ORNL/CDIAC-84
NDP-052

Total Carbon Dioxide, Hydrographic, and Nitrate Measurements in the Southwest Pacific During Austral Autumn, 1990: Results from NOAA/PMEL CGC-90 Cruise

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TOTAL CARBON DIOXIDE, HYDROGRAPHIC, AND NITRATE MEASUREMENTS IN THE SOUTHWEST PACIFIC DURING AUSTRAL AUTUMN, 1990: RESULTS FROM NOAA/PMEL CGC-90 CRUISE

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ABSTRACT

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In support of the National Oceanic and Atmospheric Administration (NOAA) Climate and Global Change (C&GC) Program, Pacific Marine Environmental Laboratory (PMEL) scientists have been measuring the growing burden of greenhouse gases in the thermocline waters of the Pacific Ocean since 1980. Collection of data at a series of hydrographic stations along longitude 170° W during austral autumn of 1990 was designed to enhance understanding of the increase in the column burden of chlorofluorocarbons and carbon dioxide in the thermocline waters since the last expedition in 1984.

This document presents the procedures and methods used to obtain total carbon dioxide (TCO_2), hydrographic, and nitrate data during the NOAA/PMEL research vessel (R/V) *Malcolm Baldrige* CGC-90 Cruise. Data were collected along two legs; sampling for Leg 1 began along 170° W from 15° S to 60° S, then angled northwest toward New Zealand across the Western Boundary Current. Leg 2 included a reoccupation of some stations between 30° S and 15° S on 170° W and measurements from 15° S to 5° N along 170° W. Along the cruise track 68 CTD stations were occupied for collection of chemical and hydrographic data. The following data report summarizes the TCO_2, salinity, temperature, and nitrate measurements from 63 stations. In addition, potential density and potential temperature were calculated from the measured variables.

The TCO_2 concentration in seawater samples was measured using a coulometric/extraction system (Models 5011 and 5030, respectively) originated by Ken Johnson (Johnson et al. 1985, 1987). Throughout the cruise, the accuracy was determined to be within 0.15%, and the precision was within 0.12%.

The NOAA/PMEL R/V Malcolm Baldrige CGC-90 Cruise data set is available without charge as a numeric data package (NDP) from the Carbon Dioxide Information Analysis Center. The NDP consists of two oceanographic data files, two FORTRAN 77 data retrieval routine files, a "readme" file, and this printed documentation, which describes the contents and format of all files as well as the procedures and methods used to obtain the data.

Keywords: carbon dioxide; nitrate; hydrographic measurements; carbon cycle; Pacific Ocean

PART 1:

OVERVIEW

1. BACKGROUND INFORMATION

Human activity is rapidly changing the composition of the earth's atmosphere, causing the greenhouse warming effect from excess carbon dioxide (CO_2) and other trace gas species such as chlorofluorocarbons, methane, and nitrous oxide. Combined, these gases play a critical role in controlling the earth's climate due to the increased trapping of outgoing infrared radiation. This mechanism has a large potential for significantly altering the world's climate.

Of all the anthropogenic CO_2 that has been released into the atmosphere, only about half still remains there; it is the "missing" CO_2 for which the global ocean is considered to be a dominant sink. Understanding the assimilation process is critical in determining the moderating role the oceans will play in delaying and damping the greenhouse warming predicted in the coming decades. Our goal is to help provide quantitative answers to the ways in which the oceans regulate and assimilate the excess CO_2, so that we can better predict the ocean's role in the natural climate cycle.

In response to these concerns, the Pacific Marine Environmental Laboratory (PMEL) conducted Cruise CGC-90 to the southwest Pacific onboard the research vessel (R/V) Malcolm Baldrige under the sponsorship of the Climate and Global Change Program(C&GC) of the National Oceanic and Atmospheric Administration (NOAA). Chemical and hydrographic data from 68 CTD stations were collected along the cruise track (Fig. 1). Several tracers were measured during the cruise, including chlorofluorocarbons, helium, tritium, total carbon dioxide (TCO_2), ^{13}C, pH, nutrients, salinity and oxygen. The following data report summarizes the TCO_2, salinity, temperature, and nitrate data from 63 stations of this cruise.

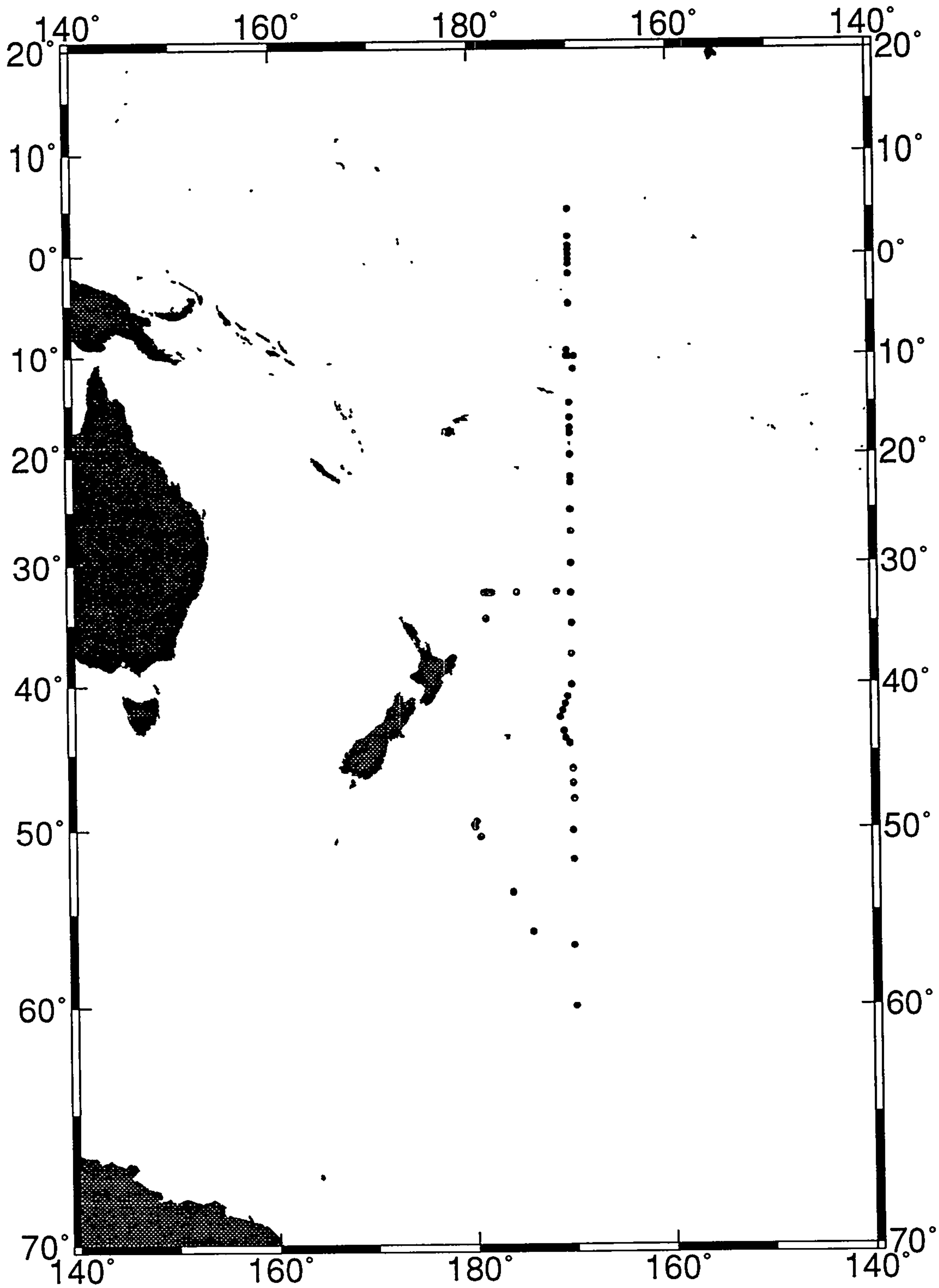

Figure 1. Station locations during R/V *Malcolm Baldrige* CGC-90 Cruise.

2. DESCRIPTION OF THE EXPEDITION

2.1 R/V *Malcolm Baldrige* Technical Details

The R/V *Malcolm Baldrige* (previously *Researcher '103*) is owned by the U.S. Department of Commerce and operated by NOAA. The basic features of the vessel are described below.

Port of registration:	Miami, Florida
Call sign:	WTER
Operator:	NOAA
Launched:	October 1968
Delivered:	June 1970
Commissioned:	October 1970
Basic Dimensions:	
length	84.8 m
beam	15.5 m
draft	5.6 m
gross tons	2802
power	3200 hp
maximum speed	15.0 knots
cruise speed	13.0 knots
Personnel:	crew: 36; scientists: 14
Navigation Equipment:	Radar Loran SatNav Gyro DopLog
Hull:	welded steel (ice-strengthened)
Cranes:	Stern, Midships

2.2 NOAA/PMEL CGC-90 Cruise Information

The following is the cruise information:

Ship Name:	*Malcolm Baldrige*
Cruise/Leg:	CGC-90/1,2
Location:	Southwest Pacific Ocean
Dates:	February 22–April 16, 1990

List of Participants:

Chief Scientist:	David Wisegarver, NOAA/PMEL
Project Manager:	Richard Feely
Total CO_2:	Marilyn Lamb-Roberts
	Paulette Murphy
CTD:	Linda Mangum
	Kristy McTaggart
	Marguerite McCarty
	Dana Greeley

	Jeff Benson
Salinity:	Survey Department of NOAA R/V *Malcolm Baldrige*
Nitrate:	Lloyd Moore
	Don Atwood
Computer Support:	Cathy Cosca
	Dan Lee
	Doug Wilson

2.3 Brief Cruise Summary

The cruise track for Leg 1 of CGC-90 started at 15° S/170° W and proceeded south along the meridional line; after reaching 60° S, it angled northwest, crossing the Western Boundary Current and ending in New Zealand. The cruise track for Leg 2 crossed the Kermadec Trench, included a reoccupation of selected stations between 30° S and 15° S on 170° W, and additional stations along the meridional line crossing the equator, to 5° N (see Fig. 1 on page 4 and Table A-1 in Appendix A). Figure 2 shows the sampling depths at the 63 hydrographic stations occupied during the cruise.

Stations 2 through 7 were sampled using a 24-position rosette package equipped with 10-L Niskin™ bottles, and a Neil Brown (Mark III) CTD sampling system. While occupying Station 8, the CTD cable parted, and the equipment package was lost. Subsequently, the remaining stations (Stations 9 through 68) were sampled using a spare 12-position rosette with 10-L Niskin™ bottles and Neil Brown (Mark III) CTD sampling system. Multiple casts were performed at these stations to ensure high density sample profiles. Occasionally while at the most extreme latitudes, weather deteriorated and prevented the occupation of some stations. Several stations sampled during Leg 1 were reoccupied on Leg 2 for data quality checks.

Two moorings were retrieved, and two deployed at the equator.

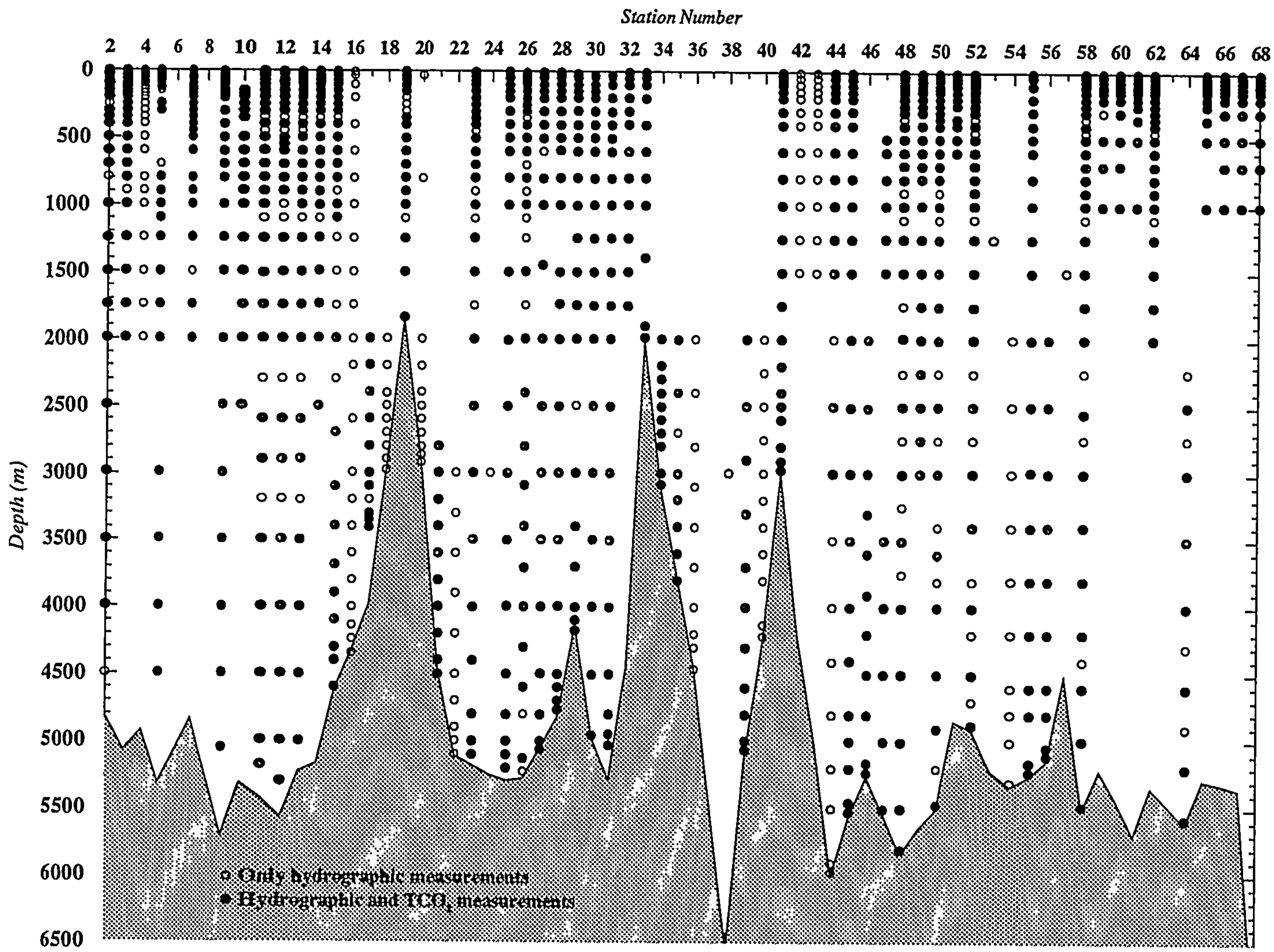

Figure 2. Sampling depths at the 63 hydrographic stations occupied during R/V *Malcolm Baldrige* CGC-90 Cruise.

3. DESCRIPTION OF VARIABLES AND METHODS

Each station consisted of the lowering of a CTD/rosette package, upon which 10-L standard Niskin™ bottles were suspended. Pressure, temperature, and CTD salinities for the tabulated data were taken from the calibrated CTD data. The discrete water samples were drawn from the Niskin™ bottles upon retrieval of the rosette on deck. Samples were collected for analyses of oxygen, chlorofluorocarbons (CFCs), helium, tritium (Leg 1 only), TCO_2, ^{13}C, pH (Leg 1 only), nutrients, and salinity. In addition, underway partial pressure of CO_2 (pCO_2) was measured throughout the cruise. This report addresses the temperature, salinity, TCO_2, and nitrate data.

CTD data were collected using a Neil Brown (Mark III) Instrument System. **Pressure, temperature, and conductivity** were recorded on the downtrace, and the discrete water samples were collected on the upcast with an electronically fired rosette sampler. The **bottle salinity** samples were analyzed with a Guideline Autosal, which was calibrated at the beginning of each day's run with a vial of Wormley standard seawater, and again after each case of samples was analyzed with another vial. An accuracy of 0.002 Practical Salinity Scale (PSS) and a precision of 0.001 PSS were achieved. A more detailed description of the CTD data processing has been published as a NOAA Data Report (McTaggart et al, 1993).

Nutrient analyses included nitrate, silicate, and phosphate. Due to accuracy and precision problems for silicate and phosphate, only nitrate data are included in this report.

Nitrate samples were collected from each Niskin bottle in aged 60-mL linear polyethylene bottles and analyzed for dissolved inorganic nitrate (NO_3^--N). Analyses were performed on samples from all CTD casts with a five-channel Technicon Auto-Analyzer (AA-II) aboard ship. The analytical procedures and methodologies used in the analysis of nitrate are similar to those described by Armstrong et al. (1967), with modifications described in Atlas et al. (1971) and in a Technicon Corporation (1977) technical report. The detection limit for nitrate was 0.39 µmol/kg with a standard deviation of ±0.1 µmol/kg. The precision of duplicate measurements was ±0.25%, full scale. The accuracy was assumed to be 1% because no absolute standards were available. Nitrate measurements are reported in µmol/kg at 1 atm and an assumed laboratory temperature of 25°C. Calibration standards ranged between 0 and 30 µmol/kg; therefore, only samples within that concentration range are reported in Appendix B and data file.

Upon retrieval of the CTD-rosette package on deck, samples for $\mathbf{TCO_2}$ were collected in 500-mL glass-stoppered bottles and poisoned with 0.5 mL of saturated $HgCl_2$ solution to decrease bacterial oxidation of organic matter prior to analysis. The samples were analyzed immediately when possible, but always within 24 h after collection.

The coulometric technique for TCO_2 analyses in seawater was originated by Ken Johnson (Johnson et al. 1985, 1987). UIC, Inc. supplied the coulometic/extraction system (Models 5011 and 5030, respectively). The following changes were made to the standard extraction system: 1. Both the pipet and seawater sample bottle were jacketed (the sample bottle was placed in a jacketed beaker) and were connected to a circulating bath set at 25°C. 2. Ultra-pure N_2 was used for both carrier gas and sample delivery; prior to hook-up to glassware, the N_2 was sent through an in-line NaOH (Malcosorb) scrubber to remove any CO_2. 3. The condensing column was connected to a circulating bath filled with antifreeze and run at 1°C. 4. An ORBO (activated Si gel from Supelco) tube was placed in-line between the glassware and titration cell to eliminate any excess moisture. 5. Standardization of instrumentation was modified (as described later in this section). The computer interfaced to the system was a Zenith ZBF-2339-BK. The program supplied by UIC was modified significantly, to accommodate our particular needs. In coulometric analysis of TCO_2, all carbonate species in seawater ($CO_{2(aq)}$, H_2CO_3, HCO_3^- and CO_3^{2-}) are converted to CO_2 by addition of excess acid. The evolved CO_2 is then moved into the titration cell by N_2 carrier gas where it is titrated potentiometrically by reacting quantitatively with ethanolamine to form hydroxyethyl carbamic acid; this is titrated with OH^- ions electrogenerated by the reduction of H_2O at a platinum cathode:

$$CO_2 + HO(CH_2)_2NH_2 \rightarrow HO(CH_2)_2NHCOO^- + H^+$$
$$Ag(s) \rightarrow Ag^+ + e^-$$
$$H_2O + e^- \rightarrow \tfrac{1}{2}H_2(g) + OH^-$$
$$H^+ + OH^- \rightarrow H_20$$

The equivalence point is detected photometrically with thymolphthalein as an indicator. The cell solution is blue at the equivalence point of 10.5 pH and colorless at pH 9.3 after the addition of CO_2 in aqueous solutions. CO_2 drives down the pH and raises percent transmittance. As the acid is titrated, pH increases (hence, the blue color returns) and percent transmittance decreases, thus causing the titration current to pass from high to low to zero as the equivalence point is approached and sensed by the optical detector. The CO_2 level is calculated based on the quantity of electricity required to reach the equivalence point and the time of passage. The entire sequence takes from 8 to 11 min.

The volume of the pipet was ~ 50 mL, and was calibrated in the laboratory before and after the cruise. The pipet was cleaned by drawing a 25% solution of NaOH into the cell and allowing it to soak overnight. This eliminated any organic film inside the pipet and ensured a clean delivery. Pipet calibrations were conducted to be within the measured pipet temperature range during the cruise (24.5°C–25.5°C) utilizing a circulating bath. Milli-Q water was drawn into the pipet in the exact manner that a liquid standard or seawater sample was handled. The water was delivered by N_2 (flow rate is 200 mL/min) into a tared, ground-glass stoppered mixing flask, and drained for an additional 5 s (monitored by a stop-watch) to allow the droplets of water to be delivered; the flask was then immediately stoppered and weighed on a Mettler AE240 balance. Approximately 15–20 samples were collected per experiment. The following references were used to correct the weighings: 1. Volume Properties of Ordinary Water. 2. Reductions of Weighings in Air to Vacuo for Brass Weights and a Water Density of 1.00. Density of air used was 0.0012. 3. Temperature Correction for Glass Volumetric Apparatus.

The corrected volumes were then linearly regressed with temperature, and a calibration curve was established (typical $r^2 = 0.80$).

Schott-Duran glass 500-mL bottles were annealed at 450°C for 1 h, then cleaned in a dishwasher with commercial grade dishwashing detergent. Prior to collection of samples, the solid ground-glass stoppers were coated with Type M Apiezon grease.

Acid used to convert carbonate species to CO_2 was a 1:10 solution of Baker reagent grade H_3PO_4. All coulometric chemicals (cathode solution, anode solution, and KI) were purchased from UIC, Inc.

Liquid standards were made up in a 0.7 *M* solution of KCl. The standards were treated just as a seawater sample and were delivered through the pipet under the same conditions. The standard used was Na_2CO_3 (Ultrex, Lot 935113); the KCl was reagent grade from Mallinkrodt.

The Na_2CO_3 was prepared in the laboratory by baking at 260–270°C for ½ h, and desiccated overnight. The standards were weighed into pre cleaned ground-glass stoppered vials with weights ranging from 0.20 to 0.25 g. They were immediately stored in an evacuated desiccator with fresh Si gel until prepared. The KCl was baked in a muffle furnace for ½ h at 260–270°C, and cooled in a desiccator overnight.

The KCl solution and liquid standards were prepared in the following manner Milli-Q water was boiled in a 3-L boiling flask for 20 min to drive off CO_2, then cooled overnight with a NaOH column attached to the neck of the flask. A glove-box was purged with ultra-pure N_2 for about 20 min; in the glove box, the KCl was mixed with the CO_2-free water in a clean 2-L volumetric. Half of this solution was stored in a 1-L sample bottle with siphon tube and clamp and was used to determine blank values for the KCl (see following discussion). The other half was used to make the Na_2CO_3 in a 1-L volumetric. After the standard equilibrated, it was poured into a 1-L bottle with siphon tube and clamp. This work was performed in an N_2 environment in the glove box.

The KCl solution was analyzed to determine a mean blank for the standard. Being careful not to expose the KCl solution to the atmosphere, it was drawn into the pipet in the same way as a sample. When handled in this way, the KCl blank was very constant, usually with a mean of around 6.0 ± 0.3 µg C for an individual batch and an "over the cruise" mean of 6 ± 1 µg C.

The standards yielded a mean calibration factor of 99.6588% ± 0.0600 (n = 25).

A Certified Reference Material (CRM) was prepared and bottled by Dr. Andrew Dickson of the Scripps Institution of Oceanography (SIO). The TCO_2 concentration of the CRM was determined to be 2020 ± 0.009 µmol/kg by manometric technique in the laboratory of Dr. Charles Keeling of the SIO. Bottles of the CRM were taken on the cruise and analyzed frequently to determine the accuracy and precision of the coulometric method; the results are reported in Table 1. Throughout the cruise, the accuracy was determined to be within 0.15% and the precision was within 0.12%. Replicates analyzed at three different stations throughout the cruise yielded a precision of ≤ 0.05%. The reported TCO_2 data have been corrected to reflect the difference in accuracy to the CRM; the correction applied is +3 µmol/kg TCO_2.

Samples were analyzed with the same method as standards, that is, 4.5 mLs of acid were dispensed into the reaction vessel, and 2–3 minutes were allowed to pass to purge CO_2 from the acid. Following that, the pipet was rinsed twice with the sample, and the third fill was isolated and used for analysis. The sample was emptied into the reaction vessel, and allowed to drain for an additional 5 seconds (monitored via stopwatch) to allow droplets of water to be delivered.

Table 1. Certified Reference Material (batch 1) analyzed for total CO_2 during R/V *Malcolm Baldrige* CGC-90 Cruise

Date	TCO_2 (µmol/kg)
24 Feb. 1990	2012
25 Feb. 1990	2024
27 Feb. 1990	2014
2 Mar. 1990	2015
5 Mar. 1990	2012
5 Mar. 1990	2016
6 Mar. 1990	2019

Table 1 (continued).

Date	TCO_2 (μmol/kg)
7 Mar. 1990	2019
8 Mar. 1990	2019
10 Mar. 1990	2015
11 Mar. 1990	2016
12 Mar. 1990	2016
13 Mar. 1990	2017
15 Mar. 1990	2017
16 Mar. 1990	2017
20 Mar. 1990	2017
29 Mar. 1990	2017
30 Mar. 1990	2014
2 Apr. 1990	2018
3 Apr. 1990	2014
5 Apr. 1990	2016
6 Apr. 1990	2017
7 Apr. 1990	2018
7 Apr. 1990	2018
11 Apr. 1990	2020
12 Apr. 1990	2017
Mean	2017
Sta. Dev	2.5

Sigma-t and **sigma-theta** were calculated using standard UNESCO algorithms (Fofonoff and Millard 1983), and the CTD measured *in situ* temperature and bottle salinities. When no bottle salinities were available or when they were defined as a questionable or unacceptable measurements, CTD salinities were used in the calculation.

4. DATA CHECKS AND PROCESSING PERFORMED BY CDIAC

An important part of the NDP process at the Carbon Dioxide Information Analysis Center (CDIAC) involves the quality assurance (QA) of data before distribution. Data received at CDIAC are rarely in a condition that would permit immediate distribution, regardless of the source. To guarantee data of the highest possible quality, CDIAC conducts extensive QA reviews. Reviews involve examining the data for completeness, reasonableness, and accuracy. Although they have common objectives, these reviews are tailored to each data set, often requiring extensive programming efforts. In short, the QA process is a critical component in the value-added concept of supplying accurate, usable data for researchers.

The following summarizes the data QA checks and processing performed by CDIAC on the data obtained during the NOAA/PMEL R/V *Malcolm Baldrige* CGC-90 Cruise in the Southwest Pacific.

1. These data were provided to CDIAC as two ASCII-formatted files and accompanying printed documentation (NOAA Data Report ERL PMEL-42) (Lamb et al. 1993). A FORTRAN 77 retrieval code was written and used to reformat the original files.

2. To check for obvious outliers all data were plotted by use of a PLOTNEST.C program written by Stewart C. Sutherland, of the Lamont-Doherty Earth Observatory. The program plots a series of nested profiles, using the station number as an offset; the first station is defined at the beginning, and subsequent stations are offset by a fixed interval (Figs. 3–8)[1]. Several outliers were identified and flagged after consultation with the principal investigators.

3. To generate a section profile plot of TCO_2 concentrations along the 170° W, the SURFER program developed by Golden Software, Inc. for Windows version 5.0 was used (Fig. 9).

4. To identify "noisy" data and possible systematic methodological errors, property-property plots for all parameters were generated (Fig. 10), carefully examined, and compared with plots from previous expeditions in the Southwest Pacific.

5. To identify possible instrumentation drifts and methodological errors, the data intercomparison for reoccupied stations was provided (Fig. 11).

6. All variables were checked for values exceeding physical limits, such as sampling depth values that are greater than the given bottom depths.

7. Station locations (latitudes and longitudes) and sampling dates were examined for consistency with maps and with cruise information supplied by Lamb et al. (1993).

8. The designation for missing values, given as "-99.00" in the original files, was changed to "-999.90".

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[1] All data were plotted with excluded questionable measurements flagged by quality flag 3.

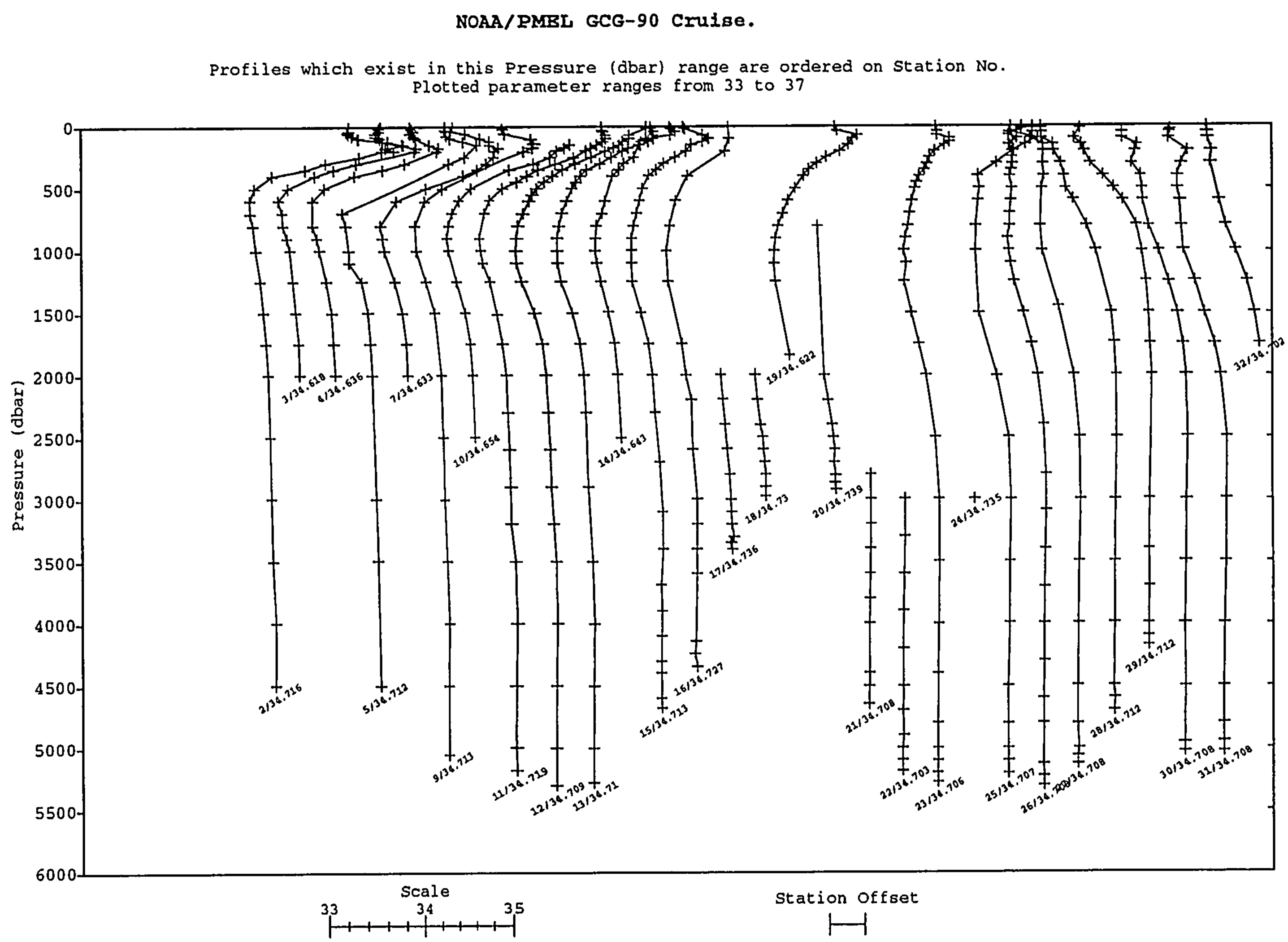

Figure 3. Nested profiles: bottle salinity (PSS) vs pressure (dbar) for stations 2–32.

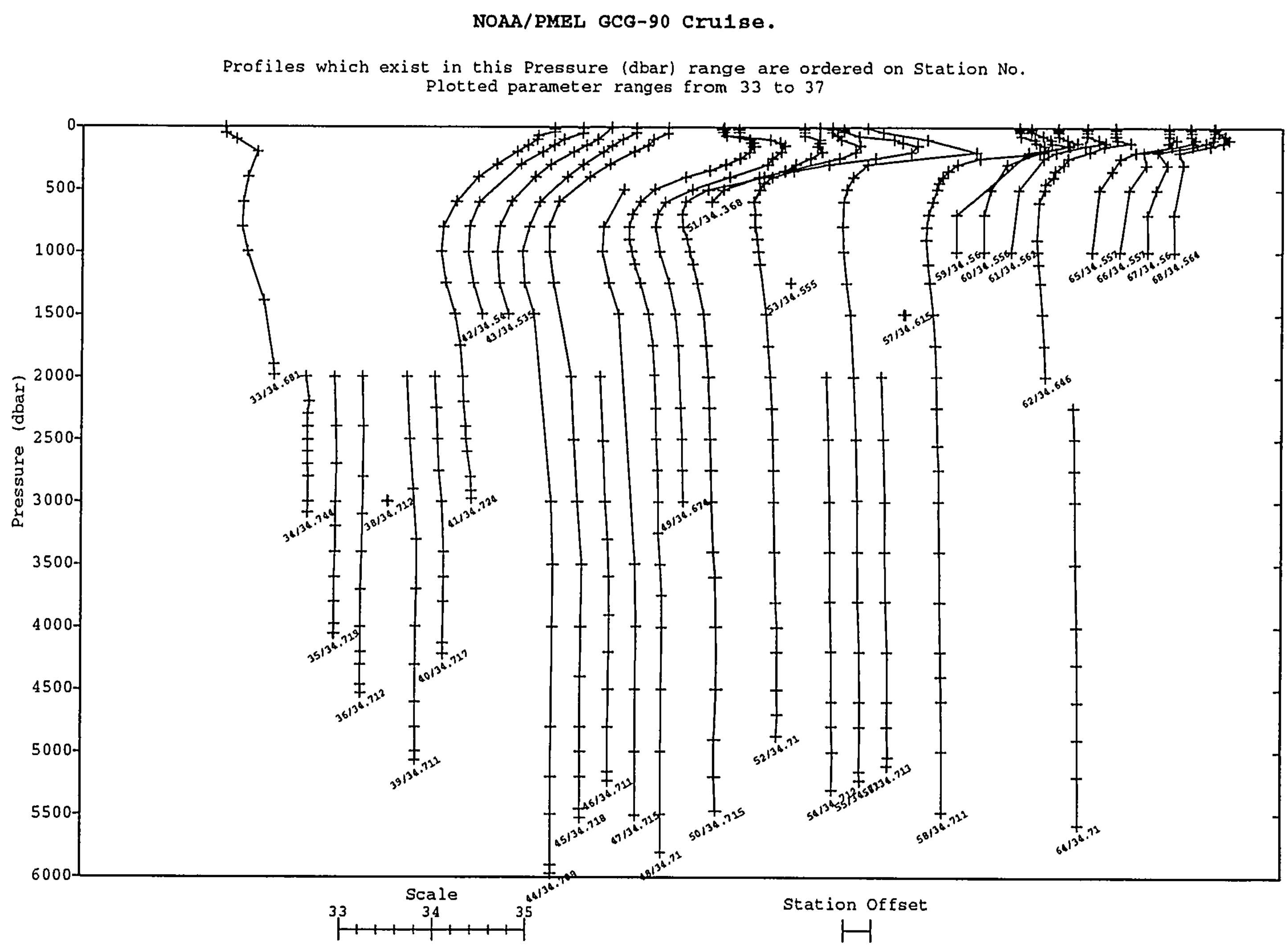

Figure 4. Nested profiles: bottle salinity (PSS) vs pressure (dbar) for stations 33–68.

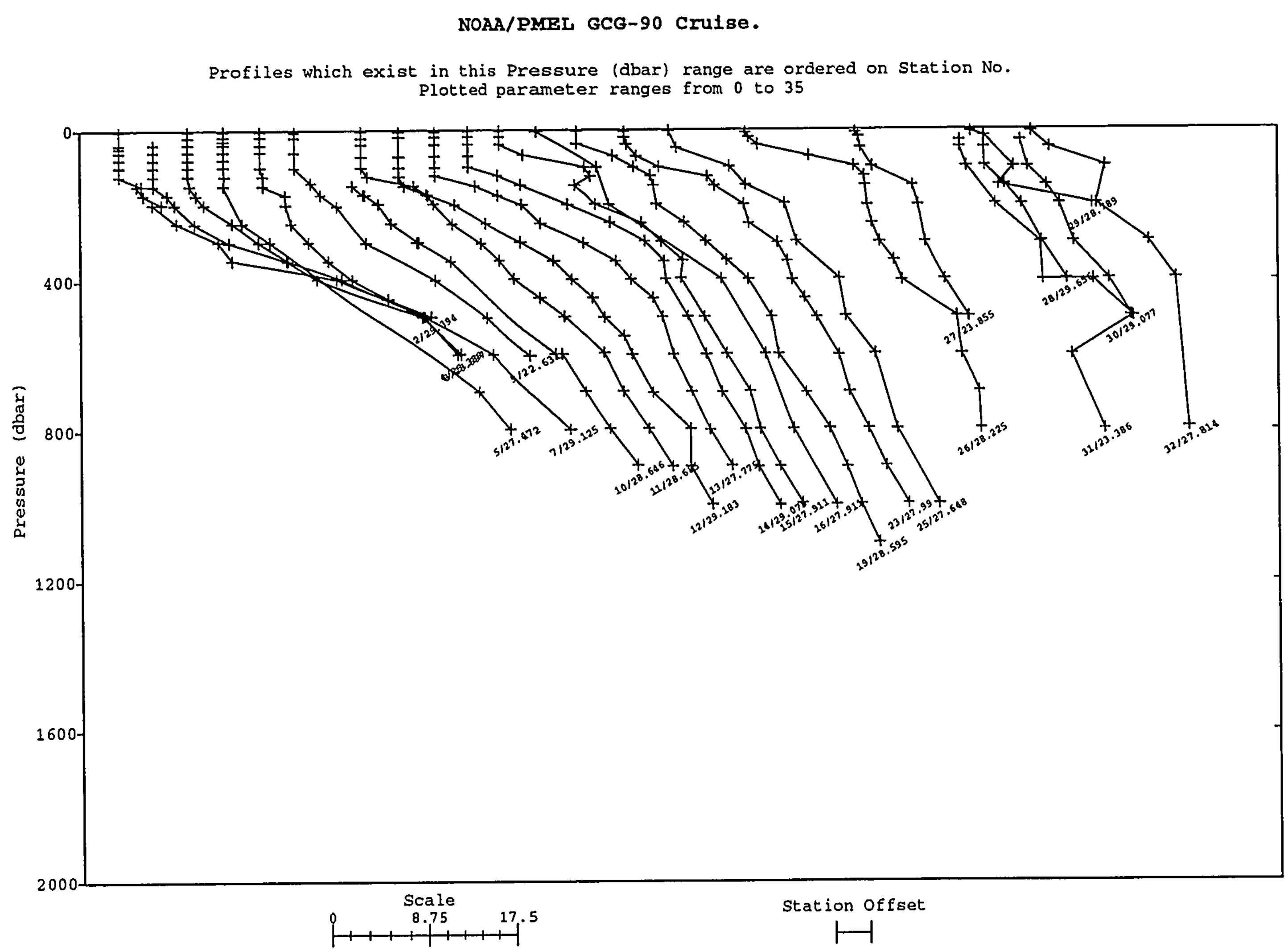

Figure 5. Nested profiles: NO_3 (μmol/kg) vs pressure (dbar) for stations 2–32.

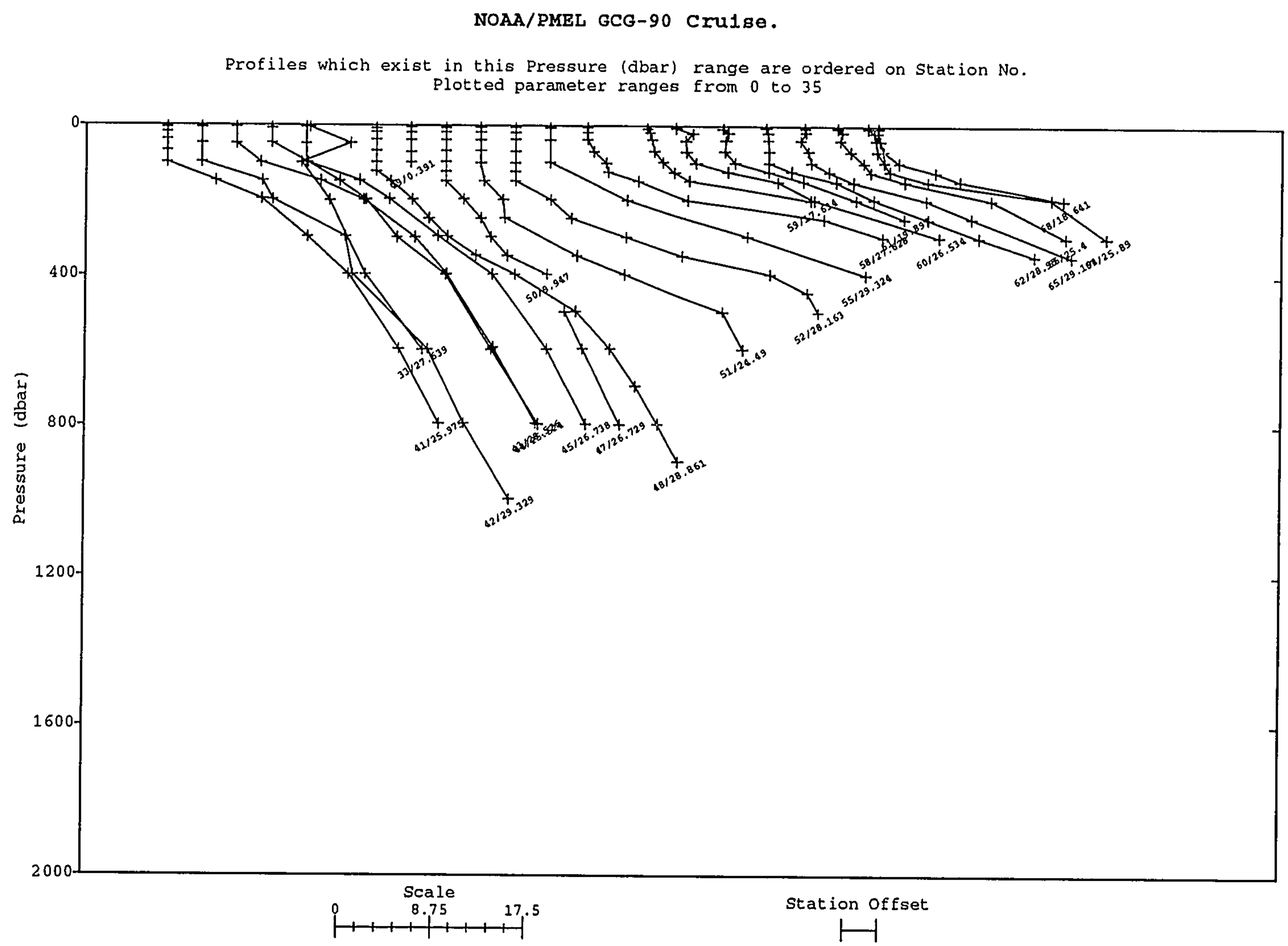

Figure 6. **Nested profiles: NO_3 (µmol/kg) vs pressure (dbar) for stations 33–68.**

NOAA/PMEL GCG-90 Cruise.

Profiles which exist in this Pressure (dbar) range are ordered on Station No.
Plotted parameter ranges from 1900 to 2400

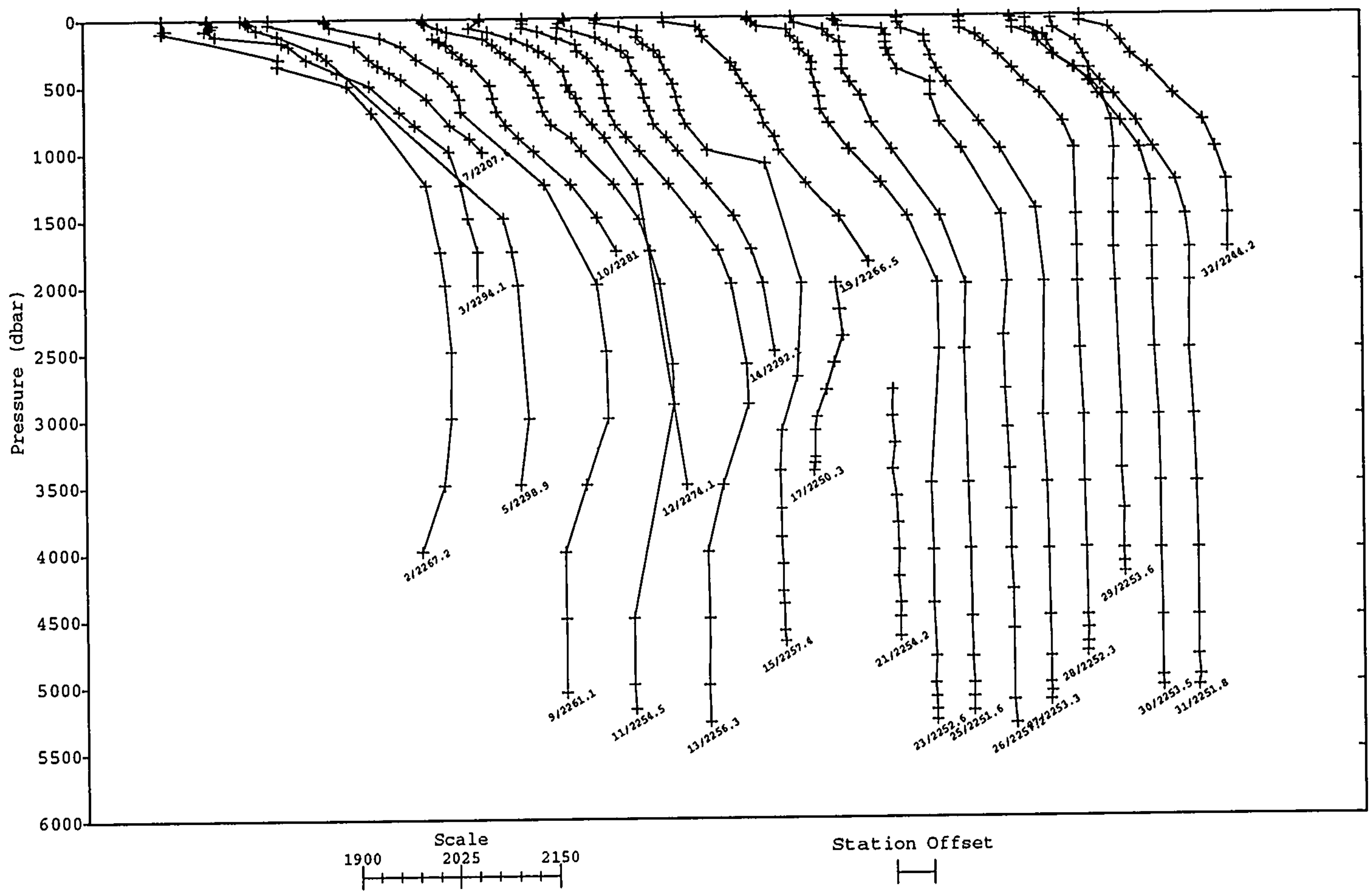

Figure 7. Nested profiles: total CO_2 (μmol/kg) vs pressure (dbar) for stations 2–32.

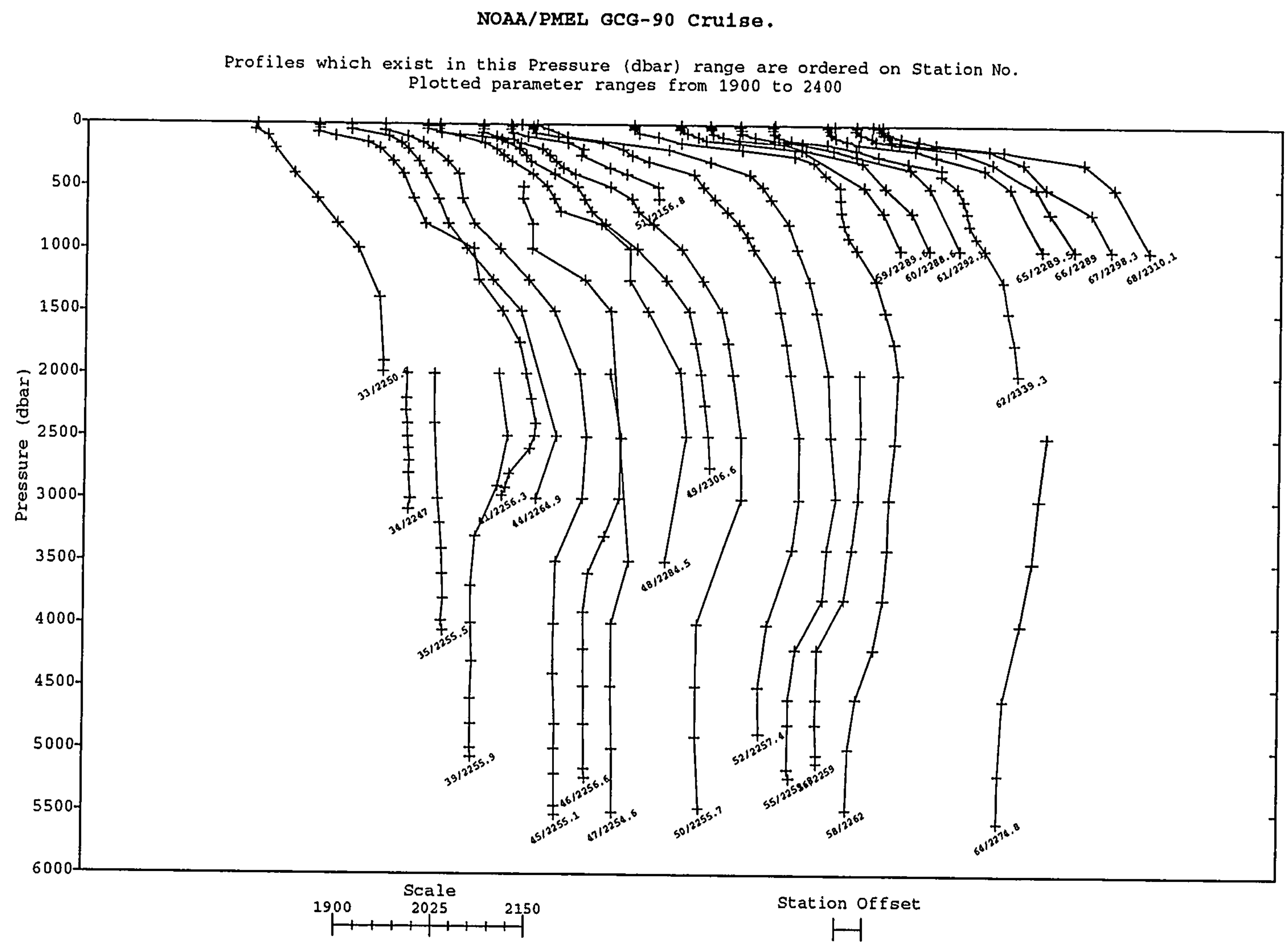

Figure 8. Nested profiles: total CO_2 (µmol/kg) vs pressure (dbar) for stations 33–68.

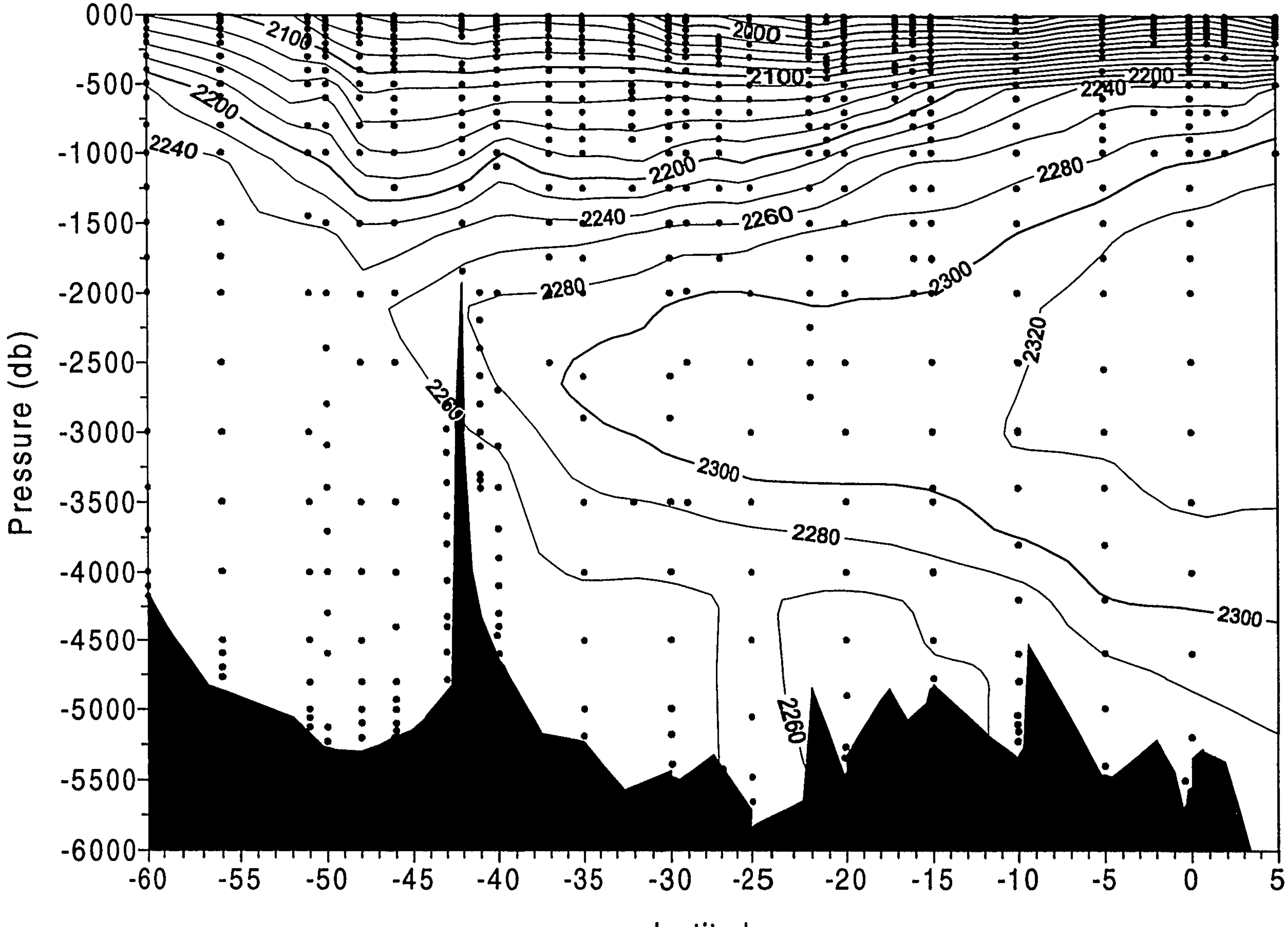

Figure 9. Total CO_2 concentrations along the 170° W during R/V *Malcolm Baldrige* CGC-90 Cruise.

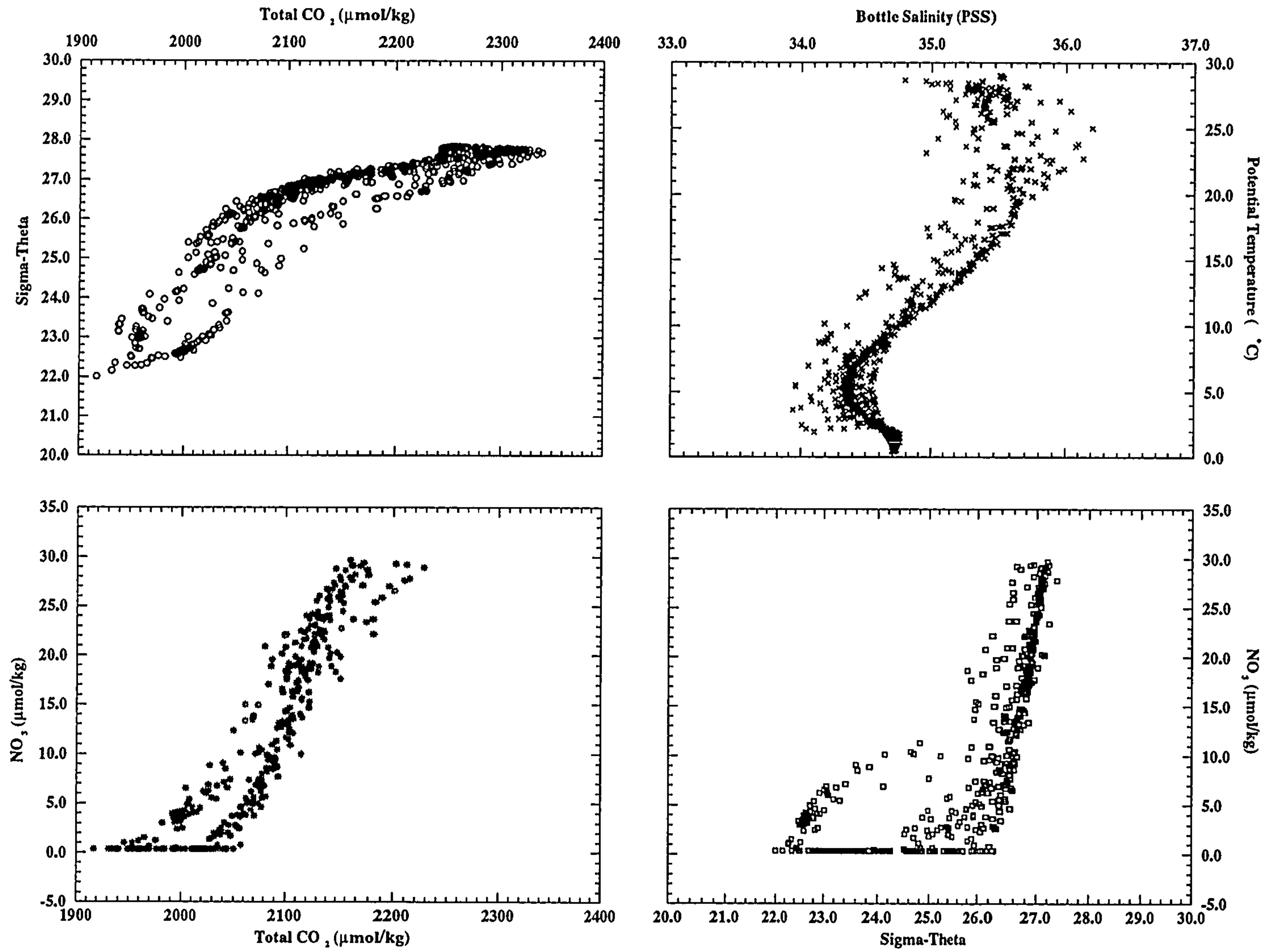

Figure 10. Property-property plots for all stations occupied during R/V *Malcolm Baldrige* CGC-90 Cruise.

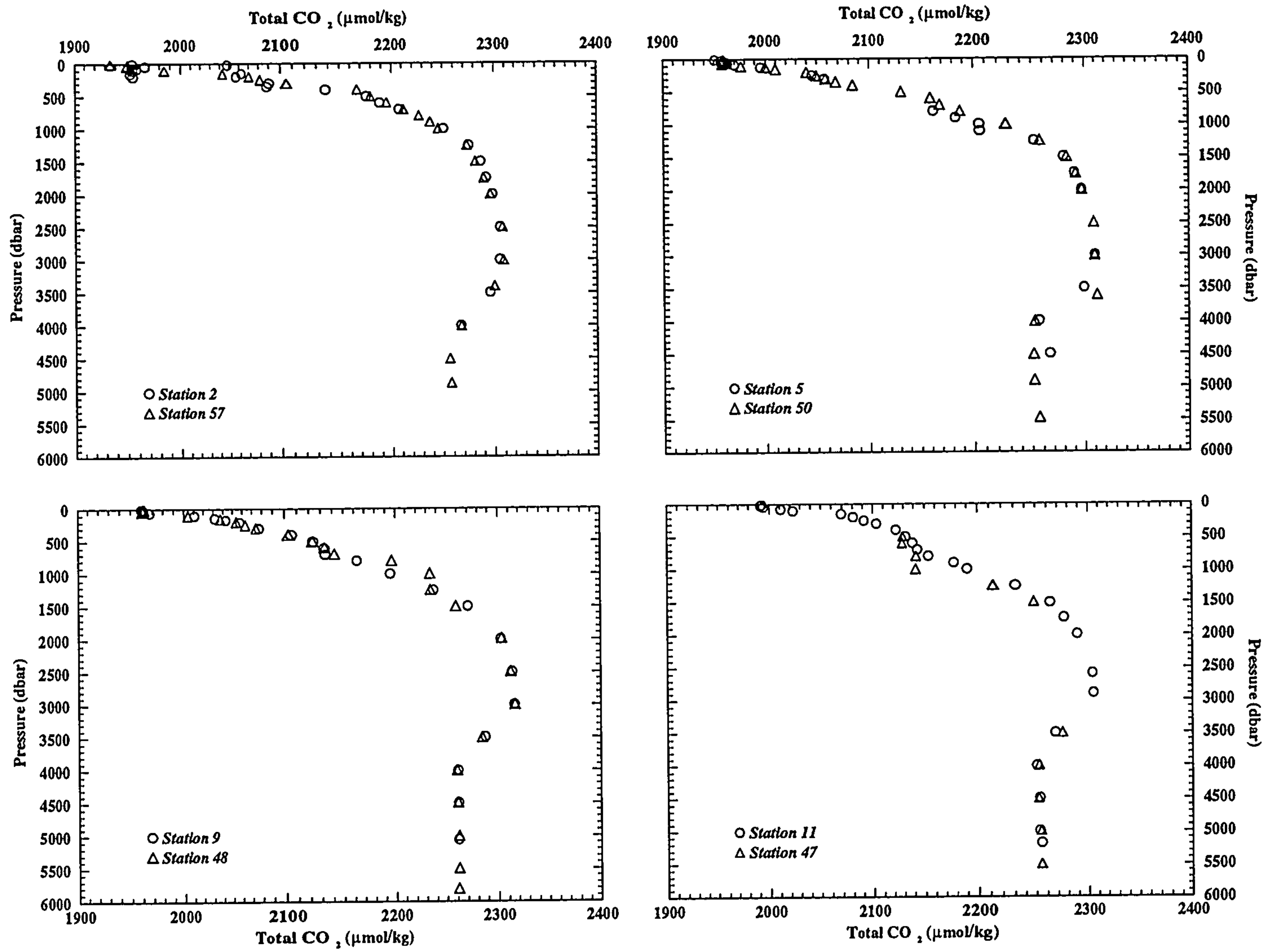

Figure 11. Total CO_2 data intercomparison for reoccupied stations during R/V *Malcolm Baldrige* CGC-90 Cruise.

5. HOW TO OBTAIN THE DATA AND DOCUMENTATION

This data base is available upon request in machine-readable form, free-of-charge from CDIAC. CDIAC will also distribute subsets of the data base as needed. It can be acquired on 9-track magnetic tape; 8-mm tape; 150-mB, quarter-inch tape cartridge; IBM-formatted floppy diskettes; or from CDIAC's anonymous File Transfer Protocol (FTP) area via Internet (see FTP address below). Requests should include any specific media instructions (i.e., 1600 or 6250 BPI, labeled or nonlabeled, ASCII or EBCDIC characters, and variable- or fixed-length records; 3.5- or 5.25-inch floppy diskettes, high or low density; and 8200 or 8500 format 8-mm tape) required by the user to access the data. Magnetic tape requests not accompanied by specific instructions will be filled on 9-track, 6250 BPI, standard-labeled tapes with EBCDIC characters. Requests should be addressed to:

Carbon Dioxide Information Analysis Center
Oak Ridge National Laboratory
Post Office Box 2008
Oak Ridge, Tennessee 37831-6335
U.S.A.

Telephone: (615) 574-0390 or (615) 574-3645
Fax: (615) 574-2232

Electronic Mail: INTERNET: CDIAC@ORNL.GOV

The data files can be also acquired from CDIAC's anonymous FTP account via Internet:

- FTP to cdiac.esd.ornl.gov (128.219.24.36)
- Enter "ftp" or "anonymous" as the userid
- Enter your electronic mail address as the password (e.g.,"alex@alex.esd.ornl.gov")[2]
- Change to the directory "/pub/ndp052"
- Acquire the files using the FTP "get" or "mget" command

or World Wide Web URL:

- http://cdiac.esd.ornl.gov/cdiac/

[2]Please enter your correct address. This address is used by CDIAC to inform data recipients of data revisions and updates.

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PART 2:

CONTENT AND FORMAT OF DATA FILES

7. FILE DESCRIPTIONS

This section describes the content and format of each of the five files that comprise this NDP (Table 2). Because CDIAC distributes the data set in several ways (e.g., via anonymous FTP, floppy diskette, and on 9-track magnetic tape), each of the five files is referenced by both an ASCII file name, which is given in lower-case, bold-faced type (e.g., **readme**), and a file number. The remainder of this section describes (or lists, where appropriate) the contents of each file. The files are discussed in the order in which they appear on the magnetic tapes.

Table 2. Content, size, and format of data files

File number, name, and description	Logical records	File size in bytes	Block size	Record length
1. **readme** a detailed description of the cruise network, the two FORTRAN 77 data retrieval routines, and the two oceanographic data files	954	50,859	8,000	80
2. **stainv.for:** a FORTRAN 77 data retrieval routine to read and print **cgc90sta.inv** (File 4)	30	1,062	8,000	80
3. **cgc90dat.for:** a FORTRAN 77 data retrieval routine to read and print **cgc90.dat** (File 5)	36	1,368	8,000	80
4. **cgc90sta.inv:** a listing of the station locations, sampling dates, and sounding bottom depths for each station	63	3,906	4,100	41
5. **cgc90.dat:** hydrographic, carbon dioxide, and nitrate data from 63 stations.	1,224	134,640	16,000	160
Total	2,307	191,835		

7.1 readme (File 1)

This file contains a detailed description of the data set, the two FORTRAN 77 data retrieval routines, and the two oceanographic data files. It exists primarily for the benefit of individuals who acquire this database as machine-readable data files from CDIAC.

7.2 stainv.for (File 2)

This file contains a FORTRAN 77 data retrieval routine to read and print **cgc90sta.inv** (File 4). The following is a listing of this program. For additional information regarding variable definitions, variable lengths, variable types, units, and codes, please see the description for the **cgc90sta.inv** file on page 30.

```
c*****************************************************************
c* This is a FORTRAN 77 retrieval code to read and print the    *
c* file named "cgc90sta.inv" (File 4)                            *
c*****************************************************************
      INTEGER  sta, cast, dep
      REAL lat, lon
      CHARACTER date*8, time*4
      OPEN (unit=1, file='cgc90sta.inv')
      OPEN (unit=2, file='pmel90sta.inv')
      write (2, 5)

 5    format (2X,'STANBR',1X,'CASTNBR',1X,'LATITUDE',1X,
     1 'LONGITUDE',6X,'DATE',4X,'TIME',3X,'DEPTH',/,18X,
     2 'DEC.DEG',3X,'DEC.DEG',5X,'D/M/Y',5X,'GMT',7X,'M',/)

 7    CONTINUE
      read (1, 10, end=999) sta, cast, lat, lon, date, time,
     1 dep
 10   format (6X, I2, 5X, I3, 2X, F7.3, 2X, F8.3, 2X, A8, 4X,
     1 A4, 4X, I4)

      write (2, 20) sta, cast, lat, lon, date, time,
     1 dep
 20   format (6X, I2, 5X, I3, 2X, F7.3, 2X, F8.3, 2X, A8, 4X,
     1 A4, 4X, I4)
      GOTO 7

 999  close(unit=1)
      close(unit=2)
      stop
      end
```

7.3 cgc90dat.for (File 3)

This file contains a FORTRAN 77 data retrieval routine to read and print **cgc90.dat** (File 5). The following is a listing of this program. For additional information regarding variable definitions, variable lengths, variable types, units, and codes, please see the description for the **cgc90.dat** file on pages 31–32.

```
c*****************************************************************
c*  This is a FORTRAN 77 data retrieval code to read and format *
c*  the file named "cgc90.dat" (File 5)                          *
c*****************************************************************

      INTEGER  sta, samp, qcfl
      REAL pres, temp, theta, ctdsal, botsal, sigma, sigmat
      REAL no3, tco2
      OPEN (unit=1, file='cgc90.dat')
      OPEN (unit=2, file='pmel90.dat')
      write (2, 5)

 5    format (3X,'STANBR',3X,'SAMPID',3X,'CTDPRS',2X,'CTDTEMP',4X,
     1 'THETA',3X,'CTDSAL',3X,'BOTSAL',4X,'SIGMA',2X,'SIGMA-T',2X,
     2 'NITRATE',4X,'TCARB',3X'QC_FLAG',/,23X'DBAR',3X,'DEG(C)',
     3 3X,'DEG(C)',6X,'PSS',6X,'PSS',4X,'THETA',11X,'UMOL/KG',2X,
     4 'UMOL/KG',/,56X,'*******',20X,'*******',2X,'*******')

 7    CONTINUE
      read (1, 10,end=999) sta, samp, pres, temp, theta, ctdsal,
     1 botsal, sigma, sigmat, no3, tco2, qcfl

 10   format (7X,I2,4X,I5,3X,F6.1,3X,F6.3,3X,F6.3,3X,F6.3,1X,F8.3,
     1 3X,F6.3,3X,F6.3,1X,F8.3,2X,F7.1,7X,I3)

      write (2, 20) sta, samp, pres, temp, theta, ctdsal,
     1 botsal, sigma, sigmat, no3, tco2, qcfl

 20   format (7X,I2,4X,I5,3X,F6.1,3X,F6.3,3X,F6.3,3X,F6.3,1X,F8.3,
     1 3X,F6.3,3X,F6.3,1X,F8.3,2X,F7.1,7X,I3)
      GOTO 7

999   close(unit=1)
      close(unit=2)
      stop
      end
```

7.4 cgc90sta.inv (File 4)

This file provides station inventory information for each of 63 stations occupied during the R/V *Malcolm Baldrige* CGC-90 Cruise. There is one entry for each station. Each line contains a section number, cast number, latitude, longitude, sampling date (day/month/year), sampling time, and sounding depth of the station. The file is sorted by station number and can be read using the following FORTRAN 77 code (contained in **stainv.for**, which is File 2):

```
      INTEGER  sta, cast, dep
      REAL lat, lon
      CHARACTER date*8, time*4
      read (1, 10, end=999) sta, cast, lat, lon, date, time,
     1 dep
 10   format (6X, I2, 5X, I3, 2X, F7.3, 2X, F8.3, 2X, A8, 4X,
     1 A4, 4X, I4)
```

Stated in tabular form, the contents include the following:

Variable	Variable type	Variable width	Starting column	Ending column
sta	Numeric	2	7	8
cast	Numeric	3	14	16
lat	Numeric	7	19	25
lon	Numeric	8	28	35
date	Character	8	38	45
time	Character	4	50	53
dep	Numeric	4	58	61

where

`sta` is the station number;

`cast` is the cast number;

`lat` is the latitude of the station (in decimal degrees).
Stations in the Southern Hemisphere have negative latitudes;

`lon` is the longitude of the station (in decimal degrees).
Stations in the Western Hemisphere have negative longitudes

`date` is the date the station was sampled (day/month/year);

`time` is the time the station was sampled (Greenwich Mean Time);

`dep` is the sounding depth of the station (in m).

7.5 cgc90.dat (File 5)

This file provides hydrographic, carbon dioxide, and nitrate data for the 63 stations occupied during R/V *Malcolm Baldrige* CGC-90 Cruise in the Southwest Pacific. Each line of the file consists of a station number, sample ID, CTD pressure, CTD temperature, potential temperature, CTD salinity, bottle salinity, sigma-t, sigma-theta, nitrate, total CO_2, and data quality flags. The file is sorted by station number and pressure and can be read using the following FORTRAN 77 code (contained in **cgc90dat.for,** which is File 3):

```
      INTEGER  sta, samp, qcfl
      REAL pres, temp, theta, ctdsal, botsal, sigma, sigmat
      REAL no3, tco2
      read (1, 10,end=999) sta, samp, pres, temp, theta, ctdsal,
    1 botsal, sigma, sigmat, no3, tco2, qcfl
 10   format (7X,I2,4X,I5,3X,F6.1,3X,F6.3,3X,F6.3,3X,F6.3,1X,F8.3,
    1 3X,F6.3,3X,F6.3,1X,F8.3,2X,F7.1,7X,I3)
```

Stated in tabular form, the contents include the following:

Variable	Variable type	Variable width	Starting column	Ending column
sta	Numeric	2	8	9
samp	Numeric	5	14	18
pres	Numeric	6	22	27
temp	Numeric	6	31	36
theta	Numeric	6	40	45
ctdsal	Numeric	6	49	54
botsal	Numeric	8	56	63
sigma	Numeric	6	67	72
sigmat	Numeric	6	76	81
no3	Numeric	8	83	90
tco2	Numeric	7	93	99
qcfl	Numeric	3	107	109

where

sta	is the station number;
samp	is the sample number;
pres	is the CTD pressure (in dbar);
temp	is the CTD temperature (in °C);

`theta`	is the potential temperature (in °C);
`ctdsal`	is the CTD salinity (in PSS);
`botsal`*	is the bottle salinity (in PSS);
`sigma`	is sigma-theta (in sigma units);
`sigmat`	is sigma-t (in sigma units);
`no3`*	is the nitrate concentration (in µmol/kg);
`tco2`*	is the total carbon dioxide concentration (in µmol/kg);
`qcfl`	is an 3-digit variable that contains data quality flag codes for parameters flagged by an asterisk in the output file.

Quality flags definitions:

2 = Acceptable measurement;
3 = Questionable measurement;
5 = Not reported;
9 = Sample not drown for this measurement from this bottle.

8. VERIFICATION OF DATA TRANSPORT

The data files contained in this numeric data package can be read by using the FORTRAN 77 data retrieval programs provided. Users should visually examine each data file to verify that the data were correctly transported to their systems. To facilitate the visual inspection process, partial listings of each data file are provided in Tables 3 and 4. Each of these tables contains the first and last five lines of a data file.

Table 3. Partial listing of "cgc90sta.inv" (File 4)

First five lines of the file:

2	2	-15.001	-170.005	24/02/90	0151	4817
3	3	-16.472	-169.993	24/02/90	1238	5073
4	4	-18.003	-170.007	24/02/90	2149	4929
5	7	-20.012	-169.993	25/02/90	2049	5320
7	10	-21.992	-169.997	26/02/90	1300	4839

Last five lines of the file:

64	105	0.000	-170.001	11/04/90	1400	5612
65	106	0.500	-170.005	11/04/90	1837	5285
66	107	1.001	-170.005	11/04/90	2145	5316
67	108	2.005	-170.015	12/04/90	0308	5357
68	109	5.001	-170.010	12/04/90	1655	7161

Table 4. Partial listing of "cgc90.dat" (File 5)

First five lines of the file:

```
        2       222       3.0    28.197    28.196    35.525    35.527    22.729
22.729 -999.900    -999.9         259
        2       110       3.6    28.214    28.213    35.531 -999.900    22.727
22.726    0.391    1954.7         522
        2       109      18.2    28.152    28.147    35.531 -999.900    22.748
22.746 -999.900    2047.9         553
        2       108      39.0    28.043    28.034    35.522    35.527    22.782
22.779    0.391    1966.5         223
        2       219      47.7    27.715    27.704    35.521    35.513    22.879
22.876    0.391    -999.9         229
```

Last five lines of the file:

```
       68     10945     196.6    14.442    14.413    34.595    34.613    25.801
25.795   18.641    2124.9         222
       68     10953     295.9     9.985     9.951    34.668    34.661    26.696
26.690 -999.900    2222.9         252
       68     10943     496.6     7.978     7.927    34.611 -999.900    26.979
26.972 -999.900    2263.0         552
       68     10942     695.1     6.208     6.145    34.558    34.553    27.181
27.173 -999.900    2292.0         253
       68     10941     996.9     4.493     4.413    34.568    34.564    27.396
27.387 -999.900    2310.1         252
```

APPENDIX A:

STATION INVENTORY

APPENDIX A
STATION INVENTORY

This appendix lists station inventory information for the 63 sites occupied during R/V *Malcolm Baldrige* CGC-90 Cruise in the Southwest Pacific. The meanings of the column headings in Table A-1 are as follows.

STANBR is the station number;

CASTNBR is the cast number;

LATITUDE is the latitude of the station (in decimal degrees). Stations in the Southern Hemisphere have negative latitudes;

LONGITUDE is the longitude of the station (in decimal degrees). Stations in the Western Hemisphere have negative longitudes;

DATE is the sampling date (day/month/year);

TIME is the sampling time [Greenwich Mean Time (GMT)];

DEPTH is the sounding bottom depth of each station (in m).

Table A.1. Station inventory information for the 63 sites occupied during R/V *Malcolm Baldrige* CGC-90 Cruise

STANBR	CASTNBR	LATITUDE DEC.DEG	LONGITUDE DEC.DEG	DATE D/M/Y	TIME GMT	DEPTH M
2	1-2	-15.001	-170.005	24/02/90	0151	4817
3	3	-16.472	-169.993	24/02/90	1238	5073
4	4	-18.003	-170.007	24/02/90	2149	4929
5	5-7	-20.012	-169.993	25/02/90	2049	5320
7	9-10	-21.992	-169.997	26/02/90	1300	4839
9	11-13	-25.022	-170.015	27/02/90	1837	5712
10	14-15	-27.053	-170.015	28/02/90	0952	5316
11	16-18	-30.005	-170.043	01/03/90	0441	5429
12	19-21	-32.553	-170.052	02/03/90	0030	5568
13	22-24	-35.023	-170.010	02/03/90	2115	5225
14	25-26	-37.543	-170.037	03/03/90	1252	5170
15	27-29	-40.028	-170.028	04/03/90	0706	4626
16	30-31	-40.968	-170.483	04/03/90	1908	4323
17	32	-41.490	-170.723	05/03/90	0041	3984
18	33	-41.982	-170.983	05/03/90	0554	2974
19	34-35	-42.478	-171.208	05/03/90	1225	1857
20	36	-43.502	-170.853	05/03/90	1902	2904
21	37	-43.985	-170.693	06/03/90	0054	4473
22	38	-44.370	-170.328	06/03/90	0641	5108
23	39-41	-46.045	-170.001	06/03/90	2207	5190
24	42	-47.007	-170.013	07/03/90	0538	5252
25	43-44	-48.022	-169.915	07/03/90	1509	5294
26	45-47	-50.067	-170.070	08/03/90	0844	5279
27	48-49	-51.967	-169.985	09/03/90	0027	5054
28	50-51	-56.768	-170.068	10/03/90	0612	4822
29	52-53	-60.010	-169.883	11/03/90	0502	4139
30	54-55	-55.997	-174.168	12/03/90	2212	4970
31	56-57	-53.948	-176.158	13/03/90	1304	5289
32	58	-50.505	-179.395	15/03/90	0620	4448
33	59	-49.492	-179.745	15/03/90	1420	2012
34	60	-49.725	-179.998	16/03/90	0724	3111
35	61	-49.848	-179.878	16/03/90	1146	4030
36	62	-50.483	-179.357	18/03/90	0704	4458
38	65	-34.648	-178.637	28/03/90	0948	6556
39	66	-32.497	-178.313	28/03/90	2141	5091
40	67	-32.510	-178.523	29/03/90	0237	4249
41	68-69	-32.488	-178.767	29/03/90	1000	3003
42	70	-32.483	-178.502	29/03/90	1257	4211
43	71	-32.493	-178.297	29/03/90	1554	5004
44	72-73	-32.510	-177.998	30/03/90	0029	6005
45	74-75	-32.490	-175.502	30/03/90	1642	5556
46	76	-32.480	-171.478	31/03/90	1104	5259
47	77	-30.000	-170.007	01/04/90	0233	5532
48	78-80	-25.020	-170.030	02/04/90	0857	5834
49	81-82	-22.507	-170.008	03/04/90	0042	5645
50	83-85	-20.025	-170.013	03/04/90	1926	5502
51	86	-17.492	-170.005	04/04/90	0841	4848
52	87-89	-15.005	-170.007	05/04/90	0438	4903
53	90	-11.440	-169.608	05/04/90	2237	5216
54	91	-10.102	-169.503	06/04/90	0700	5332
55	92-93	-10.092	-170.000	06/04/90	1546	5260
56	94	-10.088	-170.248	06/04/90	2053	5141
57	95	-9.492	-170.213	07/04/90	0238	4515
58	96-98	-5.013	-170.020	08/04/90	0526	5511

Table A.1 (continued)

STANBR	CASTNBR	LATITUDE DEC.DEG	LONGITUDE DEC.DEG	DATE D/M/Y	TIME GMT	DEPTH M
59	99	-2.005	-170.007	08/04/90	2116	5214
60	100	-0.995	-170.020	09/04/90	0244	5435
61	101	-0.498	-170.007	09/04/90	0605	5698
62	102-104	0.000	-170.020	09/04/90	0931	5342
64	105	0.000	-170.001	11/04/90	1400	5612
65	106	0.500	-170.005	11/04/90	1837	5285
66	107	1.001	-170.005	11/04/90	2145	5316
67	108	2.005	-170.015	12/04/90	0308	5357
68	109	5.001	-170.010	12/04/90	1655	7161

APPENDIX B:

TABULATED DISCRETE BOTTLE DATA

APPENDIX B
TABULATED DISCRETE BOTTLE DATA

This appendix lists discrete data collected at all observed depths during R/V *Malcolm Baldrige* CGC-90 Cruise. The meanings of the column headings in Table B-1 are as follows.

STANBR is the station number;

SAMPID is the sample number;

CTDPRS is the CTD pressure (in dbar);

CTDTEMP is the CTD temperature (in °C);

THETA is the potential temperature (in °C);

CTDSAL is the CTD salinity (in PSS);

BOTSAL is the bottle salinity (in PSS);

SIGMA is the sigma-theta (in sigma units);

SIGMA-T is the sigma-t (in sigma units);

NITRATE is the nitrate concentration (in µmol/kg);

TCARB is the total carbon dioxide concentrations (in µmol/kg);

QC_FLAG is the quality flag codes for parameters flagged by asterisks (*******).

Table B.1. Discrete data collected at all observed depths during R/V *Malcolm Baldrige* CGC-90 Cruise

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG(C)	THETA DEG(C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
2	222	3.0	28.197	28.196	35.525	35.527	22.729	22.729	-999.900	-999.9	259
2	110	3.6	28.214	28.213	35.531	-999.900	22.727	22.726	0.391	1957.7	522
2	109	18.2	28.152	28.147	35.531	-999.900	22.748	22.746	-999.900	2050.9	553
2	108	39.0	28.043	28.034	35.522	35.527	22.782	22.779	0.391	1969.5	223
2	219	47.7	27.715	27.704	35.521	35.513	22.879	22.876	0.391	-999.9	229
2	107	58.5	27.685	27.671	35.515	35.518	22.894	22.889	0.391	-999.9	229
2	106	78.0	27.502	27.484	35.550	35.554	22.981	22.976	0.391	1961.0	222
2	218	97.6	26.607	26.585	35.670	35.624	23.322	23.315	0.391	-999.9	229
2	105	98.1	26.771	26.749	35.641	35.614	23.262	23.255	0.391	1957.6	222
2	104	122.3	24.870	24.844	35.941	35.917	24.084	24.076	0.391	-999.9	229
2	223	147.3	23.710	23.680	36.077	36.075	24.552	24.543	2.509	2065.8	223
2	113	148.4	23.875	23.844	36.105	36.091	24.516	24.506	2.070	1956.1	223
2	102	173.0	22.667	22.631	35.888	35.893	24.719	24.709	2.686	-999.9	229
2	101	197.0	21.986	21.946	35.982	35.984	24.982	24.971	4.453	1957.9	223
2	220	197.0	21.418	21.379	35.862	35.859	25.045	25.035	3.564	2060.1	223
2	217	246.8	19.256	19.211	35.620	35.628	25.448	25.437	5.870	-999.9	229
2	216	296.6	16.650	16.602	35.286	35.285	25.828	25.817	9.701	2093.1	223
2	229	346.3	14.135	14.084	35.046	35.058	26.215	26.204	10.954	2091.6	222
2	214	395.9	10.790	10.742	34.716	34.689	26.580	26.572	20.906	2140.7	223
2	203	495.2	7.668	7.618	34.522	34.496	26.934	26.927	29.394	2178.5	222
2	212	595.1	6.233	6.180	34.444	34.445	27.091	27.084	-999.900	2191.6	253
2	221	696.2	5.358	5.300	34.453	34.449	27.203	27.197	-999.900	2210.2	252
2	210	794.5	4.811	4.747	34.482	34.480	27.292	27.285	-999.900	-999.9	259
2	209	995.0	4.069	3.994	34.510	34.510	27.397	27.389	-999.900	2253.8	253
2	208	1243.5	3.301	3.212	34.554	34.555	27.510	27.502	-999.900	2278.2	252
2	207	1494.3	2.776	2.671	34.591	34.590	27.587	27.578	-999.900	2290.3	253
2	206	1742.7	2.417	2.296	34.614	34.616	27.640	27.630	-999.900	2295.3	252
2	205	1993.0	2.147	2.009	34.637	34.640	27.683	27.672	-999.900	2301.4	252
2	204	2492.6	1.890	1.712	34.661	34.659	27.721	27.707	-999.900	2308.9	252
2	213	2991.0	1.703	1.482	34.673	34.675	27.751	27.734	-999.900	2308.5	252
2	202	3492.4	1.522	1.256	34.686	34.687	27.776	27.757	-999.900	2299.0	252
2	201	3990.6	1.312	0.999	34.710	34.718	27.819	27.797	-999.900	2270.2	252
2	224	4493.5	1.050	0.689	34.712	34.716	27.837	27.814	-999.900	-999.9	259
3	324	3.3	28.132	28.131	35.469	35.472	22.709	22.709	-999.900	1960.1	252
3	315	18.7	27.302	27.298	35.451	35.453	22.965	22.964	-999.900	1958.8	252
3	322	38.4	27.135	27.126	35.453	35.451	23.019	23.016	0.391	1966.1	222
3	319	58.4	26.629	26.616	35.422	35.422	23.160	23.156	0.391	1963.7	222
3	318	78.5	26.538	26.520	35.422	35.422	23.190	23.185	0.391	1957.4	222
3	323	98.3	26.291	26.269	35.455	35.462	23.300	23.293	0.391	1960.7	223
3	320	122.7	25.670	25.643	35.498	35.490	23.516	23.508	0.391	1969.5	222
3	317	148.3	24.076	24.045	35.635	-999.900	24.110	24.101	0.391	1994.7	523
3	316	172.5	22.641	22.606	35.899	35.852	24.695	24.685	1.719	2050.6	222
3	329	198.1	21.633	21.594	35.831	35.830	24.964	24.953	2.422	2059.3	222
3	314	248.6	18.442	18.399	35.519	-999.900	25.571	25.560	4.278	2068.3	523
3	303	298.3	15.849	15.801	35.188	35.227	25.969	25.958	7.406	2081.3	222
3	312	346.9	13.123	13.075	34.941	34.992	26.372	26.363	12.704	2104.4	223
3	321	396.0	11.223	11.173	34.786	34.791	26.582	26.573	15.647	2119.1	222
3	310	496.7	7.927	7.876	34.473	34.491	26.893	26.885	25.319	2160.6	222
3	309	595.3	6.146	6.093	34.380	34.382	27.053	27.046	28.997	2173.5	223
3	308	696.1	5.559	5.500	34.433	34.426	27.161	27.154	-999.900	2198.8	252
3	307	795.8	4.756	4.693	34.432	34.433	27.261	27.254	-999.900	2218.4	252
3	328	895.0	4.223	4.155	34.481	34.478	27.355	27.348	-999.900	-999.9	259
3	305	993.7	4.002	3.927	34.515	34.511	27.405	27.397	-999.900	2261.1	252
3	304	1243.3	3.295	3.206	34.555	34.547	27.504	27.496	-999.900	2275.9	252
3	313	1491.5	2.797	2.692	34.579	34.576	27.574	27.565	-999.900	2285.0	252
3	302	1742.8	2.464	2.342	34.611	34.610	27.631	27.621	-999.900	2297.2	252
3	301	1992.8	2.253	2.113	34.632	34.618	27.657	27.645	-999.900	2297.1	252
4	423	3.0	27.582	27.581	35.412	35.410	22.842	22.841	0.391	-999.9	229
4	422	19.2	26.991	26.986	35.429	35.428	23.047	23.045	0.391	-999.9	229
4	419	38.7	26.509	26.500	35.474	35.441	23.211	23.208	0.391	-999.9	229
4	418	57.9	26.141	26.128	35.432	35.406	23.302	23.298	0.391	-999.9	229
4	423	78.9	25.946	25.928	35.445	35.448	23.396	23.390	0.391	-999.9	229
4	420	98.9	25.505	25.483	35.487	35.474	23.553	23.547	0.391	-999.9	229
4	417	121.2	24.786	24.760	35.594	35.699	23.944	23.937	0.391	-999.9	329
4	416	147.6	22.697	22.667	35.620	35.626	24.506	24.497	0.576	-999.9	229
4	429	173.4	21.997	21.962	35.744	35.734	24.788	24.778	1.152	-999.9	229
4	414	198.1	21.142	21.104	35.744	35.707	25.005	24.995	1.856	-999.9	229
4	403	246.8	19.047	19.003	35.601	-999.900	25.481	25.470	4.405	-999.9	529
4	412	297.1	16.824	16.775	35.342	35.354	25.840	25.829	6.770	-999.9	229
4	421	347.0	14.352	14.300	35.120	35.116	26.214	26.203	9.576	-999.9	229
4	410	395.6	11.954	11.902	34.817	34.833	26.479	26.469	14.875	-999.9	229
4	409	495.6	8.386	8.334	34.520	34.524	26.850	26.842	22.180	-999.9	229
4	408	596.6	6.801	6.745	34.396	34.393	26.976	26.968	25.389	-999.9	229
4	407	796.0	4.991	4.926	34.394	34.394	27.203	27.196	-999.900	-999.9	259
4	428	895.6	4.369	4.300	34.440	34.439	27.308	27.301	-999.900	-999.9	259
4	405	993.9	3.800	3.727	34.472	34.469	27.392	27.384	-999.900	-999.9	259
4	404	1243.0	2.977	2.891	34.541	34.540	27.528	27.520	-999.900	-999.9	259
4	413	1495.8	2.614	2.510	34.593	34.597	27.607	27.598	-999.900	-999.9	259
4	402	1743.0	2.396	2.275	34.615	34.617	27.643	27.633	-999.900	-999.9	259
4	401	1994.2	2.205	2.066	34.635	34.636	27.675	27.664	-999.900	-999.9	259
5	522	2.8	27.035	27.034	35.427	35.429	23.032	23.032	-999.900	-999.9	259
5	716	2.8	27.185	27.184	35.435	35.434	22.988	22.987	0.391	1953.6	222
5	519	18.2	27.015	27.011	35.428	-999.900	23.039	23.037	0.391	1959.7	522
5	523	28.4	26.835	26.828	35.436	35.424	23.094	23.092	0.391	1962.8	222
5	520	38.3	26.629	26.620	35.439	35.436	23.169	23.166	0.391	1964.0	222
5	517	57.9	26.352	26.339	35.445	-999.900	23.265	23.261	0.391	1966.4	523
5	516	77.5	25.694	25.677	35.444	35.447	23.473	23.468	0.391	1972.9	222

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
5	529	97.7	25.521	25.500	35.486	35.488	23.559	23.552	0.391	-999.9	229
5	514	122.5	24.680	24.654	35.634	35.643	23.934	23.926	0.449	1998.8	222
5	503	147.8	23.008	22.977	35.792	35.805	24.553	24.544	0.391	-999.9	229
5	729	246.1	19.564	19.519	35.725	35.661	25.394	25.382	2.022	2048.2	222
5	703	297.7	17.489	17.439	35.463	35.475	25.774	25.762	4.572	2060.1	222
5	714	297.7	17.489	17.439	35.463	35.472	25.772	25.760	0.391	2059.8	232
5	712	695.2	5.954	5.893	34.364	34.335	27.041	27.033	24.314	-999.9	229
5	721	795.2	5.276	5.210	34.371	34.366	27.148	27.141	27.472	2165.3	223
5	710	896.4	4.706	4.634	34.406	-999.900	27.246	27.238	-999.900	2186.5	553
5	709	994.9	4.190	4.114	34.443	34.402	27.299	27.291	-999.900	2208.2	253
5	708	1094.9	3.663	3.583	34.469	34.404	27.354	27.346	-999.900	2208.8	253
5	707	1243.3	3.072	2.985	34.524	34.529	27.511	27.503	-999.900	2254.9	253
5	728	1494.4	2.641	2.537	34.591	34.589	27.598	27.589	-999.900	2282.8	252
5	705	1742.6	2.409	2.288	34.616	34.614	27.639	27.629	-999.900	2293.0	252
5	704	1995.0	2.219	2.079	34.634	34.632	27.671	27.659	-999.900	2299.9	252
5	713	2992.4	1.774	1.552	34.674	34.670	27.742	27.725	-999.900	2312.9	252
5	702	3491.3	1.567	1.300	34.689	34.686	27.773	27.753	-999.900	2301.9	252
5	701	3993.4	1.274	0.962	34.722	-999.900	27.825	27.804	-999.900	2259.0	553
5	724	4495.8	1.051	0.690	34.715	34.712	27.834	27.811	-999.900	2268.8	253
7	915	2.9	26.024	26.023	35.147	35.146	23.138	23.138	0.391	1941.0	222
7	922	18.6	26.017	26.013	35.143	-999.900	23.139	23.138	0.391	-999.9	529
7	919	39.2	25.912	25.903	35.125	35.124	23.159	23.156	0.391	1940.5	222
7	918	58.3	23.632	23.620	35.291	35.290	23.975	23.971	0.391	1958.8	223
7	923	98.5	22.128	22.108	35.475	35.468	24.545	24.539	0.391	1990.9	223
7	920	122.6	21.425	21.401	35.575	35.580	24.827	24.820	0.654	2013.8	223
7	974	148.1	20.500	20.472	35.588	35.580	25.080	25.072	0.654	2015.2	223
7	916	172.5	20.129	20.097	35.679	35.680	25.256	25.248	2.745	2044.6	223
7	929	198.3	19.575	19.539	35.654	35.640	25.372	25.363	2.803	2048.6	222
7	914	247.5	18.431	18.388	35.620	35.623	25.654	25.643	3.321	2050.4	223
7	903	297.7	17.096	17.047	35.547	35.541	25.919	25.908	5.021	2066.9	222
7	912	347.2	15.799	15.744	35.440	35.433	26.140	26.128	6.985	2078.2	222
7	921	397.0	14.351	14.292	35.266	35.268	26.333	26.320	9.330	2093.3	222
7	910	447.8	12.602	12.541	35.023	-999.900	26.502	26.490	12.469	2107.7	522
7	973	496.1	11.076	11.014	34.843	34.835	26.645	26.634	15.735	2121.0	223
7	908	595.8	8.189	8.126	34.512	34.515	26.874	26.865	22.523	2140.2	222
7	907	796.0	5.675	5.606	34.344	34.347	27.086	27.077	29.125	2169.4	222
7	928	895.6	5.086	5.012	34.372	34.369	27.174	27.165	-999.900	2194.2	252
7	972	994.8	4.566	4.487	34.391	34.386	27.246	27.237	-999.900	2210.6	252
7	904	1242.9	3.260	3.171	34.498	34.494	27.465	27.457	-999.900	2255.0	253
7	961	1496.1	2.624	2.520	34.581	34.578	27.591	27.582	-999.900	-999.9	259
7	902	1742.7	2.392	2.271	34.619	34.621	27.646	27.636	-999.900	2298.0	253
7	971	1997.5	2.216	2.076	34.637	34.633	27.672	27.660	-999.900	2307.7	253
9	1252	6.2	24.652	24.651	35.344	-999.900	23.709	23.708	0.391	1963.1	522
9	1251	19.1	24.654	24.650	35.342	35.346	23.711	23.709	0.391	1964.1	222
9	1250	27.1	24.646	24.641	35.343	-999.900	23.711	23.709	-999.900	-999.9	559
9	1249	58.8	23.439	23.427	35.355	35.372	24.093	24.090	0.391	1970.2	222
9	1248	99.0	20.428	20.410	35.606	35.611	25.120	25.115	0.391	2014.0	223
9	1247	139.8	19.372	19.347	35.648	35.641	25.423	25.417	1.973	2034.9	222
9	1246	170.8	18.598	18.568	35.626	35.628	25.612	25.605	2.950	2046.2	223
9	1245	201.3	17.620	17.586	35.551	35.546	25.793	25.785	4.591	2060.9	222
9	1244	298.9	15.248	15.202	35.370	-999.900	26.213	26.203	7.356	2080.5	522
9	1243	398.0	12.122	12.069	34.965	34.648	26.549	26.539	13.456	2108.5	322
9	1242	499.3	9.315	9.259	34.646	34.648	26.801	26.792	18.650	2126.5	222
9	1241	599.9	7.393	7.334	34.449	34.451	26.940	26.931	22.631	2135.7	222
9	1352	694.8	6.586	6.521	34.380	34.715	26.996	26.987	-999.900	2136.9	359
9	1351	795.9	5.809	5.739	34.349	34.345	27.068	27.059	28.235	2166.0	233
9	1350	995.2	4.494	4.415	34.361	34.357	27.231	27.222	-999.900	2198.1	253
9	1349	1243.4	3.379	3.288	34.465	34.466	27.432	27.423	-999.900	2240.6	252
9	1348	1492.2	2.682	2.578	34.560	34.562	27.573	27.564	-999.900	2273.8	253
9	1347	1994.7	2.201	2.062	34.633	34.634	27.674	27.662	-999.900	2305.8	252
9	1346	2493.0	1.939	1.760	34.659	34.654	27.713	27.699	-999.900	2316.7	252
9	1116	2494.0	1.955	1.776	34.661	34.655	27.713	27.699	-999.900	-999.9	259
9	1110	2495.6	1.955	1.776	34.660	34.656	27.714	27.700	-999.900	-999.9	259
9	1345	2996.3	1.734	1.512	34.674	34.673	27.747	27.730	-999.900	2318.9	252
9	1344	3493.9	1.564	1.296	34.702	34.702	27.786	27.766	-999.900	2290.6	252
9	1343	3997.5	1.304	0.990	34.723	34.724	27.824	27.803	-999.900	2263.5	252
9	1342	4495.9	1.087	0.725	34.716	34.715	27.834	27.811	-999.900	2263.8	252
9	1341	5053.6	1.042	0.616	34.712	34.713	27.839	27.812	-999.900	2264.1	252
10	1452	147.5	17.703	17.678	35.598	35.602	25.814	25.807	2.823	2054.8	222
10	1449	171.7	17.061	17.033	35.551	35.554	25.933	25.926	3.809	2063.3	222
10	1450	171.7	17.061	17.033	35.551	35.554	25.933	25.926	3.868	2062.5	222
10	1451	171.7	17.061	17.033	35.551	35.553	25.932	25.925	4.005	2063.2	222
10	1448	195.8	16.380	16.349	35.476	35.477	26.035	26.028	5.119	2071.9	222
10	1446	246.3	15.485	15.447	35.414	35.415	26.193	26.185	6.233	2079.9	222
10	1447	246.3	15.485	15.447	35.414	35.414	26.193	26.184	6.233	2081.0	222
10	1442	296.9	14.097	14.054	35.252	35.263	26.380	26.371	8.598	2091.5	222
10	1443	296.9	14.097	14.054	35.252	35.263	26.380	26.371	8.539	2091.6	222
10	1444	296.9	14.097	14.054	35.252	35.262	26.379	26.370	8.471	2092.4	222
10	1445	296.9	14.097	14.054	35.252	35.261	26.378	26.369	8.666	2091.1	222
10	1441	348.0	12.492	12.445	35.047	35.046	26.539	26.530	11.687	2104.7	222
10	1552	495.6	8.857	8.803	34.612	34.612	26.846	26.837	-999.900	2127.1	252
10	1550	594.9	7.567	7.507	34.471	34.469	26.929	26.921	21.399	2130.5	222
10	1551	594.9	7.567	7.507	34.471	34.472	26.932	26.923	21.946	2130.5	222
10	1549	694.4	6.680	6.615	34.389	34.390	26.991	26.982	23.932	2135.4	222
10	1548	794.4	6.020	5.949	34.349	34.350	27.046	27.037	26.113	2146.5	222
10	1547	891.4	5.378	5.302	34.334	34.332	27.111	27.101	28.646	2162.5	222
10	1546	994.1	4.888	4.806	34.348	34.349	27.181	27.172	-999.900	2181.5	252
10	1545	1243.5	3.484	3.392	34.445	34.442	27.403	27.394	-999.900	2227.3	252
10	1544	1493.3	2.826	2.720	34.543	34.542	27.545	27.535	-999.900	2259.6	252

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG(C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL.KG *******	TCARB UMOL/KG *******	QC_FLAG
10	1543	1742.8	2.482	2.360	34.604	34.602	27.624	27.613	-999.900	2284.0	252
10	1542	1993.0	2.287	2.146	34.628	34.628	27.662	27.650	-999.900	2295.5	253
10	1541	2493.6	2.004	1.824	34.656	34.654	27.708	27.694	-999.900	2307.4	253
11	1652	3.5	23.727	23.727	35.556	35.558	24.146	24.146	0.391	1996.0	222
11	1651	20.5	23.704	23.700	35.557	-999.900	24.153	24.152	0.391	1995.0	522
11	1650	29.5	23.686	23.680	35.558	35.566	24.166	24.164	-999.900	-999.9	259
11	1649	38.6	23.637	23.629	35.572	35.573	24.187	24.184	0.391	1997.5	222
11	1648	69.0	20.310	20.297	35.607	35.599	25.141	25.138	0.391	2014.6	222
11	1647	97.9	18.539	18.522	35.611	35.607	25.608	25.604	0.391	2026.2	222
11	1646	122.4	17.053	17.033	35.578	35.574	25.948	25.943	0.918	-999.9	229
11	1645	147.9	16.291	16.267	35.512	35.511	26.080	26.074	4.923	2072.3	222
11	1644	172.7	15.646	15.619	35.441	35.448	26.180	26.174	6.232	-999.9	229
11	1643	195.8	15.182	15.152	35.397	35.399	26.247	26.240	6.760	2083.8	222
11	1642	248.6	14.097	14.061	35.266	35.273	26.386	26.378	8.598	2094.4	222
11	1641	300.8	12.784	12.743	35.099	35.094	26.518	26.510	11.491	2107.3	222
11	1752	345.7	11.630	11.586	34.926	34.931	26.614	26.606	13.398	-999.9	229
11	1751	394.7	10.699	10.651	34.826	34.828	26.705	26.696	14.816	2125.8	222
11	1750	445.4	9.951	9.899	34.736	34.736	26.763	26.755	16.918	-999.9	229
11	1749	495.7	8.844	8.790	34.602	34.603	26.841	26.832	18.885	2135.1	222
11	1748	591.9	7.403	7.345	34.458	34.460	26.945	26.937	22.357	2141.7	222
11	1747	694.4	6.662	6.597	34.389	34.397	26.999	26.990	24.079	2146.3	222
11	1746	793.6	5.976	5.905	34.351	-999.900	27.052	27.043	26.455	2156.9	522
11	1745	894.3	5.329	5.253	34.340	34.339	27.122	27.113	28.685	2181.5	222
11	1744	993.6	4.707	4.626	34.357	34.356	27.207	27.198	-999.900	2194.0	252
11	1743	1094.5	4.142	4.057	34.382	34.381	27.288	27.279	-999.900	-999.9	259
11	1742	1243.5	3.483	3.391	34.443	34.464	27.421	27.412	-999.900	2235.0	252
11	1741	1505.7	2.803	2.697	34.543	34.540	27.545	27.536	-999.900	2266.2	252
11	1851	1742.9	2.450	2.328	34.602	34.597	27.622	27.612	-999.900	2279.3	252
11	1850	1992.7	2.246	2.106	34.630	34.633	27.669	27.658	-999.900	2291.9	252
11	1849	2293.7	2.077	1.914	34.650	34.648	27.696	27.684	-999.900	-999.9	259
11	1848	2593.5	1.942	1.754	34.659	34.660	27.718	27.704	-999.900	2307.4	252
11	1847	2895.0	1.832	1.618	34.669	34.669	27.736	27.720	-999.900	2308.3	252
11	1846	3191.3	1.715	1.474	34.685	34.675	27.751	27.733	-999.900	-999.9	259
11	1845	3495.3	1.605	1.336	34.712	34.713	27.792	27.772	-999.900	2270.8	253
11	1844	3995.6	1.262	0.950	34.723	34.724	27.827	27.806	-999.900	2253.1	253
11	1843	4496.1	1.057	0.696	34.716	34.715	27.836	27.813	-999.900	2255.7	252
11	1842	4993.3	1.019	0.601	34.712	34.712	27.839	27.813	-999.900	2255.9	252
11	1841	5176.6	1.032	0.592	34.711	34.719	27.846	27.817	-999.900	2257.5	252
12	1952	4.2	22.079	22.078	35.673	35.677	24.712	24.712	0.391	2022.0	222
12	1951	18.9	22.083	22.080	35.673	35.677	24.711	24.710	0.391	2021.0	222
12	1950	37.7	22.086	22.079	35.676	-999.900	24.711	24.709	-999.900	-999.9	559
12	1949	69.3	18.966	18.954	35.491	35.488	25.407	25.404	0.391	2007.3	222
12	1948	97.9	16.968	16.952	35.496	35.486	25.900	25.896	0.391	2031.5	222
12	1947	122.9	15.862	15.843	35.412	35.418	26.106	26.102	0.391	-999.9	229
12	1946	148.5	15.281	15.258	35.381	35.383	26.211	26.206	0.811	2060.7	222
12	1945	170.3	14.742	14.717	35.321	35.316	26.278	26.273	2.843	-999.9	229
12	1944	197.4	13.949	13.921	35.231	35.230	26.382	26.376	5.549	2081.6	222
12	1943	247.7	12.600	12.567	35.080	35.082	26.543	26.537	8.726	2095.9	222
12	1942	297.7	11.349	11.311	34.915	34.913	26.651	26.644	12.108	2109.8	222
12	1941	347.5	10.343	10.302	34.787	34.788	26.735	26.728	14.748	-999.9	229
12	2052	397.3	9.542	9.497	34.691	34.692	26.796	26.789	16.245	2125.6	222
12	2051	446.1	8.821	8.773	34.609	34.613	26.851	26.844	18.073	-999.9	229
12	2050	498.1	8.171	8.119	34.535	34.544	26.898	26.890	19.150	2129.2	222
12	2049	547.6	7.784	7.728	34.498	34.503	26.924	26.916	20.920	2133.9	222
12	2048	595.7	7.478	7.419	34.470	34.472	26.944	26.936	21.634	2141.3	222
12	2047	697.8	6.870	6.803	34.419	34.420	26.989	26.980	23.580	2146.7	222
12	2046	795.6	6.292	6.219	34.373	34.372	27.029	27.019	27.100	2161.5	222
12	2045	894.8	5.773	5.694	34.357	34.358	27.084	27.074	27.101	2177.5	222
12	2044	996.1	5.107	5.023	34.350	34.352	27.159	27.149	29.183	-999.9	229
12	2043	1094.1	4.568	4.480	34.357	34.356	27.223	27.213	-999.900	-999.9	259
12	2042	1244.0	3.766	3.672	34.405	34.405	27.346	27.337	-999.900	2217.6	252
12	2041	1497.4	2.927	2.820	34.522	34.521	27.519	27.509	-999.900	2255.3	253
12	2152	1741.6	2.576	2.453	34.588	34.587	27.604	27.593	-999.900	2280.0	253
12	2151	1742.7	2.575	2.452	34.589	34.587	27.604	27.593	-999.900	-999.9	259
12	2150	1992.6	2.339	2.198	34.622	34.621	27.652	27.641	-999.900	2297.1	253
12	2149	2293.5	2.140	1.976	34.642	34.642	27.687	27.674	-999.900	-999.9	259
12	2148	2592.4	1.979	1.790	34.657	34.660	27.716	27.701	-999.900	2316.7	253
12	2147	2895.3	1.842	1.627	34.672	34.670	27.736	27.720	-999.900	2314.6	253
12	2146	3191.0	1.725	1.484	34.692	34.691	27.763	27.745	-999.900	-999.9	259
12	2145	3495.5	1.595	1.326	34.714	34.715	27.794	27.775	-999.900	2277.1	252
12	2144	3996.7	1.267	0.954	34.721	34.723	27.826	27.805	-999.900	2264.0	253
12	2143	4497.4	1.023	0.663	34.712	34.713	27.836	27.813	-999.900	2265.0	253
12	2142	4997.9	1.012	0.594	34.710	34.711	27.839	27.812	-999.900	2265.8	253
12	2141	5297.7	1.037	0.582	34.709	34.709	27.838	27.809	-999.900	2265.1	253
13	2252	4.4	20.741	20.740	35.354	35.351	24.833	24.833	0.391	2028.4	222
13	2251	19.0	20.739	20.736	35.357	35.355	24.837	24.836	0.391	2028.3	222
13	2352	28.7	20.663	20.658	35.382	-999.900	24.879	24.877	-999.900	-999.9	559
13	2250	38.6	20.697	20.690	35.380	35.378	24.867	24.865	0.391	2029.0	222
13	2249	68.5	17.908	17.896	35.387	35.384	25.593	25.590	0.391	2027.2	222
13	2248	98.1	15.485	15.470	35.386	35.382	26.163	26.159	0.391	2047.0	222
13	2247	119.8	14.808	14.790	35.323	35.325	26.269	26.266	0.391	-999.9	229
13	2246	148.0	14.020	13.999	35.238	35.241	26.374	26.370	4.377	2070.7	222
13	2245	173.9	13.027	13.003	35.093	35.106	26.475	26.470	6.713	-999.9	229
13	2244	197.8	12.484	12.458	35.042	35.041	26.533	26.528	8.970	2094.2	222
13	2243	247.5	11.505	11.474	34.926	34.919	26.626	26.620	10.456	2095.8	222
13	2242	299.3	10.511	10.475	34.800	34.797	26.712	26.705	13.986	2109.1	222
13	2241	348.0	9.471	9.432	34.666	34.660	26.782	26.776	16.919	-999.9	229
13	2351	396.7	8.788	8.745	34.599	34.597	26.843	26.837	18.298	2122.8	222
13	2350	446.4	8.318	8.271	34.550	34.550	26.880	26.873	20.352	-999.9	229

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
13	2349	496.5	7.879	7.828	34.511	34.509	26.914	26.906	21.271	2128.8	222
13	2348	595.7	7.325	7.266	34.455	34.452	26.950	26.942	22.260	2131.0	222
13	2347	695.3	6.793	6.727	34.406	34.406	26.988	26.979	23.952	2135.6	222
13	2346	797.4	6.353	6.280	34.376	34.376	27.024	27.014	25.722	2143.8	222
13	2345	892.9	5.762	5.683	34.360	34.358	27.085	27.075	27.775	2157.4	222
13	2344	995.9	5.099	5.015	34.362	34.358	27.165	27.155	-999.900	2173.9	252
13	2343	1095.2	4.468	4.380	34.363	34.363	27.239	27.230	-999.900	-999.9	259
13	2342	1244.2	3.759	3.665	34.402	34.397	27.340	27.331	-999.900	2210.5	252
13	2341	1496.1	3.000	2.892	34.508	34.507	27.501	27.492	-999.900	2244.3	252
13	2451	1741.9	2.587	2.464	34.588	34.585	27.601	27.591	-999.900	2273.2	252
13	2450	1993.8	2.362	2.220	34.623	34.622	27.651	27.639	-999.900	2288.5	252
13	2449	2294.4	2.166	2.001	34.642	34.640	27.683	27.670	-999.900	-999.9	259
13	2448	2596.6	1.998	1.808	34.657	-999.900	27.712	27.697	-999.900	2306.5	552
13	2447	2894.6	1.864	1.649	34.669	34.667	27.732	27.716	-999.900	2308.7	252
13	2446	3198.6	1.746	1.504	34.683	-999.900	27.734	27.718	-999.900	-999.9	559
13	2445	3498.3	1.646	1.376	34.710	34.708	27.785	27.765	-999.900	2276.8	252
13	2444	3999.2	1.347	1.032	34.724	34.727	27.824	27.802	-999.900	2257.5	252
13	2443	4499.6	1.056	0.694	34.715	34.714	27.835	27.812	-999.900	2258.8	252
13	2442	4998.9	1.008	0.590	34.711	34.710	27.838	27.812	-999.900	2257.7	252
13	2441	5276.4	1.031	0.579	34.711	34.710	27.839	27.810	-999.900	2259.3	252
14	2552	4.0	19.622	19.622	35.194	35.191	25.008	25.008	0.391	2032.5	222
14	2551	17.1	19.563	19.560	35.200	35.206	25.035	25.035	0.391	2034.4	222
14	2550	37.1	19.486	19.480	35.255	35.253	25.092	25.091	0.391	2026.6	222
14	2549	68.2	16.833	16.822	35.185	35.201	25.712	25.709	0.391	2024.6	222
14	2548	97.2	13.445	13.431	34.937	34.930	26.252	26.249	0.391	2043.2	222
14	2547	120.7	12.479	12.463	34.875	34.870	26.399	26.396	3.460	-999.9	229
14	2546	146.0	12.080	12.061	34.870	34.847	26.459	26.456	5.649	2073.0	222
14	2545	197.7	11.353	11.328	34.855	-999.900	26.603	26.599	9.392	2087.6	522
14	2544	245.5	10.585	10.555	34.793	34.790	26.692	26.687	13.135	2105.2	222
14	2543	295.3	9.646	9.612	34.685	34.680	26.768	26.762	16.323	2114.2	222
14	2542	348.1	9.070	9.032	34.624	34.627	26.821	26.815	18.161	-999.9	229
14	2541	396.0	8.521	8.479	34.559	34.556	26.853	26.846	18.299	2117.8	222
14	2652	495.2	8.045	7.994	34.529	-999.900	26.905	26.898	20.362	2130.2	522
14	2651	595.9	7.503	7.444	34.485	34.478	26.945	26.937	22.112	2133.4	222
14	2650	696.6	7.036	6.969	34.449	34.445	26.986	26.977	23.628	2140.2	222
14	2649	796.1	6.339	6.266	34.384	34.384	27.032	27.022	25.810	2145.5	222
14	2648	896.4	5.833	5.753	34.378	34.377	27.091	27.082	27.032	2161.6	222
14	2647	997.6	5.242	5.157	34.373	34.372	27.159	27.149	29.075	2176.1	222
14	2646	1095.4	4.790	4.700	34.390	34.387	27.223	27.213	-999.900	-999.9	259
14	2645	1243.4	4.150	4.052	34.432	34.429	27.327	27.316	-999.900	2212.3	252
14	2644	1487.8	3.257	3.147	34.511	34.509	27.480	27.469	-999.900	2245.8	252
14	2643	1734.9	2.713	2.589	34.582	34.573	27.581	27.570	-999.900	2266.8	252
14	2642	1989.0	2.478	2.335	34.612	34.608	27.630	27.618	-999.900	2280.5	252
14	2641	2498.3	2.163	1.979	34.650	34.643	27.687	27.673	-999.900	2295.1	252
15	2752	2.8	17.404	17.404	34.966	34.966	25.392	25.392	0.391	2029.0	222
15	2751	18.8	16.840	16.837	34.985	34.983	25.541	25.540	0.391	2026.1	222
15	2750	38.4	16.706	16.700	34.960	35.175	25.555	25.554	0.391	2025.8	322
15	2749	66.2	14.077	14.067	35.168	35.175	26.309	26.307	2.609	2056.5	222
15	2748	98.1	13.390	13.376	35.238	35.237	26.501	26.498	7.533	2079.0	222
15	2747	122.2	12.974	12.957	35.166	35.171	26.535	26.531	8.119	-999.9	229
15	2746	146.6	12.378	12.359	35.055	35.054	26.562	26.559	6.742	2077.0	222
15	2745	196.5	11.956	11.930	35.004	34.997	26.601	26.596	8.550	2085.6	222
15	2744	246.5	11.116	11.085	34.879	34.877	26.665	26.659	12.753	2099.7	222
15	2743	296.1	10.128	10.093	34.748	34.753	26.744	26.738	14.641	2107.2	222
15	2742	346.2	9.410	9.371	34.660	34.666	26.797	26.790	16.675	-999.9	229
15	2741	393.1	8.832	8.789	34.585	34.586	26.828	26.821	16.451	2112.8	222
15	2847	496.0	8.111	8.060	34.513	34.515	26.884	26.877	18.700	2123.4	222
15	2846	595.3	7.666	7.606	34.479	34.479	26.923	26.914	20.803	2127.5	222
15	2845	694.2	7.257	7.189	34.445	34.445	26.956	26.946	22.983	2131.5	222
15	2844	795.6	6.825	6.749	34.413	34.412	26.990	26.980	23.922	2138.9	222
15	2843	894.5	6.279	6.196	34.389	34.391	27.047	27.036	25.809	-999.9	229
15	2842	993.2	5.806	5.717	34.392	34.390	27.106	27.095	27.911	2166.9	222
15	2841	1093.2	5.166	5.073	34.387	34.389	27.183	27.172	-999.900	2238.0	252
15	2852	1243.4	4.361	4.261	34.403	34.397	27.279	27.269	-999.900	-999.9	259
15	2851	1492.5	3.517	3.404	34.492	34.494	27.443	27.432	-999.900	-999.9	259
15	2850	1744.7	2.896	2.768	34.576	34.574	27.566	27.555	-999.900	-999.9	259
15	2849	1993.7	2.504	2.360	34.618	34.616	27.635	27.623	-999.900	2285.0	252
15	2848	2294.7	2.211	2.045	34.649	34.646	27.685	27.671	-999.900	-999.9	259
15	2946	2694.3	1.903	1.706	34.699	34.696	27.751	27.736	-999.900	2278.4	252
15	2947	2694.8	1.902	1.705	34.700	34.695	27.750	27.735	-999.900	-999.9	259
15	2945	3097.2	1.654	1.424	34.730	34.728	27.797	27.781	-999.900	2257.3	252
15	2944	3394.6	1.426	1.172	34.730	34.735	27.821	27.803	-999.900	2254.9	252
15	2943	3685.6	1.224	0.945	34.730	34.710	27.816	27.797	-999.900	2255.9	252
15	2942	3894.6	1.101	0.804	34.719	34.717	27.831	27.811	-999.900	2256.2	252
15	2941	4097.1	1.013	0.697	34.715	34.715	27.836	27.816	-999.900	2257.6	252
15	2951	4300.4	0.952	0.616	34.712	34.710	27.837	27.816	-999.900	2257.7	252
15	2950	4396.9	0.938	0.591	34.712	34.711	27.839	27.817	-999.900	2258.6	252
15	2949	4598.3	0.917	0.549	34.709	34.708	27.839	27.816	-999.900	2259.7	252
15	2948	4675.6	0.915	0.538	34.708	34.713	27.844	27.820	-999.900	2260.4	252
16	3047	4.5	17.574	17.573	35.082	35.078	25.437	25.437	0.391	-999.9	229
16	3046	29.1	17.077	17.072	35.097	-999.900	25.572	25.571	-999.900	-999.9	559
16	3045	98.1	12.995	12.982	35.091	35.087	26.465	26.462	5.433	-999.9	229
16	3044	197.6	12.239	12.213	35.037	35.040	26.580	26.575	6.518	-999.9	229
16	3043	395.9	9.183	9.139	34.639	34.637	26.812	26.805	17.037	-999.9	229
16	3042	595.4	7.885	7.824	34.507	34.506	26.912	26.903	21.164	-999.9	229
16	3041	795.4	7.095	7.017	34.447	34.443	26.978	26.967	23.843	-999.9	229
16	3052	996.3	6.001	5.910	34.406	34.404	27.093	27.082	27.911	-999.9	229
16	3051	1244.2	4.629	4.527	34.428	34.424	27.272	27.261	-999.900	-999.9	259
16	3050	1494.3	3.577	3.463	34.501	34.428	27.443	27.432	-999.900	-999.9	359

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
16	3049	1743.1	2.930	2.802	34.575	34.574	27.563	27.551	-999.900	-999.9	259
16	3048	1997.9	2.531	2.386	34.619	34.615	27.632	27.619	-999.900	-999.9	259
16	3146	2195.8	2.310	2.151	34.638	34.672	27.697	27.684	-999.900	-999.9	259
16	3145	2595.3	2.018	1.828	34.681	34.685	27.733	27.718	-999.900	-999.9	259
16	3144	2991.7	1.792	1.569	34.730	34.728	27.787	27.770	-999.900	-999.9	259
16	3143	3195.8	1.613	1.374	34.736	34.731	27.803	27.786	-999.900	-999.9	259
16	3142	3396.1	1.443	1.188	34.733	34.725	27.812	27.794	-999.900	-999.9	259
16	3141	3595.0	1.274	1.003	34.728	34.726	27.825	27.807	-999.900	-999.9	259
16	3152	3797.7	1.125	0.837	34.723	-999.900	27.834	27.815	-999.900	-999.9	559
16	3151	3997.9	1.019	0.713	34.718	-999.900	27.837	27.817	-999.900	-999.9	559
16	3150	4137.9	0.983	0.663	34.715	34.711	27.835	27.814	-999.900	-999.9	259
16	3149	4238.9	0.946	0.617	34.714	34.703	27.831	27.810	-999.900	-999.9	259
16	3148	4343.3	0.907	0.567	34.712	34.727	27.854	27.832	-999.900	-999.9	259
17	3247	1993.2	2.550	2.406	34.618	34.612	27.628	27.615	-999.900	2280.6	252
17	3246	2191.4	2.310	2.152	34.639	34.636	27.668	27.655	-999.900	2284.6	252
17	3245	2392.8	2.127	1.954	34.662	34.658	27.701	27.688	-999.900	2287.8	252
17	3244	2590.8	1.977	1.788	34.689	34.681	27.733	27.718	-999.900	2278.4	252
17	3243	2794.7	1.852	1.647	34.712	34.709	27.766	27.750	-999.900	2269.1	252
17	3242	2996.7	1.733	1.511	34.729	34.724	27.788	27.771	-999.900	2257.1	252
17	3241	3096.2	1.665	1.435	34.734	34.728	27.797	27.780	-999.900	2255.1	252
17	3251	3196.9	1.526	1.289	34.736	34.730	27.809	27.792	-999.900	-999.9	259
17	3250	3299.4	1.411	1.167	34.733	34.753	27.836	27.818	-999.900	2255.3	252
17	3249	3344.1	1.382	1.134	34.733	34.724	27.815	27.797	-999.900	2254.4	252
17	3248	3400.3	1.330	1.077	34.731	34.736	27.828	27.811	-999.900	2253.3	252
18	3346	1992.8	2.531	2.387	34.620	34.616	27.632	27.620	-999.900	-999.9	259
18	3347	1993.1	2.531	2.387	34.620	-999.900	27.636	27.624	-999.900	-999.9	559
18	3345	2193.3	2.273	2.115	34.644	34.639	27.673	27.660	-999.900	-999.9	259
18	3344	2400.1	2.029	1.857	34.678	34.672	27.720	27.707	-999.900	-999.9	259
18	3343	2493.3	1.924	1.745	34.693	34.697	27.749	27.735	-999.900	-999.9	259
18	3342	2592.8	1.860	1.673	34.712	34.706	27.761	27.747	-999.900	-999.9	259
18	3341	2694.3	1.788	1.593	34.723	34.718	27.777	27.762	-999.900	-999.9	259
18	3351	2793.9	1.690	1.488	34.732	34.727	27.792	27.777	-999.900	-999.9	259
18	3350	2893.9	1.586	1.377	34.736	34.734	27.806	27.790	-999.900	-999.9	259
18	3349	2894.3	1.586	1.377	34.735	34.730	27.802	27.787	-999.900	-999.9	259
18	3348	2972.7	1.511	1.296	34.735	34.730	27.808	27.793	-999.900	-999.9	259
19	3447	3.1	17.785	17.785	35.116	35.114	25.413	25.413	0.391	2017.3	222
19	3547	29.8	17.384	17.379	35.133	-999.900	25.527	25.525	-999.900	-999.9	559
19	3446	36.0	17.326	17.320	35.141	35.140	25.546	25.545	0.391	2019.3	222
19	3445	67.8	14.897	14.887	35.353	35.351	26.268	26.266	3.605	2059.8	222
19	3444	96.4	14.064	14.050	35.285	-999.900	26.397	26.394	-999.900	-999.9	559
19	3546	98.9	14.233	14.219	35.304	35.300	26.373	26.370	5.520	2065.7	222
19	3443	121.4	13.769	13.752	35.254	-999.900	26.436	26.433	7.074	-999.9	529
19	3442	146.6	13.478	13.457	35.258	35.253	26.497	26.492	7.357	2068.6	222
19	3441	196.8	12.923	12.896	35.157	35.166	26.543	26.538	7.641	-999.9	229
19	3452	245.7	12.080	12.048	35.003	35.020	26.596	26.590	10.251	-999.9	229
19	3451	295.2	11.413	11.376	34.923	34.918	26.643	26.636	12.304	-999.9	229
19	3450	345.3	10.763	10.721	34.840	34.837	26.699	26.692	14.288	2103.6	222
19	3449	396.6	10.170	10.123	34.784	34.778	26.758	26.750	16.341	2109.3	222
19	3448	496.9	9.307	9.251	34.693	34.688	26.834	26.824	18.532	2117.5	222
19	3545	594.5	8.471	8.407	34.609	34.610	26.906	26.896	19.168	2128.7	222
19	3544	697.7	7.910	7.838	34.557	34.554	26.948	26.937	21.808	2137.1	222
19	3543	793.5	7.251	7.172	34.504	34.504	27.004	26.993	24.018	2143.5	222
19	3542	895.3	6.679	6.594	34.474	34.474	27.060	27.048	25.642	2157.3	222
19	3541	995.0	6.169	6.077	34.466	34.464	27.119	27.108	26.971	2162.5	222
19	3551	1097.9	5.504	5.407	34.445	34.458	27.198	27.186	28.595	-999.9	229
19	3550	1243.5	4.750	4.646	34.483	34.471	27.296	27.284	-999.900	2198.8	252
19	3549	1495.3	3.746	3.630	34.528	34.590	27.448	27.436	-999.900	2238.4	352
19	3548	1836.9	2.699	2.566	34.608	34.622	27.622	27.610	-999.900	2269.5	252
20	3647	28.5	14.797	14.793	34.684	-999.900	25.774	25.773	-999.900	-999.9	559
20	3646	797.1	2.674	2.545	34.554	34.551	27.567	27.556	-999.900	-999.9	259
20	3645	1996.3	2.452	2.309	34.618	34.615	27.638	27.626	-999.900	-999.9	259
20	3644	2197.1	2.262	2.104	34.666	34.660	27.691	27.678	-999.900	-999.9	259
20	3643	2393.3	2.132	1.958	34.707	34.700	27.735	27.721	-999.900	-999.9	259
20	3642	2496.6	2.074	1.892	34.717	34.713	27.750	27.736	-999.900	-999.9	259
20	3641	2595.2	2.022	1.832	34.728	34.729	27.768	27.753	-999.900	-999.9	259
20	3651	2698.5	1.890	1.693	34.728	34.724	27.774	27.759	-999.900	-999.9	259
20	3650	2801.4	1.754	1.550	34.739	34.736	27.795	27.779	-999.900	-999.9	259
20	3649	2859.6	1.696	1.488	34.738	34.733	27.797	27.781	-999.900	-999.9	259
20	3648	2917.6	1.682	1.468	34.740	34.739	27.803	27.787	-999.900	-999.9	259
21	3747	2794.0	1.926	1.719	34.733	34.734	27.780	27.764	-999.900	2249.5	252
21	3746	2994.4	1.786	1.563	34.738	34.735	27.793	27.776	-999.900	2248.9	252
21	3745	3195.3	1.584	1.346	34.737	34.734	27.808	27.791	-999.900	2251.8	252
21	3744	3393.3	1.421	1.167	34.734	34.730	27.817	27.799	-999.900	2248.6	252
21	3743	3594.6	1.262	0.992	34.728	34.726	27.826	27.807	-999.900	2252.9	252
21	3742	3796.8	1.127	0.839	34.722	34.720	27.831	27.812	-999.900	2254.6	252
21	3741	3994.9	1.011	0.706	34.718	34.714	27.835	27.815	-999.900	2255.8	252
21	3751	4197.2	0.957	0.632	34.714	-999.900	27.839	27.819	-999.900	2255.4	552
21	3750	4396.0	0.919	0.573	34.711	34.715	27.844	27.822	-999.900	2258.0	252
21	3749	4498.3	0.914	0.557	34.711	34.709	27.840	27.817	-999.900	2257.1	252
21	3748	4645.8	0.906	0.532	34.709	34.708	27.840	27.817	-999.900	2257.2	252
22	3847	2994.2	1.756	1.533	34.741	34.737	27.797	27.780	-999.900	-999.9	259
22	3846	3294.9	1.509	1.263	34.737	34.737	27.816	27.799	-999.900	-999.9	259
22	3845	3595.7	1.323	1.051	34.729	34.728	27.823	27.805	-999.900	-999.9	259
22	3844	3893.3	1.127	0.829	34.722	34.719	27.831	27.811	-999.900	-999.9	259
22	3843	4198.5	0.992	0.666	34.715	34.711	27.835	27.814	-999.900	-999.9	259
22	3842	4499.8	0.940	0.582	34.712	34.711	27.840	27.817	-999.900	-999.9	259
22	3841	4696.9	0.930	0.550	34.710	34.706	27.838	27.814	-999.900	-999.9	259
22	3851	4897.1	0.933	0.530	34.709	34.712	27.844	27.818	-999.900	-999.9	259
22	3850	4998.0	0.937	0.522	34.708	34.705	27.839	27.812	-999.900	-999.9	259

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
22	3849	5098.9	0.945	0.517	34.708	34.703	27.837	27.810	-999.900	-999.9	259
22	3848	5183.7	0.952	0.514	34.709	34.703	27.837	27.810	-999.900	-999.9	259
23	3947	4.3	14.690	14.689	34.707	34.704	25.812	25.812	1.407	2031.1	222
23	3946	19.8	14.684	14.681	34.706	-999.900	25.815	25.815	1.407	2030.5	522
23	3945	29.9	14.423	14.419	34.716	-999.900	25.880	25.879	-999.900	-999.9	559
23	3944	38.4	14.377	14.371	34.718	34.717	25.891	25.889	1.613	2035.3	222
23	3943	70.0	13.934	13.924	34.726	34.712	25.981	25.979	2.531	2042.4	222
23	3942	97.9	11.647	11.635	34.847	34.854	26.545	26.543	4.642	2080.5	222
23	3941	123.3	11.223	11.208	34.854	34.852	26.623	26.620	9.206	-999.9	229
23	3952	148.3	10.808	10.790	34.797	34.795	26.654	26.651	9.910	2086.0	222
23	3951	198.0	10.037	10.014	34.694	34.692	26.709	26.706	12.657	2095.9	222
23	3950	248.2	9.409	9.381	34.634	34.633	26.769	26.765	13.147	2097.4	222
23	3949	299.2	9.037	9.004	34.616	34.609	26.812	26.806	15.815	2110.0	222
23	3948	348.6	8.707	8.670	34.582	34.578	26.840	26.834	16.803	2114.5	222
23	4047	398.2	8.244	8.203	34.519	34.522	26.868	26.862	17.224	2113.2	222
23	4046	447.2	8.003	7.957	34.495	34.494	26.883	26.876	18.417	-999.9	229
23	4045	497.2	7.785	7.735	34.479	34.476	26.902	26.894	19.542	2118.1	222
23	4044	597.9	7.445	7.386	34.445	34.444	26.927	26.918	21.663	2123.0	222
23	4043	695.8	7.168	7.100	34.426	34.424	26.951	26.942	22.632	2124.6	222
23	4042	794.5	6.764	6.688	34.401	34.404	26.992	26.982	24.411	2134.3	222
23	4041	893.3	6.288	6.206	34.378	34.375	27.033	27.022	25.976	-999.9	229
23	4052	994.2	5.716	5.628	34.361	34.356	27.090	27.079	27.990	2157.6	222
23	4051	1094.7	5.153	5.060	34.358	34.383	27.179	27.168	-999.900	-999.9	259
23	4050	1243.4	4.331	4.232	34.368	34.362	27.254	27.244	-999.900	2190.6	252
23	4049	1494.9	3.448	3.336	34.444	34.437	27.404	27.394	-999.900	2222.7	252
23	4048	1744.9	2.896	2.769	34.525	34.514	27.518	27.507	-999.900	-999.9	259
23	4147	1995.5	2.576	2.431	34.590	34.591	27.609	27.596	-999.900	2259.7	252
23	4146	2496.2	2.189	2.005	34.688	34.686	27.720	27.705	-999.900	2261.2	252
23	4145	2993.0	1.887	1.662	34.738	34.730	27.782	27.764	-999.900	2244.1	253
23	4144	3495.9	1.497	1.231	34.734	34.728	27.811	27.792	-999.900	2249.8	252
23	4143	3998.6	1.165	0.855	34.721	34.718	27.828	27.808	-999.900	2252.0	252
23	4142	4400.2	0.987	0.639	34.711	34.710	27.835	27.813	-999.900	2252.2	252
23	4141	4800.3	0.946	0.553	34.708	34.706	27.838	27.813	-999.900	2255.1	252
23	4151	5000.9	0.947	0.531	34.707	34.705	27.838	27.812	-999.900	2253.7	252
23	4150	5100.7	0.948	0.520	34.707	34.705	27.839	27.812	-999.900	2255.0	252
23	4149	5199.5	0.949	0.509	34.707	34.698	27.834	27.806	-999.900	2255.5	252
23	4148	5272.9	0.955	0.506	34.707	34.706	27.840	27.812	-999.900	2255.6	252
24	4249	2992.9	1.875	1.650	34.740	34.736	27.787	27.770	-999.900	-999.9	259
24	4248	2994.6	1.876	1.651	34.739	34.735	27.786	27.769	-999.900	-999.9	259
25	4347	2.7	13.729	13.729	34.746	34.752	26.053	26.053	2.287	2040.2	222
25	4346	27.3	13.658	13.654	34.746	-999.900	26.064	26.063	-999.900	-999.9	559
25	4345	46.9	13.540	13.533	34.740	34.740	26.084	26.082	3.020	2044.7	222
25	4344	97.1	12.403	12.390	35.055	35.042	26.547	26.544	8.032	2081.5	222
25	4343	146.3	11.557	11.538	34.920	34.913	26.609	26.606	9.577	2088.3	222
25	4342	196.0	10.591	10.567	34.788	34.785	26.686	26.682	13.263	2100.8	222
25	4341	295.7	9.153	9.120	34.575	34.603	26.788	26.783	14.379	2103.2	222
25	4352	394.9	7.852	7.812	34.406	34.408	26.837	26.831	18.428	2103.0	222
25	4351	494.3	7.702	7.652	34.414	34.420	26.870	26.863	19.024	2112.0	222
25	4350	594.8	7.262	7.204	34.402	34.409	26.925	26.917	21.752	2122.7	222
25	4349	794.8	6.736	6.660	34.382	34.383	26.979	26.969	23.737	2135.1	222
25	4348	994.9	5.968	5.878	34.382	34.378	27.077	27.065	27.648	2157.5	222
25	4447	1497.6	3.287	3.176	34.409	34.410	27.398	27.388	-999.900	2216.9	252
25	4446	2002.7	2.495	2.351	34.598	34.597	27.620	27.608	-999.900	2248.1	252
25	4445	2495.5	2.160	1.977	34.710	34.721	27.750	27.735	-999.900	2246.3	252
25	4444	2997.8	1.851	1.626	34.737	34.743	27.795	27.778	-999.900	2245.4	253
25	4443	3496.6	1.457	1.192	34.733	34.732	27.817	27.798	-999.900	2249.5	252
25	4442	3991.8	1.145	0.836	34.721	34.727	27.837	27.816	-999.900	2252.1	252
25	4441	4500.6	0.961	0.602	34.711	34.710	27.838	27.815	-999.900	2253.1	252
25	4451	4801.4	0.942	0.549	34.708	34.709	27.840	27.815	-999.900	2253.4	252
25	4450	5000.6	0.941	0.525	34.707	34.707	27.840	27.814	-999.900	2255.5	252
25	4449	5099.1	0.946	0.518	34.706	34.707	27.840	27.814	-999.900	2254.9	252
25	4448	5204.0	0.953	0.513	34.669	34.707	27.841	27.813	-999.900	2254.6	252
26	4547	6.8	12.565	12.564	34.501	34.500	26.092	26.092	6.325	-999.9	229
26	4546	20.1	12.459	12.456	34.493	34.491	26.107	26.106	6.618	2047.3	222
26	4545	39.0	12.186	12.181	34.454	34.451	26.129	26.128	7.420	2050.2	222
26	4544	69.2	10.024	10.016	34.363	34.359	26.449	26.448	12.367	2052.9	222
26	4543	96.3	8.712	8.702	34.438	34.444	26.730	26.729	16.580	2100.3	222
26	4542	122.5	8.112	8.100	34.389	34.402	26.790	26.788	17.529	-999.9	229
26	4541	147.4	7.804	7.789	34.363	34.362	26.804	26.802	17.607	2104.5	222
26	4552	198.7	7.842	7.822	34.403	34.400	26.829	26.826	17.822	2104.4	222
26	4551	248.1	7.715	7.690	34.396	34.396	26.845	26.842	18.252	2105.6	222
26	4550	297.0	7.681	7.652	34.402	34.401	26.855	26.851	18.907	2109.1	222
26	4549	346.5	7.398	7.364	34.389	34.384	26.883	26.878	20.217	-999.9	229
26	4548	399.2	7.110	7.072	34.369	34.366	26.910	26.904	20.951	2118.2	222
26	4647	495.3	6.889	6.842	34.374	34.388	26.959	26.952	26.044	2159.2	222
26	4646	594.6	6.493	6.438	34.382	34.382	27.008	27.001	26.474	2159.5	222
26	4645	694.5	5.894	5.833	34.379	34.369	27.075	27.068	28.078	-999.9	229
26	4644	794.5	5.340	5.273	34.367	34.368	27.142	27.135	28.225	2171.0	222
26	4643	893.2	4.575	4.504	34.342	34.342	27.209	27.202	-999.900	-999.9	259
26	4642	992.5	4.100	4.024	34.359	34.360	27.275	27.267	-999.900	2197.8	252
26	4641	1093.6	3.627	3.547	34.366	34.376	27.335	27.328	-999.900	-999.9	259
26	4652	1242.8	3.139	3.051	34.414	34.414	27.413	27.405	-999.900	-999.9	259
26	4651	1493.3	2.748	2.643	34.514	34.511	27.527	27.517	-999.900	2245.5	252
26	4650	1743.0	2.543	2.420	34.597	34.594	27.612	27.602	-999.900	-999.9	259
26	4649	1994.3	2.323	2.182	34.660	34.657	27.682	27.671	-999.900	2252.4	252
26	4648	2394.9	2.115	1.942	34.722	34.718	27.750	27.737	-999.900	2247.5	252
26	4747	2794.8	1.840	1.635	34.739	34.740	27.792	27.776	-999.900	2249.3	252
26	4746	3087.6	1.610	1.382	34.739	34.740	27.810	27.793	-999.900	2251.5	252
26	4745	3394.8	1.373	1.120	34.731	34.731	27.821	27.804	-999.900	2253.8	252

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
26	4744	3702.7	1.202	0.922	34.720	34.724	27.829	27.810	-999.900	2254.8	252
26	4743	3994.9	1.070	0.763	34.718	34.717	27.833	27.813	-999.900	2254.9	252
26	4742	4296.9	0.967	0.631	34.712	34.718	27.842	27.821	-999.900	2257.1	252
26	4741	4596.4	0.932	0.563	34.709	34.709	27.839	27.816	-999.900	2257.8	252
26	4751	4798.3	0.932	0.540	34.709	34.711	27.842	27.818	-999.900	-999.9	259
26	4750	5128.1	0.951	0.520	34.707	34.707	27.840	27.813	-999.900	2258.1	252
26	4749	5227.1	0.961	0.517	34.707	34.709	27.842	27.814	-999.900	-999.9	259
26	4748	5302.9	0.969	0.516	34.707	34.708	27.841	27.813	-999.900	2260.2	252
27	4847	6.7	9.430	9.429	34.238	34.238	26.452	26.452	13.454	2071.9	222
27	4846	19.0	9.404	9.402	34.239	34.237	26.456	26.456	13.747	2072.2	222
27	4845	47.5	9.366	9.361	34.235	34.241	26.466	26.465	13.894	2073.0	222
27	4844	97.3	8.886	8.876	34.224	34.216	26.524	26.523	14.989	2077.6	222
27	4843	148.7	7.724	7.709	34.360	34.350	26.806	26.804	18.693	2105.2	222
27	4842	199.1	7.465	7.446	34.348	34.348	26.843	26.840	19.201	2106.4	222
27	4841	297.9	7.146	7.118	34.343	34.346	26.887	26.884	19.856	2112.5	222
27	4852	396.5	6.893	6.856	34.354	34.353	26.929	26.924	21.675	2120.7	222
27	4851	496.8	6.399	6.354	34.333	34.331	26.979	26.973	23.855	2133.2	222
27	4850	593.9	5.917	5.865	34.327	-999.900	27.038	27.032	-999.900	-999.9	559
27	4849	796.0	4.768	4.704	34.323	34.320	27.170	27.163	-999.900	2172.9	252
27	4848	996.2	3.576	3.504	34.337	34.338	27.309	27.302	-999.900	2198.7	252
27	4947	1443.9	2.711	2.611	34.510	34.509	27.528	27.519	-999.900	2241.2	252
27	4946	1992.8	2.291	2.150	34.671	34.676	27.700	27.689	-999.900	2251.3	252
27	4945	2496.2	2.009	1.828	34.733	34.735	27.773	27.759	-999.900	2246.1	253
27	4944	2995.1	1.647	1.427	34.739	34.742	27.808	27.792	-999.900	2248.4	252
27	4943	3495.4	1.307	1.046	34.730	34.727	27.823	27.805	-999.900	2253.0	252
27	4942	3995.7	1.047	0.741	34.717	34.716	27.834	27.814	-999.900	2254.4	252
27	4941	4496.3	0.923	0.566	34.709	34.708	27.838	27.816	-999.900	2255.7	252
27	4951	4802.8	0.920	0.528	34.707	34.708	27.841	27.816	-999.900	2257.0	252
27	4950	5000.3	0.934	0.518	34.708	34.714	27.846	27.820	-999.900	2256.0	252
27	4949	5062.0	0.938	0.515	34.708	34.708	27.841	27.815	-999.900	2257.7	252
27	4948	5128.4	0.941	0.510	34.707	34.708	27.842	27.815	-999.900	2256.3	252
28	5047	5.5	5.526	5.525	33.957	33.954	26.785	26.785	20.830	2103.1	222
28	5046	17.5	5.473	5.471	33.954	33.954	26.791	26.791	22.053	2102.3	222
28	5045	47.5	5.408	5.404	33.955	33.957	26.801	26.801	22.053	2103.7	222
28	5044	96.1	5.412	5.404	33.957	33.957	26.801	26.801	22.141	2103.5	222
28	5043	146.1	4.672	4.661	34.083	34.079	26.983	26.982	24.055	2123.0	222
28	5042	197.6	4.289	4.275	34.086	34.090	27.034	27.032	25.551	2132.7	222
28	5041	295.9	4.119	4.098	34.162	34.162	27.110	27.107	27.388	2150.6	222
28	5052	396.5	3.630	3.603	34.201	34.199	27.189	27.186	29.656	2167.3	222
28	5051	495.7	2.925	2.894	34.217	34.218	27.270	27.268	-999.900	2181.5	252
28	5050	586.9	2.969	2.931	34.304	34.302	27.334	27.331	-999.900	2200.7	252
28	5049	794.4	2.668	2.617	34.435	34.438	27.471	27.466	-999.900	2229.7	252
28	5048	994.0	2.419	2.356	34.539	34.535	27.570	27.565	-999.900	2242.9	252
28	5147	1494.0	2.200	2.101	34.692	34.695	27.719	27.711	-999.900	2245.2	252
28	5146	1734.2	2.079	1.963	34.722	34.722	27.752	27.743	-999.900	2246.2	252
28	5145	1994.8	1.915	1.780	34.738	34.741	27.781	27.771	-999.900	2245.9	252
28	5144	2495.8	1.549	1.377	34.740	34.744	27.814	27.801	-999.900	2248.3	252
28	5143	2994.8	1.213	1.002	34.727	34.732	27.830	27.816	-999.900	2252.7	252
28	5142	3495.4	0.986	0.733	34.718	34.720	27.838	27.821	-999.900	2252.8	252
28	5141	3991.2	0.865	0.564	34.710	34.718	27.847	27.828	-999.900	2254.8	252
28	5151	4497.8	0.868	0.512	34.709	34.710	27.843	27.821	-999.900	2255.7	252
28	5150	4594.9	0.874	0.507	34.708	34.718	27.850	27.827	-999.900	2256.4	252
28	5149	4697.1	0.873	0.495	34.707	34.712	27.846	27.822	-999.900	2256.2	252
28	5148	4767.2	0.878	0.491	34.708	34.757	27.843	27.819	-999.900	2255.3	352
29	5247	17.5	3.788	3.787	33.928	34.002	27.014	27.014	18.894	2118.6	222
29	5246	47.5	3.762	3.759	33.930	-999.900	26.960	26.959	-999.900	2121.2	552
29	5245	98.3	3.622	3.615	33.938	33.935	26.977	26.977	21.613	2121.0	222
29	5244	146.9	2.480	2.471	34.009	34.009	27.140	27.139	20.213	2147.5	222
29	5243	196.4	2.187	2.176	34.032	34.044	27.192	27.191	28.789	2152.7	222
29	5242	294.6	1.967	1.951	34.106	34.110	27.262	27.261	-999.900	2170.5	252
29	5241	396.4	2.227	2.204	34.239	34.239	27.346	27.344	-999.900	2196.3	252
29	5252	494.6	2.213	2.184	34.348	34.342	27.430	27.428	-999.900	2217.7	252
29	5250	594.4	2.374	2.338	34.454	34.441	27.497	27.494	-999.900	2233.5	252
29	5251	594.4	2.374	2.338	34.454	34.443	27.498	27.495	-999.900	2232.1	252
29	5249	791.8	2.349	2.300	34.560	34.586	27.616	27.612	-999.900	2243.5	252
29	5248	998.4	2.296	2.233	34.643	34.645	27.668	27.663	-999.900	2246.8	252
29	5347	1240.8	2.170	2.091	34.692	34.692	27.718	27.711	-999.900	2245.4	252
29	5346	1494.7	2.040	1.943	34.721	34.721	27.753	27.745	-999.900	2245.2	252
29	5345	1741.8	1.867	1.753	34.739	34.733	27.777	27.768	-999.900	2245.1	252
29	5344	1993.2	1.688	1.556	34.742	34.752	27.807	27.797	-999.900	2246.7	252
29	5343	2489.5	1.339	1.171	34.733	-999.900	27.819	27.808	-999.900	-999.9	559
29	5342	2994.2	1.066	0.859	34.720	34.724	27.833	27.819	-999.900	2253.9	252
29	5341	3394.2	0.907	0.666	34.714	34.714	27.837	27.822	-999.900	2253.4	252
29	5351	3696.9	0.830	0.561	34.710	34.718	27.847	27.830	-999.900	2255.9	252
29	5350	3997.1	0.830	0.530	34.709	34.709	27.841	27.823	-999.900	2255.8	252
29	5349	4097.6	0.836	0.525	34.708	34.710	27.842	27.823	-999.900	2256.2	252
29	5348	4174.2	0.840	0.521	34.708	34.712	27.844	27.824	-999.900	2256.6	252
30	5447	29.3	6.991	6.988	34.058	33.407	26.678	26.678	18.922	2090.1	322
30	5446	47.6	6.993	6.988	34.058	34.062	26.682	26.681	-999.900	-999.9	259
30	5445	98.7	6.954	6.945	34.065	34.064	26.689	26.688	19.587	2090.9	222
30	5444	147.9	6.479	6.466	34.225	34.222	26.878	26.876	21.295	2111.8	222
30	5443	197.3	5.950	5.933	34.195	34.196	26.926	26.924	22.479	2117.5	222
30	5442	297.4	5.255	5.231	34.161	34.159	26.982	26.979	23.741	2125.7	222
30	5441	396.6	5.074	5.042	34.256	34.258	27.082	27.079	27.083	2151.8	222
30	5451	494.8	4.457	4.420	34.274	34.274	27.164	27.160	29.155	2169.0	222
30	5452	494.8	4.457	4.420	34.274	34.275	27.165	27.161	29.077	2168.6	222
30	5450	595.4	3.899	3.856	34.283	34.281	27.229	27.225	-999.900	2180.1	252
30	5449	799.2	2.993	2.940	34.344	34.344	27.367	27.362	-999.900	2208.9	252
30	5448	994.9	2.695	2.630	34.458	34.457	27.485	27.479	-999.900	2232.3	252

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
30	5546	1244.8	2.446	2.364	34.559	34.563	27.592	27.585	-999.900	2243.9	252
30	5545	1497.0	2.298	2.198	34.648	34.651	27.676	27.668	-999.900	2246.0	252
30	5544	1745.1	2.175	2.057	34.701	34.703	27.729	27.720	-999.900	2245.7	252
30	5543	1993.8	2.036	1.899	34.724	34.728	27.762	27.751	-999.900	2245.7	252
30	5542	2492.4	1.679	1.505	34.739	34.743	27.804	27.791	-999.900	2247.7	252
30	5541	2994.9	1.328	1.115	34.730	34.732	27.822	27.808	-999.900	2252.0	252
30	5552	3493.8	1.064	0.809	34.718	34.719	27.832	27.815	-999.900	2254.1	252
30	5551	3995.2	0.914	0.612	34.709	34.712	27.839	27.820	-999.900	2254.2	252
30	5550	4502.3	0.870	0.514	34.705	34.717	27.849	27.827	-999.900	2255.9	252
30	5549	4956.2	0.882	0.473	34.703	34.706	27.842	27.817	-999.900	2256.0	252
30	5548	5028.3	0.885	0.468	34.703	34.708	27.844	27.818	-999.900	2256.5	252
31	5747	29.2	9.101	9.098	34.206	34.211	26.485	26.484	10.022	2075.0	222
31	5746	46.3	8.915	8.910	34.193	34.196	26.503	26.502	10.022	-999.9	229
31	5745	97.0	8.703	8.693	34.186	34.191	26.533	26.532	10.609	2078.5	222
31	5753	196.9	7.609	7.590	34.368	34.376	26.844	26.841	13.364	2106.2	222
31	5743	299.8	6.837	6.809	34.310	34.314	26.905	26.901	17.461	2115.6	222
31	5741	398.8	6.260	6.225	34.272	34.279	26.954	26.950	17.706	2122.8	222
31	5742	398.8	6.260	6.225	34.272	34.278	26.954	26.949	22.302	2121.6	222
31	5752	498.2	5.814	5.771	34.278	34.279	27.012	27.006	26.056	2135.9	222
31	5751	598.3	5.321	5.271	34.304	34.301	27.090	27.084	20.297	2154.0	222
31	5750	797.9	4.241	4.180	34.316	34.314	27.222	27.215	23.386	2181.4	222
31	5749	994.5	3.290	3.220	34.337	34.334	27.333	27.327	-999.900	2201.6	252
31	5748	1240.9	2.721	2.637	34.449	34.446	27.475	27.468	-999.900	2229.1	252
31	5646	1497.2	2.546	2.443	34.537	34.538	27.565	27.557	-999.900	2241.4	252
31	5645	1747.1	2.391	2.270	34.627	34.628	27.652	27.642	28.102	2246.9	232
31	5653	1992.8	2.255	2.115	34.687	34.686	27.711	27.700	-999.900	2246.3	252
31	5643	2496.9	1.992	1.811	34.734	34.744	27.781	27.767	-999.900	2244.9	252
31	5642	2992.9	1.607	1.388	34.737	34.741	27.810	27.794	-999.900	2250.2	252
31	5641	3497.0	1.258	0.998	34.726	34.734	27.832	27.814	-999.900	2253.1	252
31	5652	3997.5	1.083	0.776	34.718	34.718	27.833	27.813	-999.900	2254.7	252
31	5651	4500.5	0.936	0.578	34.709	34.711	27.840	27.817	-999.900	2254.7	252
31	5650	4798.8	0.914	0.523	34.707	34.709	27.842	27.817	-999.900	2254.3	252
31	5649	4949.5	0.908	0.499	34.708	34.708	27.842	27.817	-999.900	2257.5	252
31	5648	5026.6	0.903	0.485	34.705	34.708	27.843	27.817	-999.900	2254.8	252
32	5847	5.6	10.209	10.208	34.186	34.188	26.283	26.283	13.366	2064.7	222
32	5846	47.5	10.195	10.189	34.185	34.193	26.290	26.289	15.038	2064.8	222
32	5845	97.3	7.297	7.288	34.195	34.198	26.747	26.746	20.211	2100.1	222
32	5853	196.4	6.212	6.195	34.223	34.228	26.918	26.916	19.379	2116.0	222
32	5843	296.0	5.678	5.653	34.220	34.221	26.980	26.977	24.219	2128.5	222
32	5842	395.5	5.224	5.192	34.258	-999.900	27.065	27.061	26.731	2149.2	522
32	5841	593.7	4.017	3.974	34.293	34.298	27.230	27.226	-999.900	2180.6	252
32	5852	791.9	3.114	3.061	34.363	34.365	27.373	27.368	27.814	2217.3	222
32	5851	992.4	2.706	2.641	34.466	34.466	27.491	27.485	-999.900	2232.2	252
32	5850	1240.2	2.456	2.374	34.575	34.579	27.604	27.597	-999.900	2246.0	252
32	5849	1492.5	2.312	2.212	34.655	34.656	27.679	27.671	-999.900	2247.7	252
32	5848	1746.2	2.179	2.060	34.702	34.702	27.728	27.719	-999.900	2247.2	252
33	5946	5.0	8.805	8.804	34.135	34.145	26.480	26.480	17.063	2087.3	222
33	5945	46.9	8.691	8.686	34.129	34.150	26.502	26.501	20.916	2084.2	222
33	5953	98.7	8.217	8.207	34.251	34.269	26.669	26.667	16.269	2101.2	222
33	5943	199.3	8.235	8.214	34.480	34.492	26.843	26.840	18.984	2112.6	222
33	5942	395.7	6.986	6.949	34.380	34.390	26.945	26.940	22.310	2138.2	222
33	5941	597.4	5.435	5.385	34.332	34.341	27.108	27.102	27.639	2168.5	222
33	5952	795.3	3.965	3.906	34.316	34.325	27.259	27.253	-999.900	2193.9	252
33	5951	994.6	3.073	3.005	34.379	34.386	27.395	27.388	-999.900	2220.7	252
33	5950	1386.8	2.517	2.423	34.552	34.561	27.585	27.577	-999.900	2248.5	252
33	5949	1894.6	2.309	2.176	34.668	34.675	27.697	27.686	-999.900	2254.3	252
33	5948	1980.5	2.286	2.146	34.675	34.681	27.704	27.693	-999.900	2253.6	252
34	6046	1993.8	2.090	1.952	34.721	34.723	27.754	27.743	-999.900	2247.2	252
34	6045	2191.1	1.942	1.789	34.734	34.754	27.791	27.779	-999.900	2246.3	252
34	6053	2293.1	1.892	1.731	34.735	34.742	27.786	27.774	-999.900	2245.8	252
34	6043	2397.2	1.791	1.623	34.736	34.744	27.796	27.783	-999.900	2248.2	252
34	6042	2498.5	1.752	1.576	34.738	34.744	27.799	27.786	-999.900	2248.3	252
34	6041	2593.5	1.678	1.495	34.739	34.744	27.805	27.792	-999.900	2249.2	252
34	6052	2693.4	1.664	1.472	34.737	34.744	27.807	27.793	-999.900	2250.3	252
34	6051	2793.2	1.654	1.453	34.737	34.748	27.811	27.797	-999.900	2250.2	252
34	6050	2993.6	1.642	1.422	34.737	34.748	27.814	27.797	-999.900	2252.1	252
34	6049	3080.4	1.635	1.407	34.736	34.743	27.811	27.794	-999.900	2250.0	252
34	6048	3082.7	1.635	1.407	34.736	34.744	27.812	27.795	-999.900	-999.9	259
35	6146	1995.3	2.085	1.947	34.719	34.723	27.754	27.743	-999.900	2244.9	252
35	6145	2393.5	1.815	1.647	34.738	34.742	27.792	27.780	-999.900	2245.8	252
35	6144	2692.0	1.626	1.435	34.737	34.743	27.809	27.795	-999.900	-999.9	259
35	6143	2996.3	1.437	1.221	34.730	34.736	27.818	27.803	-999.900	2250.6	252
35	6142	3191.5	1.340	1.108	34.727	34.735	27.825	27.809	-999.900	2253.1	252
35	6141	3395.0	1.217	0.968	34.722	34.730	27.831	27.814	-999.900	2256.4	252
35	6152	3596.7	1.152	0.884	34.721	34.724	27.831	27.813	-999.900	2257.2	252
35	6151	3795.7	1.088	0.802	34.717	34.720	27.833	27.814	-999.900	2258.2	252
35	6150	3977.0	1.069	0.764	34.714	34.722	27.837	27.817	-999.900	2255.9	252
35	6149	4052.4	1.042	0.730	34.713	34.720	27.838	27.818	-999.900	2258.5	252
35	6148	4053.0	1.047	0.735	34.713	34.719	27.837	27.816	-999.900	-999.9	259
36	6246	1994.3	2.060	1.922	34.723	34.727	27.759	27.748	-999.900	-999.9	259
36	6245	2393.6	1.773	1.606	34.740	34.738	27.792	27.780	-999.900	-999.9	259
36	6253	2794.5	1.464	1.267	34.735	34.734	27.813	27.799	-999.900	-999.9	259
36	6243	3093.0	1.251	1.030	34.728	34.728	27.825	27.810	-999.900	-999.9	259
36	6242	3395.9	1.083	0.837	34.721	34.719	27.830	27.814	-999.900	-999.9	259
36	6241	3697.6	0.958	0.685	34.713	34.713	27.835	27.818	-999.900	-999.9	259
36	6252	3996.2	0.860	0.559	34.707	34.708	27.839	27.820	-999.900	-999.9	259
36	6251	4198.0	0.832	0.510	34.707	34.710	27.843	27.823	-999.900	-999.9	259
36	6250	4297.8	0.826	0.494	34.705	34.707	27.842	27.821	-999.900	-999.9	259
36	6249	4458.3	0.815	0.465	34.705	34.706	27.843	27.821	-999.900	-999.9	259

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
36	6248	4528.2	0.816	0.459	34.704	34.712	27.848	27.826	-999.900	-999.9	259
38	6552	2990.8	1.819	1.596	34.702	34.706	27.767	27.750	-999.900	-999.9	259
38	6551	2991.9	1.817	1.594	34.702	34.705	27.767	27.750	-999.900	-999.9	259
38	6549	2992.1	1.816	1.593	34.703	34.702	27.764	27.747	-999.900	-999.9	259
38	6547	2992.3	1.814	1.591	34.704	34.703	27.765	27.748	-999.900	-999.9	259
38	6548	2992.3	1.815	1.592	34.704	34.703	27.765	27.748	-999.900	-999.9	259
38	6550	2992.3	1.816	1.592	34.704	34.702	27.764	27.747	-999.900	-999.9	259
38	6546	2992.5	1.813	1.590	34.702	34.703	27.765	27.748	-999.900	-999.9	259
38	6553	2993.3	1.811	1.588	34.703	34.713	27.773	27.757	-999.900	-999.9	259
38	6542	2993.5	1.809	1.586	34.703	34.707	27.769	27.752	-999.900	-999.9	259
38	6543	2993.8	1.809	1.585	34.704	34.706	27.768	27.751	-999.900	-999.9	259
38	6545	2994.3	1.809	1.585	34.703	34.703	27.766	27.749	-999.900	-999.9	259
38	6541	2994.6	1.810	1.586	34.702	34.712	27.773	27.756	-999.900	-999.9	259
39	6651	1993.7	2.383	2.241	34.619	34.620	27.648	27.636	-999.900	2293.3	252
39	6650	2494.1	2.057	1.876	34.650	34.654	27.704	27.690	-999.900	2305.3	252
39	6649	2893.2	1.800	1.586	34.686	34.690	27.755	27.739	-999.900	2292.0	252
39	6648	3295.9	1.566	1.318	34.721	34.724	27.802	27.784	-999.900	2262.5	252
39	6647	3695.6	1.276	0.995	34.723	34.725	27.825	27.806	-999.900	2257.0	252
39	6646	3993.8	1.102	0.794	34.716	34.717	27.831	27.811	-999.900	2257.7	252
39	6645	4298.7	1.013	0.675	34.711	34.713	27.836	27.814	-999.900	2259.4	252
39	6653	4598.2	0.998	0.627	34.710	34.711	27.837	27.813	-999.900	2258.0	252
39	6643	4797.7	1.010	0.616	34.709	34.713	27.839	27.814	-999.900	2258.3	252
39	6642	4991.1	1.023	0.605	34.710	34.717	27.843	27.816	-999.900	2258.6	252
39	6641	5061.2	1.027	0.601	34.710	34.711	27.839	27.811	-999.900	2258.9	252
40	6751	1994.0	2.351	2.209	34.623	34.624	27.654	27.642	-999.900	-999.9	259
40	6750	2244.0	2.200	2.039	34.638	34.640	27.680	27.667	-999.900	-999.9	259
40	6749	2494.3	2.027	1.846	34.654	34.657	27.709	27.695	-999.900	-999.9	259
40	6748	2744.9	1.888	1.687	34.670	34.671	27.732	27.717	-999.900	-999.9	259
40	6747	2994.3	1.777	1.554	34.700	34.701	27.766	27.750	-999.900	-999.9	259
40	6746	3195.7	1.664	1.425	34.502	-999.900	27.792	27.774	-999.900	-999.9	259
40	6745	3395.8	1.478	1.222	34.729	34.726	27.810	27.792	-999.900	-999.9	259
40	6753	3595.6	1.311	1.039	34.726	34.726	27.823	27.804	-999.900	-999.9	259
40	6743	3796.7	1.196	0.907	34.723	34.722	27.828	27.809	-999.900	-999.9	259
40	6742	4126.3	1.111	0.789	34.718	34.717	27.832	27.811	-999.900	-999.9	259
40	6741	4212.4	1.117	0.785	34.718	34.717	27.832	27.810	-999.900	-999.9	259
41	6852	5.8	22.038	22.037	35.617	35.616	24.677	24.677	0.391	2016.5	222
41	6851	18.0	22.036	22.033	35.616	35.616	24.678	24.677	0.391	2016.9	222
41	6850	37.4	21.982	21.975	35.615	35.614	24.693	24.691	0.391	2016.7	222
41	6849	67.4	18.957	18.945	35.452	35.445	25.377	25.374	0.391	2015.3	222
41	6848	98.1	16.618	16.602	35.454	35.431	25.940	25.937	0.391	2037.1	222
41	6847	146.5	14.401	14.379	35.341	35.336	26.367	26.362	4.992	2077.5	222
41	6846	196.0	13.335	13.308	35.208	35.214	26.497	26.491	9.282	2093.5	222
41	6845	296.1	11.632	11.594	34.998	34.992	26.660	26.653	13.583	2110.4	222
41	6853	396.3	10.143	10.096	34.790	34.789	26.771	26.763	17.504	2124.7	222
41	6843	594.8	7.931	7.870	34.553	34.558	26.946	26.937	22.180	2138.7	222
41	6842	794.3	6.344	6.271	34.417	34.419	27.059	27.049	25.975	2154.9	222
41	6841	993.4	5.107	5.023	34.398	34.393	27.191	27.182	-999.900	2218.8	252
41	6951	1244.3	3.636	3.543	34.448	34.446	27.392	27.382	-999.900	2226.3	252
41	6950	1493.9	2.916	2.809	34.540	34.542	27.537	27.527	-999.900	2258.7	252
41	6949	1743.8	2.543	2.420	34.601	34.600	27.617	27.606	-999.900	2282.7	252
41	6948	1992.1	2.358	2.216	34.626	34.626	27.655	27.643	-999.900	2291.6	252
41	6947	2193.8	2.215	2.058	34.638	34.637	27.676	27.664	-999.900	2298.6	252
41	6946	2393.9	2.057	1.885	34.653	34.656	27.705	27.692	-999.900	2305.0	252
41	6945	2494.1	1.978	1.798	34.661	34.662	27.717	27.703	-999.900	2303.5	252
41	6953	2594.5	1.878	1.691	34.676	34.678	27.738	27.723	-999.900	2296.9	252
41	6943	2793.8	1.709	1.507	34.713	34.713	27.779	27.764	-999.900	2269.2	252
41	6942	2906.7	1.632	1.421	34.720	34.720	27.791	27.776	-999.900	2263.9	252
41	6941	2967.5	1.582	1.366	34.726	34.724	27.798	27.783	-999.900	2259.3	252
42	7052	6.0	21.966	21.965	35.614	35.615	24.697	24.696	0.391	-999.9	229
42	7051	47.7	21.924	21.915	35.614	35.608	24.705	24.703	0.391	-999.9	229
42	7050	96.8	15.609	15.594	35.411	35.414	26.159	26.156	0.391	-999.9	229
42	7049	146.7	14.207	14.186	35.318	35.318	26.394	26.390	6.067	-999.9	229
42	7048	196.5	13.333	13.305	35.207	35.198	26.485	26.479	6.996	-999.9	229
42	7047	295.1	11.416	11.379	34.955	34.960	26.675	26.669	13.925	-999.9	229
42	7046	396.1	9.883	9.837	34.730	-999.900	26.770	26.762	14.592	-999.9	529
42	7045	595.9	7.570	7.510	34.501	34.502	26.955	26.946	21.594	-999.9	229
42	7053	793.2	6.113	6.041	34.401	34.402	27.075	27.066	25.066	-999.9	229
42	7043	995.2	4.880	4.798	34.383	34.387	27.212	27.203	29.329	-999.9	229
42	7042	1245.1	3.650	3.557	34.449	34.445	27.389	27.380	28.057	-999.9	239
42	7041	1493.3	2.914	2.807	34.545	34.540	27.535	27.526	-999.900	-999.9	259
43	7152	4.1	21.951	21.951	35.612	35.617	24.702	24.702	0.391	-999.9	229
43	7151	48.3	21.955	21.946	35.616	-999.900	24.703	24.700	0.391	-999.9	529
43	7150	97.9	16.025	16.010	35.469	35.476	26.112	26.109	2.667	-999.9	229
43	7149	146.9	14.624	14.602	35.356	35.355	26.334	26.329	8.323	-999.9	229
43	7148	197.4	13.490	13.462	35.219	35.223	26.472	26.467	12.320	-999.9	229
43	7147	297.3	11.691	11.653	34.990	34.990	26.648	26.641	17.120	-999.9	229
43	7146	394.7	10.366	10.319	34.814	34.824	26.760	26.752	20.123	-999.9	229
43	7145	590.8	8.050	7.989	34.561	34.567	26.936	26.927	24.467	-999.9	229
43	7153	793.4	6.526	6.452	34.434	34.435	27.048	27.038	28.526	-999.9	229
43	7143	994.9	5.387	5.301	34.408	34.410	27.172	27.162	-999.900	-999.9	259
43	7142	1245.6	3.798	3.703	34.435	34.434	27.366	27.357	-999.900	-999.9	259
43	7141	1494.0	2.966	2.859	34.536	34.535	27.527	27.517	-999.900	-999.9	259
44	7252	6.4	21.728	21.727	35.593	35.594	24.747	24.747	0.391	2018.5	222
44	7251	46.8	21.718	21.709	35.596	35.593	24.751	24.749	0.391	2018.9	222
44	7250	98.1	15.714	15.699	35.445	35.444	26.159	26.155	3.800	2065.9	222
44	7249	148.7	14.352	14.330	35.325	35.328	26.371	26.367	6.858	2082.8	222
44	7248	197.0	13.561	13.533	35.234	35.236	26.468	26.462	9.262	2091.8	222
44	7247	297.0	11.869	11.830	35.016	35.026	26.642	26.635	12.195	2106.3	222
44	7246	397.1	10.720	10.671	34.866	34.865	26.730	26.721	16.721	2115.6	222

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
44	7245	596.1	8.220	8.157	34.577	34.577	26.918	26.909	21.065	2132.8	222
44	7253	794.9	6.900	6.823	34.465	34.467	27.023	27.013	25.524	2146.6	222
44	7243	993.5	5.441	5.355	34.388	34.394	27.153	27.143	26.064	2171.2	232
44	7242	1244.0	3.929	3.833	34.427	34.419	27.341	27.331	-999.900	2206.9	252
44	7241	1494.7	3.042	2.934	34.526	34.519	27.507	27.497	-999.900	2245.7	252
44	7351	1993.4	2.414	2.272	34.615	-999.900	27.641	27.629	-999.900	-999.9	559
44	7350	2493.8	2.105	1.923	34.649	-999.900	27.697	27.682	-999.900	2295.1	552
44	7349	2993.9	1.748	1.526	34.706	34.707	27.773	27.757	-999.900	2267.9	252
44	7348	3495.5	1.418	1.154	34.726	34.726	27.815	27.796	-999.900	-999.9	259
44	7347	3996.2	1.121	0.813	34.718	34.724	27.836	27.815	-999.900	-999.9	259
44	7346	4403.2	1.028	0.678	34.714	-999.900	27.836	27.813	-999.900	-999.9	559
44	7345	4797.5	1.015	0.620	34.710	34.714	27.840	27.815	-999.900	-999.9	259
44	7353	5198.0	1.035	0.592	34.709	34.709	27.838	27.809	-999.900	-999.9	259
44	7343	5497.8	1.062	0.581	34.708	34.707	27.837	27.806	-999.900	-999.9	259
44	7342	5903.2	1.103	0.569	34.707	34.708	27.838	27.804	-999.900	-999.9	259
44	7341	5972.7	1.112	0.568	34.707	34.709	27.839	27.804	-999.900	-999.9	259
45	7452	5.2	21.958	21.957	35.661	35.667	24.738	24.738	0.391	2022.9	222
45	7451	49.1	21.915	21.906	35.661	35.661	24.748	24.746	0.391	2022.9	222
45	7450	97.6	16.269	16.253	35.494	35.490	26.067	26.063	0.391	2053.2	222
45	7449	146.3	15.188	15.166	35.424	35.431	26.268	26.264	5.392	2073.2	222
45	7448	196.1	13.923	13.895	35.270	35.278	26.425	26.419	8.187	2086.3	222
45	7447	294.5	12.009	11.970	35.010	35.014	26.606	26.599	12.713	2106.3	222
45	7446	395.7	10.416	10.368	34.803	34.803	26.735	26.727	17.885	2121.5	222
45	7445	594.8	7.642	7.582	34.487	34.490	26.935	26.926	23.022	2126.7	222
45	7453	794.9	6.392	6.319	34.386	34.388	27.028	27.019	26.738	2142.7	222
45	7443	995.0	5.150	5.066	34.382	34.390	27.184	27.174	-999.900	2177.8	252
45	7442	1243.5	3.727	3.633	34.435	34.434	27.373	27.364	-999.900	2217.7	252
45	7441	1494.2	2.977	2.870	34.534	-999.900	27.525	27.515	-999.900	2252.9	552
45	7547	1994.0	2.414	2.272	34.613	34.615	27.641	27.629	-999.900	2287.2	252
45	7546	2501.3	2.103	1.920	34.647	34.648	27.696	27.681	-999.900	2296.6	252
45	7545	2994.2	1.824	1.600	34.683	34.685	27.750	27.733	-999.900	2292.1	252
45	7553	3496.1	1.520	1.253	34.723	34.728	27.810	27.790	-999.900	2256.9	252
45	7543	3995.8	1.132	0.823	34.716	34.719	27.831	27.811	-999.900	2255.0	252
45	7542	4395.5	1.069	0.719	34.713	34.715	27.835	27.812	-999.900	2254.4	252
45	7541	4799.0	1.029	0.634	34.710	34.714	27.839	27.814	-999.900	2257.6	252
45	7551	4995.8	1.031	0.613	34.708	34.714	27.840	27.813	-999.900	2256.8	252
45	7550	5197.1	1.043	0.600	34.708	34.714	27.841	27.813	-999.900	2257.3	252
45	7549	5453.6	1.058	0.583	34.708	34.711	27.840	27.809	-999.900	2257.6	252
45	7548	5524.1	1.067	0.583	34.707	34.718	27.845	27.814	-999.900	2258.1	252
46	7647	1993.2	2.342	2.201	34.621	34.621	27.652	27.640	-999.900	2289.6	252
46	7646	2505.7	2.012	1.831	34.654	34.656	27.709	27.695	-999.900	2304.6	252
46	7645	2993.5	1.819	1.595	34.675	34.676	27.743	27.726	-999.900	2302.9	252
46	7644	3295.3	1.685	1.435	34.700	34.707	27.780	27.761	-999.900	2283.1	252
46	7643	3595.4	1.532	1.255	34.719	34.721	27.804	27.784	-999.900	2261.7	252
46	7642	3903.5	1.303	0.999	34.721	34.723	27.823	27.802	-999.900	2255.9	252
46	7641	4196.3	1.139	0.808	34.719	34.720	27.833	27.811	-999.900	2256.4	252
46	7651	4497.4	1.039	0.678	34.714	34.714	27.836	27.813	-999.900	2257.4	252
46	7650	4798.1	1.004	0.610	34.712	34.711	27.838	27.813	-999.900	2257.7	252
46	7649	5157.8	1.018	0.581	34.709	34.711	27.840	27.812	-999.900	2258.3	252
46	7648	5230.7	1.023	0.577	34.709	34.711	27.840	27.812	-999.900	2259.6	252
47	7751	495.6	8.639	8.586	34.578	34.578	26.853	26.845	21.397	2132.0	222
47	7750	594.2	7.532	7.473	34.470	-999.900	26.935	26.927	23.120	2131.5	522
47	7749	795.8	6.110	6.038	34.356	34.360	27.042	27.033	26.729	2145.2	222
47	7748	994.2	4.918	4.836	34.346	34.347	27.176	27.167	-999.900	2144.7	252
47	7747	1242.9	3.652	3.559	34.415	34.415	27.365	27.356	-999.900	2216.3	252
47	7746	1492.7	2.868	2.762	34.523	34.525	27.527	27.518	-999.900	2251.1	252
47	7745	3494.3	1.615	1.346	34.705	34.708	27.787	27.767	-999.900	2277.6	252
47	7753	3993.5	1.314	1.000	34.720	34.724	27.824	27.802	-999.900	2255.6	252
47	7743	4497.3	1.057	0.696	34.713	34.713	27.834	27.811	-999.900	2254.9	252
47	7742	4996.4	1.021	0.603	34.709	34.714	27.841	27.814	-999.900	2257.3	252
47	7741	5501.8	1.069	0.587	34.708	34.715	27.843	27.812	-999.900	2257.6	252
48	7852	6.7	25.010	25.009	35.352	35.353	23.607	23.607	0.391	1964.9	222
48	7851	17.2	24.999	24.996	35.351	35.351	23.610	23.609	0.391	1964.1	222
48	7850	37.5	24.944	24.936	35.353	35.355	23.631	23.628	0.391	1963.7	222
48	7849	67.0	24.304	24.290	35.391	35.383	23.847	23.843	0.391	-999.9	229
48	7848	97.5	20.766	20.748	35.595	35.594	25.016	25.011	0.391	2007.2	222
48	7847	121.5	19.759	19.737	35.620	35.619	25.305	25.299	0.391	-999.9	229
48	7846	148.6	19.132	19.106	35.639	35.638	25.483	25.476	1.797	2040.6	222
48	7845	196.2	17.938	17.904	35.591	35.592	25.750	25.742	3.800	2056.9	222
48	7853	246.3	16.730	16.690	35.505	35.502	25.974	25.965	5.333	2066.7	222
48	7843	294.9	15.497	15.451	35.379	35.375	26.162	26.151	7.131	2077.5	222
48	7842	344.4	14.106	14.056	35.234	35.230	26.354	26.343	9.790	-999.9	229
48	7841	396.3	12.245	12.192	34.987	34.986	26.542	26.532	13.456	2106.4	222
48	7952	494.3	9.257	9.202	34.624	34.627	26.794	26.785	19.197	2125.8	222
48	7951	594.2	7.583	7.523	34.459	34.464	26.923	26.914	22.533	2136.1	222
48	7950	693.0	6.528	6.464	34.374	34.376	0.027	26.991	24.861	2144.9	222
48	7949	795.4	5.809	5.739	34.338	34.342	27.066	27.057	26.993	2199.3	222
48	7948	894.4	5.231	5.156	34.335	34.342	27.136	27.127	28.861	-999.9	229
48	7947	994.0	4.619	4.539	34.370	34.370	27.228	27.219	-999.900	2237.1	252
48	7946	1094.2	4.051	3.967	34.402	34.402	27.314	27.305	-999.900	-999.9	259
48	7945	1242.1	3.407	3.316	34.459	34.468	27.431	27.422	-999.900	2237.2	252
48	7953	1491.7	2.739	2.635	34.556	34.558	27.565	27.556	-999.900	2262.2	252
48	7943	1741.6	2.420	2.299	34.611	34.610	27.635	27.625	-999.900	-999.9	259
48	7942	1979.8	2.241	2.102	34.631	34.630	27.667	27.656	-999.900	2306.8	252
48	7941	2246.8	2.066	1.907	34.648	34.648	27.697	27.684	-999.900	-999.9	259
48	8051	2493.8	1.989	1.809	34.652	34.651	27.707	27.693	-999.900	2315.4	252
48	8050	2743.4	1.867	1.666	34.662	34.671	27.734	27.719	-999.900	-999.9	259
48	8049	2996.6	1.767	1.544	34.670	34.680	27.750	27.733	-999.900	2319.3	253
48	8048	3245.8	1.659	1.414	34.680	34.680	27.760	27.742	-999.900	-999.9	259

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
48	8047	3498.2	1.532	1.265	34.704	34.704	27.789	27.770	-999.900	2287.5	252
48	8046	3747.9	1.432	1.141	34.719	34.720	27.811	27.790	-999.900	-999.9	259
48	8045	3998.7	1.280	0.967	34.720	34.720	27.823	27.801	-999.900	2262.7	253
48	8053	4495.6	1.096	0.733	34.714	34.715	27.834	27.810	-999.900	2263.4	253
48	8043	4998.2	1.042	0.623	34.709	34.711	27.837	27.810	-999.900	2264.4	253
48	8042	5496.7	1.081	0.600	34.709	34.710	27.838	27.807	-999.900	2264.2	253
48	8041	5802.5	1.116	0.594	34.709	34.710	27.838	27.805	-999.900	2264.1	253
49	8147	5.0	25.564	25.563	35.199	-999.900	23.321	23.320	0.391	1942.6	522
49	8146	18.8	25.564	25.560	35.199	35.198	23.321	23.320	0.391	1941.5	222
49	8145	38.0	25.554	25.546	35.197	35.198	23.325	23.323	0.391	1941.2	222
49	8153	69.4	25.143	25.128	35.235	35.206	23.460	23.455	0.391	1943.7	222
49	8143	97.5	21.877	21.858	35.524	35.508	24.645	24.640	0.391	1998.3	222
49	8142	119.8	21.227	21.204	35.612	35.609	24.903	24.897	1.680	2024.8	232
49	8141	145.2	20.451	20.424	35.660	35.659	25.153	25.146	2.286	2032.8	232
49	8152	195.6	18.995	18.960	35.611	35.616	25.504	25.495	3.702	2049.7	232
49	8151	246.9	17.553	17.511	35.523	35.528	25.798	25.787	4.904	2058.2	232
49	8150	295.6	16.420	16.372	35.474	35.477	26.029	26.018	4.503	2065.2	232
49	8149	394.2	13.165	13.110	35.121	35.119	26.464	26.452	12.106	2097.6	232
49	8148	495.0	10.199	10.140	34.763	34.765	26.745	26.735	17.827	2128.3	232
49	8253	596.2	7.607	7.547	34.460	34.455	26.912	26.904	22.738	2138.0	232
49	8243	694.5	6.425	6.361	34.369	34.368	27.007	26.999	25.497	2147.3	232
49	8242	794.3	5.664	5.595	34.344	34.344	27.085	27.076	27.717	2165.9	232
49	8241	992.6	4.316	4.238	34.393	34.392	27.278	27.269	-999.900	2208.0	252
49	8252	1243.2	3.238	3.149	34.500	34.500	27.472	27.464	-999.900	2248.0	252
49	8251	1493.7	2.698	2.594	34.578	34.576	27.583	27.574	-999.900	2279.8	252
49	8250	1741.5	2.457	2.335	34.609	34.612	27.634	27.623	-999.900	2289.1	252
49	8249	1993.4	2.259	2.119	34.629	-999.900	27.665	27.653	-999.900	2296.5	552
49	8248	2241.6	2.100	1.941	34.645	34.642	27.690	27.677	-999.900	2301.8	252
49	8247	2494.7	1.951	1.772	34.658	34.657	27.715	27.701	-999.900	2307.2	252
49	8246	2743.8	1.841	1.641	34.668	34.661	27.728	27.713	-999.900	2309.6	252
49	8245	2993.0	1.752	1.530	34.674	34.674	27.746	27.730	-999.900	2323.2	253
50	8352	6.1	27.176	27.175	35.575	35.579	23.100	23.100	0.391	1962.3	222
50	8351	17.6	27.179	27.175	35.573	35.574	23.096	23.095	0.391	1961.5	222
50	8350	37.7	27.186	27.178	35.574	35.576	23.097	23.094	0.391	1962.0	222
50	8349	67.3	27.179	27.164	35.576	35.576	23.101	23.096	0.391	1961.0	222
50	8348	96.5	25.510	25.489	35.722	35.739	23.752	23.745	0.391	1979.7	222
50	8347	121.7	23.939	23.914	35.748	35.742	24.230	24.223	0.391	2003.1	222
50	8346	148.4	22.651	22.621	35.707	35.718	24.589	24.580	0.391	2013.3	222
50	8345	196.1	21.032	20.995	35.768	35.764	25.078	25.068	2.080	2042.6	222
50	8353	246.8	19.378	19.333	35.636	35.641	25.427	25.415	3.702	2052.2	222
50	8343	296.4	17.523	17.473	35.486	35.486	25.775	25.762	4.640	2060.9	222
50	8342	345.8	16.088	16.033	35.355	35.362	26.019	26.007	6.184	2070.9	222
50	8341	396.2	14.299	14.241	35.150	35.149	26.252	26.240	9.947	2086.9	222
50	8452	494.9	9.526	9.470	34.638	34.628	26.751	26.742	19.842	2134.1	232
50	8451	594.0	6.936	6.879	34.398	34.399	26.962	26.954	27.041	2162.5	232
50	8450	695.1	5.878	5.817	34.356	34.355	27.066	27.059	-999.900	2171.2	252
50	8449	794.6	5.195	5.129	34.367	34.363	27.155	27.148	-999.900	2191.0	252
50	8448	893.8	4.656	4.584	34.414	34.412	27.256	27.248	-999.900	-999.9	259
50	8447	994.4	4.101	4.025	34.448	34.445	27.342	27.334	-999.900	2230.8	252
50	8446	1094.1	3.577	3.497	34.482	34.479	27.422	27.415	-999.900	-999.9	259
50	8445	1246.2	2.990	2.903	34.528	34.525	27.515	27.507	-999.900	2260.4	252
50	8453	1492.6	2.592	2.489	34.596	34.593	27.605	27.597	-999.900	2285.4	252
50	8443	1744.5	2.398	2.277	34.618	34.616	27.642	27.632	-999.900	2294.0	252
50	8442	1996.4	2.224	2.084	34.635	34.639	27.676	27.664	-999.900	2300.4	252
50	8441	2243.7	2.065	1.906	34.651	34.646	27.695	27.683	-999.900	-999.9	255
50	8551	2494.3	1.927	1.748	34.658	34.657	27.716	27.703	-999.900	2311.9	252
50	8550	2744.4	1.817	1.617	34.668	34.665	27.733	27.718	-999.900	-999.9	259
50	8549	2993.9	1.714	1.493	34.676	34.671	27.747	27.730	-999.900	2312.8	252
50	8548	3395.0	1.554	1.297	34.692	34.688	27.774	27.756	-999.900	-999.9	259
50	8547	3598.7	1.448	1.172	34.710	34.707	27.798	27.779	-999.900	2315.0	253
50	8546	3802.2	1.328	1.034	34.720	-999.900	27.818	27.798	-999.900	-999.9	559
50	8545	3996.1	1.216	0.905	34.719	34.715	27.823	27.802	-999.900	2254.9	252
50	8553	4496.9	1.036	0.675	34.713	34.721	27.842	27.819	-999.900	2253.8	252
50	8543	4898.1	1.024	0.617	34.712	34.703	27.831	27.805	-999.900	2254.0	252
50	8542	5198.3	1.051	0.607	34.710	34.705	27.833	27.805	-999.900	-999.9	259
50	8541	5470.2	1.079	0.601	34.711	34.715	27.842	27.811	-999.900	2258.7	252
51	8647	5.2	27.566	27.564	35.579	35.579	22.974	22.974	0.391	1961.0	222
51	8646	17.9	27.565	27.560	35.580	35.579	22.976	22.974	0.391	1962.7	222
51	8645	38.5	27.572	27.563	35.579	35.578	22.974	22.971	0.391	1961.0	222
51	8653	65.7	27.127	27.112	35.670	35.637	23.164	23.159	0.391	1963.8	222
51	8643	98.7	24.656	24.635	35.651	35.672	23.962	23.955	0.391	1984.1	222
51	8642	147.4	22.429	22.400	35.863	35.875	24.771	24.763	0.742	2038.5	222
51	8641	196.6	20.860	20.823	35.817	35.827	25.173	25.163	2.490	2059.0	222
51	8652	245.0	19.458	19.414	35.653	35.653	25.415	25.403	2.686	2056.3	222
51	8651	345.5	14.607	14.555	35.083	35.077	26.129	26.118	9.478	2094.2	222
51	8650	395.3	11.982	11.930	34.818	34.810	26.455	26.446	14.054	2117.1	222
51	8649	494.8	8.056	8.005	34.480	34.473	26.859	26.852	22.738	2158.5	222
51	8648	595.3	6.334	6.280	34.373	34.368	27.018	27.010	24.490	2159.8	222
52	8752	4.4	28.491	28.489	35.180	35.155	22.353	22.352	0.391	1937.8	222
52	8751	18.8	28.622	28.617	35.412	35.410	22.502	22.500	0.391	1953.3	222
52	8750	35.7	28.545	28.536	35.419	35.411	22.530	22.527	0.391	1951.3	222
52	8749	67.8	27.968	27.952	35.550	35.568	22.840	22.835	0.391	1956.8	222
52	8748	98.4	27.112	27.090	35.960	35.950	23.407	23.400	0.391	1987.1	222
52	8747	121.9	26.360	26.333	36.045	36.037	23.713	23.705	0.391	-999.9	229
52	8746	147.1	25.077	25.045	36.211	36.203	24.239	24.229	0.391	2046.1	222
52	8745	197.3	22.791	22.751	36.157	36.133	24.867	24.855	3.749	2073.7	222
52	8753	246.7	19.887	19.842	35.748	35.745	25.373	25.361	5.704	2085.0	222
52	8743	296.5	16.286	16.238	35.260	35.252	25.888	25.876	10.894	2107.8	222
52	8742	346.3	13.023	12.975	34.869	34.878	26.304	26.294	16.096	-999.9	229

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
52	8741	394.1	10.293	10.246	34.657	34.649	26.636	26.628	23.683	2169.8	222
52	8852	444.5	8.768	8.720	34.556	34.561	26.819	26.812	27.145	-999.9	229
52	8851	496.3	7.810	7.760	34.519	34.519	26.932	26.925	28.163	2182.5	222
52	8850	595.3	6.177	6.124	34.462	34.464	27.113	27.107	-999.900	2198.0	252
52	8849	694.0	5.453	5.394	34.473	34.476	27.214	27.206	-999.900	2214.8	252
52	8848	793.5	4.882	4.818	34.479	34.477	27.282	27.274	-999.900	2229.8	252
52	8847	892.2	4.493	4.423	34.493	34.496	27.340	27.333	-999.900	2240.9	252
52	8846	992.5	4.164	4.087	34.509	34.508	27.386	27.378	-999.900	2248.8	252
52	8845	1093.2	3.850	3.767	34.525	34.524	27.431	27.423	-999.900	-999.9	259
52	8853	1242.7	3.314	3.224	34.559	-999.900	27.512	27.504	-999.900	2276.4	552
52	8843	1492.2	2.808	2.703	34.589	34.587	27.582	27.573	-999.900	2284.9	252
52	8842	1749.9	2.456	2.334	34.616	34.612	27.634	27.623	-999.900	2293.1	252
52	8841	1992.6	2.170	2.031	34.641	34.633	27.675	27.664	-999.900	2299.3	252
52	8951	2244.8	2.002	1.844	34.652	34.653	27.706	27.694	-999.900	-999.9	259
52	8950	2492.5	1.892	1.714	34.663	34.664	27.725	27.711	-999.900	2311.2	252
52	8949	2743.6	1.790	1.591	34.672	34.672	27.740	27.725	-999.900	-999.9	259
52	8948	2995.1	1.716	1.495	34.676	34.678	27.752	27.736	-999.900	2311.7	252
52	8947	3394.4	1.592	1.334	34.685	34.687	27.771	27.752	-999.900	2303.3	252
52	8946	3802.5	1.422	1.126	34.701	34.702	27.797	27.777	-999.900	-999.9	259
52	8945	3998.5	1.288	0.975	34.712	34.712	27.816	27.794	-999.900	2270.4	252
52	8953	4197.3	1.169	0.837	34.715	34.714	27.826	27.804	-999.900	-999.9	259
52	8943	4498.8	1.059	0.697	34.714	34.716	27.837	27.813	-999.900	2259.0	252
52	8942	4697.2	1.044	0.660	34.713	34.717	27.840	27.815	-999.900	-999.9	259
52	8941	4873.2	1.043	0.639	34.712	34.710	27.835	27.809	-999.900	2260.4	252
53	9050	1242.8	3.592	3.499	34.557	-999.900	27.484	27.475	-999.900	-999.9	559
53	9049	1243.2	3.591	3.498	34.558	34.556	27.484	27.474	-999.900	-999.9	259
53	9051	1243.3	3.591	3.498	34.558	-999.900	27.485	27.476	-999.900	-999.9	559
53	9047	1243.7	3.591	3.498	34.558	34.555	27.483	27.474	-999.900	-999.9	259
53	9048	1243.8	3.592	3.499	34.555	-999.900	27.483	27.474	-999.900	-999.9	559
53	9045	1243.9	3.591	3.498	34.556	34.556	27.484	27.474	-999.900	-999.9	259
53	9041	1244.4	3.590	3.497	34.557	34.556	27.484	27.475	-999.900	-999.9	259
53	9042	1244.4	3.591	3.498	34.556	-999.900	27.484	27.475	-999.900	-999.9	559
53	9046	1244.5	3.590	3.497	34.558	-999.900	27.486	27.476	-999.900	-999.9	559
53	9043	1244.6	3.591	3.498	34.556	34.555	27.483	27.474	-999.900	-999.9	259
53	9052	1244.8	3.590	3.497	34.557	-999.900	27.484	27.475	-999.900	-999.9	559
53	9053	1244.9	3.590	3.497	34.557	-999.900	27.484	27.475	-999.900	-999.9	559
54	9142	1993.8	2.151	2.012	34.641	34.645	27.686	27.675	-999.900	-999.9	259
54	9141	2493.7	1.848	1.671	34.666	34.669	27.732	27.718	-999.900	-999.9	259
54	9151	2994.4	1.636	1.416	34.679	34.682	27.761	27.745	-999.900	-999.9	259
54	9150	3395.4	1.564	1.306	34.684	34.686	27.772	27.754	-999.900	-999.9	259
54	9149	3795.6	1.472	1.175	34.691	34.692	27.786	27.765	-999.900	-999.9	259
54	9148	4196.1	1.298	0.963	34.705	34.707	27.812	27.790	-999.900	-999.9	259
54	9147	4597.8	1.080	0.706	34.711	34.712	27.833	27.809	-999.900	-999.9	259
54	9146	4794.3	1.066	0.670	34.712	34.711	27.834	27.809	-999.900	-999.9	259
54	9145	4999.1	1.082	0.661	34.711	34.720	27.842	27.815	-999.900	-999.9	259
54	9153	5301.0	1.113	0.655	34.711	34.712	27.836	27.806	-999.900	-999.9	259
54	9143	5301.7	1.113	0.655	34.712	34.712	27.836	27.806	-999.900	-999.9	259
55	9242	5.9	28.695	28.693	34.762	34.784	22.006	22.006	0.391	1920.2	222
55	9241	38.7	28.622	28.612	34.946	34.950	22.158	22.155	0.391	1934.6	222
55	9252	97.7	28.083	28.059	35.434	35.431	22.702	22.694	0.391	1961.0	222
55	9251	197.5	21.809	21.770	35.937	35.941	24.999	24.988	7.714	2096.6	222
55	9250	294.4	13.696	13.654	34.963	34.781	26.091	26.082	18.333	2153.0	222
55	9249	396.7	8.719	8.676	34.626	34.630	26.880	26.873	29.324	2205.0	222
55	9248	494.4	7.274	7.226	34.562	34.562	27.042	27.036	-999.900	2220.8	252
55	9247	595.1	6.330	6.276	34.529	34.530	27.146	27.139	-999.900	2232.6	252
55	9246	792.9	5.108	5.042	34.518	34.520	27.290	27.282	-999.900	2256.5	252
55	9245	992.7	4.428	4.349	34.530	34.528	27.374	27.365	-999.900	2268.6	252
55	9253	1244.8	3.552	3.459	34.562	34.561	27.491	27.482	-999.900	2285.8	252
55	9243	1496.0	2.866	2.760	34.595	34.602	27.589	27.580	-999.900	2296.3	252
55	9353	1994.8	2.159	2.020	34.641	34.640	27.682	27.671	-999.900	2313.8	252
55	9343	2494.9	1.829	1.652	34.666	34.666	27.731	27.717	-999.900	2317.5	252
55	9342	2982.6	1.651	1.432	34.679	34.680	27.758	27.742	-999.900	2325.7	252
55	9341	3396.6	1.570	1.312	34.684	34.686	27.772	27.753	-999.900	2312.7	252
55	9351	3796.1	1.486	1.189	34.691	34.691	27.784	27.763	-999.900	2307.8	252
55	9350	4197.6	1.227	0.894	34.711	34.711	27.820	27.798	-999.900	2270.0	252
55	9349	4598.2	1.051	0.678	34.712	34.712	27.835	27.811	-999.900	2260.8	252
55	9348	4798.3	1.050	0.654	34.712	34.713	27.837	27.811	-999.900	2261.0	252
55	9347	5157.6	1.088	0.648	34.710	34.711	27.836	27.807	-999.900	2260.2	252
55	9346	5226.1	1.097	0.648	34.711	34.714	27.838	27.809	-999.900	2262.8	252
55	9345	5230.0	1.097	0.648	34.711	34.713	27.837	27.808	-999.900	-999.9	259
56	9453	1993.3	2.162	2.023	34.641	34.644	27.685	27.674	-999.900	2318.7	252
56	9443	2494.3	1.829	1.652	34.665	34.667	27.732	27.718	-999.900	2320.9	252
56	9442	2994.8	1.658	1.438	34.679	34.682	27.759	27.743	-999.900	2317.8	252
56	9441	3394.9	1.559	1.302	34.685	34.684	27.771	27.752	-999.900	2310.0	252
56	9451	3795.6	1.452	1.156	34.693	34.695	27.790	27.769	-999.900	2299.3	252
56	9450	4196.2	1.138	0.808	34.712	34.712	27.826	27.805	-999.900	2262.1	252
56	9449	4597.9	1.075	0.702	34.712	34.712	27.833	27.809	-999.900	2260.6	252
56	9448	4798.6	1.064	0.668	34.712	34.712	27.835	27.810	-999.900	2259.9	252
56	9447	5042.8	1.085	0.659	34.711	34.719	27.841	27.814	-999.900	2261.7	252
56	9446	5107.1	1.093	0.659	34.712	34.712	27.836	27.808	-999.900	2262.0	252
56	9445	5111.4	1.094	0.660	34.712	34.713	27.837	27.808	-999.900	-999.9	259
57	9553	1489.6	2.894	2.788	34.600	34.596	27.582	27.572	-999.900	-999.9	259
57	9542	1490.1	2.889	2.783	34.600	-999.900	27.585	27.576	-999.900	-999.9	559
57	9543	1491.3	2.882	2.776	34.601	34.596	27.583	27.573	-999.900	-999.9	259
57	9549	1491.5	2.890	2.784	34.600	34.598	27.584	27.574	-999.900	-999.9	259
57	9550	1491.5	2.888	2.782	34.600	34.597	27.583	27.574	-999.900	-999.9	259
57	9552	1491.8	2.883	2.777	34.602	34.594	27.581	27.572	-999.900	-999.9	259
57	9541	1491.9	2.885	2.779	34.598	34.594	27.581	27.572	-999.900	-999.9	259
57	9546	1492.2	2.886	2.780	34.601	34.596	27.583	27.573	-999.900	-999.9	259

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
57	9548	1492.3	2.885	2.779	34.601	34.591	27.579	27.569	-999.900	-999.9	259
57	9551	1492.3	2.882	2.776	34.601	34.595	27.582	27.573	-999.900	-999.9	259
57	9547	1492.8	2.883	2.777	34.601	34.596	27.583	27.573	-999.900	-999.9	259
57	9545	1493.1	2.884	2.778	34.605	34.615	27.598	27.588	-999.900	-999.9	259
58	9653	5.2	29.047	29.045	35.530	35.531	22.450	22.449	0.664	1972.5	222
58	9643	17.6	29.006	29.001	35.534	35.534	22.467	22.465	0.606	1973.2	222
58	9642	36.2	28.991	28.982	35.535	35.536	22.475	22.472	0.664	1972.5	222
58	9641	68.1	28.855	28.838	35.543	35.547	22.531	22.526	1.270	1979.2	222
58	9652	98.7	28.305	28.281	35.696	35.696	22.828	22.820	2.471	2004.8	222
58	9651	122.8	28.187	28.157	35.704	35.715	22.883	22.873	2.666	-999.9	229
58	9650	147.2	27.072	27.039	35.811	35.801	23.311	23.300	5.469	2037.8	222
58	9649	198.3	20.628	20.591	35.840	35.842	25.247	25.238	10.000	2118.2	222
58	9648	248.0	14.057	14.021	35.090	35.098	26.259	26.252	22.151	2186.7	222
58	9647	295.9	11.581	11.543	34.866	34.861	26.568	26.561	27.628	2212.9	222
58	9646	347.0	10.242	10.201	34.764	34.764	26.734	26.726	-999.900	-999.9	259
58	9645	397.0	9.410	9.365	34.711	34.710	26.832	26.825	-999.900	2230.1	252
58	9753	445.9	8.644	8.596	34.663	34.666	26.921	26.913	-999.900	-999.9	259
58	9743	494.0	8.305	8.253	34.646	34.648	26.960	26.952	-999.900	2250.7	252
58	9742	595.1	7.473	7.414	34.603	34.604	27.049	27.040	-999.900	2251.6	252
58	9741	694.5	6.498	6.434	34.559	34.562	27.151	27.142	-999.900	2252.8	252
58	9752	795.0	5.855	5.785	34.541	34.542	27.218	27.209	-999.900	2256.7	252
58	9751	895.7	5.226	5.150	34.536	34.537	27.291	27.282	-999.900	2263.1	252
58	9750	992.1	4.708	4.627	34.541	-999.900	27.354	27.345	-999.900	2274.3	552
58	9749	1094.0	4.208	4.122	34.552	34.556	27.420	27.411	-999.900	-999.9	259
58	9748	1240.7	3.616	3.523	34.573	34.576	27.497	27.488	-999.900	2300.6	252
58	9747	1493.7	2.924	2.817	34.604	34.612	27.592	27.582	-999.900	2312.5	252
58	9746	1743.4	2.496	2.374	34.628	34.632	27.646	27.636	-999.900	2324.0	252
58	9745	1994.2	2.206	2.067	34.647	34.647	27.684	27.672	-999.900	2329.9	252
58	9853	2243.1	2.074	1.915	34.653	34.653	27.700	27.688	-999.900	-999.9	259
58	9843	2543.8	1.896	1.713	34.662	34.664	27.725	27.711	-999.900	2327.8	252
58	9842	2739.7	1.805	1.606	34.667	34.678	27.744	27.729	-999.900	-999.9	259
58	9841	2993.3	1.683	1.462	34.676	34.677	27.754	27.737	-999.900	2319.6	252
58	9851	3394.8	1.555	1.298	34.684	34.685	27.772	27.753	-999.900	2317.9	252
58	9850	3798.5	1.467	1.170	34.690	34.692	27.786	27.765	-999.900	2312.9	252
58	9849	4196.6	1.369	1.032	34.697	34.701	27.803	27.780	-999.900	2311.2	252
58	9848	4397.4	1.323	0.965	34.700	34.703	27.809	27.785	-999.900	-999.9	259
58	9847	4595.0	1.256	0.877	34.704	34.708	27.819	27.793	-999.900	2277.8	252
58	9846	4992.6	1.198	0.774	34.709	34.712	27.829	27.801	-999.900	2268.3	252
58	9845	5480.8	1.246	0.761	34.708	34.711	27.829	27.796	-999.900	2265.0	252
59	9948	6.4	28.331	28.329	35.362	35.366	22.564	22.563	3.019	1997.5	222
59	9947	17.1	28.335	28.330	35.363	35.367	22.564	22.563	3.243	1997.6	222
59	9946	36.2	28.310	28.301	35.363	35.366	22.573	22.570	3.468	1996.2	222
59	9945	67.5	27.932	27.916	35.490	35.494	22.796	22.791	3.692	2006.5	222
59	9953	96.1	27.458	27.435	35.574	35.576	23.014	23.006	4.513	2021.7	222
59	9943	124.3	26.967	26.939	35.590	35.592	23.185	23.176	5.577	2032.2	222
59	9942	146.4	24.455	24.424	35.803	35.781	24.108	24.098	6.856	2075.4	222
59	9941	198.4	16.596	16.564	35.330	35.338	25.878	25.870	17.634	2157.7	222
59	9952	297.4	10.643	10.607	34.769	-999.900	26.667	26.660	-999.900	-999.9	559
59	9951	494.1	8.434	8.382	34.693	-999.900	26.975	26.967	-999.900	2245.6	552
59	9950	694.8	6.141	6.078	34.559	34.558	27.194	27.186	-999.900	2270.5	252
59	9949	994.2	4.421	4.342	34.559	34.560	27.400	27.392	-999.900	2292.6	252
60	10048	5.8	28.212	28.210	35.367	35.367	22.604	22.603	2.413	1999.6	222
60	10047	19.5	28.103	28.098	35.362	35.364	22.639	22.637	3.839	2000.2	222
60	10046	39.8	28.081	28.071	35.364	35.365	22.648	22.645	3.243	2000.7	222
60	10045	68.0	28.058	28.041	35.368	35.370	22.662	22.656	3.312	2003.6	222
60	10053	98.5	27.632	27.609	35.460	35.465	22.874	22.867	4.142	2016.3	222
60	10043	121.5	26.731	26.704	35.581	35.571	23.244	23.236	6.779	2037.7	222
60	10042	147.7	21.166	21.138	35.486	35.470	24.815	24.808	11.302	2094.8	222
60	10041	196.2	15.655	15.624	35.170	35.167	25.962	25.955	14.695	2125.6	222
60	10052	296.5	11.268	11.231	34.817	34.807	26.584	26.577	26.534	2203.9	222
60	10051	498.2	8.174	8.122	34.634	34.627	26.963	26.955	-999.900	2234.0	252
60	10050	694.1	6.078	6.016	34.562	34.557	27.201	27.193	-999.900	2268.6	252
60	10049	994.4	4.608	4.528	34.560	34.556	27.377	27.368	-999.900	2291.6	252
61	10152	6.7	28.208	28.206	35.390	35.386	22.620	22.619	3.087	2001.1	222
61	10151	18.0	28.127	28.122	35.397	35.384	22.646	22.644	3.546	1999.6	222
61	10150	38.6	28.082	28.072	35.385	35.382	22.661	22.657	3.312	2001.3	222
61	10149	67.6	28.048	28.032	35.384	35.380	22.672	22.667	3.234	2002.4	222
61	10148	97.7	27.552	27.529	35.522	35.498	22.925	22.917	4.142	2018.6	222
61	10147	121.7	26.182	26.155	35.561	35.572	23.418	23.410	7.160	2044.5	222
61	10146	147.2	21.518	21.490	35.307	35.362	24.636	24.629	10.405	2081.5	222
61	10145	196.5	14.978	14.948	35.048	35.052	26.024	26.018	15.302	2125.8	222
61	10153	246.8	12.432	12.399	34.907	34.914	26.446	26.439	19.897	2157.7	222
61	10143	345.9	10.389	10.348	34.762	-999.900	26.707	26.699	-995.900	2227.9	552
61	10142	497.1	8.377	8.324	34.651	34.641	26.943	26.935	-999.900	2253.3	252
61	10141	994.0	4.407	4.328	34.571	34.562	27.403	27.395	-999.900	2295.1	252
62	10352	4.8	28.028	28.026	35.393	35.391	22.682	22.682	3.615	2006.3	222
62	10351	18.5	28.030	28.025	35.392	35.396	22.686	22.685	3.771	2004.4	222
62	10350	37.5	27.980	27.971	35.390	35.391	22.700	22.697	3.839	2004.4	222
62	10349	67.3	27.949	27.933	35.388	35.390	22.712	22.707	3.917	2005.8	222
62	10348	97.7	27.712	27.689	35.426	35.408	22.805	22.798	3.917	2011.0	222
62	10347	120.6	27.195	27.168	35.558	35.550	23.080	23.072	6.027	2027.7	222
62	10346	147.9	21.048	21.020	35.315	35.266	24.692	24.685	10.170	2078.3	222
62	10345	195.7	15.572	15.542	35.135	35.120	25.945	25.938	13.718	2118.7	222
62	10353	247.3	12.995	12.961	34.891	34.888	26.315	26.308	18.920	2148.3	222
62	10343	297.1	11.747	11.709	34.847	34.836	26.517	26.510	23.670	2186.2	222
62	10342	346.3	10.276	10.235	34.748	34.745	26.713	26.706	28.950	2230.8	222
62	10341	394.8	9.906	9.860	34.736	34.725	26.761	26.754	-999.900	2229.7	252
62	10252	446.3	8.445	8.398	34.650	34.643	26.933	26.926	-999.900	-999.9	259
62	10251	495.1	8.205	8.153	34.638	34.633	26.963	26.955	-999.900	2252.7	252

Table B.1 (continued)

STANBR	SAMPID	CTDPRS DBAR	CTDTEMP DEG (C)	THETA DEG (C)	CTDSAL PSS	BOTSAL PSS *******	SIGMA THETA	SIGMA-T	NITRATE UMOL/KG *******	TCARB UMOL/KG *******	QC_FLAG
62	10250	596.1	6.684	6.628	34.577	34.571	27.132	27.124	-999.900	2261.2	252
62	10249	695.5	5.933	5.871	34.560	-999.900	27.222	27.214	-999.900	2266.5	552
62	10248	795.9	5.464	5.396	34.532	-999.900	27.258	27.250	-999.900	2269.6	552
62	10247	894.2	4.998	4.924	34.554	34.550	27.327	27.319	-999.900	2279.5	252
62	10246	993.3	4.420	4.341	34.564	34.559	27.399	27.391	-999.900	2293.1	252
62	10245	1093.4	4.008	3.924	34.576	34.569	27.451	27.443	-999.900	-999.9	259
62	10253	1243.0	3.489	3.397	34.595	34.588	27.519	27.510	-999.900	2320.8	252
62	10243	1494.0	2.927	2.820	34.617	34.610	27.590	27.580	-999.900	2328.0	252
62	10242	1745.4	2.488	2.366	34.639	34.630	27.645	27.635	-999.900	2337.2	252
62	10241	1992.6	2.193	2.054	34.656	34.646	27.684	27.673	-999.900	2342.3	252
64	10551	2244.0	1.970	1.813	34.657	34.656	27.711	27.698	-999.900	-999.9	259
64	10550	2492.5	1.875	1.697	34.665	34.666	27.728	27.714	-999.900	2338.7	252
64	10549	2745.3	1.736	1.538	34.670	34.669	27.742	27.727	-999.900	-999.9	259
64	10548	2996.5	1.633	1.413	34.677	34.677	27.757	27.741	-999.900	2330.1	252
64	10547	3495.5	1.537	1.270	34.684	34.683	27.772	27.753	-999.900	2323.0	252
64	10546	3999.7	1.398	1.082	34.696	34.694	27.794	27.772	-999.900	2308.8	252
64	10545	4297.6	1.328	0.981	34.699	34.698	27.804	27.780	-999.900	-999.9	259
64	10553	4599.6	1.256	0.877	34.705	34.705	27.816	27.791	-999.900	2285.5	252
64	10543	4899.0	1.245	0.831	34.707	34.706	27.820	27.792	-999.900	-999.9	259
64	10542	5198.9	1.269	0.818	34.709	34.705	27.820	27.790	-999.900	2278.8	252
64	10541	5579.1	1.316	0.815	34.707	34.710	27.824	27.791	-999.900	2277.8	252
65	10647	5.3	28.019	28.017	35.381	35.379	22.676	22.676	4.015	2012.8	222
65	10646	16.1	28.005	28.001	35.381	35.380	22.682	22.681	4.084	2001.7	222
65	10645	38.3	27.983	27.973	35.378	35.378	22.690	22.687	3.595	2004.4	222
65	10653	67.0	27.871	27.855	35.383	35.382	22.732	22.726	4.328	2007.7	222
65	10643	97.0	27.741	27.718	35.484	35.460	22.835	22.827	4.630	2014.0	222
65	10642	122.1	26.825	26.798	35.372	35.370	23.063	23.054	6.272	2029.4	222
65	10641	149.2	25.095	25.063	35.441	35.409	23.633	23.623	8.528	2045.8	222
65	10652	196.6	15.088	15.058	34.985	35.020	25.975	25.969	15.469	2118.3	222
65	10651	245.7	12.831	12.798	34.860	34.856	26.322	26.316	19.731	2146.2	222
65	10650	348.1	10.742	10.699	34.768	34.767	26.649	26.641	29.194	2214.6	222
65	10649	496.7	8.162	8.110	34.632	34.629	26.966	26.958	-999.900	2252.9	252
65	10648	994.5	4.384	4.306	34.564	34.557	27.402	27.393	-999.900	2292.5	252
66	10752	5.9	28.057	28.055	35.328	35.324	22.623	22.622	3.771	2004.2	222
66	10751	16.7	28.004	28.000	35.334	35.335	22.649	22.647	4.201	2004.9	222
66	10750	37.8	27.973	27.964	35.339	35.338	22.663	22.660	4.015	2002.8	222
66	10749	68.1	27.819	27.803	35.338	35.337	22.715	22.709	4.992	2010.3	222
66	10748	98.2	27.293	27.270	35.377	35.380	22.919	22.912	6.213	2024.8	222
66	10747	122.4	26.825	26.797	35.359	35.356	23.053	23.044	6.878	2029.7	222
66	10746	148.4	21.702	21.673	34.773	35.088	24.138	24.130	10.116	2060.1	322
66	10745	196.7	13.722	13.694	34.809	34.806	26.102	26.096	18.276	2134.6	222
66	10753	296.9	11.692	11.654	34.826	34.834	26.526	26.519	25.400	2188.2	222
66	10743	494.8	8.738	8.684	34.658	34.657	26.900	26.891	-999.900	2249.4	252
66	10742	695.2	6.271	6.208	34.560	-999.900	27.179	27.170	-999.900	2262.7	552
66	10741	994.2	4.572	4.492	34.561	34.557	27.381	27.373	-999.900	2292.0	252
67	10852	6.3	28.424	28.422	35.309	35.306	22.488	22.488	3.351	2000.4	222
67	10851	18.5	28.099	28.094	35.302	35.300	22.592	22.590	3.957	1994.9	222
67	10850	37.8	27.964	27.955	35.300	35.302	22.639	22.636	4.084	1998.1	222
67	10849	68.6	27.941	27.924	35.298	35.299	22.647	22.641	4.201	2001.6	222
67	10848	96.0	27.633	27.610	35.284	35.282	22.736	22.728	4.875	2009.0	222
67	10847	120.3	27.195	27.168	35.205	35.202	22.818	22.810	5.423	2011.1	222
67	10846	147.8	24.279	24.248	35.055	35.054	23.610	23.601	9.078	2043.6	222
67	10845	194.5	12.989	12.962	34.671	34.668	26.144	26.138	20.770	2145.1	222
67	10853	296.9	11.095	11.058	34.778	34.774	26.589	26.583	25.890	2193.2	222
67	10843	495.3	8.986	8.931	34.661	34.652	26.857	26.848	-999.900	2219.7	252
67	10842	697.3	6.275	6.211	34.564	34.557	27.176	27.167	-999.900	2274.4	252
67	10841	994.1	4.379	4.301	34.567	34.560	27.404	27.396	-999.900	2301.3	252
68	10952	5.6	28.364	28.362	34.999	34.998	22.277	22.276	1.036	1949.0	222
68	10951	18.5	28.373	28.368	35.001	35.002	22.278	22.276	0.977	1956.7	222
68	10950	39.6	28.441	28.431	35.049	35.048	22.291	22.288	1.221	1962.7	222
68	10949	66.3	28.441	28.425	35.114	35.116	22.344	22.339	1.524	1968.1	222
68	10948	97.4	28.045	28.022	35.151	35.155	22.506	22.499	3.048	1985.1	222
68	10947	122.2	26.327	26.300	35.093	35.095	23.013	23.005	6.576	2008.0	222
68	10946	146.0	23.177	23.147	34.956	34.955	23.859	23.850	8.834	2031.0	222
68	10945	196.6	14.442	14.413	34.595	34.613	25.801	25.795	18.641	2127.9	222
68	10953	295.9	9.985	9.951	34.668	34.661	26.696	26.690	-999.900	2225.9	252
68	10943	496.6	7.978	7.927	34.611	-999.900	26.979	26.972	-999.900	2266.0	552
68	10942	695.1	6.208	6.145	34.558	34.553	27.181	27.173	-999.900	2295.0	253
68	10941	996.9	4.493	4.413	34.568	34.564	27.396	27.387	-999.900	2313.1	252

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