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WHOI-86-15

Woods Hole Oceanographic Institution

Hydrographic Data from R/V Endeavor Cruise #90

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M. C. Stalcup, T. M. Joyce
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Technical Report

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Approved for Distribution:

Robert C Beardsley

Robert C. Beardsley, Chairman
Department of Physical Oceanography

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ABSTRACT

The final cruise of the NSF sponsored Warm Core Rings Program studied a Warm Core Ring (WCR) in the Fall of 1982 as it formed from a large northward meander of the Gulf Stream. This ring, known as 82-H or the eighth ring identified in 1982, formed over the New England Seamounts near 39.5 N, 65 W. Surveys using Expendable Bathythermographs, Conductivity-Temperature-Depth-Oxygen stations and Doppler Current Profiling provide a look at the genesis of a WCR. These measurements reveal that WCR 82-H separated from the Gulf Stream sometime between October 2-5. This ring was a typical WCR with a diameter of about 200 km and speeds in the high velocity core of 175 cm/sec. Satellite imagery of 82-H following the cruise showed that it drifted WSW in the Slope Water region at almost 9 km/day, had at least one interaction with the Gulf Stream and was last observed on February 8, 1983 at 39 N, 72 W.

HYDROGRAPHIC DATA FROM R/V ENDEAVOR CRUISE # 90

Data Report
by
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BACKGROUND

Northward looping meanders of the Gulf Stream may pinch off to form anti-cyclonic eddies typically 150-200 km in diameter which are known as Warm Core Rings (WCR). The central portion of each WCR is filled with water of Sargasso Sea origin and is surrounded by a ring of high velocity Gulf Stream water. In the area bounded by the Gulf Stream, the New England Seamounts and the continental slope there may be several such rings at any given time. Rings may drift slowly towards the southwest at average speeds of 3-5 km/day until they merge with the Stream off Cape Hatteras or they may interact with the Stream and be modified or captured.

The R/V Endeavor began cruise # 90 on September 22, 1982. This was the last of five cruises the Endeavor made during the NSF sponsored Warm Core Rings Program (Joyce and Wiebe, 1982). The first cruise, #74, was in September, 1981 during which measurements were made in WCR 81-D (Stalcup et al., 1982). Warm Core Ring 82-B was studied during R/V Endeavor cruises #83, 86 and 88 in the spring and summer of 1982, (Stalcup, et al., 1985). However, when the first of several interactions between this ring and the Gulf Stream occurred on July 22, it became obvious that the ring was unlikely to persist through the fall. Shortly before cruise #90 began, WCR 82-B was absorbed by the Gulf Stream. A satellite tracked ARGOS drifter (Tynan and Hooker, 1984), which had been launched in the center of WCR 82-B on August 19, was captured by the Stream during its final interaction with the ring and was transported rapidly eastwards. The trajectory of this drifter (Fig. 1) clearly defines the meander/ring which is the subject of this study.

GENERAL DESCRIPTION OF WORK

This report presents all of the CTD and hydrographic data and portions of the Acoustic Profiler of Ocean Currents (APOC) currents and ARGOS drifter data obtained during R/V Endeavor cruise #90 during a multi-disciplinary study of Warm Core Meander/Ring 82-H. Charts showing the locations of the CTD stations and XBT observations together with the bathymetry and APOC current vectors (Joyce, et al. 1982) are presented. The Doppler current vectors shown on these charts are from depths of 92 and 99 m and are plotted at 10 minute intervals along the ship's track. Each vector is the average of 10 minutes of measurements from a 6.5 m bin centered on the reported depth. Drifter trajectories for the time during which the XBT and CTD

survey were made are also shown. Vertical sections of the CTD temperature, salinity, dissolved oxygen, density, salinity anomaly and nutrient data are also presented. Figures 3b-e and 5b-e show the horizontal and vertical distribution of potential temperature (deg. C), salinity (ppt) and dissolved oxygen (ml/l), potential density (kg/m3) and salinity anomaly on density surfaces (ppt). Water samples were collected for the analysis of the nutrients Silicate, Phosphate and Nitrate, and the distribution of each variable is also shown in vertical sections. The CTD conductivity and oxygen sensors were calibrated using the data from 20 water samples collected at each CTD station. Nutrient samples were collected from each water sample and frozen for later analysis ashore. In addition to the measurements reported here, Loran-C, Doppler current profiles to 100 m (Joyce, et al. 1982) and bathymetry were continuously recorded. Satellite tracked ARGOS drifters, drogued at 100 m were launched during the cruise and are reported by Tynan and Hooker (1984). A turbulence profiler (Camel) was deployed at 21 stations to a maximum depth of 1800 m, and vertical fluorescence profiles of chlorophyll, fucozanthin, temperature and salinity to 110m were also made at 17 stations. A transmissometer, which continuously measured beam transmittance from the surface to the bottom, was also part of the CTD package.

CRUISE OVERVIEW

During earlier WCR Endeavor cruises, satellite images were used successfully to locate and delineate warm core rings and their associated surface features. By late summer however, cloud cover over the Slope Water area was so extensive that little information on ring locations was available. Cruise #90 began with a brief XBT survey of a very weak ring found near 39.5 N, 69 W. This ring was eliminated as a possible candidate for intensive study because no Sargasso water was found entrained within its center. Table 1 is the event log for this cruise and tabulates the activities during this XBT survey as well as the various other activities carried out during the remainder of the cruise. Following the brief survey an XBT section was begun eastwards along 39.8 N. Near 65 W the depth of the 10 deg. C. isotherm changed from about 300 m to over 700 m indicative of the presence of either a Gulf Stream meander or a ring. An ARGOS drifter, drogued at 100 m, was deployed there. An XBT survey (Fig. 2) of this feature, made between September 24-26, established that it was a large, northward meander of the Stream. The presence of this meander was corroborated by the track of the ARGOS drifter which had been launched in WCR 82-B on August 19 and was captured by the Gulf Stream. Between September 26 and October 4 the trajectory of this drifter clearly delineates the shape of the meander (see Fig. 1). A CTD section, comprised of 13 deep and closely spaced stations, was then made across the meander between September 26-29, (Figs. 3a-3e). Following this work an additional CTD section was made (Fig. 7a-7d) east of the meander from the Sargasso Sea northward to the 150 m isobath. This section was located to characterize the hydrography of the Slope Water region, outside the influence of either meanders or rings and to the east of the New England Seamounts. A second XBT survey (Fig. 4), from October 4-5, showed that the meander had pinched off from the Stream and was

now a Warm Core Ring. Three ARGOS drifters (Tynan and Hooker, 1984) were deployed to study the circulation in what was now WCR 82-H. Between October 6-8, eight CTD stations were made in a section across the newly formed ring (Fig. 5a-5e). At the end of the cruise, a star-shaped XBT survey was made across 82-H (Fig. 6) from October 9-13.

MEASUREMENTS AND ACCURACIES

During each CTD station a Neil Brown Instrument Systems Conductivity-Temperature-Depth-Oxygen profiler equipped with a General Oceanics Rosette sampler with twenty-four 1.2 liter Niskin bottles, a bottom finding pinger and a transmissometer was lowered to within 20 meters of the bottom. During each lowering continuous measurements of pressure, conductivity, temperature, dissolved oxygen and transmissivity were made. Water samples were collected at selected depths to calibrate the sensors on the CTD and to define the vertical structure of the nutrients in the water column. The salinity samples were measured with a Guildline Autosal 8400-A which was calibrated frequently with IAPSO standard water batches P80, P87 and P90. Differences between these batches and batch P96 of +.003 to -.003 have been observed, (Mantyla, test #17, July 1985). The room temperature in the shipboard salinity/oxygen laboratory fluctuated by +/- 4 deg.C and adversely affected the salinity determinations. Most bottle salinity values are believed accurate to +/-0.005 ppt. Oxygen samples were analysed using a modified Winkler titration which has been employed at WHOI for the past 20 years. Reproducibility using this technique is +/-0.04 ml/l and the results are believed accurate to better than 2% . Nutrient samples were collected in aged, acid rinsed, high density polyethylene bottles. Samples were frozen immediately after each station for later analysis at the University of Rhode Island Chemical Oceanographic Facility under the direction of Dr. M. Fox.

DATA INTERPRETATION

The fortuitous capture by the Gulf Stream of ARGOS drifter # 2535 provided a timely trajectory that clearly depicts the path of the Stream and the existence of the large northward meander that later developed into WCR 82-H, (Fig. 1). The first XBT survey of this feature was made before it separated from the Stream and consisted of the deployment of 47 XBTs across the meander. Figure 2 shows the 99 m, APOC current vectors and the depth of the 10 deg. C isotherm. The configuration of the isopleths indicates that, at this time, the meander was still part of the Stream. The trajectory of the ARGOS drifter (Figure 1) shows that between September 26 and October 4, three days after the XBT survey, a large northward meander of the Gulf Stream was present here. The track of the drifter during this period approximates the size and shape of the meander as defined by the contour of the 10 deg. C isotherm at 500 m. The APOC current vectors at 99 m also indicate that this survey was made across the meander before the formation of WCR 82-H. The currents at 99 m are directed around the meander at 150 cm/sec. The ARGOS drifter, which was drogued at 100 m, had an average speed of 152 cm/sec between September 26 and October 4 (Fig. 1), in close agreement with the APOC data measured three days earlier. Another ARGOS drifter deployed on September 24 near the center of the meander, moved towards the ESE at 62 cm/sec (Fig. 2).

A section of 13 CTD stations (CTD# 4-16) was made across the meander between September 26-29. Figure 3a shows the station positions and the APOC current vectors at 99 m. Maximum speeds are 180 cm/sec at the southern end of the section and 140 cm/sec at the northern end. Using the distance between maximum west and southeast currents, the diameter of the meander is about 150 km. The data collected at these stations are presented in Figures 3b-3e and illustrate the vertical structure of salinity, oxygen, density, salinity anomaly and nutrients.

Figure 3b shows the potential temperature and salinity sections across the meander. The thermohaline structure is typical of that observed in Gulf Stream sections. For instance, the high salinities and lower oxygen values near 22 deg. C, seen at stations 6 and 14 at 100 db, can generally be found near the onshore edge of the Stream. Also, the thermostad between 17-19 deg. C, which is commonly found along the right hand side of the Stream, is present in this section at stations 7-13. Slope Water salinity inversions, such as those at stations 4 and 5, are also associated with Gulf Stream sections. Figure 3d is the salinity anomaly on density surfaces and reactive silicate sections. Salinity anomaly is calculated for each observed temperature and salinity by projecting the observed potential density back on the reference theta/S curve for the Western North Atlantic (Armi and Bray, 1982). This quantity is therefore different from Worthington and Metcalf's (1961) salinity anomaly which was defined for a fixed potential temperature. The negative salinity anomaly at either end of this section clearly shows the influence of Slope Water. The relatively 'neutral' region in the central portion of the section indicates that this water differs little from that used

to construct the Northwest Sargasso Sea T/S curve used to calculate these anomolies. The water mass contrast of the meander in Fig. 3d extends from the surface to 2000 db.

Figure 4 shows the depth of the 10 deg. C isotherm during the second XBT survey (October 9-16) and the APOC currents measured at 99 m. The isopleths in the eastern portion of this survey show that, at least at these depths, WCR 82-H has separated from the Gulf Stream. The current vectors corroborate this interpretation of the temperature field as do the trajectories of the two ARGOS drifters launched near the center of the ring.

Figure 5a illustrates the APOC currents at 99 m which were measured while making this CTD section across WCR 82-H. Maximum velocities of 180 cm/sec are found in both the northern and southern portions of this section. Gaps in the data are the result of insufficient numbers of Doppler returns in a ten minute interval. Using the maximum velocities to mark the boundary of the ring, its diameter is about 200 km.

A comparison of the two CTD sections shown in Figures 3 and 5 clearly shows that the ring is a larger, shallower feature than the meander. Using the 400 db depth of the 15 deg. C isotherm, the ring is 220 km and the meander is 190km in diameter. The depth of the 27.0 potential density surface is 800 db in the center of the meander and 700 db in the center of the ring. It is also apparent that, above 2000 db, water with slightly different characteristics is present in the ring. It appears that between September 9, when the first CTD section was completed across the meander, and October 6, when the last CTD section was begun across the ring, the water within the meander was replaced by Gulf Stream and Sargasso water which differed slightly from that seen earlier. A comparison of Figures 3b and 5b shows that surface temperatures within the meander exceeded 27.7 deg. C while within WCR 82-H surface temperatures reached only 26.1 deg. C. These temperature sections also indicate that the maximum thickness of the 17-19 deg. C layer increased from 150 db in the meander to 200 db in the ring. Maximum salinities in the meander exceeded 36.7 ppt at stations 6, 9 and 14, and the greater than 36 ppt layer had an average thickness of 25 db. No salinities greater than 36.7 were observed in the ring, and the average thickness of the greater than 36.6 ppt layer was about 10 m. Figures 3d and 5d show that the thickness of the less than 3.5 ml/l oxygen minimum layer within the meander averaged about 70 db while within the ring it was 15 db. The Silicate maximum layer near 1000 db is thicker within the meander than in the ring and maximum values are 1 ugA/l greater. All of these differences seem to indicate a replacement of water in the meander before it became detached from the Stream. Such along-stream property differences are commom in the Gulf Stream.

The last XBT survey (Fig.6) across the ring (October 9-13) shows that WCR 82-H had moved towards the WSW about 90 km since it separated from the Stream. This indicates a translational speed of about 10 km/day. Due to technical problems with the acoustic current profiler, the APOC current vectors in Figure 6 are from a depth of 92 rather than 99 m. They show a clearly defined WCR with a diameter of approximately 200 km and velocities in

the high speed core of 175 cm/sec. As defined by the APOC and XBT data, the size and shape of this ring has changed little since its formation. Tynan and Hooker (1984) report that WCR 82-H interacted with a Gulf Stream meander on October 18 and suffered some deformation. They also note that after this interaction the ring moved towards the southwest and was last seen in satellite imagery at 39 N, 72 W on February 8, 1983.

Figures 7a-7d show the CTD and hydrographic data from stations 17 to 27. This section was made from the Sargasso Sea to the 150 m isobath at the edge of the shelf to provide baseline hydrographic information outside the influence of warm core rings. Surface temperatures greater than 27 deg. C and salinities greater than 36.7 ppt are found in the Gulf Stream portion of the section. As noted above, these values were found within the meander but not in the ring. Station 20 marks the northern boundary of the Stream as defined by the 15 deg C isotherm at 200 db. Slope Water is found from here to station 25 where cold, fresh shelf water overrides the Slope Water. The oxygen minimum layer, with values less than 3.5 ml/l, extends from the Sargasso to station 23. The shoreward erosion of this feature by the more oxygenated waters above, below and shoreward of it is typically seen in such sections. Although some nutrient data are reported for most of these stations, the spatial coverage was so sparse that they cannot be reliably contoured.

DESCRIPTION OF THE TABULATED DATA

Station data logs are presented which show the CTD and hydrographic data in two formats. The first listing on each page contains the CTD temperature, salinity and oxygen values at standard pressures. Each value is the average of a ten decibar segment of the water column centered at the standard pressure. To the right of the oxygen column are the calculated variables: potential temperature, density relative to 0, 1500, and 3000 db, dynamic height, Brunt-Vaisala period and depth.

Water sample data are shown in the second listing on each page. Columns one and two contain the CTD pressures and temperatures at which the water samples were collected. These columns are followed by the water sample salinity, dissolved oxygen and Silicate, Phosphate and Nitrate. The final columns contain the calculated variables: theta, sigma-theta, sigma-3 and depth. Missing values in this listing generally indicate that a measurement is believed to be erroneous and has been expunged. The complete 2 db CTD data set is on file at the National Oceanographic Data Center in Washington D.C.

ACKNOWLEDGEMENTS

We are particularly indebted to the officers and crew of the R/V Endeavor for their excellent seamanship and fine cooperation during the cruise. We would also like to express our thanks to the University of Rhode Island's URI/GSO Marine Technician group under the direction of Mr. William Hahn. This work was supported by the National Science Foundation under grant No. OCE80-16983 to the Woods Hole Oceanographic Institution and was part of the Warm Core Rings Program. The APOC measurements were supported by The National Aeronautical and Space Administration under grant No. NAGW-272.

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FIGURE CAPTIONS

Figure 1. The locations of CTD stations made during R/V Endeavor cruise #90 while studying a large Gulf Stream meander which pinched off to form WCR 82-H. The track of an ARGOS drifter, drogued at 100 m and launched in WCR 82-B on August 19, 1982 is shown after it was captured by the Gulf Stream on September 20, 1982. Arrows mark the position of the drifter at the beginning of each day. The location of the stations in the Slope Water CTD section (stations 17-27, September 29 to October 2) which began in the Sargasso Sea and ended at the 150 m isobath are also shown.

Figure 2. The first XBT survey of the Gulf Stream meander (24-26 September) which later separated from the Stream to form WCR 82-H. The upper chart shows the APOC current vectors obtained while underway during the XBT survey. The vectors are ten minute averages of the acoustic returns from a 6.5 m bin centered at 99 m. The dots in the lower chart are the positions at which each XBT was deployed. The contours show the depth of the 10 deg. C isotherm.

Figure 3a. The first CTD section occupied during this cruise was made across the Gulf Stream meander (stations 4-16, September 26-29, 1982) located over the New England Seamounts. The current vectors are as in Fig. 2.

Figure 3b. Vertical sections of potential temperature, deg. C and salinity, ppt showing the CTD data from stations 4-16.

Figure 3c. Vertical sections of oxygen, ml/l and potential density, kg/m3 as in Fig. 3b.

Figure 3d. Vertical sections of salinity anomaly on density surfaces, ppt and Silicate, ugA/l as in Fig. 3b.

Figure 3e. Vertical sections of Nitrate, ugA/l and Phosphate, ugA/l as in Fig. 3b.

Figure 4. The second XBT survey (4-6 October, 1982) of the cruise. This section is across WCR 82-H. APOC current vectors, XBT positions and isopleths as in Fig. 2.

Figure 5a. The CTD section across WCR 82-H (stations 31-38, 6-8 October, 1982). APOC current vectors as in Fig. 2.

Figure 5b. Vertical sections of potential temperature, deg. C and salinity, ppt showing the CTD data from stations 31-38.

Figure 5c. Vertical sections of oxygen, ml/l and potential density, kg/cubic meter as in Fig. 5b.

FIGURE CAPTIONS

Figure 5d. Vertical sections of salinity anomaly on density surfaces, ppt and Silicate, ugA/l as in Fig. 5b.

Figure 5e. Vertical sections of Nitrate, ugA/l and Phosphate, ugA/l as in Fig. 5b.

Figure 6a. The last XBT survey of WCR 82-H, 9-13 October, 1982. APOC current vectors are from 92 m and XBT positions and isopleths as in Fig. 2.

Figure 7a. The Slope Water CTD section east of WCR 82-H (September 29 to October 2, 1982). Vertical sections of potential temperature, deg. C showing the CTD data from stations 17-27.

Figure 7b. Vertical sections of salinity, ppt as in Fig. 7a.

Figure 7c. Vertical sections of oxygen, ml/l as in Fig. 7a.

Figure 7d. Vertical sections of potential density, kg/cubic meter as in Fig. 7a.

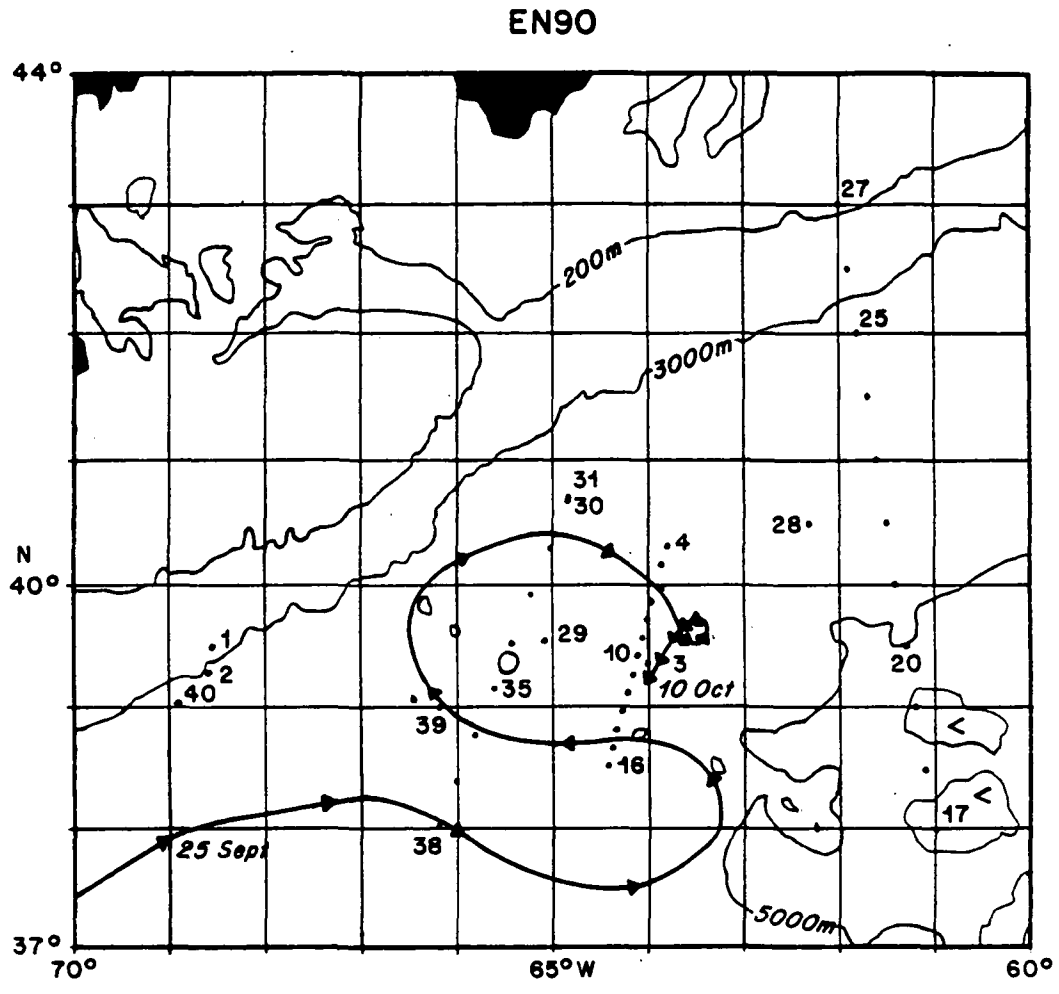


Figure 1. The locations of CTD stations made during R/V Endeavor cruise #90 while studying a large Gulf Stream meander which pinched off to form WCR 82-H. The track of an ARGOS drifter, drogued at 100 m and launched in WCR 82-B on August 19, 1982 is shown after it was captured by the Gulf Stream on September 20, 1982. Arrows mark the position of the drifter at the beginning of each day. The location of the stations in the Slope Water CTD section (stations 17-27, September 29 to October 2) which began in the Sargasso Sea and ended at the 150 m isobath are also shown.

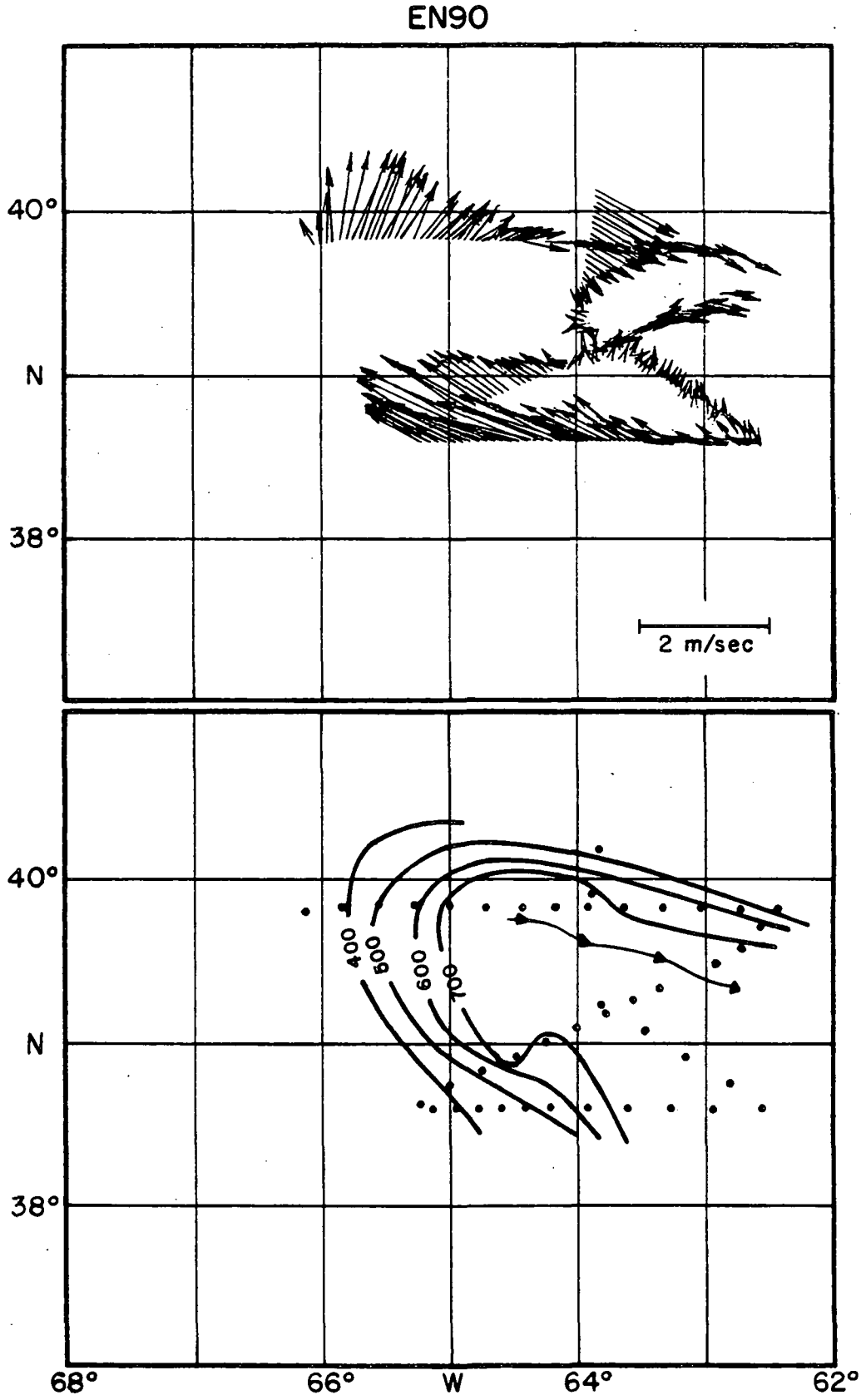


Figure 2. The first XBT survey of the Gulf Stream meander (24-26 September) which later separated from the Stream to form WCR 82-H. The upper chart shows the APOC current vectors obtained while underway during the XBT survey. The vectors are ten minute averages of the acoustic returns from a 6.5 m bin centered at 99 m. The dots in the lower chart are the positions at which each XBT was deployed. The contours show the depth of the 10 deg. C isotherm.

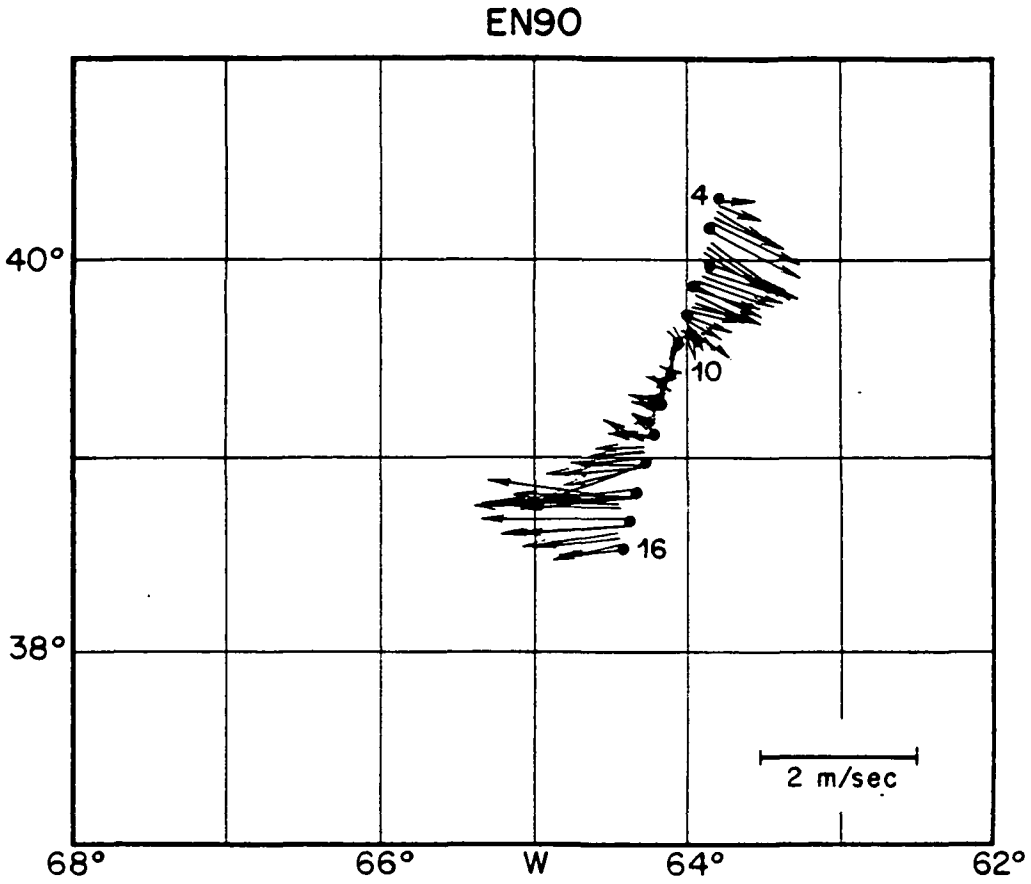


Figure 3a. The first CTD section occupied during this cruise was made across the Gulf Stream meander (stations 4-16, September 26-29, 1982) located over the New England Seamounts. The current vectors are as in Fig. 2.

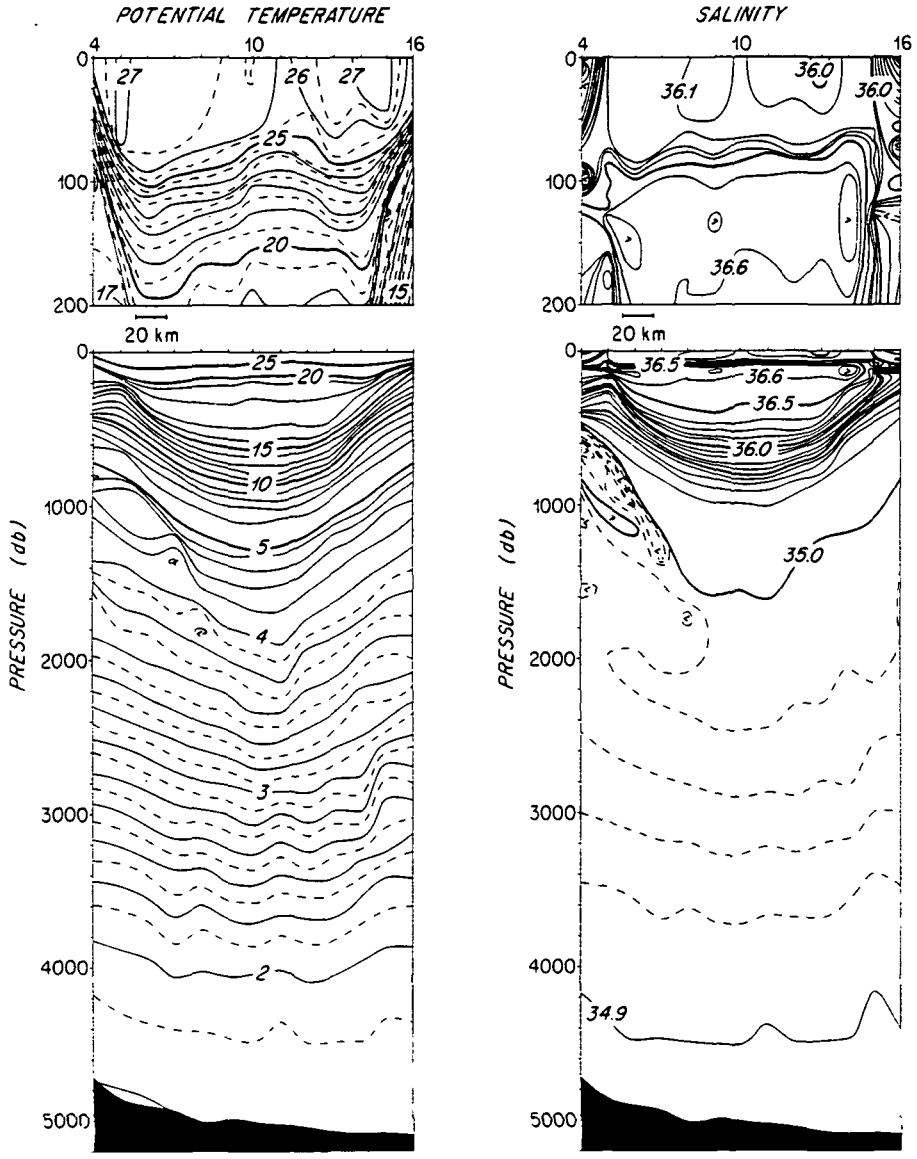


Figure 3b. Vertical sections of potential temperature, deg. C and salinity, ppt showing the CTD data from stations 4-16.

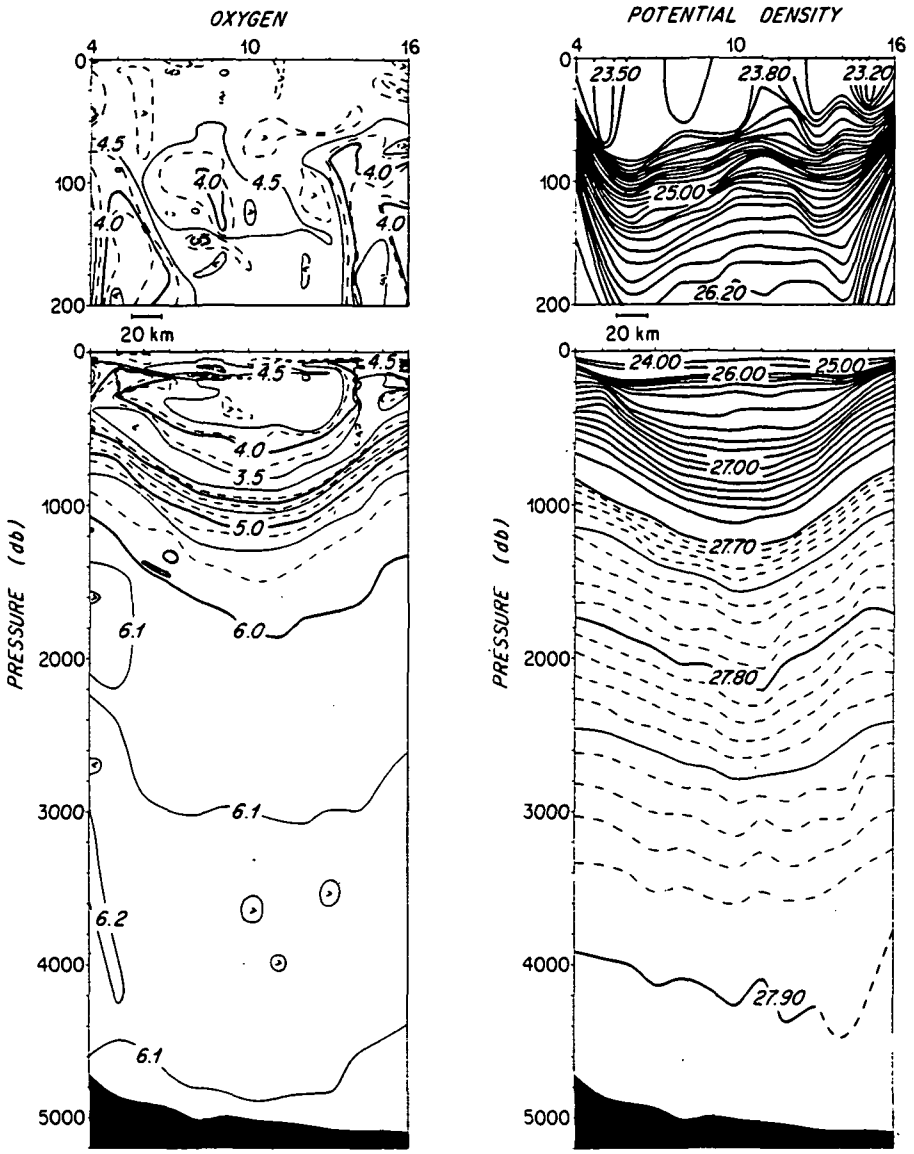


Figure 3c. Vertical sections of oxygen, ml/l and potential density, kg/m3 as in Fig. 3b.

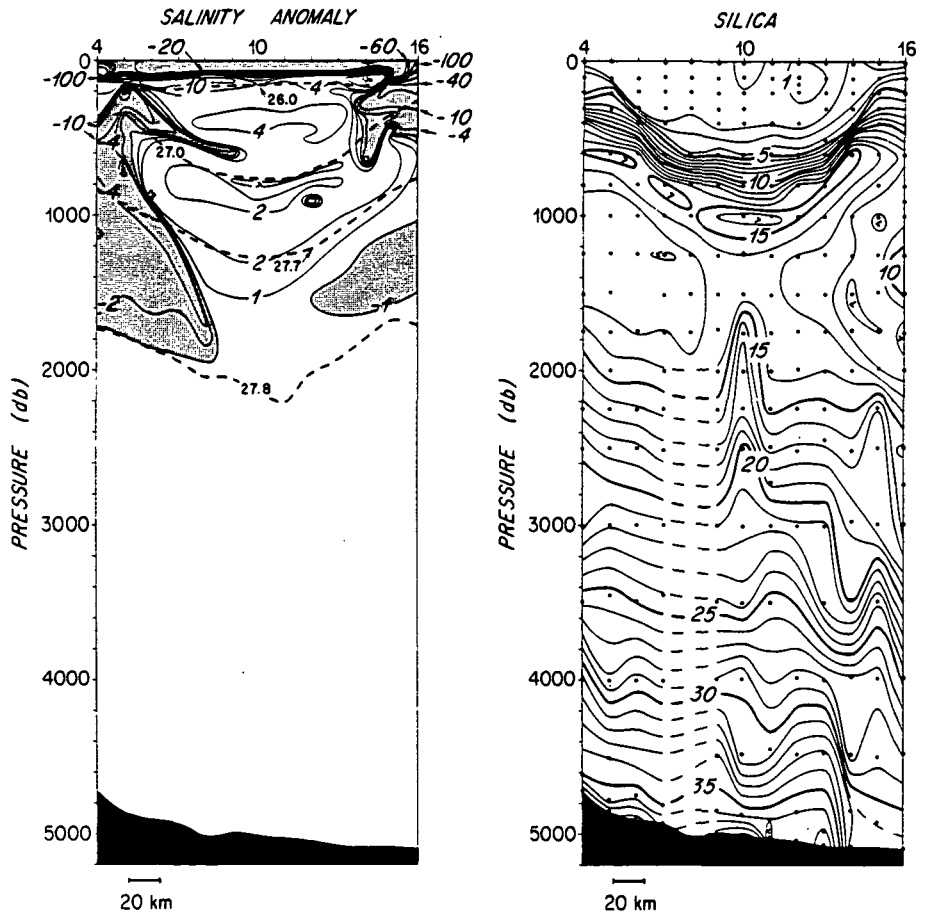


Figure 3d. Vertical sections of salinity anomaly on density surfaces, ppt and Silicate, ugA/l as in Fig. 3b.

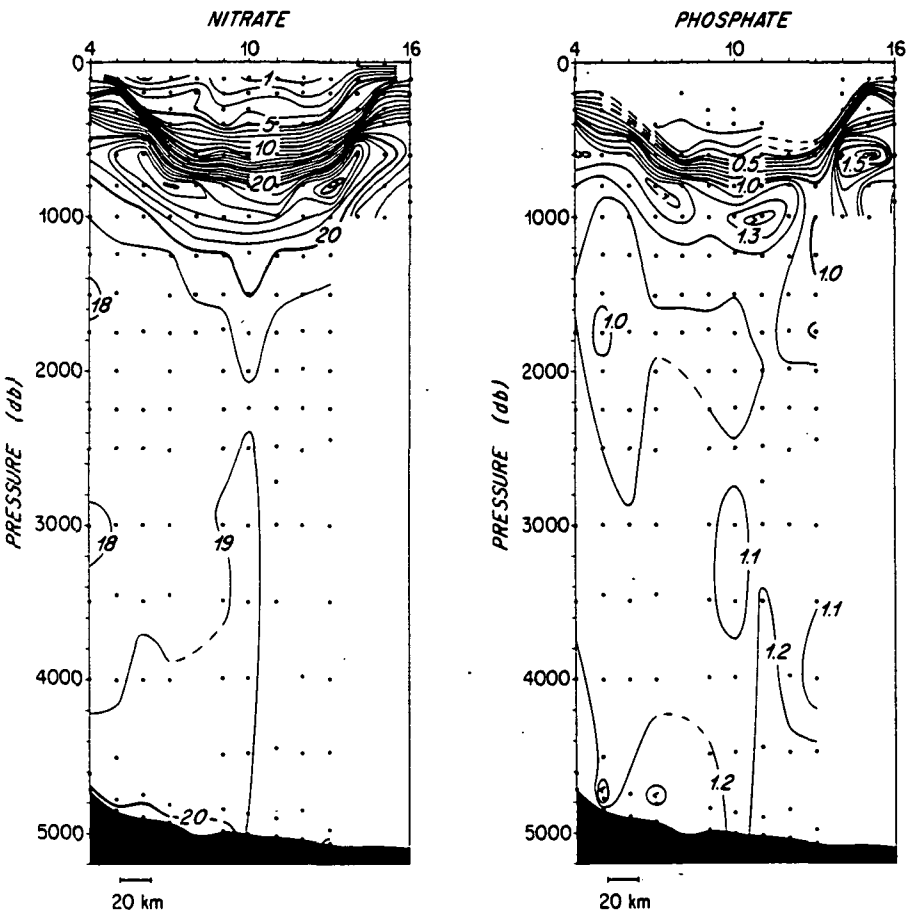
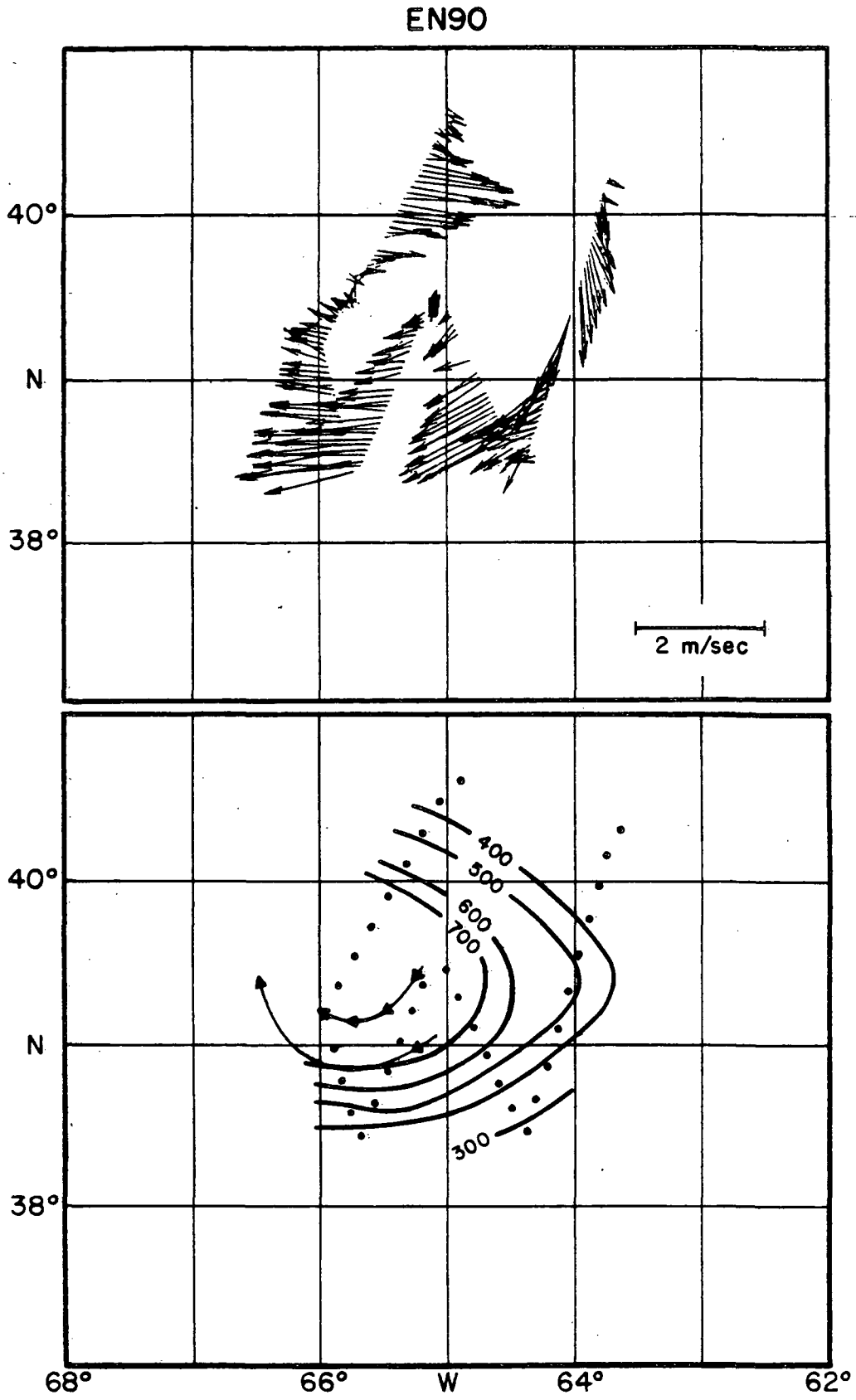


Figure 3e. Vertical sections of Nitrate, ugA/l and Phosphate, ugA/l as in Fig. 3b.



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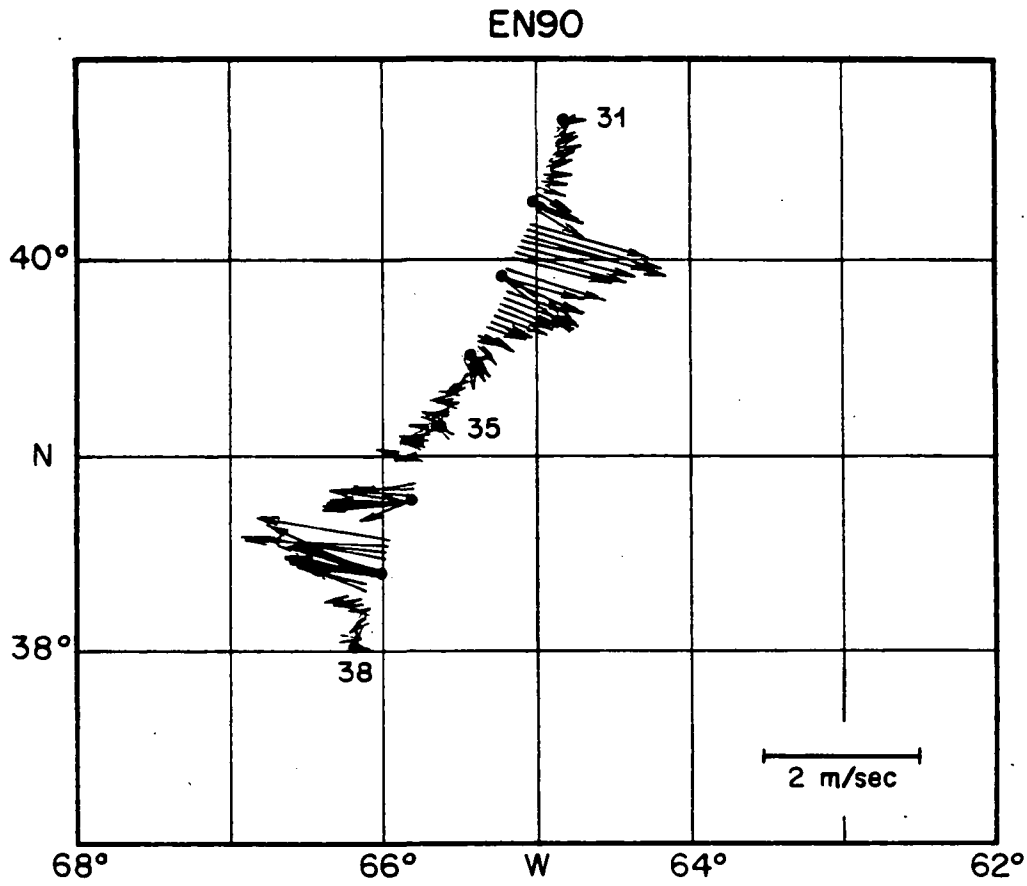

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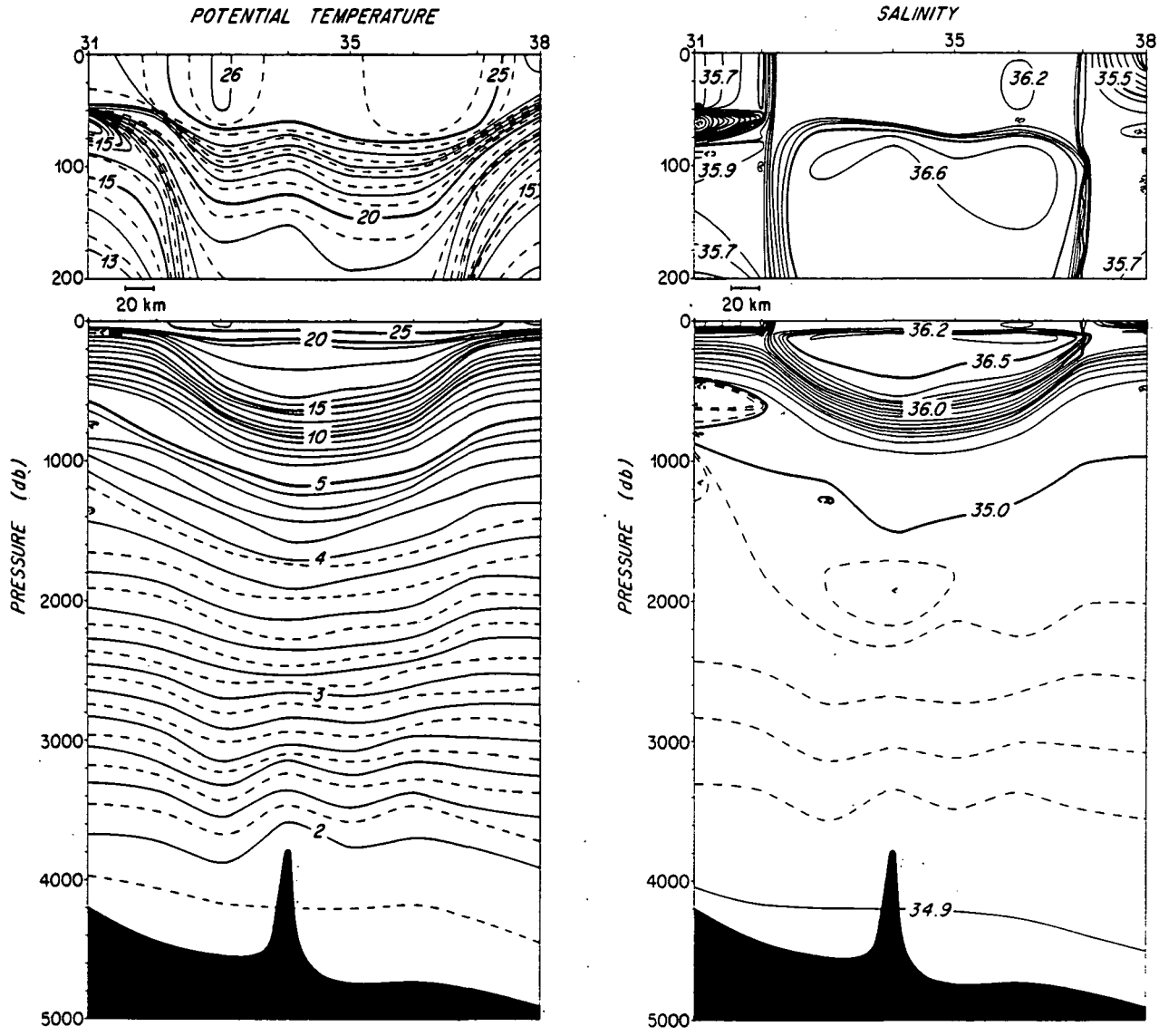

Figure 5b. Vertical sections of potential temperature, deg. C and salinity, ppt showing the CTD data from stations 31-38.

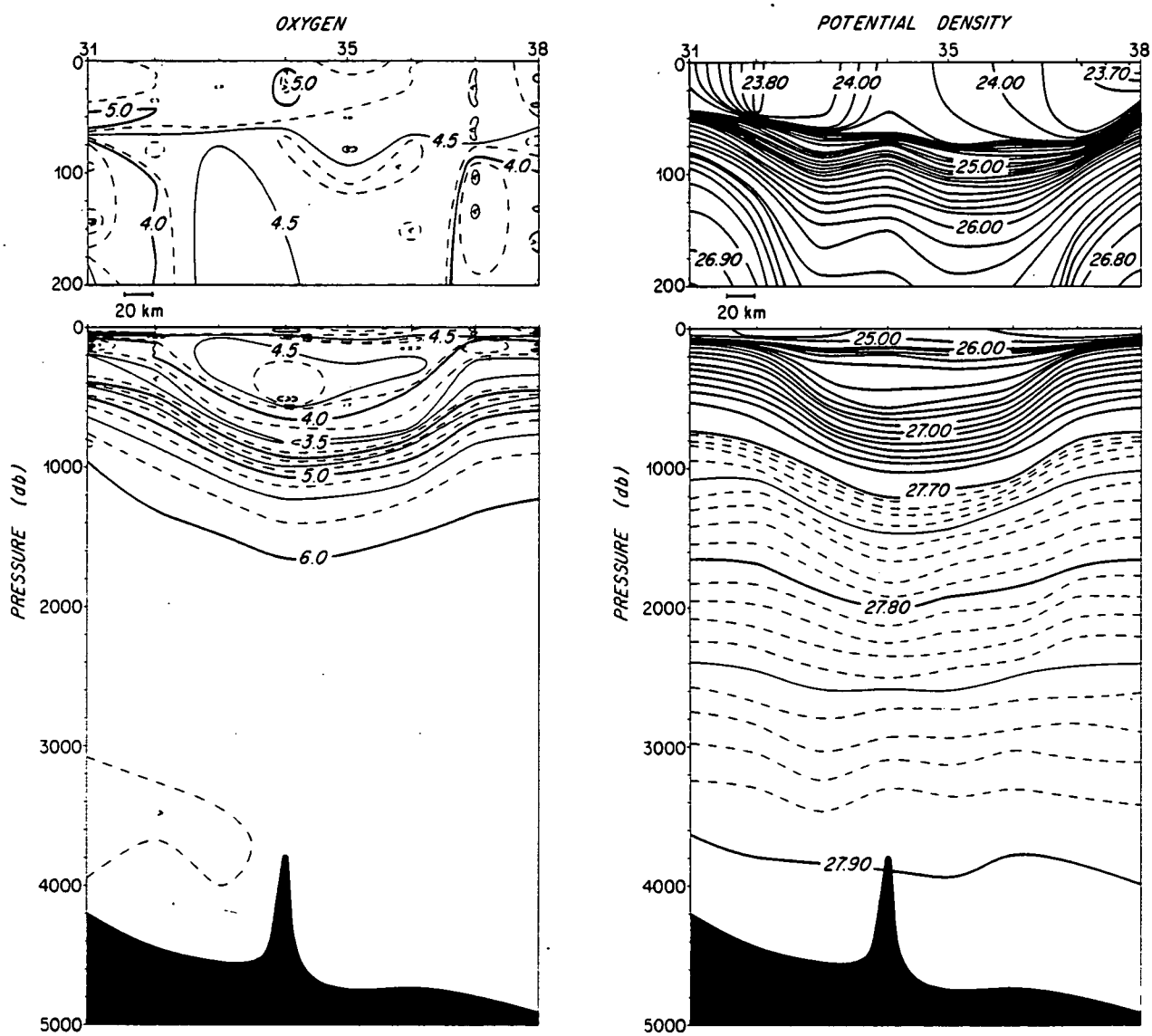

Figure 5c. Vertical sections of oxygen, ml/l and potential density, kg/cubic meter as in Fig. 5b.

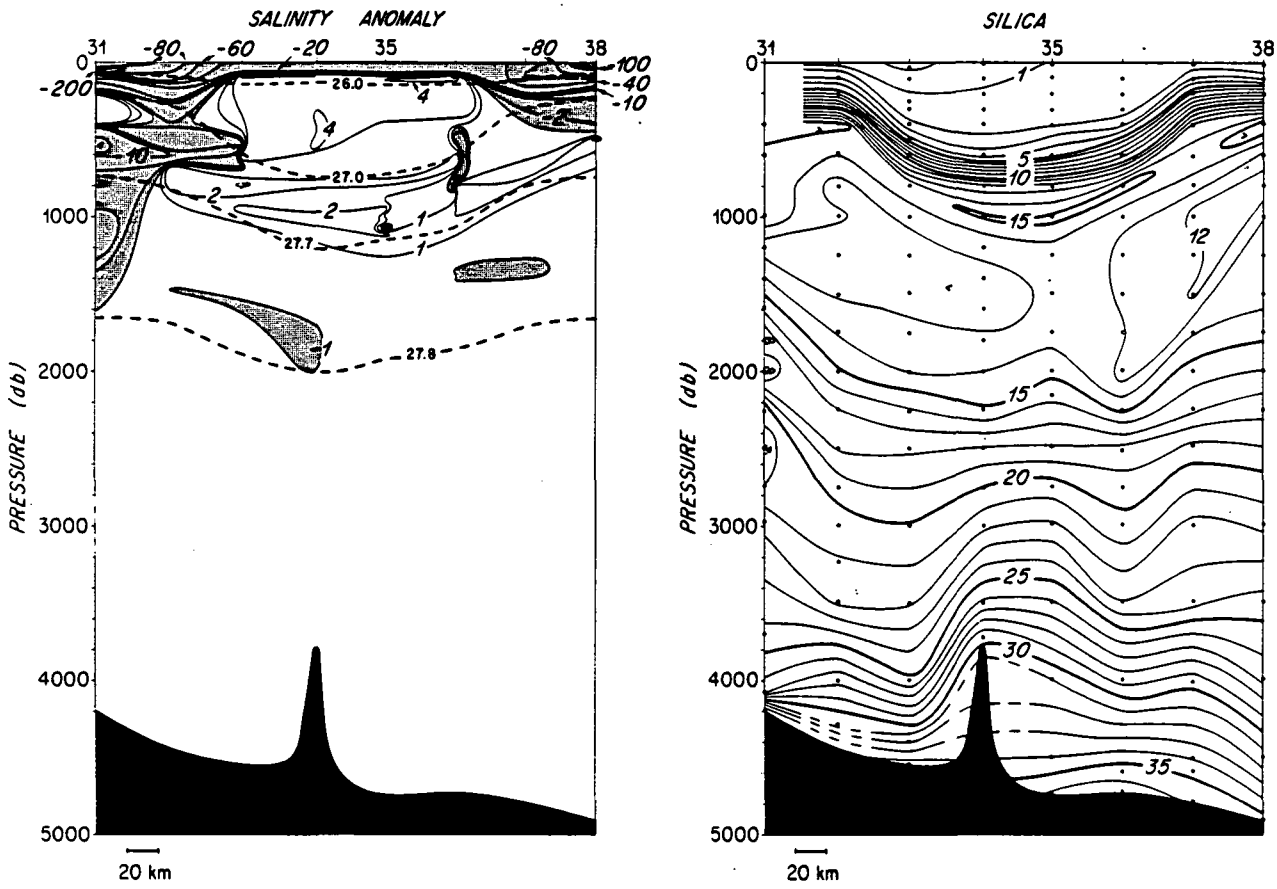

Figure 5d. Vertical sections of salinity anomaly on density surfaces, ppt and Silicate, ugA/l as in Fig. 5b.

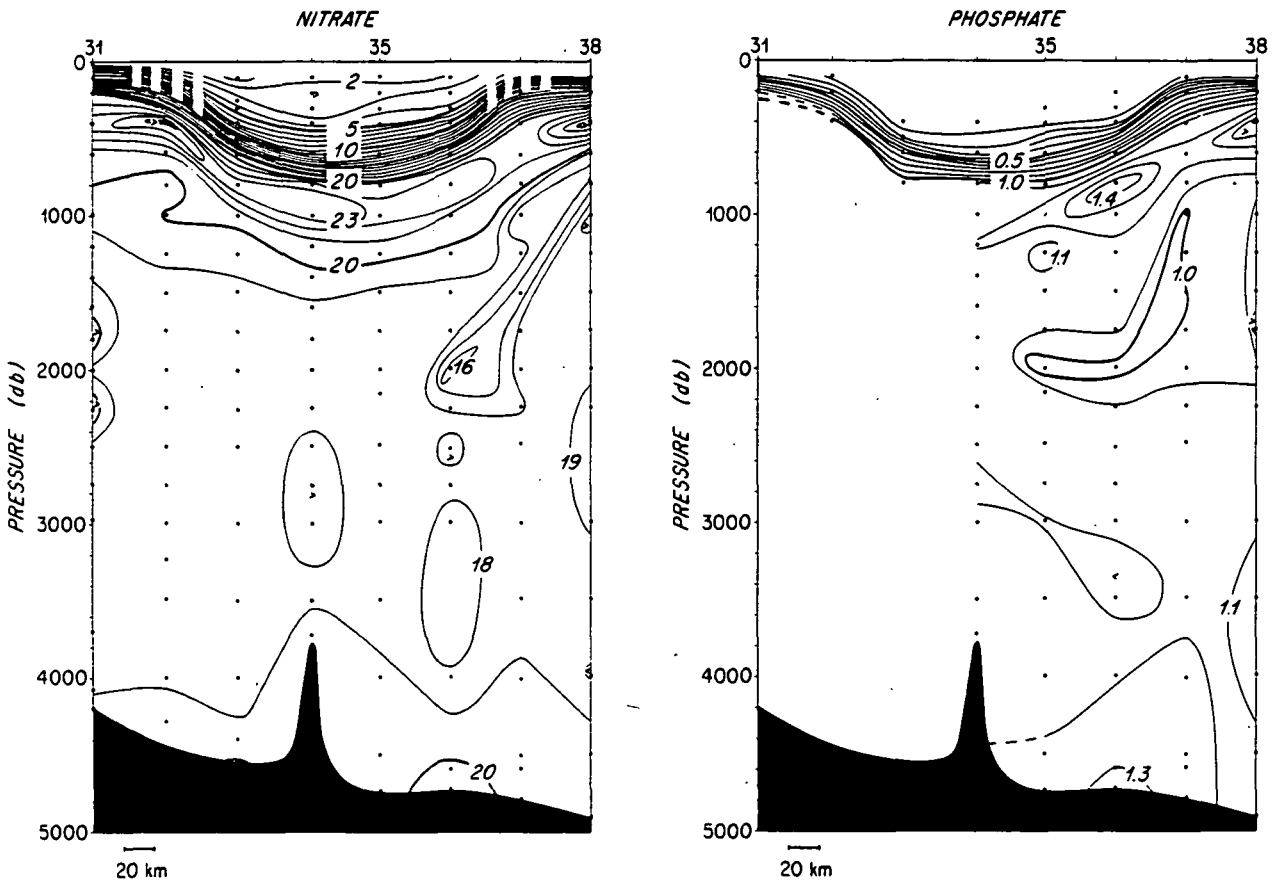

Figure 5e. Vertical sections of Nitrate, ugA/l and Phosphate, ugA/l as in Fig. 5b.

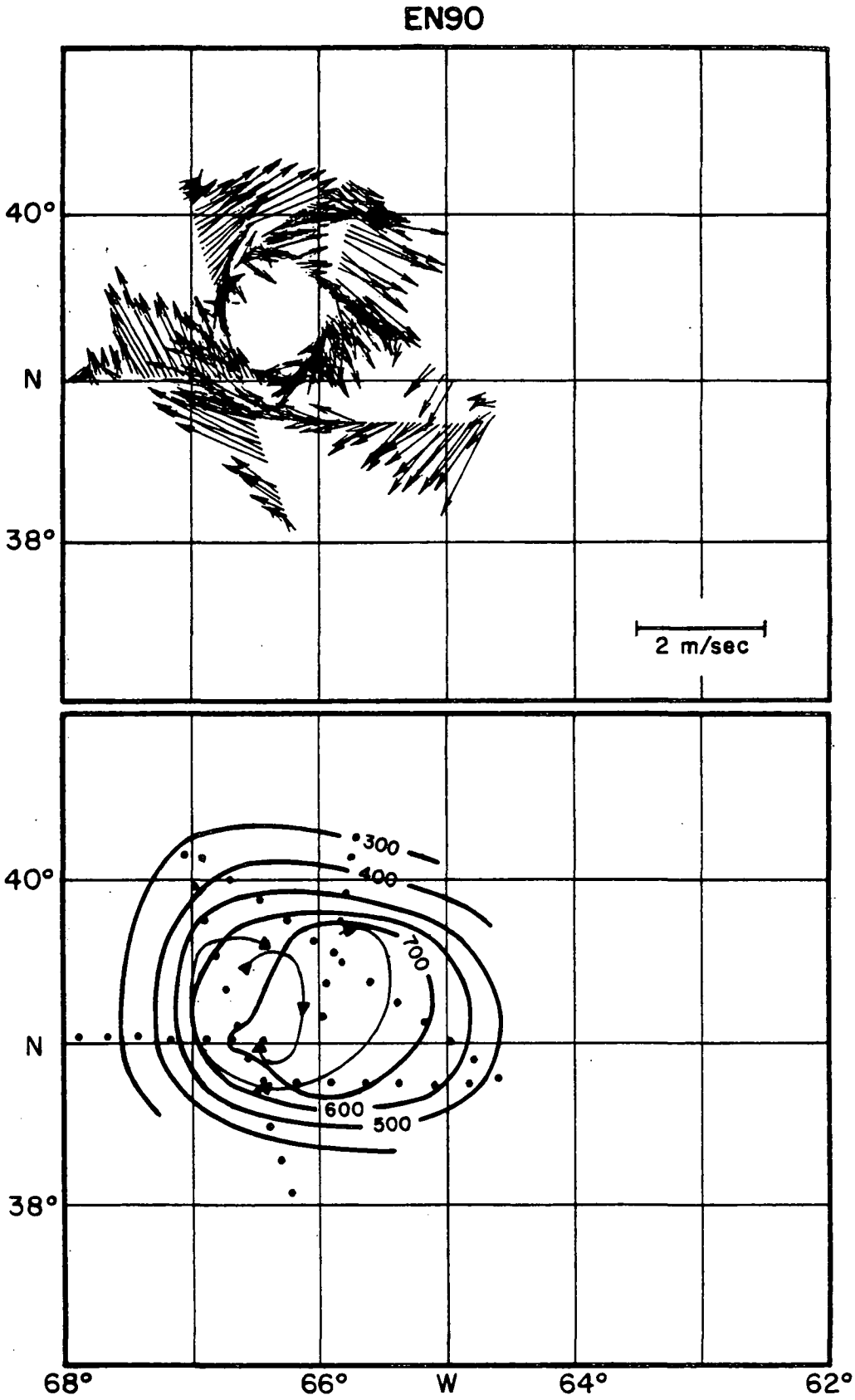

Figure 6a. The last XBT survey of WCR 82-H, 9-13 October, 1982. APOC current vectors are from 92 m and XBT positions and isopleths as in Fig. 2.

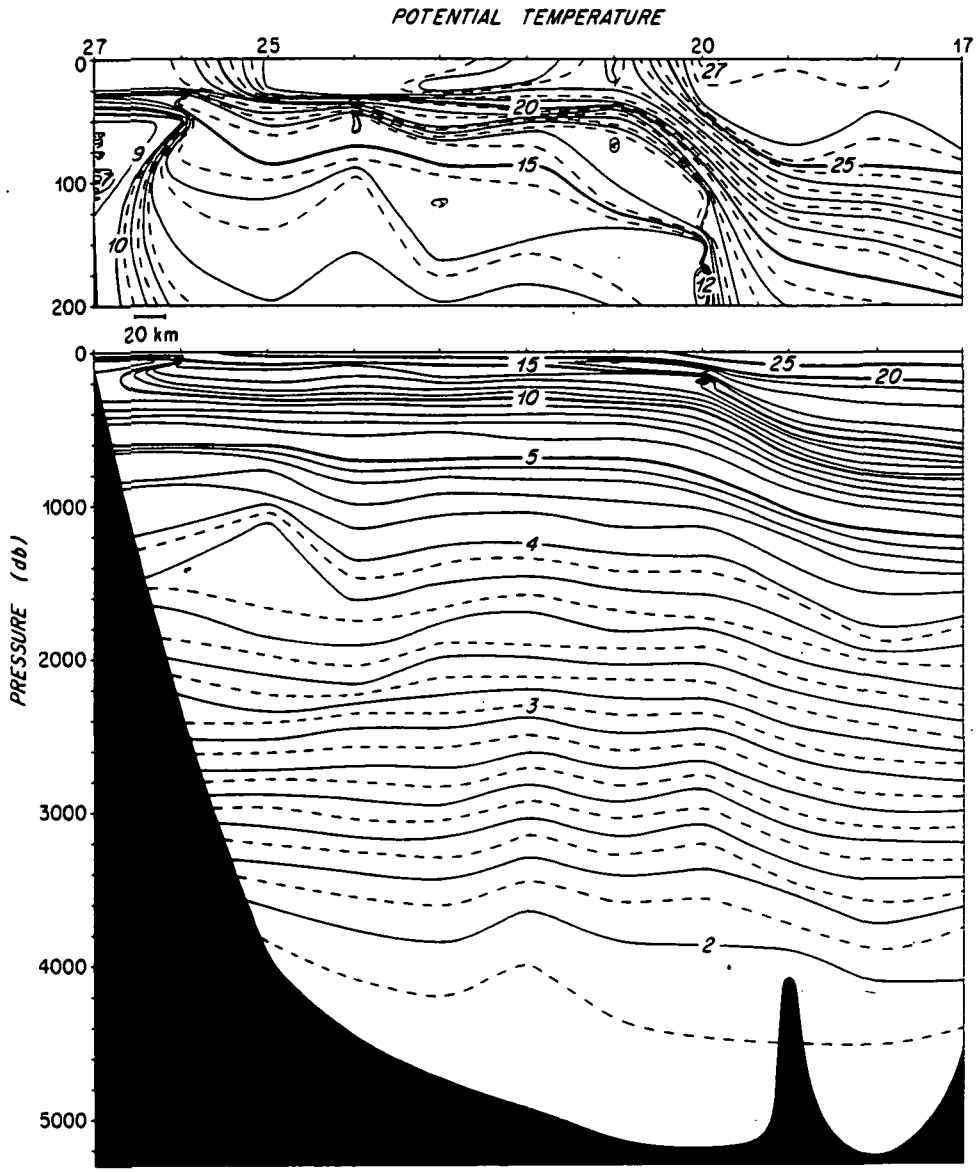

Figure 7a. The Slope Water CTD section east of WCR 82-H (September 29 to October 2, 1982). Vertical sections of potential temperature, deg. C showing the CTD data from stations 17-27.

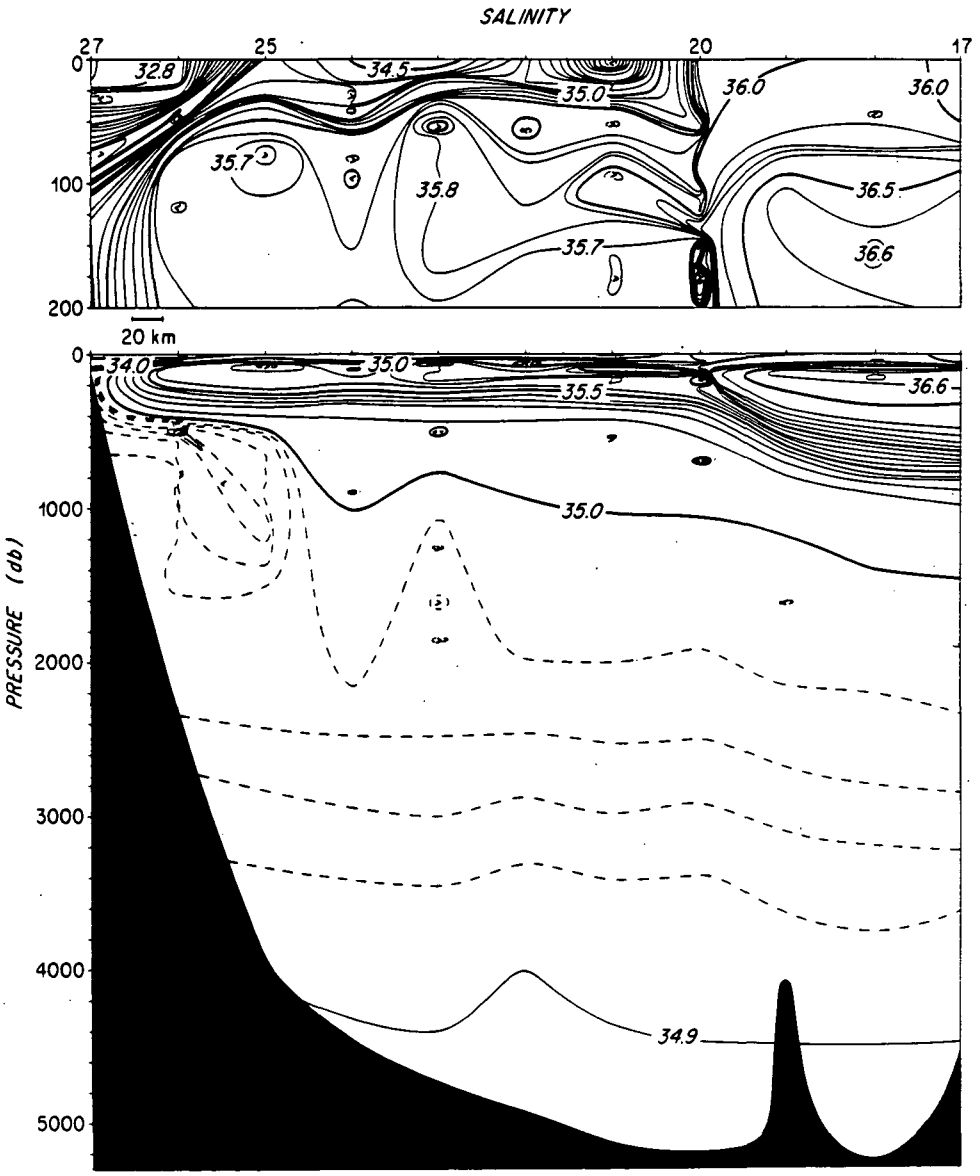

Figure 7b. Vertical sections of salinity, ppt as in Fig. 7a.

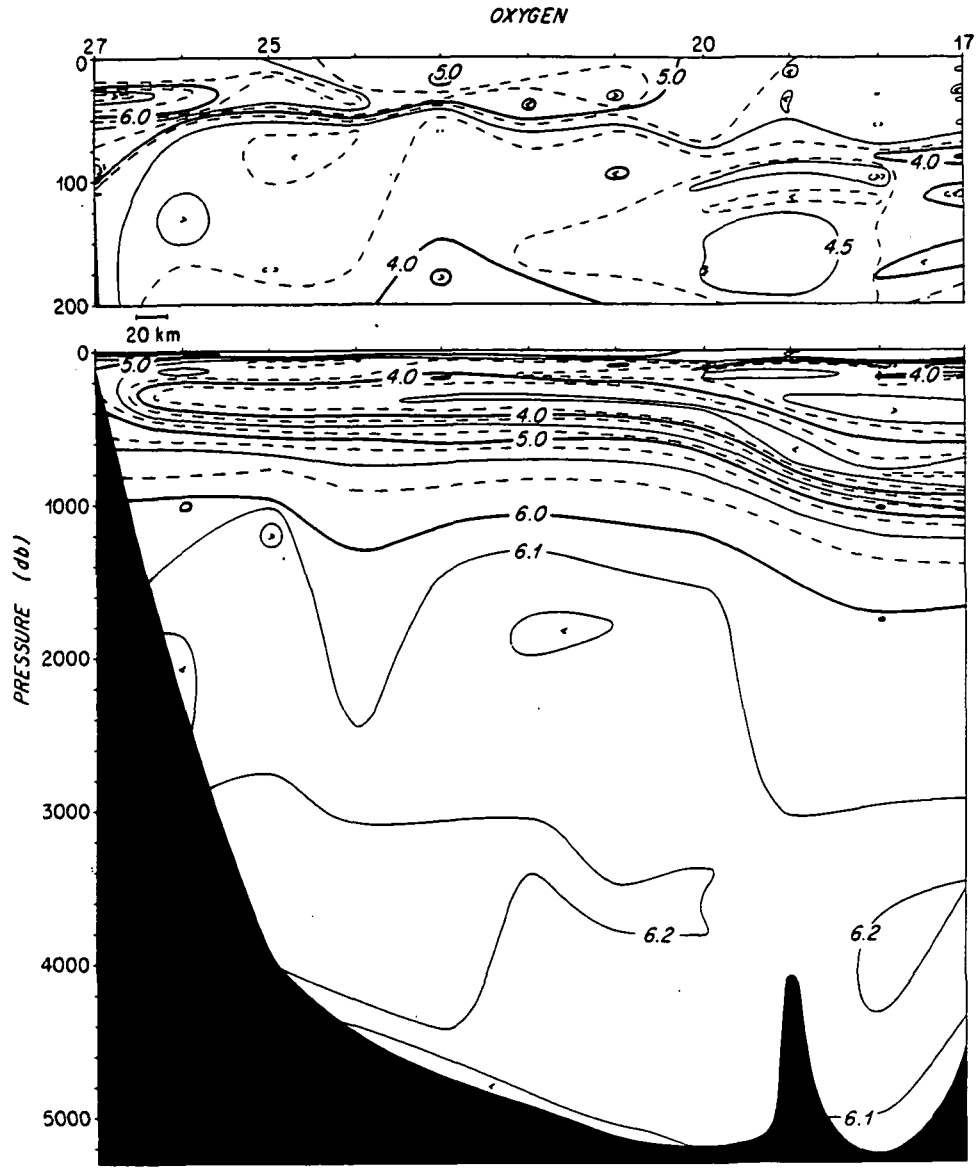

Figure 7c. Vertical sections of oxygen, ml/l as in Fig. 7a.

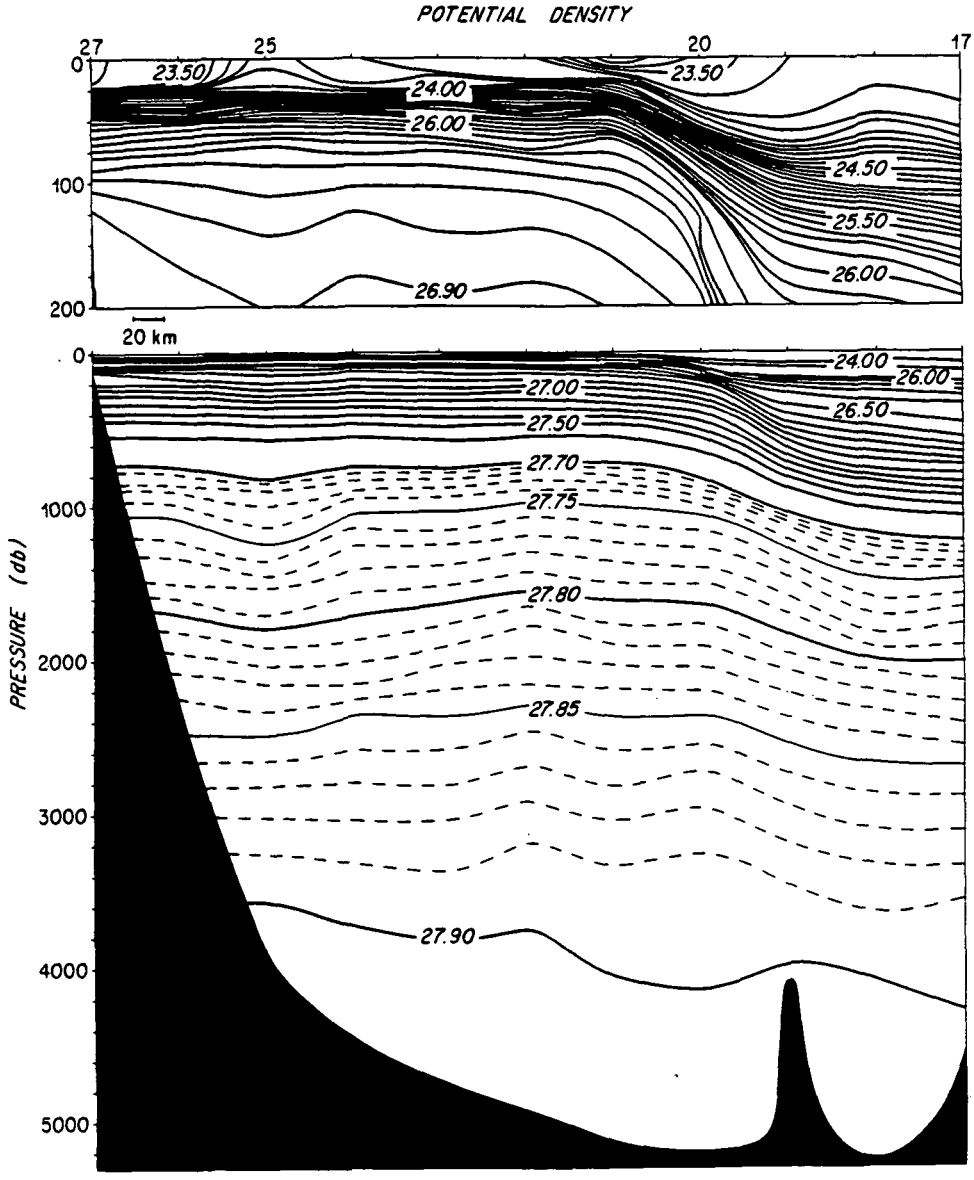

Figure 7d. Vertical sections of potential density, kg/cubic meter as in Fig. 7a.

EVENT LOG

Table 1. The event log from R/V Endeavor cruise #90. This log was maintained by the scientific watch during the cruise and records chronologically the various activities, measurements, stations, etc.

DATE DDMMYY	GMT TIME	JUL DAY	LAT. DEG	LAT. MIN.	LONG. DEG	LONG. MIN.	EVENT CPXM	COMMENTS AND OBSERVATIONS
220982	1734	265					0000	Depart Woods Hole
230982	0640	266	39	30.00	-69	30.30	0000	H/T 2000m cast to stream wire on forward winch
230982	0820	266					0000	Weight aboard
230982	0830	266	39	29.90	-69	30.80	0010	XBT #1 Sargassum weed around ship, U/W CRS=090
230982	0930	266	39	29.80	-69	18.10	0010	XBT #2
230982	1030	266	39	29.70	-69	02.80	0010	XBT #3
230982	1140	266	39	29.50	-68	45.30	0010	XBT #4
230982	1240	266	39	29.50	-68	33.00	1000	CTD #1 in water, test CTD9
230982	1408	266	39	28.40	-68	32.80	0000	CTD out, end lowering
230982	1527	266	39	17.30	-68	33.40	0100	Sta #2 (Pump #1) CTD7
230982	1652	266	39	16.90	-68	35.36	1000	CTD #2 in water, test CTD7
230982	1840	266	39	16.90	-68	35.36	0000	CTD 2 out (Northstar 6000 -/- Ns 7000)
230982	1858	266	39	17.00	-68	35.60	0001	Camel launched, sta #2 (drop #1)
230982	2002	266					0000	Camel out
230982	2010	266					0000	U/W to 39 10 N, 69 00 W
230982	2100	266	39	14.20	-68	41.10	0010	XBT #5 G-05 10 C at 273
230982	2200	266	39	10.20	-68	57.30	0010	XBT #6 G-06 10 C at 256
230982	2206	266					0000	C/C to 00.0 T
230982	2300	266	39	19.95	-69	01.11	0010	XBT #7 G-07 10 C at 319
240982	0100	267	39	42.45	-69	00.51	0010	XBT #8 G-08 10 C at 317
240982	0200	267	39	54.20	-68	59.40	0010	XBT #9 10 C at 246
240982	0206	267					0000	C/C 180 T for APOC transducer alignment
240982	0300	267					0000	C/C 090 T end calibration run, go to 81G (?)
240982	0400	267	39	47.70	-68	42.80	0010	XBT #10 G-10 10 C at 270
240982	0500	267	39	47.60	-68	27.20	0010	XBT #11 G-11 10 C at 226
240982	0600	267	39	48.00	-68	10.10	0010	XBT #12 G-12 10 C at 65, 75, 189
240982	0700	267	39	47.90	-67	53.20	0010	XBT #13 G-13 10 C at 282
240982	0800	267	39	47.90	-67	38.50	0010	XBT #14 G-14 10 C at 312
240982	0900	267	39	47.70	-67	22.40	0010	XBT #15 G-15 10 C at 339
240982	1000	267	39	47.68	-67	08.30	0010	XBT #16 G-16 10 C at 315
240982	1100	267	39	47.80	-66	51.50	0010	XBT #17 G-17 10 C at 293
240982	1200	267	39	47.90	-66	37.00	0010	XBT #18 G-18 10 C at 319
240982	1300	267	39	48.10	-66	22.60	0010	XBT #19 G-19 10 C at 340
240982	1400	267	39	48.01	-66	07.51	0010	XBT #20 G-20 10 C at 346
240982	1500	267	39	49.60	-65	51.00	0010	XBT #21 G-21 10 C at 395
240982	1600	267	39	50.70	-65	33.60	0010	XBT #22 G-22 10 C at 500
240982	1700	267	39	50.46	-65	17.04	0010	XBT #23 G-23 10 C at 612
240982	1800	267	39	50.30	-65	00.10	0010	XBT #24 G-24 10 C at 703
240982	1900	267	39	49.70	-64	43.20	0010	XBT #25 G-25 10 C at 728
240982	2000	267	39	49.50	-64	25.99	0010	XBT #26 G-26 10 C at 742
240982	2015	267	39	49.70	-64	24.50	0000	Launch drifter # 3481
240982	2100	267					0010	XBT #27 DUD **********
240982	2105	267	39	49.70	-64	10.90	0010	XBT #28 G-27 10 C at 732
240982	2200	267	39	49.70	-63	55.40	0010	XBT #29 G-28 10 C at 720
240982	2300	267	39	49.58	-63	38.33	0010	XBT #30 G-29 10 C at 681
250982	0000	268	39	49.60	-63	20.30	0010	XBT #31 G-30 10 C at 654
250982	0100	268	39	49.50	-63	02.53	0010	XBT #32 G-31 10 C at 615
250982	0200	268	39	49.10	-62	44.00	0010	XBT #33 G-32 10 C at 515
250982	0300	268	39	49.00	-62	26.70	0010	XBT #34 G-33 10 C at 463
250982	0305	268					0000	C/C 234 T Leg two of star, APOC Loran problems
250982	0400	268	39	42.50	-62	34.50	0010	XBT #35 G-34 10 C at 530
250982	0500	268	39	34.80	-62	43.90	0010	XBT #36 G-35 10 C at 668
250982	0510	268					0000	Switch Loran to 5930 chain (Canada), APOC & NS7000
250982	0600	268	39	29.30	-62	55.90	0010	XBT #37 G-36 10 C at 750
250982	0700	268	39	24.90	-63	08.40	0010	XBT #38 G-37 10 C at 750
250982	0800	268	39	20.30	-63	21.40	0010	XBT #39 DUD
250982	0805	268	39	20.10	-63	22.10	0010	XBT #40 G-38 10 C at 750
250982	0900	268	39	15.70	-63	34.20	0010	XBT #41 G-39 10 C at 750, 15 C at 632

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50982	1000	268	39 10.75	-63 46.90	0010	XBT #42 G-40	10 C at 750, 15 C at 613
250982	1100	268	39 05.70	-64 01.10	0010	XBT #43 G-01	10 C at 750, 15 C at 645
250982	1200	268	39 00.60	-64 15.20	0010	XBT #44 G-02	15 C at 649
250982	1300	268	38 55.42	-64 29.18	0010	XBT #45 G-03	10 C at 750, 15 C at 561
250982	1400	268	38 50.00	-64 44.80	0010	XBT #46 G-04	10 C at 580, 15 C at 430
250982	1500	268	38 44.50	-65 00.60	0010	XBT #47 G-05	10 C at 408, 15 C at 240
250982	1600	268	38 37.70	-65 14.19	0010	XBT #48 G-06	10 C at 330, 15 C at 108
250982	1611	268	38 36.66	-65 17.70	0000	C/C to 090	
250982	1700	268	38 35.90	-65 08.40	0010	XBT #49 G-07	10 C at 350, 15 C at 110
250982	1800	268	38 36.20	-64 57.30	0010	XBT #50 G-08	10 C at 375, 15 C at 200
250982	1900	268	38 36.10	-64 46.70	0010	XBT #51 G-09	10 C at 407, 15 C at 252
250982	2000	268	38 36.20	-64 35.90	0010	XBT #52 G-10	10 C at 444, 15 C at 311
250982	2100	268	38 36.20	-64 24.80	0010	XBT #53 G-11	10 C at 478, 15 C at 364
250982	2200	268	38 36.48	-64 13.10	0010	XBT #54 G-12	10 C at 525, 15 C at 404
250982	2330	268	38 36.20	-63 55.80	0010	XBT #55 G-13	10 C at 629, 15 C at 470
260982	0100	269	38 36.20	-63 37.00	0010	XBT #56 G-14	10 C at 719, 15 C at 543
260982	0230	269	38 36.20	-63 16.80	0010	XBT #57 G-15	10 C at 750, 15 C at 606
260982	0400	269	38 35.70	-62 57.10	0010	XBT #58 G-16	10 C at 750, 15 C at 619
260982	0530	269	38 36.04	-62 34.04	0010	XBT #59 G-17	10 C at 750, 15 C at 660
260982	0539	269	38 36.80	-62 32.59	0000	C/C TO 305 T	
260982	0700	269	38 45.20	-62 49.20	0010	XBT #60 A-01	10 C at 750, 15 C at 657
260982	0830	269	38 55.04	-63 09.83	0010	XBT #61 A-02	10 C at 750, 15 C at 677
260982	1000	269	39 04.35	-63 28.76	0010	XBT #62 A-03	10 C at 750, 15 C at 664
260982	1130	269	39 14.05	-63 49.10	0010	XBT #63 A-04	10 C at 750, 15 C at 623
260982	1218	269	39 19.95	-63 59.89	0000	H/T sta. #3	
260982	1224	269	39 20.10	-64 00.00	0100	Sta #3 (Pump #2)	
260982	1333	269	39 21.20	-64 00.50	1000	Ctd #3 in water	
260982	1607	269	39 20.54	-64 00.38	0001	Camel launched, sta #3 (drop #2)	
260982	1645	269	39 20.11	-64 00.26	0000	CTD #3 out, light cast	
260982	1728	269	39 20.50	-64 00.70	0000	Camel out	
260982	1739	269	39 21.30	-64 00.40	0000	U/W to 40 19 n ,63 48.5 w	
260982	1900	269	39 36.47	-63 57.99	0010	XBT #64 A-05	10 C at 750, 15 C at 610
260982	2030	269	39 54.50	-63 53.50	0010	XBT #65 A-06	10 C at 750, 15 C at 461
260982	2200	269	40 10.70	-63 50.30	0010	XBT #66 A-07	10 C at 462, 15 C at 224
260982	2247	269			0000	H/T STA #4	
260982	2255	269	40 18.82	-63 48.00	1000	CTD #4 in water	
270982	0155	270	40 17.85	-63 46.93	0000	CTD #4 onboard	
270982	0200	270			0000	U/W to sta. #5	
270982	0258	270	40 09.80	-63 51.60	0000	H/T sta. #5	
270982	0300	270	40 09.80	-63 51.60	1000	CTD #5 in water	
270982	0600	270			0000	CTD #5 out	
270982	0610	270			0000	U/W to sta. #6	
270982	0711	270	40 00.83	-63 54.91	0000	H/T sta. #6	
270982	0717	270	39 58.18	-63 51.36	1000	CTD #6 in water	
270982	1019	270	39 58.18	-63 51.36	0000	CTD #6 out	
270982	1021	270			0000	U/W to sta. #7	
270982	1111	270	39 51.53	-63 57.95	0000	H/T sta. #7	
270982	1118	270	39 51.80	-63 57.60	1000	CTD #7 in water	
270982	1428	270	39 49.00	-64 00.80	0000	CTD out	
270982	1526	270	39 43.00	-64 00.80	1000	CTD #8 in water	
270982	1807	270	39 40.90	-63 59.60	0001	Camel launched, sta #8 (drop #3)	
270982	1822	270	39 40.70	-63 59.7	0000	CTD out, sta #8	
270982	1900	270	39 40.14	-64 00.60	0000	Camel at surface	
270982	1930	270	39 39.61	-63 59.67	0000	Camel secure, U/W to sta. #9	
270982	2010	270	39 33.94	-64 04.12	0000	H/T, sta #9	
270982	2013	270	39 33.94	-64 04.12	1000	CTD #9 in water	
270982	2255	270	39 32.10	-64 04.20	0000	CTD out, sta #9	
270982	2300	270	39 32.10	-64 04.20	0000	U/W to sta #10	
270982	2336	270	39 24.90	-64 07.00	0000	H/T sta # 10	
270982	2346	270	39 24.90	-64 07.00	0100	Sta #10 (Pump #3)	
280982	0057	271	39 25.40	-64 07.00	0000	Pump out, sta # 10	

80982	0101	271	39 25.30	-64 07.00	1000	CTD #10 in water
280982	0400	271	39 24.80	-64 06.50	0000	CTD #10 out
280982	0412	271			0000	U/W to sta. #11
280982	0506	271			0000	H/T sta. #11
280982	0511	271	39 15.90	-64 09.80	1000	CTD #11 in water
280982	0630	271	39 15.14	-64 10.75	0000	CTD #11 at the nadir
280982	0800	271	39 13.70	-64 11.40	0000	CTD #11 out
280982	0812	271			0000	U/W to sta. #12
280982	0855	271	39 06.90	-64 12.80	1000	CTD #12 in water
280982	1145	271	39 05.40	-64 16.00	0000	CTD #12 up
280982	1152	271			0000	U/W to station #13
280982	1240	271			0000	H/T for station #13
280982	1250	271	38 57.94	-64 16.25	1000	CTD #13 in water
280982	1410	271	38 57.60	-64 18.70	0000	CTD off bottom, station #13
280982	1500	271	38 57.30	-64 19.80	0001	Camel launched, sta #13 (drop #4)
280982	1559	271	38 57.08	-64 22.20	0000	CTD out, sta #13
280982	1626	271	38 57.08	-64 22.20	0000	Camel recovered, sta # 13
280982	1730	271	38 48.79	-64 19.79	1000	CTD #14 in water
280982	1937	271	38 48.13	-64 23.73	0001	Camel launched, sta #14 (drop #5)
280982	2038	271	38 48.48	-64 25.50	0000	CTD out, sta #14
280982	2048	271	38 47.98	-64 27.03	0000	Camel recoverd, sta #14
280982	2056	271			0000	Camel secure, U/W to sta. # 15
280982	2155	271	38 39.90	-64 22.40	0000	H/T sta. 15
280982	2159	271	38 39.90	-64 22.40	1000	CTD #15 in water
290982	0103	272	38 39.90	-64 22.40	0000	CTD out, sta #15
290982	0200	272	38 31.20	-64 25.10	0000	H/T sta # 16
290982	0203	272	38 31.20	-64 25.07	1000	CTD #16 in water
290982	0430	272			0000	Broken strands in CTD cable
290982	0528	272	38 31.20	-64 28.70	0000	CTD aboard
290982	0530	272			0000	U/W to 38 North, 61 West
290982	0700	272	38 27.80	-64 07.60	0010	XBT #67 G-01
290982	0900	272	38 24.74	-63 40.31	0010	XBT #68 G-02
290982	1100	272	38 20.70	-63 13.82	0010	XBT #69 G-03
290982	1300	272	38 15.93	-62 45.31	0010	XBT #70 G-04
290982	1500	272	38 11.23	-62 14.67	0010	XBT #71 G-05
290982	1700	272	38 05.80	-61 44.40	0010	XBT #72 G-06
290982	1900	272	38 01.10	-61 12.75	0010	XBT #74 G-07
290982	1957	272	38 00.00	-61 00.00	0000	H/T sta #17
290982	2000	272	38 00.00	-61 00.00	0001	Camel launched, sta #17 (drop #6)
290982	2005	272	37 59.79	-60 59.88	0100	Sta #17 (Pump #4)
290982	2109	272			0000	Camel at surface
290982	2115	272	37 59.73	-60 58.91	0000	Retrieved CTD (pump)
290982	2118	272			0000	Retrieved hose, U/W to fetch Camel
290982	2134	272	37 59.55	-60 59.62	0000	Camel retrieved
290982	2138	272	37 59.50	-60 59.60	1000	CTD #17 in water
300982	0101	273	37 58.90	-60 57.50	0000	CTD Aboard sta#17
300982	0408	273	38 29.09	-61 05.72	1000	CTD #18 in water
300982	0748	273	38 29.10	-61 02.26	0000	CTD aboard. sta #18
300982	0750	273			0000	U/W to locate drifter #3481
300982	0911	273	38 36.22	-60 44.53	0000	Located drifter #3481
300982	0954	273	38 35.40	-60 43.34	0000	Drifter #3481 aboard
300982	0955	273			0000	U/W to sta #19
300982	1320	273			0001	Camel launched, sta #18 (drop #7)
300982	1321	273	38 59.70	-61 11.80	0100	Sta #19 (Pump #5)
300982	1448	273	38 58.20	-61 09.40	0000	Pump abd
300982	1500	273	38 58.20	-61 09.40	0000	Camel abd
300982	1530	273	38 59.90	-61 11.90	1000	CTD #19 in water
300982	1750	273	38 57.00	-61 09.00	0000	Light cast in
300982	1820	273	38 57.00	-61 09.00	0000	Light cast out
300982	1821	273	38 57.40	-61 08.20	0000	CTD out, sta #19
300982	2204	273	39 29.75	-61 17.81	1000	CTD #20 in water

11082	0057	274	39 28.00	-61 14.90	0001	Camel launched, sta #20 (drop #8)
011082	0148	274	39 27.10	-61 13.40	0000	CTD abd, sta #20
011082	0219	274	39 26.80	-61 12.90	0000	Camel aboard
011082	0547	274			0000	H/T sta #21
011082	0556	274	40 00.14	-61 24.51	1000	CTD #21 in water
011082	0720	274	39 59.90	-61 24.20	0000	CTD #21 at bottom
011082	0852	274	39 58.93	-61 22.99	0000	CTD #21 out, bridge Loran C & APOC lost signal
011082	0857	274			0000	U/W to sta #22
011082	1130	274	40 30.06	-61 30.12	0000	H/T for sta #22
011082	1132	274	40 30.06	-61 30.12	1000	CTD #22 in water
011082	1357	274	40 29.60	-61 29.60	0001	Camel launched, sta #22 (drop #9)
011082	1453	274	40 29.60	-61 29.60	0000	CTD abd, sta #22
011082	1500	274	40 29.60	-61 29.60	0000	Camel abd
011082	1748	274	40 59.90	-61 36.30	0001	Camel launched, sta #23 (drop #10)
011082	1752	274	40 59.90	-61 36.30	0100	Sta #23 (Pump #6)
011082	1901	274	41 00.70	-61 35.90	0000	Camel at surface
011082	1913	274	41 00.10	-61 35.80	0000	Pump out
011082	1929	274	41 00.10	-61 36.30	0000	Camel abd
011082	1934	274	41 00.20	-61 36.20	1000	CTD #23 in water
011082	2222	274	40 59.57	-61 35.69	0000	CTD out, sta #23
011082	2228	274	40 59.57	-61 35.69	0000	U/W to sta # 24
021082	0115	275	41 29.90	-61 42.00	1000	CTD #24 in water
021082	0312	275	41 29.80	-61 42.80	0001	Camel launched, sta #24 (drop #11)
021082	0405	275	41 29.03	-61 42.90	0000	CTD out, sta #24
021082	0412	275	41 29.03	-61 42.90	0000	Camel recovered
021082	0420	275	41 29.03	-61 42.90	0000	U/W to sta #25
021082	0720	275	41 59.95	-61 47.98	0000	H/T sta #25
021082	0725	275	41 59.95	-61 47.98	1000	CTD #25 in water
021082	0950	275	42 00.63	-61 49.30	0000	CTD out, sta #25
021082	0952	275	42 00.63	-61 49.30	0000	U/W to sta # 26
021082	1244	275	42 30.03	-61 54.04	0000	H/T at sta #26
021082	1248	275	42 30.03	-61 54.04	1000	CTD #26 in water
021082	1447	275	42 30.21	-61 55.38	0000	CTD out, sta #26
021082	1506	275	42 30.14	-61 55.71	0000	U/W to sta #27
021082	1815	275	43 00.14	-62 00.16	1000	CTD #27 in water
021082	1845	275	43 00.14	-62 00.16	0000	CTD out, sta #27
031082	0200	276			0000	(Mind overboard) H/T, main lab awash
031082	1923	276			0000	U/W CRS 160 T
041082	0450	277	40 29.72	-62 18.64	0000	H/T sta #28
041082	0455	277	40 29.72	-62 18.64	1000	CTD #28 in water
041082	0724	277	40 30.93	-62 19.32	0000	CTD at bottom, sta #28
041082	0918	277	40 29.66	-62 20.30	0000	CTD out, sta #28
041082	0920	277	40 29.66	-62 20.30	0000	Deployed XDCR attempted to contact TRIFFID
041082	0940	277	40 29.66	-62 20.30	0000	U/W to close in on TRIFFID
041082	1009	277	40 26.71	-62 17.97	0000	H/T (closer to TRIFFID)
041082	1034	277	40 26.71	-62 17.97	0000	U/W to east after no reply from TRIFFID
041082	1056	277	40 26.39	-62 14.49	0000	H/T
041082	1135	277	40 26.39	-62 14.49	0000	U/W to SE of TRIFFID
041082	1155	277	40 24.30	-62 14.10	0000	H/T
041082	1207	277	40 24.30	-62 14.10	0000	U/W to S of TRIFFID
041082	1229	277			0000	H/T 2nm south of TRIFFID (nothing)
041082	1305	277			0000	H/T 2nm west of TRIFFID
041082	1322	277			0000	TRIFFID release command sent
041082	1345	277			0000	Bottom transponder, 2 nm north of Triffed site,
041082	1345	277			0000	(via 10kHz Xdcr), left there on earlier cruise
041082	1550	277	40 26.70	-62 17.30	0000	U/W to XBT survey
041082	2200	277	40 18.79	-63 38.66	0010	XBT #75 G-13 10 C at 305, 15 C at 75,86,95
041082	2212	277			0000	C/C to 195 T
041082	2300	277	40 09.67	-63 45.35	0010	XBT #76 G-14 10 C at 312, 15 C at 132
051082	0000	278	39 58.49	-63 49.05	0010	XBT #77 G-15 10 C at 346, 15 C at 148
051082	0100	278	39 46.35	-63 53.37	0010	XBT #78 G-16 10 C at 389, 15 C at 235

11082	0057	274	39 28.00	-61 14.90	0001	Camel launched, sta #20 (drop #8)
011082	0148	274	39 27.10	-61 13.40	0000	CTD abd, sta #20
011082	0219	274	39 26.80	-61 12.90	0000	Camel aboard
011082	0547	274			0000	H/T sta #21
011082	0556	274	40 00.14	-61 24.51	1000	CTD #21 in water
011082	0720	274	39 59.90	-61 24.20	0000	CTD #21 at bottom
011082	0852	274	39 58.93	-61 22.99	0000	CTD #21 out, bridge Loran C & APOC lost signal
011082	0857	274			0000	U/W to sta #22
011082	1130	274	40 30.06	-61 30.12	0000	H/T for sta #22
011082	1132	274	40 30.06	-61 30.12	1000	CTD #22 in water
011082	1357	274	40 29.60	-61 29.60	0001	Camel launched, sta #22 (drop #9)
011082	1453	274	40 29.60	-61 29.60	0000	CTD abd, sta #22
011082	1500	274	40 29.60	-61 29.60	0000	Camel abd
011082	1748	274	40 59.90	-61 36.30	0001	Camel launched, sta #23 (drop #10)
011082	1752	274	40 59.90	-61 36.30	0100	Sta #23 (Pump #6)
011082	1901	274	41 00.70	-61 35.90	0000	Camel at surface
011082	1913	274	41 00.10	-61 35.80	0000	Pump out
011082	1929	274	41 00.10	-61 36.30	0000	Camel abd
011082	1934	274	41 00.20	-61 36.20	1000	CTD #23 in water
011082	2222	274	40 59.57	-61 35.69	0000	CTD out, sta #23
011082	2228	274	40 59.57	-61 35.69	0000	U/W to sta # 24
021082	0115	275	41 29.90	-61 42.00	1000	CTD #24 in water
021082	0312	275	41 29.80	-61 42.80	0001	Camel launched, sta #24 (drop #11)
021082	0405	275	41 29.03	-61 42.90	0000	CTD out, sta #24
021082	0412	275	41 29.03	-61 42.90	0000	Camel recovered
021082	0420	275	41 29.03	-61 42.90	0000	U/W to sta #25
021082	0720	275	41 59.95	-61 47.98	0000	H/T sta #25
021082	0725	275	41 59.95	-61 47.98	1000	CTD #25 in water
021082	0950	275	42 00.63	-61 49.30	0000	CTD out, sta #25
021082	0952	275	42 00.63	-61 49.30	0000	U/W to sta # 26
021082	1244	275	42 30.03	-61 54.04	0000	H/T at sta #26
021082	1248	275	42 30.03	-61 54.04	1000	CTD #26 in water
021082	1447	275	42 30.21	-61 55.38	0000	CTD out, sta #26
021082	1506	275	42 30.14	-61 55.71	0000	U/W to sta #27
021082	1815	275	43 00.14	-62 00.16	1000	CTD #27 in water
021082	1845	275	43 00.14	-62 00.16	0000	CTD out, sta #27
031082	0200	276			0000	(Mind overboard) H/T, main lab awash
031082	1923	276			0000	U/W CRS 160 T
041082	0450	277	40 29.72	-62 18.64	0000	H/T sta #28
041082	0455	277	40 29.72	-62 18.64	1000	CTD #28 in water
041082	0724	277	40 30.93	-62 19.32	0000	CTD at bottom, sta #28
041082	0918	277	40 29.66	-62 20.30	0000	CTD out, sta #28
041082	0920	277	40 29.66	-62 20.30	0000	Deployed XDCR attempted to contact TRIFFID
041082	0940	277	40 29.66	-62 20.30	0000	U/W to close in on TRIFFID
041082	1009	277	40 26.71	-62 17.97	0000	H/T (closer to TRIFFID)
041082	1034	277	40 26.71	-62 17.97	0000	U/W to east after no reply from TRIFFID
041082	1056	277	40 26.39	-62 14.49	0000	H/T
041082	1135	277	40 26.39	-62 14.49	0000	U/W to SE of TRIFFID
041082	1155	277	40 24.30	-62 14.10	0000	H/T
041082	1207	277	40 24.30	-62 14.10	0000	U/W to S of TRIFFID
041082	1229	277			0000	H/T 2nm south of TRIFFID (nothing)
041082	1305	277			0000	H/T 2nm west of TRIFFID
041082	1322	277			0000	TRIFFID release command sent
041082	1345	277			0000	Bottom transponder, 2 nm north of Triffed site,
041082	1345	277			0000	(via 10kHz Xdcr), left there on earlier cruise
041082	1550	277	40 26.70	-62 17.30	0000	U/W to XBT survey
041082	2200	277	40 18.79	-63 38.66	0010	XBT #75 G-13 10 C at 305, 15 C at 75,86,95
041082	2212	277			0000	C/C to 195 T
041082	2300	277	40 09.67	-63 45.35	0010	XBT #76 G-14 10 C at 312, 15 C at 132
051082	0000	278	39 58.49	-63 49.05	0010	XBT #77 G-15 10 C at 346, 15 C at 148
051082	0100	278	39 46.35	-63 53.37	0010	XBT #78 G-16 10 C at 389, 15 C at 235

51082	0200	278	39 33.11	-63 58.17	0010	XBT #79 G-17 10 C at 486, 15 C at 355
051082	0300	278	39 19.68	-64 03.22	0010	XBT #80 G-18 10 C at 523, 15 C at 390
051082	0400	278	39 05.97	-64 08.02	0010	XBT #81 G-19 10 C at 460, 15 C at 348
051082	0500	278	38 52.17	-64 13.12	0010	XBT #82 G-20 10 C at 390, 15 C at 228
051082	0600	278	38 40.14	-64 18.80	0010	XBT #83 G-21 10 C at 305, 15 C at 113
051082	0700	278	38 28.31	-64 22.67	0010	XBT #84 G-22 10 C at 289, 15 C at 120
011082	0705	278			0000	C/C underway to 39.38 -65.05
051082	0800	278	38 36.72	-64 29.63	0010	XBT #85 G-23 10 C at 331, 15 C at 126
051082	0900	278	38 45.96	-64 35.66	0010	XBT #86 G-24 10 C at 432, 15 C at 280
051082	1000	278	38 56.27	-64 41.43	0010	XBT #87 G-25 10 C at 570, 15 C at 425
051082	1100	278	39 06.28	-64 47.65	0010	XBT #88 G-27 10 C at 692, 15 C at 507
051082	1105	278			0000	H/T for drifter deployment
051082	1110	278	39 07.46	-64 48.51	0000	Drifter #3481 deployed
051082	1111	278			0000	Drifter #3481 recovered; mast torn loose.
051082	1127	278	39 07.61	-64 48.99	0000	Drifter #3481 redeployed with new mast.
051082	1230	278	39 17.71	-64 54.96	0010	XBT #89 G-28 10 C at 752, 15 C at 558
051082	1330	278	39 27.68	-65 00.72	0010	XBT #90 G-29 10 C at 750, 15 C at 582
051082	1400	278			0000	H/T for station #29
051082	1408	278	39 33.50	-65 04.10	0001	Camel launched, sta #29 (drop #12)
051082	1415	278			0100	Sta #29 (Pump #7)
051082	1530	278	39 32.60	-65 05.00	0000	Pump cast abd
051082	1545	278	39 32.09	-65 05.12	0000	Launch drifter #3480, ring center
051082	1557	278			0000	Camel abd
051082	1600	278	39 32.70	-65 04.50	1000	CTD #29 in water
051082	1726	278	39 32.10	-65 05.30	0000	CTD #29 on bottom
051082	1730	278	39 31.70	-65 05.60	0000	Begin light cast
051082	1810	278			0000	Light cast abd
051082	1907	278	39 31.70	-65 06.40	0000	CTD #29 abd
051082	1917	278			0000	U/W to continue XBT survey
051082	2000	278	39 22.05	-65 11.46	0010	XBT #91 G-30 10 C at 775, 15 C at 578
051082	2015	278	39 20.70	-65 12.38	0000	Launch drifter #3482, large RSMAS unit
051082	2100	278	39 12.70	-65 16.53	0010	XBT #92 G-31 10 C at 750, 15 C at 588
051082	2200	278	39 01.34	-65 22.33	0010	XBT #93 G-32 10 C at 721, 15 C at 515
051082	2300	278	38 49.90	-65 28.50	0010	XBT #94 G-33 10 C at 649, 15 C at 490
061082	0000	279	38 38.70	-65 34.40	0010	XBT #95 G-34 10 C at 524, 15 C at 350
061082	0100	279	38 26.64	-65 40.81	0010	XBT #96 G-35 10 C at 333, 15 C at 120,125,154
061082	0105	279			0000	C/C 345T
061082	0200	279	38 35.26	-65 45.83	0010	XBT #97 G-36 10 C at 488, 15 C at 330
061082	0300	279	38 47.02	-65 49.89	0010	XBT #98 G-37 10 C at 639, 15 C at 475
061082	0400	279	38 58.50	-65 53.70	0010	XBT #99 G-38 10 C at 719, 15 C at 561
061082	0500	279	39 10.50	-65 57.60	0010	XBT #100 G-39 10 C at 750, 15 C at 562
061082	0510	279			0000	C/C 035
061082	0600	279	39 21.95	-65 51.67	0010	XBT #101 G-40 10 C at 750, 15 C at 618
061082	0700	279	39 32.72	-65 43.72	0010	XBT #103 G-01 10 C at 750, 15 C at 638
061082	0800	279	39 43.33	-65 35.96	0010	XBT #104 G-02 10 C at 761, 15 C at 592
061082	0900	279	39 54.59	-65 27.90	0010	XBT #105 G-03 10 C at 700, 15 C at 514
061082	1000	279	40 06.28	-65 19.73	0010	XBT #106 G-04 10 C at 554, 15 C at 387
061082	1100	279	40 17.44	-65 12.04	0010	XBT #107 G-05 10 C at 408, 15 C at 190
061082	1200	279	40 28.95	-65 03.92	0010	XBT #108 G-06 10 C at 328, 15 C at 149
061082	1300	279	40 36.80	-64 54.29	0010	XBT #109 G-07 10 C at 312, 15 C at 125
061082	1330	279	40 40.60	-64 50.00	1000	CTD #30 in water, tow-yo station
061082	1500	279			0000	Pilot whales between KNORR & ENDEAVOR
061082	1640	279	40 45.60	-64 50.50	0000	CTD abd, sta #30
061082	1645	279	40 45.60	-64 50.70	0001	Camel launched, sta #30 (drop #13)
061082	1704	279			0000	Zodiac in water enroute to KNORR
061082	1708	279	40 45.65	-64 50.92	0100	Sta #30 (Pump #8)
061082	1818	279	40 46.25	-64 51.99	0000	Pump cast abd, Zodiac returns
061082	1905	279	40 46.58	-64 52.22	0000	Camel abd
061082	1952	279	40 40.72	-64 50.05	0000	H/T for sta #31, begin x-ring section
061082	1955	279	40 40.72	-64 50.05	0100	Sta #31 (Pump #9)
061082	2103	279	40 42.13	-64 49.48	0000	Pump cast abd

61082	2107	279	40 42.13	-64 49.48	1000	CTD #31 in water
061082	2346	279	40 41.90	-64 49.00	0000	CTD abd, sta #31
071082	0201	280	40 17.80	-65 01.50	0001	Camel launched, sta #32 (drop #14)
071082	0205	280			0100	Sta #32 (Pump #10)
071082	0314	280	40 17.40	-64 59.10	0000	Pump cast abd
071082	0334	280	40 17.50	-64 59.50	0000	Camel abd
071082	0400	280	40 17.58	-65 01.23	1000	CTD #32 in water
071082	0510	280	40 17.56	-64 59.92	0000	CTD on bottom
071082	0631	280	40 17.22	-64 59.27	0000	CTD abd, sta #32
071082	0901	280	39 54.90	-65 13.30	0100	Sta #33 (Pump #11)
071082	1010	280	39 53.45	-65 11.06	0000	Pump cast abd
071082	1040	280	39 55.20	-65 13.20	1000	CTD #33 in water
071082	1152	280	39 54.40	-65 11.70	0000	CTD on bottom, 10 C at 675, 15 C at 500
071082	1230	280	39 54.26	-65 10.99	0001	Camel launched, sta #33 (drop #15)
071082	1340	280	39 53.60	-65 09.90	0000	CTD abd
071082	1346	280	39 53.68	-65 09.68	0000	Camel at surface
071082	1356	280	39 53.68	-65 09.68	0000	Camel abd
071082	1605	280	39 31.91	-65 21.14	0000	Camel launched & recovered, sta #34
071082	1623	280	39 31.67	-65 25.06	0100	Sta #34 (Pump #12)
071082	1734	280	39 31.22	-65 25.42	1000	CTD #34 in water
071082	1800	280	39 30.60	-65 25.50	0000	Light cast in water
071082	1837	280	39 30.90	-65 24.70	0000	CTD on bottom, sta #34
071082	1850	280			0000	Light cast abd
071082	1926	280	39 30.87	-65 24.61	0001	Re-Launch Camel, sta #34 (drop #17)
071082	2000	280	39 30.55	-65 24.35	0000	CTD abd
071082	2044	280			0000	Camel at surface
071082	2058	280	39 30.02	-65 24.60	0000	Camel abd
071082	2229	280			0000	Ray & Bill cock Rosette in 2'09"
071082	2244	280	39 11.77	-65 35.24	0000	Radar target (drifter #3480?) 2.7nm, 290T
071082	2303	280	39 09.50	-65 37.12	0001	Camel launched, sta #35 (drop #18)
071082	2306	280			0100	Sta #35 (Pump #13)
081082	0015	281	39 09.00	-65 39.00	0000	Pump cast abd
081082	0018	281			0000	Camel at surface
081082	0039	281			0000	Camel abd
081082	0056	281	39 09.20	-65 36.80	1000	CTD #35 in water
081082	0409	281	39 09.22	-65 40.26	0000	CTD abd
081082	0621	281	38 46.37	-65 49.78	0001	Camel launched, sta #36 (drop #19)
081082	0622	281			0100	Sta #36 (Pump #14)
081082	0735	281			0000	Camel at surface
081082	0741	281	38 46.89	-65 52.92	0000	Pump cast abd
081082	0804	281	38 46.32	-65 51.93	0000	Camel abd
081082	0828	281	38 46.34	-65 48.49	1000	CTD #36 in water
081082	0941	281	38 46.70	-65 50.90	0000	CTD on bottom, 10 C at 695, 15 C at 498
081082	1123	281	38 46.94	-65 52.29	0000	CTD abd, sta #36
081082	1335	281	38 23.72	-66 00.22	0100	Sta #37 (Pump #15)
081082	1450	281	38 24.70	-66 04.30	0000	Pump cast abd
081082	1524	281	38 23.50	-66 00.30	1000	CTD #37 in water
081082	1722	281	38 22.92	-66 02.85	0001	Camel launched, sta #37 (drop #20)
081082	1825	281	38 23.30	-66 03.53	0000	CTD abd
081082	1832	281	38 23.64	-66 04.16	0000	Camel on surface
081082	1841	281	38 23.64	-66 04.16	0000	Camel recovered
081082	2044	281	38 00.70	-66 11.80	0001	Camel launched, sta #38 (drop #21)
081082	2049	281	38 00.60	-66 11.70	0100	Sta #38 (Pump #16)
081082	2204	281	38 00.20	-66 11.40	0000	Pump cast abd
081082	2209	281	38 00.20	-66 11.60	0000	Camel abd
081082	2220	281	38 00.80	-66 11.80	1000	CTD #38 in water
091082	0123	282	37 59.30	-66 10.20	0000	CTD abd, 10 C at 305, 15 C at 120
091082	0200	282	38 04.60	-66 12.90	0010	XBT #110 G-06 10 C at 313, 15 C at 123
091082	0300	282	38 16.38	-66 17.92	0010	XBT #111 G-07 10 C at 343, 15 C at 141
091082	0400	282	38 28.58	-66 23.25	0010	XBT #112 G-08 10 C at 412, 15 C at 230
091082	0500	282	38 42.14	-66 29.09	0010	XBT #113 G-09 10 C at 582, 15 C at 390

91082	0600	282	38 54.31	-66 33.55	0010	XBT #114 G-10	10 C at 662, 15 C at 488
091082	0700	282	39 06.63	-66 38.27	0010	XBT #115 G-11	10 C at 698, 15 C at 518
091082	0800	282	39 19.98	-66 43.49	0010	XBT #116 G-12	10 C at 682, 15 C at 497
091082	0900	282	39 32.36	-66 48.58	0010	XBT #117 G-13	10 C at 603, 15 C at 450
091082	1000	282	39 45.19	-66 53.89	0010	XBT #118 G-13	10 C at 529, 15 C at 395
091082	1100	282	39 57.44	-66 58.62	0010	XBT #119 G-14	10 C at 372, 15 C at 184
091082	1200	282	40 08.96	-67 03.45	0010	XBT #120 G-16	10 C at 329, 15 C at 159
091082	1217	282			0000	C/C 126T	
091082	1300	282	40 07.90	-66 55.90	0010	XBT #121 G-17	10 C at 319, 15 C at 147
091082	1400	282	40 00.06	-66 41.43	0010	XBT #122 G-18	10 C at 410, 15 C at 252
091082	1500	282	39 52.54	-66 27.49	0010	XBT #123 G-19	10 C at 567, 15 C at 412
091082	1600	282	39 45.11	-66 14.87	0010	XBT #124 G-20	10 C at 670, 15 C at 500
091082	1700	282	39 37.70	-66 02.65	0010	XBT #125 G-21	10 C at 750, 15 C at 566
091082	1800	282	39 29.95	-65 49.29	0010	XBT #126 G-22	10 C at 750, 15 C at 572
091082	1900	282	39 22.66	-65 36.21	0010	XBT #127 G-23	10 C at 750, 15 C at 595
091082	2000	282	39 15.17	-65 23.09	0010	XBT #128 G-24	10 C at 765, 15 C at 598
091082	2100	282	39 07.76	-65 10.71	0010	XBT #129 G-25	10 C at 729, 15 C at 554
091082	2200	282	39 00.50	-64 58.50	0010	XBT #130 G-26	10 C at 664, 15 C at 498
091082	2221	282			0000	Total elec failure,gyro tool switch generators	
091082	2300	282	38 53.69	-64 47.31	0010	XBT #131 G-27	10 C at 570, 15 C at 399
101082	0000	283	38 46.63	-64 35.86	0010	XBT #132 G-28	10 C at 433, 15 C at 246
101082	0005	283			0000	C/C 270, leg 3 of star	
101082	0100	283	38 44.69	-64 49.56	0010	XBT #133 G-29	10 C at 517, 15 C at 347
101082	0200	283	38 44.17	-65 05.97	0010	XBT #134 G-30	10 C at 610, 15 C at 453
101082	0300	283	38 44.85	-65 22.58	0010	XBT #135 G-31	10 C at 687, 15 C at 505
101082	0400	283	38 44.92	-65 38.37	0010	XBT #136 G-32	10 C at 708, 15 C at 538
101082	0500	283	38 45.09	-65 54.68	0010	XBT #137 G-33	10 C at 710, 15 C at 525
101082	0600	283	38 45.21	-66 10.77	0010	XBT #138 G-34	10 C at 708, 15 C at 518
101082	0700	283	38 46.00	-66 26.27	0010	XBT #139 G-35	10 C at 642, 15 C at 460
101082	0720	283			0000	H/T doors secured, winds 50-70 kts	
111082	0340	284	39 54.90	-66 20.30	0000	H/T winds down to 40 kts	
111082	1100	284	40 10.87	-65 48.66	0000	H/T winds 40 kts, supplies low, crew restless	
111082	1340	284	40 15.42	-65 42.62	0010	XBT #140 G-36	10 C at 265, 15 C at 53
111082	1500	284	40 17.60	-65 42.58	0000	Crs 191, U/W to drifter #3481 near ring center	
111082	1600	284	40 07.93	-65 44.84	0010	XBT #141 G-37	10 C at 318, 15 C at 115
111082	1700	284	39 54.90	-65 47.10	0010	XBT #143 G-38	10 C at 450, 15 C at 300
111082	1800	284	39 44.73	-65 49.84	0010	XBT #144 G-39	10 C at 600, 15 C at 445
111082	1900	284	39 33.36	-65 53.17	0010	XBT #145 G-40	10 C at 739, 15 C at 550
111082	2000	284	39 22.18	-65 56.55	0010	XBT #146 G-01	10 C at 750, 15 C at 581
111082	2100	284	39 10.07	-65 58.24	0010	XBT #147 G-02	10 C at 750, 15 C at 611
111082	2122	284			0000	H/T near drifter	
121082	1426	285	39 11.38	-65 55.20	0000	U/W crs 218, search for #3481	
121082	1535	285	38 59.40	-66 05.80	0000	C/C 000	
121082	1625	285	39 06.30	-66 05.60	0000	C/C 035	
121082	1710	285	39 11.40	-66 01.10	0000	C/C 200	
121082	1852	285	38 59.30	-66 05.20	0000	C/C 270, no drifter sighted	
121082	1920	285	38 59.90	-66 11.40	0000	H/T sta #39, ring ctr, no Camel & pump	
121082	1927	285	38 59.90	-66 11.20	1000	CTD #39 in water--rough weather	
121082	2250	285	39 01.20	-66 12.10	0000	CTD abd	
121082	2331	285	39 01.50	-66 12.40	0000	U/W crs 270	
131082	0030	286	39 00.98	-66 26.02	0010	XBT #148 G-03	10 C at 750, 15 C at 625
131082	0130	286	39 01.37	-66 40.96	0010	XBT #149 G-04	10 C at 735, 15 C at 568
131082	0230	286	39 01.41	-66 53.36	0010	XBT #150 G-05	10 C at 646, 15 C at 482
131082	0330	286	39 01.26	-67 10.08	0010	XBT #151 G-06	10 C at 469, 15 C at 314
131082	0430	286	39 02.52	-67 25.28	0010	XBT #152 G-07	10 C at 348, 15 C at 138
131082	0530	286	39 02.32	-67 39.39	0010	XBT #153 G-08	10 C at 286, 15 C at 112
131082	0630	286	39 02.15	-67 52.93	0010	XBT #154 G-09	10 C at 262, 15 C at 105
131082	0730	286	39 02.22	-68 07.16	0010	XBT #155 G-10	10 C at 240, 15 C at 84
131082	0830	286	39 02.32	-68 22.24	0010	XBT #156 G-11	10 C at 230, 15 C at 67
131082	0930	286	39 02.06	-68 37.43	0010	XBT #157 G-12	10 C at 236, 15 C at 82
131082	1032	286	39 02.70	-68 52.70	0000	H/T for final station in Slope Water	

31082	1037	286	39 02.64	-68 52.92	0100	Sta #40 (Pump #17)
131082	1150	286	39 02.15	-68 54.72	1000	CTD #40 in water
131082	1340	286	39 01.71	-68 56.95	0000	Light cast in water
131082	1415	286	39 02.50	-68 56.40	0000	CTD & Light cast abd
131082	1420	286	39 02.50	-68 56.40	0000	APOC xducer alignment run
131082	1540	286			0000	End APOC run, head for home
141082	1320	287			0000	Dock at Woods Hole

HYDROGRAPHIC DATA

Table 2. Listings of the CTD and hydrographic data obtained during R/V Endeavor cruise #90. The first listing on each page is the CTD data at standard pressures. Each temperature, salinity and oxygen value is the average of a ten decibar segment of the water column centered at the standard pressure. The second listing presents the water sample salinity, oxygen, Silicate, Phosphate and Nitrate values together with the CTD pressure and temperature at the depth the sample was collected. Each listing also contains various calculated variables.

ENDEAVOR 90 STA- 2 LAT= 39 17.4N LON= 68 35.1W SONIC DEPTH= 3060m
DATE 23/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	24.626	35.513	4.87	24.625	23.845	30.114	36.180	0.020	0.96	5
25	24.610	35.583	4.85	24.605	23.904	30.173	36.238	0.101	13.26	25
50	17.998	35.840	4.32	17.990	25.919	32.332	38.535	0.176	12.86	50
75	15.543	35.769	4.09	15.531	26.448	32.923	39.187	0.220	5.46	74
100	14.638	35.791	3.82	14.623	26.666	33.166	39.452	0.257	4.23	99
150	13.675	35.755	4.16	13.653	26.844	33.372	39.684	0.322	3.11	149
200	12.109	35.557	3.55	12.082	27.007	33.582	39.939	0.380	2.98	198
250	10.894	35.413	3.39	10.863	27.123	33.736	40.131	0.433	2.74	248
300	9.655	35.273	3.41	9.620	27.230	33.884	40.318	0.480	2.63	298
350	8.397	35.148	3.52	8.360	27.335	34.032	40.507	0.523	2.82	347
400	7.436	35.115	4.07	7.397	27.454	34.184	40.691	0.560	2.79	397
450	6.524	35.078	4.51	6.483	27.551	34.314	40.852	0.592	2.31	446
500	5.951	35.056	4.82	5.907	27.609	34.393	40.950	0.621	1.74	496
600	5.090	35.009	5.36	5.041	27.678	34.495	41.084	0.672	1.36	595
700	4.741	34.994	5.65	4.685	27.707	34.538	41.139	0.719	0.98	694
800	4.505	34.991	5.77	4.442	27.732	34.571	41.182	0.765	0.83	792
900	4.361	34.988	5.96	4.290	27.746	34.592	41.208	0.809	0.69	891
1000	4.279	34.989	5.94	4.200	27.757	34.606	41.225	0.853	0.59	990
1200	4.050	34.976	6.12	3.956	27.772	34.630	41.259	0.941	0.61	1187
1400	3.910	34.977	6.11	3.799	27.789	34.653	41.288	1.029	0.56	1385
1600	3.806	34.981	6.06	3.679	27.804	34.674	41.313	1.118	0.61	1582
1800	3.654	34.979	6.13	3.511	27.820	34.696	41.341	1.206	0.60	1779
1991	3.498	34.975	6.09	3.339	27.833	34.716	41.368	1.289	0.61	1967

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
5	24.780			24.8		0.9				5
31	24.816			24.8	0.50	13.0				31
59	17.864			17.9	1.01	18.4				58
77	15.463			15.5	1.08	18.7				76
100	14.373			14.4	1.17	20.6				99
100	14.389			14.4	1.03	18.3				99
199	12.121	35.531	3.99	12.1			12.095	26.984	39.917	197
300	9.665	35.272	3.82	9.6			9.630	27.228	40.315	297
402	7.518	35.111	4.15	7.5	0.91	17.4	7.478	27.438	40.670	398
498	5.983	35.078	5.21	5.9	1.10	19.7	5.939	27.622	40.961	494
598	5.197	35.012	5.55	5.1	1.08	19.5	5.148	27.668	41.065	592
699	4.761	34.987	5.81	4.7	1.09	19.5	4.705	27.699	41.130	692
801	4.554	34.984	6.04	4.5	1.13	19.8	4.491	27.721	41.168	792
899	4.373	34.979	6.29	4.3			4.303	27.737	41.198	890
996	4.264	34.975	6.35	4.2	1.14	19.7	4.186	27.747	41.217	985
1099	4.198	34.980	5.98	4.1	1.11	19.8	4.111	27.759	41.234	1087
1197	4.083	34.972		4.0	0.66	11.5	3.989	27.765	41.250	1184
1296	3.990	34.971	6.15	3.9	1.12	19.1	3.888	27.775	41.268	1282
1393	3.913	34.970	6.15	3.8	1.10	18.6	3.803	27.783	41.282	1377
1494	3.840	34.969		3.7	0.97	17.0	3.722	27.790	41.296	1477
1596	3.814	34.974	6.15	3.7		17.0	3.687	27.798	41.306	1577
1791	3.665	34.972	6.28	3.5	1.26	20.1	3.522	27.813	41.333	1769
1893	3.568	34.966	6.19	3.4	1.17	20.3	3.417	27.818	41.347	1869
1994	3.500	34.966	6.49	3.3	1.25	20.3	3.340	27.826	41.361	1969

ENDEAVOR 90 STA- 3 LAT= 39 21.1N LON= 64 0.5W SONIC DEPTH= 4930m
DATE 26/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	25.618	36.087	4.69	25.617	23.975	30.220	36.263	0.012	1.52	3
25	25.606	36.091	4.68	25.600	23.983	30.228	36.272	0.098	1.20	25
50	25.545	36.127	4.61	25.534	24.031	30.277	36.322	0.196	4.77	50
75	23.748	36.479	4.69	23.732	24.843	31.121	37.197	0.287	11.57	74
100	21.703	36.619	4.47	21.684	25.539	31.859	37.974	0.356	6.98	99
150	20.077	36.609	4.57	20.049	25.978	32.335	38.484	0.467	4.37	149
200	19.176	36.576	4.43	19.140	26.192	32.569	38.739	0.565	3.10	198
250	18.489	36.507	4.21	18.444	26.316	32.711	38.898	0.657	2.44	248
300	18.091	36.474	4.33	18.039	26.393	32.798	38.994	0.745	2.14	298
350	17.650	36.427	4.24	17.590	26.468	32.884	39.091	0.831	2.09	347
400	17.365	36.400	4.42	17.297	26.519	32.943	39.157	0.914	1.62	397
450	17.086	36.358	4.33	17.011	26.556	32.987	39.209	0.997	1.79	446
500	16.492	36.251	4.15	16.410	26.616	33.064	39.301	1.077	1.68	496
600	15.515	36.095	4.26	15.420	26.723	33.199	39.462	1.233	2.40	595
700	13.778	35.816	3.92	13.676	26.887	33.413	39.725	1.377	2.42	694
800	11.849	35.538	3.66	11.742	27.057	33.642	40.010	1.506	2.40	792
900	9.631	35.263	3.47	9.525	27.239	33.896	40.333	1.618	2.81	891
1000	7.924	35.136	3.85	7.818	27.409	34.124	40.616	1.710	2.49	990
1200	5.362	35.027	5.23	5.256	27.666	34.475	41.056	1.848	1.62	1187
1400	4.741	35.010	5.69	4.622	27.727	34.560	41.163	1.957	0.92	1385
1600	4.424	34.998	5.91	4.289	27.754	34.599	41.215	2.061	0.75	1582
1800	4.219	34.991	6.04	4.067	27.772	34.626	41.251	2.163	0.58	1779
2000	4.100	34.987	6.14	3.931	27.783	34.643	41.272	2.265	0.62	1975
2500	3.720	34.981	6.14	3.507	27.822	34.698	41.344	2.520	0.69	2466
3000	3.157	34.958	6.12	2.903	27.861	34.761	41.430	2.763	0.68	2956
3500	2.673	34.931	6.22	2.376	27.885	34.807	41.497	2.992	0.67	3445
4000	2.354	34.909	6.20	2.009	27.898	34.836	41.540	3.209	0.46	3933
4500	2.258	34.897	6.07	1.858	27.900	34.844	41.555	3.428	0.23	4419
5000	2.278	34.891	5.98	1.816	27.899	34.845	41.557	3.658	0.11	4905
5015	2.280	34.891	5.96	1.816	27.899	34.845	41.557	3.665	0.02	4919

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
33	25.541					0.9				32
61	25.255			1.2	0.50	13.0				60
76	24.464				1.01	18.4				76
104	22.263				1.08	18.7				103
104	22.170	36.641	4.62		1.17	20.6	22.149	25.425	37.840	103
204	19.236				1.03	18.3				202
403	17.193			1.2						400
498	16.592	36.274	4.29	3.3			16.510	26.610	39.290	494
602	15.553	36.102	4.18	4.3	0.91	17.4	15.458	26.720	39.457	596
695	13.821	35.857	3.90	6.6	1.10	19.7	13.719	26.910	39.744	688
797	12.058	35.562	3.70	9.6	1.08	19.5	11.950	27.036	39.976	789
997	7.891	35.176	4.40	16.4	1.09	19.5	7.785	27.445	40.654	987
1247	5.156	35.010	5.51	13.6	1.13	19.8	5.048	27.678	41.083	1233
1500	4.634				1.14	19.7				1483
1730	4.266	34.987	6.12	11.6	1.11	19.8	4.121	27.763	41.238	1709
1990	4.077				0.66	11.5				1965
2496	3.697	34.977	6.26	15.6	1.12	19.1	3.484	27.821	41.344	2463
2998	3.163	34.955	6.06	19.1	1.10	18.6	2.908	27.858	41.427	2954
3496	2.649				0.97	17.0				3441
3998	2.337	34.908	6.27	30.1		17.0	1.994	27.899	41.542	3931
4482	2.259	34.894	6.14	35.9	1.26	20.1	1.861	27.898	41.552	4401
4919	2.268	34.890	6.23	37.4	1.17	20.3	1.817	27.898	41.556	4826
5020	2.281	34.890	6.21	36.9	1.25	20.3	1.816	27.898	41.556	4923

ENDEAVOR 90 STA- 4 LAT= 40 18.8N LON= 63 48.0W SONIC DEPTH= 4653m
DATE 26/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
1	25.995	35.314	4.95	25.995	23.274	29.518	35.561	0.005	8.16	1
25	24.982	35.545	4.94	24.976	23.762	30.024	36.084	0.106	3.56	25
50	21.721	35.673	4.95	21.711	24.812	31.140	37.262	0.203	14.77	50
75	20.279	36.211	4.25	20.264	25.617	31.972	38.120	0.270	8.49	74
100	15.655	35.551	4.49	15.639	26.255	32.730	38.992	0.322	6.79	99
150	17.598	36.471	4.69	17.572	26.506	32.922	39.129	0.403	2.28	149
200	16.916	36.364	4.61	16.883	26.591	33.026	39.250	0.479	2.75	198
250	15.443	36.094	4.10	15.404	26.727	33.203	39.466	0.552	2.86	248
300	13.971	35.845	4.07	13.927	26.857	33.376	39.680	0.618	2.82	297
350	12.776	35.672	3.62	12.728	26.969	33.524	39.863	0.680	2.56	347
400	10.829	35.377	3.56	10.780	27.110	33.726	40.124	0.736	3.47	397
450	8.777	35.114	3.69	8.728	27.251	33.936	40.399	0.785	2.93	446
500	7.163	34.955	4.04	7.114	27.367	34.109	40.627	0.827	2.81	496
600	6.157	34.999	4.52	6.103	27.539	34.317	40.868	0.896	2.11	595
700	5.239	34.974	5.16	5.180	27.633	34.445	41.029	0.954	1.66	693
800	4.840	34.982	5.53	4.774	27.687	34.514	41.113	1.006	1.20	792
900	4.671	34.997	5.70	4.598	27.719	34.552	41.157	1.054	0.95	891
1000	4.401	34.979	5.88	4.322	27.735	34.579	41.195	1.101	0.72	990
1200	4.204	34.981	6.04	4.109	27.760	34.612	41.236	1.193	0.63	1187
1400	4.045	34.977	6.12	3.933	27.775	34.634	41.264	1.284	0.59	1385
1600	3.802	34.956	6.21	3.675	27.785	34.655	41.294	1.376	0.59	1582
1800	3.790	34.980	6.09	3.645	27.807	34.677	41.318	1.468	0.62	1778
2000	3.646	34.979	6.13	3.483	27.822	34.699	41.346	1.559	0.60	1975
2500	3.200	34.959	6.11	2.997	27.853	34.749	41.415	1.784	0.61	2466
3000	2.789	34.939	6.20	2.543	27.878	34.793	41.476	2.002	0.61	2956
3500	2.443	34.919	6.25	2.152	27.895	34.826	41.525	2.212	0.51	3445
4000	2.284	34.904	6.17	1.942	27.900	34.840	41.547	2.422	0.33	3932
4500	2.244	34.894	6.10	1.844	27.899	34.844	41.555	2.639	0.25	4419
4705	2.227	34.890	6.00	1.803	27.899	34.845	41.558	2.731	0.28	4618

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
2	26.198	35.842	4.82	1.2			26.198	23.609	35.879	2
99	17.278	35.987	3.97	3.7	0.22	7.6	17.262	26.210	38.858	98
202	15.971	36.213	4.24	3.7	0.30	9.6	15.938	26.696	39.406	200
306	13.462	35.768	3.90	6.8	0.77	15.2	13.419	26.903	39.756	304
400	10.663	35.354	3.50	12.3	1.29	20.9	10.614	27.121	40.146	397
501	7.008	34.934	4.15			19.9	6.960	27.373	40.643	496
589	6.189	34.992	4.48	15.1	1.41	21.5	6.136	27.529	40.856	583
799	4.852	34.980	5.71	13.1	1.20	19.4	4.787	27.684	41.109	791
997	4.458	34.978	5.90	12.7	1.15	19.0	4.378	27.728	41.184	987
1247	4.174	34.976	6.07	12.9	1.16	18.6	4.075	27.759	41.238	1234
1497	3.813	34.945	6.17	12.3	1.04	17.6	3.695	27.774	41.282	1480
1743	3.812	34.975	6.19	14.2	1.14	18.2	3.671	27.800	41.309	1722
1992	3.656	34.975	6.11				3.494	27.818	41.341	1967
2247	3.452	34.980	6.17	17.3	1.16	18.2	3.269	27.844	41.384	2218
2495	3.237	34.965	6.09	19.9	1.16	18.5	3.033	27.854	41.413	2461
2992	2.790	34.941	6.19	20.6	1.15	17.8	2.545	27.879	41.477	2948
3491	2.445	34.915	6.37	25.7	1.16	18.2	2.155	27.891	41.521	3435
3993	2.285	34.903	6.20	31.3	1.24	18.8	1.943	27.899	41.546	3925
4606	2.238	34.891	6.19	34.9	1.27	19.4	1.826	27.898	41.556	4521
4710	2.227	34.887	6.17	37.5	1.29	20.1	1.803	27.897	41.556	4622

ENDEAVOR 90 STA- 5 LAT= 40 9.8N LON= 63 51.6W SONIC DEPTH= 4772m
DATE 27/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	27.238	36.206	4.50	27.237	23.553	29.766	35.780	0.013	-1.38	3
25	27.252	36.200	4.59	27.246	23.545	29.759	35.772	0.108	-0.16	25
50	27.242	36.200	4.61	27.230	23.550	29.764	35.778	0.217	1.35	50
75	26.321	36.328	4.56	26.304	23.942	30.172	36.201	0.325	11.96	74
100	23.479	36.478	4.12	23.458	24.923	31.207	37.287	0.411	9.16	99
150	19.920	36.460	3.62	19.892	25.906	32.267	38.421	0.536	6.03	149
200	16.864	36.148	3.43	16.831	26.437	32.875	39.103	0.631	5.28	198
250	14.555	35.886	3.37	14.518	26.761	33.263	39.552	0.705	3.59	248
300	13.254	35.688	3.97	13.212	26.883	33.424	39.749	0.770	2.68	297
350	12.192	35.567	3.61	12.145	27.003	33.576	39.932	0.830	2.70	347
400	11.450	35.477	3.45	11.398	27.074	33.670	40.049	0.886	2.68	397
450	10.247	35.326	3.36	10.193	27.174	33.809	40.225	0.937	2.27	446
500	8.956	35.183	3.50	8.901	27.278	33.957	40.414	0.984	2.35	496
600	7.277	35.087	4.09	7.218	27.457	34.194	40.707	1.066	2.57	595
700	5.359	34.917	4.93	5.300	27.574	34.383	40.963	1.132	1.83	693
800	5.051	34.965	5.32	4.984	27.649	34.469	41.060	1.188	1.46	792
900	4.580	34.948	5.72	4.508	27.690	34.528	41.137	1.239	1.04	891
1000	4.642	34.995	5.71	4.561	27.722	34.557	41.163	1.288	0.84	990
1200	4.313	34.985	5.99	4.217	27.752	34.600	41.219	1.383	0.72	1187
1400	4.088	34.974	6.07	3.976	27.768	34.626	41.254	1.476	0.58	1385
1600	3.955	34.976	6.09	3.826	27.785	34.649	41.283	1.570	0.61	1582
1800	3.839	34.979	6.13	3.693	27.801	34.670	41.309	1.663	0.61	1779
2000	3.703	34.980	6.11	3.540	27.817	34.692	41.336	1.755	0.62	1975
2500	3.282	34.966	6.11	3.077	27.851	34.745	41.407	1.983	0.64	2466
3000	2.834	34.943	6.14	2.587	27.877	34.790	41.472	2.204	0.61	2956
3500	2.472	34.920	6.17	2.180	27.893	34.823	41.521	2.416	0.51	3445
4000	2.315	34.908	6.22	1.972	27.901	34.840	41.546	2.627	0.34	3932
4500	2.264	34.897	6.10	1.864	27.900	34.844	41.554	2.845	0.21	4419
4843	2.236	34.888	5.97	1.795	27.898	34.845	41.558	3.001	0.33	4752

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
0	27.197	36.182	4.73	1.4			27.197	23.547	35.776	0
105	23.189	36.472	4.12	2.0		2.5	23.167	25.004	37.380	105
203	16.836	36.158	3.49	5.0	0.31	11.9	16.802	26.452	39.119	201
302	13.306	35.677	4.12	6.2	0.57	13.8	13.264	26.865	39.728	300
599	7.602	35.102	3.89	15.6	1.37	23.7	7.542	27.422	40.649	593
800	5.005		5.30	13.1	1.12	20.2				793
998	4.700	35.005	5.62	12.8	1.07	19.5	4.618	27.723	41.160	988
1244	4.218	34.973	5.99	12.2	1.05	18.7	4.119	27.752	41.227	1231
1494	4.040	34.973	6.08	12.5	1.03	18.7	3.920	27.773	41.263	1477
1747	3.865	34.975	6.05	13.3	0.94	18.3	3.723	27.795	41.300	1726
1997	3.698	34.975	6.15	14.5	1.04	18.5	3.535	27.814	41.334	1972
2241	3.530	34.975	6.09	16.4	1.07	18.7	3.346	27.832	41.367	2212
2505	3.286	34.964	6.12	18.6	1.10	18.5	3.081	27.849	41.404	2471
2994	2.854	34.940	6.15	21.9	1.11	18.5	2.607	27.873	41.466	2950
3495	2.477	34.916	6.21	25.7	1.12	18.8	2.186	27.889	41.517	3440
3993	2.311	34.905	6.19	28.2	1.15	18.7	1.969	27.898	41.544	3925
4490	2.268	34.894	6.11	33.9	1.20	19.6	1.867	27.897	41.551	4409
4777	2.253	34.891	6.05	35.5	1.02	19.6	1.820	27.899	41.556	4688
4844	2.236	34.888	6.04	37.5	1.23	20.2	1.795	27.898	41.558	4753

ENDEAVOR 90 STA- 6 LAT= 40 0.8N LON= 63 54.9W SONIC DEPTH= 4805m
DATE 27/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.555	36.143	4.70	26.555	23.723	29.950	35.976	0.012	0.74	3
25	26.589	36.162	4.82	26.583	23.728	29.954	35.979	0.104	0.37	25
50	26.563	36.166	4.81	26.552	23.741	29.968	35.994	0.209	1.53	50
75	26.517	36.170	4.77	26.500	23.761	29.989	36.015	0.313	3.40	74
100	25.363	36.496	4.36	25.341	24.370	30.616	36.661	0.412	10.81	99
150	21.670	36.727	3.46	21.641	25.634	31.954	38.068	0.557	6.80	149
200	19.705	36.602	3.88	19.668	26.074	32.439	38.597	0.667	4.84	198
250	18.631	36.548	4.40	18.586	26.312	32.703	38.886	0.762	3.48	248
300	17.692	36.453	4.46	17.641	26.476	32.891	39.096	0.848	2.35	297
350	17.020	36.338	4.22	16.962	26.552	32.985	39.208	0.929	2.48	347
400	15.038	35.981	3.56	14.976	26.735	33.223	39.499	1.006	3.70	397
450	13.462	35.751	3.47	13.397	26.894	33.429	39.748	1.074	3.03	446
500	11.887	35.530	3.31	11.821	27.036	33.619	39.985	1.135	2.63	496
600	9.540	35.245	3.39	9.471	27.233	33.892	40.331	1.242	2.75	595
700	7.723	35.122	3.95	7.652	27.422	34.143	40.641	1.329	2.62	693
800	6.291	35.065	4.61	6.217	27.576	34.349	40.895	1.399	2.05	792
900	5.494	35.030	5.14	5.416	27.650	34.452	41.027	1.458	1.67	891
1000	4.473	34.930	5.73	4.393	27.689	34.531	41.144	1.511	1.07	990
1200	4.525	35.003	5.79	4.427	27.743	34.583	41.194	1.609	0.77	1187
1400	4.188	34.978	5.98	4.075	27.761	34.615	41.239	1.705	0.65	1385
1600	4.035	34.979	6.05	3.905	27.780	34.640	41.271	1.800	0.59	1582
1800	3.896	34.977	6.09	3.749	27.794	34.661	41.297	1.894	0.59	1779
2000	3.784	34.981	6.08	3.619	27.810	34.682	41.323	1.989	0.63	1975
2500	3.351	34.970	6.06	3.145	27.848	34.738	41.398	2.221	0.64	2466
3000	2.921	34.946	6.11	2.672	27.872	34.782	41.460	2.446	0.61	2956
3500	2.521	34.923	6.17	2.227	27.892	34.820	41.516	2.662	0.55	3445
4000	2.321	34.908	6.15	1.977	27.899	34.838	41.544	2.874	0.35	3932
4500	2.283	34.900	6.13	1.882	27.901	34.844	41.553	3.093	0.21	4419
4889	2.243	34.888	6.02	1.796	27.898	34.845	41.558	3.271	0.37	4797

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
14	26.484	36.117	4.65				26.481	23.727	35.983	14
105	23.698	36.605	4.40	1.3		1.0	23.676	24.955	37.309	104
204	19.617	36.643	4.17	1.7		3.7	19.579	26.128	38.655	202
303	17.761	36.462	4.29	1.7		4.9	17.709	26.465	39.083	300
400	15.074	35.990	3.45	6.3	0.54	15.0	15.012	26.734	39.496	397
502	12.053	35.551	3.29	10.7	1.06	21.1	11.987	27.020	39.959	497
601	9.588	35.249	3.33	14.6	1.34	24.9	9.518	27.228	40.323	596
801	6.407	35.060	4.47	14.9	1.26	22.8	6.332	27.557	40.869	793
1002	4.498	34.917	5.70	12.2	1.08	19.2	4.418	27.676	41.129	992
1250	4.382	34.982	5.87	12.2	1.06	18.9	4.281	27.742	41.205	1237
1736	3.924	34.977	6.07	12.8	1.01	18.6	3.783	27.790	41.291	1716
2000	3.761	34.974	6.12				3.597	27.807	41.322	1975
2246	3.584	34.976	6.02	16.1	1.05	18.7	3.399	27.828	41.358	2216
2494	3.359	34.968	6.05	18.2	1.07	18.9	3.153	27.845	41.395	2460
2997	2.936	34.945	6.12	21.5	1.11	18.9	2.687	27.870	41.456	2953
3482	2.522	34.919	6.19	24.9	1.13	18.9	2.231	27.888	41.512	3427
3996	2.321	34.904	6.18	29.3	1.16	19.2	1.978	27.897	41.541	3928
4741	2.278	34.893	6.04	35.5	1.21	19.8	1.849	27.898	41.553	4653
4893	2.244	34.887	6.02	38.2	1.24	20.3	1.796	27.897	41.557	4800

ENDEAVOR 90 STA- 7 LAT= 39 51.8N LON= 63 57.6W SONIC DEPTH= 4836m
DATE 27/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.548	36.140	4.76	26.548	23.723	29.950	35.976	0.012	-1.16	3
25	26.554	36.133	4.59	26.548	23.717	29.944	35.970	0.104	0.33	25
50	26.557	36.135	4.59	26.546	23.720	29.947	35.973	0.209	0.95	50
75	26.411	36.221	4.36	26.394	23.833	30.062	36.090	0.314	7.98	74
100	24.474	36.612	4.14	24.453	24.728	30.991	37.051	0.406	9.57	99
150	21.425	36.652	4.59	21.395	25.645	31.971	38.091	0.544	6.30	149
200	19.761	36.645	4.29	19.724	26.092	32.455	38.612	0.652	4.33	198
250	18.662	36.558	4.28	18.617	26.312	32.702	38.884	0.746	3.07	248
300	18.084	36.512	4.49	18.032	26.424	32.829	39.025	0.833	2.21	297
350	17.828	36.486	4.50	17.768	26.470	32.881	39.083	0.918	1.70	347
400	17.389	36.416	4.45	17.321	26.525	32.948	39.162	1.001	2.14	397
450	16.434	36.249	4.10	16.361	26.626	33.076	39.314	1.082	2.90	446
500	15.366	36.066	3.84	15.288	26.731	33.210	39.477	1.158	2.80	496
600	12.673	35.644	3.43	12.590	26.975	33.534	39.877	1.294	3.05	595
700	10.356	35.336	3.34	10.271	27.168	33.801	40.214	1.407	2.52	693
800	7.734	35.119	3.91	7.652	27.419	34.141	40.639	1.500	2.75	792
900	6.395	35.064	4.57	6.311	27.563	34.333	40.876	1.573	2.15	891
1000	5.545	35.039	5.08	5.457	27.652	34.452	41.026	1.634	1.53	990
1200	4.470	34.968	5.81	4.372	27.721	34.564	41.177	1.739	0.94	1187
1400	4.265	34.979	5.91	4.151	27.754	34.605	41.226	1.837	0.65	1385
1600	4.099	34.977	6.02	3.968	27.771	34.630	41.258	1.934	0.62	1582
1800	3.966	34.979	6.06	3.818	27.789	34.652	41.286	2.031	0.59	1779
2000	3.823	34.979	6.09	3.658	27.805	34.675	41.315	2.127	0.63	1975
2500	3.414	34.970	6.06	3.206	27.842	34.730	41.388	2.364	0.64	2466
3000	2.989	34.950	6.09	2.738	27.869	34.776	41.451	2.592	0.60	2956
3500	2.606	34.928	6.17	2.311	27.888	34.813	41.506	2.813	0.54	3445
4000	2.369	34.911	6.18	2.024	27.898	34.835	41.539	3.030	0.43	3932
4500	2.285	34.900	6.13	1.884	27.901	34.843	41.553	3.250	0.25	4419
4921	2.261	34.890	6.03	1.809	27.899	34.845	41.558	3.443	0.28	4828

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
7	26.446	36.115		1.2			26.444	23.737	35.994	7
100	24.389	36.611	4.12	1.3		1.5	24.368	24.753	37.080	99
202	19.411	36.609	4.19	1.5		3.8	19.374	26.156	38.692	200
301	18.065	36.504	4.43	1.8		4.6	18.012	26.423	39.024	298
403	17.431	36.424	4.44	2.0	0.04	5.8	17.363	26.521	39.156	399
598	13.438	35.760	3.67	7.2	0.75	16.6	13.353	26.911	39.767	592
798	8.419	35.146	3.56	15.7	1.44	25.2	8.333	27.338	40.512	791
998	5.653	35.046	4.94	14.0	1.25	21.2	5.564	27.644	41.011	988
1246	4.303	34.952	5.91	11.9	1.12	18.9	4.202	27.727	41.196	1233
1498	4.214	34.981	5.93	12.4	1.12	18.8	4.092	27.762	41.238	1481
1747	4.001	34.977	6.02	13.0	1.06	18.5	3.857	27.783	41.278	1726
2000	3.846	34.979	6.04	14.1	1.12	18.8	3.680	27.803	41.311	1975
2240	3.666	34.979	6.06	15.7	1.13	18.8	3.480	27.823	41.346	2211
2512	3.405	34.971	6.04	17.4	1.13	18.7	3.196	27.844	41.390	2478
2998	2.994	34.948	6.07	21.3	1.13	18.9	2.744	27.867	41.449	2954
3496	2.590	34.925	6.18	24.4	1.17	18.8	2.295	27.887	41.506	3440
3994	2.364	34.908	6.16	28.5	1.18	19.0	2.020	27.896	41.538	3926
4490	2.286	34.902	6.07	33.1	1.22	19.6	1.886	27.902	41.554	4409
4802	2.274	34.895	6.03	34.8	1.19	19.7	1.837	27.901	41.557	4712
4925	2.262	34.888	6.00	36.9	1.27	20.1	1.810	27.897	41.556	4832

ENDEAVOR 90 STA- 8 LAT= 39 43.0N LON= 64 0.8W SONIC DEPTH= 4876m
DATE 27/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.602	36.297	4.79	26.601	23.825	30.049	36.073	0.012	-5.55	3
25	26.554	36.098	4.56	26.548	23.692	29.919	35.945	0.105	0.73	25
50	26.541	36.101	4.58	26.529	23.699	29.927	35.954	0.210	3.81	50
75	25.979	36.353	4.26	25.962	24.068	30.304	36.339	0.311	7.91	74
100	24.300	36.625	4.06	24.279	24.791	31.057	37.120	0.400	9.32	99
150	20.817	36.624	5.03	20.789	25.790	32.130	38.263	0.533	6.24	149
200	19.237	36.586	4.46	19.200	26.183	32.560	38.728	0.635	3.60	198
250	18.595	36.553	4.47	18.550	26.325	32.717	38.901	0.727	2.49	248
300	18.196	36.525	4.49	18.144	26.406	32.808	39.001	0.814	2.03	297
350	17.948	36.508	4.65	17.887	26.457	32.865	39.065	0.900	1.69	347
400	17.690	36.476	4.57	17.621	26.498	32.914	39.119	0.984	1.63	397
450	17.353	36.421	4.61	17.276	26.540	32.964	39.179	1.067	1.96	446
500	16.724	36.311	4.41	16.641	26.607	33.049	39.280	1.149	2.36	496
600	14.755	35.970	3.92	14.663	26.795	33.292	39.576	1.301	2.68	595
700	12.210	35.572	3.31	12.115	27.012	33.586	39.943	1.435	2.94	693
800	9.995	35.294	3.38	9.899	27.199	33.844	40.269	1.547	2.51	792
900	7.777	35.120	3.95	7.683	27.415	34.136	40.633	1.642	2.98	891
1000	6.303	35.066	4.64	6.209	27.578	34.351	40.898	1.715	1.98	990
1200	5.035	35.023	5.45	4.932	27.702	34.522	41.115	1.831	1.21	1187
1400	4.579	35.009	5.79	4.461	27.744	34.582	41.192	1.935	0.86	1385
1600	4.241	34.993	5.98	4.108	27.769	34.622	41.244	2.034	0.68	1582
1800	3.945	34.964	6.09	3.798	27.779	34.644	41.279	2.132	0.57	1779
2000	3.893	34.978	6.11	3.727	27.797	34.664	41.301	2.230	0.64	1975
2500	3.489	34.973	6.07	3.280	27.838	34.723	41.377	2.472	0.66	2466
3000	3.007	34.951	6.08	2.756	27.868	34.774	41.449	2.705	0.66	2956
3500	2.570	34.926	6.16	2.276	27.890	34.816	41.510	2.926	0.58	3445
4000	2.355	34.910	6.16	2.010	27.899	34.836	41.540	3.140	0.38	3932
4500	2.287	34.900	6.12	1.886	27.900	34.843	41.553	3.360	0.23	4419
4997	2.263	34.889	6.00	1.801	27.898	34.845	41.558	3.589	0.30	4902

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
8	26.565	36.100	4.64	1.3			26.563	23.688	35.941	8
105	23.398	36.689	4.11	1.4		2.1	23.376	25.107	37.471	105
202	19.415	36.601	4.09	1.8	0.02	4.6	19.378	26.149	38.685	200
299	18.134	36.523	4.59	1.6		3.9	18.082	26.420	39.018	297
602	14.782	35.969	3.75	4.1	0.21	10.5	14.690	26.788	39.568	596
800	9.985	35.288	3.32	14.0	1.36	24.8	9.889	27.196	40.267	792
999	6.460	35.067	4.46	14.6	1.33	22.8	6.365	27.558	40.867	989
1247	4.882	35.017	5.53	12.9	1.15	19.7	4.776	27.715	41.140	1234
1497	4.340	34.990	5.87	12.8	1.14	19.1	4.216	27.755	41.223	1480
1744	3.970	34.960	6.08	12.3	1.03	18.5	3.828	27.772	41.270	1723
1993	3.904	34.974	6.06				3.738	27.793	41.297	1968
2240	3.751	34.980	6.05				3.563	27.815	41.332	2211
2501	3.490	34.975	6.10				3.281	27.839	41.378	2467
2992	3.041	34.951	6.06				2.790	27.865	41.444	2948
3492	2.613	34.926	6.16				2.318	27.886	41.503	3437
3993	2.358	34.907	6.18				2.014	27.896	41.538	3926
4490	2.287	34.898	6.10				1.888	27.899	41.551	4409
4892	2.285	34.893	6.05				1.836	27.899	41.555	4799
5004	2.264	34.890	6.03				1.802	27.899	41.559	4908

ENDEAVOR 90 STA- 9 LAT= 39 33.9N LON= 64 4.1W SONIC DEPTH= 4888m
DATE 27/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.467	36.036	4.71	26.466	23.670	29.900	35.928	0.013	4.22	3
25	26.351	36.077	4.51	26.345	23.740	29.971	36.001	0.104	1.50	25
50	26.351	36.099	4.52	26.339	23.758	29.989	36.019	0.208	1.86	50
75	25.383	36.278	4.41	25.367	24.197	30.445	36.491	0.309	9.24	74
100	23.989	36.574	4.22	23.968	24.845	31.118	37.187	0.395	9.54	99
150	20.427	36.634	4.66	20.398	25.903	32.252	38.393	0.522	5.41	149
200	19.251	36.586	4.66	19.215	26.180	32.556	38.724	0.623	3.74	198
250	18.545	36.552	4.56	18.501	26.337	32.730	38.915	0.715	2.80	248
300	18.221	36.534	4.74	18.168	26.407	32.808	39.001	0.802	1.81	297
350	18.006	36.521	4.72	17.945	26.453	32.860	39.057	0.887	1.60	347
400	17.813	36.500	4.72	17.744	26.486	32.898	39.101	0.972	1.31	397
450	17.460	36.433	4.52	17.383	26.523	32.945	39.156	1.056	1.95	446
500	16.884	36.331	4.36	16.801	26.585	33.022	39.249	1.138	2.21	496
600	15.330	36.063	4.02	15.236	26.740	33.221	39.489	1.295	2.54	595
700	13.390	35.756	3.76	13.289	26.921	33.458	39.781	1.436	2.65	693
800	10.832	35.397	3.41	10.731	27.134	33.752	40.151	1.559	2.65	792
900	8.740	35.172	3.55	8.640	27.311	33.998	40.463	1.663	2.77	891
1000	7.036	35.092	4.28	6.937	27.500	34.247	40.769	1.747	2.24	990
1200	5.303	35.041	5.28	5.197	27.685	34.496	41.078	1.875	1.42	1187
1400	4.660	35.009	5.74	4.542	27.735	34.571	41.178	1.982	0.95	1385
1600	4.342	34.998	5.92	4.208	27.763	34.611	41.230	2.083	0.71	1582
1800	4.138	34.989	6.03	3.988	27.779	34.636	41.263	2.183	0.61	1779
2000	3.966	34.984	6.07	3.799	27.795	34.659	41.294	2.282	0.66	1975
2500	3.571	34.979	6.08	3.360	27.834	34.716	41.367	2.527	0.67	2466
3000	3.054	34.953	6.12	2.802	27.866	34.771	41.443	2.761	0.62	2956
3500	2.655	34.931	6.15	2.359	27.887	34.810	41.500	2.987	0.61	3445
4000	2.365	34.911	6.18	2.021	27.898	34.836	41.539	3.204	0.41	3932
4500	2.295	34.901	6.13	1.894	27.901	34.843	41.552	3.424	0.26	4419
4973	2.275	34.891	6.03	1.816	27.899	34.845	41.557	3.642	0.26	4878

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	26.458	36.088	4.73	1.3			26.456	23.713	35.970	10
103	23.741	36.611	4.37	1.3		1.2	23.719	24.947	37.299	102
202	19.020	36.577	4.65	1.1		1.9	18.983	26.233	38.788	200
307	18.159	36.535	4.72	1.4	0.01	3.2	18.106	26.423	39.020	305
399	17.830	36.496	4.74	1.3	0.01	3.3	17.761	26.479	39.093	396
599	15.427	36.084	3.92	4.6	0.37	11.9	15.332	26.735	39.478	594
801	10.908	35.406	3.37	12.8	1.18	22.5	10.807	27.127	40.139	793
1000	7.112	35.096	4.13	16.1	1.24	23.3	7.012	27.493	40.757	990
1242	5.056	35.025	5.84	13.8	1.16	19.9	4.948	27.701	41.113	1229
1497	4.427	35.001	5.83	13.3	1.14	19.2	4.302	27.755	41.215	1480
1724	4.188	34.988		13.2	1.06	18.8	4.044	27.772	41.252	1704
1994	3.962	34.983	6.03	14.1	1.08	18.9	3.796	27.794	41.293	1969
2249	3.760	34.982	6.06	15.4	1.10	18.8	3.571	27.816	41.333	2219
2494	3.569	34.985	6.05	17.1	1.12	18.9	3.359	27.839	41.372	2460
2993	3.086	34.956	6.10	21.0	1.10	19.0	2.834	27.865	41.440	2949
3488	2.668	34.933		24.1	1.12	18.9	2.373	27.887	41.499	3433
3992	2.373	34.910	6.17	29.1	1.15	19.3	2.029	27.897	41.538	3924
4492	2.295	34.900	6.13	34.1	1.21	19.7	1.895	27.900	41.551	4411
4841	2.280	34.894	6.07	35.7	1.22	19.8	1.838	27.900	41.556	4750
4978	2.275	34.891	6.06	38.1	1.27	20.1	1.816	27.899	41.557	4883

ENDEAVOR 90 STA- 10 LAT= 39 25.3N LON= 64 7.0W SONIC DEPTH= 4910m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
7	26.512	36.116	4.67	26.511	23.717	29.945	35.971	0.029	0.89	7
25	26.487	36.116	4.62	26.481	23.726	29.954	35.982	0.104	1.76	25
50	26.443	36.124	4.71	26.431	23.748	29.977	36.005	0.209	3.56	50
75	24.684	36.399	4.80	24.668	24.502	30.762	36.820	0.306	10.84	74
100	22.411	36.612	4.49	22.391	25.334	31.639	37.739	0.383	8.55	99
150	20.168	36.609	4.56	20.140	25.953	32.308	38.455	0.499	5.23	149
200	18.864	36.559	4.54	18.828	26.258	32.644	38.821	0.596	3.23	198
250	18.296	36.524	4.64	18.252	26.378	32.778	38.968	0.684	2.23	248
300	18.022	36.519	4.57	17.970	26.444	32.851	39.048	0.770	1.74	298
350	17.835	36.500	4.69	17.774	26.479	32.890	39.092	0.854	1.27	347
400	17.666	36.476	4.69	17.598	26.504	32.920	39.126	0.937	1.41	397
450	17.412	36.434	4.70	17.336	26.536	32.958	39.171	1.021	1.63	446
500	16.953	36.349	4.45	16.869	26.583	33.018	39.243	1.103	1.87	496
600	15.683	36.129	4.21	15.588	26.712	33.183	39.441	1.261	2.41	595
700	13.703	35.805	3.90	13.601	26.894	33.422	39.736	1.405	2.49	694
800	11.782	35.528	3.61	11.676	27.062	33.649	40.019	1.534	2.69	792
900	9.351	35.237	3.52	9.246	27.264	33.931	40.376	1.643	2.91	891
1000	7.207	35.094	4.20	7.106	27.478	34.219	40.735	1.731	2.38	990
1200	5.355	35.029	5.23	5.249	27.669	34.478	41.059	1.863	1.59	1187
1400	4.736	35.011	5.68	4.617	27.728	34.561	41.165	1.972	0.85	1385
1600	4.415	34.997	5.87	4.281	27.754	34.599	41.216	2.076	0.75	1582
1800	4.187	34.989	5.99	4.036	27.774	34.629	41.255	2.178	0.66	1779
2000	4.021	34.983	6.02	3.854	27.788	34.651	41.283	2.279	0.61	1975
2500	3.654	34.980	6.08	3.442	27.827	34.705	41.353	2.529	0.68	2466
3000	3.135	34.956	6.09	2.881	27.861	34.763	41.432	2.769	0.65	2956
3500	2.658	34.930	6.19	2.362	27.886	34.809	41.499	2.997	0.63	3445
4000	2.360	34.909	6.15	2.015	27.898	34.835	41.539	3.215	0.44	3932
4500	2.299	34.902	6.20	1.898	27.901	34.843	41.552	3.435	0.25	4419
4997	2.274	34.890	6.05	1.813	27.898	34.844	41.557	3.665	0.28	4902

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	26.473	36.122	4.76	1.0			26.471	23.734	35.990	9
102	22.574	36.593	4.54	0.7		0.6	22.553	25.273	37.672	101
201	18.953	36.591	4.57	1.1		2.4	18.917	26.260	38.818	199
301	18.087		4.88	1.3	0.03	3.7				299
400	17.643	36.477	4.68	1.7	0.04	4.8	17.574	26.510	39.134	397
596	15.750	36.142	4.12	3.8	0.25	9.9	15.655	26.706	39.432	590
797	11.678	35.514	3.54	10.6	0.96	20.4	11.573	27.070	40.034	789
1000	7.584	35.112	4.02	16.5	1.34	23.7	7.480	27.439	40.670	990
1234	5.257	35.023	5.23	14.1	1.19	20.1	5.148	27.676	41.074	1221
1495	4.576	35.004	5.74	13.2	1.11	20.1	4.450	27.741	41.191	1479
1743	4.259	34.992	5.90	16.9	1.02	19.3	4.113	27.768	41.243	1723
1992	4.041	34.985	6.04	17.3	1.09	19.4	3.874	27.788	41.281	1967
2239	3.869	34.981	6.03	17.4	1.03	18.1	3.680	27.804	41.313	2210
2500	3.637	34.981	6.11	20.3	1.12	19.6	3.425	27.829	41.357	2466
2992	3.127	34.956	6.05	21.6	1.08	19.7	2.874	27.862	41.433	2948
3493	2.664	34.933	6.18	23.5	1.08	19.0	2.369	27.888	41.500	3437
3989	2.372	34.910	6.19	29.9	1.12	19.9	2.029	27.897	41.538	3922
4487	2.299	34.904	6.18	30.2	1.11	19.5	1.899	27.903	41.554	4406
4875	2.286	34.895	6.12	35.9	1.16	19.5	1.839	27.900	41.557	4783
5001	2.275	34.891	5.99	39.1	1.18	18.0	1.813	27.899	41.558	4905

ENDEAVOR 90 STA- 11 LAT= 39 15.9N LON= 64 9.8W SONIC DEPTH= 4935m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	25.836	36.035	4.76	25.835	23.868	30.109	36.149	0.012	1.12	3
25	25.713	36.052	4.74	25.708	23.920	30.164	36.205	0.101	4.05	25
50	25.621	36.130	4.75	25.610	24.010	30.255	36.297	0.199	4.68	50
75	24.142	36.405	4.73	24.126	24.670	30.941	37.009	0.292	11.42	74
100	22.264	36.607	4.53	22.244	25.372	31.680	37.783	0.364	7.68	99
150	20.035	36.608	4.54	20.007	25.988	32.346	38.496	0.480	5.05	149
200	19.081	36.583	4.57	19.044	26.221	32.601	38.773	0.577	2.97	198
250	18.527	36.552	4.58	18.482	26.341	32.735	38.920	0.668	2.35	248
300	18.199	36.530	4.63	18.147	26.409	32.811	39.004	0.755	2.13	298
350	17.879	36.501	4.64	17.819	26.469	32.879	39.080	0.840	1.84	347
400	17.542	36.454	4.68	17.473	26.517	32.937	39.146	0.924	1.52	397
450	17.220	36.399	4.58	17.143	26.555	32.983	39.201	1.006	1.86	446
500	16.750	36.315	4.42	16.667	26.605	33.045	39.275	1.087	1.98	496
600	15.454	36.086	4.10	15.360	26.730	33.207	39.472	1.243	2.47	595
700	13.517	35.775	3.77	13.416	26.909	33.443	39.762	1.385	2.26	694
800	11.641	35.507	3.58	11.535	27.072	33.663	40.037	1.513	2.77	792
900	9.209	35.219	3.48	9.106	27.273	33.944	40.394	1.621	2.53	891
1000	7.347	35.108	4.09	7.245	27.470	34.205	40.717	1.709	2.59	990
1200	5.272	35.031	5.26	5.167	27.680	34.492	41.076	1.838	1.39	1187
1400	4.723	35.014	5.66	4.604	27.732	34.565	41.169	1.946	0.89	1385
1600	4.447	35.002	5.86	4.312	27.755	34.599	41.215	2.048	0.67	1582
1800	4.214	34.990	5.98	4.063	27.771	34.626	41.250	2.150	0.54	1779
2000	4.075	34.985	6.05	3.907	27.784	34.645	41.275	2.252	0.60	1975
2500	3.633	34.979	6.07	3.421	27.828	34.708	41.356	2.504	0.71	2466
3000	3.045	34.952	6.09	2.793	27.866	34.771	41.444	2.743	0.70	2956
3500	2.601	34.927	6.15	2.306	27.888	34.814	41.506	2.965	0.58	3445
4000	2.354	34.910	6.21	2.009	27.899	34.837	41.541	3.181	0.41	3933
4500	2.284	34.900	6.13	1.884	27.901	34.844	41.553	3.400	0.25	4419
5000	2.294	34.893	6.07	1.831	27.900	34.845	41.556	3.631	0.16	4905
5009	2.295	34.893	6.07	1.831	27.900	34.845	41.557	3.635	0.27	4913

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	25.866	36.041	4.51	1.2			25.864	23.863	36.143	9
104	21.555	36.604	4.47	1.1		0.6	21.535	25.569	38.011	103
203	19.020	36.569	4.47	1.6		2.8	18.983	26.226	38.782	202
405	17.640	36.470	3.30	2.0	0.06	4.3	17.570	26.506	39.129	402
601	15.300	36.062	4.00	4.8	0.42	11.9	15.206	26.746	39.497	595
801	11.529	35.494	3.54	10.8	1.13	20.1	11.424	27.083	40.056	794
1001	7.149	35.098	4.15	16.0	1.44	23.2	7.048	27.490	40.750	991
1247	5.067	35.023	5.22	13.7	1.19	19.7	4.959	27.698	41.110	1234
1496	4.555	35.005	5.50	13.3	1.19	19.2	4.429	27.744	41.195	1479
1744	4.286	34.991	5.85	13.3	1.16	18.7	4.139	27.764	41.238	1723
1995	4.082	34.984	5.92	13.8	1.08	18.2	3.914	27.783	41.273	1970
2240	3.876	34.982	5.97	14.7	1.18	18.5	3.687	27.804	41.312	2211
2494	3.634	34.979	5.90	16.7	1.16	18.5	3.423	27.828	41.356	2460
2719	3.359	34.970	6.01	18.8	1.19	18.5	3.130	27.849	41.400	2681
2991	3.068	34.954	6.03	21.7	1.15	18.5	2.816	27.865	41.442	2947
3497	2.595	34.927	6.11	25.5	1.21	18.5	2.300	27.889	41.507	3442
3995	2.360	34.910	6.16	27.9	1.21	18.5	2.016	27.898	41.540	3928
4495	2.274	34.899	6.09	31.0	1.24	18.8	1.874	27.901	41.554	4414
4902	2.283	34.893	6.02	36.0	1.27	19.3	1.833	27.899	41.556	4810
5012	2.295	34.894	6.01	35.2	1.28	19.5	1.831	27.900	41.557	4916

ENDEAVOR 90 STA- 12 LAT= 39 6.9N LON= 64 12.8W SONIC DEPTH= 4950m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.372	36.041	4.69	26.371	23.704	29.936	35.966	0.013	0.87	3
25	26.371	36.054	4.64	26.365	23.716	29.947	35.977	0.105	4.39	25
50	25.380	36.161	4.70	25.369	24.107	30.356	36.403	0.205	5.63	50
75	24.760	36.238	4.59	24.744	24.357	30.618	36.676	0.298	8.83	74
100	22.651	36.618	4.69	22.630	25.270	31.570	37.666	0.377	8.41	99
150	20.187	36.627	4.58	20.159	25.962	32.316	38.463	0.493	5.11	149
200	18.965	36.588	4.60	18.929	26.255	32.638	38.812	0.590	3.14	198
250	18.359	36.544	4.61	18.315	26.378	32.776	38.964	0.679	2.57	248
300	18.063	36.524	4.64	18.011	26.438	32.844	39.040	0.764	1.49	298
350	17.842	36.503	4.69	17.782	26.479	32.890	39.092	0.848	1.62	347
400	17.585	36.465	4.70	17.516	26.515	32.934	39.142	0.932	1.51	397
450	17.250	36.402	4.56	17.174	26.550	32.977	39.194	1.014	1.63	446
500	16.896	36.349	4.58	16.812	26.596	33.033	39.259	1.096	2.11	496
600	15.145	36.033	3.99	15.052	26.758	33.244	39.517	1.251	2.78	595
700	12.637	35.646	3.70	12.541	26.986	33.547	39.891	1.388	2.90	694
800	10.312	35.336	3.40	10.214	27.178	33.812	40.227	1.503	2.72	792
900	8.103	35.118	3.65	8.007	27.366	34.075	40.561	1.599	2.41	891
1000	6.654	35.075	4.44	6.558	27.539	34.299	40.834	1.678	2.24	990
1200	5.027	35.015	5.43	4.924	27.696	34.517	41.110	1.798	1.29	1187
1400	4.531	35.000	5.77	4.414	27.742	34.583	41.194	1.902	0.81	1385
1600	4.302	34.993	5.93	4.169	27.763	34.613	41.234	2.002	0.74	1582
1800	4.094	34.986	6.02	3.944	27.781	34.640	41.269	2.101	0.63	1779
2000	3.908	34.982	6.05	3.742	27.799	34.666	41.302	2.199	0.60	1975
2500	3.560	34.976	6.06	3.350	27.833	34.715	41.367	2.443	0.63	2466
3000	3.104	34.955	6.08	2.851	27.863	34.765	41.436	2.680	0.65	2956
3500	2.637	34.929	6.16	2.341	27.887	34.810	41.501	2.906	0.63	3445
4000	2.378	34.910	6.16	2.033	27.897	34.834	41.537	3.124	0.41	3933
4500	2.298	34.900	6.15	1.897	27.900	34.842	41.551	3.345	0.26	4419
5000	2.291	34.892	6.03	1.828	27.899	34.844	41.556	3.577	0.23	4905
5031	2.295	34.892	6.02	1.828	27.899	34.844	41.556	3.592	-0.19	4935

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	26.428	36.037	4.68	1.0			26.426	23.684	35.943	9
100	23.250	36.604	4.43	1.0		0.4	23.229	25.085	37.457	99
152	20.153	36.631	4.63	0.9		1.2	20.124	25.975	38.477	151
202	18.805	36.566	4.67	0.8		1.5	18.769	26.279	38.844	201
400	17.589	36.471	4.64	1.5		4.7	17.520	26.519	39.145	396
592	14.906	36.005	3.98	4.5	0.35	11.7	14.815	26.789	39.561	587
801	9.888	35.288	3.40	14.5	1.25	23.6	9.792	27.213	40.289	793
997	6.252	35.059	4.53	15.2	1.24	22.2	6.159	27.579	40.903	987
1251	4.756	35.004	5.56	12.9	1.11	19.6	4.651	27.719	41.153	1237
1501	4.345	34.990	5.87	12.7	1.08	19.0	4.221	27.755	41.222	1484
1739	4.107	34.988	5.96	13.3	1.05	18.2	3.963	27.781	41.267	1719
1990	3.934	34.983	6.02	13.6	1.11	18.6	3.768	27.797	41.298	1966
2245	3.766	34.982	6.02	15.3	1.13	18.6	3.577	27.815	41.331	2216
2514	3.524	34.982	6.05	17.3	1.16	18.6	3.313	27.841	41.378	2480
3003	3.084	34.954	6.06	21.2	1.13	18.5	2.831	27.864	41.439	2959
3988	2.374	34.910	6.17	28.4	1.18	18.9	2.031	27.897	41.537	3920
4485	2.295	34.903	6.13	32.8	1.21	19.0	1.895	27.902	41.554	4404
4857	2.286	34.905	6.05	36.1	1.21	18.9	1.841	27.908	41.564	4765
5035	2.295	34.890	6.03	36.3	1.25	19.5	1.828	27.897	41.554	4938

ENDEAVOR 90 STA- 13 LAT= 38 57.9N LON= 64 16.3W SONIC DEPTH= 4966m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.789	35.972	4.62	26.788	23.520	29.744	35.767	0.013	1.05	3
25	26.801	36.000	4.62	26.795	23.539	29.763	35.785	0.109	1.86	25
50	26.679	36.143	4.58	26.668	23.687	29.912	35.936	0.217	6.69	50
75	25.770	36.317	4.25	25.753	24.106	30.347	36.386	0.318	9.08	74
100	23.495	36.623	4.41	23.474	25.028	31.311	37.390	0.403	8.49	99
150	20.266	36.615	4.53	20.237	25.932	32.284	38.429	0.530	6.87	149
200	18.784	36.566	4.59	18.748	26.285	32.672	38.851	0.626	3.55	198
250	18.279	36.543	4.70	18.235	26.397	32.797	38.987	0.714	2.18	248
300	17.990	36.520	4.70	17.938	26.454	32.861	39.059	0.799	1.77	298
350	17.727	36.488	4.68	17.667	26.496	32.910	39.115	0.882	1.60	347
400	17.357	36.429	4.64	17.289	26.543	32.967	39.181	0.965	1.88	397
450	16.823	36.332	4.46	16.748	26.598	33.037	39.265	1.045	2.17	446
500	15.847	36.154	4.06	15.767	26.690	33.156	39.409	1.123	3.01	496
600	13.399	35.760	3.79	13.313	26.919	33.456	39.777	1.263	2.73	595
700	10.716	35.389	3.49	10.629	27.146	33.767	40.169	1.382	2.83	694
800	8.655	35.194	3.71	8.567	27.339	34.029	40.496	1.481	2.80	792
900	6.513	35.074	4.53	6.427	27.555	34.320	40.860	1.558	2.43	891
1000	5.568	35.041	5.02	5.479	27.651	34.451	41.024	1.620	1.55	990
1200	4.674	35.000	5.65	4.574	27.724	34.559	41.165	1.725	0.93	1187
1400	4.357	34.994	5.86	4.242	27.756	34.603	41.221	1.824	0.74	1385
1600	4.163	34.986	5.97	4.032	27.772	34.627	41.253	1.921	0.64	1582
1800	4.000	34.983	6.03	3.852	27.788	34.651	41.283	2.018	0.65	1779
2000	3.843	34.982	6.03	3.677	27.805	34.675	41.314	2.114	0.59	1975
2500	3.472	34.974	6.04	3.263	27.839	34.725	41.380	2.353	0.61	2466
3000	3.031	34.951	6.10	2.780	27.866	34.772	41.445	2.585	0.63	2956
3500	2.620	34.928	6.20	2.324	27.887	34.812	41.503	2.808	0.57	3445
4000	2.359	34.909	6.15	2.014	27.898	34.835	41.539	3.025	0.41	3933
4500	2.300	34.900	6.14	1.898	27.900	34.842	41.551	3.246	0.24	4419
5000	2.286	34.890	6.07	1.824	27.898	34.843	41.555	3.478	0.24	4905
5059	2.294	34.890	6.04	1.824	27.898	34.843	41.555	3.506	-0.07	4962

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
11	26.825	35.996	4.74	1.3			26.823	23.527	35.773	11
104	22.824	36.634	4.36	1.0		1.1	22.803	25.232	37.620	104
204	18.692	36.566	4.71	1.1		2.4	18.655	26.308	38.878	202
303	17.923	36.510	4.66	1.4		3.8	17.871	26.462	39.071	301
511	15.498	36.094	3.96	4.2	0.22	11.4	15.417	26.723	39.462	506
608	12.853	35.666	3.98	7.6	0.65	16.6	12.768	26.956	39.847	602
800	8.418	35.152	3.60	15.5	1.04	26.0	8.331	27.343	40.517	792
1003	5.461	35.036	5.04	13.9	1.00	20.8	5.373	27.660	41.040	993
1247	4.579	35.000	5.71	12.7	0.94	19.3	4.476	27.735	41.183	1233
1498	4.209	34.987	5.91	12.7	1.06	18.9	4.087	27.767	41.244	1481
1745	4.015	34.985	5.98	13.0	0.98	18.3	3.871	27.788	41.281	1725
1997	3.834	34.980	6.01	14.0	1.12	18.7	3.669	27.805	41.314	1972
2244	3.676	34.981	6.00	15.3	1.14	18.7	3.490	27.823	41.346	2215
2454	3.526	34.976	6.03	16.7	1.16	18.7	3.321	27.836	41.372	2421
3003	3.023	34.952	6.08	21.2	1.13	18.8	2.772	27.868	41.448	2959
3498	2.632	34.928	6.38	21.7	1.11	18.4	2.336	27.886	41.502	3443
3997	2.359	34.910	6.13	28.1	1.01	19.0	2.015	27.898	41.540	3929
4470	2.299	34.900	6.09	33.1	1.23	19.6	1.901	27.899	41.550	4389
4976	2.285	34.893	5.99	37.1	1.25	19.9	1.826	27.900	41.557	4881
5063	2.294	34.893	6.03	37.2	1.25	20.1	1.824	27.900	41.557	4965

ENDEAVOR 90 STA- 14 LAT= 38 48.9N LON= 64 19.7W SONIC DEPTH= 4980m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	27.133	36.183	4.63	27.132	23.568	29.785	35.800	0.013	-0.76	3
25	27.053	36.164	4.70	27.048	23.581	29.799	35.816	0.108	4.49	25
50	26.010	36.162	4.78	25.999	23.913	30.150	36.185	0.212	5.79	50
75	25.335	36.554	3.98	25.318	24.420	30.667	36.712	0.307	8.32	74
100	23.740	36.747	3.74	23.719	25.050	31.326	37.399	0.389	8.64	99
150	20.768	36.731	3.72	20.739	25.885	32.225	38.358	0.512	5.01	149
200	19.065	36.574	3.85	19.029	26.219	32.599	38.772	0.614	4.50	198
250	17.468	36.333	3.41	17.425	26.436	32.858	39.069	0.702	3.17	248
300	16.575	36.231	3.72	16.526	26.573	33.018	39.253	0.782	2.69	298
350	16.030	36.178	3.89	15.974	26.661	33.121	39.370	0.859	2.45	347
400	15.073	36.019	3.74	15.011	26.756	33.243	39.517	0.931	2.75	397
450	13.709	35.798	3.50	13.644	26.880	33.407	39.719	0.999	3.52	446
500	11.085	35.408	3.10	11.021	27.090	33.699	40.089	1.059	2.72	496
600	8.898	35.144	3.17	8.831	27.259	33.940	40.400	1.160	2.50	595
700	7.625	35.112	3.94	7.554	27.428	34.153	40.654	1.245	2.76	694
800	6.030	35.063	4.74	5.957	27.608	34.390	40.946	1.312	1.96	792
900	5.339	35.036	5.18	5.261	27.673	34.481	41.062	1.368	1.44	891
1000	4.987	35.023	5.42	4.903	27.705	34.527	41.120	1.419	1.02	990
1200	4.422	34.987	5.80	4.324	27.742	34.586	41.201	1.518	0.81	1188
1400	4.211	34.985	5.94	4.098	27.764	34.617	41.240	1.613	0.65	1385
1600	4.083	34.985	5.98	3.953	27.779	34.638	41.267	1.707	0.50	1582
1800	3.863	34.981	6.02	3.717	27.801	34.668	41.306	1.802	0.69	1779
2000	3.730	34.981	6.02	3.566	27.816	34.690	41.333	1.895	0.63	1975
2500	3.407	34.971	6.06	3.199	27.843	34.732	41.389	2.125	0.53	2466
3000	3.002	34.949	6.09	2.751	27.868	34.774	41.449	2.355	0.67	2956
3500	2.533	34.923	6.15	2.240	27.891	34.818	41.514	2.575	0.57	3445
4000	2.332	34.907	6.14	1.988	27.898	34.837	41.542	2.788	0.34	3933
4500	2.299	34.900	6.11	1.898	27.899	34.842	41.551	3.008	0.22	4419
5000	2.310	34.893	6.06	1.847	27.898	34.843	41.554	3.241	0.16	4905
5069	2.319	34.894	6.09	1.847	27.899	34.844	41.555	3.274	0.23	4972

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
14	27.082	36.154	4.68	2.7		0.7	27.079	23.564	35.798	14
106	23.238	36.767	3.69	2.8	0.09	4.3	23.216	25.213	37.583	105
202	18.761	36.543	3.82	2.5	0.15	6.8	18.725	26.273	38.840	200
301	16.666	36.322	4.11	3.1	0.16	7.0	16.616	26.622	39.295	298
399	14.869	36.013	3.71	4.6	0.65	10.8	14.808	26.796	39.569	396
498	11.316	35.443	3.10	12.5	1.36	22.0	11.253	27.075	40.059	493
593	9.150	35.182	3.17	16.1	1.55	24.5	9.083	27.248	40.371	588
799	6.296	35.078	4.56				6.222	27.586	40.905	791
1003	4.940	35.020	5.42	12.0	1.11	17.3	4.856	27.708	41.127	993
1258	4.365	34.994	5.86	12.2			4.263	27.754	41.217	1244
1497	4.124	34.984	5.97	10.3			4.003	27.773	41.257	1480
1741	3.898	34.981	6.04	11.7			3.757	27.796	41.299	1721
1998	3.747	34.982	6.05	13.6			3.583	27.815	41.330	1973
2519	3.403	34.972	6.05	16.5			3.194	27.845	41.391	2485
2987	3.031	34.954	6.10	18.8			2.781	27.869	41.448	2943
3490	2.557	34.924	6.40	20.0			2.264	27.889	41.510	3435
3987	2.335	34.908	6.19	27.3			1.993	27.899	41.542	3920
4493	2.298	34.901	6.14	27.6			1.898	27.901	41.552	4412
4900	2.297	34.896	6.04	32.7			1.847	27.900	41.556	4807
5073	2.320	34.897	6.10	31.7			1.847	27.901	41.557	4975

ENDEAVOR 90 STA- 15 LAT= 38 39.9N LON= 64 22.4W SONIC DEPTH= 5000m
DATE 28/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	27.773	35.943	4.65	27.772	23.181	29.387	35.394	0.014	-2.09	3
25	27.766	35.922	4.75	27.760	23.169	29.376	35.383	0.118	2.75	25
50	26.619	36.147	4.45	26.607	23.709	29.935	35.960	0.231	10.06	50
75	24.356	36.333	4.47	24.340	24.551	30.819	36.883	0.327	11.94	74
100	20.888	36.383	3.87	20.869	25.585	31.925	38.059	0.398	8.15	99
150	17.593	36.199	3.46	17.568	26.298	32.718	38.927	0.500	5.13	149
200	15.973	36.114	3.40	15.941	26.620	33.081	39.331	0.580	3.24	198
250	14.995	35.980	3.48	14.957	26.738	33.227	39.503	0.652	3.04	248
300	13.399	35.718	3.76	13.356	26.877	33.414	39.734	0.718	2.69	298
350	12.107	35.559	3.46	12.061	27.012	33.588	39.946	0.778	3.13	347
400	10.655	35.369	3.32	10.606	27.134	33.756	40.159	0.831	2.49	397
450	9.569	35.261	3.51	9.517	27.238	33.896	40.332	0.880	2.65	446
500	8.455	35.158	3.67	8.402	27.337	34.032	40.505	0.924	2.60	496
600	7.054	35.090	4.17	6.996	27.490	34.235	40.755	0.999	2.26	595
700	5.854	35.049	4.84	5.792	27.618	34.407	40.968	1.061	1.92	694
800	5.227	35.032	5.27	5.160	27.682	34.494	41.078	1.114	1.28	792
900	4.826	35.018	5.58	4.753	27.719	34.546	41.145	1.163	1.00	891
1000	4.592	35.002	5.73	4.511	27.733	34.570	41.178	1.210	0.78	990
1200	4.298	34.993	5.91	4.202	27.760	34.609	41.228	1.303	0.66	1188
1400	4.091	34.987	6.00	3.979	27.778	34.635	41.263	1.395	0.62	1385
1600	3.934	34.982	6.05	3.806	27.792	34.657	41.291	1.486	0.58	1582
1800	3.788	34.983	6.06	3.643	27.809	34.680	41.320	1.577	0.64	1779
2000	3.636	34.981	6.05	3.474	27.825	34.702	41.349	1.667	0.50	1975
2500	3.240	34.964	6.07	3.036	27.853	34.748	41.412	1.893	0.69	2466
3000	2.806	34.940	6.10	2.559	27.877	34.791	41.474	2.110	0.49	2956
3500	2.456	34.917	6.13	2.165	27.892	34.823	41.521	2.322	0.48	3445
4000	2.302	34.903	6.14	1.959	27.898	34.837	41.544	2.533	0.33	3933
4500	2.280	34.895	6.10	1.879	27.897	34.841	41.550	2.752	0.17	4419
5000	2.294	34.889	6.04	1.832	27.896	34.841	41.553	2.985	0.16	4905
5069	2.302	34.888	6.03	1.831	27.895	34.841	41.552	3.018	-0.10	4972

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	27.704	35.888	4.78	1.2		0.2	27.702	23.162	35.378	9
103	17.865	36.050	3.84	2.9	0.05	5.2	17.848	26.115	38.733	103
201	14.924	35.930	3.80	5.6	0.80	11.3	14.893	26.714	39.483	200
305	12.583	35.634	3.50	7.0	0.80	13.9	12.541	26.977	39.881	302
399	10.342	35.332	3.37	9.9	1.04	17.8	10.294	27.161	40.205	396
600	7.114	35.095	4.09	14.4	1.70	21.5	7.056	27.486	40.747	595
797	5.109	35.006	5.32	12.6	1.07	18.0	5.042	27.675	41.081	790
1000	4.626	35.003	5.69	10.8	1.05	15.9	4.544	27.730	41.172	990
1241	4.267	34.993	5.92	11.3			4.168	27.763	41.234	1228
1490	4.040	34.983	6.06	11.7			3.921	27.781	41.271	1474
1738	3.855	34.981	6.04	10.9			3.715	27.801	41.306	1718
1991	3.667	34.981	6.08	12.1			3.505	27.822	41.343	1967
2243	3.486	34.977	6.05	17.0			3.303	27.838	41.376	2214
2503	3.239	34.963	6.11	17.6			3.034	27.852	41.411	2469
2995	2.809	34.943	6.18	17.2			2.563	27.879	41.476	2952
3494	2.472	34.919	6.19	23.8			2.180	27.892	41.520	3439
3993	2.304	34.902	6.15	27.6			1.962	27.896	41.542	3925
4502	2.274	34.901	6.04	28.7			1.873	27.902	41.556	4421
4933	2.293	34.892	6.08	30.8			1.839	27.898	41.554	4840
5072	2.303	34.892	6.08	27.4			1.831	27.899	41.556	4975

ENDEAVOR 90 STA- 16 LAT= 38 31.1N LON= 64 25.1W SONIC DEPTH= 5000m
DATE 29/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	25.577	35.091	4.98	25.577	23.235	29.489	35.541	0.014	7.89	3
25	25.763	35.528	4.76	25.758	23.509	29.756	35.801	0.112	5.98	25
50	23.367	35.912	4.62	23.357	24.523	30.814	36.901	0.213	13.86	50
75	18.068	35.692	4.56	18.055	25.790	32.202	38.404	0.282	11.32	74
100	16.410	35.972	3.53	16.394	26.405	32.856	39.096	0.329	5.81	99
150	14.135	35.719	4.16	14.113	26.720	33.235	39.535	0.402	3.20	149
200	13.168	35.623	3.95	13.140	26.848	33.392	39.719	0.468	2.68	198
250	12.168	35.514	3.65	12.135	26.963	33.537	39.893	0.528	3.05	248
300	10.651	35.326	3.42	10.615	27.100	33.722	40.125	0.583	2.74	298
350	9.674	35.229	3.37	9.634	27.193	33.848	40.281	0.632	2.33	347
400	8.603	35.126	3.50	8.560	27.288	33.978	40.446	0.677	2.54	397
450	7.857	35.091	3.80	7.811	27.374	34.091	40.584	0.718	2.72	446
500	7.019	35.066	4.22	6.971	27.475	34.221	40.742	0.755	2.60	496
600	5.805	35.040	4.88	5.753	27.616	34.406	40.969	0.815	1.81	595
700	5.099	35.011	5.32	5.041	27.679	34.496	41.084	0.867	1.23	694
800	4.761	35.002	5.61	4.697	27.712	34.542	41.143	0.915	0.99	792
900	4.583	34.997	5.75	4.511	27.729	34.566	41.174	0.962	0.78	891
1000	4.408	34.993	5.85	4.328	27.746	34.590	41.205	1.007	0.78	990
1200	4.153	34.984	5.95	4.058	27.768	34.622	41.247	1.097	0.57	1188
1400	4.015	34.980	6.02	3.904	27.781	34.641	41.272	1.187	0.51	1385
1600	3.886	34.979	6.04	3.758	27.794	34.661	41.297	1.278	0.51	1582
1800	3.763	34.978	6.05	3.618	27.808	34.680	41.321	1.369	0.64	1779
2000	3.654	34.979	6.06	3.492	27.821	34.698	41.344	1.460	0.64	1975
2500	3.184	34.961	6.08	2.981	27.856	34.753	41.419	1.683	0.60	2466
3000	2.766	34.940	6.11	2.520	27.881	34.797	41.481	1.899	0.60	2956
3500	2.440	34.920	6.15	2.149	27.895	34.827	41.526	2.108	0.47	3445
4000	2.302	34.907	6.12	1.959	27.900	34.840	41.546	2.317	0.30	3933
4500	2.280	34.899	6.10	1.880	27.900	34.844	41.553	2.535	0.18	4419
5000	2.298	34.892	6.08	1.835	27.898	34.843	41.555	2.767	0.17	4905
5085	2.302	34.890	6.04	1.829	27.898	34.843	41.555	2.808	0.04	4987

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
2	25.109	34.352	4.87	1.1			25.109	22.820	35.156	2
104	16.661	36.028	3.57	4.0	0.23	8.9	16.644	26.389	39.067	103
206	13.182	35.654	4.11	5.1	0.48	11.2	13.153	26.869	39.739	204
400	8.594	35.158	3.45		1.22	18.8	8.551	27.314	40.473	396
599	5.794	35.048	4.81	12.4	1.28	18.5	5.742	27.624	40.977	593
799	4.914	35.012	5.43	11.1	1.07	16.5	4.848	27.703	41.122	791
899	4.693	35.002	5.63	11.1	1.17	16.8	4.620	27.721	41.157	890
997	4.497	34.996	5.83	11.5		15.4	4.417	27.738	41.190	987
1250	4.174	34.986	5.96	9.6			4.074	27.767	41.245	1237
1495	3.974	34.977	6.04	9.8			3.855	27.783	41.278	1479
1752	3.769	34.977	6.05	13.0			3.628	27.806	41.319	1731
1995	3.636	34.977	6.10	11.3			3.474	27.822	41.346	1971
2499	3.164	34.959	6.09	16.2			2.961	27.856	41.421	2465
2742	2.980	34.949	6.11	15.2			2.756	27.867	41.448	2703
2995	2.802	34.937	6.16	15.1			2.556	27.875	41.472	2952
3994	2.303	34.902	6.12	24.7			1.961	27.896	41.542	3926
4482	2.279	34.895	5.99	27.9			1.880	27.897	41.550	4402
5089	2.303	34.889	6.07	31.4			1.829	27.896	41.554	4991

ENDEAVOR 90 STA- 17 LAT= 37 59.5N LON= 60 59.6W SONIC DEPTH= 4500m
DATE 29/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	26.429	35.938	4.63	26.428	23.609	29.839	35.869	0.021	1.55	5
25	26.303	35.938	4.49	26.297	23.650	29.883	35.915	0.107	3.52	25
50	26.156	36.005	4.52	26.145	23.749	29.984	36.019	0.212	4.26	50
75	25.938	36.320	4.05	25.921	24.056	30.293	36.329	0.313	7.99	74
100	24.752	36.562	4.03	24.731	24.606	30.864	36.920	0.403	7.56	99
150	21.917	36.678	4.04	21.887	25.527	31.842	37.952	0.550	7.00	149
200	19.929	36.624	4.36	19.891	26.031	32.391	38.544	0.663	4.49	198
250	19.162	36.580	4.42	19.117	26.200	32.579	38.749	0.762	3.45	248
300	18.512	36.532	4.51	18.459	26.332	32.726	38.912	0.855	2.65	298
350	18.088	36.496	4.58	18.026	26.413	32.818	39.014	0.943	2.02	347
400	17.842	36.471	4.62	17.772	26.457	32.869	39.071	1.029	1.47	397
450	17.627	36.442	4.63	17.550	26.490	32.907	39.115	1.114	1.48	446
500	17.223	36.372	4.42	17.138	26.536	32.964	39.183	1.199	1.88	496
600	16.029	36.154	4.07	15.932	26.652	33.114	39.363	1.362	2.61	595
700	13.550	35.765	3.60	13.449	26.894	33.428	39.745	1.509	3.05	694
800	10.973	35.404	3.41	10.871	27.114	33.728	40.122	1.633	2.59	792
900	8.815	35.167	3.45	8.714	27.295	33.980	40.443	1.738	2.87	891
1000	7.036	35.080	4.23	6.937	27.491	34.238	40.760	1.823	2.42	990
1200	5.139	35.022	5.37	5.035	27.689	34.506	41.095	1.948	1.27	1188
1400	4.649	35.012	5.75	4.530	27.739	34.575	41.182	2.054	0.95	1385
1600	4.307	34.993	5.95	4.173	27.762	34.612	41.233	2.155	0.70	1582
1800	4.046	34.982	6.05	3.897	27.782	34.643	41.274	2.254	0.63	1779
2000	3.914	34.982	6.10	3.748	27.798	34.665	41.301	2.352	0.61	1976
2500	3.533	34.976	6.08	3.323	27.835	34.719	41.371	2.594	0.66	2467
3000	3.050	34.951	6.12	2.798	27.864	34.769	41.442	2.829	0.63	2957
3500	2.641	34.930	6.21	2.345	27.887	34.810	41.501	3.054	0.64	3445
4000	2.371	34.910	6.15	2.026	27.898	34.835	41.538	3.269	0.35	3933
4500	2.290	34.900	6.05	1.889	27.900	34.843	41.552	3.490	0.38	4420
4513	2.288	34.900	6.06	1.886	27.901	34.844	41.553	3.496	0.17	4432

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
103	24.460	36.632	3.97	2.2	0.23	2.3	24.438	24.748	37.071	102
204	20.052	36.653	4.39	2.1	0.03	2.6	20.013	26.021	38.528	202
294	18.586	36.564	4.39	1.6	0.04	3.1	18.534	26.337	38.914	292
401	17.898	36.507	4.62	1.8	0.07	3.8	17.828	26.471	39.081	397
598	16.334	36.231	4.05	3.3	0.23	8.4	16.236	26.641	39.335	593
800	10.972	35.408	3.33	10.8	1.21	20.1	10.870	27.117	40.125	792
1000	7.037	35.081	4.18	13.8	1.31	19.9	6.938	27.492	40.760	990
1258	5.015	35.022	5.42	11.6	1.17	16.7	4.906	27.704	41.119	1244
1530	4.434	35.005	5.83	12.3	1.17	18.1	4.306	27.758	41.218	1513
1741	4.119	34.987	6.01	13.2	1.12	18.4	3.975	27.779	41.264	1721
1993	3.938	34.982	6.04	11.0	0.94	14.1	3.772	27.796	41.297	1968
2247	3.753		6.09	13.0	0.96	15.0				2219
2497	3.537	34.979	6.05	13.9	0.96	14.8	3.328	27.837	41.373	2463
2742	3.280	34.968	6.08	14.0	0.84	13.3	3.051	27.855	41.412	2703
2998	3.050	34.953	6.10	19.4	1.08	18.5	2.798	27.866	41.444	2954
3471	2.642	34.930	6.22	20.7	1.04	17.5	2.349	27.887	41.501	3417
3997	2.370	34.918	6.15	27.1	1.06	17.8	2.025	27.904	41.545	3929
4368	2.312	34.906	6.11	28.2	1.06	16.6	1.926	27.902	41.551	4291
4518	2.288	34.916	6.15				1.885	27.914	41.566	4437

ENDEAVOR 90 STA- 18 LAT= 38 29.1N LON= 61 5.7W SONIC DEPTH= 5120m
DATE 30/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.528	36.067	4.57	26.527	23.675	29.903	35.930	0.013	1.51	3
25	26.489	36.086	4.59	26.484	23.702	29.931	35.959	0.105	2.41	25
50	25.887	36.048	4.70	25.876	23.865	30.105	36.144	0.209	5.94	50
75	25.329	36.295	4.31	25.313	24.226	30.475	36.522	0.307	7.64	74
100	24.200	36.456	4.76	24.179	24.693	30.962	37.029	0.394	8.71	99
150	20.929	36.597	4.25	20.900	25.739	32.077	38.208	0.532	6.64	149
200	19.492	36.592	4.18	19.455	26.122	32.492	38.655	0.637	3.79	198
250	18.760	36.552	4.39	18.715	26.282	32.670	38.850	0.731	2.73	248
300	18.296	36.515	4.48	18.243	26.374	32.773	38.964	0.821	2.17	298
350	17.936	36.479	4.54	17.876	26.438	32.847	39.046	0.908	2.18	347
400	17.506	36.421	4.54	17.438	26.501	32.921	39.132	0.992	1.67	397
450	17.245	36.390	4.58	17.168	26.542	32.969	39.187	1.075	1.88	446
500	16.476	36.251	4.29	16.394	26.620	33.068	39.306	1.156	2.40	496
600	14.645	35.944	3.96	14.554	26.799	33.299	39.586	1.308	2.62	595
700	12.549	35.630	3.73	12.453	26.991	33.554	39.901	1.442	2.53	694
800	10.535	35.358	3.45	10.436	27.156	33.783	40.191	1.560	2.81	792
900	7.885	35.111	3.85	7.790	27.393	34.110	40.603	1.657	2.82	891
1000	6.269	35.057	4.64	6.175	27.575	34.350	40.898	1.731	2.13	990
1200	4.995	35.018	5.45	4.892	27.702	34.524	41.118	1.847	1.11	1188
1400	4.562	35.002	5.77	4.445	27.740	34.580	41.190	1.950	0.80	1385
1600	4.289	34.986	5.96	4.157	27.759	34.609	41.231	2.051	0.63	1582
1800	4.150	34.988	6.02	3.999	27.777	34.634	41.261	2.152	0.63	1779
2000	3.912	34.982	6.05	3.746	27.798	34.665	41.301	2.251	0.73	1976
2500	3.443	34.972	6.08	3.235	27.841	34.728	41.384	2.489	0.62	2466
3000	3.051	34.950	6.11	2.799	27.864	34.769	41.441	2.722	0.62	2956
3500	2.666	34.930	6.17	2.369	27.885	34.807	41.497	2.946	0.56	3445
4000	2.397	34.913	6.23	2.051	27.898	34.834	41.537	3.166	0.46	3933
4500	2.302	34.900	6.13	1.901	27.899	34.842	41.550	3.387	0.26	4419
5000	2.292	34.893	6.11	1.830	27.899	34.845	41.556	3.619	0.24	4905
5211	2.302	34.891	6.07	1.812	27.899	34.845	41.558	3.720	0.11	5110

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
6	26.527	36.144	4.61				26.525	23.733	35.987	6
102	24.137	36.537	4.36				24.115	24.773	37.110	101
204	19.352	36.619	4.44				19.315	26.179	38.718	202
401	17.617	36.458	4.54				17.549	26.502	39.127	397
604	14.682	35.970	3.93				14.590	26.811	39.596	598
794	10.771	35.386	3.37				10.671	27.136	40.156	787
1001	6.177	35.048	4.58				6.084	27.580	40.909	991
1250	4.796	35.011	5.58				4.690	27.720	41.151	1237
1498	4.380	34.994	5.88				4.256	27.754	41.219	1482
1746	4.106	34.980	6.02				3.961	27.774	41.261	1726
1995	3.893	34.982	6.05	14.6	1.06	18.4	3.727	27.800	41.305	1970
2244	3.675	34.980	6.09	16.2	1.13	18.7	3.488	27.823	41.346	2215
2496	3.454	34.972	6.10	16.4	1.03	16.4	3.246	27.840	41.382	2463
2752	3.292	34.964	6.09	18.2	1.07	17.6	3.061	27.851	41.408	2713
2996	3.085	34.951	6.14	20.5	1.13	18.3	2.833	27.861	41.436	2953
3491	2.648	34.928	6.18	24.4	1.32	19.1	2.353	27.885	41.499	3436
3996	2.396	34.912	6.24	22.8			2.051	27.897	41.536	3929
4487	2.308	34.904	6.19	28.6	1.29	19.1	1.908	27.902	41.552	4407
5081	2.288	34.892	6.08	33.8	1.20	18.2	1.816	27.900	41.558	4983
5217	2.303	34.890	6.06	36.1	1.24	18.8	1.812	27.898	41.557	5115

ENDEAVOR 90 STA- 19 LAT= 38 59.9N LON= 61 11.9W SONIC DEPTH= 4050m
DATE 30/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	26.615	35.989	4.91	26.614	23.588	29.815	35.841	0.013	4.66	3
25	26.474	36.023	4.53	26.468	23.660	29.889	35.918	0.106	1.12	25
50	26.426	36.074	4.46	26.415	23.715	29.945	35.974	0.212	4.29	50
75	25.856	36.299	4.16	25.839	24.066	30.305	36.342	0.314	8.74	74
100	23.726	36.557	4.44	23.705	24.910	31.188	37.263	0.401	9.13	99
150	20.424	36.605	4.55	20.395	25.882	32.231	38.373	0.529	5.64	149
200	19.045	36.557	4.48	19.008	26.211	32.592	38.765	0.630	3.99	198
250	18.265	36.497	4.33	18.222	26.365	32.766	38.957	0.720	2.75	248
300	17.740	36.451	4.55	17.688	26.462	32.876	39.080	0.805	1.88	298
350	17.426	36.407	4.49	17.367	26.507	32.929	39.142	0.888	2.21	347
400	16.645	36.275	4.22	16.578	26.595	33.038	39.271	0.969	2.55	397
450	15.689	36.107	3.91	15.618	26.688	33.159	39.416	1.046	2.57	446
500	14.502	35.910	3.59	14.427	26.800	33.304	39.595	1.119	3.03	496
600	11.681	35.504	3.48	11.602	27.057	33.647	40.019	1.246	2.69	595
700	9.376	35.232	3.44	9.295	27.252	33.917	40.361	1.353	2.76	694
800	7.247	35.093	4.18	7.167	27.469	34.208	40.722	1.438	2.75	792
900	5.910	35.052	4.86	5.829	27.616	34.403	40.963	1.504	1.91	891
1000	5.181	35.018	5.32	5.096	27.679	34.493	41.080	1.561	1.34	990
1200	4.520	34.997	5.79	4.422	27.739	34.579	41.190	1.662	0.83	1187
1400	4.279	34.991	5.95	4.165	27.762	34.612	41.233	1.758	0.70	1385
1600	4.067	34.984	6.03	3.936	27.781	34.640	41.269	1.853	0.63	1582
1800	3.902	34.981	6.09	3.755	27.797	34.663	41.299	1.948	0.61	1779
2000	3.759	34.981	6.10	3.595	27.813	34.685	41.328	2.042	0.64	1975
2500	3.353	34.969	6.07	3.147	27.847	34.737	41.397	2.273	0.61	2466
3000	2.943	34.947	6.09	2.693	27.871	34.780	41.457	2.499	0.61	2956
3500	2.538	34.924	6.14	2.245	27.891	34.819	41.514	2.718	0.56	3445
4000	2.307	34.907	6.09	1.964	27.900	34.839	41.546	2.931	0.49	3933
4059	2.276	34.904		1.928	27.900	34.841	41.549	2.956	0.40	3990

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
12	26.473	35.087	4.62				26.470	22.953	35.227	12
102	23.638	35.624	4.39				23.616	24.229	36.602	102
206	18.960	35.581	4.59				18.923	25.486	38.062	204
401	16.920	36.342	4.29				16.853	26.581	39.242	397
600	12.002	35.557	3.40				11.922	27.037	39.979	595
787	7.627	35.117	3.83				7.546	27.433	40.660	780
1000	5.170	35.011	5.26				5.085	27.674	41.076	990
1246	4.508	34.999	5.72				4.405	27.742	41.195	1232
1491	4.133	34.979	5.96				4.012	27.768	41.251	1475
1747	3.954	34.980	6.03				3.811	27.790	41.288	1726
1997	3.757	34.980	6.02	12.1	1.00	17.0	3.594	27.812	41.327	1972
2243	3.579	34.977	6.05	12.3	0.98	16.1	3.394	27.829	41.360	2214
2497	3.352	34.974	6.05	15.1	1.08	17.0	3.145	27.851	41.401	2464
2752	3.160	34.964	6.05	13.5	0.80	14.1	2.932	27.863	41.430	2714
2991	2.926	34.952	6.10				2.678	27.876	41.463	2947
3244	2.720	34.955	6.09	13.9	0.80	13.6	2.450	27.898	41.504	3195
3478	2.547	34.925	6.10	16.3	0.74	13.2	2.256	27.891	41.512	3424
3736	2.433	34.920	6.09	20.8	0.97	15.1	2.116	27.898	41.531	3675
3948	2.322	34.912	6.14	20.1	0.97	15.1	1.985	27.902	41.546	3881
4064	2.277	34.901	6.12	23.2	1.59	16.3	1.928	27.898	41.547	3995

ENDEAVOR 90 STA- 20 LAT= 39 29.7N LON= 61 17.8W SONIC DEPTH= 5090m
DATE 30/ 9/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	27.085	35.974	4.87	27.085	23.427	29.646	35.663	0.013	5.13	3
25	26.347	35.855	4.86	26.341	23.573	29.806	35.838	0.110	4.03	25
50	23.893	35.353	4.92	23.883	23.945	30.231	36.312	0.215	9.49	50
75	21.117	35.939	4.51	21.103	25.182	31.521	37.654	0.301	12.30	74
100	18.240	35.866	4.38	18.222	25.881	32.287	38.485	0.361	8.22	99
150	14.165	35.370	4.45	14.143	26.443	32.961	39.264	0.449	3.99	149
200	12.928	35.451	4.14	12.901	26.763	33.315	39.651	0.523	3.45	198
250	13.594	35.733	4.15	13.558	26.847	33.378	39.693	0.588	2.54	248
300	12.515	35.596	3.78	12.474	26.961	33.524	39.870	0.649	2.92	297
350	10.901	35.395	3.49	10.858	27.110	33.723	40.118	0.704	3.01	347
400	9.816	35.269	3.61	9.770	27.202	33.851	40.280	0.753	2.56	397
450	8.770	35.168	3.70	8.721	27.295	33.980	40.443	0.798	2.42	446
500	7.985	35.110	3.85	7.933	27.371	34.083	40.571	0.840	2.56	496
600	6.608	35.071	4.50	6.552	27.537	34.297	40.832	0.910	2.02	595
700	5.076	34.942	5.25	5.018	27.628	34.446	41.036	0.969	1.63	693
800	5.081	35.022	5.40	5.015	27.691	34.509	41.098	1.021	1.26	792
900	4.808	35.019	5.63	4.734	27.721	34.549	41.149	1.069	0.98	891
1000	4.529	35.003	5.82	4.449	27.741	34.580	41.190	1.116	0.79	990
1200	4.219	34.989	5.98	4.123	27.764	34.616	41.239	1.207	0.63	1187
1400	4.041	34.982	6.08	3.929	27.779	34.639	41.269	1.298	0.61	1385
1600	3.906	34.984	6.11	3.777	27.796	34.662	41.297	1.388	0.60	1582
1800	3.749	34.982	6.10	3.605	27.813	34.685	41.327	1.479	0.62	1779
2000	3.590	34.978	6.11	3.429	27.827	34.706	41.355	1.569	0.60	1975
2500	3.171	34.961	6.12	2.968	27.857	34.755	41.421	1.790	0.61	2466
3000	2.732	34.937	6.17	2.487	27.881	34.798	41.484	2.005	0.59	2956
3500	2.422	34.916	6.20	2.131	27.894	34.827	41.526	2.212	0.45	3445
4000	2.310	34.906	6.18	1.967	27.899	34.838	41.544	2.422	0.29	3932
4500	2.300	34.900	6.18	1.898	27.899	34.842	41.551	2.641	0.18	4419
5000	2.321	34.895	6.18	1.857	27.899	34.843	41.554	2.874	0.19	4905
5169	2.332	34.894	6.13	1.847	27.899	34.844	41.555	2.956	0.15	5068

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
8	27.268	36.001	4.67				27.266	23.389	35.618	8
204	14.885	35.765	4.56				14.855	26.595	39.370	202
301	13.321	35.703	4.05				13.279	26.882	39.743	298
401	10.382	35.342	3.25				10.333	27.162	40.204	398
600	6.613	35.075	4.40				6.557	27.539	40.834	594
800	5.064	35.022	5.38				4.997	27.693	41.102	793
995	4.567	35.008	5.75				4.486	27.740	41.187	985
1247	4.182	34.990	5.98	12.7	0.93	16.4	4.083	27.770	41.247	1233
1498	3.964	34.988	6.06	14.7	0.85	17.8	3.845	27.793	41.288	1482
1741	3.816	34.988	6.09	16.3	0.93	17.6	3.675	27.810	41.319	1721
1994	3.601	34.981	6.09	16.8	0.93	16.7	3.440	27.828	41.355	1969
2236	3.411	34.974	6.09	19.8	1.06	17.8	3.229	27.843	41.386	2207
2500	3.180	34.965	6.12	23.1	0.88	17.8	2.977	27.859	41.423	2466
2993	2.777	34.946	6.17	27.4	0.85	18.0	2.532	27.884	41.483	2949
3500	2.438	34.919	6.19	26.3	0.95	15.2	2.147	27.895	41.526	3444
3995	2.307	34.906	6.19	27.9	0.78	15.0	1.964	27.899	41.545	3927
4494	2.298	34.902	6.15	28.1	0.95	14.5	1.898	27.901	41.553	4413
5042	2.321	34.898	6.09	35.9	1.19	18.8	1.852	27.902	41.557	4945
5175	2.330	34.895	6.11	34.8	1.25	19.0	1.844	27.900	41.556	5074

ENDEAVOR 90 STA- 21 LAT= 40 0.1N LON= 61 24.5W SONIC DEPTH= 5030m
DATE 1/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	21.891	33.636	5.28	21.890	23.214	29.556	35.692	0.014	11.74	3
25	22.116	34.940	5.42	22.111	24.143	30.469	36.589	0.107	12.39	25
50	17.873	35.589	4.67	17.864	25.758	32.176	38.384	0.181	11.63	50
75	16.062	35.827	4.11	16.050	26.374	32.835	39.085	0.229	5.51	74
100	16.081	36.092	3.99	16.065	26.574	33.032	39.279	0.268	4.14	99
150	13.865	35.702	4.32	13.843	26.763	33.286	39.594	0.338	2.90	149
200	13.110	35.665	4.05	13.082	26.892	33.437	39.766	0.401	2.91	198
250	12.044	35.557	3.70	12.011	27.020	33.597	39.957	0.459	2.79	248
300	10.917	35.410	3.56	10.880	27.117	33.730	40.124	0.512	2.59	297
350	9.442	35.238	3.56	9.403	27.239	33.901	40.342	0.560	2.83	347
400	8.343	35.129	3.73	8.301	27.329	34.029	40.505	0.603	2.82	397
450	7.213	35.084	4.10	7.169	27.461	34.200	40.714	0.640	2.57	446
500	6.672	35.095	4.44	6.625	27.545	34.303	40.835	0.672	1.91	496
600	5.597	35.037	5.04	5.545	27.640	34.437	41.008	0.729	1.68	595
700	5.062	35.023	5.44	5.005	27.693	34.511	41.101	0.779	1.16	693
800	4.779	35.014	5.67	4.714	27.719	34.548	41.149	0.827	0.92	792
900	4.593	35.011	5.79	4.521	27.739	34.575	41.183	0.873	0.74	891
1000	4.448	35.003	5.90	4.368	27.749	34.591	41.205	0.918	0.65	990
1200	4.217	34.992	6.04	4.122	27.767	34.619	41.242	1.008	0.61	1187
1400	4.056	34.988	6.08	3.944	27.783	34.641	41.270	1.098	0.57	1385
1600	3.895	34.984	6.10	3.767	27.798	34.664	41.300	1.188	0.59	1582
1800	3.746	34.982	6.10	3.601	27.813	34.686	41.328	1.278	0.57	1779
2000	3.601	34.980	6.12	3.439	27.827	34.706	41.354	1.368	0.62	1975
2500	3.189	34.962	6.13	2.986	27.856	34.753	41.419	1.590	0.58	2466
3000	2.787	34.940	6.18	2.541	27.879	34.794	41.477	1.807	0.60	2956
3500	2.441	34.918	6.20	2.150	27.894	34.825	41.524	2.017	0.49	3445
4000	2.301	34.905	6.18	1.958	27.899	34.839	41.545	2.227	0.31	3932
4500	2.279	34.899	6.18	1.879	27.900	34.843	41.553	2.446	0.21	4419
5000	2.268	34.890	6.12	1.807	27.899	34.845	41.558	2.677	0.28	4904
5109	2.252	34.886	6.07	1.777	27.898	34.846	41.560	2.728	0.36	5010

PR dbar	T Deg. C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
	22.855	34.489	5.12				22.857	23.589	36.012	
103	14.945	35.816	4.22				14.929	26.618	39.387	102
203	13.310	35.710	4.08				13.281	26.887	39.748	201
400	8.344	35.138	3.54				8.302	27.337	40.512	397
598	5.792	35.035	4.87				5.740	27.614	40.968	593
798	4.870	35.016	5.52				4.805	27.711	41.133	791
993	4.438	35.003	5.83				4.358	27.750	41.207	983
1251	4.109	34.977	6.06				4.010	27.767	41.250	1238
1468	4.010	34.991	6.06				3.893	27.790	41.282	1451
1707	3.830	34.986	6.09				3.692	27.807	41.314	1687
1997	3.594	34.981	6.07	16.2	0.81	19.0	3.433	27.829	41.356	1972
2245	3.391	34.971	6.12	17.5	1.01	19.2	3.209	27.842	41.387	2216
2488	3.193	34.963	6.11	19.7	1.01	19.4	2.990	27.857	41.419	2454
2695	3.022	34.954	6.13	20.2	0.95	19.5	2.802	27.867	41.444	2657
2993	2.776	34.941	6.18	22.4	1.04	19.3	2.531	27.880	41.479	2949
3490	2.438	34.919	6.22	26.5	0.88	19.7	2.148	27.895	41.525	3435
3990	2.304	34.905	6.18	30.8	1.09	20.2	1.962	27.899	41.545	3923
4489	2.278	34.900	6.13	33.0	1.10	20.4	1.879	27.901	41.554	4408
4984	2.274	34.891	6.07	37.0	1.11	20.9	1.814	27.899	41.557	4889
5114	2.253	34.888	6.18	38.4	1.17	20.1	1.777	27.900	41.561	5015

ENDEAVOR 90 STA- 22 LAT= 40 30.1N LON= 61 30.1W SONIC DEPTH= 4830m
DATE 1/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	23.243	34.910	5.13	23.243	23.797	30.100	36.197	0.012	0.42	3
25	22.033	35.217	5.27	22.028	24.376	30.701	36.821	0.100	13.49	25
50	17.617	35.457	4.97	17.609	25.719	32.145	38.360	0.173	12.15	50
75	15.296	35.565	4.22	15.285	26.345	32.830	39.101	0.221	7.55	74
100	14.594	35.731	4.15	14.580	26.629	33.130	39.419	0.259	4.47	99
150	13.898	35.784	4.27	13.877	26.820	33.341	39.647	0.325	2.57	149
200	12.640	35.614	3.92	12.613	26.947	33.506	39.848	0.386	2.99	198
250	11.332	35.455	3.60	11.301	27.075	33.674	40.056	0.441	2.84	248
300	10.062	35.304	3.49	10.027	27.185	33.826	40.247	0.490	2.58	297
350	9.023	35.192	3.55	8.984	27.271	33.947	40.401	0.535	2.30	347
400	8.138	35.131	3.84	8.097	27.363	34.069	40.552	0.577	2.62	397
450	7.185	35.087	4.24	7.142	27.468	34.208	40.723	0.613	2.50	446
500	6.458	35.060	4.57	6.413	27.546	34.312	40.852	0.646	2.14	496
600	5.729	35.070	5.08	5.677	27.649	34.442	41.007	0.702	1.66	595
700	5.035	35.020	5.45	4.977	27.694	34.513	41.104	0.751	1.19	693
800	4.741	35.012	5.66	4.676	27.722	34.553	41.155	0.798	0.92	792
900	4.529	35.003	5.81	4.458	27.740	34.579	41.189	0.844	0.69	891
1000	4.338	34.992	5.94	4.259	27.752	34.599	41.216	0.889	0.71	990
1200	4.129	34.985	6.06	4.034	27.771	34.626	41.252	0.978	0.59	1187
1400	3.970	34.983	6.12	3.859	27.787	34.650	41.282	1.066	0.58	1385
1600	3.818	34.982	6.14	3.690	27.804	34.673	41.311	1.155	0.67	1582
1800	3.688	34.987	6.05	3.544	27.822	34.697	41.341	1.243	0.48	1778
2000	3.551	34.979	6.10	3.390	27.832	34.712	41.362	1.331	0.60	1975
2500	3.101	34.958	6.13	2.899	27.861	34.762	41.431	1.549	0.60	2466
3000	2.675	34.934	6.17	2.431	27.883	34.803	41.491	1.761	0.59	2956
3500	2.368	34.914	6.19	2.079	27.896	34.831	41.532	1.966	0.47	3445
4000	2.242	34.900	6.15	1.900	27.900	34.842	41.551	2.172	0.22	3932
4500	2.267	34.897	6.14	1.867	27.900	34.844	41.554	2.388	0.11	4419
4911	2.287	34.894	6.09	1.836	27.900	34.845	41.557	2.577	0.25	4818

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
14	23.135	34.972	5.03				23.132	23.876	36.279	14
101	14.069	35.699	4.14				14.054	26.717	39.536	100
200	12.686	35.614	3.93				12.658	26.938	39.836	198
301	10.150	35.312	3.30				10.115	27.176	40.232	299
399	8.164	35.131	3.60				8.122	27.359	40.546	395
600	5.605	35.068	5.05				5.553	27.663	41.030	594
796	4.689	35.008	5.66				4.626	27.725	41.161	788
997	4.312	34.989	5.90				4.233	27.753	41.219	987
1245	4.071	34.984	6.04				3.973	27.776	41.262	1232
1494	3.878	34.980	6.10				3.759	27.795	41.298	1477
1749	3.696	34.980	6.09	10.0	0.62	11.7	3.556	27.816	41.334	1728
1996	3.566	34.977	6.12	13.9	0.90	14.8	3.405	27.828	41.358	1971
2240	3.343	34.970	6.14	15.5	0.96	15.5	3.162	27.846	41.395	2211
2502	3.130	34.958	6.11	19.8	1.10	18.6	2.927	27.858	41.426	2468
2992	2.707	34.933	6.18	16.7	0.94	13.0	2.463	27.880	41.485	2948
3490	2.373	34.911	6.21	27.1	1.09	18.6	2.085	27.894	41.529	3435
3993	2.240	34.904	6.14	28.2	1.04	16.4	1.899	27.903	41.554	3925
4493	2.266	34.895	6.11	31.3	1.15	15.8	1.867	27.898	41.552	4411
4826	2.287	34.893	6.11				1.847	27.898	41.554	4735
4915	2.288	34.894	6.12				1.836	27.900	41.556	4822

ENDEAVOR 90 STA- 23 LAT= 41 0.3N LON= 61 36.1W SONIC DEPTH= 4540m
DATE 1/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	22.384	34.458	5.11	22.383	23.700	30.024	36.143	0.021	8.14	5
25	22.820	35.181	5.04	22.815	24.126	30.434	36.538	0.101	14.84	25
50	18.389	35.962	4.24	18.380	25.916	32.317	38.510	0.170	10.47	50
75	15.328	35.760	4.14	15.316	26.489	32.970	39.239	0.215	6.55	74
100	14.398	35.742	4.11	14.383	26.680	33.187	39.480	0.251	3.62	99
150	14.191	35.873	3.99	14.169	26.827	33.339	39.636	0.317	2.56	149
200	12.968	35.664	3.90	12.941	26.920	33.469	39.801	0.378	2.63	198
250	11.826	35.521	3.59	11.794	27.034	33.618	39.985	0.435	2.90	248
300	10.460	35.348	3.44	10.424	27.150	33.778	40.187	0.486	2.92	297
350	9.097	35.185	3.59	9.058	27.254	33.928	40.380	0.533	2.47	347
400	8.289	35.146	3.79	8.247	27.352	34.053	40.531	0.575	2.49	397
450	7.343	35.082	4.14	7.299	27.441	34.175	40.685	0.612	2.44	446
500	6.217	34.978	4.52	6.172	27.514	34.289	40.838	0.646	2.13	496
600	5.641	35.018	4.98	5.590	27.619	34.415	40.984	0.705	1.72	594
700	5.069	35.008	5.39	5.011	27.680	34.498	41.088	0.756	1.26	693
800	4.695	34.994	5.65	4.631	27.713	34.546	41.149	0.804	1.02	792
900	4.535	34.995	5.78	4.463	27.732	34.571	41.181	0.851	0.83	891
1000	4.357	34.985	5.91	4.278	27.745	34.591	41.208	0.896	0.66	990
1200	4.124	34.978	6.03	4.029	27.766	34.621	41.247	0.986	0.62	1187
1400	3.996	34.977	6.11	3.885	27.780	34.642	41.273	1.076	0.58	1384
1600	3.879	34.981	6.11	3.751	27.797	34.663	41.300	1.167	0.57	1582
1800	3.721	34.978	6.11	3.576	27.812	34.685	41.328	1.257	0.61	1778
2000	3.544	34.972	6.14	3.383	27.826	34.707	41.358	1.347	0.60	1975
2500	3.163	34.959	6.14	2.960	27.856	34.754	41.421	1.568	0.57	2466
3000	2.814	34.941	6.17	2.568	27.877	34.791	41.473	1.785	0.60	2956
3500	2.450	34.919	6.22	2.159	27.894	34.825	41.524	1.996	0.51	3444
4000	2.297	34.908	6.26	1.954	27.902	34.842	41.548	2.206	0.35	3932
4500	2.234	34.896	6.17	1.835	27.902	34.847	41.558	2.422	0.27	4418
4713	2.234	34.891	6.07	1.809	27.899	34.845	41.558	2.518	0.09	4625

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	22.613	34.719	5.09	0.6			22.611	23.833	36.263	10
103	14.500	35.797	4.20	4.4	0.28	12.0	14.485	26.700	39.494	102
191	13.264	35.747	3.87	7.0	0.67	17.5	13.237	26.924	39.787	189
398	7.734	35.081	3.81	14.7	1.25	24.3	7.693	27.383	40.601	395
599	5.602	35.033	4.98	14.0	1.12	22.0	5.550	27.636	41.003	594
798	4.753	35.002	5.64	12.6	1.04	21.2	4.689	27.713	41.144	790
989	4.364	34.983	5.89	12.3	0.99	20.6	4.285	27.742	41.205	979
1243	4.084	34.979		11.2	0.90	18.0	3.986	27.771	41.256	1230
1495	3.944	34.982	6.09	13.1	1.00	20.5	3.825	27.790	41.287	1478
1744	3.762	34.979	6.18	12.4	0.90		3.622	27.808	41.321	1723
1957	3.618	34.983	6.07	10.9	0.69	14.0	3.460	27.828	41.353	1933
2190	3.452	34.975	6.13	14.6	0.93	17.8	3.274	27.839	41.379	2162
2495	3.196	34.966	6.15	14.6	0.86	15.4	2.993	27.859	41.421	2461
2734	3.016	34.953	6.13	13.9	0.76	13.3	2.792	27.867	41.445	2695
2995	2.815	34.948	6.17	16.3	0.81	14.5	2.569	27.883	41.479	2951
3497	2.448	34.919	6.25	15.1	0.62	11.6	2.157	27.894	41.524	3441
3997	2.292	34.910		21.6	0.93	15.6	1.950	27.904	41.550	3929
4304	2.255	34.904	6.24	20.8	0.86	13.6	1.878	27.904	41.557	4228
4592	2.230	34.900	6.06	26.3	0.95	15.3	1.820	27.906	41.563	4508
4717	2.235	34.890	6.06	26.2	0.91	14.7	1.809	27.899	41.557	4629

ENDEAVOR 90 STA- 24 LAT= 41 29.9N LON= 61 42.0W SONIC DEPTH= 4360m
DATE 2/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	22.163	34.524	5.04	22.162	23.812	30.141	36.264	0.020	0.77	5
25	22.227	34.840	5.28	22.222	24.036	30.360	36.479	0.101	13.54	25
50	14.919	35.057	5.03	14.912	26.036	32.535	38.821	0.172	11.42	50
75	14.816	35.594	4.31	14.804	26.474	32.971	39.254	0.216	5.81	74
100	13.418	35.476	4.34	13.404	26.680	33.218	39.540	0.252	4.05	99
150	13.058	35.595	4.41	13.037	26.848	33.394	39.725	0.317	2.46	149
200	12.509	35.588	4.01	12.482	26.953	33.516	39.862	0.376	2.66	198
250	11.446	35.470	3.65	11.414	27.066	33.662	40.040	0.431	2.71	248
300	10.269	35.326	3.53	10.233	27.167	33.801	40.215	0.482	2.59	297
350	8.859	35.168	3.62	8.821	27.279	33.960	40.420	0.527	2.69	347
400	8.026	35.127	3.86	7.985	27.376	34.086	40.573	0.568	2.68	396
450	7.142	35.086	4.18	7.099	27.473	34.214	40.731	0.604	2.47	446
500	6.534	35.066	4.53	6.488	27.541	34.304	40.842	0.637	2.02	496
600	5.545	35.026	5.08	5.493	27.637	34.437	41.009	0.693	1.61	594
700	5.090	35.019	5.38	5.032	27.686	34.503	41.092	0.744	1.11	693
800	4.787	35.007	5.61	4.722	27.713	34.542	41.142	0.792	0.93	792
900	4.588	34.999	5.75	4.516	27.730	34.567	41.175	0.838	0.80	891
1000	4.472	35.001	5.82	4.392	27.745	34.586	41.199	0.884	0.69	990
1200	4.243	34.993	5.95	4.147	27.765	34.616	41.237	0.975	0.60	1187
1400	4.074	34.986	6.02	3.962	27.779	34.637	41.266	1.066	0.56	1384
1600	3.940	34.982	6.08	3.811	27.792	34.656	41.290	1.157	0.55	1581
1800	3.810	34.982	6.09	3.665	27.807	34.676	41.316	1.249	0.55	1778
2000	3.713	34.983	6.09	3.550	27.819	34.693	41.337	1.341	0.62	1975
2500	3.168	34.960	6.09	2.965	27.856	34.754	41.421	1.566	0.60	2466
3000	2.785	34.938	6.18	2.539	27.877	34.793	41.476	1.782	0.58	2956
3500	2.430	34.918	6.24	2.139	27.895	34.827	41.526	1.993	0.51	3444
4000	2.269	34.906	6.25	1.927	27.902	34.843	41.551	2.200	0.34	3932
4437	2.229	34.897	6.10	1.837	27.902	34.847	41.559	2.388	0.28	4357

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	22.081	34.492	5.04				22.080	23.811	36.267	10
107	13.418	35.591	4.42				13.403	26.769	39.626	106
207	12.235	35.564	4.14				12.207	26.988	39.913	205
305	9.935	35.292	3.37				9.900	27.198	40.268	302
402	8.099	35.136	4.86				8.057	27.372	40.564	398
601	5.526	35.013	5.02				5.475	27.629	41.003	595
796	4.851	35.013	5.58				4.787	27.710	41.135	788
996	4.466	35.007	5.77				4.386	27.750	41.205	986
1241	4.207	34.989					4.108	27.766	41.242	1228
1495	4.003	34.984	6.02				3.883	27.786	41.279	1478
1742	3.834	34.982	6.05				3.693	27.804	41.311	1721
1996	3.712	34.982	6.05	14.9	0.98	18.8	3.549	27.818	41.336	1971
2195	3.509	34.975	6.07	17.0	1.03	18.9	3.330	27.834	41.369	2166
2381	3.244	34.963	6.12	19.2	1.03	18.9	3.052	27.851	41.408	2349
2663	3.050	34.952	6.15	20.6	1.03	18.8	2.833	27.862	41.437	2625
2992	2.780	34.941	6.36	21.1	0.82	18.6	2.535	27.880	41.479	2947
3494	2.425	34.916	6.27	23.4	0.97	18.4	2.135	27.894	41.525	3438
3998	2.268	34.902	6.23	25.5	1.03	18.5	1.927	27.899	41.548	3930
4323	2.243	34.900	6.23				1.864	27.902	41.556	4245
4441	2.229	34.899	6.15	32.1	1.03	19.1	1.837	27.904	41.560	4360

ENDEAVOR 90 STA- 25 LAT= 41 60.0N LON= 61 48.0W SONIC DEPTH= 3868m
DATE 2/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	22.124	34.754	5.50	22.123	23.998	30.325	36.447	0.012	2.09	3
25	21.700	34.869	5.60	21.695	24.205	30.541	36.670	0.097	14.25	25
50	16.414	35.524	4.63	16.406	26.058	32.513	38.757	0.163	9.88	50
75	15.409	35.835	4.05	15.398	26.528	33.007	39.273	0.206	5.55	74
100	14.461	35.731	4.22	14.446	26.658	33.163	39.455	0.242	3.62	99
150	13.424	35.644	4.42	13.403	26.810	33.346	39.666	0.308	2.37	149
200	12.998	35.638	4.14	12.970	26.894	33.442	39.774	0.371	2.54	198
250	11.990	35.536	3.73	11.957	27.015	33.594	39.955	0.429	3.08	248
300	10.394	35.332	3.55	10.358	27.150	33.780	40.191	0.481	2.97	297
350	8.984	35.188	3.64	8.946	27.274	33.952	40.407	0.527	2.83	347
400	7.910	35.099	3.90	7.869	27.372	34.086	40.577	0.568	2.51	396
450	7.112	35.064	4.19	7.068	27.460	34.203	40.721	0.604	2.45	446
500	6.138	34.986	4.58	6.094	27.530	34.308	40.860	0.637	2.02	495
600	5.163	34.949	5.19	5.113	27.622	34.437	41.023	0.695	1.61	594
700	4.639	34.930	5.57	4.583	27.667	34.502	41.108	0.746	1.11	693
800	4.379	34.932	5.82	4.317	27.698	34.544	41.159	0.795	0.89	792
900	4.333	34.951	5.93	4.262	27.720	34.567	41.184	0.842	0.80	891
1000	4.072	34.929	6.06	3.995	27.730	34.588	41.215	0.888	0.60	990
1200	3.851	34.917	6.21	3.759	27.745	34.612	41.249	0.980	0.54	1187
1400	3.906	34.948	6.14	3.795	27.766	34.631	41.266	1.072	0.58	1384
1600	3.863	34.962	6.15	3.735	27.783	34.651	41.288	1.164	0.52	1581
1800	3.781	34.970	6.15	3.636	27.800	34.671	41.312	1.257	0.60	1778
2000	3.649	34.972	6.17	3.486	27.816	34.693	41.340	1.350	0.62	1975
2500	3.229	34.960	6.16	3.025	27.851	34.746	41.410	1.577	0.64	2466
3000	2.711	34.933	6.24	2.467	27.879	34.798	41.484	1.795	0.62	2955
3500	2.366	34.915	6.29	2.077	27.898	34.832	41.534	2.002	0.55	3444
3905	2.196	34.901	6.16	1.867	27.903	34.846	41.556	2.166	0.39	3839

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	22.092	34.854	5.10				22.090	24.083	36.532	10
100	14.521	35.747	4.23				14.507	26.657	39.450	99
203	13.004	35.654	4.16				12.976	26.905	39.785	201
399	8.034	35.108	3.68				7.993	27.360	40.557	396
601	5.168	34.945	5.14				5.119	27.618	41.019	595
789	4.665	34.970	5.63				4.601	27.697	41.136	781
996	4.126	34.942	6.12				4.049	27.735	41.216	986
1203	3.830	34.916	6.28				3.737	27.747	41.252	1190
1400	3.842	34.939	6.24				3.733	27.765	41.271	1384
1596	3.861	34.960	6.16				3.733	27.782	41.287	1577
1794	3.771	34.968	6.14				3.626	27.799	41.312	1772
1996	3.630	34.972	6.17	14.8	0.94	18.3	3.468	27.818	41.343	1971
2240	3.471	34.968	6.16	16.1	0.68	18.5	3.289	27.832	41.371	2210
2468	3.236	34.958	6.18	17.4	0.98	18.2	3.034	27.849	41.407	2435
2742	3.016	34.950	6.17	19.5	0.97	18.2	2.792	27.864	41.443	2703
2980	2.741	34.942	6.28	17.8	0.84	17.7	2.498	27.884	41.486	2935
3246	2.550	34.924	6.35	19.5	0.94	17.4	2.283	27.888	41.507	3196
3493	2.366	34.916	6.36	21.2	0.97	17.5	2.077	27.898	41.535	3437
3821	2.224	34.904	6.28	26.6	1.03	17.9	1.903	27.903	41.553	3757
3910	2.197	34.901	6.24	30.0	1.09	18.6	1.867	27.903	41.557	3844

ENDEAVOR 90 STA- 26 LAT= 42 30.0N LON= 61 54.0W SONIC DEPTH= 2295m
DATE 2/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	18.485	32.828	5.66	18.484	23.491	29.920	36.139	0.013	1.14	3
25	17.204	33.157	6.17	17.200	24.054	30.512	36.758	0.108	15.78	25
50	11.444	34.039	5.28	11.438	25.948	32.558	38.950	0.180	13.19	50
75	14.532	35.535	4.40	14.521	26.490	32.995	39.287	0.223	6.33	74
100	13.977	35.648	4.45	13.962	26.697	33.216	39.522	0.259	3.76	99
150	13.117	35.612	4.53	13.097	26.849	33.393	39.722	0.324	2.81	149
200	12.384	35.586	4.00	12.357	26.975	33.542	39.892	0.383	2.84	198
250	10.517	35.323	3.74	10.487	27.120	33.746	40.152	0.436	3.05	248
300	9.379	35.233	3.58	9.345	27.244	33.908	40.350	0.483	2.67	297
350	8.372	35.125	3.81	8.335	27.322	34.020	40.495	0.526	2.37	347
400	7.577	35.073	4.03	7.537	27.400	34.126	40.628	0.565	2.67	396
450	6.383	34.993	4.43	6.342	27.503	34.272	40.815	0.599	2.58	446
500	5.290	34.884	4.91	5.249	27.554	34.364	40.947	0.630	1.75	495
600	5.051	34.951	5.26	5.002	27.637	34.455	41.046	0.685	1.48	594
700	4.489	34.927	5.67	4.434	27.681	34.522	41.134	0.735	1.12	693
800	4.562	34.977	5.74	4.499	27.714	34.552	41.161	0.782	0.91	792
900	4.233	34.950	5.93	4.164	27.729	34.580	41.201	0.828	0.71	891
1000	4.180	34.956	5.96	4.103	27.741	34.594	41.217	0.873	0.65	990
1200	4.045	34.959	6.04	3.951	27.759	34.618	41.247	0.964	0.60	1187
1400	3.880	34.952	6.14	3.770	27.772	34.638	41.274	1.055	0.50	1384
1600	3.805	34.962	6.11	3.678	27.789	34.659	41.298	1.146	0.64	1581
1800	3.707	34.971	6.10	3.563	27.808	34.682	41.326	1.236	0.57	1778
2000	3.573	34.972	6.09	3.412	27.824	34.704	41.353	1.327	0.62	1975
2319	3.348	34.965	6.09	3.159	27.842	34.732	41.391	1.469	0.52	2288

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
301	9.412	.	3.78							298
401	7.310	35.061	3.98				7.271	27.429	40.675	398
601	5.037	34.947	5.26				4.988	27.635	41.046	595
798	4.596	34.980	5.73				4.533	27.713	41.157	789
992	4.146	34.949	6.06				4.070	27.738	41.218	981
1202	3.990		6.20							1189
1398	3.876	34.949	6.19				3.766	27.770	41.272	1382
1596	3.798	34.960	6.35				3.671	27.788	41.298	1578
1796	3.711	34.970	6.14	14.1	0.82	18.3	3.567	27.807	41.324	1774
1998	3.573	34.972	6.17	15.4	1.04	18.5	3.412	27.824	41.353	1972
2212	3.402	34.978	6.19	15.1	0.97	18.4	3.223	27.847	41.390	2183
2322	3.348	34.962	6.17	17.3	1.05	18.3	3.159	27.840	41.389	2291

ENDEAVOR 90 STA- 27 LAT= 43 0.1N LON= 62 0.2W SONIC DEPTH= 130m
DATE 2/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	18.509	32.689	5.77	18.508	23.379	29.809	36.028	0.022	0.97	5
25	17.431	32.974	6.31	17.427	23.860	30.314	36.557	0.112	17.26	25
50	9.040	33.506	5.85	9.034	25.943	32.636	39.106	0.182	11.09	50
75	9.055	34.108	5.23	9.047	26.413	33.099	39.562	0.228	7.22	74
100	6.453	34.053	5.20	6.444	26.747	33.524	40.074	0.265	6.41	99
129	9.287	34.807	4.66	9.273	26.923	33.594	40.043	0.299	2.25	128

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
8	18.460	32.626	5.51				18.458	23.344	35.996	8
104	6.271	34.106	5.53				6.262	26.813	40.151	103
131	9.633	34.838	4.57				9.618	26.890	39.988	130

ENDEAVOR 90 STA- 28 LAT= 40 29.7N LON= 62 18.6W SONIC DEPTH= 4890m
DATE 4/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	21.224	34.332	5.19	21.224	23.926	30.277	36.421	0.012	1.50	3
25	21.249	34.348	5.25	21.244	23.933	30.283	36.427	0.099	7.81	25
50	16.921	35.496	4.37	16.913	25.917	32.360	38.591	0.178	12.63	50
75	14.821	35.545	4.32	14.810	26.435	32.933	39.216	0.223	7.37	74
100	13.800	35.574	4.14	13.786	26.677	33.202	39.513	0.260	3.75	99
150	13.031	35.616	4.11	13.010	26.869	33.416	39.748	0.325	2.96	149
200	11.857	35.495	3.77	11.831	27.006	33.590	39.955	0.382	2.80	198
250	10.978	35.416	3.52	10.947	27.110	33.720	40.113	0.435	2.78	248
300	9.583	35.253	3.55	9.549	27.226	33.883	40.319	0.483	2.61	297
350	8.361	35.133	3.79	8.324	27.329	34.028	40.504	0.525	2.69	347
400	7.439	35.090	4.11	7.400	27.434	34.164	40.671	0.563	2.61	397
450	6.715	35.073	4.40	6.673	27.522	34.278	40.809	0.597	2.31	446
500	6.158	35.062	4.71	6.113	27.588	34.364	40.915	0.627	1.91	496
600	5.339	35.029	5.20	5.289	27.664	34.471	41.051	0.679	1.39	595
700	4.977	35.028	5.46	4.919	27.707	34.528	41.121	0.728	1.09	693
800	4.672	35.014	5.70	4.608	27.731	34.564	41.169	0.773	0.91	792
900	4.460	35.002	5.77	4.388	27.747	34.588	41.201	0.818	0.71	891
1000	4.326	34.999	5.95	4.247	27.759	34.606	41.224	0.862	0.70	990
1200	4.109	34.990	6.03	4.015	27.777	34.633	41.260	0.950	0.60	1187
1400	3.913	34.982	6.10	3.802	27.793	34.657	41.292	1.037	0.59	1385
1600	3.777	34.982	6.09	3.651	27.808	34.678	41.318	1.125	0.56	1582
1800	3.660	34.981	6.09	3.516	27.821	34.697	41.342	1.212	0.55	1778
2000	3.510	34.978	6.07	3.350	27.834	34.717	41.368	1.300	0.58	1975
2500	3.117	34.959	6.08	2.915	27.860	34.760	41.428	1.517	0.58	2466
3000	2.738	34.937	6.15	2.493	27.881	34.798	41.483	1.730	0.57	2956
3500	2.411	34.916	6.17	2.121	27.895	34.828	41.527	1.939	0.48	3445
4000	2.276	34.903	6.12	1.934	27.899	34.840	41.548	2.147	0.30	3932
4500	2.255	34.896	6.09	1.855	27.900	34.844	41.555	2.364	0.21	4419
4891	2.247	34.889	6.11	1.800	27.899	34.845	41.558	2.542	0.26	4798

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
7	21.908	34.705	5.06				21.907	24.021	36.480	7
98	13.648	35.580	4.15				13.634	26.713	39.557	97
199	12.048	35.549	3.67				12.022	27.012	39.949	197
403	7.276	35.094	4.00				7.237	27.460	40.708	399
594	5.436	35.033	5.11				5.385	27.656	41.036	589
790	4.699	35.138	5.66				4.635	27.827	41.259	782
1001	4.339	34.945	5.89				4.260	27.715	41.180	990
1250	4.100	34.990	6.02				4.002	27.778	41.262	1236
1499	3.882	34.983	6.07				3.763	27.797	41.299	1482
1743	3.719	34.980	6.11				3.580	27.813	41.329	1722
1986	3.548	34.982	6.11	16.6	0.93	18.9	3.389	27.834	41.365	1961
2240	3.304	34.969	6.13	18.7	1.02	19.1	3.124	27.849	41.401	2211
2486	3.127	34.958	6.16	19.9	0.65	19.1	2.926	27.859	41.426	2452
2713	2.931	34.951	6.13	20.9	0.70	18.9	2.711	27.872	41.457	2675
2983	2.707	34.937	6.22	22.7	1.04	19.3	2.465	27.883	41.487	2939
3489	2.382	34.915	6.23	26.7	0.87	19.4	2.093	27.896	41.531	3434
3997	2.268	34.903	6.17	31.3	1.09	19.8	1.927	27.900	41.549	3929
4486	2.251	34.897	6.10	35.1	1.03	20.7	1.853	27.901	41.556	4405
4758	2.252	34.893	6.10	35.7	1.09	20.4	1.821	27.900	41.558	4669
4894	2.247	34.891	6.16	35.8	0.67	20.4	1.800	27.900	41.560	4801

ENDEAVOR 90 STA- 29 LAT= 39 32.6N LON= 65 5.0W SONIC DEPTH= 4692m
DATE 5/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	25.583	36.118	4.70	25.582	24.009	30.254	36.298	0.019	0.48	5
25	25.588	36.119	4.70	25.582	24.010	30.255	36.298	0.097	0.26	25
50	25.590	36.119	4.69	25.579	24.011	30.256	36.300	0.195	0.60	50
75	25.161	36.371	4.37	25.145	24.335	30.587	36.636	0.292	10.52	74
100	22.631	36.565	4.50	22.610	25.235	31.536	37.632	0.372	8.79	99
150	20.158	36.602	4.47	20.130	25.951	32.306	38.453	0.491	5.51	149
200	19.001	36.555	4.28	18.965	26.220	32.602	38.776	0.589	3.02	198
250	18.423	36.520	4.33	18.379	26.343	32.739	38.927	0.680	2.53	248
300	18.082	36.503	4.59	18.029	26.417	32.823	39.018	0.767	1.95	297
350	17.868	36.485	4.66	17.808	26.459	32.870	39.071	0.852	1.18	347
400	17.639	36.454	4.64	17.571	26.493	32.910	39.117	0.936	1.74	397
450	17.305	36.398	4.54	17.228	26.534	32.960	39.176	1.020	1.72	446
500	16.770	36.301	4.30	16.687	26.589	33.030	39.259	1.102	2.50	496
600	14.912	35.988	4.08	14.820	26.775	33.268	39.547	1.255	2.54	595
700	12.544	35.627	3.78	12.448	26.990	33.553	39.900	1.392	2.99	693
800	9.691	35.264	3.56	9.597	27.227	33.882	40.316	1.506	2.90	792
900	7.489	35.107	4.08	7.397	27.447	34.178	40.684	1.596	2.76	891
1000	6.035	35.058	4.80	5.943	27.606	34.389	40.945	1.665	1.82	990
1200	4.951	35.030	5.48	4.849	27.717	34.540	41.136	1.777	1.14	1187
1400	4.443	34.999	5.84	4.327	27.750	34.594	41.209	1.877	0.70	1385
1600	4.169	34.981	6.02	4.037	27.768	34.623	41.249	1.976	0.64	1582
1800	3.989	34.979	6.10	3.841	27.786	34.649	41.282	2.073	0.66	1779
2000	3.810	34.977	6.13	3.645	27.805	34.675	41.316	2.170	0.65	1975
2500	3.389	34.970	6.10	3.182	27.845	34.734	41.392	2.406	0.65	2466
3000	2.906	34.944	6.17	2.657	27.872	34.782	41.461	2.632	0.65	2956
3500	2.450	34.918	6.20	2.158	27.893	34.825	41.523	2.846	0.53	3445
4000	2.285	34.904	6.17	1.942	27.899	34.840	41.547	3.055	0.33	3932
4500	2.253	34.896	6.13	1.853	27.900	34.845	41.555	3.272	0.23	4419
4779	2.232	34.889	6.08	1.799	27.899	34.845	41.558	3.399	0.30	4690

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
2	25.588	36.191	4.65	1.3			25.587	24.063	36.350	2
103	22.404	36.696	4.29	1.2		2.0	22.383	25.400	37.804	102
205	18.801	36.585	4.58	1.2		2.5	18.764	26.295	38.860	203
400	17.544	36.476	4.60	1.9		4.8	17.475	26.534	39.162	396
601	14.950	36.021	3.98	4.9	0.31	11.9	14.858	26.792	39.561	595
800	9.983	35.303	3.39	14.1	1.07	23.0	9.887	27.208	40.279	792
999	6.020	35.061	4.77	14.5	1.28	20.5	5.928	27.610	40.951	989
1250	4.735	35.019	5.58	13.3	1.17	19.0	4.630	27.733	41.168	1236
1494	4.272	34.995	5.90	13.0	1.12	18.4	4.149	27.767	41.239	1478
1741	4.022	34.982	6.01	13.4	1.07	18.1	3.879	27.785	41.278	1720
1995	3.838	34.984	6.06	14.3	1.01	17.9	3.673	27.807	41.316	1970
2244	3.637	34.981	6.08	15.8	1.07	18.1	3.451	27.827	41.353	2215
2485	3.411	34.983	6.12	18.0	1.10	18.3	3.205	27.852	41.397	2452
2734	3.157	34.968	6.08	16.6	0.87	15.0	2.930	27.866	41.433	2696
2997	2.899	34.951	6.15	21.7	1.05	18.2	2.651	27.878	41.467	2953
3506	2.453	34.924	6.37	20.8	0.79	14.3	2.161	27.898	41.527	3450
3992	2.286	34.909	6.13	31.4	1.10	18.7	1.945	27.903	41.550	3924
4446	2.254	34.903	6.32	34.9	1.16	19.2	1.860	27.905	41.559	4366
4591	2.253	34.900	6.06	35.7	0.89	19.2	1.842	27.904	41.560	4507
4784	2.233	34.892	6.02	39.0	1.22	19.6	1.800	27.901	41.560	4694

ENDEAVOR 90 STA- 31 LAT= 40 42.1N LON= 64 49.5W SONIC DEPTH= 4120m
DATE 6/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	23.807	35.866	4.56	23.807	24.356	30.638	36.717	0.011	2.09	3
25	23.610	35.857	4.72	23.605	24.409	30.696	36.778	0.089	3.16	25
50	18.124	35.338	5.12	18.116	25.504	31.918	38.122	0.172	15.61	50
75	14.443	35.145	3.76	14.432	26.208	32.720	39.017	0.224	8.34	74
100	15.262	35.930	3.73	15.246	26.636	33.117	39.386	0.264	4.89	99
150	13.824	35.795	3.88	13.803	26.844	33.367	39.675	0.329	3.03	149
200	12.247	35.587	3.59	12.220	27.003	33.574	39.927	0.388	2.95	198
250	11.142	35.446	3.57	11.110	27.103	33.709	40.096	0.441	2.71	248
300	9.762	35.284	3.56	9.727	27.220	33.871	40.301	0.489	2.69	297
350	8.553	35.173	3.75	8.516	27.331	34.023	40.492	0.532	2.79	347
400	7.705	35.115	4.04	7.665	27.414	34.135	40.633	0.570	2.54	397
450	5.963	34.915	4.58	5.924	27.495	34.280	40.839	0.604	2.29	446
500	5.368	34.924	4.90	5.326	27.576	34.383	40.963	0.635	1.83	496
600	4.711	34.916	5.48	4.663	27.648	34.480	41.083	0.688	1.37	595
700	4.762	34.982	5.57	4.706	27.695	34.525	41.126	0.737	1.03	693
800	4.545	34.980	5.77	4.481	27.718	34.557	41.166	0.784	0.90	792
900	4.492	34.994	5.83	4.421	27.736	34.577	41.188	0.829	0.70	891
1000	4.080	34.944	6.07	4.003	27.741	34.598	41.226	0.875	0.62	990
1200	3.987	34.951	6.09	3.893	27.758	34.620	41.251	0.965	0.58	1187
1400	3.932	34.966	6.10	3.822	27.778	34.642	41.276	1.055	0.55	1385
1600	3.864	34.975	6.09	3.736	27.793	34.661	41.298	1.146	0.58	1582
1800	3.736	34.976	6.11	3.591	27.809	34.682	41.324	1.236	0.59	1778
2000	3.613	34.976	6.11	3.452	27.823	34.701	41.349	1.327	0.61	1975
2500	3.154	34.957	6.14	2.951	27.856	34.754	41.421	1.550	0.63	2466
3000	2.701	34.934	6.21	2.457	27.881	34.800	41.486	1.764	0.60	2956
3500	2.371	34.915	6.27	2.082	27.897	34.832	41.533	1.970	0.47	3444
4000	2.231	34.902	6.23	1.890	27.902	34.844	41.554	2.175	0.35	3932
4183	2.194	34.896	6.06	1.833	27.901	34.846	41.558	2.252	0.31	4110

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
15	22.780	35.586	4.95			1.8	22.777	24.444	36.851	15
102	15.189	35.926	4.38		0.28	9.7	15.173	26.649	39.403	101
202	12.352	35.620	3.37		0.88	20.9	12.325	27.008	39.926	201
398	8.101	35.154	3.79	15.6	1.31	23.9	8.060	27.386	40.578	395
599	4.805	34.915	5.35	14.7	0.93	20.4	4.758	27.636	41.064	594
793	4.498	34.966	5.76		1.07		4.436	27.712	41.164	785
988	4.345		5.88	14.7	1.14	19.7				978
1196	4.009	34.956	6.09	12.4	0.89	18.3	3.916	27.760	41.251	1183
1395	3.989	34.970	6.09	14.1	0.91	18.9	3.878	27.775	41.269	1380
1585	3.870	34.973	6.12	15.7	1.16	19.6	3.743	27.791	41.295	1566
1797	3.774	34.979	6.10	18.1	0.97	20.7	3.629	27.808	41.320	1775
1996	3.631	34.979	6.11	15.8	0.82	18.6	3.469	27.824	41.348	1971
2249	3.420	34.971	6.15	20.9	1.09	20.8	3.238	27.840	41.382	2220
2493	3.171	34.959	6.18	18.8	1.12	18.7	2.969	27.855	41.419	2459
2738	2.936	34.949	6.19	20.1	0.84	19.0	2.713	27.871	41.455	2699
2967	2.745	34.937	6.27	21.6	0.94	18.8	2.503	27.879	41.481	2923
3292	2.489	34.924	6.31		0.84		2.219	27.893	41.518	3241
3693	2.304	34.912	6.30	24.2	0.88	18.2	1.995	27.902	41.545	3632
4067	2.217		6.06	26.6	0.83	18.7				3997
4187	2.194	34.899	6.15	33.6	1.01	19.7	1.833	27.904	41.561	4114

ENDEAVOR 90 STA- 32 LAT= 40 17.4N LON= 64 59.1W SONIC DEPTH= 4360m
DATE 7/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	24.728	35.482	4.90	24.726	23.791	30.058	36.122	0.021	1.11	5
25	24.728	35.489	4.80	24.722	23.797	30.064	36.129	0.103	-0.60	25
50	23.377	35.469	4.97	23.366	24.184	30.479	36.570	0.205	13.51	50
75	19.585	35.831	4.20	19.572	25.509	31.884	38.051	0.280	10.52	74
100	17.062	35.797	4.26	17.045	26.117	32.553	38.779	0.334	7.12	99
150	15.162	35.876	4.02	15.139	26.617	33.103	39.375	0.416	4.33	149
200	14.115	35.810	4.01	14.085	26.796	33.311	39.611	0.485	2.97	198
250	12.847	35.632	3.88	12.812	26.921	33.474	39.811	0.548	3.08	248
300	11.640	35.498	3.48	11.602	27.052	33.642	40.014	0.604	2.23	297
350	10.597	35.365	3.51	10.555	27.140	33.764	40.168	0.656	2.59	347
400	9.583	35.247	3.50	9.537	27.224	33.881	40.317	0.704	2.48	397
450	8.646	35.181	3.75	8.597	27.324	34.013	40.480	0.749	2.48	446
500	7.663	35.108	4.02	7.613	27.417	34.140	40.639	0.788	2.65	496
600	5.693	34.940	4.76	5.641	27.551	34.346	40.914	0.855	1.84	595
700	5.585	35.045	5.03	5.524	27.648	34.446	41.018	0.912	1.55	693
800	5.130	35.032	5.35	5.063	27.694	34.509	41.097	0.963	1.09	792
900	4.713	35.007	5.64	4.640	27.722	34.554	41.158	1.011	0.95	891
1000	4.547	35.002	5.75	4.467	27.738	34.576	41.186	1.058	0.77	990
1200	4.268	34.994	5.93	4.172	27.764	34.614	41.234	1.150	0.66	1187
1400	4.032	34.983	6.03	3.921	27.781	34.641	41.271	1.241	0.58	1385
1600	3.921	34.982	6.09	3.792	27.794	34.658	41.293	1.332	0.57	1582
1800	3.795	34.980	6.09	3.649	27.806	34.677	41.317	1.423	0.59	1778
2000	3.646	34.977	6.09	3.483	27.821	34.698	41.344	1.514	0.58	1975
2500	3.245	34.963	6.10	3.040	27.852	34.747	41.410	1.740	0.62	2466
3000	2.770	34.937	6.19	2.525	27.878	34.794	41.477	1.959	0.63	2956
3500	2.395	34.916	6.28	2.105	27.896	34.829	41.530	2.168	0.51	3445
4000	2.257	34.904	6.23	1.915	27.902	34.843	41.551	2.375	0.33	3932
4419	2.216	34.894	6.10	1.827	27.901	34.846	41.558	2.554	0.28	4340

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	24.483	35.430	4.78	1.0			24.481	23.825	36.167	9
96	17.281	35.851	4.22	3.0	0.03		17.265	26.105	38.755	96
204	13.584	35.719	4.11	5.8	0.33	14.1	13.555	26.837	39.683	202
391	9.453	35.231	3.33	15.3	1.07	25.2	9.408	27.233	40.335	388
583	5.649	34.959	4.76	14.1	0.91	21.2	5.599	27.571	40.937	578
798	5.112	35.038	5.38	12.6	0.67	19.2	5.045	27.700	41.105	790
988	4.531	35.007	5.75	13.1	0.82	20.2	4.451	27.743	41.193	978
1245	4.191	34.994	5.95	12.4	0.67	19.1	4.092	27.772	41.248	1232
1495	3.970	34.985	6.06	12.9	0.84	18.9	3.851	27.790	41.285	1478
1738	3.830	34.983	6.07	13.9	0.72	18.9	3.689	27.805	41.312	1717
1995	3.644	34.984	6.06	15.1	1.02	18.7	3.482	27.826	41.350	1970
2240	3.457	34.976	6.08	17.0	0.78	18.9	3.275	27.840	41.380	2211
2493	3.228	34.968	6.14	17.9	1.10	18.9	3.025	27.857	41.417	2460
2744	3.012	34.966	6.18	19.6	1.11	18.8	2.787	27.878	41.456	2705
2992	2.807	34.942	6.21	20.5	1.10	18.6	2.562	27.878	41.475	2948
3226	2.599	34.931		21.1	0.97	18.4	2.333	27.889	41.504	3177
3486	2.412	34.924	6.32	21.7	1.08	18.2	2.123	27.901	41.533	3431
3997	2.255	34.907	6.20	27.6	1.15	18.9	1.914	27.904	41.554	3929
4278	2.230	34.901	6.19	30.9	0.94	19.2	1.857	27.904	41.558	4202

ENDEAVOR 90 STA- 33 LAT= 39 55.2N LON= 65 13.1W SONIC DEPTH= 4450m
DATE 7/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	26.127	36.172	4.89	26.126	23.881	30.115	36.148	0.020	-1.41	5
25	26.135	36.168	4.83	26.129	23.876	30.111	36.144	0.101	0.74	25
50	26.026	36.163	4.76	26.014	23.909	30.145	36.181	0.201	4.81	50
75	24.363	36.549	4.49	24.347	24.712	30.978	37.041	0.293	9.81	74
100	22.027	36.608	4.64	22.008	25.440	31.753	37.861	0.367	8.52	99
150	19.372	36.566	4.55	19.344	26.130	32.504	38.669	0.476	4.66	149
200	18.491	36.529	4.50	18.455	26.330	32.725	38.911	0.568	2.90	198
250	18.118	36.513	4.57	18.074	26.414	32.818	39.013	0.654	1.83	248
300	17.906	36.493	4.64	17.854	26.453	32.863	39.063	0.738	1.84	297
350	17.497	36.435	4.65	17.437	26.511	32.932	39.142	0.821	2.07	347
400	16.871	36.327	4.44	16.804	26.581	33.018	39.245	0.902	2.12	397
450	16.126	36.194	4.20	16.053	26.655	33.113	39.359	0.980	2.40	446
500	14.983	36.000	3.97	14.906	26.765	33.255	39.532	1.055	3.07	496
600	12.206	35.583	3.76	12.125	27.019	33.592	39.949	1.186	2.73	595
700	9.334	35.235	3.68	9.254	27.261	33.928	40.373	1.295	3.09	693
800	7.379	35.116	4.18	7.298	27.468	34.202	40.712	1.378	2.42	792
900	5.851	35.045	4.84	5.770	27.618	34.407	40.969	1.445	2.02	891
1000	5.168	35.028	5.28	5.083	27.688	34.503	41.090	1.500	1.30	990
1200	4.562	34.995	5.72	4.463	27.733	34.571	41.181	1.601	0.80	1187
1400	4.317	34.997	5.92	4.202	27.762	34.611	41.231	1.698	0.73	1385
1600	4.089	34.985	6.03	3.959	27.778	34.637	41.265	1.794	0.61	1582
1800	3.921	34.979	6.07	3.774	27.793	34.659	41.295	1.889	0.59	1779
2000	3.796	34.982	6.09	3.631	27.810	34.681	41.322	1.984	0.62	1975
2500	3.386	34.969	6.12	3.179	27.844	34.733	41.391	2.218	0.63	2466
3000	2.959	34.946	6.16	2.709	27.868	34.777	41.453	2.447	0.61	2956
3500	2.543	34.924	6.25	2.249	27.890	34.818	41.512	2.667	0.61	3445
4000	2.298	34.908	6.26	1.955	27.901	34.841	41.548	2.878	0.37	3932
4500	2.231	34.896	6.12	1.832	27.901	34.846	41.558	3.094	0.28	4419
4531	2.234	34.895	6.08	1.831	27.901	34.846	41.558	3.108	-0.17	4449

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
31	26.131	36.218	4.65	1.1			26.124	23.916	36.183	31
102	21.256	36.628	4.70	0.6		0.8	21.236	25.670	38.124	101
249	18.107	36.526	4.71	1.3		3.7	18.063	26.427	39.026	247
299	17.839	36.503	4.66	1.4		4.2	17.788	26.478	39.090	296
399	16.841	36.345	4.50	2.2	0.02	6.7	16.775	26.602	39.267	396
499	15.030	36.025	3.98	4.5	0.19	12.3	14.953	26.774	39.538	494
599	12.113	35.578	3.61	9.2	0.62	19.3	12.033	27.033	39.968	593
797	7.263	35.111	4.10	15.0	1.08	24.0	7.184	27.481	40.732	789
997	5.149	35.029	5.30	13.2	0.87	20.3	5.064	27.691	41.094	987
1244	4.513	34.998	5.75	12.6	0.99	19.4	4.411	27.741	41.193	1231
1486	4.241	34.992	5.93	12.6	0.79	18.7	4.120	27.767	41.242	1470
1742	4.016	34.984	6.01	13.2	0.98	18.8	3.873	27.787	41.280	1722
1997	3.825	34.992	6.06	13.9	1.07	18.9	3.660	27.815	41.325	1972
2249	3.622	34.986	6.05	16.1	1.09	18.9	3.436	27.832	41.360	2220
2493	3.378	34.970	6.07	17.8	0.96	18.9	3.172	27.845	41.393	2459
2991	2.941	34.945	6.16	20.1	0.86	18.6	2.693	27.869	41.455	2947
3491	2.566	34.925	6.23	21.8	1.09	18.4	2.273	27.889	41.510	3436
3991	2.312	34.916	6.22	25.2	1.11	18.5	1.970	27.907	41.552	3924
4391	2.244	34.898	6.10	31.7	1.17	19.3	1.857	27.901	41.556	4313
4535	2.235	34.897	6.09	34.3	1.22	20.1	1.832	27.902	41.559	4453

ENDEAVOR 90 STA- 34 LAT= 39 31.2N LON= 65 25.4W SONIC DEPTH= 3590m
DATE 7/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	25.140	36.147	4.84	25.139	24.167	30.421	36.472	0.019	1.64	5
25	25.078	36.146	5.34	25.073	24.187	30.442	36.494	0.093	1.39	25
50	25.029	36.146	4.80	25.018	24.204	30.460	36.513	0.187	1.46	50
75	23.565	36.578	4.16	23.550	24.972	31.253	37.331	0.275	11.93	74
100	21.203	36.580	4.41	21.184	25.648	31.980	38.105	0.341	6.87	99
150	19.100	36.563	4.51	19.073	26.198	32.578	38.749	0.446	4.40	149
200	18.543	36.536	4.52	18.507	26.323	32.716	38.900	0.536	2.39	198
250	18.284	36.524	4.72	18.240	26.381	32.781	38.972	0.624	1.90	248
300	18.136	36.528	4.84	18.083	26.423	32.827	39.021	0.709	1.23	297
350	18.052	36.524	4.96	17.991	26.443	32.849	39.045	0.795	1.03	347
400	17.917	36.504	4.88	17.847	26.463	32.873	39.073	0.881	1.39	397
450	17.552	36.446	4.82	17.475	26.510	32.930	39.139	0.965	1.88	446
500	17.335	36.428	5.01	17.250	26.552	32.977	39.192	1.049	1.52	496
600	16.002	36.170	4.20	15.905	26.671	33.133	39.383	1.212	2.91	595
700	13.426	35.755	3.89	13.325	26.912	33.449	39.770	1.356	2.63	693
800	10.680	35.380	3.56	10.580	27.147	33.770	40.173	1.479	3.11	792
900	8.336	35.144	3.74	8.238	27.351	34.052	40.531	1.578	2.86	891
1000	6.476	35.065	4.48	6.381	27.554	34.321	40.862	1.656	2.22	990
1200	5.013	35.017	5.40	4.910	27.699	34.521	41.114	1.772	1.14	1187
1400	4.585	35.003	5.74	4.468	27.738	34.577	41.186	1.876	0.81	1385
1600	4.299	34.992	5.93	4.166	27.762	34.613	41.233	1.977	0.74	1582
1800	4.030	34.974	6.07	3.881	27.778	34.639	41.271	2.076	0.54	1779
2000	3.845	34.974	6.10	3.680	27.799	34.668	41.307	2.175	0.66	1975
2500	3.502	34.975	6.07	3.293	27.837	34.722	41.376	2.415	0.74	2466
3000	2.878	34.942	6.15	2.630	27.873	34.784	41.464	2.641	0.69	2956
3500	2.353	34.912	6.20	2.065	27.896	34.832	41.534	2.851	0.60	3445
3773	2.266	34.905	6.14	1.950	27.899	34.840	41.546	2.962	0.25	3711

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
7	25.135	36.195	4.70	1.0			25.133	24.206	36.510	7
101	20.474	36.604	4.54	0.7		1.5	20.455	25.865	38.353	101
203	18.396	36.548	4.74	1.2		3.1	18.361	26.369	38.954	201
303	18.077	36.548	4.94	1.1		2.4	18.025	26.453	39.054	300
400	17.871	36.514	4.88	1.3	0.02	3.3	17.801	26.483	39.094	396
598	15.964	36.204	4.17	3.4	0.24	9.6	15.867	26.706	39.419	593
798	10.784	35.403	3.38	12.4	1.12	22.9	10.684	27.147	40.166	790
995	6.552	35.071	4.40	15.1	1.16	23.4	6.456	27.549	40.852	985
1196	5.012	35.025	5.49	13.1	1.21	20.3	4.910	27.706	41.121	1183
1395	4.548	35.008	5.78	12.8	1.13	19.9	4.431	27.746	41.197	1379
1591	4.263	34.994	5.93	12.7	1.10	18.7	4.131	27.768	41.241	1573
1795	4.016	34.982	6.03	13.1	1.11	18.8	3.868	27.786	41.280	1774
1995	3.849	34.981	6.05	14.0	1.15	18.8	3.684	27.804	41.312	1970
2242	3.688	34.982	6.06	15.1	1.16	19.0	3.501	27.823	41.345	2213
2492	3.409	34.973	6.06	18.1	1.17	19.0	3.202	27.845	41.390	2459
2748	3.142	34.959	6.08	20.0	1.01	19.1	2.914	27.860	41.429	2709
2994	2.883	34.945	6.18	21.6	1.18	19.1	2.635	27.874	41.465	2950
3494	2.363	34.915	6.18	26.2	1.17	18.9	2.074	27.898	41.534	3439
3715	2.267	34.908	6.16	29.7	1.19	19.2	1.957	27.901	41.548	3654
3776	2.267	34.910	6.16	30.0	1.19	19.4	1.950	27.904	41.550	3714

ENDEAVOR 90 STA- 35 LAT= 39 9.2N LON= 65 36.8W SONIC DEPTH= 4650m
DATE 8/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	25.397	36.132	4.68	25.396	24.078	30.326	36.373	0.019	1.93	5
25	25.374	36.139	4.77	25.369	24.091	30.340	36.387	0.096	-0.29	25
50	25.256	36.132	4.74	25.245	24.124	30.376	36.425	0.191	2.41	50
75	24.890	36.306	4.57	24.874	24.369	30.626	36.681	0.286	10.10	74
100	22.953	36.615	4.40	22.932	25.180	31.474	37.564	0.364	8.82	99
150	19.886	36.593	4.36	19.858	26.016	32.377	38.531	0.481	5.06	149
200	18.959	36.557	4.50	18.923	26.233	32.616	38.791	0.577	2.82	198
250	18.440	36.531	4.45	18.396	26.347	32.743	38.930	0.668	2.56	248
300	18.110	36.508	4.61	18.058	26.415	32.819	39.014	0.755	1.79	298
350	17.911	36.491	4.62	17.851	26.453	32.862	39.062	0.840	1.50	347
400	17.686	36.462	4.64	17.617	26.488	32.904	39.109	0.925	1.60	397
450	17.307	36.398	4.57	17.230	26.533	32.959	39.175	1.009	1.84	446
500	16.837	36.318	4.44	16.754	26.586	33.025	39.253	1.091	2.29	496
600	14.908	35.987	4.12	14.816	26.775	33.268	39.547	1.246	2.78	595
700	13.015	35.694	3.83	12.916	26.949	33.498	39.831	1.383	2.65	694
800	10.232	35.320	3.48	10.134	27.180	33.817	40.234	1.502	2.84	792
900	8.023	35.128	3.86	7.927	27.386	34.098	40.586	1.598	2.74	891
1000	6.025	35.028	4.73	5.933	27.584	34.367	40.924	1.673	2.12	990
1200	4.958	35.022	5.46	4.855	27.710	34.534	41.129	1.785	0.98	1187
1400	4.519	35.002	5.80	4.402	27.744	34.585	41.197	1.888	0.88	1385
1600	4.216	34.991	5.98	4.084	27.770	34.624	41.248	1.987	0.71	1582
1800	3.997	34.980	6.06	3.849	27.787	34.649	41.282	2.084	0.65	1779
2000	3.835	34.982	6.08	3.670	27.806	34.675	41.315	2.181	0.62	1975
2500	3.407	34.972	6.08	3.200	27.844	34.732	41.390	2.417	0.67	2466
3000	2.917	34.946	6.12	2.668	27.872	34.782	41.460	2.644	0.65	2956
3500	2.473	34.920	6.20	2.181	27.893	34.823	41.521	2.859	0.57	3445
4000	2.283	34.904	6.17	1.941	27.900	34.840	41.547	3.068	0.29	3933
4500	2.259	34.897	6.16	1.859	27.900	34.844	41.555	3.285	0.25	4419
4725	2.242	34.891	6.04	1.816	27.899	34.845	41.558	3.386	0.15	4638

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	25.498	36.210	4.70	1.3			25.496	24.105	36.396	8
98	22.528	36.667	4.32	1.3		1.7	22.508	25.342	37.742	97
203	18.903	36.576	4.66	1.2		2.4	18.867	26.262	38.822	201
304	18.130	36.529	4.63	1.6	0.02	3.8	18.077	26.426	39.024	301
402	17.657	36.473	4.65	1.9	0.06	4.5	17.588	26.504	39.126	398
599	15.180	36.050	3.97	4.8	0.48	12.0	15.087	26.763	39.520	594
801	10.562	35.373	3.51	12.6	1.08	21.7	10.463	27.163	40.196	793
995	6.453	35.065	4.47	15.3	1.27	22.4	6.358	27.558	40.867	985
1245	4.867	35.019	5.54	13.4	1.04	20.3	4.761	27.718	41.144	1232
1493	4.327	34.995	5.89	13.1	1.17	18.8	4.204	27.761	41.229	1476
1742	4.083	34.984	5.99	13.5	1.11	18.1	3.939	27.780	41.268	1721
1993	3.862	34.987	6.06	14.7	0.95	18.4	3.697	27.807	41.314	1969
2151	3.697	34.979	6.10	15.7	1.16	18.5	3.519	27.819	41.339	2124
2485	3.420	34.973	6.10	18.0	1.11	18.5	3.214	27.844	41.388	2452
2744	3.192	34.962	6.10	20.5	1.18	18.6	2.963	27.858	41.423	2705
2988	2.933	34.948	6.12	22.1	1.09	18.4	2.685	27.872	41.459	2944
3491	2.464	34.921	6.21	26.1	1.18	18.6	2.173	27.894	41.523	3436
3991	2.278	34.903	6.16	30.9	1.10	19.2	1.937	27.899	41.547	3924
4499	2.259	34.899	6.09	33.9	1.23	19.4	1.859	27.902	41.556	4418
4728	2.243	34.893	6.05	36.0	1.21	19.1	1.816	27.901	41.559	4640

ENDEAVOR 90 STA- 36 LAT= 38 46.3N LON= 65 48.5W SONIC DEPTH= 4650m
DATE 8/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	25.901	36.197	4.79	25.900	23.970	30.209	36.246	0.020	1.38	5
25	25.904	36.209	4.73	25.898	23.980	30.218	36.255	0.098	1.31	25
50	25.751	36.200	4.71	25.740	24.022	30.264	36.304	0.196	2.28	50
75	25.211	36.510	4.12	25.194	24.425	30.674	36.722	0.292	10.37	74
100	22.855	36.659	4.18	22.835	25.242	31.538	37.629	0.371	9.07	99
150	19.870	36.613	4.18	19.842	26.036	32.397	38.551	0.486	5.07	149
200	18.693	36.547	4.31	18.658	26.293	32.683	38.864	0.580	3.00	198
250	18.230	36.515	4.52	18.187	26.388	32.789	38.981	0.668	2.36	248
300	17.872	36.485	4.61	17.821	26.455	32.866	39.067	0.753	2.00	298
350	17.452	36.419	4.49	17.393	26.510	32.932	39.143	0.837	1.80	347
400	17.015	36.352	4.50	16.948	26.566	32.999	39.222	0.918	2.38	397
450	15.971	36.158	3.99	15.899	26.663	33.125	39.376	0.996	2.86	446
500	14.876	35.978	3.86	14.800	26.771	33.265	39.545	1.070	2.77	496
600	12.458	35.618	3.73	12.376	26.997	33.563	39.911	1.202	2.79	595
700	9.731	35.273	3.56	9.648	27.225	33.879	40.311	1.313	2.78	694
800	7.720	35.124	4.02	7.637	27.426	34.148	40.646	1.404	2.88	792
900	6.038	35.052	4.73	5.956	27.599	34.382	40.938	1.473	2.12	891
1000	5.282	35.032	5.19	5.196	27.677	34.488	41.071	1.530	1.22	990
1200	4.584	35.002	5.71	4.485	27.736	34.574	41.182	1.632	0.95	1188
1400	4.261	34.988	5.93	4.147	27.761	34.612	41.234	1.728	0.69	1385
1600	4.075	34.984	6.05	3.945	27.780	34.638	41.267	1.824	0.59	1582
1800	3.931	34.980	6.08	3.784	27.793	34.658	41.294	1.919	0.61	1779
2000	3.790	34.981	6.09	3.625	27.810	34.681	41.322	2.013	0.62	1975
2500	3.297	34.967	6.10	3.092	27.850	34.743	41.404	2.246	0.67	2466
3000	2.825	34.942	6.14	2.578	27.877	34.791	41.473	2.468	0.67	2956
3500	2.363	34.914	6.17	2.074	27.897	34.832	41.533	2.677	0.53	3445
4000	2.271	34.905	6.18	1.929	27.901	34.842	41.550	2.884	0.27	3933
4500	2.247	34.897	6.11	1.847	27.901	34.845	41.556	3.100	0.21	4419
4713	2.252	34.893	6.03	1.826	27.900	34.845	41.557	3.196	-0.19	4626

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
103	22.274	36.668	4.33	1.1		2.0	22.253	25.416	37.826	102
207	18.573	36.558	4.52	1.6	0.03	3.6	18.536	26.332	38.908	206
303	17.810	36.498	4.64	1.5	0.02	4.1	17.758	26.481	39.095	300
399	16.873	36.337	4.36	2.6	0.15	7.5	16.807	26.588	39.252	395
595	12.565	35.644	3.76	8.4	0.94	18.4	12.483	26.996	39.904	590
795	7.756	35.118	3.83	15.5	1.48	25.0	7.674	27.415	40.633	787
998	5.183	35.017	5.29	13.3	1.24	20.7	5.097	27.678	41.079	988
1243	4.510	35.001	5.78	12.8	1.17	19.8	4.407	27.743	41.196	1230
1495	4.214	34.990	5.98	12.1	1.12	18.6	4.092	27.769	41.245	1478
1744	3.980	34.985	6.07	13.5	1.11	19.0	3.838	27.791	41.287	1724
1993	3.765	34.984	6.09	12.3	0.97	15.6	3.602	27.814	41.329	1969
2249	3.570	34.978	6.11	14.9	1.11	17.8	3.385	27.831	41.362	2220
2509	3.320	34.971	6.10	18.4	1.19	19.7	3.114	27.851	41.404	2475
2748	3.064	34.955	6.11	19.4	1.15	18.2	2.838	27.864	41.439	2710
2990	2.840	34.942	6.17	20.3	1.11	17.7	2.594	27.875	41.470	2947
3488	2.375	34.915	6.22	23.1	1.07		2.087	27.897	41.532	3433
3993	2.262	34.903	6.18	28.6	1.19	18.2	1.921	27.900	41.550	3925
4587	2.251	34.898	6.11	35.5	1.30	20.2	1.841	27.903	41.559	4503
4718	2.252	34.894	6.07	36.5	1.31	20.4	1.826	27.901	41.558	4631

ENDEAVOR 90 STA- 37 LAT= 38 23.5N LON= 66 0.3W SONIC DEPTH= 4710m
DATE 8/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	25.560	35.862	4.52	25.559	23.823	30.071	36.117	0.020	2.10	5
25	25.519	35.871	4.47	25.514	23.844	30.092	36.139	0.102	0.90	25
50	25.461	35.854	4.50	25.450	23.851	30.101	36.149	0.203	1.72	50
75	23.134	35.776	4.38	23.119	24.490	30.787	36.880	0.301	13.30	74
100	19.901	36.373	3.47	19.883	25.842	32.204	38.359	0.370	8.64	99
150	16.660	36.052	3.66	16.635	26.410	32.854	39.087	0.463	5.17	149
200	14.109	35.774	3.88	14.079	26.769	33.285	39.586	0.537	3.61	198
250	13.512	35.761	3.45	13.477	26.886	33.418	39.736	0.601	2.98	248
300	12.051	35.549	3.36	12.012	27.014	33.591	39.951	0.659	2.89	298
350	10.695	35.373	3.42	10.653	27.129	33.749	40.151	0.713	2.77	347
400	9.659	35.261	3.52	9.613	27.222	33.877	40.311	0.761	2.52	397
450	8.740	35.172	3.61	8.691	27.303	33.989	40.452	0.805	2.06	446
500	7.937	35.124	3.94	7.885	27.389	34.102	40.592	0.846	2.58	496
600	6.455	35.053	4.54	6.400	27.543	34.309	40.850	0.917	2.28	595
700	5.494	35.027	5.07	5.434	27.645	34.447	41.021	0.974	1.61	694
800	5.026	35.026	5.42	4.960	27.701	34.521	41.112	1.025	1.15	792
900	4.710	35.010	5.64	4.637	27.725	34.557	41.160	1.073	0.95	891
1000	4.522	35.002	5.76	4.441	27.740	34.580	41.190	1.119	0.72	990
1200	4.274	34.992	5.93	4.178	27.761	34.611	41.231	1.211	0.64	1188
1400	4.069	34.983	6.04	3.957	27.777	34.636	41.265	1.302	0.56	1385
1600	3.938	34.982	6.07	3.809	27.792	34.656	41.290	1.394	0.60	1582
1800	3.787	34.982	6.07	3.642	27.809	34.680	41.320	1.486	0.69	1779
2000	3.619	34.980	6.08	3.457	27.826	34.704	41.351	1.576	0.61	1976
2500	3.236	34.963	6.08	3.032	27.853	34.748	41.412	1.800	0.57	2467
3000	2.830	34.943	6.11	2.583	27.877	34.791	41.472	2.019	0.58	2956
3500	2.480	34.921	6.19	2.188	27.893	34.823	41.520	2.232	0.56	3445
4000	2.294	34.906	6.17	1.951	27.900	34.840	41.547	2.441	0.30	3933
4500	2.267	34.899	6.14	1.867	27.901	34.845	41.555	2.659	0.25	4419
4775	2.271	34.895	6.12	1.837	27.901	34.845	41.557	2.783	0.15	4687

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
8	25.933	36.077	4.72	1.3			25.931	23.870	36.146	8
104	19.768	36.482	3.59	3.1	0.11		19.749	25.960	38.482	103
199	14.243	35.825		6.0	0.56	13.8	14.214	26.780	39.588	197
401	9.852	35.283	3.33	13.1	1.14	21.2	9.805	27.207	40.283	398
606	6.435	35.054	4.43	14.7	1.24	21.4	6.379	27.546	40.854	601
792	5.264	35.037	5.22	13.6	1.15	20.4	5.197	27.682	41.075	784
994	4.593	35.009	5.70	11.5	0.97	17.2	4.512	27.738	41.183	984
1244	4.228	35.008	5.96	12.5	1.07	18.4	4.129	27.779	41.253	1231
1501	4.008	35.003		11.8	0.99	16.4	3.887	27.801	41.292	1484
1748	3.844	34.988	6.09	13.9	1.04	18.5	3.703	27.807	41.314	1727
1996	3.635	34.983		15.5	1.06	18.2	3.473	27.826	41.351	1972
2240	3.425	34.975	6.11	16.7	1.16	17.9	3.243	27.842	41.385	2211
2480	3.227	34.968	6.11	19.3	1.18	18.7	3.025	27.857	41.417	2447
2748	2.984	34.957	6.19				2.760	27.873	41.453	2709
2998	2.798	34.942	6.13	22.3	1.12	18.5	2.552	27.879	41.477	2954
3487	2.429	34.935	6.22	23.6	1.16	18.5	2.139	27.908	41.539	3432
4001	2.289	34.906		29.5	1.24	19.2	1.946	27.901	41.548	3933
4499	2.265	34.899	6.13	33.7	1.23	19.5	1.865	27.901	41.555	4419
4586	2.260	34.899	6.09	34.9	1.27	19.5	1.849	27.903	41.558	4502
4779	2.272	34.898	6.02	35.2	1.21	19.4	1.838	27.903	41.559	4690

ENDEAVOR 90 STA- 38 LAT= 38 0.8N LON= 66 11.7W SONIC DEPTH= 4820m
DATE 8/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
3	23.858	34.853	4.92	23.858	23.574	29.864	35.950	0.013	3.74	3
25	24.107	35.238	4.95	24.102	23.793	30.075	36.154	0.106	6.33	25
50	21.088	35.675	4.71	21.078	24.988	31.330	37.465	0.199	14.55	50
75	17.520	35.810	4.25	17.508	26.015	32.439	38.654	0.260	9.07	74
100	15.690	35.745	3.97	15.675	26.396	32.869	39.128	0.306	6.27	99
150	13.715	35.732	3.97	13.694	26.818	33.345	39.656	0.376	3.38	149
200	12.752	35.632	3.73	12.725	26.938	33.494	39.833	0.437	2.62	198
250	11.502	35.471	3.35	11.470	27.057	33.651	40.027	0.492	2.77	248
300	10.193	35.317	3.42	10.157	27.173	33.810	40.226	0.543	2.58	298
350	9.197	35.214	3.55	9.158	27.261	33.931	40.379	0.589	2.44	347
400	8.254	35.126	3.64	8.212	27.341	34.044	40.523	0.631	2.27	397
450	7.557	35.085	3.87	7.512	27.413	34.140	40.643	0.670	2.58	446
500	6.742	35.086	4.44	6.695	27.529	34.284	40.815	0.704	2.25	496
600	5.675	35.037	4.98	5.623	27.630	34.425	40.993	0.762	1.87	595
700	5.005	35.017	5.41	4.948	27.695	34.515	41.107	0.812	1.04	694
800	4.802	35.014	5.59	4.737	27.717	34.545	41.145	0.860	1.09	792
900	4.590	35.009	5.71	4.518	27.738	34.574	41.182	0.906	0.74	891
1000	4.415	34.995	5.88	4.335	27.747	34.591	41.205	0.951	0.70	990
1200	4.186	34.989	5.99	4.091	27.768	34.621	41.245	1.041	0.53	1188
1400	4.027	34.984	6.04	3.915	27.783	34.643	41.273	1.131	0.59	1385
1600	3.896	34.983	6.09	3.768	27.797	34.663	41.299	1.221	0.55	1582
1800	3.770	34.983	6.09	3.625	27.811	34.683	41.324	1.311	0.58	1779
2000	3.628	34.980	6.09	3.466	27.825	34.703	41.350	1.402	0.62	1976
2500	3.225	34.964	6.09	3.021	27.854	34.750	41.414	1.625	0.58	2467
3000	2.860	34.943	6.14	2.612	27.875	34.787	41.468	1.845	0.58	2956
3500	2.517	34.922	6.17	2.224	27.891	34.820	41.516	2.060	0.51	3445
4000	2.307	34.906	6.17	1.964	27.899	34.839	41.545	2.273	0.37	3933
4500	2.296	34.901	6.19	1.895	27.901	34.843	41.553	2.492	0.24	4420
4897	2.277	34.893	6.06	1.828	27.899	34.845	41.556	2.674	0.23	4805

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
10	24.149	35.097	4.93	1.0			24.146	23.673	36.034	10
102	16.450	35.837	4.39	2.5	0.11	4.9	16.434	26.292	38.984	101
201	12.857	35.655	3.85	7.4	0.84	16.0	12.829	26.936	39.824	199
395	8.329	35.163	3.50	16.0	1.51	25.5	8.288	27.358	40.535	392
598	5.749	35.045	4.88	12.7	1.24	18.9	5.697	27.627	40.984	592
797	4.795	35.011	5.58	11.2	1.03	16.5	4.730	27.715	41.144	790
997	4.417	35.002	5.82	13.0	1.18	19.1	4.338	27.752	41.210	987
1246	4.166	34.988	5.99	13.1	1.17	18.8	4.067	27.770	41.248	1233
1493	3.945	34.983	6.07	13.5	1.17	18.9	3.826	27.791	41.288	1477
1739	3.796	34.979	6.10	14.7	1.23	18.9	3.656	27.805	41.315	1719
1992	3.616	34.981	6.07	16.0	1.06	18.8	3.455	27.827	41.352	1968
2243	3.416	34.971	6.09	17.7	1.15	19.3	3.234	27.840	41.383	2214
2491	3.225	34.962	6.10				3.022	27.853	41.413	2458
2741	3.025	34.952	6.15				2.801	27.865	41.443	2703
2990	2.882	34.946	6.15	21.7	1.11	19.1	2.635	27.875	41.466	2947
3490	2.522	34.923	6.21	24.4	1.06	18.4	2.230	27.891	41.515	3435
3990	2.329	34.906	6.17	26.7	1.07	17.9	1.986	27.898	41.541	3923
4496	2.289	34.900	6.16	31.4	1.12	19.7	1.888	27.900	41.553	4415
4795	2.280	34.898	6.10				1.843	27.902	41.558	4706
4902	2.277	34.888	6.07	35.7	1.17	19.9	1.828	27.896	41.553	4810

ENDEAVOR 90 STA- 39 LAT= 38 59.9N LON= 66 11.2W SONIC DEPTH= 4590m
DATE 12/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
5	23.817	36.220	5.10	23.816	24.622	30.901	36.976	0.017	-1.60	5
25	23.835	36.220	5.14	23.830	24.617	30.896	36.972	0.083	0.35	25
50	23.782	36.280	5.01	23.771	24.680	30.960	37.036	0.166	8.60	50
75	21.730	36.599	4.89	21.715	25.515	31.834	37.949	0.237	7.82	74
100	20.296	36.593	4.68	20.277	25.905	32.256	38.401	0.295	6.07	99
150	18.957	36.567	4.70	18.930	26.239	32.622	38.796	0.392	3.35	149
200	18.501	36.542	4.69	18.466	26.338	32.732	38.917	0.481	2.06	198
250	18.211	36.527	4.77	18.168	26.402	32.803	38.996	0.568	1.74	248
300	18.118	36.530	4.91	18.065	26.429	32.833	39.028	0.653	1.07	298
350	17.990	36.515	4.84	17.929	26.452	32.859	39.057	0.738	1.24	347
400	17.824	36.489	4.76	17.754	26.475	32.887	39.089	0.823	1.44	397
450	17.543	36.448	4.83	17.465	26.515	32.934	39.144	0.908	1.81	446
500	17.247	36.414	4.93	17.162	26.562	32.989	39.206	0.991	1.51	496
600	16.193	36.210	4.31	16.095	26.658	33.115	39.360	1.154	2.47	595
700	13.926	35.829	3.86	13.823	26.866	33.388	39.695	1.303	3.05	694
800	11.373	35.473	3.64	11.269	27.095	33.695	40.077	1.429	2.59	792
900	8.506	35.162	3.76	8.407	27.339	34.034	40.507	1.535	3.20	891
1000	6.582	35.070	4.53	6.486	27.544	34.307	40.845	1.614	2.25	990
1200	5.128	35.029	5.42	5.024	27.695	34.513	41.102	1.734	1.25	1187
1400	4.462	34.986	5.88	4.346	27.738	34.581	41.196	1.839	0.85	1385
1600	4.259	34.989	6.00	4.126	27.765	34.616	41.239	1.939	0.70	1582
1800	4.063	34.982	6.06	3.913	27.781	34.641	41.272	2.038	0.61	1779
2000	3.910	34.982	6.09	3.744	27.799	34.665	41.302	2.136	0.65	1975
2500	3.488	34.974	6.13	3.279	27.838	34.723	41.377	2.378	0.70	2466
3000	2.978	34.948	6.16	2.727	27.869	34.776	41.452	2.608	0.62	2956
3500	2.492	34.920	6.23	2.199	27.891	34.821	41.518	2.826	0.59	3445
4000	2.315	34.906	6.24	1.972	27.899	34.838	41.544	3.037	0.38	3933
4500	2.238	34.894	6.14	1.839	27.900	34.844	41.556	3.254	0.16	4419
4669	2.256	34.893	6.13	1.836	27.899	34.844	41.555	3.330	-0.21	4583

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
20	23.929	36.278	4.91	1.1			23.924	24.634	36.983	20
107	20.841	36.612	4.66	1.0		1.2	20.821	25.772	38.244	106
206	18.580	36.571	4.86	1.1		1.8	18.544	26.340	38.916	205
401	17.777	36.502	4.83	1.8	0.03	3.6	17.708	26.497	39.113	397
588	16.522	36.292	4.50	3.1	0.15	6.9	16.425	26.644	39.327	583
802	11.214	35.478	3.73	10.9	1.11	18.2	11.111	27.128	40.120	794
1006	6.795	35.087	4.51	15.2	1.37	20.4	6.696	27.530	40.815	995
1254	4.734	34.996	5.81	12.4	1.11	16.1	4.629	27.715	41.151	1240
1503	4.367	34.996	6.05	12.5	1.12	15.8	4.243	27.757	41.223	1486
1758	4.106	34.987	6.21	13.2	1.13	16.1	3.961	27.780	41.267	1737
1998	3.908	34.989	6.23	13.6	1.04	15.1	3.742	27.804	41.308	1973
2249	3.769	34.984	6.31	15.1	1.05	15.1	3.580	27.817	41.332	2220
2498	3.598	34.980	6.23	15.8	1.06	14.4	3.387	27.832	41.363	2464
2734	3.279	34.970	6.23	17.9	1.03	13.9	3.050	27.857	41.414	2695
2998	2.983	34.953	6.28	21.0	1.11	14.7	2.733	27.872	41.455	2955
3257	2.717	34.936		22.5	1.11	14.8	2.445	27.884	41.490	3207
3501	2.512	34.923	6.24	24.4	1.17	14.7	2.219	27.892	41.517	3446
3994	2.296	34.910	6.21	29.0	1.20	15.5	1.954	27.903	41.550	3927
4523	2.239	34.898	6.23	24.1	0.82	10.8	1.837	27.903	41.559	4441
4664	2.256	34.899	6.23	34.4	1.36	16.5	1.836	27.904	41.560	4578

ENDEAVOR 90 STA- 40 LAT= 39 2.1N LON= 68 54.7W SONIC DEPTH= 3120m
DATE 13/10/82

PR dbar	T Deg C	S o/oo	O2 ml/l	θ Deg C	SIG-θ kg/m3	SIG-1.5 kg/m3	SIG-3 kg/m3	HGTH m	N cph	DE m
7	21.711	35.370	4.85	21.710	24.582	30.912	37.037	0.023	-0.87	7
25	21.731	35.374	4.94	21.726	24.580	30.910	37.035	0.084	0.39	25
50	18.658	35.831	4.40	18.649	25.747	32.144	38.331	0.162	15.54	50
75	16.051	35.915	3.89	16.039	26.443	32.904	39.154	0.209	8.13	74
100	14.152	35.736	3.81	14.137	26.728	33.242	39.542	0.245	4.04	99
150	13.032	35.683	3.69	13.011	26.920	33.467	39.797	0.307	3.40	149
200	11.328	35.465	3.49	11.301	27.083	33.682	40.063	0.362	2.94	198
250	9.938	35.294	3.46	9.909	27.197	33.842	40.267	0.410	2.81	248
300	8.770	35.190	3.70	8.738	27.310	33.994	40.456	0.454	2.78	298
350	7.416	35.065	4.08	7.382	27.416	34.148	40.655	0.492	2.34	347
400	6.659	35.037	4.44	6.622	27.500	34.259	40.792	0.526	2.56	397
450	6.144	35.050	4.74	6.104	27.579	34.356	40.907	0.556	2.17	446
500	5.796	35.052	4.96	5.753	27.626	34.415	40.978	0.583	1.56	496
600	5.189	35.037	5.33	5.140	27.689	34.501	41.086	0.633	1.32	595
700	4.809	35.019	5.56	4.753	27.719	34.547	41.146	0.680	0.93	694
800	4.629	35.018	5.69	4.565	27.739	34.574	41.180	0.724	0.72	792
900	4.405	35.000	5.90	4.334	27.751	34.594	41.209	0.768	0.67	891
1000	4.361	35.011	5.90	4.282	27.765	34.610	41.227	0.812	0.64	990
1200	4.066	34.986	6.03	3.972	27.778	34.636	41.264	0.899	0.54	1187
1400	3.935	34.983	6.11	3.824	27.791	34.655	41.288	0.987	0.56	1385
1600	3.748	34.972	6.10	3.619	27.803	34.675	41.316	1.074	0.56	1582
1800	3.636	34.974	6.08	3.492	27.817	34.694	41.340	1.163	0.60	1779
2000	3.495	34.974	6.10	3.335	27.832	34.715	41.368	1.250	0.59	1975
2500	3.062	34.953	6.17	2.861	27.860	34.762	41.433	1.467	0.60	2466
3000	2.568	34.926	6.26	2.327	27.886	34.810	41.502	1.676	0.69	2956
3161	2.371	34.916	6.27	2.118	27.895	34.828	41.528	1.740	0.73	3114

PR dbar	T Deg C	S o/oo	O2 ml/l	SIL umol/kg	PHOS umol/kg	NO3 umol/kg	θ Deg C	SIG-θ kg/m3	SIG-3 kg/m3	DE m
9	22.165	35.608	4.99	2.4		0.9	22.163	24.635	37.068	9
103	14.224	35.729	3.98	5.7	0.50	13.0	14.209	26.707	39.517	102
204	11.279	35.476	3.44	10.2	1.01	18.4	11.253	27.100	40.084	202
302	8.923	35.209	3.50		1.08	18.7	8.890	27.300	40.436	300
399	6.664	35.031	4.28	13.2	1.17	20.6	6.627	27.495	40.786	396
500	5.787	35.051	4.94	11.7	1.03	18.3	5.743	27.626	40.979	496
600	5.143	35.030	5.34	10.7			5.094	27.688	41.089	594
796	4.615	35.016	5.75				4.551	27.739	41.181	788
997	4.396	35.015	5.90	11.9	0.91	17.4	4.317	27.764	41.224	987
1197	4.181	35.004	6.03	12.9	1.10	19.7	4.086	27.780	41.257	1184
1396	3.934	34.983	6.12	13.6	1.08	19.5	3.824	27.791	41.288	1381
1594	3.771	34.976	6.18	14.1	1.09	19.5	3.645	27.804	41.315	1575
1798	3.645	34.979	6.22	15.1	1.13	19.8	3.502	27.820	41.342	1776
1999	3.488	34.975	6.16				3.328	27.834	41.370	1975
2195	3.319	34.970	6.17	17.2	1.14	19.7	3.143	27.848	41.398	2167
2395	3.151	34.958	6.24	18.5	1.11	19.8	2.958	27.856	41.421	2363
2594	2.972	34.950	6.22	12.2	0.66	11.5	2.764	27.867	41.447	2558
2896	2.692	34.936	6.29	19.5	1.12	19.1	2.459	27.882	41.488	2854
3068	2.477	34.926	6.36	20.2	1.10	18.6	2.231	27.894	41.517	3023
3164	2.373	34.922	6.36	20.5	0.97	17.0	2.119	27.900	41.532	3117

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16. Abstract (Limit: 200 words)

The final cruise of the NSF sponsored Warm Core Rings Program studied a Warm Core Ring (WCR) in the Fall of 1982 as it formed from a large northward meander of the Gulf Stream. This ring, known as 82-H or the eighth ring identified in 1982, formed over the New England Seamounts near 39.5°N, 65°W. Surveys using Expendable Bathythermographs, Conductivity-Temperature—Depth-Oxygen stations and Doppler Current Profiling provide a look at the genesis of a WCR. These measurements reveal that WCR 82-H separated from the Gulf Stream sometime between October 2-5. This ring was a typical WCR with a diameter of about 200 km and speeds in the high velocity core of the 175 cm/sec. Satellite imagery of 82-H following the cruise showed that it drifted WSW in the Slope Water region at almost 9 km/day, had at least one interaction with the Gulf Stream and was last observed on February 8, 1983 at 39°N, 72°W.

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