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HYDROGRAPHIC MEASUREMENTS COLLECTED ABOARD THE NATIONAL ENVIRONMENTAL RESEARCH COUNCIL SHIP RRS DISCOVERY, 21 NOVEMBER - 6 DECEMBER 2009: WESTERN BOUNDARY TIME SERIES CRUISE D345 (AB0911)

James A. Hooper V
Molly O. Baringer

Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida
March 2015

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James A. Hooper V
University of Miami / Cooperative Institute for Marine and Atmospheric Studies
NOAA/ Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida

Molly O. Baringer
NOAA/ Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida

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Abstract

This report summarizes the November 21 - December 6, 2009 cruise on the RSS Discovery involving full-water-column CTD and lowered ADCP profiles, along with shipboard ADCP profiles, conducted within the Northwest Providence Channel and east of Abaco Island, Bahamas. No Florida Straits sections were planned due to the RRS Discovery not having clearances to enter U.S. waters. A package consisting of a Seabird Electronics Model 9/11+ CTD O2 system, a RDI 150 kHz Workhorse Lowered Acoustic Doppler Current Profiler, a RDI 300 kHz Workhorse Lowered Acoustic Doppler Current Profilers, and 23 10-liter Niskin bottles, was to be lowered to the bottom. This report includes a description of the calibrations procedures and profiles of pressure, salinity (conductivity), temperature, and dissolved oxygen concentration. Water samples were also collected at various depths and analyzed for salinity and oxygen concentration to aid with CTD calibration. A total of 35 CTD-O2/LADCP stations were occupied. PIES/CPIES operations were conducted from 5 sites, involving recovery, deployment and telemetry. Mooring operations include recovery and redeployment of 3 moorings with a mixture of current meters, Acoustic Doppler Current Profilers (ADCPs), and temperature/salinity recorders, and deployment of 2 bottom landers instrumented with bottom pressure recorders.

1 Introduction

The Abaco time series began in August 1984 when NOAA extended its Straits of Florida program to include measurements of western boundary current transports and water mass properties east of Abaco, the Bahamas. Since 1986, 36 hydrographic sections have been completed east of Abaco, most including direct velocity observations by Pegasus and/or Lowered Acoustic Doppler Current Profiler (LADCP). Transient tracer (CFC) measurements have been made on 8 of these sections. Current meter arrays were also maintained from April 1986 to April 1997. A new international program funded by the United Kingdom's Rapid Climate Change Program and the United States National Science Foundation began in March 2004 and is currently scheduled to end in 2021. Included in this program is a new deployment of current meter moorings along the Abaco section (the UK segment of the program continues with moorings across to the east edge of the Atlantic basin). Independently, the National Oceanic and Atmospheric Administration began a monitoring program in September 2004 utilizing inverted echo sounder moorings (some including bottom pressure measurements and near-bottom current meters) along the Abaco section. All of these programs are collaborating with scientific analysis and logistics including ship time.

The repeated hydrographic and tracer sampling at Abaco has established a high-resolution record of water mass properties in the Deep Western Boundary Current (DWBC) at 26°N, which for temperature and salinity can be reasonably constructed back to about 1985 (Vaughan and Molinari, 1997; Molinari et al., 1998). Events such as the intense convection period in the Labrador Sea and renewal of classical Labrador Sea Water in the 1980's are clearly reflected in the cooling and freshening of the DWBC waters off Abaco, and the arrival of a strong CFC pulse, approximately 10 years later (e.g. van Sebille et al., 2011). This program is unique in that it is not just a single time series site, but instead is a section from which transport can be directly calculated, of which very few are available in the ocean that approach a decade or more in length.

To achieve the goals of NOAA's strategic plan in terms of understanding the Atlantic Ocean's role in decadal and longer time scale climate variability, these continued time series observations at Abaco are seen as serving three main purposes:

1. Monitoring of the DWBC for watermass and transport signatures related to changes in the strengths and regions of high latitude water mass formation in the North Atlantic. Monitoring watermass properties in the DWBC at key locations is one part of an effort to track decadal changes in large-scale watermass properties.

2. Serving as a western boundary endpoint of a subtropical Meridional Overturning Circulation (MOC) heat flux monitoring system designed to measure the interior dynamic height difference across the Atlantic basin and the associated baroclinic heat transport.

3. Monitoring the intensity of the Antilles current as an index (together with the Florida Current) of inter-annual variability in the strength of the subtropical gyre. Variations in the strength of the subtropical gyre in relation to the North Atlantic Oscillation

(NAO) has been proposed as an important mechanism in the atmosphere-ocean feedback within coupled models (e.g. Latif and Barnett, 1996).

A hydrographic survey consisting of a repeat LADCP/CTD/rosette section in the western North Atlantic was carried out in November-Decmeber 2009 (Figure 1 & 2 and Table 2). The RRS Discovery departed Freeport 1900 local time on 21 November 2009. A total of 35 LADCP/CTD/Rosette stations were occupied. Water samples (up to 23 for each station), LADCP, CTD data were collected on each cast to within 20 m of the bottom. Salinity and dissolved oxygen samples were analyzed from the majority of bottles sampled on the rosette. Mooring operations included recovery of three subsurface moorings and redeployment of three subsurface moorings and two bottom landers with a mixture of current meters, ADCP's, and temperature/salinity recorders. The cruise ended in Freeport at 1000 local time on 5 May 2009.

The goals of cruise D345 were to:

1. Service the U.S. moorings within the western boundary array of the RAPID/MOCHA trans-basin observing system. This includes three taut wire subsurface current meter/CTD moorings, and two "bottom-lander" moorings containing high-precision bottom pressure gauges.

2. Conduct hydrographic (CTDO2) and direct current profiling (lowered-ADCP, "LADC") stations along the 26.5^{o} N mooring section off Abaco, Bahamas; and across the Northwest Providence Channel, including continuous shipboard ADCP observations; and

3. Service three bottom pressure/inverted echo sounder (PIES) moorings and retrieve data from two additional PIES moorings via acoustic telemetry.

Table 1: Cruise participants of RRS Discovery.

Name	Responsibility	Affiliation
Bill Johns	Chief Scientist	RSMAS/ U. Miami
Adam Houk	Scientist	RSMAS/ U. Miami
Mark Graham	Technician	RSMAS/ U. Miami
Ben Shaw	Student	RSMAS/ U. Miami
Chris Meinen	Scientist	NOAA/AOML
Carlos Fonseca	Scientist	CIMAS/ U. Miami
Pedro Pena	Technician	NOAA/AOML
Rigoberto Garcia	Scientist	CIMAS/ U. Miami
Stuart Cunningham	Scientist	NOC Southampton
Paul Wright	Scientist	NOC Southampton
Paul Duncan	Technician	NOC Southampton
Christian Crowe	Technician	NOC Southampton
Dave Childs	Technician	NOC Southampton
Stephen Whittle	Technician	NOC Southampton
John Wynar	Technician	NOC Southampton

Table 2: Abaco Cruise – CTD Cast Summary

Station	Date	Time (GMT)	Latitude	Longitude	Depth
1	11/22/09	02:21:59	26.431N	78.664W	749
2	11/22/09	04:23:40	26.333N	78.719W	675
3	11/22/09	06:05:53	26.254N	78.767W	496
4	11/22/09	07:51:24	26.172N	78.799W	437
5	11/22/09	09:19:14	26.064N	78.850W	276
6	11/22/09	23:04:45	25.958N	76.897W	3500
7	11/23/09	02:59:23	25.960N	76.894W	3501
8	11/23/09	06:50:11	25.967N	76.897W	3557
9	11/23/09	12:47:24	26.525N	76.882W	446
10	11/23/09	14:23:36	26.513N	76.829W	1132
11	11/23/09	17:40:29	26.500N	76.744W	3891
12	11/23/09	23:19:42	26.498N	76.655W	4655
13	11/24/09	15:52:41	26.501N	76.567W	4895
14	11/24/09	20:57:00	26.499N	76.476W	4906
15	11/25/09	01:59:08	26.501N	76.345W	4931
16	11/25/09	06:51:27	26.491N	76.211W	4874
17	11/25/09	14:00:19	26.496N	76.085W	4871
18	11/25/09	19:35:13	26.493N	75.900W	4809
19	11/26/09	00:23:20	26.493N	75.711W	4753
20	11/26/09	05:08:58	26.495N	75.497W	4749
21	11/26/09	10:00:57	26.497N	75.300W	4691
22	11/26/09	15:10:27	26.509N	75.080W	4670
23	11/26/09	20:03:45	26.510N	74.802W	4604
24	11/27/09	01:14:42	26.505N	74.518W	4548
25	11/27/09	06:18:19	26.513N	74.242W	4582
26	11/27/09	11:47:23	26.499N	73.873W	4801
27	11/27/09	17:43:07	26.488N	73.515W	4969
28	11/27/09	23:56:55	26.500N	73.137W	5124
29	11/28/09	05:52:55	26.504N	72.778W	5212
30	11/29/09	00:40:33	26.499N	72.390W	5260
31	11/29/09	06:56:01	26.497N	71.991W	5373
32	12/01/09	03:53:23	26.502N	75.700W	3503
33	12/03/09	14:55:52	26.483N	76.474W	3502
34	12/04/09	00:04:52	26.515N	76.832W	1091
35	12/04/09	04:22:10	26.525N	76.768W	2026

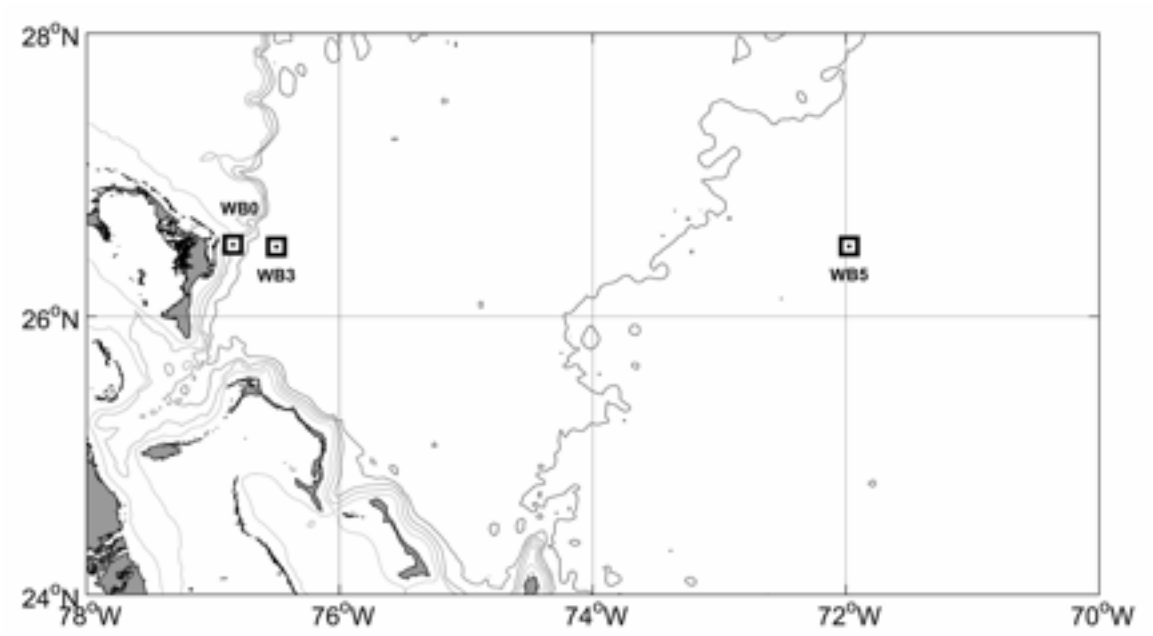

Figure 1: Abaco mooring station locations. Land masses are shaded gray with the Bahamas to the left.

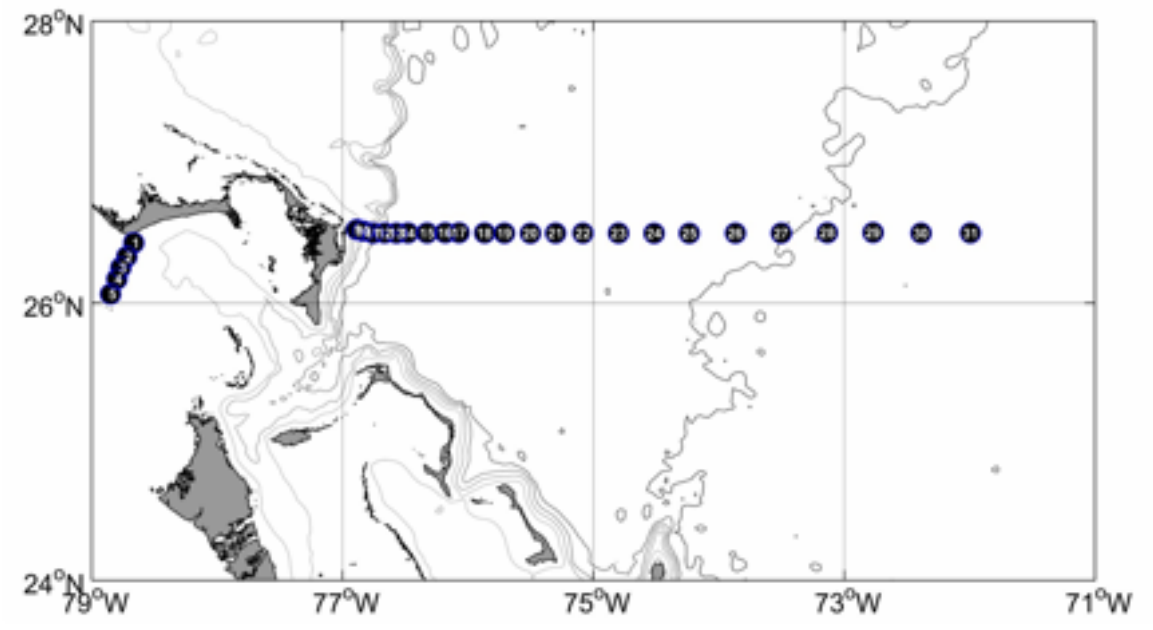

Figure 2: Abaco and NWPC CTD station locations. Land masses are shaded gray with the Bahamas to the left.

2 Cruise Narrative

The following section is a personal communication of Bill Johns.

The cruise departed from Freeport at 1900 local time, delayed from the intended departure time of 0900 local owing to repairs to the ships anchor windlass that needed to be completed before sailing. The CTD/LADCP section across Northwest Providence Channel was accomplished without any problems, with both CTD and LADCP systems functioning well. The NOAA/AOML CTD/LADCP system was used, with NOAA's CTD frame interfaced to the Discovery's Seabird deck unit. A "chinese finger" wire clasp system with a safety strap was attached to the CTD cable just above the termination for added deployment security of the system.

Once in deep water east of Abaco, three deep "cal-dip" CTD stations were done to obtain in-situ calibration data for all the Seabird instruments to be deployed on the moorings. Following this, the Abaco 26.5°N CTDO2/LADCP section was commenced. Problems with the LADCP system became evident on the first deep (3500m) station (CTD 11), with both the 150kHz downward looking ADCP and the upward looking 300kHz ADCP stopping prior to the end of the cast. Several changes of cables and of rechargeable battery systems failed to solve the problem, and after losing more than a half a day of time it was concluded that the root of the problem was the 150kHz ADCP, which was having a failure of one of its beams at depth and apparently drawing excessive current, resulting in several blown fuses. As no repair could be implemented onboard, and with no spare 150kHz ADCP available, the LADCP operations were discontinued for the remainder of the section. It was determined at this time that the last several stations on the 26.5°line (those to the east of 72°W) would have to be cut to ensure sufficient time on the cruise to complete the mooring operations.

The 26.5°section was paused early on Nov. 28 after completing CTD 29, in order to take advantage of good weather and daylight for mooring operations at sites WB5/WBL5 on Nov. 28 and 29th. The remaining two CTD stations (Sta. 30 and 31) were completed during the night of Nov. 28. Mooring number M383 (site WB5) was successfully recovered on Nov. 28, but the bottom lander mooring (M384/WBL5) could not be recovered. Only one of its acoustic releases was communicating, and although it replied with a successful release response it never left the bottom. Several further attempts to release the lander over the next 24 hours proved unsuccessful, and the mooring is assumed lost.

Mooring M392 was successfully deployed at site WB5 on Nov. 29th during ideal weather conditions, and confirmed on bottom. The surface telemetry buoy popped to the surface about an hour after deployment and was visually inspected from the ship and confirmed in good shape. Bottom lander M393 (WBL5) was also successfully deployed Nov. 29th, and acoustic telemetry at PIES site E was successfully performed. Successful telemetry messages were received from M392 at 0000Z Nov 30, with all instruments on M392 online and reporting data.

PIES "D" (a C-PIES instrument) was successfully recovered just after dark on November

30, and a new PIES redeployed in its place. A cal-dip CTD cast (CTD 032) was performed at the PIES "D" site during the evening of Nov. 30 to obtain post-deployment calibration data for 12 of the Seabird Micro-cat instruments recovered from mooring M383. This cast also served as the post-deployment CTD cast for PIES "D".

Mooring recovery operations were commenced at site WB3 (M382) on Dec. 1. This mooring had lost its top float and upper portion in February 2009 to a cut-off (that part having been fortunately recovered in a charter boat operation out of Hope Town), and therefore no radio or strobe were present on the mooring. The mooring was successfully released from the bottom but took much longer to come to the surface than expected, and its top part surfaced nearly a mile to the south of the anchor location. It was successfully recovered in full after waiting for all mooring components to come to the surface. We later determined, after looking at the moored instrument data, that the delayed surfacing time and large distance from the mooring site was explained by the mooring being vertically depressed by very strong deep southward currents at the time of release, in addition to the impact of its reduced positive buoyancy.

PIES "A" was successfully recovered, and a new C-PIES deployed in its place, during the night of December 1. This was followed by data telemetry operations at PIES site "C", which, however, proved unsuccessful. (An earlier attempt at data telemetry from this site, during the outbound CTD section, was also unsuccessful, but it was determined that the instrument itself was otherwise healthy and sampling on schedule and so no recovery was attempted.) The ship then returned to mooring site WB3 to await daytime deployment operations.

Mooring WB3 (M391) was successfully deployed in the morning of Dec. 2. Attempts to recover the PIES at site "B" were unsuccessful. Nothing was heard from it in response to multiple release attempts, nor could it be heard sampling, and no radio signal was heard after waiting on-site for several hours; therefore it is presumed lost. Bottom lander WBL3 (M394) was successfully deployed during the evening of Dec. 2, followed by the bottom survey of M391. A new PIES was successfully deployed at site "B" during the night of Dec. 2.

On the morning of Dec. 3 a deep cal-dip CTD cast was performed at the PIES "B" site, where the remaining Seabird micro-cats recovered from M383 and M382 were lowered; this also served as the post-deployment CTD cast for PIES "B". Following this, the ship proceeded to mooring site WB0 where M381 was successfully recovered. The top float of the mooring proved difficult to approach safely and so the mooring was recovered in reverse order, starting from the release cluster first. Despite some tangles the mooring was successfully recovered in full, with no damage to any of the instruments. A shallow CTD cast (CTD034) was done at PIES "A" to provide the post-deployment CTD cast at that site, and to obtain cal-dip data for a SeaBird microcat recovered from M381 that had a limited (3000 psi) pressure range. The rest of the evening was spent offshore in deeper water where a final CTD/LADCP cast was done (CTD035) to obtain further diagnostic data on the failure mode of the 150 kHz ADCP.

M390 (site WB0) was successfully deployed on the morning of Dec. 4 and surveyed. This completed the scientific work and the ship then began its transit to Freeport for disembarkation. No Florida Straits sections were planned due to the RRS Discovery not having clearances to enter U.S. waters. During the transit to Freeport the ship followed a shallow-water track along the south side of Northwest Providence Channel to obtain additional bottom track calibration data for the shipboard ADCP system. Ship arrived at Freeport and docked at 1000 local on Dec. 5.

3 Inverted Echo-Sounder Operations

NOAA maintains a line of inverted echo sounders (IES) along 26°30' N as part of its Western Boundary Time Series project. Most of the instruments are also equipped with bottom pressure sensors (PIES), and one has both a bottom pressure sensor and a single point current meter 50 m above the bottom (C-PIES). The activities involving inverted echo sounders are summarized in Table 3.

Table 3: Inverted echo-sounder locations and operation.

IES Site	Type	Latitude	Longitude	Date	Operation
A	PIES	026°30.9′ N	076°50.0′ W	12/1/09	PIES Recovery
A	CPIES	026°30.9′ N	076°50.0′ W	12/1/09	CPIES Deployment
B	IES	026°29.6′ N	076°28.3′ W	12/2/09	Failed IES Recovery
B	PIES	026°29.6′ N	076°28.4′ W	12/3/09	PIES Deployment
C	PIES	026°30.1′ N	076°05.3′ W	11/25/09	Failed Pies Telemetry
C	PIES	026°30.1′ N	076°05.3′ W	12/2/09	Failed Pies Telemetry
D	CPIES	026°30.2′ N	075°42.3′ W	11/30/09	CPIES Recovery
D	PIES	026°30.2′ N	075°42.3′ W	12/1/09	PIES Deployment
E	PIES	026°30.0′ N	072°00.0′ W	11/30/09	PIES Telemetry

4 Mooring Operations

Three taut-line subsurface moorings were successfully recovered from the locations listed in Table 4 and shown in Figure 1. These moorings contained a mixture of current meters, Acoustic Doppler Current Profilers (ADCPs), and temperature/salinity recorders. These moorings had been deployed previously in April 2008 aboard the R/V Seward Johnson. A bottom lander mooring previously deployed at site WBL5 could not be released from the bottom, and is presumed lost. The bottom lander at site WBL3 deployed in April 2008 was left in the water to continue recording data until Spring of 2010 to provide overlapping bottom pressure data with the newly deployed lander at this site.

A total of 5 moorings (3 taut-wire moorings and 2 bottom landers) were deployed at the locations listed in Table 5 and shown in Figure 1. Surveying of the on-bottom position of all moorings (except for the bottom landers) was successfully completed after each mooring deployment.

Mooring WB5 contained a surface telemetry buoy intended to provide near-real time data from all of the instruments on the mooring. The instrument data is relayed via inductive up-wire telemetry to a subsurface controller/logger in the main subsurface flotation unit at 50 m depth, which then relays the data via conducting S-tether cable to a surface telemetry buoy. The other moorings contain only internally recording instruments whose data is recovered after the moorings are retrieved.

Table 4: Summary of U.S. mooring recovery operations.

Mooring Site	Mooring Number	Latitude (N)	Longitude (W)	Depth	Date of Recovery
WB0	M381	26° 30.34’	76° 50.49’	1001	12/3/2009
WB3	M382	26° 29.53’	76° 30.04’	4858	12/1/2009
WB5	M383	26° 30.33’	71° 58.23’	5293	11/28/2009

Table 5: Summary of U.S. mooring deployment operations.

Mooring Site	Mooring Number	Latitude (N)	Longitude (W)	Depth	Date of Deployment
WB0	M390	26° 30.41’	76° 50.45’	1004	12/4/2009
WB3	M391	26° 29.37’	76° 30.02’	4840	12/2/2009
WB5	M392	26° 29.16’	71° 58.70’	5294	12/29/2009
WBL3	M394	26° 29.42’	76° 29.64’	4843	12/2/2009
WBL5	M393	26° 30.05’	71° 59.20’	5240	12/29/2009

5 Standards and Pre-Cruise Calibrations

The CTD/O2 system is a real-time data acquisition system with the data from a Sea-Bird Electronics, Inc. (SBE) 9plus underwater unit transmitted via a conducting cable to a SBE 11plus deck unit (V2). The serial data from the underwater unit is sent to the deck unit in RS-232 NRZ format. The deck unit decodes the serial data and sends it to a personal computer for display and storage in a disk file using Sea-Bird Seasave software.

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

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

The SBE 911plus underwater unit is configured with dual standard modular temperature (SBE 3 plus) and conductivity (SBE 4) sensors, which are mounted near the lower end cap. The conductivity cell entrance is co-planar with the tip of the temperature sensor probe. The pressure sensor is mounted inside the underwater unit main housing. A centrifugal pump module flushes water through sensor tubing at a constant rate independent of the CTD's motion to improve dynamic performance. Dual dissolved oxygen sensors (SBE 43) are added to the pumped sensor configuration following the temperature-conductivity (TC) pair. A list of sensors used during the cruise can be seen in Table 6.

Table 6: Equipment used during AB0911

Instrument	SN	Stations	Use	Pre-Cruise Calibration	Comment
Sea-Bird SBE 32 24-palce Carousel Water Sampler	328531-0031	1- 35			
Sea-Bird SBE9plus CTD	0957	1-35		09/22/09	
Paroscientific Digiquartz Pressure Sensor	115173	1-35		09/22/09	
Sea-Bird SBE3plus Temperature Sensor	5140	1-35	Primary	09/10/09	
Sea-Bird SBE3plus Temperature Sensor	5171	1-35	Secondary	08/13/09	
Sea-Bird SBE4C Conductivity Sensor	1374	1-35	Primary	08/21/09	
Sea-Bird SBE4C Conductivity Sensor	3657	1-35	Secondary	08/14/09	
Sea-Bird SBE43 Dissolved Oxygen Sensor	0140	1- 12	Primary	09/15/09	
Sea-Bird SBE43 Dissolved Oxygen Sensor	1266	13-35	Primary	02/26/09	
Sea-Bird SBE43 Dissolved Oxygen Sensor	1666	1-35	Secondary	08/18/09	
Sea-Bird SBE5T Pump	N/A	1-35	Primary		
Sea-Bird SBE5T Pump	N/A	1-35	Secondary		
Altimeter	AOML# 1	1- 35	Range: 280		scale: 2.928
RDI LADCP - 150 kHz Broad Band (AOML)	N/A	1-10	Downward		
RDI LADCP - 300 kHz Workhorse (AOML)	N/A	1-10	Upward		

5.1 Conductivity

The flow-through conductivity-sensing element is a glass tube (cell) with three platinum electrodes (Seabird model SBE 4). The resistance measured between the center electrode and the end electrode pair is determined by the cell geometry and the specific conductance of the fluid within the cell, and controls the output frequency of a Wein Bridge circuit. The sensor has a frequency output of approximately 3 to 12 kHz corresponding to conductivity from 0 to 7 Siemens/meter (0 to 70 mmho/cm). The SBE 4 has a typical accuracy/stability of ± 0.0003 S·m^{-1}/month and resolution of 0.00004 S·m^{-1} at 24 scans per second.

Two conductivity sensors were used during AB0911, serial numbers (s/n) 1374 and 3657. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington during August 2009. The coefficients shown in Table 7 were entered into Seasave using the configuration file.

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

$$C\ (Siemens/meter) = \frac{(g + h * f^2 + i * f^3 + j * f^4)}{[10 * (1 + c_{t_{cor}} * t + c_{p_{cor}} * p)]}$$

where g, h, i, j, $c_{t_{cor}}$, and $c_{p_{cor}}$ are the calibrations coefficients shown above, f is the instrument frequency (kHz), t is the water temperature (degrees Celsius), and p is the water pressure (dbar). SEASAVE® automatically implements this equation.

Table 7: Calibration coefficients for the conductivity sensors.

s/n 1374 August 21, 2009	s/n 3657 August 14, 2009
g = -3.96668534e+00	g = -9.89444754e+00
h = 4.84495487e-01	h = 1.40009198e+00
i = -2.19535256e-04	i = -2.48419181e-03
j = 3.77227066e-05	j = 2.56836805e-04
CPcor = -9.5700e-08	CPcor = -9.5700e-08
CTcor = 3.2500e-06	CTcor = 3.2500e-06

5.2 Temperature

The temperature-sensing element is a glass-coated thermistor bead, pressure protected by a stainless steel tube. The sensor output frequency ranges from 5–13 kHz corresponding to temperatures from -5 to 35°C. The output frequency is inversely proportional to the square root of the thermistor resistance, which controls the output of a patented Wien Bridge circuit. The thermistor resistance is exponentially related to temperature. The SBE 3 thermometer has a typical accuracy/stability of ±0.001°C per year and resolution of 0.001°C/year at 24 samples per second. The SBE 3 thermometer has a fast response time of 0.065 seconds.

Two temperature sensors (SBE 3plus) were used during AB0911, serial numbers (s/n) 5140 and 5171. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington during August and September 2009. The following coefficients (Table 8) were entered into SEASAVE® using the configuration file. SEASAVE® automatically implements the equation below and converts between ITS-90 and IPTS-68 temperature scales as desired. The Temperature (ITS-90) is computed from g, h, i, j and f_0 and f is the instrument frequency (kHz) coefficients as follows:

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

Table 8: Calibration coefficients for the temperature sensors.

s/n 5140 September 10, 2009	s/n 5171 August 13, 2009
g = 4.36465389e-03	g = 4.39243526e-03
h = 6.40962773e-04	h = 6.45531062e-04
i = 2.22912766e-05	i = 2.30771702e-05
j = 2.07846363e-06	j = 2.16710891e-06
f_0 = 1000.0	f_0 = 1000.0

5.3 Pressure

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

The pressure sensors utilized during AB0911 was s/n 0957. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington on September 2009.

The following coefficients (Table 9) were entered into SEASAVE® using the configuration file:

Pressure coefficients are first formulated into:

$$\begin{aligned} c &= c_1 + c_2 * U + c_3 * U^2 \\ d &= d_1 + d_2 * U \\ t_0 &= t_1 + t_2 * U + t_3 * U^2 + t_4 * U^3 + t_5 * U^4 \end{aligned}$$

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

$$P\ (psia) = c * \left(1 - \frac{t_0^2}{t}\right) * \left[1 - d * \left(1 - \frac{t_0^2}{t}\right)\right]$$

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

Table 9: Calibration coefficients for the pressure sensor.

s/n 0957
September 22, 2009
c_1 = -4.701953e+04
c_2 = -3.199230e-01
c_3 = 1.464100e-02
d_1 = 3.748600e-02
d_2 = 0.000000e+00
t_1 = 3.002465e+01
t_2 = -3.417081e-04
t_3 = 4.148380e-06
t_4 = 2.793720e-09
t_5 = 0.000000e+00
Slope = 1.00001000
Offset = -0.2120
AD590M = 1.281500e-02
AD590B = -9.225010e+00

5.4 Dissolved Oxygen

The SBE 43 dissolved oxygen sensor uses a membrane polarographic oxygen detector (MPOD). Oxygen sensors determine the dissolved oxygen concentration by counting the number of oxygen molecules per second (flux) that diffuse through a membrane. By knowing the flux of oxygen and the geometry of the diffusion path, the concentration of oxygen can be computed. The permeability of the membrane to oxygen is a function of temperature and ambient pressure. In order to minimize the errors in the oxygen measurement due to the temperature

differences between the water and the oxygen sensor, a temperature compensation is calculated using a temperature measured near the active surface of the sensor. The interface electronics output voltages proportional to the temperature-compensated oxygen current. Initial computation of dissolved oxygen in engineering units is done in the software. The range for dissolved oxygen is 120% of surface saturation in all natural waters, fresh and salt, and the nominal accuracy is 2% of saturation.

Under extreme pressure, changes can occur in gas permeable Teflon membranes that affect their permeability characteristics. Some of these changes (plasticization and amorphous/crystalinity ratios) have long time constants and depend on the sensor's time-pressure history. These slow processes result in hysteresis in long, deep casts. The hysteresis correction algorithm operates through the entire data profile and corrects the oxygen voltage values for changes in membrane permeability as pressure varies. At each measurement, the correction to the membrane permeability is calculated based on the current pressure and how long the sensor spent at previous pressures.

Sea-Bird has implemented an optional hysteresis correction for dissolved oxygen data. The correction algorithm requires a continuous time series of data, with no temporal data gaps (although a continuous time series is necessary, a constant sampling interval is not required). Prior to processing, do not remove any data from the downcast or upcast (if to be used), other than a surface soak at the beginning of the downcast.

Oxygen sensors 0140, 1266 and 1666 were used during AB0911. The following oxygen coefficients (Table 10) were entered into SEASAVE® using the configuration file:

Table 10: Calibration coefficients for the dissolved oxygen sensors.

s/n 0140	s/n 1266	s/n 1666
September 15, 2009	June 12, 2009	August 18, 2009
Soc = 0.3185	Soc = 0.5481	Soc = 0.5651
Voffset = -0.6083	Voffset = -0.5337	Voffset = -0.4991
Tau20 = 1.56	Tau20 = 2.03	Tau20 = 1.80
A = -2.2375e-03	A = -3.1015e-03	A = -3.6562e-03
B = 1.4514e-04	B = 1.4744e-04	B = 2.0806e-04
C = -2.5553e-06	C = -2.8459e-06	C = -4.0140e-06
$E_{nominal}$ = 0.036	$E_{nominal}$ = 0.036	$E_{nominal}$ = 0.036

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

Dissolved oxygen concentration is calculated according to:

$$O\ (ml/l) = \{Soc * (V + V_{offset} + tau(T,S) * \frac{\delta v}{\delta t}) + p1 * station\}$$
$$*(1.0 + A * T + B * T^2 + C * T^3) * OXSAT(T,S) * e^{E*(\frac{P}{K})}$$

where Soc, V_{offset}, tau, A, B, C, E and $p1$ are the calibration coefficients shown above and V is the instrument voltage (V). T, S and P are the temperature, salinity and pressure measured by the CTD. K is the temperature in the absolute scale (K), $\delta v/\delta t$ is the oxygen voltage time derivative, *station* is the station number, and $OXSAT$ is the oxygen saturation value calculated according to (Weiss, 1970):

$$OXSAT(\theta, S) = \exp\left\{A_1 + A_2 * \left(\frac{100}{\theta}\right) + A_3 * \ln\left(\frac{\theta}{100}\right) + A_4 * \left(\frac{\theta}{100}\right) + S * \left[B_1 + B_2 * \left(\frac{\theta}{100}\right) + B_3 * \left(\frac{\theta}{100}\right)^2\right]\right\}$$

where θ is the absolute temperature (K); and

$$\begin{array}{rlrl} A_1 = & -173.4292 & B_1 = & -0.033096 \\ A_2 = & 249.6339 & B_2 = & 0.014259 \\ A_3 = & 143.3483 & B_3 = & -0.00170 \\ A_4 = & -21.8492. & & \end{array}$$

SEASAVE® automatically implements this equation.

The hysteresis correction is calculated, using the oxygen voltages, with the following algorithm:

$$D = 1 + H_1 * (e^{\left(\frac{P(i)}{H2}\right)} - 1)$$

$$C = e(-1 * \left(\frac{Time(i) - Time(i-1))}{H3}\right)$$

$$O_V(i) = O_{volt}(i) + V_{offset}$$

$$O_{newvolts}(i) = a * \frac{a}{D}$$

$$O_{finalvolts}(i) = O_{newvolts}(i) - V_{offset}$$

Where:

i = indexing variable (must be a continuous time series to work; can be performed on bin averaged data), where i = 1:end (end is largest data index point plus 1).
$P(i)$ = pressure (decibars) at index point i .
$Time(i)$ = time (seconds) from start of index point i.
$O_{volt}(i)$ = SBE 43 oxygen voltage output directly from sensor, with no calibration or hysteresis corrections, at index point i.
V_{offset} = correction for an electronic offset that is applied to voltage output of sensor. V_{offset} correction is always negative (see factory calibration sheet for this coefficient). V_{offset} is added to raw voltages prior to hysteresis correction. At end of hysteresis corrections, V_{offset} is removed prior to data conversion using SBE 43 calibration equation (see $O_{finalvolts}(i)$).
$O_V(i)$ = dissolved oxygen voltage value with V_{offset} correction (made prior to hysteresis correction) at index point i.

D and C are temporary variables used to simplify expression in processing loop.
$H1$ = amplitude of hysteresis correction function. Default = -0.033, range = -0.02 to -0.05 (varies from sensor to sensor).
$H2$ = function constant or curvature function for hysteresis. Default = 5000.
$H3$ = time constant for hysteresis (seconds). Default = 1450, range = 1200 to 2000 (varies from sensor to sensor).
$O_{newvolts}(i)$ = hysteresis-corrected oxygen value at index point i.
$O_{finalvolts}(i)$ = hysteresis-corrected oxygen value at index point i with V_{offset} removed.

This step is necessary prior to computing oxygen concentration using SBE 43 calibration equation.

6 Data Acquisition

CTD/rosette casts were performed with a package consisting of a 24-place, 10-liter rosette frame, a 24-place water sampler (SBE32) and 23, 10-liter Bullister-style bottles. Underwater electronic components consisted of a Sea-Bird Electronics (SBE) 9 plus CTD with dual pumps and the following sensors: dual temperature (SBE3), dual conductivity (SBE4), dual dissolved oxygen (SBE43), and an altimeter. The other underwater electronic components consisted of two RDI LADCPs. A total of 35 CTD/rosette casts were made, usually to within 20 m of the bottom.

The CTD's supplied a standard Sea-Bird format data stream at a data rate of 24 frames/second. The SBE9 plus CTD was connected to the SBE32 24-place pylon providing for single-conductor sea cable operations. Power to the SBE9 plus CTD, SBE32 pylon, auxiliary sensors, and altimeter was provided through the sea cable from the SBE911plus deck unit. The rosette system was suspended from a UNOLS-standard three-conductor 0.322" electro-mechanical sea cable.

The CTD was mounted vertically attached to the bottom center of the rosette frame. All SBE4 conductivity and SBE3 temperature sensors and their respective pumps were mounted vertically as recommended by SBE, outboard of the CTD. The CTD was outfitted with dual pumps. Primary temperature, conductivity, and dissolved oxygen were plumbed on one pump circuit and secondary temperature, conductivity, and dissolved oxygen on the other. Pump exhausts were attached to outside corners of the CTD cage and directed downward. The altimeter near the bottom of the frame. The LADCP's were vertically mounted inside the bottle rings with one 150 kHz pointing down, the other 300 kHz transducer pointing up. A niskin bottle had to be removed to mount the upward looking 300 kHz ADCP.

O-rings were changed as necessary and bottle maintenance was performed each day to insure proper closure and sealing. Valves were inspected for leaks and repaired or replaced as needed.

6.1 Data Acquisition Procedure

This report was written after the cruise was completed where no CTD procedures were recorded. On deck pressure was obtained fromt the cruise log book.

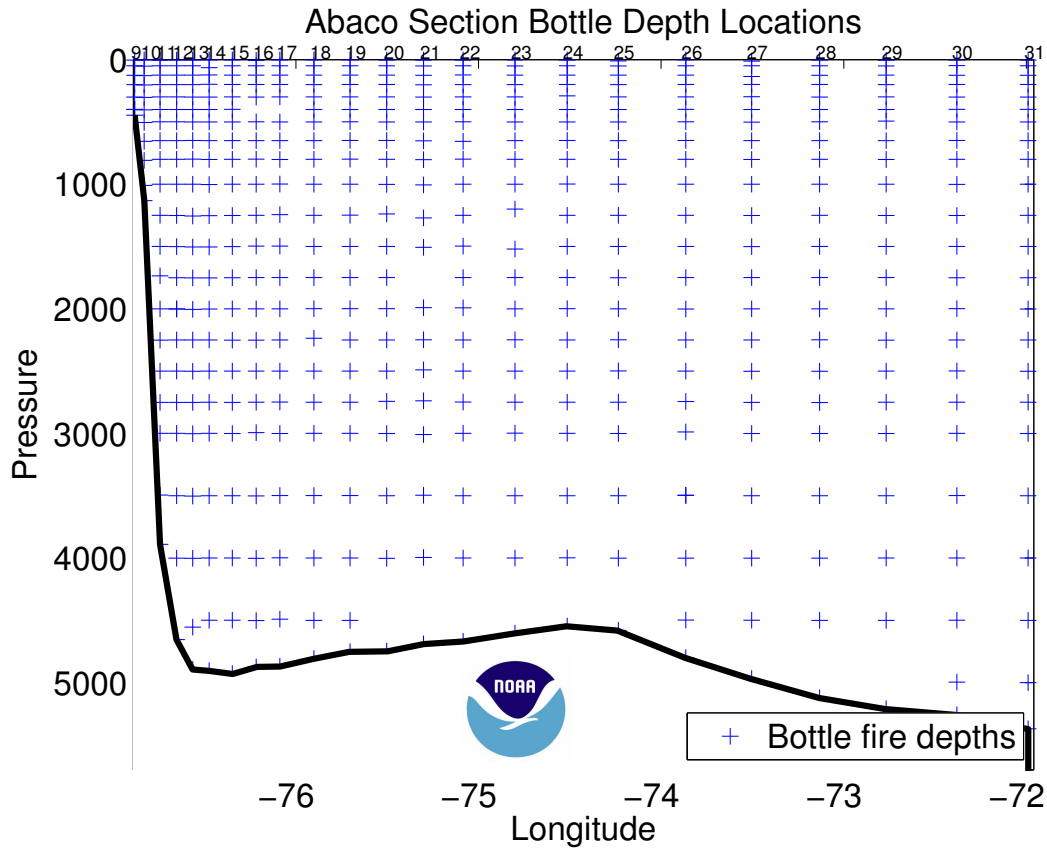

Figure 3: Bottle locations for 26.5°N Deep Western Boundary Current section east of Abaco Island.

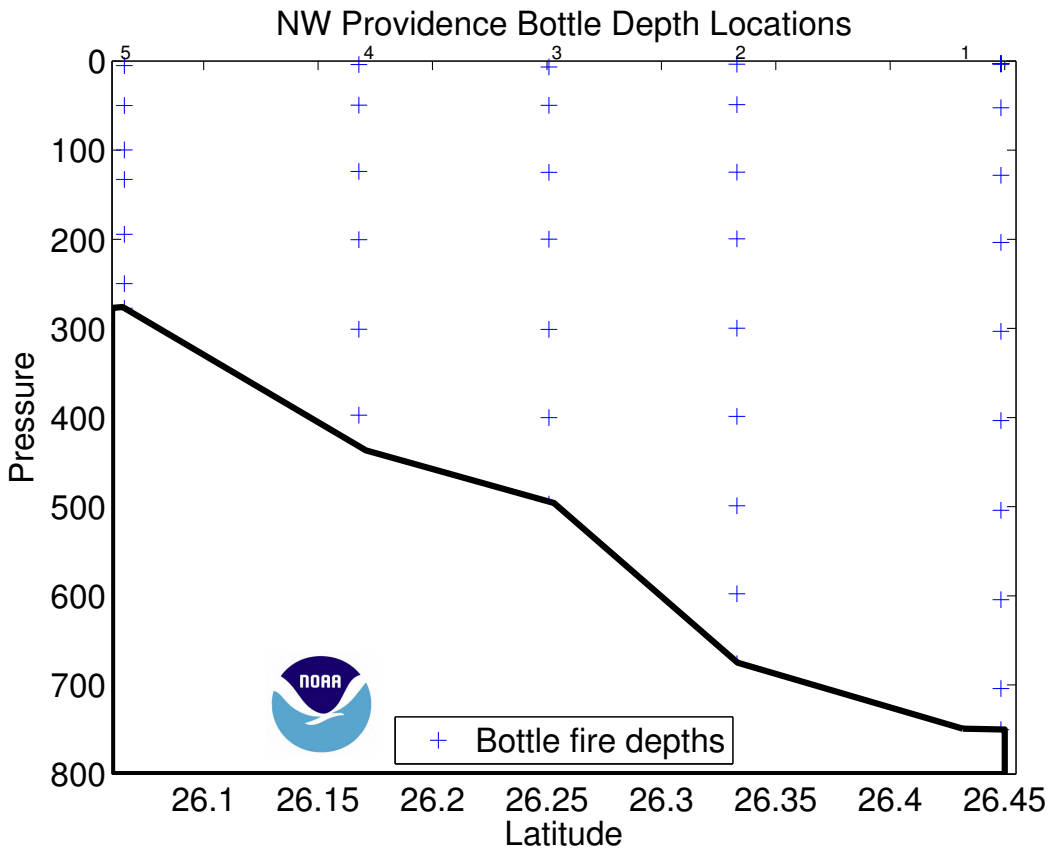

Figure 4: Bottle locations for along the Northwest Providence Channel section.

6.2 Shipboard CTD Data Processing

Shipboard CTD data processing was performed automatically at the end of each deployment using the SEABIRD SBE Data Processing package and AOML Matlab processing software. The raw CTD data and bottle trips acquired by SBE Seasave on the Windows workstation were copied onto the CTD processing laptop, and processed to a 1-dbar series and a 1-second time series. Bottle trip values were extracted and a 1-decibar (dbar) down cast pressure series created.

Raw data are acquired from the instruments and are stored unmodified. The conversion module DATCNV uses the instrument configuration and pre-cruise factory calibration coefficients to create a converted engineering unit data file that is utilized by all SBEDataProc® post processing modules. Unless otherwise noted, all calibration parameters given are factory default values recommended by Sea Bird Electronics, Inc. The following is the SBEDataProc® processing module sequence and specifications for primary calibrated data (1 dbar averages) uses the following routines in order for reduction of CTD/O2 data from this cruise:

1. DATCNV converts raw data into engineering units and creates a .ROS bottle file. Both down and up casts were processed for scan, elapsed time(s), depth, pressure, t0 ITS-90 C, t1 ITS-90 C, c0 S/cm, c1 S/cm, salinity (PSU), salinity 2 (PSU), oxygen voltage V, oxygen 2 voltage V, altimeter, optical sensor, oxygen umol/kg, oxygen 2 umol/kg, oxygen mll/l, oxygen 2 ml/l, oxygen dv/dt, oxygen dv/dt 2, latitude, and longitude. MARKSCAN was used to determine the number of scans acquired on deck and while priming the system to exclude these scans from processing.

2. ALIGNCTD aligns temperature, conductivity, and oxygen measurements in time relative to pressure to ensure that derived parameters are made using measurements from the same parcel of water. Secondary conductivity and oxygen were automatically advanced by 0.073 seconds. The primary conductivity was further aligned subtracting -0.007 and the secondary -0.014. The primary oxygen used 1.066 and the secondary 1.059.

3. BOTTLESUM creates a summary of the bottle data. Bottle position, date, and time were output automatically. Pressure, temperature, conductivity, salinity, oxygen voltage and preliminary oxygen values were averaged over a 5 second interval.

4. WILDEDIT computes the standard deviation of 100 point bins, and then makes two passes through the data. The first pass flags points that differ from the mean by more than 2 standard deviations. A new standard deviation is computed excluding the flagged points and the second pass marks bad values greater than 20 standard deviations from the mean. For this data set, data were kept within a distance of 100

of the mean (i.e., all data).

5. FILTER applies a low pass filter to pressure with a time constant of 0.15 seconds. In order to produce zero phase (no time shift), the filter is first run forward through the file and then run backwards through the file.

6. CELLTM uses a recursive filter to remove conductivity cell thermal mass effects from measured conductivity. In areas with steep temperature gradients the thermal mass correction is on the order of 0.005 PSS-78. In other areas the correction is negligible. The value used for the thermal anomaly amplitude (alpha) was 0.03°C. The value used for the thermal anomaly time constant (1/beta) was 7.0°C.

7. LOOPEDIT removes scans associated with pressure slowdowns and reversals. If the CTD velocity is less than 0.25 m/s or the pressure is not greater than the previous maximum scan, the scan is omitted.

8. DERIVE uses 1 dbar averaged pressure, temperature, and conductivity to compute primary and secondary salinities. Oxygen voltage is used to calculate oxygen concentrations.

9. BINAVG averages the data into 1 dbar bins. Each bin is centered on an integer pressure value, e.g., the 1 dbar bin averages scans where pressure is between 0.5 dbar and 1.5 dbar. There is no surface bin. The number of points averaged in each bin is included in the data file.

10. STRIP removes the computed oxygen variable.

11. TRANS converts the binary data file into ASCII format.

12. SPLIT separates the cast into upcast and downcast values.

Package slowdowns and reversals owing to ship roll can move mixed water in tow to in front of the CTD sensors and create artificial density inversions and other artifacts. In addition to Seasoft module LOOPEDIT, a program computes values of density locally referenced between every 1 dbar of pressure to compute N^2 and linearly interpolates temperature, conductivity, and oxygen voltage over those records where N^2 is less than or equal to -1 x 10^{-5} s^{-2}. These data were retained but flagged as questionable in the final WOCE formatted files.

Final calibrations are applied to delooped data files. ITS-90 temperature, salinity, and oxygen are computed, and WOCE quality flags are created.

CTD data were examined at the completion of each deployment for clean corrected sensor response and any calibration shifts. As bottle salinity and oxygen results became available, they were used to refine shipboard conductivity and oxygen sensor calibrations.

A total of 35 casts were processed.

6.3 CTD Calibration Procedures

Laboratory calibrations of the CTD pressure, temperature, conductivity, and oxygen sensors were all performed at SBE. The calibration dates are listed in Table 6.

Secondary temperature, conductivity and dissolved oxygen (T2, C2 and DO2) sensors served as calibration checks for the reported primary sensors. During the cruise, it was determined that the primary T/C and secondary DO2 sensors behaved more stably during the cruise.

In-situ salinity and dissolved O2 check samples collected during each cast were used to calibrate the conductivity and dissolved O2 sensors.

There were two sensor combinations (not including pump replacements) used during the cruise (Table 6).

6.3.1 Salinity Analysis

Bottle salinity analyses were performed using a Guildline Model 8400B inductive autosalinometer, and a dedicated PC. Software allowed the user to standardize the autosalinometer. IAPSO Standard Seawater was used as the standard. The autosal was standardized before each case of samples was analyzed, or every 24 samples.

IAPSO Standard Seawater Batch P-151 was used to standardize the casts (Table 11).

Table 11: Nominal values for the batches of IAPSO standard seawater.

P-151
Use By: May 2012
K15: 0.99997
Salinity: 34.999

Bottle salinities were compared with preliminary CTD salinity values to monitor CTD conductivity cell performance and drift (Figure 5). The expected precision of the autosalinometer is 0.001 PSS, with an accuracy of ±0.0003 PSS. In order to check the precision of our measurements the duplicate samples were analyzed. From the 24 duplicate samples (3.9% of total samples collected in this cruise) the average residual for the duplicates was 0.00014 with a standard deviation of ± 0.00075.

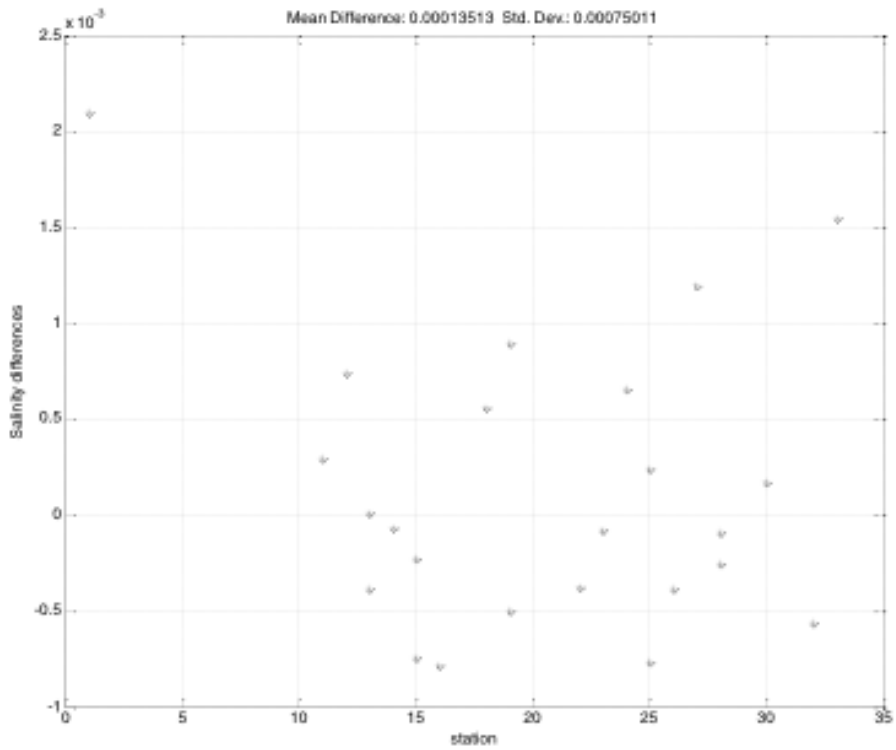

Figure 5: Standard vial calibrations throughout the cruise.

6.3.2 Oxygen Analysis

Bottle oxygen analyses were also performed using a photometric automatic Winkler method titration with a Carpenter modification, and a dedicated PC. The water samples are drawn (without air bubbles) from Niskin bottles immediately upon arrival on deck. Manganese sulfate (or chloride) is added to the sample, followed by the addition of an alkaline sodium hydroxide-sodium iodide solution. These solutions "pickle" the sample causing it to precipitate and react with the dissolved oxygen in the water sample. The sample is then dissolved and photometrically titrated to an end point with a standardized sodium thiosulphate solution. The content of oxygen value is calculated utilizing the volume of the water sample bottle and the amount of added thiosulphate. Automated titrating systems can attain a

precision of about ±4.46 $umol/kg$ (Friederich, et al., 1991).

The precision of the oxygen measurements during the cruise was estimated by using the duplicate samples. From the 31 duplicate samples (which corresponds of 5.8% of the total samples collected during this cruise the average residual for the duplicates was 0.0 $umol/kg$ with and standard deviation of 0.48 $umol/kg$.

The precision of the oxygen measurements during the cruise were estimated by using the duplicate samples. From the 31 duplicate samples (Table 12), which corresponds to 5.8% of the total samples collected during this cruise, the average residual for the duplicates was 0.0 $umol/kg$ with and standard deviation of ±0.48 $umol/kg$ (Figure 6). Not oxygens were collected during the mooring sensor calibration casts.

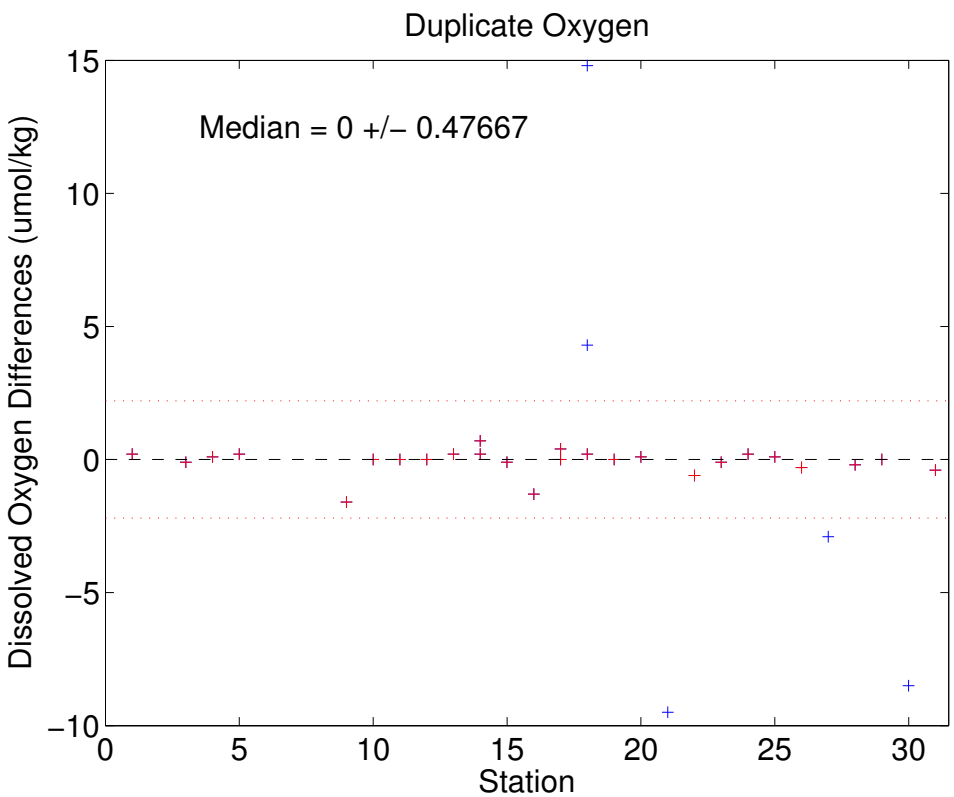

Figure 6: Oxygen residuals of the duplicate samples .

Table 12: Duplicate dissolved oxygen samples collected during the ABACO cruise (values in $umol/kg$).

Station	Niskin	Oxygen1	Oxygen2	Differences
1	3	163.3	163.5	-0.200
3	5	190.6	190.5	0.100
4	2	172.5	172.6	-0.100
5	1	169.0	169.2	-0.200
9	7	200.5	198.9	1.600
10	2	222.1	222.1	0.000
11	2	274.2	274.2	0.000
12	2	273.2	273.2	0.000
13	3	274.0	274.2	-0.200
14	4	275.5	276.2	-0.700
14	21	207.7	207.9	-0.200
15	2	270.4	270.3	0.100
16	3	273.7	272.4	1.300
17	18	195.9	196.3	-0.400
17	22	206.5	206.5	0.000
18	1	262.9	263.1	-0.200
18	14	149.2	164.0	-14.800
18	21	202.7	207.0	-4.300
19	5	274.7	274.7	0.000
20	17	190.4	190.5	-0.100
21	1	272.3	262.8	9.500
22	10	270.4	269.8	0.600
23	3	274.1	274.0	0.100
24	23	203.4	203.6	-0.200
25	21	201.3	201.4	-0.100
26	15	145.2	144.9	0.300
27	7	274.6	271.7	2.900
28	4	275.8	275.6	0.200
29	14	166.3	166.3	0.000
30	1	268.7	260.2	8.500
31	9	267.2	266.8	0.400

7 Post-Cruise Calibrations

Post cruise sensor calibrations were done at Sea-Bird Electronics, Inc.. Secondary temperature, conductivity and dissolved oxygen sensors served as calibration checks for the reported primary sensors.

In-situ salinity and dissolved oxygen samples collected during each cast were used to calibrate the conductivity and dissolved oxygen sensors.

Two sensor combinations were used during the cruise as listed in Table 6. Primary TC pair T5140/C1374 was selected for final data reduction. Secondary oxygen sensor, s/n 1666, was used for the final data reduction. In addition to the Seasave processing modules, a group of Matlab script files called AOML/CTDCAL Toolbox were used. These scripts were based on earlier work of different groups as well as in modern statistical tools. They cover all the steps of the CTD data processing from the preliminary comparisons between sensors or bottle samples to data reductions and final sensors calibrations.

7.1 CTD Data Processing

By using the post cruise sensors calibrations; time drifts were estimated for the temperature and conductivity sensors (for estimated time drifts see the appropriate sections below). The processing module sequence used at sea is done again to include the time drifts as well the pressure correction. After this step the following Matlab scripts based on PMEL programs are applied to the CTD data:

- FILL_SURFACE was used to copy the first good value of salinity, potential temperature, oxygen and oxygen current back to the surface. The program then calculated temperature and conductivity, and zeroed doc/dt of oxygen current for those records.

- DESPIKE1 removed spikes from primary oxygen current and oxygen temperature data, as well as removing spikes from the primary conductivity sensor. Data were linearly interpolated over de-spiked records. Conductivity was back calculated, and sigma-theta and potential temperature were recomputed for the interpolated records.

- DESPIKE2 removed spikes from secondary sensors in the same method as DESPIKE1.

- Package slowdown and reversals due to ship roll can move mixed water in tow in front of the CTD sensors. This mixture can create artificial density inversions and other artifacts. In addition to the SEASOFT module LOOPEDIT, DELOOP, computes values of density locally referenced between every 1 dbar of pressure to compute N^2 = (- g/p) (dp/dz) and linearly interpolated measured parameters over those records where $N^2 \leq$ -1.0 e -05 s^{-2}.

7.2 CTD Pressure

Pressure sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw pressure data during each cast. Residual pressure offsets (the difference between the first and last submerged pressures) were examined to check for calibration shifts (see Figure 7 and Table 13). Pressure sensor, s/n 0957, was used during the cruise. On deck pressures before the start of each cast was recorded and is plotted in Figure 7. The on deck pressure before the cast was 0.2± 0.09 dbar and after the cast it was 0.1± 0.089 dbar. A pressure correction of 0.153 dbar was applied to the pressure sensor.

Near surface pressure values (which is taken as the near-surface pressure at the markscan and the last fired bottle pressure) showed little variability over the cruise besides a few stations that were started or ended deeper (3.2 ± 1.81 dbar before and 3.32 ± 2.18 dbar after).

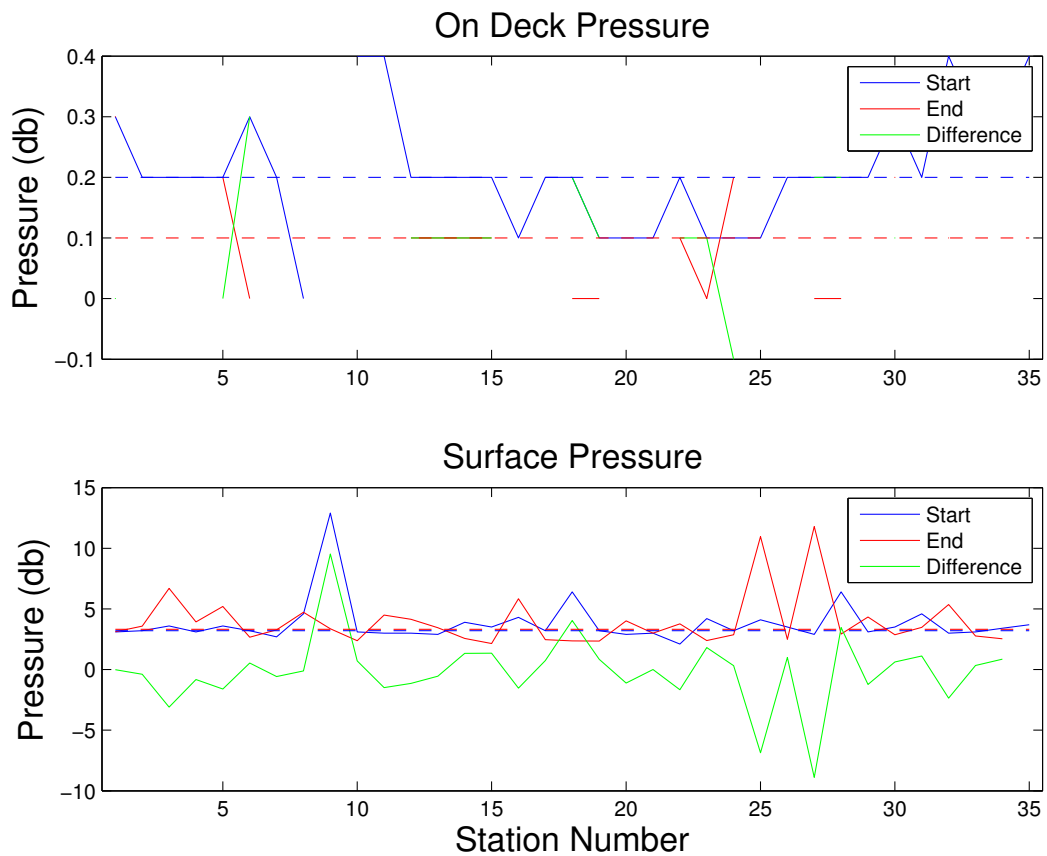

Figure 7: Pressure differences vs. station number. Top panel is the pressures measured on deck before the cast (blue). Bottom panel are the sea surface pressure values measured at the start of the downcast (blue), at the end of the upcast (red) and their respective difference (green).

Table 13: Near surface Pressure values and scan number used to remove surface soak and on-deck values.

Station	Markscan	Deck Prs Start	Deck Prs End	Sfc Prs Start	Sfc Prs End
1	1538	0.3000	0.3000	3.1000	
2	671	0.2000		3.2000	
3	490	0.2000		3.6000	
4	917	0.2000		3.1000	
5	510	0.2000	0.2000	3.6000	
6	10382	0.3000	0.0000	3.2000	
7	11461	0.2000		2.7000	
8	12162	0.0000		4.6000	
9	1104			12.9000	
10	9608	0.4000		3.1000	
11	7225	0.4000		3.0000	
12	20815	0.2000	0.1000	3.0000	
13	9858	0.2000	0.1000	2.9000	
14	11654	0.2000	0.1000	3.9000	
15	9053	0.2000	0.1000	3.5000	
16	10705	0.1000		4.3000	
17	11577	0.2000		3.2000	
18	17639	0.2000	0.0000	6.4000	
19	8123	0.1000	0.0000	3.2000	
20	17131	0.1000		2.9000	
21	16980	0.1000		3.0000	
22	10921	0.2000	0.1000	2.1000	
23	11698	0.1000	0.0000	4.2000	
24	10647	0.1000	0.2000	3.2000	
25	18319	0.1000		4.1000	
26	14872	0.2000		3.5000	
27	8700	0.2000	0.0000	2.9000	
28	14721	0.2000	0.0000	6.4000	
29	14028	0.2000		3.1000	
30	10775	0.3000	0.2000	3.5000	
31	17766	0.2000		4.6000	
32	10360	0.4000	0.1000	3.0000	
33	11000	0.3000		3.1000	
34	14131	0.3000		3.4000	
35	8700	0.4000		3.7000	

7.3 CTD Temperature

Temperature sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw primary and secondary temperature data during each cast. Data accuracy,

reproducibility and stability were examined by tabulating the difference between the two different temperature sensors over a range of pressures (bottle trip locations) for each cast. These comparisons are summarized in Figure 8, which shows a median temperature difference between the two sensors of -0.0005 °C and a standard deviation of 0.0009 °C.

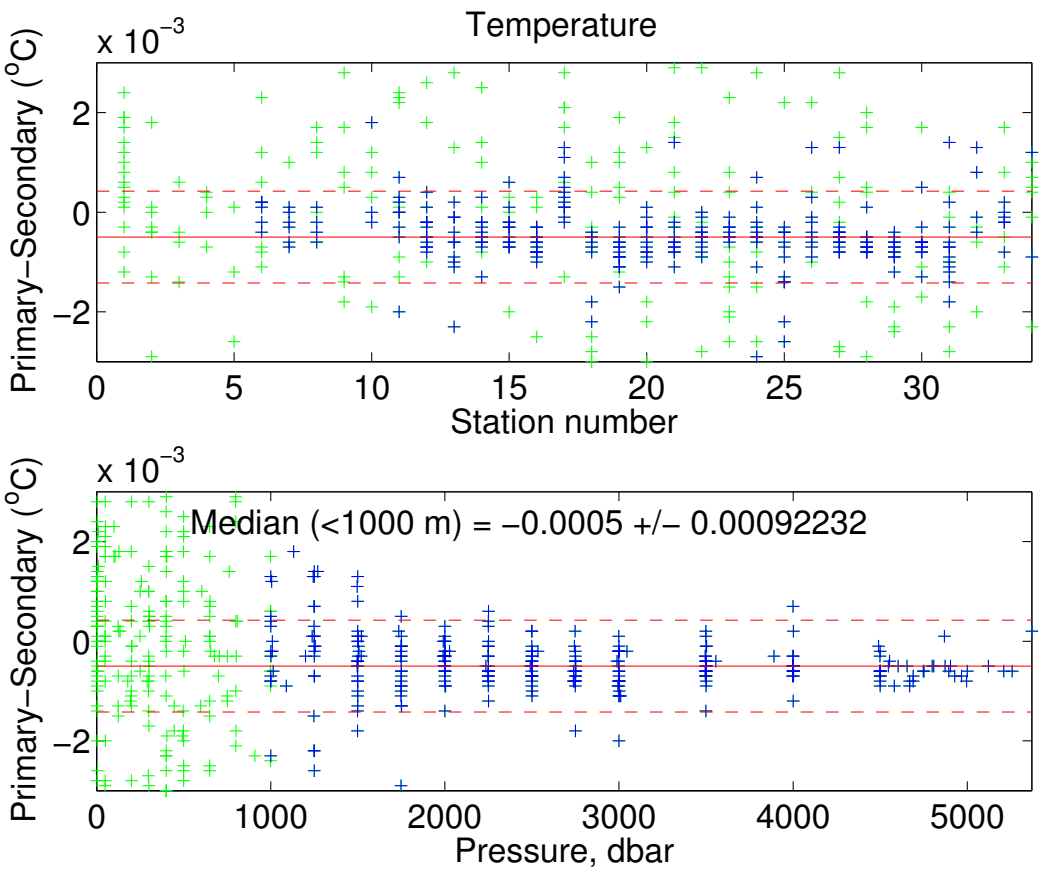

Figure 8: Temperature differences (after corrections) between sensors by station number (top) and pressure (bottom). The green represents the surface data down to 1000 dbar. The blue represents data below 1000 dbar. The red solid line represents the median with the red dashed representing the standard deviation (same for top and bottom).

7.4 Conductivity

Conductivity sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw primary and secondary conductivities. Comparisons between the primary and secondary sensors and between each of the sensors to conductivity calculated from bottle salinities were used to derive conductivity corrections. Uncorrected C1-C2 are shown in Figure 9 to help identify sensor drift. The sensors show a median difference of 0.001 mS/m and a standard deviation of 0.039 mS/m. Both sensors showed reasonable values for the residuals. The primary sensor was used for all the final data values (Figure 10).

Despite the large variability of the data in the upper 1000 m, the bottle values are kept in the database and used for the final calibration. However, the bottle data below 1000 m is weighted more heavily to calculate the new conductivity coefficients. The AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 549 data points (92.4 %) were used in the final calculations.

In order to calibrate the CTD conductivity data against the sample conductivity we assume a constant additive correction (offset), multiplicative correction (slope), time drift correction (represented by station number) and where needed, a linear pressure-dependent term. A non-linear function is used to derive these coefficients and are applied to

$$C_{new} = [m * C_{CTD} + (p_1 * station) + b + pcor * P]$$

with

	s/n 1374	
Sta 1-6	Sta 7-10	Sta 11-35
m=1.00022805	m=1.00003773	m=1.0000845
p_1=6.0162577e-04	p_1=0	p_1=6.0931908e-05
b=-0.0108821	b=0.0018123	b=–0.0018090
$pcor$=1.6755390e-07	$pcor$=72537510e-08	$pcor$=1.75629788e-07

where C_{bottle} is bottle conductivity (S/m), C_{CTD} is pre-cruise calibrated CTD conductivity (S/m), m is the conductivity slope, b is the offset (S/m), P is the pressure, $pcor$ is the pressure correction coefficient, $station$ is the station number and p_1 is the polynomial coefficient. The fit is also weighted in such way that the final solution is preferentially forced to fit the data below a specified depth, in this case 1000 dbar.

The coefficients estimated by the equation above were then applied to the CTD conductivities and the final results (Figure 10 to Figure 14) show a residual of 1.23 · 10-5 psu (3.83 · 10-5 psu for the data below 1000 dbar) and a standard deviation of 0.0017 psu (0.0008 psu for the data below 1000 dbar). Also 83.4% of the residuals for the data are within the confidence limits determined by the WOCE (± 0.002 psu) and this number increases to 98.2%

if we consider only the data below 1000 dbar.

A final verification about the quality of the data was made by comparing the results of this cruise with some historical data (Figure 15 and Figure 16). Water mass properties are very stable, specially for deeper layers of the ocean, that way by comparing these values we can have a very good estimative of the quality of these data.

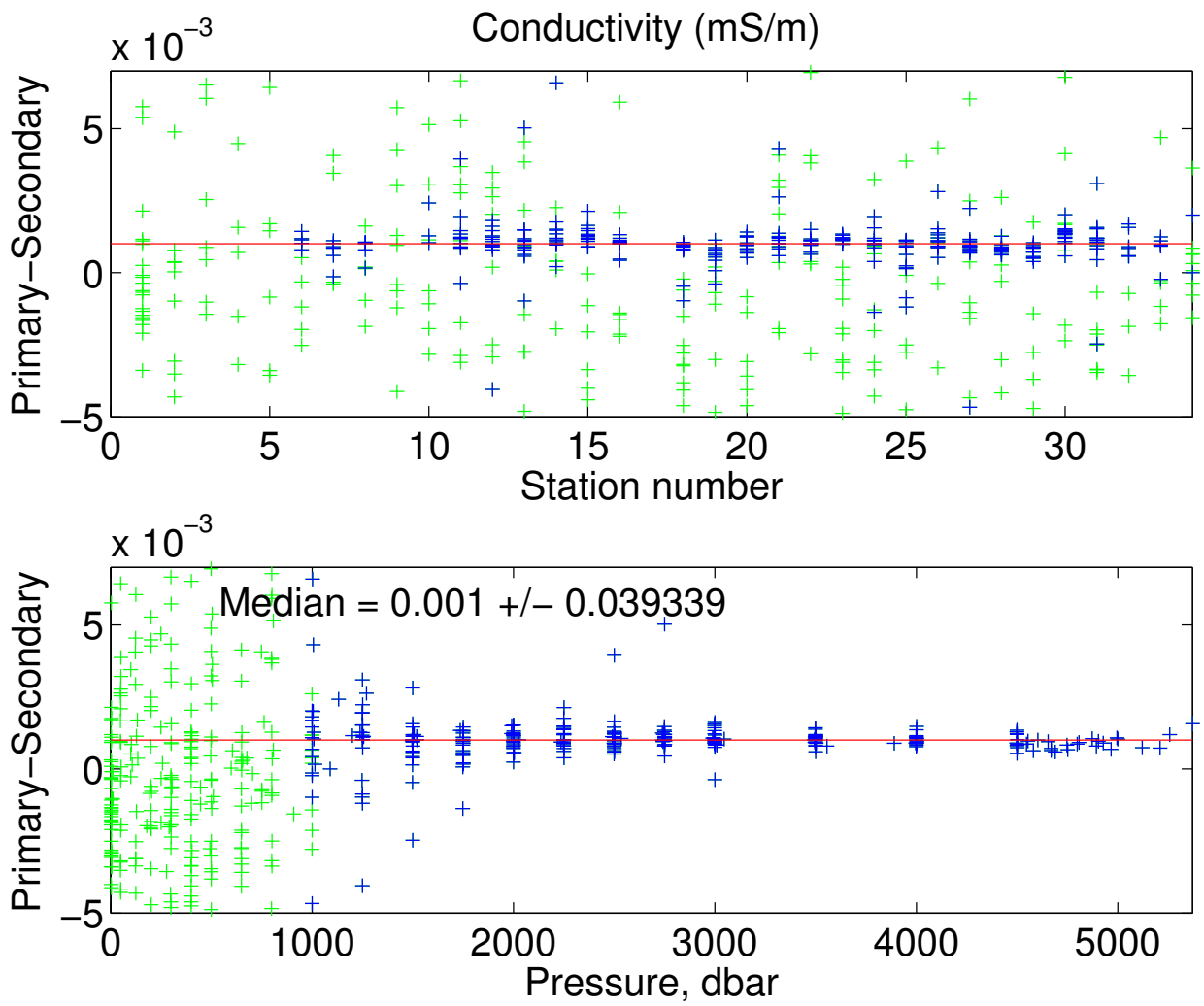

Figure 9: Conductivity (S/m) differences between sensors by station (top) and pressure (bottom). The red solid line represents the median with the red dashed representing the standard deviation.

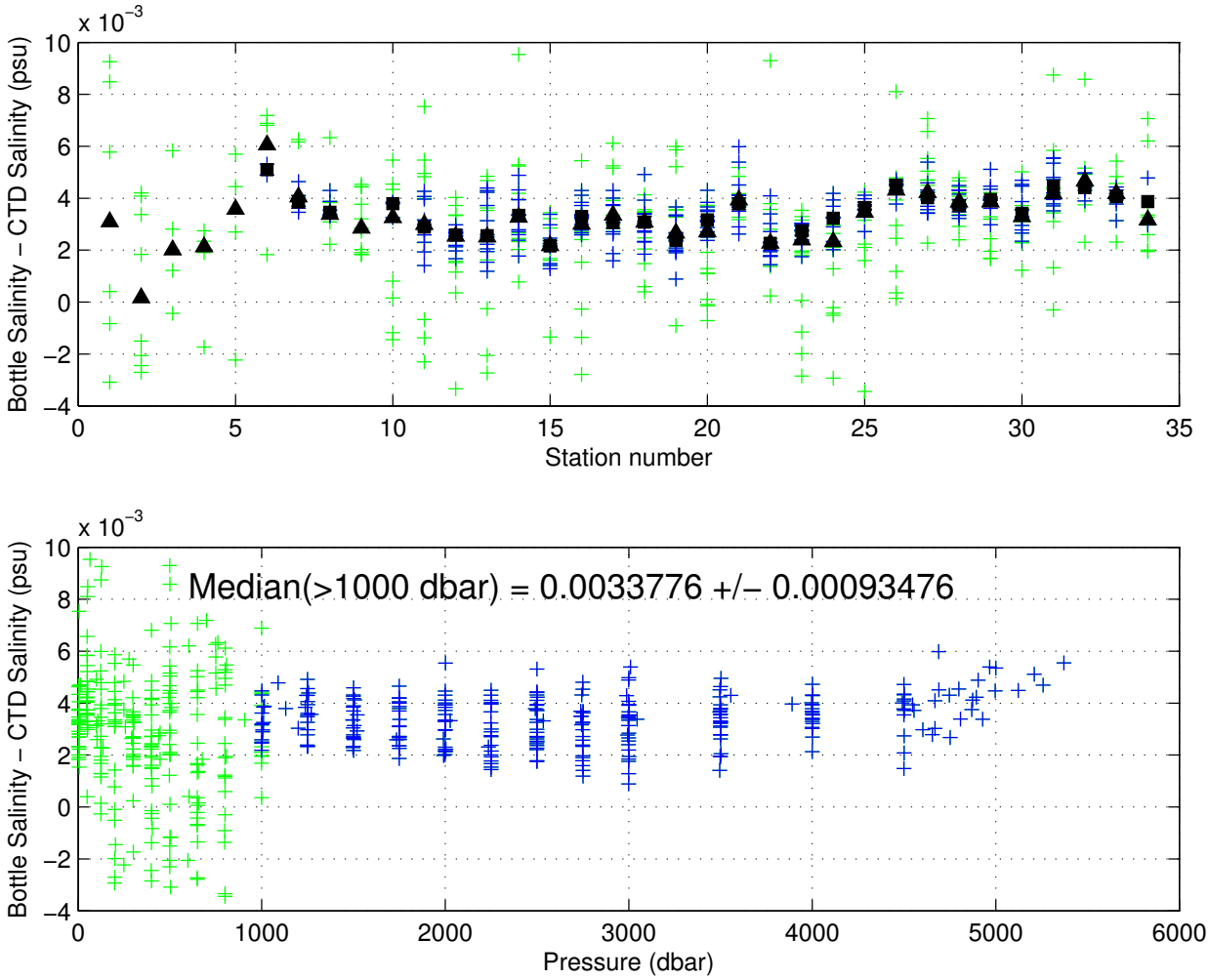

Figure 10: Bottle and uncalibrated secondary CTD salinity differences plotted against pressure. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.

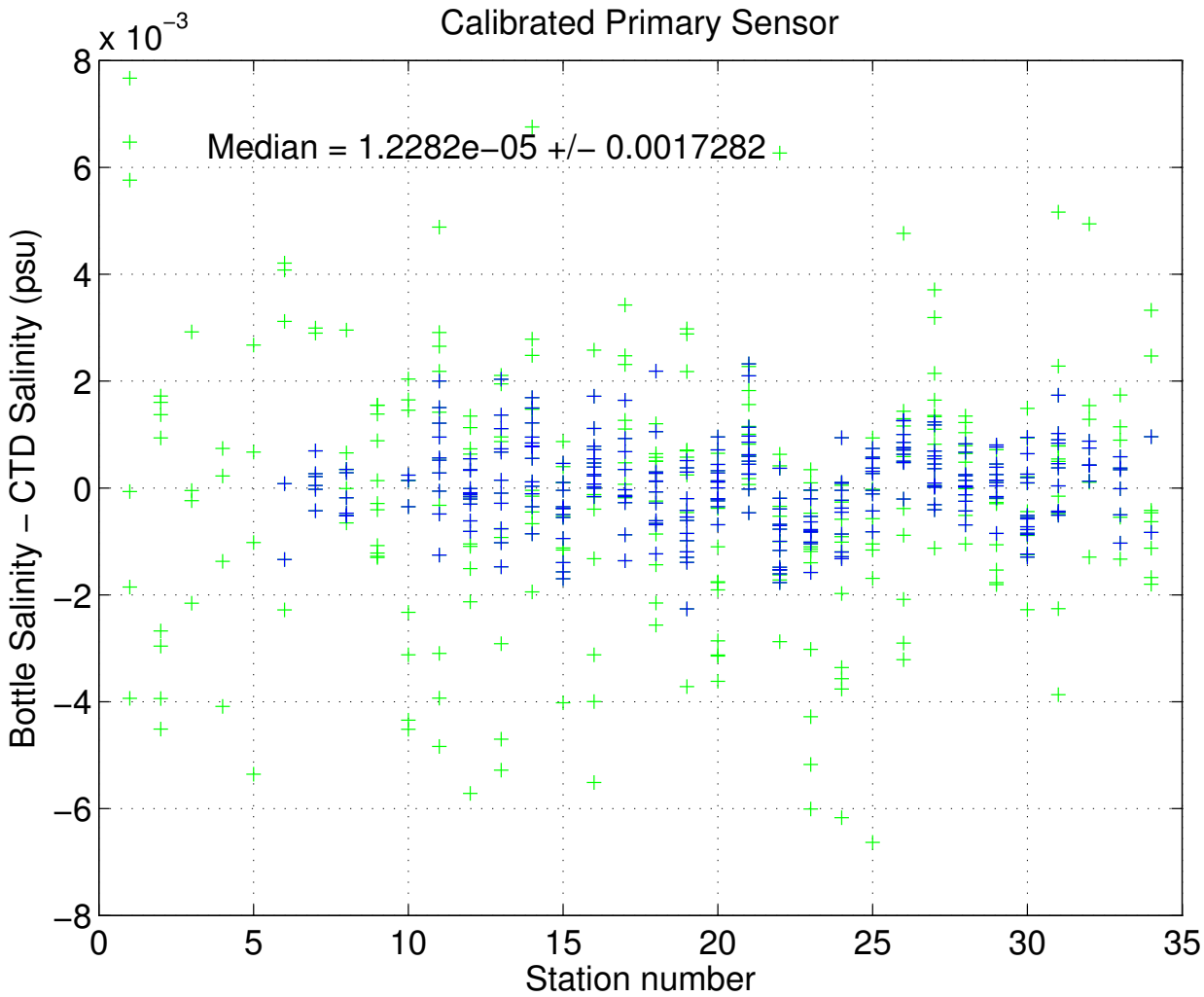

Figure 11: Bottle and calibrated secondary CTD salinity differences plotted vs. station.

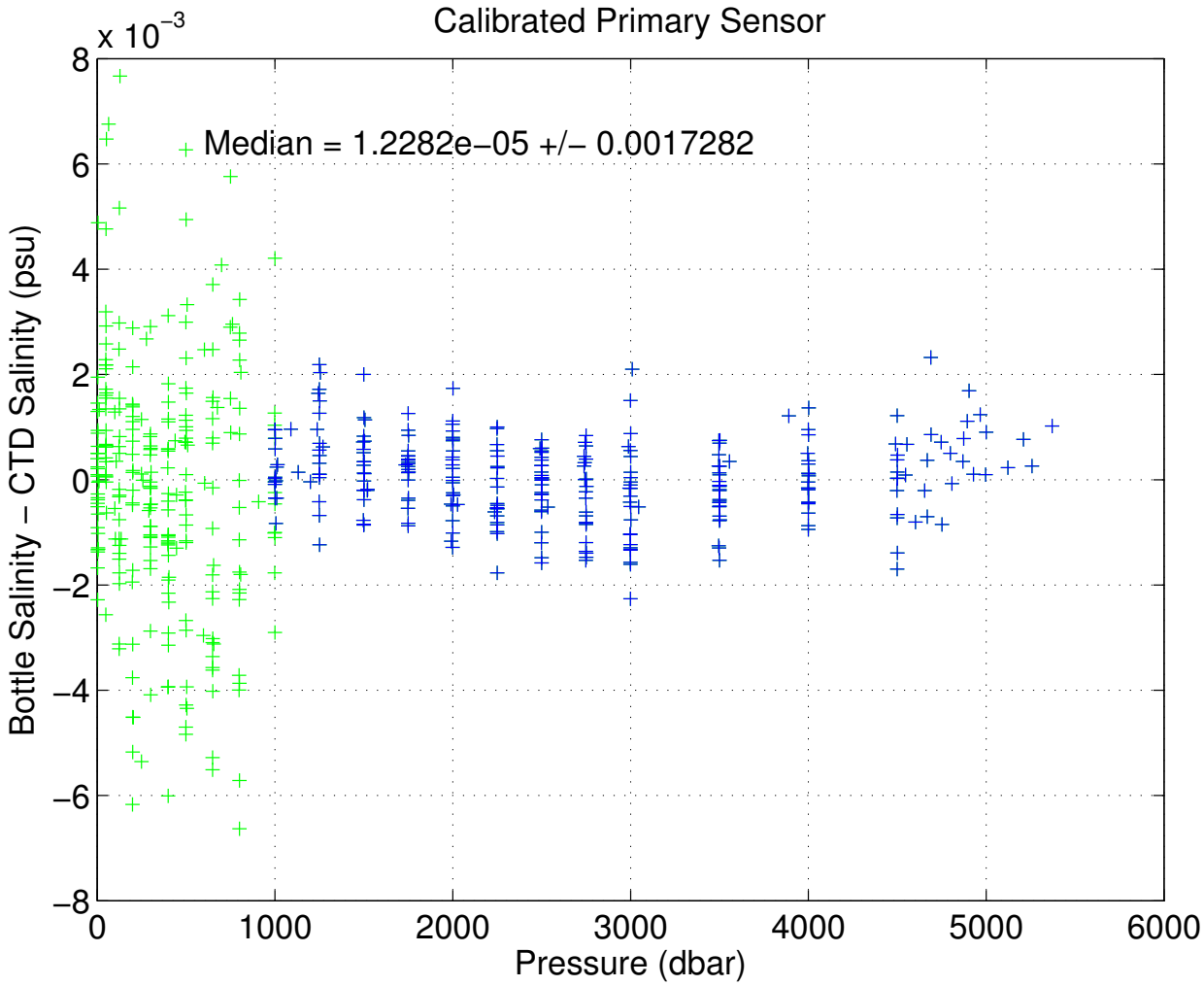

Figure 12: Bottle and calibrated secondary CTD salinity differences plotted vs. pressure.

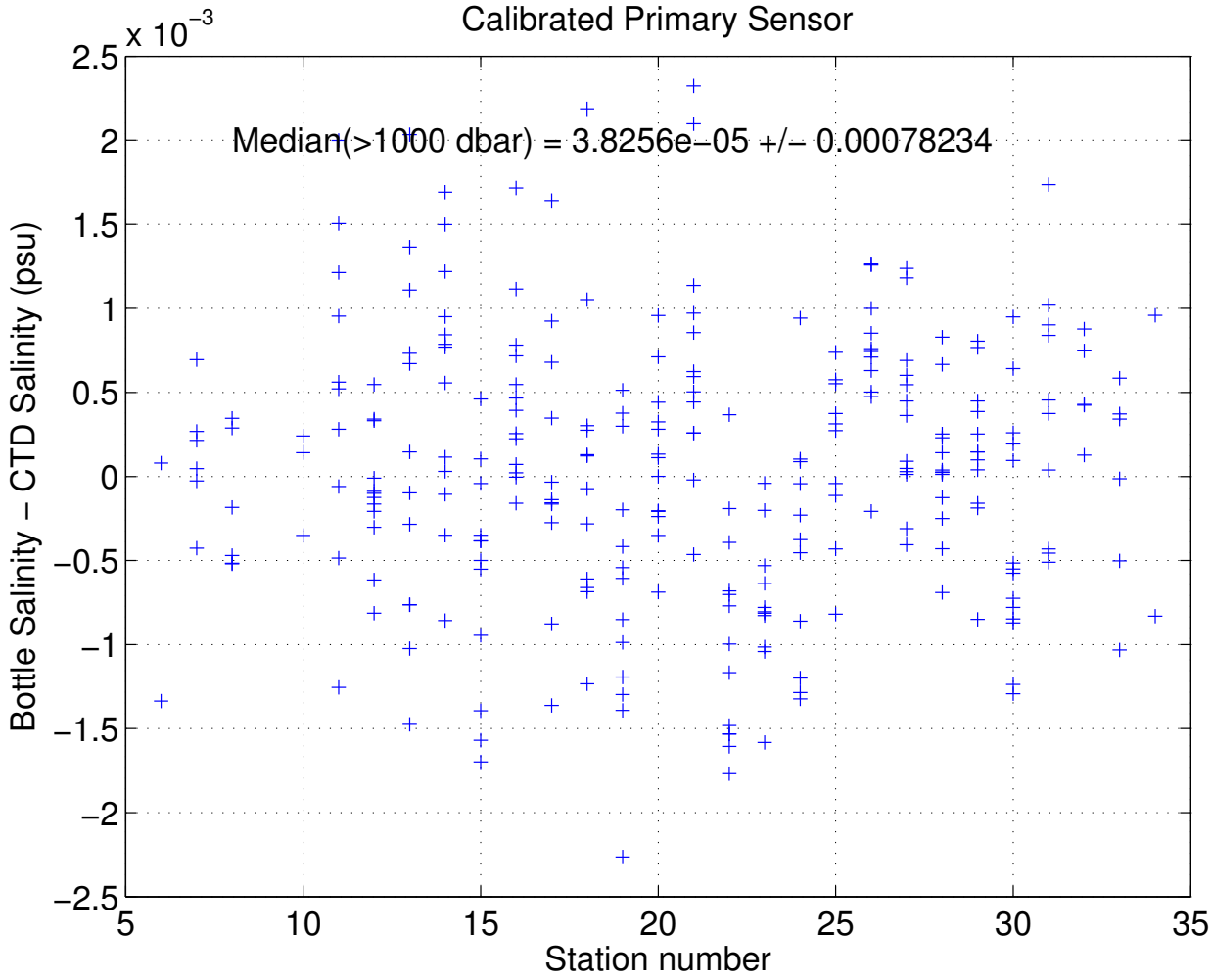

Figure 13: Bottle and calibrated secondary CTD salinity differences plotted vs. station below 1000 dbar.

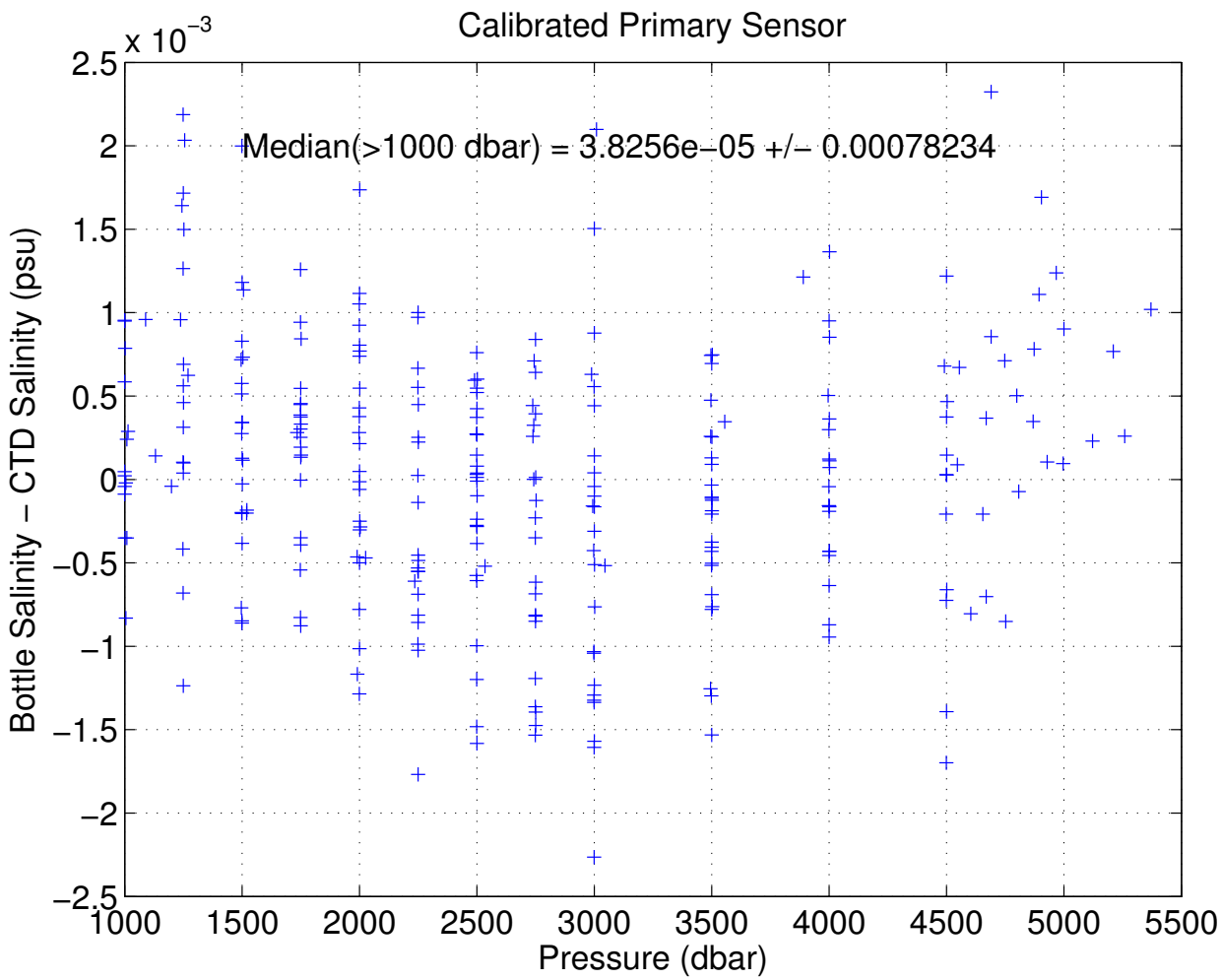

Figure 14: Bottle and calibrated secondary CTD salinity differences plotted vs. pressure below 1000 dbar.

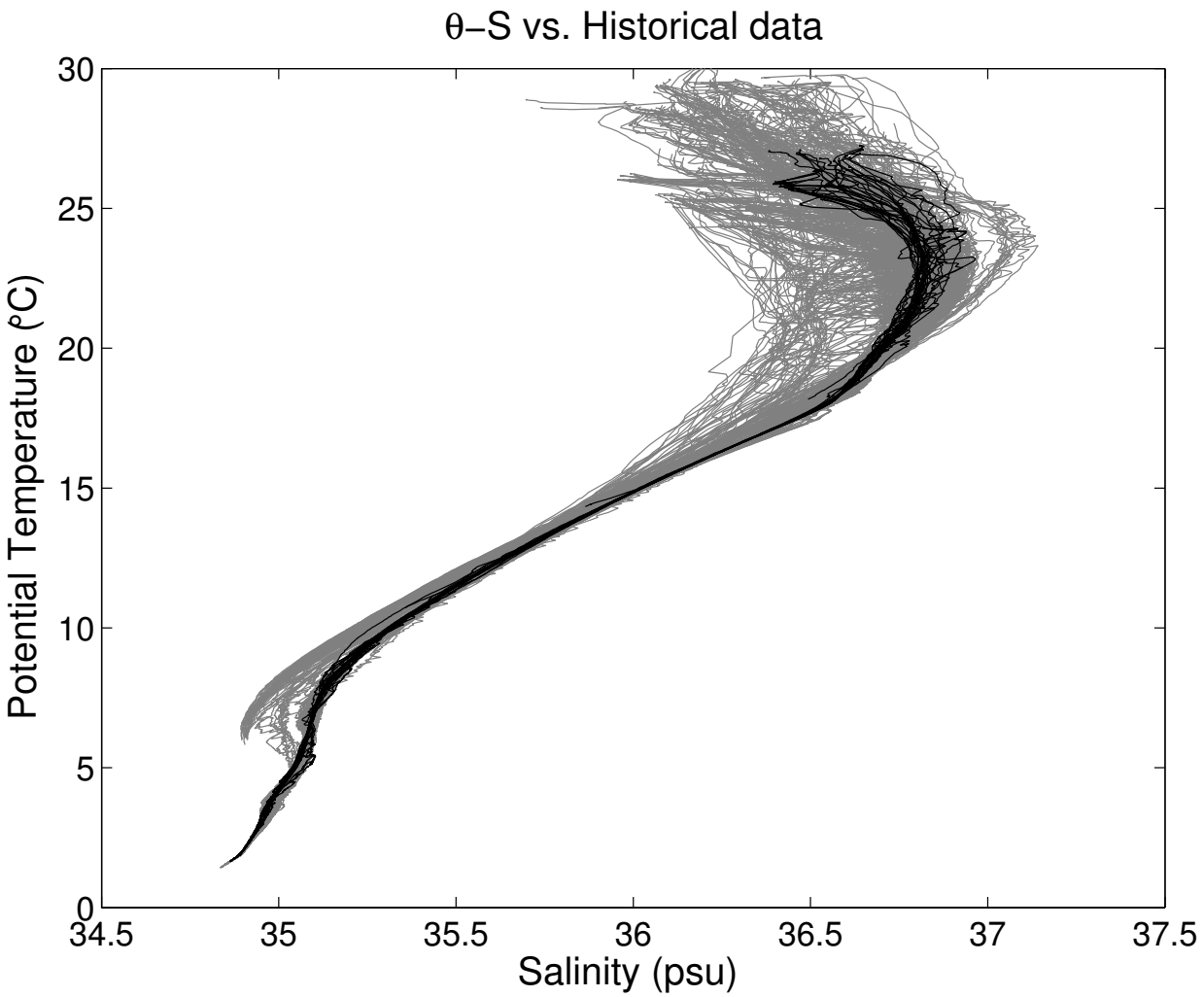

Figure 15: Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

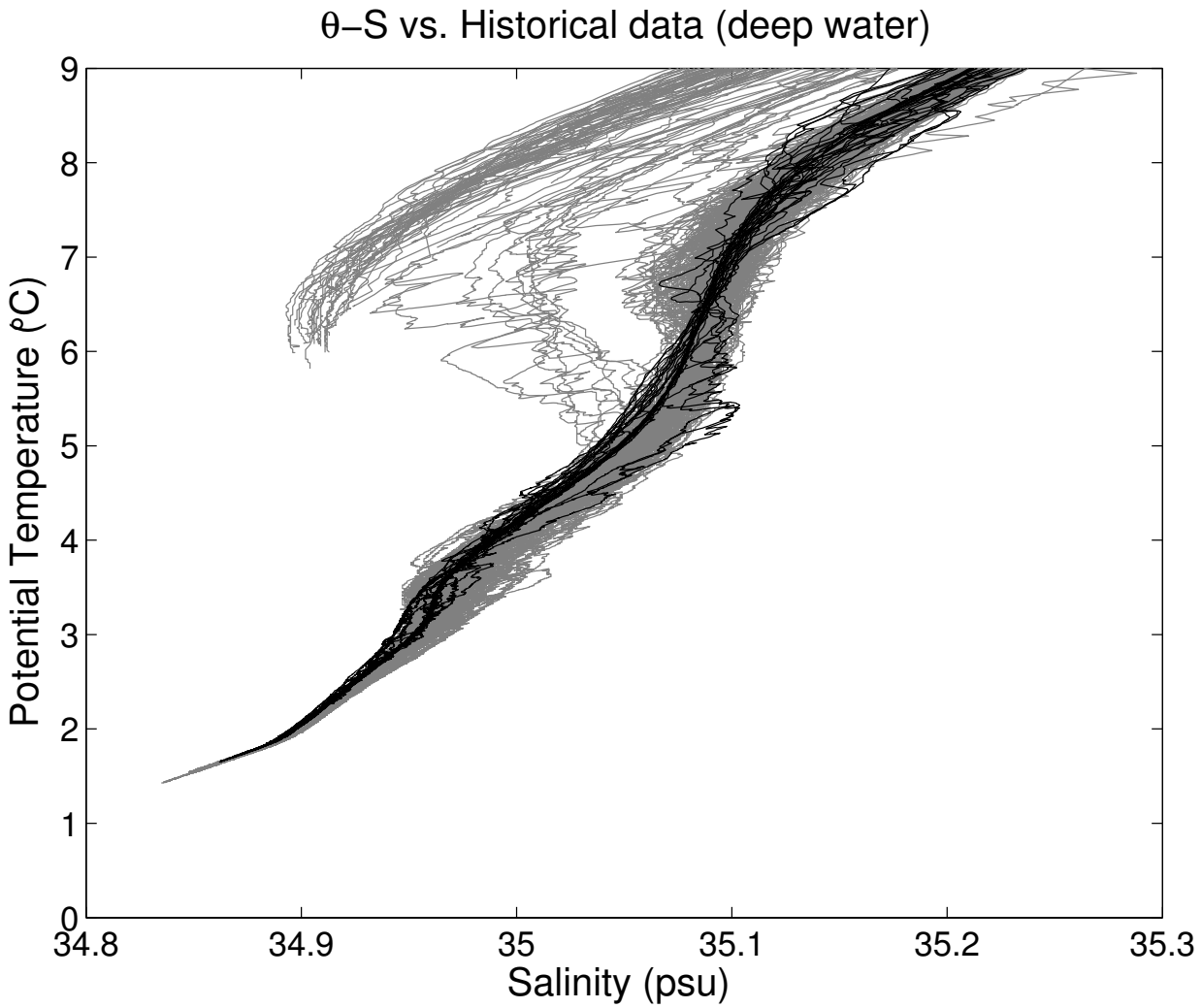

Figure 16: Potential Temperature - Salinity diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

7.5 Dissolved Oxygen

Three SBE43 dissolved O_2 (DO) sensors were used on this leg (Table 6). Due to a hysteresis problem with the oxygen sensors the DO sensors were calibrated to dissolved O2 check samples by matching the up cast bottle trips to down cast CTD data along neutral density surfaces, calculating CTD dissolved O_2, and then minimizing the residuals using a non-linear least-squares fitting procedure.

The algorithm used for converting oxygen sensor current and probe temperature measurements as described, requires a non-linear least squares regression technique in order to determine the best fit coefficients of the model for oxygen sensor behavior to the water sample observations. A Matlab® sub-routine called `oxfit.m` from the AOML CTD/CAL TOOLBOX performs a non-linear least squares regression using the Gauss-Newton algorithm with Levenberg-Marquardt modifications for global convergence. This algorithm is independent of the first coefficients guess and demonstrates excellent convergence. This `oxfit.m` routine includes an optional time drift term (related with the station number), allowing all stations to be calibrated without breaking into discrete groupings. The Owens and Millard (1985) algorithm was modified as follows:

$$O\ (ml/l) = \{Soc * (V + V_{offset} + tau(T,S) * \frac{\delta v}{\delta t}) + p1 * station\}$$
$$*(1.0 + A * T + B * T^2 + C * T^3) * OXSAT(T,S) * e^{E*(\frac{P}{K})}$$

with

	S/N 2691		
	Sta 1-5	Sta 6-16,18-35	Sta 17
Soc	0.55458943	0.5606948	0.5659613
V_offset	-0.5232344	-0.4828044	-0.4824470
tau	1.47	1.53	2.03
A	-0.0032302	-0.01268643	-0.0153370
B	0.00013311	0.00079477	0.0009749
C	-0.00001172	-0.0000150	-0.0000186
E	0.03824693	0.0355558	0.0347204
$p1$	0.00009854	0.0000022	0.0002362

where Soc, tau, V_{offset}, A, B, C, E and $p1$ are the calibration coefficients shown above and V is the instrument voltage (V). T, S and P are the temperature, salinity and pressure measured by the CTD. K is the temperature in the absolute scale, *station* is the station number, and $OXSAT$ is the oxygen saturation.

A comparison between the primary and secondary sensors (Figure 17) was evaluated. The sensors show a median difference of -3.619 $umol/kg$ and a standard deviation of 40.89

$umol/kg$. The secondary sensor was chosen, except station for station 17, (Figure 18) and the sensor shows a median difference of 9.31 $umol/kg$ and a standard deviation of 1.38 $umol/kg$ compare to the oxyen bottle data.

The coefficients for oxygen sensor, s/n 1666, were applied to all the stations, except for station 17. The oxygen profile for the secondary sensor on station 17 was bad and the primary sensor was substituted. Also, analogous to the conductivity, AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 464 data points (86.73%) were used in the final calculations.

By minimizing the differences between the oxygen samples and the CTD oxygen estimated from the equation described in this section, the new coefficients above were calculated and then applied to the CTD original data (Figure 19 to Figure 22). The residual is -0.008 $umol/kg$ (-0.02 $umol/kg$ for the data below 1000 dbar) and the standard deviation 0.74 $umol/kg$ (0.67 $umol/kg$ for the data below 1000 dbar). Also 100% of the residuals for the data are within the confidence limits determined by the WOCE ($\pm$ 1% of the dissolved oxygen measured).

A final verification about the quality of the data, like in the salinity data, was made by comparing the results of this cruise with some historical data available at the location of the Abaco section and the other sections (Figure 23 & Figure 24). Again by investigating water mass properties, particularly for deeper layers of the ocean, we can have an estimative of the quality of these data.

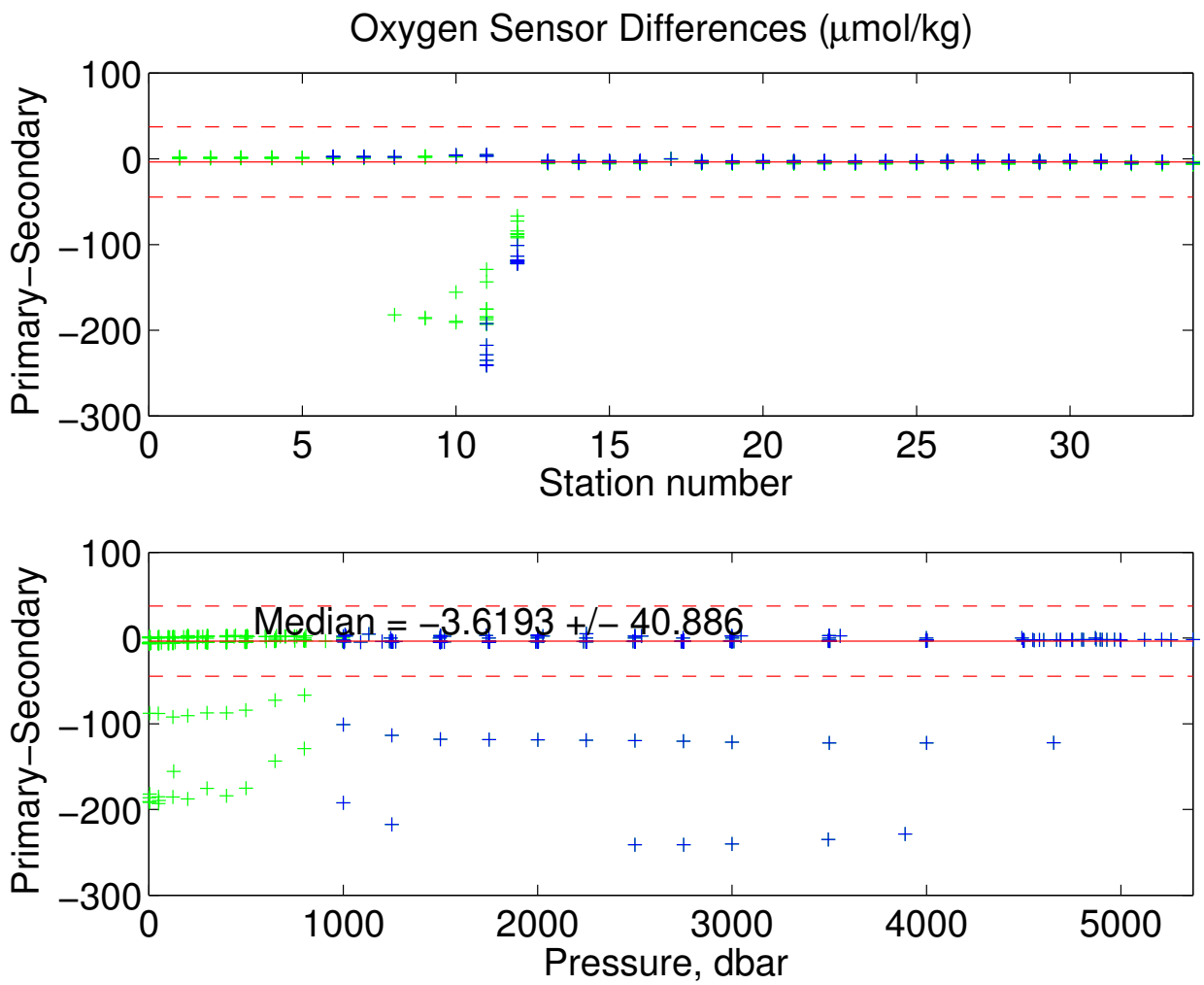

Figure 17: Dissolved oxygen differences between sensors by station (top) and by pressure (bottom). Sensor changes at station 15 and 24. The red solid line represents the median with the red dashed representing the standard deviation.

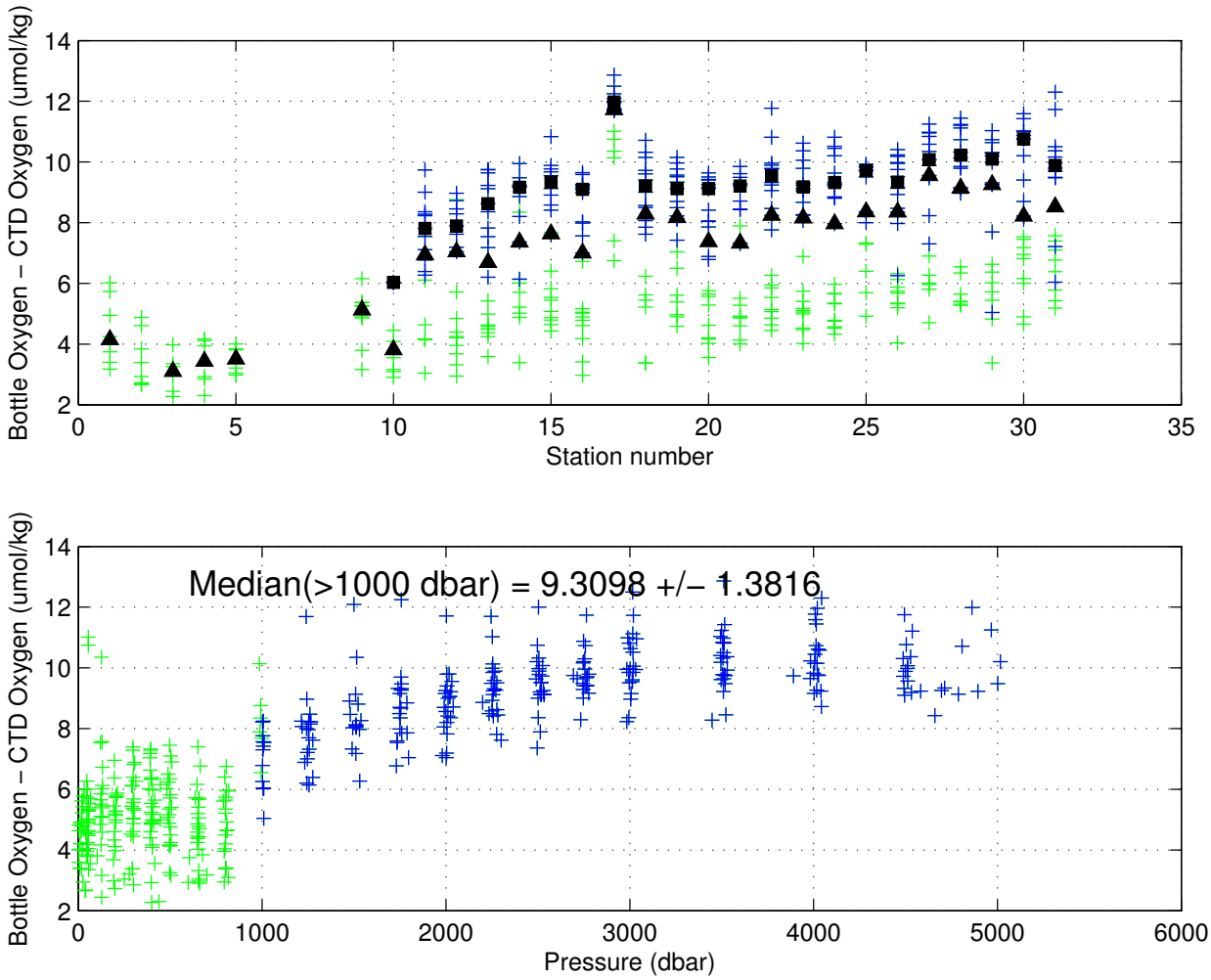

Figure 18: Bottle and uncalibrated secondary CTD oxygen differences plotted against station number. The green crosses represent all data points and the blue are the data points below 1000 dbar. The median was calculated using only the data below 1000 dbar.

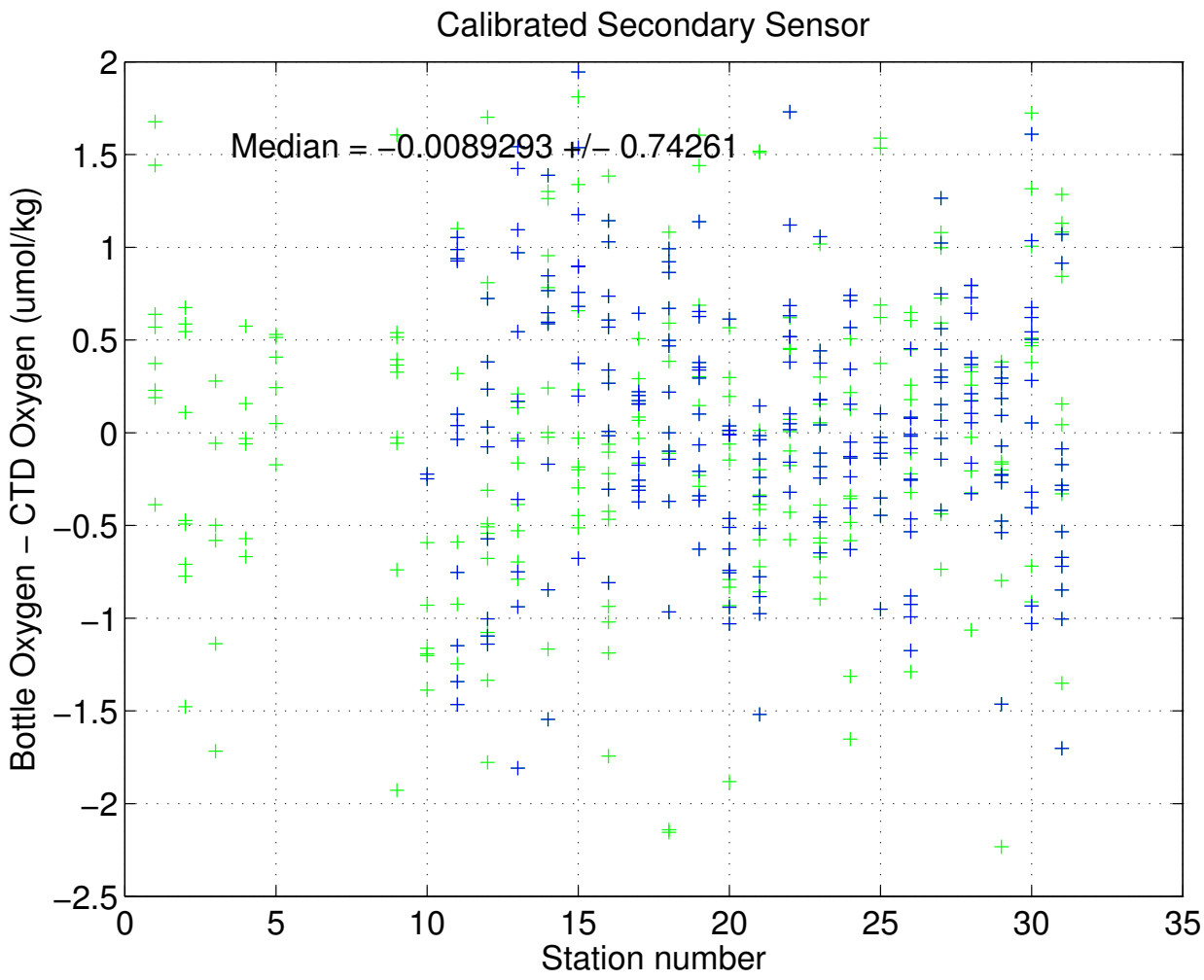

Figure 19: Bottle and calibrated secondary CTD oxygen differences plotted vs. station.

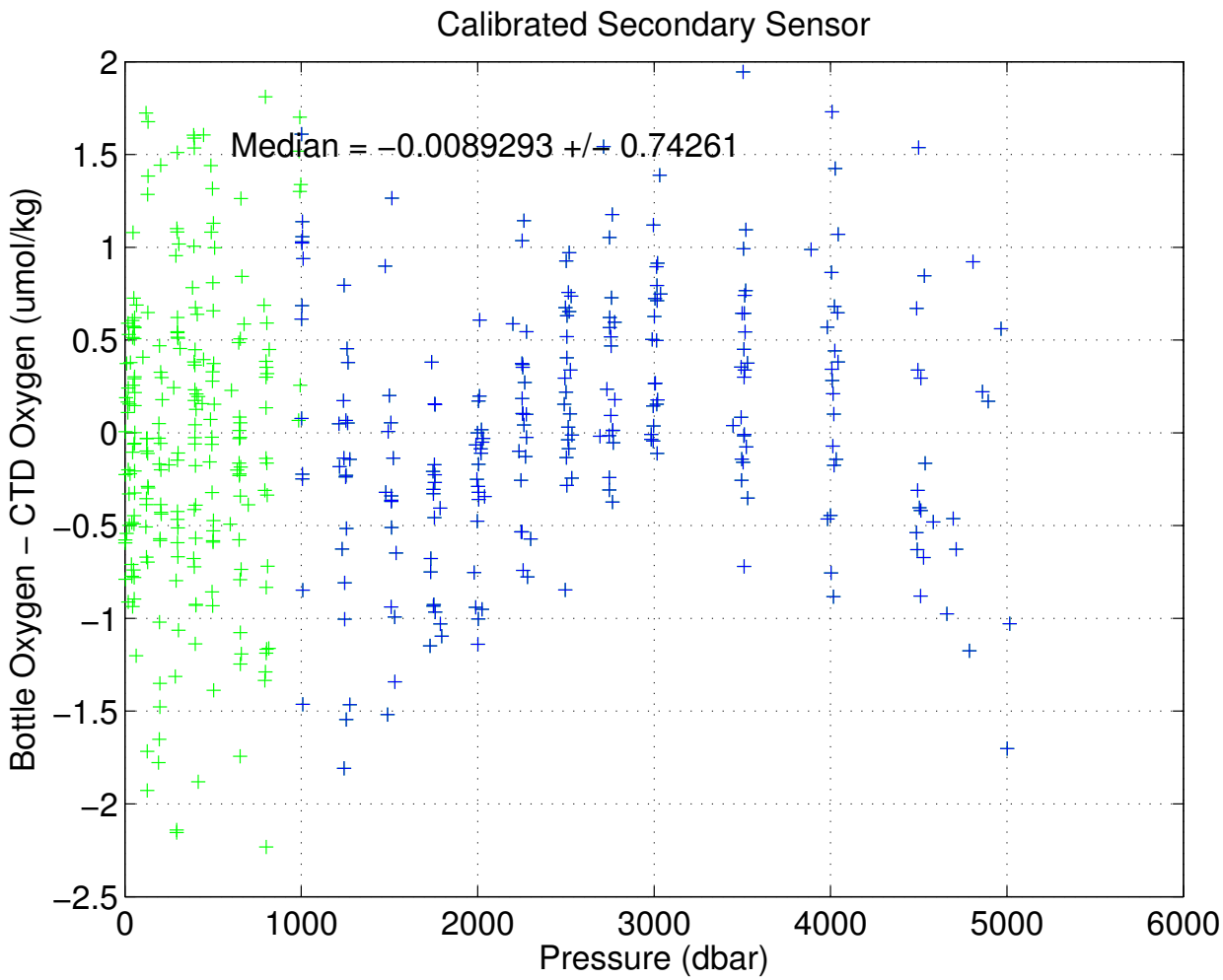

Figure 20: Bottle and calibrated secondary CTD oxygen differences plotted vs. pressure.

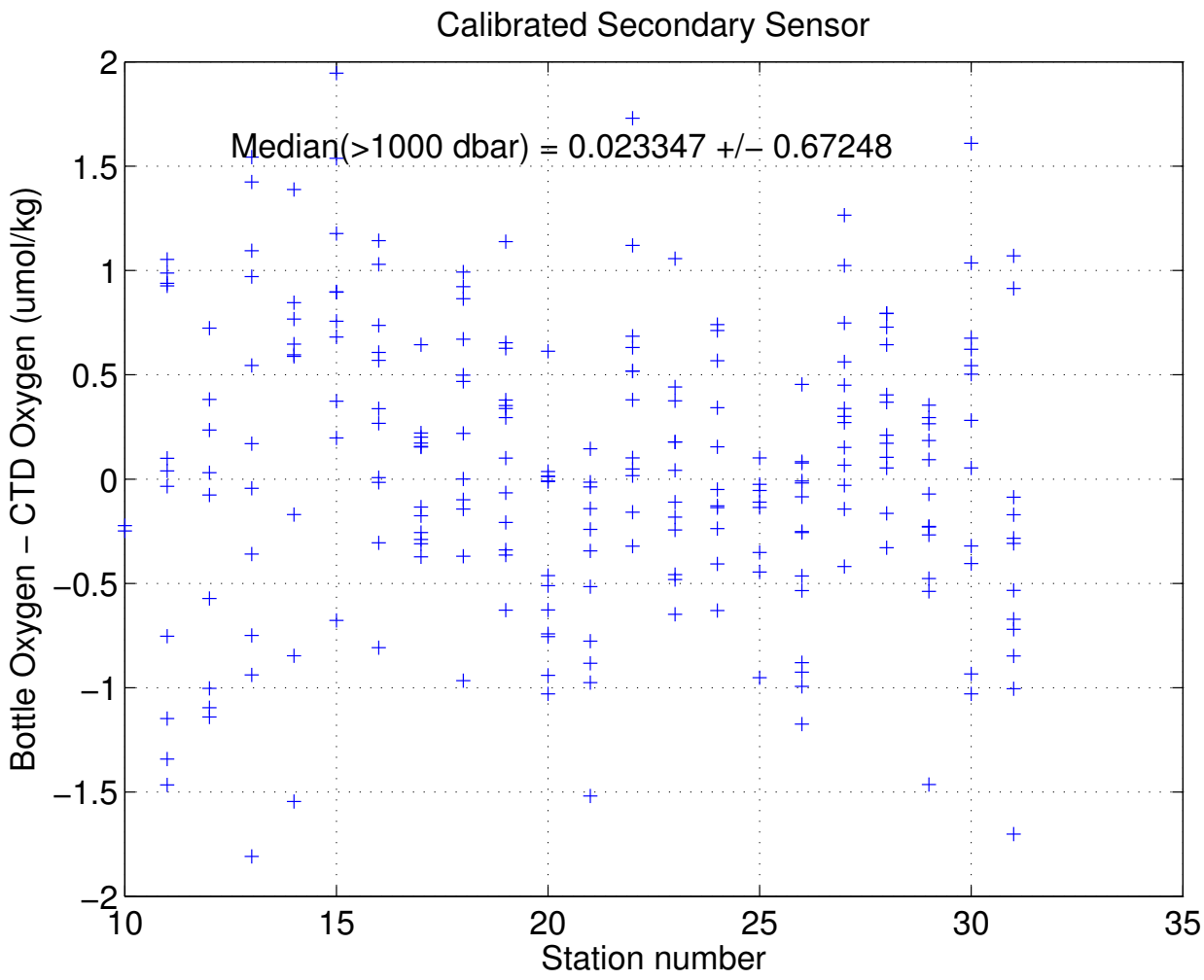

Figure 21: Bottle and calibrated secondary CTD oxygen differences plotted vs. station below 1000 dbar.

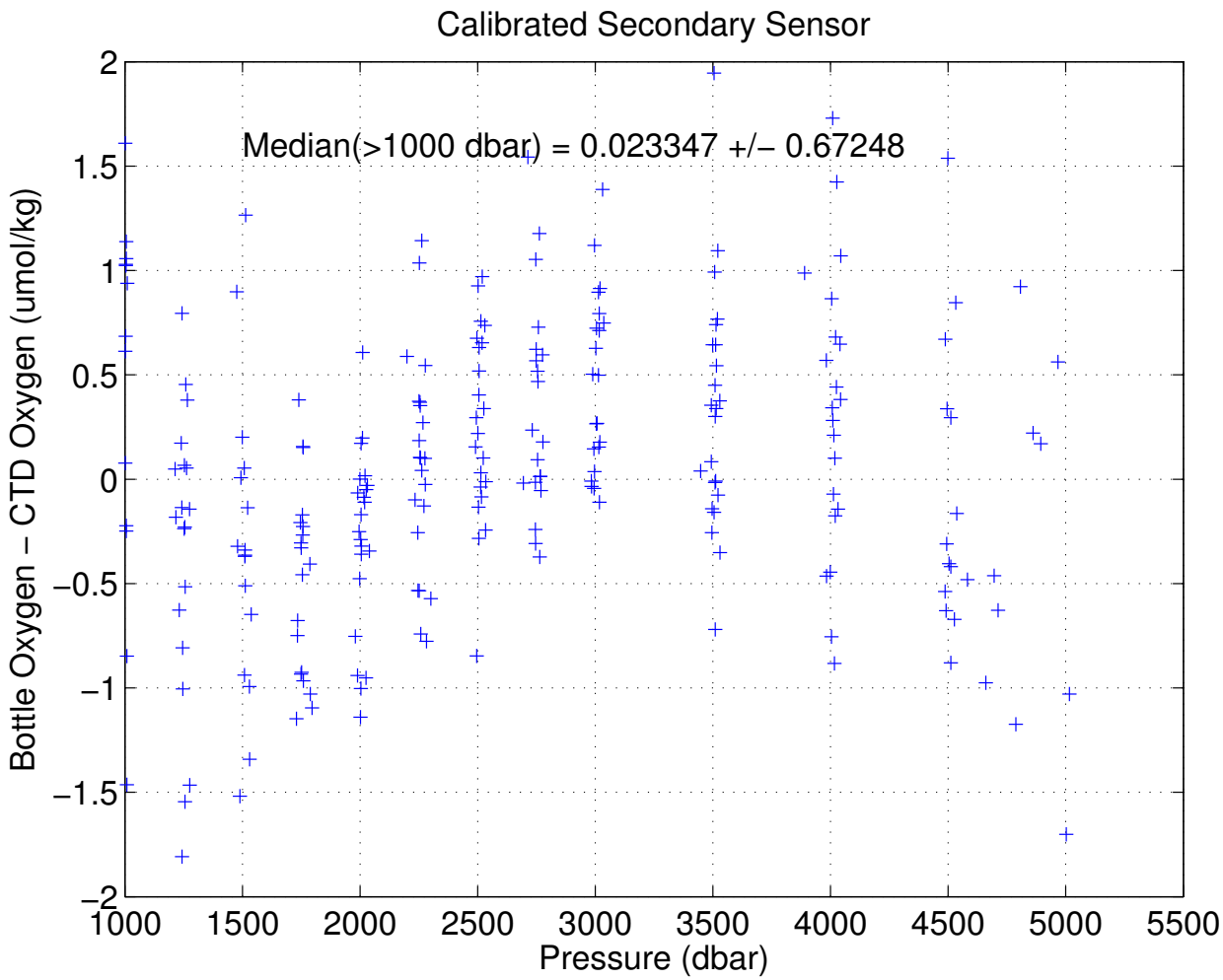

Figure 22: Bottle and calibrated secondary CTD oxygen differences plotted vs. pressure below 1000 dbar.

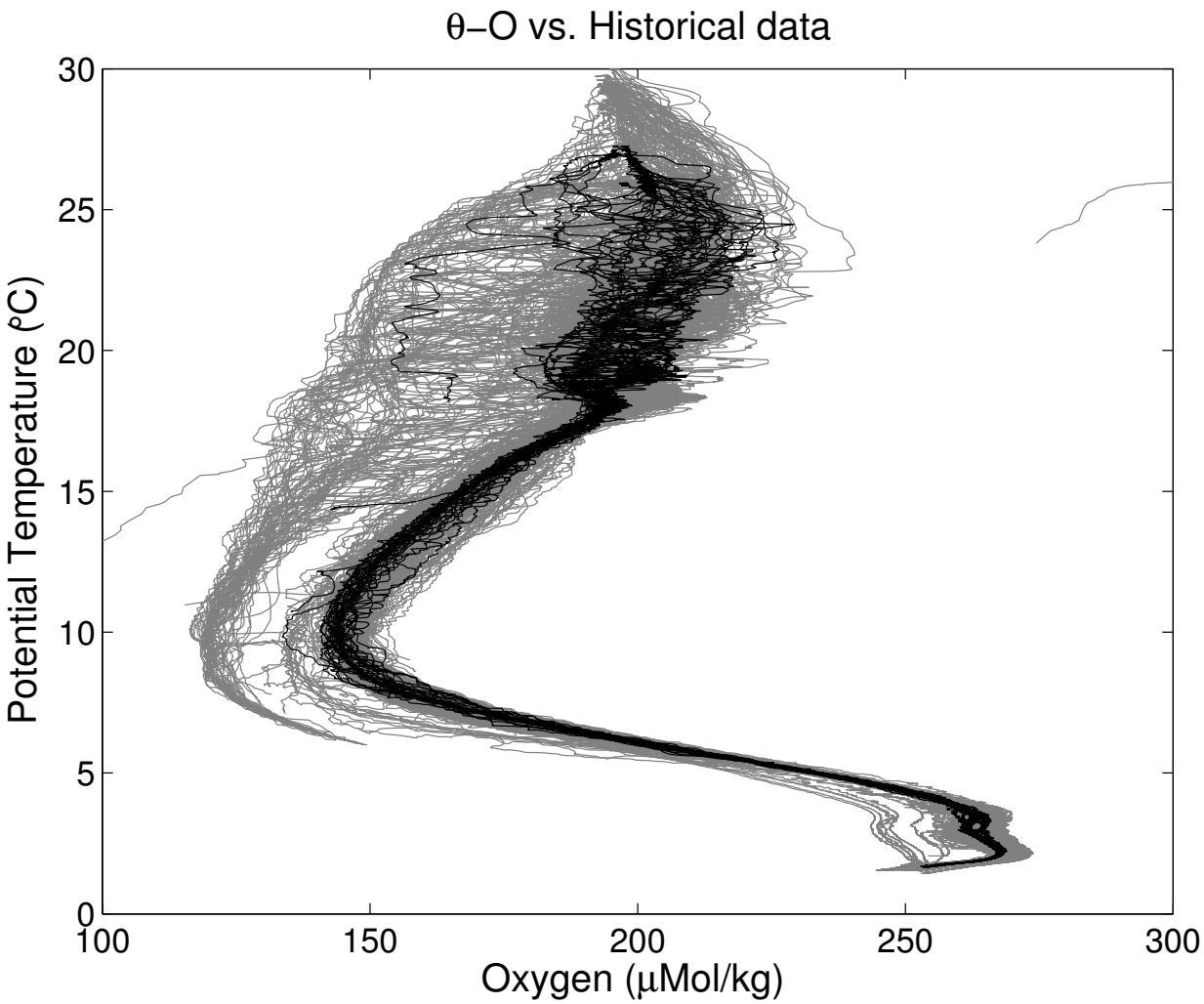

Figure 23: Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

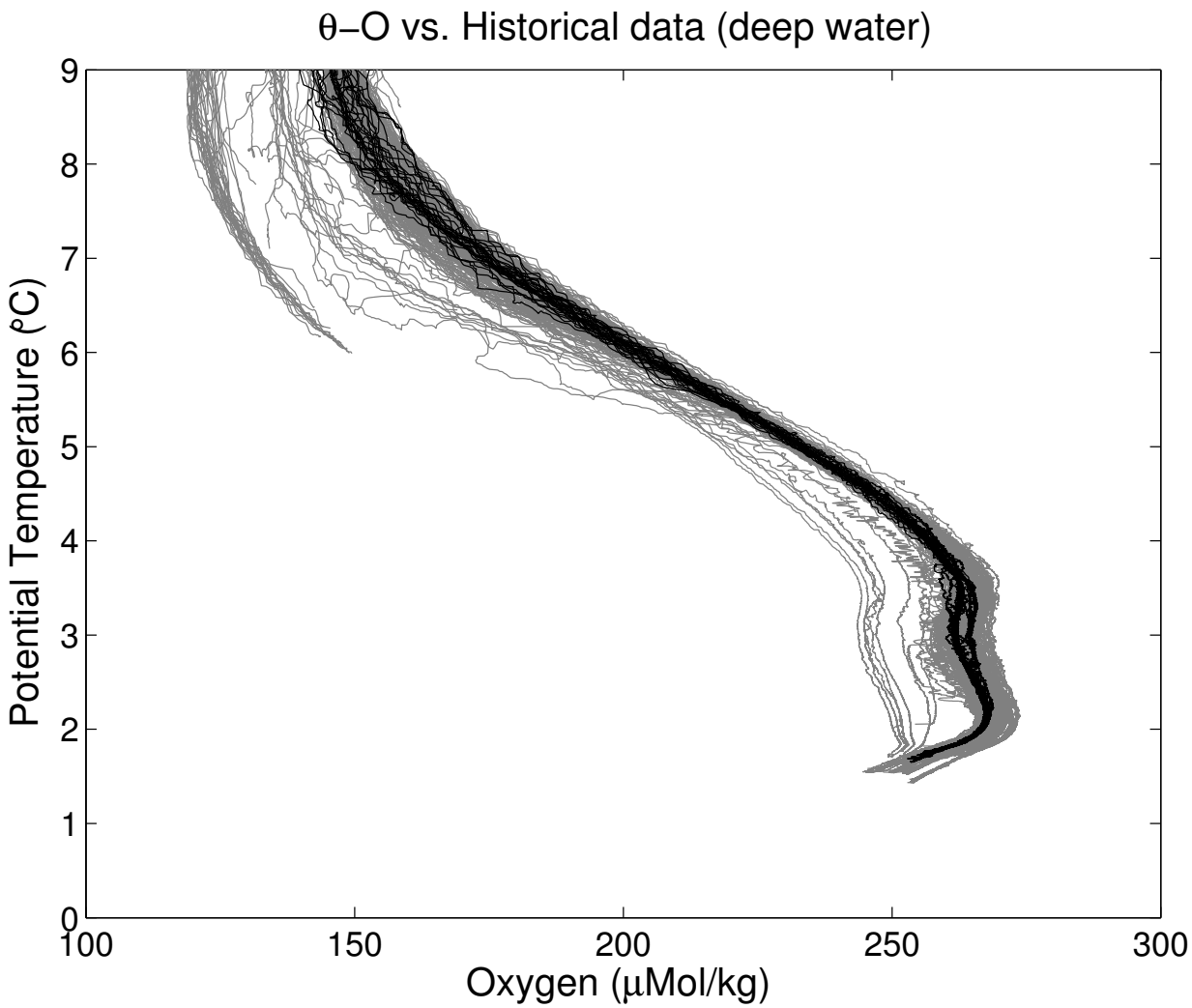

Figure 24: Potential Temperature - Oxygen diagram for all stations. The solid black lines are the data collected during this cruise; the solid gray lines are data from the historical database.

8 Final CTD Data Presentation

The final calibrated data files were used to produce the tables and station profile plots presented in Appendix A for each CTD station. The table on the top is in "standard depths" followed by the a table of the bottle trip depths. The corresponding profile plot is shown on the following page. Niskin bottle depths are presented on the right side of the profile plot. Bottle salinity and oxygen values are plotted as points in the three smaller plots.

Vertical sections of potential temperature, CTD salinity, neutral density, and CTD oxygen are contoured with pressure as the vertical axis and, for Abaco sections longitude as horizontal axis (Figure 25 to Figure 28). Nominal vertical exaggerations are 400:1 below 1000 dbar (lower panels) and 200:1 above 1000 dbar (upper panels). For the Northwest Providence Channel Sections latitude is used as horizontal axis (Figure 29 to Figure 32).

Post-cruise calibrations were applied to CTD data associated with bottle data using Matlab sub-routines (`apply_calibration.m`). WOCE quality flags were appended to bottle data records. "Bad values" (WOCE quality control value = 4) were flagged if the bottle samples failed the initial quality control and were not used for the calibration (which meant they typically fell outside 2.57 standard deviations of the difference between samples and uncalibrated CTD values). A second pass is applied, using the value of 2.5 times the standard deviation of the difference between calibrated CTD values and bottle samples, where bottle values may be flagged as "bad values" or as questionable (WOCE quality control value = 3).

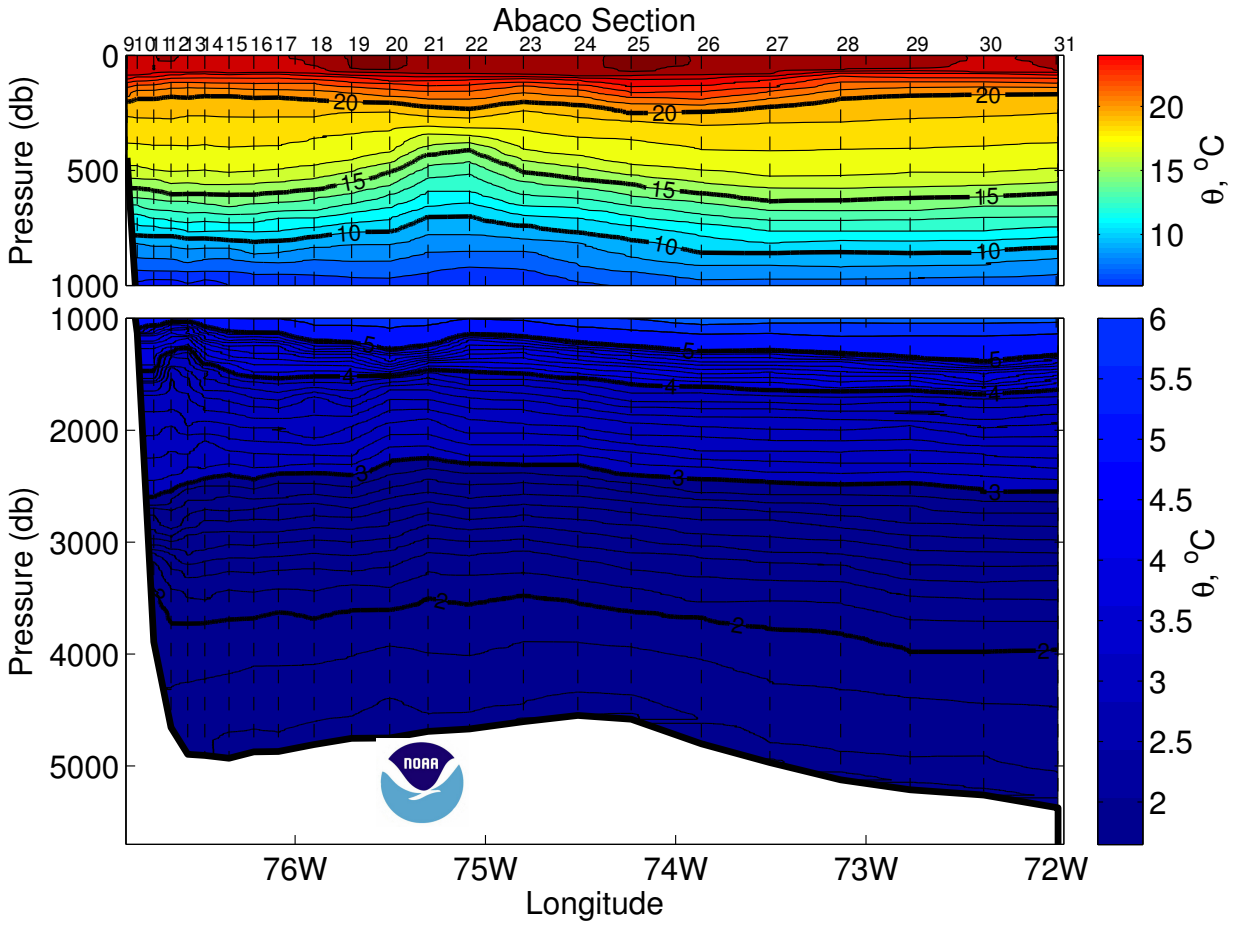

Figure 25: Potential Temperature (°C) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

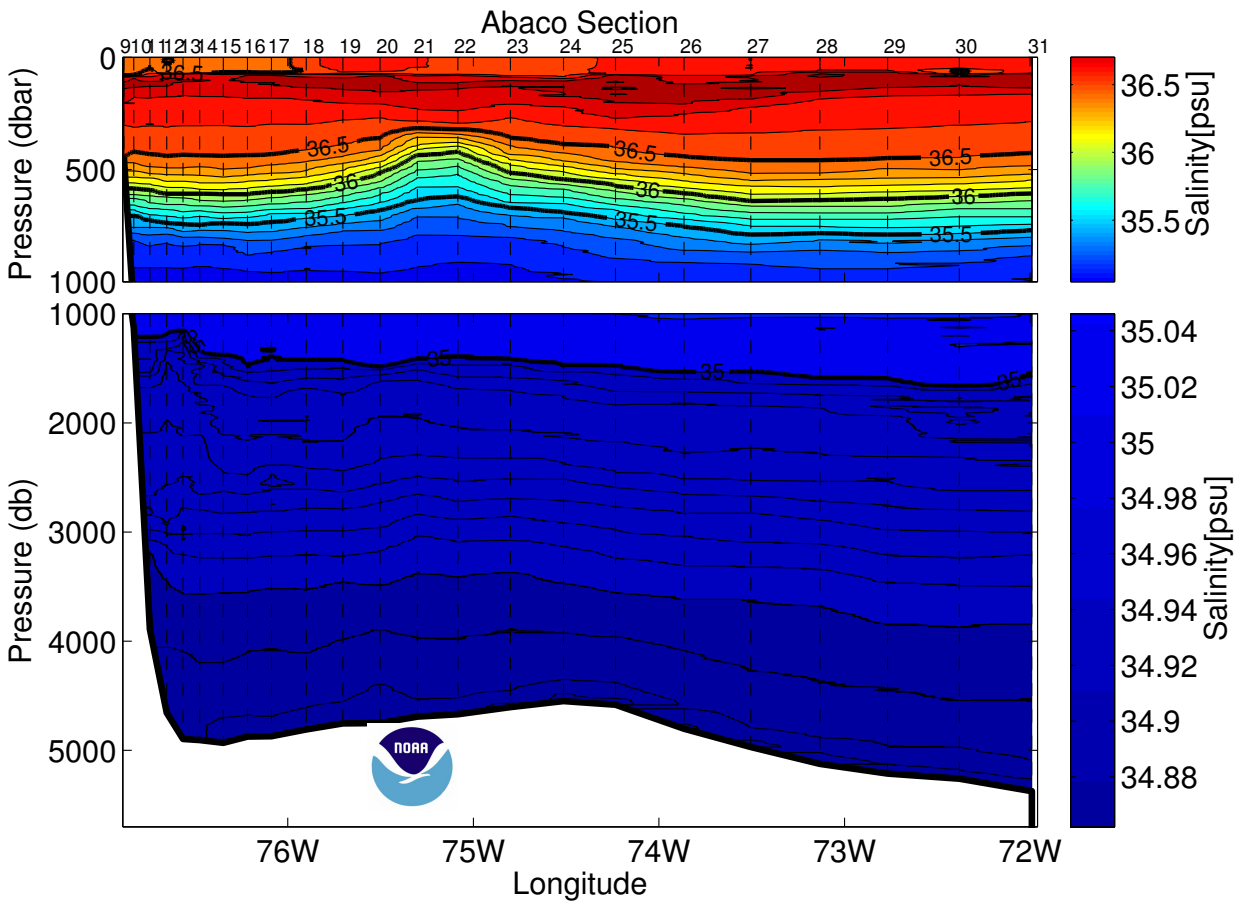

Figure 26: Salinity (PSS 78) section for the Abaco section. Dashed vertical lines are the CTD station locations.

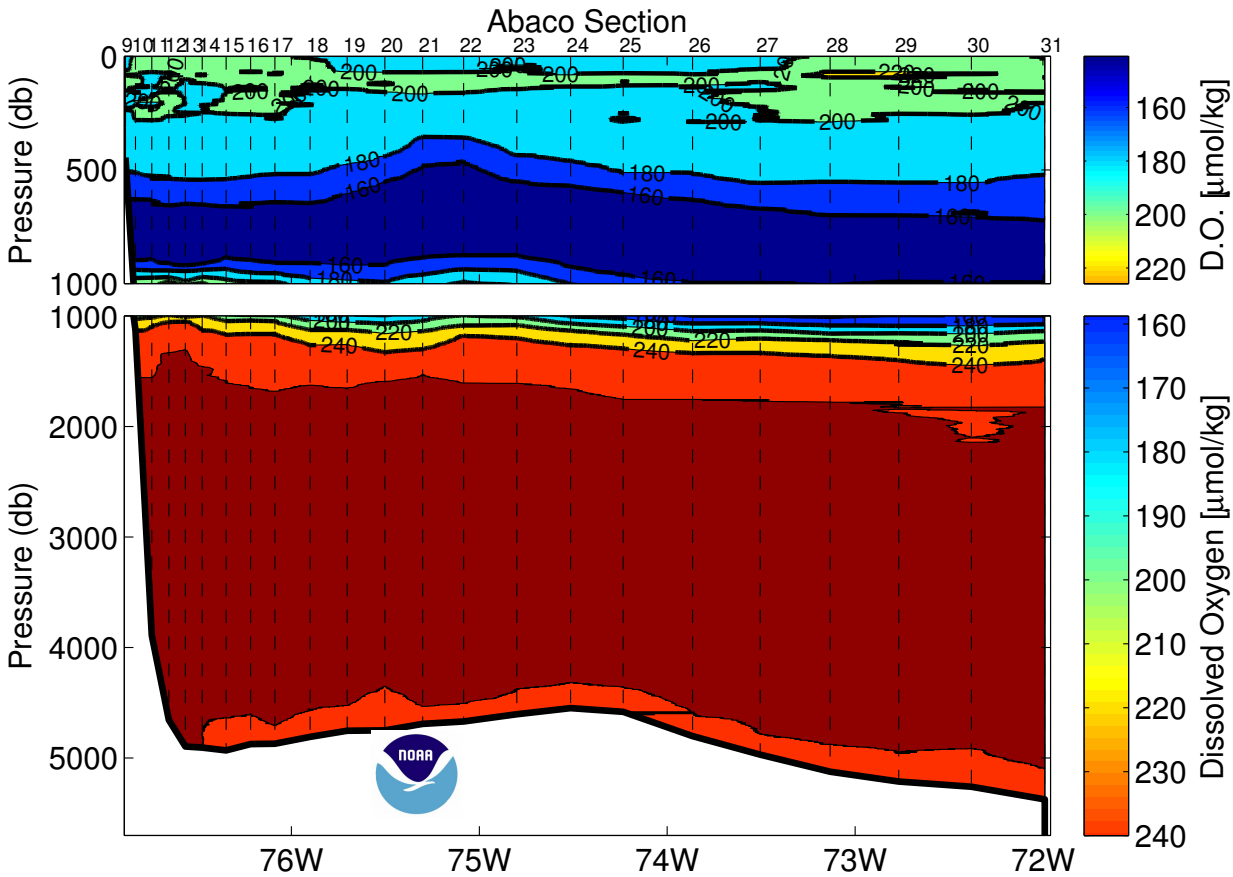

Figure 27: Dissolved Oxygen ($umol/kg$) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

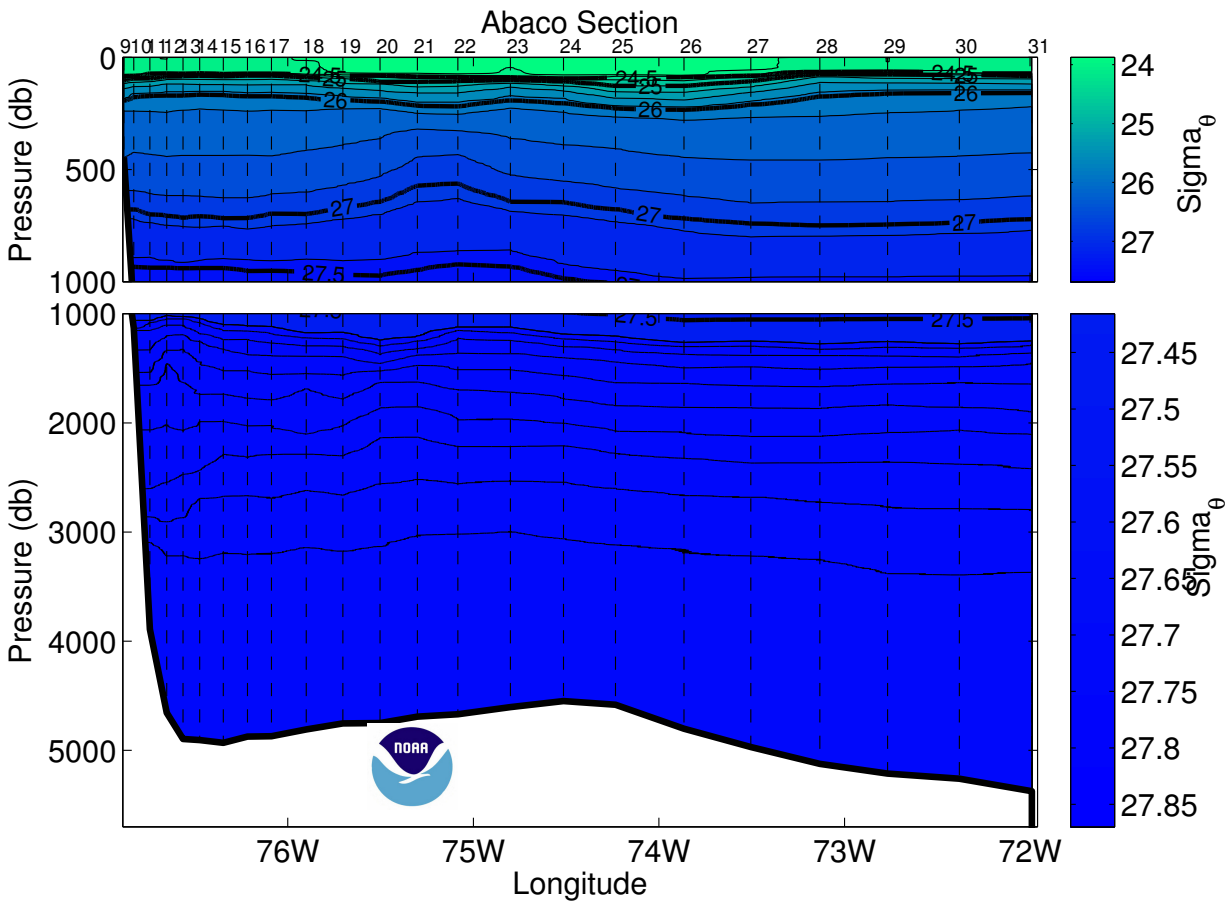

Figure 28: Neutral density (kg/m3) section for the Abaco Section. Dashed vertical lines are the CTD station locations.

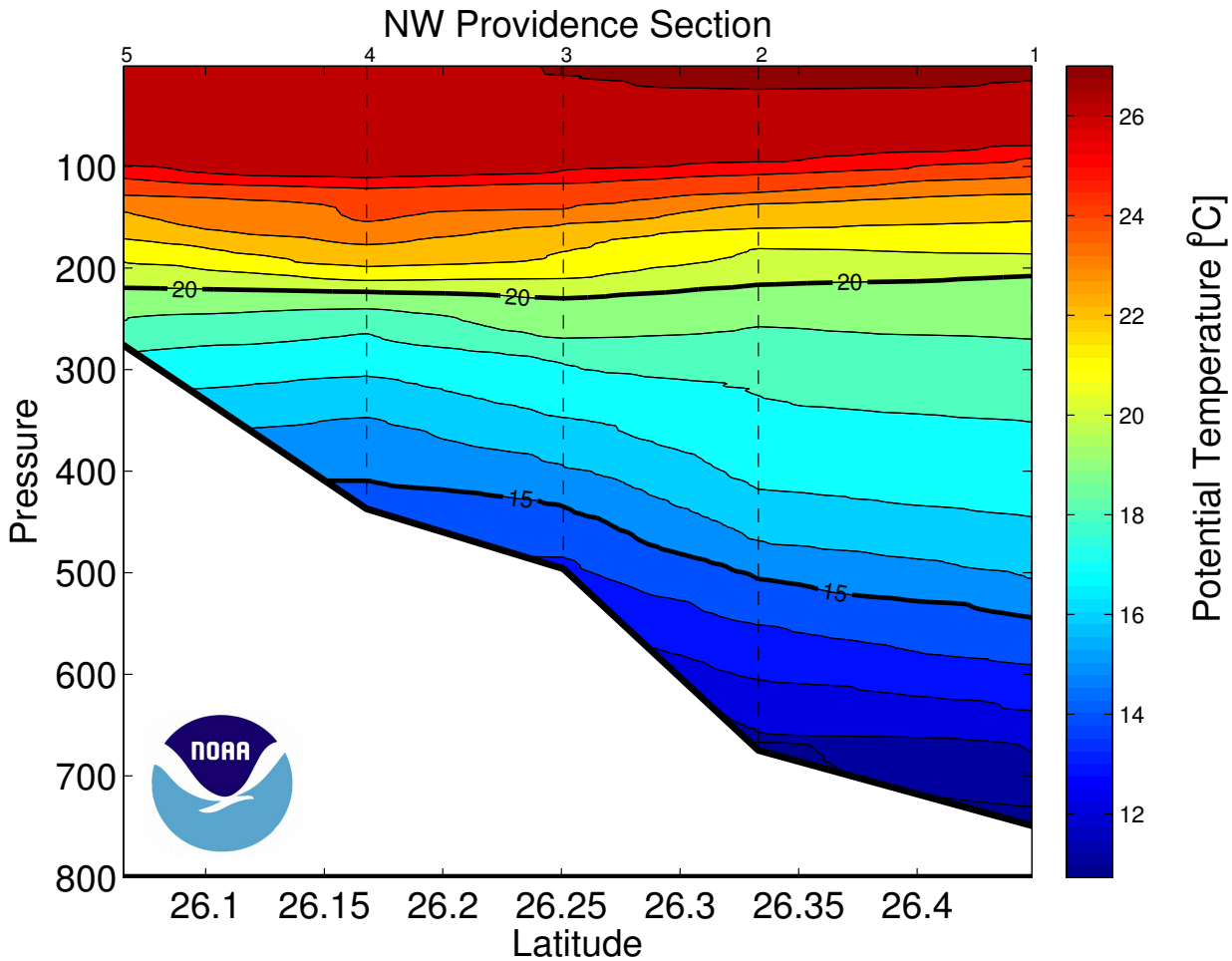

Figure 29: Potential Temperature (°C) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

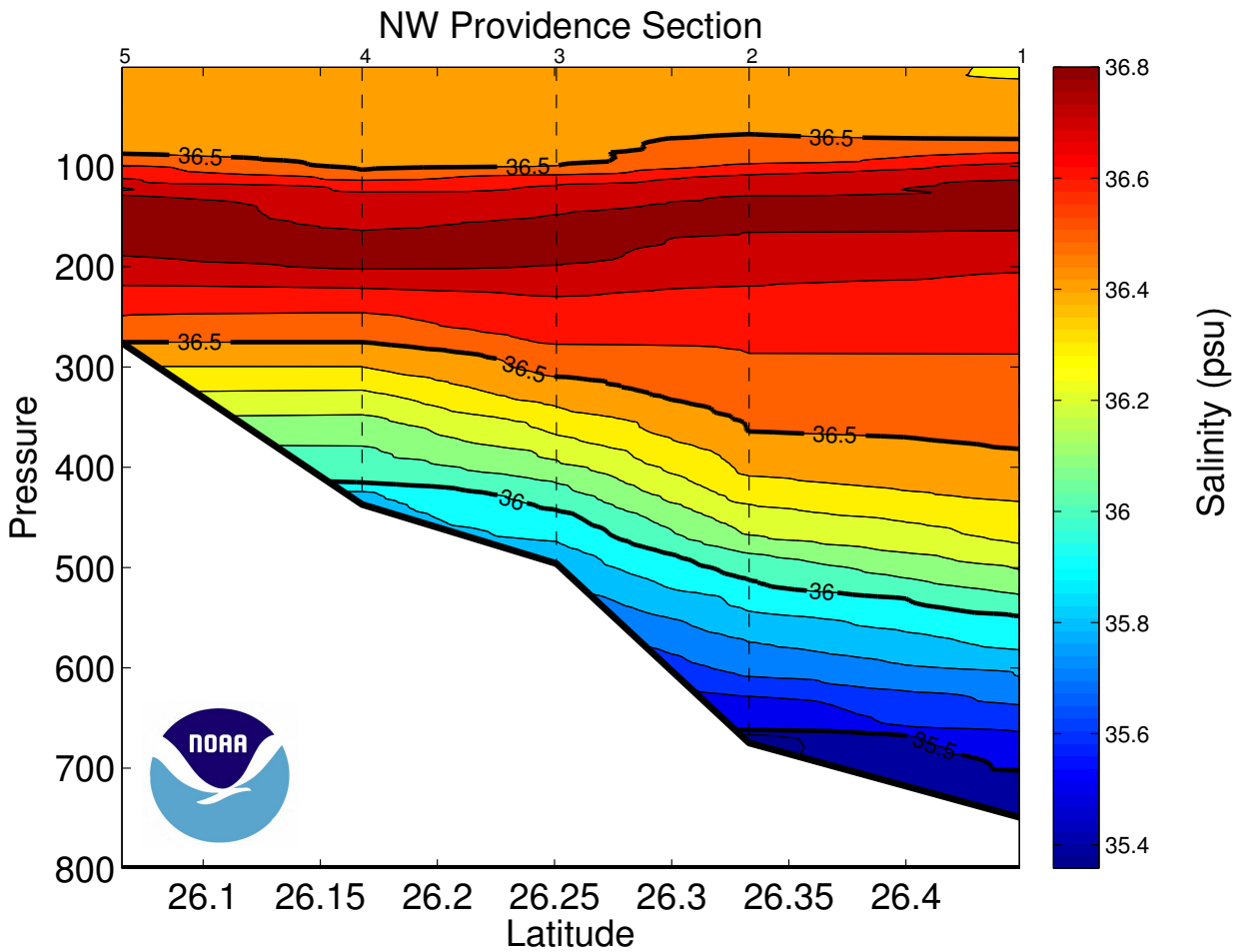

Figure 30: Salinity (PSS 78) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

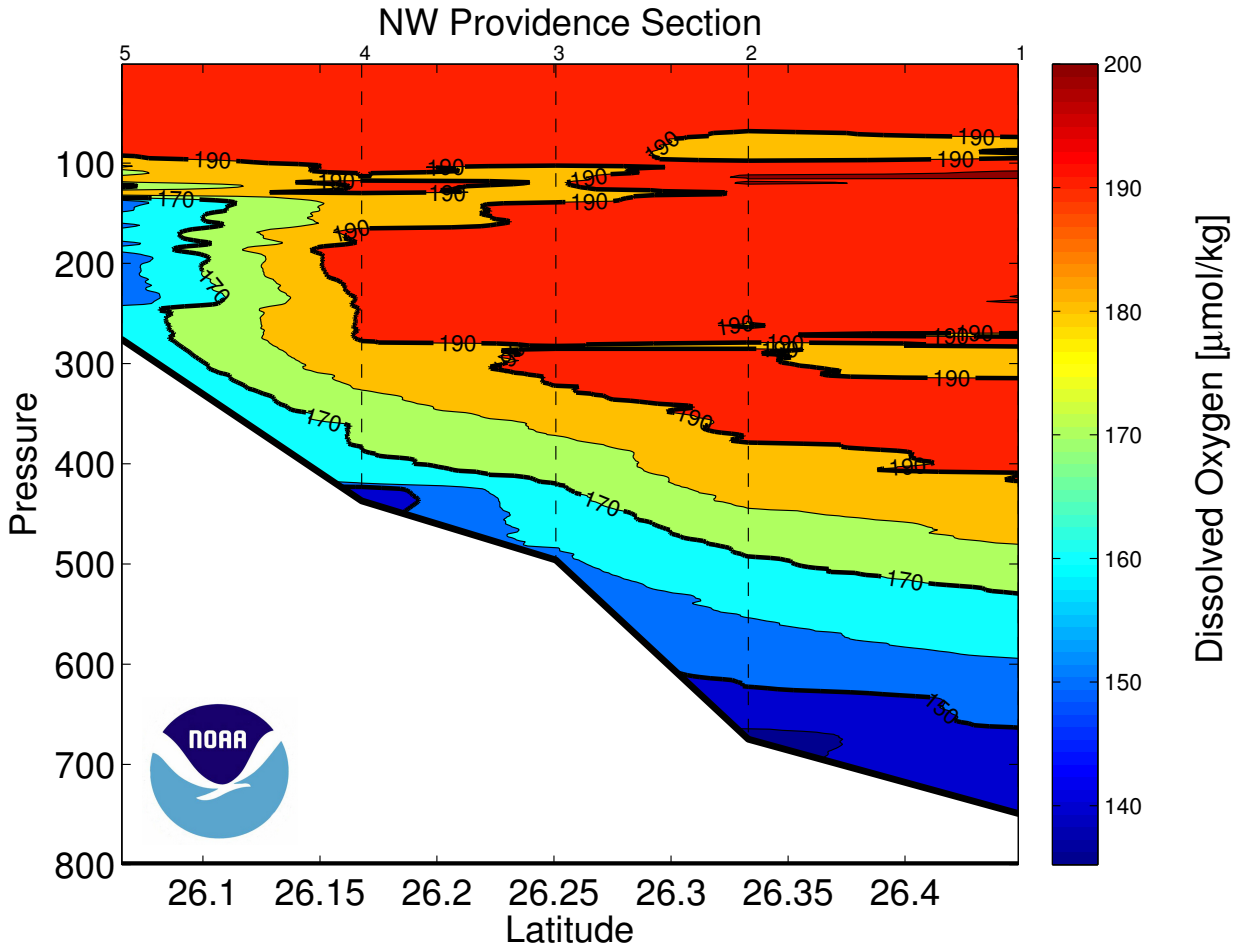

Figure 31: Dissolved Oxygen ($umol/kg$) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

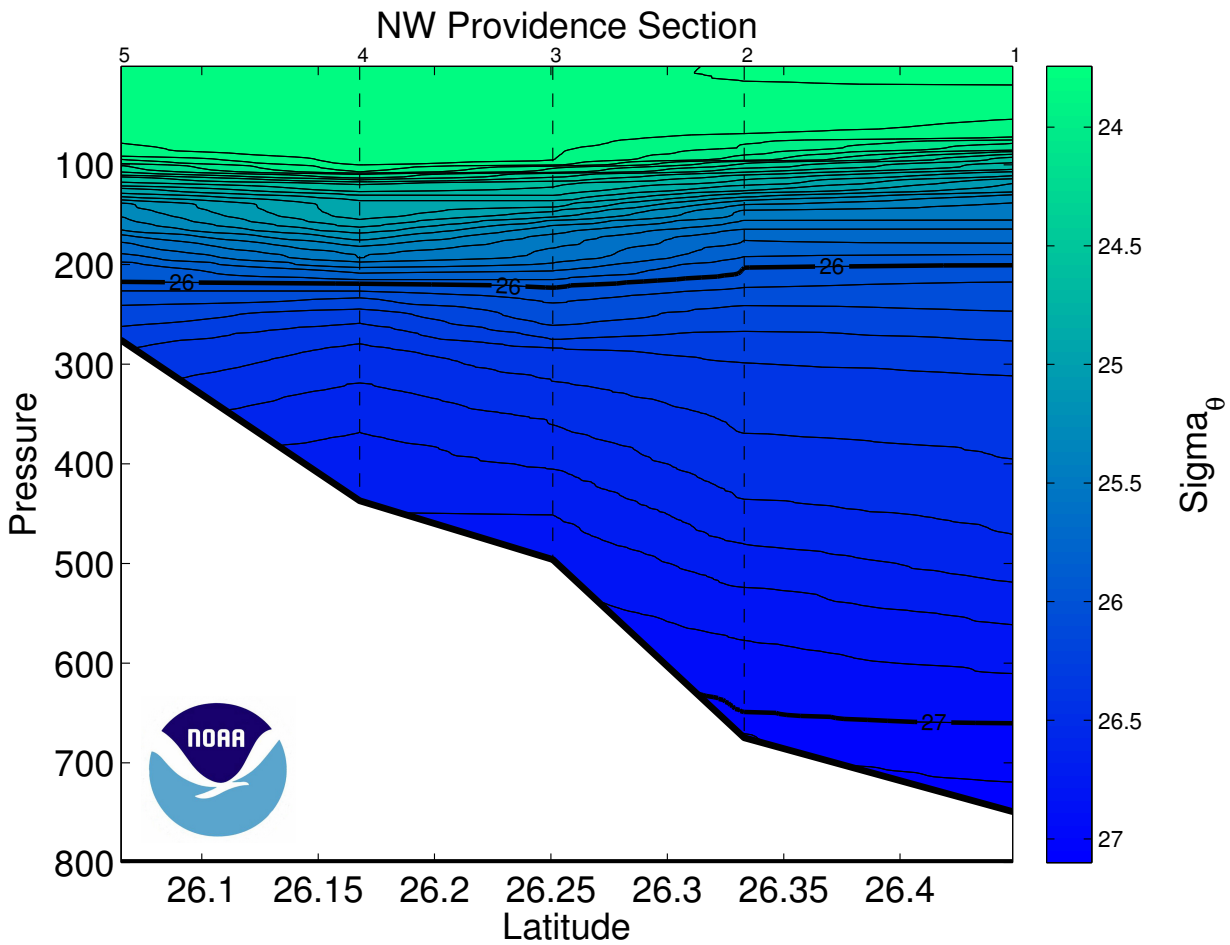

Figure 32: Neutral density (kg/m3) section for the Northwest Providence Channel section. Dashed vertical lines are the CTD station locations.

9 Acknowledgements

The successful completion of the cruise relied on dedicated assistance from many individuals on shore and on the NERC ship RRS Discovery. Funded investigators in the project and members of the Western Boundary Time Series, and the RAPID/MOC programs were instrumental in planning and executing the cruise. The participants in the cruise showed dedication and camaraderie during their 16 days at sea. Officers and crew of the Discovery exhibited a high degree of professionalism and assistance to accomplish the mission and to make us feel at home during the voyage.

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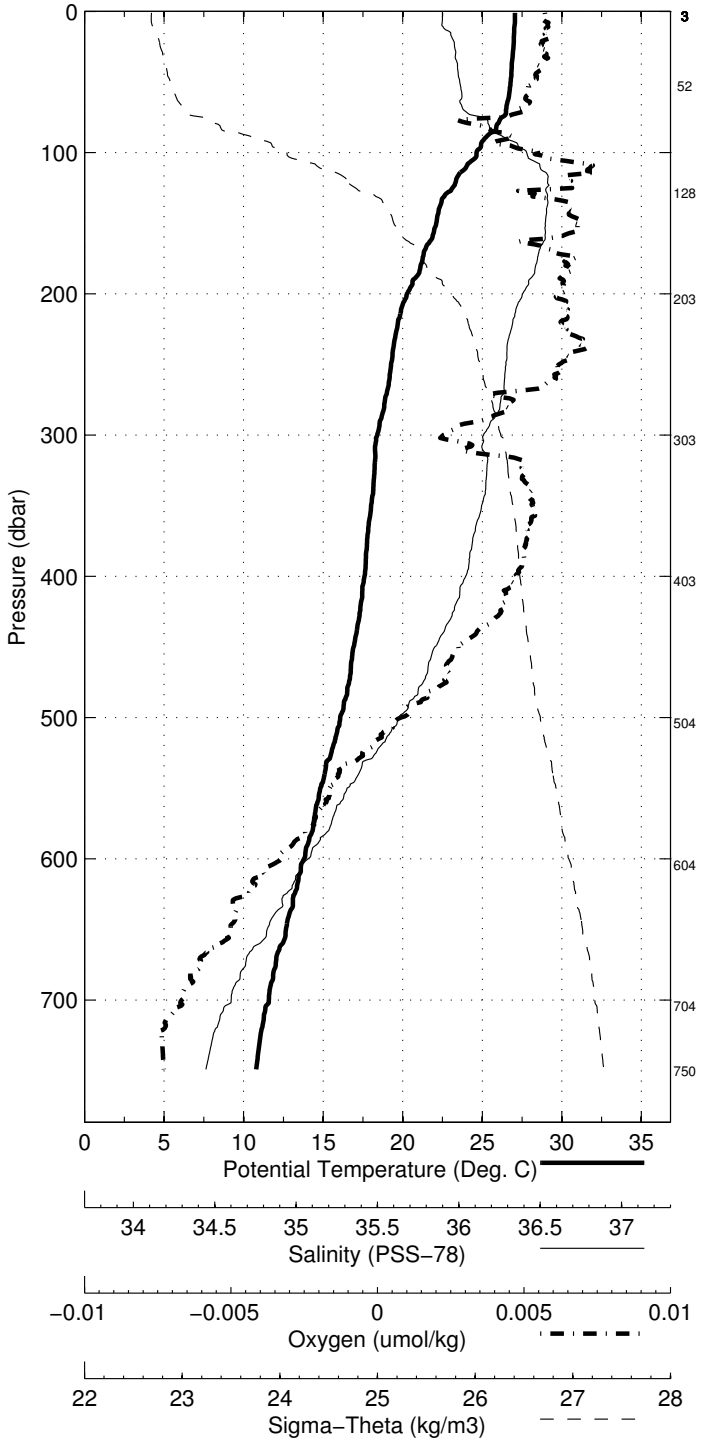
A Hydrographic - CTD Data

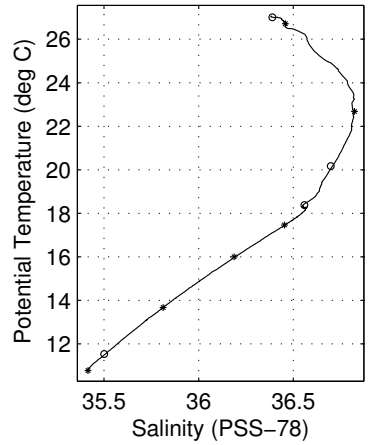
Abaco November - December 2009 RRS Discovery
CTD Station 1 (CTD001)
Latitude 26.432N Longitude 78.664W
22-Nov-2009 01:34Z

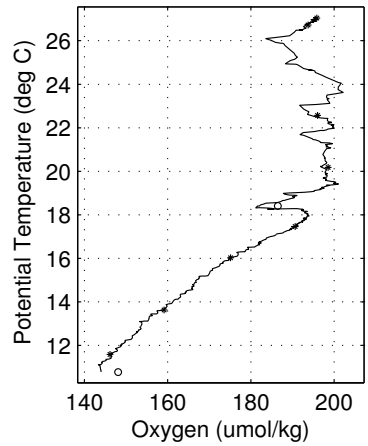
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	27.055	27.055	36.385	195.3	0.004	23.744
10	27.028	27.026	36.382	195.7	0.041	23.751
20	26.988	26.983	36.428	195.4	0.083	23.799
30	26.925	26.919	36.438	195.5	0.124	23.828
50	26.795	26.784	36.455	193.7	0.205	23.884
75	26.246	26.229	36.560	189.3	0.304	24.139
100	24.662	24.640	36.731	194.8	0.392	24.760
125	23.145	23.119	36.813	199.0	0.465	25.274
150	22.139	22.109	36.808	199.3	0.529	25.561
200	20.308	20.270	36.714	197.3	0.643	25.998
250	19.314	19.269	36.646	197.2	0.742	26.210
300	18.457	18.404	36.554	181.6	0.833	26.362
400	17.669	17.600	36.480	191.5	1.004	26.505
500	16.152	16.071	36.206	175.9	1.165	26.659
600	13.882	13.794	35.830	159.9	1.310	26.872
700	11.676	11.584	35.514	146.4	1.436	27.068

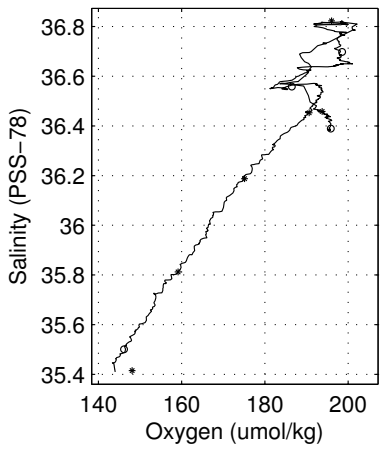
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
750	1	10.867	10.772	35.415	148.1
704	2	11.624	11.532	35.501	146.1
604	3	13.760	13.672	35.812	159.1
504	4	16.081	15.999	36.187	175.1
403	5	17.531	17.462	36.453	190.6
303	6	18.434	18.381	36.558	186.5
204	7	20.212	20.174	36.698	198.5
128	8	22.707	22.681	36.823	196.0
53	9	26.722	26.710	36.458	193.8
3	10	27.005	27.004	36.389	195.9
3	11	27.004	27.006	−999.000	NaN
3	12	27.004	27.005	−999.000	NaN
3	13	27.003	27.004	−999.000	NaN
3	14	27.002	27.003	−999.000	NaN
3	15	27.001	27.002	−999.000	NaN
3	16	27.005	27.007	−999.000	NaN
3	17	27.006	27.007	−999.000	NaN
3	18	27.004	27.006	−999.000	NaN
3	19	27.004	27.006	−999.000	NaN
3	20	27.003	27.004	−999.000	NaN
3	21	27.004	27.005	−999.000	NaN
3	22	27.004	27.006	−999.000	NaN
3	23	27.005	27.006	−999.000	NaN
3	24	27.007	27.009	−999.000	NaN

Abaco November – December 2009 RRS Discovery
CTD Station 1 (CTD001)
Latitude 26.432 N Longitude 78.664 W
22–Nov–2009 01:34 Z





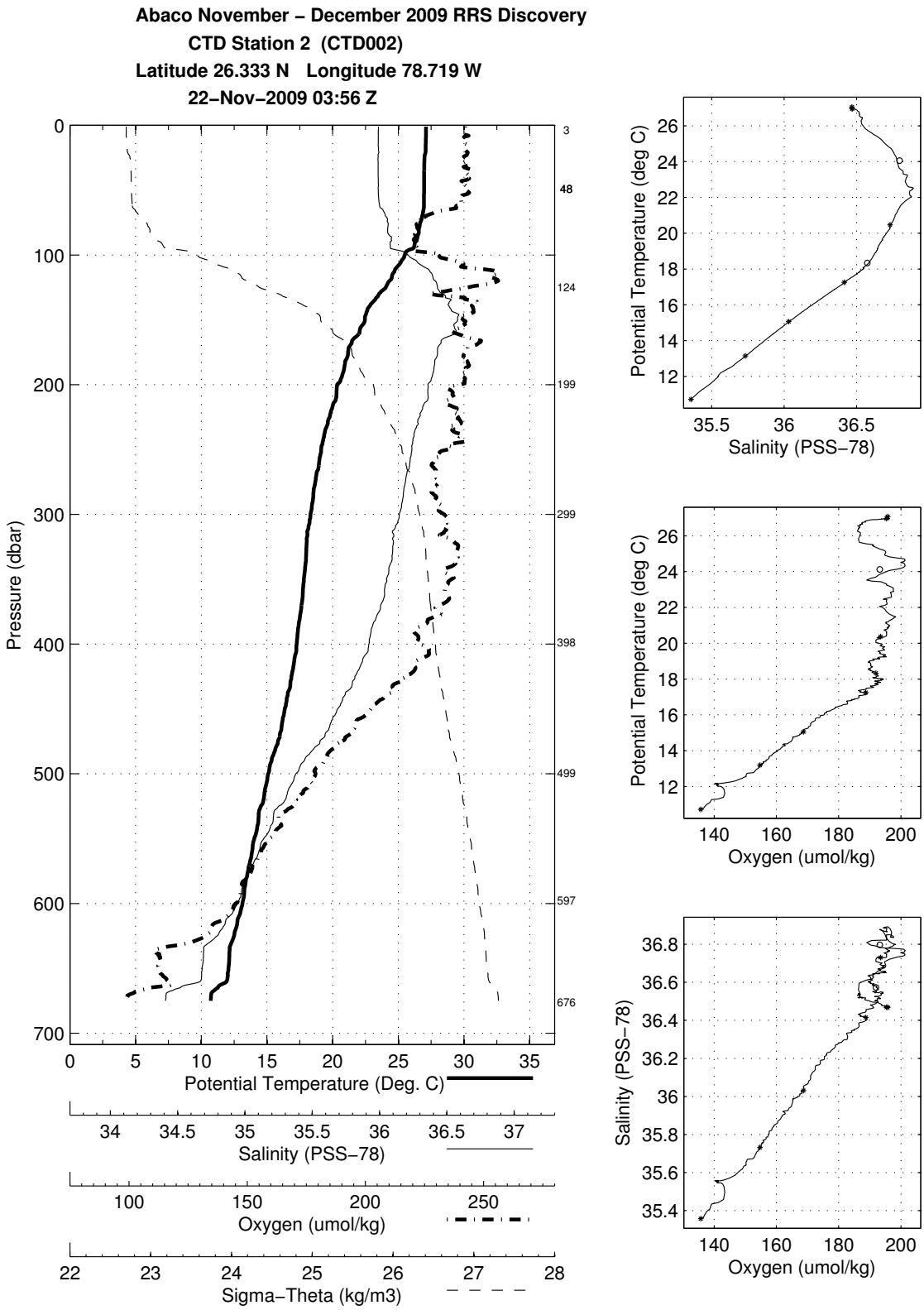




Abaco November - December 2009 RRS Discovery
CTD Station 2 (CTD002)
Latitude 26.333N Longitude 78.719W
22-Nov-2009 03:56Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$	DynHt $m^2 \cdot s^{-2}$	SigT $kg \cdot m^{-3}$
1	27.102	27.102	36.471	195.5	0.004	23.794
10	27.099	27.097	36.470	195.6	0.041	23.794
20	27.080	27.075	36.471	195.7	0.082	23.802
30	26.983	26.976	36.469	195.7	0.123	23.833
50	26.967	26.956	36.470	195.7	0.204	23.840
75	26.680	26.663	36.520	187.7	0.306	23.971
100	25.495	25.473	36.627	191.3	0.401	24.426
125	24.064	24.038	36.780	195.8	0.483	24.978
150	22.485	22.455	36.886	195.1	0.550	25.522
200	20.373	20.335	36.730	194.5	0.664	25.992
250	19.173	19.128	36.645	192.4	0.763	26.246
300	18.369	18.316	36.580	191.8	0.853	26.404
400	17.331	17.263	36.421	187.3	1.020	26.542
500	15.167	15.089	36.039	168.9	1.176	26.754
600	13.220	13.135	35.733	154.6	1.312	26.934

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$
676	1	10.799	10.715	35.358	135.7
598	2	13.235	13.150	35.732	154.7
499	3	15.137	15.059	36.031	168.7
399	4	17.320	17.252	36.415	188.7
300	5	18.389	18.336	36.574	191.9
200	6	20.509	20.471	36.731	193.5
125	7	24.085	24.058	36.797	193.2
49	8	26.973	26.961	36.469	195.3
49	9	26.970	26.958	36.469	195.3
4	10	27.055	27.054	36.468	195.7

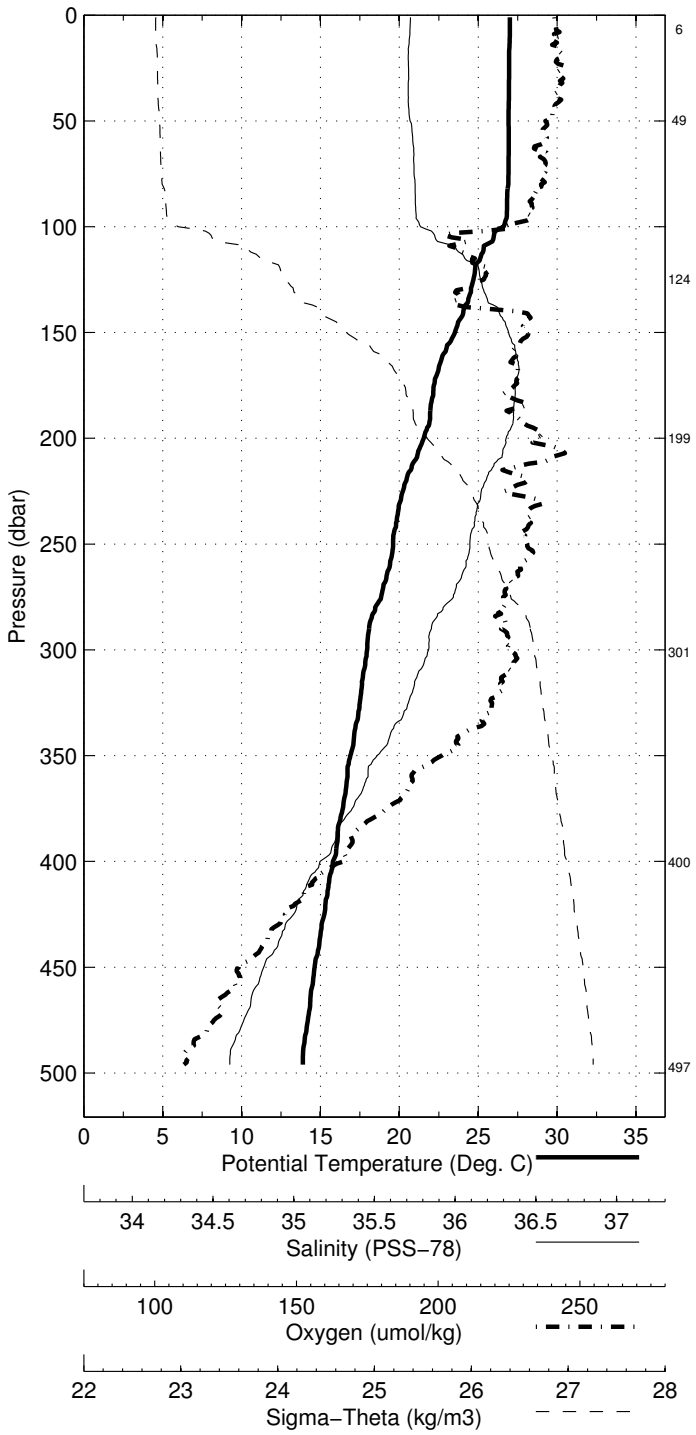

Abaco November – December 2009 RRS Discovery
CTD Station 2 (CTD002)
Latitude 26.333 N Longitude 78.719 W
22–Nov–2009 03:56 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Oxygen (umol/kg)

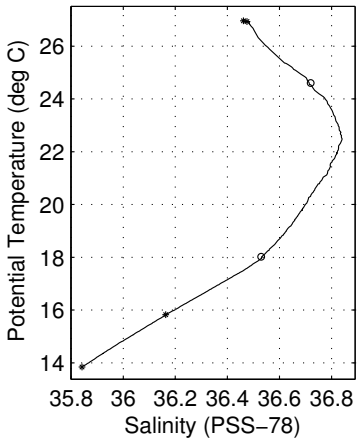
Abaco November - December 2009 RRS Discovery
CTD Station 3 (CTD003)
Latitude 26.253N Longitude 78.767W
22-Nov-2009 05:46Z

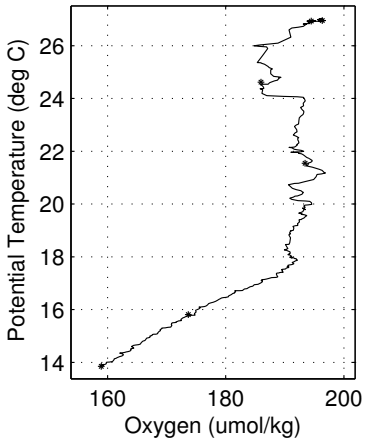
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	27.008	27.008	36.468	195.8	0.004	23.822
10	27.005	27.003	36.466	196.5	0.041	23.821
20	26.961	26.956	36.460	196.6	0.081	23.832
30	26.962	26.955	36.462	196.7	0.122	23.834
50	26.937	26.926	36.467	194.9	0.204	23.847
75	26.934	26.917	36.480	194.6	0.305	23.860
100	26.623	26.600	36.502	190.7	0.406	23.978
125	24.725	24.698	36.707	188.8	0.494	24.724
150	23.552	23.520	36.804	193.2	0.571	25.150
200	21.588	21.549	36.796	194.0	0.698	25.710
250	19.647	19.601	36.672	193.1	0.803	26.143
300	18.013	17.961	36.530	191.5	0.894	26.455
400	15.858	15.794	36.158	174.8	1.052	26.686

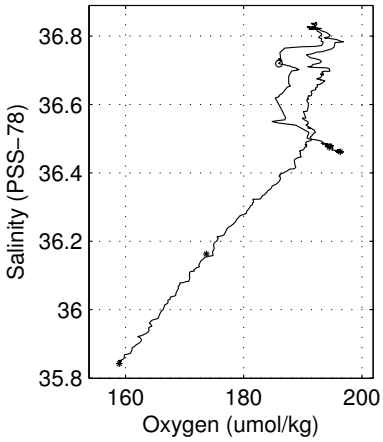
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
497	1	13.920	13.847	35.842	158.9
400	2	15.889	15.825	36.163	173.7
301	3	18.074	18.021	36.530	204.7
200	4	21.545	21.707	−999.000	NaN
125	5	24.633	24.606	36.720	185.9
50	6	26.940	26.928	36.475	194.5
7	7	26.960	26.958	36.462	196.3

Abaco November – December 2009 RRS Discovery
CTD Station 3 (CTD003)
Latitude 26.253 N Longitude 78.767 W
22–Nov–2009 05:46 Z







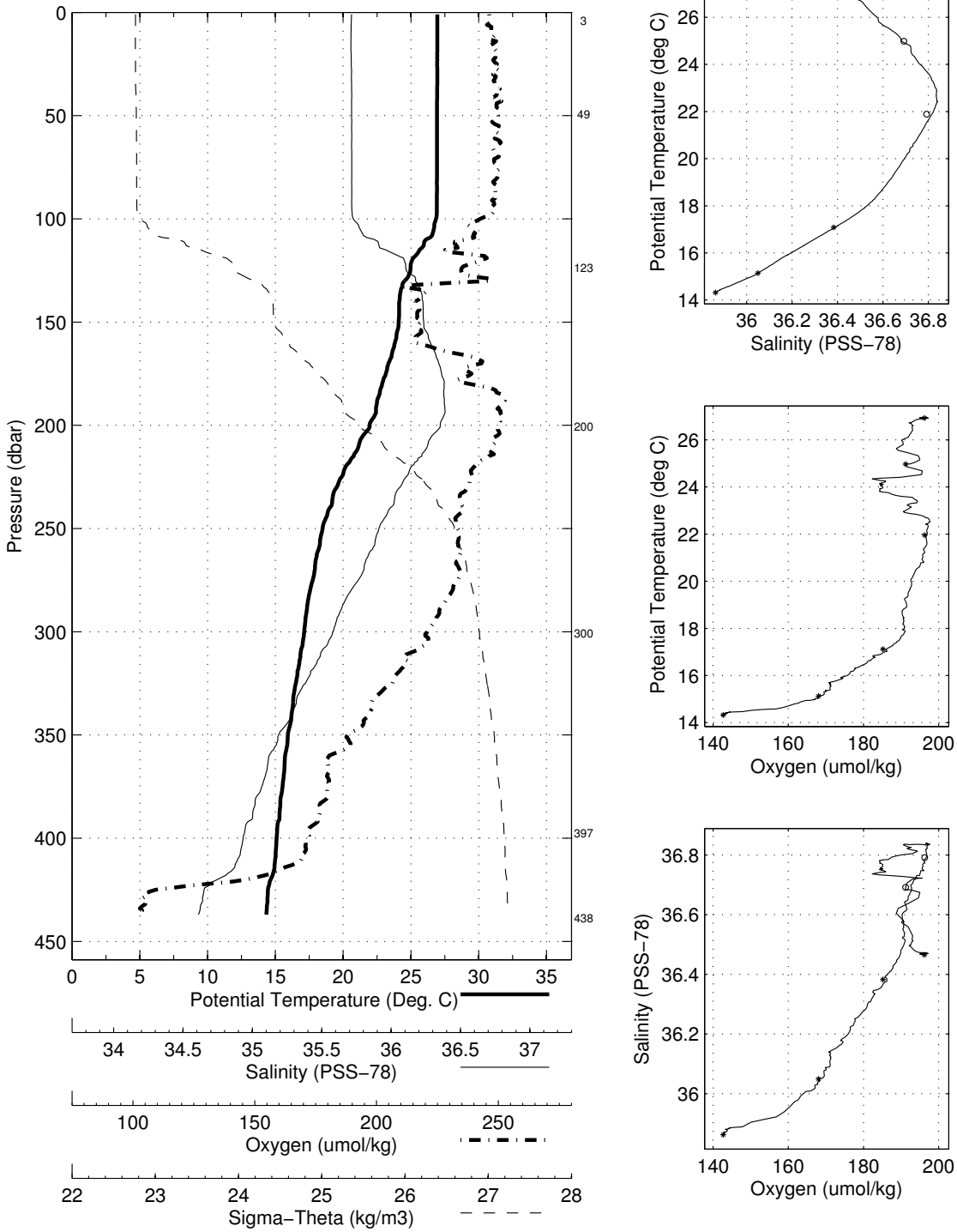


Abaco November - December 2009 RRS Discovery
CTD Station 4 (CTD004)
Latitude 26.171N Longitude 78.800W
22-Nov-2009 07:21Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.942	26.941	36.470	195.3	0.004	23.844
10	26.942	26.940	36.468	195.9	0.041	23.843
20	26.944	26.940	36.468	196.1	0.081	23.843
30	26.949	26.942	36.469	195.9	0.122	23.844
50	26.935	26.923	36.470	196.7	0.203	23.850
75	26.935	26.918	36.471	196.7	0.305	23.852
100	26.876	26.853	36.477	194.0	0.407	23.878
125	24.981	24.954	36.686	191.1	0.499	24.630
150	24.127	24.095	36.755	185.0	0.578	24.942
200	21.998	21.958	36.821	196.8	0.716	25.614
250	18.518	18.474	36.578	190.6	0.818	26.362
300	17.176	17.126	36.396	186.1	0.900	26.556
400	15.152	15.090	36.041	168.3	1.049	26.755

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
439	1	14.384	14.319	35.863	142.7
397	2	15.203	15.141	36.049	168.1
301	3	17.135	17.084	36.383	185.2
201	4	21.931	21.891	36.792	196.3
124	5	25.013	24.986	36.692	191.2
50	6	26.946	26.973	−999.000	NaN
4	7	26.920	26.919	36.466	196.2

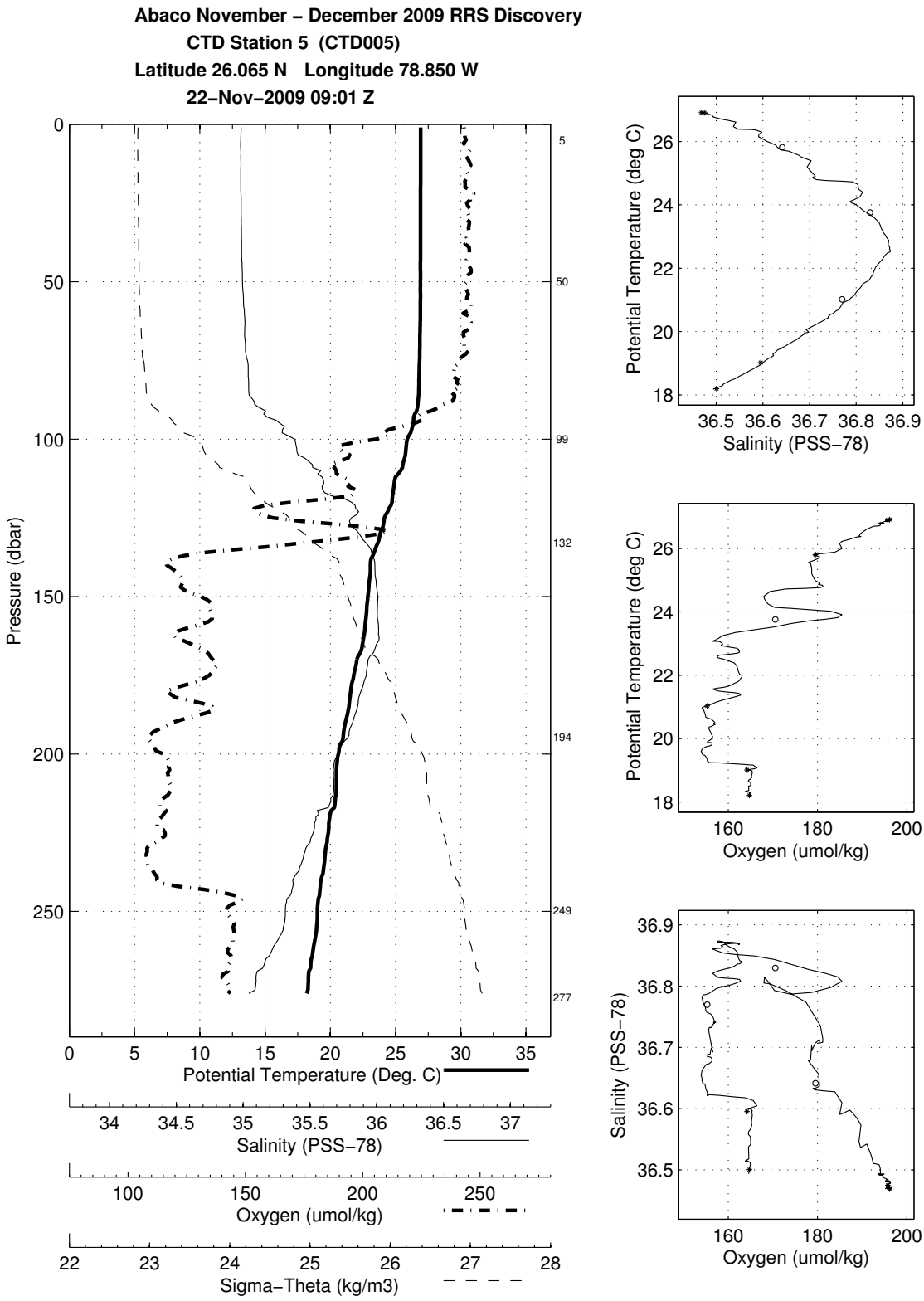
Abaco November – December 2009 RRS Discovery
CTD Station 4 (CTD004)
Latitude 26.171 N Longitude 78.800 W
22–Nov–2009 07:21 Z



Abaco November - December 2009 RRS Discovery
CTD Station 5 (CTD005)
Latitude 26.065N Longitude 78.850W
22-Nov-2009 09:01Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$	DynHt $m^2 \cdot s^{-2}$	SigT $kg \cdot m^{-3}$
1	26.924	26.924	36.471	195.3	0.004	23.851
10	26.927	26.925	36.470	195.5	0.040	23.849
20	26.922	26.917	36.470	195.5	0.081	23.852
30	26.918	26.911	36.471	195.5	0.121	23.855
50	26.917	26.906	36.475	195.7	0.203	23.859
75	26.857	26.839	36.489	194.7	0.304	23.891
100	25.912	25.890	36.628	183.8	0.402	24.296
125	24.169	24.142	36.793	170.4	0.487	24.957
150	22.906	22.876	36.870	161.0	0.557	25.389
200	20.657	20.619	36.754	156.2	0.677	25.934
250	19.054	19.009	36.600	164.3	0.777	26.242

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$
277	1	18.249	18.201	36.500	164.8
250	2	19.067	19.022	36.595	164.2
194	3	21.054	21.016	36.770	155.3
133	4	23.786	23.758	36.830	170.5
100	5	25.842	25.820	36.641	179.5
50	6	26.918	26.907	36.475	195.7
5	7	26.915	26.914	36.469	196.1

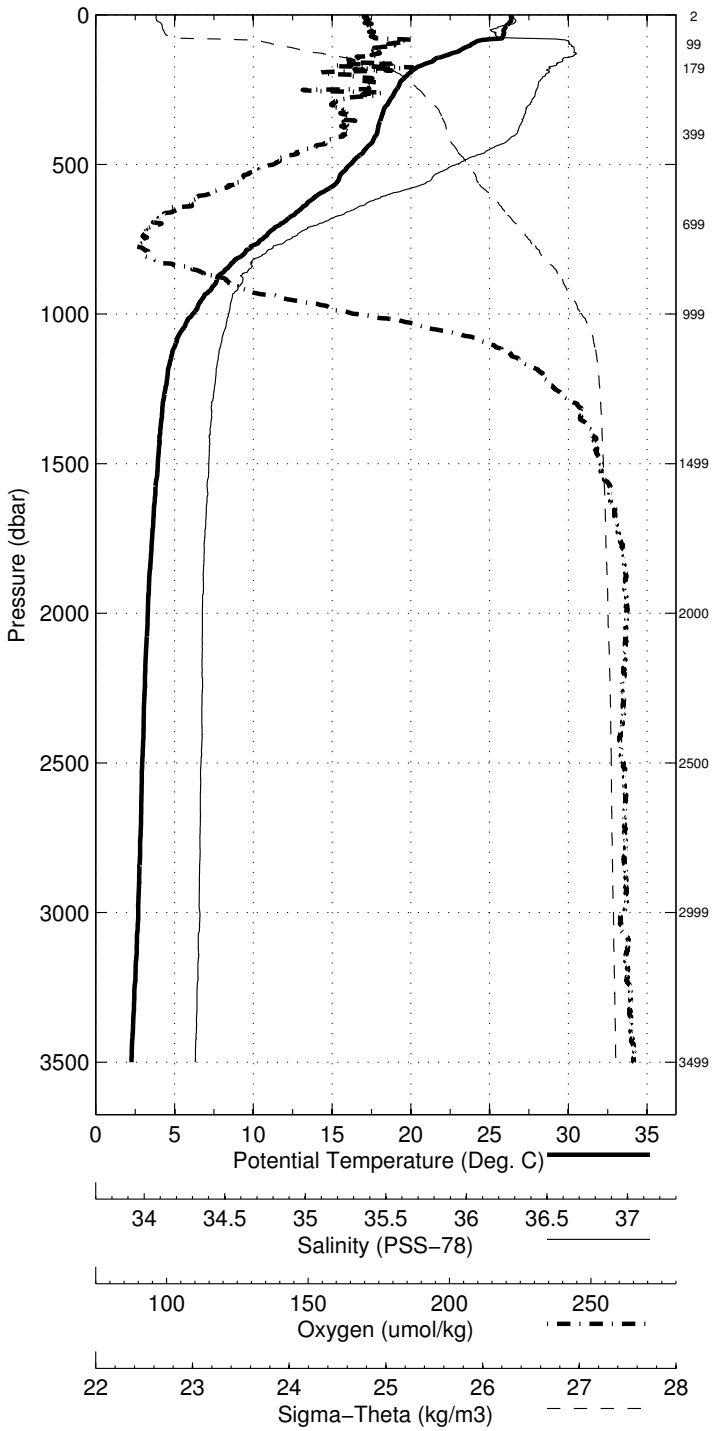

Abaco November – December 2009 RRS Discovery
CTD Station 5 (CTD005)
Latitude 26.065 N Longitude 78.850 W
22–Nov–2009 09:01 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Oxygen (umol/kg)

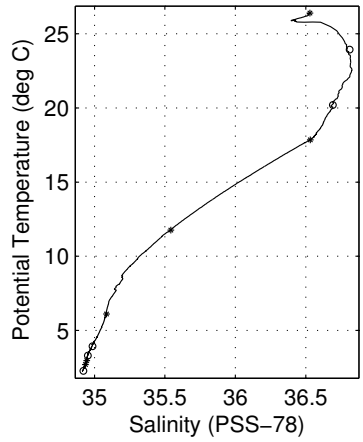
Abaco November - December 2009 RRS Discovery
CTD Station 6 (CTD006)
Latitude 25.956N Longitude 76.898W
22-Nov-2009 21:56Z

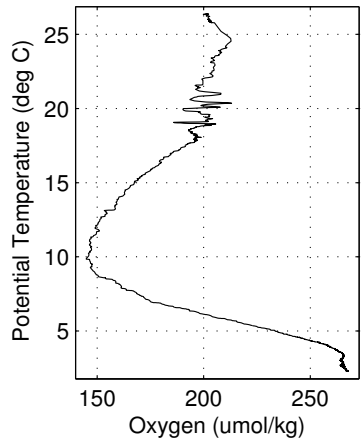
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.357	26.357	36.512	200.3	0.004	24.062
10	26.368	26.365	36.515	201.6	0.038	24.062
20	26.369	26.365	36.524	201.8	0.077	24.069
30	26.225	26.218	36.511	202.9	0.115	24.106
50	25.903	25.892	36.396	202.9	0.191	24.121
75	25.831	25.814	36.433	203.8	0.286	24.173
100	23.817	23.796	36.803	207.6	0.366	25.068
125	22.891	22.866	36.816	205.0	0.436	25.351
150	21.491	21.461	36.759	197.6	0.498	25.706
200	19.833	19.795	36.675	197.0	0.605	26.094
250	19.124	19.079	36.629	189.1	0.701	26.246
300	18.570	18.516	36.595	192.9	0.791	26.365
400	17.878	17.809	36.524	195.7	0.962	26.487
500	16.239	16.157	36.225	178.6	1.125	26.654
600	14.245	14.155	35.888	162.4	1.274	26.841
700	11.807	11.714	35.532	150.6	1.402	27.057
800	9.481	9.388	35.258	147.5	1.510	27.257
900	7.644	7.551	35.143	168.5	1.597	27.453
1000	6.240	6.147	35.082	199.1	1.668	27.598
1100	5.149	5.054	35.043	231.5	1.725	27.703
1200	4.659	4.559	35.018	245.0	1.775	27.740
1300	4.357	4.251	34.997	253.6	1.823	27.757
1400	4.199	4.086	34.988	256.8	1.870	27.768
1500	4.052	3.931	34.982	259.3	1.917	27.779
1750	3.711	3.572	34.961	264.0	2.032	27.799
2000	3.458	3.299	34.950	265.7	2.145	27.817
2500	3.148	2.946	34.943	264.9	2.368	27.845
3000	2.945	2.696	34.937	264.8	2.594	27.863
3500	2.563	2.269	34.915	267.5	2.817	27.881

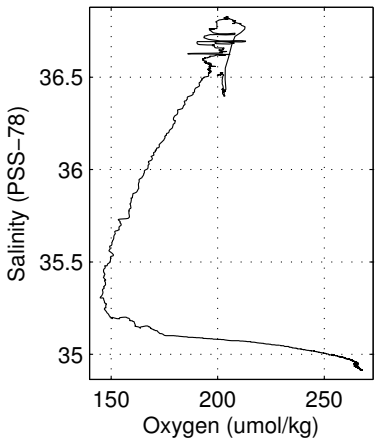
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3499	2	2.562	2.268	34.921	NaN
3000	4	2.939	2.689	34.936	NaN
2500	6	3.161	2.958	34.945	NaN
2000	8	3.460	3.301	34.953	NaN
1499	10	4.045	3.925	34.985	NaN
1000	12	6.200	6.107	35.085	NaN
699	14	11.860	11.767	35.542	NaN
400	16	17.922	17.852	36.532	NaN
179	18	20.239	20.205	36.693	NaN
99	20	23.953	23.931	36.811	NaN
3	22	26.406	26.405	36.530	NaN

Abaco November – December 2009 RRS Discovery
CTD Station 6 (CTD006)
Latitude 25.956 N Longitude 76.898 W
22–Nov–2009 21:56 Z







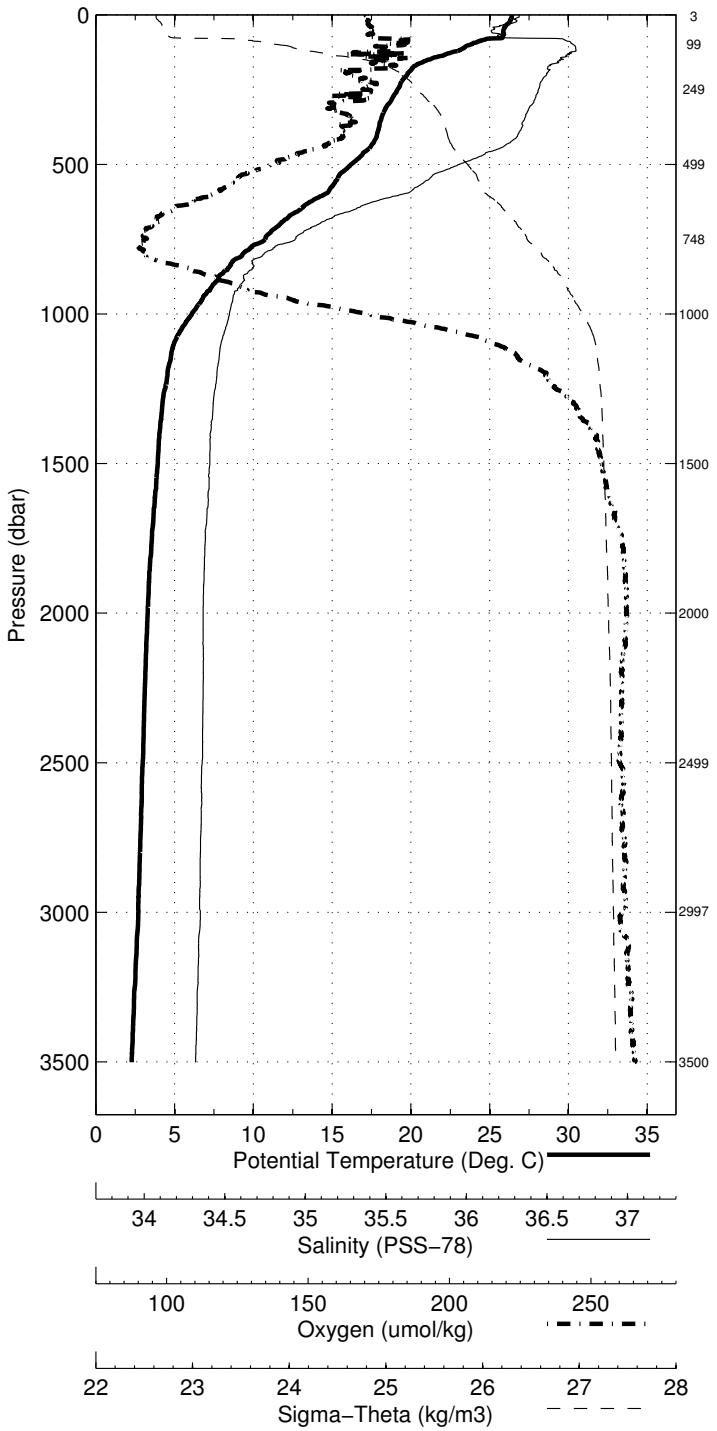


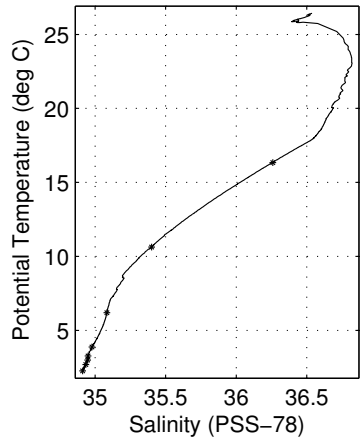
Abaco November - December 2009 RRS Discovery
CTD Station 7 (CTD007)
Latitude 25.960N Longitude 76.894W
23-Nov-2009 01:46Z

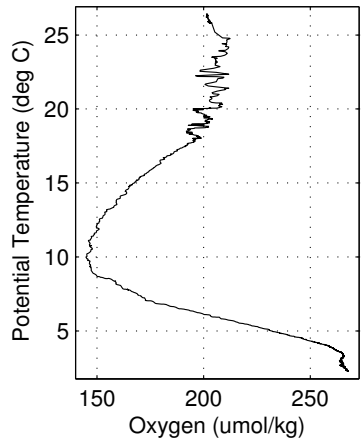
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.408	26.408	36.535	201.4	0.004	24.063
10	26.385	26.382	36.523	201.6	0.038	24.063
20	26.324	26.319	36.523	202.1	0.077	24.082
30	26.162	26.156	36.486	202.1	0.115	24.106
50	25.897	25.886	36.402	202.9	0.191	24.127
75	25.822	25.805	36.433	202.6	0.286	24.176
100	23.779	23.758	36.807	211.1	0.365	25.083
125	22.649	22.624	36.791	198.4	0.434	25.401
150	21.125	21.096	36.743	203.9	0.495	25.795
200	19.799	19.762	36.672	197.6	0.599	26.101
250	19.190	19.145	36.631	201.2	0.695	26.231
300	18.587	18.534	36.599	192.6	0.787	26.363
400	17.917	17.848	36.529	195.6	0.958	26.481
500	16.295	16.214	36.234	178.3	1.123	26.648
600	14.608	14.517	35.947	163.5	1.271	26.808
700	11.792	11.699	35.528	149.8	1.400	27.057
800	9.425	9.332	35.254	147.1	1.509	27.263
900	7.582	7.489	35.140	169.0	1.595	27.459
1000	6.187	6.094	35.081	202.2	1.666	27.605
1100	5.049	4.956	35.039	232.9	1.722	27.711
1200	4.652	4.553	35.019	245.7	1.772	27.742
1300	4.335	4.229	34.999	252.6	1.820	27.761
1400	4.144	4.031	34.984	257.7	1.867	27.770
1500	4.054	3.933	34.983	259.2	1.913	27.780
1750	3.695	3.556	34.961	264.4	2.028	27.801
2000	3.450	3.290	34.949	265.5	2.140	27.817
2500	3.179	2.976	34.945	264.0	2.364	27.843
3000	2.950	2.700	34.935	264.7	2.591	27.861
3500	2.567	2.273	34.911	267.8	2.815	27.878

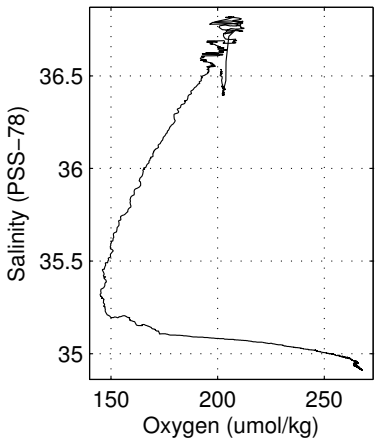
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3500	2	2.568	2.274	34.912	NaN
2998	4	2.949	2.700	34.935	NaN
2500	6	3.203	2.999	34.948	NaN
2001	8	3.440	3.281	34.950	NaN
1501	10	4.002	3.882	34.978	NaN
1001	12	6.301	6.207	35.084	NaN
749	14	10.730	10.637	35.400	NaN
499	16	16.425	16.344	36.259	NaN
250	18	19.140	19.371	−999.000	NaN
99	20	23.861	23.930	−999.000	NaN
3	22	26.305	26.307	−999.000	NaN

Abaco November – December 2009 RRS Discovery
CTD Station 7 (CTD007)
Latitude 25.960 N Longitude 76.894 W
23–Nov–2009 01:46 Z





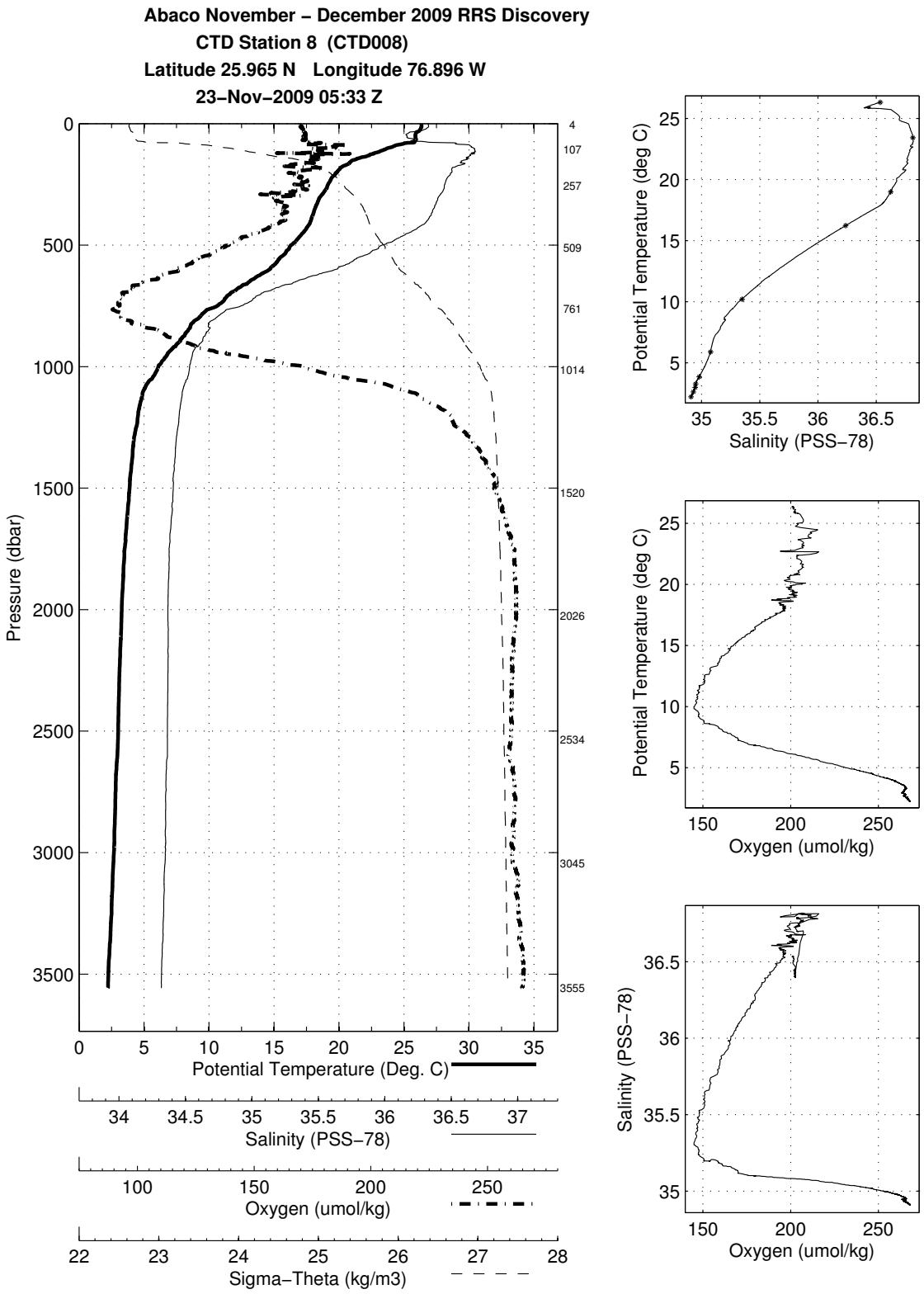




Abaco November - December 2009 RRS Discovery
CTD Station 8 (CTD008)
Latitude 25.965N Longitude 76.896W
23-Nov-2009 05:33Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.342	26.341	36.533	200.9	0.004	24.083
10	26.358	26.355	36.534	201.4	0.038	24.079
20	26.295	26.290	36.520	201.6	0.077	24.089
30	26.166	26.160	36.479	202.0	0.115	24.099
50	25.891	25.880	36.400	202.6	0.191	24.128
75	25.832	25.815	36.520	203.9	0.285	24.238
100	23.819	23.798	36.805	211.6	0.366	25.069
125	22.581	22.556	36.799	214.8	0.435	25.427
150	21.127	21.098	36.750	204.1	0.495	25.800
200	19.866	19.829	36.675	200.6	0.600	26.085
250	19.209	19.163	36.633	199.3	0.697	26.227
300	18.623	18.570	36.596	195.6	0.789	26.352
400	17.890	17.820	36.524	196.0	0.961	26.485
500	16.387	16.306	36.250	179.7	1.125	26.639
600	14.747	14.655	35.969	165.3	1.276	26.795
700	11.715	11.623	35.515	148.1	1.406	27.061
800	9.290	9.199	35.240	147.5	1.513	27.274
900	7.767	7.673	35.153	166.5	1.600	27.442
1000	6.190	6.097	35.081	202.3	1.672	27.605
1100	5.041	4.947	35.038	233.2	1.729	27.712
1200	4.636	4.537	35.018	246.2	1.778	27.742
1300	4.322	4.217	35.000	252.7	1.826	27.763
1400	4.151	4.038	34.989	256.7	1.873	27.773
1500	4.009	3.888	34.982	259.1	1.919	27.783
1750	3.639	3.500	34.956	265.1	2.033	27.802
2000	3.441	3.281	34.949	265.5	2.145	27.818
2500	3.212	3.008	34.946	264.1	2.369	27.841
3000	2.926	2.677	34.934	264.6	2.595	27.861
3500	2.547	2.254	34.910	267.9	2.819	27.879

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3556	2	2.523	2.224	34.910	NaN
3045	4	2.876	2.623	34.929	NaN
2534	6	3.200	2.993	34.946	NaN
2027	8	3.438	3.276	34.949	NaN
1520	10	3.977	3.855	34.980	NaN
1014	12	5.986	5.893	35.077	NaN
762	14	10.296	10.203	35.348	NaN
510	16	16.321	16.238	36.238	NaN
258	18	19.035	18.988	36.624	NaN
107	20	23.453	23.430	36.814	NaN
5	22	26.318	26.317	36.535	NaN

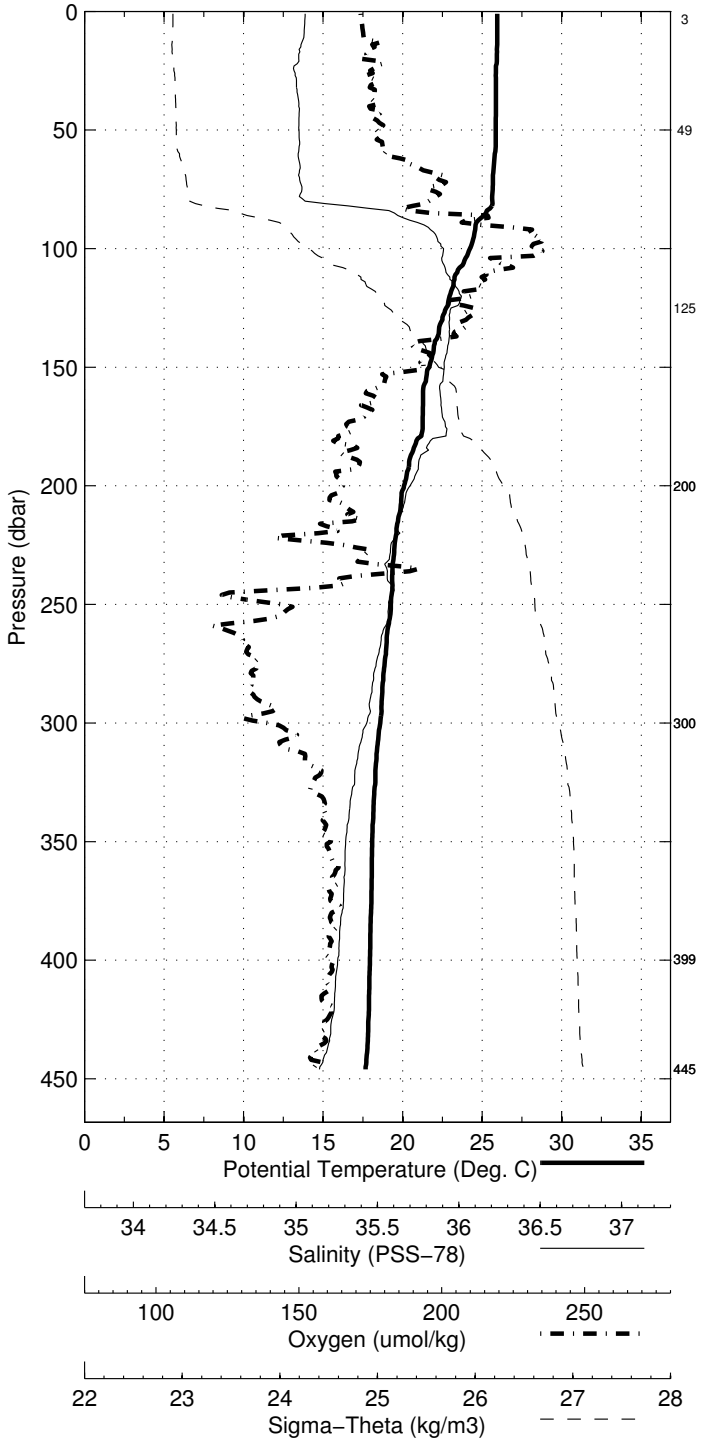

Abaco November – December 2009 RRS Discovery
CTD Station 8 (CTD008)
Latitude 25.965 N Longitude 76.896 W
23–Nov–2009 05:33 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Oxygen (umol/kg)
Potential Temperature (deg C)
Oxygen (umol/kg)
Salinity (PSS–78)
Oxygen (umol/kg)

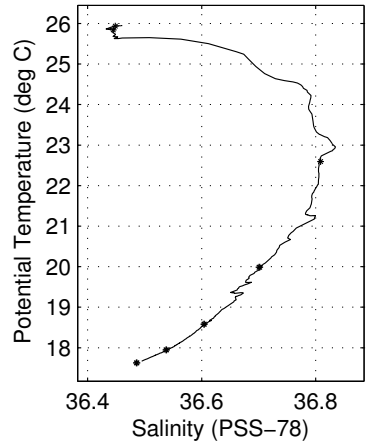
Abaco November - December 2009 RRS Discovery
CTD Station 9 (CTD009)
Latitude 26.524N Longitude 76.883W
23-Nov-2009 12:34Z

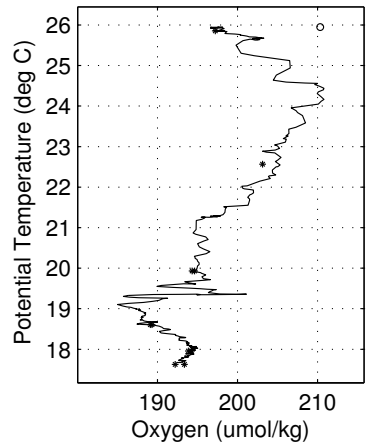
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.948	25.948	36.461	196.6	0.004	24.152
10	25.948	25.946	36.458	196.8	0.038	24.151
20	25.929	25.925	36.445	196.6	0.075	24.148
30	25.866	25.859	36.440	197.9	0.113	24.164
50	25.864	25.852	36.446	197.8	0.188	24.171
75	25.682	25.665	36.453	201.9	0.282	24.234
100	24.247	24.225	36.792	210.5	0.366	24.931
125	22.760	22.735	36.810	205.4	0.436	25.384
150	21.704	21.675	36.794	201.5	0.498	25.673
200	20.128	20.090	36.712	195.2	0.609	26.044
250	19.309	19.263	36.661	190.5	0.706	26.223
300	18.654	18.601	36.608	189.3	0.797	26.353
400	18.011	17.941	36.538	194.3	0.969	26.466

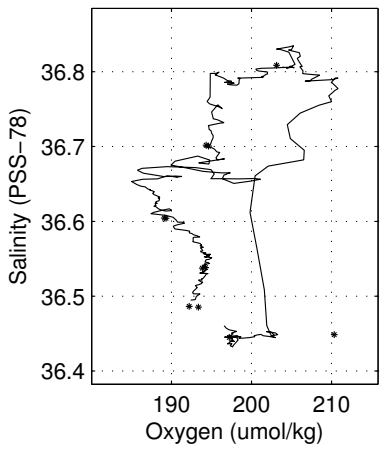
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
446	1	17.704	17.627	36.485	193.4
446	2	17.704	17.627	36.486	192.2
400	3	18.018	17.949	36.538	194.3
400	4	18.019	17.949	36.537	193.9
300	5	18.634	18.581	36.604	189.3
300	6	18.636	18.582	36.604	189.1
200	7	20.024	19.986	36.700	194.6
200	8	20.024	19.987	36.702	194.3
125	9	22.618	22.593	36.809	203.1
50	10	25.854	25.843	36.445	197.2
3	11	25.934	25.933	36.449	210.3

Abaco November – December 2009 RRS Discovery
CTD Station 9 (CTD009)
Latitude 26.524 N Longitude 76.883 W
23–Nov–2009 12:34 Z







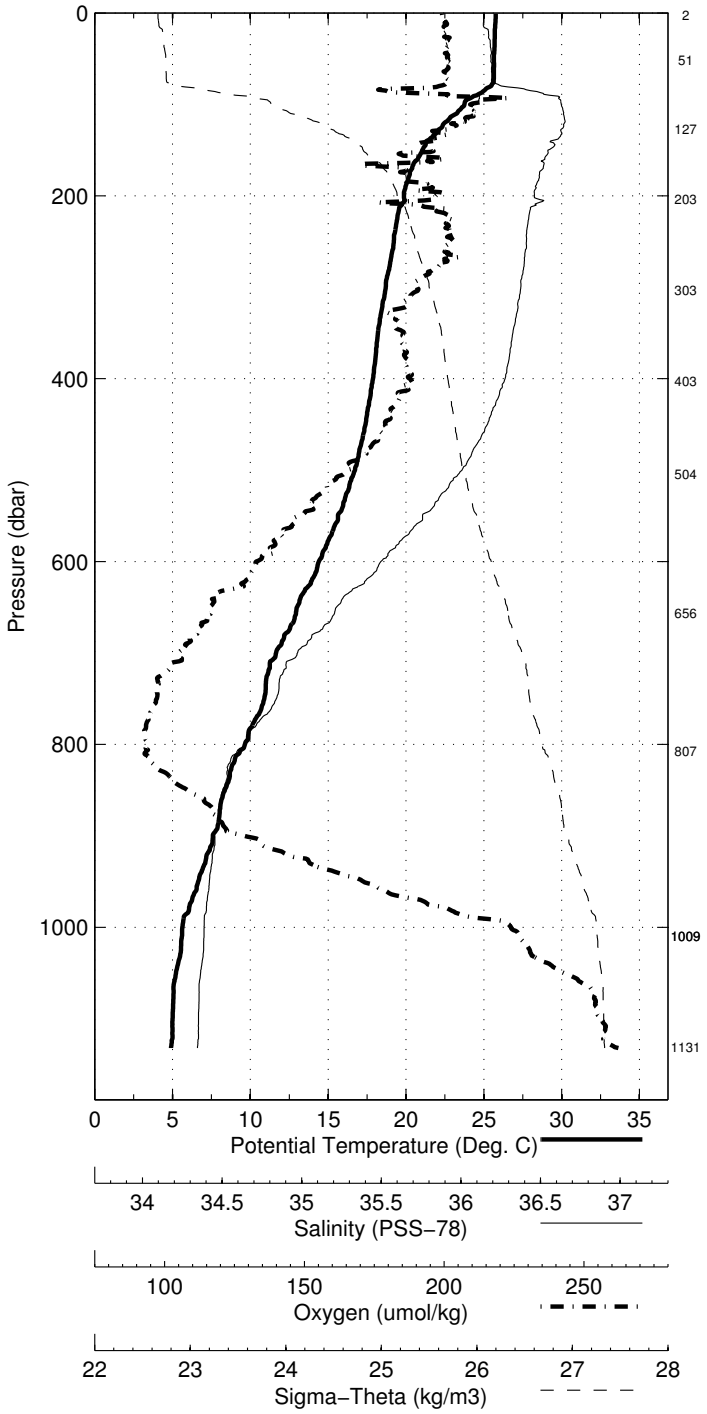


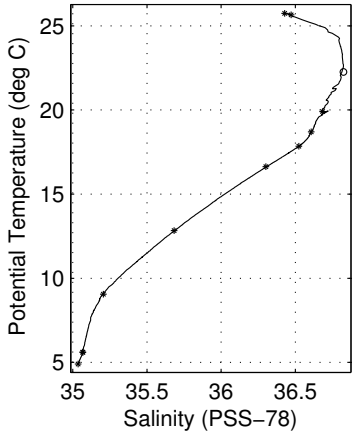
Abaco November - December 2009 RRS Discovery
CTD Station 10 (CTD010)
Latitude 26.514N Longitude 76.830W
23-Nov-2009 13:53Z

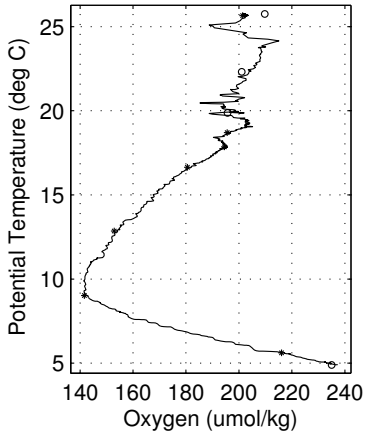
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$	DynHt $m^2 \cdot s^{-2}$	SigT $kg \cdot m^{-3}$
1	25.760	25.760	36.429	201.6	0.004	24.187
10	25.749	25.747	36.428	202.5	0.037	24.190
20	25.705	25.700	36.452	202.7	0.074	24.223
30	25.700	25.693	36.460	202.8	0.111	24.231
50	25.661	25.650	36.464	202.9	0.185	24.247
75	25.652	25.635	36.466	202.4	0.277	24.254
100	23.772	23.751	36.806	207.3	0.359	25.084
125	22.337	22.312	36.816	203.8	0.426	25.510
150	21.072	21.042	36.741	199.8	0.485	25.808
200	19.905	19.868	36.675	200.4	0.590	26.075
250	19.267	19.221	36.637	204.0	0.686	26.215
300	18.752	18.699	36.609	196.6	0.779	26.329
400	17.950	17.880	36.533	195.1	0.952	26.476
500	16.798	16.714	36.322	182.3	1.118	26.598
600	14.485	14.395	35.928	164.1	1.270	26.820
700	11.749	11.657	35.522	148.5	1.400	27.060
800	9.743	9.649	35.268	142.1	1.510	27.221
900	7.686	7.593	35.120	161.6	1.601	27.429
1000	5.722	5.633	35.068	215.6	1.670	27.653
1100	5.097	5.002	35.041	234.1	1.724	27.708

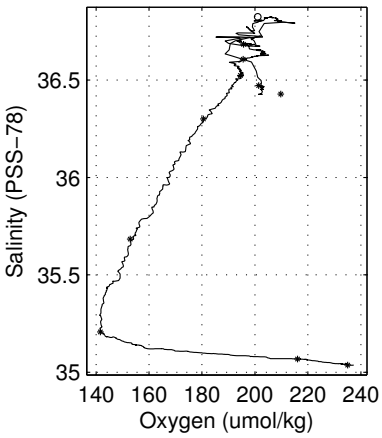
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$
1131	1	4.996	4.900	35.036	235.0
1010	2	5.700	5.610	35.068	216.1
1010	3	5.700	5.610	35.068	216.1
808	4	9.143	9.051	35.207	141.6
656	5	12.927	12.834	35.684	152.9
505	6	16.711	16.627	36.301	180.5
403	7	17.919	17.849	36.524	194.5
303	8	18.750	18.696	36.607	195.6
203	9	19.937	19.899	36.684	195.7
128	10	22.281	22.255	36.825	201.1
52	11	25.665	25.653	36.472	201.4
2	12	25.744	25.743	36.428	209.7

Abaco November – December 2009 RRS Discovery
CTD Station 10 (CTD010)
Latitude 26.514 N Longitude 76.830 W
23–Nov–2009 13:53 Z







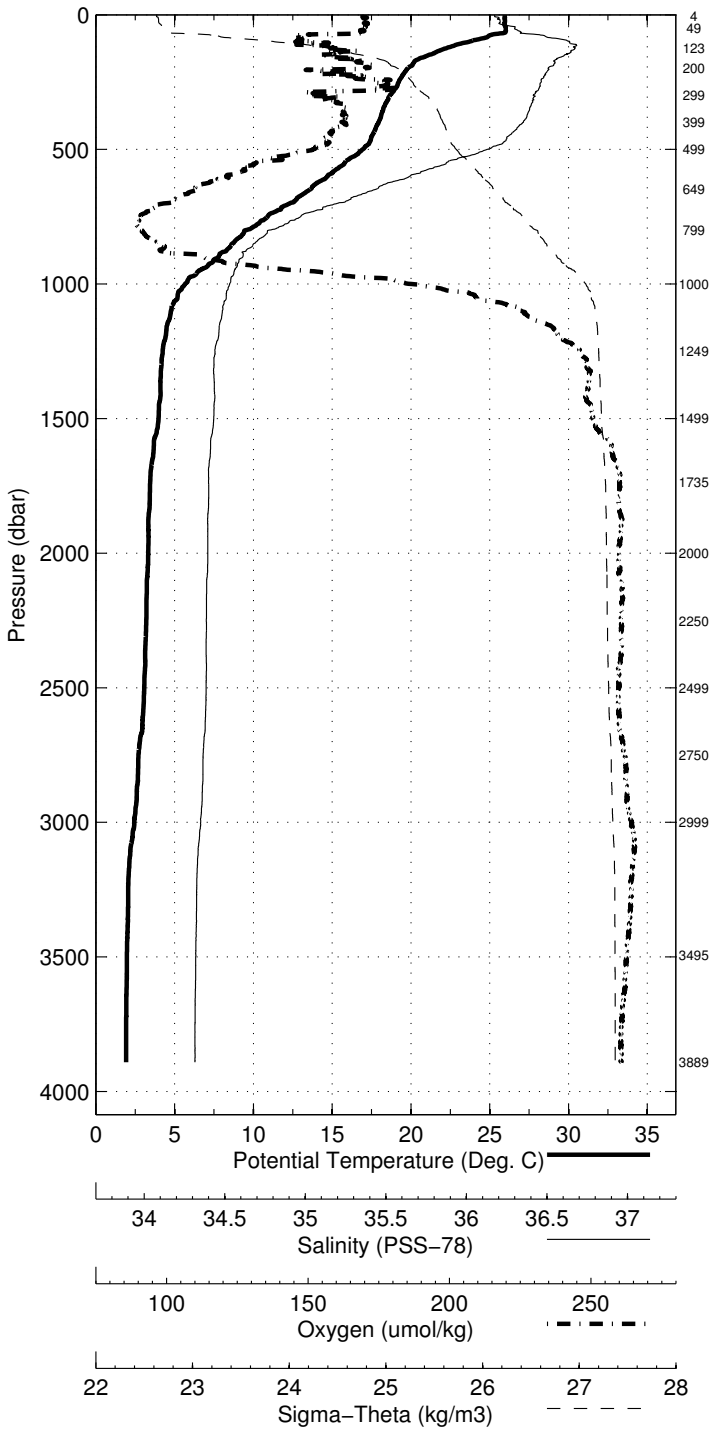


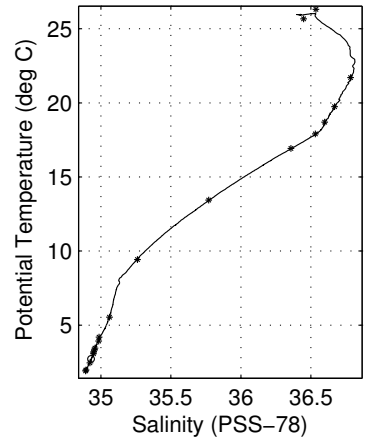
Abaco November - December 2009 RRS Discovery
CTD Station 11 (CTD011)
Latitude 26.500N Longitude 76.744W
23-Nov-2009 16:23Z

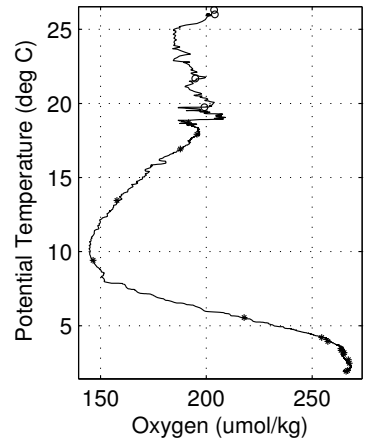
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.957	25.956	36.402	200.4	0.004	24.105
10	25.967	25.965	36.422	201.8	0.038	24.118
20	25.969	25.965	36.428	201.8	0.076	24.122
30	25.961	25.955	36.428	202.0	0.114	24.125
50	26.027	26.016	36.503	200.7	0.189	24.163
75	25.093	25.076	36.632	186.1	0.282	24.552
100	23.718	23.696	36.778	184.1	0.361	25.078
125	22.217	22.192	36.804	194.3	0.428	25.535
150	21.119	21.090	36.753	191.2	0.487	25.805
200	19.797	19.760	36.671	201.1	0.591	26.100
250	19.267	19.222	36.636	205.7	0.687	26.215
300	18.707	18.653	36.598	187.5	0.780	26.332
400	18.021	17.952	36.544	196.1	0.954	26.468
500	17.012	16.928	36.364	188.3	1.122	26.579
600	14.776	14.685	35.971	167.3	1.275	26.790
700	12.431	12.335	35.610	152.0	1.410	26.998
800	9.609	9.515	35.263	145.9	1.522	27.240
900	7.870	7.775	35.130	161.4	1.614	27.410
1000	5.750	5.660	35.064	212.9	1.684	27.646
1100	4.856	4.764	35.027	240.2	1.737	27.724
1200	4.513	4.414	35.007	250.1	1.785	27.747
1300	4.266	4.161	34.986	256.4	1.833	27.758
1400	4.219	4.105	34.987	256.7	1.880	27.765
1500	4.103	3.981	34.984	258.0	1.927	27.776
1750	3.575	3.437	34.959	264.6	2.040	27.810
2000	3.486	3.326	34.954	264.6	2.151	27.817
2500	3.276	3.071	34.946	264.4	2.380	27.835
3000	2.683	2.440	34.918	267.6	2.604	27.870
3500	2.262	1.975	34.894	266.3	2.807	27.888

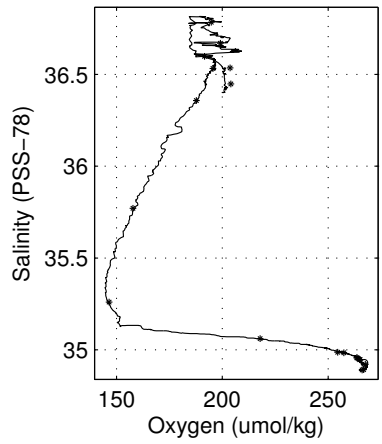
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3890	1	2.251	1.922	34.891	266.1
3495	2	2.270	1.984	34.893	266.8
3000	3	2.703	2.459	34.921	267.5
2751	4	2.940	2.716	34.930	267.2
2500	5	3.278	3.073	34.947	264.9
2251	6	3.372	3.190	34.947	265.1
2000	7	3.499	3.339	34.955	263.7
1735	8	3.588	3.452	34.958	263.6
1499	9	4.050	3.930	34.984	257.4
1250	10	4.291	4.191	34.987	254.5
1000	11	5.625	5.536	35.061	217.9
800	12	9.521	9.428	35.260	146.5
650	13	13.528	13.434	35.770	157.8
499	14	17.009	16.925	36.357	187.7
400	15	17.975	17.905	36.532	195.6
299	16	18.757	18.703	36.598	191.7
200	17	19.780	19.743	36.669	199.1
124	18	21.730	21.705	36.784	194.8
49	19	25.677	25.666	36.448	204.1
4	20	26.311	26.310	36.535	203.7

Abaco November – December 2009 RRS Discovery
CTD Station 11 (CTD011)
Latitude 26.500 N Longitude 76.744 W
23–Nov–2009 16:23 Z







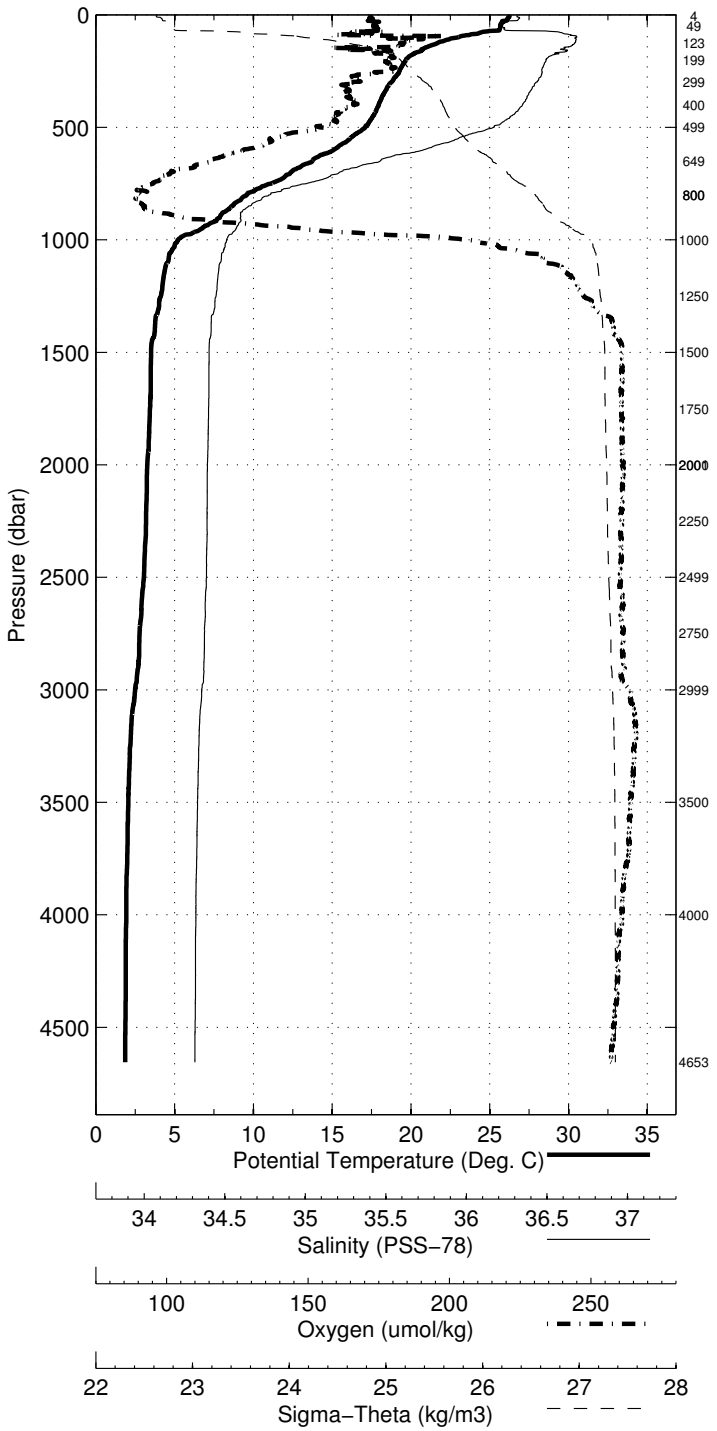


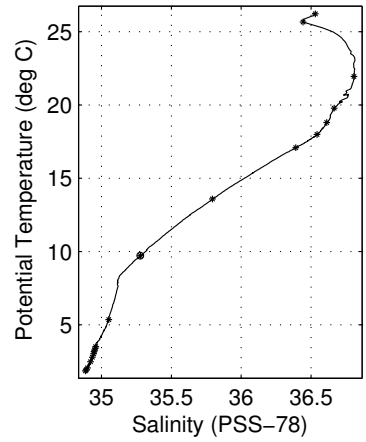
Abaco November - December 2009 RRS Discovery
CTD Station 12 (CTD012)
Latitude 26.498N Longitude 76.654W
23-Nov-2009 21:44Z

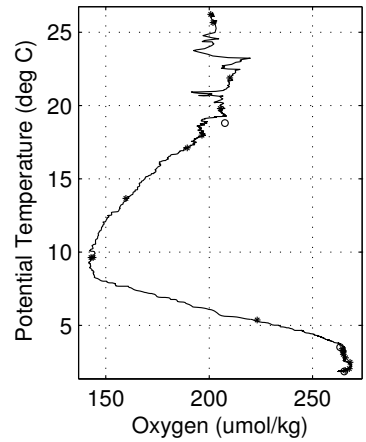
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.251	26.251	36.514	201.4	0.004	24.097
10	26.230	26.227	36.518	201.2	0.038	24.107
20	26.116	26.112	36.519	201.6	0.076	24.145
30	25.787	25.780	36.446	202.5	0.113	24.193
50	25.679	25.667	36.439	202.4	0.188	24.223
75	24.653	24.637	36.712	201.2	0.278	24.747
100	23.009	22.989	36.812	214.9	0.352	25.312
125	21.708	21.683	36.803	208.9	0.414	25.678
150	20.823	20.794	36.751	201.4	0.471	25.884
200	19.716	19.679	36.660	204.9	0.573	26.114
250	19.316	19.271	36.638	207.3	0.670	26.203
300	18.793	18.739	36.609	195.6	0.763	26.319
400	18.018	17.948	36.540	197.0	0.938	26.465
500	17.195	17.111	36.397	188.6	1.106	26.560
600	15.189	15.096	36.040	169.2	1.263	26.753
700	12.463	12.367	35.615	151.1	1.399	26.996
800	9.680	9.586	35.263	143.0	1.512	27.228
900	7.973	7.878	35.117	153.9	1.606	27.384
1000	5.291	5.205	35.046	225.8	1.675	27.688
1100	4.644	4.553	35.014	246.0	1.725	27.738
1200	4.333	4.236	34.998	253.8	1.771	27.760
1300	4.111	4.007	34.986	257.9	1.817	27.775
1400	3.857	3.748	34.968	263.0	1.861	27.787
1500	3.622	3.506	34.957	265.4	1.904	27.803
1750	3.572	3.434	34.955	265.0	2.013	27.808
2000	3.425	3.266	34.949	265.6	2.125	27.820
2500	3.254	3.049	34.944	264.6	2.353	27.836
3000	2.735	2.490	34.920	267.0	2.578	27.867
3500	2.353	2.064	34.899	267.4	2.787	27.886
4000	2.274	1.932	34.891	265.0	2.998	27.890
4500	2.273	1.873	34.887	263.2	3.220	27.891

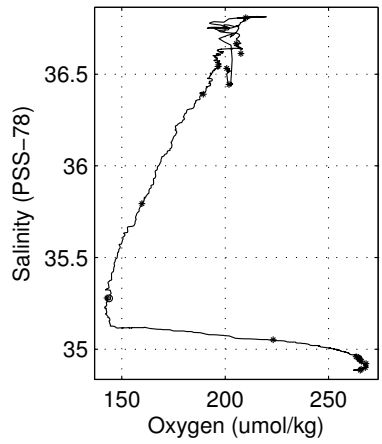
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4654	1	2.281	1.862	34.885	265.3
4000	2	2.272	1.930	34.891	265.8
3500	3	2.351	2.062	34.900	267.7
3000	4	2.737	2.493	34.922	268.1
2750	5	3.015	2.790	34.934	265.9
2500	6	3.243	3.038	34.945	264.8
2250	7	3.362	3.180	34.947	264.8
2001	8	3.432	3.273	34.950	264.8
2001	9	3.433	3.273	34.951	264.6
1751	10	3.558	3.421	34.956	264.3
1500	11	3.633	3.517	34.959	263.3
1250	12	4.292	6.259	−999.000	NaN
1000	13	5.451	5.363	35.052	223.2
800	14	9.820	9.725	35.279	142.9
800	15	9.820	9.725	35.277	143.9
649	16	13.681	13.586	35.794	159.7
499	17	17.169	17.085	36.391	189.4
400	18	18.064	17.994	36.543	196.5
299	19	18.855	18.802	36.612	207.6
200	20	19.828	19.791	36.666	205.3
124	21	21.969	21.945	36.808	209.9
49	22	25.675	25.664	36.443	201.8
4	23	26.224	26.223	36.531	200.8

Abaco November – December 2009 RRS Discovery
CTD Station 12 (CTD012)
Latitude 26.498 N Longitude 76.654 W
23–Nov–2009 21:44 Z







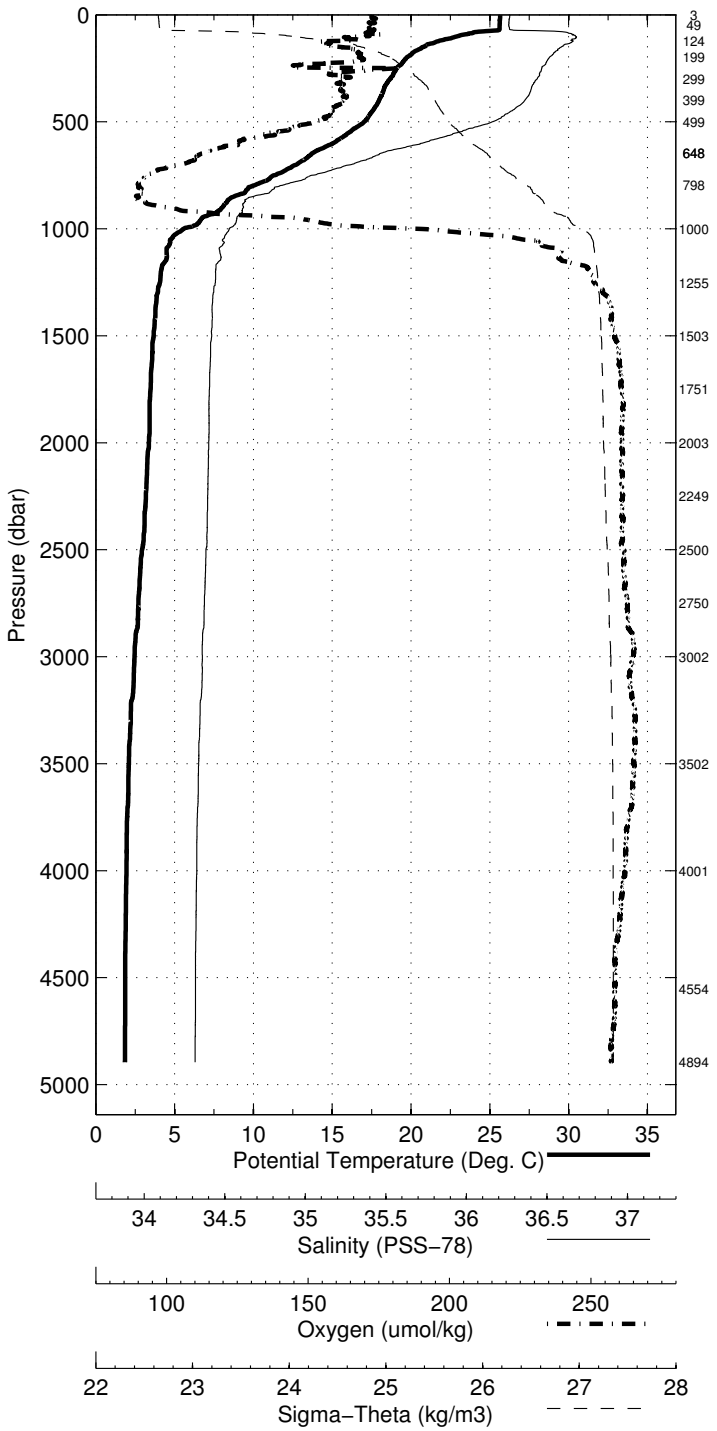


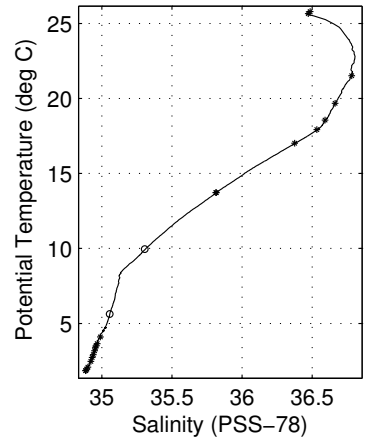
Abaco November - December 2009 RRS Discovery
CTD Station 13 (CTD013)
Latitude 26.500N Longitude 76.566W
24-Nov-2009 14:22Z

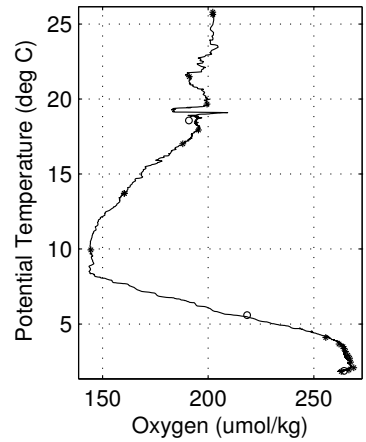
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.659	25.659	36.470	202.2	0.004	24.249
10	25.659	25.656	36.468	203.1	0.037	24.249
20	25.645	25.641	36.466	202.5	0.073	24.252
30	25.641	25.635	36.465	202.2	0.110	24.253
50	25.633	25.622	36.464	201.7	0.184	24.256
75	24.972	24.956	36.655	202.2	0.275	24.606
100	22.981	22.961	36.799	200.8	0.348	25.310
125	21.650	21.625	36.783	189.4	0.411	25.679
150	20.806	20.778	36.729	194.5	0.467	25.872
200	19.754	19.717	36.667	199.3	0.571	26.109
250	19.143	19.097	36.630	209.2	0.667	26.242
300	18.734	18.680	36.606	195.1	0.758	26.331
400	18.037	17.967	36.544	195.1	0.933	26.463
500	17.107	17.023	36.381	188.5	1.101	26.569
600	15.162	15.068	36.028	168.2	1.257	26.750
700	12.822	12.724	35.669	154.8	1.394	26.967
800	10.024	9.927	35.309	144.2	1.510	27.206
900	8.138	8.042	35.128	151.2	1.606	27.368
1000	5.666	5.577	35.056	213.5	1.679	27.651
1100	4.577	4.488	35.007	249.4	1.729	27.739
1200	4.227	4.131	34.987	256.6	1.776	27.762
1300	4.010	3.907	34.975	259.7	1.821	27.776
1400	3.885	3.775	34.970	261.9	1.866	27.786
1500	3.789	3.671	34.967	262.8	1.910	27.794
1750	3.614	3.476	34.956	264.4	2.020	27.804
2000	3.530	3.370	34.953	264.5	2.133	27.812
2500	3.138	2.935	34.938	265.0	2.361	27.842
3000	2.698	2.454	34.920	267.2	2.581	27.870
3500	2.388	2.099	34.902	267.4	2.792	27.885
4000	2.292	1.950	34.892	265.3	3.004	27.889
4500	2.268	1.868	34.886	262.6	3.226	27.891

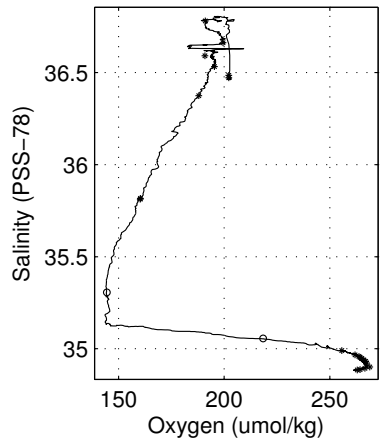
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4894	1	2.295	1.845	34.885	263.0
4554	2	2.272	1.865	34.887	264.3
4002	3	2.285	1.943	34.894	266.7
3502	4	2.376	2.086	34.901	268.9
3002	5	2.717	2.472	34.923	267.4
2750	6	2.955	2.731	34.931	267.0
2501	7	3.119	2.917	34.939	266.1
2250	8	3.357	3.175	34.948	265.0
2004	9	3.535	3.374	34.954	264.3
1751	10	3.630	3.492	34.958	263.8
1504	11	3.773	3.655	34.967	261.9
1256	12	4.196	4.096	34.991	255.7
1000	13	5.718	5.628	35.056	218.5
798	14	10.051	9.955	35.307	144.5
649	15	13.819	13.724	35.813	160.3
649	16	13.818	13.723	35.817	160.4
500	17	17.098	17.013	36.375	188.0
400	18	17.991	17.921	36.533	195.4
300	19	18.610	18.557	36.591	190.9
200	20	19.708	19.671	36.663	199.5
124	21	21.535	21.511	36.781	191.1
50	22	25.666	25.655	36.472	202.2
3	23	25.789	25.789	36.485	202.2

Abaco November – December 2009 RRS Discovery
CTD Station 13 (CTD013)
Latitude 26.500 N Longitude 76.566 W
24–Nov–2009 14:22 Z







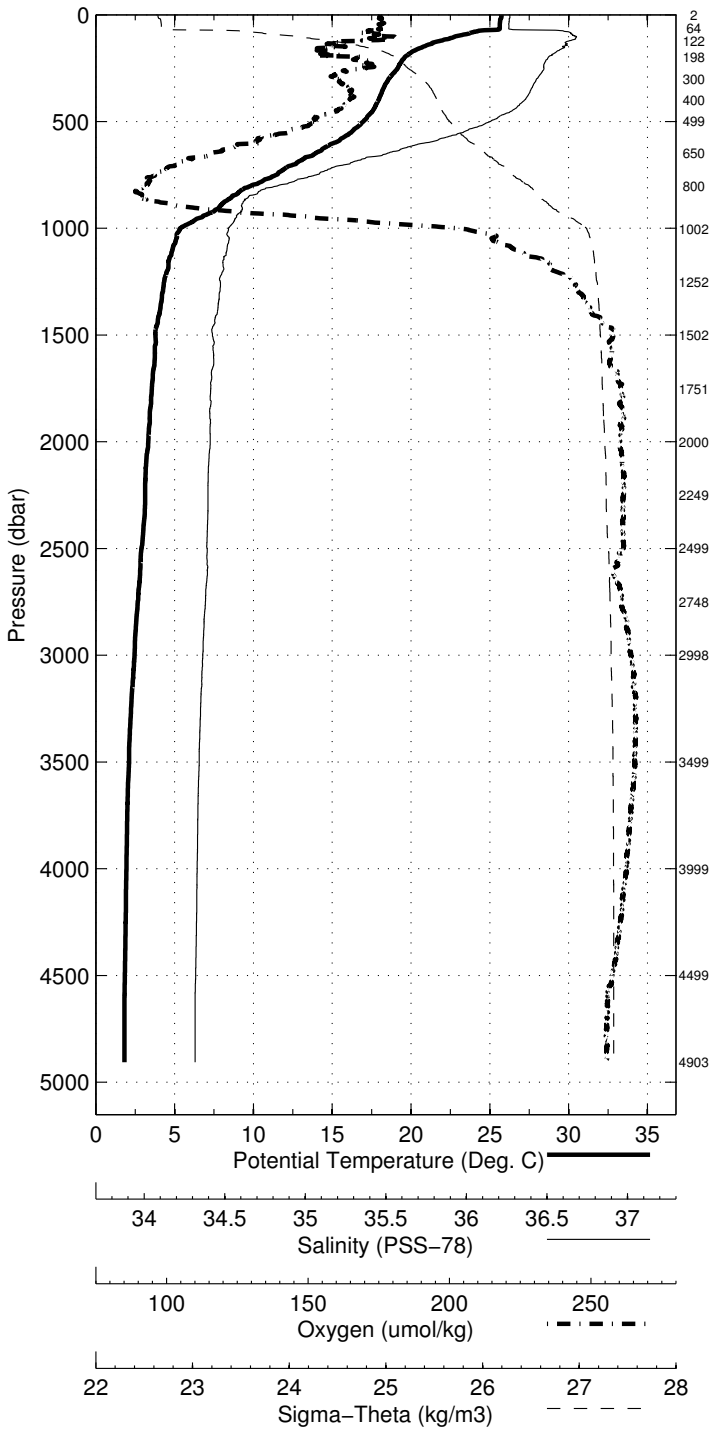


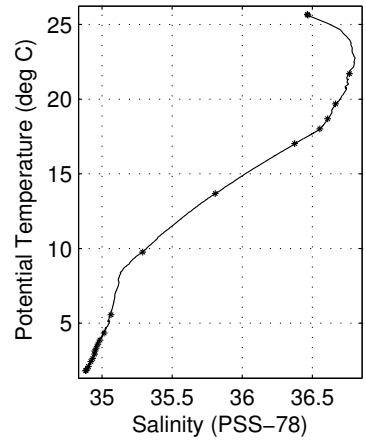
Abaco November - December 2009 RRS Discovery
CTD Station 14 (CTD014)
Latitude 26.499N Longitude 76.475W
24-Nov-2009 19:23Z

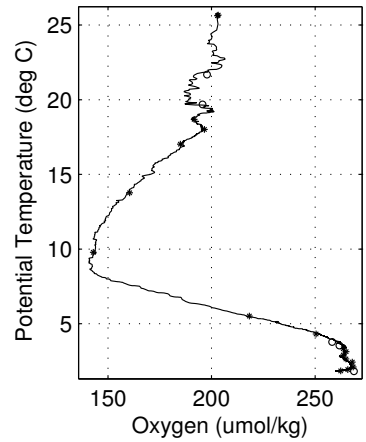
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$	DynHt $m^2 \cdot s^{-2}$	SigT $kg \cdot m^{-3}$
1	25.732	25.732	36.469	202.7	0.004	24.226
10	25.733	25.731	36.468	202.6	0.037	24.225
20	25.665	25.661	36.464	203.1	0.074	24.245
30	25.657	25.650	36.465	202.9	0.111	24.248
50	25.645	25.634	36.463	202.7	0.184	24.252
75	24.282	24.266	36.735	200.1	0.274	24.876
100	22.881	22.861	36.798	203.9	0.346	25.339
125	21.672	21.647	36.753	191.6	0.409	25.650
150	20.790	20.761	36.744	194.0	0.466	25.887
200	19.619	19.582	36.662	197.3	0.567	26.140
250	19.199	19.153	36.639	199.1	0.663	26.235
300	18.626	18.572	36.603	191.6	0.754	26.356
400	17.996	17.926	36.541	195.5	0.927	26.472
500	17.050	16.966	36.368	186.1	1.095	26.573
600	15.212	15.118	36.042	172.5	1.251	26.750
700	12.724	12.627	35.650	151.7	1.389	26.971
800	9.959	9.863	35.300	143.6	1.505	27.210
900	7.923	7.828	35.119	154.0	1.600	27.393
1000	5.431	5.344	35.050	222.5	1.669	27.674
1100	4.957	4.864	35.042	237.0	1.721	27.725
1200	4.623	4.524	35.023	246.8	1.770	27.748
1300	4.330	4.224	35.004	253.1	1.817	27.766
1400	4.161	4.048	34.993	256.5	1.864	27.776
1500	3.901	3.782	34.969	261.8	1.909	27.784
1750	3.697	3.558	34.961	263.7	2.023	27.801
2000	3.486	3.326	34.958	263.3	2.136	27.821
2500	3.099	2.897	34.943	264.3	2.360	27.849
3000	2.700	2.456	34.921	266.4	2.576	27.870
3500	2.396	2.106	34.902	267.2	2.787	27.885
4000	2.283	1.941	34.892	265.0	2.999	27.890
4500	2.243	1.844	34.885	261.5	3.220	27.892

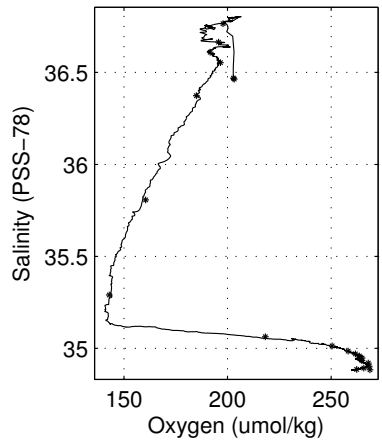
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$
4904	1	2.269	1.819	34.883	268.8
4500	2	2.239	1.840	34.886	262.4
4000	3	2.274	1.932	34.893	265.8
3500	4	2.396	2.106	34.903	268.4
2999	5	2.672	2.429	34.920	267.9
2749	6	2.870	2.648	34.934	264.9
2500	7	3.132	2.929	34.946	263.7
2250	8	3.320	3.139	34.947	265.0
2001	9	3.486	3.326	34.959	263.7
1751	10	3.729	3.589	34.970	261.7
1503	11	3.995	3.874	34.986	258.2
1252	12	4.441	4.338	35.014	250.4
1002	13	5.654	5.565	35.063	218.3
801	14	9.863	9.767	35.290	142.9
650	15	13.770	13.674	35.807	160.5
500	16	17.111	17.027	36.374	185.0
400	17	18.083	18.013	36.553	196.6
300	18	18.735	18.682	36.610	191.7
198	19	19.723	19.687	36.665	195.7
123	20	21.726	21.701	36.765	197.8
64	21	25.636	25.622	36.469	202.9
3	22	25.680	25.679	36.464	203.3

Abaco November – December 2009 RRS Discovery
CTD Station 14 (CTD014)
Latitude 26.499 N Longitude 76.475 W
24–Nov–2009 19:23 Z







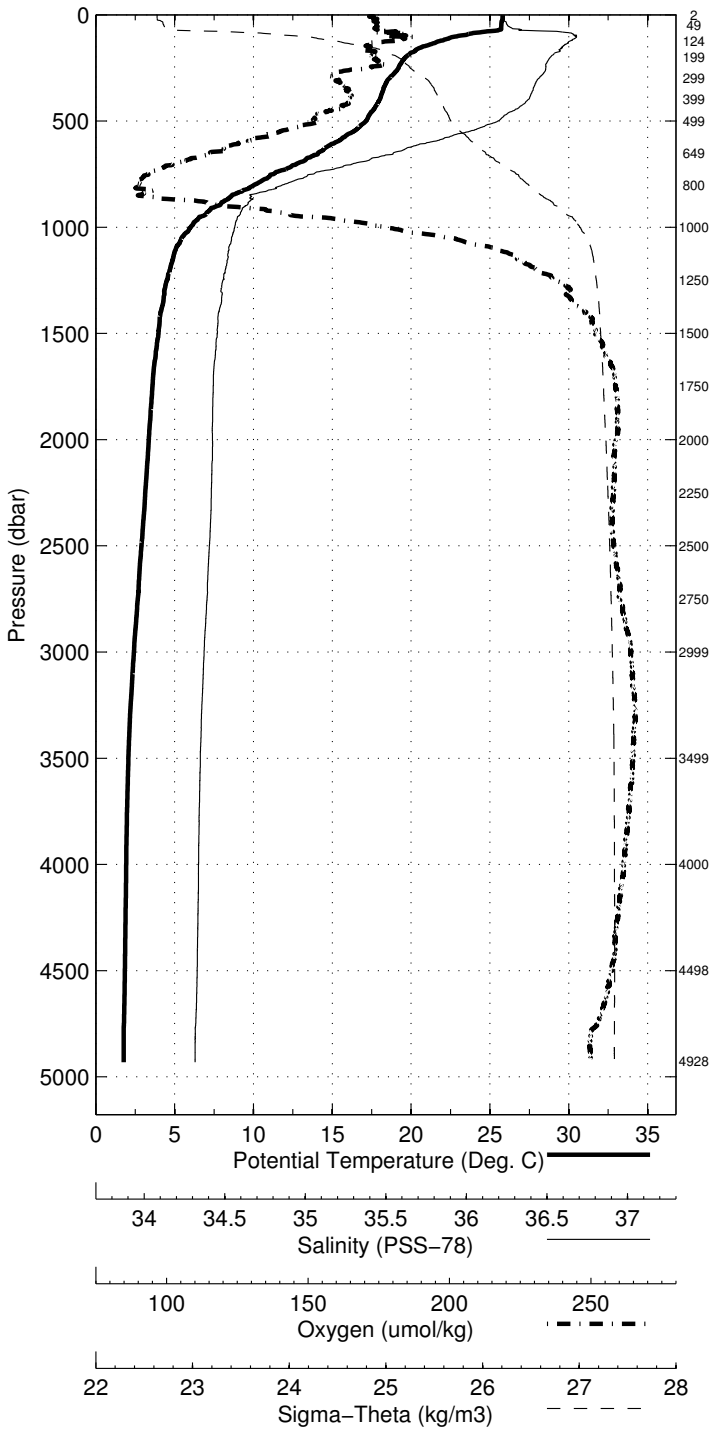


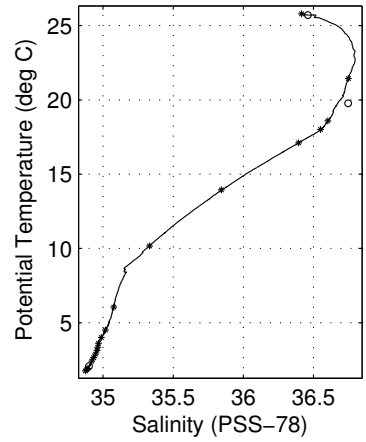
Abaco November - December 2009 RRS Discovery
CTD Station 15 (CTD015)
Latitude 26.500N Longitude 76.347W
25-Nov-2009 00:27Z

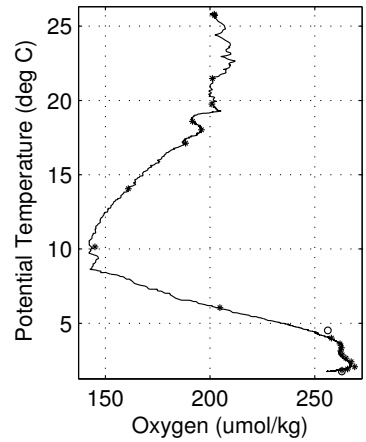
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.817	25.817	36.417	200.8	0.004	24.160
10	25.818	25.816	36.416	201.9	0.038	24.160
20	25.819	25.814	36.416	202.1	0.075	24.160
30	25.758	25.752	36.435	201.8	0.113	24.194
50	25.732	25.720	36.448	202.8	0.187	24.214
75	25.347	25.331	36.591	203.8	0.279	24.442
100	22.985	22.964	36.788	205.2	0.354	25.301
125	21.736	21.711	36.758	204.7	0.417	25.636
150	20.745	20.717	36.725	201.1	0.475	25.885
200	19.683	19.646	36.664	201.6	0.577	26.125
250	19.249	19.204	36.641	200.8	0.673	26.223
300	18.654	18.601	36.604	192.1	0.764	26.350
400	18.069	17.999	36.551	195.7	0.938	26.461
500	17.217	17.132	36.400	187.4	1.106	26.557
600	15.314	15.220	36.056	168.6	1.264	26.738
700	12.854	12.756	35.672	152.4	1.404	26.962
800	10.152	10.055	35.316	143.8	1.521	27.190
900	7.781	7.687	35.128	164.0	1.615	27.421
1000	6.120	6.027	35.074	204.6	1.685	27.608
1100	5.172	5.077	35.043	232.4	1.742	27.701
1200	4.796	4.695	35.027	243.1	1.793	27.732
1300	4.442	4.335	35.004	251.3	1.842	27.754
1400	4.232	4.119	34.994	255.1	1.890	27.769
1500	4.098	3.977	34.987	257.5	1.936	27.778
1750	3.733	3.593	34.966	262.5	2.051	27.801
2000	3.521	3.360	34.962	262.8	2.165	27.821
2500	3.098	2.896	34.947	262.1	2.387	27.852
3000	2.657	2.414	34.920	266.2	2.602	27.873
3500	2.356	2.067	34.901	266.8	2.810	27.887
4000	2.270	1.928	34.892	264.5	3.021	27.891
4500	2.243	1.844	34.885	261.6	3.241	27.892

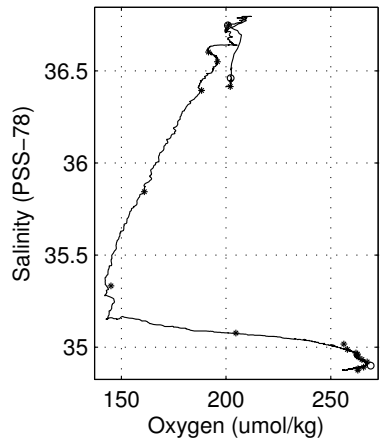
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4928	1	2.216	1.765	34.875	263.0
4499	2	2.243	1.844	34.884	263.0
4000	3	2.269	1.927	34.892	265.7
3500	4	2.359	2.070	34.900	269.1
3000	5	2.655	2.412	34.920	267.3
2751	6	2.870	2.648	34.933	264.9
2500	7	3.086	2.884	34.947	263.1
2251	8	3.320	3.139	34.957	262.4
2000	9	3.511	3.351	34.962	262.8
1750	10	3.757	3.617	34.968	262.0
1500	11	4.129	4.007	34.988	257.9
1251	12	4.617	4.513	35.017	256.3
1000	13	6.146	6.053	35.077	204.7
800	14	10.262	10.165	35.332	145.1
650	15	14.049	13.953	35.844	161.0
500	16	17.193	17.108	36.394	188.3
399	17	18.081	18.012	36.550	195.9
300	18	18.648	18.594	36.603	191.7
199	19	19.807	19.770	36.747	200.9
124	20	21.466	21.442	36.748	201.1
50	21	25.714	25.703	36.460	202.2
2	22	25.795	25.794	36.415	202.0

Abaco November – December 2009 RRS Discovery
CTD Station 15 (CTD015)
Latitude 26.500 N Longitude 76.347 W
25–Nov–2009 00:27 Z







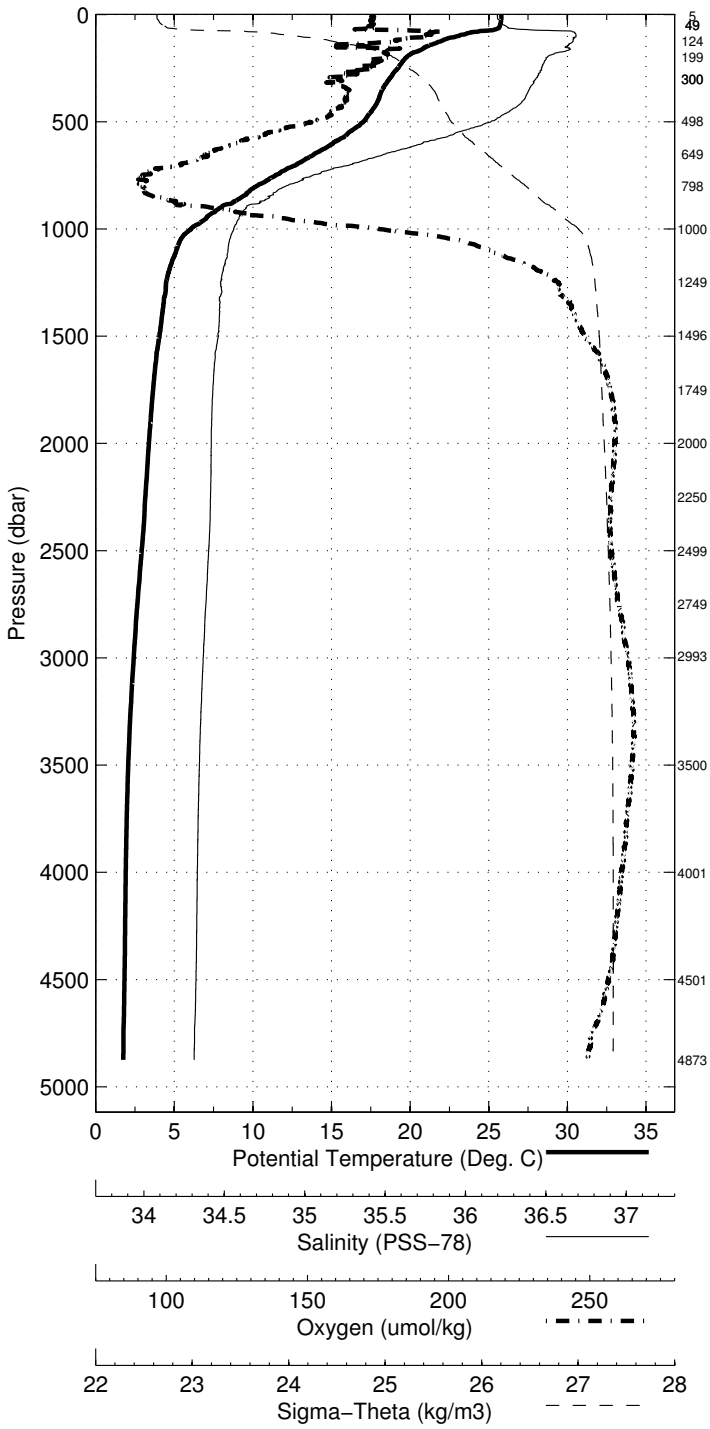


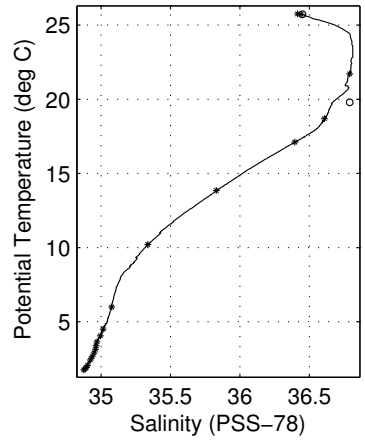
Abaco November - December 2009 RRS Discovery
CTD Station 16 (CTD016)
Latitude 26.495N Longitude 76.213W
25-Nov-2009 05:07Z

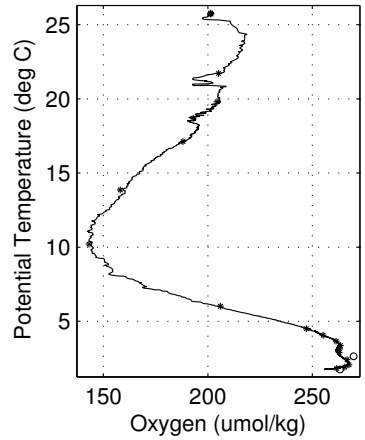
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$	DynHt $m^2 \cdot s^{-2}$	SigT $kg \cdot m^{-3}$
1	25.802	25.802	36.415	201.6	0.004	24.164
10	25.803	25.801	36.415	202.3	0.037	24.163
20	25.802	25.797	36.415	201.8	0.075	24.165
30	25.788	25.782	36.427	201.4	0.112	24.179
50	25.731	25.720	36.450	202.0	0.187	24.215
75	24.962	24.945	36.698	212.0	0.278	24.642
100	23.104	23.083	36.812	215.0	0.350	25.285
125	21.956	21.932	36.798	208.0	0.414	25.604
150	21.031	21.002	36.760	194.1	0.472	25.834
200	19.791	19.753	36.664	205.8	0.576	26.097
250	19.276	19.231	36.639	201.3	0.673	26.215
300	18.742	18.689	36.610	193.6	0.764	26.332
400	18.033	17.964	36.546	195.3	0.938	26.466
500	17.113	17.028	36.381	186.1	1.106	26.568
600	15.201	15.107	36.036	167.6	1.263	26.747
700	12.859	12.761	35.669	153.9	1.402	26.959
800	10.333	10.235	35.341	144.3	1.520	27.178
900	8.042	7.946	35.138	161.1	1.617	27.391
1000	6.137	6.044	35.076	203.4	1.691	27.607
1100	5.214	5.119	35.046	231.8	1.747	27.698
1200	4.749	4.649	35.020	244.4	1.799	27.731
1300	4.551	4.443	35.014	248.3	1.848	27.750
1400	4.346	4.231	35.004	252.7	1.896	27.765
1500	4.187	4.064	34.998	255.2	1.944	27.778
1750	3.792	3.651	34.970	261.7	2.060	27.798
2000	3.550	3.389	34.962	262.8	2.174	27.818
2500	3.131	2.929	34.948	261.9	2.398	27.851
3000	2.664	2.420	34.921	266.1	2.613	27.874
3500	2.361	2.072	34.901	267.0	2.822	27.887
4000	2.256	1.915	34.891	264.4	3.033	27.891
4500	2.235	1.835	34.884	261.3	3.253	27.892

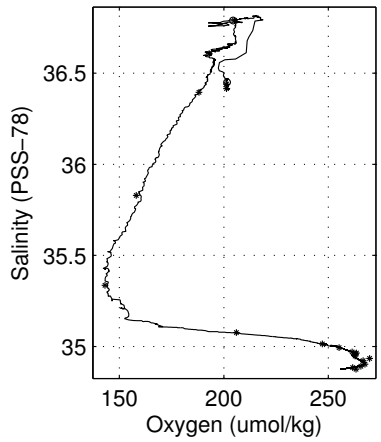
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen $\mu mol \cdot kg^{-1}$
4873	1	2.205	1.762	34.876	263.3
4502	2	2.236	1.836	34.885	261.7
4002	3	2.262	1.920	34.892	265.6
3501	4	2.363	2.074	34.903	267.5
2994	5	2.664	2.422	34.922	266.7
2750	6	2.867	2.644	34.935	269.8
2500	7	3.102	2.901	34.948	262.9
2251	8	3.332	3.151	34.959	263.1
2001	9	3.542	3.382	34.964	263.5
1749	10	3.795	3.655	34.970	261.4
1496	11	4.169	4.047	34.994	255.2
1250	12	4.606	4.503	35.014	247.1
1000	13	6.093	6.000	35.076	206.0
799	14	10.312	10.215	35.336	143.1
650	15	13.951	13.855	35.829	158.1
498	16	17.191	17.107	36.395	188.1
300	17	18.748	18.694	36.608	193.0
300	18	18.748	18.695	36.608	193.0
200	19	19.833	19.796	36.790	204.4
124	20	21.736	21.711	36.791	205.1
50	21	25.746	25.735	36.451	201.5
49	22	25.748	25.737	36.441	201.2
6	23	25.762	25.761	36.416	201.3

Abaco November – December 2009 RRS Discovery
CTD Station 16 (CTD016)
Latitude 26.495 N Longitude 76.213 W
25–Nov–2009 05:07 Z







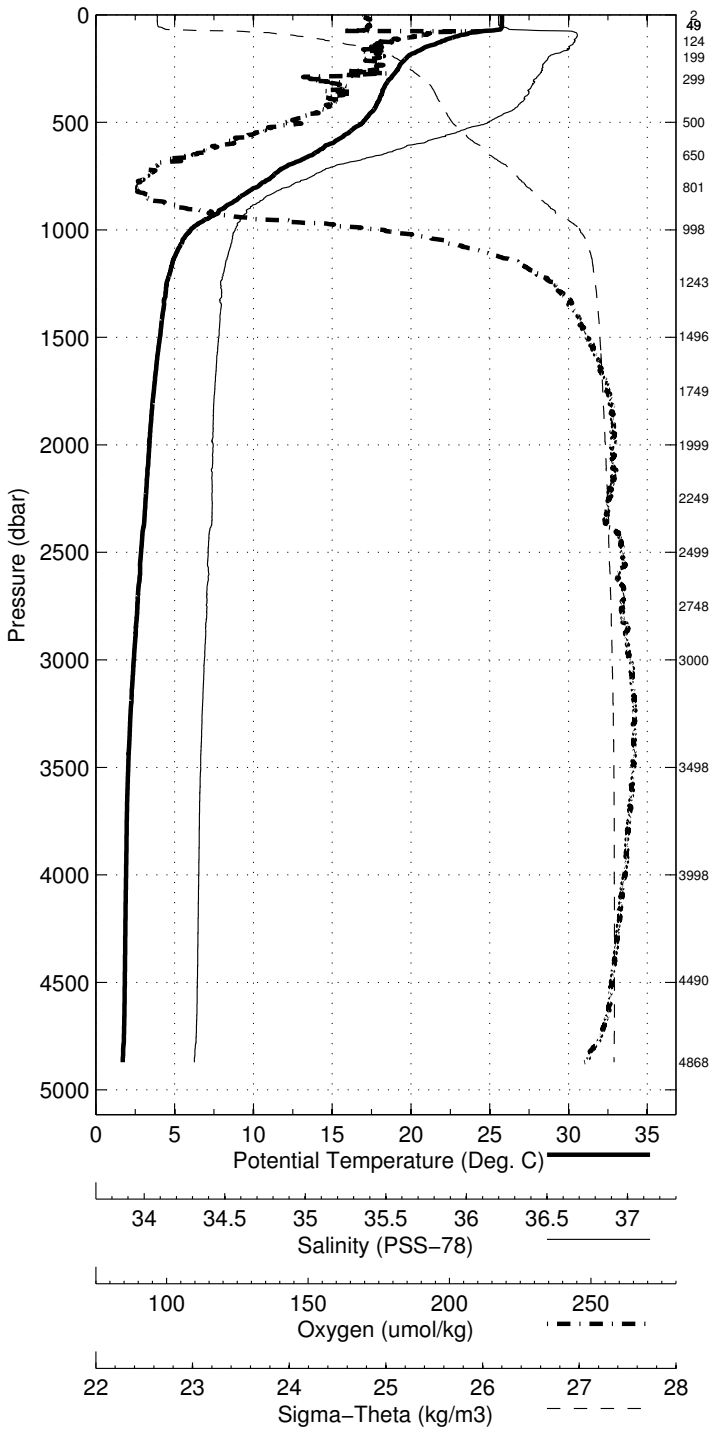


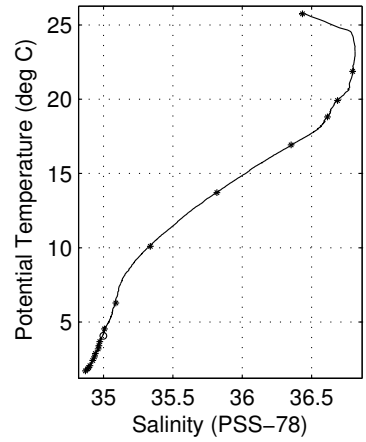
Abaco November - December 2009 RRS Discovery
CTD Station 17 (CTD017)
Latitude 26.498N Longitude 76.087W
25-Nov-2009 12:29Z

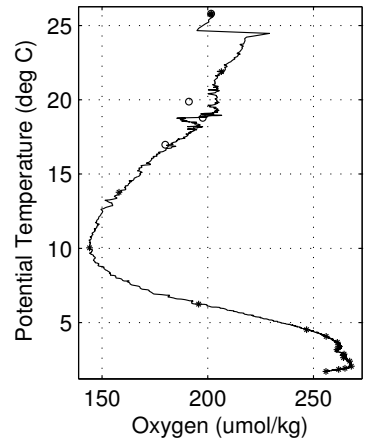
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.777	25.777	36.415	200.4	0.004	24.171
10	25.777	25.775	36.413	201.0	0.037	24.170
20	25.779	25.775	36.413	201.5	0.075	24.170
30	25.780	25.774	36.413	201.4	0.112	24.171
50	25.785	25.774	36.420	201.9	0.187	24.176
75	24.675	24.659	36.760	194.9	0.279	24.776
100	22.924	22.904	36.813	213.9	0.351	25.337
125	21.930	21.905	36.799	205.5	0.414	25.612
150	20.939	20.910	36.773	205.0	0.472	25.869
200	19.776	19.739	36.666	204.3	0.575	26.102
250	19.217	19.171	36.632	204.2	0.671	26.225
300	18.658	18.605	36.594	189.1	0.763	26.342
400	18.022	17.952	36.540	193.3	0.937	26.464
500	17.027	16.943	36.358	181.0	1.105	26.571
600	14.948	14.856	35.998	167.4	1.260	26.774
700	12.283	12.188	35.588	149.2	1.396	27.010
800	10.363	10.265	35.349	144.2	1.511	27.179
900	8.242	8.145	35.152	156.3	1.608	27.372
1000	6.118	6.025	35.076	205.3	1.682	27.610
1100	5.260	5.164	35.044	230.4	1.739	27.691
1200	4.808	4.707	35.018	242.9	1.791	27.723
1300	4.528	4.421	35.007	249.7	1.841	27.746
1400	4.338	4.223	34.999	253.7	1.889	27.762
1500	4.193	4.071	34.993	255.8	1.937	27.773
1750	3.824	3.682	34.972	260.9	2.054	27.797
2000	3.562	3.401	34.964	262.1	2.168	27.819
2500	3.071	2.870	34.939	264.7	2.392	27.849
3000	2.651	2.408	34.920	266.6	2.607	27.874
3500	2.346	2.058	34.901	267.4	2.815	27.887
4000	2.262	1.920	34.891	265.2	3.025	27.891
4500	2.238	1.839	34.884	261.9	3.245	27.892

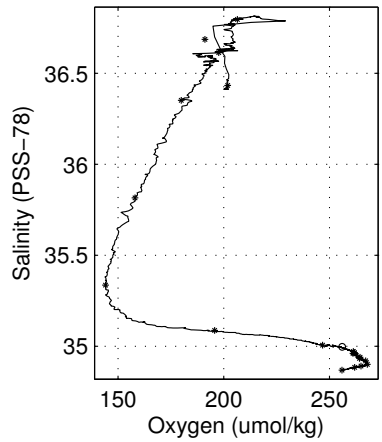
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4869	1	2.151	1.710	34.869	256.0
4490	2	2.238	1.840	34.885	261.9
3999	3	2.260	1.918	34.891	264.9
3499	4	2.345	2.056	34.901	267.9
3000	5	2.647	2.404	34.921	267.2
2748	6	2.866	2.644	34.934	264.2
2500	7	3.073	2.872	34.940	264.5
2250	8	3.364	3.182	34.961	261.1
2000	9	3.565	3.404	34.966	261.8
1750	10	3.818	3.677	34.972	261.3
1496	11	4.192	4.070	34.998	256.0
1244	12	4.633	4.530	35.006	246.8
999	13	6.365	6.271	35.088	195.7
801	14	10.197	10.099	35.337	144.1
650	15	13.811	13.716	35.816	158.1
500	16	17.009	16.925	36.352	179.9
299	17	18.863	18.809	36.614	197.6
199	18	19.957	19.920	36.687	191.1
124	19	21.899	21.875	36.796	206.4
50	20	25.773	25.762	36.434	201.8
50	21	25.772	25.802	−999.000	NaN
2	22	25.800	25.801	−999.000	NaN

Abaco November – December 2009 RRS Discovery
CTD Station 17 (CTD017)
Latitude 26.498 N Longitude 76.087 W
25–Nov–2009 12:29 Z







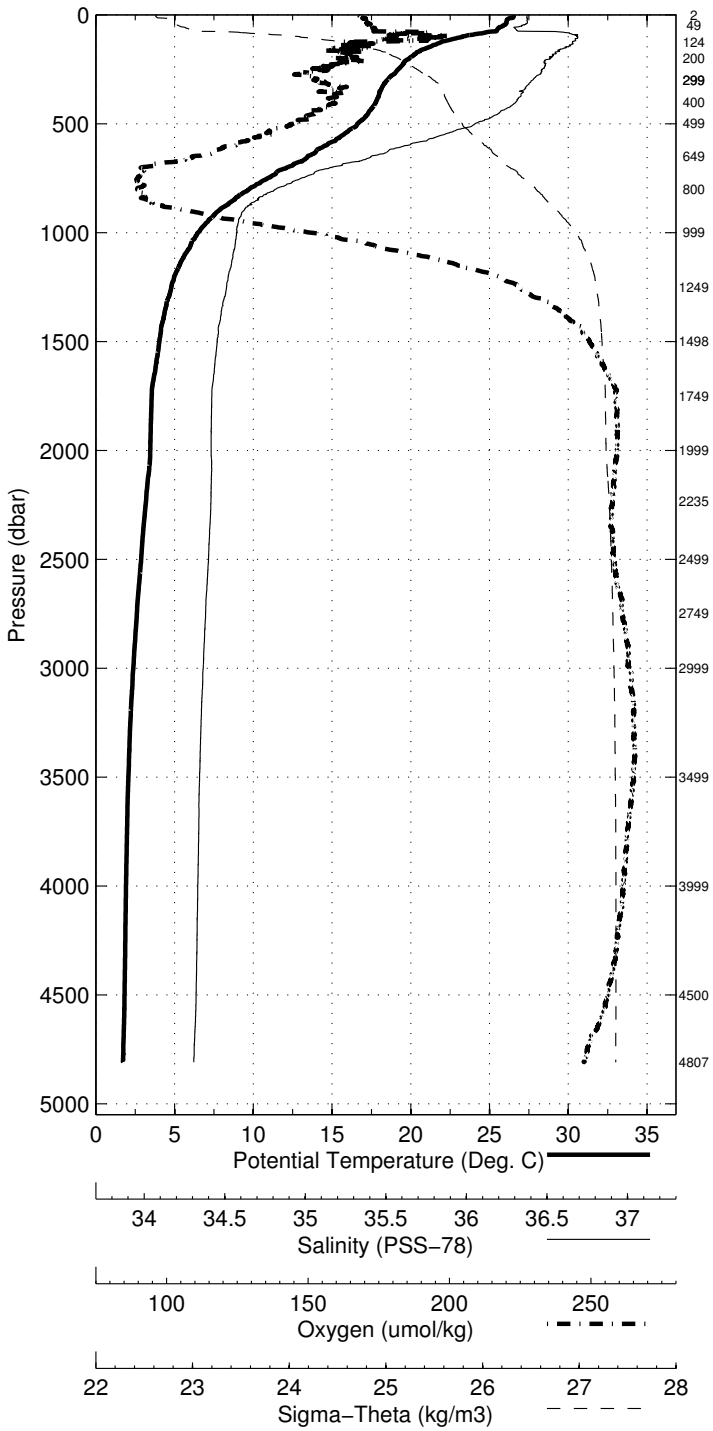


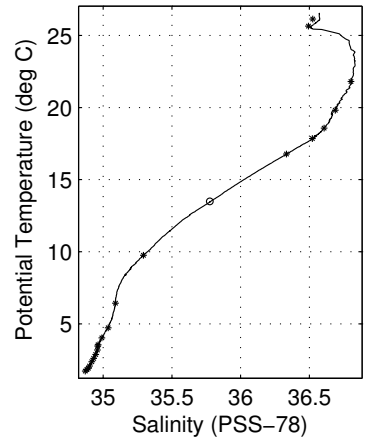
Abaco November - December 2009 RRS Discovery
CTD Station 18 (CTD018)
Latitude 26.495N Longitude 75.901W
25-Nov-2009 17:52Z

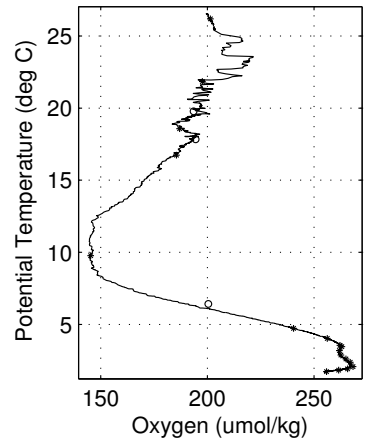
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.537	26.536	36.574	199.4	0.004	24.052
10	26.515	26.513	36.572	200.2	0.039	24.058
20	26.139	26.134	36.574	202.0	0.076	24.179
30	26.093	26.086	36.574	201.7	0.114	24.194
50	25.862	25.851	36.543	202.6	0.188	24.245
75	25.460	25.443	36.526	203.7	0.279	24.359
100	23.264	23.243	36.830	217.7	0.355	25.252
125	21.962	21.937	36.805	197.7	0.420	25.608
150	21.130	21.101	36.773	201.6	0.478	25.816
200	19.923	19.886	36.688	195.8	0.583	26.080
250	19.245	19.199	36.649	191.4	0.680	26.230
300	18.561	18.508	36.600	188.5	0.770	26.371
400	17.861	17.792	36.516	193.0	0.942	26.486
500	16.701	16.618	36.307	183.2	1.107	26.609
600	14.724	14.633	35.961	168.7	1.259	26.794
700	12.276	12.181	35.575	145.9	1.393	27.001
800	9.844	9.749	35.291	144.8	1.506	27.222
900	7.877	7.782	35.124	157.8	1.599	27.403
1000	6.574	6.478	35.089	187.6	1.674	27.561
1100	5.755	5.656	35.071	213.2	1.737	27.652
1200	5.100	4.996	35.048	233.7	1.793	27.714
1300	4.699	4.590	35.026	243.4	1.844	27.743
1400	4.397	4.282	35.007	251.5	1.893	27.762
1500	4.150	4.028	34.990	256.3	1.941	27.776
1750	3.691	3.551	34.963	262.7	2.056	27.803
2000	3.617	3.455	34.960	263.0	2.170	27.810
2500	3.079	2.877	34.946	262.3	2.394	27.853
3000	2.625	2.383	34.919	265.9	2.607	27.875
3500	2.358	2.069	34.901	267.0	2.814	27.887
4000	2.258	1.916	34.892	264.6	3.025	27.891
4500	2.222	1.823	34.883	260.5	3.245	27.892

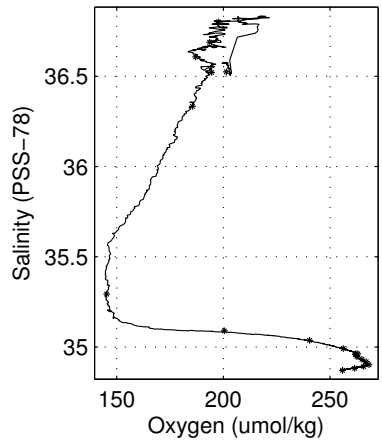
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4808	1	2.162	1.728	34.871	255.9
4500	2	2.225	1.827	34.882	261.6
4000	3	2.260	1.919	34.892	265.8
3499	4	2.360	2.071	34.902	268.3
3000	5	2.612	2.370	34.918	267.0
2750	6	2.828	2.607	34.932	265.0
2500	7	3.083	2.882	34.947	262.6
2235	8	3.372	3.191	34.959	261.9
1999	9	3.622	3.460	34.962	263.1
1749	10	3.691	3.552	34.964	262.2
1499	11	4.145	4.023	34.992	256.3
1249	12	4.828	4.722	35.038	240.4
999	13	6.525	6.430	35.090	200.5
800	14	9.854	9.759	35.293	145.2
650	15	13.585	13.491	35.776	NaN
500	16	16.854	16.771	36.333	185.5
400	17	17.914	17.845	36.522	194.5
300	18	18.630	18.576	36.607	187.0
300	19	18.629	18.576	36.607	187.0
200	20	19.848	19.811	36.689	193.5
125	21	21.833	21.808	36.801	197.6
49	22	25.651	25.640	36.493	NaN
2	23	26.145	26.144	36.524	201.4

Abaco November – December 2009 RRS Discovery
CTD Station 18 (CTD018)
Latitude 26.495 N Longitude 75.901 W
25–Nov–2009 17:52 Z







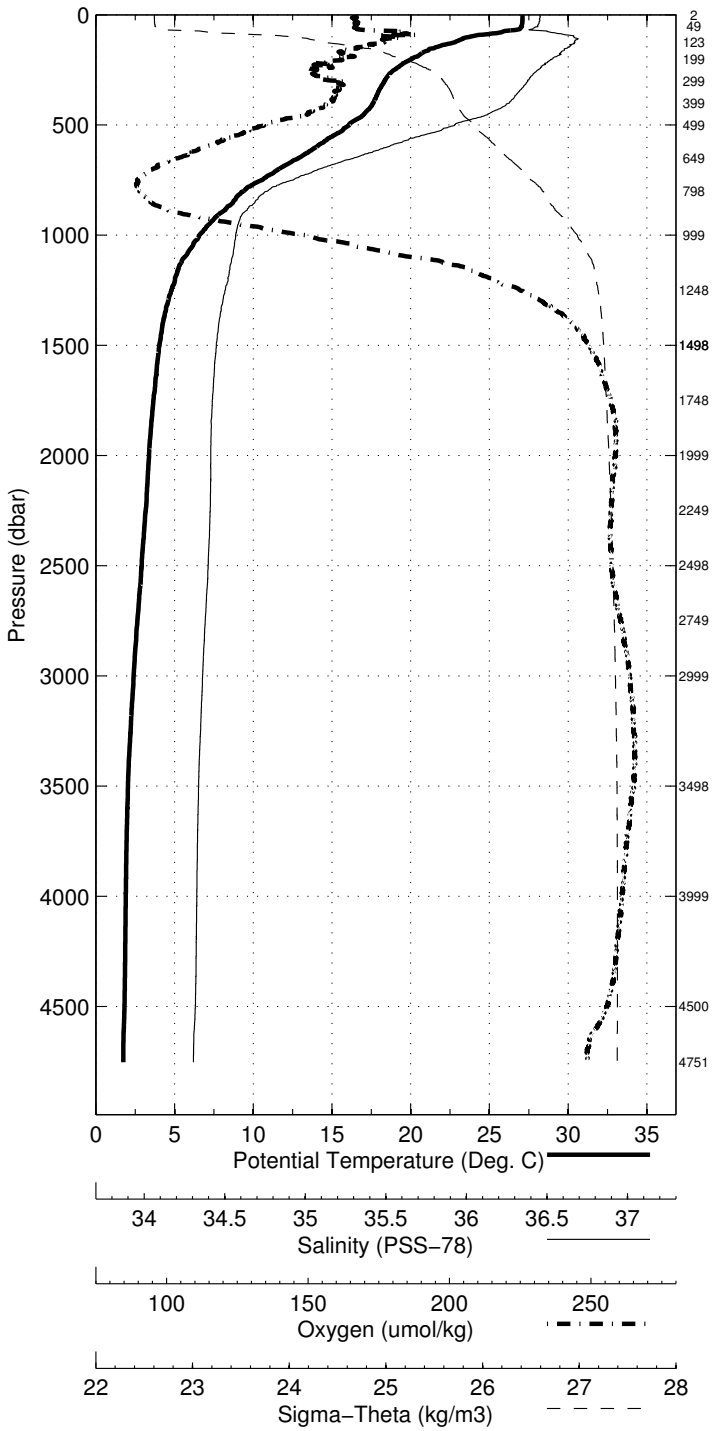


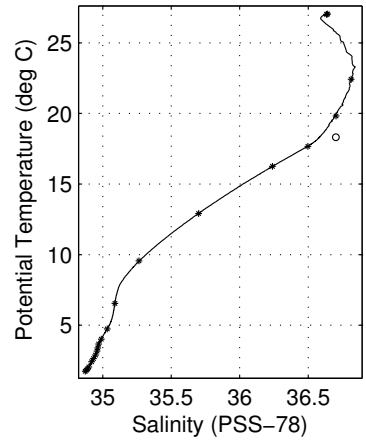
Abaco November - December 2009 RRS Discovery
CTD Station 19 (CTD019)
Latitude 26.495N Longitude 75.708W
25-Nov-2009 22:55Z

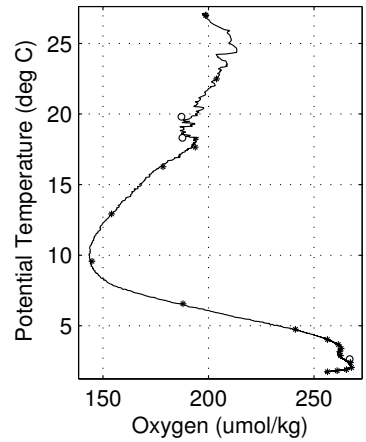
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	27.105	27.104	36.649	197.9	0.004	23.926
10	27.103	27.101	36.648	197.9	0.040	23.928
20	27.100	27.096	36.645	198.3	0.080	23.926
30	27.098	27.091	36.644	198.4	0.119	23.928
50	27.064	27.052	36.634	198.6	0.199	23.933
75	25.928	25.911	36.685	210.0	0.297	24.333
100	23.783	23.762	36.820	208.2	0.378	25.091
125	22.823	22.797	36.826	205.3	0.447	25.378
150	21.531	21.502	36.788	198.4	0.508	25.717
200	20.121	20.084	36.711	194.9	0.616	26.046
250	18.998	18.953	36.636	188.2	0.712	26.285
300	18.400	18.347	36.584	194.6	0.801	26.399
400	17.696	17.627	36.490	192.1	0.970	26.506
500	16.169	16.088	36.211	175.3	1.131	26.659
600	14.090	14.001	35.865	160.8	1.277	26.856
700	11.691	11.599	35.514	147.6	1.405	27.065
800	9.486	9.392	35.251	144.2	1.513	27.250
900	7.993	7.898	35.126	154.4	1.606	27.388
1000	6.670	6.574	35.089	185.5	1.683	27.547
1100	5.733	5.634	35.071	212.0	1.747	27.655
1200	5.132	5.028	35.050	232.5	1.802	27.712
1300	4.703	4.594	35.023	244.5	1.853	27.740
1400	4.363	4.248	35.002	252.1	1.902	27.762
1500	4.164	4.042	34.990	256.4	1.950	27.774
1750	3.791	3.650	34.969	261.6	2.067	27.798
2000	3.543	3.382	34.961	262.8	2.181	27.818
2500	3.112	2.910	34.948	261.9	2.404	27.852
3000	2.646	2.403	34.920	266.2	2.619	27.874
3500	2.330	2.042	34.899	267.1	2.827	27.887
4000	2.243	1.902	34.890	264.4	3.036	27.891
4500	2.217	1.818	34.882	260.5	3.256	27.891

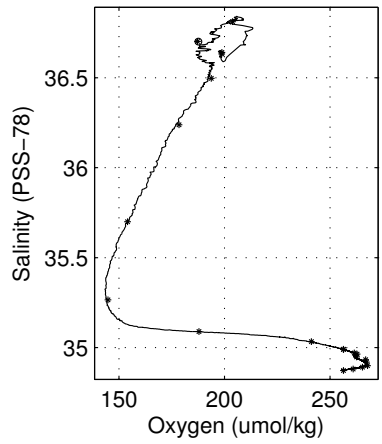
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4752	1	2.172	1.745	34.872	256.4
4500	2	2.214	1.816	34.881	261.0
3999	3	2.244	1.903	34.890	265.4
3498	4	2.330	2.042	34.898	267.8
3000	5	2.650	2.407	34.919	267.3
2749	6	2.861	2.639	34.932	267.0
2499	7	3.096	2.894	34.947	262.6
2249	8	3.347	3.165	34.958	262.2
1999	9	3.551	3.391	34.963	262.9
1748	10	3.805	3.664	34.970	261.5
1499	11	4.138	4.016	34.989	256.4
1499	12	4.138	4.016	34.990	256.4
1248	13	4.847	4.742	35.032	241.2
1000	14	6.643	6.547	35.089	187.9
799	15	9.648	9.554	35.265	144.8
649	16	13.000	12.909	35.700	154.0
499	17	16.338	16.257	36.239	178.4
400	18	17.743	17.674	36.497	193.8
300	19	18.374	18.321	36.702	187.6
200	20	19.862	19.825	36.703	187.2
124	21	22.451	22.426	36.813	203.8
50	22	27.030	27.019	36.634	198.6
2	23	27.042	27.041	36.641	198.7

Abaco November – December 2009 RRS Discovery
CTD Station 19 (CTD019)
Latitude 26.495 N Longitude 75.708 W
25–Nov–2009 22:55 Z









Abaco November - December 2009 RRS Discovery
CTD Station 20 (CTD020)
Latitude 26.498N Longitude 75.498W
26-Nov-2009 03:33Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	27.152	27.152	36.646	197.7	0.004	23.909
10	27.157	27.154	36.645	196.7	0.040	23.908
20	27.159	27.154	36.645	197.7	0.080	23.908
30	27.162	27.155	36.644	198.0	0.120	23.907
50	27.165	27.154	36.645	197.7	0.200	23.908
75	26.071	26.054	36.666	206.0	0.299	24.274
100	24.570	24.549	36.834	203.6	0.382	24.865
125	22.898	22.872	36.850	199.9	0.454	25.375
150	21.956	21.927	36.802	201.4	0.517	25.609
200	20.241	20.203	36.722	191.7	0.629	26.022
250	18.974	18.929	36.638	186.9	0.725	26.292
300	18.234	18.181	36.568	192.9	0.813	26.429
400	17.312	17.244	36.420	188.3	0.980	26.546
500	15.277	15.199	36.058	169.1	1.135	26.744
600	13.293	13.208	35.745	153.5	1.273	26.928
700	11.292	11.202	35.458	143.8	1.394	27.095
800	9.548	9.455	35.256	143.4	1.501	27.244
900	7.953	7.858	35.128	156.3	1.593	27.396
1000	6.845	6.747	35.092	181.6	1.671	27.527
1100	6.025	5.923	35.078	205.0	1.737	27.624
1200	5.457	5.350	35.063	223.4	1.795	27.683
1300	4.989	4.877	35.042	236.1	1.850	27.723
1400	4.684	4.566	35.025	244.4	1.902	27.745
1500	4.200	4.077	34.994	254.3	1.951	27.773
1750	3.613	3.474	34.964	263.2	2.064	27.811
2000	3.388	3.230	34.959	262.3	2.173	27.831
2500	3.009	2.809	34.943	262.8	2.389	27.857
3000	2.610	2.368	34.918	266.7	2.599	27.876
3500	2.343	2.054	34.900	267.4	2.806	27.887
4000	2.224	1.883	34.888	263.8	3.015	27.891
4500	2.156	1.759	34.875	256.9	3.233	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4747	1	2.153	1.727	34.872	255.0
4002	2	2.227	1.886	34.889	263.9
3500	3	2.344	2.055	34.901	267.6
3000	4	2.619	2.376	34.920	267.0
2742	5	2.779	2.559	34.930	265.3
2742	6	2.779	2.559	34.929	265.2
2500	7	2.981	2.781	34.942	263.0
2250	8	3.205	3.025	34.953	261.7
1999	9	3.402	3.243	34.961	261.9
1750	10	3.573	3.435	34.964	262.3
1499	11	4.157	4.035	34.993	254.5
1238	12	5.310	5.200	35.059	227.4
1001	13	6.833	6.735	35.093	182.3
800	14	9.537	9.444	35.252	142.7
649	15	12.222	12.134	35.582	146.7
500	16	15.321	15.243	36.063	168.3
400	17	17.123	17.055	36.381	185.5
400	18	17.123	17.055	36.380	187.6
299	19	18.251	18.198	36.567	192.7
199	20	19.891	19.854	36.697	190.2
125	21	22.791	22.765	36.822	203.3
49	22	27.148	27.137	36.643	197.8
4	23	27.128	27.127	36.641	198.2

Abaco November – December 2009 RRS Discovery
CTD Station 20 (CTD020)
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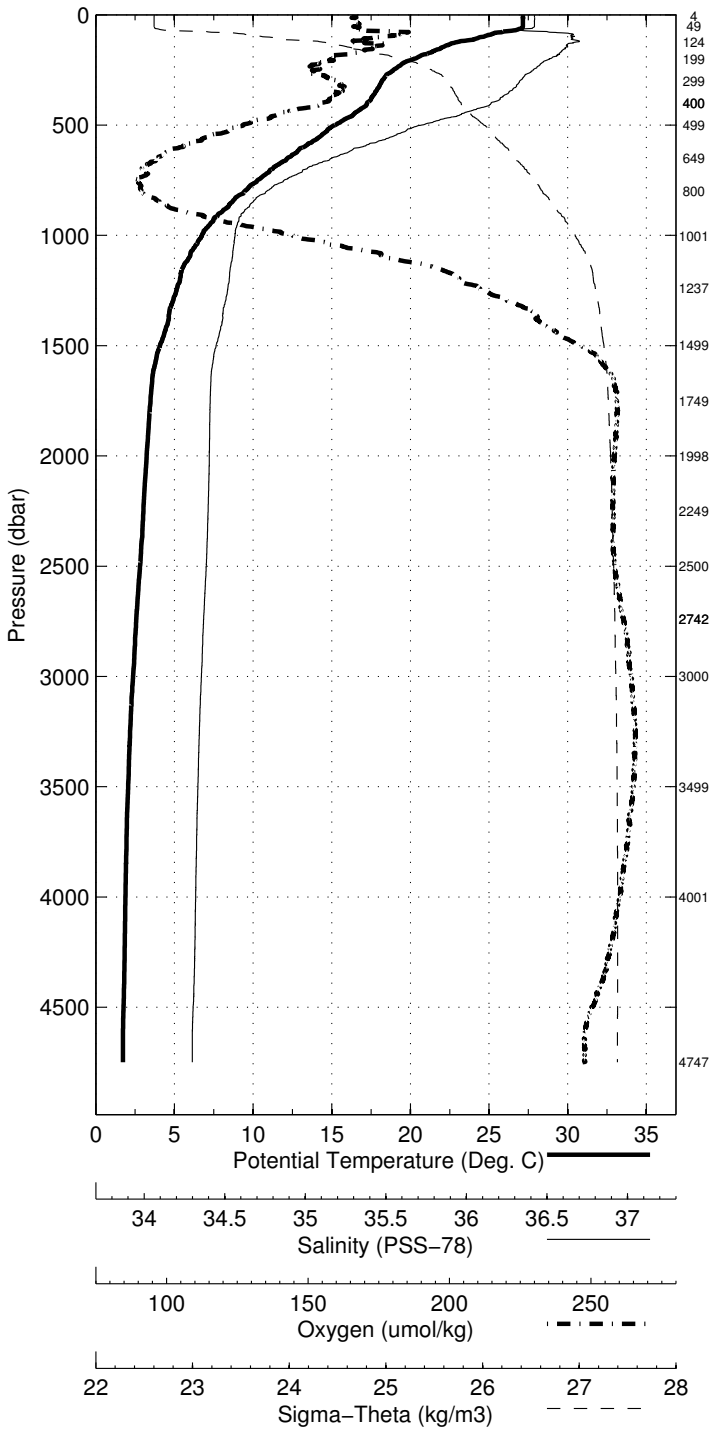

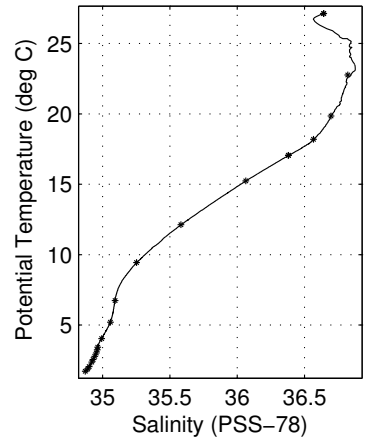

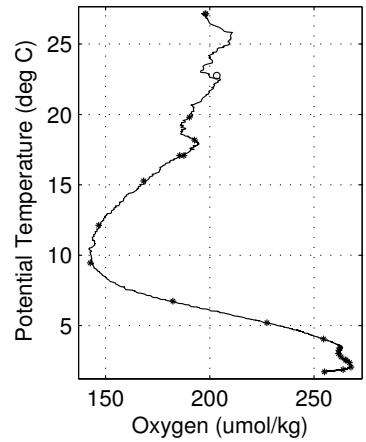

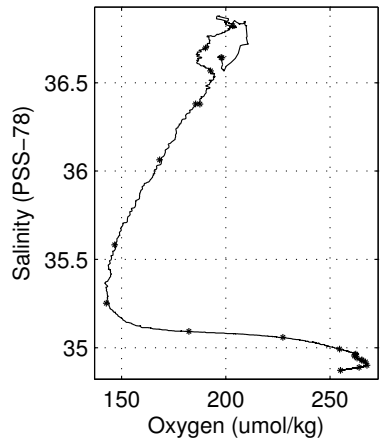

Abaco November - December 2009 RRS Discovery
CTD Station 21 (CTD021)
Latitude 26.497N Longitude 75.299W
26-Nov-2009 08:17Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.808	26.808	36.613	198.3	0.004	23.995
10	26.810	26.808	36.612	198.8	0.039	23.994
20	26.812	26.808	36.612	199.7	0.078	23.994
30	26.811	26.804	36.610	199.2	0.117	23.994
50	26.711	26.699	36.584	199.8	0.196	24.007
75	26.302	26.285	36.587	201.1	0.293	24.142
100	24.721	24.699	36.772	215.0	0.379	24.773
125	23.334	23.308	36.804	212.3	0.454	25.213
150	22.369	22.339	36.799	205.2	0.521	25.489
200	20.783	20.745	36.750	189.4	0.638	25.897
250	19.436	19.390	36.673	182.5	0.739	26.199
300	18.155	18.103	36.553	190.4	0.829	26.437
400	15.828	15.764	36.155	172.4	0.986	26.691
500	13.726	13.653	35.812	158.6	1.125	26.888
600	12.006	11.926	35.561	149.1	1.248	27.040
700	10.184	10.099	35.328	143.8	1.359	27.191
800	8.835	8.746	35.191	147.6	1.457	27.308
900	7.395	7.304	35.107	167.9	1.542	27.460
1000	6.442	6.347	35.085	193.4	1.615	27.575
1100	5.788	5.688	35.073	213.0	1.678	27.650
1200	5.293	5.187	35.056	228.3	1.734	27.698
1300	4.860	4.749	35.036	239.8	1.787	27.732
1400	4.305	4.190	35.001	252.3	1.836	27.767
1500	3.988	3.868	34.982	258.7	1.883	27.785
1750	3.611	3.472	34.964	263.4	1.995	27.811
2000	3.384	3.226	34.959	262.4	2.104	27.832
2500	2.954	2.754	34.939	263.4	2.317	27.859
3000	2.500	2.261	34.911	267.9	2.524	27.879
3500	2.287	2.000	34.897	267.0	2.726	27.889
4000	2.239	1.898	34.890	264.8	2.935	27.891
4500	2.213	1.815	34.882	260.9	3.154	27.892

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4689	1	2.163	1.744	34.875	264.9
4689	2	2.163	1.744	34.874	256.0
3996	3	2.238	1.898	34.890	264.6
3495	4	2.292	2.006	34.898	267.2
3009	5	2.517	2.275	34.915	268.1
2739	6	2.719	2.500	34.926	265.9
2738	7	2.719	2.501	34.927	266.1
2490	8	2.941	2.743	34.940	263.6
2249	9	3.141	2.963	34.952	261.8
1990	10	3.357	3.200	34.959	262.1
1506	11	4.021	3.900	34.986	257.1
1270	12	5.014	4.904	35.045	235.5
1006	13	6.600	6.503	35.090	189.4
802	14	8.749	8.660	35.186	147.4
652	15	11.218	11.135	35.458	146.2
500	16	13.852	13.779	35.831	158.4
401	17	15.985	15.921	36.183	173.8
400	18	15.990	15.925	36.183	174.1
300	19	18.239	18.186	36.562	192.0
201	20	20.680	20.642	36.744	187.3
126	21	23.430	23.404	36.803	212.0
50	22	26.811	26.799	36.613	202.2
3	23	26.753	26.752	36.570	199.1

Abaco November – December 2009 RRS Discovery
CTD Station 21 (CTD021)
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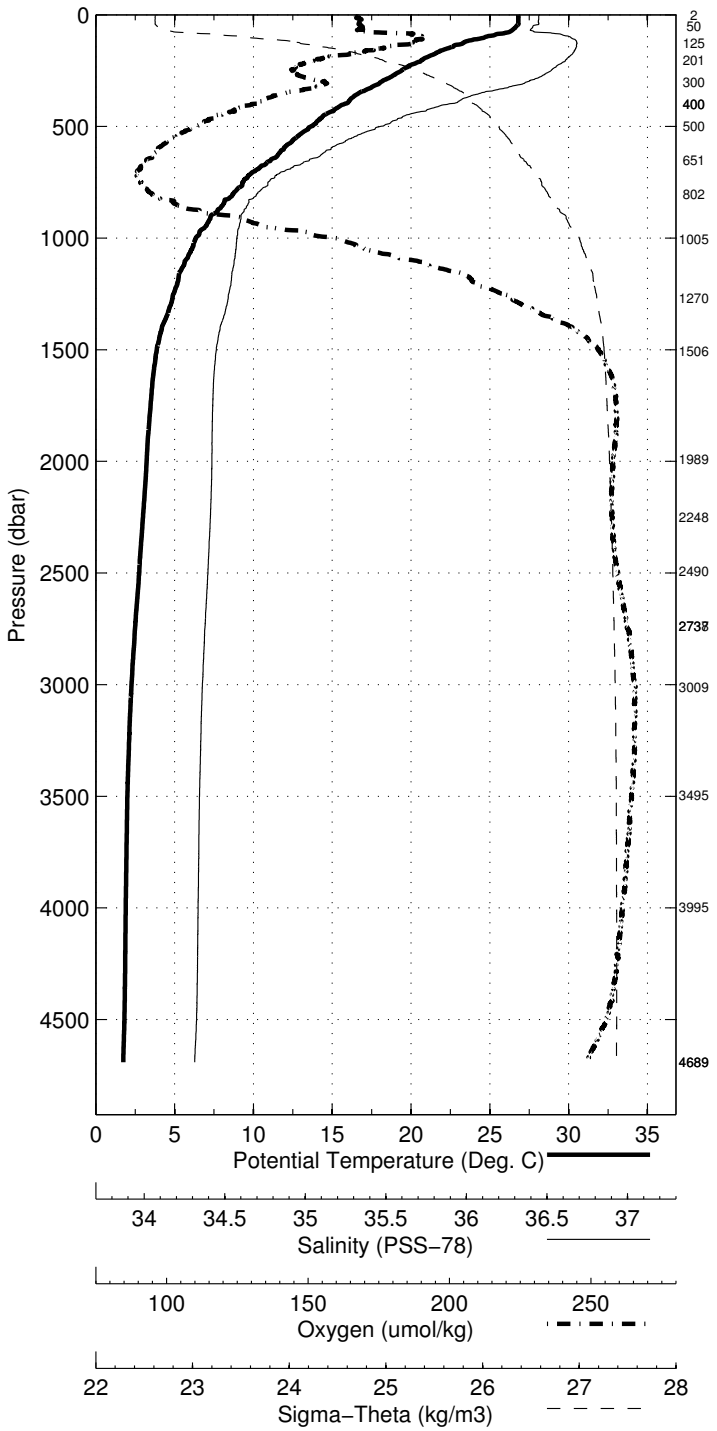
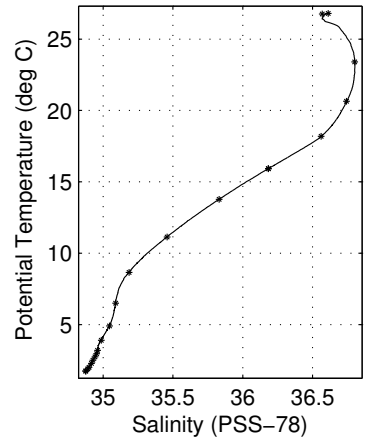
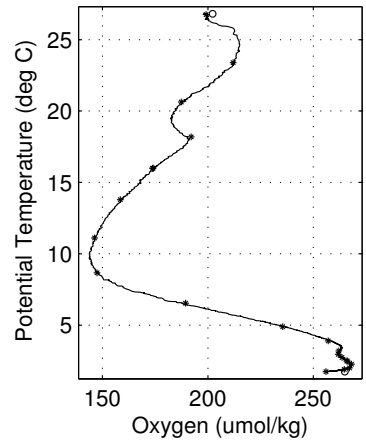
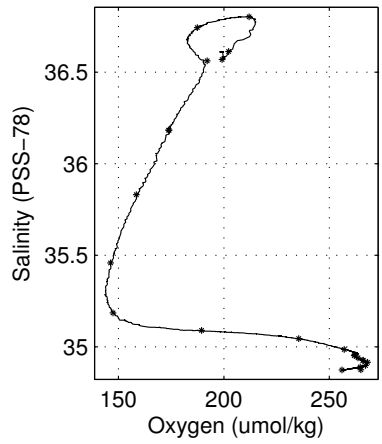
26–Nov–2009 08:17 Z









Abaco November - December 2009 RRS Discovery
CTD Station 22 (CTD022)
Latitude 26.505N Longitude 75.082W
26-Nov-2009 13:41Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.688	26.687	36.566	198.7	0.004	23.998
10	26.686	26.684	36.566	199.1	0.039	23.999
20	26.692	26.688	36.566	199.4	0.078	23.998
30	26.695	26.689	36.566	199.3	0.117	23.998
50	26.700	26.689	36.567	199.1	0.196	23.998
75	26.427	26.410	36.602	201.6	0.294	24.113
100	24.478	24.457	36.779	214.6	0.379	24.852
125	23.157	23.131	36.804	211.2	0.452	25.264
150	22.225	22.195	36.797	203.1	0.518	25.529
200	20.810	20.771	36.753	188.1	0.635	25.891
250	19.538	19.492	36.679	182.7	0.738	26.177
300	18.438	18.385	36.583	187.8	0.830	26.388
400	15.301	15.239	36.068	167.9	0.988	26.743
500	13.379	13.307	35.760	155.6	1.123	26.919
600	11.859	11.779	35.542	148.7	1.244	27.052
700	10.046	9.962	35.313	144.2	1.353	27.203
800	8.777	8.689	35.187	147.6	1.451	27.315
900	7.361	7.270	35.104	168.2	1.536	27.463
1000	6.114	6.022	35.080	202.4	1.604	27.613
1100	5.402	5.306	35.060	224.4	1.663	27.687
1200	4.776	4.675	35.029	242.8	1.714	27.736
1300	4.558	4.450	35.018	248.1	1.763	27.752
1400	4.285	4.171	34.999	254.1	1.811	27.767
1500	4.106	3.984	34.988	257.2	1.858	27.779
1750	3.692	3.553	34.966	262.7	1.973	27.805
2000	3.495	3.335	34.961	262.8	2.085	27.822
2500	2.991	2.791	34.942	262.9	2.303	27.858
3000	2.535	2.295	34.914	267.5	2.512	27.879
3500	2.306	2.018	34.897	267.2	2.715	27.888
4000	2.244	1.903	34.890	264.5	2.924	27.891
4500	2.205	1.807	34.881	260.3	3.143	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4669	1	2.165	1.748	34.874	347.0
4669	2	2.164	1.747	34.873	267.7
4000	3	2.245	1.904	34.890	266.9
3500	4	2.308	2.021	34.897	267.4
2999	5	2.545	2.304	34.914	268.6
2749	6	2.773	2.553	34.928	265.8
2499	7	2.988	2.788	34.942	263.7
2500	8	2.988	2.788	34.941	263.6
2250	9	3.253	3.073	34.954	262.1
1991	10	3.475	3.316	34.961	262.8
1750	11	3.717	3.577	34.967	262.8
1497	12	4.116	3.994	34.988	256.7
1249	13	4.758	4.653	35.028	243.1
999	14	6.086	5.993	35.079	204.0
799	15	8.493	8.406	35.164	150.5
655	16	10.926	10.843	35.417	145.4
499	17	13.630	13.558	35.804	157.7
400	18	15.339	15.277	36.057	167.8
300	19	18.093	18.040	36.536	190.2
200	20	20.647	20.609	36.741	186.9
123	21	23.253	23.228	36.802	211.0
49	22	26.706	26.695	36.571	199.5
4	23	26.775	26.774	36.569	200.0

Abaco November – December 2009 RRS Discovery
CTD Station 22 (CTD022)
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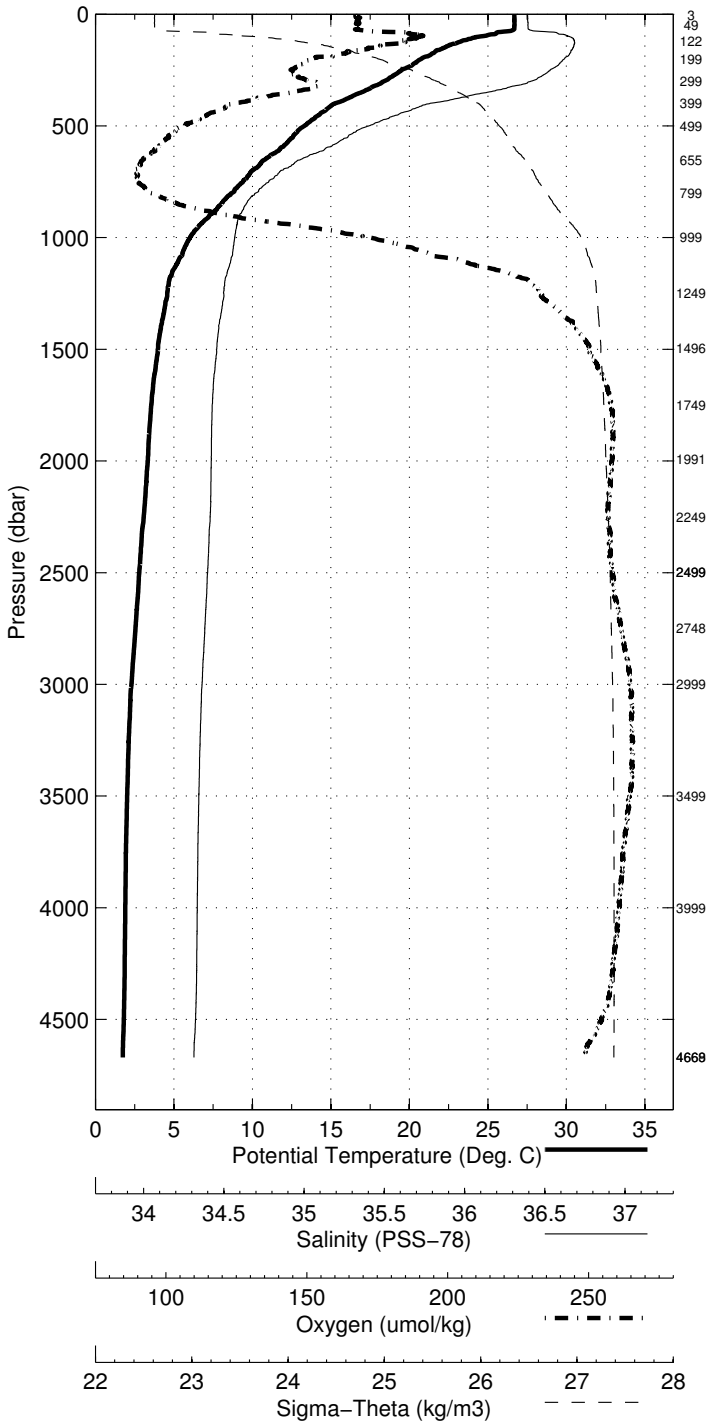

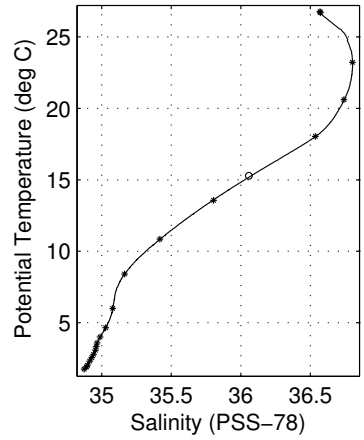

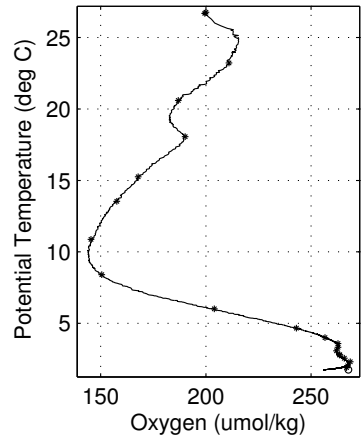

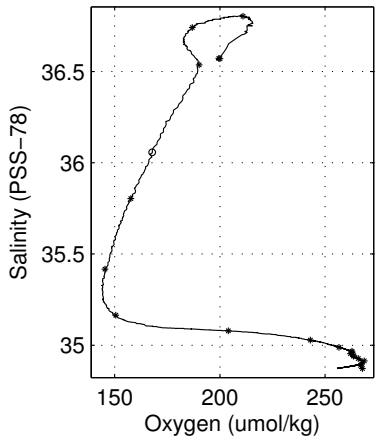

Abaco November - December 2009 RRS Discovery
CTD Station 23 (CTD023)
Latitude 26.505N Longitude 74.801W
26-Nov-2009 18:34Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.797	26.796	36.581	199.3	0.004	23.975
10	26.779	26.777	36.581	199.5	0.039	23.980
20	26.688	26.684	36.578	199.7	0.078	24.008
30	26.679	26.672	36.580	200.1	0.117	24.013
50	26.392	26.381	36.589	200.4	0.195	24.112
75	26.332	26.315	36.582	200.2	0.290	24.128
100	24.068	24.047	36.794	215.5	0.376	24.986
125	22.313	22.288	36.803	206.8	0.445	25.507
150	21.389	21.360	36.779	197.3	0.505	25.749
200	20.111	20.074	36.719	191.6	0.612	26.054
250	18.876	18.831	36.627	190.5	0.707	26.309
300	18.288	18.236	36.574	191.7	0.795	26.419
400	17.170	17.102	36.393	185.8	0.961	26.559
500	15.215	15.137	36.049	168.6	1.114	26.751
600	13.229	13.144	35.734	154.9	1.251	26.933
700	10.952	10.864	35.420	146.3	1.371	27.127
800	9.040	8.949	35.207	145.7	1.473	27.289
900	7.396	7.305	35.104	166.4	1.559	27.458
1000	6.266	6.172	35.082	195.2	1.630	27.595
1100	5.426	5.329	35.064	224.1	1.689	27.687
1200	4.888	4.787	35.036	239.8	1.741	27.729
1300	4.529	4.422	35.013	249.0	1.791	27.751
1400	4.325	4.211	35.003	252.7	1.839	27.766
1500	4.100	3.979	34.987	257.4	1.886	27.778
1750	3.719	3.579	34.967	262.6	2.001	27.803
2000	3.490	3.330	34.962	262.8	2.114	27.823
2500	2.969	2.770	34.940	263.2	2.331	27.859
3000	2.521	2.280	34.914	267.1	2.538	27.880
3500	2.279	1.992	34.897	266.3	2.740	27.890
4000	2.228	1.887	34.889	263.5	2.948	27.891
4500	2.155	1.759	34.875	257.4	3.166	27.891

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4603	1	2.096	1.689	34.865	253.1
4000	2	2.226	1.885	34.888	264.3
3500	3	2.269	1.983	34.896	266.6
2998	4	2.501	2.261	34.913	267.4
2750	5	2.707	2.488	34.925	266.1
2500	6	2.946	2.747	34.939	263.1
2249	7	3.252	3.072	34.956	262.0
2000	8	3.473	3.313	34.961	262.5
1749	9	3.716	3.577	34.967	262.3
1520	10	4.034	3.911	34.984	257.8
1199	11	4.828	4.727	35.034	241.2
1000	12	6.232	6.139	35.082	200.6
799	13	9.026	8.936	35.206	146.1
650	14	12.042	11.955	35.562	149.7
500	15	15.075	14.998	36.020	167.8
400	16	17.129	17.062	36.382	185.4
400	17	17.131	17.064	36.378	185.2
299	18	18.206	18.153	36.562	193.9
200	19	20.141	20.103	36.725	188.8
125	20	22.507	22.482	36.808	206.2
51	21	26.374	26.362	36.582	200.7
51	22	26.372	26.361	36.583	200.7
2	23	26.770	26.770	36.571	199.8

Abaco November – December 2009 RRS Discovery
CTD Station 23 (CTD023)
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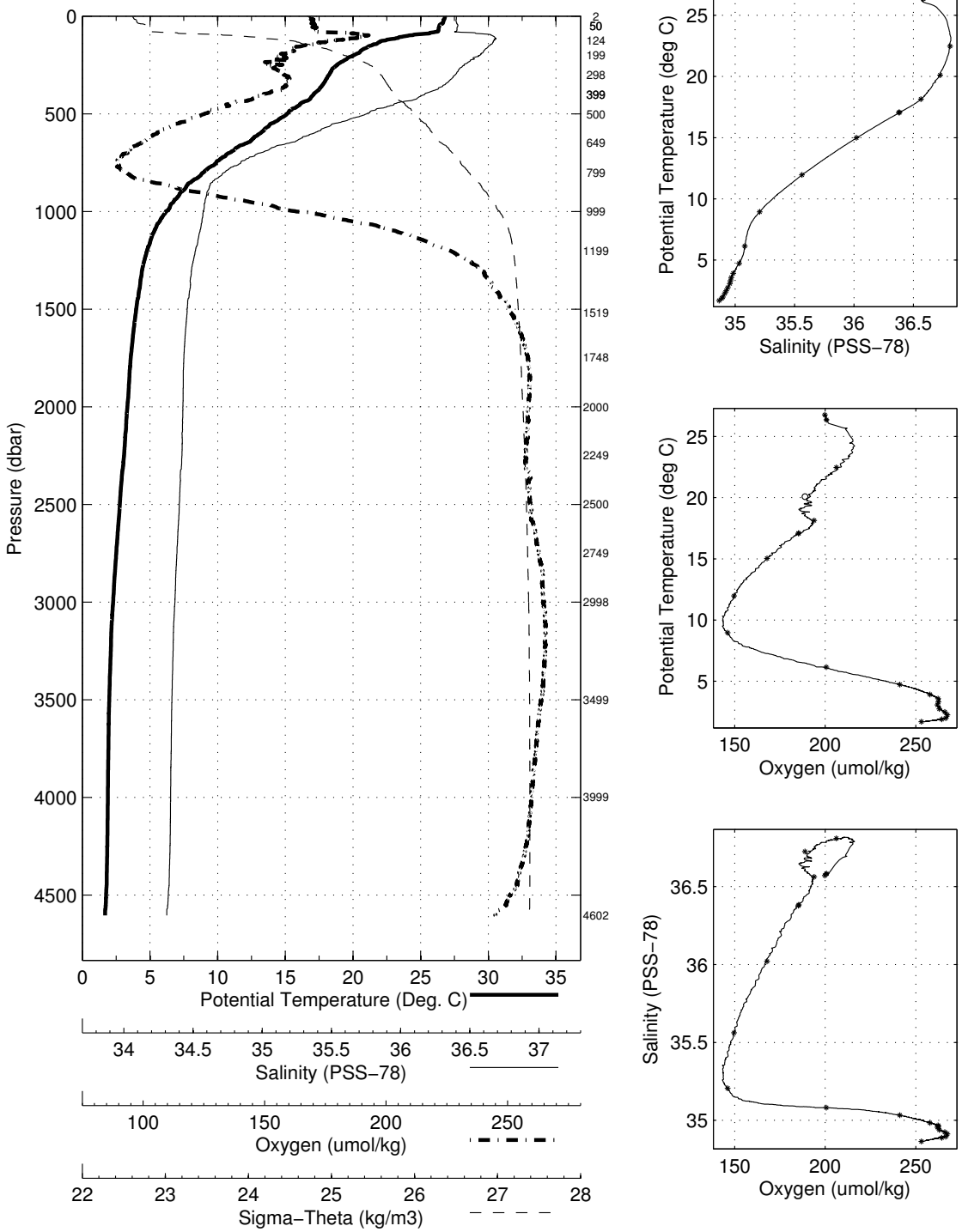
26–Nov–2009 18:34 Z

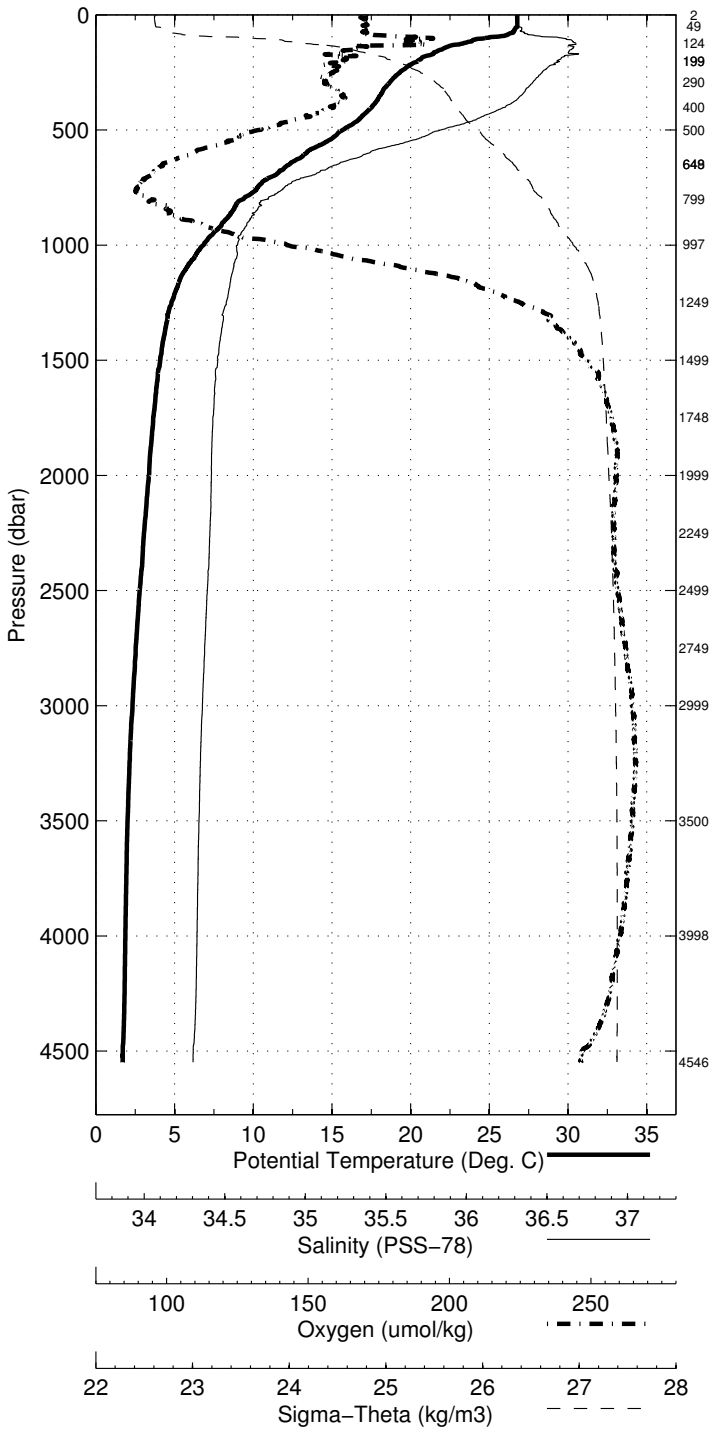


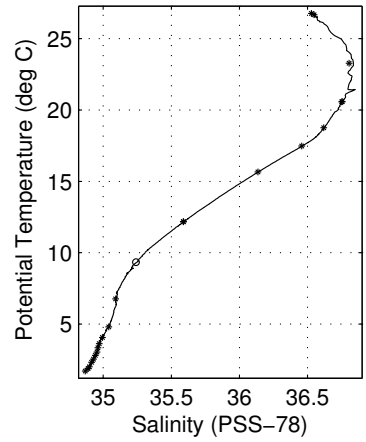
Abaco November - December 2009 RRS Discovery
CTD Station 24 (CTD024)
Latitude 26.504N Longitude 74.518W
26-Nov-2009 23:49Z

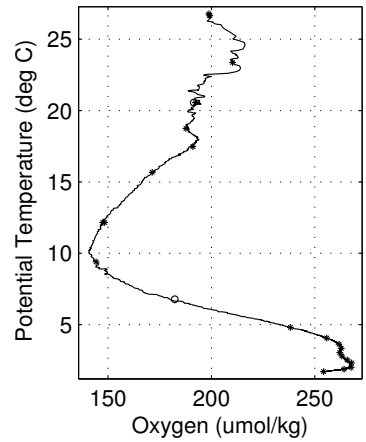
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.761	26.761	36.527	199.2	0.004	23.945
10	26.774	26.771	36.526	198.9	0.040	23.941
20	26.784	26.780	36.526	198.9	0.079	23.939
30	26.783	26.777	36.530	198.8	0.119	23.942
50	26.788	26.776	36.540	199.5	0.198	23.950
75	26.547	26.529	36.570	198.3	0.296	24.051
100	24.824	24.803	36.759	215.3	0.388	24.732
125	23.308	23.282	36.836	210.7	0.462	25.245
150	22.031	22.001	36.815	196.4	0.526	25.597
200	20.480	20.442	36.741	195.0	0.638	25.972
250	19.364	19.319	36.663	190.6	0.738	26.210
300	18.636	18.582	36.607	188.9	0.829	26.357
400	17.621	17.552	36.474	190.3	1.000	26.512
500	15.758	15.678	36.141	172.1	1.159	26.700
600	13.473	13.386	35.773	155.6	1.300	26.913
700	11.359	11.268	35.467	144.3	1.423	27.090
800	9.472	9.379	35.255	144.3	1.529	27.256
900	8.201	8.105	35.151	155.9	1.622	27.376
1000	6.939	6.841	35.095	179.2	1.701	27.516
1100	5.841	5.740	35.076	209.6	1.767	27.645
1200	5.171	5.067	35.052	231.1	1.823	27.708
1300	4.682	4.573	35.019	245.2	1.874	27.739
1400	4.436	4.321	35.009	250.6	1.924	27.759
1500	4.213	4.091	34.995	255.2	1.972	27.773
1750	3.784	3.644	34.970	261.6	2.089	27.799
2000	3.537	3.377	34.962	262.9	2.203	27.819
2500	2.982	2.782	34.941	263.1	2.421	27.858
3000	2.572	2.330	34.916	267.0	2.630	27.878
3500	2.303	2.015	34.899	266.8	2.834	27.889
4000	2.215	1.874	34.889	263.8	3.042	27.892
4500	2.101	1.707	34.869	254.1	3.259	27.890

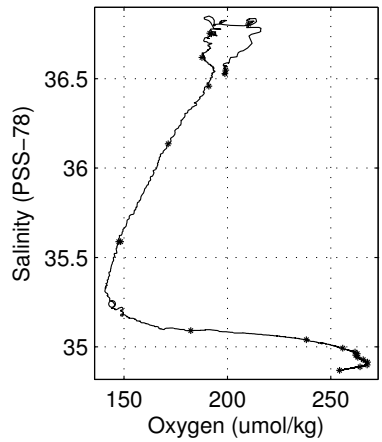
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4546	1	2.107	1.706	34.869	254.2
3999	2	2.214	1.874	34.889	264.1
3500	3	2.301	2.013	34.899	267.6
2999	4	2.567	2.326	34.915	267.7
2749	5	2.758	2.538	34.928	265.7
2499	6	3.006	2.806	34.942	263.1
2250	7	3.220	3.041	34.954	262.1
1999	8	3.503	3.343	34.962	262.8
1749	9	3.763	3.623	34.971	261.7
1499	10	4.179	4.057	34.994	255.8
1249	11	4.918	4.811	35.041	238.2
998	12	6.856	6.759	35.092	182.3
800	13	9.430	9.337	35.240	144.2
649	14	12.259	12.171	35.589	147.4
649	15	12.259	12.171	35.589	148.3
500	16	15.742	15.662	36.136	171.3
400	17	17.541	17.473	36.458	191.0
290	18	18.805	18.753	36.619	187.7
199	19	20.616	20.578	36.751	192.3
199	20	20.620	20.582	36.754	191.4
125	21	23.310	23.284	36.805	210.2
50	22	26.681	26.670	36.548	199.2
3	23	26.763	26.762	36.528	198.7

Abaco November – December 2009 RRS Discovery
CTD Station 24 (CTD024)
Latitude 26.504 N Longitude 74.518 W
26–Nov–2009 23:49 Z







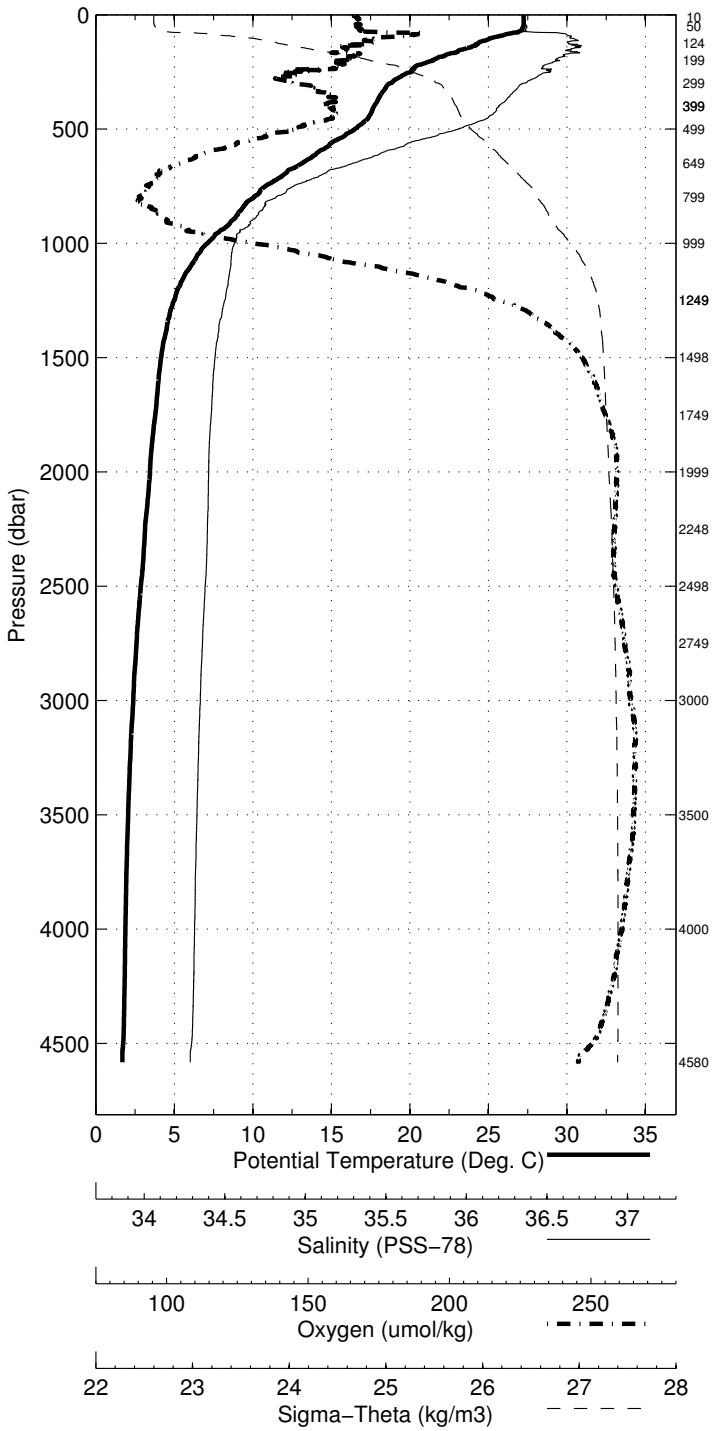


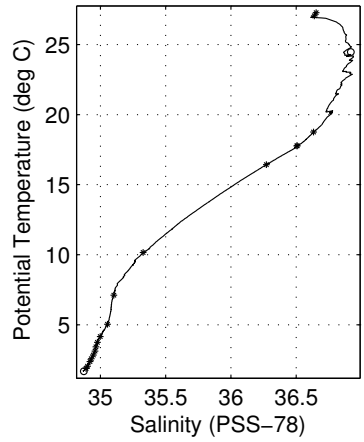
Abaco November - December 2009 RRS Discovery
CTD Station 25 (CTD025)
Latitude 26.510N Longitude 74.240W
27-Nov-2009 04:40Z

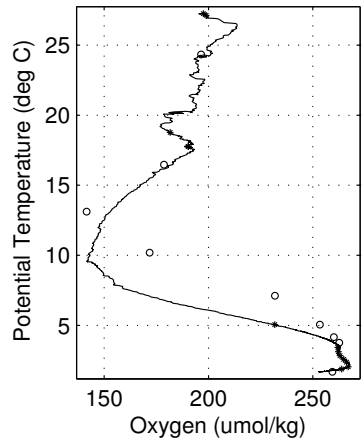
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	27.238	27.238	36.641	196.1	0.004	23.878
10	27.244	27.242	36.639	197.6	0.040	23.875
20	27.247	27.243	36.640	197.8	0.080	23.875
30	27.251	27.244	36.640	197.4	0.121	23.875
50	27.245	27.233	36.648	198.1	0.202	23.885
75	26.929	26.912	36.666	201.9	0.302	24.002
100	25.299	25.277	36.876	203.6	0.390	24.675
125	24.374	24.347	36.872	201.0	0.469	24.955
150	23.479	23.447	36.885	194.8	0.542	25.233
200	21.527	21.488	36.823	192.6	0.668	25.748
250	20.121	20.074	36.773	178.8	0.774	26.095
300	18.758	18.704	36.629	181.2	0.869	26.343
400	17.790	17.721	36.502	190.0	1.041	26.493
500	16.581	16.499	36.285	182.8	1.206	26.620
600	14.269	14.179	35.894	159.9	1.354	26.840
700	12.043	11.949	35.562	147.4	1.484	27.036
800	10.132	10.036	35.318	143.0	1.596	27.194
900	8.762	8.661	35.190	149.8	1.695	27.321
1000	7.206	7.105	35.101	171.6	1.780	27.484
1100	6.131	6.028	35.081	202.2	1.849	27.613
1200	5.308	5.203	35.059	226.0	1.908	27.698
1300	4.839	4.728	35.035	240.5	1.961	27.735
1400	4.535	4.418	35.013	248.2	2.011	27.752
1500	4.276	4.153	34.997	254.0	2.060	27.768
1750	3.929	3.787	34.977	259.9	2.180	27.790
2000	3.613	3.452	34.964	262.9	2.296	27.813
2500	3.063	2.862	34.945	262.6	2.519	27.854
3000	2.627	2.385	34.920	266.2	2.731	27.876
3500	2.348	2.059	34.902	267.0	2.938	27.888
4000	2.223	1.883	34.889	263.9	3.147	27.892
4500	2.140	1.744	34.874	256.7	3.364	27.890

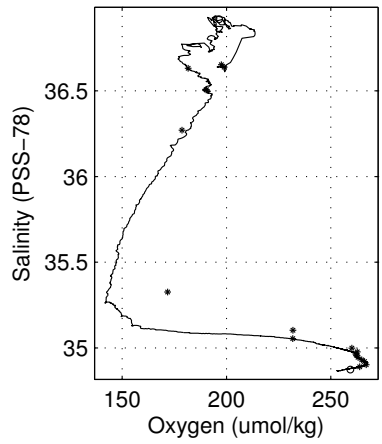
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4581	1	2.091	1.687	34.873	259.4
4000	2	2.226	1.885	34.889	263.8
3500	3	2.339	2.051	34.902	267.0
3000	4	2.621	2.379	34.920	266.2
2750	5	2.802	2.581	34.930	264.8
2498	6	3.044	2.843	34.945	263.0
2249	7	3.301	3.120	34.958	262.2
2000	8	3.591	3.430	34.965	261.9
1750	9	3.896	3.754	34.977	262.7
1499	10	4.280	4.156	34.999	260.1
1249	11	5.144	7.059	−999.000	NaN
1250	12	5.146	5.037	35.054	231.8
999	13	7.221	7.120	35.103	231.8
800	14	10.259	10.162	35.326	171.8
650	15	13.194	13.969	−999.000	NaN
500	16	16.518	16.435	36.271	178.6
400	17	17.838	17.769	36.505	190.3
400	18	17.842	17.773	36.507	190.3
299	19	18.812	18.758	36.632	181.6
200	20	21.644	21.805	−999.000	NaN
125	21	24.493	24.466	36.918	196.4
50	22	27.056	27.044	36.638	198.8
11	23	27.281	27.278	36.653	197.5

Abaco November – December 2009 RRS Discovery
CTD Station 25 (CTD025)
Latitude 26.510 N Longitude 74.240 W
27–Nov–2009 04:40 Z







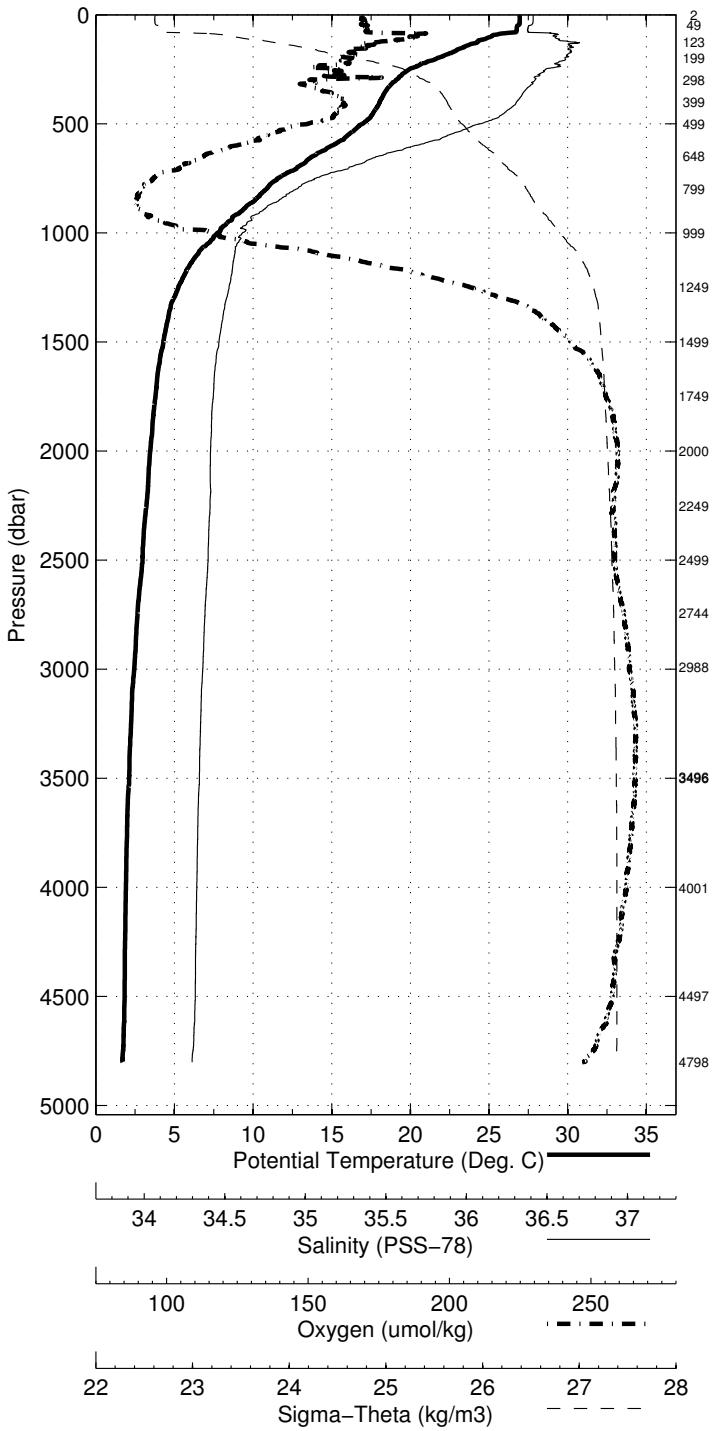


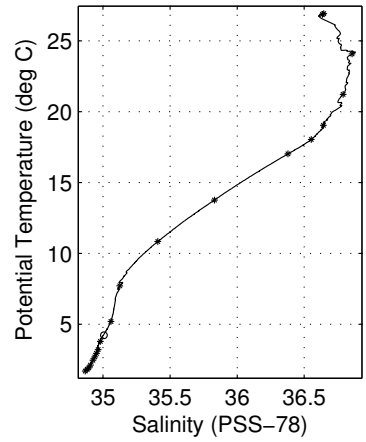
Abaco November - December 2009 RRS Discovery
CTD Station 26 (CTD026)
Latitude 26.501N Longitude 73.868W
27-Nov-2009 10:13Z

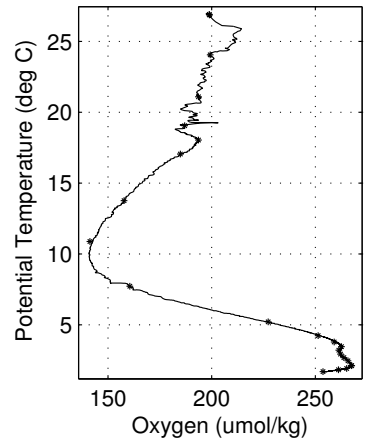
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.946	26.946	36.641	198.2	0.004	23.972
10	26.955	26.952	36.639	198.2	0.039	23.968
20	26.961	26.956	36.640	198.1	0.079	23.968
30	26.955	26.948	36.639	198.2	0.118	23.970
50	26.796	26.784	36.615	199.1	0.197	24.004
75	26.758	26.741	36.613	199.4	0.295	24.016
100	25.158	25.136	36.760	210.1	0.384	24.630
125	24.304	24.277	36.863	201.9	0.464	24.970
150	23.405	23.374	36.842	197.7	0.537	25.222
200	21.719	21.679	36.805	195.3	0.666	25.681
250	19.974	19.928	36.705	192.7	0.775	26.082
300	19.141	19.086	36.648	186.4	0.872	26.259
400	18.112	18.042	36.553	193.3	1.050	26.451
500	17.028	16.944	36.362	184.3	1.218	26.574
600	15.083	14.990	36.025	166.0	1.374	26.765
700	12.890	12.792	35.682	152.1	1.511	26.963
800	10.921	10.819	35.406	142.5	1.631	27.125
900	9.383	9.279	35.230	142.3	1.738	27.253
1000	7.838	7.733	35.129	160.3	1.830	27.415
1100	6.567	6.461	35.089	189.1	1.907	27.562
1200	5.690	5.581	35.070	215.3	1.970	27.661
1300	5.062	4.949	35.046	234.0	2.026	27.718
1400	4.693	4.575	35.025	244.3	2.078	27.744
1500	4.418	4.293	35.007	251.1	2.128	27.760
1750	3.935	3.793	34.977	259.8	2.249	27.790
2000	3.622	3.460	34.963	262.6	2.366	27.812
2500	3.172	2.969	34.951	262.2	2.592	27.849
3000	2.685	2.441	34.923	265.7	2.807	27.873
3500	2.407	2.117	34.905	267.3	3.017	27.886
4000	2.256	1.914	34.892	265.0	3.228	27.892
4500	2.230	1.831	34.884	261.5	3.447	27.892

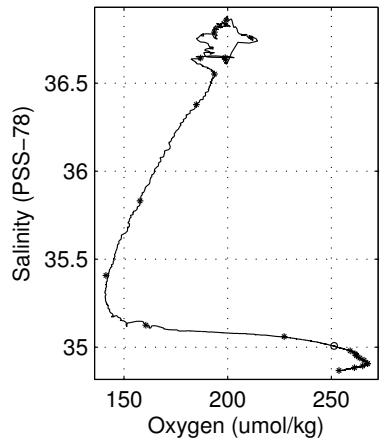
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4799	1	2.127	1.695	34.868	253.7
4498	2	2.230	1.831	34.884	261.1
4001	3	2.264	1.922	34.894	265.1
3496	4	2.414	2.124	34.907	267.3
3497	5	2.415	2.125	34.907	267.5
2989	6	2.705	2.462	34.925	265.7
2744	7	2.922	2.699	34.938	263.8
2499	8	3.156	2.953	34.951	262.1
2250	9	3.403	3.221	34.963	261.3
2001	10	3.634	6.703	−999.000	NaN
1749	11	3.941	3.798	34.980	259.1
1499	12	4.357	4.232	35.007	251.3
1249	13	5.309	5.199	35.060	227.2
1000	14	7.816	7.711	35.125	160.5
800	15	10.949	10.848	35.408	141.2
649	16	13.863	13.767	35.831	157.8
499	17	17.119	17.034	36.378	184.9
399	18	18.119	18.049	36.552	193.6
299	19	19.101	19.047	36.642	187.0
199	20	21.262	21.223	36.790	193.6
124	21	24.109	24.083	36.858	199.3
49	22	26.886	26.875	36.635	198.9
2	23	26.925	26.925	36.645	198.8

Abaco November – December 2009 RRS Discovery
CTD Station 26 (CTD026)
Latitude 26.501 N Longitude 73.868 W
27–Nov–2009 10:13 Z







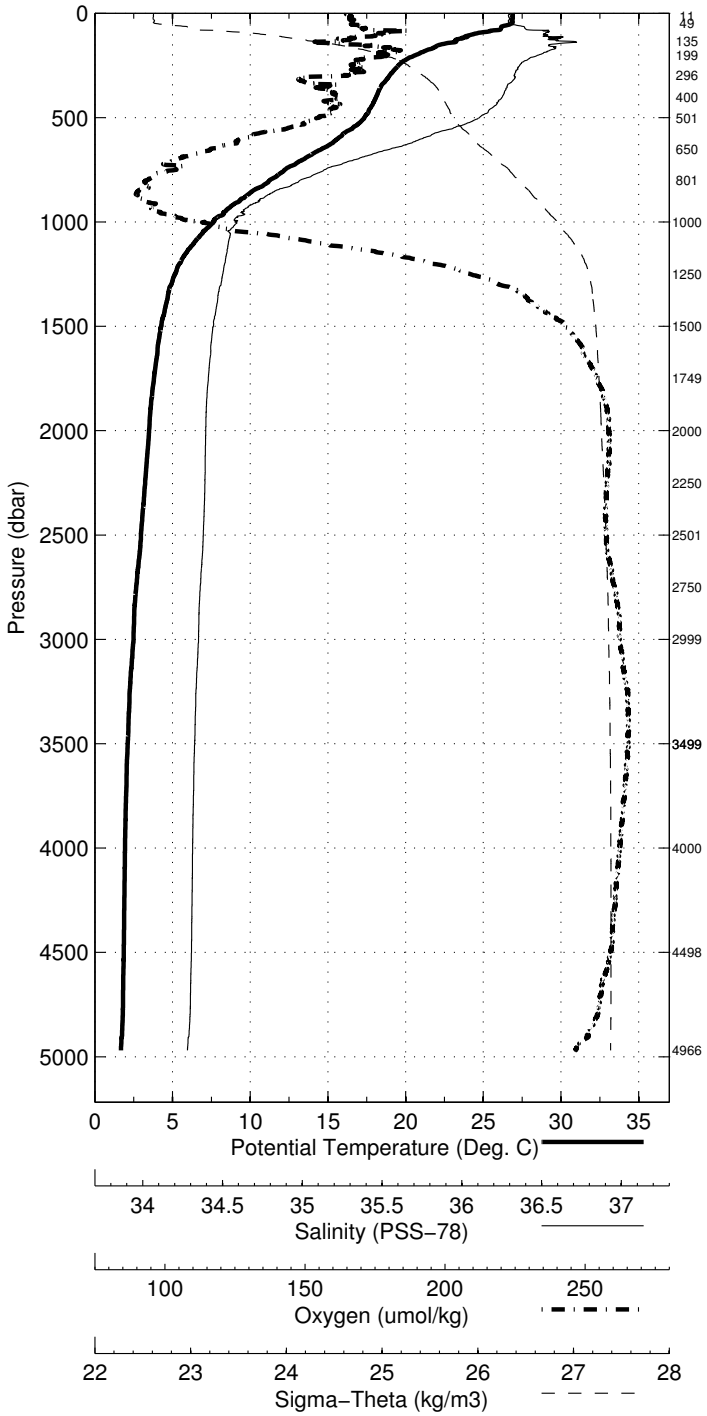


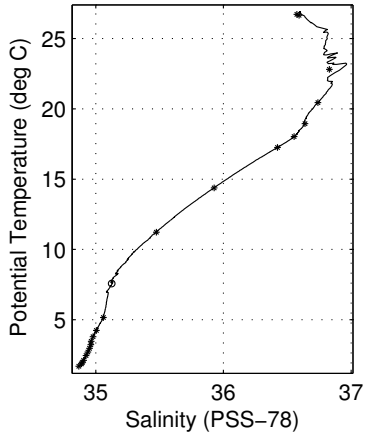
Abaco November - December 2009 RRS Discovery
CTD Station 27 (CTD027)
Latitude 26.490N Longitude 73.510W
27-Nov-2009 16:09Z

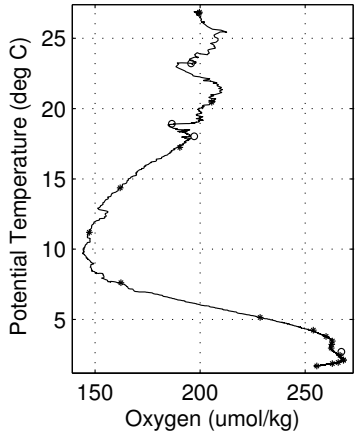
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.894	26.894	36.606	196.9	0.004	23.962
10	26.881	26.878	36.597	197.4	0.039	23.960
20	26.893	26.889	36.600	198.7	0.079	23.959
30	26.885	26.878	36.602	198.2	0.118	23.964
50	26.790	26.779	36.601	198.9	0.197	23.995
75	26.139	26.122	36.691	201.6	0.291	24.271
100	24.408	24.386	36.789	207.1	0.375	24.881
125	23.335	23.310	36.811	198.2	0.449	25.218
150	22.285	22.255	36.820	199.9	0.515	25.529
200	20.696	20.658	36.760	206.8	0.630	25.928
250	19.577	19.531	36.658	198.7	0.732	26.151
300	18.997	18.943	36.628	195.5	0.827	26.281
400	18.179	18.109	36.565	195.2	1.004	26.444
500	17.438	17.352	36.441	190.3	1.174	26.536
600	15.752	15.656	36.135	171.3	1.335	26.700
700	13.520	13.419	35.776	154.6	1.480	26.909
800	11.354	11.250	35.474	147.0	1.605	27.099
900	9.379	9.275	35.246	146.6	1.713	27.266
1000	7.724	7.619	35.124	161.6	1.803	27.428
1100	6.492	6.386	35.087	189.5	1.879	27.571
1200	5.557	5.449	35.066	218.1	1.941	27.674
1300	5.034	4.921	35.046	235.1	1.996	27.721
1400	4.684	4.566	35.024	244.7	2.048	27.744
1500	4.403	4.278	35.006	251.6	2.098	27.761
1750	3.945	3.802	34.978	259.8	2.219	27.789
2000	3.648	3.486	34.964	262.7	2.336	27.810
2500	3.172	2.969	34.951	262.0	2.564	27.849
3000	2.735	2.490	34.925	265.4	2.781	27.871
3500	2.403	2.113	34.904	267.4	2.992	27.886
4000	2.284	1.941	34.894	265.5	3.204	27.891
4500	2.262	1.862	34.887	263.3	3.425	27.892

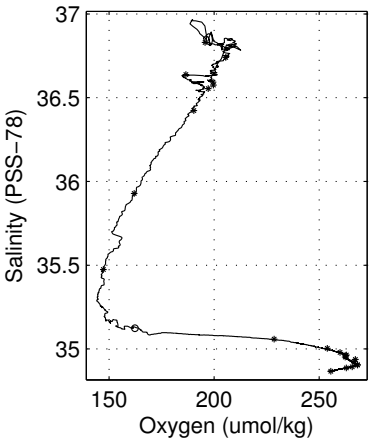
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
4967	1	2.138	1.685	34.867	255.5
4499	2	2.259	1.859	34.887	262.9
4001	3	2.277	1.935	34.894	265.7
3500	4	2.405	2.114	34.905	268.1
3500	5	2.405	2.115	34.905	268.2
3000	6	2.695	2.451	34.924	266.6
2751	7	2.919	2.696	34.937	267.2
2502	8	3.161	2.958	34.952	262.4
2251	9	3.404	3.222	34.961	262.6
2000	10	3.630	3.468	34.964	262.9
1750	11	3.940	3.797	34.979	259.9
1500	12	4.360	4.236	35.004	253.9
1251	13	5.264	5.154	35.059	228.6
1000	14	7.678	7.574	35.124	162.3
801	15	11.325	11.221	35.474	147.3
651	16	14.474	14.375	35.928	162.0
502	17	17.335	17.249	36.424	190.3
401	18	18.101	18.031	36.554	197.2
297	19	18.997	18.943	36.638	186.6
200	20	20.480	20.442	36.741	205.6
135	21	22.843	22.815	36.830	195.7
49	22	26.668	26.657	36.593	199.5
12	23	26.722	26.719	36.576	199.6

Abaco November – December 2009 RRS Discovery
CTD Station 27 (CTD027)
Latitude 26.490 N Longitude 73.510 W
27–Nov–2009 16:09 Z









Abaco November - December 2009 RRS Discovery
CTD Station 28 (CTD028)
Latitude 26.499N Longitude 73.134W
27-Nov-2009 22:13Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.026	26.026	36.702	202.1	0.004	24.310
10	26.015	26.013	36.700	202.0	0.036	24.313
20	26.026	26.021	36.700	203.1	0.072	24.310
30	26.022	26.015	36.700	202.2	0.108	24.312
50	26.032	26.021	36.700	202.9	0.181	24.310
75	24.277	24.261	36.904	223.8	0.267	25.006
100	22.597	22.576	36.889	217.8	0.334	25.490
125	21.652	21.628	36.850	207.1	0.394	25.729
150	21.010	20.981	36.805	207.5	0.450	25.874
200	19.885	19.848	36.677	206.2	0.554	26.082
250	19.487	19.441	36.650	205.6	0.652	26.169
300	18.913	18.859	36.617	198.1	0.747	26.294
400	18.122	18.052	36.557	197.3	0.923	26.452
500	17.368	17.283	36.430	191.1	1.092	26.544
600	15.693	15.597	36.126	172.4	1.253	26.707
700	13.562	13.460	35.782	159.7	1.397	26.905
800	11.169	11.066	35.441	145.2	1.522	27.107
900	9.239	9.135	35.222	144.2	1.629	27.270
1000	7.720	7.615	35.123	158.7	1.720	27.428
1100	6.598	6.492	35.087	184.5	1.796	27.557
1200	5.723	5.614	35.071	214.1	1.860	27.658
1300	5.158	5.044	35.051	231.6	1.917	27.710
1400	4.691	4.573	35.023	245.3	1.969	27.743
1500	4.466	4.340	35.011	249.8	2.020	27.758
1750	3.973	3.830	34.980	259.2	2.142	27.788
2000	3.663	3.500	34.965	262.5	2.260	27.809
2500	3.177	2.974	34.951	261.9	2.488	27.849
3000	2.729	2.485	34.925	265.6	2.706	27.871
3500	2.410	2.119	34.905	267.2	2.918	27.886
4000	2.299	1.956	34.894	266.0	3.131	27.890
4500	2.276	1.876	34.889	263.7	3.353	27.892
5000	2.202	1.742	34.873	257.5	3.586	27.890

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
5122	1	2.132	1.660	34.863	332.0
4501	2	2.275	1.874	34.889	264.2
4000	3	2.300	1.957	34.895	266.8
3500	4	2.415	2.125	34.905	268.2
3000	5	2.725	2.480	34.926	266.7
2752	6	2.938	2.714	34.938	264.2
2500	7	3.181	2.978	34.953	262.6
2249	8	3.429	3.246	34.962	262.5
2249	9	3.429	3.246	34.963	262.2
2001	10	3.663	3.500	34.965	262.9
1749	11	3.982	3.839	34.981	259.1
1500	12	4.460	4.335	35.013	250.2
1250	13	5.428	5.316	35.063	224.1
999	14	7.797	7.692	35.130	158.4
800	15	11.146	11.044	35.440	145.0
650	16	14.496	14.397	35.927	162.5
499	17	17.399	17.314	36.436	191.9
400	18	18.136	18.066	36.556	197.2
300	19	18.846	18.792	36.556	197.9
199	20	19.862	19.825	36.676	203.6
125	21	21.895	21.870	36.863	212.0
50	22	25.954	25.943	36.703	202.3
3	23	25.951	25.950	36.702	202.4

Abaco November – December 2009 RRS Discovery
CTD Station 28 (CTD028)
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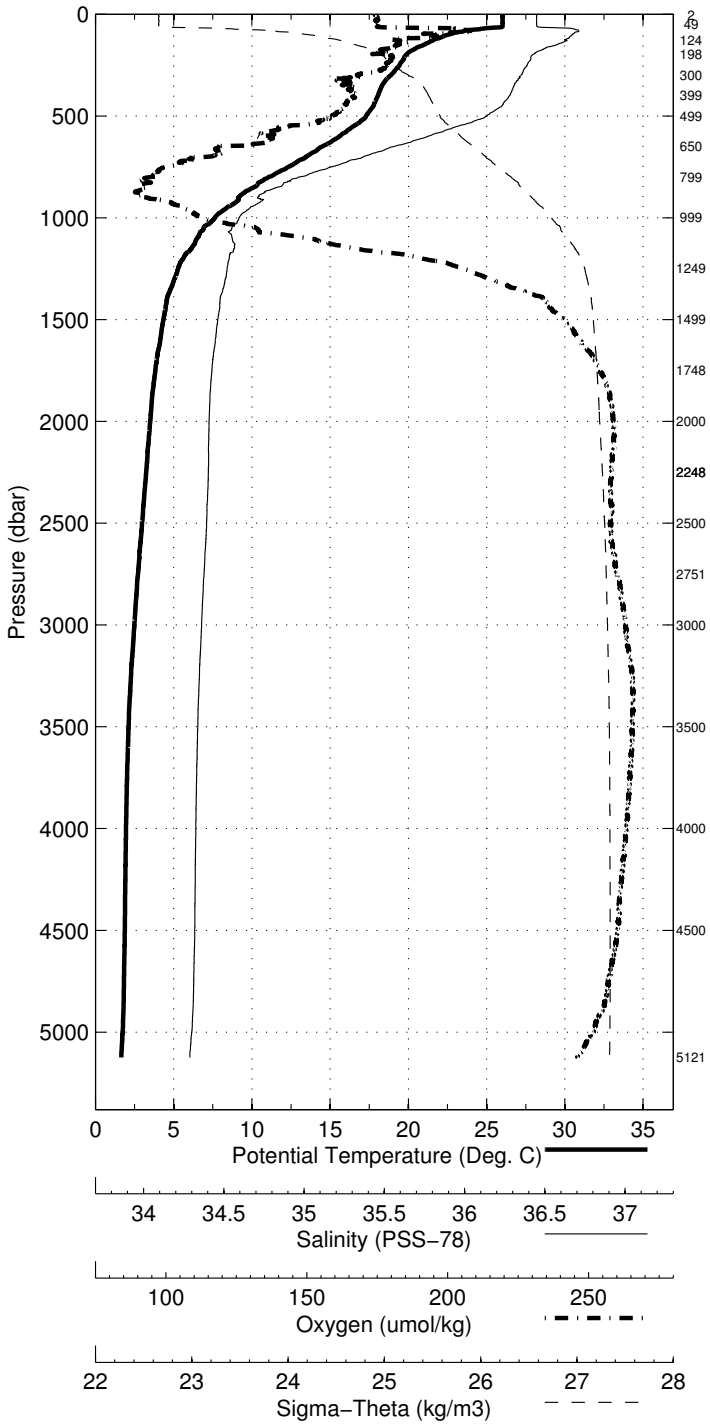
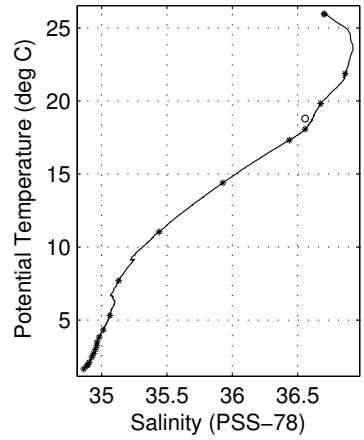
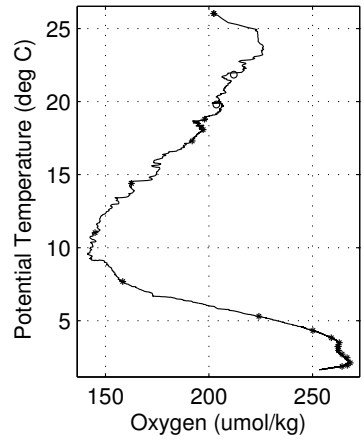
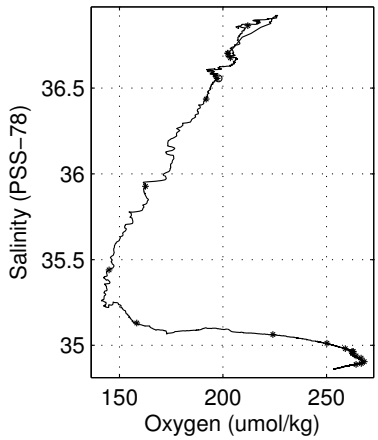
27–Nov–2009 22:13 Z







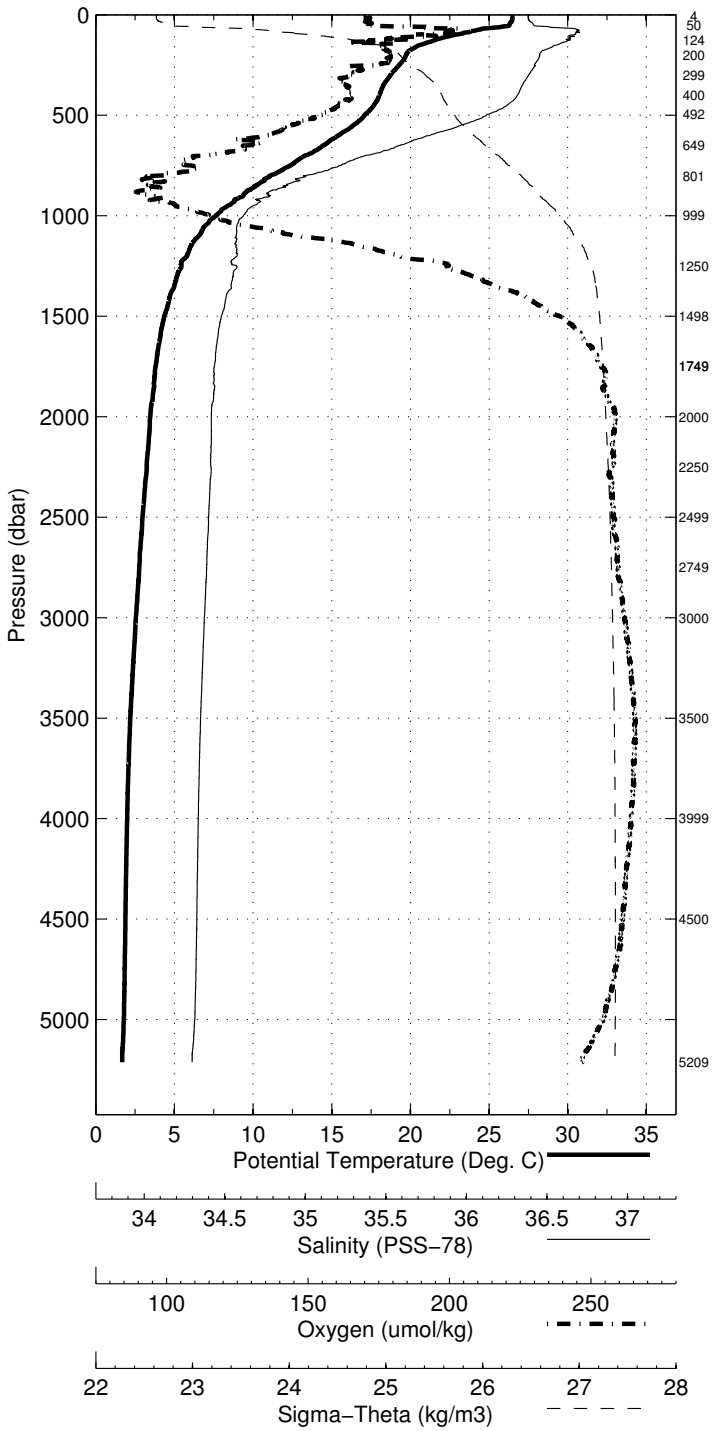


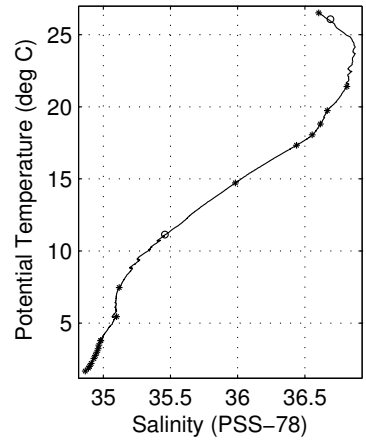
Abaco November - December 2009 RRS Discovery
CTD Station 29 (CTD029)
Latitude 26.504N Longitude 72.773W
28-Nov-2009 04:10Z

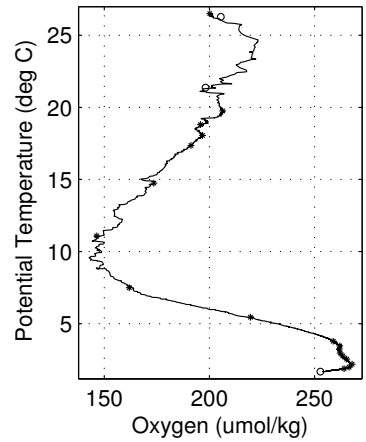
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.484	26.484	36.610	200.0	0.004	24.095
10	26.486	26.483	36.609	200.0	0.038	24.095
20	26.490	26.485	36.610	200.0	0.076	24.095
30	26.463	26.456	36.615	200.6	0.114	24.108
50	26.314	26.303	36.637	200.8	0.190	24.174
75	24.316	24.300	36.866	221.2	0.275	24.965
100	22.858	22.837	36.843	213.7	0.345	25.379
125	21.640	21.615	36.827	205.5	0.407	25.715
150	20.656	20.627	36.758	204.5	0.462	25.935
200	19.763	19.726	36.670	206.9	0.563	26.109
250	19.318	19.273	36.643	202.6	0.661	26.207
300	18.782	18.728	36.611	196.8	0.753	26.323
400	18.085	18.016	36.553	196.0	0.928	26.458
500	17.169	17.085	36.392	187.7	1.097	26.563
600	15.553	15.457	36.100	175.1	1.256	26.718
700	13.397	13.297	35.764	160.2	1.399	26.924
800	11.180	11.077	35.450	148.1	1.523	27.112
900	9.492	9.387	35.272	146.6	1.630	27.268
1000	7.716	7.612	35.131	161.9	1.720	27.435
1100	6.656	6.549	35.093	183.5	1.796	27.554
1200	5.911	5.800	35.097	208.5	1.860	27.655
1300	5.280	5.165	35.076	226.7	1.917	27.716
1400	4.827	4.707	35.042	239.9	1.970	27.743
1500	4.474	4.348	35.016	248.6	2.020	27.762
1750	3.941	3.798	34.980	259.2	2.141	27.791
2000	3.619	3.457	34.964	262.4	2.258	27.813
2500	3.174	2.971	34.951	262.2	2.485	27.848
3000	2.788	2.542	34.929	264.9	2.706	27.869
3500	2.483	2.191	34.909	267.3	2.922	27.883
4000	2.337	1.993	34.897	266.5	3.138	27.890
4500	2.281	1.881	34.889	264.1	3.361	27.892
5000	2.242	1.781	34.878	259.5	3.595	27.891

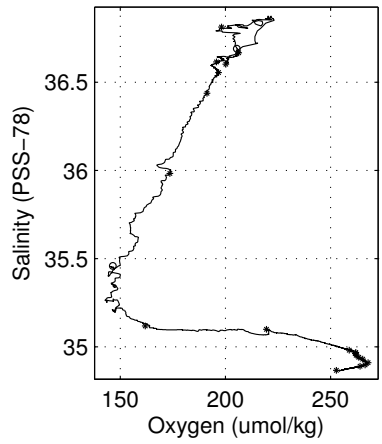
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
5209	1	2.162	1.678	34.866	252.8
4500	2	2.284	1.883	34.890	264.0
4000	3	2.337	1.993	34.897	266.5
3501	4	2.492	2.200	34.910	267.8
3000	5	2.792	2.545	34.929	265.3
2750	6	2.984	2.760	34.940	263.5
2499	7	3.184	2.981	34.952	262.2
2251	8	3.409	3.226	34.961	261.8
2000	9	3.634	3.471	34.968	262.0
1749	10	3.931	3.789	34.981	258.9
1749	11	3.932	3.790	34.981	258.9
1499	12	4.409	6.723	−999.000	NaN
1251	13	5.561	5.448	35.099	219.5
999	14	7.570	7.467	35.118	161.9
801	15	11.239	11.136	35.458	146.4
649	16	14.825	14.725	35.983	173.6
493	17	17.416	17.332	36.438	191.2
400	18	18.123	18.053	36.555	196.7
299	19	18.866	18.812	36.615	195.8
201	20	19.782	19.745	36.667	206.3
124	21	21.425	21.401	36.813	198.1
50	22	26.089	26.078	36.691	205.4
4	23	26.511	26.510	36.603	200.2

Abaco November – December 2009 RRS Discovery
CTD Station 29 (CTD029)
Latitude 26.504 N Longitude 72.773 W
28–Nov–2009 04:10 Z







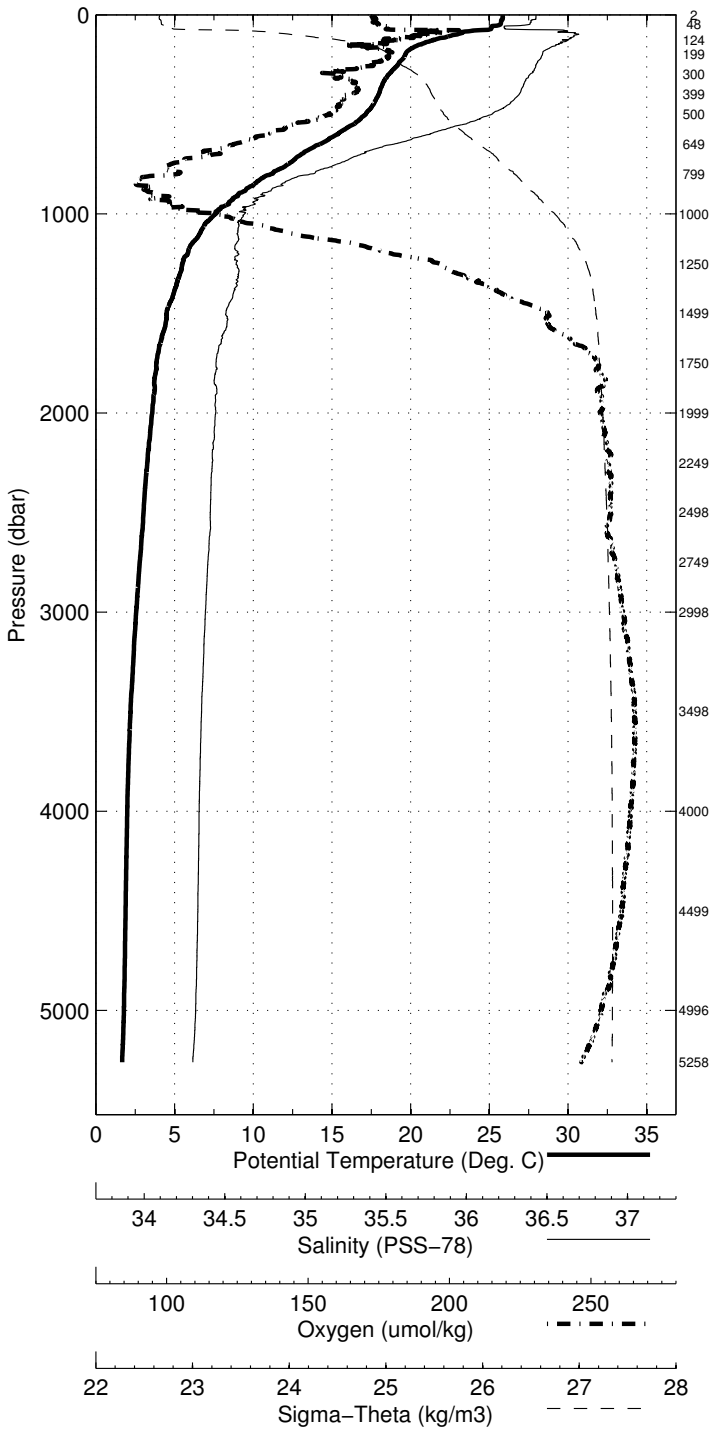


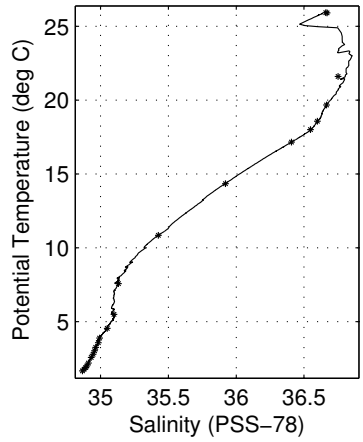
Abaco November - December 2009 RRS Discovery
CTD Station 30 (CTD030)
Latitude 26.498N Longitude 72.387W
28-Nov-2009 23:01Z

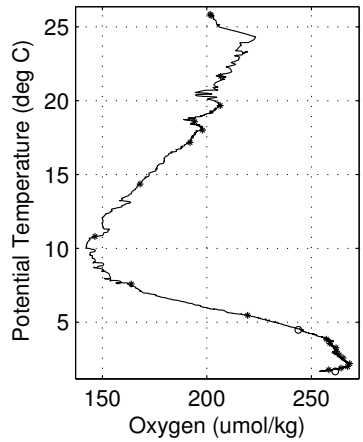
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.849	25.849	36.635	201.2	0.004	24.315
10	25.862	25.859	36.634	201.2	0.036	24.311
20	25.858	25.854	36.634	201.8	0.072	24.312
30	25.754	25.747	36.607	203.0	0.108	24.325
50	25.681	25.669	36.589	203.2	0.180	24.336
75	24.914	24.897	36.748	208.4	0.269	24.694
100	22.871	22.850	36.847	215.2	0.339	25.378
125	21.501	21.477	36.782	207.3	0.401	25.719
150	20.555	20.526	36.737	197.2	0.456	25.946
200	19.698	19.661	36.667	206.5	0.557	26.124
250	19.243	19.197	36.635	202.6	0.653	26.220
300	18.651	18.598	36.603	194.0	0.744	26.350
400	18.039	17.969	36.547	196.5	0.918	26.465
500	17.226	17.141	36.405	191.0	1.086	26.559
600	15.470	15.375	36.088	175.7	1.244	26.728
700	13.148	13.048	35.732	162.2	1.385	26.950
800	11.209	11.106	35.469	152.4	1.508	27.122
900	9.175	9.072	35.222	145.7	1.614	27.280
1000	7.702	7.597	35.132	162.2	1.704	27.437
1100	6.688	6.580	35.092	181.7	1.780	27.549
1200	5.946	5.834	35.101	206.5	1.845	27.654
1300	5.472	5.355	35.100	223.0	1.902	27.713
1400	5.069	4.947	35.074	234.1	1.956	27.740
1500	4.616	4.488	35.035	245.6	2.007	27.761
1750	3.991	3.847	34.984	258.5	2.129	27.790
2000	3.745	3.581	34.983	258.9	2.247	27.815
2500	3.233	3.029	34.955	261.3	2.476	27.847
3000	2.807	2.560	34.930	264.5	2.698	27.869
3500	2.496	2.204	34.910	267.3	2.915	27.883
4000	2.339	1.995	34.897	266.4	3.132	27.890
4500	2.294	1.893	34.891	264.1	3.355	27.893
5000	2.244	1.783	34.879	258.9	3.589	27.892

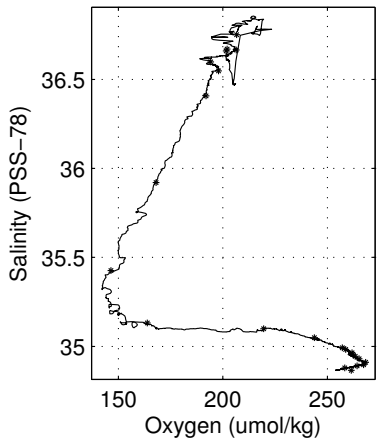
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
5258	1	2.165	1.674	34.866	261.4
4996	2	2.243	1.783	34.879	258.3
4499	3	2.295	1.894	34.890	264.1
4000	4	2.340	1.997	34.897	267.2
3499	5	2.494	2.202	34.910	268.2
2999	6	2.827	2.580	34.931	265.1
2749	7	3.023	2.798	34.944	263.3
2499	8	3.242	3.038	34.956	262.0
2249	9	3.448	3.265	34.964	261.7
1999	10	3.742	3.579	34.983	258.7
1750	11	4.034	3.890	34.992	257.2
1500	12	4.682	4.554	35.049	243.7
1250	13	5.614	5.500	35.099	219.5
1001	14	7.683	7.579	35.132	163.8
800	15	10.948	10.847	35.426	146.4
649	16	14.437	14.339	35.920	168.0
500	17	17.237	17.152	36.408	191.9
400	18	18.073	18.003	36.548	197.9
300	19	18.626	18.573	36.598	194.2
199	20	19.711	19.675	36.665	206.4
125	21	21.622	21.597	36.751	206.6
49	22	25.915	25.904	36.670	202.0
3	23	25.911	25.910	36.660	201.6

Abaco November – December 2009 RRS Discovery
CTD Station 30 (CTD030)
Latitude 26.498 N Longitude 72.387 W
28–Nov–2009 23:01 Z









Abaco November - December 2009 RRS Discovery
CTD Station 31 (CTD031)
Latitude 26.498N Longitude 71.991W
29-Nov-2009 05:05Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.187	26.187	36.633	199.8	0.004	24.207
10	26.186	26.184	36.632	199.3	0.037	24.207
20	26.173	26.169	36.663	200.9	0.074	24.235
30	26.140	26.133	36.677	201.1	0.111	24.257
50	26.099	26.088	36.680	201.3	0.184	24.274
75	24.688	24.672	36.827	216.6	0.274	24.823
100	23.047	23.026	36.863	217.8	0.346	25.340
125	21.857	21.832	36.824	210.1	0.409	25.652
150	20.575	20.546	36.740	202.4	0.465	25.943
200	19.572	19.535	36.659	201.8	0.565	26.150
250	19.056	19.011	36.631	197.4	0.660	26.266
300	18.490	18.437	36.592	191.7	0.749	26.383
400	17.947	17.877	36.534	194.8	0.921	26.478
500	16.926	16.843	36.347	185.4	1.087	26.586
600	15.081	14.988	36.022	171.8	1.243	26.763
700	13.114	13.014	35.730	163.5	1.381	26.955
800	10.844	10.743	35.409	146.9	1.501	27.141
900	8.785	8.685	35.173	144.0	1.603	27.304
1000	7.473	7.371	35.098	162.0	1.692	27.443
1100	6.443	6.337	35.095	187.7	1.766	27.584
1200	5.699	5.590	35.090	214.2	1.828	27.676
1300	5.296	5.181	35.085	226.8	1.883	27.721
1400	4.814	4.694	35.050	240.3	1.935	27.751
1500	4.445	4.320	35.013	248.9	1.985	27.762
1750	3.967	3.824	34.981	258.8	2.106	27.789
2000	3.723	3.559	34.972	261.1	2.225	27.809
2500	3.252	3.048	34.956	261.4	2.455	27.845
3000	2.824	2.577	34.930	264.3	2.678	27.868
3500	2.498	2.206	34.910	267.4	2.895	27.883
4000	2.334	1.990	34.897	266.5	3.111	27.890
4500	2.300	1.899	34.891	264.5	3.335	27.892
5000	2.278	1.816	34.883	261.4	3.569	27.892

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
5371	1	2.154	1.649	34.863	251.6
5000	2	2.278	1.816	34.884	259.9
4500	3	2.296	1.896	34.891	263.8
4000	4	2.330	1.987	34.897	267.7
3499	5	2.500	2.208	34.911	267.3
3001	6	2.816	2.569	34.931	265.9
2750	7	3.025	2.800	34.945	262.6
2501	8	3.252	3.048	34.957	261.2
2250	9	3.498	3.314	34.973	259.8
2001	10	3.695	3.532	34.972	260.9
1750	11	3.964	3.821	34.981	258.9
1500	12	4.479	4.353	35.048	240.4
1250	13	5.487	5.375	35.089	220.8
1000	14	7.388	7.286	35.097	163.4
800	15	10.657	10.558	35.403	149.3
650	16	13.890	13.795	35.839	167.5
500	17	16.896	16.813	36.342	184.6
399	18	17.948	17.879	36.533	194.8
300	19	18.498	18.445	36.590	193.0
199	20	19.560	19.524	36.653	200.3
125	21	21.655	21.630	36.819	208.7
49	22	26.136	26.125	36.667	201.0
3	23	26.137	26.136	36.661	201.0

Abaco November – December 2009 RRS Discovery
CTD Station 31 (CTD031)
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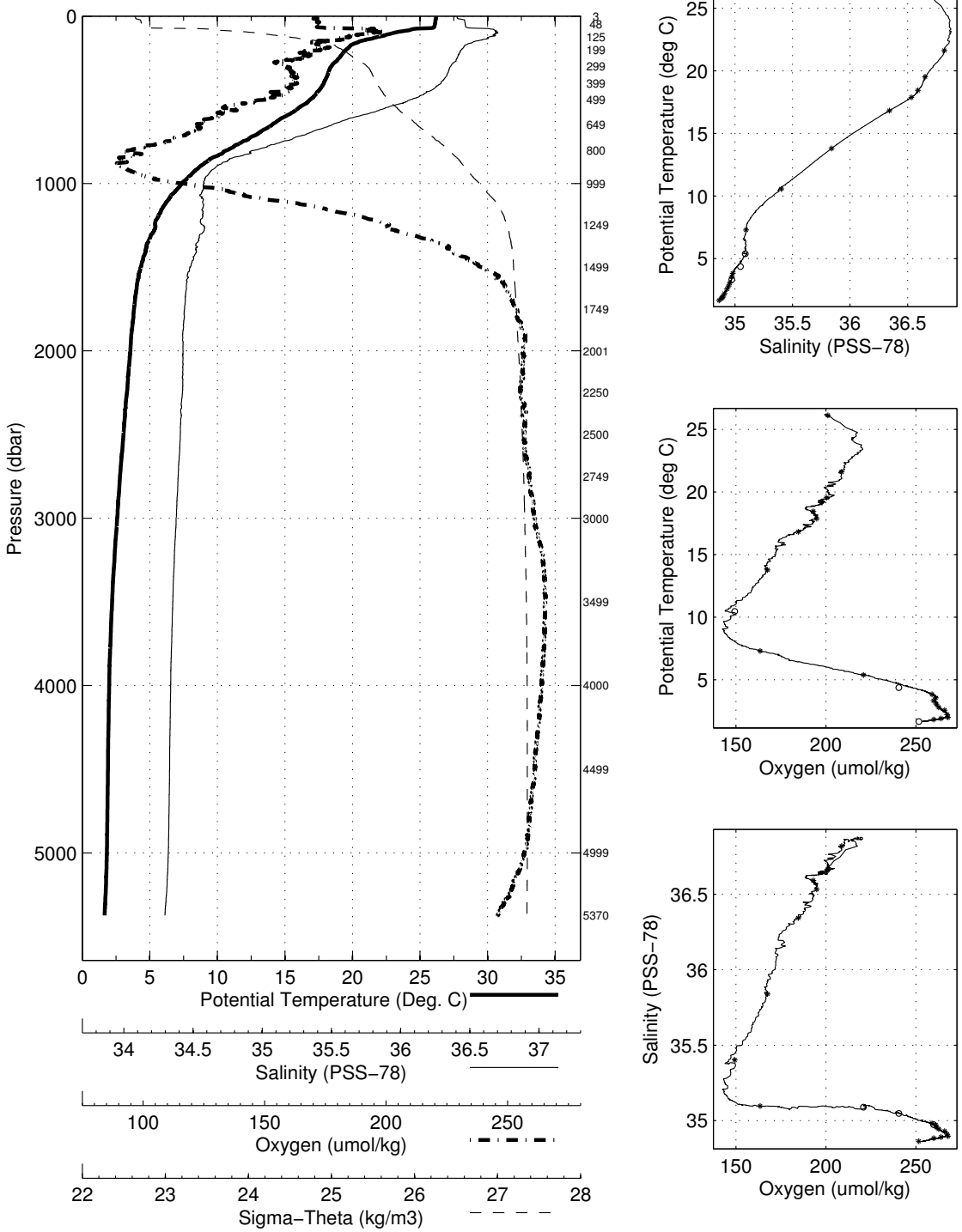
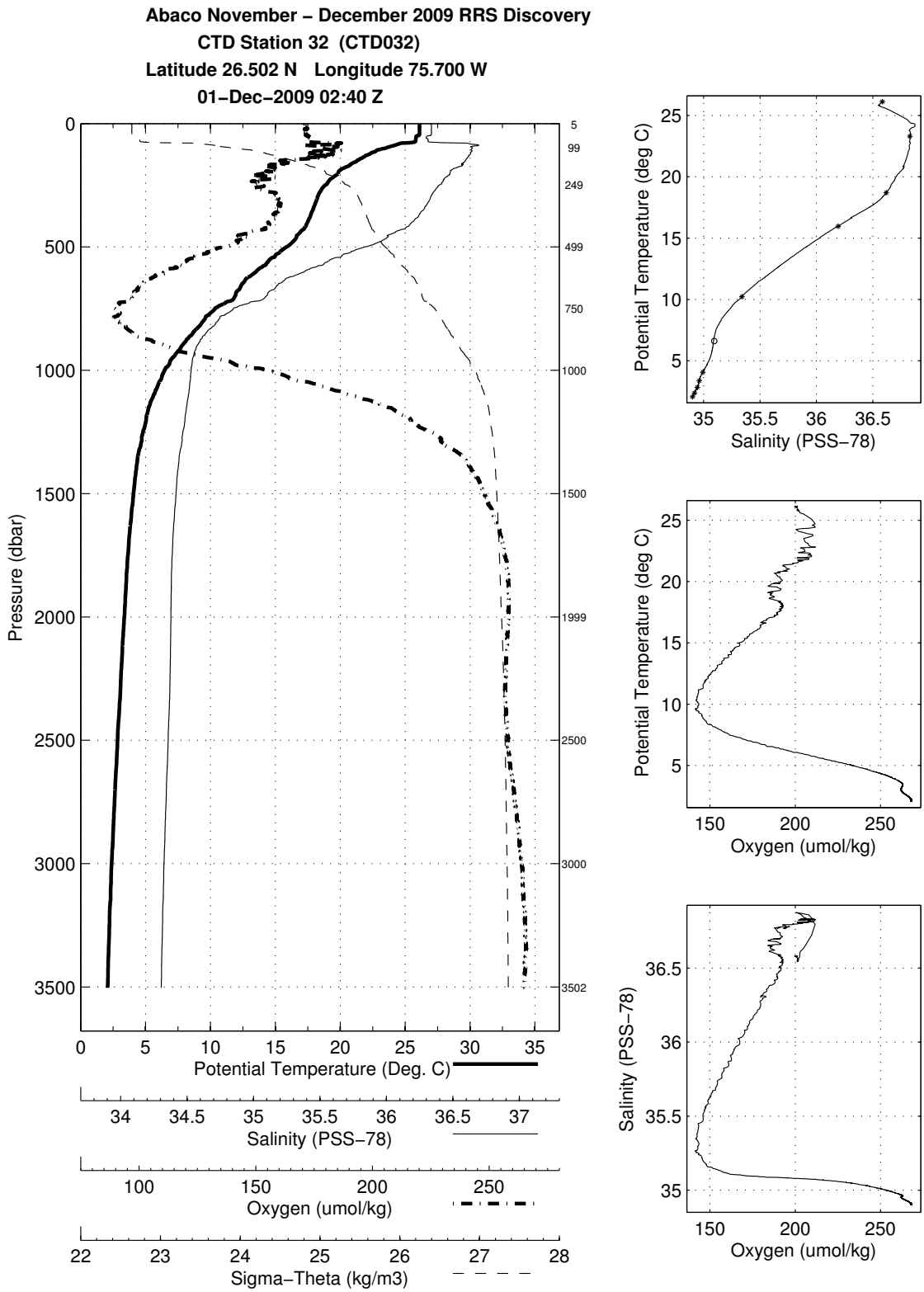


Abaco November - December 2009 RRS Discovery
CTD Station 32 (CTD032)
Latitude 26.502N Longitude 75.700W
01-Dec-2009 02:40Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.108	26.108	36.581	199.7	0.004	24.193
10	26.112	26.109	36.579	200.9	0.037	24.191
20	26.113	26.108	36.580	201.2	0.074	24.192
30	26.114	26.108	36.580	200.8	0.112	24.192
50	25.902	25.891	36.556	201.6	0.186	24.242
75	25.731	25.714	36.574	202.5	0.278	24.310
100	23.496	23.475	36.834	205.1	0.354	25.186
125	22.219	22.193	36.821	207.3	0.419	25.547
150	21.310	21.281	36.790	192.9	0.479	25.780
200	19.886	19.849	36.696	188.0	0.584	26.096
250	18.864	18.819	36.626	186.9	0.678	26.311
300	18.289	18.237	36.574	191.9	0.766	26.419
400	17.540	17.472	36.459	189.0	0.934	26.520
500	15.920	15.840	36.164	175.3	1.094	26.680
600	13.604	13.517	35.791	157.2	1.236	26.900
700	11.974	11.880	35.553	147.5	1.360	27.042
800	9.546	9.453	35.254	142.6	1.469	27.243
900	7.888	7.794	35.123	157.4	1.561	27.402
1000	6.547	6.452	35.087	188.9	1.637	27.562
1100	5.718	5.619	35.071	213.8	1.700	27.657
1200	5.144	5.040	35.049	232.8	1.755	27.710
1300	4.744	4.635	35.028	243.4	1.807	27.739
1400	4.403	4.287	35.006	251.5	1.856	27.761
1500	4.192	4.070	34.993	255.5	1.904	27.774
1750	3.779	3.638	34.970	261.7	2.020	27.799
2000	3.523	3.362	34.962	263.0	2.134	27.820
2500	3.043	2.843	34.945	262.8	2.354	27.856
3000	2.628	2.385	34.919	266.9	2.566	27.875
3500	2.363	2.074	34.901	267.8	2.774	27.887

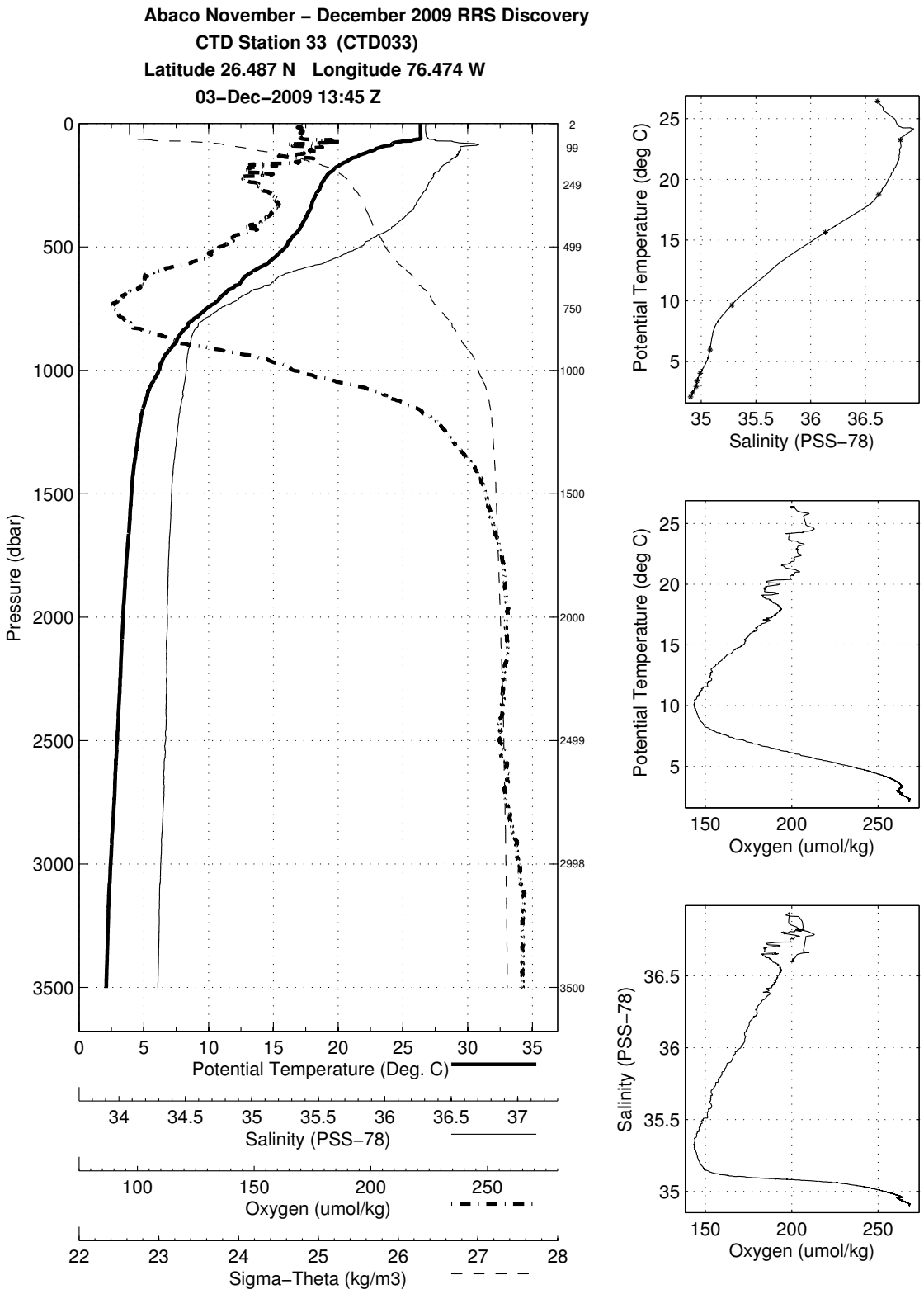
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3503	2	2.363	2.074	34.902	NaN
3000	4	2.618	2.376	34.919	NaN
2500	6	3.032	2.832	34.945	NaN
2000	8	3.532	3.371	34.963	NaN
1500	10	4.182	4.060	34.994	NaN
1000	12	6.706	6.609	35.095	NaN
750	14	10.317	10.226	35.340	NaN
500	16	16.048	15.968	36.193	NaN
250	18	18.748	18.703	36.619	NaN
99	20	23.331	23.310	36.828	NaN
5	22	26.131	26.130	36.584	NaN


Abaco November – December 2009 RRS Discovery
CTD Station 32 (CTD032)
Latitude 26.502 N Longitude 75.700 W
01–Dec–2009 02:40 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Oxygen (umol/kg)

Abaco November - December 2009 RRS Discovery
CTD Station 33 (CTD033)
Latitude 26.487N Longitude 76.474W
03-Dec-2009 13:45Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	26.360	26.360	36.604	201.1	0.004	24.131
10	26.362	26.359	36.603	200.1	0.038	24.130
20	26.363	26.358	36.602	199.1	0.076	24.130
30	26.364	26.357	36.602	201.0	0.114	24.130
50	26.374	26.363	36.607	200.6	0.189	24.132
75	24.557	24.541	36.788	213.1	0.280	24.833
100	23.028	23.007	36.820	203.4	0.352	25.313
125	21.849	21.824	36.809	199.4	0.416	25.643
150	20.771	20.742	36.757	200.8	0.472	25.903
200	19.350	19.313	36.663	190.7	0.572	26.212
250	18.723	18.678	36.617	187.7	0.663	26.340
300	18.223	18.171	36.567	193.1	0.749	26.430
400	17.361	17.293	36.428	188.5	0.916	26.540
500	16.008	15.927	36.183	175.9	1.075	26.675
600	13.491	13.405	35.759	156.2	1.219	26.898
700	11.042	10.953	35.432	146.8	1.340	27.121
800	8.770	8.681	35.184	147.6	1.443	27.313
900	7.316	7.225	35.105	168.7	1.527	27.470
1000	6.250	6.157	35.082	198.5	1.595	27.597
1100	5.375	5.279	35.063	226.4	1.654	27.692
1200	4.845	4.744	35.034	241.6	1.705	27.732
1300	4.598	4.490	35.019	247.5	1.755	27.748
1400	4.322	4.208	35.000	253.7	1.803	27.764
1500	4.168	4.046	34.990	256.9	1.851	27.774
1750	3.829	3.688	34.972	261.7	1.968	27.796
2000	3.572	3.411	34.964	263.3	2.083	27.817
2500	3.153	2.950	34.952	261.2	2.308	27.852
3000	2.678	2.435	34.921	266.9	2.524	27.872
3500	2.390	2.100	34.903	268.1	2.734	27.886

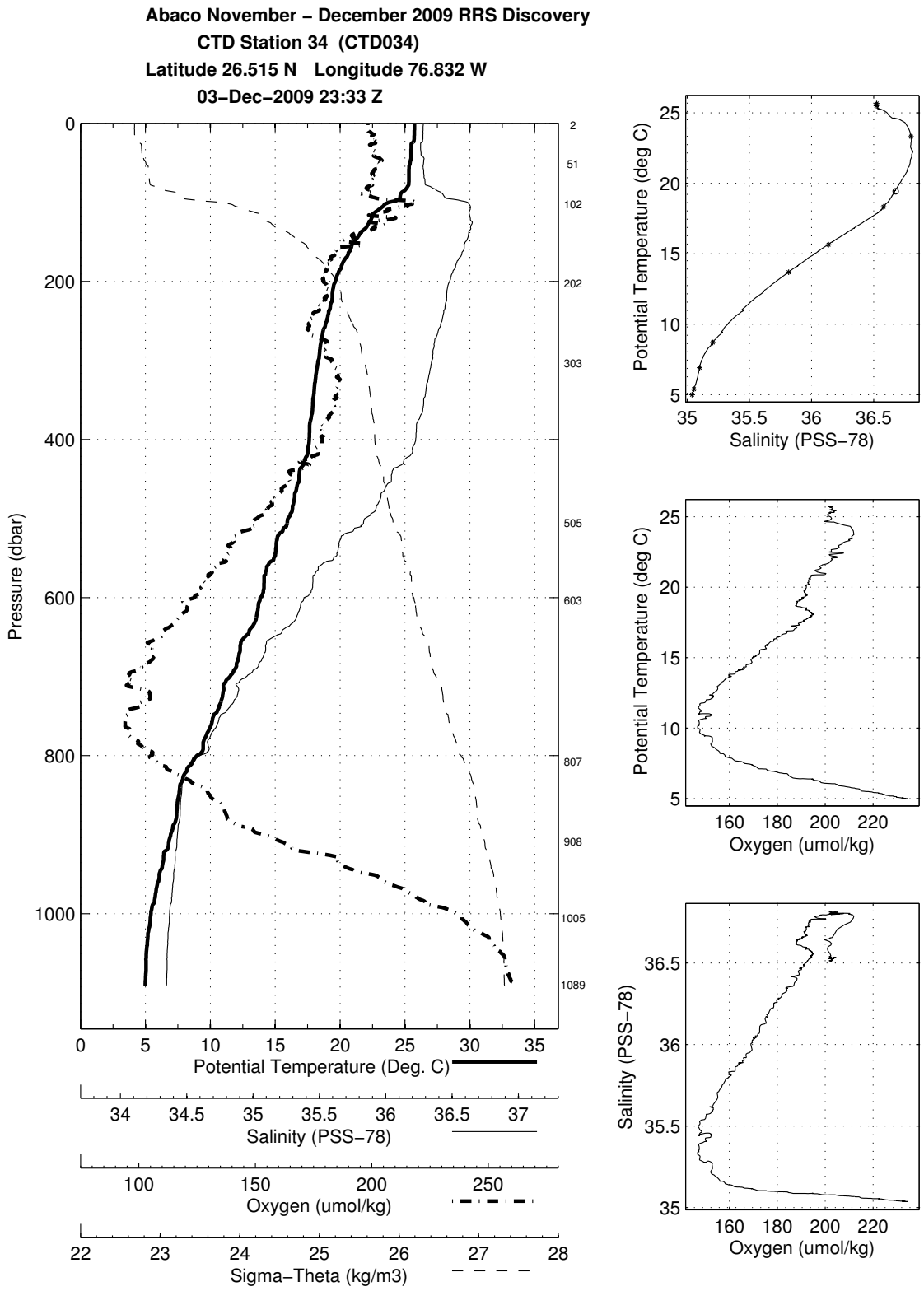
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
3500	2	2.389	2.099	34.902	NaN
2998	4	2.690	2.446	34.921	NaN
2499	6	3.160	2.957	34.955	NaN
2000	8	3.561	3.400	34.962	NaN
1500	10	4.164	4.041	34.991	NaN
1001	12	6.052	5.960	35.080	NaN
751	14	9.735	9.647	35.280	NaN
499	16	15.723	15.643	36.135	NaN
250	18	18.788	18.743	36.622	NaN
99	20	23.262	23.241	36.820	NaN
3	22	26.437	26.436	36.611	NaN


Abaco November – December 2009 RRS Discovery
CTD Station 33 (CTD033)
Latitude 26.487 N Longitude 76.474 W
03–Dec–2009 13:45 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Potential Temperature (deg C)
Oxygen (umol/kg)
Salinity (PSS–78)
Oxygen (umol/kg)

Abaco November - December 2009 RRS Discovery
CTD Station 34 (CTD034)
Latitude 26.515N Longitude 76.832W
03-Dec-2009 23:33Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}	DynHt m^2·s^{-2}	SigT kg·m^{-3}
1	25.729	25.728	36.530	201.3	0.004	24.273
10	25.727	25.725	36.528	201.4	0.036	24.273
20	25.717	25.712	36.528	202.7	0.073	24.276
30	25.486	25.479	36.514	202.3	0.109	24.339
50	25.402	25.391	36.532	203.7	0.181	24.379
75	25.314	25.298	36.541	201.8	0.269	24.415
100	23.766	23.745	36.789	212.0	0.352	25.072
125	22.297	22.272	36.815	201.9	0.419	25.521
150	21.112	21.083	36.775	196.7	0.478	25.823
200	19.668	19.631	36.683	191.3	0.581	26.144
250	19.021	18.976	36.639	188.2	0.676	26.281
300	18.365	18.312	36.580	193.3	0.764	26.404
400	17.697	17.628	36.486	191.1	0.933	26.503
500	16.061	15.980	36.190	176.3	1.094	26.668
600	13.934	13.846	35.836	162.4	1.237	26.866
700	11.597	11.506	35.501	147.1	1.364	27.072
800	9.054	8.963	35.230	152.6	1.470	27.304
900	7.035	6.946	35.100	178.1	1.550	27.505
1000	5.509	5.421	35.055	221.5	1.613	27.669

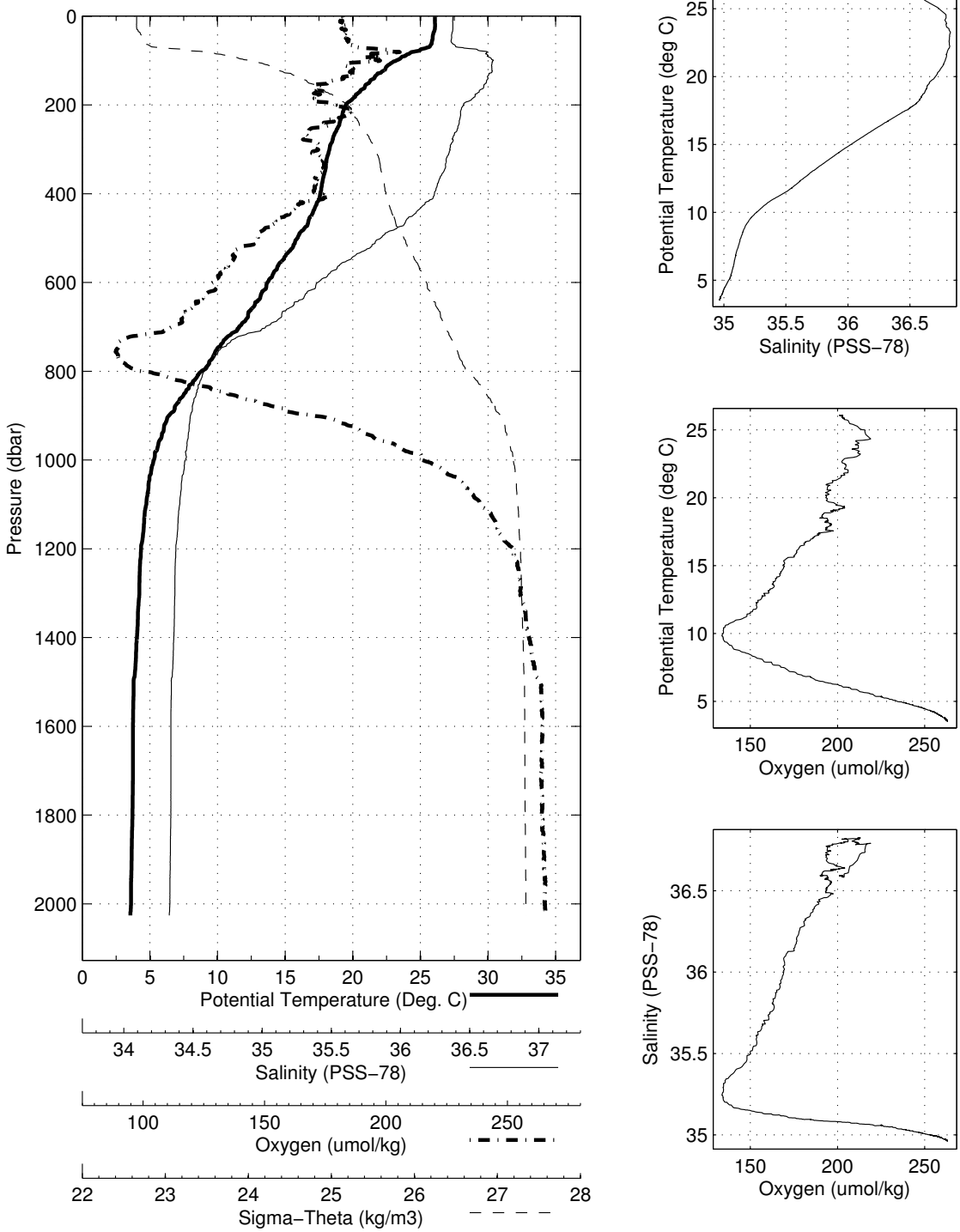
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen μmol·kg^{-1}
1090	2	5.095	5.001	35.039	NaN
1005	4	5.489	5.401	35.054	NaN
908	6	7.007	6.917	35.100	NaN
807	8	8.796	8.706	35.206	NaN
604	10	13.787	13.699	35.817	NaN
505	12	15.730	15.650	36.137	NaN
304	14	18.392	18.339	36.580	NaN
203	16	19.470	19.432	36.677	NaN
102	18	23.332	23.311	36.801	NaN
52	20	25.513	25.502	36.522	NaN
3	22	25.672	25.671	36.524	NaN


Abaco November – December 2009 RRS Discovery
CTD Station 34 (CTD034)
Latitude 26.515 N Longitude 76.832 W
03–Dec–2009 23:33 Z
Pressure (dbar)
Potential Temperature (Deg. C)
Salinity (PSS–78)
Oxygen (umol/kg)
Sigma–Theta (kg/m3)
Potential Temperature (deg C)
Salinity (PSS–78)
Oxygen (umol/kg)

Abaco November - December 2009 RRS Discovery
CTD Station 35 (CTD035)
Latitude 26.528N Longitude 76.766W
04-Dec-2009 02:33Z

Pressure	Temp90	PoTemp90	Salinity	Oxygen	DynHt	SigT
dbar	°C	°C	PSS-78	μmol·kg^{-1}	m^2·s^{-2}	kg·m^{-3}
1	26.077	26.077	36.594	202.0	0.004	24.212
10	26.080	26.078	36.592	201.8	0.037	24.211
20	26.083	26.078	36.593	202.9	0.074	24.211
30	26.071	26.064	36.593	202.4	0.111	24.215
50	25.918	25.907	36.586	202.8	0.185	24.260
75	25.017	25.001	36.733	214.0	0.275	24.651
100	23.233	23.212	36.825	213.1	0.350	25.256
125	22.172	22.147	36.818	204.0	0.414	25.558
150	21.238	21.209	36.784	197.2	0.473	25.795
200	19.534	19.498	36.656	199.9	0.577	26.159
250	18.939	18.894	36.622	195.6	0.670	26.289
300	18.328	18.275	36.575	194.5	0.759	26.410
400	17.665	17.596	36.488	195.4	0.927	26.512
500	15.990	15.909	36.179	176.3	1.088	26.676
600	13.780	13.693	35.817	163.0	1.232	26.883
700	11.684	11.592	35.517	150.8	1.358	27.068
800	8.902	8.813	35.165	141.6	1.466	27.278
900	6.477	6.392	35.085	193.0	1.546	27.569
1000	5.383	5.296	35.056	225.8	1.604	27.685
1100	4.827	4.735	35.024	243.2	1.655	27.725
1200	4.444	4.347	35.001	253.1	1.704	27.750
1300	4.321	4.215	34.995	255.3	1.751	27.760
1400	4.152	4.039	34.989	257.8	1.798	27.774
1500	3.913	3.794	34.975	261.3	1.844	27.788
1750	3.873	3.732	34.973	261.6	1.959	27.792
2000	3.770	3.606	34.967	262.6	2.077	27.800

Abaco November – December 2009 RRS Discovery
CTD Station 35 (CTD035)
Latitude 26.528 N Longitude 76.766 W
04–Dec–2009 02:33 Z



B WOCE Summary File

Table 14: Abaco Cruise – WOCE Summary File

SHIP/CRS EXPOCODE	WOCE SECT	STN	CAST	CAST TYPE	CAST DATE	UTC TIME	EVENT CODE	LAT	LON	NAV	UNC DPH	HT ABV BTM	WIRE OUT	MAX PRS	NO. BTLS	PARA-METERS	COMMENTS
WBTSD	AB0911	1	1	ROS	11222013	0134	BE	26.431N	78.664W	GPS							
WBTSD	AB0911	1	1	ROS	11222013	0134	BO	26.431N	78.664W	GPS	744	21	744	749	24	1,2	
WBTSD	AB0911	1	1	ROS	11222013	0301	EN	26.431N	78.664W	GPS							
WBTSD	AB0911	2	1	ROS	11222013	0356	BE	26.333N	78.719W	GPS							
WBTSD	AB0911	2	1	ROS	11222013	0356	BO	26.333N	78.719W	GPS	671	20	670	675	10	1,2	
WBTSD	AB0911	2	1	ROS	11222013	0448	EN	26.333N	78.719W	GPS							
WBTSD	AB0911	3	1	ROS	11222013	0546	BE	26.254N	78.767W	GPS							
WBTSD	AB0911	3	1	ROS	11222013	0546	BO	26.254N	78.767W	GPS	493	28	495	496	7	1,2	
WBTSD	AB0911	3	1	ROS	11222013	0636	EN	26.254N	78.767W	GPS							
WBTSD	AB0911	4	1	ROS	11222013	0721	BE	26.172N	78.799W	GPS							
WBTSD	AB0911	4	1	ROS	11222013	0721	BO	26.172N	78.799W	GPS	435	22	441	437	7	1,2	
WBTSD	AB0911	4	1	ROS	11222013	0810	EN	26.172N	78.799W	GPS							
WBTSD	AB0911	5	1	ROS	11222013	0901	BE	26.064N	78.850W	GPS							
WBTSD	AB0911	5	1	ROS	11222013	0901	BO	26.064N	78.850W	GPS	275	23	275	276	7	1,2	
WBTSD	AB0911	5	1	ROS	11222013	0938	EN	26.064N	78.850W	GPS							
WBTSD	AB0911	6	1	ROS	11222013	2156	BE	25.958N	76.897W	GPS							
WBTSD	AB0911	6	1	ROS	11222013	2156	BO	25.958N	76.897W	GPS	2959	334	3445	3500	11	1,2	
WBTSD	AB0911	6	1	ROS	11232013	0114	EN	25.958N	76.897W	GPS							
WBTSD	AB0911	7	1	ROS	11232013	0146	BE	25.960N	76.894W	GPS							
WBTSD	AB0911	7	1	ROS	11232013	0146	BO	25.960N	76.894W	GPS	3449	360	3446	3501	11	1,2	
WBTSD	AB0911	7	1	ROS	11232013	0458	EN	25.960N	76.894W	GPS							
WBTSD	AB0911	8	1	ROS	11232013	0533	BE	25.967N	76.897W	GPS							
WBTSD	AB0911	8	1	ROS	11232013	0533	BO	25.967N	76.897W	GPS	3503	362	3500	3557	11	1,2	
WBTSD	AB0911	8	1	ROS	11232013	0903	EN	25.967N	76.897W	GPS							
WBTSD	AB0911	9	1	ROS	11232013	1234	BE	26.525N	76.882W	GPS							
WBTSD	AB0911	9	1	ROS	11232013	1234	BO	26.525N	76.882W	GPS	443	26	441	446	11	1,2	
WBTSD	AB0911	9	1	ROS	11232013	1309	EN	26.525N	76.882W	GPS							
WBTSD	AB0911	10	1	ROS	11232013	1353	BE	26.513N	76.829W	GPS							
WBTSD	AB0911	10	1	ROS	11232013	1353	BO	26.513N	76.829W	GPS	1121	28	-9	1132	12	1,2	
WBTSD	AB0911	10	1	ROS	11232013	1455	EN	26.513N	76.829W	GPS							
WBTSD	AB0911	11	1	ROS	11232013	1623	BE	26.500N	76.744W	GPS							
WBTSD	AB0911	11	1	ROS	11232013	1623	BO	26.500N	76.744W	GPS	3829	18	3830	3891	20	1,2	
WBTSD	AB0911	11	1	ROS	11232013	1923	EN	26.500N	76.744W	GPS							
WBTSD	AB0911	12	1	ROS	11232013	2144	BE	26.498N	76.655W	GPS							
WBTSD	AB0911	12	1	ROS	11232013	2144	BO	26.498N	76.655W	GPS	4574	22	4497	4655	23	1,2	
WBTSD	AB0911	12	1	ROS	11242013	0119	EN	26.498N	76.655W	GPS							
WBTSD	AB0911	13	1	ROS	11242013	1422	BE	26.501N	76.567W	GPS							
WBTSD	AB0911	13	1	ROS	11242013	1422	BO	26.501N	76.567W	GPS	4807	25	4830	4895	23	1,2	
WBTSD	AB0911	13	1	ROS	11242013	1754	EN	26.501N	76.567W	GPS							
WBTSD	AB0911	14	1	ROS	11242013	1923	BE	26.499N	76.476W	GPS							
WBTSD	AB0911	14	1	ROS	11242013	1923	BO	26.499N	76.476W	GPS	4816	22	4859	4906	22	1,2	
WBTSD	AB0911	14	1	ROS	11242013	2307	EN	26.499N	76.476W	GPS							
WBTSD	AB0911	15	1	ROS	11252013	0027	BE	26.501N	76.345W	GPS							
WBTSD	AB0911	15	1	ROS	11252013	0027	BO	26.501N	76.345W	GPS	4840	20	4882	4931	22	1,2	
WBTSD	AB0911	15	1	ROS	11252013	0404	EN	26.501N	76.345W	GPS							
WBTSD	AB0911	16	1	ROS	11252013	0507	BE	26.491N	76.211W	GPS							
WBTSD	AB0911	16	1	ROS	11252013	0507	BO	26.491N	76.211W	GPS	4787	26	4780	4874	23	1,2	
WBTSD	AB0911	16	1	ROS	11252013	0903	EN	26.491N	76.211W	GPS							
WBTSD	AB0911	17	1	ROS	11252013	1229	BE	26.496N	76.085W	GPS							
WBTSD	AB0911	17	1	ROS	11252013	1229	BO	26.496N	76.085W	GPS	4782	17	4775	4871	22	1,2	
WBTSD	AB0911	17	1	ROS	11252013	1619	EN	26.496N	76.085W	GPS							
WBTSD	AB0911	18	1	ROS	11252013	1752	BE	26.493N	75.900W	GPS							
WBTSD	AB0911	18	1	ROS	11252013	1752	BO	26.493N	75.900W	GPS	4723	20	4714	4809	23	1,2	
WBTSD	AB0911	18	1	ROS	11252013	2137	EN	26.493N	75.900W	GPS							
WBTSD	AB0911	19	1	ROS	11252013	2255	BE	26.493N	75.711W	GPS							
WBTSD	AB0911	19	1	ROS	11252013	2255	BO	26.493N	75.711W	GPS	4669	20	4664	4753	23	1,2	
WBTSD	AB0911	19	1	ROS	11262013	0218	EN	26.493N	75.711W	GPS							
WBTSD	AB0911	20	1	ROS	11262013	0333	BE	26.495N	75.497W	GPS							
WBTSD	AB0911	20	1	ROS	11262013	0333	BO	26.495N	75.497W	GPS	4664	21	4680	4749	23	1,2	
WBTSD	AB0911	20	1	ROS	11262013	0703	EN	26.495N	75.497W	GPS							
WBTSD	AB0911	21	1	ROS	11262013	0817	BE	26.497N	75.300W	GPS							
WBTSD	AB0911	21	1	ROS	11262013	0817	BO	26.497N	75.300W	GPS	4608	28	-9	4691	23	1,2	

WBTSD	AB0911	21	1	ROS	11262013	1200	EN	26.497N	75.300W	GPS						
WBTSD	AB0911	22	1	ROS	11262013	1341	BE	26.509N	75.080W	GPS						
WBTSD	AB0911	22	1	ROS	11262013	1341	BO	26.509N	75.080W	GPS	4588	20	4590	4670	23	1,2
WBTSD	AB0911	22	1	ROS	11262013	1703	EN	26.509N	75.080W	GPS						
WBTSD	AB0911	23	1	ROS	11262013	1834	BE	26.510N	74.802W	GPS						
WBTSD	AB0911	23	1	ROS	11262013	1834	BO	26.510N	74.802W	GPS	4524	19	4516	4604	23	1,2
WBTSD	AB0911	23	1	ROS	11262013	2200	EN	26.510N	74.802W	GPS						
WBTSD	AB0911	24	1	ROS	11262013	2349	BE	26.505N	74.518W	GPS						
WBTSD	AB0911	24	1	ROS	11262013	2349	BO	26.505N	74.518W	GPS	4469	20	4466	4548	23	1,2
WBTSD	AB0911	24	1	ROS	11272013	0303	EN	26.505N	74.518W	GPS						
WBTSD	AB0911	25	1	ROS	11272013	0440	BE	26.513N	74.242W	GPS						
WBTSD	AB0911	25	1	ROS	11272013	0440	BO	26.513N	74.242W	GPS	4503	22	4499	4582	23	1,2
WBTSD	AB0911	25	1	ROS	11272013	0804	EN	26.513N	74.242W	GPS						
WBTSD	AB0911	26	1	ROS	11272013	1013	BE	26.499N	73.873W	GPS						
WBTSD	AB0911	26	1	ROS	11272013	1013	BO	26.499N	73.873W	GPS	4714	26	4715	4801	23	1,2
WBTSD	AB0911	26	1	ROS	11272013	1341	EN	26.499N	73.873W	GPS						
WBTSD	AB0911	27	1	ROS	11272013	1609	BE	26.488N	73.515W	GPS						
WBTSD	AB0911	27	1	ROS	11272013	1609	BO	26.488N	73.515W	GPS	4878	23	4873	4969	23	1,2
WBTSD	AB0911	27	1	ROS	11272013	1946	EN	26.488N	73.515W	GPS						
WBTSD	AB0911	28	1	ROS	11272013	2213	BE	26.500N	73.137W	GPS						
WBTSD	AB0911	28	1	ROS	11272013	2213	BO	26.500N	73.137W	GPS	5028	20	5019	5124	23	1,2
WBTSD	AB0911	28	1	ROS	11282013	0158	EN	26.500N	73.137W	GPS						
WBTSD	AB0911	29	1	ROS	11282013	0410	BE	26.504N	72.778W	GPS						
WBTSD	AB0911	29	1	ROS	11282013	0410	BO	26.504N	72.778W	GPS	5113	22	5110	5212	23	1,2
WBTSD	AB0911	29	1	ROS	11282013	0754	EN	26.504N	72.778W	GPS						
WBTSD	AB0911	30	1	ROS	11282013	2301	BE	26.499N	72.390W	GPS						
WBTSD	AB0911	30	1	ROS	11282013	2301	BO	26.499N	72.390W	GPS	5160	20	5159	5260	23	1,2
WBTSD	AB0911	30	1	ROS	11292013	0246	EN	26.499N	72.390W	GPS						
WBTSD	AB0911	31	1	ROS	11292013	0505	BE	26.497N	71.991W	GPS						
WBTSD	AB0911	31	1	ROS	11292013	0505	BO	26.497N	71.991W	GPS	5269	21	5260	5373	23	1,2
WBTSD	AB0911	31	1	ROS	11292013	0901	EN	26.497N	71.991W	GPS						
WBTSD	AB0911	32	1	ROS	12012013	0240	BE	26.502N	75.700W	GPS						
WBTSD	AB0911	32	1	ROS	12012013	0240	BO	26.502N	75.700W	GPS	3451	354	3447	3503	11	1,2
WBTSD	AB0911	32	1	ROS	12012013	0554	EN	26.502N	75.700W	GPS						
WBTSD	AB0911	33	1	ROS	12032013	1345	BE	26.483N	76.474W	GPS						
WBTSD	AB0911	33	1	ROS	12032013	1345	BO	26.483N	76.474W	GPS	3449	343	3443	3502	11	1,2
WBTSD	AB0911	33	1	ROS	12032013	1653	EN	26.483N	76.474W	GPS						
WBTSD	AB0911	34	1	ROS	12032013	2333	BE	26.515N	76.832W	GPS						
WBTSD	AB0911	34	1	ROS	12032013	2333	BO	26.515N	76.832W	GPS	1080	27	1080	1091	11	1,2
WBTSD	AB0911	34	1	ROS	12042013	0132	EN	26.515N	76.832W	GPS						

C WOCE Bottle Summary File

Table 15: Abaco Cruise – WOCE Bottle Summary File

SHIP/CRS EXPOCODE	WOCE SECT	STN	CAST	BTL#	BTL# Flag	DATE	UTC TIME	LAT	LON	DEPTH	CTD PRS	CTD TMP	CTD SAL	SAL FLAG	BTL SAL	SAL FLAG	CTD OXY	OXY FLAG	BTL OXY	OXY FLAG
WBTSD	AB0911	1	1	1	2	20091122	0222	26.448N	78.667W	744	750	10.867	35.410	2	35.415	2	142.1	2	148.1	4
WBTSD	AB0911	1	1	2	2	20091122	0222	26.448N	78.667W	698	704	11.624	35.506	2	35.501	4	146.5	2	146.1	2
WBTSD	AB0911	1	1	3	2	20091122	0222	26.448N	78.667W	599	604	13.760	35.812	2	35.812	2	158.9	2	159.1	6
WBTSD	AB0911	1	1	4	2	20091122	0222	26.448N	78.667W	500	504	16.081	36.191	2	36.187	2	174.8	2	175.1	2
WBTSD	AB0911	1	1	5	2	20091122	0222	26.448N	78.667W	400	403	17.531	36.454	2	36.453	2	190.0	2	190.6	2
WBTSD	AB0911	1	1	6	2	20091122	0222	26.448N	78.667W	301	303	18.434	36.547	2	36.558	4	179.5	2	186.5	4
WBTSD	AB0911	1	1	7	2	20091122	0222	26.448N	78.667W	202	204	20.212	36.704	2	36.698	4	197.1	2	198.5	2
WBTSD	AB0911	1	1	8	2	20091122	0222	26.448N	78.667W	127	128	22.707	36.815	2	36.823	2	194.3	2	196.0	2
WBTSD	AB0911	1	1	9	2	20091122	0222	26.448N	78.667W	52	53	26.722	36.452	2	36.458	2	193.2	2	193.8	2
WBTSD	AB0911	1	1	10	2	20091122	0222	26.448N	78.667W	3	3	27.005	36.378	2	36.389	4	195.7	2	195.9	2
WBTSD	AB0911	1	1	11	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.378	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	12	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.378	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	13	2	20091122	0222	26.448N	78.667W	3	3	27.003	36.378	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	14	2	20091122	0222	26.448N	78.667W	3	3	27.002	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	15	2	20091122	0222	26.448N	78.667W	3	3	27.001	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	16	2	20091122	0222	26.448N	78.667W	3	3	27.005	36.378	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	17	2	20091122	0222	26.448N	78.667W	3	3	27.006	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	18	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	19	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	20	2	20091122	0222	26.448N	78.667W	3	3	27.003	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	21	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	22	2	20091122	0222	26.448N	78.667W	3	3	27.004	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	23	2	20091122	0222	26.448N	78.667W	3	3	27.005	36.379	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	1	1	24	2	20091122	0222	26.448N	78.667W	3	3	27.007	36.378	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	1	2	20091122	0425	26.333N	78.717W	671	676	10.799	35.356	2	35.358	2	135.1	2	135.7	2
WBTSD	AB0911	2	1	2	2	20091122	0425	26.333N	78.717W	593	598	13.235	35.735	2	35.732	2	155.2	2	154.7	2
WBTSD	AB0911	2	1	3	2	20091122	0425	26.333N	78.717W	495	499	15.137	36.034	2	36.031	2	169.2	2	168.7	2
WBTSD	AB0911	2	1	4	2	20091122	0425	26.333N	78.717W	396	399	17.320	36.419	2	36.415	2	188.0	2	188.7	2
WBTSD	AB0911	2	1	5	2	20091122	0425	26.333N	78.717W	298	300	18.389	36.579	2	36.574	4	191.4	2	191.9	2
WBTSD	AB0911	2	1	6	2	20091122	0425	26.333N	78.717W	198	200	20.509	36.735	2	36.731	2	195.0	2	193.5	2
WBTSD	AB0911	2	1	7	2	20091122	0425	26.333N	78.717W	124	125	24.085	36.774	2	36.797	4	193.8	2	193.2	4
WBTSD	AB0911	2	1	8	2	20091122	0425	26.333N	78.717W	49	49	26.973	36.467	2	36.469	2	196.1	2	195.3	2
WBTSD	AB0911	2	1	9	2	20091122	0425	26.333N	78.717W	49	49	26.970	36.468	2	36.469	2	196.1	2	195.3	2
WBTSD	AB0911	2	1	10	2	20091122	0425	26.333N	78.717W	4	4	27.055	36.467	2	36.468	2	195.6	2	195.7	2
WBTSD	AB0911	2	1	11	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	12	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	13	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	14	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	15	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	16	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	17	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	18	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	19	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	20	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	21	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	22	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	23	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	2	1	24	2	20091122	0425	26.333N	78.717W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	1	2	20091122	0608	26.251N	78.767W	493	497	13.920	35.842	2	35.842	2	158.7	2	158.9	2
WBTSD	AB0911	3	1	2	2	20091122	0608	26.251N	78.767W	397	400	15.889	36.165	2	36.163	2	174.8	2	173.7	2
WBTSD	AB0911	3	1	3	2	20091122	0608	26.251N	78.767W	299	301	18.074	36.534	2	36.530	4	188.4	2	204.7	4
WBTSD	AB0911	3	1	4	2	20091122	0608	26.251N	78.767W	198	200	21.545	36.791	2	-999.000	9	194.0	2	193.4	2
WBTSD	AB0911	3	1	5	2	20091122	0608	26.251N	78.767W	124	125	24.633	36.707	2	36.720	4	187.7	2	185.9	6
WBTSD	AB0911	3	1	6	2	20091122	0608	26.251N	78.767W	49	50	26.940	36.472	2	36.475	2	194.5	2	194.5	2
WBTSD	AB0911	3	1	7	2	20091122	0608	26.251N	78.767W	7	7	26.960	36.462	2	36.462	2	196.8	2	196.3	2
WBTSD	AB0911	3	1	8	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	9	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	10	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	11	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	12	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	13	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	14	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9

WBTSD	AB0911	3	1	15	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	16	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	17	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	18	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	19	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	20	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	21	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	22	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	23	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	3	1	24	2	20091122	0608	26.251N	78.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	1	2	20091122	0751	26.168N	78.800W	435	439	14.384	35.862	2	35.863	2	142.5	2	142.7	2
WBTSD	AB0911	4	1	2	2	20091122	0751	26.168N	78.800W	394	397	15.203	36.049	2	36.049	2	168.1	2	168.1	6
WBTSD	AB0911	4	1	3	2	20091122	0751	26.168N	78.800W	299	301	17.135	36.387	2	36.383	2	185.9	2	185.2	2
WBTSD	AB0911	4	1	4	2	20091122	0751	26.168N	78.800W	199	201	21.931	36.805	2	36.792	4	196.8	2	196.3	2
WBTSD	AB0911	4	1	5	2	20091122	0751	26.168N	78.800W	123	124	25.013	36.677	2	36.692	4	191.2	2	191.2	2
WBTSD	AB0911	4	1	6	2	20091122	0751	26.168N	78.800W	49	50	26.946	36.463	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	7	2	20091122	0751	26.168N	78.800W	4	4	26.920	36.467	2	36.466	2	195.6	2	196.2	2
WBTSD	AB0911	4	1	8	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	9	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	10	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	11	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	12	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	13	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	14	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	15	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	16	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	17	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	18	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	19	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	20	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	21	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	22	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	23	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	4	1	24	2	20091122	0751	26.168N	78.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	1	2	20091122	0918	26.065N	78.849W	275	277	18.249	36.498	2	36.500	2	164.5	2	164.8	6
WBTSD	AB0911	5	1	2	2	20091122	0918	26.065N	78.849W	248	250	19.067	36.601	2	36.595	2	164.4	2	164.2	2
WBTSD	AB0911	5	1	3	2	20091122	0918	26.065N	78.849W	193	194	21.054	36.780	2	36.770	4	155.2	2	155.3	2
WBTSD	AB0911	5	1	4	2	20091122	0918	26.065N	78.849W	132	133	23.786	36.820	2	36.830	4	175.8	2	170.5	4
WBTSD	AB0911	5	1	5	2	20091122	0918	26.065N	78.849W	99	100	25.842	36.625	2	36.641	4	179.1	2	179.5	2
WBTSD	AB0911	5	1	6	2	20091122	0918	26.065N	78.849W	50	50	26.918	36.474	2	36.475	2	195.2	2	195.7	2
WBTSD	AB0911	5	1	7	2	20091122	0918	26.065N	78.849W	5	5	26.915	36.470	2	36.469	2	195.6	2	196.1	2
WBTSD	AB0911	5	1	8	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	9	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	10	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	11	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	12	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	13	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	14	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	15	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	16	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	17	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	18	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	19	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	20	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	21	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	22	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	23	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	5	1	24	2	20091122	0918	26.065N	78.849W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	1	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	2	2	20091122	2310	25.955N	76.896W	3448	3499	2.562	34.908	2	34.921	4	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	3	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	4	2	20091122	2310	25.955N	76.896W	2959	3000	2.939	34.937	2	34.936	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	5	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	6	2	20091122	2310	25.955N	76.896W	2469	2500	3.161	34.945	2	34.945	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	7	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	8	2	20091122	2310	25.955N	76.896W	1978	2000	3.460	34.946	2	34.953	4	-999.0	9	-999.0	9

WBTSD	AB0911	6	1	9	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	10	2	20091122	2310	25.955N	76.896W	1484	1499	4.045	34.979	2	34.985	4	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	11	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	12	2	20091122	2310	25.955N	76.896W	991	1000	6.200	35.081	2	35.085	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	13	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	14	2	20091122	2310	25.955N	76.896W	693	699	11.860	35.538	2	35.542	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	15	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	16	2	20091122	2310	25.955N	76.896W	397	400	17.922	36.529	2	36.532	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	17	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	18	2	20091122	2310	25.955N	76.896W	178	179	20.239	36.674	2	36.693	4	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	19	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	20	2	20091122	2310	25.955N	76.896W	99	99	23.953	36.793	2	36.811	4	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	21	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	22	2	20091122	2310	25.955N	76.896W	3	3	26.406	36.532	2	36.530	2	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	23	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	6	1	24	2	20091122	2310	25.955N	76.896W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	1	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	2	2	20091123	0301	25.959N	76.894W	3449	3500	2.568	34.911	2	34.912	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	3	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	4	2	20091123	0301	25.959N	76.894W	2957	2998	2.949	34.935	2	34.935	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	5	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	6	2	20091123	0301	25.959N	76.894W	2469	2500	3.203	34.947	2	34.948	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	7	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	8	2	20091123	0301	25.959N	76.894W	1978	2001	3.440	34.950	2	34.950	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	9	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	10	2	20091123	0301	25.959N	76.894W	1486	1501	4.002	34.978	2	34.978	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	11	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	12	2	20091123	0301	25.959N	76.894W	992	1001	6.301	35.084	2	35.084	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	13	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	14	2	20091123	0301	25.959N	76.894W	742	749	10.730	35.397	2	35.400	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	15	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	16	2	20091123	0301	25.959N	76.894W	496	499	16.425	36.256	2	36.259	2	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	17	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	18	2	20091123	0301	25.959N	76.894W	248	250	19.140	36.624	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	19	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	20	2	20091123	0301	25.959N	76.894W	99	99	23.861	36.802	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	21	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	22	2	20091123	0301	25.959N	76.894W	3	3	26.305	36.521	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	23	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	7	1	24	2	20091123	0301	25.959N	76.894W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	1	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	2	2	20091123	0651	25.963N	76.895W	3503	3556	2.523	34.909	2	34.910	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	3	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	4	2	20091123	0651	25.963N	76.895W	3004	3045	2.876	34.930	2	34.929	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	5	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	6	2	20091123	0651	25.963N	76.895W	2503	2534	3.200	34.946	2	34.946	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	7	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	8	2	20091123	0651	25.963N	76.895W	2004	2027	3.438	34.950	2	34.949	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	9	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	10	2	20091123	0651	25.963N	76.895W	1505	1520	3.977	34.981	2	34.980	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	11	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	12	2	20091123	0651	25.963N	76.895W	1005	1014	5.986	35.077	2	35.077	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	13	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	14	2	20091123	0651	25.963N	76.895W	755	762	10.296	35.345	2	35.348	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	15	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	16	2	20091123	0651	25.963N	76.895W	506	510	16.321	36.237	2	36.238	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	17	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	18	2	20091123	0651	25.963N	76.895W	256	258	19.035	36.624	2	36.624	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	19	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	20	2	20091123	0651	25.963N	76.895W	106	107	23.453	36.814	2	36.814	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	21	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	22	2	20091123	0651	25.963N	76.895W	5	5	26.318	36.535	2	36.535	2	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	23	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	8	1	24	2	20091123	0651	25.963N	76.895W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	1	2	20091123	1248	26.524N	76.883W	442	446	17.704	36.487	2	36.485	2	191.8	2	193.4	2
WBTSD	AB0911	9	1	2	2	20091123	1248	26.524N	76.883W	443	446	17.704	36.487	2	36.486	2	191.8	2	192.2	2

WBTSD	AB0911	9	1	3	2	20091123	1248	26.524N	76.883W	397	400	18.018	36.539	2	36.538	2	193.9	2	194.3	2
WBTSD	AB0911	9	1	4	2	20091123	1248	26.524N	76.883W	397	400	18.019	36.539	2	36.537	2	193.9	2	193.9	2
WBTSD	AB0911	9	1	5	2	20091123	1248	26.524N	76.883W	298	300	18.634	36.605	2	36.604	2	188.8	2	189.3	2
WBTSD	AB0911	9	1	6	2	20091123	1248	26.524N	76.883W	298	300	18.636	36.605	2	36.604	2	188.6	2	189.1	2
WBTSD	AB0911	9	1	7	2	20091123	1248	26.524N	76.883W	199	200	20.024	36.700	2	36.700	2	194.3	2	194.6	6
WBTSD	AB0911	9	1	8	2	20091123	1248	26.524N	76.883W	199	200	20.024	36.700	2	36.702	2	194.4	2	194.3	2
WBTSD	AB0911	9	1	9	2	20091123	1248	26.524N	76.883W	124	125	22.618	36.807	2	36.809	2	205.1	2	203.1	2
WBTSD	AB0911	9	1	10	2	20091123	1248	26.524N	76.883W	49	50	25.854	36.443	2	36.445	2	198.0	2	197.2	2
WBTSD	AB0911	9	1	11	2	20091123	1248	26.524N	76.883W	3	3	25.934	36.448	2	36.449	2	7.5	2	210.3	4
WBTSD	AB0911	9	1	12	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	13	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	14	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	15	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	16	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	17	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	18	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	19	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	20	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	21	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	22	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	23	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	9	1	24	2	20091123	1248	26.524N	76.883W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	1	2	20091123	1423	26.516N	76.831W	1121	1131	4.996	35.036	2	35.036	2	234.6	2	235.0	4
WBTSD	AB0911	10	1	2	2	20091123	1423	26.516N	76.831W	1001	1010	5.700	35.068	2	35.068	2	216.4	2	216.1	6
WBTSD	AB0911	10	1	3	2	20091123	1423	26.516N	76.831W	1001	1010	5.700	35.068	2	35.068	2	216.3	2	216.1	2
WBTSD	AB0911	10	1	4	2	20091123	1423	26.516N	76.831W	801	808	9.143	35.205	2	35.207	2	142.8	2	141.6	2
WBTSD	AB0911	10	1	5	2	20091123	1423	26.516N	76.831W	651	656	12.927	35.687	2	35.684	2	154.1	2	152.9	2
WBTSD	AB0911	10	1	6	2	20091123	1423	26.516N	76.831W	501	505	16.711	36.305	2	36.301	2	181.9	2	180.5	2
WBTSD	AB0911	10	1	7	2	20091123	1423	26.516N	76.831W	400	403	17.919	36.526	2	36.524	2	195.5	2	194.5	2
WBTSD	AB0911	10	1	8	2	20091123	1423	26.516N	76.831W	301	303	18.750	36.607	2	36.607	2	196.1	2	195.6	2
WBTSD	AB0911	10	1	9	2	20091123	1423	26.516N	76.831W	202	203	19.937	36.689	2	36.684	2	205.6	2	195.7	4
WBTSD	AB0911	10	1	10	2	20091123	1423	26.516N	76.831W	127	128	22.281	36.809	2	36.825	4	-106.5	2	201.1	4
WBTSD	AB0911	10	1	11	2	20091123	1423	26.516N	76.831W	52	52	25.665	36.470	2	36.472	2	202.6	2	201.4	2
WBTSD	AB0911	10	1	12	2	20091123	1423	26.516N	76.831W	2	2	25.744	36.427	2	36.428	2	5.1	2	209.7	4
WBTSD	AB0911	10	1	13	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	14	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	15	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	16	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	17	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	18	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	19	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	20	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	21	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	22	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	23	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	10	1	24	2	20091123	1423	26.516N	76.831W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	11	1	1	2	20091123	1740	26.500N	76.743W	3829	3890	2.251	34.890	2	34.891	2	265.1	2	266.1	2
WBTSD	AB0911	11	1	2	2	20091123	1740	26.500N	76.743W	3444	3495	2.270	34.894	2	34.893	2	266.7	2	266.8	6
WBTSD	AB0911	11	1	3	2	20091123	1740	26.500N	76.743W	2959	3000	2.703	34.919	2	34.921	2	267.6	2	267.5	2
WBTSD	AB0911	11	1	4	2	20091123	1740	26.500N	76.743W	2715	2751	2.940	34.929	2	34.930	4	266.1	2	267.2	2
WBTSD	AB0911	11	1	5	2	20091123	1740	26.500N	76.743W	2469	2500	3.278	34.946	2	34.947	2	264.0	2	264.9	2
WBTSD	AB0911	11	1	6	2	20091123	1740	26.500N	76.743W	2224	2251	3.372	34.947	2	34.947	2	265.0	2	265.1	2
WBTSD	AB0911	11	1	7	2	20091123	1740	26.500N	76.743W	1978	2000	3.499	34.955	2	34.955	2	264.4	2	263.7	2
WBTSD	AB0911	11	1	8	2	20091123	1740	26.500N	76.743W	1717	1735	3.588	34.957	2	34.958	2	264.7	2	263.6	2
WBTSD	AB0911	11	1	9	2	20091123	1740	26.500N	76.743W	1484	1499	4.050	34.982	2	34.984	2	258.8	2	257.4	2
WBTSD	AB0911	11	1	10	2	20091123	1740	26.500N	76.743W	1238	1250	4.291	34.986	2	34.987	2	256.0	2	254.5	2
WBTSD	AB0911	11	1	11	2	20091123	1740	26.500N	76.743W	991	1000	5.625	35.060	2	35.061	2	216.9	2	217.9	2
WBTSD	AB0911	11	1	12	2	20091123	1740	26.500N	76.743W	793	800	9.521	35.258	2	35.260	2	146.2	2	146.5	2
WBTSD	AB0911	11	1	13	2	20091123	1740	26.500N	76.743W	644	650	13.528	35.773	2	35.770	2	159.0	2	157.8	2
WBTSD	AB0911	11	1	14	2	20091123	1740	26.500N	76.743W	496	499	17.009	36.362	2	36.357	2	188.3	2	187.7	2
WBTSD	AB0911	11	1	15	2	20091123	1740	26.500N	76.743W	397	400	17.975	36.536	2	36.532	2	196.5	2	195.6	2
WBTSD	AB0911	11	1	16	2	20091123	1740	26.500N	76.743W	297	299	18.757	36.595	2	36.598	2	190.6	2	191.7	2
WBTSD	AB0911	11	1	17	2	20091123	1740	26.500N	76.743W	199	200	19.780	36.668	2	36.669	2	-25.2	2	199.1	4
WBTSD	AB0911	11	1	18	2	20091123	1740	26.500N	76.743W	123	124	21.730	36.785	2	36.784	2	4.3	2	194.8	4
WBTSD	AB0911	11	1	19	2	20091123	1740	26.500N	76.743W	49	49	25.677	36.446	2	36.448	2	4.1	2	204.1	4
WBTSD	AB0911	11	1	20	2	20091123	1740	26.500N	76.743W	4	4	26.311	36.531	2	36.535	2	5.5	2	203.7	4

WBTSD	AB0911	11	1	21	2	20091123	1740	26.500N	76.743W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	11	1	22	2	20091123	1740	26.500N	76.743W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	11	1	23	2	20091123	1740	26.500N	76.743W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	11	1	24	2	20091123	1740	26.500N	76.743W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	12	1	1	2	20091123	2320	26.498N	76.653W	4574	4654	2.281	34.886	2	34.885	2	132.4	2	265.3	4
WBTSD	AB0911	12	1	2	2	20091123	2320	26.498N	76.653W	3937	4000	2.272	34.891	2	34.891	2	265.4	2	265.8	6
WBTSD	AB0911	12	1	3	2	20091123	2320	26.498N	76.653W	3449	3500	2.351	34.900	2	34.900	2	267.8	2	267.7	2
WBTSD	AB0911	12	1	4	2	20091123	2320	26.498N	76.653W	2959	3000	2.737	34.922	2	34.922	2	267.4	2	268.1	2
WBTSD	AB0911	12	1	5	2	20091123	2320	26.498N	76.653W	2714	2750	3.015	34.935	2	34.934	2	265.7	2	265.9	2
WBTSD	AB0911	12	1	6	2	20091123	2320	26.498N	76.653W	2469	2500	3.243	34.945	2	34.945	2	264.8	2	264.8	2
WBTSD	AB0911	12	1	7	2	20091123	2320	26.498N	76.653W	2223	2250	3.362	34.948	2	34.947	2	265.4	2	264.8	2
WBTSD	AB0911	12	1	8	2	20091123	2320	26.498N	76.653W	1978	2001	3.432	34.951	2	34.950	2	265.8	2	264.8	2
WBTSD	AB0911	12	1	9	2	20091123	2320	26.498N	76.653W	1979	2001	3.433	34.951	2	34.951	2	265.8	2	264.6	2
WBTSD	AB0911	12	1	10	2	20091123	2320	26.498N	76.653W	1732	1751	3.558	34.955	2	34.956	2	265.4	2	264.3	2
WBTSD	AB0911	12	1	11	2	20091123	2320	26.498N	76.653W	1485	1500	3.633	34.959	2	34.959	2	138.9	2	263.3	4
WBTSD	AB0911	12	1	12	2	20091123	2320	26.498N	76.653W	1238	1250	4.292	34.995	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	12	1	13	2	20091123	2320	26.498N	76.653W	991	1000	5.451	35.052	2	35.052	2	221.5	2	223.2	2
WBTSD	AB0911	12	1	14	2	20091123	2320	26.498N	76.653W	794	800	9.820	35.285	2	35.279	2	144.2	2	142.9	2
WBTSD	AB0911	12	1	15	2	20091123	2320	26.498N	76.653W	794	800	9.820	35.283	2	35.277	4	144.2	2	143.9	2
WBTSD	AB0911	12	1	16	2	20091123	2320	26.498N	76.653W	644	649	13.681	35.796	2	35.794	2	160.8	2	159.7	2
WBTSD	AB0911	12	1	17	2	20091123	2320	26.498N	76.653W	495	499	17.169	36.390	2	36.391	2	188.6	2	189.4	2
WBTSD	AB0911	12	1	18	2	20091123	2320	26.498N	76.653W	397	400	18.064	36.544	2	36.543	2	197.2	2	196.5	2
WBTSD	AB0911	12	1	19	2	20091123	2320	26.498N	76.653W	297	299	18.855	36.613	2	36.612	2	106.3	2	207.6	4
WBTSD	AB0911	12	1	20	2	20091123	2320	26.498N	76.653W	199	200	19.828	36.665	2	36.666	2	207.1	2	205.3	2
WBTSD	AB0911	12	1	21	2	20091123	2320	26.498N	76.653W	123	124	21.969	36.809	2	36.808	2	210.4	2	209.9	2
WBTSD	AB0911	12	1	22	2	20091123	2320	26.498N	76.653W	49	49	25.675	36.442	2	36.443	2	202.3	2	201.8	2
WBTSD	AB0911	12	1	23	2	20091123	2320	26.498N	76.653W	4	4	26.224	36.530	2	36.531	2	201.3	2	200.8	2
WBTSD	AB0911	12	1	24	2	20091123	2320	26.498N	76.653W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	13	1	1	2	20091124	1554	26.500N	76.565W	4807	4894	2.295	34.884	2	34.885	2	262.8	2	263.0	2
WBTSD	AB0911	13	1	2	2	20091124	1554	26.500N	76.565W	4476	4554	2.272	34.886	2	34.887	2	251.2	2	264.3	4
WBTSD	AB0911	13	1	3	2	20091124	1554	26.500N	76.565W	3939	4002	2.285	34.892	2	34.894	2	265.2	2	266.7	6
WBTSD	AB0911	13	1	4	2	20091124	1554	26.500N	76.565W	3451	3502	2.376	34.902	2	34.901	2	267.8	2	268.9	2
WBTSD	AB0911	13	1	5	2	20091124	1554	26.500N	76.565W	2961	3002	2.717	34.923	2	34.923	2	267.5	2	267.4	2
WBTSD	AB0911	13	1	6	2	20091124	1554	26.500N	76.565W	2715	2750	2.955	34.933	2	34.931	2	265.4	2	267.0	2
WBTSD	AB0911	13	1	7	2	20091124	1554	26.500N	76.565W	2470	2501	3.119	34.939	2	34.939	2	265.1	2	266.1	2
WBTSD	AB0911	13	1	8	2	20091124	1554	26.500N	76.565W	2223	2250	3.357	34.949	2	34.948	2	264.5	2	265.0	2
WBTSD	AB0911	13	1	9	2	20091124	1554	26.500N	76.565W	1981	2004	3.535	34.954	2	34.954	2	264.7	2	264.3	2
WBTSD	AB0911	13	1	10	2	20091124	1554	26.500N	76.565W	1733	1751	3.630	34.958	2	34.958	2	264.5	2	263.8	2
WBTSD	AB0911	13	1	11	2	20091124	1554	26.500N	76.565W	1488	1504	3.773	34.966	2	34.967	2	262.9	2	261.9	2
WBTSD	AB0911	13	1	12	2	20091124	1554	26.500N	76.565W	1244	1256	4.196	34.989	2	34.991	2	257.5	2	255.7	2
WBTSD	AB0911	13	1	13	2	20091124	1554	26.500N	76.565W	991	1000	5.718	35.058	2	35.056	4	204.9	2	218.5	4
WBTSD	AB0911	13	1	14	2	20091124	1554	26.500N	76.565W	791	798	10.051	35.311	2	35.307	4	144.3	2	144.5	2
WBTSD	AB0911	13	1	15	2	20091124	1554	26.500N	76.565W	643	649	13.819	35.818	2	35.813	2	160.5	2	160.3	2
WBTSD	AB0911	13	1	16	2	20091124	1554	26.500N	76.565W	643	649	13.818	35.818	2	35.817	2	160.4	2	160.4	2
WBTSD	AB0911	13	1	17	2	20091124	1554	26.500N	76.565W	496	500	17.098	36.380	2	36.375	2	188.5	2	188.0	2
WBTSD	AB0911	13	1	18	2	20091124	1554	26.500N	76.565W	397	400	17.991	36.536	2	36.533	2	195.2	2	195.4	2
WBTSD	AB0911	13	1	19	2	20091124	1554	26.500N	76.565W	298	300	18.610	36.590	2	36.591	2	184.6	2	190.9	4
WBTSD	AB0911	13	1	20	2	20091124	1554	26.500N	76.565W	198	200	19.708	36.662	2	36.663	2	199.9	2	199.5	2
WBTSD	AB0911	13	1	21	2	20091124	1554	26.500N	76.565W	123	124	21.535	36.782	2	36.781	2	191.8	2	191.1	2
WBTSD	AB0911	13	1	22	2	20091124	1554	26.500N	76.565W	49	50	25.666	36.470	2	36.472	2	202.0	2	202.2	2
WBTSD	AB0911	13	1	23	2	20091124	1554	26.500N	76.565W	3	3	25.789	36.483	2	36.485	2	203.0	2	202.2	2
WBTSD	AB0911	13	1	24	2	20091124	1554	26.500N	76.565W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	14	1	1	2	20091124	2058	26.500N	76.475W	4816	4904	2.269	34.882	2	34.883	2	249.5	2	268.8	4
WBTSD	AB0911	14	1	2	2	20091124	2058	26.500N	76.475W	4423	4500	2.239	34.884	2	34.886	2	261.5	2	262.4	2
WBTSD	AB0911	14	1	3	2	20091124	2058	26.500N	76.475W	3937	4000	2.274	34.892	2	34.893	2	265.1	2	265.8	2
WBTSD	AB0911	14	1	4	2	20091124	2058	26.500N	76.475W	3449	3500	2.396	34.903	2	34.903	2	267.6	2	268.4	6
WBTSD	AB0911	14	1	5	2	20091124	2058	26.500N	76.475W	2958	2999	2.672	34.919	2	34.920	2	266.5	2	267.9	2
WBTSD	AB0911	14	1	6	2	20091124	2058	26.500N	76.475W	2713	2749	2.870	34.934	2	34.934	2	264.3	2	264.9	2
WBTSD	AB0911	14	1	7	2	20091124	2058	26.500N	76.475W	2469	2500	3.132	34.946	2	34.946	2	264.5	2	263.7	2
WBTSD	AB0911	14	1	8	2	20091124	2058	26.500N	76.475W	2223	2250	3.320	34.948	2	34.947	2	264.4	2	265.0	2
WBTSD	AB0911	14	1	9	2	20091124	2058	26.500N	76.475W	1978	2001	3.486	34.958	2	34.959	2	263.8	2	263.7	2
WBTSD	AB0911	14	1	10	2	20091124	2058	26.500N	76.475W	1733	1751	3.729	34.969	2	34.970	2	252.1	2	261.7	4
WBTSD	AB0911	14	1	11	2	20091124	2058	26.500N	76.475W	1488	1503	3.995	34.985	2	34.986	2	249.7	2	258.2	4
WBTSD	AB0911	14	1	12	2	20091124	2058	26.500N	76.475W	1240	1252	4.441	35.012	2	35.014	2	252.0	2	250.4	2
WBTSD	AB0911	14	1	13	2	20091124	2058	26.500N	76.475W	993	1002	5.654	35.063	2	35.063	2	217.0	2	218.3	2
WBTSD	AB0911	14	1	14	2	20091124	2058	26.500N	76.475W	794	801	9.863	35.287	2	35.290	2	144.1	2	142.9	2

WBTSD	AB0911	14	1	15	2	20091124	2058	26.500N	76.475W	645	650	13.770	35.807	2	35.807	2	159.2	2	160.5	2
WBTSD	AB0911	14	1	16	2	20091124	2058	26.500N	76.475W	496	500	17.111	36.374	2	36.374	2	185.0	2	185.0	2
WBTSD	AB0911	14	1	17	2	20091124	2058	26.500N	76.475W	397	400	18.083	36.551	2	36.553	2	195.8	2	196.6	2
WBTSD	AB0911	14	1	18	2	20091124	2058	26.500N	76.475W	298	300	18.735	36.610	2	36.610	2	190.7	2	191.7	2
WBTSD	AB0911	14	1	19	2	20091124	2058	26.500N	76.475W	197	198	19.723	36.667	2	36.665	2	180.4	2	195.7	4
WBTSD	AB0911	14	1	20	2	20091124	2058	26.500N	76.475W	122	123	21.726	36.762	2	36.765	2	181.6	2	197.8	4
WBTSD	AB0911	14	1	21	2	20091124	2058	26.500N	76.475W	64	64	25.636	36.462	2	36.469	2	202.9	2	202.9	6
WBTSD	AB0911	14	1	22	2	20091124	2058	26.500N	76.475W	3	3	25.680	36.465	2	36.464	2	203.0	2	203.3	2
WBTSD	AB0911	14	1	23	2	20091124	2058	26.500N	76.475W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	14	1	24	2	20091124	2058	26.500N	76.475W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	15	1	1	2	20091125	0200	26.500N	76.348W	4840	4928	2.216	34.875	2	34.875	2	245.4	2	263.0	4
WBTSD	AB0911	15	1	2	2	20091125	0200	26.500N	76.348W	4423	4499	2.243	34.885	2	34.884	2	261.5	2	263.0	6
WBTSD	AB0911	15	1	3	2	20091125	0200	26.500N	76.348W	3937	4000	2.269	34.893	2	34.892	2	265.0	2	265.7	2
WBTSD	AB0911	15	1	4	2	20091125	0200	26.500N	76.348W	3448	3500	2.359	34.899	2	34.900	4	267.2	2	269.1	2
WBTSD	AB0911	15	1	5	2	20091125	0200	26.500N	76.348W	2959	3000	2.655	34.921	2	34.920	2	266.5	2	267.3	2
WBTSD	AB0911	15	1	6	2	20091125	0200	26.500N	76.348W	2715	2751	2.870	34.934	2	34.933	2	263.7	2	264.9	2
WBTSD	AB0911	15	1	7	2	20091125	0200	26.500N	76.348W	2469	2500	3.086	34.947	2	34.947	2	262.3	2	263.1	2
WBTSD	AB0911	15	1	8	2	20091125	0200	26.500N	76.348W	2224	2251	3.320	34.957	2	34.957	2	262.0	2	262.4	2
WBTSD	AB0911	15	1	9	2	20091125	0200	26.500N	76.348W	1978	2000	3.511	34.963	2	34.962	2	262.6	2	262.8	2
WBTSD	AB0911	15	1	10	2	20091125	0200	26.500N	76.348W	1731	1750	3.757	34.968	2	34.968	2	262.7	2	262.0	2
WBTSD	AB0911	15	1	11	2	20091125	0200	26.500N	76.348W	1485	1500	4.129	34.988	2	34.988	2	257.0	2	257.9	2
WBTSD	AB0911	15	1	12	2	20091125	0200	26.500N	76.348W	1239	1251	4.617	35.016	2	35.017	2	235.2	2	256.3	4
WBTSD	AB0911	15	1	13	2	20091125	0200	26.500N	76.348W	991	1000	6.146	35.077	2	35.077	2	203.4	2	204.7	2
WBTSD	AB0911	15	1	14	2	20091125	0200	26.500N	76.348W	794	800	10.262	35.332	2	35.332	2	143.2	2	145.1	2
WBTSD	AB0911	15	1	15	2	20091125	0200	26.500N	76.348W	645	650	14.049	35.848	2	35.844	2	161.2	2	161.0	2
WBTSD	AB0911	15	1	16	2	20091125	0200	26.500N	76.348W	496	500	17.193	36.393	2	36.394	2	187.6	2	188.3	2
WBTSD	AB0911	15	1	17	2	20091125	0200	26.500N	76.348W	396	399	18.081	36.551	2	36.550	2	195.7	2	195.9	2
WBTSD	AB0911	15	1	18	2	20091125	0200	26.500N	76.348W	297	300	18.648	36.603	2	36.603	2	192.2	2	191.7	2
WBTSD	AB0911	15	1	19	2	20091125	0200	26.500N	76.348W	198	199	19.807	36.667	2	36.747	4	200.9	2	200.9	2
WBTSD	AB0911	15	1	20	2	20091125	0200	26.500N	76.348W	123	124	21.466	36.749	2	36.748	2	201.4	2	201.1	2
WBTSD	AB0911	15	1	21	2	20091125	0200	26.500N	76.348W	49	50	25.714	36.445	2	36.460	4	202.7	2	202.2	2
WBTSD	AB0911	15	1	22	2	20091125	0200	26.500N	76.348W	2	2	25.795	36.415	2	36.415	2	202.2	2	202.0	2
WBTSD	AB0911	15	1	23	2	20091125	0200	26.500N	76.348W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	15	1	24	2	20091125	0200	26.500N	76.348W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	16	1	1	2	20091125	0651	26.500N	76.217W	4787	4873	2.205	34.875	2	34.876	2	245.6	2	263.3	4
WBTSD	AB0911	16	1	2	2	20091125	0651	26.500N	76.217W	4426	4502	2.236	34.884	2	34.885	2	261.4	2	261.7	2
WBTSD	AB0911	16	1	3	2	20091125	0651	26.500N	76.217W	3939	4002	2.262	34.892	2	34.892	2	265.1	2	265.6	6
WBTSD	AB0911	16	1	4	2	20091125	0651	26.500N	76.217W	3449	3501	2.363	34.902	2	34.903	2	267.6	2	267.5	2
WBTSD	AB0911	16	1	5	2	20091125	0651	26.500N	76.217W	2953	2994	2.664	34.922	2	34.922	2	266.4	2	266.7	2
WBTSD	AB0911	16	1	6	2	20091125	0651	26.500N	76.217W	2714	2750	2.867	34.935	2	34.935	2	252.4	2	269.8	4
WBTSD	AB0911	16	1	7	2	20091125	0651	26.500N	76.217W	2469	2500	3.102	34.948	2	34.948	2	262.1	2	262.9	2
WBTSD	AB0911	16	1	8	2	20091125	0651	26.500N	76.217W	2224	2251	3.332	34.959	2	34.959	2	261.9	2	263.1	2
WBTSD	AB0911	16	1	9	2	20091125	0651	26.500N	76.217W	1978	2001	3.542	34.963	2	34.964	2	262.9	2	263.5	2
WBTSD	AB0911	16	1	10	2	20091125	0651	26.500N	76.217W	1731	1749	3.795	34.970	2	34.970	2	261.7	2	261.4	2
WBTSD	AB0911	16	1	11	2	20091125	0651	26.500N	76.217W	1481	1496	4.169	34.993	2	34.994	2	255.2	2	255.2	2
WBTSD	AB0911	16	1	12	2	20091125	0651	26.500N	76.217W	1238	1250	4.606	35.012	2	35.014	2	248.0	2	247.1	2
WBTSD	AB0911	16	1	13	2	20091125	0651	26.500N	76.217W	991	1000	6.093	35.076	2	35.076	2	205.0	2	206.0	2
WBTSD	AB0911	16	1	14	2	20091125	0651	26.500N	76.217W	792	799	10.312	35.340	2	35.336	2	144.3	2	143.1	2
WBTSD	AB0911	16	1	15	2	20091125	0651	26.500N	76.217W	644	650	13.951	35.834	2	35.829	2	159.8	2	158.1	2
WBTSD	AB0911	16	1	16	2	20091125	0651	26.500N	76.217W	494	498	17.191	36.395	2	36.395	2	188.2	2	188.1	2
WBTSD	AB0911	16	1	17	2	20091125	0651	26.500N	76.217W	298	300	18.748	36.608	2	36.608	2	193.4	2	193.0	2
WBTSD	AB0911	16	1	18	2	20091125	0651	26.500N	76.217W	298	300	18.748	36.608	2	36.608	2	193.5	2	193.0	2
WBTSD	AB0911	16	1	19	2	20091125	0651	26.500N	76.217W	198	200	19.833	36.663	2	36.790	4	205.4	2	204.4	2
WBTSD	AB0911	16	1	20	2	20091125	0651	26.500N	76.217W	123	124	21.736	36.794	2	36.791	2	203.8	2	205.1	2
WBTSD	AB0911	16	1	21	2	20091125	0651	26.500N	76.217W	49	50	25.746	36.436	2	36.451	4	201.6	2	201.5	2
WBTSD	AB0911	16	1	22	2	20091125	0651	26.500N	76.217W	49	49	25.748	36.438	2	36.441	2	202.2	2	201.2	2
WBTSD	AB0911	16	1	23	2	20091125	0651	26.500N	76.217W	6	6	25.762	36.417	2	36.416	2	201.6	2	201.3	2
WBTSD	AB0911	16	1	24	2	20091125	0651	26.500N	76.217W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	17	1	1	2	20091125	1402	26.499N	76.088W	4782	4869	2.151	34.869	2	34.869	2	255.7	2	256.0	2
WBTSD	AB0911	17	1	2	2	20091125	1402	26.499N	76.088W	4414	4490	2.238	34.884	2	34.885	2	262.2	2	261.9	2
WBTSD	AB0911	17	1	3	2	20091125	1402	26.499N	76.088W	3936	3999	2.260	34.891	2	34.891	2	265.1	2	264.9	2
WBTSD	AB0911	17	1	4	2	20091125	1402	26.499N	76.088W	3448	3499	2.345	34.901	2	34.901	2	267.3	2	267.9	2
WBTSD	AB0911	17	1	5	2	20091125	1402	26.499N	76.088W	2960	3000	2.647	34.921	2	34.921	2	267.0	2	267.2	2
WBTSD	AB0911	17	1	6	2	20091125	1402	26.499N	76.088W	2713	2748	2.866	34.935	2	34.934	2	264.6	2	264.2	2
WBTSD	AB0911	17	1	7	2	20091125	1402	26.499N	76.088W	2469	2500	3.073	34.940	2	34.940	2	264.7	2	264.5	2
WBTSD	AB0911	17	1	8	2	20091125	1402	26.499N	76.088W	2223	2250	3.364	34.961	2	34.961	2	261.4	2	261.1	2

WBTSD	AB0911	17	1	9	2	20091125	1402	26.499N	76.088W	1977	2000	3.565	34.965	2	34.966	2	262.1	2	261.8	2
WBTSD	AB0911	17	1	10	2	20091125	1402	26.499N	76.088W	1731	1750	3.818	34.973	2	34.972	2	261.2	2	261.3	2
WBTSD	AB0911	17	1	11	2	20091125	1402	26.499N	76.088W	1481	1496	4.192	34.990	2	34.998	4	255.8	2	256.0	2
WBTSD	AB0911	17	1	12	2	20091125	1402	26.499N	76.088W	1232	1244	4.633	35.005	2	35.006	2	246.6	2	246.8	2
WBTSD	AB0911	17	1	13	2	20091125	1402	26.499N	76.088W	990	999	6.365	35.086	2	35.088	2	195.6	2	195.7	2
WBTSD	AB0911	17	1	14	2	20091125	1402	26.499N	76.088W	795	801	10.197	35.333	2	35.337	2	144.2	2	144.1	2
WBTSD	AB0911	17	1	15	2	20091125	1402	26.499N	76.088W	645	650	13.811	35.814	2	35.816	2	158.0	2	158.1	2
WBTSD	AB0911	17	1	16	2	20091125	1402	26.499N	76.088W	496	500	17.009	36.350	2	36.352	2	173.0	2	179.9	4
WBTSD	AB0911	17	1	17	2	20091125	1402	26.499N	76.088W	297	299	18.863	36.613	2	36.614	2	183.3	2	197.6	4
WBTSD	AB0911	17	1	18	2	20091125	1402	26.499N	76.088W	198	199	19.957	36.686	2	36.687	2	194.3	2	191.1	4
WBTSD	AB0911	17	1	19	2	20091125	1402	26.499N	76.088W	123	124	21.899	36.796	2	36.796	2	206.4	2	206.4	2
WBTSD	AB0911	17	1	20	2	20091125	1402	26.499N	76.088W	50	50	25.773	36.434	2	36.434	2	201.3	2	201.8	2
WBTSD	AB0911	17	1	21	2	20091125	1402	26.499N	76.088W	50	50	25.772	36.432	2	-999.000	9	201.2	2	201.5	2
WBTSD	AB0911	17	1	22	2	20091125	1402	26.499N	76.088W	2	2	25.800	36.415	2	-999.000	9	192.1	2	201.6	4
WBTSD	AB0911	17	1	23	2	20091125	1402	26.499N	76.088W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	17	1	24	2	20091125	1402	26.499N	76.088W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	18	1	1	2	20091125	1936	26.499N	75.901W	4723	4808	2.162	34.871	2	34.871	2	254.9	2	255.9	6
WBTSD	AB0911	18	1	2	2	20091125	1936	26.499N	75.901W	4424	4500	2.225	34.883	2	34.882	2	260.9	2	261.6	2
WBTSD	AB0911	18	1	3	2	20091125	1936	26.499N	75.901W	3936	4000	2.260	34.892	2	34.892	2	264.9	2	265.8	2
WBTSD	AB0911	18	1	4	2	20091125	1936	26.499N	75.901W	3448	3499	2.360	34.902	2	34.902	2	267.3	2	268.3	2
WBTSD	AB0911	18	1	5	2	20091125	1936	26.499N	75.901W	2959	3000	2.612	34.919	2	34.918	2	266.5	2	267.0	2
WBTSD	AB0911	18	1	6	2	20091125	1936	26.499N	75.901W	2714	2750	2.828	34.932	2	34.932	2	264.5	2	265.0	2
WBTSD	AB0911	18	1	7	2	20091125	1936	26.499N	75.901W	2469	2500	3.083	34.947	2	34.947	2	262.4	2	262.6	2
WBTSD	AB0911	18	1	8	2	20091125	1936	26.499N	75.901W	2209	2235	3.372	34.960	2	34.959	2	262.0	2	261.9	2
WBTSD	AB0911	18	1	9	2	20091125	1936	26.499N	75.901W	1977	1999	3.622	34.961	2	34.962	2	263.1	2	263.1	2
WBTSD	AB0911	18	1	10	2	20091125	1936	26.499N	75.901W	1731	1749	3.691	34.964	2	34.964	2	263.2	2	262.2	2
WBTSD	AB0911	18	1	11	2	20091125	1936	26.499N	75.901W	1484	1499	4.145	34.991	2	34.992	2	256.7	2	256.3	2
WBTSD	AB0911	18	1	12	2	20091125	1936	26.499N	75.901W	1237	1249	4.828	35.036	2	35.038	2	240.6	2	240.4	2
WBTSD	AB0911	18	1	13	2	20091125	1936	26.499N	75.901W	990	999	6.525	35.090	2	35.090	2	180.8	2	200.5	4
WBTSD	AB0911	18	1	14	2	20091125	1936	26.499N	75.901W	793	800	9.854	35.295	2	35.293	2	144.9	2	145.2	2
WBTSD	AB0911	18	1	15	2	20091125	1936	26.499N	75.901W	644	650	13.585	35.781	2	35.776	4	-999.0	9	-999.0	9
WBTSD	AB0911	18	1	16	2	20091125	1936	26.499N	75.901W	496	500	16.854	36.334	2	36.333	2	184.4	2	185.5	2
WBTSD	AB0911	18	1	17	2	20091125	1936	26.499N	75.901W	397	400	17.914	36.523	2	36.522	2	182.0	2	194.5	4
WBTSD	AB0911	18	1	18	2	20091125	1936	26.499N	75.901W	297	300	18.630	36.606	2	36.607	2	189.1	2	187.0	2
WBTSD	AB0911	18	1	19	2	20091125	1936	26.499N	75.901W	297	300	18.629	36.606	2	36.607	2	189.1	2	187.0	2
WBTSD	AB0911	18	1	20	2	20091125	1936	26.499N	75.901W	199	200	19.848	36.687	2	36.689	2	186.4	2	193.5	4
WBTSD	AB0911	18	1	21	2	20091125	1936	26.499N	75.901W	124	125	21.833	36.801	2	36.801	2	197.7	2	197.6	2
WBTSD	AB0911	18	1	22	2	20091125	1936	26.499N	75.901W	49	49	25.651	36.495	2	36.493	2	-999.0	9	-999.0	9
WBTSD	AB0911	18	1	23	2	20091125	1936	26.499N	75.901W	2	2	26.145	36.524	2	36.524	2	200.8	2	201.4	2
WBTSD	AB0911	18	1	24	2	20091125	1936	26.499N	75.901W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	19	1	1	2	20091126	0023	26.497N	75.704W	4669	4752	2.172	34.873	2	34.872	2	257.1	2	256.4	2
WBTSD	AB0911	19	1	2	2	20091126	0023	26.497N	75.704W	4424	4500	2.214	34.882	2	34.881	2	260.7	2	261.0	2
WBTSD	AB0911	19	1	3	2	20091126	0023	26.497N	75.704W	3936	3999	2.244	34.890	2	34.890	2	265.3	2	265.4	2
WBTSD	AB0911	19	1	4	2	20091126	0023	26.497N	75.704W	3447	3498	2.330	34.900	2	34.898	2	267.5	2	267.8	2
WBTSD	AB0911	19	1	5	2	20091126	0023	26.497N	75.704W	2959	3000	2.650	34.921	2	34.919	2	266.6	2	267.3	6
WBTSD	AB0911	19	1	6	2	20091126	0023	26.497N	75.704W	2713	2749	2.861	34.934	2	34.932	2	251.9	2	267.0	4
WBTSD	AB0911	19	1	7	2	20091126	0023	26.497N	75.704W	2468	2499	3.096	34.948	2	34.947	2	261.9	2	262.6	2
WBTSD	AB0911	19	1	8	2	20091126	0023	26.497N	75.704W	2223	2249	3.347	34.959	2	34.958	2	261.8	2	262.2	2
WBTSD	AB0911	19	1	9	2	20091126	0023	26.497N	75.704W	1977	1999	3.551	34.963	2	34.963	2	263.0	2	262.9	2
WBTSD	AB0911	19	1	10	2	20091126	0023	26.497N	75.704W	1730	1748	3.805	34.971	2	34.970	2	261.7	2	261.5	2
WBTSD	AB0911	19	1	11	2	20091126	0023	26.497N	75.704W	1484	1499	4.138	34.989	2	34.989	2	256.7	2	256.4	2
WBTSD	AB0911	19	1	12	2	20091126	0023	26.497N	75.704W	1484	1499	4.138	34.989	2	34.990	2	256.7	2	256.4	2
WBTSD	AB0911	19	1	13	2	20091126	0023	26.497N	75.704W	1236	1248	4.847	35.033	2	35.032	2	240.8	2	241.2	2
WBTSD	AB0911	19	1	14	2	20091126	0023	26.497N	75.704W	991	1000	6.643	35.089	2	35.089	2	186.8	2	187.9	2
WBTSD	AB0911	19	1	15	2	20091126	0023	26.497N	75.704W	792	799	9.648	35.269	2	35.265	2	144.1	2	144.8	2
WBTSD	AB0911	19	1	16	2	20091126	0023	26.497N	75.704W	644	649	13.000	35.699	2	35.700	2	154.3	2	154.0	2
WBTSD	AB0911	19	1	17	2	20091126	0023	26.497N	75.704W	495	499	16.338	36.238	2	36.239	2	177.0	2	178.4	2
WBTSD	AB0911	19	1	18	2	20091126	0023	26.497N	75.704W	397	400	17.743	36.497	2	36.497	2	192.2	2	193.8	2
WBTSD	AB0911	19	1	19	2	20091126	0023	26.497N	75.704W	297	300	18.374	36.579	2	36.702	4	183.4	2	187.6	4
WBTSD	AB0911	19	1	20	2	20091126	0023	26.497N	75.704W	198	200	19.862	36.700	2	36.703	2	181.5	2	187.2	4
WBTSD	AB0911	19	1	21	2	20091126	0023	26.497N	75.704W	123	124	22.451	36.810	2	36.813	2	204.1	2	203.8	2
WBTSD	AB0911	19	1	22	2	20091126	0023	26.497N	75.704W	49	50	27.030	36.632	2	36.634	2	198.3	2	198.6	2
WBTSD	AB0911	19	1	23	2	20091126	0023	26.497N	75.704W	2	2	27.042	36.641	2	36.641	2	198.6	2	198.7	2
WBTSD	AB0911	19	1	24	2	20091126	0023	26.497N	75.704W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	20	1	1	2	20091126	0509	26.501N	75.503W	4664	4747	2.153	34.871	2	34.872	2	255.5	2	255.0	2
WBTSD	AB0911	20	1	2	2	20091126	0509	26.501N	75.503W	3939	4002	2.227	34.889	2	34.889	2	264.7	2	263.9	2

WBTSD	AB0911	20	1	3	2	20091126	0509	26.501N	75.503W	3448	3500	2.344	34.901	2	34.901	2	267.6	2	267.6	2
WBTSD	AB0911	20	1	4	2	20091126	0509	26.501N	75.503W	2959	3000	2.619	34.919	2	34.920	2	266.9	2	267.0	2
WBTSD	AB0911	20	1	5	2	20091126	0509	26.501N	75.503W	2707	2742	2.779	34.929	2	34.930	2	265.3	2	265.3	2
WBTSD	AB0911	20	1	6	2	20091126	0509	26.501N	75.503W	2707	2742	2.779	34.929	2	34.929	2	265.2	2	265.2	2
WBTSD	AB0911	20	1	7	2	20091126	0509	26.501N	75.503W	2469	2500	2.981	34.942	2	34.942	2	263.0	2	263.0	2
WBTSD	AB0911	20	1	8	2	20091126	0509	26.501N	75.503W	2223	2250	3.205	34.954	2	34.953	2	262.5	2	261.7	2
WBTSD	AB0911	20	1	9	2	20091126	0509	26.501N	75.503W	1976	1999	3.402	34.960	2	34.961	2	262.9	2	261.9	2
WBTSD	AB0911	20	1	10	2	20091126	0509	26.501N	75.503W	1731	1750	3.573	34.963	2	34.964	2	263.3	2	262.3	2
WBTSD	AB0911	20	1	11	2	20091126	0509	26.501N	75.503W	1484	1499	4.157	34.993	2	34.993	2	255.0	2	254.5	2
WBTSD	AB0911	20	1	12	2	20091126	0509	26.501N	75.503W	1226	1238	5.310	35.058	2	35.059	2	228.0	2	227.4	2
WBTSD	AB0911	20	1	13	2	20091126	0509	26.501N	75.503W	992	1001	6.833	35.093	2	35.093	2	181.7	2	182.3	2
WBTSD	AB0911	20	1	14	2	20091126	0509	26.501N	75.503W	794	800	9.537	35.254	2	35.252	2	143.5	2	142.7	2
WBTSD	AB0911	20	1	15	2	20091126	0509	26.501N	75.503W	644	649	12.222	35.586	2	35.582	2	147.5	2	146.7	2
WBTSD	AB0911	20	1	16	2	20091126	0509	26.501N	75.503W	496	500	15.321	36.066	2	36.063	2	169.2	2	168.3	2
WBTSD	AB0911	20	1	17	2	20091126	0509	26.501N	75.503W	397	400	17.123	36.383	2	36.381	2	187.4	2	185.5	6
WBTSD	AB0911	20	1	18	2	20091126	0509	26.501N	75.503W	397	400	17.123	36.383	2	36.380	2	187.4	2	187.6	2
WBTSD	AB0911	20	1	19	2	20091126	0509	26.501N	75.503W	297	299	18.251	36.568	2	36.567	2	192.9	2	192.7	2
WBTSD	AB0911	20	1	20	2	20091126	0509	26.501N	75.503W	198	199	19.891	36.700	2	36.697	2	189.9	2	190.2	2
WBTSD	AB0911	20	1	21	2	20091126	0509	26.501N	75.503W	124	125	22.791	36.824	2	36.822	2	188.3	2	203.3	4
WBTSD	AB0911	20	1	22	2	20091126	0509	26.501N	75.503W	49	49	27.148	36.642	2	36.643	2	197.8	2	197.8	2
WBTSD	AB0911	20	1	23	2	20091126	0509	26.501N	75.503W	4	4	27.128	36.642	2	36.641	2	197.6	2	198.2	2
WBTSD	AB0911	20	1	24	2	20091126	0509	26.501N	75.503W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	21	1	1	2	20091126	1000	26.501N	75.301W	4608	4689	2.163	34.873	2	34.875	2	245.3	2	264.9	4
WBTSD	AB0911	21	1	2	2	20091126	1000	26.501N	75.301W	4608	4689	2.163	34.873	2	34.874	2	256.9	2	256.0	2
WBTSD	AB0911	21	1	3	2	20091126	1000	26.501N	75.301W	3933	3996	2.238	34.890	2	34.890	2	265.5	2	264.6	2
WBTSD	AB0911	21	1	4	2	20091126	1000	26.501N	75.301W	3444	3495	2.292	34.898	2	34.898	2	267.3	2	267.2	2
WBTSD	AB0911	21	1	5	2	20091126	1000	26.501N	75.301W	2968	3009	2.517	34.913	2	34.915	2	268.0	2	268.1	2
WBTSD	AB0911	21	1	6	2	20091126	1000	26.501N	75.301W	2703	2739	2.719	34.926	2	34.926	2	266.1	2	265.9	2
WBTSD	AB0911	21	1	7	2	20091126	1000	26.501N	75.301W	2702	2738	2.719	34.926	2	34.927	2	266.1	2	266.1	2
WBTSD	AB0911	21	1	8	2	20091126	1000	26.501N	75.301W	2459	2490	2.941	34.940	2	34.940	2	263.6	2	263.6	2
WBTSD	AB0911	21	1	9	2	20091126	1000	26.501N	75.301W	2222	2249	3.141	34.951	2	34.952	2	262.6	2	261.8	2
WBTSD	AB0911	21	1	10	2	20091126	1000	26.501N	75.301W	1968	1990	3.357	34.959	2	34.959	2	262.4	2	262.1	2
WBTSD	AB0911	21	1	11	2	20091126	1000	26.501N	75.301W	1491	1506	4.021	34.985	2	34.986	2	258.6	2	257.1	2
WBTSD	AB0911	21	1	12	2	20091126	1000	26.501N	75.301W	1258	1270	5.014	35.045	2	35.045	2	236.0	2	235.5	2
WBTSD	AB0911	21	1	13	2	20091126	1000	26.501N	75.301W	997	1006	6.600	35.090	2	35.090	2	187.9	2	189.4	2
WBTSD	AB0911	21	1	14	2	20091126	1000	26.501N	75.301W	795	802	8.749	35.184	2	35.186	2	147.7	2	147.4	2
WBTSD	AB0911	21	1	15	2	20091126	1000	26.501N	75.301W	646	652	11.218	35.457	2	35.458	2	146.2	2	146.2	2
WBTSD	AB0911	21	1	16	2	20091126	1000	26.501N	75.301W	496	500	13.852	35.830	2	35.831	2	159.3	2	158.4	2
WBTSD	AB0911	21	1	17	2	20091126	1000	26.501N	75.301W	398	401	15.985	36.181	2	36.183	2	174.5	2	173.8	2
WBTSD	AB0911	21	1	18	2	20091126	1000	26.501N	75.301W	397	400	15.990	36.182	2	36.183	2	174.5	2	174.1	2
WBTSD	AB0911	21	1	19	2	20091126	1000	26.501N	75.301W	298	300	18.239	36.562	2	36.562	2	190.5	2	192.0	2
WBTSD	AB0911	21	1	20	2	20091126	1000	26.501N	75.301W	200	201	20.680	36.744	2	36.744	2	187.5	2	187.3	2
WBTSD	AB0911	21	1	21	2	20091126	1000	26.501N	75.301W	125	126	23.430	36.802	2	36.803	2	212.3	2	212.0	2
WBTSD	AB0911	21	1	22	2	20091126	1000	26.501N	75.301W	50	50	26.811	36.612	2	36.613	2	188.4	2	202.2	4
WBTSD	AB0911	21	1	23	2	20091126	1000	26.501N	75.301W	3	3	26.753	36.570	2	36.570	2	199.7	2	199.1	2
WBTSD	AB0911	21	1	24	2	20091126	1000	26.501N	75.301W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	22	1	1	2	20091126	1510	26.500N	75.084W	4588	4669	2.165	34.873	2	34.874	2	244.7	2	347.0	4
WBTSD	AB0911	22	1	2	2	20091126	1510	26.500N	75.084W	4588	4669	2.164	34.873	2	34.873	2	243.7	2	267.7	4
WBTSD	AB0911	22	1	3	2	20091126	1510	26.500N	75.084W	3937	4000	2.245	34.890	2	34.890	2	265.1	2	266.9	2
WBTSD	AB0911	22	1	4	2	20091126	1510	26.500N	75.084W	3448	3500	2.308	34.898	2	34.897	2	267.6	2	267.4	2
WBTSD	AB0911	22	1	5	2	20091126	1510	26.500N	75.084W	2959	2999	2.545	34.915	2	34.914	2	267.5	2	268.6	2
WBTSD	AB0911	22	1	6	2	20091126	1510	26.500N	75.084W	2713	2749	2.773	34.929	2	34.928	2	265.3	2	265.8	2
WBTSD	AB0911	22	1	7	2	20091126	1510	26.500N	75.084W	2468	2499	2.988	34.943	2	34.942	2	263.0	2	263.7	2
WBTSD	AB0911	22	1	8	2	20091126	1510	26.500N	75.084W	2468	2500	2.988	34.942	2	34.941	2	263.0	2	263.6	2
WBTSD	AB0911	22	1	9	2	20091126	1510	26.500N	75.084W	2223	2250	3.253	34.956	2	34.954	2	262.0	2	262.1	2
WBTSD	AB0911	22	1	10	2	20091126	1510	26.500N	75.084W	1969	1991	3.475	34.962	2	34.961	2	262.8	2	262.8	6
WBTSD	AB0911	22	1	11	2	20091126	1510	26.500N	75.084W	1731	1750	3.717	34.967	2	34.967	2	262.4	2	262.8	2
WBTSD	AB0911	22	1	12	2	20091126	1510	26.500N	75.084W	1482	1497	4.116	34.989	2	34.988	2	257.0	2	256.7	2
WBTSD	AB0911	22	1	13	2	20091126	1510	26.500N	75.084W	1238	1249	4.758	35.029	2	35.028	2	243.0	2	243.1	2
WBTSD	AB0911	22	1	14	2	20091126	1510	26.500N	75.084W	990	999	6.086	35.080	2	35.079	2	203.3	2	204.0	2
WBTSD	AB0911	22	1	15	2	20091126	1510	26.500N	75.084W	792	799	8.493	35.165	2	35.164	2	150.0	2	150.5	2
WBTSD	AB0911	22	1	16	2	20091126	1510	26.500N	75.084W	650	655	10.926	35.419	2	35.417	2	145.9	2	145.4	2
WBTSD	AB0911	22	1	17	2	20091126	1510	26.500N	75.084W	495	499	13.630	35.797	2	35.804	2	157.6	2	157.7	2
WBTSD	AB0911	22	1	18	2	20091126	1510	26.500N	75.084W	397	400	15.339	36.071	2	36.057	4	168.0	2	167.8	2
WBTSD	AB0911	22	1	19	2	20091126	1510	26.500N	75.084W	297	300	18.093	36.539	2	36.536	2	189.7	2	190.2	2
WBTSD	AB0911	22	1	20	2	20091126	1510	26.500N	75.084W	199	200	20.647	36.743	2	36.741	2	187.3	2	186.9	2

WBTSD	AB0911	22	1	21	2	20091126	1510	26.500N	75.084W	122	123	23.253	36.802	2	36.802	2	211.1	2	211.0	2
WBTSD	AB0911	22	1	22	2	20091126	1510	26.500N	75.084W	49	49	26.706	36.571	2	36.571	2	198.9	2	199.5	2
WBTSD	AB0911	22	1	23	2	20091126	1510	26.500N	75.084W	4	4	26.775	36.570	2	36.569	2	200.0	2	200.0	2
WBTSD	AB0911	22	1	24	2	20091126	1510	26.500N	75.084W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	23	1	1	2	20091126	2003	26.498N	74.800W	4524	4603	2.096	34.866	2	34.865	2	253.6	2	253.1	2
WBTSD	AB0911	23	1	2	2	20091126	2003	26.498N	74.800W	3936	4000	2.226	34.889	2	34.888	2	263.9	2	264.3	2
WBTSD	AB0911	23	1	3	2	20091126	2003	26.498N	74.800W	3448	3500	2.269	34.897	2	34.896	2	266.2	2	266.6	6
WBTSD	AB0911	23	1	4	2	20091126	2003	26.498N	74.800W	2958	2998	2.501	34.914	2	34.913	2	267.3	2	267.4	2
WBTSD	AB0911	23	1	5	2	20091126	2003	26.498N	74.800W	2714	2750	2.707	34.926	2	34.925	2	265.9	2	266.1	2
WBTSD	AB0911	23	1	6	2	20091126	2003	26.498N	74.800W	2469	2500	2.946	34.940	2	34.939	2	263.3	2	263.1	2
WBTSD	AB0911	23	1	7	2	20091126	2003	26.498N	74.800W	2222	2249	3.252	34.956	2	34.956	2	262.0	2	262.0	2
WBTSD	AB0911	23	1	8	2	20091126	2003	26.498N	74.800W	1978	2000	3.473	34.962	2	34.961	2	262.6	2	262.5	2
WBTSD	AB0911	23	1	9	2	20091126	2003	26.498N	74.800W	1730	1749	3.716	34.968	2	34.967	2	262.8	2	262.3	2
WBTSD	AB0911	23	1	10	2	20091126	2003	26.498N	74.800W	1504	1520	4.034	34.984	2	34.984	2	258.5	2	257.8	2
WBTSD	AB0911	23	1	11	2	20091126	2003	26.498N	74.800W	1188	1199	4.828	35.034	2	35.034	2	241.4	2	241.2	2
WBTSD	AB0911	23	1	12	2	20091126	2003	26.498N	74.800W	991	1000	6.232	35.083	2	35.082	2	199.5	2	200.6	2
WBTSD	AB0911	23	1	13	2	20091126	2003	26.498N	74.800W	793	799	9.026	35.207	2	35.206	2	145.8	2	146.1	2
WBTSD	AB0911	23	1	14	2	20091126	2003	26.498N	74.800W	644	650	12.042	35.565	2	35.562	2	149.6	2	149.7	2
WBTSD	AB0911	23	1	15	2	20091126	2003	26.498N	74.800W	496	500	15.075	36.024	2	36.020	2	167.7	2	167.8	2
WBTSD	AB0911	23	1	16	2	20091126	2003	26.498N	74.800W	397	400	17.129	36.383	2	36.382	2	185.8	2	185.4	2
WBTSD	AB0911	23	1	17	2	20091126	2003	26.498N	74.800W	397	400	17.131	36.384	2	36.378	2	185.7	2	185.2	2
WBTSD	AB0911	23	1	18	2	20091126	2003	26.498N	74.800W	297	299	18.206	36.563	2	36.562	2	192.9	2	193.9	2
WBTSD	AB0911	23	1	19	2	20091126	2003	26.498N	74.800W	199	200	20.141	36.730	2	36.725	2	180.9	2	188.8	4
WBTSD	AB0911	23	1	20	2	20091126	2003	26.498N	74.800W	124	125	22.507	36.810	2	36.808	2	206.8	2	206.2	2
WBTSD	AB0911	23	1	21	2	20091126	2003	26.498N	74.800W	50	51	26.374	36.582	2	36.582	2	201.6	2	200.7	2
WBTSD	AB0911	23	1	22	2	20091126	2003	26.498N	74.800W	50	51	26.372	36.582	2	36.583	2	201.4	2	200.7	2
WBTSD	AB0911	23	1	23	2	20091126	2003	26.498N	74.800W	2	2	26.770	36.571	2	36.571	2	200.4	2	199.8	2
WBTSD	AB0911	23	1	24	2	20091126	2003	26.498N	74.800W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	24	1	1	2	20091127	0116	26.502N	74.514W	4469	4546	2.107	34.869	2	34.869	2	254.8	2	254.2	2
WBTSD	AB0911	24	1	2	2	20091127	0116	26.502N	74.514W	3936	3999	2.214	34.889	2	34.889	2	263.8	2	264.1	2
WBTSD	AB0911	24	1	3	2	20091127	0116	26.502N	74.514W	3449	3500	2.301	34.899	2	34.899	2	266.9	2	267.6	2
WBTSD	AB0911	24	1	4	2	20091127	0116	26.502N	74.514W	2958	2999	2.567	34.917	2	34.915	2	267.0	2	267.7	2
WBTSD	AB0911	24	1	5	2	20091127	0116	26.502N	74.514W	2713	2749	2.758	34.928	2	34.928	2	265.1	2	265.7	2
WBTSD	AB0911	24	1	6	2	20091127	0116	26.502N	74.514W	2468	2499	3.006	34.944	2	34.942	2	262.9	2	263.1	2
WBTSD	AB0911	24	1	7	2	20091127	0116	26.502N	74.514W	2223	2250	3.220	34.954	2	34.954	2	262.2	2	262.1	2
WBTSD	AB0911	24	1	8	2	20091127	0116	26.502N	74.514W	1977	1999	3.503	34.963	2	34.962	2	262.8	2	262.8	2
WBTSD	AB0911	24	1	9	2	20091127	0116	26.502N	74.514W	1730	1749	3.763	34.970	2	34.971	2	262.1	2	261.7	2
WBTSD	AB0911	24	1	10	2	20091127	0116	26.502N	74.514W	1484	1499	4.179	34.995	2	34.994	2	255.9	2	255.8	2
WBTSD	AB0911	24	1	11	2	20091127	0116	26.502N	74.514W	1237	1249	4.918	35.040	2	35.041	2	238.4	2	238.2	2
WBTSD	AB0911	24	1	12	2	20091127	0116	26.502N	74.514W	989	998	6.856	35.093	2	35.092	2	171.1	2	182.3	4
WBTSD	AB0911	24	1	13	2	20091127	0116	26.502N	74.514W	793	800	9.430	35.244	2	35.240	4	144.3	2	144.2	2
WBTSD	AB0911	24	1	14	2	20091127	0116	26.502N	74.514W	644	649	12.259	35.592	2	35.589	2	147.8	2	147.4	2
WBTSD	AB0911	24	1	15	2	20091127	0116	26.502N	74.514W	644	649	12.259	35.592	2	35.589	2	147.8	2	148.3	2
WBTSD	AB0911	24	1	16	2	20091127	0116	26.502N	74.514W	496	500	15.742	36.137	2	36.136	2	171.9	2	171.3	2
WBTSD	AB0911	24	1	17	2	20091127	0116	26.502N	74.514W	397	400	17.541	36.458	2	36.458	2	190.9	2	191.0	2
WBTSD	AB0911	24	1	18	2	20091127	0116	26.502N	74.514W	288	290	18.805	36.619	2	36.619	2	189.0	2	187.7	2
WBTSD	AB0911	24	1	19	2	20091127	0116	26.502N	74.514W	198	199	20.616	36.758	2	36.751	2	194.0	2	192.3	2
WBTSD	AB0911	24	1	20	2	20091127	0116	26.502N	74.514W	198	199	20.620	36.758	2	36.754	2	182.7	2	191.4	4
WBTSD	AB0911	24	1	21	2	20091127	0116	26.502N	74.514W	124	125	23.310	36.807	2	36.805	2	210.6	2	210.2	2
WBTSD	AB0911	24	1	22	2	20091127	0116	26.502N	74.514W	49	50	26.681	36.548	2	36.548	2	199.0	2	199.2	2
WBTSD	AB0911	24	1	23	2	20091127	0116	26.502N	74.514W	3	3	26.763	36.529	2	36.528	2	199.2	2	198.7	6
WBTSD	AB0911	24	1	24	2	20091127	0116	26.502N	74.514W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	25	1	1	2	20091127	0618	26.500N	74.234W	4503	4581	2.091	34.862	2	34.873	4	241.5	2	259.4	4
WBTSD	AB0911	25	1	2	2	20091127	0618	26.500N	74.234W	3937	4000	2.226	34.890	2	34.889	2	264.3	2	263.8	2
WBTSD	AB0911	25	1	3	2	20091127	0618	26.500N	74.234W	3449	3500	2.339	34.902	2	34.902	2	267.3	2	267.0	2
WBTSD	AB0911	25	1	4	2	20091127	0618	26.500N	74.234W	2959	3000	2.621	34.920	2	34.920	2	266.3	2	266.2	2
WBTSD	AB0911	25	1	5	2	20091127	0618	26.500N	74.234W	2714	2750	2.802	34.931	2	34.930	2	264.9	2	264.8	2
WBTSD	AB0911	25	1	6	2	20091127	0618	26.500N	74.234W	2467	2498	3.044	34.945	2	34.945	2	262.9	2	263.0	2
WBTSD	AB0911	25	1	7	2	20091127	0618	26.500N	74.234W	2222	2249	3.301	34.958	2	34.958	2	262.2	2	262.2	2
WBTSD	AB0911	25	1	8	2	20091127	0618	26.500N	74.234W	1977	2000	3.591	34.964	2	34.965	2	262.9	2	261.9	2
WBTSD	AB0911	25	1	9	2	20091127	0618	26.500N	74.234W	1731	1750	3.896	34.977	2	34.977	2	247.4	2	262.7	4
WBTSD	AB0911	25	1	10	2	20091127	0618	26.500N	74.234W	1484	1499	4.280	34.998	2	34.999	2	241.1	2	260.1	4
WBTSD	AB0911	25	1	11	2	20091127	0618	26.500N	74.234W	1238	1249	5.144	35.050	2	-999.000	9	219.6	2	253.4	4
WBTSD	AB0911	25	1	12	2	20091127	0618	26.500N	74.234W	1238	1250	5.146	35.053	2	35.054	2	231.9	2	231.8	2
WBTSD	AB0911	25	1	13	2	20091127	0618	26.500N	74.234W	990	999	7.221	35.103	2	35.103	2	162.2	2	231.8	4
WBTSD	AB0911	25	1	14	2	20091127	0618	26.500N	74.234W	793	800	10.259	35.333	2	35.326	2	135.6	2	171.8	4

WBTSD	AB0911	25	1	15	2	20091127	0618	26.500N	74.234W	644	650	13.194	35.723	2	-999.000	9	144.6	2	141.6	4
WBTSD	AB0911	25	1	16	2	20091127	0618	26.500N	74.234W	496	500	16.518	36.272	2	36.271	2	172.2	2	178.6	4
WBTSD	AB0911	25	1	17	2	20091127	0618	26.500N	74.234W	397	400	17.838	36.507	2	36.505	2	188.7	2	190.3	2
WBTSD	AB0911	25	1	18	2	20091127	0618	26.500N	74.234W	397	400	17.842	36.507	2	36.507	2	188.7	2	190.3	2
WBTSD	AB0911	25	1	19	2	20091127	0618	26.500N	74.234W	297	299	18.812	36.634	2	36.632	2	181.0	2	181.6	2
WBTSD	AB0911	25	1	20	2	20091127	0618	26.500N	74.234W	198	200	21.644	36.886	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	25	1	21	2	20091127	0618	26.500N	74.234W	124	125	24.493	36.924	2	36.918	4	189.6	2	196.4	4
WBTSD	AB0911	25	1	22	2	20091127	0618	26.500N	74.234W	50	50	27.056	36.637	2	36.638	2	198.2	2	198.8	2
WBTSD	AB0911	25	1	23	2	20091127	0618	26.500N	74.234W	11	11	27.281	36.653	2	36.653	2	197.1	2	197.5	2
WBTSD	AB0911	25	1	24	2	20091127	0618	26.500N	74.234W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	26	1	1	2	20091127	1148	26.499N	73.865W	4714	4799	2.127	34.867	2	34.868	2	254.9	2	253.7	2
WBTSD	AB0911	26	1	2	2	20091127	1148	26.499N	73.865W	4422	4498	2.230	34.884	2	34.884	2	262.0	2	261.1	2
WBTSD	AB0911	26	1	3	2	20091127	1148	26.499N	73.865W	3938	4001	2.264	34.893	2	34.894	2	265.6	2	265.1	2
WBTSD	AB0911	26	1	4	2	20091127	1148	26.499N	73.865W	3445	3496	2.414	34.906	2	34.907	2	267.6	2	267.3	2
WBTSD	AB0911	26	1	5	2	20091127	1148	26.499N	73.865W	3445	3497	2.415	34.906	2	34.907	2	267.5	2	267.5	2
WBTSD	AB0911	26	1	6	2	20091127	1148	26.499N	73.865W	2948	2989	2.705	34.925	2	34.925	2	265.7	2	265.7	2
WBTSD	AB0911	26	1	7	2	20091127	1148	26.499N	73.865W	2708	2744	2.922	34.938	2	34.938	2	263.8	2	263.8	2
WBTSD	AB0911	26	1	8	2	20091127	1148	26.499N	73.865W	2468	2499	3.156	34.951	2	34.951	2	262.2	2	262.1	2
WBTSD	AB0911	26	1	9	2	20091127	1148	26.499N	73.865W	2223	2250	3.403	34.962	2	34.963	2	261.9	2	261.3	2
WBTSD	AB0911	26	1	10	2	20091127	1148	26.499N	73.865W	1978	2001	3.634	34.961	2	-999.000	9	262.8	2	262.6	2
WBTSD	AB0911	26	1	11	2	20091127	1148	26.499N	73.865W	1731	1749	3.941	34.979	2	34.980	2	260.0	2	259.1	2
WBTSD	AB0911	26	1	12	2	20091127	1148	26.499N	73.865W	1484	1499	4.357	35.001	2	35.007	4	252.3	2	251.3	2
WBTSD	AB0911	26	1	13	2	20091127	1148	26.499N	73.865W	1237	1249	5.309	35.059	2	35.060	2	226.8	2	227.2	2
WBTSD	AB0911	26	1	14	2	20091127	1148	26.499N	73.865W	991	1000	7.816	35.128	2	35.125	2	160.4	2	160.5	2
WBTSD	AB0911	26	1	15	2	20091127	1148	26.499N	73.865W	793	800	10.949	35.410	2	35.408	2	142.5	2	141.2	6
WBTSD	AB0911	26	1	16	2	20091127	1148	26.499N	73.865W	644	649	13.863	35.830	2	35.831	2	158.0	2	157.8	2
WBTSD	AB0911	26	1	17	2	20091127	1148	26.499N	73.865W	495	499	17.119	36.379	2	36.378	2	185.2	2	184.9	2
WBTSD	AB0911	26	1	18	2	20091127	1148	26.499N	73.865W	396	399	18.119	36.551	2	36.552	2	193.1	2	193.6	2
WBTSD	AB0911	26	1	19	2	20091127	1148	26.499N	73.865W	297	299	19.101	36.643	2	36.642	2	187.1	2	187.0	2
WBTSD	AB0911	26	1	20	2	20091127	1148	26.499N	73.865W	198	199	21.262	36.789	2	36.790	2	193.4	2	193.6	2
WBTSD	AB0911	26	1	21	2	20091127	1148	26.499N	73.865W	123	124	24.109	36.861	2	36.858	2	198.7	2	199.3	2
WBTSD	AB0911	26	1	22	2	20091127	1148	26.499N	73.865W	49	49	26.886	36.631	2	36.635	2	198.7	2	198.9	2
WBTSD	AB0911	26	1	23	2	20091127	1148	26.499N	73.865W	2	2	26.925	36.644	2	36.645	2	198.2	2	198.8	2
WBTSD	AB0911	26	1	24	2	20091127	1148	26.499N	73.865W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	27	1	1	2	20091127	1744	26.497N	73.504W	4878	4967	2.138	34.866	2	34.867	2	254.9	2	255.5	2
WBTSD	AB0911	27	1	2	2	20091127	1744	26.497N	73.504W	4423	4499	2.259	34.887	2	34.887	2	263.3	2	262.9	2
WBTSD	AB0911	27	1	3	2	20091127	1744	26.497N	73.504W	3937	4001	2.277	34.893	2	34.894	2	265.8	2	265.7	2
WBTSD	AB0911	27	1	4	2	20091127	1744	26.497N	73.504W	3449	3500	2.405	34.905	2	34.905	2	267.8	2	268.1	2
WBTSD	AB0911	27	1	5	2	20091127	1744	26.497N	73.504W	3448	3500	2.405	34.905	2	34.905	2	267.8	2	268.2	2
WBTSD	AB0911	27	1	6	2	20091127	1744	26.497N	73.504W	2959	3000	2.695	34.924	2	34.924	2	265.8	2	266.6	2
WBTSD	AB0911	27	1	7	2	20091127	1744	26.497N	73.504W	2715	2751	2.919	34.937	2	34.937	2	250.8	2	267.2	4
WBTSD	AB0911	27	1	8	2	20091127	1744	26.497N	73.504W	2471	2502	3.161	34.951	2	34.952	2	262.1	2	262.4	2
WBTSD	AB0911	27	1	9	2	20091127	1744	26.497N	73.504W	2224	2251	3.404	34.960	2	34.961	2	262.3	2	262.6	2
WBTSD	AB0911	27	1	10	2	20091127	1744	26.497N	73.504W	1978	2000	3.630	34.964	2	34.964	2	262.9	2	262.9	2
WBTSD	AB0911	27	1	11	2	20091127	1744	26.497N	73.504W	1731	1750	3.940	34.978	2	34.979	2	259.7	2	259.9	2
WBTSD	AB0911	27	1	12	2	20091127	1744	26.497N	73.504W	1485	1500	4.360	35.003	2	35.004	2	252.6	2	253.9	2
WBTSD	AB0911	27	1	13	2	20091127	1744	26.497N	73.504W	1239	1251	5.264	35.058	2	35.059	2	228.5	2	228.6	2
WBTSD	AB0911	27	1	14	2	20091127	1744	26.497N	73.504W	991	1000	7.678	35.124	2	35.124	4	161.3	2	162.3	2
WBTSD	AB0911	27	1	15	2	20091127	1744	26.497N	73.504W	794	801	11.325	35.473	2	35.474	2	146.7	2	147.3	2
WBTSD	AB0911	27	1	16	2	20091127	1744	26.497N	73.504W	645	651	14.474	35.924	2	35.928	2	162.7	2	162.0	2
WBTSD	AB0911	27	1	17	2	20091127	1744	26.497N	73.504W	498	502	17.335	36.422	2	36.424	2	189.4	2	190.3	2
WBTSD	AB0911	27	1	18	2	20091127	1744	26.497N	73.504W	398	401	18.101	36.553	2	36.554	2	184.4	2	197.2	4
WBTSD	AB0911	27	1	19	2	20091127	1744	26.497N	73.504W	295	297	18.997	36.637	2	36.638	2	180.7	2	186.6	4
WBTSD	AB0911	27	1	20	2	20091127	1744	26.497N	73.504W	198	200	20.480	36.738	2	36.741	2	206.0	2	205.6	2
WBTSD	AB0911	27	1	21	2	20091127	1744	26.497N	73.504W	134	135	22.843	36.831	2	36.830	2	178.5	2	195.7	4
WBTSD	AB0911	27	1	22	2	20091127	1744	26.497N	73.504W	49	49	26.668	36.590	2	36.593	2	198.8	2	199.5	2
WBTSD	AB0911	27	1	23	2	20091127	1744	26.497N	73.504W	12	12	26.722	36.574	2	36.576	2	198.5	2	199.6	2
WBTSD	AB0911	27	1	24	2	20091127	1744	26.497N	73.504W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	28	1	1	2	20091127	2356	26.497N	73.132W	5028	5122	2.132	34.863	2	34.863	2	241.3	2	332.0	4
WBTSD	AB0911	28	1	2	2	20091127	2356	26.497N	73.132W	4425	4501	2.275	34.889	2	34.889	2	264.4	2	264.2	2
WBTSD	AB0911	28	1	3	2	20091127	2356	26.497N	73.132W	3937	4000	2.300	34.895	2	34.895	2	266.6	2	266.8	2
WBTSD	AB0911	28	1	4	2	20091127	2356	26.497N	73.132W	3449	3500	2.415	34.906	2	34.905	2	267.6	2	268.2	6
WBTSD	AB0911	28	1	5	2	20091127	2356	26.497N	73.132W	2960	3000	2.725	34.925	2	34.926	2	265.9	2	266.7	2
WBTSD	AB0911	28	1	6	2	20091127	2356	26.497N	73.132W	2716	2752	2.938	34.938	2	34.938	2	263.5	2	264.2	2
WBTSD	AB0911	28	1	7	2	20091127	2356	26.497N	73.132W	2469	2500	3.181	34.953	2	34.953	2	262.2	2	262.6	2
WBTSD	AB0911	28	1	8	2	20091127	2356	26.497N	73.132W	2222	2249	3.429	34.962	2	34.962	2	262.1	2	262.5	2

WBTSD	AB0911	28	1	9	2	20091127	2356	26.497N	73.132W	2222	2249	3.429	34.962	2	34.963	2	262.1	2	262.2	2
WBTSD	AB0911	28	1	10	2	20091127	2356	26.497N	73.132W	1978	2001	3.663	34.965	2	34.965	2	262.7	2	262.9	2
WBTSD	AB0911	28	1	11	2	20091127	2356	26.497N	73.132W	1730	1749	3.982	34.981	2	34.981	2	259.4	2	259.1	2
WBTSD	AB0911	28	1	12	2	20091127	2356	26.497N	73.132W	1484	1500	4.460	35.012	2	35.013	2	250.1	2	250.2	2
WBTSD	AB0911	28	1	13	2	20091127	2356	26.497N	73.132W	1238	1250	5.428	35.063	2	35.063	2	223.3	2	224.1	2
WBTSD	AB0911	28	1	14	2	20091127	2356	26.497N	73.132W	990	999	7.797	35.129	2	35.130	2	158.1	2	158.4	2
WBTSD	AB0911	28	1	15	2	20091127	2356	26.497N	73.132W	793	800	11.146	35.440	2	35.440	2	144.6	2	145.0	2
WBTSD	AB0911	28	1	16	2	20091127	2356	26.497N	73.132W	645	650	14.496	35.926	2	35.927	2	162.6	2	162.5	2
WBTSD	AB0911	28	1	17	2	20091127	2356	26.497N	73.132W	495	499	17.399	36.435	2	36.436	2	191.6	2	191.9	2
WBTSD	AB0911	28	1	18	2	20091127	2356	26.497N	73.132W	397	400	18.136	36.557	2	36.556	2	197.0	2	197.2	2
WBTSD	AB0911	28	1	19	2	20091127	2356	26.497N	73.132W	298	300	18.846	36.608	2	36.556	4	199.0	2	197.9	2
WBTSD	AB0911	28	1	20	2	20091127	2356	26.497N	73.132W	197	199	19.862	36.675	2	36.676	2	194.2	2	203.6	4
WBTSD	AB0911	28	1	21	2	20091127	2356	26.497N	73.132W	124	125	21.895	36.862	2	36.863	2	196.6	2	212.0	4
WBTSD	AB0911	28	1	22	2	20091127	2356	26.497N	73.132W	50	50	25.954	36.702	2	36.703	2	202.6	2	202.3	2
WBTSD	AB0911	28	1	23	2	20091127	2356	26.497N	73.132W	3	3	25.951	36.703	2	36.702	2	202.6	2	202.4	2
WBTSD	AB0911	28	1	24	2	20091127	2356	26.497N	73.132W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	29	1	1	2	20091128	0553	26.499N	72.767W	5113	5209	2.162	34.865	2	34.866	2	241.4	2	252.8	4
WBTSD	AB0911	29	1	2	2	20091128	0553	26.499N	72.767W	4424	4500	2.284	34.890	2	34.890	2	264.6	2	264.0	2
WBTSD	AB0911	29	1	3	2	20091128	0553	26.499N	72.767W	3936	4000	2.337	34.898	2	34.897	2	266.5	2	266.5	2
WBTSD	AB0911	29	1	4	2	20091128	0553	26.499N	72.767W	3449	3501	2.492	34.910	2	34.910	2	267.5	2	267.8	2
WBTSD	AB0911	29	1	5	2	20091128	0553	26.499N	72.767W	2959	3000	2.792	34.929	2	34.929	2	265.0	2	265.3	2
WBTSD	AB0911	29	1	6	2	20091128	0553	26.499N	72.767W	2714	2750	2.984	34.941	2	34.940	2	263.4	2	263.5	2
WBTSD	AB0911	29	1	7	2	20091128	0553	26.499N	72.767W	2468	2499	3.184	34.952	2	34.952	2	261.9	2	262.2	2
WBTSD	AB0911	29	1	8	2	20091128	0553	26.499N	72.767W	2224	2251	3.409	34.961	2	34.961	2	261.6	2	261.8	2
WBTSD	AB0911	29	1	9	2	20091128	0553	26.499N	72.767W	1978	2000	3.634	34.967	2	34.968	2	262.5	2	262.0	2
WBTSD	AB0911	29	1	10	2	20091128	0553	26.499N	72.767W	1731	1749	3.931	34.980	2	34.981	2	259.1	2	258.9	2
WBTSD	AB0911	29	1	11	2	20091128	0553	26.499N	72.767W	1731	1749	3.932	34.980	2	34.981	2	259.2	2	258.9	2
WBTSD	AB0911	29	1	12	2	20091128	0553	26.499N	72.767W	1484	1499	4.409	35.009	2	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	29	1	13	2	20091128	0553	26.499N	72.767W	1239	1251	5.561	35.099	2	35.099	2	219.7	2	219.5	2
WBTSD	AB0911	29	1	14	2	20091128	0553	26.499N	72.767W	990	999	7.570	35.120	2	35.118	2	163.3	2	161.9	6
WBTSD	AB0911	29	1	15	2	20091128	0553	26.499N	72.767W	794	801	11.239	35.463	2	35.458	4	148.7	2	146.4	2
WBTSD	AB0911	29	1	16	2	20091128	0553	26.499N	72.767W	644	649	14.825	35.985	2	35.983	2	173.8	2	173.6	2
WBTSD	AB0911	29	1	17	2	20091128	0553	26.499N	72.767W	489	493	17.416	36.437	2	36.438	2	191.4	2	191.2	2
WBTSD	AB0911	29	1	18	2	20091128	0553	26.499N	72.767W	397	400	18.123	36.556	2	36.555	2	196.3	2	196.7	2
WBTSD	AB0911	29	1	19	2	20091128	0553	26.499N	72.767W	297	299	18.866	36.617	2	36.615	2	196.5	2	195.8	2
WBTSD	AB0911	29	1	20	2	20091128	0553	26.499N	72.767W	199	201	19.782	36.667	2	36.667	2	206.5	2	206.3	2
WBTSD	AB0911	29	1	21	2	20091128	0553	26.499N	72.767W	124	124	21.425	36.814	2	36.813	2	190.1	2	198.1	4
WBTSD	AB0911	29	1	22	2	20091128	0553	26.499N	72.767W	50	50	26.089	36.671	2	36.691	4	190.8	2	205.4	4
WBTSD	AB0911	29	1	23	2	20091128	0553	26.499N	72.767W	4	4	26.511	36.603	2	36.603	2	200.4	2	200.2	2
WBTSD	AB0911	29	1	24	2	20091128	0553	26.499N	72.767W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	30	1	1	2	20091129	0040	26.498N	72.381W	5160	5258	2.165	34.865	2	34.866	2	240.3	2	261.4	4
WBTSD	AB0911	30	1	2	2	20091129	0040	26.498N	72.381W	4906	4996	2.243	34.879	2	34.879	2	259.3	2	258.3	2
WBTSD	AB0911	30	1	3	2	20091129	0040	26.498N	72.381W	4423	4499	2.295	34.891	2	34.890	2	264.5	2	264.1	2
WBTSD	AB0911	30	1	4	2	20091129	0040	26.498N	72.381W	3937	4000	2.340	34.898	2	34.897	2	267.0	2	267.2	2
WBTSD	AB0911	30	1	5	2	20091129	0040	26.498N	72.381W	3448	3499	2.494	34.911	2	34.910	2	267.7	2	268.2	2
WBTSD	AB0911	30	1	6	2	20091129	0040	26.498N	72.381W	2958	2999	2.827	34.932	2	34.931	2	264.6	2	265.1	2
WBTSD	AB0911	30	1	7	2	20091129	0040	26.498N	72.381W	2714	2749	3.023	34.944	2	34.944	2	262.6	2	263.3	2
WBTSD	AB0911	30	1	8	2	20091129	0040	26.498N	72.381W	2468	2499	3.242	34.956	2	34.956	2	261.3	2	262.0	2
WBTSD	AB0911	30	1	9	2	20091129	0040	26.498N	72.381W	2223	2249	3.448	34.964	2	34.964	2	260.7	2	261.7	2
WBTSD	AB0911	30	1	10	2	20091129	0040	26.498N	72.381W	1977	1999	3.742	34.983	2	34.983	2	259.0	2	258.7	2
WBTSD	AB0911	30	1	11	2	20091129	0040	26.498N	72.381W	1731	1750	4.034	34.992	2	34.992	2	258.1	2	257.2	2
WBTSD	AB0911	30	1	12	2	20091129	0040	26.498N	72.381W	1485	1500	4.682	35.049	2	35.049	2	233.1	2	243.7	4
WBTSD	AB0911	30	1	13	2	20091129	0040	26.498N	72.381W	1238	1250	5.614	35.100	2	35.099	2	219.5	2	219.5	2
WBTSD	AB0911	30	1	14	2	20091129	0040	26.498N	72.381W	992	1001	7.683	35.131	2	35.132	2	162.2	2	163.8	2
WBTSD	AB0911	30	1	15	2	20091129	0040	26.498N	72.381W	793	800	10.948	35.429	2	35.426	2	147.1	2	146.4	2
WBTSD	AB0911	30	1	16	2	20091129	0040	26.498N	72.381W	644	649	14.437	35.919	2	35.920	2	167.5	2	168.0	2
WBTSD	AB0911	30	1	17	2	20091129	0040	26.498N	72.381W	496	500	17.237	36.407	2	36.408	2	190.6	2	191.9	2
WBTSD	AB0911	30	1	18	2	20091129	0040	26.498N	72.381W	397	400	18.073	36.549	2	36.548	2	196.9	2	197.9	2
WBTSD	AB0911	30	1	19	2	20091129	0040	26.498N	72.381W	298	300	18.626	36.599	2	36.598	2	193.7	2	194.2	2
WBTSD	AB0911	30	1	20	2	20091129	0040	26.498N	72.381W	198	199	19.711	36.666	2	36.665	2	205.9	2	206.4	2
WBTSD	AB0911	30	1	21	2	20091129	0040	26.498N	72.381W	124	125	21.622	36.752	2	36.751	2	204.9	2	206.6	2
WBTSD	AB0911	30	1	22	2	20091129	0040	26.498N	72.381W	48	49	25.915	36.670	2	36.670	2	201.6	2	202.0	2
WBTSD	AB0911	30	1	23	2	20091129	0040	26.498N	72.381W	3	3	25.911	36.660	2	36.660	2	202.5	2	201.6	2
WBTSD	AB0911	30	1	24	2	20091129	0040	26.498N	72.381W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	31	1	1	2	20091129	0657	26.499N	71.991W	5269	5371	2.154	34.862	2	34.863	2	239.6	2	251.6	4
WBTSD	AB0911	31	1	2	2	20091129	0657	26.499N	71.991W	4910	5000	2.278	34.883	2	34.884	2	261.6	2	259.9	2

WBTSD	AB0911	31	1	3	2	20091129	0657	26.499N	71.991W	4424	4500	2.296	34.891	2	34.891	2	264.5	2	263.8	2
WBTSD	AB0911	31	1	4	2	20091129	0657	26.499N	71.991W	3937	4000	2.330	34.898	2	34.897	2	266.7	2	267.7	2
WBTSD	AB0911	31	1	5	2	20091129	0657	26.499N	71.991W	3448	3499	2.500	34.911	2	34.911	2	268.1	2	267.3	2
WBTSD	AB0911	31	1	6	2	20091129	0657	26.499N	71.991W	2960	3001	2.816	34.931	2	34.931	2	265.0	2	265.9	2
WBTSD	AB0911	31	1	7	2	20091129	0657	26.499N	71.991W	2714	2750	3.025	34.944	2	34.945	2	262.9	2	262.6	2
WBTSD	AB0911	31	1	8	2	20091129	0657	26.499N	71.991W	2470	2501	3.252	34.957	2	34.957	2	261.5	2	261.2	2
WBTSD	AB0911	31	1	9	2	20091129	0657	26.499N	71.991W	2223	2250	3.498	34.966	2	34.973	4	260.3	2	259.8	6
WBTSD	AB0911	31	1	10	2	20091129	0657	26.499N	71.991W	1978	2001	3.695	34.970	2	34.972	2	261.0	2	260.9	2
WBTSD	AB0911	31	1	11	2	20091129	0657	26.499N	71.991W	1731	1750	3.964	34.981	2	34.981	2	259.1	2	258.9	2
WBTSD	AB0911	31	1	12	2	20091129	0657	26.499N	71.991W	1485	1500	4.479	35.015	2	35.048	4	235.7	2	240.4	4
WBTSD	AB0911	31	1	13	2	20091129	0657	26.499N	71.991W	1238	1250	5.487	35.081	2	35.089	4	221.8	2	220.8	2
WBTSD	AB0911	31	1	14	2	20091129	0657	26.499N	71.991W	991	1000	7.388	35.096	2	35.097	2	164.3	2	163.4	2
WBTSD	AB0911	31	1	15	2	20091129	0657	26.499N	71.991W	794	800	10.657	35.407	2	35.403	2	137.9	2	149.3	4
WBTSD	AB0911	31	1	16	2	20091129	0657	26.499N	71.991W	644	650	13.890	35.841	2	35.839	2	166.7	2	167.5	2
WBTSD	AB0911	31	1	17	2	20091129	0657	26.499N	71.991W	496	500	16.896	36.342	2	36.342	2	183.5	2	184.6	2
WBTSD	AB0911	31	1	18	2	20091129	0657	26.499N	71.991W	396	399	17.948	36.532	2	36.533	2	194.8	2	194.8	2
WBTSD	AB0911	31	1	19	2	20091129	0657	26.499N	71.991W	298	300	18.498	36.590	2	36.590	2	191.9	2	193.0	2
WBTSD	AB0911	31	1	20	2	20091129	0657	26.499N	71.991W	198	199	19.560	36.653	2	36.653	2	201.6	2	200.3	2
WBTSD	AB0911	31	1	21	2	20091129	0657	26.499N	71.991W	124	125	21.655	36.814	2	36.819	2	207.5	2	208.7	2
WBTSD	AB0911	31	1	22	2	20091129	0657	26.499N	71.991W	49	49	26.136	36.664	2	36.667	2	200.9	2	201.0	2
WBTSD	AB0911	31	1	23	2	20091129	0657	26.499N	71.991W	3	3	26.137	36.661	2	36.661	2	201.4	2	201.0	2
WBTSD	AB0911	31	1	24	2	20091129	0657	26.499N	71.991W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	1	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	2	2	20091201	0353	26.502N	75.701W	3451	3503	2.363	34.901	2	34.902	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	3	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	4	2	20091201	0353	26.502N	75.701W	2959	3000	2.618	34.919	2	34.919	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	5	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	6	2	20091201	0353	26.502N	75.701W	2469	2500	3.032	34.945	2	34.945	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	7	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	8	2	20091201	0353	26.502N	75.701W	1977	2000	3.532	34.962	2	34.963	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	9	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	10	2	20091201	0353	26.502N	75.701W	1485	1500	4.182	34.993	2	34.994	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	11	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	12	2	20091201	0353	26.502N	75.701W	991	1000	6.706	35.086	2	35.095	4	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	13	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	14	2	20091201	0353	26.502N	75.701W	744	750	10.317	35.339	2	35.340	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	15	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	16	2	20091201	0353	26.502N	75.701W	496	500	16.048	36.188	2	36.193	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	17	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	18	2	20091201	0353	26.502N	75.701W	248	250	18.748	36.619	2	36.619	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	19	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	20	2	20091201	0353	26.502N	75.701W	99	99	23.331	36.827	2	36.828	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	21	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	22	2	20091201	0353	26.502N	75.701W	5	5	26.131	36.586	2	36.584	2	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	23	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	32	1	24	2	20091201	0353	26.502N	75.701W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	1	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	2	2	20091203	1456	26.493N	76.474W	3449	3500	2.389	34.903	2	34.902	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	3	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	4	2	20091203	1456	26.493N	76.474W	2958	2998	2.690	34.922	2	34.921	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	5	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	6	2	20091203	1456	26.493N	76.474W	2468	2499	3.160	34.954	2	34.955	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	7	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	8	2	20091203	1456	26.493N	76.474W	1978	2000	3.561	34.962	2	34.962	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	9	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	10	2	20091203	1456	26.493N	76.474W	1485	1500	4.164	34.990	2	34.991	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	11	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	12	2	20091203	1456	26.493N	76.474W	992	1001	6.052	35.080	2	35.080	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	13	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	14	2	20091203	1456	26.493N	76.474W	744	751	9.735	35.279	2	35.280	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	15	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	16	2	20091203	1456	26.493N	76.474W	496	499	15.723	36.133	2	36.135	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	17	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	18	2	20091203	1456	26.493N	76.474W	248	250	18.788	36.620	2	36.622	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	19	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	20	2	20091203	1456	26.493N	76.474W	99	99	23.262	36.820	2	36.820	2	-999.0	9	-999.0	9

WBTSD	AB0911	33	1	21	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	22	2	20091203	1456	26.493N	76.474W	3	3	26.437	36.612	2	36.611	2	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	23	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	33	1	24	2	20091203	1456	26.493N	76.474W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	1	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	2	2	20091204	0010	26.517N	76.832W	1080	1090	5.095	35.038	2	35.039	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	3	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	4	2	20091204	0010	26.517N	76.832W	996	1005	5.489	35.054	2	35.054	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	5	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	6	2	20091204	0010	26.517N	76.832W	901	908	7.007	35.100	2	35.100	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	7	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	8	2	20091204	0010	26.517N	76.832W	800	807	8.796	35.208	2	35.206	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	9	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	10	2	20091204	0010	26.517N	76.832W	599	604	13.787	35.814	2	35.817	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	11	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	12	2	20091204	0010	26.517N	76.832W	501	505	15.730	36.133	2	36.137	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	13	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	14	2	20091204	0010	26.517N	76.832W	301	304	18.392	36.580	2	36.580	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	15	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	16	2	20091204	0010	26.517N	76.832W	201	203	19.470	36.663	2	36.677	4	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	17	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	18	2	20091204	0010	26.517N	76.832W	102	102	23.332	36.802	2	36.801	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	19	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	20	2	20091204	0010	26.517N	76.832W	51	52	25.513	36.523	2	36.522	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	21	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	22	2	20091204	0010	26.517N	76.832W	3	3	25.672	36.526	2	36.524	2	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	23	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9
WBTSD	AB0911	34	1	24	2	20091204	0010	26.517N	76.832W	-999	-999	-999.000	-999.000	9	-999.000	9	-999.0	9	-999.0	9