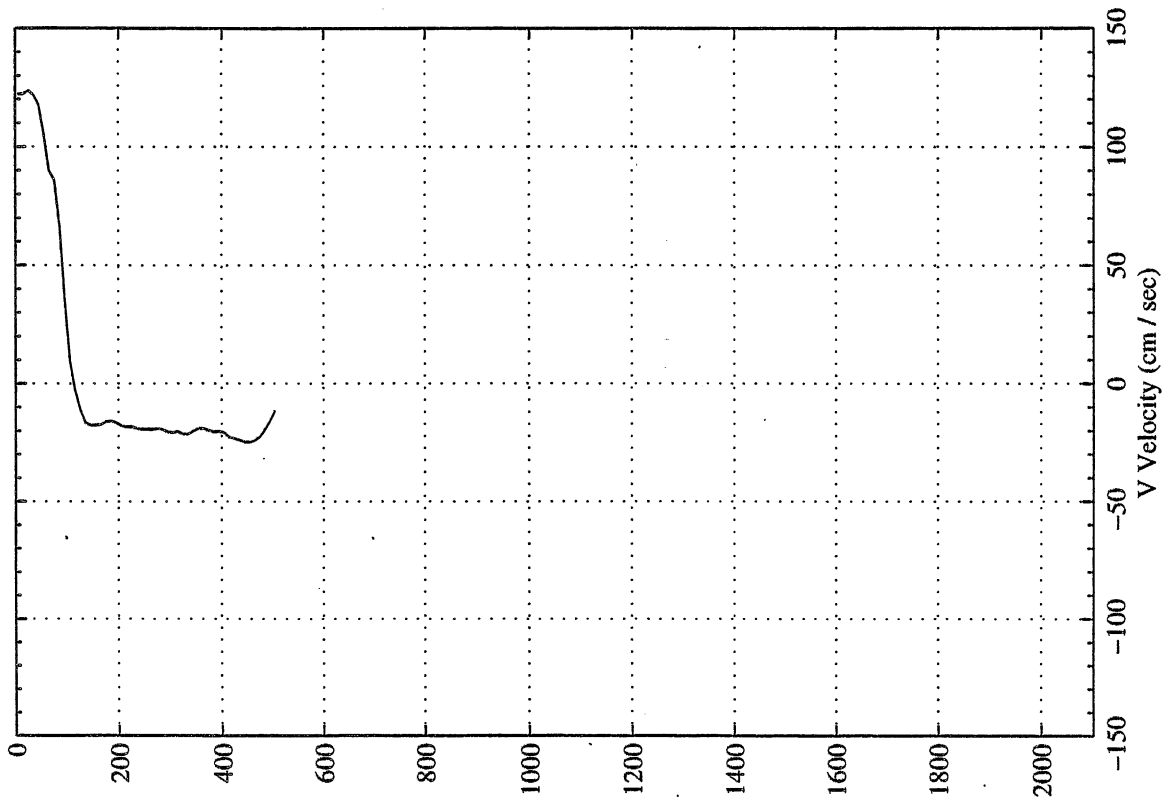
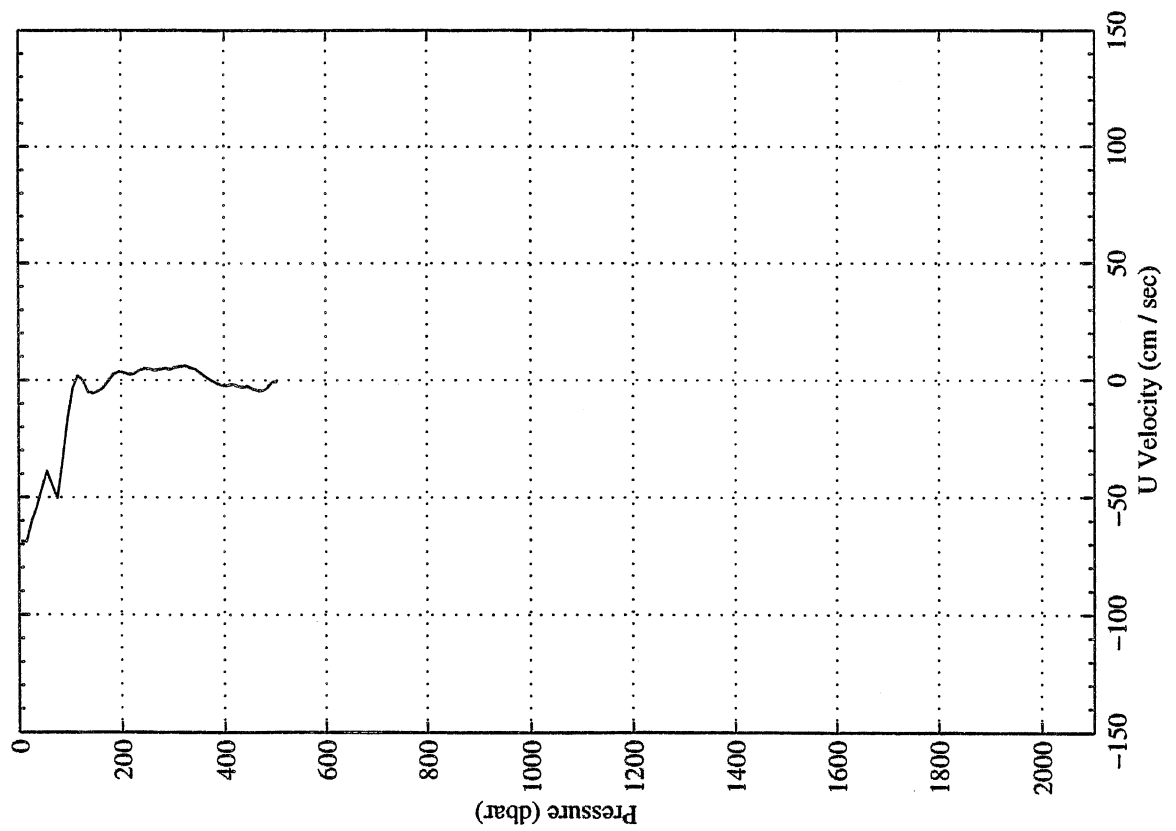
NBC-2 R/V SEWARD JOHNSON
LADCP Station 63 (99063)
Latitude 5.999 N Longitude 50.101 W
28-Feb-1999 19:03 Z



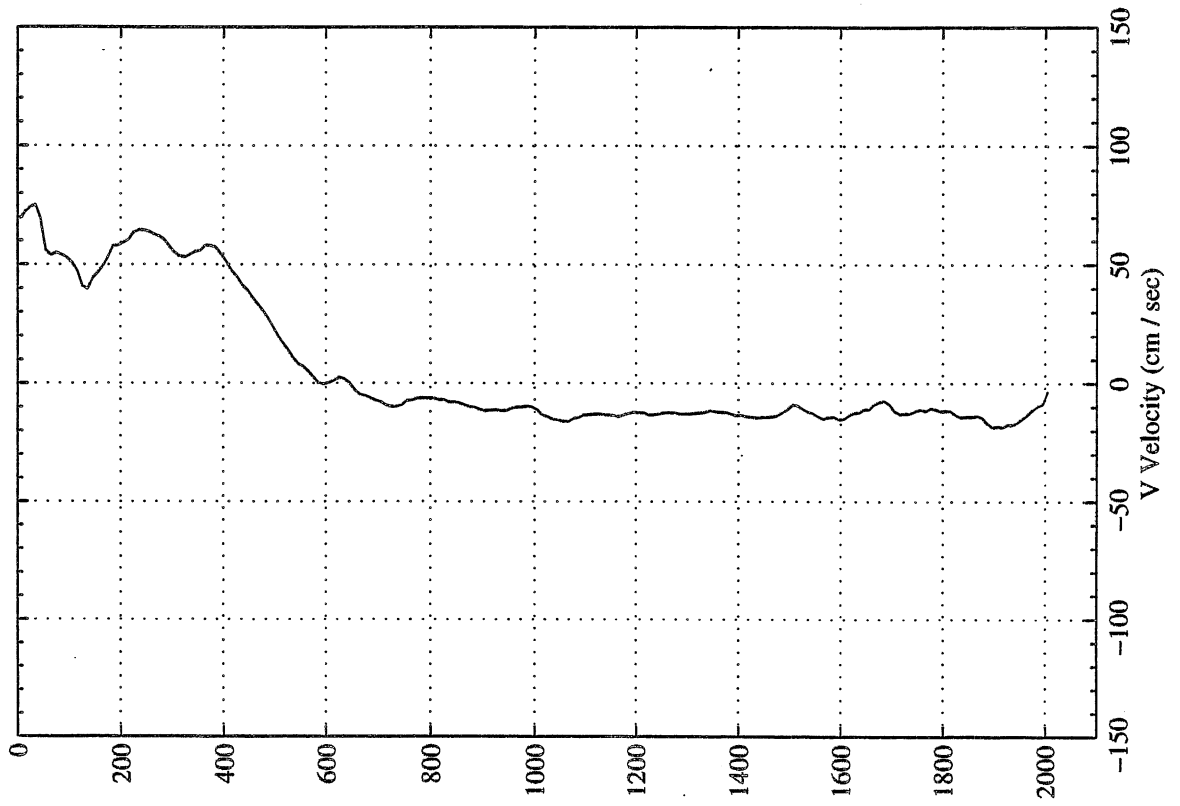
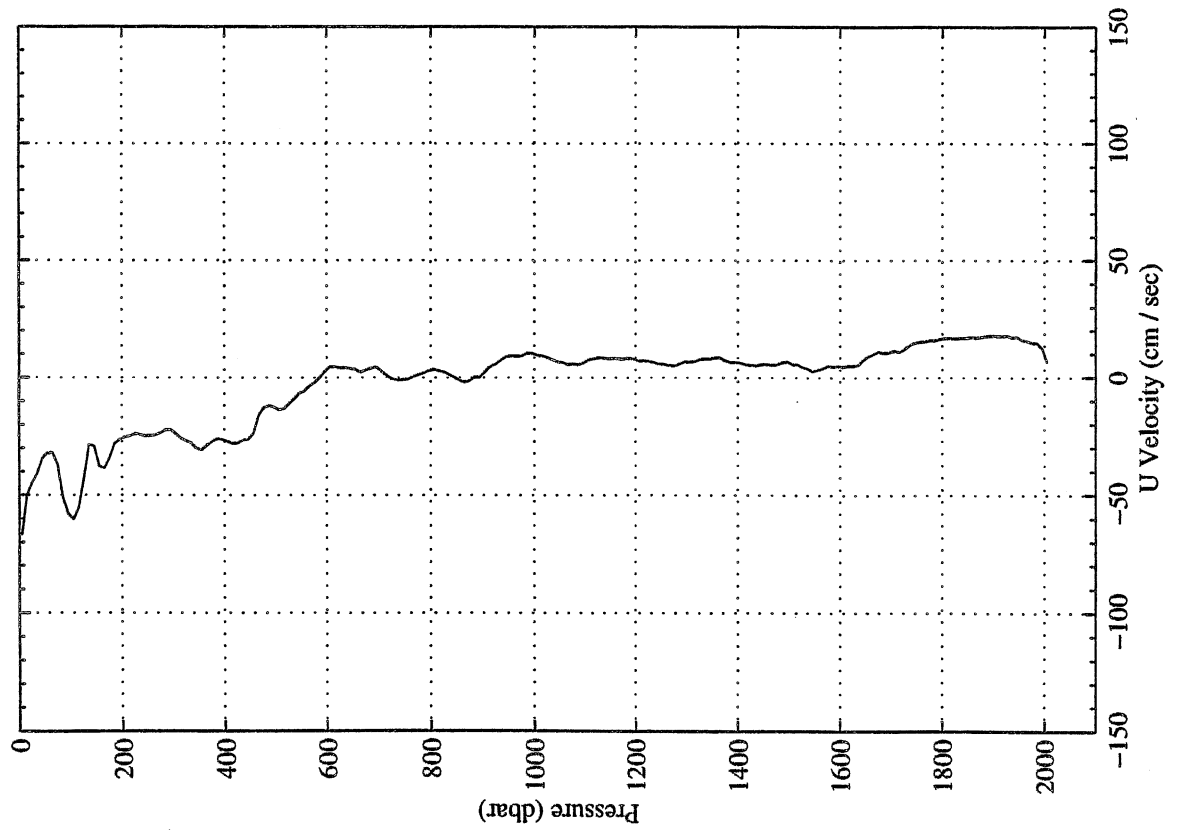
NBC-2 R/V SEWARD JOHNSON
LADCP Station 64 (99064)
Latitude 5.598 N Longitude 50.403 W
28-Feb-1999 23:52 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 65 (99065)
Latitude 5.329 N Longitude 50.601 W
01-Mar-1999 03:11 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 66 (99066)
Latitude 4.658 N Longitude 49.499 W
01-Mar-1999 18:14 Z

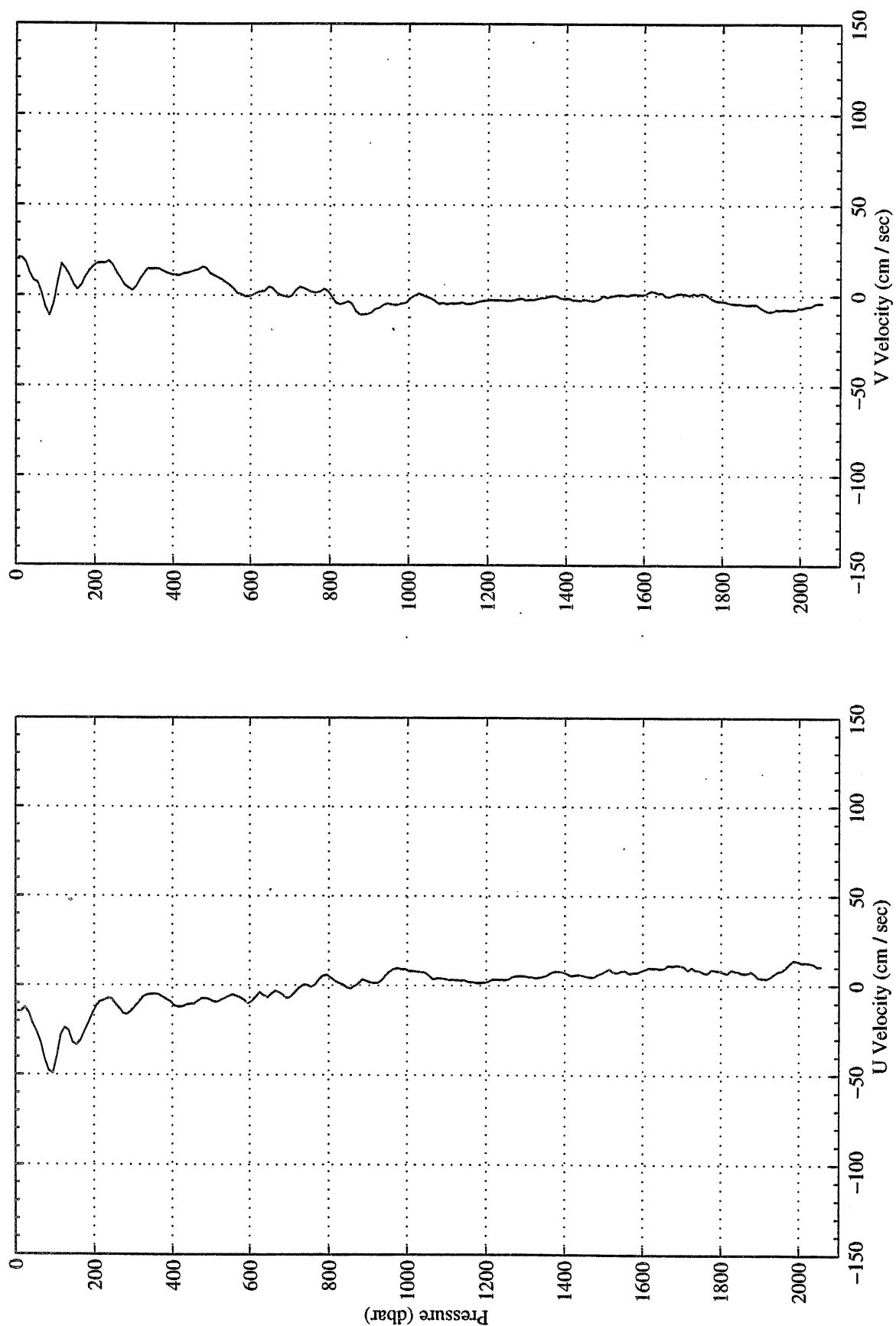


NBC-2 R/V SEWARD JOHNSON

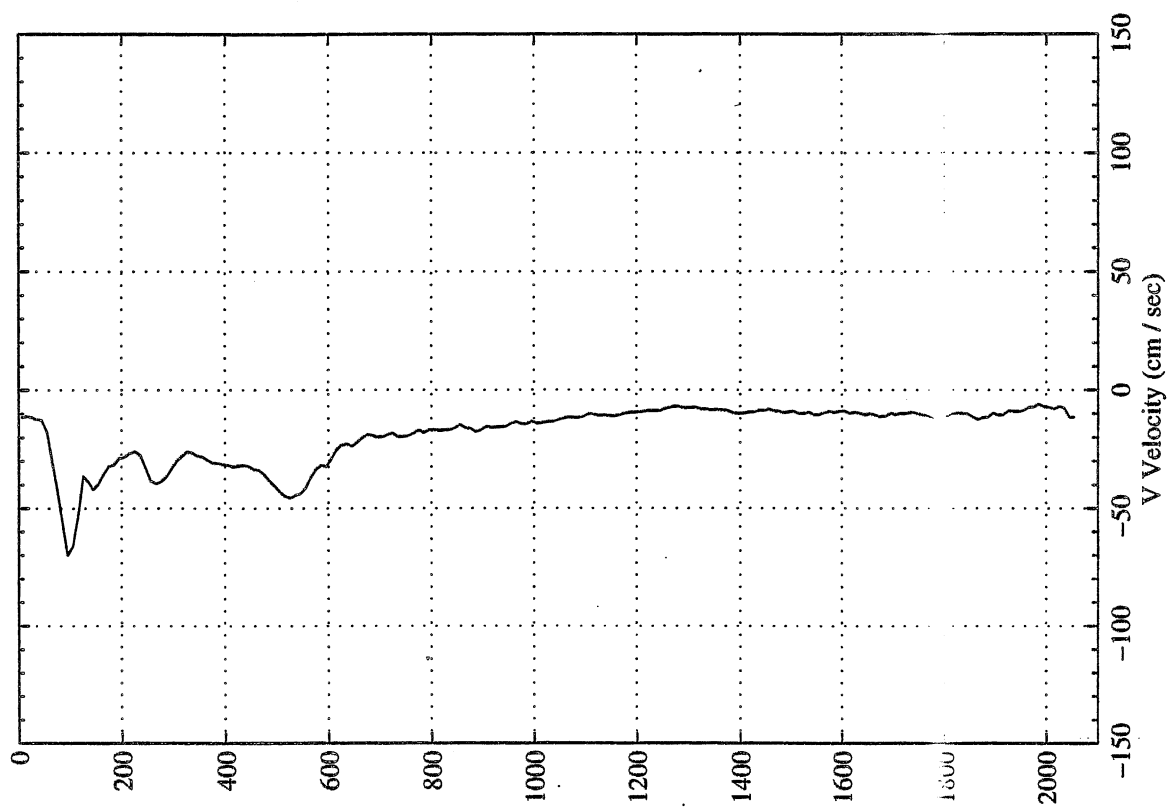
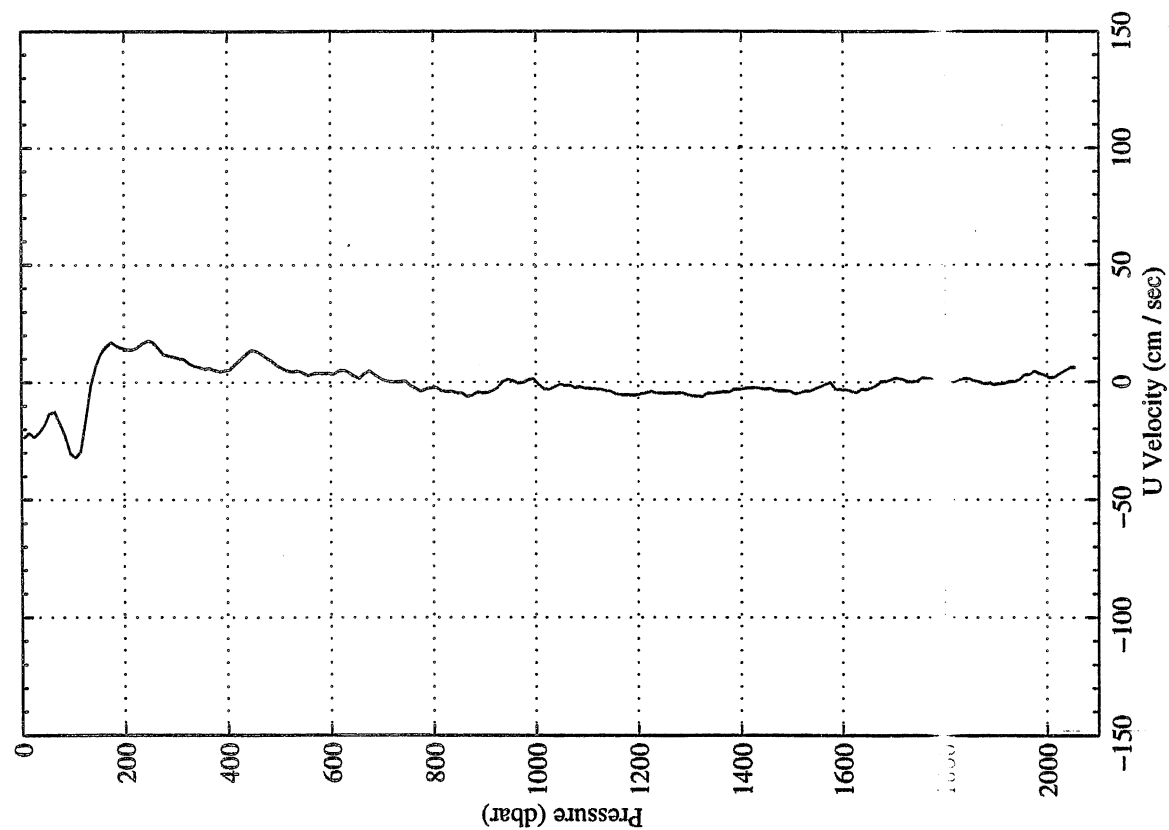
LADCP Station 67 (99067)

Latitude 5.110 N Longitude 48.884 W

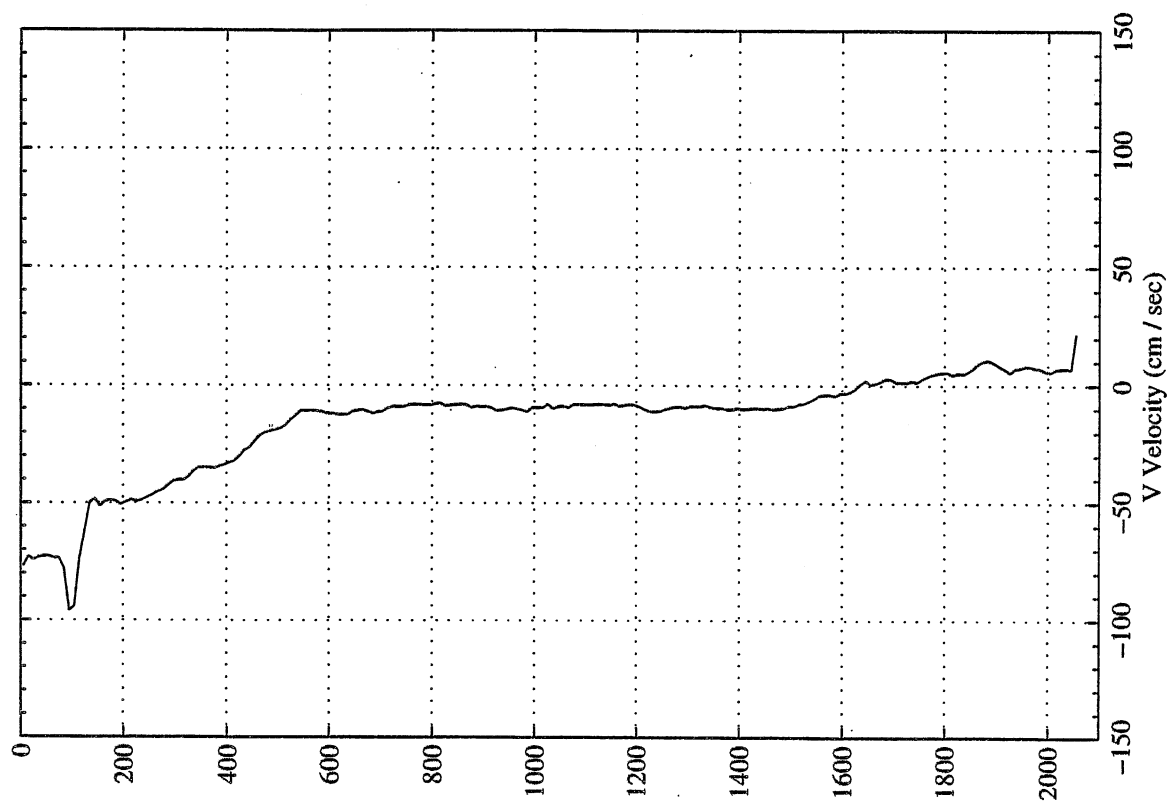
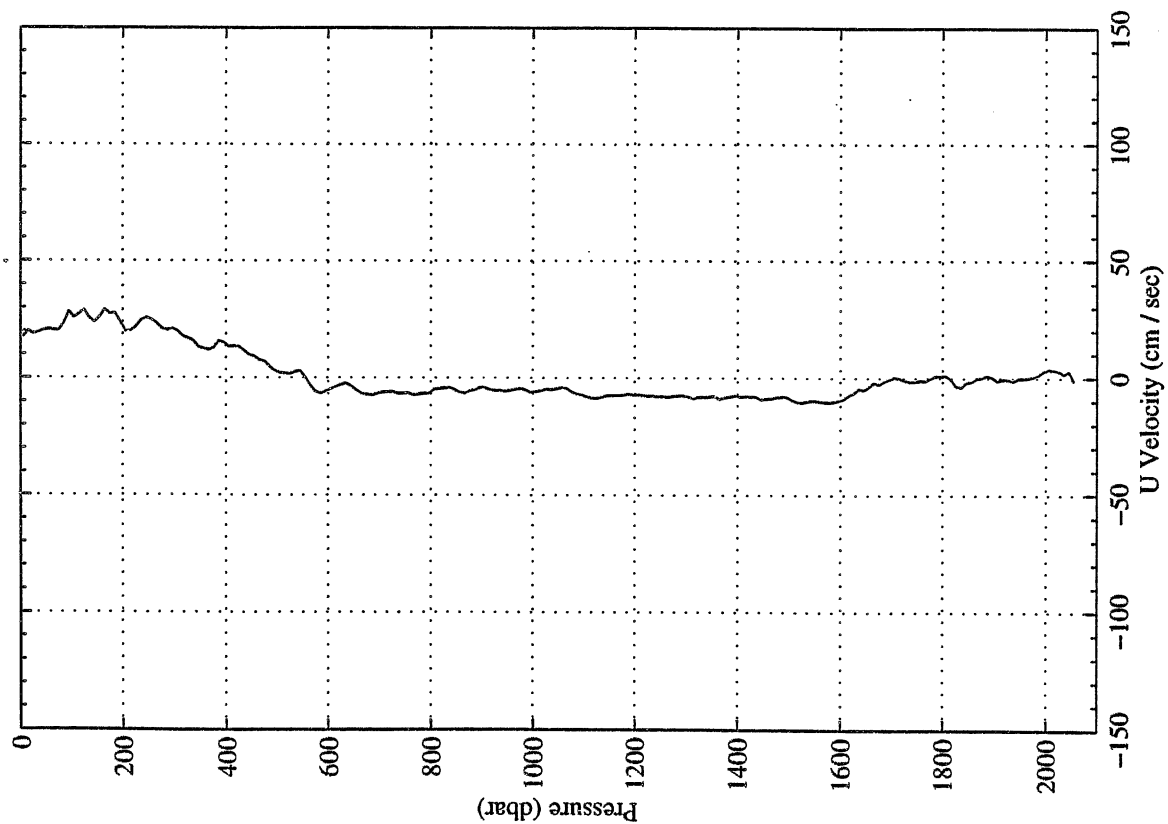
02-Mar-1999 01:43 Z



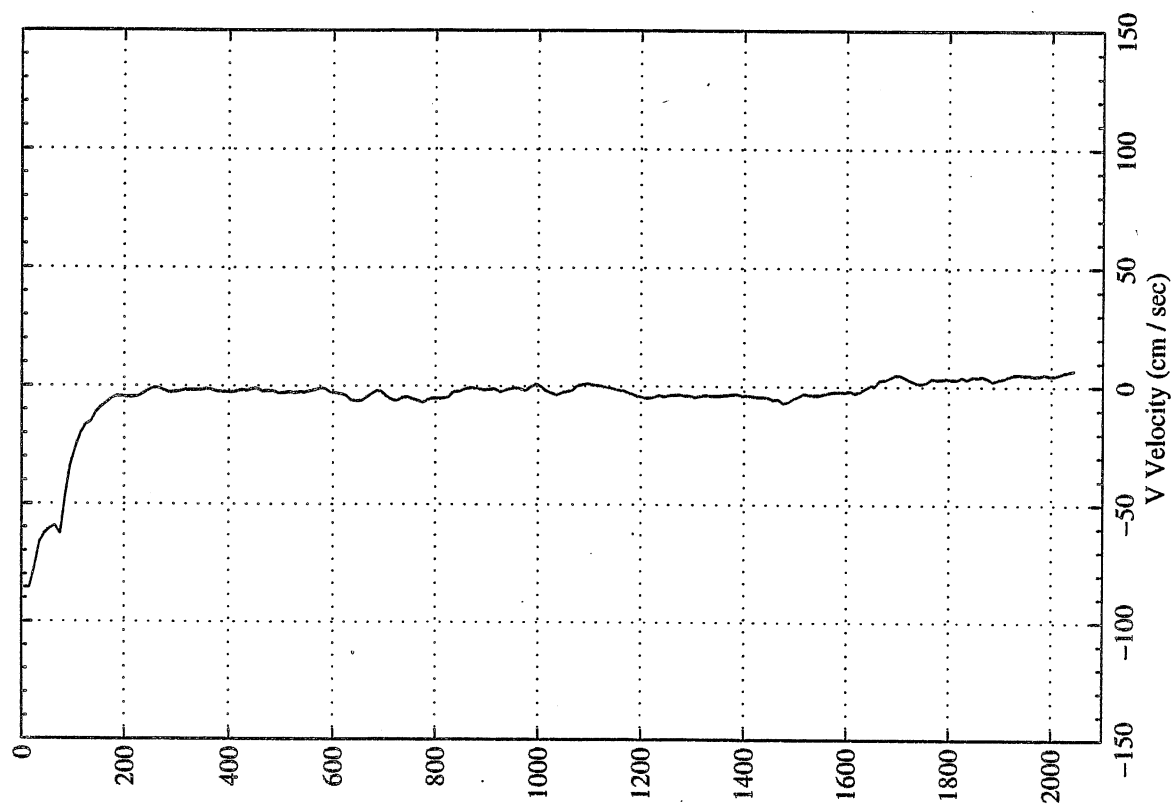
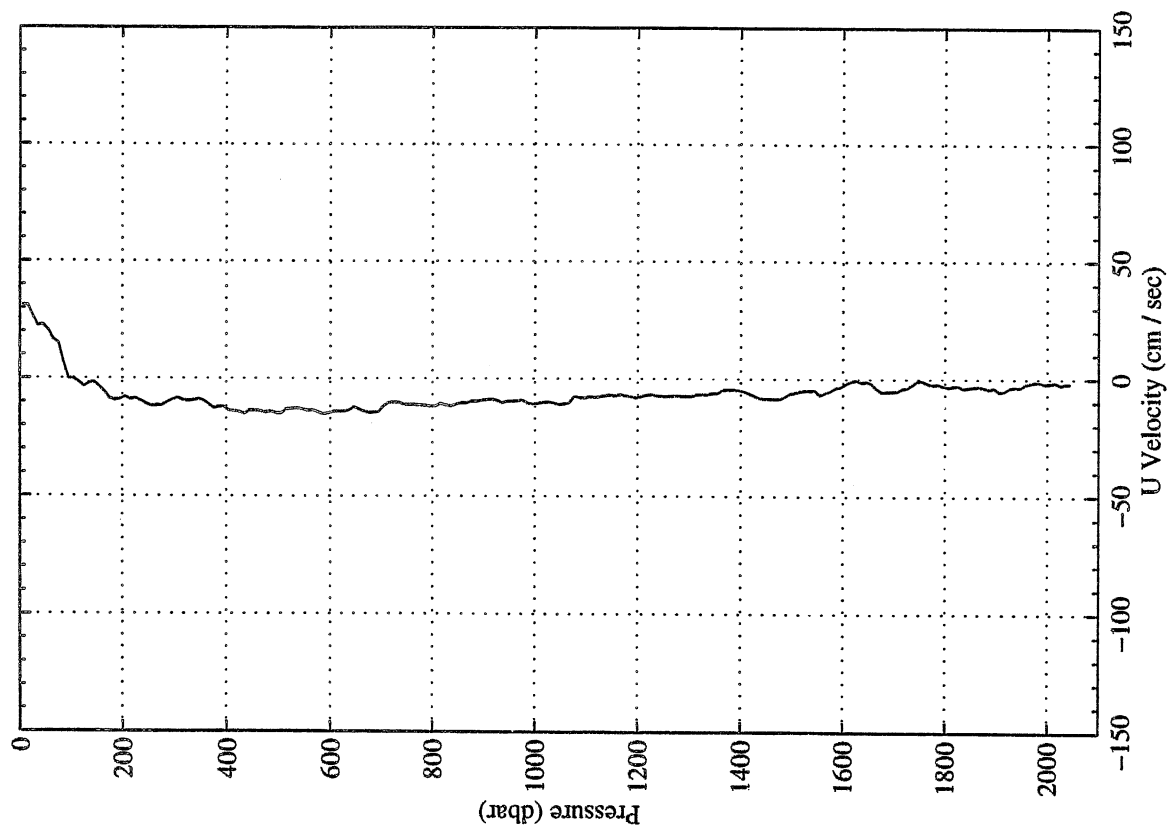
NBC-2 R/V SEWARD JOHNSON
LADCP Station 68 (99068)
Latitude 5.499 N Longitude 48.325 W
02-Mar-1999 07:09 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 69 (99069)
Latitude 6.126 N Longitude 47.975 W
02-Mar-1999 13:17 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 70 (99070)
Latitude 6.748 N Longitude 47.665 W
02-Mar-1999 19:27 Z

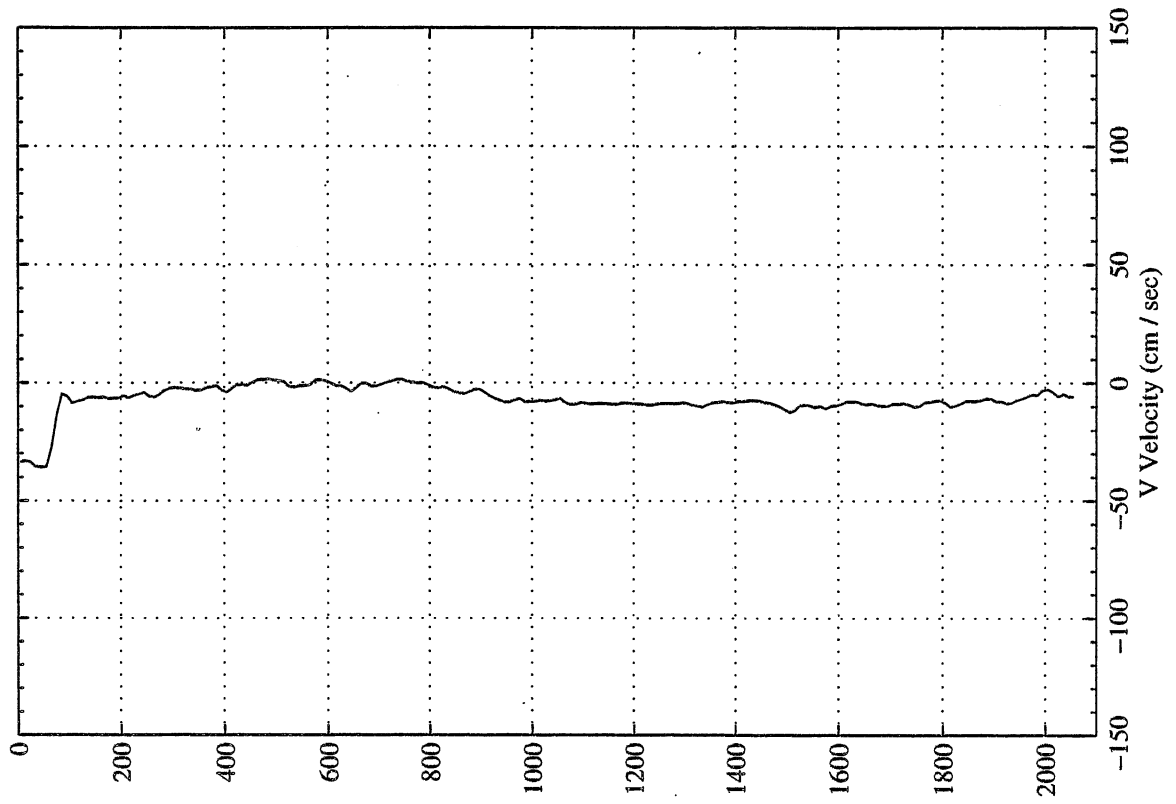
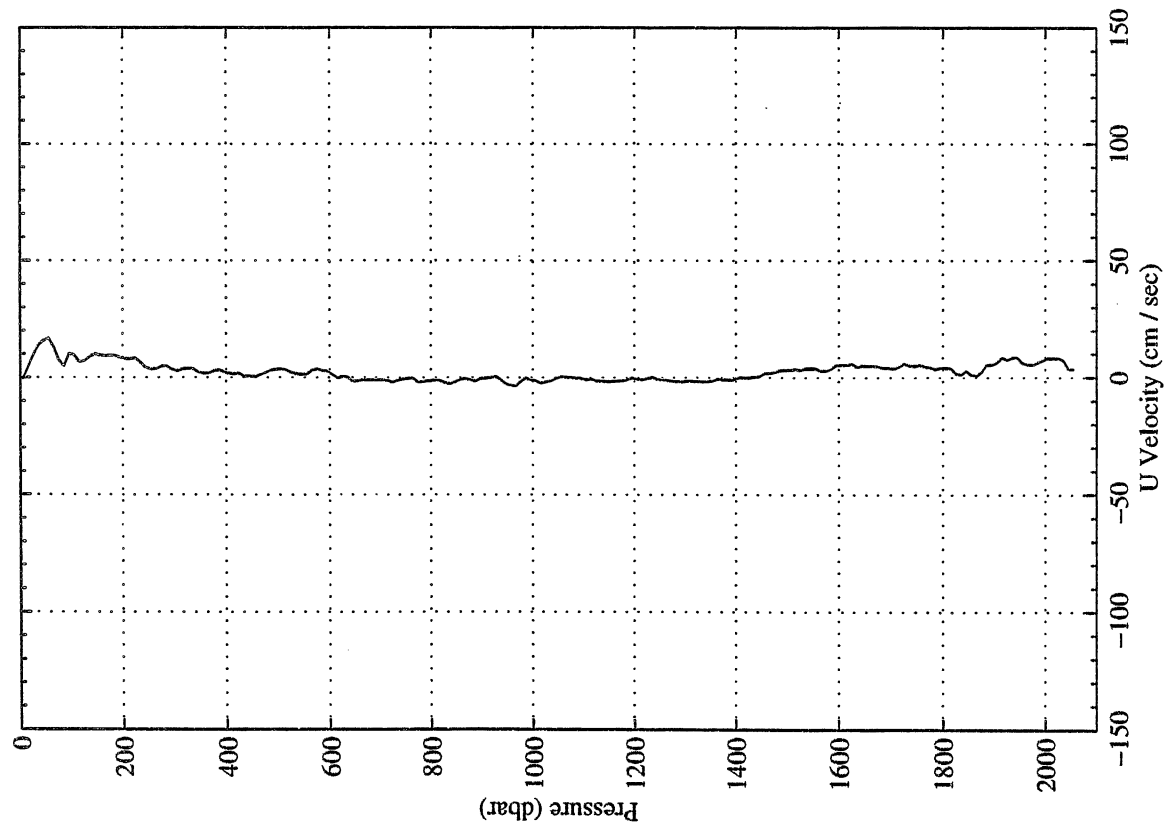


NBC-2 R/V SEWARD JOHNSON

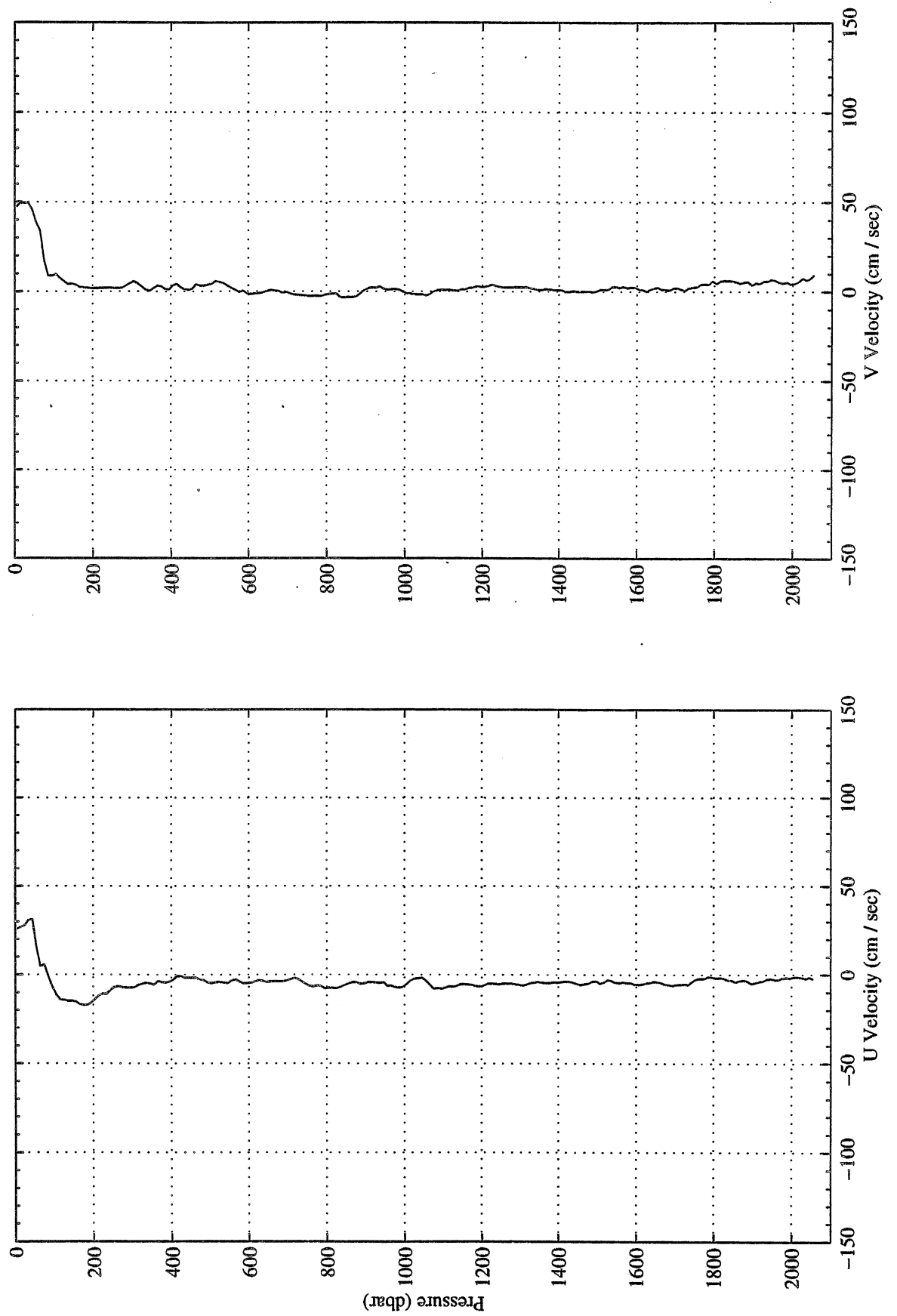
LADCP Station 71 (99071)

Latitude 7.398 N Longitude 47.364 W

03-Mar-1999 01:30 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 72 (99072)
Latitude 6.768 N Longitude 45.744 W
03-Mar-1999 12:29 Z

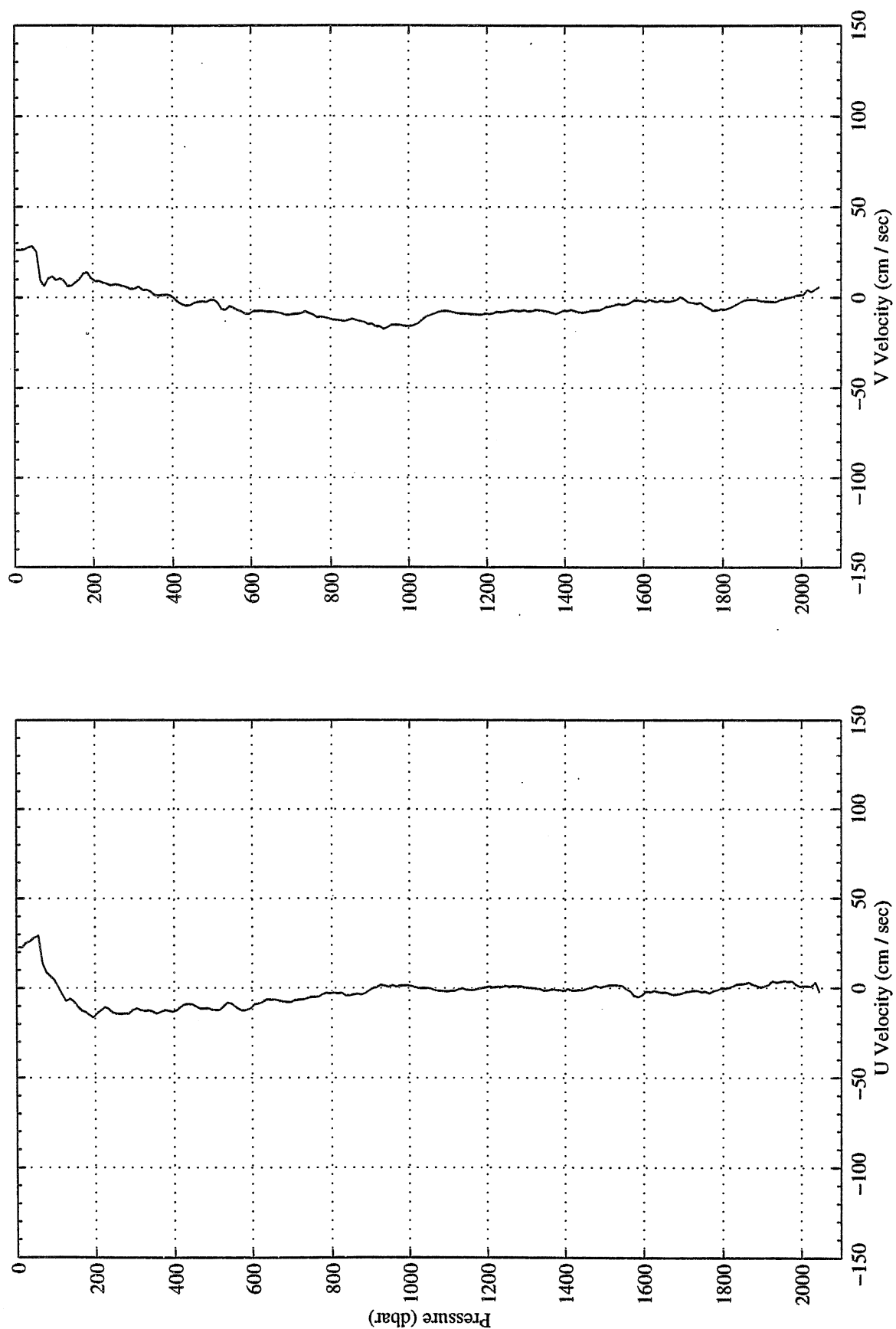


NBC-2 R/V SEWARD JOHNSON

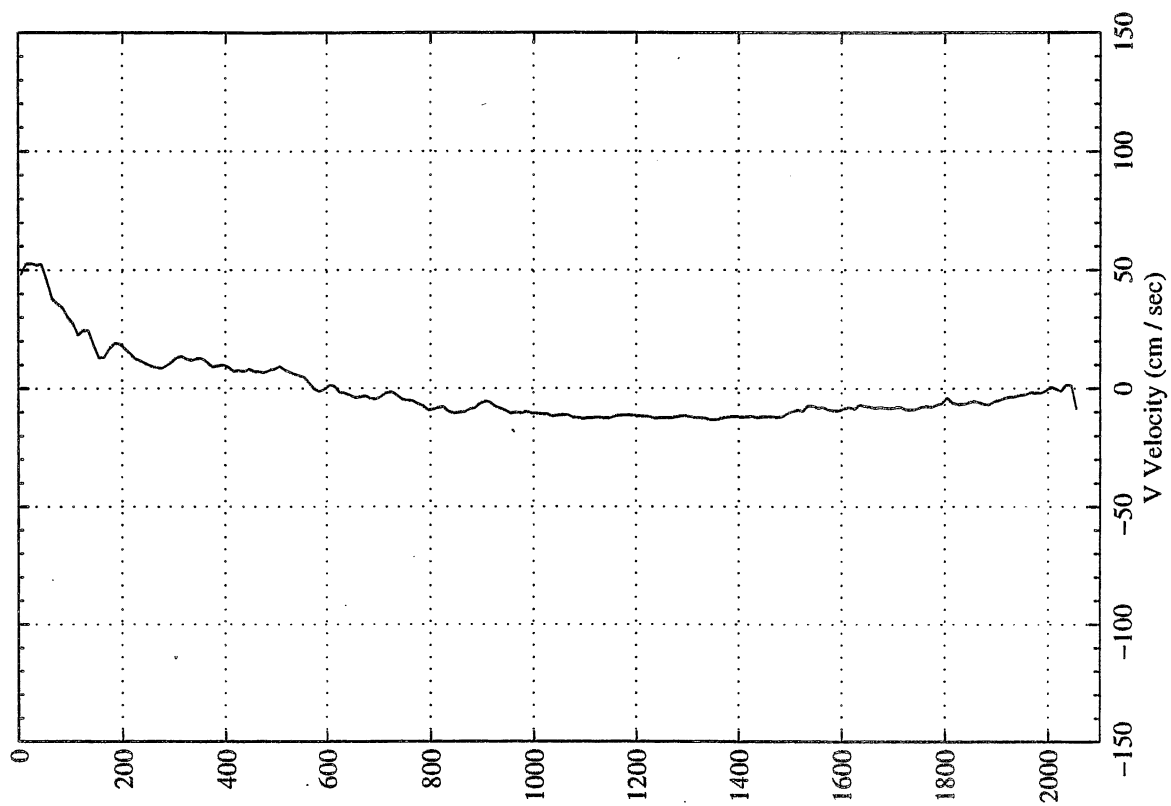
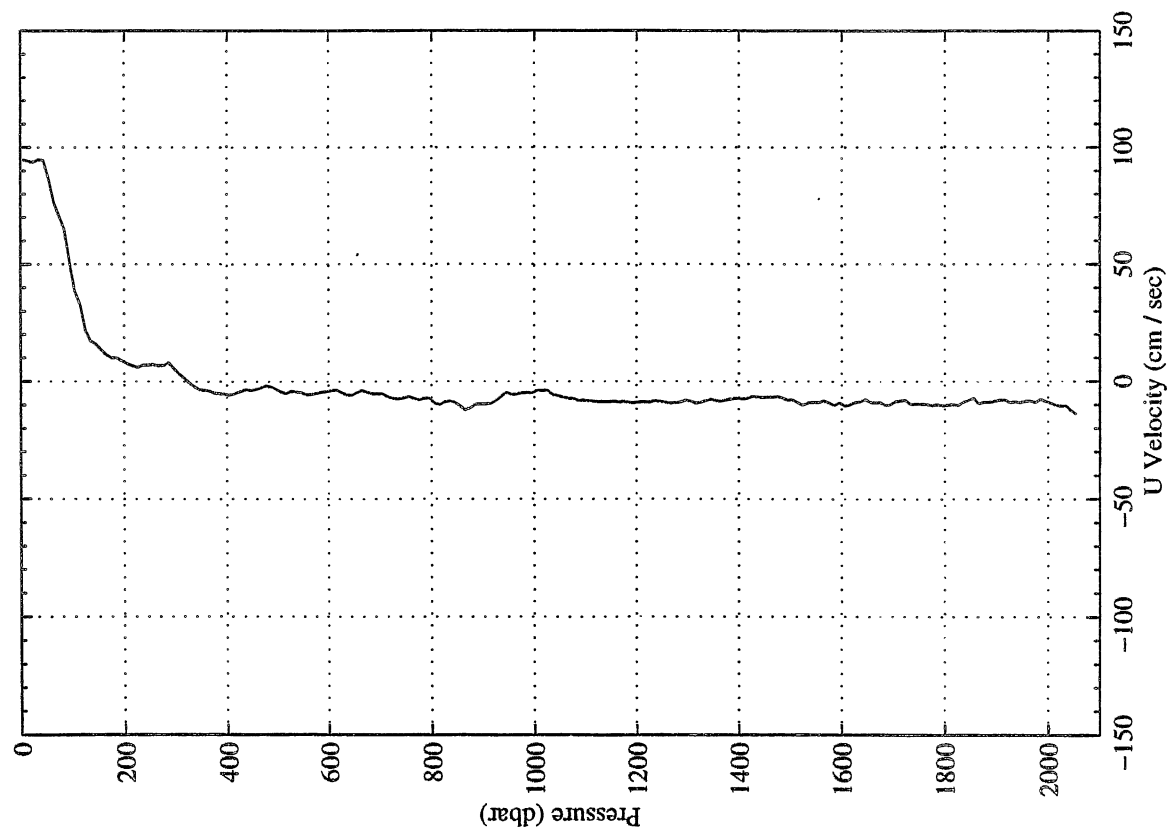
LADCP Station 73 (99073)

Latitude 6.176 N Longitude 45.913 W

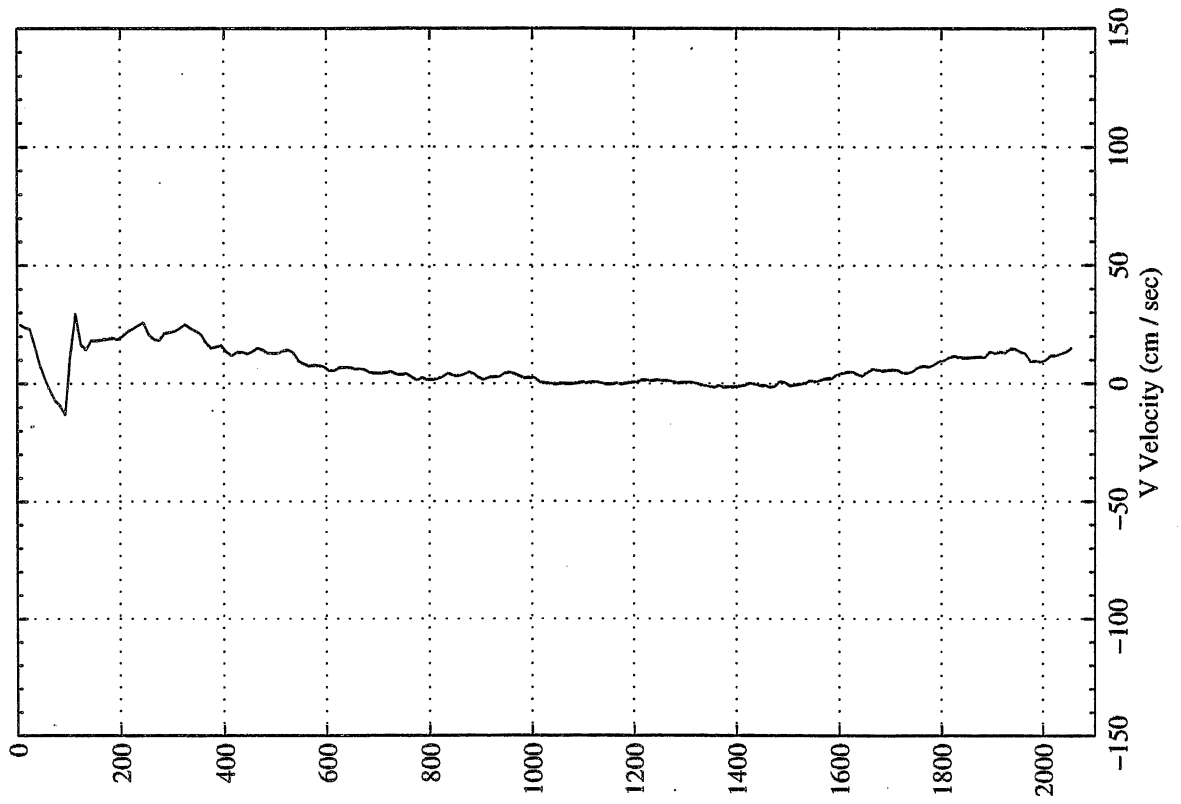
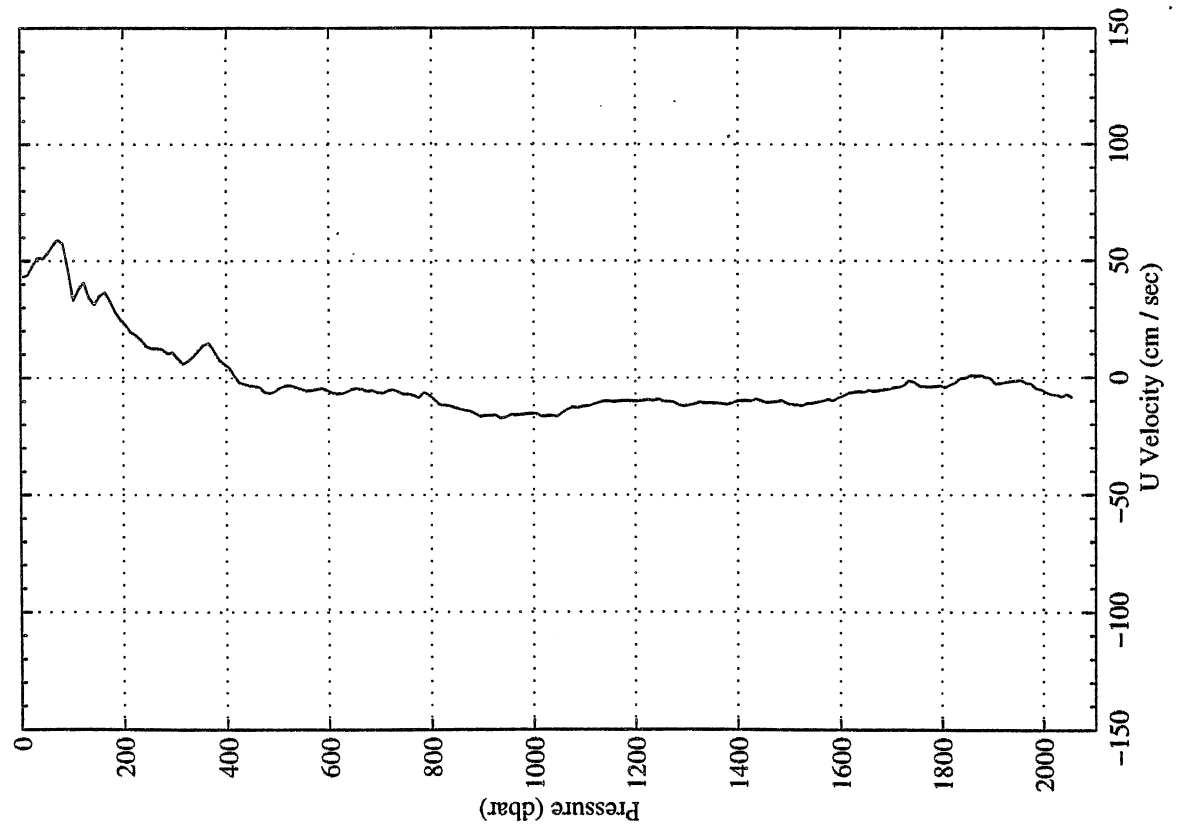
03-Mar-1999 17:33 Z



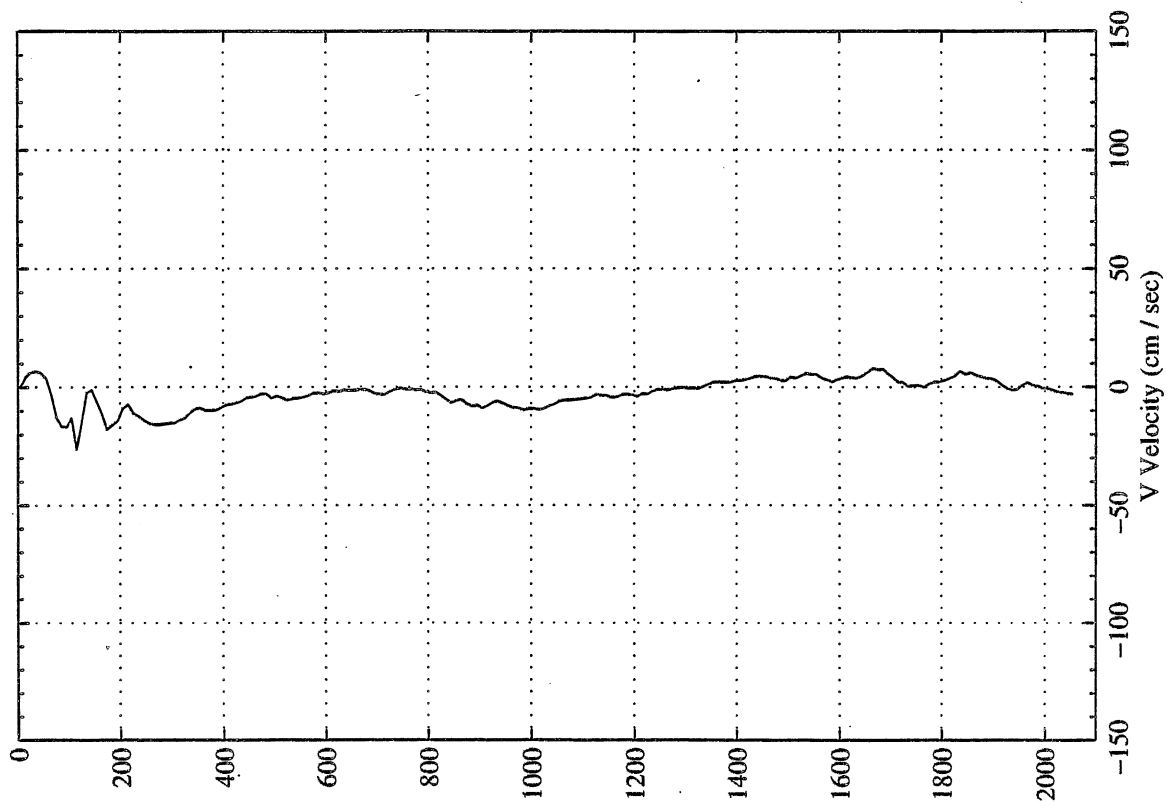
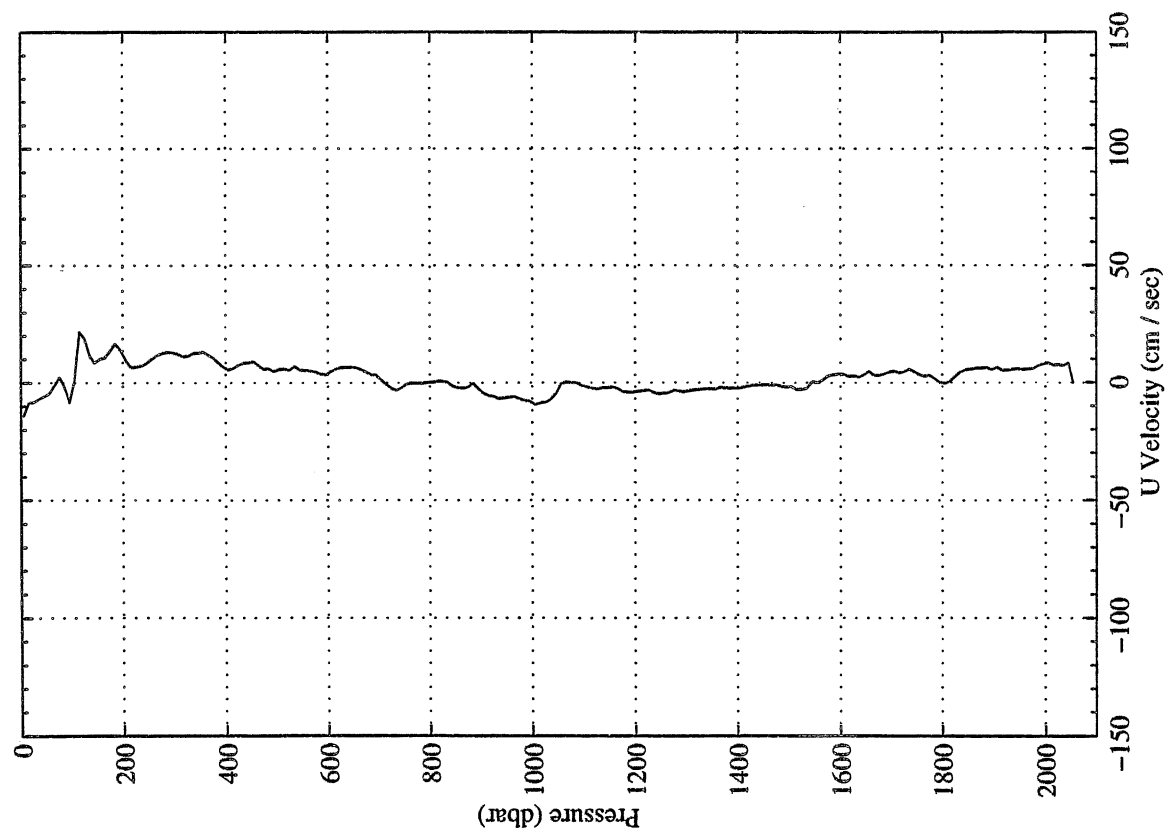
NBC-2 R/V SEWARD JOHNSON
LADCP Station 74 (99074)
Latitude 5.593 N Longitude 46.192 W
04-Mar-1999 04:12 Z



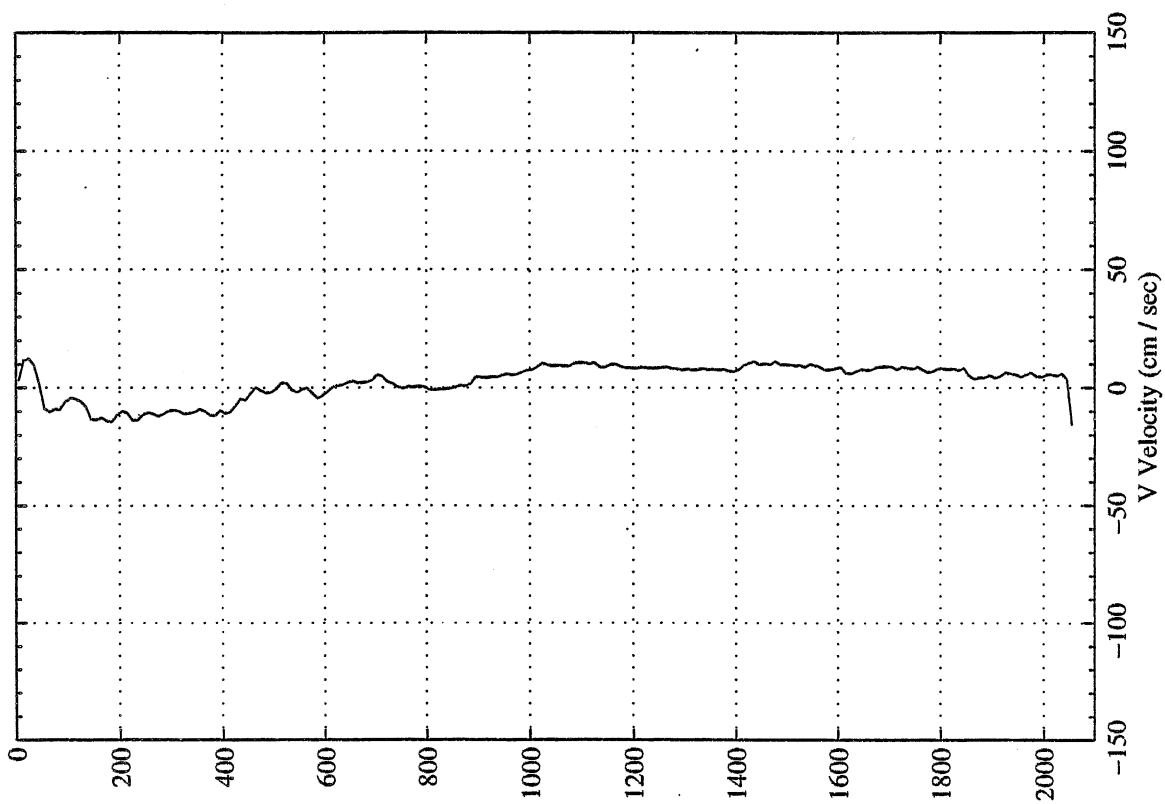
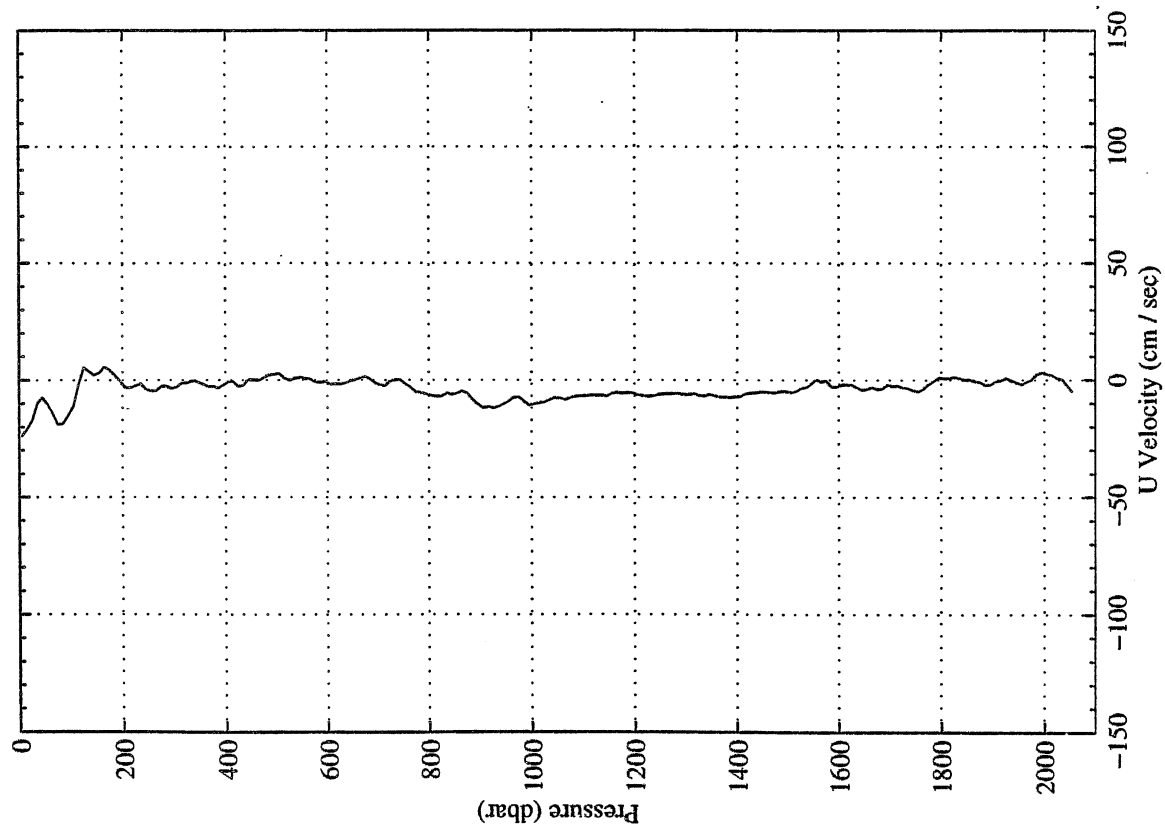
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LADCP Station 75 (99075)
Latitude 5.005 N Longitude 46.395 W
04-Mar-1999 12:49 Z



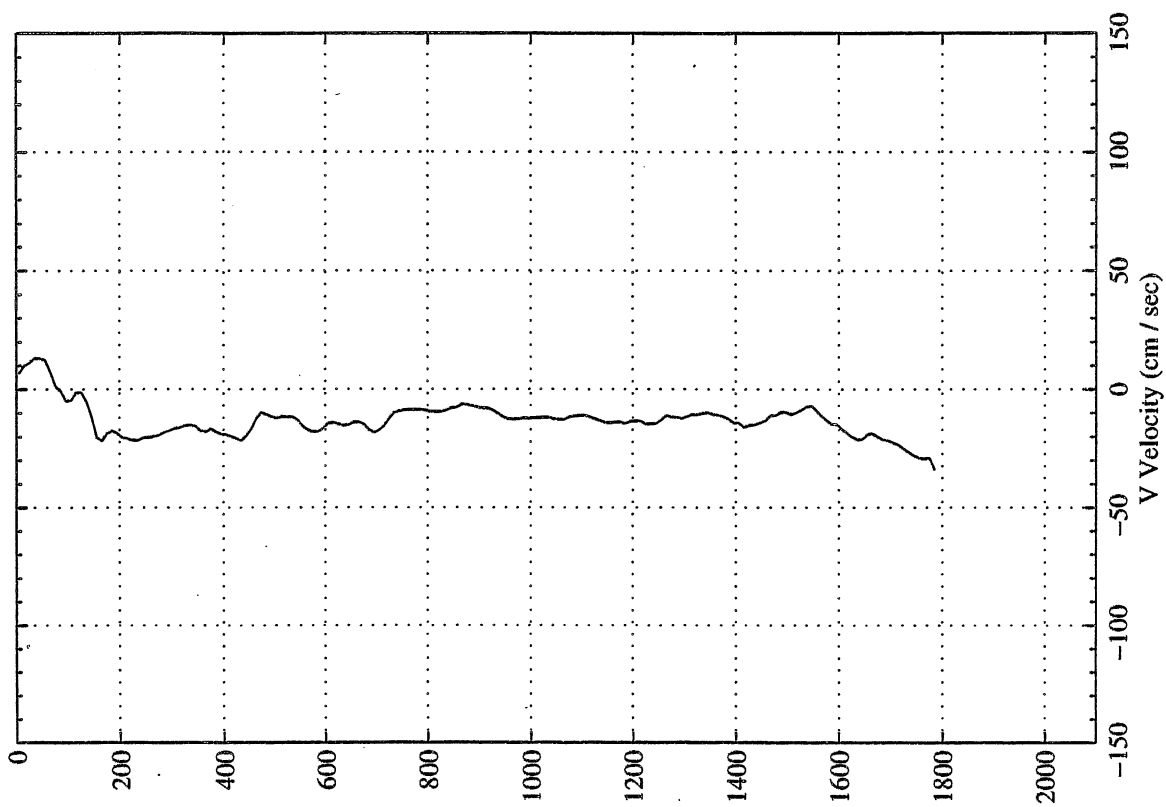
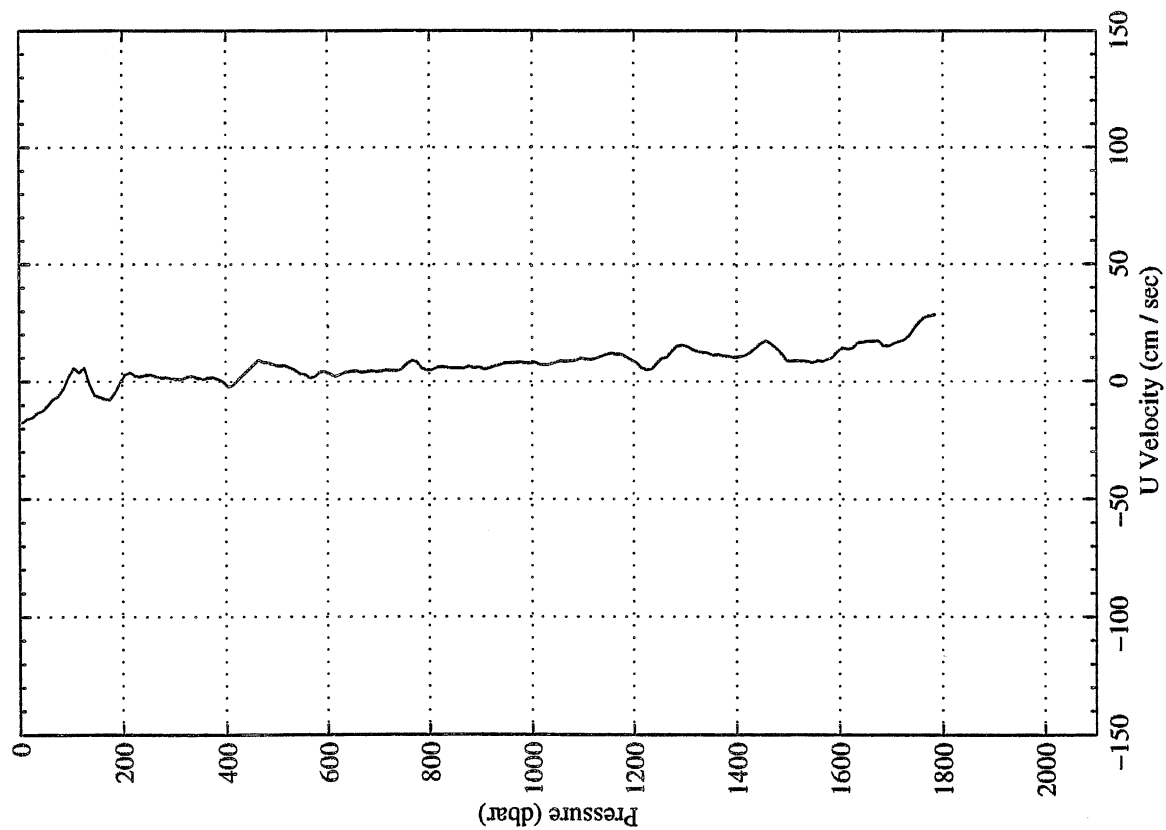
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LADCP Station 76 (99076)
Latitude 4.417 N Longitude 46.657 W
04-Mar-1999 18:44 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 77 (99077)
Latitude 3.972 N Longitude 46.817 W
04-Mar-1999 23:01 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 78 (99078)
Latitude 3.500 N Longitude 47.004 W
05-Mar-1999 03:08 Z

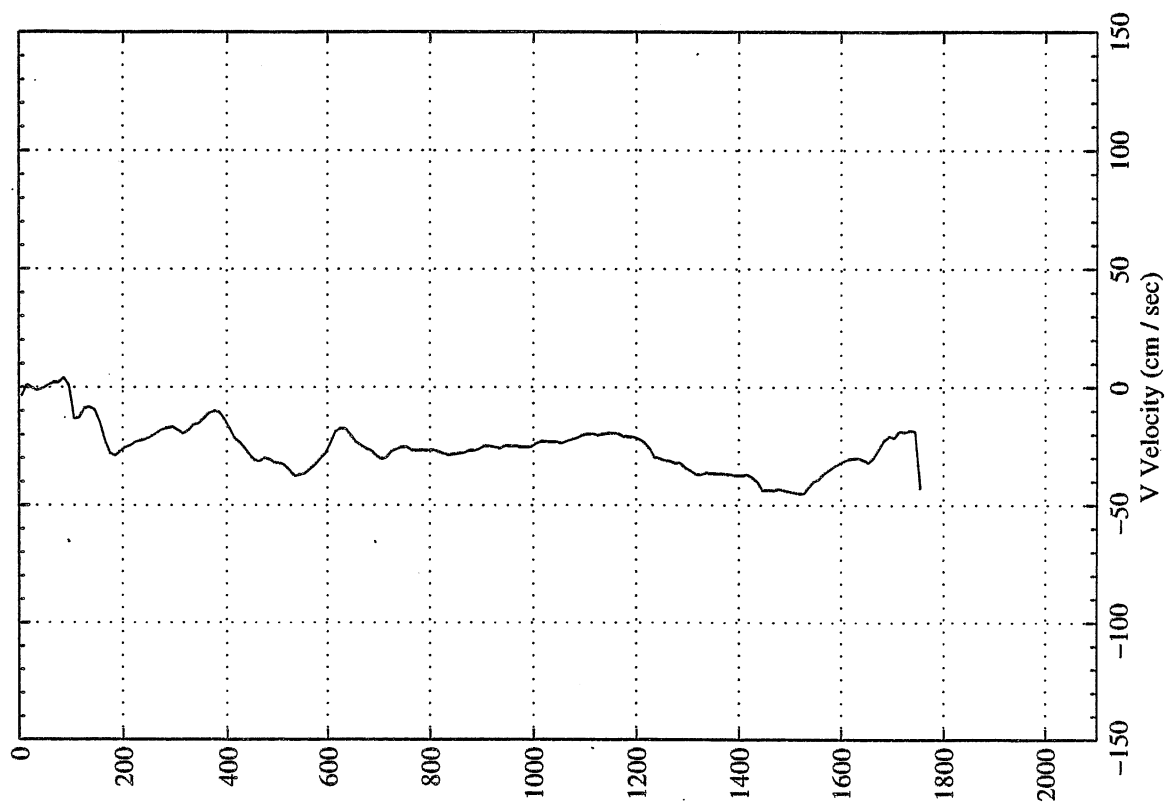
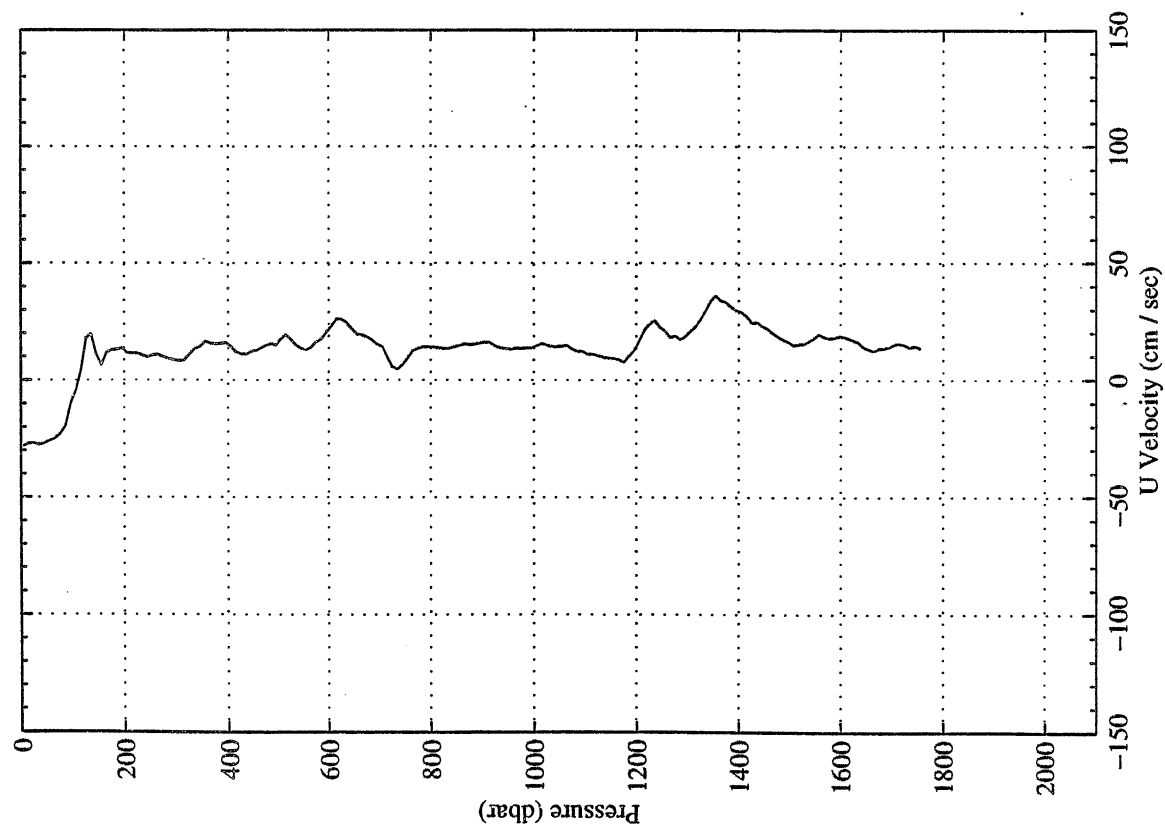


NBC-2 R/V SEWARD JOHNSON

LADCP Station 79 (99079)

Latitude 3.079 N Longitude 47.152 W

05-Mar-1999 06:50 Z

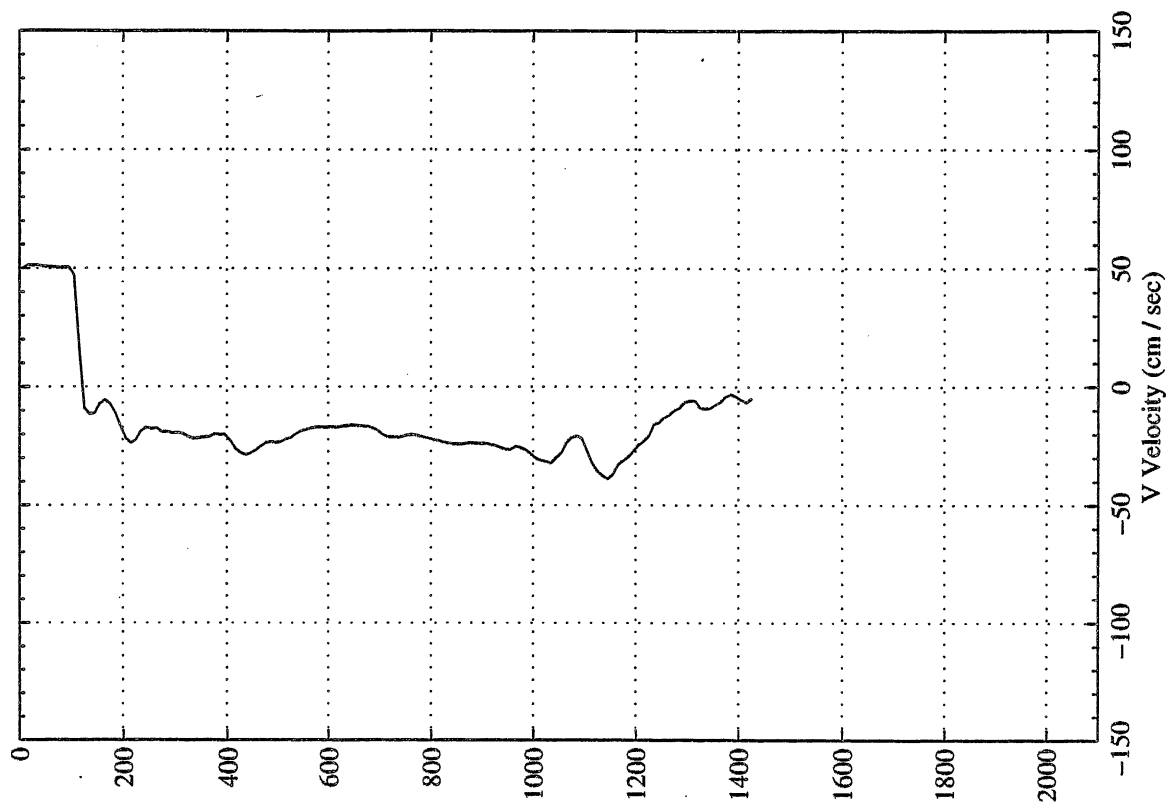
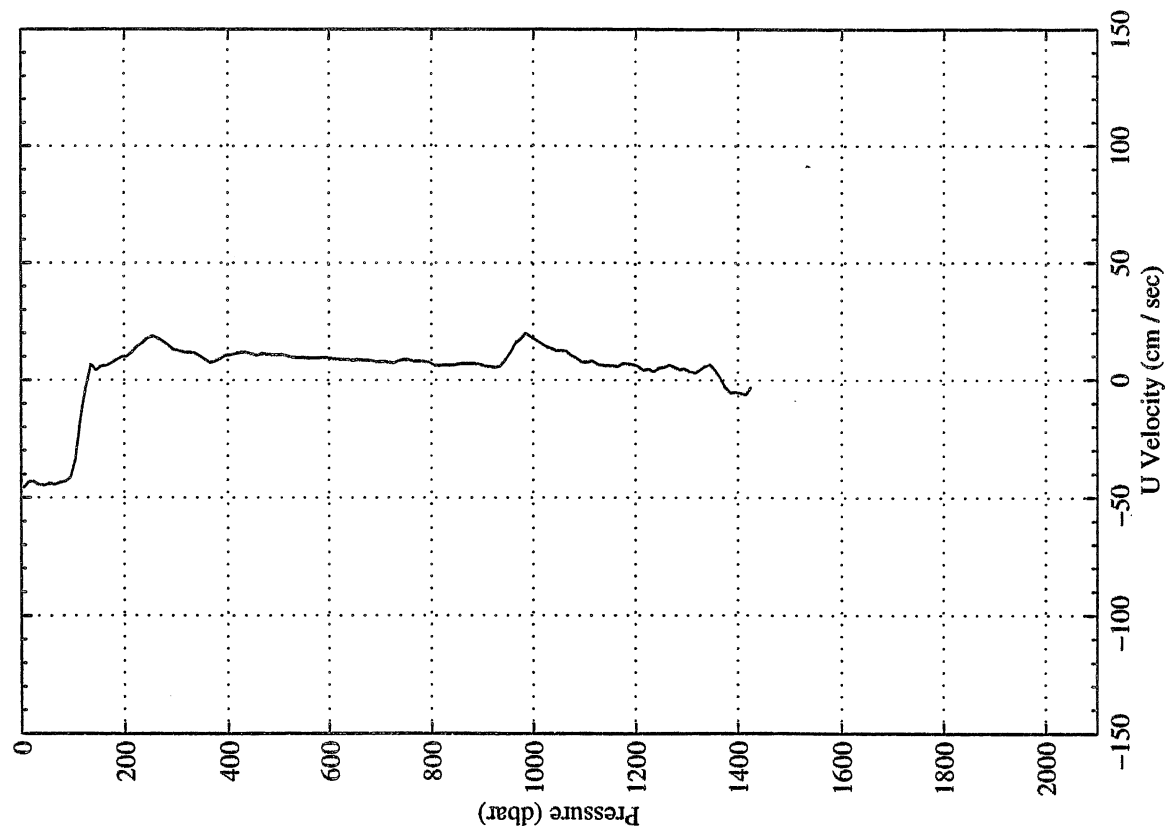


NBC-2 R/V SEWARD JOHNSON

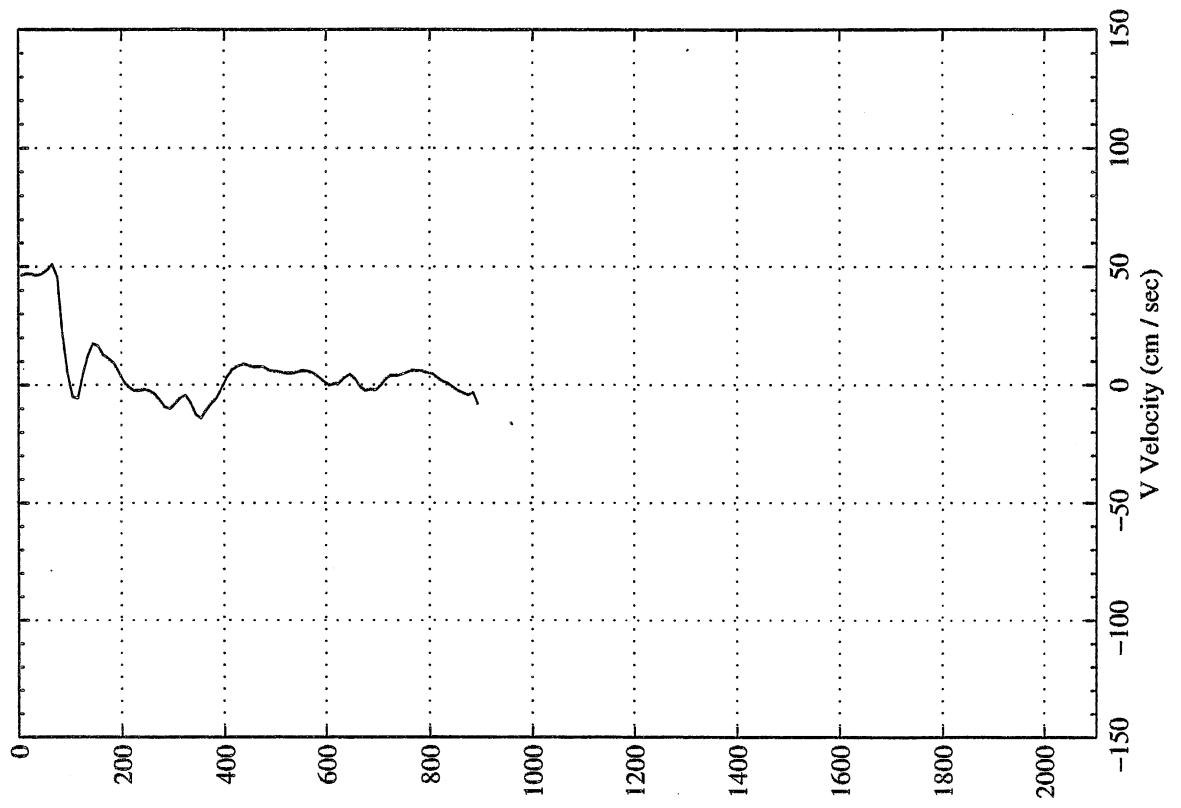
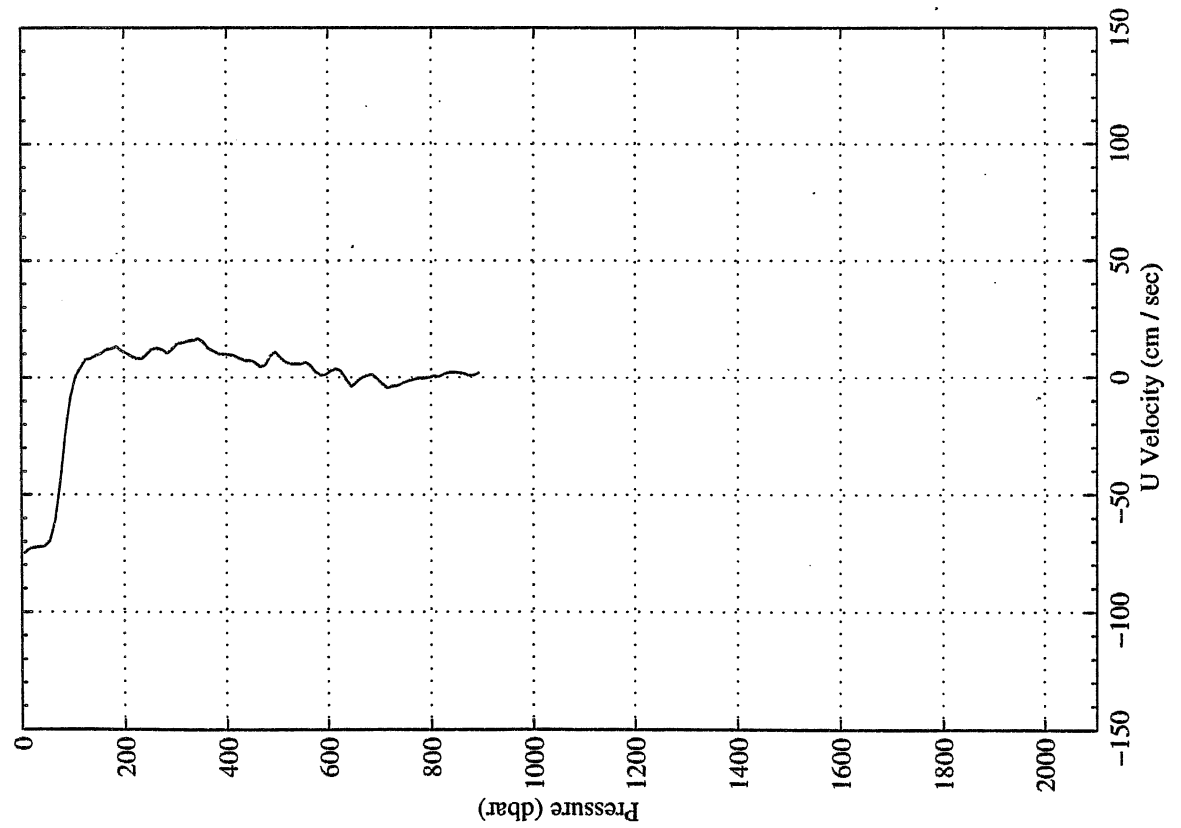
LADCP Station 80 (99080)

Latitude 2.677 N Longitude 47.337 W

05-Mar-1999 10:40 Z



NBC-2 R/V SEWARD JOHNSON
LADCP Station 81 (99081)
Latitude 2.336 N Longitude 47.467 W
05-Mar-1999 13:39 Z



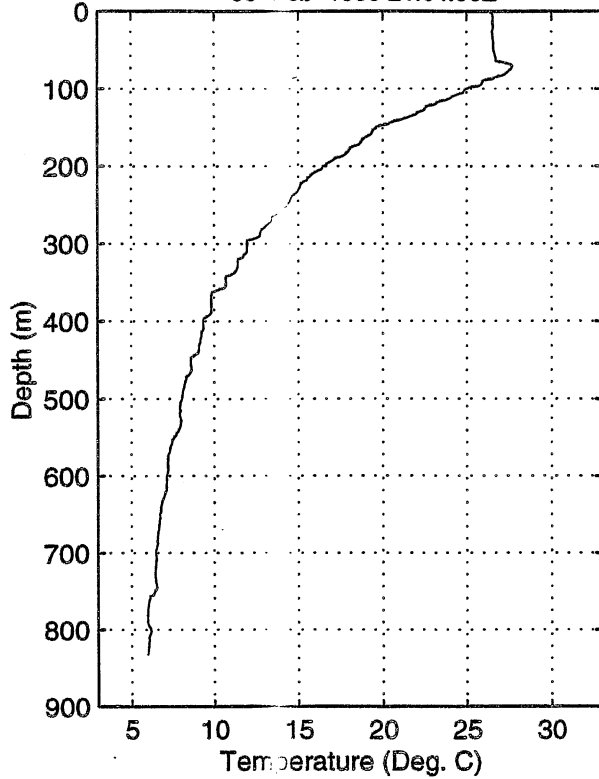
APPENDIX C

XBT DATA

NBC-2 R/V SEWARD JOHNSON XBT Drop 001

Lat. 12.995 N Long. 59.160 W

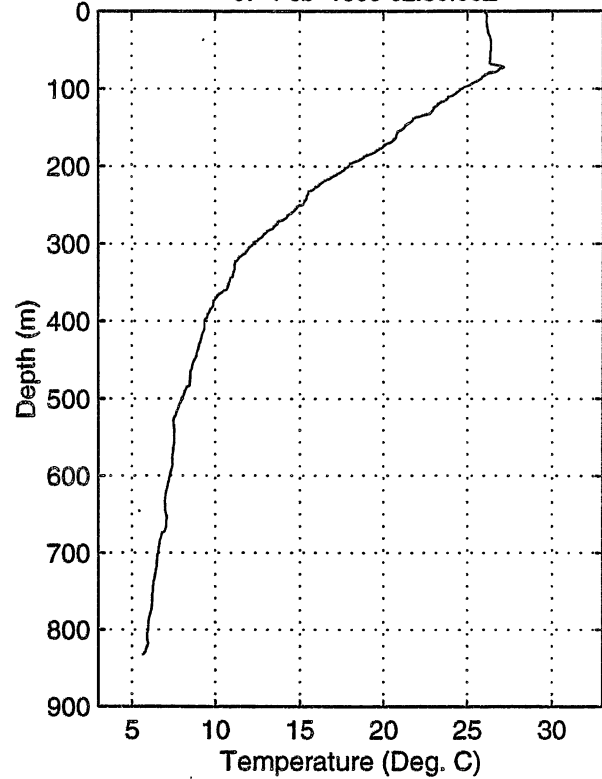
06-Feb-1999 21:04:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 002

Lat. 13.002 N Long. 58.550 W

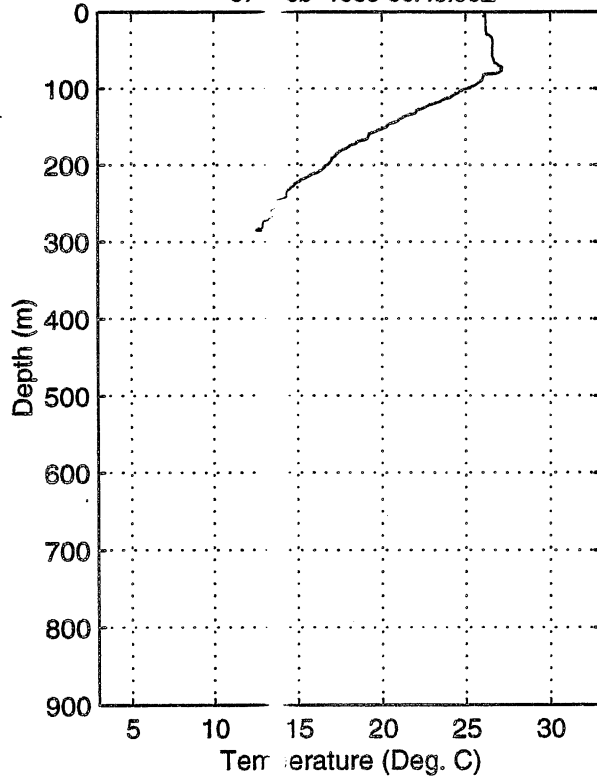
07-Feb-1999 02:59:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 003

Lat. 13.010 N Long. 58.187 W

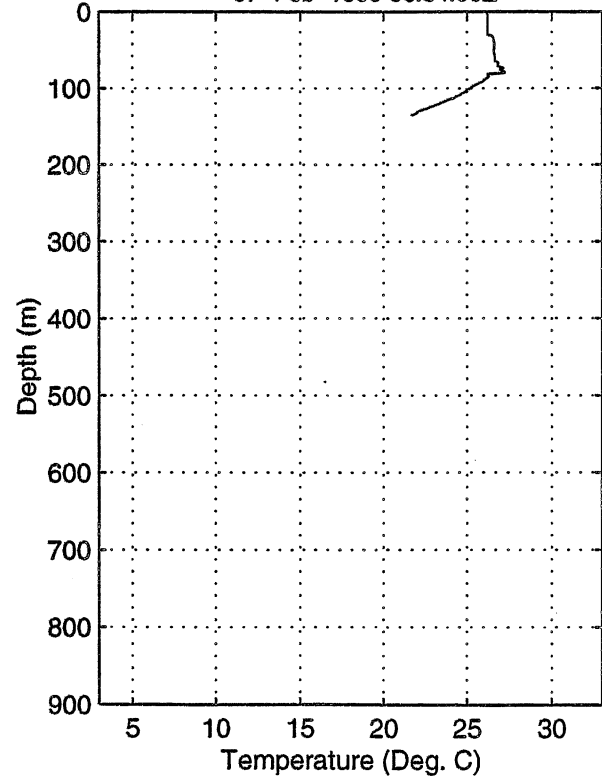
07-Feb-1999 06:45:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 004

Lat. 13.008 N Long. 58.162 W

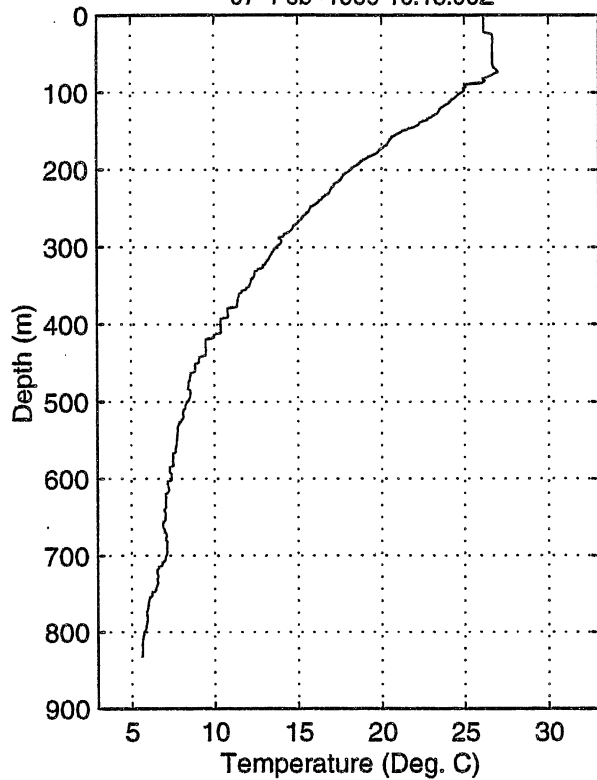
07-Feb-1999 06:54:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 005

Lat. 13.000 N Long. 57.837 W

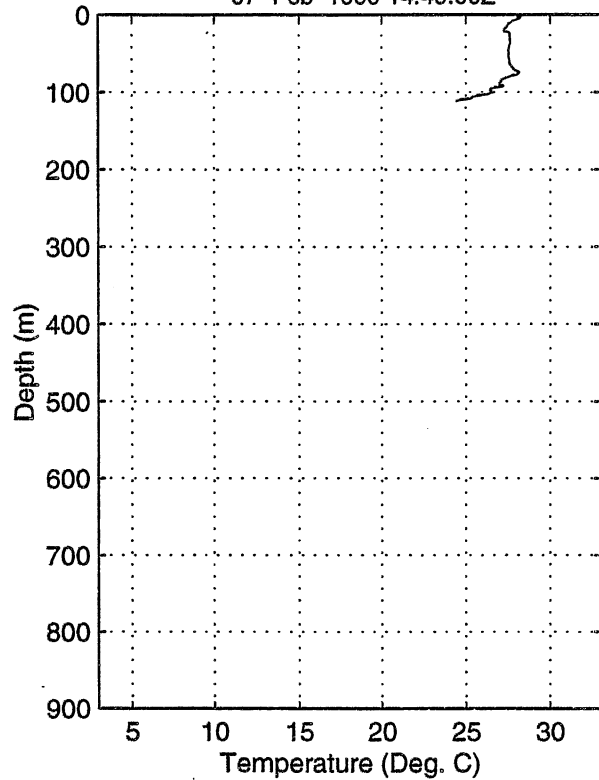
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Lat. 12.928 N Long. 57.673 W

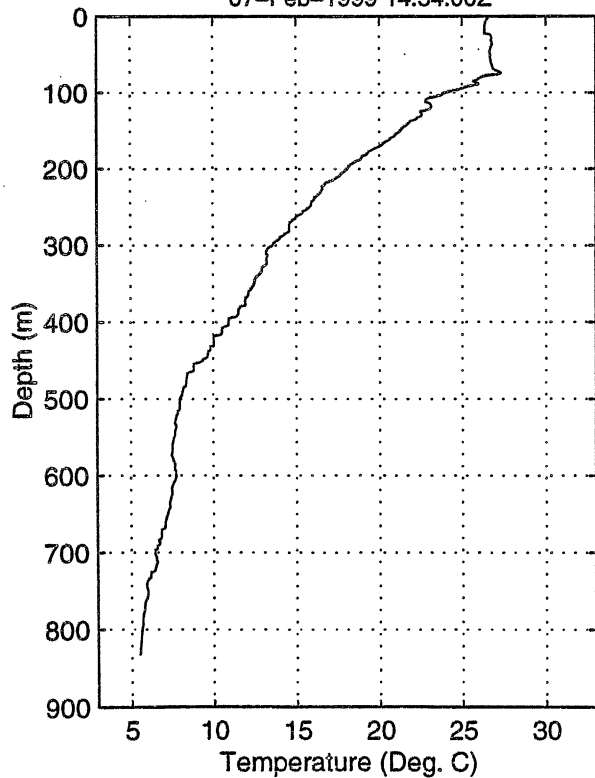
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NBC-2 R/V SEWARD JOHNSON XBT Drop 007

Lat. 12.920 N Long. 57.688 W

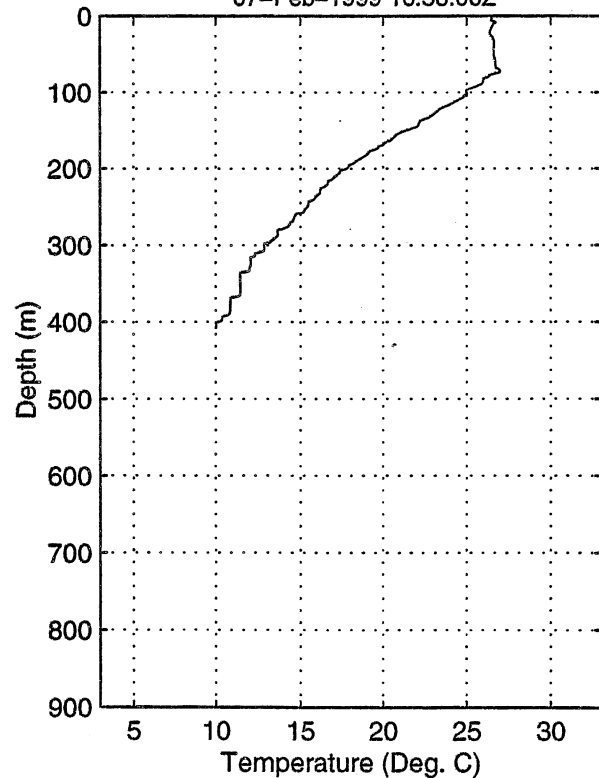
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Lat. 12.735 N Long. 58.060 W

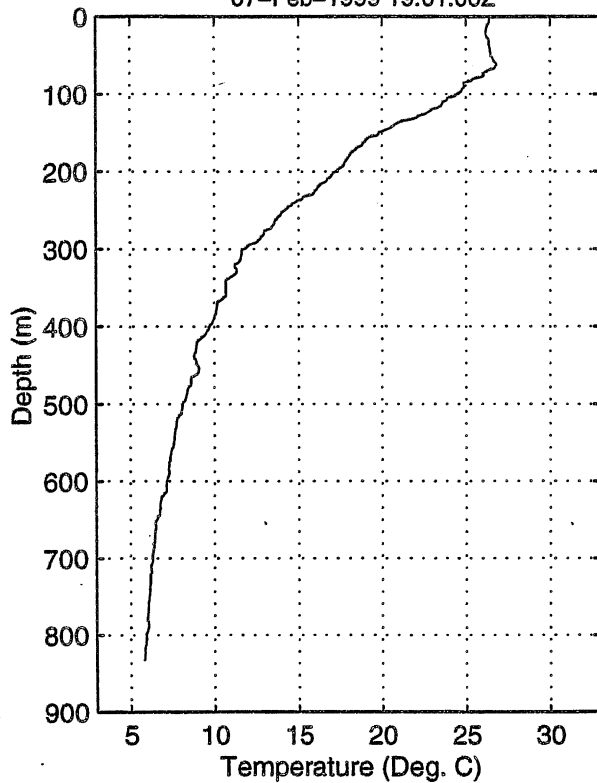
07-Feb-1999 16:58:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 009

Lat. 12.547 N Long. 58.433 W

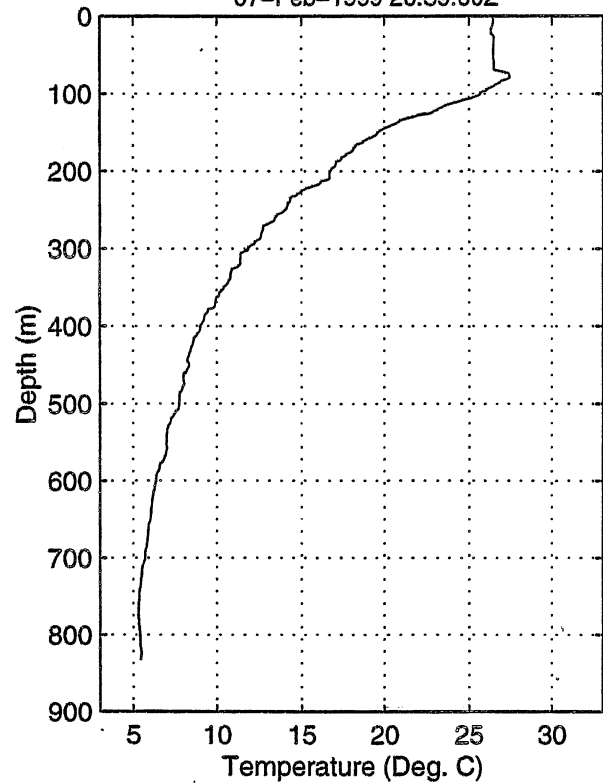
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Lat. 12.367 N Long. 58.780 W

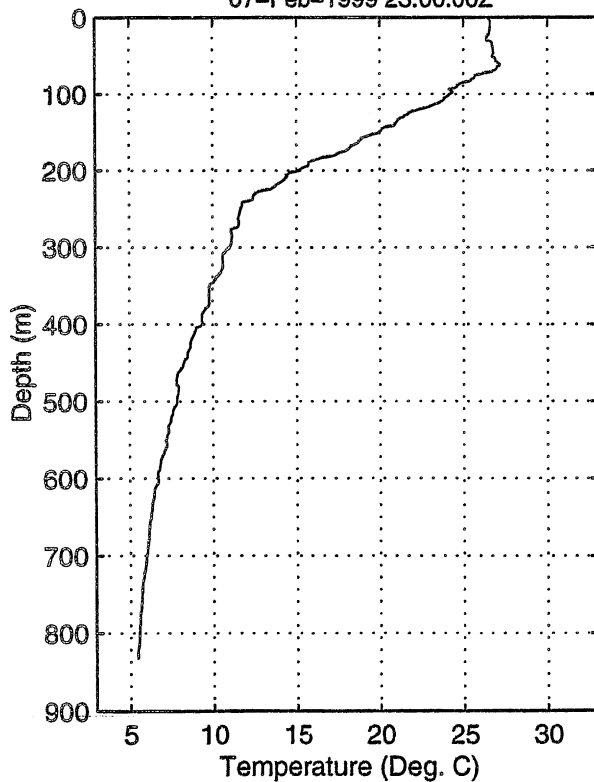
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Lat. 12.200 N Long. 59.147 W

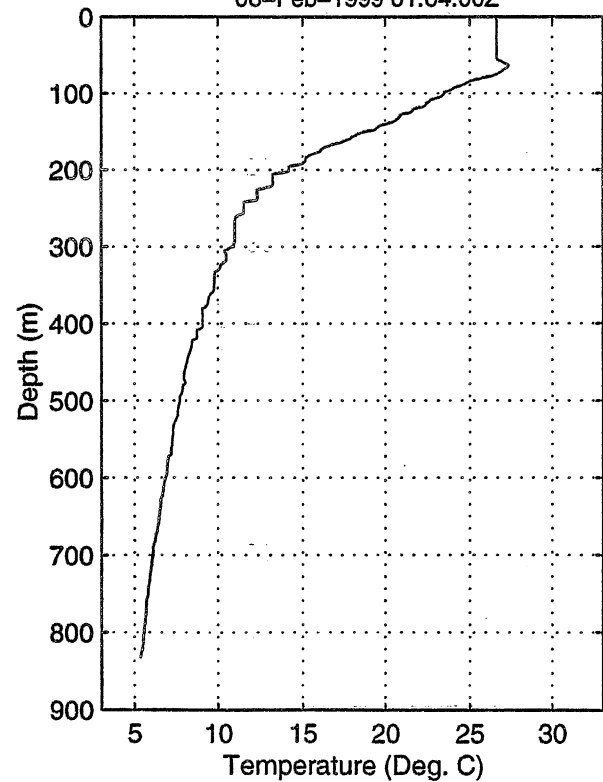
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Lat. 12.003 N Long. 59.492 W

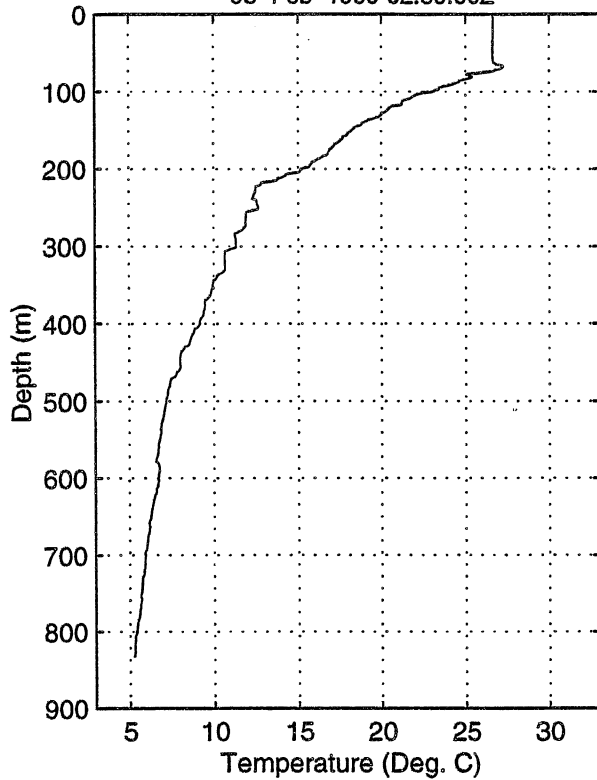
08-Feb-1999 01:04:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 013

Lat. 11.818 N Long. 59.800 W

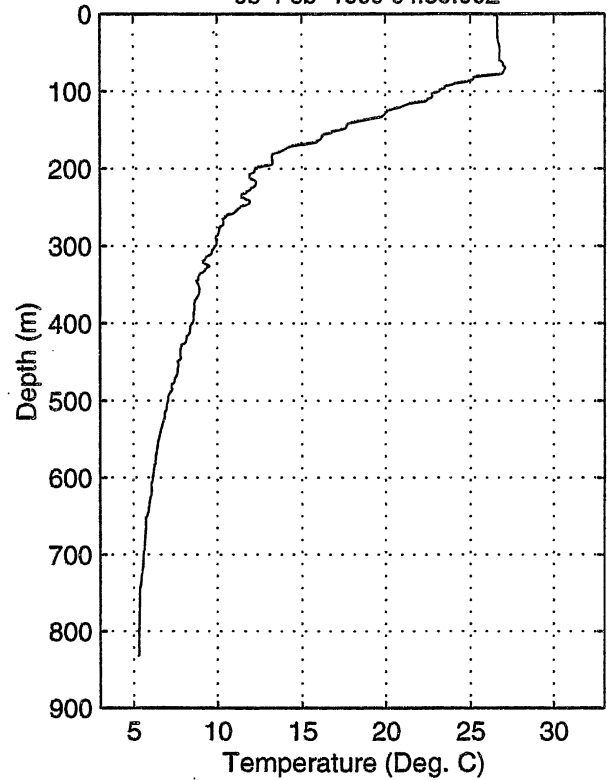
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NBC-2 R/V SEWARD JOHNSON XBT Drop 014

Lat. 11.610 N Long. 60.145 W

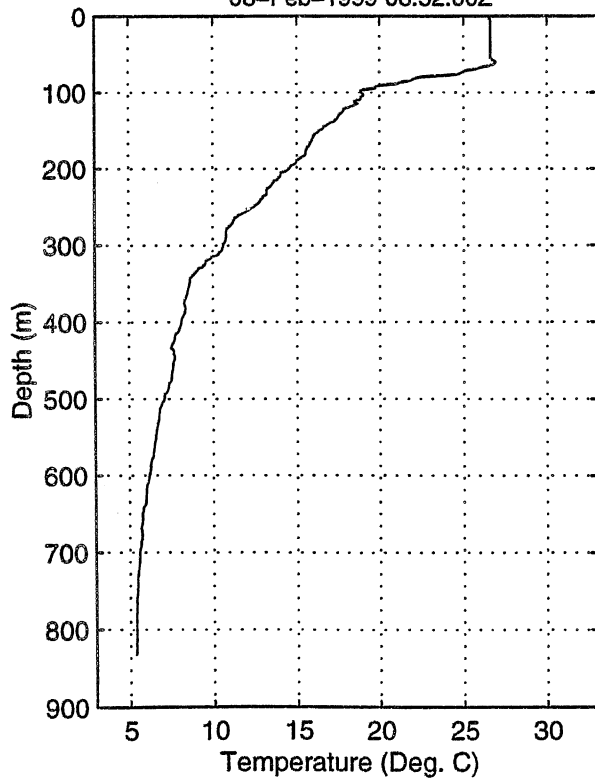
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Lat. 11.552 N Long. 60.418 W

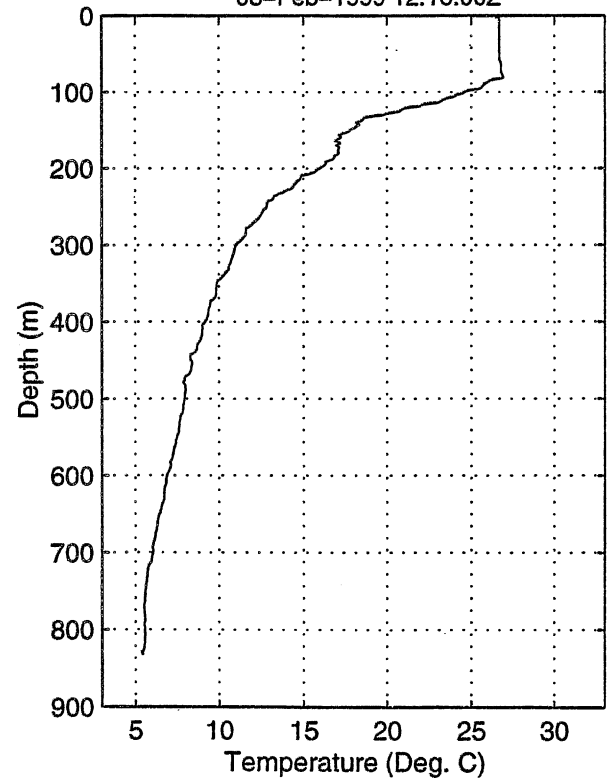
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Lat. 11.900 N Long. 60.223 W

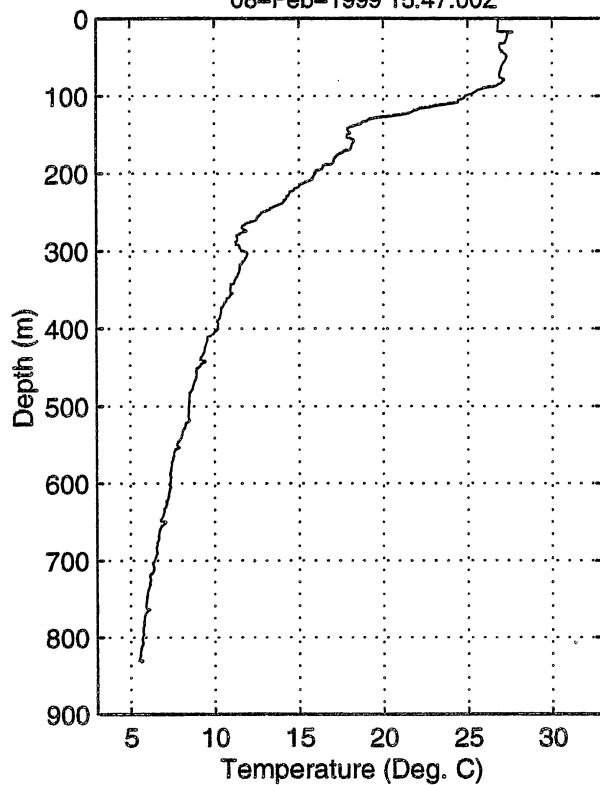
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Lat. 12.178 N Long. 60.057 W

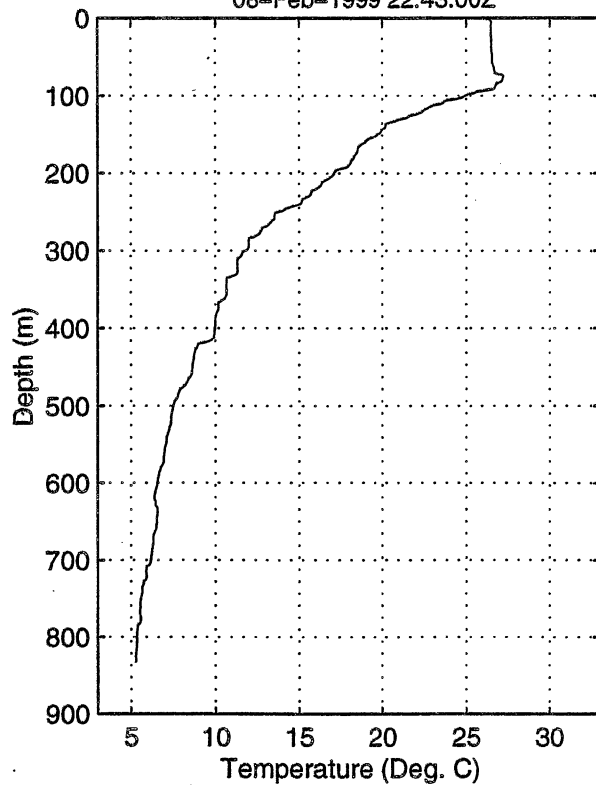
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NBC-2 R/V SEWARD JOHNSON XBT Drop 019

Lat. 12.550 N Long. 59.843 W

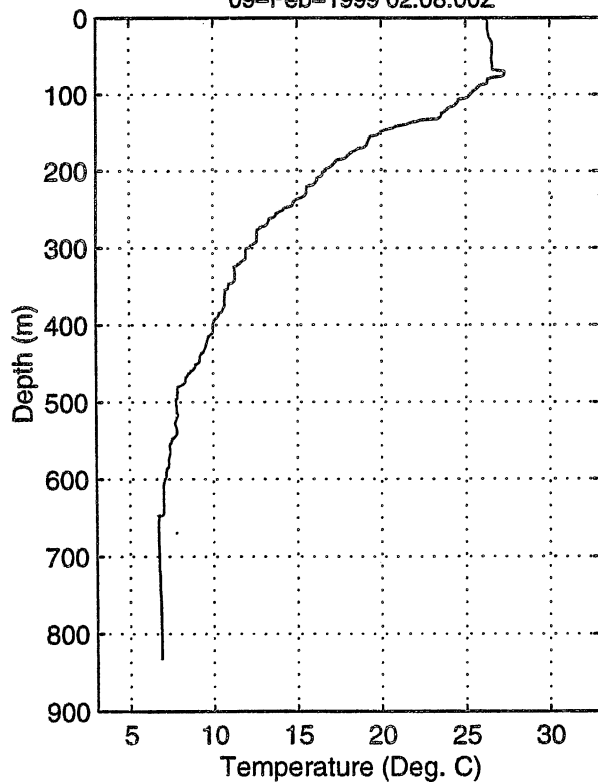
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NBC-2 R/V SEWARD JOHNSON XBT Drop 020

Lat. 12.873 N Long. 59.638 W

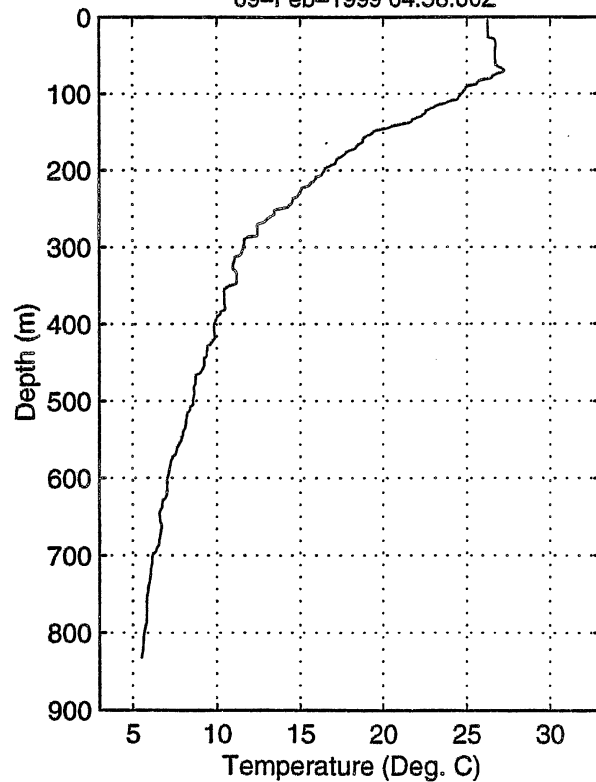
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Lat. 12.658 N Long. 59.447 W

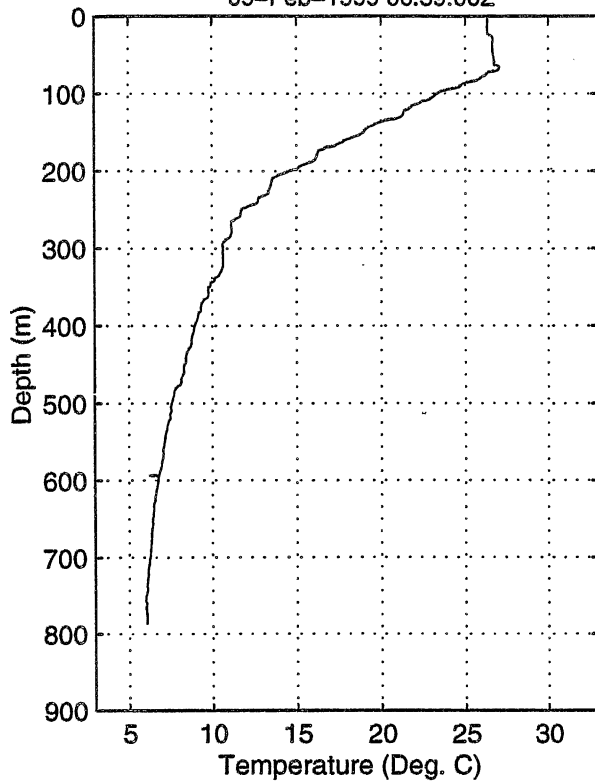
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Lat. 12.343 N Long. 59.277 W

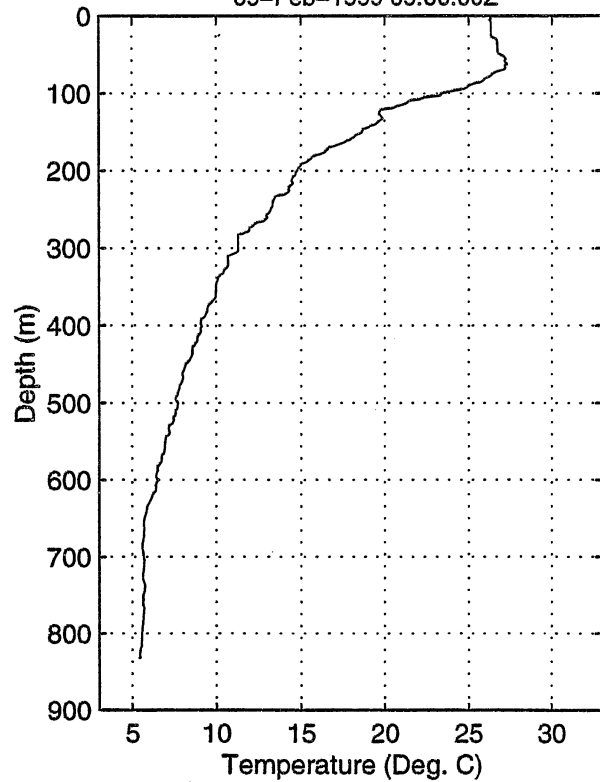
09-Feb-1999 06:59:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 023

Lat. 12.025 N Long. 59.102 W

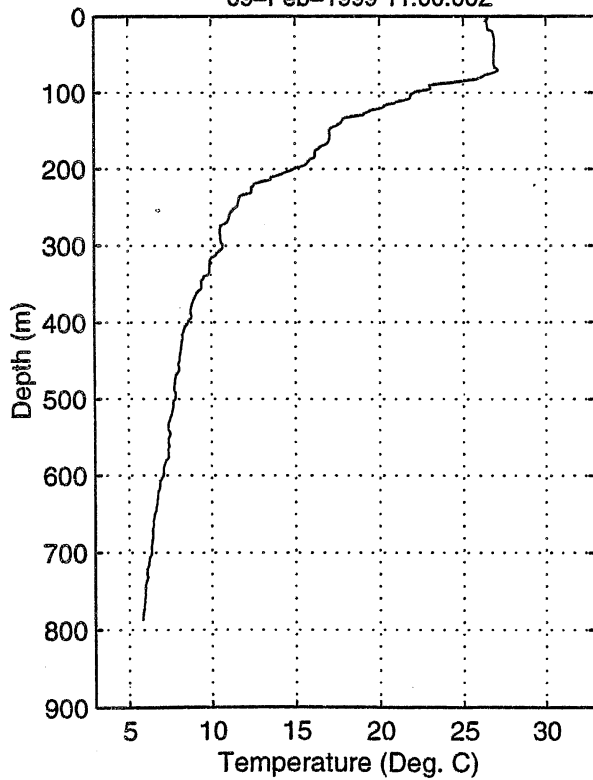
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Lat. 11.710 N Long. 58.937 W

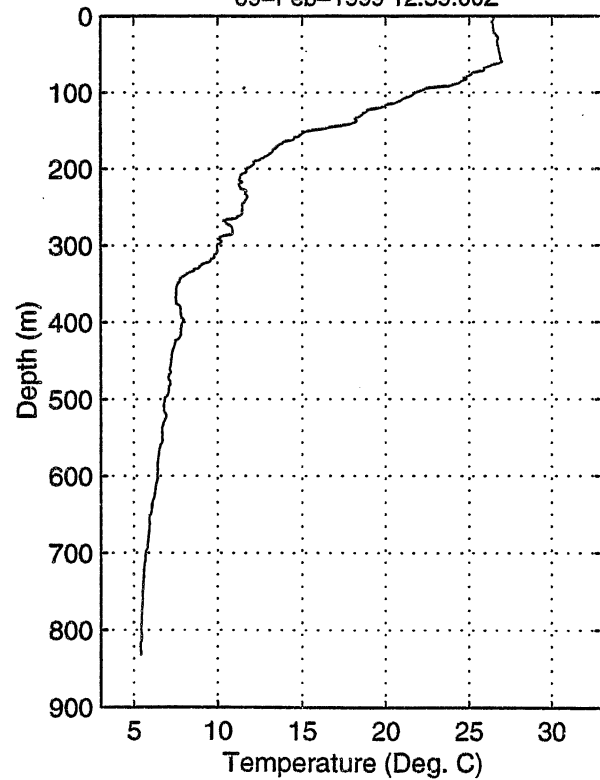
09-Feb-1999 11:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 025

Lat. 11.407 N Long. 58.765 W

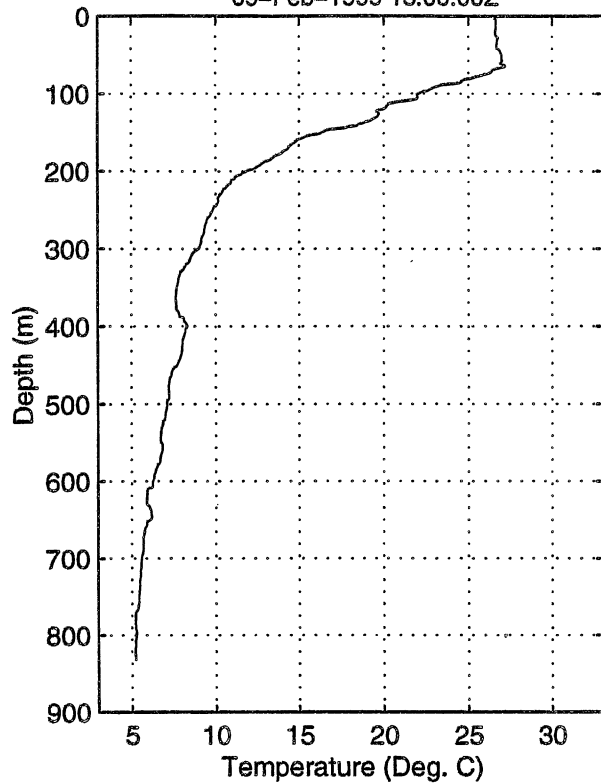
09-Feb-1999 12:59:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 026

Lat. 11.162 N Long. 58.547 W

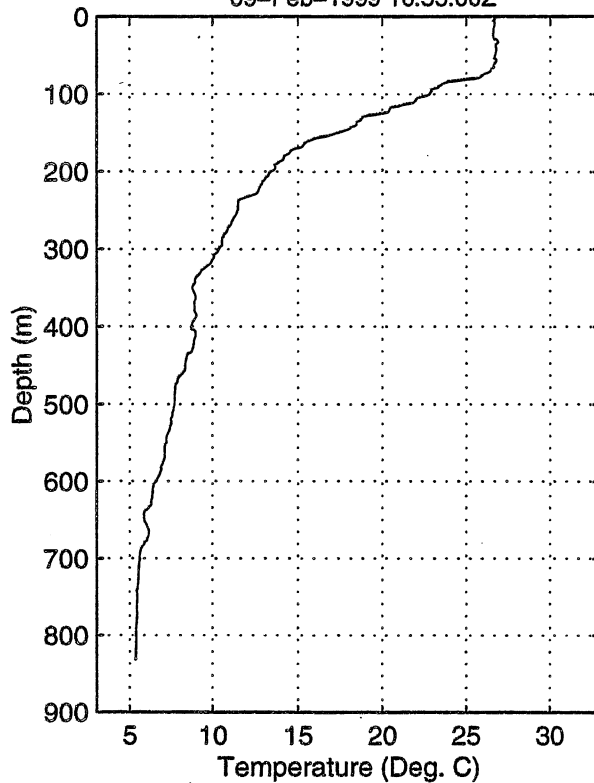
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NBC-2 R/V SEWARD JOHNSON XBT Drop 027

Lat. 10.967 N Long. 58.295 W

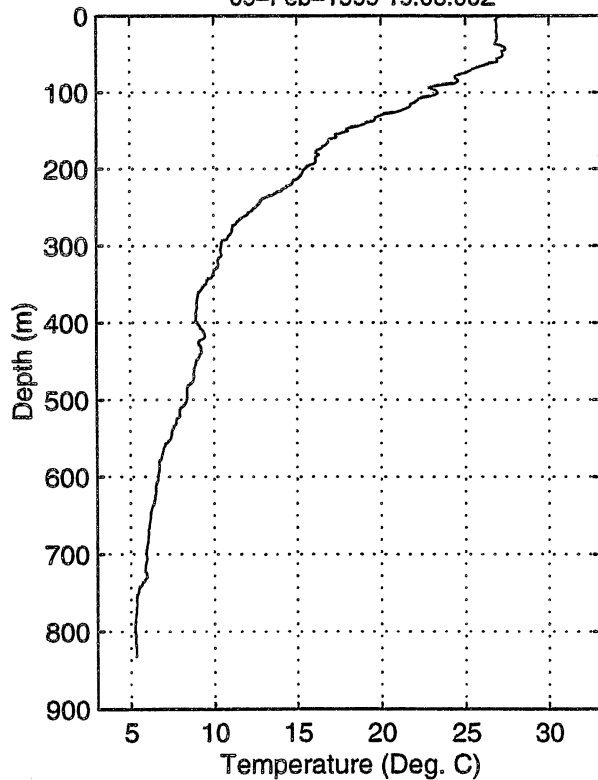
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NBC-2 R/V SEWARD JOHNSON XBT Drop 028

Lat. 10.752 N Long. 58.005 W

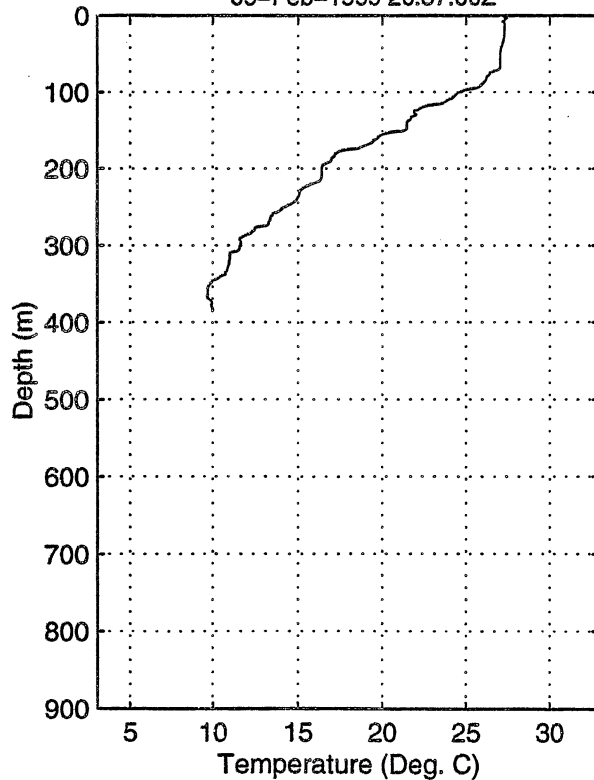
09-Feb-1999 19:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 029

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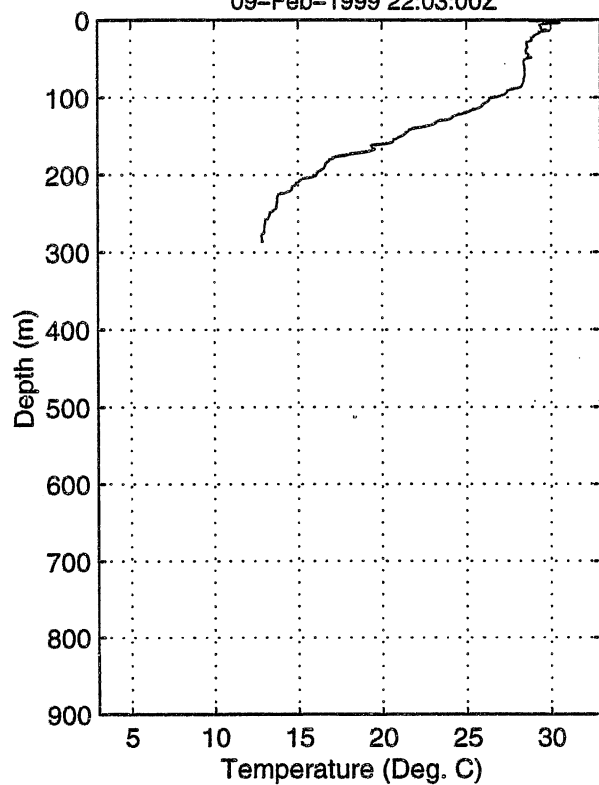
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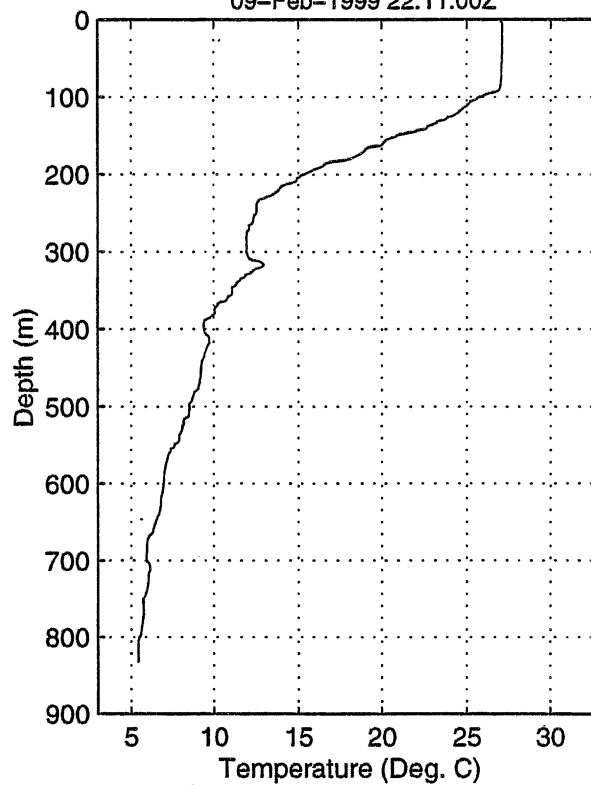
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NBC-2 R/V SEWARD JOHNSON XBT Drop 031

Lat. 10.535 N Long. 57.600 W

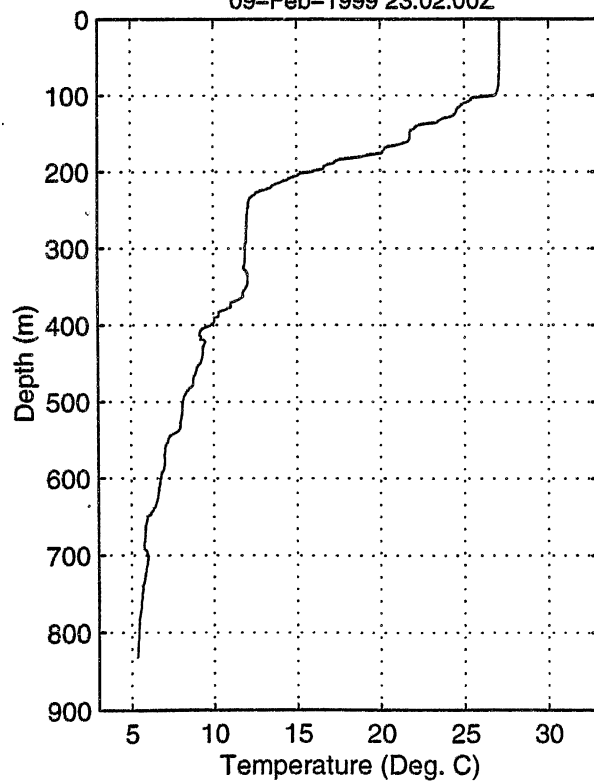
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NBC-2 R/V SEWARD JOHNSON XBT Drop 032

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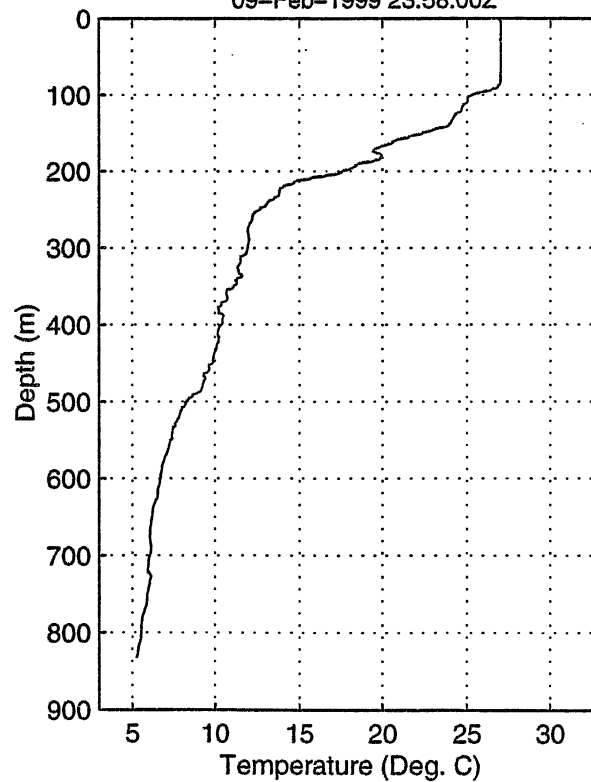
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Lat. 10.462 N Long. 57.347 W

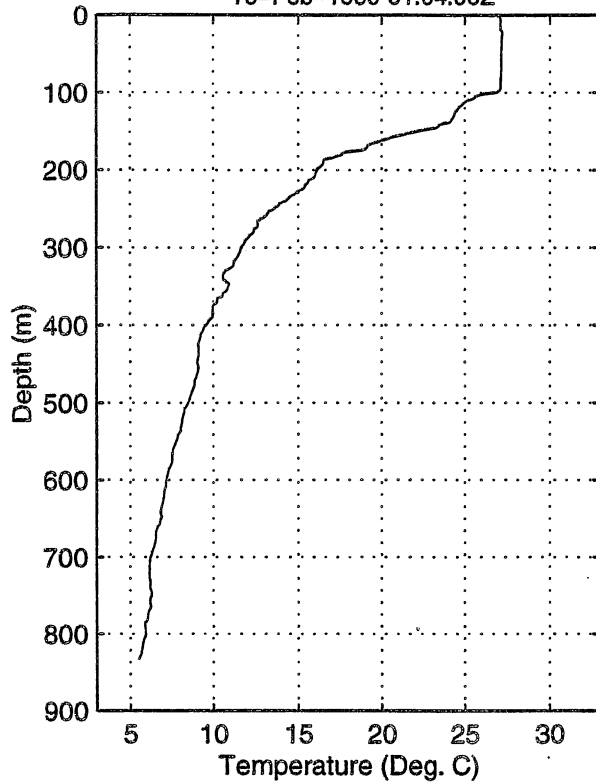
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Lat. 10.410 N Long. 57.182 W

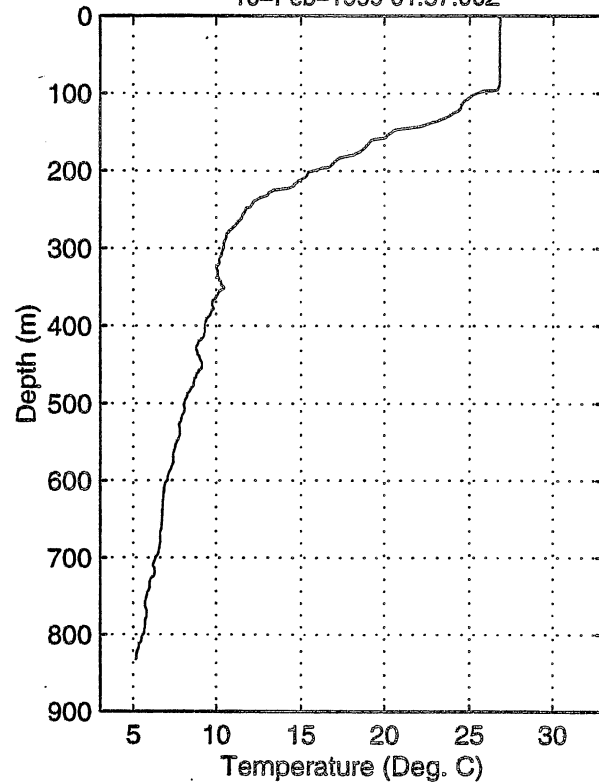
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Lat. 10.368 N Long. 57.052 W

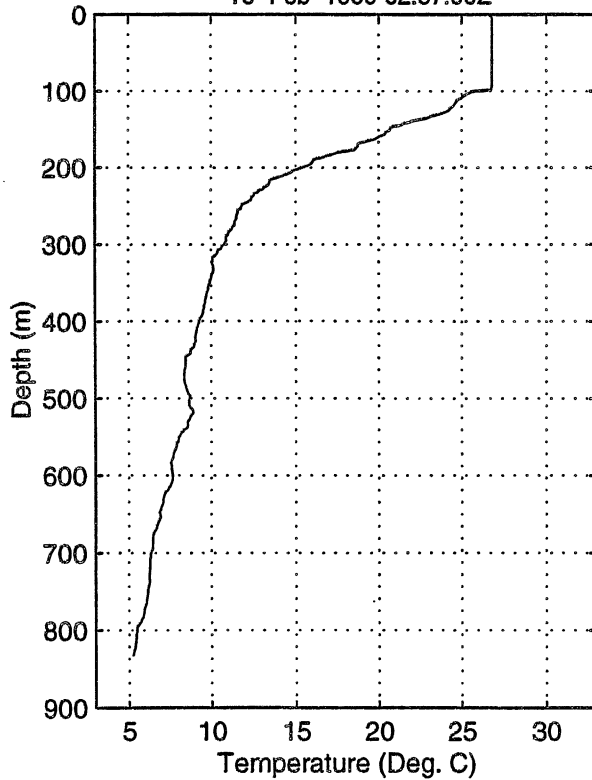
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NBC-2 R/V SEWARD JOHNSON XBT Drop 037

Lat. 10.328 N Long. 56.903 W

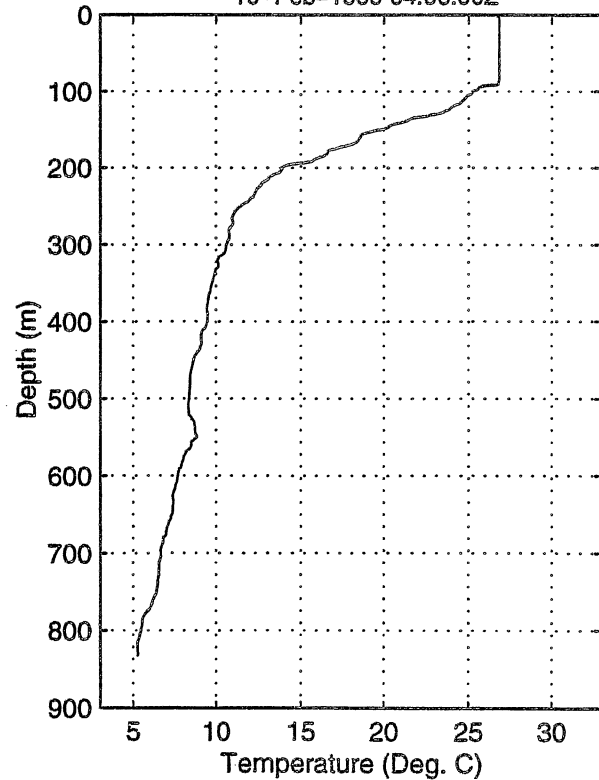
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Lat. 10.277 N Long. 56.737 W

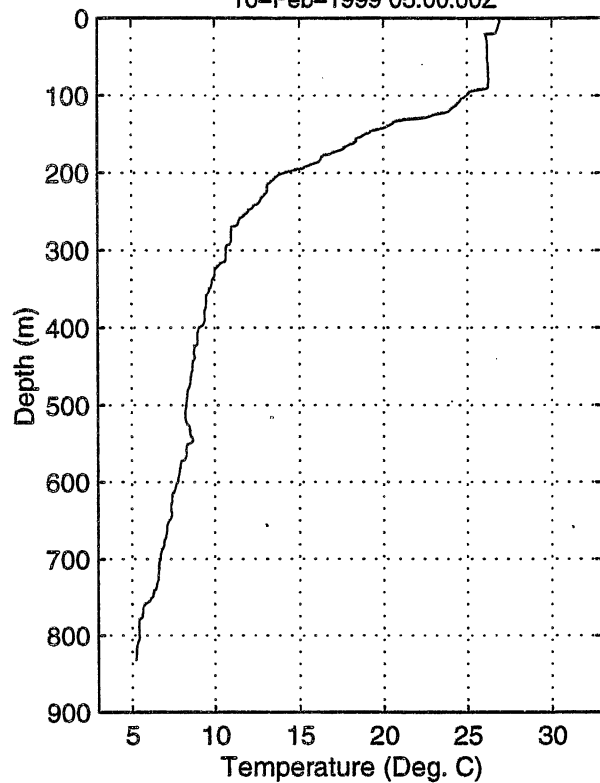
10-Feb-1999 04:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 040

Lat. 10.233 N Long. 56.605 W

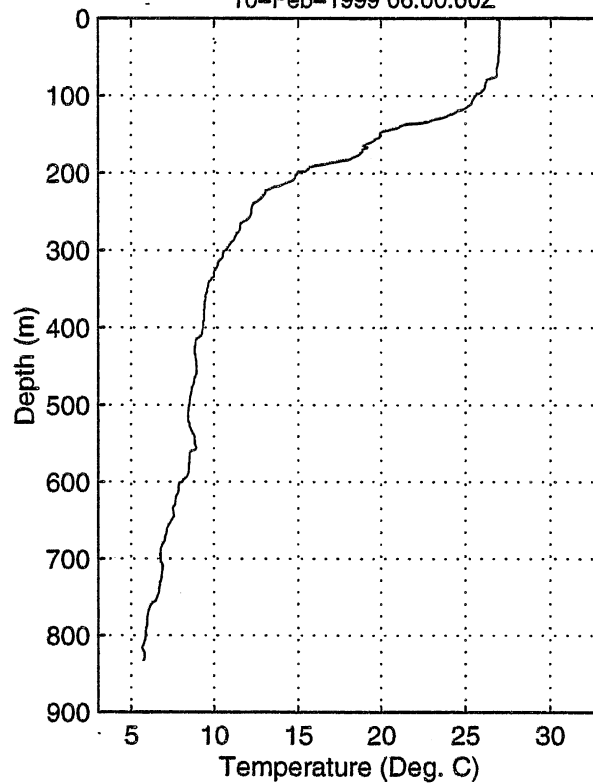
10-Feb-1999 05:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 041

Lat. 10.192 N Long. 56.462 W

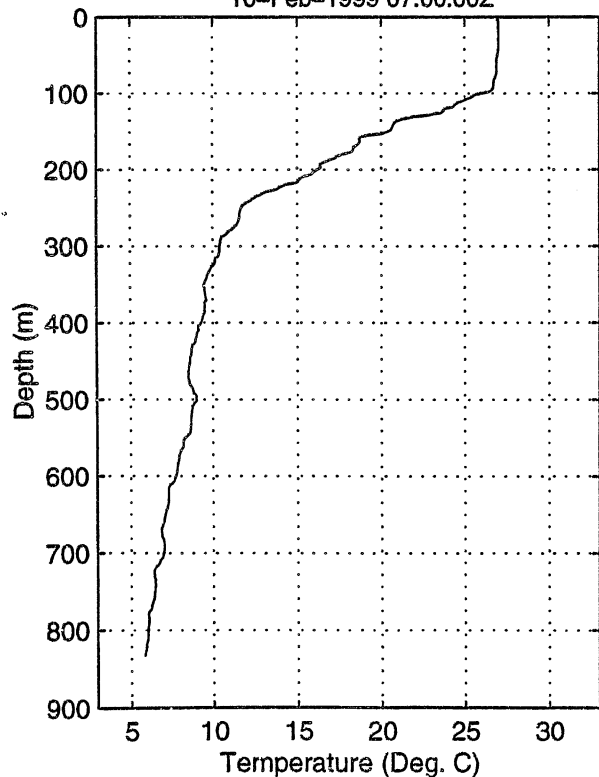
10-Feb-1999 06:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 042

Lat. 10.150 N Long. 56.332 W

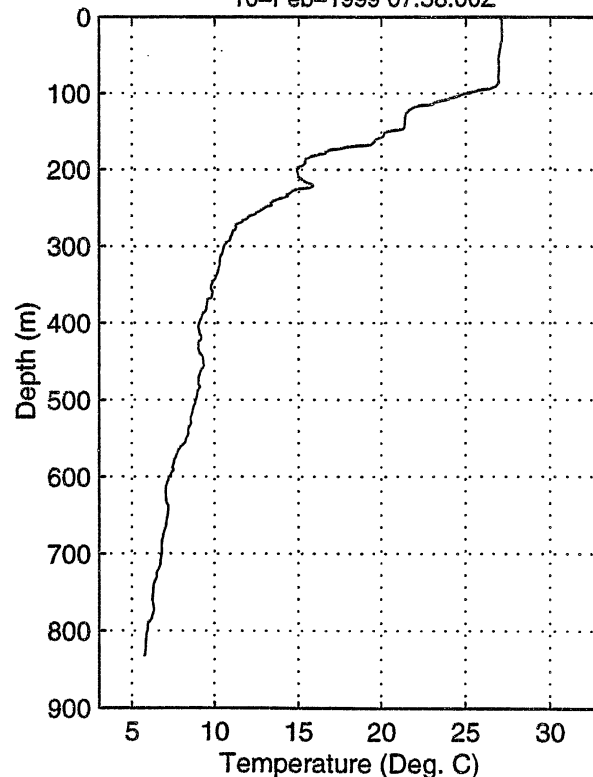
10-Feb-1999 07:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 044

Lat. 10.105 N Long. 56.185 W

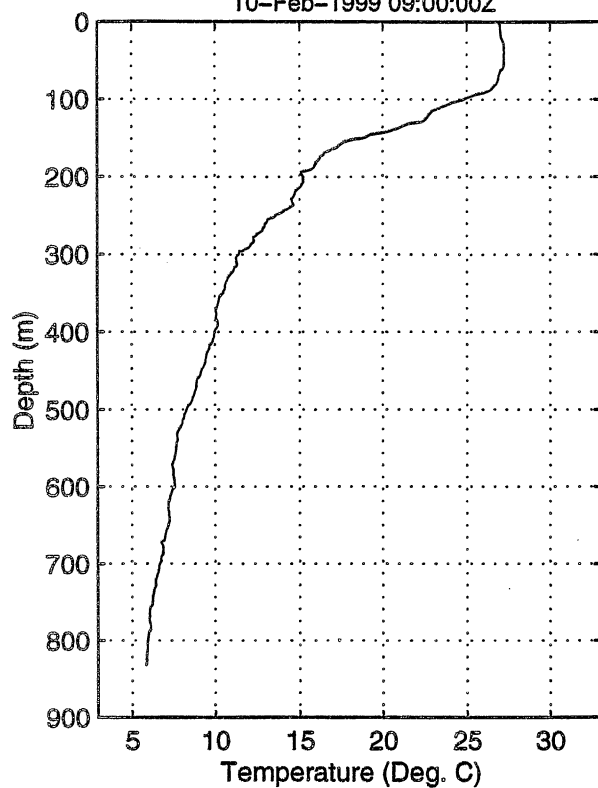
10-Feb-1999 07:58:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 045

Lat. 10.053 N Long. 56.022 W

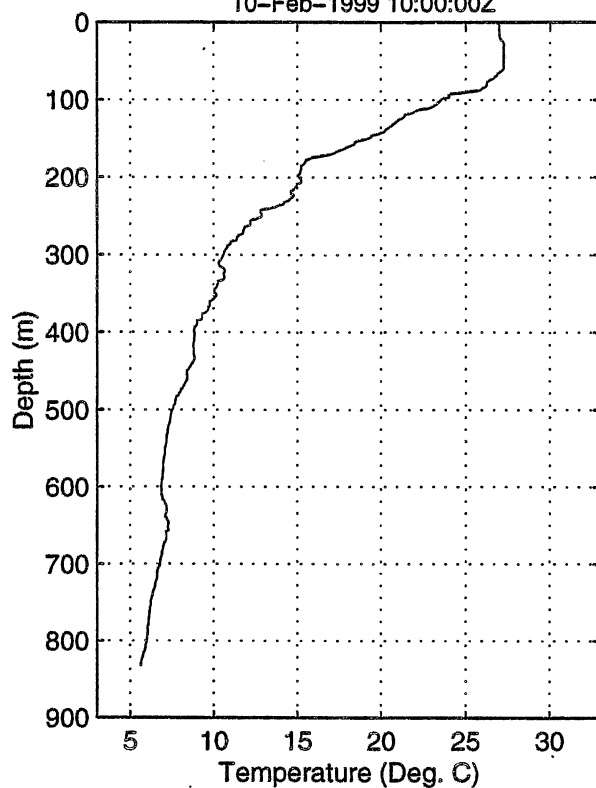
10-Feb-1999 09:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 046

Lat. 10.002 N Long. 55.855 W

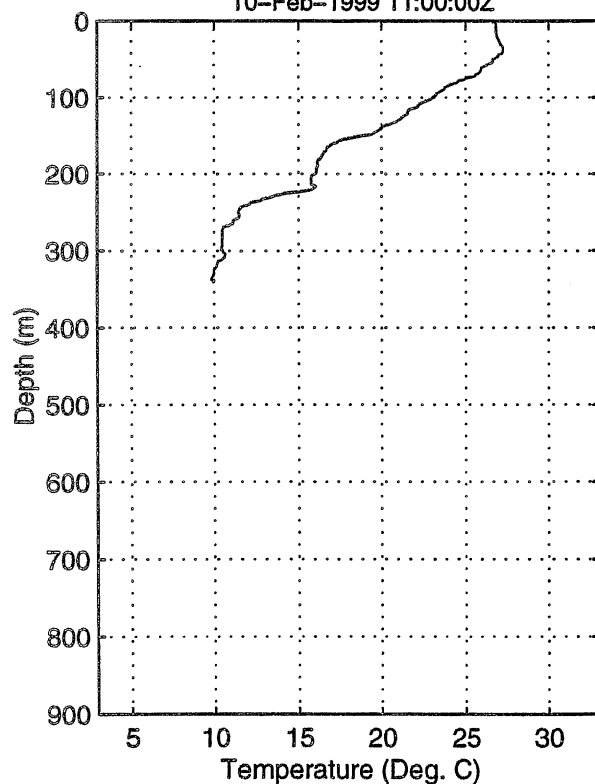
10-Feb-1999 10:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 047

Lat. 9.960 N Long. 55.702 W

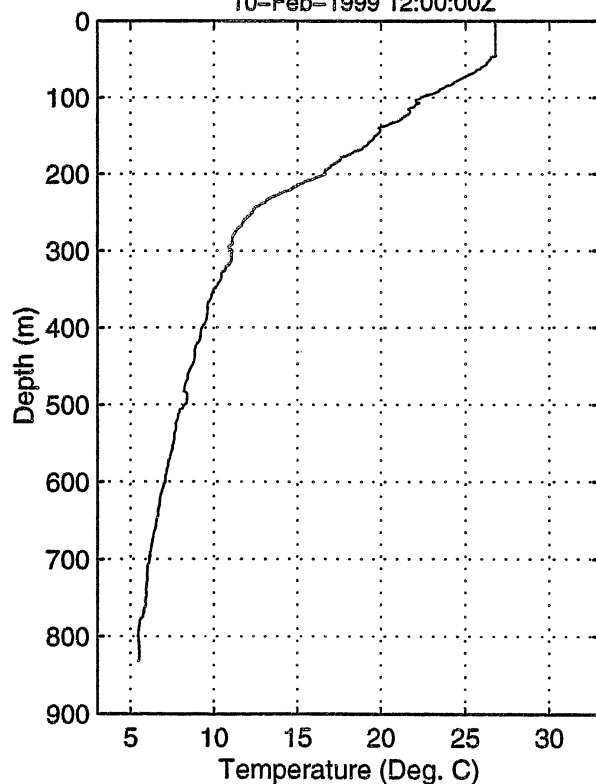
10-Feb-1999 11:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 048

Lat. 9.913 N Long. 55.535 W

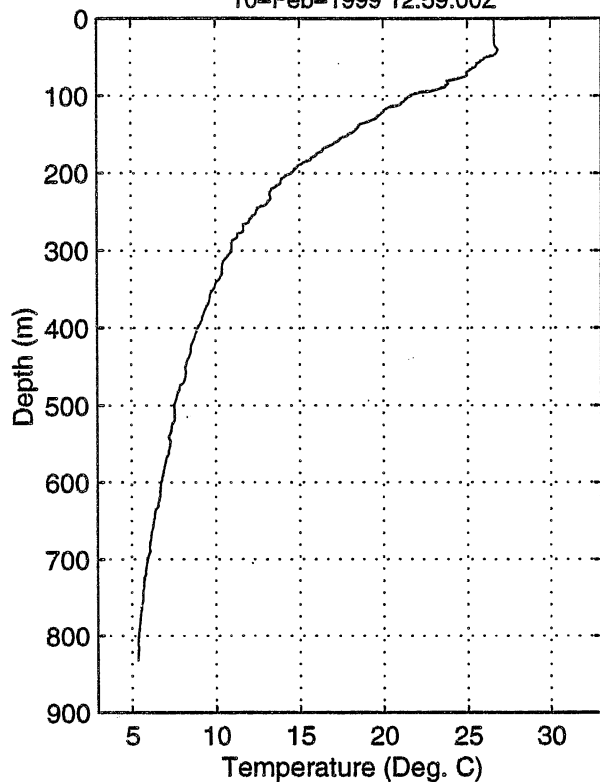
10-Feb-1999 12:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 049

Lat. 9.863 N Long. 55.368 W

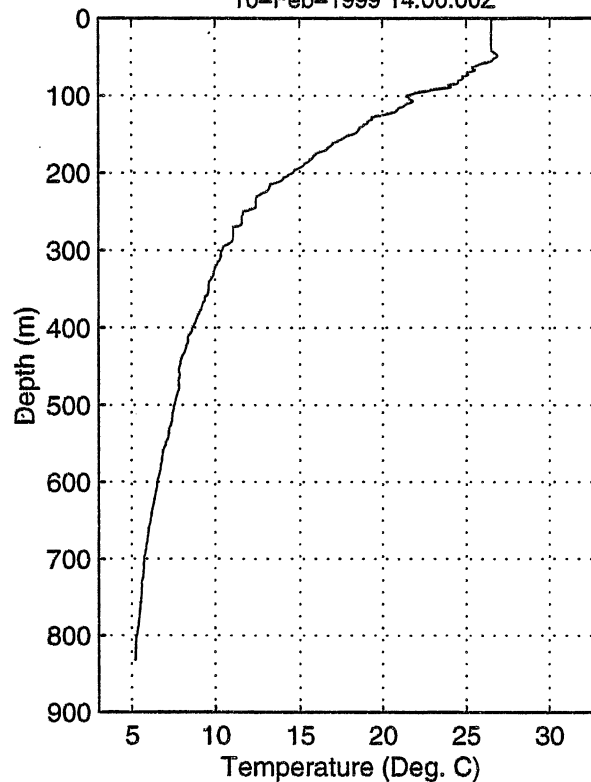
10-Feb-1999 12:59:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 050

Lat. 9.812 N Long. 55.205 W

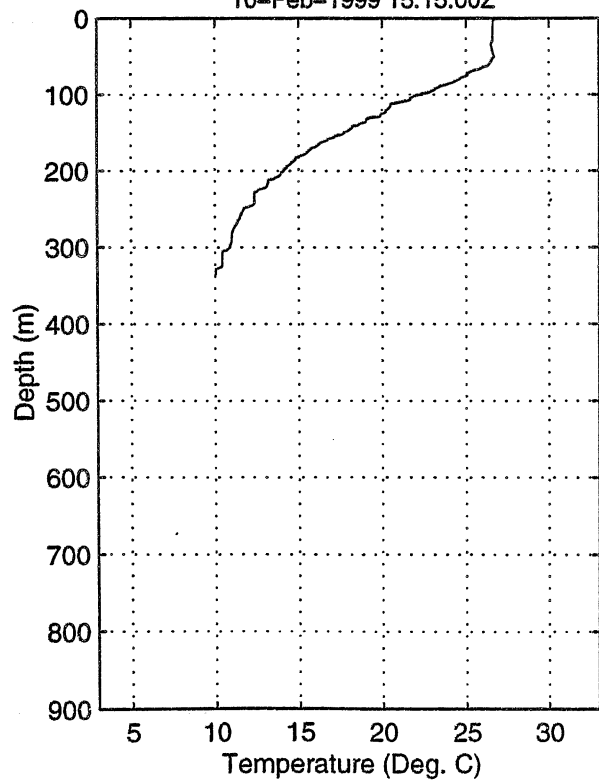
10-Feb-1999 14:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 051

Lat. 9.752 N Long. 55.007 W

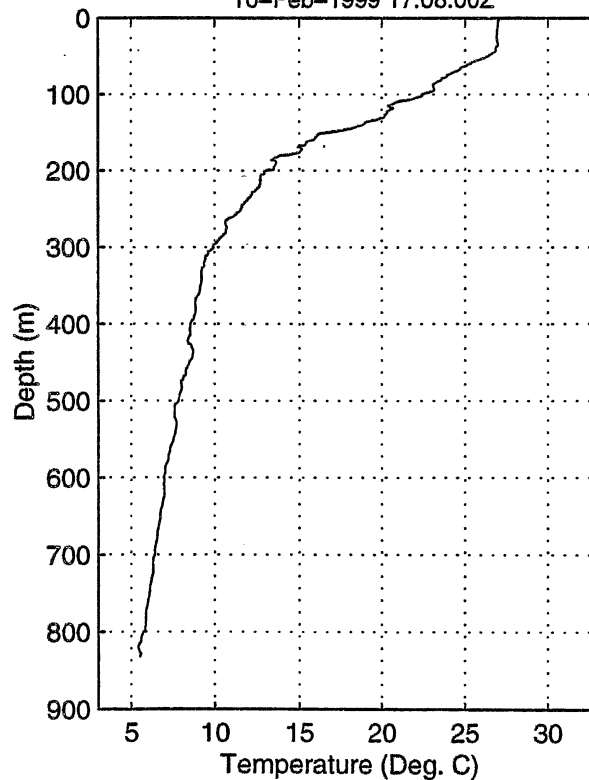
10-Feb-1999 15:15:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 052

Lat. 9.480 N Long. 55.262 W

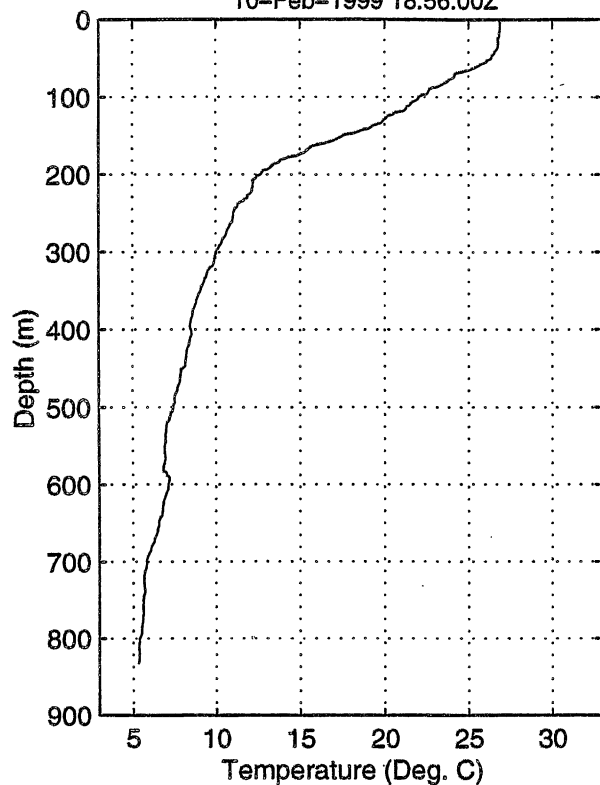
10-Feb-1999 17:08:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 053

Lat. 9.220 N Long. 55.528 W

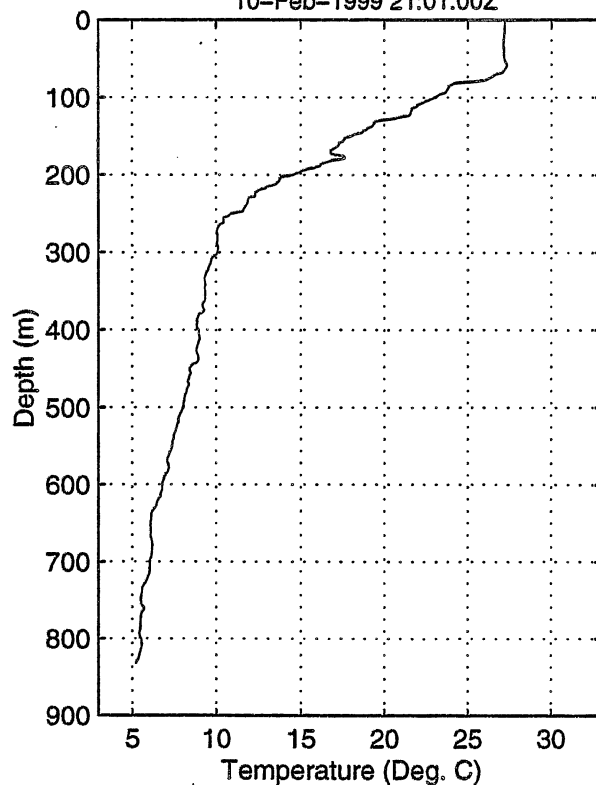
10-Feb-1999 18:56:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 054

Lat. 8.907 N Long. 55.845 W

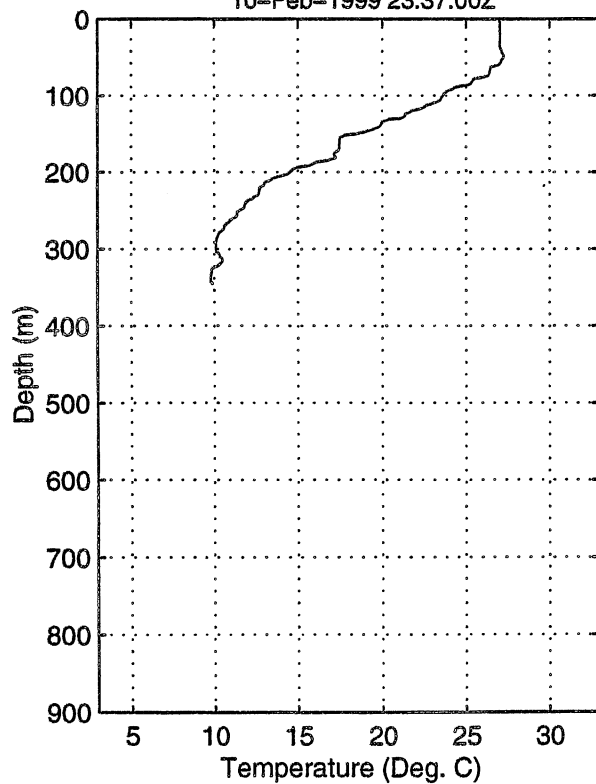
10-Feb-1999 21:01:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 056

Lat. 8.505 N Long. 56.245 W

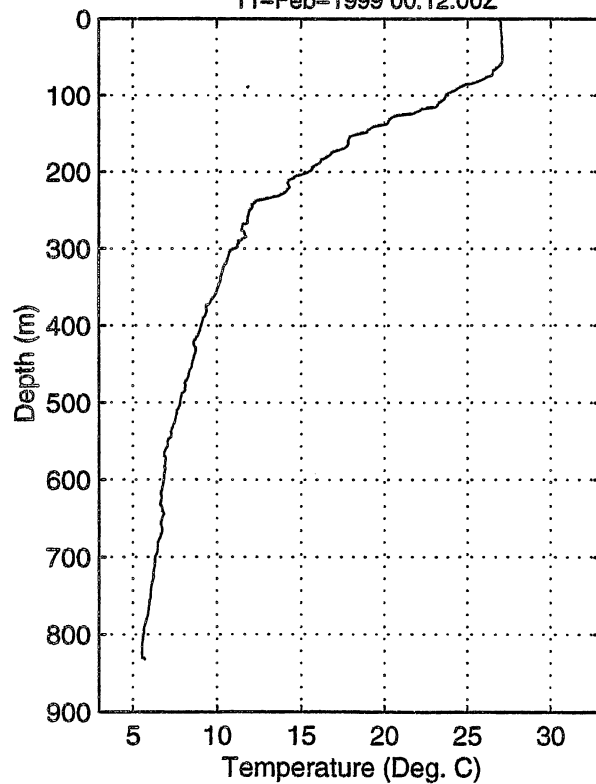
10-Feb-1999 23:37:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 057

Lat. 8.418 N Long. 56.333 W

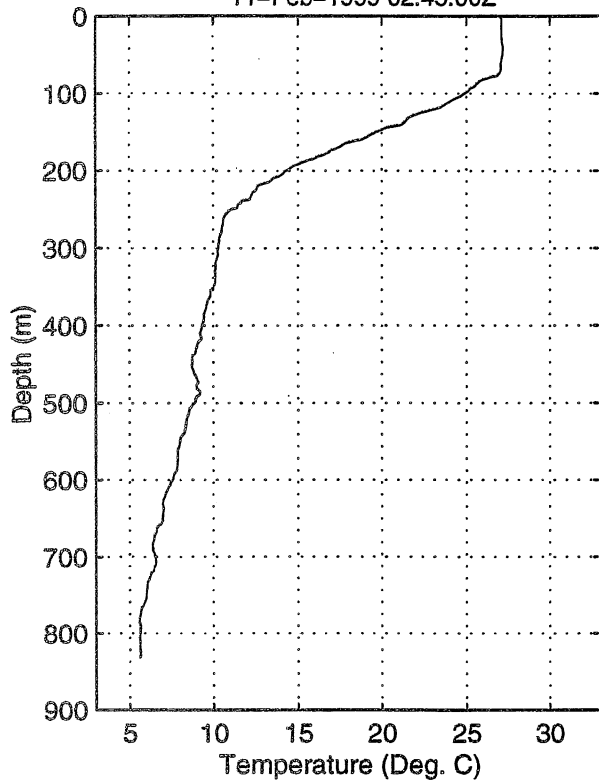
11-Feb-1999 00:12:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 058

Lat. 8.865 N Long. 56.440 W

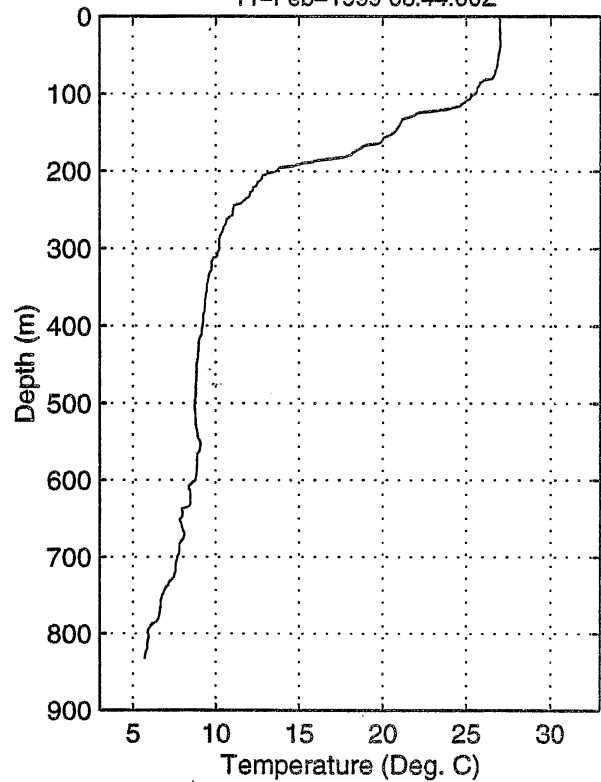
11-Feb-1999 02:45:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 059

Lat. 9.505 N Long. 56.600 W

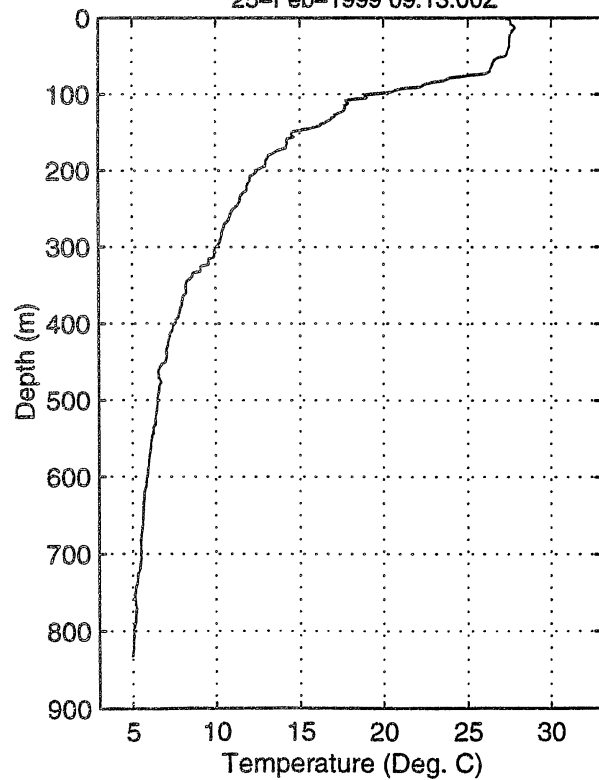
11-Feb-1999 08:44:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 073

Lat. 6.775 N Long. 51.902 W

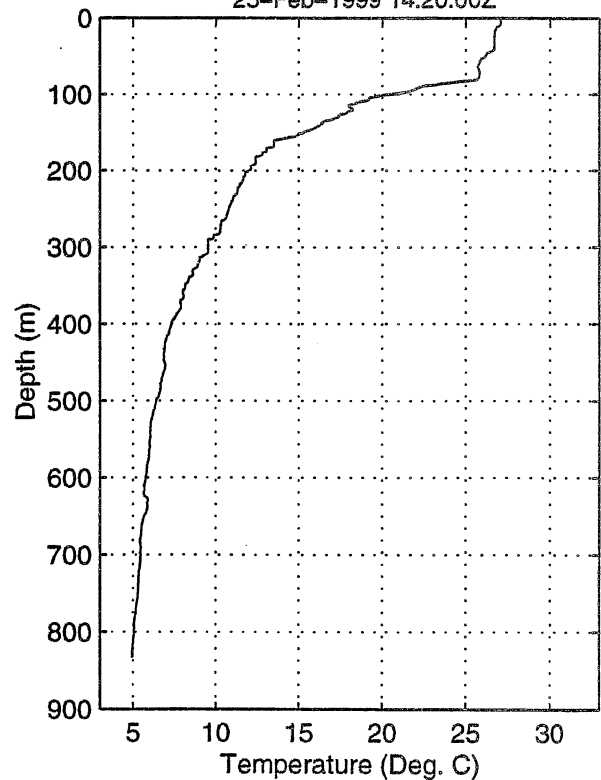
25-Feb-1999 09:13:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 074

Lat. 7.372 N Long. 52.185 W

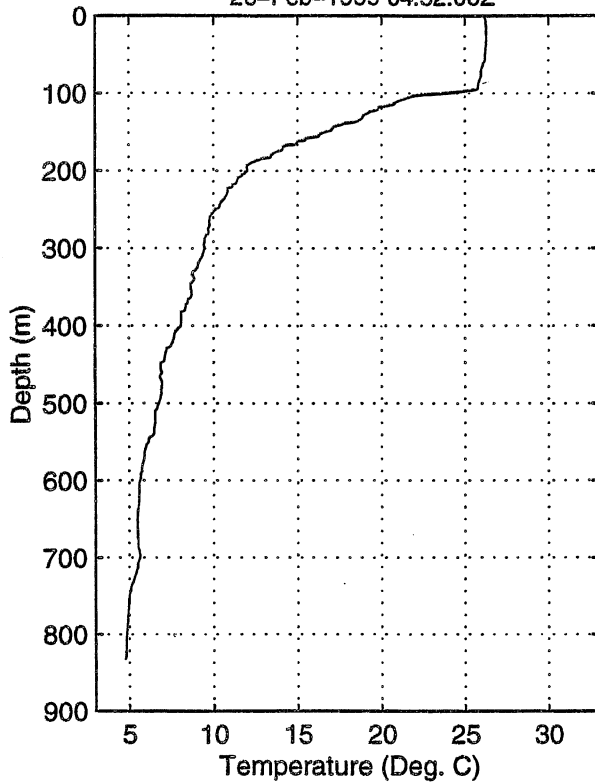
25-Feb-1999 14:20:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 075

Lat. 7.783 N Long. 52.568 W

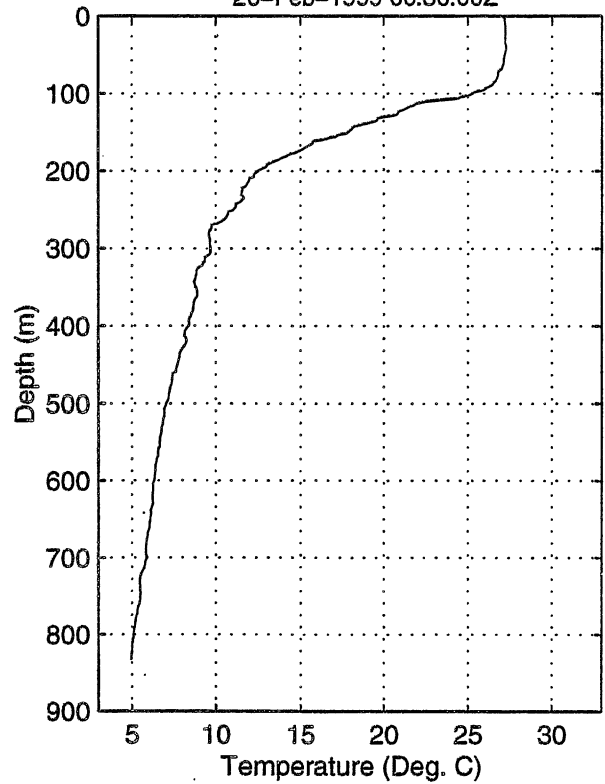
26-Feb-1999 04:52:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 076

Lat. 8.090 N Long. 52.613 W

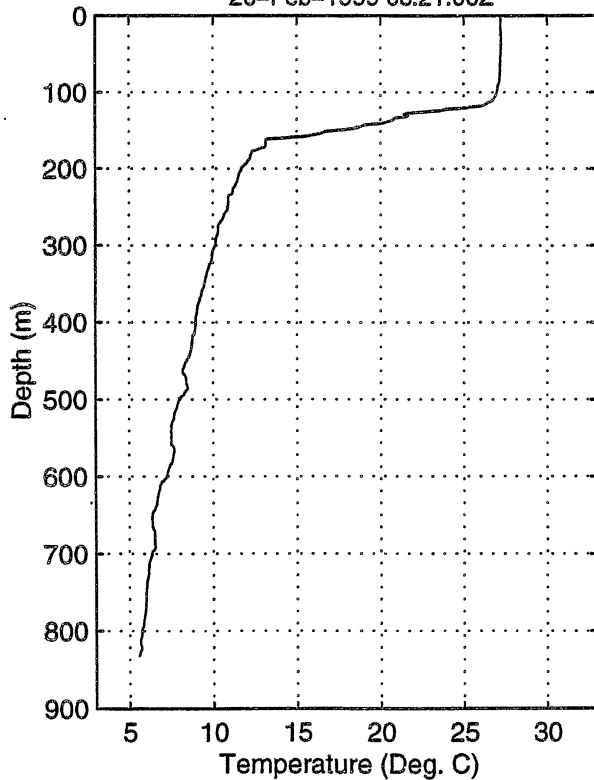
26-Feb-1999 06:36:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 077

Lat. 8.407 N Long. 52.658 W

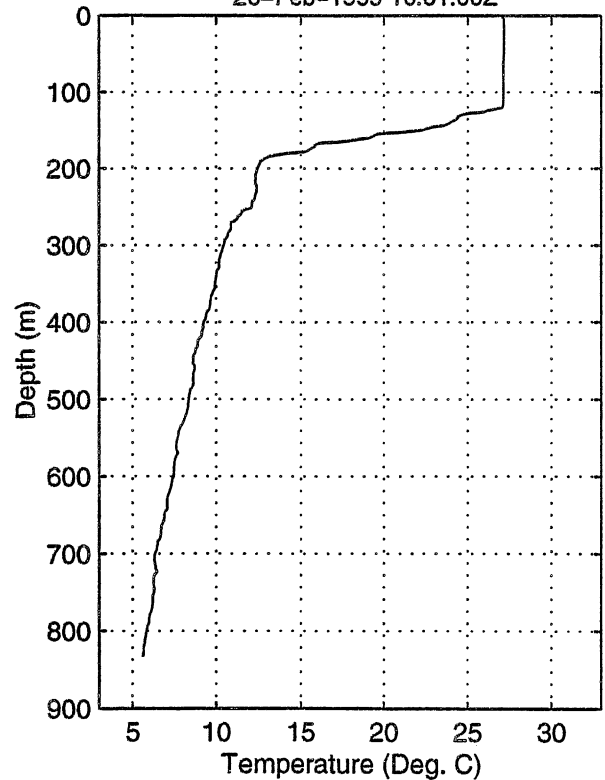
26-Feb-1999 08:21:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 078

Lat. 8.700 N Long. 52.707 W

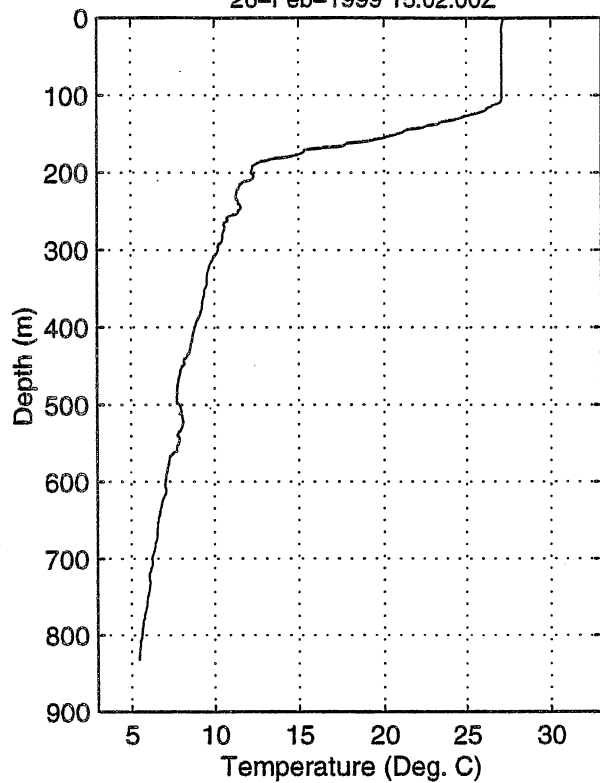
26-Feb-1999 10:01:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 079

Lat. 8.832 N Long. 52.518 W

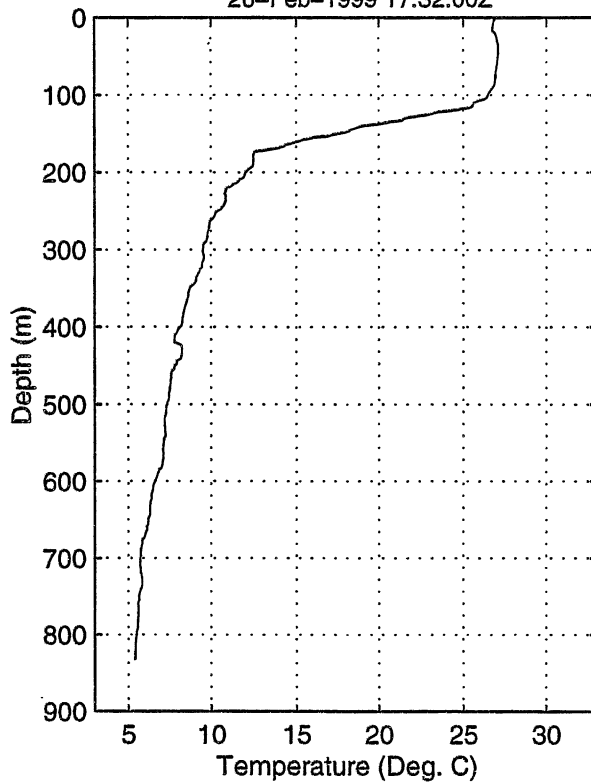
26-Feb-1999 15:02:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 080

Lat. 8.583 N Long. 52.172 W

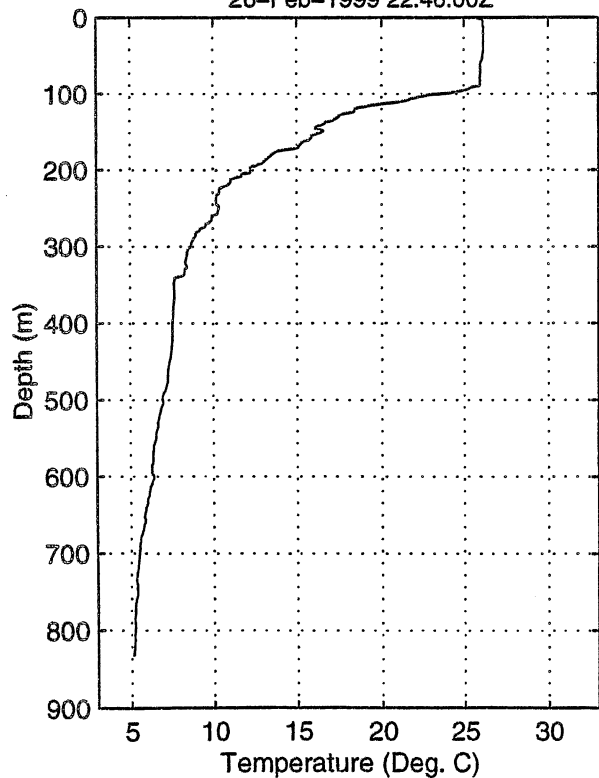
26-Feb-1999 17:32:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 081

Lat. 8.195 N Long. 51.658 W

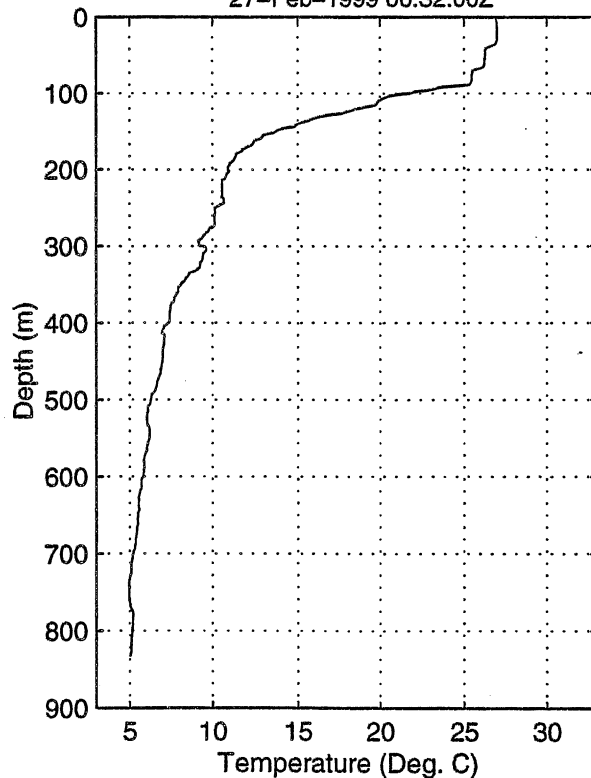
26-Feb-1999 22:46:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 082

Lat. 8.003 N Long. 51.412 W

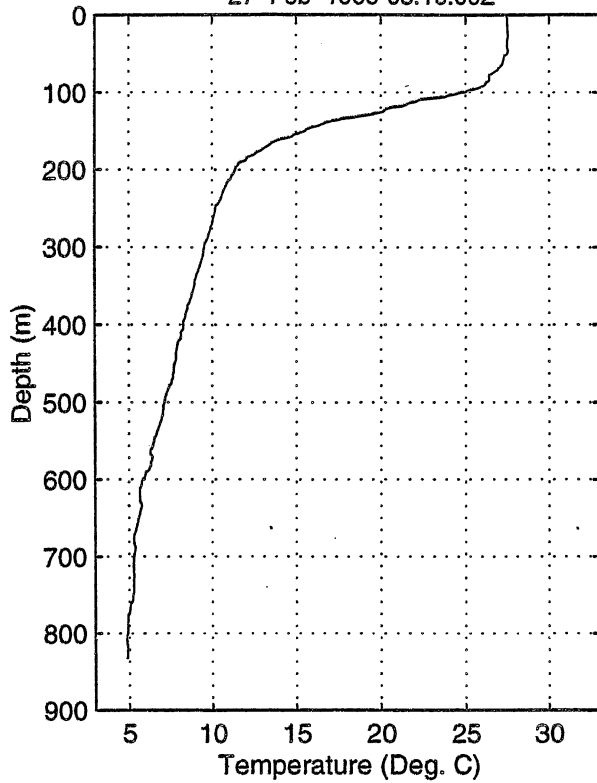
27-Feb-1999 00:32:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 083

Lat. 7.677 N Long. 50.997 W

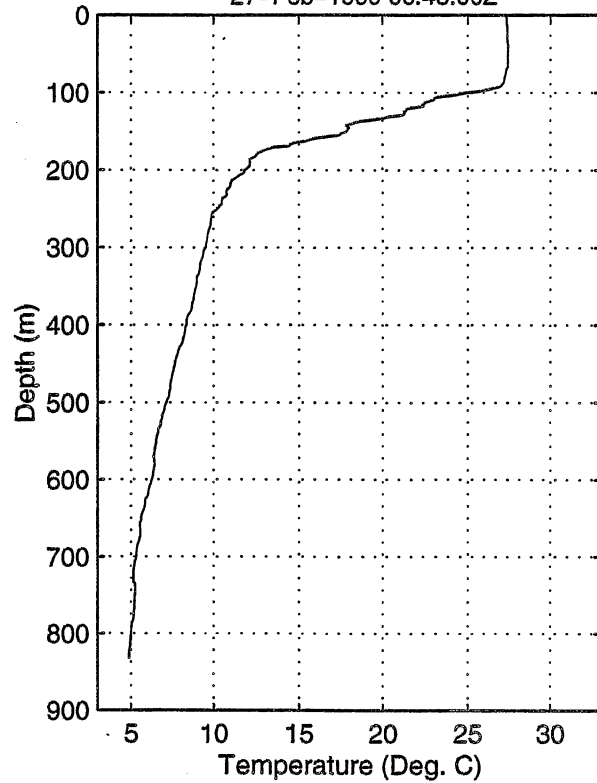
27-Feb-1999 05:10:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 084

Lat. 7.497 N Long. 50.790 W

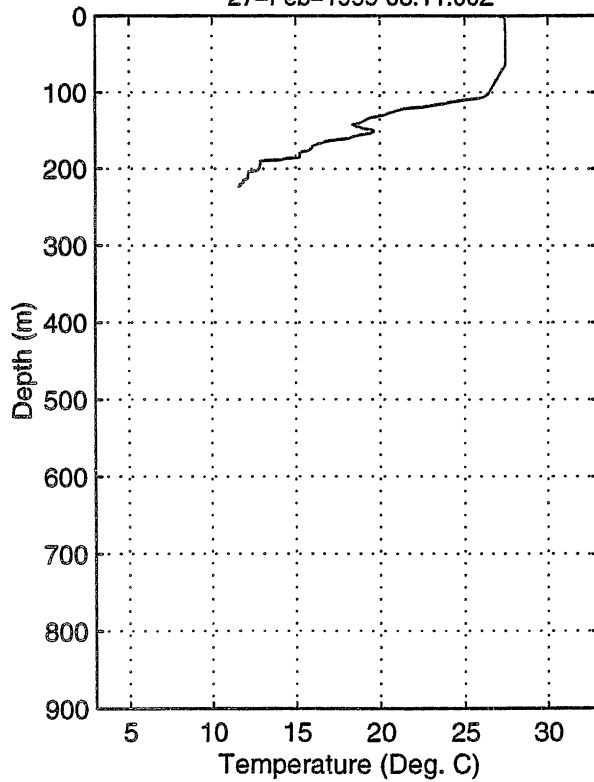
27-Feb-1999 06:45:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 085

Lat. 7.345 N Long. 50.608 W

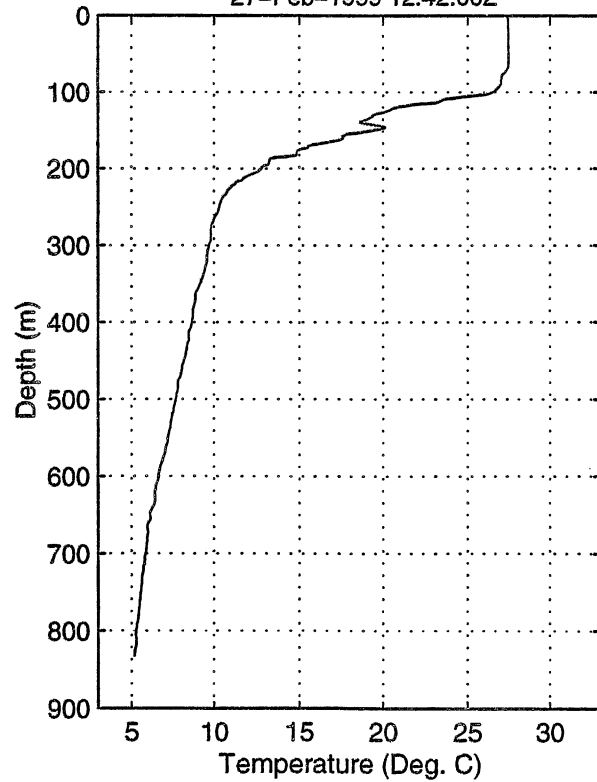
27-Feb-1999 08:11:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 086

Lat. 7.523 N Long. 50.428 W

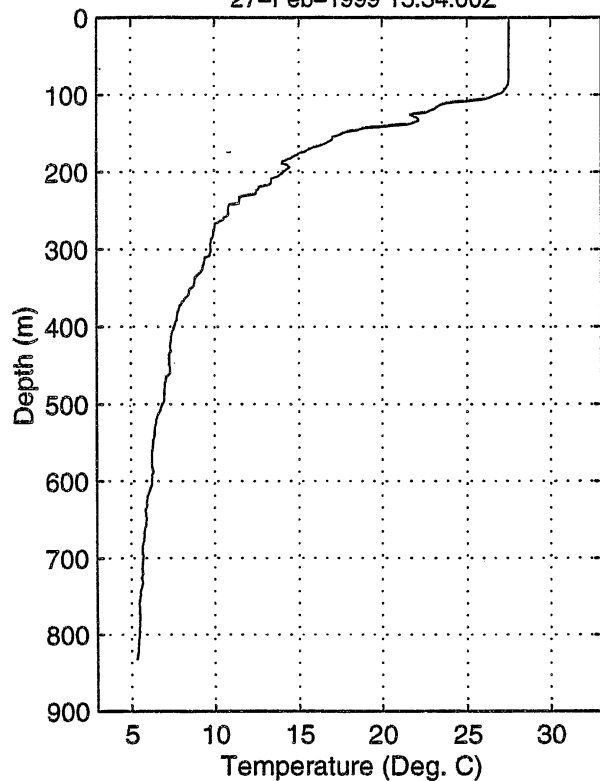
27-Feb-1999 12:42:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 087

Lat. 7.882 N Long. 50.102 W

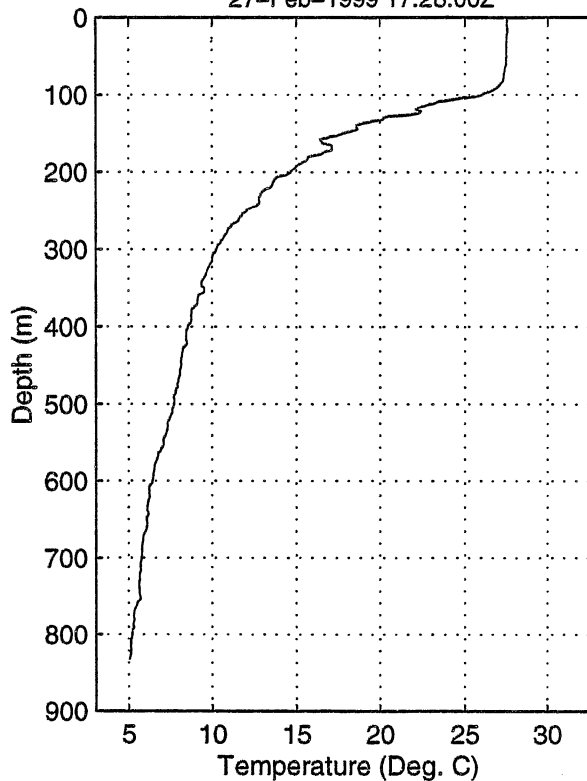
27-Feb-1999 15:34:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 088

Lat. 8.048 N Long. 49.785 W

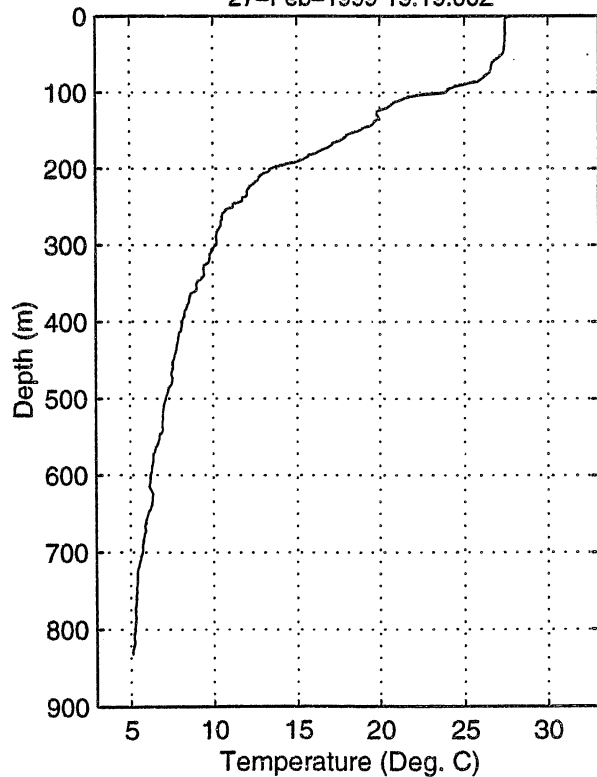
27-Feb-1999 17:28:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 089

Lat. 8.213 N Long. 49.473 W

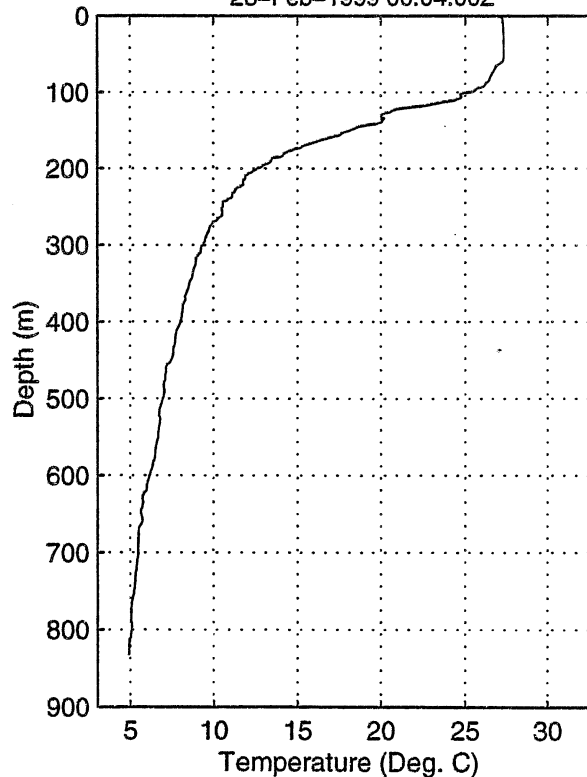
27-Feb-1999 19:19:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 090

Lat. 8.107 N Long. 49.180 W

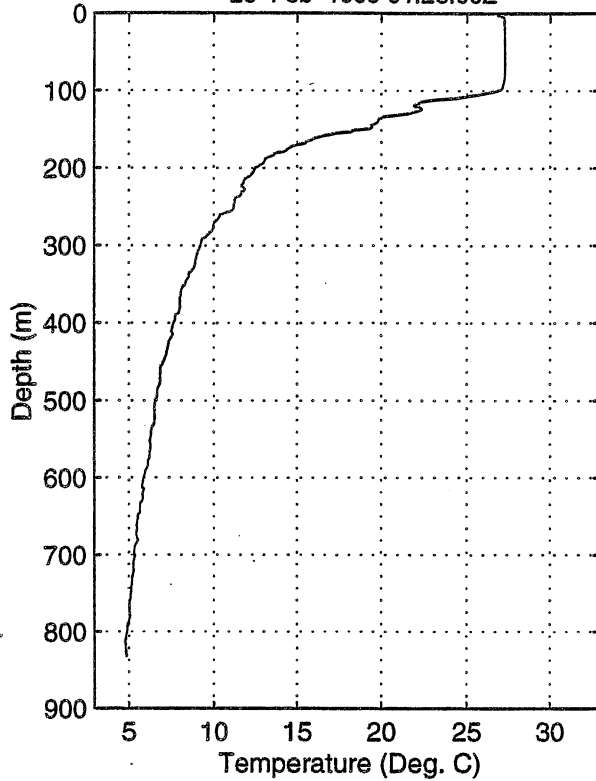
28-Feb-1999 00:04:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 091

Lat. 7.840 N Long. 49.182 W

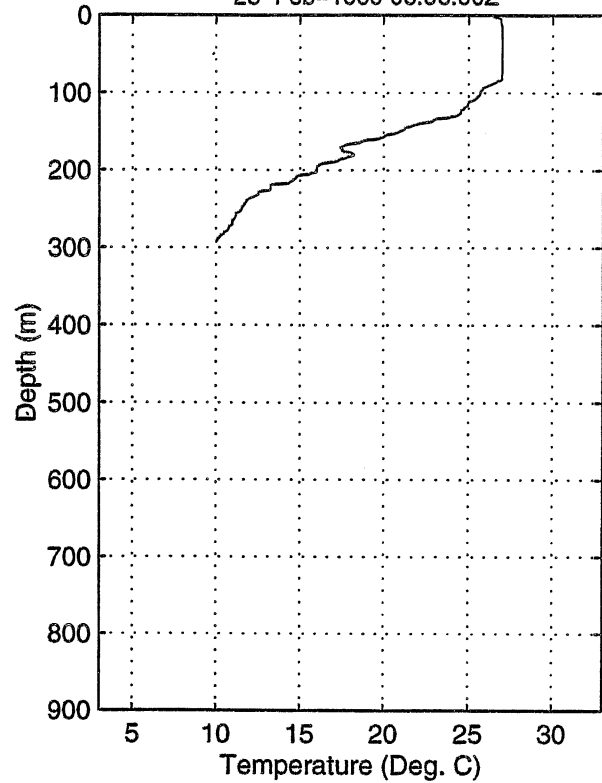
28-Feb-1999 01:28:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 092

Lat. 7.287 N Long. 49.260 W

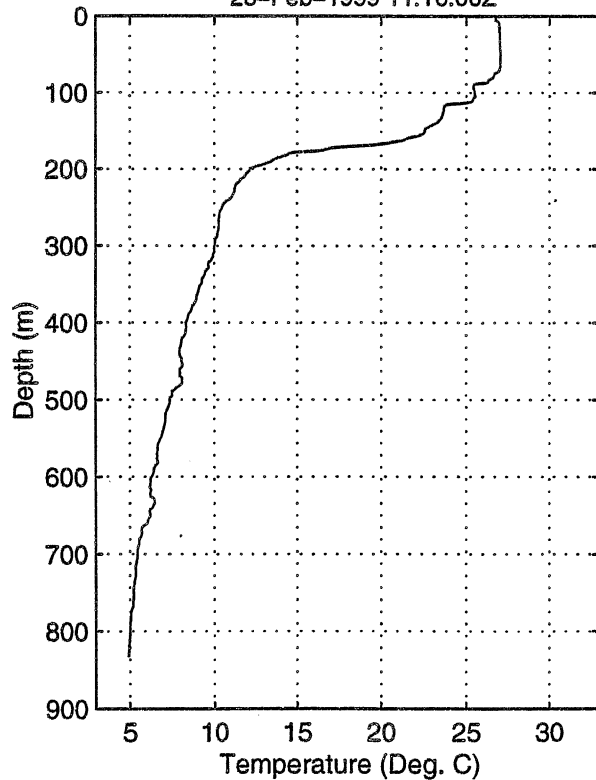
28-Feb-1999 06:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 093

Lat. 6.733 N Long. 49.522 W

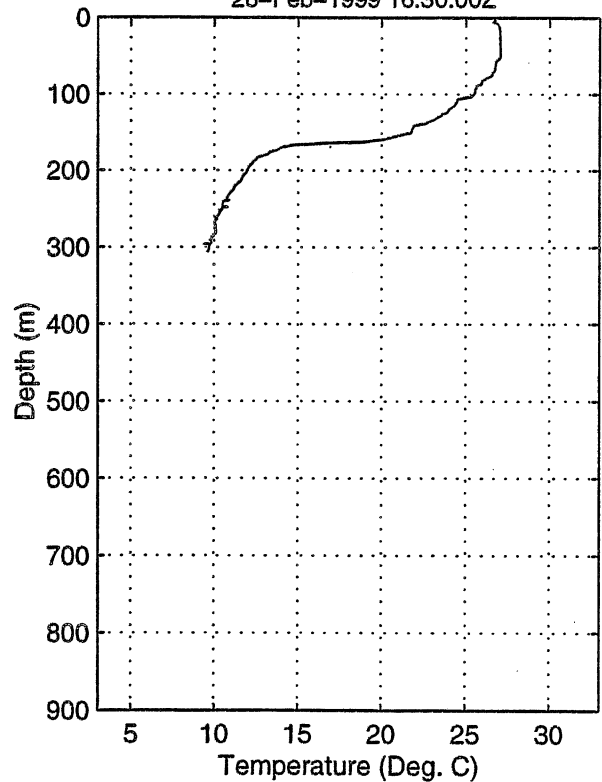
28-Feb-1999 11:16:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 094

Lat. 6.213 N Long. 49.913 W

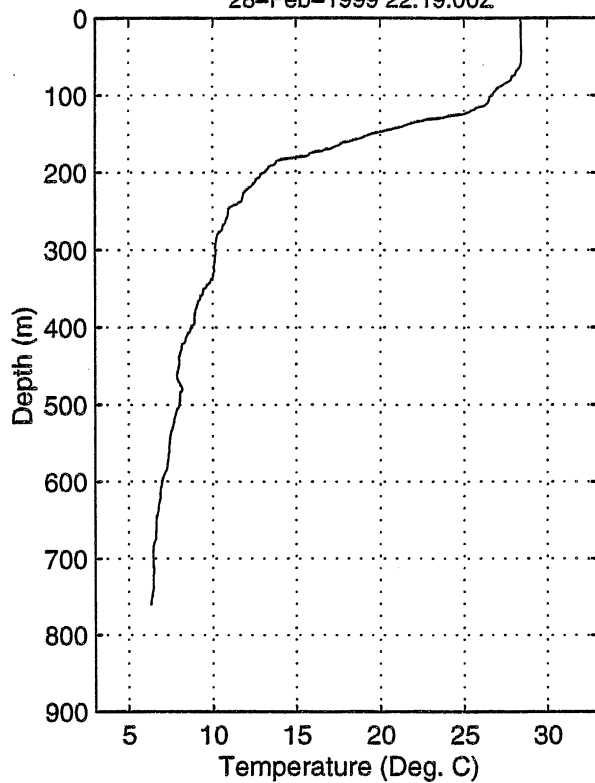
28-Feb-1999 16:30:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 096

Lat. 5.733 N Long. 50.292 W

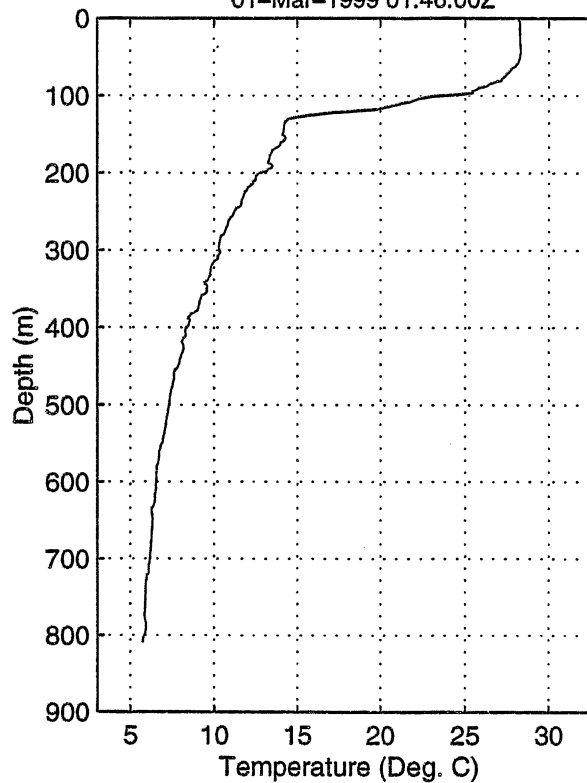
28-Feb-1999 22:19:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 097

Lat. 5.455 N Long. 50.498 W

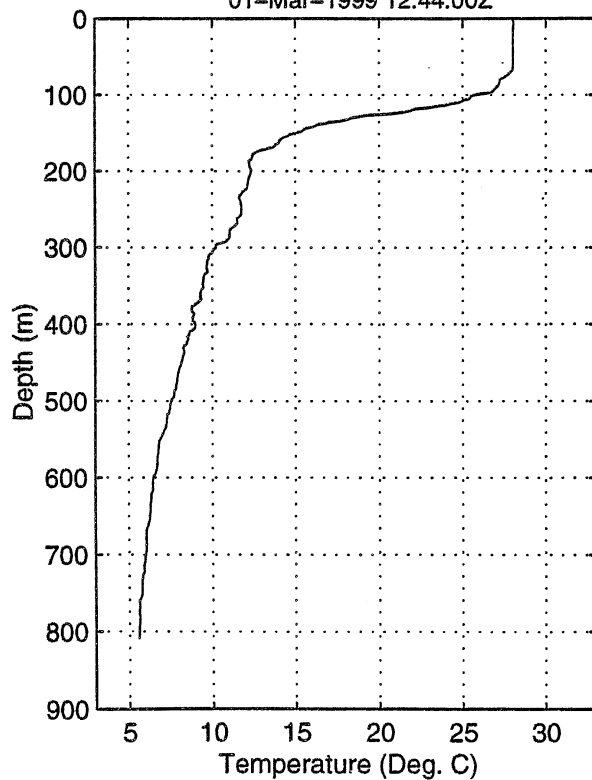
01-Mar-1999 01:46:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 098

Lat. 4.592 N Long. 49.917 W

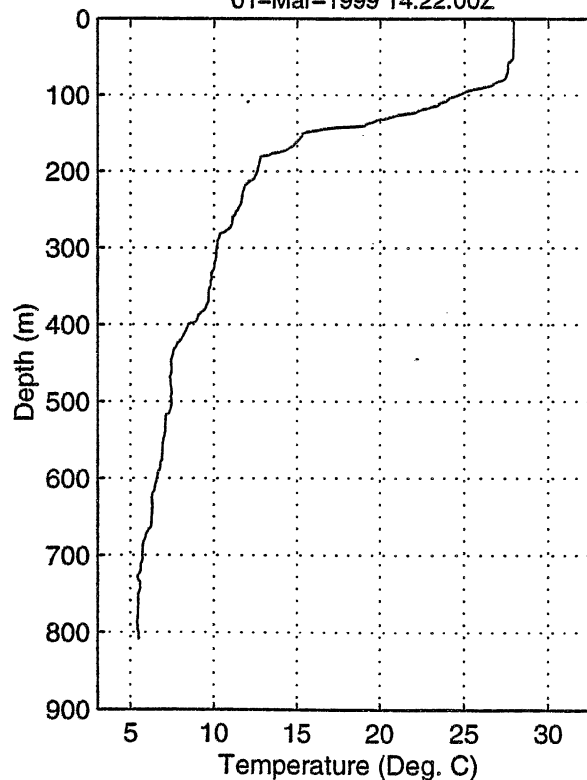
01-Mar-1999 12:44:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 099

Lat. 4.627 N Long. 49.675 W

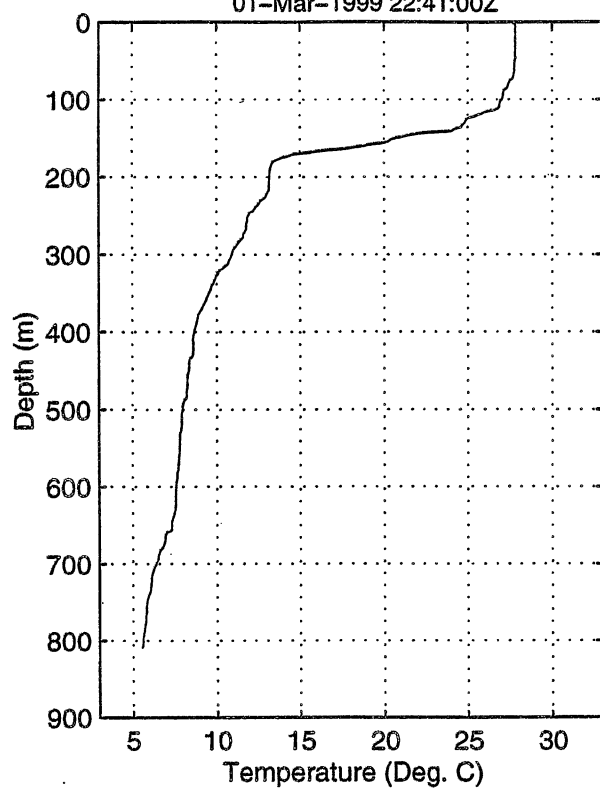
01-Mar-1999 14:22:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 100

Lat. 4.883 N Long. 49.205 W

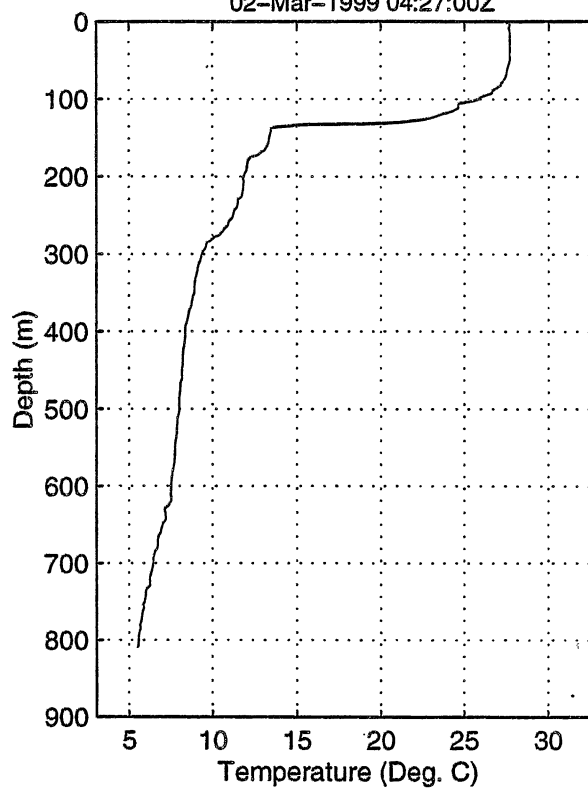
01-Mar-1999 22:41:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 101

Lat. 5.307 N Long. 48.595 W

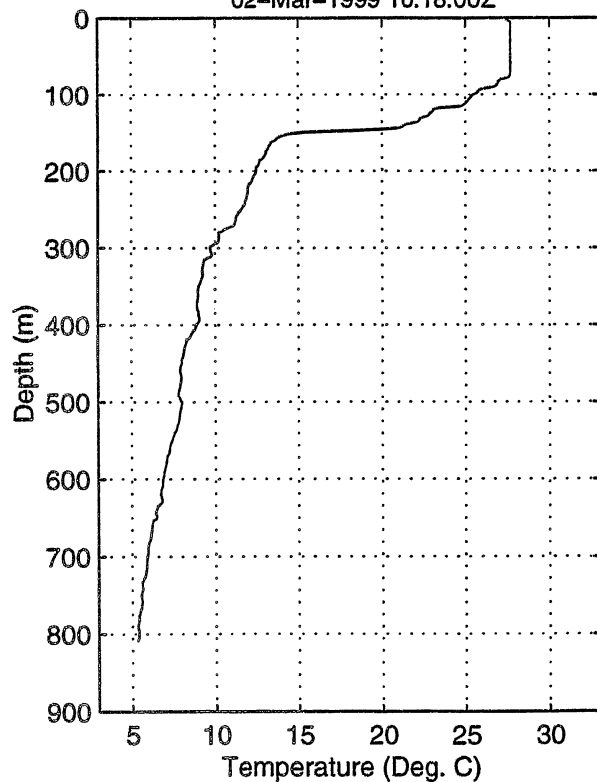
02-Mar-1999 04:27:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 102

Lat. 5.810 N Long. 48.152 W

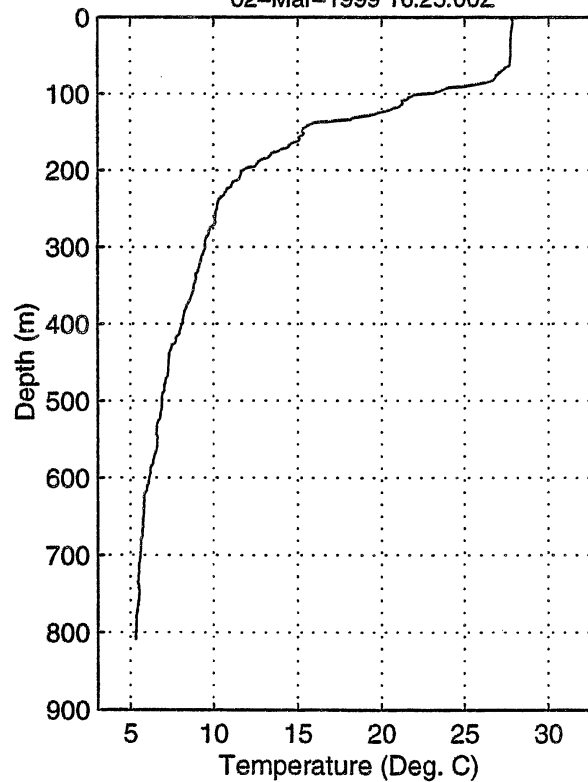
02-Mar-1999 10:18:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 103

Lat. 6.448 N Long. 47.820 W

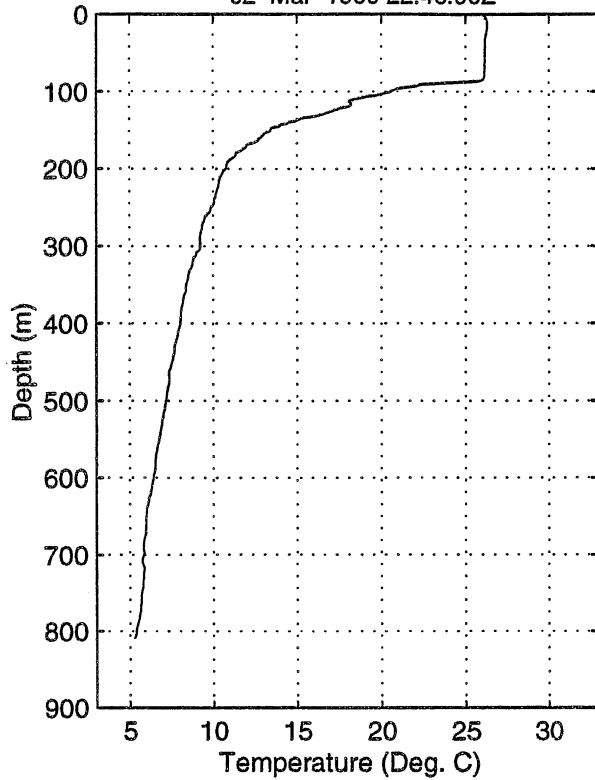
02-Mar-1999 16:25:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 104

Lat. 7.080 N Long. 47.515 W

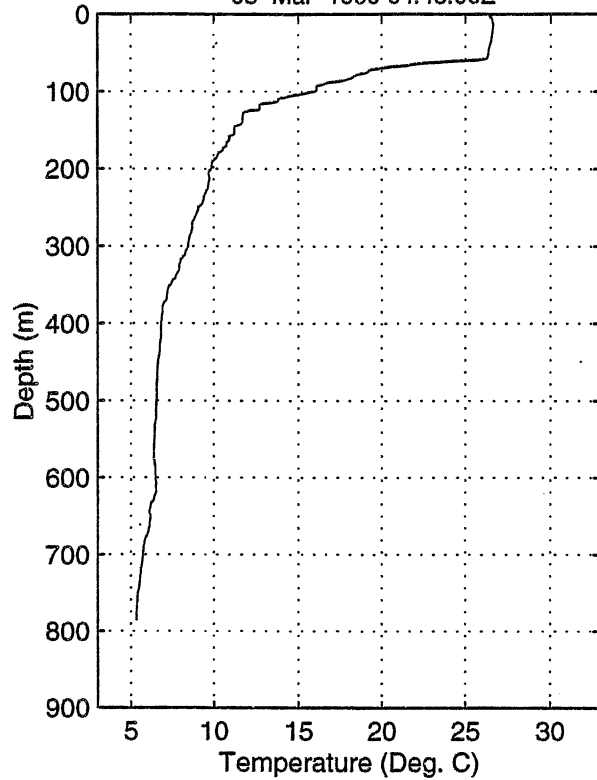
02-Mar-1999 22:46:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 105

Lat. 7.240 N Long. 46.940 W

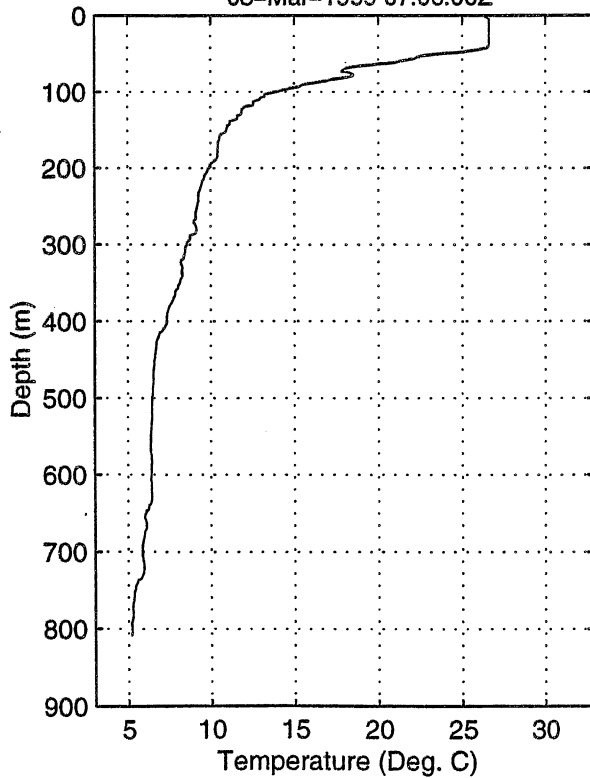
03-Mar-1999 04:45:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 106

Lat. 7.075 N Long. 46.535 W

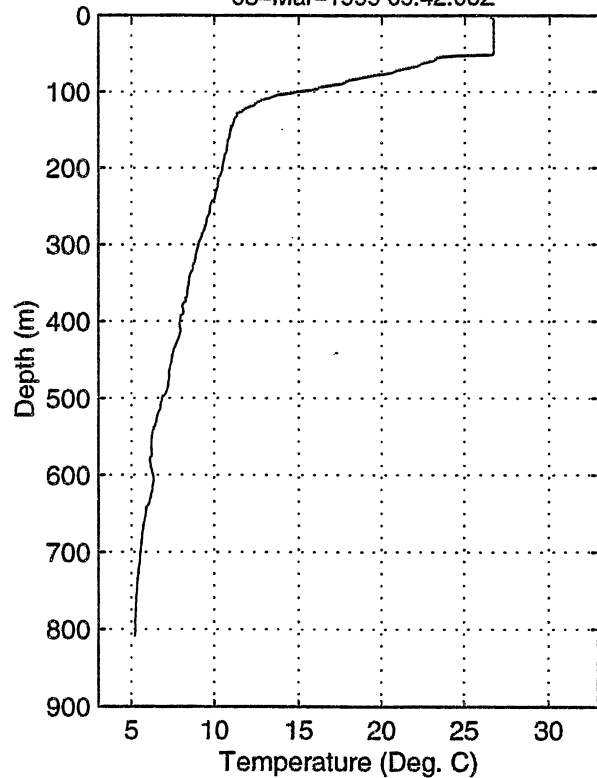
03-Mar-1999 07:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 107

Lat. 6.900 N Long. 46.088 W

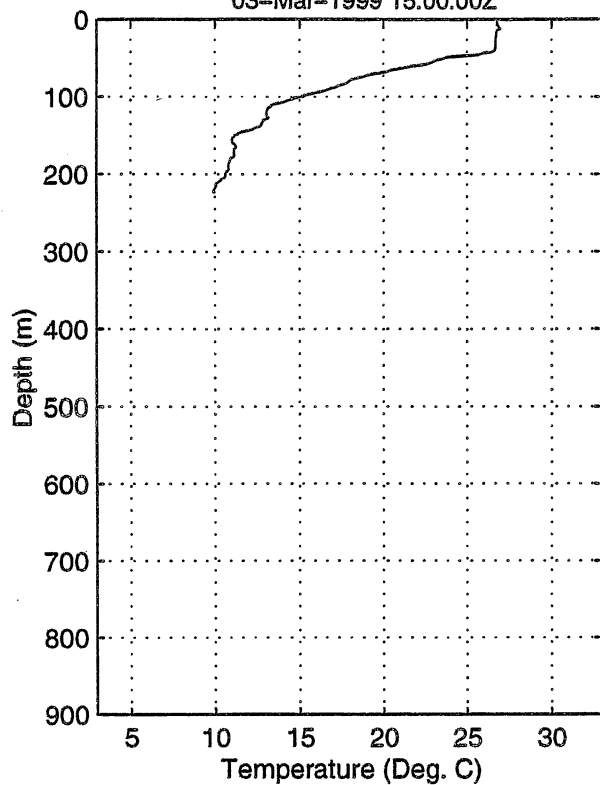
03-Mar-1999 09:42:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 108

Lat. 6.480 N Long. 45.827 W

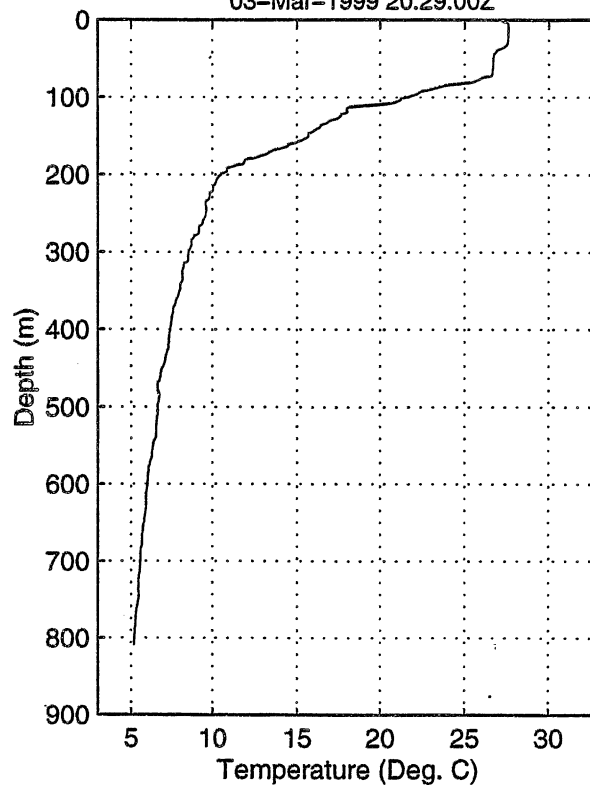
03-Mar-1999 15:00:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 109

Lat. 5.863 N Long. 46.065 W

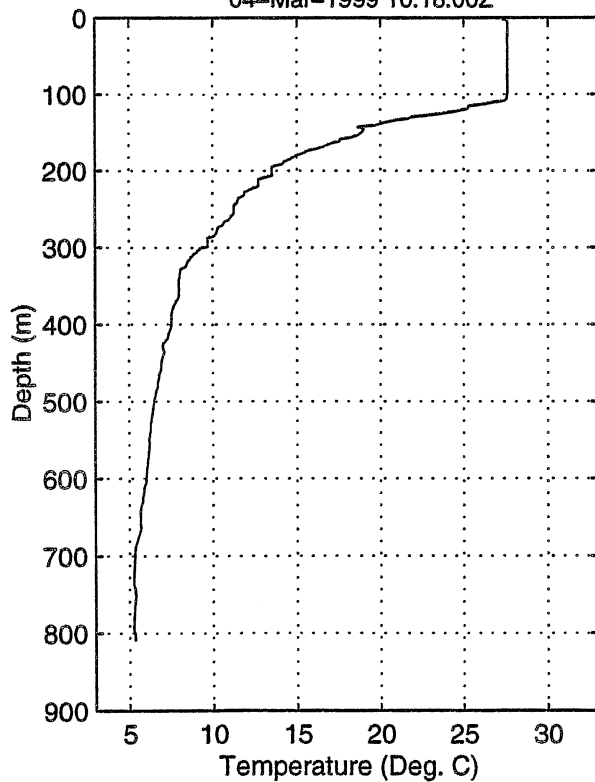
03-Mar-1999 20:29:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 110

Lat. 5.293 N Long. 46.297 W

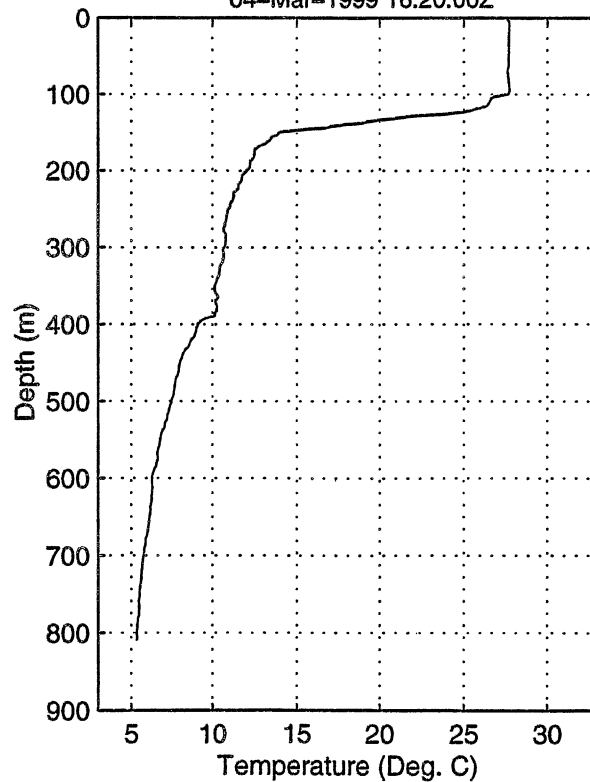
04-Mar-1999 10:18:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 111

Lat. 4.717 N Long. 46.523 W

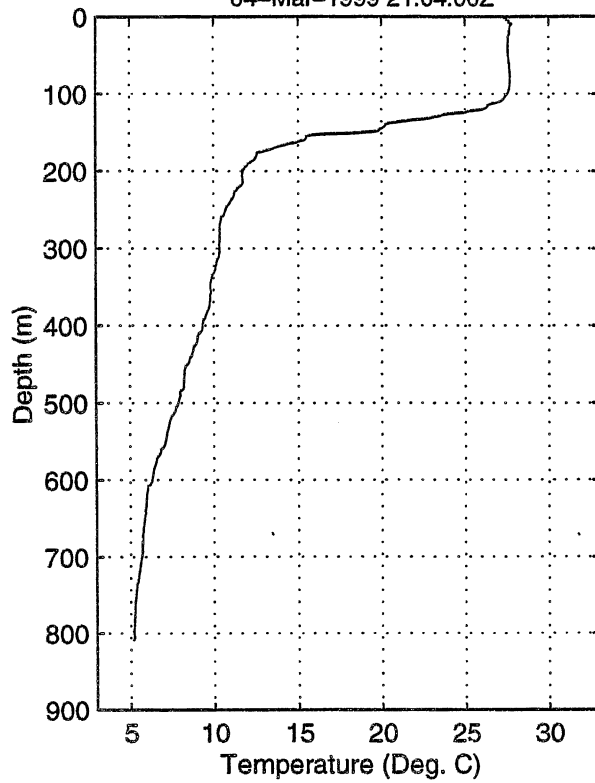
04-Mar-1999 16:20:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 112

Lat. 4.185 N Long. 46.737 W

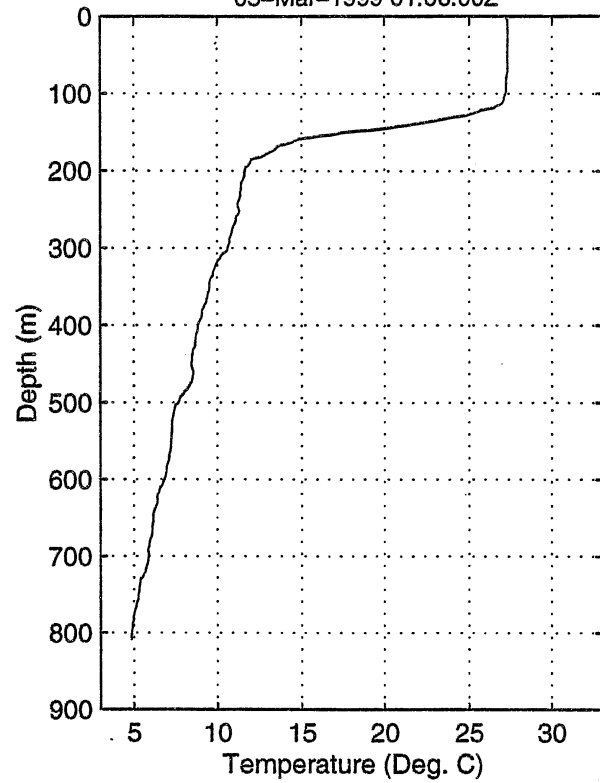
04-Mar-1999 21:04:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 113

Lat. 3.747 N Long. 46.913 W

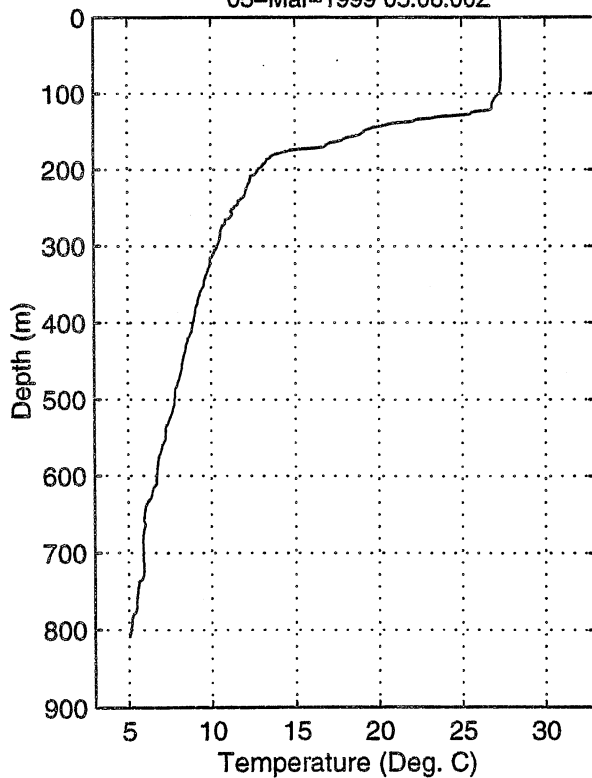
05-Mar-1999 01:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 114

Lat. 3.287 N Long. 47.077 W

05-Mar-1999 05:06:00Z



NBC-2 R/V SEWARD JOHNSON XBT Drop 115

Lat. 2.867 N Long. 47.247 W

05-Mar-1999 08:55:00Z

