G. Siedler

GEOSECS

ATLANTIC EXPEDITION

Volume 1
Hydrographic Data

National Science Foundation · Washington, D.C.

GEOSECS ATLANTIC EXPEDITION

Volume 1

HYDROGRAPHIC DATA 1972-1973

By
Arnold E. Bainbridge
Project Director, GEOSECS Operations Group

Sponsored by
International Decade of Ocean Exploration
National Science Foundation

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COMPILATION OF ATLAS MATERIAL BY

Robert T. Williams
Kristin M. Sanborn

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Contents

ARNOLD E. BAINBRIDGE

December 16, 1930—February 27, 1979

In memory of friendship and the pleasure of his company, in recognition of his many contributions to the GEOSECS program:

This book, which is primarily the result of his efforts, is gratefully and affectionately dedicated by his colleagues and shipmates.

Foreword

The GEOSECS Program was conceived by a handful of far-sighted geochemists and physical oceanographers in 1967. They successfully organized their scientific colleagues, developed a solid scientific and logistics plan, and carried out preliminary field work so that the Program was ready to begin simultaneously with the initiation of the International Decade of Ocean Exploration in 1970.

The members of that original GEOSECS panel were as follows:

Wallace S. Broecker, *Lamont-Doherty Geological Observatory*
Harmon Craig, *Scripps Institution of Oceanography*
H. Gote Ostlund, *University of Miami*
P. Kilho Park, *Oregon State University*
Joseph L. Reid, *Scripps Institution of Oceanography*
Derek W. Spencer, *Woods Hole Oceanographic Institution*
Henry M. Stommel, *Massachusetts Institute of Technology*
Taro Takahashi, *Lamont-Doherty Geological Observatory*
Karl K. Turekian, *Yale University*
Herbert L. Volchok, *Atomic Energy Commission*

The objective of the program was "the study of the geochemical properties of the ocean with respect to large-scale circulations problems." The goals for measurement accuracies, which the scientists set for themselves, were so rigorous that each shipboard and shoreside laboratory measurement was at the very forefront of the technology. Nevertheless, within the eighteen months between the start of the program in January 1971 and the start of the Atlantic transect in July 1972, the shipboard sampling and analytical tools were designed, constructed, and installed, and the shoreside laboratory construction and improvements were completed. The analytical goals were met or exceeded in all cases.

The responsibilities for upgrading the shoreside laboratories were assumed by the individual scientist at each institution. But, the responsibility for the shipboard equipment rested entirely with one man, Mr. Arnold E. Bainbridge of the Scripps Institution of Oceanography. The oceanographic community owes Mr. Bainbridge and his highly skilled technicians who formed GEOSECS Operations Group a debt of gratitude for their heroic efforts in preparation of the ships for the work to be done at sea, and for the excellence of the shipboard sampling and analyses.

These Atlas volumes were compiled by Mr. Bainbridge and the other GEOSECS scientists with the same care that typifies the collection and analyses of samples. They are now ready to take their place in oceanographic literature along with the volumes of the CHALLENGER and METEOR.

The National Science Foundation and, in particular, the International Decade of Ocean Exploration, is privileged to have played a role in this historic venture.

Feenan D. Jennings
Head, International Decade
of Ocean Exploration
National Science Foundation
Washington, D.C.
May 1976

Acknowledgements

The idea of carrying out a cooperative ocean-wide survey of radioisotopes and geochemical tracers in the sea originated with Henry Stommel; he, George Veronis, and Klaus Wyrtki have provided advice, encouragement, and strong support throughout the GEOSECS program.

With the exception of some early planning grants, funding for the program has been provided by the National Science Foundation Office of International Decade of Ocean Exploration. Feenan Jennings, head of the NSF-IDOE office from 1971 to 1978, provided leadership, wisdom and advice that played a crucial role in the success of GEOSECS. During the formative years of the program, funds were provided for planning by the National Science Foundation (Oceanography Section) and the U.S. Atomic Energy Commission (now Department of Energy). The assistance of Drs. Hugh McClellan and Charles Osterberg of these agencies is acknowledged with many thanks.

Three test and calibration cruises were a very important part of the development of GEOSECS. During these early preparations, the GEOSECS Operations Group was ably assisted by John Goddard of LDGO, and Susan Kadar and Peter Sachs of WHOI. Shale Niskin of General Oceanics, Inc. provided designs, equipment, and cheerful assistance at sea on three cruises. Credit for the development of the equipment used on the test cruises and the major expeditions goes to many people. The principal role was taken by Arnold Bainbridge, Project Director of the GEOSECS Operations Group. He personally supervised many aspects of instrument development and data flow from acquisition to final corrected and calibrated results. In all this work he was assisted by Rick Ackermann, electronics engineer; Tom Digre and Jack Spiegelberg, computer programmers, Bob Williams and Arnold Mantyla, chief analysts, Len Cunningham, chief marine technician, and Fred Dixon, development technician. These individuals, together with the other GOG staff members, developed the most modern, versatile and efficient seagoing data and sampling system ever used for geochemical and hydrographic studies of the ocean.

The GEOSECS Atlantic Expedition was carried out on R/V KNORR. Captains Emerson Hiller and Mike Palmieri, and the crew of the KNORR contributed to all aspects of the seagoing operation. Jerry Cotter, the KNORR's boatswain, deserves special mention for his cheerful endurance of long hours of work and little sleep. Assistance with the logistics of the Atlantic expedition was provided by Bill Jouris of WHOI. Major credit for the Alantic shipboard data belongs to the technicians and analysts of GOG (listed below) who worked with great skill and dedication throughout the voyage.

During the entire period of the Atlantic and Pacific expeditions, Phyllis Laking of WHOI served as Administrative Assistant to the Executive Committee. She handled proposals, organized meetings, filed the quarterly reports, and shouldered the most onerous burdens of the administrative program. Ms. Laking was aided in her efforts by Ellen Coxe of LDGO, Sandra Cajero and Kris Stewart of SIO, Barbara Stickney of RSMAS, and Bruna Jain and Harry Grow of GOG.

Drs. P. M. Fye and W. Nierenberg, Directors of WHOI and SIO respectively, strongly encouraged the development of the GEOSECS proposal and contributed to the solution of many problems in planning and execution. Special praise goes to the staffs of the Port Office and Shop Facilities at WHOI and the Marine Facilities Group at SIO. Without the efforts and dedication of all these people and many others at both institutions, our shipboard work would have been much more difficult.

W. S. Broecker, LDGO
H. Craig, SIO
D. W. Spencer, WHOI
H. G. Ostlund, RSMAS
Executive Committee,
Geochemical Ocean Sections Study

GEOSECS Operations Group—Analysts and Technicians

George C. Anderson
David L. Bos
David G. Brader
Charles H. Breeze
Leonard M. Cunningham
Thomas J. Digre
Fred S. Dixon
Wayne B. Evans
Robert W. Fong
Anne M. Gilbert
Dagmar Gobat
Arthur W. Hester
Anne Marie Horowitz
Ross M. Horowitz
John K. Jain
Brian J. James
Kenneth P. LeVeille
Donald E. Lingle
Arnold W. Mantyla
Michael T. Morrione
James D. Nash
Alan C. Osgood
William H. Price
Marston D. Robertson
Alden S. Rollins
Frank Sanchez
Edward J. Slater
Martin V. Smith
Jack W. Spiegelberg
Steven W. Tavan
Charles R. Toy
Alan H. Trist
Romeo J. Vadnais
Bruce W. Waldorf
Robert T. Williams
Frederick A. Van Woy

Introduction

These atlas volumes contain the record of the oceanographic measurements made during the Geochemical Ocean Sections Study (GEOSECS), a program of the International Decade of Ocean Exploration (IDOE), 1970-1980. The Geochemical Ocean Sections Study, or "GEOSECS" as the program has become known, was conceived as a cooperative multi-national and multi-institutional study of the oceans, based on the concept of a global survey of radioisotopes and other geochemical tracers accompanied by high-precision measurements of temperature, salinity, and density in both continuous and discrete-sample profiles.

The work reported in these atlas volumes includes the shipboard measurements made on the United States expeditions in the Atlantic, Pacific, and Indian Oceans, and the laboratory measurements performed on samples collected by these expeditions of scientists from the United States and other countries. The U.S. shipboard program was carried out on the Woods Hole Oceanographic Institution ship R/V KNORR and the Scripps Institution of Oceanography ship R/V MELVILLE, during three expeditions which were at sea for a total of 24 months. The Atlantic field work was done on R/V KNORR during the nine-month period from July 1972, to April 1973. Shortly afterwards, the Pacific expedition was carried out on R/V MELVILLE during the ten months from August 1973 to June 1974, and in December 1977, the MELVILLE began a five-month Indian Ocean expedition.

In addition to the U.S. Atlantic, Pacific, and Indian Ocean expeditions, scientists from West Germany and Japan have carried out associated GEOSECS studies aboard the German vessel METEOR in the Atlantic and the Japanese ship HAKUHÓ-MARU in the Pacific and Indian Oceans. The results of these allied investigations are being published separately and are not included in these volumes.

The GEOSECS program began with the recognition by Henry Stommel that the full potential of geochemical tracers for the study of circulation and mixing processes in the world oceans could only be realized by a large-scale collaborative effort in which simultaneous studies of the most significant properties were made over large sections of the oceans. A preliminary meeting involving Dr. Stommel, Drs. W.S. Broecker, H. Craig, and K. K. Turekian was held at Woods Hole in July of 1968 for the purpose of planning such a program. Shortly afterwards, P. Kilho Park, J. L. Reid, and H. G. Ostlund were added to this group and an initial proposal for a geochemical expedition was prepared. In the following year, the group was enlarged to a formal Scientific Advisory Committee by the addition of Drs. D. W. Spencer, T. Takahashi, and H. Volchok. Arnold Bainbridge was selected as Project Director of the GEOSECS Operations Group with the responsibility for shipboard operations and data processing.

During this initial phase of the program, the National Science Foundation and the Office of Naval Research supported several testing and intercalibration seagoing efforts in order to establish the feasibility of the proposed program. The "GEOSECS I" station in the Pacific off Baja California was occupied for a week of testing and equipment trials in September 1969 on Scripps R/V WASHINGTON; and "GEOSECS II", an Atlantic station off Bermuda, was occupied by R/V KNORR in August 1970. A full-scale dress rehearsal was then run on Leg 15 of SIO's Antipode Expedition in the southwest Pacific, aboard R/V MELVILLE in August 1971. On this expedition, the deep-water CTD developed by Neil Brown of WHOI was used successfully for the first time to depths of 5000 meters, and the combination of precise geochemical and hydrographic data with continuous CTD profiling resulted in the discovery of a major oceanographic feature—the benthic front, or density discontinuity, between the Pacific Deep Water and the Antarctic Bottom Water.

Antipode Expedition Leg 15, and two further trials—the GOGO I and GOGO II reoccupations of the GEOSECS I station in November 1971 and April 1972—set the basic style of the GEOSECS shipboard sampling and hydrographic program for the future expeditions. For hydrographic measurements and "normal-sized" water samples, Shale Niskin of General Oceanics had developed the rosette sampler, which holds 12 thirty-liter nonmetallic sampling bottles with reversing thermometers. The rosettes were equipped by A.E. Bainbridge and the GEOSECS Operations Group (GOG) with modified versions of the Neil Brown CTD, new dissolved-oxygen probes and nephelometers. A new hydrographic winch with conducting wire for CTD, rosette triggering, and other signals, was constructed and used with the rosettes.

For large volume water samples, required for the measurements of ^{14}C, ^{226}Ra, and other radionuclides, nine 270-liter Gerard-Ewing samplers, developed at LDGO, were constructed from stainless steel and used as multiple sampling devices on the trawl wire. Large-volume near-surface water sampling was done with a "seasucker," a pumping system designed for obtaining large quantities of water from depths down to about 350 meters. During 1971 and early 1972, necessary improvements were made to

the shorebased laboratory facilities needed for the analysis of the expedition samples.

The final selection of tracers and of participating laboratories was made by the Scientific Advisory Committee, and was based on three criteria established at the inception of the GEOSECS program:

1) Demonstration of a significant and reliably measurable variability in the oceanic concentration of a proposed tracer, a variability which would be correlated with circulation, mixing, and non-conservative processes.
2) Selection of a target sampling and analytical precision for each proposed tracer, and demonstration that such precision could be routinely achieved.
3) In almost all cases, the participation of more than one laboratory for the analysis of each tracer, with intercalibrations at selected stations as a continuing control on the quality of the data.

A list of the components selected as tracers which met the above criteria follows.

1) *Long-lived radioisotopes*

The three nuclides in this category are the oceanic "timekeepers": ^{14}C (radiocarbon), ^{226}Ra, and ^{32}Si. Two of these components, ^{14}C and ^{32}Si, have naturally-occurring stable isotopic species for calibration of non-conservative effects, but ^{226}Ra does not. Hence barium was included as a trace element component for analysis because of its possible role as a chemical analogue for radium.

2) *Short-lived radioisotopes*

The initial selection of tracers in this category included ^{3}H (tritium), ^{228}Ra, and ^{222}Rn, the latter extracted from surface and bottom waters, and measured at sea because of its short half-life. The fission-product isotopes, ^{90}Sr and ^{137}Cs, were included for study at selected depths and locations in order to compare the distribution of these tracers to tritium. Later additions to this list included ^{210}Pb, after the discovery of the large disequilibrium between ^{210}Pb, and ^{226}Ra in deep waters, and ^{210}Po and ^{228}Th for further studies of the effects of particulate scavenging.

3) *Stable isotopes*

These tracers included D/H and $^{18}O/^{16}O$ ratios in seawater, ^{18}O in dissolved oxygen, phosphate, and sulphate, ^{13}C in dissolved inorganic carbon, and ^{13}C and ^{18}O in atmospheric CO_2.

4) *Dissolved gases*

Primary emphasis in this program was on the distribution of ^{3}He in seawater, because the injection of "excess ^{3}He" into deep water on oceanic rises provides a unique deep-sea tracer for circulation and mixing. ^{4}He and Ne concentrations were also measured, for calibration of the atmospheric ^{3}He component. In near-surface waters, the association of ^{3}H and ^{3}He provided a unique new parent-daughter isotopic pair for circulation studies. A ship-board measurement program for dissolved N_2 and Ar was also included in the program, for further control on the atmospheric "air-injection" component in deep water.

5) *Trace elements*

As noted above, the most important of these is barium, which can be measured mass spectrometrically with very high precision. Other trace elements included Sr, Cu, Ni, and other heavy metals.

6) *Particulates*

In addition to mineralogical and chemical studies on particulate material filtered from surface and deep water, thorium isotopes, ^{210}Pb, ^{226}Ra, ^{239}Pu, and ^{14}C in particulates, were analyzed in order to provide information on rates of settling of suspended material and on the chemistry of the scavenging processes associated with particles.

A complete list of the institutions participating in the analytical programs and the components studied by each is included in Table 1.

The regular GEOSECS expedition work began with the departure of R/V KNORR from Woods Hole on July 18, 1972, for the nine-leg Atlantic expedition. At this time, the program was directed by an Executive Committee consisting of W. S. Broecker, H. Craig, D. W. Spencer (appointed in 1970), together with a Scientific Advisory Committee consisting of these

Table 1—Major Participating Institutions, Principal Investigators, and Scientific Programs (Atlantic and Pacific Expeditions)

INSTITUTION	PRINCIPAL INVESTIGATORS	SCIENTIFIC PROGRAMS
Atomic Energy Commission (from 1975 Health & Safety Laboratory, ERDA)	H. Volchok	Fallout studies
Centre des Faibles Radio-activités Gif-sur-Yvette, France	R. Chesselet	Particulate analysis (trace elements)
Lamont-Doherty Geological Observatory of Columbia University	W. S. Broecker, P. E. Biscaye, H. W. Feely	^{222}Rn, ^{226}Ra, ^{228}Ra, ^{228}Th; Particulate studies
Louisiana State University	L. H. Chan	Ba
Massachusetts Institute of Technology	J. M. Edmond	Ba; Trace elements
McMaster University Hamilton, Ontario, Canada	W. B. Clarke	^{3}He, He, Ne
Oregon State University	P. K. Park, L. I. Gordon	Nutrients, pH
Queens College, City University of New York	T. Takahashi	Atmospheric CO_2, pCO_2
Scripps Institution of Oceanography University of California at San Diego	H. Craig, Y. Chung, J. E. Lupton, R. F. Weiss	^{2}H and ^{18}O (H_2O); ^{13}C (CO_2); ^{3}He, He, Ne; ^{226}Ra, ^{210}Pb; N_2O, N_2, Ar; ΣCO_2 (gas chromatography)
Scripps Institution of Oceanography University of California at San Diego GEOSECS Operations Group	A. E. Bainbridge, A. W. Mantyla, R. T. Williams	Salinity, nutrients, O_2, CTD, ΣCO_2 (titration), alkalinity
Tata Institute Bombay, India (from 1973 Physical Research Laboratory) Ahmedabad, India	D. Lal, B.L.K. Somayajulu, S. Krishnaswami	^{32}Si; Particulate studies; ^{14}C, Th isotopes, ^{210}Pb, ^{226}Ra, and ^{239}Pu in particulates
U.S. Naval Oceanographic Office (from 1976 University of South Carolina)	W. S. Moore	^{228}Ra
Universita di Pisa, Pisa, Italy Laboratorio di Geologia Nucleare	A. Longinelli	^{18}O (SO_4, PO_4)
Université Libre de Bruxelles Bruxelles, Belgium	J. Jedwab	Particulate analysis (trace elements)
University of Hawaii	P. Kroopnick	^{13}C (ΣCO_2); ^{18}O (dissolved O_2)
University of Miami	H. G. Ostlund	^{3}H, ^{14}C
University of Southern California	T-L. Ku	^{226}Ra
University of Washington	M. Stuiver	^{14}C
Woods Hole Oceanographic Institution	D. W. Spencer, P. G. Brewer, V. Bowen	Particulate studies; I; ^{90}Sr, ^{137}Cs
Yale University	K. K. Turekian	Sr; ^{210}Pb, ^{210}Po

three together with A. Gordon, H. G. Ostlund, P. K. Park, J. L. Reid, H. Stommel, T. Takahashi, K. K. Turekian, H. Volchok, and K. Wyrtki. The Atlantic expedition, coordinated by D. W. Spencer of Woods Hole, lasted nine months. The KNORR returned to WHOI on April 4, 1973, after having occupied 116 Atlantic stations from 75°N in the Greenland Sea to 61°S in the Drake Passage. More than 10,000 water samples, ranging in size from small glass ampoules to 100-liter plastic drums, were stored in the Woods Hole "GEOSECS Water Library" facility, and winch, vans, computer, and

the complete inventory of deck gear and analytical equipment were immediately transferred to the Scripps Institution of Oceanography for the Pacific expedition work on R/V MELVILLE.

The Pacific expedition work began at Scripps on August 22, 1973. Administrative changes at this time included the addition of H. G. Ostlund to the GEOSECS Executive Committee, and of J. Edmond to the Scientific Advisory Committee. H. Craig was the Expedition Coordinator for the ten-leg Pacific expedition, which ended on June 10, 1974, after occupying 147 Pacific stations.

Following the Pacific work, there was a three and one-half year delay in seagoing work while the shorebased laboratories in the U.S. and other countries concentrated on the analysis of Atlantic and Pacific samples. In 1975, P. E. Biscaye, P. G. Brewer, and R. F. Weiss were added to the Scientific Advisory Committee to help prepare the Indian Ocean program. The Indian Ocean expedition work began with R/V MELVILLE leaving Alexandria, Egypt, on 15 December 1977. A. E. Bainbridge acted as Expedition Coordinator for this expedition.

The scientific program on the GEOSECS expeditions changed only slightly from its inception on the Atlantic legs in 1972-73. The shipboard analytical program included the standard hydrographic parameters, temperature, salinity, oxygen, and nutrients (nitrate, phosphate, and silica), together with total dissolved inorganic carbon measured by two techniques: titration (which also gave alkalinity), and shipboard gas chromatography. Ancillary shipboard programs included the measurement of radon activity in surface mixed layer and bottom water profiles, measurement of dissolved nitrogen and argon by shipboard gas chromatography, and measurement of atmospheric and surface water CO_2 partial pressure using an infrared analyzer. In addition to these discrete parameters, continuous profiles of temperature, salinity, dissolved oxygen, and particulate concentration by nephelometry, were obtained on station in real time, using the probes mounted on the sampling rosette.

Particulate samples were collected in several ways. Water samples from the thirty-liter rosette samplers were filtered to provide small particulate sample profiles for U.S. investigators. Continuous filtration of surface water (the "J-underway program") was carried out to provide large-volume surface particulate samples throughout the oceans. In the Pacific, deep-water particulate profiles were obtained at one station per leg by pumping up to 5000 liters of water through battery-operated filtration units suspended on the wire. These large-scale particulate sampling programs were instituted by the Physical Research Laboratory of Ahmedabad, India. Additional particulate profiles (one per leg) were also obtained for ^{210}Pb analysis in the Pacific by filtering 200 liters of water collected in the Gerard barrels.

The GEOSECS station plan in the Atlantic and Pacific consisted of alternate "large volume" and "small volume" stations. At both types of stations, water samples were collected at approximately 50 depths in the nonmetallic thirty-liter sampling bottles, using a pair of the sampling rosettes on the conducting hydrographic wire for each rosette cast. There were generally three rosette casts: a "bottom rosette" cast which included a bottom-radon profile, and a "deep rosette" and "shallow rosette" cast. At some stations, only one or two rosette casts were taken and the shallow rosette was replaced by a shallow Niskin bottle cast with bottles attached to the wire at predetermined intervals. In the Atlantic work, the rosette casts were supplemented by metal Nansen bottle casts for duplicate salinity and temperature profiles, but this practice was discontinued at the end of the Atlantic expedition.

At the "large volume" stations, additional sampling included use of the 270-liter Gerard barrels, usually in three casts of six samples each, to collect the large volume water samples for ^{14}C, ^{228}Ra, and other radioisotope studies. In some cases, these "Gerard casts" were supplemented with large-volume samples collected at shallow depths with the "seasucker" pumping system.

In certain areas of special interest such as equatorial crossings, CTD casts were made at supplementary station positions; these stations are labeled "SDT stations." In most cases, these CTD casts were made with a single rosette, so that discrete temperature, salinity, and, in some cases, oxygen data were measured at approximately 10 depths for calibration purposes. These discrete sample data, together with supplementary salinity and temperature data extracted from the continuous CTD record, are tabulated for the "SDT stations"; for example, stations 43-45 and 47 in the equatorial Atlantic on Atlantic Leg 4.

In general, the first cast made at a station was a "bottom rosette" or "deep rosette" cast, so that the actual hydrographic structure of the entire water column could be displayed by the shipboard computer system at the beginning of station work. The scientist at the data console controlled the lowering rate of the rosette package by voice communication with the winch operator, while observing a set of profiles and plots on the four CRT

displays in the control room. Thus the temperature, salinity, dissolved oxygen, density, and light scattering profiles, together with plots such as potential temperature vs. salinity, could be studied as the sensor package went down. During this time, the discrete sampling scheme relative to the various significant features of the water mass structure was laid out. Discrete sampling was then carried out during the ascent of the rosette system by manual triggering of rosette bottles at the desired depths. (For the Pacific expedition, the exact position of the rosette package on each profile or property plot was continually indicated on the displays). In this way, it was possible to obtain accurate core properties and precise gradients for the geochemical parameters being mapped, and at the same time, to adjust the sampling density according to the gradients in temperature, salinity, density, dissolved oxygen or particulate concentration, as desired.

The importance of the "real-time" sampling system for a program such as GEOSECS is amply demonstrated by the profiles of nutrient data and geochemical parameters obtained across sharp discontinuities such as the "benthic front" in the South Pacific, and in the very subtle but beautifully defined vertical structures observed in the North Atlantic Deep Water profiles, especially in the equatorial and south Atlantic. These profiles reveal significant core structures and gradients, which, although never previously observed, are readily correlated from property to property, as shown, for example, in the potential temperature, salinity, oxygen, silica, and nutrient profiles for stations 40 and 48 at 4° north and south of the equator in the Atlantic (see Figure 1).

"An ocean is forever asking questions," wrote Edwin Arlington Robinson, "and writing them aloud along the shore." The data presented in these volumes may answer some old questions, and pose new ones yet unasked, but they will surely contribute new dimensions to our understanding of the intricate chemical and physical processes which govern the distribution of geochemical parameters in the sea.

Harmon Craig
for GEOSECS Executive Committee

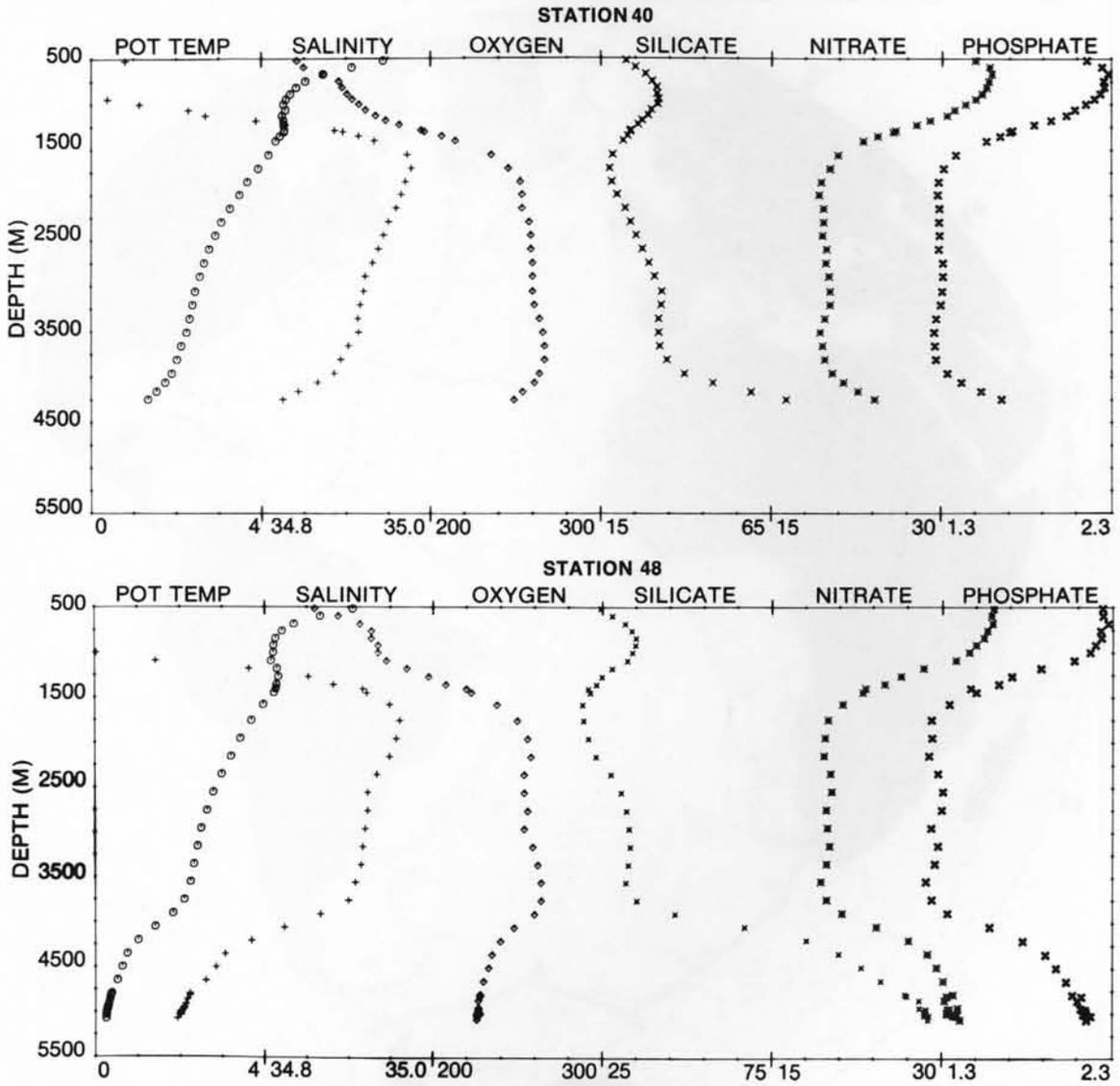


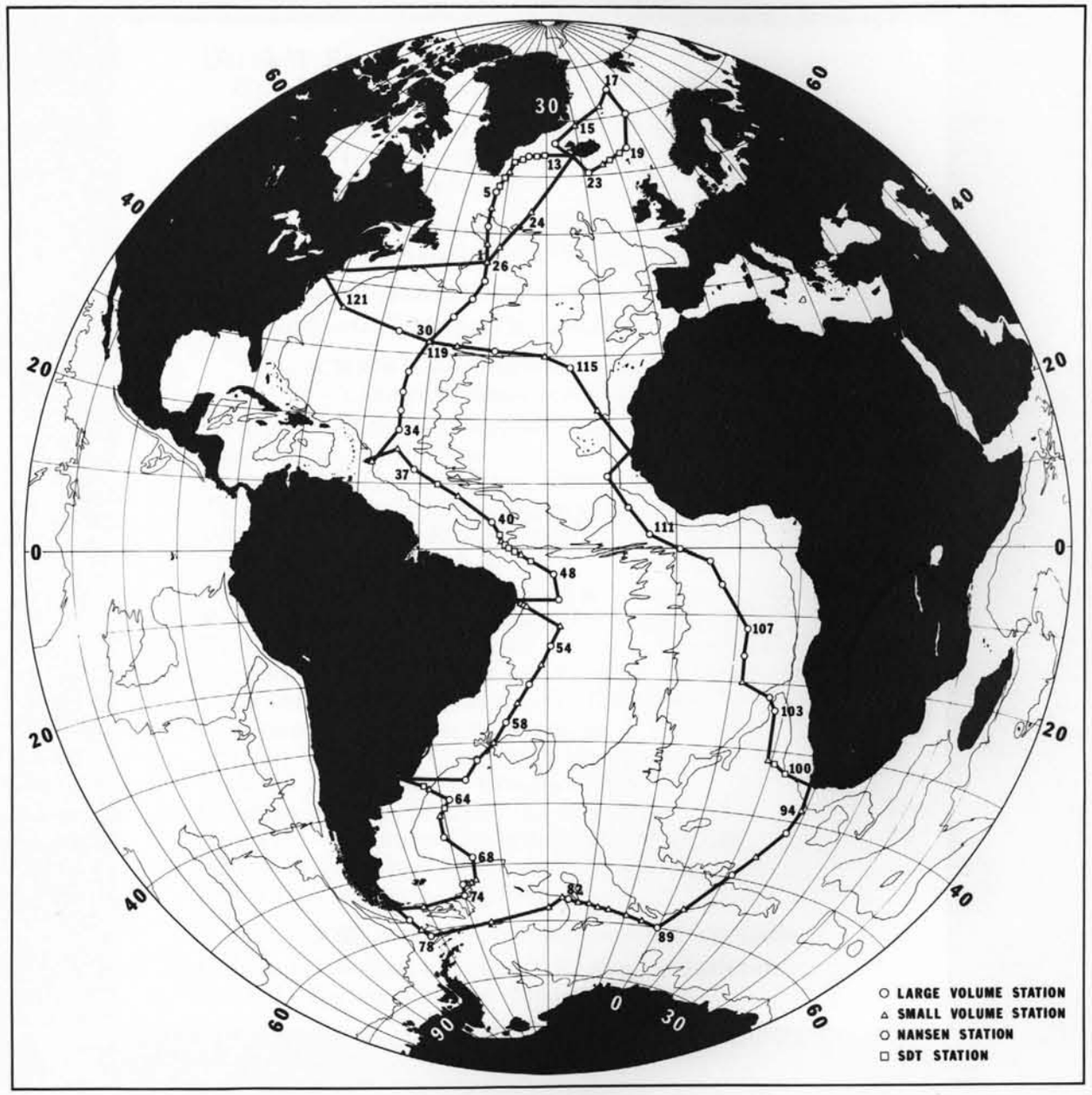
FIGURE 1. GEOSECS Atlantic Expedition

GEOSECS Atlantic Expedition

Itinerary of R/V KNORR

	DEPART	ARRIVE
LEG 1	Woods Hole, Massachusetts 18 July 1972	Reykjavik, Iceland 1 August 1972
LEG 2	Reykjavik, Iceland 12 August 1972	Reykjavik, Iceland 30 August 1972
LEG 3	Reykjavik, Iceland 4 September 1972	Bridgetown, Barbados 1 October 1972
LEG 4	Bridgetown, Barbados 9 October 1972	Recife, Brazil 31 October 1972
LEG 5	Recife, Brazil 4 November 1972	Buenos Aires, Argentina 28 November 1972
LEG 6	Buenos Aires, Argentina 2 December 1972	Ushuaia, Argentina 22 December 1972
LEG 7	Ushuaia, Argentina 30 December 1972	Capetown, Republic of South Africa 5 February 1973
LEG 8	Capetown, Republic of South Africa 10 February 1973	Dakar, Senegal 7 March 1973
LEG 9	Dakar, Senegal 10 March 1973	New York, New York 1 April 1973

TRACK OF R/V KNORR, GEOSECS ATLANTIC EXPEDITION, 1972-73



The 4 kilometer isobath shown on this Lambert equal area projection was reproduced from Plate 1, Volume 2 of this atlas series. Other isobaths and the bathymetric data sources appear in that atlas.

LIST OF PARTICIPANTS

Leg 1

Derek W. Spencer, Chief Scientist
Woods Hole Oceanographic Institution

Arnold E. Bainbridge, Associate Chief Scientist
Scripps Institution of Oceanography, GEOSECS Operations Group/NSF

John M. Edmond, Associate Chief Scientist
Massachusetts Institute of Technology

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

John Goddard, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

George C. Anderson, Senior Analyst
David L. Bos, Analyst
Leonard M. Cunningham, Chief Marine Technician
Thomas J. Digre, Chief Programmer
Wayne B. Evans, Electronics Technician
Dagmar Gobat, Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
Donald E. Lingle, Analyst
Arnold W. Mantyla, Chief Analyst
William H. Price, Marine Technician
Marston D. Robertson, Analyst
Martin V. Smith, Computer Engineer
Jack W. Spiegelberg, Programmer
Charles R. Toy, Marine Technician
Romeo J. Vadnais, Electronics Technician
Bruce W. Waldorf, Marine Technician
Frederick V. Woy, Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician
Peter L. Sachs, Marine Technician

Leg 2

Derek W. Spencer, Chief Scientist
Woods Hole Oceanographic Institution

John M. Edmond, Associate Chief Scientist
Massachusetts Institute of Technology

Ray F. Weiss, Associate Chief Scientist
Scripps Institution of Oceanography

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

John Goddard, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

George C. Anderson, Senior Analyst
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Dagmar Gobat, Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
Donald E. Lingle, Analyst
Arnold W. Mantyla, Chief Analyst
Alan C. Osgood, Marine Technician
Marston D. Robertson, Analyst
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Alan H. Trist, Programmer
Romeo J. Vadnais, Electronics Technician
Bruce W. Waldorf, Marine Technician
Frederick V. Woy, Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician
Peter L. Sachs, Marine Technician

Leg 3

Wallace S. Broecker, Chief Scientist
Lamont-Doherty Geological Observatory

Arnold E. Bainbridge, Associate Chief Scientist
Scripps Institution of Oceanography, GEOSECS Operations Group/NSF

Peter M. Kroopnick, Associate Chief Scientist
University of Hawaii

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Robert Trier, Marine Technician

OREGON STATE UNIVERSITY

Edward A. Seifert, Analyst

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

George C. Anderson, Senior Analyst
David L. Bos, Analyst
David G. Brader, Electronics Technician
Leonard M. Cunningham, Chief Marine Technician
Robert W. Fong, Electronics Engineer
Brian J. James, Marine Technician
Kenneth P. LeVeille, Marine Technician
Donald E. Lingle, Analyst
Michael T. Morrione, Analyst
Alan C. Osgood, Marine Technician
William H. Price, Senior Marine Technician
Frank Sanchez, Electronics Technician
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Charles R. Toy, Marine Technician
Alan H. Trist, Programmer
Bruce W. Waldorf, Marine Technician
Robert T. Williams, Chief Analyst
Frederick V. Woy, Analyst

Leg 4

Harmon Craig, Chief Scientist
Scripps Institution of Oceanography

Kilho P. Park, Associate Chief Scientist
Oregon State University

Ray F. Weiss, Associate Chief Scientist
Scripps Institution of Oceanography

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Guy G. Mathieu, Marine Technician
Robert Trier, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

David G. Brader, Electronics Technician
Charles H. Breeze, Analyst
Thomas J. Digre, Chief Programmer
Fred S. Dixon, Development Technician
Robert W. Fong, Electronics Engineer
Dagmar Gobat, Analyst
Arthur W. Hester, Senior Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
Brian J. James, Marine Technician
Kenneth P. LeVeille, Marine Technician
Michael T. Morrione, Analyst
William H. Price, Chief Marine Technician
Frank Sanchez, Electronics Technician
Edward J. Slater, Analyst
Robert T. Williams, Chief Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician
Susan Kadar, Analyst
C. L. Roy Smith, Marine Technician

Leg 5

Wallace S. Broecker, Chief Scientist
Lamont-Doherty Geological Observatory

Arnold W. Mantyla, Associate Chief Scientist
Scripps Institution of Oceanography, GEOSECS Operations Group/NSF

Taro Takahashi, Associate Chief Scientist
City University of New York

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Guy G. Mathieu, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

Charles H. Breeze, Analyst
Wayne B. Evans, Electronics Technician
Dagmar Gobat, Analyst
Arthur W. Hester, Senior Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Senior Marine Technician
Brian J. James, Marine Technician
Kenneth P. LeVeille, Marine Technician
Michael T. Morrione, Analyst
Alan C. Osgood, Marine Technician
William H. Price, Chief Marine Technician
Alden S. Rollins, Marine Technician
Edward J. Slater, Analyst
Martin V. Smith, Computer Engineer
Jack W. Spiegelberg, Programmer
Romeo J. Vadnais, Electronics Technician
Robert T. Williams, Chief Analyst

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Edward C. Ruth, Marine Technician

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician
C. L. Roy Smith, Analyst

Leg 6

Kilho P. Park, Chief Scientist
Oregon State University

Peter G. Brewer, Associate Chief Scientist
Woods Hole Oceanographic Institution

Derek W. Spencer, Associate Chief Scientist
Woods Hole Oceanographic Institution

Norberto Bienati, Associate Scientist
Argentina

ARGENTINA

Luis Sota, Analyst

SCRIPPS INSTITUTION OF OCEANOGRAPHY

James A. Wells, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

David L. Bos, Senior Analyst
Charles H. Breeze, Analyst
Leonard M. Cunningham, Chief Marine Technician
Wayne B. Evans, Electronics Technician
Anne M. Gilbert, Analyst
Dagmar Gobat, Analyst
Arthur W. Hester, Chief Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
Donald E. Lingle, Analyst
James D. Nash, Computer Engineer
Alden S. Rollins, Marine Technician
Charles R. Toy, Marine Technician
Alan H. Trist, Programmer
Romeo J. Vadnais, Electronics Technician
Bruce W. Waldorf, Senior Marine Technician
Frederick V. Woy, Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Marine Technician
David Masch, Marine Technician

Leg 7

Harmon Craig, Chief Scientist
Scripps Institution of Oceanography

John M. Edmond, Associate Chief Scientist
Massachusetts Institute of Technology

Antonio Longinelli, Associate Chief Scientist
University of Pisa

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Douglas Hammond, Marine Technician
Susan C. Williams, Analyst

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

David L. Bos, Senior Analyst
David G. Brader, Electronics Technician
Leonard M. Cunningham, Chief Marine Technician
Thomas J. Digre, Chief Programmer
Dagmar Gobat, Analyst
John K. Jain, Electronics Technician
Brian J. James, Marine Technician
Kenneth P. LeVeille, Marine Technician
Donald E. Lingle, Analyst
Michael T. Morrione, Analyst
James D. Nash, Computer Engineer
Alan C. Osgood, Marine Technician
William H. Price, Marine Technician
Edward J. Slater, Analyst
Steven W. Tavan, Analyst
Charles R. Toy, Marine Technician
Robert T. Williams, Chief Analyst
Frederick V. Woy, Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

David Masch, Marine Technician

Leg 8

Joseph L. Reid, Chief Scientist
Scripps Institution of Oceanography

Peter G. Brewer, Associate Chief Scientist
Woods Hole Oceanographic Institution

Louis I. Gordon, Associate Chief Scientist
Oregon State University

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Susan C. Williams, Analyst

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

Charles H. Breeze, Analyst
Robert W. Fong, Electronics Engineer
Anne M. Gilbert, Analyst
Arthur W. Hester, Senior Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
John K. Jain, Electronics Technician
Kenneth P. LeVeille, Marine Technician
Arnold W. Mantyla, Chief Analyst
Michael T. Morrione, Analyst
Alan C. Osgood, Marine Technician
William H. Price, Marine Technician
Alden S. Rollins, Marine Technician
Frank Sanchez, Electronics Technician
Edward J. Slater, Analyst
Jack W. Spiegelberg, Programmer
Steven W. Tavan, Analyst
Bruce W. Waldorf, Senior Marine Technician

UNIVERSITY OF HAWAII

Kenneth F. Binder, Marine Technician

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician

Leg 9

Taro Takahashi, Chief Scientist
City University of New York

Yu-Chia Chung, Associate Chief Scientist
Scripps Institution of Oceanography

Arnold W. Mantyla, Associate Chief Scientist
Scripps Institution of Oceanography, GEOSECS Operations Group/NSF

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Guy G. Mathieu, Marine Technician

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

David L. Bos, Analyst
Charles H. Breeze, Analyst
Leonard M. Cunningham, Chief Marine Technician
Wayne B. Evans, Electronics Technician
Anne M. Gilbert, Analyst
Arthur W. Hester, Chief Analyst
Anne Marie Horowitz, Analyst
Ross M. Horowitz, Marine Technician
Brian J. James, Marine Technician
Donald E. Lingle, Analyst
Frank Sanchez, Electronics Technician
Steven W. Tavan, Analyst
Charles R. Toy, Marine Technician
Alan H. Trist, Programmer
Bruce W. Waldorf, Senior Marine Technician
Frederick V. Woy, Analyst

UNIVERSITY OF HAWAII

Kenneth F. Binder, Marine Technician

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician

STATION AND CAST DESCRIPTION

GEOSECS ATLANTIC R/V KNORR

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
1	1	1	24 JUL 72	ROS	44° 57.0' N	42° 0.2' W	0911	4696	4603	* DEEP ROSETTE
1	1	2	24 JUL 72	NAN	44° 59.0' N	42° 0.0' W	1328		4627	* DEEP NANSEN
1	1	3	24 JUL 72	ROS	44° 56.0' N	41° 59.0' W	1828		1942	* SHALLOW ROSETTE
1	1	4	24 JUL 72	NAN	44° 59.4' N	42° 0.7' W	2334	4718	1652	* SHALLOW NANSEN
1	1	5	25 JUL 72	PMP	44° 58.0' N	42° 1.5' W	0119		100	* SURFACE PUMP, RADON
1	2	1	25 JUL 72	NAN	48° 0.0' N	42° 30.5' W	2247	4059	4027	* DEEP NANSEN
1	2	2	26 JUL 72	PMP	47° 57.3' N	42° 28.3' W	0027		70	* SURFACE PUMP, RADON
1	2	3	26 JUL 72	NAN	47° 58.8' N	42° 28.5' W	0619	4071	1796	* SHALLOW NANSEN
1	2	4	26 JUL 72	ROS	47° 58.0' N	42° 32.0' W	0954	4071	1834	* SHALLOW ROSETTE
1	2	5	26 JUL 72	NIS	47° 58.3' N	42° 31.0' W	1500	4061	4054	* BOTTOM NISKIN, RADON
1	2	6	26 JUL 72	ROS	47° 54.0' N	42° 39.5' W	2202	3839	3644	* DEEP ROSETTE
1	2	7	27 JUL 72	ROS	47° 58.5' N	42° 32.0' W	0342	3967	463	* SHAL SINGLE ROSETTE (REPEAT)
1	3	1	27 JUL 72	PMP	51° 1.5' N	43° 1.0' W	2127		100	* SURFACE PUMP, RADON
1	3	2	28 JUL 72	BAG	50° 57.5' N	43° 7.6' W	0230			* SI-32 BAG (ABORTED)
1	3	3	28 JUL 72	ROS	51° 1.1' N	43° 7.0' W	0822	4212	2036	* SHALLOW ROSETTE
1	3	4	28 JUL 72	GER	51° 1.2' N	43° 10.0' W	1240		467	* SHALLOW GERARD, C-14
1	3	5	28 JUL 72	NAN	51° 3.8' N	43° 0.7' W	1705	4310	4268	* DEEP NANSEN
1	3	6	28 JUL 72	GER	51° 0.7' N	42° 57.6' W	2207	4266	1826	* INTERMEDIATE GERARD, C-14
1	3	7	29 JUL 72	ROS	51° 0.7' N	42° 58.7' W	0314	4293	4144	* DEEP ROSETTE
1	3	8	29 JUL 72	NAN	51° 1.4' N	43° 0.0' W	0741		2219	* SHALLOW NANSEN
1	3	9	29 JUL 72	PMP	51° 1.6' N	43° 0.0' W	0935		350	* SURFACE PUMP, RA-228
1	3	10	29 JUL 72	ROS	51° 0.0' N	42° 59.3' W	1618	4252	4244	* BOTTOM SINGLE ROSETTE, RADON
1	3	11	29 JUL 72	GER	50° 59.7' N	43° 0.0' W	2031		4306	* DEEP GERARD, C-14
1	3	12	29 JUL 72	ESS	50° 59.9' N	42° 59.9' W	2209		0	* ESSO, BUCKET
1	4	1	30 JUL 72	ROS	54° 5.5' N	42° 57.8' W	1545	3528	3520	* DEEP & BOTTOM ROSETTE, RADON
1	4	2	30 JUL 72	PMP	54° 5.5' N	42° 57.8' W	1553		130	* SURFACE PUMP, RADON
1	4	3	30 JUL 72	NAN	54° 6.7' N	42° 57.0' W	1854		1361	* SHALLOW NANSEN
1	4	4	30 JUL 72	NAN	54° 7.4' N	42° 56.0' W	2057	3495	3466	* DEEP NANSEN
1	4	5	30 JUL 72	ROS	54° 8.0' N	42° 57.0' W	2324	3447	1993	* SHALLOW ROSETTE
1	4	6	31 JUL 72	ROS	54° 9.0' N	42° 58.9' W	0117	3447	626	* SHALLOW ROSETTE (REPEAT)
1	5	1	31 JUL 72	ROS	56° 56.7' N	42° 33.5' W	1938	3388	3381	* DEEP & BOTTOM ROSETTE, RADON
1	5	2	31 JUL 72	PMP	56° 56.1' N	42° 33.4' W	2249		45	* SURFACE PUMP, RADON
1	5	3	31 JUL 72	GER	56° 56.0' N	42° 33.4' W	2321		2462	* INTERMED. GERARD, C-14, RA228
1	5	4	1 AUG 72	NAN	56° 55.2' N	42° 33.5' W	0159		1310	* SHALLOW NANSEN
1	5	5	1 AUG 72	ROS	56° 54.4' N	42° 34.0' W	0345		2009	* SHALLOW ROSETTE
1	5	6	1 AUG 72	GER	56° 52.5' N	42° 36.0' W	0723		3287	* DEEP GERARD, C-14
1	5	7	1 AUG 72	NAN	56° 57.0' N	42° 36.2' W	1051	3385	3296	* DEEP NANSEN
1	5	8	1 AUG 72	PMP	56° 55.0' N	42° 39.8' W	1354		350	* SURFACE PUMP, C-14, RA-228
1	5	9	1 AUG 72	BAG	56° 55.5' N	42° 40.8' W	2025			* SI-32 BAG (ABORTED)
1	5	10	1 AUG 72	ESS	56° 56.0' N	42° 41.0' W	2232			* ESSO, BUCKET- LOST PAIL
1	6	1	2 AUG 72	SDT	58° 0.0' N	41° 58.0' W	0726	3179	3114	* SDT WITH 3 CHECK SAMPLES
1	7	1	2 AUG 72	SDT	59° 30.0' N	40° 56.5' W	2210	2478	2455	* SDT WITH 3 CHECK SAMPLES
1	8	1	3 AUG 72	ROS	60° 30.0' N	40° 1.0' W	1108	2583	2551	* DEEP ROSETTE
1	8	2	3 AUG 72	NAN	60° 30.8' N	40° 1.6' W	1403	2586	2546	* DEEP NANSEN
1	8	3	3 AUG 72	ROS	60° 32.5' N	40° 1.0' W	1633	2516	645	* SHALLOW SINGLE ROSETTE
1	8	4	3 AUG 72	NAN	60° 32.7' N	40° 1.0' W	1803	2490	1110	* SHALLOW NANSEN
1	8	5	3 AUG 72	NIS	60° 33.5' N	40° 1.0' W	1957	2486	2475	* DEEP NISKIN, RADON
1	9	1	4 AUG 72	SDT	62° 25.4' N	39° 4.9' W	1618	1891	1886	* SDT
1	10	1	5 AUG 72	SDT	63° 0.0' N	36° 50.0' W	0122	2325	2314	* SDT WITH 4 CHECK SAMPLES
1	11	1	5 AUG 72	ROS	63° 31.9' N	35° 13.8' W	0757	2400	2393	* DEEP & BOTTOM ROSETTE, RADON
1	11	2	5 AUG 72	GER	63° 31.9' N	35° 12.2' W	1035	2430	408	* SHALLOW GERARD, C-14
1	11	3	5 AUG 72	NAN	63° 31.7' N	35° 11.2' W	1230	2404	2399	* DEEP NANSEN
1	11	4	5 AUG 72	ROS	63° 30.5' N	35° 11.3' W	1616		1098	* SHALLOW ROSETTE
1	11	5	5 AUG 72	GER	63° 29.9' N	35° 11.2' W	2013		1695	* INTERMED. GERARD, C-14, RA228
1	11	6	5 AUG 72	NAN	63° 29.9' N	35° 11.0' W	2151		1110	* SHALLOW NANSEN
1	11	7	5 AUG 72	PMP	63° 29.9' N	35° 11.1' W	2304		350	* SURFACE PUMP, RA-228
1	11	8	6 AUG 72	GER	63° 28.9' N	35° 10.5' W	0420	2444	2418	* DEEP GERARD, C-14
1	11	9	6 AUG 72	ESS	63° 29.0' N	35° 10.5' W	0540		0	* ESSO, BUCKET
1	12	1	6 AUG 72	SDT	63° 37.5' N	32° 52.0' W	1241	2766	2754	* SDT WITH 2 CHECK SAMPLES
1	13	1	6 AUG 72	SDT	63° 43.5' N	30° 31.0' W	2035	2347	2338	* SDT WITH 2 CHECK SAMPLES
2	14	1	13 AUG 72	ROS	65° 55.7' N	27° 27.0' W	0624	646		* ROSETTE FAILURE, SDT ONLY
2	14	2	13 AUG 72	ROS	65° 56.0' N	27° 32.0' W	1024	637	605	* DP & SHALLOW ROSETTE (REPEAT)
2	14	3	13 AUG 72	GER	65° 56.5' N	27° 33.0' W	1400		604	* DEEP GERARD, C-14
2	14	4	13 AUG 72	NAN	65° 55.8' N	27° 22.9' W	1605	646	571	* DEEP NANSEN
2	14	5	13 AUG 72	ROS	65° 54.6' N	27° 23.1' W	1752	653	645	* BOTTOM SINGLE ROSETTE, RADON
2	15	1	15 AUG 72	NIS	69° 0.9' N	20° 1.7' W	0422	1534	1526	* BOTTOM NISKIN, RADON
2	15	2	15 AUG 72	ROS	69° 1.0' N	20° 6.0' W	0643	1516	1495	* DEEP ROSETTE
2	15	3	15 AUG 72	PMP	69° 0.5' N	20° 12.0' W	0855		3	* BOW PUMP, RADON, SR-90
2	15	4	15 AUG 72	NAN	69° 0.9' N	20° 4.2' W	1133	1537	1513	* DEEP & SHALLOW NANSEN
2	15	5	15 AUG 72	ROS	69° 0.2' N	20° 6.4' W	1254	1528	225	* SHALLOW SINGLE ROSETTE, RADON
2	16	1	16 AUG 72	ROS	72° 2.5' N	8° 26.5' W	2146	2542	2537	* BOTTOM ROSETTE, RADON
2	16	2	16 AUG 72	NAN	72° 2.0' N	8° 26.5' W	2341	2550	2523	* DEEP NANSEN
2	16	3	17 AUG 72	ROS	72° 1.0' N	8° 25.2' W	0236	2568		* DEEP ROSETTE (ABORTED)
2	16	4	17 AUG 72	NAN	72° 0.3' N	8° 26.3' W	0437		903	* SHALLOW NANSEN
2	16	5	17 AUG 72	ROS	71° 59.7' N	8° 24.6' W	0618	2530	2515	* DEEP ROSETTE (REPEAT)
2	16	6	17 AUG 72	ROS	72° 1.0' N	8° 26.5' W	1154		749	* SHALLOW ROSETTE, RADON
2	16	7	17 AUG 72	PMP	71° 59.7' N	8° 24.6' W	0640		1	* BOW PUMP, RADON, SR-90
2	17	1	18 AUG 72	ROS	74° 56.0' N	1° 7.3' W	1112	3688	3681	* BOTTOM SINGLE ROSETTE, RADON
2	17	2	18 AUG 72	NAN	74° 56.0' N	1° 10.0' W	1426	3707	3680	* DEEP NANSEN
2	17	3	18 AUG 72	GER	74° 56.4' N	1° 12.0' W	1633	3652	306	* SHALLOW GERARD, C-14
2	17	4	18 AUG 72	ROS	74° 56.0' N	1° 20.0' W	2009	3686	3679	* DEEP ROSETTE
2	17	5	18 AUG 72	GER	74° 56.0' N	1° 5.1' W	2350	3696	3552	* DEEP GERARD, C-14
2	17	6	19 AUG 72	ROS	74° 54.0' N	1° 12.0' W	0646		1593	* SHALLOW ROSETTE
2	17	7	19 AUG 72	NAN	74° 55.9' N	1° 2.0' W	1008		1303	* SHALLOW NANSEN
2	17	8	19 AUG 72	PMP	74° 54.8' N	1° 2.9' W	1134		350	* SURFACE PUMP, RA-228
2	17	9	19 AUG 72	BAG	74° 54.5' N	1° 4.2' W	1655			* SI-32 BAG (ABORTED)
2	17	10	20 AUG 72	GER	74° 56.0' N	1° 14.0' W	0924	3692	1836	* INTERMEDIATE GERARD, C-14
2	17	11	20 AUG 72	GER	74° 55.3' N	1° 16.4' W	1125		3550	* 1000 LITER GERARD, RA-228
2	17	12	20 AUG 72	ESS	74° 56.5' N	1° 15.4' W	1730		2200	* ESSO ROSETTE
2	17	13	20 AUG 72	GER	74° 58.2' N	1° 12.5' W	2046	3654	3416	* DEEP GERARD C-14 (REPEAT)
2	17	14	21 AUG 72	NAN	74° 59.5' N	1° 13.7' W	0030	3652	3575	* DEEP NANSEN (REPEAT)
2	18	1	22 AUG 72	ROS	70° 0.0' N	0° 0.5' W	1019	3249	3242	* BOTTOM SINGLE ROSETTE, RADON
2	18	2	22 AUG 72	GER	69° 59.8' N	0° 0.0' W	1315	3270	1213	* DP GER C-14 (PART. POSTTRIP)
2	18	3	22 AUG 72	GER	69° 59.8' N	0° 1.8' W	1612		1972	* DP GER C-14 (PART. POSTTRIP)
2	18	4	22 AUG 72	ROS	69° 58.8' N	0° 2.9' W	2024	3231	3219	* DEEP ROSETTE
2	18	5	22 AUG 72	NAN	69° 58.9' N	0° 6.0' W	2317	3287	3215	* DEEP NANSEN
2	18	6	23 AUG 72	PMP	69° 58.9' N	0° 6.8' W	0030		250	* SURFACE PUMP, RA-228
2	18	7	23 AUG 72	ROS	69° 59.0' N	0° 8.0' W	0254	3237	1196	* SHALLOW ROSETTE
2	18	8	23 AUG 72	NAN	69° 58.9' N	0° 8.3' W	0506	3287	1005	* SHALLOW NANSEN
2	18	9	23 AUG 72	GER	69° 59.9' N	0° 9.5' W	0705	3231	3198	* DEEP GERARD C-14 (REPEAT)
2	18	10	23 AUG 72	ROS	70° 0.0' N	0° 4.5' W	1034		80	* SURFACE RADON
2	19	1	24 AUG 72	ROS	64° 12.0' N	5° 34.2' W	2345	3195	3188	* BOTTOM ROSETTE, RADON
2	19	2	25 AUG 72	GER	64° 11.5' N	5° 36.0' W	0151	3473	349	* SHALLOW GERARD, C-14
2	19	3	25 AUG 72	ROS	64° 8.8' N	5° 43.0' W	0458	3484	3457	* DEEP ROSETTE
2	19	4	25 AUG 72	GER	64° 10.4' N	5° 40.2' W	0837	3278		* DEEP GERARD, C-14
2	19	5	25 AUG 72	NAN	64° 11.4' N	5° 38.9' W	1057	3234	3219	* DEEP NANSEN
2	19	6	25 AUG 72	ROS	64° 10.7' N	5° 35.6' W	1354	1004		* SHALLOW ROSETTE
2	19	7	25 AUG 72	PMP	64° 10.7' N	5° 35.6' W	1419		350	* SURFACE PUMP, RA-228
2	19	8	25 AUG 72	BAG	64° 9.9' N	5° 37.5' W	2010			* RA-228 BAG (PRETRIP)
2	19	9	25 AUG 72	GER	64° 9.1' N	5° 39.0' W	2325		969	* INTERMEDIATE GERARD, C-14
2	19	10	26 AUG 72	NAN	64° 8.3' N	5° 36.7' W	0104		822	* SHALLOW NANSEN
2	19	11	26 AUG 72	ESS	64° 7.8' N	5° 36.5' W	0130		0	* ESSO, BUCKET

STATION AND CAST DESCRIPTION

GEOSECS ATLANTIC **R/V KNORR**

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
2	20	1	26 AUG 72	SDT	63° 24.7' N	8° 23.0' W	1209	630	621	* SDT WITH 3 CHECK SAMPLES
2	21	1	27 AUG 72	SDT	62° 24.1' N	11° 53.4' W	0358	859	837	* SDT WITH 3 CHECK SAMPLES
2	22	1	27 AUG 72	ROS	61° 39.4' N	14° 17.6' W	1845	1848	1828	* DEEP ROSETTE, SURFACE RADON
2	23	1	28 AUG 72	ROS	60° 24.9' N	18° 37.0' W	1402	2523	2516	* BOTTOM SINGLE ROSETTE, RADON
2	23	2	28 AUG 72	GER	60° 24.9' N	18° 37.5' W	1604		440	* SHALLOW GERARD, C-14
2	23	3	28 AUG 72	NAN	60° 24.7' N	18° 37.5' W	1745			* DEEP NANSEN (ABORTED)
2	23	4	28 AUG 72	ROS	60° 24.5' N	18° 34.5' W	2245	2534	2516	* DEEP ROSETTE
2	23	5	29 AUG 72	GER	60° 23.0' N	18° 38.2' W	0220	2509	2499	* DEEP GERARD, C-14
2	23	6	29 AUG 72	NAN	60° 23.0' N	18° 39.7' W	0423	2527	2512	* DEEP NANSEN (REPEAT)
2	23	7	29 AUG 72	ROS	60° 23.1' N	18° 40.0' W	0643	2523	1198	* SHALLOW ROSETTE
2	23	8	29 AUG 72	NAN	60° 24.0' N	18° 40.0' W	0850		896	* SHALLOW NANSEN
2	23	9	29 AUG 72	PMP	60° 24.5' N	18° 38.6' W	0957		350	* SURFACE PUMP, RA-228
2	23	10	29 AUG 72	GER	60° 24.5' N	18° 38.7' W	1057	2527	1438	* INTERMEDIATE GERARD, C-14
3	24	1	7 SEP 72	ROS	53° 45.6' N	33° 37.6' W	2227	2549	2532	* BOTTOM SINGLE ROSETTE, RADON
3	24	2	8 SEP 72	NAN	53° 47.0' N	33° 37.0' W	0130	2527	2520	* DEEP NANSEN
3	24	3	8 SEP 72	ROS	53° 49.7' N	33° 36.0' W	0455	2519	2461	* INTERMEDIATE ROSETTE
3	24	4	8 SEP 72	NAN	53° 50.6' N	33° 32.5' W	0801		630	* SHALLOW NANSEN
3	24	5	8 SEP 72	PMP	53° 50.1' N	33° 33.0' W	0934		350	* SURFACE PUMP, RA-228
3	24	6	8 SEP 72	ROS	53° 50.0' N	33° 34.0' W	1503		353	* SURFACE RADON
3	24	7	8 SEP 72	ESS	53° 49.8' N	33° 33.6' W	1536		0	* ESSO, BUCKET
3	25	1	10 SEP 72	ROS	47° 36.5' N	39° 53.6' W	1127	4559	4540	* BOT SINGLE ROSETTE,SURF RADON
3	26	1	11 SEP 72	ROS	44° 57.6' N	42° 4.6' W	0932	4708	3987	* DEEP ROSETTE
3	26	2	11 SEP 72	PMP	44° 57.6' N	42° 4.9' W	0952		350	* SURFACE PUMP, RA-228
3	26	3	11 SEP 72	ROS	45° 0.8' N	42° 5.6' W	1743	4708	297	* SURFACE RADON
3	27	1	12 SEP 72	ROS	42° 0.0' N	42° 2.0' W	1554	4885	4867	* BOTTOM SINGLE ROSETTE, RADON
3	27	2	12 SEP 72	GER	41° 59.0' N	42° 0.0' W	1854		970	* SHALLOW GERARD, C-14
3	27	3	12 SEP 72	NAN	41° 58.4' N	41° 59.5' W	2038			* SHALLOW NANSEN (ABORTED)
3	27	4	12 SEP 72	ROS	41° 57.0' N	41° 59.0' W	2344	4892	4854	* DEEP ROSETTE
3	27	5	13 SEP 72	NAN	42° 0.0' N	42° 1.0' W	0425		963	* SHALLOW NANSEN (REPEAT)
3	27	6	13 SEP 72	GER	42° 0.0' N	42° 0.0' W	0630	4893	4859	* DEEP GERARD, C-14
3	27	7	13 SEP 72	NAN	42° 0.0' N	41° 57.5' W	0930	4888	3902	* DEEP NANSEN
3	27	8	13 SEP 72	ROS	41° 59.5' N	41° 58.0' W	1226		1268	* SHALLOW ROSETTE
3	27	9	13 SEP 72	GER	41° 59.4' N	41° 56.4' W	1515		1893	* INTERMEDIATE GERARD, C-14
3	27	10	13 SEP 72	PMP	41° 59.7' N	41° 56.5' W	1624		320	* SURFACE PUMP, RA-228, C-14
3	27	11	13 SEP 72	NAN	42° 2.0' N	42° 2.0' W	2304	4899	4874	* DEEP NANSEN
3	27	12	14 SEP 72	ESS	42° 2.0' N	42° 2.0' W	0204		3500	* ESSO ROSETTE
3	28	1	15 SEP 72	ROS	39° 0.0' N	43° 59.0' W	0150	4897	4878	* BOTTOM SINGLE ROSETTE, RADON
3	28	2	15 SEP 72	NAN	39° 2.0' N	43° 58.0' W	0334		127	* SURFACE NANSEN
3	28	3	15 SEP 72	NAN	39° 2.0' N	43° 58.0' W	0412		1358	* SHALLOW NANSEN
3	28	4	15 SEP 72	ROS	39° 0.0' N	43° 57.4' W	0739	4903	4831	* DEEP ROSETTE
3	28	5	15 SEP 72	PMP	38° 59.3' N	43° 57.3' W	0950		5	* SURFACE PUMP, RA-228
3	28	6	15 SEP 72	NAN	38° 59.3' N	43° 57.1' W	1057	4903	4882	* DEEP NANSEN
3	28	7	15 SEP 72	ROS	38° 58.0' N	43° 57.0' W	1326		300	* SURFACE SINGLE ROSETTE, RADON
3	28	8	15 SEP 72	ROS	38° 59.7' N	44° 0.0' W	1627		1302	* SHALLOW ROSETTE
3	28	9	15 SEP 72	GER	38° 57.9' N	44° 3.0' W	2027	4825	3878	* DEEP GERARD (SPECIAL), RA-228
3	28	10	16 SEP 72	GER	38° 58.0' N	44° 3.0' W	0027		4201	* DEEP GERARD (SPECIAL), RA-228
3	28	11	16 SEP 72	GER	38° 59.0' N	44° 0.0' W	0502		1531	* DEEP GERARD (SPECIAL), RA-228
3	28	12	16 SEP 72	GER	38° 58.0' N	44° 0.0' W	0950		4800	* DEEP GERARD (SPECIAL), RA-228
3	29	1	17 SEP 72	ROS	35° 58.5' N	47° 0.5' W	1234	4995	4977	* BOTTOM ROSETTE, RADON
3	29	2	17 SEP 72	NAN	35° 57.5' N	47° 1.0' W	1440		92	* SURFACE NANSEN
3	29	3	17 SEP 72	NAN	35° 57.5' N	47° 1.0' W	1533		1212	* SHALLOW NANSEN
3	29	4	17 SEP 72	GER	35° 57.0' N	47° 1.0' W	1658		787	* SHALLOW GERARD, C-14
3	29	5	17 SEP 72	ROS	35° 59.0' N	47° 0.0' W	2157	4996	4908	* DEEP ROSETTE
3	29	6	18 SEP 72	GER	35° 56.1' N	46° 59.8' W	0255	4993	4772	* DEEP GERARD, C-14
3	29	7	18 SEP 72	ROS	35° 57.0' N	47° 0.0' W	0717		2703	* INTERMEDIATE ROSETTE
3	29	8	18 SEP 72	NAN	36° 0.0' N	47° 0.0' W	1053	5021	5012	* DEEP NANSEN
3	29	9	18 SEP 72	PMP	36° 0.0' N	47° 0.0' W	1224		250	* SURFACE PUMP, C-14, RA-228
3	29	10	18 SEP 72	ROS	35° 56.0' N	47° 0.0' W	1724		503	* SURFACE SINGLE ROSETTE, RADON
3	29	11	18 SEP 72	GER	35° 55.0' N	47° 0.0' W	1939	4813	4639	* INTERMEDIATE GERARD, C-14
3	29	12	18 SEP 72	ESS	35° 54.7' N	47° 0.5' W	2130		0	* ESSO, BUCKET
3	30	1	20 SEP 72	ROS	31° 48.0' N	50° 46.0' W	0422	5850	5831	* BOTTOM SINGLE ROSETTE, RADON
3	30	2	20 SEP 72	NAN	31° 48.0' N	50° 45.4' W	0619		77	* SURFACE NANSEN
3	30	3	20 SEP 72	NAN	31° 48.0' N	50° 44.0' W	0658		1506	* SHALLOW NANSEN
3	30	4	20 SEP 72	ROS	31° 48.0' N	50° 43.5' W	1015	5846	5787	* DEEP ROSETTE
3	30	5	20 SEP 72	NAN	31° 48.0' N	50° 42.6' W	1416	5828	5816	* DEEP NANSEN
3	30	6	20 SEP 72	SDT	31° 47.5' N	50° 47.5' W	1710			* SDT TEST (ABORTED)
3	30	7	20 SEP 72	ROS	31° 48.5' N	50° 46.5' W	1941		1403	* SHALLOW ROSETTE
3	30	8	20 SEP 72	ESS	31° 49.0' N	50° 46.0' W	2234		2954	* ESSO ROSETTE
3	30	9	21 SEP 72	ROS	31° 47.0' N	50° 43.0' W	0022		299	* SURFACE ROSETTE, RADON
3	30	10	21 SEP 72	ESS	31° 47.0' N	50° 43.0' W	0115		0	* ESSO, BUCKET
3	31	1	22 SEP 72	ROS	27° 0.0' N	53° 32.0' W	0755	6055	6037	* BOTTOM SINGLE ROSETTE, RADON
3	31	2	22 SEP 72	GER	27° 0.0' N	53° 34.0' W	1138	5590	5508	* DEEP GERARD, C-14
3	31	3	22 SEP 72	ROS	27° 0.3' N	53° 30.0' W	1705		5510	* DEEP ROSETTE
3	31	4	22 SEP 72	GER	27° 0.5' N	53° 30.6' W	2022		2882	* INTERMEDIATE GERARD, C-14
3	31	5	22 SEP 72	NAN	27° 0.6' N	53° 31.0' W	2319	6035	5975	* DEEP NANSEN
3	31	6	23 SEP 72	ROS	27° 0.0' N	53° 31.0' W	0316	6039	6012	* SHALLOW ROSETTE, RADON
3	31	7	23 SEP 72	NAN	27° 0.0' N	53° 31.0' W	0558		82	* SURFACE NANSEN
3	31	8	23 SEP 72	NAN	26° 59.6' N	53° 30.7' W	0632		1507	* SHALLOW NANSEN
3	31	9	23 SEP 72	PMP	26° 59.5' N	53° 30.7' W	0758		320	* SURFACE PUMP, C-14, RA-228
3	31	10	23 SEP 72	GER	27° 0.0' N	53° 31.0' W	1204		1261	* SHALLOW GERARD, C-14
3	31	11	23 SEP 72	ESS	26° 59.6' N	53° 31.1' W	1305		0	* ESSO, BUCKET
3	32	1	24 SEP 72	ROS	23° 50.5' N	53° 59.5' W	0834	5847	5834	* BOTTOM SINGLE ROSETTE, RADON
3	32	2	24 SEP 72	NAN	23° 51.0' N	53° 59.0' W	1052		93	* SURFACE NANSEN
3	32	3	24 SEP 72	NAN	23° 51.0' N	53° 59.0' W	1129		1662	* SHALLOW NANSEN
3	32	4	24 SEP 72	ROS	23° 51.0' N	54° 1.0' W	1451	5730	5651	* DEEP ROSETTE
3	32	5	24 SEP 72	NAN	23° 51.0' N	54° 0.4' W	1906	5720	5666	* DEEP NANSEN
3	32	6	24 SEP 72	ROS	23° 51.0' N	53° 59.7' W	2156		1801	* SHALLOW ROSETTE
3	32	7	25 SEP 72	ROS	23° 52.0' N	54° 2.4' W	1659		76	* SURFACE SINGLE ROSETTE, RADON
3	32	8	25 SEP 72	GER	23° 49.7' N	54° 0.0' W	0158	5795	5737	* DEEP GERARD A, RA-228
3	32	9	25 SEP 72	GER	23° 50.0' N	54° 1.2' W	0604		5327	* DEEP GERARD B, RA-228
3	32	10	25 SEP 72	GER	23° 51.0' N	54° 2.2' W	0925		4916	* DEEP GERARD C, RA-228
3	32	11	25 SEP 72	GER	23° 51.0' N	54° 2.0' W	1300		4516	* DEEP GERARD D, RA-228
3	32	12	25 SEP 72	ESS	23° 52.0' N	54° 2.0' W	1725		0	* ESSO, BUCKET
3	33	1	26 SEP 72	ROS	21° 0.0' N	54° 0.0' W	1033	5241	5223	* BOTTOM SINGLE ROSETTE, RADON
3	33	2	26 SEP 72	GER	21° 0.0' N	54° 0.0' W	1345	5232	5191	* DEEP GERARD, C-14
3	33	3	26 SEP 72	ROS	20° 59.0' N	54° 2.0' W	1715	5098	4992	* DEEP ROSETTE
3	33	4	26 SEP 72	GER	20° 59.6' N	54° 2.0' W	2032		2238	* INTERMEDIATE GERARD, C-14
3	33	5	26 SEP 72	NAN	21° 0.0' N	54° 2.0' W	2156		118	* SURFACE NANSEN
3	33	6	26 SEP 72	NAN	21° 0.7' N	54° 3.0' W	2249		1713	* SHALLOW NANSEN
3	33	7	27 SEP 72	ROS	21° 0.7' N	54° 4.0' W	0053		1611	* SHALLOW ROSETTE
3	33	8	27 SEP 72	NAN	21° 0.0' N	53° 59.0' W	0404	5195	5183	* DEEP NANSEN
3	33	9	27 SEP 72	PMP	21° 0.6' N	53° 59.4' W	0603		320	* SURFACE PUMP, RA-228
3	33	10	27 SEP 72	GER	21° 0.8' N	53° 59.7' W	0952		763	* SHALLOW GERARD, C-14
3	33	11	27 SEP 72	PMP	21° 0.8' N	53° 59.7' W	1050		320	* SURFACE PUMP, C-14
3	34	1	28 SEP 72	GER	18° 1.0' N	54° 0.4' W	0719	4741	4687	* SHALLOW GERARD A, RA-228
3	34	2	28 SEP 72	GER	17° 59.0' N	54° 1.0' W	1032		4091	* SHALLOW GERARD B, RA-228
3	34	3	28 SEP 72	GER	17° 59.3' N	54° 1.0' W	1333	4581	3473	* SHALLOW GERARD C, RA-228
3	34	4	28 SEP 72	GER	18° 1.0' N	54° 0.0' W	1805		2484	* SHALLOW GERARD D, RA-228
3	34	5	28 SEP 72	ROS	18° 1.0' N	53° 59.0' W	2131	4724	4704	* BOTTOM ROSETTE, RADON
3	34	6	28 SEP 72	NAN	18° 1.5' N	53° 58.0' W	2322		89	* SURFACE NANSEN
3	34	7	29 SEP 72	NAN	18° 0.0' N	53° 58.0' W	0026		1410	* SHALLOW NANSEN
3	34	8	29 SEP 72	ROS	18° 2.0' N	53° 58.0' W	0305	4731	4691	* DEEP ROSETTE
3	34	9	29 SEP 72	NAN	18° 2.4' N	53° 57.6' W	0603	4716	4711	* DEEP NANSEN
3	34	10	29 SEP 72	ROS	18° 2.0' N	53° 57.0' W	0810		1497	* SHALLOW ROSETTE
3	34	11	29 SEP 72	ESS	18° 2.0' N	53° 56.0' W	1124		3500	* ESSO ROSETTE
3	34	12	29 SEP 72	ROS	18° 2.0' N	53° 57.0' W	1401		98	* SURFACE ROSETTE, RADON
3	34	13	29 SEP 72	GER	18° 3.0' N	53° 57.5' W	1551		2896	* SHALLOW GERARD (REPEAT)

STATION AND CAST DESCRIPTION

GEOSECS ATLANTIC R/V KNORR

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
3	34	14	28 SEP 72	NAN	18° 1.5' N	53° 58.0' W	2350		177	* SURFACE NANSEN
3	34	15	29 SEP 72	ESS	18° 4.7' N	53° 57.3' W	1710		0	* ESSO, BUCKET
3	35	1	1 OCT 72	SDT	13° 1.0' N	58° 0.5' W	0400			* SDT (MALFUNCTION)
3	35	2	1 OCT 72	NAN	13° 2.0' N	58° 1.0' W	0458	3149		* NANSEN (Q TEST)
3	35	3	1 OCT 72	PMP	13° 2.0' N	58° 1.0' W	0455		250	* SURFACE PUMP, RA-228
3	35	4	1 OCT 72	SDT	13° 2.5' N	58° 1.0' W	0640			* SDT (TEST)
3	35	5	1 OCT 72	NAN	13° 2.2' N	58° 1.6' W	0852	3168		* NANSEN (Q TEST)
4	36	1	11 OCT 72	ROS	15° 0.0' N	53° 56.5' W	1034	5449	5439	* BOTTOM SINGLE ROSETTE, RADON
4	36	2	11 OCT 72	NAN	15° 1.5' N	53° 56.5' W	1330		1205	* SHALLOW NANSEN
4	36	3	11 OCT 72	PMP	15° 2.0' N	53° 57.0' W	1516		300	* SURFACE PUMP, RA-228
4	36	4	11 OCT 72	ROS	15° 1.4' N	53° 58.0' W	2016	5440	1607	* SHALLOW ROSETTE
4	36	5	11 OCT 72	NAN	15° 2.0' N	53° 58.5' W	2330	5440	5395	* DEEP NANSEN
4	36	6	12 OCT 72	ROS	14° 59.5' N	53° 58.2' W	0348		100	* SURFACE RADON
4	36	7	12 OCT 72	ROS	14° 59.3' N	53° 57.0' W	1003	5440	4007	* DEEP ROSETTE
4	37	1	13 OCT 72	ROS	12° 1.8' N	50° 59.8' W	1140	5073	5065	* BOTTOM SINGLE ROSETTE, RADON
4	37	2	13 OCT 72	GER	12° 2.3' N	51° 0.8' W	1550	5044	5014	* DEEP GERARD, C-14
4	37	3	13 OCT 72	ROS	11° 59.5' N	51° 0.6' W	1926	5039	5021	* DEEP ROSETTE
4	37	4	14 OCT 72	NAN	12° 1.1' N	51° 1.0' W	0059	5043	5023	* DEEP NANSEN
4	37	5	14 OCT 72	GER	12° 1.1' N	51° 1.2' W	0330		1983	* INTERMEDIATE GERARD, C-14
4	37	6	14 OCT 72	ROS	12° 1.2' N	51° 2.0' W	0706	5050	1848	* SHALLOW ROSETTE
4	37	7	14 OCT 72	NAN	12° 1.5' N	51° 2.0' W	1047	5046	1201	* SHALLOW NANSEN
4	37	8	14 OCT 72	PMP	12° 2.4' N	51° 2.2' W	1506		320	* SURFACE PUMP, C-14, RA-228
4	37	9	14 OCT 72	BAG	12° 2.5' N	51° 2.5' W	1545			* SI-32 BAG (ABORTED)
4	37	10	14 OCT 72	GER	12° 3.0' N	51° 3.0' W	2007	5031	712	* SHALLOW GERARD, C-14
4	38	1	15 OCT 72	SDT	9° 45.4' N	47° 10.5' W	2353	4834	4827	* SDT W/11 CHECK SAMPLES, RADON
4	38	2	16 OCT 72	NAN	9° 45.4' N	47° 12.0' W	0400	4824		* DEEP NANSEN (ABORTED)
4	38	3	16 OCT 72	PMP	9° 45.5' N	47° 11.5' W	0323		5	* BOW PUMP, RA-228
4	39	1	17 OCT 72	ROS	7° 57.5' N	43° 51.3' W	0212	4793	4724	* DEEP ROSETTE
4	39	2	17 OCT 72	NAN	7° 57.5' N	43° 51.3' W	0502		1199	* SHALLOW NANSEN
4	39	3	17 OCT 72	ROS	7° 57.6' N	43° 51.8' W	0832	4797	4788	* BOTTOM ROSETTE, RADON
4	39	4	17 OCT 72	NAN	7° 54.6' N	43° 50.0' W	1423	4781	4766	* DEEP NANSEN
4	39	5	17 OCT 72	ROS	7° 55.2' N	43° 50.5' W	1739	4777	1688	* SHALLOW ROSETTE
4	39	6	17 OCT 72	NIS	7° 55.0' N	43° 51.0' W	2011	4777	100	* SURFACE RADON
4	40	1	19 OCT 72	ROS	3° 56.8' N	38° 31.0' W	0848	4273	4243	* DEEP ROSETTE
4	40	2	19 OCT 72	GER	3° 55.6' N	38° 30.0' W	1236	4323	3467	* DEEP GERARD, C-14
4	40	3	19 OCT 72	GER	3° 54.5' N	38° 30.0' W	1429	4323	4170	* DEEP GERARD, C-14 (REPEAT)
4	40	4	19 OCT 72	NAN	3° 54.2' N	38° 29.5' W	1718	4325	4316	* DEEP NANSEN
4	40	5	19 OCT 72	GER	3° 54.0' N	38° 31.5' W	2115		1685	* INTERMEDIATE GERARD, C-14
4	40	6	20 OCT 72	NAN	3° 53.5' N	38° 32.7' W	0006	4637	1184	* SHALLOW NANSEN
4	40	7	20 OCT 72	ROS	3° 53.0' N	38° 32.0' W	0159	4824	1346	* SHALLOW ROSETTE
4	40	8	20 OCT 72	PMP	3° 51.5' N	38° 31.0' W	0456		300	* SURFACE PUMP, C-14, RA-228
4	40	9	20 OCT 72	NIS	3° 47.0' N	38° 27.0 W	0823	4199	200	* SURFACE RADON
4	40	10	20 OCT 72	GER	3° 47.0' N	38° 27.0' W	1033	4199	685	* SHALLOW GERARD, C-14
4	41	1	21 OCT 72	SDT	2° 0.0' N	37° 21.6' W	0011	4368	4343	* SDT W/10 CHECK SAMPLES, RADON
4	41	2	21 OCT 72	NIS	1° 59.7' N	37° 21.6' W	0238	4359	225	* SURFACE RADON
4	42	1	21 OCT 72	ROS	0° 58.0' N	37° 4.0' W	1207	4535	4499	* DEEP ROSETTE
4	42	2	21 OCT 72	NAN	0° 58.3' N	37° 3.5' W	1605	4524	4513	* DEEP NANSEN
4	42	3	21 OCT 72	ROS	0° 58.3' N	37° 3.5' W	1847	4534	4526	* BOTTOM SINGLE ROSETTE, RADON
4	42	4	21 OCT 72	NAN	0° 58.0' N	37° 3.0' W	2111	4522	1207	* SHALLOW NANSEN
4	42	5	21 OCT 72	ROS	0° 58.0' N	37° 3.0' W	2314	4522	1563	* SHALLOW ROSETTE
4	42	6	22 OCT 72	NIS	0° 57.8' N	37° 3.1' W	0115		120	* SURFACE RADON
4	42	7	22 OCT 72	PMP	0° 57.8' N	37° 3.1' W	0120		5	* BOW PUMP, RA-228
4	43	1	22 OCT 72	SDT	0° 31.6' N	36° 31.0' W	0756	4536	4528	* SDT W/10 CHECK SAMPLES
4	44	1	22 OCT 72	SDT	0° 1.0' N	35° 58.6' W	1546	4534	4525	* SDT W/10 CHECK SAMPLES
4	44	2	22 OCT 72	PMP	0° 1.0' N	35° 58.6' W	1505		5	* BOW PUMP, RA-228

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
4	45	1	23 OCT 72	SDT	0° 30.3' S	34° 59.8' W	0148	4499	4491	* SDT W/10 CHECK SAMPLES
4	45	2	23 OCT 72	PMP	0° 30.3' S	34° 59.8' W	0215		5	* BOW PUMP, RA-228
4	46	1	23 OCT 72	ROS	0° 59.3' S	34° 2.2' W	1151	4440	4425	* DEEP ROSETTE
4	46	2	23 OCT 72	NAN	0° 59.5' S	34° 2.3' W	1552	4436	4424	* DEEP NANSEN
4	46	3	23 OCT 72	ROS	0° 59.7' S	34° 2.2' W	1815	4444	4436	* BOTTOM SINGLE ROSETTE, RADON
4	46	4	23 OCT 72	NAN	0° 59.8' S	34° 1.5' W	2022	4357	1198	* SHALLOW NANSEN
4	46	5	23 OCT 72	ROS	0° 59.9' S	34° 0.5' W	2227	4306	1363	* SHALLOW ROSETTE
4	46	6	24 OCT 72	NIS	0° 59.5' S	34° 0.1' W	0112	4306	300	* SURFACE RADON
4	47	1	24 OCT 72	SDT	1° 58.4' S	32° 31.8' W	1345	4506	4498	* SDT W/10 CHECK SAMPLES
4	48	1	25 OCT 72	ROS	4° 0.0' S	29° 0.0' W	2103	5079	5073	* DEEP ROSETTE
4	48	2	26 OCT 72	GER	3° 59.9' S	28° 59.0' W	0142	5063	5040	* DEEP GERARD,C-14,PB-210,RADON
4	48	3	26 OCT 72	NAN	3° 59.5' S	28° 58.5' W	0520	5067	5059	* DEEP NANSEN
4	48	4	26 OCT 72	GER	4° 0.0' S	28° 57.0' W	1031	5063	2652	* INT. GERARD,C-14,PB-210,RADON
4	48	5	26 OCT 72	NAN	3° 58.8' S	29° 0.2' W	1505	5069	1200	* SHALLOW NANSEN
4	48	6	26 OCT 72	PMP	3° 58.7' S	28° 58.0' W	1753		350	* SURFACE PUMP, C-14, RA-228
4	48	7	27 OCT 72	BAG	4° 0.7' S	28° 57.1' W	0221	5070	4479	* SI-32 BAG
4	48	8	27 OCT 72	NIS	3° 58.5' S	29° 2.2' W	1600		250	* SURFACE RADON
4	48	9	27 OCT 72	ROS	3° 59.0' S	29° 1.0 W	1747	5032	1446	* SHALLOW ROSETTE
4	48	10	28 OCT 72	ROS	3° 58.8' S	29° 4.0' W	0053	5038	5031	* BOTTOM ROSETTE, RADON
4	48	11	27 OCT 72	GER	3° 58.4' S	28° 59.7' W	2014	5028	990	* SHALLOW GERARD, C-14, PB-210
4	49	1	29 OCT 72	ROS	7° 56.0' S	28° 12.0' W	0405	5536	5518	* DEEP ROSETTE
4	49	2	29 OCT 72	GER	7° 55.0' S	28° 10.8' W	0830	4983	4995	* DEEP GERARD, C-14, PB-210
4	49	3	29 OCT 72	GER	7° 55.3' S	28° 13.0' W	1249		2087	* INTERMEDIATE GERARD, C-14
4	49	4	29 OCT 72	NIS	7° 55.4' S	28° 13.4' W	1425	5574	250	* SURFACE RADON
4	49	5	29 OCT 72	ROS	7° 55.5' S	28° 14.5' W	1553		1403	* SHALLOW ROSETTE
4	49	6	29 OCT 72	PMP	7° 55.8' S	28° 14.6' W	1748		105	* SURFACE PUMP, RA-228
4	49	7	29 OCT 72	GER	7° 55.8' S	28° 14.6' W	1949	5590	742	* SHALLOW GERARD, C-14
5	50	1	5 NOV 72	ROS	8° 26.0' S	34° 11.0' W	0130	1859	1839	* DEEP SINGLE ROSETTE
5	50	2	5 NOV 72	NIS	8° 25.4' S	34° 10.0' W	0259		200	* SURFACE RADON
5	51	1	5 NOV 72	ROS	8° 38.0' S	33° 47.0' W	0751	3336	3307	* DEEP SINGLE ROSETTE
5	51	2	5 NOV 72	PMP	8° 38.0' S	33° 47.0' W	0615		5	* BOW PUMP, RA-228
5	52	1	5 NOV 72	ROS	8° 54.8' S	33° 17.6' W	1355	4776	4719	* DEEP SINGLE ROSETTE
5	52	2	5 NOV 72	NIS	8° 54.8' S	33° 17.4' W	1617		120	* SURFACE RADON
5	53	1	7 NOV 72	NIS	11° 59.0' S	27° 59.0' W	0430	5495	100	* SURFACE RADON
5	53	2	7 NOV 72	ROS	11° 57.7' S	27° 58.7' W	0701	5537	5531	* DEEP ROSETTE, RADON
5	53	3	7 NOV 72	NAN	11° 57.0' S	27° 58.0' W	1002	5496	1204	* SHALLOW NANSEN
5	53	4	7 NOV 72	SAT	12° 0.0' S	28° 1.0' W	1315	5525	808	* SATUROMETER
5	53	5	7 NOV 72	ROS	11° 59.7' S	28° 1.0' W	1431	5525	1699	* SHALLOW ROSETTE
5	53	6	7 NOV 72	NAN	11° 59.6' S	28° 1.0' W	1710	5533	5206	* DEEP NANSEN
5	53	7	7 NOV 72	ROS	11° 59.0' S	28° 1.5' W	2038	5531	5525	* BOTTOM SINGLE ROSETTE, RADON
5	54	1	8 NOV 72	SAT	15° 3.3' S	29° 31.2' W	2025		804	* SATUROMETER
5	54	2	8 NOV 72	ROS	15° 2.5' S	29° 32.0' W	2246	5102	5087	* DEEP ROSETTE
5	54	3	9 NOV 72	GER	15° 0.7' S	29° 32.0' W	0326	5053	5034	* DEEP GERARD, C-14
5	54	4	9 NOV 72	NAN	15° 0.0' S	29° 32.0' W	0641	5168	5158	* DEEP NANSEN
5	54	5	9 NOV 72	ROS	15° 2.5' S	29° 31.0' W	1101		1698	* SHALLOW ROSETTE
5	54	6	9 NOV 72	GER	15° 2.5' S	29° 31.0' W	1346		2739	* INTERMEDIATE GERARD, C-14
5	54	7	9 NOV 72	NAN	15° 2.0' S	29° 30.5' W	1557		1201	* SHALLOW NANSEN
5	54	8	9 NOV 72	ROS	15° 1.2' S	29° 30.5' W	1918	5091	5081	* BOTTOM SINGLE ROSETTE, RADON
5	54	9	9 NOV 72	NIS	15° 1.0' S	29° 30.5' W	2021	5028	70	* SURFACE RADON
5	54	10	9 NOV 72	GER	15° 0.8' S	29° 30.7' W	2248	5093	1036	* SHALLOW GERARD, C-14
5	54	11	10 NOV 72	PMP	15° 0.7' S	29° 30.7' W	0000	300		* SURFACE PUMP, C-14, RA-228
5	54	12	9 NOV 72	SPE	15° 2.0' S	29° 31.0' W	1600		14	* LANGMUIR CELL STUDY
5	55	1	11 NOV 72	ROS	18° 0.0' S	31° 0.5' W	0132	4694	4685	* DEEP ROSETTE, RADON
5	55	2	11 NOV 72	SAT	18° 0.0' S	31° 1.8' W	0845	4693	4643	* SATUROMETER
5	55	3	11 NOV 72	ROS	17° 59.5' S	31° 2.0' W	1123	4693	1697	* SHALLOW ROSETTE

STATION AND CAST DESCRIPTION

GEOSECS ATLANTIC **R/V KNORR**

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
5	55	4	11 NOV 72	NIS	17° 59.0' S	31° 1.5' W	1324		50	* SURFACE RADON
5	55	5	11 NOV 72	NAN	17° 58.6' S	31° 1.5' W	1423		1204	* SHALLOW NANSEN
5	55	6	11 NOV 72	NAN	17° 58.7' S	31° 1.5' W	1616	4714	4685	* DEEP NANSEN
5	55	7	11 NOV 72	ROS	17° 58.5' S	31° 2.0' W	1912	4718	4703	* BOTTOM ROSETTE, RADON
5	55	8	11 NOV 72	ESS	18° 0.2' S	31° 3.0' W	2255		3485	* ESSO ROSETTE
5	55	9	11 NOV 72	PMP	17° 58.5' S	31° 2.5' W	1850		5	* BOW PUMP, RA-228
5	55	10	12 NOV 72	ESS	18° 0.6' S	31° 2.5' W	0012		0	* ESSO, BUCKET
5	56	1	12 NOV 72	ROS	21° 0.5' S	33° 0.0' W	2219	4323	4312	* DEEP ROSETTE
5	56	2	13 NOV 72	GER	21° 1.0' S	33° 0.0' W	0205	4311	4277	* DEEP GERARD, C-14
5	56	3	13 NOV 72	NAN	21° 1.7' S	32° 59.7' W	0426	4313	1202	* SHALLOW NANSEN
5	56	4	13 NOV 72	NAN	21° 2.0' S	32° 59.7' W	0552	4313	4301	* DEEP NANSEN
5	56	5	13 NOV 72	ROS	21° 2.0' S	33° 0.3' W	0824	4311	1393	* SHALLOW ROSETTE
5	56	6	13 NOV 72	GER	21° 1.0' S	33° 0.7' W	1045	4308	2370	* INTERMEDIATE GERARD, C-14
5	56	7	13 NOV 72	ROS	20° 59.2' S	33° 0.0' W	1430	4322	4315	* BOTTOM ROSETTE, RADON
5	56	8	13 NOV 72	GER	20° 59.2' S	32° 59.8' W	1722	4311	1087	* SHALLOW GERARD, C-14
5	56	9	13 NOV 72	PMP	20° 59.1' S	32° 59.6' W	1909		230	* SURFACE PUMP, C-14, RA-228
5	57	1	15 NOV 72	SAT	23° 59.1' S	35° 1.3' W	0007	4225	2824	* SATUROMETER
5	57	2	15 NOV 72	ROS	23° 59.3' S	35° 0.0' W	0350	4234	4225	* DEEP ROSETTE, RADON
5	57	3	15 NOV 72	NIS	23° 58.7' S	35° 0.0' W	0611	4225	80	* SURFACE RADON
5	57	4	15 NOV 72	NAN	23° 58.6' S	35° 0.0' W	0651		1204	* SHALLOW NANSEN
5	57	5	15 NOV 72	NAN	23° 58.0' S	35° 1.0' W	0814	4212	4207	* DEEP NANSEN
5	57	6	15 NOV 72	ROS	23° 58.0' S	35° 0.3' W	1013	4224	1196	* SHALLOW ROSETTE
5	57	7	15 NOV 72	SAT	23° 56.1' S	35° 2.1' W	1545	4234	318	* SATUROMETER
5	57	8	15 NOV 72	ROS	23° 55.5' S	35° 3.0' W	1811	4236	4221	* BOTTOM SINGLE ROSETTE, RADON
5	57	9	15 NOV 72	PMP	23° 58.0' S	35° 0.0' W	1050		5	* BOW PUMP, RA-228
5	57	10	15 NOV 72	ESS	23° 55.5' S	35° 2.6' W	1930		0	* ESSO, BUCKET
5	58	1	16 NOV 72	ROS	27° 0.0' S	37° 1.4' W	1731	4592	4582	* BOTTOM SINGLE ROSETTE, RADON
5	58	2	16 NOV 72	PMP	27° 0.0' S	37° 2.0' W	2030		340	* SURFACE PUMP, C-14, RA-228
5	58	3	17 NOV 72	GER	26° 59.0' S	37° 2.0' W	0018		514	* SHALLOW GERARD A, RA-228
5	58	4	17 NOV 72	BAG	27° 0.4' S	37° 1.4' W	0607	4583	4464	* SI-32 BAG
5	58	5	17 NOV 72	GER	27° 1.0' S	36° 58.0' W	1811	4594	583	* SHALLOW GERARD, C-14
5	58	6	17 NOV 72	ROS	27° 0.0' S	37° 0.0' W	2145		4580	* DEEP ROSETTE
5	58	7	18 NOV 72	GER	26° 59.5' S	37° 0.0' W	0056		1102	* SHALLOW GERARD, C-14, RA-228
5	58	8	18 NOV 72	NIS	26° 59.0' S	36° 59.0' W	0220		100	* SURFACE RADON
5	58	9	18 NOV 72	ROS	27° 0.0' S	37° 1.0' W	0711		1156	* SHALLOW ROSETTE
5	58	10	18 NOV 72	NAN	26° 59.0' S	36° 59.0' W	0307	1203		* SHALLOW NANSEN
5	58	11	18 NOV 72	NAN	26° 59.0' S	36° 59.0' W	0449	4586	4563	* DEEP NANSEN
5	58	12	18 NOV 72	GER	27° 0.0' S	37° 1.0' W	0928	4594	2177	* INTERMEDIATE GERARD, C-14
5	58	13	18 NOV 72	GER	27° 0.0' S	37° 3.0' W	1234		4567	* SHALLOW GERARD B, RA-228
5	58	14	18 NOV 72	GER	27° 0.0' S	37° 3.0' W	1659		4170	* SHALLOW GERARD C, RA-228
5	58	15	18 NOV 72	GER	27° 0.0' S	37° 2.0' W	2125	4602	3564	* SHALLOW GERARD D, RA-228
5	58	16	19 NOV 72	GER	27° 0.0' S	37° 2.0' W	0125	4586	4491	* DEEP GERARD, C-14
5	58	17	18 NOV 72	SPE	27° 0.0' S	37° 3.0' W	1600		14	* LANGMUIR CELL STUDY
5	59	1	20 NOV 72	ROS	30° 12.5' S	39° 18.0' W	0335	4826	4805	* DEEP ROSETTE, RADON
5	59	2	20 NOV 72	NIS	30° 12.0' S	39° 24.0' W	0619		120	* SURFACE RADON
5	59	3	20 NOV 72	SAT	30° 10.5' S	39° 30.0' W	1304		3021	* SATUROMETER
5	59	4	20 NOV 72	ROS	30° 10.5' S	39° 23.0' W	1635	4816	1492	* SHALLOW ROSETTE
5	59	5	20 NOV 72	NAN	30° 10.0' S	39° 24.0' W	1836	4825	1202	* SHALLOW NANSEN
5	59	6	20 NOV 72	NAN	30° 10.0' S	39° 24.0' W	2007	4779	4759	* DEEP NANSEN
5	59	7	20 NOV 72	ROS	30° 12.0' S	39° 24.0' W	2329	4827	4800	* BOTTOM SINGLE ROSETTE, RADON
5	59	8	21 NOV 72	ESS	30° 12.0' S	39° 24.0' W	0249	4818	3510	* ESSO ROSETTE
5	59	9	21 NOV 72	SAT	30° 12.0' S	39° 25.0' W	0745	4827	3026	* SATUROMETER
5	59	10	20 NOV 72	PMP	30° 10.5' S	39° 22.5' W	1735		5	* BOW PUMP, RA-228
5	59	11	21 NOV 72	ESS	30° 12.1' S	39° 25.6' W	0850		0	* ESSO, BUCKET
5	60	1	22 NOV 72	ROS	32° 58.0' S	42° 30.5' W	1510	4425	4415	* DEEP ROSETTE
5	60	2	22 NOV 72	NIS	32° 57.0' S	42° 32.0' W	1720		75	* SURFACE RADON
5	60	3	22 NOV 72	GER	32° 56.4' S	42° 31.0' W	1911	4402	4358	* DEEP GERARD, C-14
5	60	4	22 NOV 72	ROS	32° 57.0' S	42° 31.0' W	2150		1486	* SHALLOW ROSETTE
5	60	5	23 NOV 72	NAN	32° 58.0' S	42° 31.0' W	0001	4398	1205	* SHALLOW NANSEN
5	60	6	23 NOV 72	NAN	32° 58.0' S	42° 30.0' W	0242	4415	4380	* DEEP NANSEN
5	60	7	23 NOV 72	GER	32° 57.0' S	42° 29.0' W	0527	4401	2584	* INTERMEDIATE GERARD, C-14
5	60	8	23 NOV 72	ROS	32° 57.0' S	42° 28.0' W	0810	4416	4406	* BOTTOM SINGLE ROSETTE, RADON
5	60	9	23 NOV 72	GER	32° 56.4' S	42° 28.0' W	1013	4396	892	* SHALLOW GERARD, C-14
5	60	10	23 NOV 72	PMP	32° 56.4' S	42° 28.0' W	1215		350	* SURFACE PUMP, C-14, RA-228
5	61	1	24 NOV 72	ROS	36° 0.0' S	45° 0.0' W	1622	4943	4924	* DEEP ROSETTE, RADON
5	61	2	24 NOV 72	NIS	36° 0.0' S	45° 0.0' W	1650	4732	90	* SURFACE RADON
5	61	3	24 NOV 72	NAN	36° 0.0' S	44° 58.9' W	1910	4924	1204	* SHALLOW NANSEN
5	61	4	24 NOV 72	NAN	36° 0.0' S	44° 58.0' W	2331	4916	4892	* DEEP NANSEN, SATUROMETER LOST
5	61	5	25 NOV 72	ROS	36° 0.4' S	44° 55.0' W	0412		1309	* SHALLOW ROSETTE
5	61	6	25 NOV 72	GER	36° 1.0' S	44° 55.0' W	0703	4930	4897	* SHALLOW GERARD A, RA-228
5	61	7	25 NOV 72	GER	36° 1.0' S	44° 59.0' W	1050	4933	4226	* SHALLOW GERARD B, RA-228
5	61	8	25 NOV 72	ROS	36° 1.0' S	44° 59.4' W	1415	4934	4926	* BOTTOM SINGLE ROSETTE, RADON
5	61	9	24 NOV 72	PMP	36° 0.1' S	44° 59.9' W	1625		3	* BOW PUMP, RA-228
6	62	1	4 DEC 72	SDT	36° 40.0' S	52° 55.0' W	0149	2619		* SDT (ABORTED)
6	63	1	4 DEC 72	ROS	37° 14.5' S	52° 0.0' W	1213	3908	3872	* BOTTOM ROSETTE, RADON
6	64	1	5 DEC 72	NAN	39° 3.5' S	48° 33.0' W	1554	5343	5301	* DEEP NANSEN
6	64	2	5 DEC 72	PMP	39° 6.5' S	48° 31.0' W	1755			* SURFACE PUMP (ABORTED)
6	64	3	5 DEC 72	NAN	39° 8.0' S	48° 30.0' W	2059	5336	1191	* SHALLOW NANSEN
6	64	4	6 DEC 72	ROS	39° 5.0' S	48° 33.0' W	0035			* DEEP ROSETTE (ABORTED)
6	64	5	6 DEC 72	GER	39° 11.0' S	48° 34.0' W	0630	5341	2475	* DEEP GERARD, C-14
6	64	6	6 DEC 72	ROS	39° 8.0' S	48° 35.0' W	1100			* DEEP ROSETTE (ABORTED)
6	64	7	6 DEC 72	ROS	39° 11.0' S	48° 36.0' W	1514	5353	5313	* DEEP ROSETTL
6	64	8	6 DEC 72	GER	39° 9.0' S	48° 34.0' W	2009		1935	* INTERMEDIATE GERARD, C-14
6	64	9	6 DEC 72	ROS	39° 11.0' S	48° 32.0' W	2344		1612	* SHALLOW ROSETTE
6	64	10	7 DEC 72	GER	39° 14.0' S	48° 32.0' W	0349	5363	5195	* DEEP GERARD, C-14 (REPEAT)
6	64	11	7 DEC 72	ROS	39° 11.0' S	48° 35.5' W	0922	5350	5341	* BOTTOM ROSETTE, RADON
6	64	12	7 DEC 72	GER	39° 12.0' S	48° 33.0' W	1250		1012	* SHALLOW GERARD, C-14
6	65	1	7 DEC 72	SDT	40° 21.0' S	49° 42.0' W	2140			* SDT (ABORTED)
6	66	1	8 DEC 72	ROS	41° 32.5' S	50° 57.0' W	0951	5742	5719	* DEEP ROSETTE
6	66	2	8 DEC 72	NIS	41° 34.0' S	50° 54.0' W	1325		130	* SURFACE RADON
6	66	3	8 DEC 72	NAN	41° 34.0' S	50° 52.0' W	1420		945	* SHALLOW NANSEN
6	66	4	8 DEC 72	ROS	41° 31.0' S	50° 55.5' W	1655		1629	* SHALLOW ROSETTE
6	66	5	8 DEC 72	NAN	41° 32.0' S	50° 53.0' W	1956	5746	5673	* DEEP NANSEN
6	66	6	8 DEC 72	ROS	41° 33.0' S	50° 51.5' W	2331	5791	5785	* BOTTOM ROSETTE, RADON
6	67	1	9 DEC 72	ROS	44° 58.0' S	51° 3.5' W	2150	5813	5797	* DEEP ROSETTE
6	67	2	10 DEC 72	GER	44° 58.0' S	51° 6.0' W	0222	5812	5746	* DEEP GERARD, C-14
6	67	3	10 DEC 72	NAN	45° 0.0' S	51° 2.0' W	0558		1199	* SHALLOW NANSEN
6	67	4	10 DEC 72	ROS	44° 59.5' S	51° 5.0' W	0827		1589	* SHALLOW ROSETTE
6	67	5	10 DEC 72	GER	44° 58.5' S	51° 7.0' W	1110		1721	* INTERMEDIATE GERARD, C-14
6	67	6	10 DEC 72	NAN	44° 58.0' S	51° 10.0' W	1335	5830	5788	* DEEP NANSEN
6	67	7	10 DEC 72	ROS	44° 58.9' S	51° 0.6' W	1818	5824	5814	* BOTTOM ROSETTE, RADON
6	67	8	10 DEC 72	GER	44° 59.0' S	51° 2.7' W	2159		1870	* SHALLOW GERARD, C-14
6	67	9	11 DEC 72	PMP	44° 57.5' S	51° 5.0' W	0304		60	* SURFACE PUMP, C-14, RA-228
6	67	10	11 DEC 72	BAG	44° 57.0' S	51° 7.1' W	0400		5385	* SI-32 BAG
6	67	11	11 DEC 72	ESS	44° 57.0' S	51° 19.0' W	2215		0	* ESSO, BUCKET
6	68	1	13 DEC 72	ROS	48° 39.0' S	45° 59.2' W	0321	5970	5957	* DEEP ROSETTE
6	68	2	13 DEC 72	NAN	48° 38.5' S	45° 57.4' W	0620		1201	* SHALLOW NANSEN
6	68	3	13 DEC 72	GER	48° 38.7' S	45° 56.0' W	0855	5965	5897	* DEEP GERARD, C-14
6	68	4	13 DEC 72	NAN	48° 37.0' S	45° 56.5' W	1316	5942	4667	* DEEP NANSEN
6	68	5	13 DEC 72	ROS	48° 41.5' S	46° 0.5' W	1809		1532	* SHALLOW ROSETTE
6	68	6	13 DEC 72	GER	48° 43.0' S	45° 59.5' W	2207			* DEEP GERARD, RA-228 (ABORTED)
6	68	7	14 DEC 72	ROS	48° 43.0' S	45° 57.3' W	0246	5907	5897	* BOTTOM SINGLE ROSETTE, RADON
6	68	8	14 DEC 72	GER	48° 43.0' S	45° 56.0' W	0735			* SHALLOW GER, RA-228 (ABORTED)
6	68	9	14 DEC 72	GER	48° 40.5' S	45° 57.0' W	1134		530	* SHALLOW GERARD, C-14
6	68	10	14 DEC 72	GER	48° 40.5' S	45° 57.0' W	1244		62	* SHALLOW GERARD, C-14
6	68	11	14 DEC 72	NIS	48° 40.5' S	45° 58.5' W	1351		61	* SURFACE RADON
6	69	1	15 DEC 72	ROS	52° 31.0' S	46° 22.5' W	1838	3429	3424	* DEEP & BOTTOM ROSETTE, RADON
6	69	2	15 DEC 72	NAN	52° 32.5' S	46° 22.0' W	2120		902	* SHALLOW NANSEN

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
6	69	3	15 DEC 72	NAN	52° 33.5' S	46° 22.5' W	2218		3250	* DEEP NANSEN
6	69	4	16 DEC 72	ROS	52° 35.0' S	46° 22.5' W	0114		1396	* SHALLOW ROSETTE
6	69	5	16 DEC 72	NIS	52° 37.5' S	46° 23.0' W	0324		80	* SURFACE RADON
6	70	1	16 DEC 72	ROS	53° 3.5' S	47° 43.5' W	1223	2711	2675	* DEEP ROSETTE
6	71	1	16 DEC 72	ROS	53° 7.5' S	48° 24.0' W	1752	2950	2936	* DEEP ROSETTE
6	72	1	16 DEC 72	ROS	53° 4.0' S	48° 50.5' W	2234	3200	3149	* DEEP ROSETTE
6	73	1	17 DEC 72	ROS	53° 2.5' S	49° 31.5' W	0340	2676	2664	* DEEP SINGLE ROSETTE
6	73	2	17 DEC 72	GER	53° 1.0' S	49° 31.0' W	0545		637	* SHALLOW GERARD, C-14
6	74	1	17 DEC 72	ROS	55° 0.5' S	50° 4.5' W	1817	4134	4103	* DEEP ROSETTE
6	74	2	17 DEC 72	NIS	55° 0.0' S	50° 5.5' W	2105		40	* SURFACE RADON
6	74	3	17 DEC 72	GER	54° 59.0' S	50° 7.0' W	2319		3881	* DEEP GERARD, C-14
6	74	4	18 DEC 72	NAN	54° 58.5' S	50° 8.5' W	0220		906	* SHALLOW NANSEN
6	74	5	18 DEC 72	ROS	54° 58.5' S	50° 9.0' W	0446		987	* SHALLOW ROSETTE
6	74	6	18 DEC 72	NAN	54° 58.5' S	50° 14.5' W	0707	4147	4129	* DEEP NANSEN
6	74	7	18 DEC 72	GER	55° 1.0' S	50° 3.5' W	1102		777	* SHALLOW GERARD, C-14
6	74	8	18 DEC 72	ROS	55° 1.0' S	50° 2.5' W	1345	4063	4058	* BOTTOM ROSETTE, RADON
6	74	9	18 DEC 72	ESS	55° 1.5' S	50° 2.0' W	1632		1200	* ESSO ROSETTE
6	74	10	18 DEC 72	GER	55° 2.0' S	49° 58.0' W	2040		3980	* DEEP GERARD, RA-228
6	74	11	19 DEC 72	GER	55° 2.5' S	49° 53.5' W	0019		3294	* SHALLOW GERARD, RA-228
6	74	12	19 DEC 72	ESS	55° 2.6' S	49° 52.1' W	0200		0	* ESSO, BUCKET
6	75	1	20 DEC 72	ROS	56° 2.0' S	61° 2.0' W	1744	4153	4120	* DEEP ROSETTE
6	75	2	20 DEC 72	NAN	56° 4.0' S	61° 3.5' W	2010		728	* SHALLOW NANSEN
6	75	3	20 DEC 72	NAN	56° 5.0' S	61° 3.0' W	2136	4189	4180	* DEEP NANSEN
6	75	4	20 DEC 72	ROS	56° 6.0' S	61° 3.0' W	2330		997	* SHALLOW ROSETTE
7	76	1	31 DEC 72	ROS	57° 44.0' S	66° 8.0' W	1554	4598	4593	* BOTTOM ROSETTE, RADON
7	76	2	31 DEC 72	GER	57° 42.0' S	66° 12.0' W	2055	4602	4510	* DEEP GERARD, C-14
7	76	3	1 JAN 73	ROS	57° 43.0' S	66° 12.0' W	0110	4596	4490	* DEEP ROSETTE
7	76	4	1 JAN 73	NAN	57° 42.0' S	66° 14.7' W	0515			* DEEP NANSEN (PRETRIPPED)
7	76	5	1 JAN 73	GER	57° 42.0' S	66° 11.0' W	0900			* INT. GERARD,PB-210 (PRETRIP)
7	76	6	1 JAN 73	NAN	57° 43.5' S	66° 6.0' W	1220	3790	1200	* SHALLOW NANSEN
7	76	7	1 JAN 73	ROS	57° 44.0' S	66° 3.0' W	1425	3790	1198	* SHALLOW ROSETTE
7	76	8	1 JAN 73	GER	57° 43.0' S	66° 9.0' W	1830	3866	988	* INTERMEDIATE GERARD, C-14
7	76	9	1 JAN 73	NAN	57° 42.5' S	66° 5.5' W	2043	3942	3902	* DEEP NANSEN
7	76	10	1 JAN 73	GER	57° 42.8' S	66° 4.2' W	2322	3904	1401	* SHALLOW GERARD, C-14
7	76	11	1 JAN 73	PMP	57° 40.0' S	66° 4.0' W	2050		3	* BOW PUMP, C-14, RA-228
7	77	1	2 JAN 73	ROS	59° 39.5' S	64° 30.0' W	1403	3591	3549	* DEEP ROSETTE
7	77	2	2 JAN 73	PMP	59° 39.1' S	64° 29.9' W	1600		5	* BOW PUMP, C-14, RA-228
7	78	1	3 JAN 73	ROS	61° 3.0' S	62° 58.0' W	0323	3696	3615	* DEEP ROSETTE
7	78	2	3 JAN 73	NAN	61° 2.3' S	62° 56.5' W	0646	3713	3700	* DEEP NANSEN
7	78	3	3 JAN 73	GER	61° 1.5' S	62° 56.0' W	0928	3699	3478	* DEEP GERARD, C-14
7	78	4	3 JAN 73	NAN	61° 0.9' S	62° 56.0' W	1137	3680	1206	* SHALLOW NANSEN
7	78	5	3 JAN 73	ROS	61° 0.7' S	62° 59.0' W	1329	3672	1489	* SHALLOW ROSETTE
7	78	6	3 JAN 73	GER	61° 0.8' S	62° 59.3' W	1624	3678	889	* INTERMEDIATE GERARD, C-14
7	78	7	3 JAN 73	ROS	60° 59.0' S	63° 0.0' W	2039	3816	3805	* BOTTOM ROSETTE, RADON
7	78	8	3 JAN 73	GER	60° 58.0' S	62° 58.0' W	2343	3676	189	* SHALLOW GERARD, C-14
7	78	9	3 JAN 73	PMP	60° 58.5' S	62° 58.4' W	2220		3	* BOW PUMP, C-14, RA-228
7	79	1	6 JAN 73	ROS	59° 56.5' S	45° 2.0' W	1448	5027	1591	* SHALLOW ROSETTE
7	79	2	6 JAN 73	NAN	59° 56.0' S	44° 57.3' W	1700	5027	1200	* SHALLOW NANSEN
7	79	3	6 JAN 73	ROS	59° 56.5' S	44° 54.0' W	2026	4860	4845	* BOTTOM ROSETTE, RADON
7	79	4	7 JAN 73	NAN	59° 59.1' S	45° 9.9' W	0049	5377	5323	* DEEP NANSEN
7	79	5	7 JAN 73	ROS	59° 57.0' S	45° 8.0' W	0453	5182	5062	* DEEP ROSETTE
7	79	6	6 JAN 73	PMP	59° 56.2' S	44° 56.2' W	1810		5	* BOW PUMP, C-14, RA-228
7	80	1	10 JAN 73	ROS	57° 47.8' S	29° 44.3' W	0136	3391	3363	* DEEP ROSETTE
7	80	2	10 JAN 73	NIS	57° 48.0' S	29° 44.3' W	0359		98	* SURFACE RADON
7	80	3	10 JAN 73	PMP	57° 47.8' S	29° 44.5' W	0140		5	* BOW PUMP, C-14, RA-228

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
7	81	1	11 JAN 73	ROS	55° 58.7' S	26° 26.4' W	1117	4587	4482	* DEEP SINGLE ROSETTE
7	82	1	11 JAN 73	ROS	56° 15.7' S	24° 55.2' W	2315	7873		* WIRE PARTED, ROSETTE LOST
7	82	2	12 JAN 73	NAN	56° 14.7' S	24° 58.0' W	0955	7833	1645	* SHALLOW NANSEN
7	82	3	12 JAN 73	NAN	56° 15.0' S	24° 59.5' W	1806	7835	7025	* DEEP NANSEN
7	82	4	13 JAN 73	ROS	56° 17.0' S	24° 55.5' W	0518	7820	1776	* SHALLOW ROSETTE (MALFUNCTION)
7	82	5	13 JAN 73	GER	56° 15.6' S	24° 55.0' W	0823	7899	1585	* INTERMEDIATE GERARD, C-14
7	82	6	13 JAN 73	ROS	56° 15.7' S	24° 54.5' W	1058	7869	286	* SHALLOW ROSETTE (REPEAT)
7	82	7	13 JAN 73	GER	56° 16.0' S	24° 55.0' W	1515	7908	7808	* BOTTOM GERARD, C-14
7	82	8	14 JAN 73	ROS	56° 14.3' S	24° 50.5' W	0150	7771		* DEEP ROSETTE (ABORTED)
7	82	9	14 JAN 73	GER	56° 15.0' S	24° 49.0' W	0623	7899	4657	* DEEP GERARD, C-14
7	82	10	14 JAN 73	NAN	56° 15.4' S	24° 54.8' W	1007	7889	7693	* DEEP NANSEN
7	82	11	14 JAN 73	GER	56° 15.6' S	24° 55.5' W	1328	7885	395	* SHALLOW GERARD
7	82	12	14 JAN 73	ROS	56° 16.2' S	24° 56.0' W	1629	7885	96	* SURFACE RADON
7	82	13	14 JAN 73	ROS	56° 17.0' S	24° 58.2' W	2333			* DEEP SINGLE ROSETTE (ABORTED)
7	82	14	15 JAN 73	NIS	56° 18.3' S	24° 58.7' W	0657	7810	6509	* DEEP NISKIN
7	82	15	14 JAN 73	PMP	56° 14.7' S	24° 49.8' W	0440		3	* BOW PUMP, RA-228
7	83	1	17 JAN 73	ROS	56° 48.6' S	22° 22.0' W	0237	4702	1308	* SHALLOW ROSETTE
7	83	2	17 JAN 73	ROS	56° 49.3' S	22° 27.0' W	0947	4636	4602	* DEEP ROS, 14 NISKINS ON WIRE
7	83	3	17 JAN 73	PMP	56° 48.6' S	22° 22.4' W	0432		5	* BOW PUMP, C-14, RA-228
7	84	1	18 JAN 73	ROS	56° 55.4' S	19° 49.8' W	0123	5132	5097	* ROS TEST, 21 NISKINS ON WIRE
7	84	2	18 JAN 73	PMP	56° 55.4' S	19° 49.9' W	0114		5	* BOW PUMP, C-14, RA-228
7	85	1	18 JAN 73	NIS	57° 30.8' S	17° 23.1' W	1442		97	* SURFACE RADON
7	85	2	18 JAN 73	ROS	57° 32.0' S	17° 26.0' W	1709	4758	4722	* DEEP ROS, 11 NISKINS ON WIRE
7	85	3	18 JAN 73	ROS	57° 29.2' S	17° 22.7' W	2310		1296	* SHAL ROS, 5 NISKINS ON WIRE
7	85	4	18 JAN 73	PMP	57° 31.8' S	17° 26.7' W	1906		5	* BOW PUMP, C-14, RA-228
7	86	1	19 JAN 73	ROS	57° 52.0' S	14° 32.0' W	1349	4523	4472	* DEEP ROS, 11 NISKINS ON WIRE
7	86	2	19 JAN 73	PMP	57° 51.6' S	14° 32.0' W	1400		5	* BOW PUMP, C-14, RA-228
7	87	1	20 JAN 73	ROS	58° 38.0' S	9° 26.0' W	1237	4196	4178	* DEEP ROSETTE
7	87	2	20 JAN 73	PMP	58° 38.3' S	9° 25.9' W	1406		5	* BOW PUMP, C-14, RA-228
7	88	1	21 JAN 73	ROS	59° 20.0' S	4° 51.0' W	1028	5240		* DEEP ROSETTE (MALFUNCTION)
7	88	2	21 JAN 73	ROS	59° 22.3' S	4° 44.0' W	1855	5526	5497	* DEEP ROS, 12 NISKINS ON WIRE
7	88	3	21 JAN 73	PMP	59° 22.4' S	4° 42.8' W	1010		5	* BOW PUMP, C-14, RA-228
7	89	1	22 JAN 73	GER	60° 0.9' S	0° 2.0' E	1354	5296	5268	* DEEP GERARD, C-14, PB-210
7	89	2	22 JAN 73	ROS	60° 1.5' S	0° 1.5' E	1840	5363	5308	* DEEP ROS, 10 NISKINS ON WIRE
7	89	3	23 JAN 73	PMP	60° 2.4' S	0° 0.6' W	0500		175	* SURFACE PUMP, RA-228
7	89	4	23 JAN 73	ROS	60° 2.2' S	0° 0.2' E	0930		2096	* SHALLOW ROSETTE
7	89	5	23 JAN 73	GER	60° 1.4' S	0° 0.2' E	1345		4770	* INT. GERARD, C-14, PB-210
7	89	6	23 JAN 73	BAG	60° 0.0' S	0° 1.0' E	2010		4803	* SI-32 BAG
7	89	7	24 JAN 73	GER	59° 58.5' S	0° 7.6' W	1128		3550	* SHALLOW GERARD, C-14, PB-210
7	89	8	24 JAN 73	ROS	59° 58.1' S	0° 9.5' W	1413		82	* SURFACE ROSETTE, RADON
7	89	9	24 JAN 73	GER	59° 59.0' S	0° 1.0' W	1650		1792	* SURFACE GERARD, C-14, PB-210
7	89	10	24 JAN 73	ROS	59° 57.1' S	0° 4.6' W	2025	5367	5351	* BOTTOM ROSETTE, RADON
7	89	11	24 JAN 73	PMP	59° 57.1' S	0° 4.6' W	2020		3	* BOW PUMP, C-14
7	89	12	24 JAN 73	ESS	59° 56.3' S	0° 7.0' W	2340		0	* ESSO, BUCKET
7	90	1	26 JAN 73	ROS	56° 25.7' S	4° 30.7' E	0704	4339	4324	* DEEP ROSETTE
7	90	2	26 JAN 73	PMP	56° 25.0' S	4° 30.0' E	1040		176	* SURFACE PUMP, C-14, RA-228
7	90	3	26 JAN 73	ROS	56° 25.1' S	4° 27.0' E	1626		1969	* SHALLOW ROSETTE
7	91	1	29 JAN 73	ROS	49° 34.3' S	11° 28.0' E	0453	4192	4168	* DEEP ROSETTE
7	91	2	29 JAN 73	GER	49° 34.2' S	11° 30.8' E	1022	4115	4085	* DEEP GERARD, C-14
7	91	3	29 JAN 73	PMP	49° 34.5' S	11° 30.8' E	1220		175	* SURFACE PUMP, RA-228
7	91	4	29 JAN 73	ROS	49° 34.5' S	11° 33.0' E	1611		2002	* SHALLOW ROSETTE
7	91	5	29 JAN 73	GER	49° 35.2' S	11° 35.0' E	2005		2384	* INTERMEDIATE GERARD, C-14
7	91	6	29 JAN 73	ROS	49° 35.4' S	11° 36.3' E	2211		108	* SURFACE SINGLE ROSETTE, RADON
7	91	7	30 JAN 73	GER	49° 36.8' S	11° 37.8' E	0010		746	* SHALLOW GERARD, C-14
7	91	8	30 JAN 73	ESS	49° 37.1' S	11° 38.2' E	0035		0	* ESSO, BUCKET

STATION AND CAST DESCRIPTION

GEOSECS ATLANTIC **R/V KNORR**

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
7	92	1	31 JAN 73	ROS	46° 11.0' S	14° 36.8' E	0004	4553	4506	* DEEP ROSETTE
7	92	2	31 JAN 73	PMP	46° 13.0' S	14° 36.0' E	0420		176	* SURFACE PUMP, C-14, RA-228
7	92	3	31 JAN 73	ROS	46° 14.0' S	14° 35.4' E	0731		2002	* SHALLOW ROSETTE
7	93	1	2 FEB 73	ROS	41° 46.1' S	18° 27.2' E	0054	4953	4506	* DEEP ROSETTE
7	93	2	2 FEB 73	PMP	41° 46.2' S	18° 27.2' E	0300		176	* SURFACE PUMP, C-14, RA-228
7	93	3	2 FEB 73	GER	41° 46.1' S	18° 25.9' E	0846	4923	4625	* DEEP GERARD, C-14
7	93	4	2 FEB 73	ROS	41° 46.4' S	18° 26.0' E	1200		2196	* SHALLOW ROSETTE
7	93	5	2 FEB 73	GER	41° 47.2' S	18° 26.0' E	1544		2277	* SHALLOW GERARD, C-14
7	93	6	2 FEB 73	NIS	41° 49.7' S	18° 23.8' E	1930		797	* SHALLOW NISKIN
7	93	7	2 FEB 73	ESS	41° 49.7' S	18° 23.8' E	2010		0	* ESSO, BUCKET
7	94	1	3 FEB 73	ROS	38° 18.0' S	19° 23.8' E	1855	4796	1622	* ROS TRIPPED IN TOP 1600M ONLY
7	94	2	3 FEB 73	PMP	38° 23.0' S	19° 24.0' E	2235		175	* SURFACE PUMP, C-14, RA-228
8	100	1	11 FEB 73	NAN	33° 12.5' S	13° 19.4' E	1450	4017		* NANSEN Q CAST
8	100	2	11 FEB 73	NAN	33° 11.8' S	13° 19.0' E	1626	3996		* NANSEN Q CAST
8	100	3	11 FEB 73	NAN	33° 11.9' S	13° 18.9' E	1900	4000		* NANSEN Q CAST
8	100	4	11 FEB 73	NAN	33° 11.9' S	13° 18.9' E	1914	4008		* NANSEN Q CAST
8	100	5	11 FEB 73	NAN	33° 11.0' S	13° 18.5' E	2042	3990		* NANSEN Q CAST
8	100	6	11 FEB 73	ROS	33° 9.0' S	13° 17.5' E	2314	4014	3978	* DEEP ROSETTE (ABORTED)
8	101	1	12 FEB 73	SDT	31° 58.0' S	10° 48.0' E	1441	4849	1002	* SDT WITH 5 CHECK SAMPLES
8	102	1	12 FEB 73	ROS	31° 31.3' S	9° 26.4' E	2311	4884		* SHALLOW ROSETTE (ABORTED)
8	102	2	13 FEB 73	NIS	31° 31.0' S	9° 24.9' E	0105	4669	110	* SURFACE RADON
8	102	3	13 FEB 73	NAN	31° 31.1' S	9° 24.5' E	0153	4669	505	* SHALLOW NANSEN
8	102	4	13 FEB 73	SDT	31° 31.2' S	9° 24.3' E	0250			* STD TEST, WINCH FAILED
8	102	5	13 FEB 73	NIS	31° 35.5' S	9° 15.0' E	1127	4940	4927	* DEEP NISKIN, BOTTOM RADON
8	102	6	13 FEB 73	NIS	31° 33.4' S	9° 17.6' E	1613		2000	* SHALLOW NISKIN
8	102	7	13 FEB 73	PMP	31° 33.6' S	9° 17.1' E	1636		5	* BOW PUMP, RA-228
8	103	1	17 FEB 73	ROS	23° 59.8' S	8° 30.3' E	0327	4634		* SHALLOW ROSETTE (ABORTED)
8	103	2	17 FEB 73	GER	23° 59.9' S	8° 30.1' E	0643	4650	4546	* DEEP GERARD, C-14
8	103	3	17 FEB 73	NIS	23° 59.9' S	8° 29.4' E	1051	4660	4586	* DEEP NISKIN
8	103	4	17 FEB 73	NIS	24° 0.0' S	8° 29.1' E	1400		102	* SURFACE RADON
8	103	5	17 FEB 73	PMP	24° 0.0' S	8° 29.1' E	1445		120	* SURFACE PUMP, C-14, RA-228
8	103	6	17 FEB 73	ROS	24° 0.0' S	8° 27.7' E	2215	4634	2317	* SHALLOW NISKIN & DEEP SDT
8	103	7	18 FEB 73	GER	23° 59.0' S	8° 27.0' E	0258	4676	1088	* SHALLOW GERARD, C-14
8	104	1	18 FEB 73	NAN	22° 0.0' S	7° 14.5' E	1609		345	* SHALLOW NANSEN
8	104	2	18 FEB 73	NAN	22° 0.0' S	7° 14.5' E	1719	2963	2960	* DEEP NANSEN
8	105	1	20 FEB 73	NIS	20° 0.3' S	2° 0.0' E	0452	5508	5498	* DEEP NISKIN, BOTTOM RADON
8	105	2	20 FEB 73	SDT	20° 0.1' S	1° 58.6' E	0820			* SDT (MALFUNCTION)
8	105	3	20 FEB 73	NIS	20° 0.2' S	1° 58.0' E	1047	5479	1292	* SHALLOW NISKIN
8	105	4	20 FEB 73	NIS	20° 0.3' S	1° 57.6' E	1223	5504	101	* SURFACE RADON
8	105	5	20 FEB 73	NIS	20° 0.0' S	1° 57.4' E	1320	5471	181	* SURFACE NISKIN
8	106	1	21 FEB 73	NAN	15° 59.9' S	1° 58.3' E	1135	5512	1088	* SHALLOW NANSEN
8	106	2	21 FEB 73	SDT	15° 59.9' S	1° 58.3' E	1140			* STD TEST
8	106	3	21 FEB 73	NAN	15° 59.4' S	1° 58.0' E	1345	5471	2734	* DEEP NANSEN
8	106	4	21 FEB 73	NAN	15° 59.3' S	1° 57.8' E	1631	5550	5518	* DEEP NANSEN (REPEAT)
8	107	1	22 FEB 73	NIS	12° 0.0' S	2° 0.0' E	1520		100	* SURFACE RADON
8	107	2	22 FEB 73	GER	12° 0.0' S	1° 59.2' E	1723	5573	5551	* DEEP GERARD, C-14
8	**107**	**3**	**22 FEB 73**	ROS	**12° 0.6' S**	**1° 59.0' E**	**2245**		**1889**	* SHAL NIS (ABORTED ESSO ROS)
8	107	4	22 FEB 73	PMP	12° 0.0' S	1° 58.0' E	2330		150	* SURFACE PUMP, C-14, RA-228
8	107	5	23 FEB 73	NIS	12° 0.0' S	1° 58.0' E	0608	5581	5571	* DP NISKIN,3ESSO, BOTTOM RADON
8	107	6	23 FEB 73	GER	12° 0.3' S	1° 57.9' E	1004	5618	1390	* SHALLOW GERARD, C-14
8	107	7	23 FEB 73	ESS	12° 0.3' S	1° 57.9' E	1100		0	* ESSO, BUCKET
8	108	1	25 FEB 73	NAN	5° 20.7' S	2° 25.4' W	0553	4523	1100	* SHALLOW NANSEN
8	108	2	25 FEB 73	NAN	5° 20.5' S	2° 25.2' W	0725	4552	4539	* DEEP NANSEN
8	109	1	26 FEB 73	NIS	2° 0.0' S	4° 30.0' W	0545	5080	121	* SURFACE RADON
8	109	2	26 FEB 73	GER	1° 59.7' S	4° 31.5' W	0757	5059	5041	* BOTTOM GERARD, RA-228
8	109	3	26 FEB 73	SDT	1° 59.5' S	4° 32.0' W	1030		75	* SDT
8	109	4	26 FEB 73	NIS	1° 59.8' S	4° 33.0' W	1326	5171	2007	* SHALLOW NISKIN
8	109	5	26 FEB 73	GER	1° 59.8' S	4° 33.3' W	1655	5261	4574	* DEEP GERARD, RA-228
8	109	6	26 FEB 73	NIS	2° 0.0' S	4° 33.0' W	2106	5148	5136	* DEEP NISKIN, BOTTOM RADON
8	109	7	26 FEB 73	PMP	2° 0.0' S	4° 33.0' W	2346		5	* BOW PUMP, RA-228
8	110	1	28 FEB 73	NAN	0° 0.5' S	9° 11.4' W	0135	5012	884	* SHALLOW NANSEN
8	110	2	28 FEB 73	NAN	0° 1.0' N	9° 10.8' W	0355	5047	5039	* DEEP NANSEN
8	111	1	1 MAR 73	GER	2° 0.5' N	14° 1.6' W	0836	5178	5158	* DEEP GERARD, C-14
8	111	2	1 MAR 73	NIS	2° 0.0' N	14° 1.3' W	1206	5160	5150	* DEEP NISKIN, BOTTOM RADON
8	111	3	1 MAR 73	PMP	2° 0.0' N	14° 1.0' W	1355		300	* SURFACE PUMP, C-14, RA-228
8	111	4	1 MAR 73	SDT	2° 0.0' N	14° 0.6' W	1730		151	* SDT
8	111	5	1 MAR 73	NIS	2° 0.5' N	13° 59.8' W	2015		1811	* SHALLOW NISKIN
8	111	6	1 MAR 73	GER	1° 59.7' N	13° 59.8' W	2230		2062	* SHALLOW GERARD, C-14
8	111	7	1 MAR 73	NIS	2° 0.5' N	13° 59.6' W	2355		115	* SURFACE RADON
8	112	1	3 MAR 73	NAN	6° 20.5' N	17° 16.0' W	0730		897	* SHALLOW NANSEN
8	112	2	3 MAR 73	NAN	6° 20.5' N	17° 15.9' W	0920	4955	4942	* DEEP NANSEN
8	112	3	3 MAR 73	SDT	6° 20.4' N	17° 16.0' W	1055			* SDT TEST
8	113	1	5 MAR 73	GER	10° 59.1' N	20° 31.0' W	0018	4954	3158	* BOTTOM GERARD, C-14
8	113	2	5 MAR 73	GER	10° 59.0' N	20° 31.1' W	0332	4954	4741	* DEEP GERARD, C-14
8	113	3	5 MAR 73	NIS	10° 59.4' N	20° 32.4' W	0740	4950	4914	* DEEP NISKIN
8	113	4	5 MAR 73	PMP	11° 0.0' N	20° 33.0' W	1005		250	* SURFACE PUMP, C-14, RA-228
8	113	5	5 MAR 73	SDT	11° 0.0' N	20° 35.0' W	1255			* SDT TEST
8	113	6	5 MAR 73	NIS	11° 0.8' N	20° 35.5' W	1650		1552	* SHALLOW NISKIN (MALFUNCTION)
8	**113**	**7**	**5 MAR 73**	**GER**	**11° 1.3' N**	**20° 35.7' W**	**1837**		**1751**	* SHALLOW GERARD, C-14
8	113	8	5 MAR 73	NIS	11° 1.0' N	20° 36.0' W	1953		100	* SURFACE RADON
8	113	9	5 MAR 73	NIS	11° 1.0' N	20° 36.0' W	2102		1197	* SHALLOW NISKIN (REPEAT)
9	114	1	12 MAR 73	ROS	21° 10.5' N	21° 46.5' W	2022	4343	1194	* SHALLOW ROSETTE
9	114	2	12 MAR 73	NIS	21° 10.5' N	21° 46.5' W	2217		81	* SURFACE RADON
9	114	3	12 MAR 73	NIS	21° 10.5' N	21° 46.5' W	2247		156	* SURFACE RADON
9	114	4	12 MAR 73	NAN	21° 9.7' N	21° 46.2' W	2349		1204	* SHALLOW NANSEN
9	114	5	13 MAR 73	ROS	21° 10.0' N	21° 46.0' W	0220	4359	4341	* DEEP ROSETTE
9	114	6	13 MAR 73	NAN	21° 10.0' N	21° 46.0' W	0600		3576	* DEEP NANSEN
9	114	7	13 MAR 73	NIS	21° 10.0' N	21° 46.0' W	0909	4368	4352	* DEEP NISKIN, BOTTOM RADON
9	115	1	15 MAR 73	NIS	28° 1.5' N	26° 0.0' W	0757	5266	230	* SURFACE RADON
9	115	2	15 MAR 73	GER	28° 2.5' N	26° 0.0' W	0919	5266	1191	* INTERMEDIATE GERARD, C-14
9	115	3	15 MAR 73	ROS	28° 2.0' N	26° 1.0' W	1407	5266	1491	* SHALLOW ROSETTE
9	115	4	15 MAR 73	PMP	28° 2.0' N	26° 0.0' W	1130		300	* SURFACE PUMP, RA-228
9	115	5	15 MAR 73	NAN	28° 5.0' N	25° 56.5' W	1822	5297	5284	* DEEP NANSEN
9	115	6	15 MAR 73	ROS	28° 6.0' N	25° 55.0' W	1945			* DEEP ROSETTE (ABORTED)
9	115	7	16 MAR 73	GER	28° 6.0' N	25° 54.0' W	0010	5308	5281	* BOTTOM GERARD, RA-228
9	115	8	16 MAR 73	NIS	28° 6.0' N	25° 53.0' W	0215			* DEEP NISKIN (ABORTED)
9	115	9	16 MAR 73	NIS	28° 6.0' N	25° 46.0' W	0907	5313	5306	* DEEP NISKIN, BOTTOM RADON
9	115	10	16 MAR 73	GER	28° 6.0' N	25° 46.0' W	1233	5248	4456	* DEEP GERARD, RA-228
9	115	11	16 MAR 73	NAN	28° 6.5' N	25° 44.0' W	1520	5189	1407	* SHALLOW NANSEN
9	115	12	16 MAR 73	GER	28° 6.5' N	25° 42.7' W	1742	5285	5175	* DEEP GERARD, C-14
9	116	1	18 MAR 73	NIS	29° 56.0' N	30° 24.0' W	0043		300	* SURFACE RADON
9	116	2	18 MAR 73	ROS	29° 56.0' N	30° 24.0' W	0140		1485	* SHALLOW ROSETTE
9	116	3	18 MAR 73	NIS	29° 54.0' N	30° 22.0' W	0445	4682	4671	* BOTTOM NISKIN, RADON
9	116	4	18 MAR 73	PMP	29° 53.0' N	30° 22.0' W	0800		150	* SURFACE PUMP, C-14
9	116	5	18 MAR 73	ROS	29° 51.0' N	30° 21.0' W	1043			* DEEP ROSETTE AND STD (FAILED)
9	116	6	18 MAR 73	NIS	29° 51.0' N	30° 20.0' W	1540	4617	4501	* DEEP NISKIN
9	116	7	18 MAR 73	ESS	29° 50.0' N	30° 20.2' W	1730		0	* ESSO, BUCKET
9	117	1	20 MAR 73	NIS	30° 40.5' N	38° 58.0' W	2043	3645	300	* SURFACE RADON
9	117	2	20 MAR 73	GER	30° 40.0' N	38° 56.0' W	2222	3644	3425	* DEEP GERARD, C-14
9	117	3	21 MAR 73	ROS	30° 39.0' N	38° 57.0' W	0100		1503	* SHALLOW ROSETTE
9	117	4	21 MAR 73	PMP	30° 39.0' N	38° 57.0' W	0000		300	* SURFACE PUMP, RA-228
9	117	5	21 MAR 73	NAN	30° 44.5' N	38° 58.0' W	0755	3643	3623	* DEEP NANSEN
9	117	6	21 MAR 73	NAN	30° 44.5' N	38° 58.4' W	0938	3622	1204	* SHALLOW NANSEN

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
9	117	7	21 MAR 73	GER	30° 46.0' N	38°58.0' W	1200	3646	1954	* SHALLOW GERARD, C-14
9	117	8	21 MAR 73	ROS	30° 49.0' N	38°56.0' W	1500	3582	3564	* DEEP AND BOTTOM ROSETTE,RADON
9	117	9	21 MAR 73	ESS	30° 49.6' N	38°53.7' W	1720		0	* ESSO, BUCKET
9	118	1	23 MAR 73	NIS	31° 18.1' N	45°38.9' W	0532	4565	300	* SURFACE RADON
9	118	2	23 MAR 73	ROS	31° 18.2' N	45°38.2' W	0720	4565	1999	* SHALLOW ROSETTE
9	118	3	23 MAR 73	NAN	31° 18.0' N	45°37.0' W	1010	4567	4545	* DEEP NANSEN
9	118	4	23 MAR 73	NAN	31° 18.3' N	45°36.6' W	1220	4567	1186	* SHALLOW NANSEN
9	118	5	23 MAR 73	ROS	31° 18.0' N	45°34.7' W	1445	4563		* DEEP ROSETTE, SDT CHECKS ONLY
9	118	6	23 MAR 73	NIS	31° 16.9' N	45°33.2' W	2002	4573	4529	* DEEP NISKIN, BOTTOM RADON
9	118	7	23 MAR 73	PMP	31° 16.7' N	45°33.3' W	1914		5	* BOW PUMP, RA-228
9	118	8	23 MAR 73	ESS	31° 16.7' N	45°33.3' W	2300		0	* ESSO, BUCKET
9	119	1	25 MAR 73	NIS	31° 49.0' N	50°53.0' W	1018		1392	* SHALLOW NISKIN
9	119	2	25 MAR 73	NIS	31° 48.8' N	50°53.5' W	1621	5805	5794	* DEEP NISKIN, BOTTOM RADON
9	119	3	25 MAR 73	PMP	31° 48.7' N	50°52.8' W	1822		5	* BOW PUMP, RA-228
9	120	1	27 MAR 73	NIS	33° 16.0' N	56°33.0' W	0511	5574	5567	* DEEP NISKIN, BOTTOM RADON
9	120	2	27 MAR 73	GER	33° 15.0' N	56°33.1' W	0807		1293	* SHALLOW GERARD, C-14
9	120	3	27 MAR 73	PMP	33° 14.0' N	56°34.0' W			300	* SURFACE PUMP, RA-228
9	120	4	27 MAR 73	NIS	33° 14.2' N	56°34.8' W	1352		1802	* SHALLOW NISKIN
9	120	5	27 MAR 73	GER	33° 13.8' N	56°34.2' W	1642	5553	5535	* DEEP GERARD, C-14
9	120	6	27 MAR 73	ROS	33° 12.5' N	56°32.7' W	2228	5554	250	* SURFACE RADON
9	120	7	27 MAR 73	ESS	33° 12.5' N	56°32.7' W	2315		0	* ESSO, BUCKET
9	121	1	30 MAR 73	ROS	35° 59.4' N	67°59.0' W	1849	4800	302	* SURFACE RADON
9	121	2	30 MAR 73	NIS	35° 59.7' N	67°59.4' W	2050	4802	1861	* SHALLOW NISKIN
9	121	3	31 MAR 73	NIS	35° 59.3' N	68° 0.8' W	0200	4933	4918	* DEEP NISKIN, BOTTOM RADON
9	121	4	31 MAR 73	PMP	36° 0.9' N	68° 1.0' W	0001		5	* BOW PUMP, RA-228
9	121	5	31 MAR 73	ESS	36° 0.9' N	68° 1.8' W	0402		0	* ESSO, BUCKET

Chapter 1

PRECISION OF GEOSECS SHIPBOARD DATA

Preface

The utility of any set of data depends, ultimately, on the precision with which that data has been measured. An important part of the GEOSECS program is the acquisition of precisely determined profiles of salinity, temperature, oxygen, nutrients, dissolved nitrogen and argon, total carbon dioxide and alkalinity. Most of these constituents have been determined at about 45 depths at 113 stations throughout the Atlantic Ocean section from 75°N to 60°S. Prior to the cruise, targets had been set for the precision that should be attained, generally less than 1.5% coefficient of variation (c.v.) for the nutrients, less than 0.5% c.v. for oxygen, less than 0.2% c.v. for alkalinity, less than 0.5% c.v. for total carbon dioxide, less than 0.003°/₀₀ standard deviation (s.d.) for salinity and less than 0.005°C s.d. for temperature. These targets represented realistic limits that could be approached during routine operations using the best methods available.

HYDROGRAPHIC, NUTRIENT, AND OXYGEN DATA

During GEOSECS Legs 1, 2, 3, 6 and 9 covering the North Atlantic, Arctic and South Atlantic sections of the major cruise track, three methods of obtaining precision estimates were attempted:

1. *Replicate sampling at a single depth*
   At one or more depths during a cast, two Niskin bottles were tripped at the same depth. The analysts, unaware of this duplication, analyzed the replicates as separate samples. Assuming that the error is independent of the level of the constituent, the mean difference between the first and second bottle tripped at the same depth should be zero, and the standard deviation of the difference will be a measure of the overall precision attained by the sampling and analytical procedure.

2. *Well mixed water column*
   Assuming that adiabatic bottom water encountered at several stations is a well mixed reservoir for all of the constituents, then samples taken at various depths within such a water column can be used to estimate the precision of the sampling and analytical techniques.

3. *Reoccupation of a station*
   Provided that the vertical profile of a constituent is stationary over a short period of time, reoccupation of a station and sampling and analysis of the water column at a later date should give a set of data whose mean deviation from the original profile is a measure of the overall sampling and analytical precision.

Ideally, we would like to establish the precision with which it is possible to dip into a homogeneous solution and determine a constituent over periods long enough that errors due to changes in standards, operators and instrument drift are included. Clearly none of the above methods meet this ideal.

Replicate sampling at a single depth comes as close as possible to the goal of sampling a homogeneous solution, but the replicated data are produced in a short time by a single operator using the same standards. Precision estimates determined in this way will be minimized. Method 2 suffers similar drawbacks, but has the added condition that a water "well mixed" for temperature may not be so for other properties.

Method 3 overcomes the short analysis period problems, but as will be illustrated later, it is highly unlikely that the assumption of a stationary water column is valid.

Methods of Operation, Sampling and Analyses

Throughout the GEOSECS Atlantic section all samples for salinity, oxygen, and nutrients were collected in 30-liter P.V.C. Niskin sample bottles mounted on General Oceanics rosette samplers. In general, two casts were made at each station, each cast having two rosettes with a total of 22 bottles. The lower rosette was equipped with a Neil Brown CTD for *in situ* measurement of conductivity, temperature, and pressure, a dissolved oxygen probe fabricated by the GEOSECS Operations Group, and a laser nephelometer built at Woods Hole Oceanographic Institution. Reversing racks containing two protected and one unprotected deep sea reversing thermometers (DSRT's) were mounted on 3 or 4 bottles of each rosette.

Specially designed 4°C (-2 to +2° and 0 to 4°) range DSRT's were built for GEOSECS by Kahl Scientific Instrument Co., incorporating the suggestions of Folsom *et al.* (1) and of Nordstrom and Folsom (2) in order to eliminate possible pressure effects upon protected thermometers. The main scales were etched to 0.01°C and the auxiliary scales to 0.1°C, making it possible to read and correct those thermometers to the nearest 0.001°C. These low range thermometers, along with higher range protected and unprotected thermometers, were used to check the temperature and pressure calibration of the 4 CTD's used on the GEOSECS Atlantic expedition. Output from these instruments provides the basic *in situ* temperature and pressure data for the sampled levels. On rare occasions when the CTD's failed to function, various range thermometers were used on 30-liter Niskin bottles and the casts were done on the hydrographic wire. Temperatures were listed to the nearest 0.001°C where paired low range thermometers agreed within 0.005°C, and for CTD temperatures that had good calibration checks. Higher range thermometers or CTD temperatures with insufficient calibration data were listed to 0.01°C.

The thermometers were calibrated at SIO both before and after the expedition against standard thermometers calibrated by the National Bureau of Standards.

Salinities were analyzed on a University of Washington conductive salinometer calibrated against Copenhagen standard seawater. Each sample was run twice. A few casts were also run in duplicate with a Bradshaw and Schleicher conductive and with a Plessey inductive salinometer to check for possible instrument bias. All three types of salinometers gave essentially the same results ($\sigma = 0.003°/_{oo}$).

Dissolved oxygen samples were titrated in calibrated 125 ml iodine flasks with a 1 ml microburet, following the technique of Carpenter (3). Standardizations were performed with 0.01N potassium iodate solutions freshly prepared for each leg from preweighed potassium iodate crystals. A few checks were made with biiodate standard solutions, prepared by the Sagami Chemical Research Center, Japan. The shipboard standards were in excellent agreement with the Sagami standards.

Phosphate, silicate, and nitrate analyses were performed on a Technicon AutoAnalyzer®, modified by Oregon State University. The procedures used are described in Hager *et al.* (4) and Atlas *et al.* (5). Standardizations were performed with both Sagami standard nutrient solutions and with standard solutions prepared from preweighed standards. The shipboard prepared standards were used as working standards before and after each cast (approximately 22 samples) to correct for instrumental drift during analyses. The Sagami standards were used only to establish the shape of the Beer's Law curve at each station. The silicate response was nonlinear at higher concentrations, while the phosphate and nitrate were usually linear. The Sagami standards (particularly phosphate) seemed to deteriorate during the course of the expedition; the repeat station comparison would have been poor if the Sagami standards had been used for the primary calibrations. D. Letzring of Texas A & M and L. Gordon of Oregon State University have also experienced similar problems with the Sagami nutrient standards (6).

Results

The CTD temperatures were calibrated *in situ* against paired deep sea reversing thermometers. Each of the CTD's had a different temperature offset, and the temperature offset for some CTD's was changed by approximately 2°C at sea in order to record temperatures less than 0°C. Although the CTD temperature probe has a sensitivity on the order of 0.001°, its accuracy is limited by the precision of the DSRT's used to calibrate the CTD. Table 1 lists the precision of various range DSRT's, based upon paired thermometers read by two different observers. As a rule of thumb, the potential precision of the water temperature from four DSRT readings is approximately one-tenth of a scale etching. The precision of the 4° thermometers was somewhat worse than expected on this expedition, due to the reluctance of some technicians to read those thermometers to the nearest tenth of a scale etching.

Comparisons of the corrected CTD temperatures against the 4° DSRT calibration check gave a mean difference of 0.000° and a standard deviation

Table 1—Precision of Deep Sea Reversing Thermometers Used on the GEOSECS Atlantic Expedition

Range, °C	Etching Interval, °C	1 Standard Deviation, °C
-2 to 30	0.1	0.009
-2 to 16	0.05	0.006
0 to 4, or -2 to 2	0.01	0.002

of 0.005°C. At warmer temperatures, three different problems were encountered: 1) higher range DSRT's with poorer precision were used for calibration checks; 2) CTD's with the 2° offset used in the North Atlantic had a nonlinear temperature error, the error at 25° C being as much as 1.5° different from that at 0°C; and 3) the calibrations at warmer temperatures were usually on the upper rosette, nominally at 10 meters above the CTD sensor. Slight depth errors in the rosette spacing in regions of large temperature gradients resulted in unsatisfactory calibration checks. CTD's with the nonlinear temperature errors were listed to the nearest .01° at temperatures above 5°C. Although the target precision of 0.005°C was not achieved in many of the warmer temperature measurements, all deep water temperatures were within the desired precision. The nonlinear CTD temperature error was corrected by the sixth leg of the expedition and is no longer a problem.

Replicate sampling was performed with reasonable frequency during Legs 1, 2, and 6. In general, only duplicate samples were taken, but at Station 4 (54°5.5′ N, 42° 58.8′ W) 3 samples were taken at 1104 meters and at Station 26 (44° 58′ N, 42° 1.0′ W) 6 samples were taken at 2676 meters. Table 2 lists statistics for the duplicated samples and Table 3 lists statistics for the replicates from Stations 4 and 26.

The 18 pairs of duplicates from Legs 1 and 2 and the 21 pairs from Leg 6 show that the mean difference is not significantly different from zero and the standard deviations are well within acceptable levels for current 'state of the art' techniques. Although the calculation of a coefficient of variation has no meaning for these data, a somewhat equivalent statistic is provided by the (standard deviation/median range) X 100 which is listed in columns 5 and 6 of Table 2.

Similar statistics for the adiabatic bottom water at Station 19 are given in Table 4. This station was located in the Norwegian Sea at 64° 10′ N, 5° 36.5′ W. Reversing thermometer and CTD data show that the potential temperature was -1.053°C (± 0.001°) over the interval from about 2600 to 3468 meters.

Table 5 compares the various precision estimates discussed so far. The coefficients of variation of PO_4 for the six replicates from Station 26 include

Table 2—Statistics from Duplicated Samples

	Legs 1 & 2*		Leg 6**		$\left(\frac{\text{Standard Deviation}}{\text{Median Range}}\right) \times 100\%$	
	Mean Difference	Standard Deviation Difference	Mean Difference	Standard Deviation Difference	Legs 1, 2	Leg 6
Salinity (°/₀₀)	0.000	0.0035	-0.0002	0.0014		
Oxygen (μM/kg) ...	0.07	0.62	-0.091	0.92	0.2	0.4
Silicate (μM/kg) ...	-0.029	0.073	0.084	0.52	0.6	0.4
Phosphate (μM/kg) .	0.0007	0.006	0.0024	0.019	0.5	0.7
Nitrate (μM/kg)	0.033	0.097	0.016	0.087	0.6	0.3

*Legs 1 and 2 data from 18 pairs of duplicates
**Leg 6 data from 21 pairs of duplicates

one errant value, quite different from the others. If this value is discarded, the c.v. reduces to 1.0%. The relatively high c.v. for silicate in Table 4 is almost certainly due to the fact that the upper part of the adiabatic water column at Station 19 has concentrations lower than the deep water and it is unlikely that the assumption that this water column was well mixed for silicate is true. If only the bottom 500 meters are included, the c.v. for silicate reduces to 0.6% and this figure is included in Table 5.

Table 3—Statistics on 3 Replicate Samples from 1104 m, Station 4

	Salinity (°/₀₀)	O_2 (μM/kg)	SiO_3 (μM/kg)	PO_4 (μM/kg)	NO_3 (μM/kg)
Mean	34.912	284	9.9	1.153	17.33
Standard Deviation	0.0016	0	0	0.011	0.115
Coefficient Variation (%)		0	0	1.0	0.7

Statistics on 6 Replicate Samples from 2676 m, Station 26

	Salinity (°/₀₀)	O_2 (μM/kg)	SiO_3 (μM/kg)	PO_4 (μM/kg)	NO_3 (μM/kg)
Mean	34.954	272.2	15.82	1.173	17.3
Standard Deviation	0.0017	0.41	0.147	0.0206	0.126
Coefficient Variation (%)		0.15	0.9	1.7	0.7

Table 4—Statistics* for Samples from Adiabatic Deep Water at Station 19

	Salinity (°/₀₀)	O_2 (μM/kg)	SiO_3 (μM/kg)	PO_4 (μM/kg)	NO_3 (μM/kg)
Mean	34.911	301.8	14.04	1.011	16.14
Standard Deviation	0.0021	0.437	0.226	0.0081	0.128
Coefficient Variation (%)		0.14	1.6	0.8	0.8

*Based on 17 samples

The summary data gives a clear indication that the target precisions have been not only met, but somewhat surpassed.

The data presented so far gives an indication of the precision with which individual profiles are being determined. Within the logistical constraints of the program, the only method of attempting to assess the consistency of calibration and interoperator differences is by reoccupation of a station.

Throughout the Atlantic section, three such opportunities arose. Station 1, taken in July 1972 at 44° 58′ N, 42° 00′ W, was reoccupied as Station 26 (44° 58′ N, 42° 03′ W) in September 1972. Station 30, taken in September 1972 at 31° 48′ N, 50° 46′ W, was reoccupied as Station 119 (31° 48.9′ N, 50° 53.2′ W) in March 1973. Station 121, taken in March 1973 at 35° 59.5′ N, 68° 00′ W, occupied the site of the GEOSECS II station, taken at 35° 46.5′ N, 67° 59.8′ W, during the period from 24 August to 2 September 1970. Hydrographic and nutrient data for this station are discussed by Spencer (7).

As stated earlier, comparison of these pairs of stations to elucidate data quality depends upon the assumption that the properties of the water column were stationary over the time elapsed between the sampling. This assumption

Table 5—Comparison of Precision Estimates

Property	Mean Difference of Duplicate Samples		Replicate Samples		Bottom Water	Root Mean Square
	Legs 1 & 2 (18 pairs)	Leg 6 (21 pairs)	Sta. 4 (3)	Sta. 26 (5)	Sta. 19 (17)	
Salinity °/₀₀ ..	0.0035	0.0014	0.0016	0.0017	0.0021	0.0023
Oxygen*	0.2	0.4	0	0.15	0.14	0.26
Silicate*	0.6	0.4	0	0.9	0.6	0.56
Phosphate* ..	0.5	0.7	1.0	1.0	0.8	0.73
Nitrate*	0.6	0.3	0.7	0.7	0.8	0.60

*Estimates expressed as % standard deviation for mean difference, and as coefficient of variation for replicate samples and bottom water.

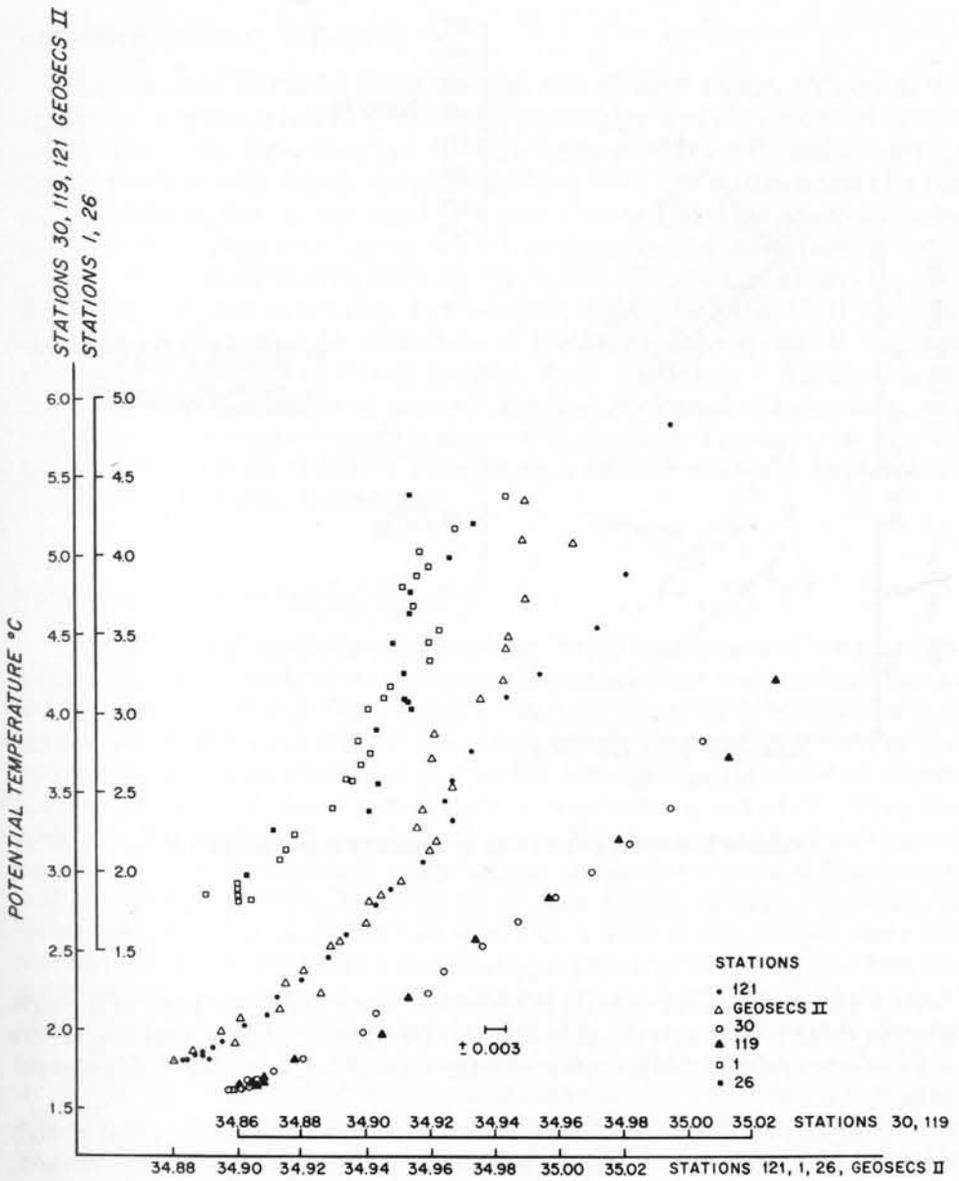

FIGURE 2. Salinity, Potential Temperature for reoccupied stations.

is most likely to be true for the deep water, and the comparisons made in this report are for samples with potential temperature less than 5° C.

A measure of the validity of this assumption for the deep water can be gained from the potential temperature (Θ)—salinity correlations given in Figure 2.

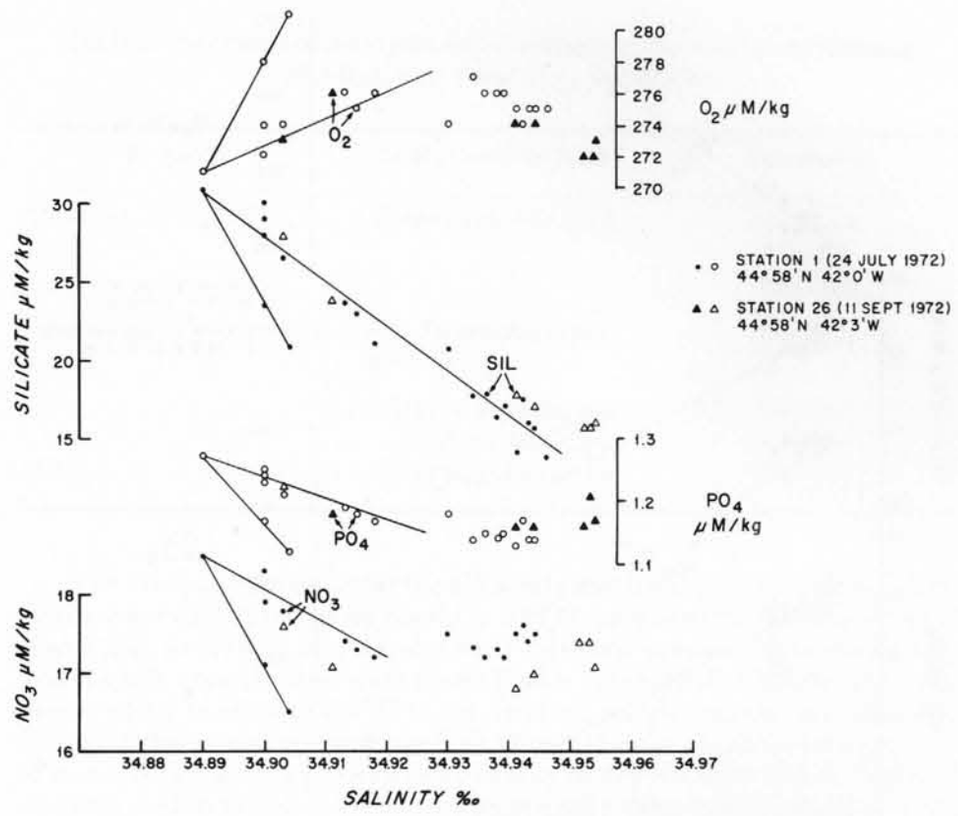

FIGURE 3. Nutrients vs Salinity at station pair 1 and 26 (same location).

Stations 121 and GEOSECS II appear to be identical up to Θ = 3.2° C, but above this point the salinity at 121 appears to be about 0.01°/₀₀ high relative to GEOSECS II. Stations 30 and 119 coincide well up to Θ ~ 4.0° C.

For Stations 1 and 26 the Θ—salinity correlation between 4.2° C and 3.6° C appear identical, but between 3.6° C and 3.2° C, and 3.2° C and 2.2° C, the salinities at Station 26 differ from those of Station 1 by about -0.01°/₀₀ and +0.01°/₀₀ respectively. Throughout the western North Atlantic Ocean between 35° N and 45° N some considerable horizontal gradients are apparent in the properties of the deep water due to the dominance of Antarctic bottom water to the south and the Norwegian Sea overflow water to the north. In addition, the time scale of the horizontal mixing in the deep water in this area is only of the order of a few years as seen by the presence of significant quantities of fallout isotopes in the deep and bottom water (8). These facts produce considerable difficulty in comparison of properties plotted against depth. However, provided the concentrations of all the constituents in the deep water are determined solely by mixing, it is likely that differences in the plots of nutrients and oxygen versus either salinity

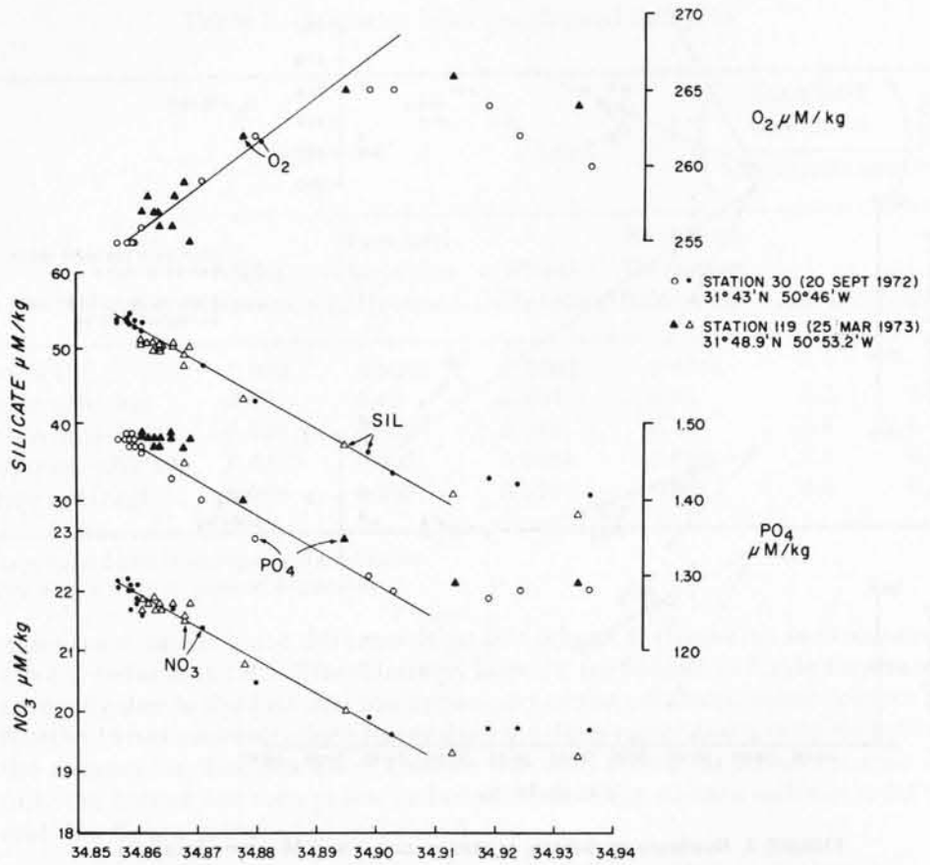

FIGURE 4. Nutrients vs Salinity at station pair 30 and 119.

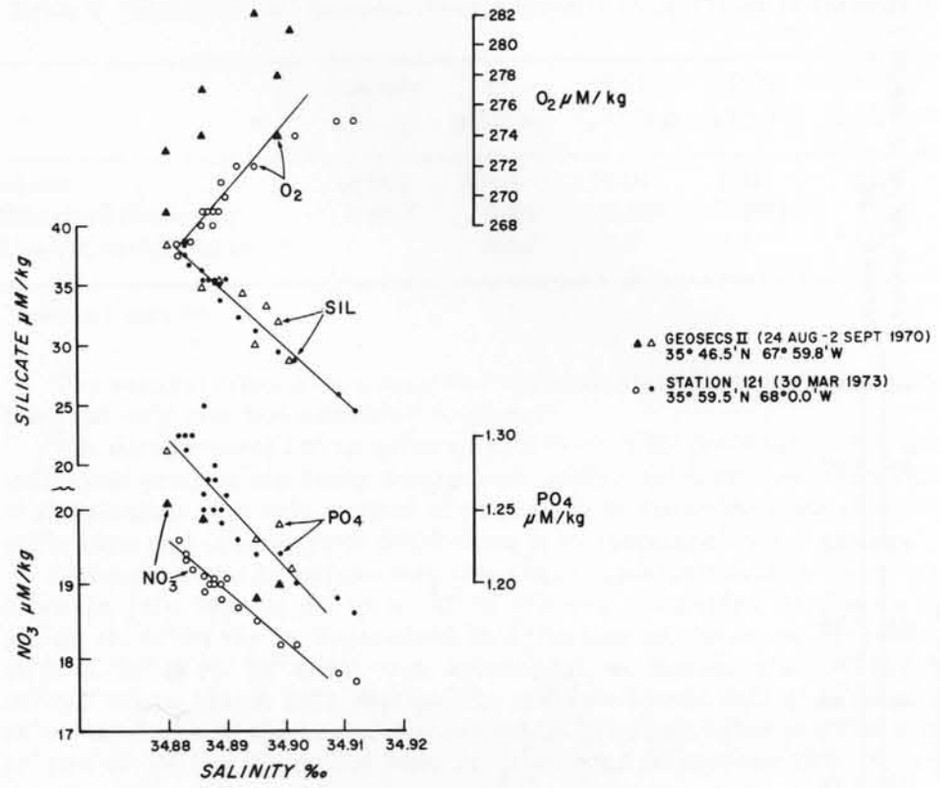

FIGURE 5. Nutrients vs Salinity at GEOSECS II and station 121.

or potential temperature will provide an indication of the stability of the sampling and analytical procedures. On the time scale of the reoccupation of the stations, it is unlikely that *in situ* solution or utilization effects are important and the comparison of oxygen and nutrients versus salinity for the three pairs of stations is shown in Figures 3, 4, and 5.

The comparisons show that slight systematic variations are apparent in NO_3 between Stations 1 and 26 and between Stations 121 and GEOSECS II, in PO_4 between 30 and 119, and in oxygen between 121 and GEOSECS II.

The differences are most apparent between 121 and GEOSECS II, and it should be pointed out that for the GEOSECS II stations the nutrients were determined manually and not with the AutoAnalyzer® used for the Atlantic section.

For the comparison of stations on the Atlantic section, the deviation of PO_4 of about 2% between Stations 30 and 119 and NO_3 of about 2.5% between Stations 1 and 26 is not far outside the limits of error for replication of a single sample determined earlier, although it is likely that small systematic errors are present and the interpretation of differences from leg to leg must consider this.

In summary, the GEOSECS shipboard data has been shown to be of high quality. The precision of single profiles of salinity, temperature, oxygen, silicate, phosphate, and nitrate is at least equal to or better than the target precisions set prior to the cruise based upon the best performance of experienced analysts. Throughout the whole Atlantic section, the calibration of the data from leg to leg appears to have been maintained to acceptable limits.

Derek W. Spencer, WHOI
Arnold W. Mantyla, SIO

GEOSECS CARBONATE DATA

During the GEOSECS Expedition in the Atlantic Ocean 1972-1973, the alkalinity, total inorganic CO_2 dissolved in seawater, and pCO_2 exerted by seawater have been determined in discrete water samples collected at various depths using 30-liter Niskin samplers made of PVC. The methods used for the determinations, the accuracy and precision obtained, and the internal consistency of those measured quantities are summarized in the following paragraphs. The data presented here are the results of collective efforts by A. E. Bainbridge, D. Bos, J. Gieskes, P. Guenther, A. M. Horowitz, C. D. Keeling, D. Lingle, M. Morrione, M. Robertson, E. Slater, R. van Woy, and R. F. Weiss of Scripps Institution of Oceanography, W. S. Broecker, P. Kaiteris, L. A. Prince, and T. Takahashi of Lamont-Doherty Geological Observatory, and J. M. Edmond of Massachusetts Institute of Technology. The financial support was provided by the Office of International Decade of Ocean Exploration, U.S. National Science Foundation.

Methods of Analyses and Calibrations

The analytical methods employed for the determination of various carbonate chemistry parameters and respective calibration and standardization are tabulated in Table 6. The alkalinity was determined by the potentiometric acid titration method similar to that described by Edmond (9). The titration was conducted on shipboard soon after the samples were brought on board, and performed in a closed vessel in order to prevent a loss of CO_2 from the sample. The amount of acid added to the titration vessel was controlled and recorded by an electronic computer system developed by A. E. Bainbridge and M. Morrione of the GEOSECS Operations Group, Scripps Institution of Oceanography. The alkalinity and total CO_2 values of the sample were obtained from the titration curve using an improved Gran method (10). Thus, the alkalinity and total CO_2 (which is designated "titration total CO_2") were determined by titration of a single sample. The total CO_2 was also determined by two other methods: gas chromatography (designated as "GC total CO_2"), developed by Weiss and Craig (11), which was employed on board ship shortly after the samples were collected, and by infrared gas analysis (designated as IR total CO_2) of stored samples in the shorebased laboratory of T. Takahashi using a method developed by Broecker and Takahashi (12). In addition to the alkalinity and total CO_2 measurements, the partial pressure of CO_2 (pCO_2) exerted by the seawater samples was determined on board ship in order to further test the internal consistency of alkalinity and total CO_2 determinations. This was done by first equilibrating a water sample with a carrier gas in a flow-through system and by measuring CO_2 concentration in the equilibrated gas. The theory and operation of the method are presented in Takahashi *et al.* (13).

Table 6—Methods of Analyses and Calibration for the Determinations of Alkalinity, Total CO_2, and pCO_2

Property	Analytical Methods	Standards
Alkalinity, Total CO_2	Potentiometric acid	$Na_2B_4O_7$ and Na_2CO_3
Total CO_2	Gas chromatographic method	Na_2CO_3
	Infrared gas analysis (Shore based)	Na_2CO_3
pCO_2	Infrared gas analysis	Na_2CO_3

The titration apparatus for the alkalinity and titration total CO_2 measurements were calibrated using $Na_2B_4O_7 \cdot 10H_2O$, prepared by the procedure of Vogel (14), as well as Na_2CO_3 standard solutions prepared gravimetrically. The Na_2CO_3 crystals used were of the Fisher Scientific C.P. grade, and were prepared by heating to 270°C in air until no weight change was detected, following the procedure described by Wong (15). For shipboard preparation of standard solution, a preweighed quantity of dry $Na_2B_4O_7 \cdot 10H_2O$, sealed in a plastic vial, was dissolved in a volumetrically determined quantity of distilled water shortly before the calibration was performed at the beginning of each station. The gas chromatograph apparatus used for shipboard total CO_2 determinations was calibrated at each station using the Na_2CO_3 standard solutions similarly prepared on board, using preweighed Na_2CO_3. The infrared units used for the shipboard pCO_2 and shorebased total CO_2 determinations have been calibrated using the same Na_2CO_3 crystals. Thus, all the total CO_2, pCO_2, and alkalinity measurements are calibrated using a common standard material.

The results of analyses of standards and reference samples by means of various methods are summarized in Table 7a-c. Table 7-a shows that the results of total CO_2 analyses by the gas chromatographic, volumetric, and infrared methods are in agreement within the respective experimental uncertainties. Table 7-b shows the results of the titrimetric determination of alkalinity and total CO_2 in seven Na_2CO_3 standard solutions, of which the ionic strength was adjusted to that of seawater (0.7) using NaCl. Those determinations were performed in the Scripps laboratories by A. E. Bainbridge and his staff in 1974 after the end of the Pacific GEOSECS using the seagoing equipment. The titrators were calibrated with $Na_2B_4O_7 \cdot 10H_2O$ standard solutions, and the chromatograph with Na_2CO_3 solutions in an identical manner as done

Table 7a-c—Results of Alkalinity and Total CO_2 Analyses by Various Methods

Table 7a—Total Inorganic CO_2 Dissolved in Seawater*

	Gas Chromatograph	Volumetric	Infrared
Investigators	Weiss	Weiss & Keeling	Takahashi & Hammond
Estimated Accuracy	0.5%	0.2%	0.8%
Precision	0.3%	0.1%	0.5%
Seawater A(μM/kg)	2090	2095	—
Seawater B(μM/kg)	2021	2019	—
La Jolla Seawater #1 (μM/kg)	1989	—	—
La Jolla Seawater #2 (μM/kg)	1966	—	1977

*See Takahashi *et al.* (22) for more details.

on board the ship. The precision for alkalinity and total CO_2 measurements has been estimated on the basis of the repeated measurements, and is $\pm$ 0.1% for alkalinity, $\pm$ 0.5% for titration total CO_2, and $\pm$ 0.4% for GC total CO_2. The accuracy of the determinations has been estimated on the basis of the difference between the standard solution and measured values. The average deviations from the standard solution values are -0.12% for alkalinity, and +0.7% for titration CO_2 and -0.03% for GC total CO_2. Thus, the observed deviations are consistent with the precision of each method, and the accuracy of $\pm$ 0.1% in alkalinity, $\pm$ 0.5% in titration total CO_2, and $\pm$ 0.4% in GC total CO_2 has been obtained in shorebased laboratory conditions.

The N_2-CO_2 standard gas mixtures prepared for GEOSECS have been compared with the standard gases of C. D. Keeling (Table 7-c). The values reported in Table 7-c are corrected for the oxygen effect according to Takahashi *et al.* (16) for the GEOSECS values and to Keeling *et al.* (17) for the Keeling values. Those values agree within 0.4% below 340 ppmv CO_2, whereas a discrepancy of 1.1% has been observed at a concentration of 400 ppmv CO_2.

Internal Consistency of the Atlantic GEOSECS Shipboard Data

The internal consistency of the Atlantic GEOSECS carbonate data has been examined by the following schemes:

1. a statistical comparison between the shipboard GC and titration total CO_2 measurements;
2. the internal consistency among the alkalinity, total CO_2, and pCO_2 values; and
3. a comparison between the shipboard total CO_2 measurements and the shorebased infrared total CO_2 determinations.

Titration and GC total CO_2 data: The station-by-station average for the difference between the shipboard GC and titration total CO_2 values are listed in Table 8. It is seen that the GC total CO_2 values are in average 15.1 ($\pm$ 9.7) μM/kg greater than the titration total CO_2 values. Since, among the seven legs compared, the GC values are always greater than the titration values except in Leg 3, a portion of the observed difference appears to be of a systematic nature. However, this discrepancy is about 0.7% of the total CO_2 and within the root mean square value of the precision of $\pm$ 0.5% each for two sets of measurements. The overall accuracy of the GEOSECS total CO_2 values have been thus estimated to be about 0.7%. It is also noted that the data for Stations 24 and 26 on Leg 3 deviate significantly from the mean difference by as much as 4 standard deviations or more. Therefore, those data are not included in the leg average and the overall average, and are also omitted from the cross-sections.

Alkalinity, total CO_2, and pCO_2 data: Takahashi *et al.* (18) computed the CO_2 partial pressures (pCO_2) using the alkalinity and titration total CO_2 values and compared the calculated values with the measured pCO_2 values in order to test the internal consistency of those carbonate chemistry data. They found that 77 sets of the alkalinity, titration total CO_2, and pCO_2 data are consistent with the apparent dissociation constants of carbonic acid in seawater by Mehrbach *et al.* (19), the apparent dissociation constant of boric acid in seawater by Lyman (20) and the solubility of CO_2 of Weiss (21). On the other hand, the titration total CO_2 values are in average 15 μM/kg smaller than the shipboard GC total CO_2 values as presented in Table 8. Hence, the GC total CO_2 values are not consistent with the measured alkalinity and the system of the dissociation constants of carbonic and boric acid. Thus, the GEOSECS carbonate data presented in this volume are ambiguous at a level of 0.7% in alkalinity and total CO_2.

Shorebased infrared total CO_2 data: Approximately 100 randomly selected seawater samples were analyzed in a shorebased laboratory by means of the infrared gas analysis method. The difference between the shipboard data and those shorebased data are:

$$(\text{IR } CO_2 - \text{Tit } CO_2) = 23.1 \pm 18.5\,\mu\text{M/kg (N = 74)}$$
$$(\text{IR } CO_2 - \text{GC } CO_2) = 9.5 \pm 20.1\,\mu\text{M/kg (N = 66)},$$

where N is the number of analyses. It appears that the IR CO_2 values are in better agreement with the shipboard GC CO_2 values than with the titration CO_2 values. However, it has been noted that the reproducibility of repeated infrared CO_2 analyses for the stored seawater samples (poisoned with $HgCl_2$

Table 7b—Alkalinity, Titration Total CO_2, and GC Total CO_2 in Standard Na_2CO_3 Solutions[1]

	ALKALINITY				TOTAL INORGANIC CO_2						
					Titration				Gas Chromatograph		
Sample No.	Standard Na_2CO_3 Solution (μEq/kg)	No. of Meas.	Measured[2] Alkalinity (μEq/kg)	Deviation[3] (%)	Standard Na_2CO_3 Solution (μM/kg)	No. of Meas.	Measured Total CO_2[4] (μM/kg)	Deviation[5] (%)	No. of Meas.	Measured Total CO_2[6] (μM/kg)	Deviation (%)
87	2320	3	2320 ± 0.6	0.00	1160	3	1160 ± 2.6	0.0	0	____	____
110	2384	2	2388 ± 1.4	-0.17	1192	2	1198 ± 0.7	-0.3	0	____	____
111	2390	2	2392 ± 2.1	-0.08	1195	2	1184 ± 11	+0.9	3	1189 ± 4.6	-0.4
112	2495	3	2507 ± 2.5	-0.48	1248	3	1237 ± 15	+0.9	1	1248	0.0
128	2378	3	2383 ± 3.6	-0.21	1189	3	1163 ± 3.0	+2.2	1	1185	+0.3
132	2510	4	2510 ± 4.0	0.00	1255	4	1242 ± 5.3	+1.0	0	____	____
133	2360	3	2358 ± 5.0	+0.08	1180	3	1181 ± 5.3	-0.1	0	____	____
Mean Deviation (%)[7]				-0.12				+0.7			-0.03
Mean Precision (%)[8]			± 0.1				± 0.5			± 0.4	

[1]Performed by A. E. Bainbridge and his co-workers.

[2]An alkalinity blank of 30 μ Eq/kg was subtracted from the measured values. This blank may be attributed to impurities in the NaCl used to adjust the ionic strength of the standard solution to that of seawater. The ± values indicate one standard deviation of measurements.

[3]Deviation (%) was computed by:

$$\frac{(\text{(Alkalinity in standard solution)}-\text{(Measured alkalinity)}) \times 100}{\text{(Alkalinity in standard solution)}}$$

[4]A CO_2 blank of 26 μ M/kg, which is based on 10 measurements, was subtracted from the measured values. This blank may be attributed to CO_2 dissolved in the distilled water and to that contained in the NaCl used to adjust the ionic strength of the standard solutions. The ± values indicate one standard deviation of measurements.

[5]Deviation (%) was computed by:

$$\frac{(\text{(Total } CO_2 \text{ in standard solution)}-\text{(Measured total } CO_2\text{)}) \times 100}{\text{(Total } CO_2 \text{ in standard solution)}}$$

[6]A CO_2 blank of 20 μ M/kg, which is based on 5 measurements, was subtracted from the measured values. This blank may be attributed to CO_2 in distilled water and to that contained in the NaCl used to adjust the ionic strength of the standard solution. The ± values indicate one standard deviation of measurements.

[7]An arithmetic mean of the observed deviations (%) of the measurements from the standard solution values.

[8]This is an arithmetic mean of the precisions (one standard deviation of repeated measurements) expressed in percentages.

Table 7 c—Standard Gas Mixtures Used for pCO_2 Measurements and Air Samples

	CO_2 Concentration in ppm by Volume in Dry Air			
	Takahashi (GEOSECS)	Keeling	Difference (ppm)	(%)
Air, Scripps pier, April 1976	339.5 ± 0.3*	338.3 ± 0.1*	+0.8	+0.2
GEOSECS Standard Gases				
GX—26—72	307.6 ± 0.2*	306.3 ± 0.1*	+1.3	+0.4
GX—65—73	340.2 ± 0.2*	339.4 ± 0.1*	+0.8	+0.2
GX—38—72	400.8 ± 0.1*	396.4 ± 0.1*	+4.4	+1.1

*Precision of measurements, one standard deviation.

solution at the time of sampling) is about 5 times as large as that obtained for standard solutions (~ 0.2% reproducibility). This may be an indication of alteration of the samples during storage in spite of the addition of $HgCl_2$ poison for biological activities. Thus, a comparison of the shipboard data with the shorebased measurements of total CO_2 does not appear to yield conclusive support for either the titration or GC total CO_2 data.

Taro Takahashi,LDGO
Arnold E. Bainbridge,SIO

Table 8—Comparison of the Shipboard GC and Titration Total CO_2 Data in the Atlantic.

N indicates the number of comparisons, and the ± values indicate one standard deviation.

LEG	STA	N	(Ship GC-TIT) (μM/kg)	LEG	STA	N	(Ship GC-TIT) (μM/kg)
3	24	14	-30.3 ± 12.0*	6	64	32	32.7 ± 5.3
	26	20	-40.6 ± 21.4*		66	19	22.4 ± 11.5
	27	0	—		67	38	20.5 ± 13.2
	28	0	—		68	7	27.7 ± 11.3
	29	35	1.5 ± 4.8	Leg 6 Average		96	25.5 ± 10.5
	30	33	-5.3 ± 8.0				
	31	27	-9.6 ± 6.1	7	76	34	18.1 ± 11.7
	32	13	-3.9 ± 7.4		78	30	15.3 ± 6.9
	33	31	-12.8 ± 11.7		79	38	9.6 ± 9.4
	34	16	1.2 ± 12.2		82	42	4.9 ± 11.4
Leg 3 Average		155	-5.2 ± 8.4		85	30	8.0 ± 10.0
					89	32	7.8 ± 8.3
4	36	17	27.9 ± 10.6		90	20	14.2 ± 8.9
	37	26	12.3 ± 6.8		91	26	6.7 ± 9.6
	39	35	12.8 ± 8.5		92	20	-1.0 ± 13.1
	40	25	11.4 ± 6.6		93	37	2.0 ± 15.5
	42	29	11.6 ± 8.8	Leg 7 Average		309	8.6 ± 10.7
	46	24	14.6 ± 7.6	8	102	15	26.7 ± 7.4
	48	35	17.8 ± 8.4		107	17	20.8 ± 8.0
	49	26	8.4 ± 9.7		109	28	24.2 ± 10.3
Leg 4 Average		217	14.1 ± 8.3		111	31	26.2 ± 15.4
					113	34	31.3 ± 16.0
5	53	23	34.3 ± 8.5	Leg 8 Average		125	26.5 ± 12.8
	54	35	15.8 ± 6.5	9	114	40	31.6 ± 7.3
	55	30	17.6 ± 12.7		115	31	16.5 ± 8.7
	56	43	31.5 ± 7.4		116	38	22.7 ± 12.4
	57	31	20.1 ± 9.1		117	28	23.5 ± 7.7
	58	31	21.6 ± 8.2		118	32	12.1 ± 10.6
	59	30	23.5 ± 11.2		119	27	5.6 ± 6.6
	60	38	17.5 ± 6.6		120	33	19.5 ± 8.7
	61	37	14.3 ± 12.8		121	32	14.5 ± 7.8
Leg 5 Average		298	21.5 ± 9.3	Leg 9 Average		261	18.9 ± 8.9
All Legs						1461	15.1 ± 9.7

*Excluded from the leg and total average.

GEOSECS SHIPBOARD ^{222}RN MEASUREMENTS

Method of Sampling and Analysis

Water samples were obtained with 30-liter Niskin bottles. All the bottom ^{222}Rn samples and some of the surface samples were obtained by Niskins attached to a rosette. Most of the surface samples were obtained with Niskin bottles attached directly to a hydrowire. The bottom profiles were normally taken with a single rosette sampler on which were deployed ten 30-liter Niskin bottles, a laser nephelometer, a Bainbridge-Brown CTD, a dissolved oxygen probe, and a pinger.

Once the Niskin bottles were on the ship, the first sample drawn was for oxygen. This used approximately 0.5 liter of water. The next sample drawn was for ^{222}Rn. A 20-liter flint glass sample bottle was connected by hose to the Niskin drain valve and the air vent was opened. The flint glass bottle, previously evacuated, was permitted to fill with water and was then sealed. Normally, the sample was between 19 and 20 liters. In the case of bottom samples, a filter was placed in line for particulates. The drawing procedure would take about one hour. Surface samples were not filtered, and the drawing procedure would take less than five minutes.

The analytical procedures and equipment were basically the same as those described by Broecker (23) except that the counting system was independent of the extraction system. The counting cells or chambers were coupled to the extraction system by means of a Swagelok double-ended Quick-Connect fitting. This made it possible to use many counting cells, but suffered from the disadvantage that it was impractical to use an internal thorium-230 calibration source such as the one described by Broecker (23). The procedures and equipment used during GEOSECS are described in detailed by Mathieu *et al.* (24).

Data Reduction

The radon activities and standard deviations calculated for the ^{222}Rn measurements are reported in the data tables. These were calculated by the method of Sarmiento *et al.* (25) with one exception: In the Atlantic Ocean the criterion for rejecting data from a given counting interval was that the activity during this interval deviates by more than 3 sigmas from the mean activity, whereas Chauvenet's criterion was used for the Pacific Ocean calculations. For most of our calculations Chauvenet's criterion was between 2 and 2.5 sigmas. The blank used for all our calculations was 0.05 ± 0.02 dpm and the background, measured before each sample, was of the order of 0.1 ± 0.01 cpm.

A set of 10 separate replicate analyses with between 2 and 8 measurements in each were made during the GEOSECS program on water samples obtained from an overflowing vessel on deck by pumping from the surface. The standard deviations for each replicate analysis range from 2% to 11.3% with half the values falling in the range 6.7% to 8.1% and a mean of 6.1% ± 2.8%. These errors show good agreement with the errors calculated by the method of Sarmiento *et al.* (25).

Complete details of the calculations and laboratory intercalibrations[1] are given in Mathieu *et al.* (24) along with a discussion of the nonrandom variability in radon trapping efficiency of the order of 10% and higher that occurred throughout the GEOSECS program. Subsequent studies have indicated that the primary cause for the variability was almost certainly the fact that the silver-activated zinc sulfide Mylar film that was used to line the interior of the counting cells was separating from the walls of the cell. The efficiency used in the radon calculations was the mean of the 3 efficiency determinations closest in time to the actual radon measurement.

The ^{222}Rn which is of greatest interest near the ocean floor is that which originates in the sediments and is in excess of ^{222}Rn supported by *in situ* ^{226}Ra decay. Near the ocean surface the radon which is of interest is that part of the supported ^{222}Rn which escapes from the ocean to the atmosphere by gas exchange. To calculate these concentrations from the measurements reported in Chapter 4, we must know the ^{226}Ra concentrations. Measurements of these were made on shore and will be reported with other shorebased measurements. They are also reported in Mathieu *et al.* (24). Estimates of the ^{226}Ra concentrations based on shipboard ^{222}Rn measurements have been made and are reported in Bainbridge *et al.* (26, 27) and Mathieu *et al.* (28).

Wallace S. Broecker, LDGO
Jorge Sarmiento, Princeton University

GEOSECS SHIPBOARD DISSOLVED NITROGEN AND ARGON MEASUREMENTS

The GEOSECS shipboard dissolved nitrogen and argon measurements were made by the on-line stripping gas chromatography technique described by Weiss and Craig (11), with the exceptions that the water produced by the catalytic reaction of oxygen with the hydrogen carrier gas was absorbed by a drying column rather than analyzed, and the thermal conductivity detector was replaced by an ultrasonic phase-shift detector (Tracor, Inc., Model U-90) for increased sensitivity. Peaks were integrated by a voltage-to-frequency converter and counter using the shipboard IBM 1800 computer. During the course of the shipboard program, separate laboratory measurements showed

[1]Intercalibrations completed as of 1976 are reported in W. S. Broecker, J. Goddard, and J. L. Sarmiento. The Distribution of ^{226}Ra in the Atlantic Ocean, *Earth and Planetary Science Letters*, (1976), 32, 220-235.

that the response of the ultrasonic detector could be markedly nonlinear. Because such nonlinearity cannot readily be calibrated using the constant volume shipboard chromatographic system, the shipboard nonlinearity corrections were determined from independent laboratory analyses of selected matching samples stored in copper tubes. These measurements were made using vacuum extraction, gas chromatography with thermal conductivity detection (Craig *et al.* (29)), and a Spectro-Physics System IV chromatographic integrator. Since the shipboard analyses are particularly susceptible to air contamination and outgassing errors, occasional points show deviations of several percent. The precision of the uncontaminated analyses is $\pm 0.7\%$ for N_2 and $\pm 1.1\%$ for Ar (1σ confidence limits), and the estimated calibration accuracy is $\pm 0.6\%$ for both gases.

Ray F. Weiss, SIO

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Chapter 2

HYDROGRAPHIC DATA

STATION: 1 LEG: I POSITION: 44° 57′ N 42° 0′ W DATE: 24 JUL 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
3201	1	1	21.66	21.66	35.15 D	24.447	32.861	40.892	24.452					1
3202	16	16	21.64	21.64	35.15 D	24.452	32.866	40.899	24.521					16
3203	31	31	16.38	16.37	35.15 D	25.808	34.389	42.580	25.944					31
301	48	48	12.69	12.68	35.234	26.673	35.390	43.706	26.887	268	1.8	0.19	1.2	48
302	90	89	12.73	12.72	35.410	26.802	35.516	43.828	27.204	237	3.1	0.45	7.3	89
3204	124	123	12.051	12.034	35.37 D	26.907	35.648	43.985	27.462					123
3205	158	157	11.155	11.135	35.26 D	26.988	35.767	44.140	27.698					157
303	189	188	10.49	10.47	35.166	27.039	35.848	44.247	27.890	219	6.5	0.82	13.0	188
3206	242	240	10.117	10.088	35.17 D	27.111	35.936	44.350	28.202					240
304	288	286	9.48	9.45	35.117	27.177	36.029	44.471	28.479	206	8.7	1.03	16.0	286
305	383	380	7.920	7.880	34.973	27.311	36.237	44.745	29.055	192	11.6	1.26	19.4	380
306	455	451	6.99	6.95	34.914	27.399	36.369	44.918	29.479	193	12.9	1.35	20.7	451
307	504	500	6.828	6.779	34.977	27.472	36.448	45.004	29.776	193	13.5	1.36	21.2	500
308	583	578	5.901	5.848	34.924	27.552	36.575	45.173	30.228	211	13.2	1.31	20.3	578
309	668	662	5.69	5.63	34.990	27.631	36.663	45.271	30.698	221	12.6	1.27	19.9	662
311	707	701	5.715	5.652	35.099	27.714	36.744	45.349	30.958	219	12.3	1.25	20.0	701
310	708	702	5.715	5.651	35.105	27.719	36.749	45.354	30.967	219	12.2	1.25	19.9	702
312	835	827	5.227	5.155	35.013	27.706	36.762	45.391	31.542	249	11.1	1.17	18.7	827
313	845	837	5.19	5.12	35.038	27.731	36.788	45.418	31.612	243	11.7	1.16	19.2	837
314	962	953	4.72	4.64	34.993	27.749	36.832	45.485	32.174	258	11.1	1.11	18.7	953
315	1020	1010	4.639	4.554	35.010	27.772	36.859	45.516	32.462	259	11.0	1.11	18.9	1010
316	1137	1126	4.451	4.357	34.984	27.773	36.870	45.538	33.000	263	11.0	1.10	18.4	1126
317	1247	1234	4.254	4.152	34.968	27.782	36.890	45.568	33.514	268	10.9	1.09	17.8	1234
318	1349	1335	4.124	4.014	34.957	27.788	36.903	45.587	33.985	270	11.0	1.09	17.6	1335
319	1465	1449	4.039	3.919	34.960	27.800	36.920	45.609	34.524	272	11.0	1.09	17.4	1449
320	1537	1520	3.990	3.864	34.958	27.804	36.927	45.619	34.855	272	11.2	1.10	17.5	1520
321	1624	1606	3.922	3.788	34.952	27.807	36.934	45.629	35.252	273	11.3	1.10	17.5	1606
322	1766	1746	3.810	3.664	34.955	27.822	36.955	45.657	35.910	273	11.6	1.10	17.6	1746
323	1852	1830	3.756	3.603	34.954	27.827	36.964	45.668	36.303	272	11.7	1.11	17.7	1830
324	1966	1943	3.696	3.533	34.954D	27.834	36.974	45.682	36.823					1943
101	2017	1993	3.680	3.512	34.963	27.843	36.984	45.693	37.060	273	12.0	1.15	18.0	1993
102	2130	2104	3.622	3.444	34.96	27.847	36.992	45.705	37.571	273	12.2	1.12	17.8	2104
103	2232	2204	3.519	3.332	34.96	27.858	37.009	45.727	38.042	274	12.4	1.11	17.6	2204
104	2438	2406	3.373	3.168	34.948	27.864	37.024	45.750	38.971	275	13.5	1.11	17.6	2406
105	2528	2495	3.302	3.089	34.946	27.869	37.034	45.764	39.379	275	13.8	1.11	17.4	2495
106	2612	2577	3.246	3.026	34.941	27.871	37.039	45.772	39.756	275	14.1	1.10	17.3	2577
107	2818	2779	3.131	2.891	34.944	27.886	37.061	45.801	40.686	275	15.7	1.11	17.3	2779
108	2818	2779	3.131	2.891	34.943	27.885	37.060	45.800	40.685	275	15.9	1.11	17.2	2779
109	2929	2888	3.070	2.820	34.938	27.887	37.066	45.810	41.179	276	16.3	1.10	17.3	2888
110	3032	2988	3.006	2.746	34.942	27.897	37.080	45.827	41.645	274	17.5	1.14	17.6	2988
111	3110	3065	2.941	2.674	34.939	27.901	37.088	45.839	41.996	276	17.0	1.11	17.2	3065
112	3225	3177	2.855	2.578	34.934	27.905	37.097	45.853	42.510	277	17.8	1.10	17.3	3177
113	3235	3187	2.847	2.569	34.936	27.907	37.100	45.857	42.556	276	17.9	1.11	17.2	3187
114	3443	3390	2.694	2.397	34.930	27.917	37.119	45.885	43.485	274	20.8	1.14	17.5	3390
115	3647	3589	2.550	2.234	34.918	27.921	37.132	45.906	44.387	276	21.1	1.13	17.2	3589
116	3757	3697	2.461	2.135	34.915	27.926	37.143	45.922	44.878	275	23.0	1.14	17.3	3697
117	3872	3809	2.405	2.068	34.913	27.930	37.151	45.933	45.384	276	23.6	1.15	17.4	3809
118	4074	4006	2.324	1.966	34.903	27.930	37.157	45.945	46.262	274	26.5	1.17	17.8	4006
119	4173	4102	2.290	1.921	34.900	27.931	37.160	45.950	46.691	272	29.0	1.20	18.3	4102
120	4276	4203	2.267	1.886	34.90	27.934	37.165	45.957	47.138	272	30.0	1.20	18.3	4203
121	4378	4302	2.249	1.857	34.89	27.931	37.164	45.958	47.573	271	30.8	1.22	18.5	4302
122	4499	4420	2.254	1.847	34.90	27.934	37.168	45.962	48.092	274	27.9	1.18	17.9	4420
123	4594	4512	2.253	1.834	34.90	27.937	37.172	45.966	48.499	278	23.6	1.12	17.1	4512
124	4689	4604	2.253	1.822	34.904	27.942	37.176	45.972	48.907	281	20.9	1.08	16.5	4604

BOTTOM DEPTH FOR CAST 1 IS 4696

STATION: 2 LEG: I POSITION: 47° 58′ N 42° 32′ W DATE: 26 JUL 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
715	99	98	4.906	4.898	34.455	27.294	36.372	45.021	27.754	245	8.2	1.03	16.1	98
716	129	128	5.564	5.553	34.608	27.339	36.381	44.998	27.936	227	10.4	1.20	18.5	128
717	170	169	4.392	4.379	34.595	27.462	36.564	45.236	28.254	242	10.3	1.17	18.3	169
718	203	201	5.242	5.225	34.820	27.545	36.601	45.229	28.485	232	11.7	1.23	19.5	201
719	243	241	5.129	5.109	34.882	27.608	36.668	45.301	28.733	226	12.5	1.26	20.0	241
720	288	286	5.230	5.206	34.940	27.643	36.697	45.325	28.974	228	12.5	1.26	19.8	286
721	337	334	5.097	5.069	34.960	27.674	36.735	45.369	29.233	239	11.6	1.20	19.2	334
722	378	375	4.203	4.175	34.843	27.681	36.789	45.468	29.437	261	10.2	1.12	18.1	375
723	410	406	4.213	4.182	34.854	27.688	36.797	45.474	29.593	264	10.0	1.11	18.1	406
724	467	463	4.358	4.322	34.905	27.714	36.814	45.484	29.880	266	9.9	1.10	18.1	463
413	496	492	4.397	4.359	34.937	27.736	36.833	45.501	30.034	268	9.8	1.10	17.7	492
414	596	591	4.241	4.195	34.924	27.743	36.849	45.525	30.504	277	9.4	1.09	17.4	591
415	696	689	4.209	4.155	34.942	27.761	36.869	45.547	30.982	276				689
416	797	789	4.062	4.001	34.924	27.763	36.879	45.565	31.450	279	9.8	1.09	17.3	789
417	899	890	3.997	3.927	34.951	27.792	36.912	45.600	31.947	275	10.2	1.10	17.6	890
419	999	989	3.954	3.876	34.939	27.788	36.910	45.602	32.401	278	10.1	1.08	17.3	989
418	1000	990	3.957	3.879	34.945	27.792	36.915	45.606	32.410	277	10.1	1.09	17.3	990
601	1199	1186	3.827	3.733	34.944	27.806	36.936	45.634	33.334	277	10.4	1.11	17.8	1186
420	1201	1188	3.856	3.762	34.952	27.810	36.938	45.635	33.345	276	10.7	1.10	17.4	1188
421	1403	1387	3.701	3.590	34.945	27.821	36.959	45.664	34.278	277	10.7	1.08	17.3	1387
422	1553	1535	3.619	3.496	34.945	27.830	36.973	45.683	34.968	277	11.1	1.09	17.7	1535
423	1706	1686	3.509	3.373	34.952	27.847	36.997	45.712	35.680	276	11.7	1.09	17.6	1686
602	1736	1715	3.480	3.342	34.945	27.845	36.996	45.713	35.813	277	11.0	1.11	17.6	1715
424	1857	1834	3.427	3.278	34.954	27.858	37.012	45.733	36.373	275	12.4	1.11	17.7	1834
603	1885	1862	3.380	3.229	34.947	27.857	37.014	45.737	36.500	277	11.7	1.10	17.6	1862
604	1986	1961	3.287	3.128	34.949	27.868	37.030	45.758	36.968	278	12.1	1.10	17.5	1961
606	2121	2094	3.212	3.041	34.945	27.873	37.040	45.772	37.580	278	12.6	1.10	17.3	2094
605	2125	2098	3.210	3.039	34.945	27.873	37.040	45.773	37.598	278	12.6	1.10	17.5	2098
607	2223	2194	3.148	2.969	34.948	27.882	37.053	45.789	38.048	279	12.9	1.11	17.3	2194
608	2321	2290	3.091	2.903	34.943	27.884	37.058	45.798	38.489	278	13.2	1.11	17.0	2290
609	2423	2390	3.022	2.825	34.941	27.889	37.068	45.811	38.952	278	13.6	1.10	17.0	2390
610	2518	2483	2.950	2.745	34.948	27.902	37.085	45.832	39.391	278	14.3	1.10	17.3	2483
611	2613	2577	2.883	2.670	34.940	27.902	37.089	45.840	39.816	278	14.4	1.10	17.4	2577
612	2707	2669	2.793	2.572	34.945	27.914	37.107	45.863	40.250	276		1.11	17.5	2669
613	2722	2683	2.809	2.586	34.943	27.911	37.103	45.859	40.312	278	15.0	1.11	17.2	2683
614	2764	2725	2.759	2.533	34.939	27.913	37.107	45.866	40.503	279	15.0	1.09	17.2	2725
615	2871	2829	2.693	2.458	34.930	27.912	37.111	45.873	40.978	280	15.1	1.08	17.2	2829
616	2979	2935	2.606	2.361	34.933	27.922	37.127	45.894	41.470	280	15.8	1.08	17.3	2935
617	3082	3036	2.490	2.237	34.921	27.923	37.134	45.908	41.933	280	16.9	1.09	17.3	3036
618	3180	3132	2.406	2.145	34.916	27.926	37.143	45.921	42.373	281	17.2	1.08	17.0	3132
619	3277	3226	2.313	2.044	34.918	27.936	37.158	45.942	42.814	281	18.0	1.11	17.3	3226
620	3377	3324	2.278	1.999	34.915D	27.937	37.161	45.947	43.255	282	17.9	1.08	16.9	3324
621	3437	3383	2.251	1.967	34.911	27.936	37.163	45.951	43.519	282	17.2	1.07	16.9	3383
622	3547	3490	2.209	1.914	34.917	27.945	37.174	45.965	44.010	284	16.2	1.04	16.4	3490
623	3625	3566	2.186	1.883	34.912	27.943	37.174	45.967	44.350	285	15.5	1.03	16.3	3566
624	3705	3644	2.142	1.831	34.916D	27.951	37.184	45.979	44.708	287	14.6	1.00	16.2	3644
525	4012H	3944	2.133H	1.788	34.920	27.957	37.193	45.990	46.042	286	14.7	1.01	16.1	3944
526	4053H	3984			34.916					288	13.3	0.99	15.6	3984
527	4074H	4004	2.06 H	1.71	34.915	27.959	37.200	46.001	46.319	290	12.5	0.98	15.6	4004
528	4084H	4014			34.921					289	13.0	0.98	15.5	4014
529	4095H	4024	2.059H	1.706	34.916	27.960	37.201	46.002	46.410	289	13.0	0.98	15.6	4024
530	4105H	4034			34.918					290	12.5	0.97	15.5	4034
531	4115H	4044			34.920					291	12.6	0.97	15.2	4044
532	4126H	4055	2.067H	1.710	34.914	27.958	37.199	46.000	46.540	291	12.5	0.97	15.4	4055

BOTTOM DEPTH FOR CAST 6 IS 3839 — CAST 5 IS 4061

STATION: 3 LEG: I POSITION: 51° 1′ N 43° 7′ W DATE: 28 JUL 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
7201	1	1	12.908	12.908	33.14 D	25.008	33.745	42.080	25.013					1
713	7	7	12.908	12.907	33.138	25.008	33.745	42.080	25.040	282	0.4	0.09	0.0	7
7202	20	20	5.68	5.68	33.57 D	26.504	35.556	44.182	26.596					20
714	48	48	2.408	2.405	33.769	26.989	36.210	44.993	27.216	325	1.3	0.44	5.3	48
3201	1	1	12.521	12.521	34.31 D	25.991	34.727	43.060	25.995					1
301	18	18	12.511	12.509	34.334	26.012	34.748	43.082	26.092	274	1.2	0.11	0.2	18
302	28	28	12.324	12.320	34.464	26.149	34.891	43.230	26.275	273	1.2	0.14	0.6	28
303	59	59	9.373	9.366	34.861	26.990	35.850	44.298	27.258	253	4.0	0.67	10.3	59

D. DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

H. THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 3 LEG: I POSITION: 51° 1' N 43° 7' W DATE: 28 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
304	105	104	9.290	9.278	35.008	27.120	35.981	44.431	27.596	245	5.2	0.78	12.1	104
305	137	136	9.186	9.171	35.044	27.165	36.031	44.485	27.787	242	5.7	0.81	13.0	136
306	183	182	6.805	6.788	34.738	27.282	36.262	44.821	28.123	220	8.3	1.07	16.7	182
307	234	232	7.457	7.434	34.885	27.308	36.255	44.783	28.378	195	10.9	1.30	19.8	232
308	276	274	7.645	7.617	34.990	27.364	36.301	44.820	28.623	250	7.8	0.99	15.4	274
309	332	329	7.099	7.067	34.944	27.406	36.370	44.913	28.925	239	8.9	1.08	16.9	329
310	380	377	6.077	6.043	34.822	27.447	36.461	45.052	29.194	261	8.4	1.03	16.3	377
311	441	437	5.782	5.743	34.886	27.535	36.563	45.167	29.564	223	11.3	1.26	19.9	437
312	468	464	5.167	5.128	34.831	27.565	36.626	45.259	29.726	222	11.7	1.27	20.1	464
313	521	516	4.978	4.935	34.857	27.608	36.678	45.319	30.014	233	11.1	1.23	19.4	516
314	580	575	4.816	4.769	34.896	27.658	36.735	45.384	30.337	242	10.9	1.20	19.3	575
315	642	636	4.889	4.836	34.957	27.699	36.772	45.417	30.660	247	10.7	1.19	19.1	636
316	820	812	4.220	4.156	34.904	27.731	36.840	45.518	31.520	276	9.0	1.10	17.6	812
317	968	958	4.190	4.113	34.925	27.752	36.863	45.543	32.218	279	9.1	1.09	17.4	958
318	1094	1082	4.253	4.164	34.961	27.775	36.883	45.560	32.813	271	10.1	1.13	18.1	1082
319	1189	1176	4.111	4.015	34.944	27.777	36.893	45.577	33.251	275	10.0	1.10	17.9	1176
320	1390	1374	3.910	3.798	34.941	27.797	36.924	45.619	34.188	277	10.1	1.11	17.8	1374
321	1590	1571	3.819	3.690	34.936	27.804	36.937	45.637	35.101	276	10.4	1.11	17.7	1571
702	1592	1573	3.815	3.686	34.945	27.812	36.944	45.645	35.118	277	9.4	1.13	17.6	1573
701	1594	1575	3.815	3.686	34.943	27.810	36.943	45.643	35.125	276	10.7	1.12	17.7	1575
322	1744	1723	3.713	3.571	34.945	27.823	36.962	45.668	35.817	277	10.7	1.10	17.6	1723
703	1781	1759	3.678	3.533	34.944	27.826	36.967	45.675	35.987	278	10.9	1.12	17.9	1759
704	1897	1873	3.642	3.486	34.943	27.829	36.973	45.683	36.513	277	11.1	1.13	17.8	1873
323	1942	1918	3.625	3.465	34.940	27.829	36.974	45.685	36.715	276				1918
705	2011	1985	3.585	3.419	34.941	27.834	36.981	45.695	37.030	276	11.5	1.13	17.8	1985
324	2063	2036	3.540	3.370	34.943	27.841	36.990	45.706	37.271	278	11.1	1.09	17.2	2036
706	2187	2158	3.470	3.289	34.945	27.850	37.004	45.724	37.837	277	11.8	1.09	17.7	2158
708	2385	2353	3.341	3.142	34.948	27.866	37.028	45.755	38.740	277	12.4	1.09	17.4	2353
707	2385	2353	3.341	3.142	34.948	27.866	37.028	45.755	38.740	278	12.4	1.09	17.5	2353
709	2511	2476	3.248	3.038	34.944	27.872	37.040	45.772	39.311	278	12.6	1.11	17.0	2476
710	2629	2592	3.148	2.928	34.949	27.886	37.059	45.797	39.853	278	12.4	1.10	17.0	2592
711	2732	2693	3.083	2.853	34.944	27.889	37.066	45.808	40.314	278	12.9	1.10	17.2	2693
713	2930	2886	2.918	2.671	34.946	27.906	37.094	45.845	41.215	280	13.2	1.08	16.8	2886
714	3031	2985	2.836	2.580	34.944	27.913	37.105	45.860	41.670	279	13.8	1.09	16.9	2985
715	3133	3085	2.738	2.474	34.939	27.918	37.116	45.877	42.130	280	14.2	1.09	16.8	3085
716	3316	3264	2.596	2.316	34.932	27.925	37.132	45.902	42.949	282	15.0	1.08	16.8	3264
717	3317	3265	2.595	2.315	34.936	27.929	37.135	45.905	42.957	282	15.0	1.08	16.9	3265
718	3419	3364	2.493	2.204	34.931	27.933	37.146	45.922	43.415	283	14.4	1.07	16.1	3364
719	3539	3482	2.423	2.123	34.926	27.936	37.153	45.933	43.946	285	13.5	1.04	16.1	3482
720	3686	3625	2.329	2.015	34.927	27.945	37.169	45.954	44.602	286	13.6	1.03	16.2	3625
721	3789	3725	2.261	1.937	34.925	27.950	37.177	45.967	45.059	287	13.7	1.03	15.9	3725
722	3959	3891	2.189	1.848	34.915	27.948	37.181	45.975	45.799	289	12.8	1.01	15.6	3891
1015	4028	3958	2.165	1.817	34.916	27.952	37.186	45.982	46.102	287	13.5	1.01	15.9	3958
723	4115	4043	2.113	1.756	34.926	27.964	37.202	46.001	46.494	290	12.7	1.00	15.4	4043
1016	4131	4059	2.099	1.741	34.914	27.956	37.195	45.994	46.556	290	12.5	0.99	15.6	4059
1017	4179	4105	2.068	1.705	34.911	27.956	37.197	45.998	46.766	291	12.1	0.98	15.5	4105
1018	4219	4144	2.057	1.690	34.919	27.963	37.205	46.007	46.946	291	11.9	0.98	15.4	4144
724	4220	4145	2.043	1.676	34.911	27.958	37.201	46.004	46.947	292	12.2	0.98	15.0	4145
1019	4261	4185	2.044	1.672	34.914	27.961	37.204	46.007	47.125	291	11.8	0.98	15.4	4185
1020	4281	4205	2.024	1.651	34.911	27.960	37.204	46.008	47.212	292	11.7	0.98	15.4	4205
1021	4291	4214	2.018	1.644	34.918	27.966	37.211	46.015	47.262	292	11.7	0.98	15.1	4214
1022	4302	4225	2.012	1.637	34.913	27.963	37.207	46.013	47.306	292	11.7	0.98	15.3	4225
1023	4313	4236	2.011	1.634	34.910	27.960	37.205	46.011	47.351	292	11.7	0.98	15.1	4236
1024	4323	4245	2.012	1.634	34.919	27.968	37.212	46.018	47.401	292	11.7	0.98	15.3	4245

BOTTOM DEPTH FOR CAST 7 IS 4293 — CAST 10 IS 4252

STATION: 4 LEG: I POSITION: 54° 5' N 42° 57' W DATE: 30 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
613	1	1	8.369	8.369	34.592	26.939	35.847	44.340	26.944	304	0.4	0.44	5.0	1
614	18	18	7.432	7.430	34.625	27.104	36.055	44.588	27.187	309	0.3	0.48	5.9	18
615	70	69	3.940	3.935	34.675	27.572	36.696	45.388	27.899	296	8.1	1.02	16.0	69
616	120	119	3.759	3.751	34.727	27.632	36.764	45.465	28.193	296	8.5	1.06	16.5	119
617	188	186	3.691	3.678	34.793	27.691	36.827	45.530	28.570	294	8.8	1.07	16.8	186

STATION: 4 LEG: I POSITION: 54° 5' N 42° 57' W DATE: 30 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
618	272	270	3.864	3.845	34.851	27.721	36.847	45.541	28.989	285	8.9	1.08	17.1	270
619	322	319	3.895	3.872	34.868	27.732	36.856	45.548	29.231	284	8.9	1.09	17.3	319
620	372	369	3.934	3.907	34.890	27.746	36.868	45.558	29.477	283	9.0	1.09	17.3	369
621	430	426	3.806	3.775	34.872	27.745	36.874	45.571	29.746	287	9.0	1.08	17.1	426
622	498	493	3.761	3.725	34.879	27.755	36.887	45.586	30.071	288	9.0	1.08	17.1	493
623	546	541	3.661	3.622	34.881	27.767	36.904	45.609	30.307	292	9.0	1.07	16.9	541
624	632	626	3.634	3.588	34.866	27.758	36.897	45.604	30.695	293	8.9	1.07	17.1	626
501	756	748	3.725	3.669	34.890	27.769	36.904	45.606	31.276	286	9.5	1.08	17.3	748
502	861	852	3.766	3.701	34.897	27.772	36.904	45.605	31.759	286	9.6	1.08	17.4	852
503	962	952	3.747	3.674	34.910	27.785	36.919	45.620	32.235	285	9.6	1.08	17.3	952
506	1114	1102	3.734	3.648	34.912	27.789	36.924	45.627	32.933	284	9.9	1.09	17.2	1102
504	1115	1103	3.734	3.648	34.910	27.787	36.923	45.626	32.936	284	9.9	1.08	17.4	1103
505	1115	1103	3.734	3.648	34.913	27.790	36.925	45.628	32.938	284	9.9	1.09	17.4	1103
507	1316	1301	3.723	3.620	34.927	27.804	36.940	45.644	33.866	281	10.4	1.10	17.4	1301
508	1466	1449	3.661	3.545	34.939	27.821	36.961	45.668	34.564	279	10.7	1.11	17.4	1449
509	1619	1599	3.593	3.464	34.938	27.828	36.972	45.684	35.265	279	11.2	1.11	17.3	1599
101	1711	1690	3.562	3.425	34.958	27.847	36.994	45.707	35.700	277	11.2	1.12	17.4	1690
510	1772	1750	3.511	3.369	34.945	27.842	36.992	45.708	35.971	278	11.4	1.09	17.7	1750
102	1863	1839	3.466	3.316	34.946	27.848	37.000	45.719	36.388	277	11.6	1.12	17.4	1839
103	1863	1839	3.466	3.316	34.945	27.847	37.000	45.718	36.387	277	11.6	1.12	17.4	1839
511	1919	1894	3.420	3.265	34.958	27.862	37.017	45.738	36.655	277	11.8	1.09	17.6	1894
104	2015	1988	3.379	3.216	34.950	27.861	37.018	45.742	37.085	277	12.0	1.11	17.3	1988
512	2020	1993	3.360	3.197	34.952	27.864	37.023	45.747	37.112	277	12.0	1.09	17.5	1993
105	2114	2086	3.322	3.150	34.956	27.872	37.033	45.760	37.541	278	12.2	1.11	17.2	2086
106	2330	2298	3.184	2.993	34.964	27.892	37.062	45.796	38.532	277	12.8	1.10	17.3	2298
107	2485	2450	3.123	2.918	34.961	27.897	37.070	45.809	39.228	278	13.3	1.10	17.1	2450
108	2485	2450	3.123	2.918	34.966	27.901	37.074	45.812	39.232	278	13.3	1.10	17.0	2450
109	2635	2597	3.058	2.839	34.967	27.909	37.086	45.828	39.907	277	13.7	1.09	16.8	2597
110	2737	2697	3.041	2.812	34.972	27.915	37.094	45.837	40.365	277	13.9	1.09	17.1	2697
111	2837	2794	3.019	2.780	34.974	27.919	37.100	45.845	40.811	277	14.3	1.09	17.1	2794
112	2944	2899	2.971	2.721	34.972	27.923	37.107	45.855	41.288	276	14.9	1.09	17.2	2899
113	3056	3009	2.875	2.616	34.968	27.929	37.119	45.872	41.792	277	15.5	1.10	17.1	3009
115	3157	3107	2.788	2.520	34.954	27.926	37.121	45.880	42.239	277	15.7	1.10	17.1	3107
116	3260	3208	2.662	2.386	34.943	27.928	37.131	45.897	42.702	279	16.0	1.09	17.1	3208
117	3363	3309	2.587	2.302	34.937	27.930	37.138	45.908	43.160	280	15.9	1.08	17.1	3309
118	3471	3414	2.538	2.242	34.932	27.931	37.142	45.915	43.635	281	15.9	1.07	16.9	3414
119	3510	3452	2.536	2.236	34.933	27.933	37.144	45.917	43.806	281	16.1	1.07	16.8	3452
120	3530	3472	2.535	2.233	34.932	27.932	37.143	45.917	43.892	281	16.1	1.07	17.0	3472
121	3550	3491	2.537	2.232	34.932	27.932	37.143	45.917	43.979	281	16.0	1.07	17.0	3491
122	3560	3501	2.532	2.226	34.927	27.928	37.140	45.914	44.020	281	16.1	1.06	16.9	3501
123	3569	3510	2.525	2.219	34.933	27.934	37.146	45.920	44.065	281	16.3	1.07	16.9	3510
124	3580	3520	2.525	2.217	34.931	27.932	37.145	45.919	44.111	281	16.4	1.07	16.8	3520

BOTTOM DEPTH FOR CAST 1 IS 3528

STATION: 5 LEG: I POSITION: 56° 56' N 42° 33' W DATE: 31 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	2	2	8.4	8.4	34.53 D	26.886	35.794	44.286	26.895					2
501	7	7	7.157	7.156	34.435	26.993	35.960	44.507	27.026	315	2.5	0.55	6.4	7
502	21	21	6.887	6.885	34.636	27.189	36.166	44.722	27.286	316	2.1	0.65	8.6	21
503	59	59	5.250	5.245	34.843	27.561	36.615	45.243	27.835	309	3.7	0.86	11.3	59
504	110	109	4.744	4.736	34.849	27.625	36.704	45.356	28.136	299	7.5	1.03	15.4	109
505	160	159	4.475	4.463	34.877	27.677	36.770	45.434	28.421	292	8.9	1.09	17.0	159
506	211	209	4.375	4.359	34.892	27.700	36.798	45.467	28.681	289	8.9	1.10	17.1	209
507	285	282	3.982	3.961	34.878	27.730	36.850	45.538	29.058	292	8.9	1.09	17.1	282
508	364	361	3.780	3.754	34.897	27.767	36.896	45.594	29.462	292	9.1	1.10	17.1	361
509	464	459	3.644	3.611	34.864	27.754	36.892	45.598	29.915	294	9.1	1.09	17.0	459
510	565	559	3.715	3.674	34.889	27.768	36.902	45.604	30.395	291	9.2	1.09	17.5	559
511	668	661	3.506	3.458	34.864	27.769	36.915	45.628	30.875	296	8.8	1.07	17.3	661
512	768	760	3.451	3.396	34.850	27.764	36.914	45.630	31.331	298	8.7	1.06	17.3	760
513	869	860	3.416	3.353	34.853	27.771	36.922	45.641	31.803	298	8.7	1.06	17.1	860
514	935	925	3.435	3.367	34.855	27.771	36.922	45.639	32.105	294	8.7	1.06	17.2	925
515	998	987	3.434	3.361	34.857	27.773	36.924	45.642	32.396	296	8.8	1.06	17.2	987
516	1092	1080	3.577	3.495	34.911	27.803	36.947	45.657	32.851	293	9.2	1.08	17.5	1080

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 5 LEG: I POSITION: 56° 56' N 42° 33' W DATE: 31 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
517	1203	1189	3.721	3.628	34.940	27.813	36.949	45.652	33.362	282	9.8	1.10	17.9	1189
518	1304	1289	3.749	3.647	34.934	27.807	36.942	45.644	33.814	279	10.2	1.11	17.8	1289
519	1425	1408	3.710	3.597	34.934	27.811	36.949	45.654	34.368	279	10.7	1.12	17.7	1408
520	1556	1537	3.619	3.496	34.945	27.830	36.973	45.683	34.982	278	11.1	1.12	17.7	1537
521	1657	1636	3.547	3.415	34.947	27.839	36.987	45.700	35.450	276	11.1	1.12	17.5	1636
522	1758	1736	3.542	3.401	34.956	27.848	36.996	45.710	35.913	277	11.4	1.11	17.3	1736
101	1832	1808	3.474	3.327	34.963	27.861	37.012	45.730	36.261	276	11.7	1.10	17.1	1808
523	1885	1860	3.451	3.299	34.963	27.863	37.016	45.736	36.502	277	11.7	1.11	17.3	1860
102	2034	2007	3.373	3.208	34.965	27.873	37.031	45.755	37.183	276	12.2	1.09	17.3	2007
524	2036	2009	3.351	3.186	34.957	27.869	37.028	45.753	37.189	277	12.1	1.11	17.1	2009
103	2111	2082	3.282	3.111	34.958	27.877	37.040	45.769	37.535	277	12.3	1.09	17.1	2082
104	2187	2157	3.224	3.047	34.956	27.881	37.048	45.780	37.882	277	12.7	1.09	17.1	2157
105	2289	2257	3.153	2.967	34.957D	27.889	37.060	45.796	38.348	277	12.9	1.09	17.1	2257
106	2393	2359	3.098	2.903	34.958	27.896	37.070	45.809	38.820	277	13.4	1.09	17.1	2359
107	2495	2459	3.029	2.825	34.954	27.899	37.078	45.821	39.281	277	13.9	1.09	16.6	2459
109	2673	2633	2.958	2.737	34.962	27.914	37.097	45.844	40.087	277	14.7	1.09	16.6	2633
108	2673	2633	2.958	2.737	34.960	27.912	37.095	45.843	40.085	277	14.6	1.09	16.8	2633
110	2765	2723	2.908	2.679	34.960	27.917	37.103	45.854	40.500	277	14.8	1.08	16.9	2723
111	2858	2814	2.859	2.621	34.958	27.920	37.110	45.863	40.916	278	15.1	1.07	16.9	2814
112	2969	2923	2.743	2.496	34.955	27.929	37.125	45.885	41.421	279	14.8	1.07	16.6	2923
113	3053	3005	2.617	2.364	34.940	27.928	37.132	45.899	41.799	282	14.1	1.04	16.5	3005
115	3053	3005	2.617	2.364	34.941	27.928	37.132	45.899	41.800	282	14.2	1.05	16.5	3005
116	3107	3058	2.509	2.253	34.935	27.933	37.143	45.916	42.050	284	14.2	1.03	16.2	3058
117	3199	3148	2.316	2.055	34.925	27.940	37.162	45.945	42.477	287	12.5	1.01	15.8	3148
118	3325	3271	2.203	1.932	34.924	27.949	37.178	45.967	43.047	289		1.00	15.5	3271
119	3368	3313	2.150	1.876	34.923	27.953	37.184	45.976	43.243	290	10.7	0.98	15.3	3313
120	3388	3332	2.092	1.817	34.921	27.956	37.190	45.986	43.339	290	11.0	0.98	15.2	3332
121	3408	3352	2.079	1.802	34.915	27.952	37.187	45.984	43.424	291	10.9	0.98	15.2	3352
122	3416	3362	2.075	1.797	34.925	27.960	37.196	45.992	43.476	290	10.9	0.97	15.2	3362
123	3428	3371	2.068	1.789	34.913	27.951	37.188	45.985	43.511	291	10.9	0.97	15.1	3371
124	3438	3381	2.066	1.786	34.918	27.956	37.192	45.989	43.559	292	11.0	0.97	15.1	3381

BOTTOM DEPTH FOR CAST 1 IS 3388

STATION: 6 LEG: I POSITION: 58° 0' N 41° 58' W DATE: 2 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	3	3	6.504	6.504	34.13 D	26.842	35.845	44.425	26.856					3
1102	10	10	6.469	6.468	34.13 D	26.847	35.852	44.434	26.893					10
1103	21	21	6.438	6.436	34.14 D	26.862	35.867	44.451	26.959					21
1104	31	31	5.748	5.745	34.36 D	27.122	36.159	44.770	27.266					31
1105	51	51	4.848	4.844	34.60 D	27.416	36.494	45.144	27.653					51
1106	75	74	4.037	4.032	34.71 D	27.591	36.710	45.397	27.942					74
1107	101	100	3.569	3.562	34.75 D	27.667	36.809	45.519	28.140					100
1108	125	124	3.357	3.349	34.76 D	27.700	36.854	45.574	28.286					124
1109	150	149	3.625	3.615	34.82 D	27.717	36.855	45.561	28.418					149
1110	204	202	3.913	3.899	34.88 D	27.740	36.863	45.554	28.692					202
1111	251	249	3.781	3.763	34.88 D	27.751	36.880	45.578	28.921					249
1112	302	299	3.614	3.593	34.86 D	27.755	36.893	45.600	29.164					299
1113	354	351	3.422	3.398	34.84 D	27.754	36.904	45.620	29.407					351
1114	402	398	3.460	3.432	34.85 D	27.757	36.905	45.620	29.633					398
1115	453	449	3.459	3.428	34.85 D	27.761	36.909	45.624	29.873					449
1116	503	498	3.411	3.376	34.85 D	27.764	36.915	45.632	30.109					498
1117	553	547	3.389	3.351	34.85 D	27.766	36.918	45.637	30.342					547
1118	605	599	3.458	3.415	34.86 D	27.769	36.918	45.633	30.585					599
1119	705	698	3.426	3.376	34.86 D	27.772	36.923	45.640	31.050					698
1120	808	799	3.389	3.331	34.86 D	27.776	36.929	45.648	31.528					799
1121	910	900	3.405	3.339	34.86 D	27.777	36.930	45.649	31.998					900
1122	1012	1001	3.471	3.396	34.87 D	27.779	36.928	45.644	32.465					1001
1123	1112	1099	3.507	3.424	34.88 D	27.783	36.931	45.645	32.925					1099
1124	1213	1199	3.661	3.568	34.91 D	27.791	36.931	45.638	33.388					1199
1125	1314	1298	3.634	3.532	34.90 D	27.794	36.935	45.644	33.851					1298
1126	1415	1398	3.598	3.488	34.91 D	27.802	36.946	45.657	34.318					1398
1127	1517	1498	3.683	3.562	34.93 D	27.814	36.954	45.660	34.787					1498
1128	1618	1598	3.682	3.552	34.95 D	27.825	36.965	45.672	35.254					1598

STATION: 6 LEG: I POSITION: 58° 0' N 41° 58' W DATE: 2 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1129	1822	1798	3.573	3.425	34.95 D	27.842	36.989	45.702	36.193					1798
1130	2023	1996	3.461	3.296	34.96 D	27.860	37.014	45.733	37.116					1996
1131	2228	2197	3.292	3.110	34.96 D	27.876	37.039	45.768	38.056					2197
1132	2432	2397	3.116	2.916	34.96 D	27.892	37.066	45.804	38.989					2397
1133	2635	2596	2.913	2.697	34.95 D	27.911	37.096	45.846	39.920					2596
1134	2839	2795	2.644	2.413	34.94 D	27.926	37.127	45.892	40.855					2795
1201	3043	2995	1.951	1.715	34.91 D	27.956	37.196	45.997	41.839					2995
1202	3166	3115	1.563	1.325	34.92 D	27.986	37.249	46.070	42.443					3115

BOTTOM DEPTH FOR CAST 1 IS 3179

STATION: 7 LEG: I POSITION: 59° 30' N 40° 56' W DATE: 2 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	3	3	7.810	7.810	34.84 D	27.217	36.148	44.661	27.231					3
1102	11	11	7.731	7.730	34.84 D	27.229	36.163	44.680	27.280					11
1103	21	21	7.731	7.729	34.84 D	27.229	36.164	44.680	27.326					21
1104	30	30	7.732	7.729	34.84 D	27.230	36.164	44.681	27.368					30
1105	50	50	6.402	6.397	34.89 D	27.454	36.451	45.025	27.685					50
1106	75	74	5.230	5.224	34.88 D	27.594	36.648	45.276	27.941					74
1107	101	100	4.623	4.615	34.91 D	27.686	36.771	45.427	28.156					100
1108	126	125	4.303	4.294	34.90 D	27.715	36.816	45.488	28.302					125
1109	151	150	4.203	4.192	34.90 D	27.724	36.831	45.507	28.428					150
1110	201	199	4.081	4.066	34.90 D	27.740	36.854	45.536	28.677					199
1111	254	252	4.040	4.022	34.91 D	27.748	36.864	45.548	28.931					252
1112	302	299	4.099	4.077	34.93 D	27.759	36.872	45.553	29.164					299
1113	354	351	4.049	4.023	34.93 D	27.765	36.881	45.565	29.412					351
1114	405	401	3.991	3.961	34.92 D	27.766	36.885	45.572	29.650					401
1115	453	448	3.846	3.813	34.91 D	27.769	36.895	45.590	29.876					448
1116	507	502	3.826	3.789	34.91 D	27.773	36.901	45.597	30.130					502
1117	556	550	3.803	3.762	34.91 D	27.776	36.905	45.603	30.360					550
1118	606	600	3.855	3.810	34.92 D	27.777	36.903	45.598	30.590					600
1119	707	700	3.794	3.742	34.93 D	27.791	36.921	45.619	31.070					700
1120	807	798	3.785	3.725	34.93 D	27.793	36.924	45.623	31.532					798
1121	907	897	3.759	3.691	34.93 D	27.798	36.931	45.632	31.996					897
1122	1012	1001	3.799	3.721	34.95 D	27.812	36.943	45.641	32.489					1001
1123	1111	1098	3.775	3.689	34.96 D	27.821	36.953	45.653	32.949					1098
1124	1214	1200	3.749	3.655	34.97 D	27.831	36.965	45.666	33.429					1200
1125	1314	1298	3.707	3.604	34.97 D	27.839	36.975	45.679	33.892					1298
1126	1414	1397	3.633	3.522	34.97 D	27.847	36.988	45.696	34.356					1397
1127	1515	1496	3.546	3.427	34.97 D	27.853	36.999	45.712	34.822					1496
1128	1619	1598	3.452	3.325	34.97 D	27.863	37.015	45.733	35.306					1598
1129	1820	1796	3.241	3.098	34.97 D	27.884	37.047	45.777	36.241					1796
1130	2025	1997	2.920	2.763	34.95 D	27.901	37.083	45.829	37.195					1997
1131	2230	2199	2.240	2.076	34.93 D	27.940	37.161	45.942	38.192					2199
1132	2431	2396	1.593	1.423	34.92 D	27.981	37.238	46.054	39.174					2396
1133	2492	2455	1.454	1.282	34.92 D	27.990	37.255	46.079	39.465					2455

BOTTOM DEPTH FOR CAST 1 IS 2478

STATION: 8 LEG: I POSITION: 60° 30' N 40° 1' W DATE: 3 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
3201	1	1	8.10	8.10	34.83 D	27.162	36.080	44.580	27.167	302				1
313	12	12	8.097	8.096	34.925	27.241	36.157	44.657	27.296	302	3.4	0.53	6.8	12
314	27	27	8.083	8.080	34.917	27.237	36.154	44.655	27.361	303	3.4	0.53	6.8	27
315	77	76	4.915	4.909	34.918	27.660	36.729	45.372	28.017	289	8.7	1.10	16.6	76
316	153	152	4.291	4.280	34.913	27.725	36.827	45.499	28.438	292	9.1	1.12	17.0	152
317	227	225	4.306	4.289	34.916	27.726	36.828	45.500	28.782	294	8.9	1.10	16.7	225
318	277	274	4.155	4.135	34.908	27.736	36.846	45.525	29.025	294	8.9	1.10	16.7	274
319	327	324	4.221	4.197	34.930	27.747	36.854	45.529	29.267	293	8.9	1.10	16.4	324
320	384	380	4.099	4.071	34.917	27.750	36.863	45.545	29.535	291	9.3	1.11	16.6	380
321	452	447	4.142	4.108	34.925	27.753	36.864	45.544	29.852	288	9.4	1.11	16.6	447

D. DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 8 LEG: I POSITION: 60° 30' N 40° 1' W DATE: 3 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
322	527	522	4.082	4.042	34.93	27.763	36.878	45.561	30.209	285	9.5	1.11	16.7	522
101	556	550	4.049	4.007	34.929	27.766	36.882	45.567	30.346	285	9.2	1.08	16.9	550
323	601	595	3.983	3.938	34.920	27.766	36.886	45.575	30.554	287	9.4	1.11	17.0	595
324	652	645	3.947	3.898	34.922	27.772	36.894	45.584	30.795	285	9.4	1.10	17.1	645
102	657	650	3.973	3.924	34.921	27.768	36.889	45.578	30.815	285	9.3	1.09	16.8	650
103	761	753	3.902	3.845	34.926	27.780	36.905	45.598	31.306	283	9.6	1.09	16.9	753
104	858	849	3.835	3.770	34.924	27.786	36.915	45.612	31.758	280	9.8	1.10	16.9	849
105	861	852	3.835	3.770	34.929	27.790	36.919	45.616	31.776	281	9.7	1.10	17.0	852
106	959	948	3.791	3.718	34.930	27.796	36.928	45.627	32.231	280	10.0	1.10	17.0	948
107	1063	1051	3.774	3.692	34.945	27.811	36.943	45.643	32.721	278	10.3	1.10	17.1	1051
108	1160	1146	3.722	3.633	34.945	27.817	36.952	45.655	33.170	277	10.7	1.12	17.0	1146
109	1260	1245	3.660	3.562	34.957	27.833	36.972	45.679	33.643	277	10.8	1.11	17.0	1245
110	1366	1349	3.604	3.498	34.947	27.832	36.974	45.684	34.125	277	10.9	1.11	17.3	1349
111	1465	1447	3.532	3.418	34.952	27.843	36.990	45.704	34.587	276	11.1	1.11	17.3	1447
112	1576	1556	3.478	3.354	34.959	27.855	37.005	45.722	35.102	277	11.3	1.11	17.2	1556
113	1668	1646	3.432	3.301	34.961	27.862	37.014	45.734	35.526	276	11.6	1.11	17.3	1646
115	1770	1747	3.330	3.191	34.960D	27.871	37.030	45.755	35.999	276	11.9	1.11	17.3	1747
116	1923	1897	3.231	3.079	34.964D	27.885	37.049	45.780	36.705	276	12.4	1.11	17.2	1897
117	2063	2035	3.091	2.928	34.959D	27.894	37.067	45.805	37.349	277	13.0	1.10	17.1	2035
118	2121	2091	3.041	2.873	34.963	27.902	37.078	45.819	37.619	278	13.3	1.10	16.9	2091
119	2189	2158	2.983	2.810	34.957D	27.903	37.083	45.827	37.927	277	13.4	1.10	16.8	2158
120	2291	2258	2.890	2.709	34.953	27.909	37.094	45.843	38.393	279	13.3	1.09	16.5	2258
525	2368H	2334	2.129H	1.955	34.909	27.936	37.163	45.951	38.812	293	10.3	1.01	15.0	2334
121	2391	2356	2.675	2.488	34.945	27.921	37.118	45.879	38.864	280	13.2	1.07	16.4	2356
526	2410H	2375			34.905				38.908	295	9.8	1.00	15.0	2375
527	2440H	2404			34.904				38.977	297	9.6	0.99	14.8	2404
528	2461H	2425			34.906				39.025	297	9.6	1.00	14.8	2425
122	2465	2429	2.469	2.279	34.930	27.927	37.135	45.907	39.212	287	11.3	1.03	15.6	2429
529	2482H	2445			34.901				40.010	298	9.3	0.99	14.6	2445
530	2492H	2455	1.70 H	1.53	34.905	27.964	37.215	46.026	39.422	297	9.4	1.00	14.7	2455
531	2502H	2465			34.900				38.835	298	9.3	0.99	14.5	2465
532	2513H	2476			34.898				38.188	299	9.4	1.00	14.5	2476
123	2539	2501	2.151	1.960	34.913	27.938	37.165	45.953	39.575	291	10.6	1.01	15.2	2501
124	2590	2551	1.713	1.527	34.916	27.973	37.224	46.035	39.867	288	9.3	0.96	14.6	2551

BOTTOM DEPTH FOR CAST 1 IS 2583 — CAST 5 IS 2486

STATION: 9 LEG: I POSITION: 62° 25' N 39° 4' W DATE: 4 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	6	6	9.39	9.39	34.95 D	27.056	35.914	44.359	27.083					6
1102	10	10	9.42	9.42	34.95 D	27.052	35.909	44.353	27.098					10
1103	21	21	8.56	8.55	34.97 D	27.209	36.104	44.584	27.305					21
1104	29	29	7.84	7.84	35.00 D	27.340	36.266	44.776	27.472					29
1105	50	50	7.13	7.12	35.01 D	27.448	36.408	44.948	27.677					50
1106	76	75	6.67	6.66	35.05 D	27.541	36.523	45.083	27.891					75
1107	101	100	6.47	6.46	35.06 D	27.577	36.568	45.137	28.042					100
1108	126	125	5.99	5.97	35.03 D	27.622	36.637	45.228	28.203					125
1109	150	149	5.73	5.71	35.02 D	27.647	36.675	45.278	28.340					149
1110	201	199	5.29	5.27	34.99 D	27.671	36.722	45.346	28.601					199
1111	252	250	4.99	4.97	34.97 D	27.695	36.761	45.400	28.863					250
1112	302	299	4.75	4.72	34.95 D	27.709	36.787	45.438	29.108					299
1113	354	350	4.59	4.57	34.95 D	27.719	36.806	45.464	29.361					350
1114	403	399	4.50	4.46	34.94 D	27.727	36.819	45.482	29.595					399
1115	455	450	4.38	4.35	34.93 D	27.734	36.833	45.501	29.844					450
1116	505	500	4.32	4.28	34.93 D	27.740	36.842	45.514	30.081					500
1117	557	551	4.28	4.24	34.93 D	27.744	36.848	45.522	30.325					551
1118	605	599	4.22	4.17	34.93 D	27.750	36.857	45.534	30.553					599
1119	706	698	4.07	4.02	34.93 D	27.766	36.881	45.566	31.035					698
1120	807	798	3.98	3.92	34.93 D	27.775	36.896	45.585	31.510					798
1121	907	897	3.87	3.80	34.93 D	27.787	36.914	45.609	31.982					897
1122	1011	999	3.83	3.75	34.94 D	27.799	36.928	45.625	32.470					999
1123	1110	1097	3.80	3.72	34.94 D	27.807	36.938	45.637	32.930					1097
1124	1213	1198	3.79	3.70	34.96 D	27.822	36.953	45.653	33.414					1198

STATION: 9 LEG: I POSITION: 62° 25' N 39° 4' W DATE: 4 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1125	1314	1298	3.67	3.57	34.95 D	27.827	36.966	45.672	33.882					1298
1126	1415	1397	3.57	3.46	34.96 D	27.843	36.987	45.698	34.359					1397
1127	1515	1496	3.47	3.35	34.96 D	27.853	37.003	45.720	34.826					1496
1128	1618	1597	3.22	3.09	34.95 D	27.869	37.033	45.763	35.318					1597
1129	1821	1797	2.39	2.26	34.91 D	27.914	37.124	45.897	36.318					1797
1130	1912	1886	2.22	2.08	34.91 D	27.927	37.147	45.929	36.751					1886

BOTTOM DEPTH FOR CAST 1 IS 1891

STATION: 10 LEG: I POSITION: 63° 0' N 36° 50' W DATE: 5 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	5	5	9.44	9.44	34.94 D	27.039	35.895	44.338	27.062					5
1102	9	9	9.37	9.37	34.96 D	27.063	35.922	44.368	27.104					9
1103	21	21	8.98	8.97	34.99 D	27.153	36.028	44.490	27.248					21
1104	30	30	7.82	7.81	34.88 D	27.247	36.176	44.688	27.384					30
1105	51	51	7.67	7.66	34.95 D	27.324	36.260	44.778	27.558					51
1106	76	75	7.06	7.05	35.01 D	27.462	36.425	44.969	27.811					75
1107	102	101	6.37	6.36	34.99 D	27.536	36.533	45.108	28.006					101
1108	127	126	5.93	5.92	35.00 D	27.600	36.618	45.213	28.186					126
1109	202	200	5.40	5.38	34.99 D	27.662	36.707	45.326	28.596					200
1110	253	251	5.07	5.05	34.96 D	27.678	36.740	45.375	28.849					251
1111	302	299	4.91	4.89	34.95 D	27.689	36.759	45.402	29.087					299
118	304	301	4.94	4.91	34.95 D	27.687	36.756	45.397	29.094					301
120	305	302	4.93	4.91	34.95 D	27.688	36.757	45.399	29.100					302
124	305	302	4.92	4.90	34.95 D	27.688	36.758	45.400	29.101					302
122	306	303	4.93	4.90	34.95 D	27.689	36.759	45.400	29.106					303
1112	353	349	4.87	4.85	34.96 D	27.699	36.772	45.416	29.333					349
1113	402	398	4.73	4.70	34.95 D	27.708	36.788	45.440	29.570					398
1114	455	450	4.60	4.56	34.94 D	27.716	36.803	45.461	29.823					450
1115	508	503	4.49	4.45	34.95 D	27.738	36.831	45.494	30.091					503
1116	554	548	4.38	4.33	34.92 D	27.728	36.827	45.497	30.294					548
1117	605	599	4.31	4.26	34.92 D	27.735	36.838	45.511	30.536					599
1118	706	698	4.20	4.14	34.92 D	27.747	36.856	45.535	31.014					698
1119	808	799	4.11	4.05	34.93 D	27.762	36.876	45.558	31.498					799
1120	908	898	4.06	3.99	34.93 D	27.769	36.886	45.572	31.964					898
1122	1010	998	3.92	3.84	34.92 D	27.776	36.901	45.594	32.440					998
1123	1111	1098	3.86	3.77	34.92 D	27.786	36.914	45.611	32.912					1098
1124	1212	1197	3.83	3.73	34.93 D	27.794	36.925	45.623	33.381					1197
1125	1314	1298	3.84	3.74	34.95 D	27.806	36.936	45.634	33.855					1298
1126	1415	1397	3.82	3.70	34.95 D	27.817	36.948	45.648	34.324					1397
1127	1515	1496	3.65	3.53	34.93 D	27.818	36.959	45.668	34.784					1496
1128	1617	1596	3.56	3.43	34.94 D	27.831	36.978	45.691	35.261					1596
1129	1822	1798	3.17	3.03	34.92 D	27.853	37.022	45.755	36.224					1798
1130	2026	1998	2.48	2.33	34.91 D	27.906	37.113	45.882	37.229					1998
1131	2229	2197	1.51	1.36	34.90 D	27.972	37.233	46.052	38.264					2197
1132	2349	2315	1.32	1.16	34.89 D	27.974	37.247	46.077	38.818					2315

BOTTOM DEPTH FOR CAST 1 IS 2325

STATION: 11 LEG: I POSITION: 63° 31' N 35° 13' W DATE: 5 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	1	1	10.52	10.52	34.97 D	26.878	35.687	44.087	26.883					1
401	7	7	8.91	8.91	34.955	27.138	36.017	44.482	27.170	308	1.7	0.29	4.6	7
402	31	31	7.652	7.649	34.966	27.340	36.276	44.794	27.482	297	2.4	0.57	7.8	31
403	57	56	7.20	7.19	35.042	27.465	36.421	44.958	27.727	289	3.1	0.74	10.0	56
404	84	83	6.78	6.77	35.045	27.526	36.502	45.057	27.912	274	6.7	0.99	15.4	83
405	119	118	6.256	6.245	35.033	27.587	36.589	45.167	28.135	272	7.0	1.08	16.8	118
406	169	167	6.006	5.991	35.019	27.609	36.623	45.214	28.388	276	7.7	1.08	17.0	167
407	211	209	5.668	5.650	34.999	27.636	36.667	45.273	28.610	279	8.4	1.10		209
408	260	257	5.386	5.364	34.987	27.661	36.707	45.326	28.862	281	8.5	1.15		257
409	311	308	5.062	5.037	34.960	27.678	36.741	45.376	29.117	283	8.8	1.13		308

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 11 LEG: I POSITION: 63° 31' N 35° 13' W DATE: 5 AUG 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
410	361	357	4.856	4.827	34.943	27.689	36.762	45.408	29.360	285	8.8	1.12	16.9	357
411	414	410	4.742	4.709	34.944	27.703	36.782	45.434	29.619	287	8.8	1.11	17.0	410
412	461	456	4.588	4.552	34.931	27.710	36.798	45.457	29.845	286	8.8	1.11	17.2	456
413	514	509	4.459	4.419	34.929	27.723	36.817	45.483	30.103	286	8.8	1.10	17.4	509
414	564	558	4.338	4.294	34.924	27.732	36.833	45.505	30.345	287	8.8	1.10	17.4	558
415	614	607	4.244	4.197	34.920	27.739	36.846	45.522	30.583	288	8.8	1.10	17.4	607
416	665	658	4.177	4.126	34.924	27.750	36.860	45.539	30.829	287	9.0	1.10	17.4	658
417	716	708	4.122	4.067	34.917	27.751	36.864	45.546	31.065	286	9.2	1.11	17.3	708
418	766	758	4.062	4.003	34.913	27.754	36.871	45.556	31.299	287	9.1	1.09	17.1	758
419	817	808	3.978	3.916	34.909	27.760	36.881	45.571	31.541	289	9.0	1.09	17.1	808
420	869	859	3.945	3.878	34.911	27.765	36.888	45.580	31.785	288	9.3	1.08	17.2	859
421	869	859	3.953	3.886	34.911	27.764	36.887	45.578	31.784	287	9.2	1.09	17.2	859
101	914	904	3.881	3.811	34.906	27.768	36.895	45.590	31.995	289	9.5	1.08	17.1	904
422	970	959	3.857	3.783	34.909	27.773	36.901	45.598	32.257	287	9.4	1.09	17.2	959
102	1015	1003	3.814	3.736	34.905	27.775	36.905	45.604	32.465	287	9.4	1.08	17.4	1003
103	1015	1003	3.814	3.736	34.901	27.772	36.902	45.601	32.462	287	9.6	1.08	17.4	1003
423	1021	1009	3.853	3.774	34.913	27.777	36.906	45.602	32.494	284	9.5	1.09	17.2	1009
424	1111	1098	3.790	3.704	34.913	27.784	36.917	45.617	32.913	282	9.7	1.09	17.3	1098
104	1115	1102	3.811	3.725	34.914	27.783	36.914	45.613	32.929	282	9.8	1.10	17.4	1102
105	1216	1201	3.782	3.687	34.920	27.791	36.924	45.625	33.398	280	10.0	1.10	17.6	1201
106	1321	1305	3.789	3.685	34.931	27.800	36.933	45.634	33.883	278	10.2	1.12	17.7	1305
107	1420	1402	3.793	3.680	34.944	27.811	36.944	45.645	34.342	276	10.6	1.11	17.4	1402
108	1523	1504	3.754	3.632	34.946	27.818	36.953	45.656	34.815	276	10.7	1.11	17.4	1504
109	1628	1607	3.682	3.551	34.951	27.830	36.969	45.676	35.303	276	11.2	1.11	17.1	1607
110	1776	1752	3.545	3.402	34.943	27.838	36.985	45.700	35.983	277	11.3	1.10	16.7	1752
111	1827	1802	3.521	3.374	34.949	27.845	36.994	45.710	36.220	277	11.5	1.09	16.8	1802
112	1883	1857	3.404	3.253	34.943	27.852	37.007	45.729	36.484	279	11.0	1.08	16.6	1857
113	1976	1949	3.121	2.966	34.922	27.861	37.033	45.769	36.925	283	10.7	1.04	15.8	1949
115	2076	2047	2.725	2.567	34.902	27.880	37.074	45.831	37.414	288	10.0	1.00	15.3	2047
116	2179	2148	2.330	2.169	34.911	27.920	37.135	45.913	37.938	289	10.7	1.01	15.4	2148
117	2237	2205	1.923	1.764	34.900	27.943	37.181	45.979	38.245	293	10.0	0.97	14.7	2205
118	2319	2285	1.605	1.445	34.883	27.952	37.208	46.024	38.643	298	8.6	0.93	14.4	2285
119	2358	2323	1.282	1.125	34.877	27.969	37.244	46.077	38.856	302	7.3	0.89	14.2	2323
120	2379	2344	1.247	1.089	34.876	27.971	37.247	46.082	38.954	303	7.2	0.89	14.2	2344
121	2398	2363	1.234	1.075	34.870	27.967	37.244	46.080	39.037	303	7.2	0.89	14.1	2363
122	2410	2374	1.245	1.084	34.875	27.970	37.247	46.082	39.093	303	7.5	0.88	13.8	2374
123	2421	2385	1.257	1.095	34.878	27.972	37.248	46.083	39.143	303	7.5	0.88	13.8	2385
124	2429	2393	1.257	1.094	34.878	27.972	37.248	46.083	39.179	303	7.6	0.89	13.8	2393

BOTTOM DEPTH FOR CAST 1 IS 2400

STATION: 12 LEG: I POSITION: 63° 37' N 32° 52' W DATE: 6 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	7	7	10.26	10.26	34.86 D	26.837	35.658	44.070	26.869					7
1102	10	10	10.17	10.17	34.86 D	26.857	35.682	44.097	26.902					10
1103	21	21	8.85	8.85	34.87 D	27.079	35.962	44.431	27.175					21
1104	30	30	8.13	8.13	34.94 D	27.248	36.162	44.660	27.385					30
1105	49	49	7.72	7.72	34.97 D	27.330	36.262	44.778	27.554					49
1106	76	75	6.74	6.73	35.04 D	27.529	36.507	45.064	27.879					75
1107	99	98	6.52	6.51	35.02 D	27.538	36.527	45.094	27.993					98
1108	177	175	5.67	5.66	34.98 D	27.621	36.653	45.259	28.439					175
1109	201	199	5.49	5.47	34.97 D	27.634	36.675	45.290	28.563					199
1110	253	251	5.22	5.20	34.96 D	27.659	36.713	45.341	28.829					251
1111	303	300	5.00	4.98	34.95 D	27.673	36.739	45.378	29.076					300
1112	353	349	4.75	4.72	34.92 D	27.685	36.764	45.415	29.320					349
1113	404	400	4.61	4.58	34.92 D	27.697	36.784	45.442	29.570					400
1114	454	449	4.51	4.47	34.91 D	27.703	36.795	45.458	29.807					449
1115	506	501	4.43	4.39	34.91 D	27.711	36.807	45.474	30.055					501
1116	557	551	4.29	4.24	34.90 D	27.715	36.819	45.493	30.296					551
1117	604	598	4.27	4.23	34.91 D	27.724	36.829	45.504	30.522					598
1118	707	699	4.15	4.10	34.90 D	27.735	36.847	45.528	31.008					699
1119	807	798	4.01	3.94	34.90 D	27.747	36.867	45.555	31.481					798
1120	909	899	3.93	3.86	34.89 D	27.752	36.877	45.569	31.955					899

STATION: 12 LEG: I POSITION: 63° 37' N 32° 52' W DATE: 6 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1121	1009	997	3.92	3.85	34.90 D	27.762	36.887	45.580	32.422					997
1122	1110	1097	3.84	3.75	34.90 D	27.770	36.900	45.598	32.893					1097
1123	1211	1196	3.83	3.74	34.91 D	27.781	36.911	45.610	33.363					1196
1124	1313	1297	3.80	3.70	34.91 D	27.782	36.914	45.615	33.828					1297
1125	1416	1398	3.78	3.67	34.93 D	27.798	36.932	45.634	34.312					1398
1126	1516	1497	3.72	3.60	34.93 D	27.808	36.945	45.650	34.775					1497
1127	1620	1599	3.69	3.56	34.94 D	27.816	36.956	45.663	35.254					1599
1128	1819	1795	3.56	3.41	34.94 D	27.832	36.979	45.693	36.170					1795
1129	2022	1994	3.42	3.26	34.94 D	27.850	37.005	45.727	37.103					1994
1130	2227	2195	3.29	3.11	34.95 D	27.867	37.030	45.759	38.042					2195
1131	2432	2396	3.08	2.88	34.94 D	27.879	37.055	45.796	38.979					2396
1132	2633	2593	2.82	2.60	34.93 D	27.896	37.087	45.842	39.904					2593
1133	2798	2754	1.34	1.14	34.88 D	27.968	37.242	46.074	40.817					2754

BOTTOM DEPTH FOR CAST 1 IS 2766

STATION: 13 LEG: I POSITION: 63° 43' N 30° 31' W DATE: 6 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	6	6	10.24	10.24	34.96 D	26.921	35.741	44.153	26.948					6
1102	10	10	10.24	10.23	34.96 D	26.921	35.742	44.154	26.966					10
1103	21	21	10.03	10.03	34.97 D	26.960	35.789	44.209	27.055					21
1104	31	31	9.15	9.15	34.99 D	27.123	35.991	44.446	27.264					31
1105	51	51	7.85	7.85	35.02 D	27.355	36.281	44.790	27.589					51
1106	77	76	7.15	7.14	34.99 D	27.429	36.389	44.929	27.783					76
1107	101	100	6.69	6.68	35.00 D	27.506	36.487	45.047	27.970					100
1108	126	125	6.50	6.49	35.03 D	27.550	36.540	45.108	28.130					125
1109	151	150	6.41	6.39	35.03 D	27.569	36.563	45.135	28.263					150
1110	203	201	6.05	6.03	35.01 D	27.599	36.611	45.200	28.534					201
1111	253	251	5.77	5.75	35.00 D	27.620	36.647	45.249	28.787					251
1112	303	300	5.61	5.58	34.99 D	27.634	36.669	45.279	29.032					300
1113	352	349	5.40	5.37	34.98 D	27.651	36.697	45.316	29.276					349
1114	403	399	5.03	5.00	34.94 D	27.666	36.731	45.369	29.529					399
1115	455	450	4.89	4.86	34.93 D	27.677	36.749	45.393	29.780					450
1116	504	499	4.84	4.80	34.93 D	27.684	36.759	45.406	30.014					499
1117	556	550	4.68	4.63	34.92 D	27.696	36.780	45.435	30.266					550
1118	606	600	4.46	4.41	34.90 D	27.704	36.800	45.466	30.508					600
1119	707	699	4.34	4.29	34.90 D	27.716	36.818	45.490	30.985					699
1120	808	799	4.17	4.11	34.89 D	27.725	36.837	45.517	31.461					799
1121	909	899	4.17	4.10	34.91 D	27.740	36.851	45.533	31.937					899
1122	1011	999	4.08	4.00	34.91 D	27.751	36.868	45.554	32.416					999
1123	1110	1097	3.98	3.89	34.91 D	27.761	36.883	45.575	32.879					1097
1124	1213	1198	3.84	3.74	34.90 D	27.769	36.899	45.598	33.360					1198
1125	1313	1297	3.88	3.78	34.92 D	27.782	36.910	45.606	33.825					1297
1126	1413	1395	3.87	3.75	34.93 D	27.794	36.923	45.620	34.290					1395
1127	1518	1499	3.82	3.70	34.93 D	27.801	36.933	45.634	34.774					1499
1128	1617	1596	3.77	3.64	34.93 D	27.806	36.942	45.644	35.227					1596
1129	1823	1799	3.63	3.48	34.93 D	27.822	36.966	45.677	36.175					1799
1130	2023	1995	3.46	3.29	34.93 D	27.840	36.994	45.714	37.097					1995
1131	2228	2196	3.30	3.12	34.94 D	27.858	37.021	45.750	38.037					2196
1132	2373	2338	3.23	3.03	34.93 D	27.864	37.032	45.765	38.692					2338

BOTTOM DEPTH FOR CAST 1 IS 2347

STATION: 14 LEG: II POSITION: 65° 55' N 27° 27' W DATE: 13 AUG 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
2201	1	1	1.05	1.05	30.02 D	24.078	33.439	42.354	24.083					1
201	6	6	1.052	1.052	30.020	24.078	33.438	42.354	24.107	366	0.6	0.33	0.1	6
202	18	18	0.770	0.769	31.573	25.338	34.689	43.595	25.424	376	0.2	0.31	0.1	18
203	43	43	-0.843	-0.844	32.571	26.210	35.640	44.620	26.418	373	0.7	0.53	1.1	43
204	68	67	-1.233	-1.234	32.866	26.460	35.909	44.907	26.789	367	0.7	0.53	1.1	67
205	94	93	-0.386	-0.389	33.312	26.791	36.181	45.123	27.243	363	3.5	0.54	3.6	93
206	118	117	0.938	0.933	33.783	27.103	36.407	45.268	27.665	345	3.3	0.57	5.1	117

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 14 LEG: II POSITION: 65° 55' N 27° 27' W DATE: 13 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
207	141	140	0.939	0.933	33.964	27.249	36.549	45.407	27.920	339	5.5	0.69	7.4	140
208	193	191	1.404	1.395	34.389	27.560	36.827	45.653	28.474	319	5.1	0.76	9.4	191
209	217	215	2.226	2.214	34.535	27.616	36.835	45.616	28.639	310	6.0	0.81	10.9	215
210	243	241	1.542	1.530	34.516	27.652	36.910	45.727	28.802	317	5.0	0.72	9.3	241
211	269	267	1.250	1.237	34.571	27.716	36.989	45.821	28.991	315	5.8	0.77	11.1	267
515	306	303	5.844	5.817	34.964	27.587	36.611	45.210	28.997	278	7.8	0.97	15.2	303
212	313	310	-0.385	-0.396	34.593	27.825	37.193	46.114	29.323	319	6.6	0.80	12.1	310
215	324	321	-0.354	-0.365	34.616	27.842	37.208	46.127	29.392	318	6.6	0.80	12.1	321
216	362	358	-0.376	-0.389	34.731	27.936	37.302	46.220	29.666	316	6.3	0.80	12.6	358
217	400	396	0.268	0.252	34.825	27.980	37.306	46.187	29.883	320	5.9	0.85	13.5	396
516	432	428	0.911	0.891	34.761	27.891	37.181	46.028	29.937	308	7.8	0.88	13.5	428
218	443	439	0.342	0.323	34.880	28.021	37.341	46.217	30.125	311	7.4	0.89	14.1	439
219	481	476	0.013	-0.006	34.896	28.051	37.391	46.285	30.340	311	7.9	0.90	14.1	476
220	520	515	-0.182	-0.202	34.924	28.083	37.434	46.339	30.560	309	8.2	0.91	14.2	515
221	560	554	-0.184	-0.206	34.929	28.087	37.439	46.343	30.753	309	8.2	0.90	14.1	554
222	561	555	-0.189	-0.211	34.933	28.091	37.442	46.347	30.761	308	8.3	0.89	14.1	555
517	574	568	-0.487	-0.508	34.910	28.086	37.456	46.377	30.823	306	10.1	0.95	14.7	568
518	591	585	-0.487	-0.508	34.922	28.096	37.465	46.387	30.913	306	10.1	0.95	14.7	585
519	603	597	-0.487	-0.509	34.916	28.091	37.461	46.382	30.965	306	10.1	0.94	14.4	597
223	612	605	-0.193	-0.217	34.928	28.087	37.439	46.344	30.999	309	8.3	0.89	14.1	605
224	612	605	-0.193	-0.217	34.924	28.084	37.436	46.341	30.995	309	8.3	0.89	14.1	605
520	627	620	-0.484	-0.507	34.922	28.096	37.465	46.386	31.083	306	10.2	0.95	14.5	620
521	636	629	-0.484	-0.507	34.922	28.096	37.465	46.387	31.126	307	10.2	0.94	14.4	629
522	644	637	-0.481	-0.505	34.923	28.097	37.466	46.387	31.165	306	10.0	0.93	14.3	637
523	645	638	-0.483	-0.507	34.918	28.093	37.462	46.383	31.165	306	9.8	0.91	14.3	638
524	652	645	-0.488	-0.512	34.920	28.094	37.464	46.386	31.200	306	9.8	0.90	14.2	645

BOTTOM DEPTH FOR CAST 2 IS 637 — CAST 5 IS 653

STATION: 15 LEG: II POSITION: 69° 0' N 20° 1' W DATE: 15 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	3	3	2.88	2.88	33.02 D	26.349	35.556	44.327	26.363					3
513	16	16	2.77	2.77	33.018	26.360	35.573	44.350	26.436	344	0.1	0.09	0.0	16
514	16	16	2.77	2.77	33.013	26.356	35.570	44.346	26.432	344	0.1	0.09	0.0	16
515	28	28	1.96	1.96	33.651	26.929	36.176	44.985	27.062	367	0.2	0.05	0.0	28
516	38	38	1.20	1.20	33.810	27.108	36.397	45.243	27.289	378	0.2	0.07	0.0	38
517	48	48	-0.911	-0.912	34.131	27.473	36.880	45.838	27.704	356	0.9	0.36	4.5	48
518	48	48	-0.911	-0.912	34.139	27.479	36.887	45.844	27.711	352	1.2	0.41	5.9	48
519	58	57	-1.580	-1.581	34.217	27.564	37.011	46.006	27.845	323	5.9	0.68		57
520	66	65	-1.525	-1.526	34.266	27.602	37.045	46.036	27.921	323	5.7	0.67		65
521	102	101	-1.005	-1.008	34.447	27.732	37.140	46.098	28.223	317	6.6	0.75		101
522	127	126	-0.538	-0.542	34.585	27.825	37.202	46.131	28.435	313	7.0	0.78		126
201	145	144	-0.280	-0.285	34.611	27.835	37.196	46.110	28.529	312	6.7	0.78	12.6	144
202	193	191	0.777	0.769	34.859	27.978	37.273	46.125	28.895	303	6.6	0.81	13.3	191
523	227	225	1.076	1.065	34.904	27.995	37.272	46.108	29.071		6.4	0.83	12.5	225
524	227	225	1.076	1.065	34.912	28.001	37.279	46.114	29.078	303	6.4	0.79	12.6	225
203	243	241	1.078	1.067	34.924	28.011	37.288	46.123	29.163	302	6.4	0.80	13.5	241
204	292	289	1.074	1.060	34.934	28.019	37.296	46.132	29.403	303	6.5	0.81	13.5	289
205	342	338	1.071	1.055	34.955	28.037	37.314	46.149	29.656	307	6.3	0.82	13.5	338
206	389	385	0.966	0.948	34.957	28.045	37.328	46.169	29.887	308	6.3	0.81	13.6	385
207	435	430	0.860	0.840	34.966	28.059	37.349	46.195	30.119	310	6.3	0.82	13.6	430
208	485	480	0.807	0.784	34.967	28.063	37.356	46.205	30.360	310	6.3	0.82	13.6	480
209	534	528	0.664	0.639	34.970	28.075	37.375	46.233	30.604	311	6.4	0.83	13.7	528
210	583	576	0.526	0.500	34.972	28.085	37.393	46.258	30.846	311	6.5	0.83	13.6	576
211	683	675	0.194	0.165	34.957	28.091	37.420	46.303	31.329	312	6.9	0.84	13.7	675
212	788	779	-0.070	-0.103	34.940	28.091	37.436	46.335	31.829	312	7.3	0.85	14.1	779
215	912	901	-0.317	-0.354	34.937	28.101	37.461	46.373	32.427	313	7.8	0.87	14.2	901
216	1013	1001	-0.494	-0.534	34.929	28.103	37.473	46.396	32.907	313	8.0	0.87	14.3	1001
217	1090	1076	-0.525	-0.569	34.926	28.102	37.475	46.399	33.268	311	8.5	0.89	14.5	1076
218	1197	1182	-0.618	-0.666	34.924	28.104	37.483	46.413	33.773	309	9.1	0.90	14.7	1182
219	1301	1284	-0.686	-0.739	34.918	28.103	37.486	46.420	34.259	307	9.7	0.92	14.8	1284
220	1407	1388	-0.771	-0.828	34.922	28.109	37.498	46.438	34.763	306	10.3	0.93	15.0	1388
125	1412H	1393			34.918					305	10.5	0.93	15.0	1393
221	1451	1432	-0.807	-0.866	34.920	28.109	37.500	46.442	34.969	306	10.5	0.93	15.0	1432

STATION: 15 LEG: II POSITION: 69° 0' N 20° 1' W DATE: 15 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
126	1454H	1435	-0.77 H	-0.83	34.917	28.106	37.495	46.435	34.977	305	10.6	0.94	15.0	1435
127	1475H	1455			34.919					306	10.7	0.93	15.0	1455
222	1477	1457	-0.874	-0.934	34.916	28.109	37.504	46.449	35.092	306	11.1	0.94	15.0	1457
128	1495H	1475	-0.829H	-0.890	34.915	28.106	37.499	46.442	35.171	305	11.0	0.93	15.0	1475
223	1496	1476	-0.875	-0.936	34.922	28.114	37.509	46.454	35.185	306	11.2	0.95	15.0	1476
129	1515H	1495			34.914					306	10.9	0.93	15.0	1495
224	1516	1496	-0.874	-0.936	34.918	28.110	37.505	46.451	35.274	306	11.2	0.95	15.0	1496
130	1526H	1505			34.914					306	11.0	0.94	15.0	1505
131	1536H	1515			34.914					306	11.1	0.94	15.0	1515
132	1547H	1526	-0.86 H	-0.93	34.915	28.108	37.502	46.447	35.415	306	11.1	0.94	14.9	1526

BOTTOM DEPTH FOR CAST 2 IS 1516 — CAST 1 IS 1534

STATION: 16 LEG: II POSITION: 72° 2' N 8° 26' W DATE: 16 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
601	1	1	4.11	4.11	33.271	26.439	35.577	44.282	26.444	329	0.6	0.04	0.0	1
602	5	5	4.10	4.10	33.272	26.441	35.579	44.285	26.465	330	0.6	0.05	0.0	5
603	5	5	4.10	4.10	33.277	26.445	35.583	44.289	26.469	329	0.6	0.05	0.0	5
604	15	15	3.45	3.45	33.756	26.888	36.053	44.783	26.959	346	1.0	0.11	1.2	15
605	31	31	-1.10	-1.10	34.345	27.653	37.068	46.033	27.802	382	1.3	0.31	4.4	31
606	41	41	-1.472	-1.473	34.464	27.761	37.197	46.181	27.959	331	3.6	0.71	10.6	41
607	51	51	-1.449	-1.450	34.545	27.826	37.259	46.241	28.073	332	4.5	0.73	11.5	51
608	76	75	-1.277	-1.279	34.653	27.908	37.329	46.299	28.275	332	5.1	0.76	11.3	75
609	105	104	0.168	0.164	34.825	27.985	37.316	46.202	28.486	315	5.9	0.77	12.6	104
610	130	129	0.718	0.712	34.903	28.016	37.314	46.169	28.635	309	6.0	0.78	12.9	129
611	155	153	0.902	0.895	34.933	28.029	37.316	46.160	28.766	308	6.1	0.79	12.8	153
612	180	178	0.873	0.865	34.947	28.042	37.331	46.176	28.897	308	6.1	0.78	13.1	178
613	205	203	0.817	0.808	34.950	28.048	37.340	46.188	29.022	310	6.1	0.80	13.1	203
614	255	252	0.688	0.677	34.954	28.060	37.358	46.214	29.271	311	6.2	0.80	13.2	252
615	306	303	0.511	0.498	34.951	28.068	37.377	46.242	29.522	313	6.3	0.80	13.1	303
616	356	352	0.347	0.332	34.950	28.076	37.395	46.270	29.769	314	6.4	0.81	13.2	352
617	406	402	0.167	0.151	34.939	28.077	37.407	46.292	30.009	314	6.8	0.81	13.3	402
618	481	476	-0.072	-0.091	34.935	28.087	37.431	46.329	30.377	314	6.8	0.82	13.3	476
619	557	551	-0.226	-0.247	34.926	28.087	37.441	46.348	30.739	318	6.8	0.82	13.4	551
621	633	626	-0.366	-0.390	34.929	28.096	37.458	46.373	31.110	316	7.2	0.84	13.6	626
622	633	626	-0.365	-0.389	34.929	28.096	37.458	46.373	31.110	316	7.2	0.84	13.6	626
501	675	667	-0.410	-0.435	34.923	28.093	37.458	46.376	31.306	315	7.3	0.89	13.9	667
623	708	700	-0.494	-0.520	34.930	28.103	37.473	46.395	31.473	318	7.4	0.84	13.7	700
502	749	740	-0.552	-0.580	34.922D	28.099	37.473	46.398	31.664	314	7.5	0.90	14.3	740
624	758	749	-0.539	-0.567	34.926	28.102	37.474	46.399	31.709	318	7.5	0.84	13.7	749
503	824	814	-0.601	-0.632	34.927	28.105	37.482	46.410	32.025	316	7.6	0.91	14.3	814
504	900	889	-0.642	-0.676	34.921	28.102	37.482	46.413	32.381	313	8.2	0.93	14.4	889
505	1011	998	-0.722	-0.760	34.919	28.104	37.489	46.425	32.906	312	8.6	0.94	14.9	998
506	1102	1088	-0.761	-0.803	34.918	28.105	37.492	46.430	33.335	309	9.1	0.95	15.0	1088
507	1203	1187	-0.824	-0.870	34.913	28.104	37.495	46.437	33.808	308	9.6	0.98	15.2	1187
508	1304	1287	-0.887	-0.938	34.911	28.105	37.500	46.446	34.283	308	10.0	0.99	15.3	1287
509	1404	1385	-0.904	-0.960	34.912	28.106	37.503	46.450	34.751	307	10.1	0.99	15.5	1385
510	1504	1483	-0.925	-0.986	34.92	28.114	37.512	46.461	35.225	307	10.4	0.99	15.7	1483
511	1504	1483	-0.925	-0.986	34.92	28.114	37.512	46.461	35.225	307	10.4	0.99	15.7	1483
512	1605	1583	-0.943	-1.009	34.92	28.115	37.514	46.464	35.695	308	10.6	0.99	15.8	1583
515	1716	1692	-0.961	-1.033	34.913	28.110	37.511	46.463	36.204	308	10.7	0.99	15.9	1692
516	1842	1815	-0.983	-1.062	34.914	28.112	37.515	46.468	36.789	309	10.7	0.99	15.8	1815
517	1970	1941	-1.009	-1.095	34.918	28.116	37.521	46.476	37.383	311	10.7	0.98	15.7	1941
518	2045	2014	-1.034	-1.124	34.913	28.113	37.520	46.477	37.726	312	10.6	0.98	15.8	2014
519	2122	2090	-1.062	-1.156	34.912	28.114	37.522	46.481	38.081	314	10.5	0.98	15.5	2090
520	2196	2162	-1.087	-1.186	34.906	28.110	37.520	46.481	38.418	315	10.4	0.96	15.4	2162
521	2298	2262	-1.125	-1.230	34.900	28.107	37.520	46.483	38.883	317	10.3	0.96	15.4	2262
115	2381	2344	-1.141	-1.251	34.901	28.108	37.523	46.487	39.264	316	10.3	0.99	15.8	2344
522	2400	2362	-1.147	-1.258	34.897	28.105	37.520	46.485	39.348	318	10.1	0.96	15.4	2362
116	2451	2412	-1.153	-1.267	34.897	28.105	37.521	46.486	39.581	318	10.3	0.99	15.9	2412
523	2477	2438	-1.160	-1.276	34.897	28.106	37.522	46.487	39.700	319	10.3	0.96	15.4	2438
117	2491	2451	-1.162	-1.279	34.898	28.107	37.523	46.489	39.764	318	10.3	0.99	15.9	2451
118	2511	2471	-1.150	-1.268	34.900	28.108	37.524	46.489	39.856	318	10.2	0.98	15.7	2471
119	2531	2490	-1.150	-1.270	34.893	28.102	37.518	46.484	39.941	319	10.2	0.98	15.9	2490
120	2551	2510	-1.152	-1.273	34.901	28.109	37.525	46.490	40.038	319	10.2	0.98	15.8	2510

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 16 LEG: II POSITION: 72° 2' N 8° 26' W DATE: 16 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
524	2557	2516	-1.169	-1.290	34.895	28.105	37.522	46.488	40.062	320	10.3	0.96	15.4	2516
121	2559	2518	-1.151	-1.273	34.895	28.104	37.520	46.486	40.070	319	10.3	1.00	15.7	2518
122	2569	2528	-1.151	-1.273	34.890	28.100	37.516	46.482	40.111	319	10.3	1.00	15.6	2528
123	2579	2537	-1.150	-1.273	34.897	28.106	37.522	46.487	40.162	319	10.2	0.99	15.5	2537
124	2579	2537	-1.150	-1.273	34.893	28.102	37.518	46.484	40.159	319	10.2	0.98	15.4	2537

BOTTOM DEPTH FOR CAST 5 IS 2530 — CAST 1 IS 2542

STATION: 17 LEG: II POSITION: 74° 56' N 1° 7' W DATE: 18 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
601	1	1	4.57	4.57	34.500	27.366	36.460	45.124	27.371	320	0.4	0.27	0.6	1
6201	24	24	4.57	4.57	34.50 D	27.366	36.460	45.125	27.478					24
602	41	41	-0.906	-0.907	34.774	27.993	37.389	46.335	28.190	371	4.2	0.76	9.9	41
603	76	75	-1.681	-1.683	34.825	28.060	37.502	46.493	28.427	348	5.1	0.87	13.1	75
604	102	101	-1.714	-1.716	34.842	28.075	37.519	46.511	28.568	340	5.7	0.90	14.3	101
605	154	152	-1.598	-1.601	34.840	28.070	37.507	46.492	28.813	337	6.1	0.92	14.8	152
606	204	202	-1.521	-1.526	34.852	28.077	37.509	46.490	29.061	334	6.4	0.92	15.0	202
607	257	254	-1.318	-1.324	34.868	28.084	37.504	46.472	29.321	330	6.9	0.94	15.4	254
608	306	303	-1.215	-1.223	34.869	28.081	37.495	46.458	29.552	326	7.2	0.96	15.4	303
609	355	351	-1.118	-1.128	34.878	28.085	37.493	46.450	29.789	324	7.4	0.96	15.7	351
610	398	394	-1.118	-1.129	34.879	28.086	37.494	46.451	29.996	322	7.7	0.96	15.7	394
611	470	465	-1.073	-1.087	34.886	28.090	37.495	46.450	30.343	319	8.2	0.97	16.0	465
612	554	548	-1.065	-1.082	34.895	28.097	37.502	46.456	30.749	315	8.6	0.99	16.1	548
614	628	621	-1.065	-1.084	34.886	28.090	37.495	46.450	31.094	314	9.0	0.99	16.1	621
615	704	696	-1.050	-1.072	34.896	28.098	37.501	46.456	31.461	312	9.4	0.99	16.2	696
616	794	784	-1.060	-1.086	34.891	28.094	37.499	46.454	31.884	312	9.6	0.99	16.1	784
617	894	883	-1.074	-1.104	34.896D	28.099	37.505	46.460	32.361					883
618	1002	989	-1.100	-1.134	34.903	28.106	37.513	46.471	32.877	313	10.2	0.99	15.9	989
619	1111	1097	-1.097	-1.136	34.898	28.102	37.509	46.467	33.385	313	10.3	0.99	15.9	1097
620	1211	1195	-1.110	-1.154	34.896	28.101	37.509	46.468	33.853	313	10.4	0.99	15.8	1195
621	1311	1293	-1.118	-1.166	34.901	28.105	37.515	46.474	34.326	314	10.4	0.98	15.8	1293
622	1411	1392	-1.125	-1.178	34.894	28.100	37.510	46.470	34.787	315	10.3	0.98	15.6	1392
401	1419	1400	-1.130	-1.183	34.904	28.108	37.519	46.479	34.833	314	10.2	0.98	15.0	1400
623	1513	1492	-1.137	-1.195	34.897	28.103	37.514	46.475	35.265	316	10.5	0.99	15.1	1492
402	1520	1499	-1.144	-1.202	34.895	28.102	37.513	46.475	35.297	316	10.1	0.99	15.0	1499
624	1616	1593	-1.158	-1.221	34.893	28.101	37.513	46.476	35.742	317	10.2	0.97	15.2	1593
403	1619	1596	-1.153	-1.217	34.896	28.103	37.515	46.478	35.758	317	10.0	1.04	15.3	1596
404	1720	1695	-1.160	-1.229	34.897	28.104	37.517	46.480	36.227	318	9.9	0.97	15.0	1695
405	1819	1793	-1.168	-1.242	34.889	28.098	37.512	46.476	36.679	318	9.8	0.97	14.9	1793
406	1920	1892	-1.173	-1.253	34.889	28.098	37.513	46.478	37.146	319	9.8	0.98	14.9	1892
407	2065	2034	-1.179	-1.268	34.891	28.101	37.516	46.482	37.815	319	9.6	0.98	14.9	2034
408	2216	2182	-1.182	-1.280	34.894	28.103	37.520	46.486	38.509	320	9.5	0.97	14.9	2182
409	2326	2289	-1.181	-1.286	34.888	28.099	37.516	46.482	39.007	320	9.5	0.97	14.9	2289
410	2432	2393	-1.178	-1.290	34.893	28.103	37.520	46.487	39.494	321	9.4	0.97	14.9	2393
411	2534	2493	-1.176	-1.295	34.888	28.099	37.516	46.483	39.953	321	9.4	0.97	14.8	2493
412	2632	2589	-1.173	-1.299	34.890	28.101	37.519	46.486	40.399	321	9.4	0.97	14.8	2589
415	2748	2702	-1.169	-1.304	34.891	28.102	37.520	46.487	40.924	321	9.4	0.96	14.7	2702
416	2845	2797	-1.163	-1.305	34.888	28.099	37.517	46.485	41.359	321	9.4	0.96	14.7	2797
417	2946	2896	-1.159	-1.309	34.888	28.099	37.518	46.486	41.814	321	9.4	0.96	14.7	2896
418	3048	2995	-1.154	-1.312	34.891	28.102	37.520	46.488	42.274	321	9.7	0.94	14.6	2995
419	3146	3091	-1.147	-1.312	34.889	28.100	37.519	46.487	42.710	321	9.6	0.93	14.6	3091
420	3244	3186	-1.140	-1.313	34.889	28.100	37.519	46.487	43.148	321	9.6	0.93	14.6	3186
421	3344	3284	-1.131	-1.313	34.891	28.102	37.521	46.489	43.595	321	9.6	0.92	14.6	3284
115	3474	3410	-1.119	-1.312	34.898	28.108	37.526	46.494	44.177	318	9.3	0.92	13.9	3410
422	3491	3427	-1.118	-1.313	34.886	28.098	37.517	46.485	44.243	321	9.7	0.92	14.6	3427
116	3582	3516	-1.110	-1.313	34.891	28.102	37.521	46.489	44.650	321	9.3	0.92	13.9	3516
117	3623	3556	-1.106	-1.312	34.895	28.105	37.524	46.492	44.834	321	9.3	0.92	13.9	3556
423	3640	3572	-1.105	-1.313	34.886	28.098	37.517	46.485	44.902	321	9.8	0.93	14.3	3572
118	3666	3597	-1.102	-1.312	34.892	28.103	37.521	46.489	45.021	321	9.3	0.92	13.8	3597
119	3687	3618	-1.100	-1.312	34.894	28.104	37.523	46.491	45.116	321	9.3	0.91	13.6	3618
120	3711	3641	-1.097	-1.311	34.894	28.104	37.523	46.491	45.221	321	9.3	0.92	13.7	3641
121	3722	3652	-1.097	-1.312	34.893	28.104	37.522	46.490	45.269	322	9.3	0.92	13.7	3652
122	3732	3662	-1.096	-1.312	34.897	28.107	37.525	46.493	45.316	321	9.4	0.91	13.7	3662
123	3744	3673	-1.095	-1.312	34.894	28.104	37.523	46.491	45.367	321	9.4	0.92	13.6	3673

STATION: 17 LEG: II POSITION: 74° 56' N 1° 7' W DATE: 18 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
424	3751	3680	-1.093	-1.311	34.891	28.102	37.520	46.488	45.395	321	9.8	0.96	14.5	3680
124	3753	3682	-1.094	-1.312	34.894	28.104	37.523	46.491	45.406	321	9.4	0.92	13.7	3682

BOTTOM DEPTH FOR CAST 4 IS 3686 — CAST 1 IS 3688

STATION: 18 LEG: II POSITION: 70° 0' N 0° 0' W DATE: 22 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1018	1	1	9.42	9.42	35.080	27.152	36.007	44.449	27.157					1
701	5	5	9.42	9.42	35.083	27.155	36.009	44.452	27.178	280	2.5	0.22	1.7	5
1019	9	9	9.42	9.42	35.072	27.146	36.001	44.444	27.187					9
1020	9	9	9.42	9.42	35.072	27.146	36.001	44.444	27.187					9
702	18	18	9.42	9.42	35.079	27.152	36.006	44.449	27.234	280	2.4	0.21	1.8	18
1021	21	21	9.42	9.42	35.077	27.150	36.005	44.448	27.246					21
1022	37	37	9.41	9.41	35.075	27.151	36.006	44.449	27.319					37
703	44	44	7.23	7.23	35.148	27.544	36.497	45.031	27.746	283	4.8	0.66	7.3	44
1023	57	56	6.98	6.97	35.153	27.583	36.548	45.093	27.845					56
704	68	67	6.34	6.33	35.151	27.668	36.664	45.237	27.982	282	5.8	0.86	13.3	67
1024	81	80	6.30	6.29	35.154	27.676	36.674	45.249	28.049					80
705	95	94	5.94	5.93	35.136	27.709	36.724	45.316	28.147	289	5.7	0.85	12.9	94
706	119	118	5.77	5.76	35.132	27.727	36.751	45.350	28.277	289	5.7	0.85	12.8	118
707	144	143	5.48	5.47	35.131	27.762	36.801	45.414	28.428	294	5.7	0.83	12.7	143
708	169	167	5.29	5.28	35.118	27.775	36.823	45.445	28.557	295	5.7	0.82	12.8	167
709	195	193	5.05	5.03	35.103	27.792	36.852	45.486	28.695	297	5.6	0.81	12.8	193
710	245	242	4.80	4.78	35.118	27.833	36.906	45.551	28.968	300	5.6	0.81	12.6	242
711	344	340	4.24	4.21	35.117	27.894	36.996	45.668	29.492	304	5.6	0.81	12.9	340
712	445	440	3.90	3.87	35.115	27.928	37.049	45.738	29.997	306	5.5	0.81	12.9	440
715	557	551	3.51	3.47	35.107	27.962	37.103	45.812	30.553	308	5.6	0.84	13.2	551
716	655	648	3.14	3.10	35.100	27.991	37.153	45.881	31.042	310	5.6	0.84	13.3	648
717	758	749	2.66	2.61	35.076E	28.015	37.204	45.956	31.552	312	5.7	0.85	13.4	749
718	808	799	2.37	2.32	35.061E	28.028	37.232	46.000	31.802	305	5.8	0.84	13.3	799
719	858	848	2.04	1.99	35.024	28.025	37.248	46.033	32.038	309	6.0	0.89	14.0	848
720	909	898	1.61	1.56	34.997	28.036	37.284	46.091	32.296	307	6.2	0.91	14.3	898
721	959	947	1.18	1.13	34.980	28.052	37.324	46.155	32.555	306	6.5	0.93	14.5	947
722	1036	1023	0.579	0.528	34.942	28.059	37.366	46.230	32.938	303	7.1	0.96	14.6	1023
401	1043	1030	0.593	0.541	34.945	28.060	37.367	46.230	32.972	302	7.3	0.95	14.7	1030
402	1093	1079	0.198	0.147	34.926	28.067	37.397	46.282	33.223	302	7.4	0.96	15.0	1079
723	1111	1097	0.173	0.121	34.926	28.068	37.400	46.287	33.310	302	7.6	0.98	14.9	1097
403	1143	1129	0.001	-0.051	34.924	28.076	37.418	46.314	33.472	301	7.9	0.98	15.0	1129
404	1196	1181	-0.159	-0.212	34.917	28.078	37.430	46.335	33.726	302	8.2	0.99	15.1	1181
724	1212	1197	-0.209	-0.263	34.921	28.084	37.438	46.346	33.808	302	8.2	0.99	15.0	1197
405	1297	1280	-0.352	-0.409	34.909	28.081	37.444	46.360	34.206	301	8.8	1.00	15.1	1280
406	1397	1379	-0.489	-0.549	34.916	28.093	37.465	46.389	34.688	302	9.6	1.00	15.0	1379
407	1499	1479	-0.590	-0.655	34.911	28.093	37.472	46.402	35.166	302	10.1	1.00	15.3	1479
408	1601	1579	-0.662	-0.732	34.916	28.101	37.483	46.418	35.648	303	10.3	1.00	15.4	1579
409	1704	1680	-0.724	-0.799	34.912	28.100	37.487	46.425	36.127	303	10.7	1.01	15.5	1680
410	1803	1777	-0.769	-0.849	34.914	28.104	37.494	46.435	36.589	304	11.0	1.01	15.5	1777
411	1903	1876	-0.802	-0.887	34.913	28.104	37.497	46.440	37.052	304	11.3	1.01	15.6	1876
412	2006	1977	-0.829	-0.920	34.913	28.106	37.500	46.445	37.528	304	11.6	1.02	15.6	1977
415	2118	2086	-0.850	-0.948	34.908	28.103	37.499	46.446	38.039	304	11.9	1.03	15.6	2086
416	2217	2183	-0.864	-0.968	34.911	28.106	37.503	46.451	38.495	304	12.1	1.03	15.7	2183
417	2318	2282	-0.876	-0.987	34.912	28.107	37.506	46.455	38.958	304	12.4	1.02	15.7	2282
418	2470	2431	-0.887	-1.008	34.911	28.107	37.507	46.457	39.649	304	13.0	1.03	15.6	2431
419	2622	2580	-0.891	-1.023	34.912	28.109	37.509	46.460	40.340	304	13.2	1.03	15.6	2580
420	2774	2728	-0.890	-1.033	34.911	28.108	37.510	46.461	41.025	304	13.4	1.03	15.8	2728
421	2928	2879	-0.887	-1.042	34.909	28.107	37.509	46.461	41.716	303	13.6	1.03	15.7	2879
115	2952	2902	-0.886	-1.043	34.915	28.112	37.514	46.466	41.829	303	14.0	1.02	15.2	2902
422	3055	3003	-0.880	-1.045	34.911	28.109	37.511	46.463	42.287	303	13.7	1.03	15.7	3003
116	3056	3004	-0.880	-1.046	34.915	28.112	37.514	46.466	42.294	303	13.6	1.02	15.6	3004
117	3162	3107	-0.875	-1.049	34.910	28.108	37.510	46.463	42.764	304	13.9	1.02	15.6	3107
118	3205	3149	-0.874	-1.052	34.912	28.110	37.512	46.465	42.958	304	13.5	1.02	15.6	3149
423	3209	3153	-0.874	-1.052	34.913	28.111	37.513	46.466	42.976	304	13.7	1.03	15.6	3153
119	3225	3169	-0.875	-1.054	34.912	28.110	37.512	46.465	43.047	304	13.4	1.03	15.4	3169
120	3245	3188	-0.875	-1.056	34.910	28.108	37.511	46.464	43.135	304	13.6	1.03	15.3	3188
121	3267	3210	-0.873	-1.056	34.911	28.109	37.512	46.465	43.233	304	13.6	1.03	15.4	3210

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
E VALUES ORIGINALLY REPORTED IN REVERSE ORDER

STATION: 18 LEG: II POSITION: 70° 0′ N 0° 0′ W DATE: 22 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
424	3277	3220	-0.872	-1.056	34.913	28.111	37.513	46.466	43.279	304	13.5	1.03	15.6	3220
122	3278	3220	-0.872	-1.056	34.910	28.108	37.511	46.464	43.281	304	13.5	1.02	15.5	3220
123	3290	3232	-0.869	-1.054	34.914	28.112	37.514	46.467	43.338	304	13.4	1.02	15.5	3232
124	3301	3243	-0.869	-1.055	34.910	28.108	37.511	46.464	43.383	304	13.3	1.02	15.4	3243

BOTTOM DEPTH FOR CAST 4 IS 3231—CAST 1 IS 3249

STATION: 19 LEG: II POSITION: 64° 12′ N 5° 34′ W DATE: 24 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
602	3	3	10.41	10.41	35.053	26.962	35.774	44.177	26.975	280	1.2	0.23	2.4	3
603	42	42	10.26	10.25	35.053	26.989	35.807	44.217	27.179	277	1.4	0.27	2.9	42
604	78	77	7.30	7.29	35.141	27.529	36.479	45.010	27.887	270	5.9	0.92	14.9	77
605	113	112	6.23	6.22	35.113	27.653	36.655	45.234	28.174	280	6.5	0.92	14.9	112
606	154	153	4.89	4.88	34.986	27.717	36.787	45.430	28.432	295	6.3	0.87	13.6	153
607	204	202	4.11	4.10	34.931	27.759	36.870	45.551	28.709	305	6.2	0.81	12.8	202
608	243	241	3.73	3.71	34.910	27.781	36.913	45.612	28.915	305	5.9	0.82	13.1	241
609	293	290	2.68	2.66	34.881	27.855	37.044	45.797	29.230	306	6.0	0.87	13.7	290
610	353	349	2.02	2.00	34.929	27.948	37.172	45.958	29.610	305	5.9	0.90	14.2	349
611	404	400	1.96	1.94	34.978	27.992	37.219	46.007	29.893	307	5.8	0.90	14.3	400
612	454	449	1.93	1.90	35.010	28.020	37.248	46.038	30.156	307	5.9	0.91	14.5	449
615	515	510	1.735	1.706	35.010	28.035	37.274	46.074	30.458	308	6.0	0.91	14.5	510
616	565	559	1.532	1.501	34.998	28.040	37.291	46.102	30.701	308	6.0	0.92	14.6	559
617	639	632	1.190	1.157	34.978	28.048	37.319	46.149	31.061	308	6.3	0.92	14.6	632
618	715	707	0.723	0.689	34.952	28.057	37.355	46.210	31.435	306	6.6	0.92	14.7	707
619	763	754	0.445	0.410	34.936	28.061	37.375	46.246	31.669	305	6.8	0.93	14.6	754
620	814	805	0.284	0.247	34.930	28.065	37.389	46.269	31.916	305	7.0	0.94	14.9	805
621	864	854	0.120	0.082	34.927	28.071	37.405	46.294	32.161	305	7.3	0.95	14.8	854
622	916	905	-0.028	-0.068	34.921	28.074	37.417	46.314	32.411	301	7.3	0.96	14.9	905
301	944	933	-0.250	-0.289	34.919	28.083	37.440	46.349	32.558	301	8.4	0.98	15.1	933
623	965	954	-0.148	-0.189	34.915	28.075	37.426	46.330	32.645	302	7.5	0.96	14.9	954
624	1016	1004	-0.296	-0.338	34.913	28.081	37.440	46.352	32.893	302	8.6	0.97	15.0	1004
302	1057	1044	-0.447	-0.490	34.912	28.087	37.455	46.376	33.096	301	8.9	0.99	15.6	1044
303	1158	1144	-0.569	-0.616	34.913	28.093	37.469	46.397	33.579	301	9.6	0.99	15.7	1144
304	1254	1238	-0.642	-0.693	34.913	28.097	37.477	46.409	34.032	302	10.0	0.99	15.8	1238
305	1394	1376	-0.726	-0.783	34.913	28.100	37.486	46.424	34.691	302	10.5	1.00	15.9	1376
306	1543	1523	-0.788	-0.853	34.912	28.102	37.492	46.434	35.388	303	11.1	1.02	15.7	1523
307	1692	1669	-0.839	-0.911	34.913	28.105	37.499	46.444	36.083	303	11.4	1.01	16.0	1669
308	1844	1818	-0.867	-0.948	34.912	28.106	37.502	46.448	36.786	303	11.7	1.02	16.0	1818
309	1998	1970	-0.892	-0.982	34.913	28.108	37.506	46.455	37.497	303	12.1	1.02	16.1	1970
310	2100	2070	-0.900	-0.996	34.913	28.109	37.507	46.457	37.965	303	12.3	1.02	16.1	2070
311	2199	2167	-0.906	-1.008	34.912	28.108	37.508	46.458	38.418	303	12.5	1.03	16.1	2167
312	2199	2167	-0.906	-1.008	34.910	28.107	37.506	46.456	38.416	303	12.5	1.03	16.2	2167
315	2310	2275	-0.909	-1.019	34.911	28.108	37.508	46.459	38.924	303	12.7	1.02	16.1	2275
316	2404	2367	-0.909	-1.025	34.911	28.108	37.509	46.460	39.352	303	12.8	1.02	16.2	2367
317	2556	2516	-0.908	-1.035	34.911	28.108	37.510	46.461	40.042	303	13.0	1.02	16.2	2516
318	2706	2663	-0.905	-1.043	34.909	28.107	37.509	46.461	40.718	302	13.5	1.03	16.1	2663
319	2853	2807	-0.894	-1.043	34.911	28.109	37.511	46.463	41.381	302	13.7	1.02	16.1	2807
115	2988	2939	-0.883	-1.043	34.912	28.110	37.511	46.463	41.988	302	14.1	1.03	16.2	2939
320	3006	2956	-0.881	-1.043	34.913	28.110	37.512	46.464	42.069	302	13.7	1.02	16.1	2956
116	3072	3021	-0.876	-1.043	34.909	28.107	37.509	46.461	42.361	302	14.1	1.04	16.2	3021
117	3112	3060	-0.873	-1.043	34.909	28.107	37.509	46.461	42.540	302	13.9	1.03	16.3	3060
118	3155	3102	-0.869	-1.043	34.913	28.110	37.512	46.464	42.734	301	14.1	1.04	16.2	3102
321	3159	3106	-0.868	-1.042	34.912	28.110	37.511	46.463	42.751	302	13.9	1.03	16.1	3106
119	3175	3121	-0.867	-1.042	34.910	28.108	37.510	46.462	42.821	302	14.3	1.05	16.1	3121
120	3194	3140	-0.865	-1.042	34.913	28.110	37.512	46.464	42.908	302	14.2	1.05	16.2	3140
121	3212	3157	-0.865	-1.044	34.907	28.106	37.507	46.460	42.984	302	14.1	1.04	16.2	3157
122	3223	3168	-0.862	-1.042	34.909	28.107	37.509	46.461	43.034	302	14.0	1.04	16.3	3168
123	3234	3179	-0.862	-1.042	34.910	28.108	37.510	46.462	43.084	302	14.2	1.03	16.2	3179
124	3244	3189	-0.861	-1.042	34.909	28.107	37.509	46.461	43.128	302	14.2	1.04	16.2	3189
322	3313	3256	-0.855	-1.042	34.914	28.111	37.513	46.465	43.438	301	14.2	1.03	16.0	3256
323	3464	3403	-0.842	-1.043	34.913	28.110	37.512	46.464	44.107	301	14.1	1.03	16.0	3403
324	3520	3458	-0.837	-1.043	34.913	28.110	37.512	46.464	44.355	301	14.3	1.03	15.8	3458

BOTTOM DEPTH FOR CAST 1 IS 3195—CAST 3 IS 3484

STATION: 20 LEG: II POSITION: 63° 24′ N 8° 23′ W DATE: 26 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1201	7	7	9.64	9.64	35.00 D	27.052	35.898	44.333	27.084					7
1202	11	11	9.64	9.64	35.00 D	27.052	35.898	44.333	27.102					11
1203	19	19	9.63	9.63	34.99 D	27.050	35.897	44.332	27.137					19
1204	30	30	9.21	9.21	34.94 D	27.074	35.940	44.393	27.211					30
1205	51	51	9.04	9.03	34.93 D	27.094	35.968	44.429	27.326					51
1206	74	73	8.58	8.57	35.18 D	27.365	36.255	44.731	27.701					73
1207	102	101	8.36	8.35	35.21 D	27.422	36.322	44.807	27.887					101
1208	125	124	8.37	8.36	35.23 D	27.441	36.341	44.825	28.010					124
1209	151	150	8.24	8.22	35.23 D	27.459	36.365	44.855	28.147					150
122	155	154	8.22	8.20	35.228	27.462	36.369	44.860	28.169					154
1210	201	199	8.00	7.98	35.21 D	27.484	36.401	44.902	28.400					199
1211	230	228	7.51	7.49	35.18 D	27.530	36.470	44.992	28.581					228
1212	252	250	6.62	6.60	35.10 D	27.596	36.579	45.141	28.752					250
1213	274	271	5.58	5.56	35.03 D	27.668	36.704	45.314	28.933					271
1214	304	301	5.40	5.37	35.12 D	27.766	36.810	45.427	29.170					301
1215	326	323	4.45	4.42	35.04 D	27.813	36.905	45.568	29.326					323
1216	349	346	3.47	3.45	35.02 D	27.891	37.036	45.747	29.520					346
1217	364	360	2.65	2.63	34.96 D	27.922	37.112	45.864	29.629					360
1218	405	401	1.38	1.36	34.95 D	28.014	37.273	46.092	29.926					401
1219	427	423	0.432	0.414	34.91 D	28.043	37.358	46.228	30.071					423
1220	455	450	0.049	0.031	34.92 D	28.065	37.402	46.294	30.231					450
1221	506	501	-0.254	-0.273	34.92 D	28.080	37.436	46.344	30.491					501
1222	556	550	-0.534	-0.554	34.91 D	28.091	37.463	46.387	30.743					550
1223	609	602	-0.542	-0.564	34.91 D	28.090	37.463	46.388	30.994					602
1224	623	616	-0.545	-0.567	34.91 D	28.090	37.463	46.388	31.060					616
124	628	621	-0.545	-0.568	34.909	28.088	37.461	46.386	31.082					621
125	628	621	-0.545	-0.568	34.912	28.090	37.463	46.389	31.084					621

BOTTOM DEPTH FOR CAST 1 IS 630

STATION: 21 LEG: II POSITION: 62° 24′ N 11° 53′ W DATE: 27 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1201	7	7	10.98	10.98	35.22 D	26.985	35.771	44.151	27.017					7
1202	19	19	10.98	10.98	35.22 D	26.985	35.771	44.151	27.071					19
1203	30	30	10.98	10.98	35.22 D	26.986	35.772	44.151	27.121					30
1204	51	51	10.97	10.96	35.21 D	26.985	35.771	44.152	27.214					51
1205	63	62	10.28	10.27	35.03 D	26.969	35.788	44.197	27.254					62
1206	75	74	9.42	9.41	35.23 D	27.267	36.120	44.561	27.607					74
1207	89	88	9.13	9.12	35.25 D	27.331	36.197	44.649	27.735					88
122	104	103	8.93	8.92	35.253	27.370	36.244	44.704	27.842					103
1208	126	125	8.87	8.86	35.26 D	27.387	36.264	44.727	27.960					125
1209	153	152	8.77	8.75	35.26 D	27.399	36.281	44.748	28.094					152
1210	203	201	8.76	8.74	35.27 D	27.411	36.293	44.761	28.333					201
1211	249	247	8.69	8.66	35.27 D	27.423	36.308	44.779	28.553					247
1212	300	297	8.54	8.51	35.24 D	27.427	36.320	44.797	28.789					297
1213	355	352	8.55	8.51	35.25 D	27.434	36.326	44.803	29.044					352
1214	407	403	8.49	8.45	35.25 D	27.441	36.336	44.816	29.286					403
1215	455	451	8.41	8.36	35.24 D	27.448	36.348	44.832	29.512					451
1216	503	498	8.29	8.24	35.24 D	27.465	36.370	44.860	29.746					498
1217	525	520	8.23	8.17	35.22 D	27.463	36.371	44.863	29.844					520
123	554	548	8.25	8.19	35.231	27.467	36.374	44.865	29.978					548
1218	598	592	8.07	8.01	35.23 D	27.490	36.406	44.905	30.202					592
1219	671	664	7.79	7.72	35.21 D	27.517	36.446	44.958	30.562					664
1220	721	713	7.21	7.14	35.21 D	27.601	36.558	45.095	30.881					713
1221	742	734	6.62	6.55	35.17 D	27.657	36.642	45.205	31.042					734
1222	770	762	5.68	5.61	35.10 D	27.723	36.754	45.361	31.253					762
1223	792	784	5.18	5.11	35.03 D	27.728	36.786	45.417	31.368					784
1224	799	790	4.93	4.86	35.05 D	27.768	36.838	45.480	31.445					790
1225	812	803	2.28	2.23	34.97 D	27.959	37.170	45.943	31.754					803
124	846	837	1.87	1.82	34.988	28.009	37.242	46.037	31.971					837

BOTTOM DEPTH FOR CAST 1 IS 859

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 22 LEG: II POSITION: 61° 39' N 14° 17' W DATE: 27 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	1	1	11.39	11.39	35.146	26.856	35.626	43.990	26.860	272	1.0	0.21	2.6	1
102	11	11	11.38	11.38	35.148	26.859	35.630	43.995	26.909	272	0.9	0.21	2.6	11
103	26	26	11.37	11.37	35.147	26.861	35.632	43.997	26.978	272	1.0	0.20	2.6	26
104	26	26	11.37	11.37	35.149	26.862	35.633	43.999	26.979	271	0.8	0.20	2.5	26
105	34	34	11.36	11.36	35.149	26.864	35.636	44.001	27.017	271	0.8	0.21	2.5	34
106	43	43	11.35	11.34	35.158	26.873	35.645	44.011	27.067	268	1.4	0.31	4.5	43
107	55	55	11.19	11.18	35.214	26.947	35.724	44.096	27.194	263	4.2	0.74	12.7	55
108	74	73	8.99	8.98	35.216	27.330	36.202	44.661	27.667	263	5.2	0.78	13.5	73
109	99	98	8.80	8.79	35.216	27.361	36.242	44.708	27.812	262	5.3	0.78	13.5	98
110	150	149	8.60	8.58	35.209	27.388	36.278	44.753	28.071	263	6.0	0.80	13.7	149
111	400	396	8.26	8.22	35.208	27.445	36.351	44.841	29.261	265	6.4	0.83	14.2	396
112	586	580	7.86	7.80	35.187	27.491	36.417	44.926	30.152	255	7.5	0.92	15.6	580
115	778	770	6.98	6.90	35.153	27.593	36.562	45.110	31.134	223	10.6	1.13	19.2	770
116	924	914	5.89	5.80	35.087	27.686	36.708	45.306	31.910	233	11.3	1.15	19.5	914
117	1078	1066	5.01	4.92	35.019	27.739	36.807	45.447	32.682	249	11.1	1.12	19.0	1066
118	1329	1313	4.20	4.09	34.951	27.775	36.887	45.567	33.880	269	10.7	1.07	18.3	1313
119	1463	1445	3.99	3.87	34.944	27.792	36.915	45.607	34.510	273	10.7	1.06	18.2	1445
120	1548	1529	3.97	3.84	34.962U	27.809	36.933	45.626	34.911	275	10.7	1.04	18.0	1529
121	1574	1554	3.92	3.79	34.953	27.807	36.934	45.630	35.028	275	10.9	1.05	17.6	1554
122	1705	1683	3.85	3.71	34.963	27.823	36.955	45.654	35.636	276	10.8	1.03	17.5	1683
123	1808	1784	3.32	3.18	34.973	27.883	37.042	45.767	36.182	275	13.2	1.03	17.2	1784
124	1853	1829	2.88	2.74	34.982	27.929	37.112	45.859	36.452	278	11.9	0.99	16.9	1829

BOTTOM DEPTH FOR CAST 1 IS 1848

STATION: 23 LEG: II POSITION: 60° 24' N 18° 37' W DATE: 28 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
701	1	1	11.02	11.02	35.128	26.910	35.696	44.075	26.915	274	0.2	0.31	2.7	1
702	27	27	11.01	11.01	35.127	26.912	35.698	44.077	27.033	274	0.2	0.31	2.8	27
703	71	70	10.26	10.25	35.117	27.039	35.857	44.266	27.360	269	1.1	0.49	6.1	70
704	102	101	9.43	9.42	35.160	27.215	36.068	44.510	27.677	266	3.3	0.67	11.7	101
705	150	149	9.09	9.07	35.205	27.307	36.175	44.630	27.987	259	5.5	0.82	14.4	149
706	222	220	8.98	8.96	35.228	27.344	36.217	44.676	28.351	260	5.7	0.83	14.3	220
707	274	271	8.94	8.91	35.234	27.356	36.231	44.692	28.598	261	5.7	0.82	14.5	271
708	325	322	8.87	8.83	35.235	27.369	36.247	44.712	28.842	263	5.7	0.82	14.4	322
709	404	400	8.78	8.74	35.236	27.386	36.268	44.737	29.215	261	6.1	0.85	14.7	400
710	479	474	8.47	8.42	35.197	27.405	36.302	44.785	29.576	259	6.4	0.88	15.4	474
711	551	546	7.97	7.91	35.129	27.429	36.350	44.855	29.931	250	7.7	0.98	17.1	546
712	629	623	7.68	7.61	35.133	27.476	36.411	44.928	30.334	229	9.4	1.09	19.2	623
715	680	673	7.33	7.26	35.094	27.497	36.449	44.982	30.590	239	9.3	1.08	18.9	673
716	733	725	7.14	7.07	35.102	27.530	36.492	45.033	30.866	216	10.7	1.19	20.9	725
717	785	777	6.71	6.63	35.072	27.566	36.549	45.110	31.145	218	11.0	1.22	21.1	777
718	834	825	6.57	6.49	35.098	27.606	36.595	45.162	31.408	219	11.4	1.21	20.8	825
719	896	886	6.09	6.01	35.070	27.647	36.660	45.249	31.740	224	11.8	1.23	20.6	886
720	975	964	5.64	5.55	35.059	27.695	36.731	45.341	32.156	232	11.7	1.20	20.6	964
401	990	979	5.47	5.38	35.046	27.706	36.750	45.368	32.238	236	11.7	1.16	18.9	979
402	1048	1036	5.18	5.09	35.020	27.720	36.779	45.411	32.522	243	11.4	1.15	19.1	1036
721	1058	1046	5.25	5.16	35.038	27.726	36.781	45.410	32.572	242	11.5	1.19	19.9	1046
722	1108	1096	5.08	4.98	35.020	27.732	36.796	45.433	32.809	246	11.7	1.18	19.4	1096
403	1132	1119	4.82	4.72	34.998	27.744	36.822	45.472	32.937	251	11.4	1.13	19.0	1119
723	1155	1142	4.72	4.62	34.985	27.745	36.828	45.483	33.045	255	11.1	1.16	19.0	1142
404	1212	1198	4.53	4.43	34.968	27.753	36.846	45.510	33.317	260	11.5	1.12	18.9	1198
724	1212	1198	4.55	4.45	34.976	27.757	36.849	45.512	33.320	258	11.2	1.16	18.7	1198
405	1288	1273	4.28	4.17	34.952	27.767	36.874	45.551	33.683	265	10.9	1.11	18.6	1273
406	1360	1344	4.14	4.03	34.942	27.774	36.889	45.573	34.021	270	10.8	1.11	18.2	1344
407	1437	1420	4.03	3.91	34.937	27.782	36.903	45.593	34.381	272	10.8	1.08	18.4	1420
408	1521	1502	3.93	3.81	34.932	27.789	36.916	45.611	34.771	275	10.8	1.07	18.2	1502
409	1600	1580	3.87	3.74	34.930	27.794	36.924	45.622	35.134	276	10.9	1.07	18.2	1580
410	1600	1580	3.87	3.74	34.932	27.796	36.926	45.624	35.136	275	10.8	1.06	18.3	1580
411	1674	1653	3.82	3.68	34.931	27.801	36.934	45.635	35.475	276	10.9	1.06	18.1	1653
412	1748	1726	3.77	3.63	34.930	27.805	36.941	45.645	35.815	277	11.0	1.05	18.2	1726
415	1864	1840	3.69	3.54	34.936	27.819	36.960	45.668	36.352	277	11.3	1.05	18.2	1840
416	1962	1936	3.67	3.51	34.949	27.832	36.974	45.683	36.805	277	11.6	1.04	18.1	1936
417	2041	2013	3.59	3.42	34.947	27.839	36.986	45.699	37.168	276	12.0	1.05	18.1	2013

STATION: 23 LEG: II POSITION: 60° 24' N 18° 37' W DATE: 28 AUG 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
418	2119	2090	3.53	3.35	34.955	27.852	37.002	45.719	37.532	275	12.3	1.03	17.6	2090
419	2198	2167	3.47	3.29	34.961	27.863	37.016	45.736	37.898	275	12.7	1.05	17.7	2167
115	2229	2198	3.49	3.30	34.976	27.873	37.026	45.745	38.045	273	12.8	1.12	17.3	2198
420	2273	2241	3.37	3.18	34.967	27.877	37.037	45.762	38.252	275	13.2	1.04	17.7	2241
421	2339	2306	3.29	3.10	34.981	27.896	37.060	45.789	38.569	275	13.8	1.03	17.6	2306
116	2380	2346	3.27	3.07	34.996	27.911	37.075	45.805	38.766	275	12.7	1.07	17.2	2346
117	2420	2385	3.19	2.99	35.002	27.923	37.092	45.826	38.961	276	12.6	1.07	17.0	2385
422	2442	2407	3.09	2.89	34.987	27.920	37.095	45.834	39.062	274	15.2U	1.03	17.4	2407
118	2459	2423	3.04	2.84	35.001	27.936	37.113	45.855	39.156	277	12.1	1.06	16.9	2423
119	2479	2443	2.95	2.75	35.001	27.944	37.126	45.872	39.259	278	11.7	1.04	16.7	2443
120	2501	2464	2.81	2.61	35.000	27.955	37.144	45.898	39.377	279	11.9	1.04	16.6	2464
423	2514	2477	2.89	2.69	34.997	27.946	37.131	45.881	39.420	277	12.7	0.97	16.8	2477
121	2524	2487	2.54	2.34	34.995	27.973	37.178	45.945	39.515	283	11.0	1.01	16.4	2487
122	2537	2500	2.36	2.16	34.993	27.986	37.200	45.976	39.598	282	11.2	1.01	16.2	2500
123	2545	2508	2.33	2.13	34.990	27.986	37.202	45.980	39.636	284	10.8	1.01	16.2	2508
424	2554	2516	2.36	2.16	34.995	27.988	37.202	45.978	39.675	282	10.7	0.89	16.2	2516
124	2554	2516	2.29	2.09	34.991	27.990	37.208	45.988	39.682	283	11.0	1.00	16.4	2516

BOTTOM DEPTH FOR CAST 4 IS 2534 CAST 1 IS 2523

STATION: 24 LEG: III POSITION: 53° 45' N 33° 37' W DATE: 7 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6201	3	3	11.25	11.25	34.69 D	26.524	35.307	43.683	26.538					3
615	5	5	11.251	11.250	34.686	26.524	35.306	43.683	26.547	291	2.1	0.41	5.2	5
616	16	16	10.611	10.609	34.687	26.641	35.450	43.851	26.714	292	2.0	0.42	5.2	16
617	24	24	10.411	10.408	34.695	26.683	35.500	43.909	26.792	291	2.2	0.45	5.6	24
618	64	64	7.768	7.762	34.583	27.023	35.959	44.478	27.316	283	4.6	0.77	10.6	64
619	90	89	7.133	7.124	34.871	27.341	36.303	44.845	27.753	283	5.8	0.85	12.5	89
620	114	113	6.427	6.417	34.869	27.435	36.431	45.005	27.960	279	8.1	1.01	14.6	113
621	154	153	6.247	6.233	34.905	27.488	36.492	45.073	28.197	276	8.5	1.04	15.3	153
622	204	202	6.146	6.128	34.931	27.522	36.531	45.116	28.461	277	8.6	1.03	15.5	202
623	279	277	6.175	6.150	34.983	27.560	36.567	45.151	28.843	269	9.0	1.06	15.9	277
301	304	301	6.040	6.013	34.949	27.551	36.565	45.155	28.950	275	8.7	1.01	15.6	301
624	356	353	5.834	5.803	34.977	27.599	36.624	45.223	29.239	256	9.9	1.13	17.1	353
302	368	365	5.893	5.860	34.963	27.581	36.603	45.200	29.275	262	9.4	1.08	16.4	365
303	408	404	5.779	5.743	34.979	27.608	36.635	45.238	29.486	255	10.0	1.11	17.3	404
304	430	426	5.723	5.685	34.981	27.617	36.647	45.252	29.596	253	10.1	1.13	17.4	426
305	466	462	5.529	5.489	34.973	27.635	36.675	45.289	29.781	250	10.6	1.15	17.2	462
306	506	501	5.458	5.414	34.999	27.664	36.707	45.325	29.995	244	10.8	1.16	18.3	501
307	545	540	5.211	5.165	34.987	27.685	36.740	45.369	30.197	246	10.8	1.18	18.5	540
308	576	571	5.083	5.035	34.985	27.698	36.761	45.396	30.354	247	11.0	1.18	18.4	571
309	619	613	4.959	4.908	34.985	27.713	36.782	45.423	30.568	249	10.9	1.17	18.5	613
310	674	667	4.690	4.635	34.972	27.733	36.816	45.470	30.844	255	10.8	1.16	18.4	667
311	708	701	4.506	4.449	34.962	27.746	36.838	45.501	31.016	260	10.7	1.14	18.0	701
312	749	742	4.394	4.335	34.957	27.754	36.853	45.522	31.214	263	10.7	1.14	18.0	742
315	806	798	4.294	4.230	34.951	27.760	36.865	45.538	31.484	266	10.7	1.13	17.8	798
316	919	909	4.059	3.987	34.939	27.776	36.893	45.579	32.022	272	10.7	1.12	17.6	909
317	1115	1103	3.840	3.753	34.936	27.798	36.927	45.624	32.943	276	10.9	1.10	17.1	1103
318	1311	1296	3.703	3.601	34.951	27.825	36.962	45.666	33.865	276	11.2	1.09	17.1	1296
319	1519	1501	3.553	3.434	34.962	27.850	36.995	45.708	34.837	276	11.7	1.09	16.9	1501
320	1735	1714	3.366	3.229	34.973	27.878	37.034	45.757	35.847	276	12.5	1.08	16.7	1714
115	1811	1788	3.396	3.252	34.978	27.880	37.035	45.756	36.189	276	12.6	1.10	16.5	1788
321	1933	1908	3.251	3.098	34.993	27.906	37.069	45.798	36.769	276	12.6	1.06	16.1	1908
322	2111	2083	3.123	2.955	34.999	27.924	37.095	45.831	37.591	276	12.8	1.07	16.1	2083
323	2294	2263	3.038	2.853	34.997	27.931	37.108	45.849	38.419	276	13.2	1.06	16.0	2263
116	2359	2326	3.020	2.829	34.997	27.933	37.111	45.853	38.711	276	13.8	1.10	16.2	2326
117	2414	2380	3.009	2.813	34.998	27.936	37.114	45.857	38.958	276	14.1	1.10	16.0	2380
118	2433	2399	3.013	2.815	35.002	27.939	37.117	45.860	39.045	276	14.1	1.10	16.3	2399
119	2453	2419	3.011	2.811	35.002	27.939	37.117	45.861	39.135	275	14.1	1.09	16.3	2419
120	2478	2443	3.013	2.811	35.001	27.938	37.117	45.860	39.245	276	14.3	1.07	16.0	2443
324	2497	2462	3.013	2.809	34.997	27.935	37.114	45.857	39.326	276	14.0	1.07	16.2	2462
121	2500	2465	3.015	2.810	35.000	27.937	37.116	45.859	39.341	276	14.2	1.08	16.3	2465

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS
U UNCERTAIN DATA

STATION: 24 LEG: III POSITION: 53° 45' N 33° 37' W DATE: 7 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
122	2522	2486	3.017	2.810	35.000	27.937	37.116	45.859	39.438	275	14.0	1.07	16.2	2486
123	2545	2509	3.021	2.812	35.001	27.938	37.117	45.860	39.541	276	14.1	1.07	16.1	2509
124	2569	2532	3.021	2.809	35.001	27.938	37.117	45.860	39.647	276	14.0	1.07	16.2	2532

BOTTOM DEPTH FOR CAST 3 IS 2519 — CAST 1 IS 2549

STATION: 25 LEG: III POSITION: 47° 36' N 39° 53' W DATE: 10 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
115	5	5	20.239	20.238	35.627	25.198	33.648	41.715	25.220	229				5
1201	6	6	20.20	20.20	35.63 D	25.208	33.659	41.727	25.234					6
116	11	11	20.206	20.204	35.627	25.207	33.659	41.726	25.255	229				11
117	15	15	20.212	20.209	35.626	25.205	33.656	41.724	25.270	230				15
118	20	20	20.188	20.184	35.627	25.212	33.664	41.732	25.299	230				20
119	25	25	20.200	20.195	35.628	25.210	33.662	41.730	25.319	230				25
120	34	34	17.131	17.125	36.013	26.287	34.832	42.988	26.436	232				34
121	48	48	16.904	16.896	36.213	26.495	35.046	43.206	26.705	214				48
1202	51	51	16.95	16.94	36.24 D	26.505	35.054	43.213	26.728					51
1203	75	75	15.93	15.92	36.06 D	26.611	35.197	43.391	26.941					75
1204	100	99	14.90	14.88	35.89 D	26.715	35.340	43.570	27.156					99
1205	127	126	14.70	14.68	35.90 D	26.769	35.401	43.638	27.330					126
1206	151	150	14.16	14.14	35.79 D	26.800	35.453	43.710	27.468					150
1207	173	172	14.01	13.99	35.78 D	26.827	35.486	43.749	27.593					172
1208	203	202	13.76	13.73	35.77 D	26.870	35.539	43.811	27.769					202
1209	249	247	13.22	13.18	35.73 D	26.953	35.644	43.935	28.058					247
1210	301	299	12.59	12.54	35.65 D	27.021	35.738	44.053	28.361					299
1211	351	348	12.06	12.01	35.61 D	27.100	35.838	44.173	28.664					348
1212	403	400	11.63	11.57	35.53 D	27.119	35.876	44.228	28.918					400
1213	454	450	11.49	11.43	35.52 D	27.135	35.898	44.257	29.162					450
1214	504	500	11.00	10.94	35.44 D	27.167	35.952	44.330	29.421					500
1215	599	594	8.95	8.88	35.14 D	27.287	36.164	44.627	29.991					594
1216	700	694	7.14	7.07	35.03 D	27.473	36.436	44.978	30.660					694
1217	805	798	6.11	6.03	35.05 D	27.630	36.642	45.230	31.311					798
1218	902	894	5.30	5.22	34.99 D	27.682	36.735	45.362	31.820					894
122	1001	991	4.939	4.853	34.982	27.717	36.788	45.432	32.313	248				991
1228	1103	1092	4.674	4.581	34.997D	27.759	36.844	45.501	32.825					1092
1229	1199	1187	4.511	4.411	34.988D	27.770	36.865	45.529	33.276					1187
1230	1304	1290	4.295	4.187	34.967D	27.778	36.884	45.560	33.766					1290
1231	1404	1389	4.251	4.134	34.973D	27.788	36.897	45.575	34.229					1389
1220	1502	1486	4.128	4.003	34.974D	27.802	36.918	45.603	34.690					1486
1232	1702	1682	3.919	3.778	34.958D	27.813	36.940	45.636	35.609					1682
1233	1903	1880	3.772	3.614	34.957D	27.828	36.964	45.668	36.532					1880
1221	2004	1980	3.691	3.524	34.956D	27.836	36.977	45.686	36.995					1980
1234	2248	2219	3.523	3.335	34.955D	27.854	37.005	45.722	38.108					2219
1222	2502	2469	3.351	3.140	34.950D	27.868	37.029	45.757	39.259					2469
1235	2750	2712	3.116	2.884	34.945D	27.887	37.063	45.803	40.389					2712
1223	3002	2958	2.924	2.669	34.942D	27.903	37.091	45.842	41.527					2958
1236	3250	3201	2.744	2.467	34.937D	27.917	37.115	45.877	42.640					3201
1224	3500	3445	2.631	2.329	34.929D	27.922	37.128	45.897	43.743					3445
1237	3752	3691	2.496	2.170	34.922D	27.929	37.144	45.921	44.855					3691
1225	4003	3936	2.387	2.035	34.918D	27.936	37.159	45.943	45.956					3936
1238	4196	4124	2.250	1.879	34.915D	27.946	37.177	45.970	46.809					4124
123	4406	4328	2.214	1.819	34.914	27.950	37.184	45.980	47.715	285				4328
1226	4503	4422	2.190	1.784	34.913D	27.952	37.188	45.986	48.133					4422
124	4625	4541	2.170	1.750	34.913	27.954	37.193	45.992	48.657	288				4541

BOTTOM DEPTH FOR CAST 1 IS 4559

STATION: 26 LEG: III POSITION: 44° 57' N 42° 4' W DATE: 11 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
315	4	4	21.812	21.811	35.754	24.865	33.267	41.287	24.882	220	0.6	0.04	0.1	4
316	9	9	21.813	21.811	35.753	24.864	33.266	41.286	24.903	220	0.6	0.03	0.0	9
317	13	13	21.804	21.801	35.755	24.868	33.270	41.291	24.924	220	0.6	0.03	0.1	13
318	18	18	21.810	21.806	35.768	24.877	33.279	41.299	24.954	221	0.5	0.03	0.0	18
319	29	29	19.740	19.734	36.036	25.643	34.104	42.180	25.769	247	0.7	0.04	0.0	29
320	47	47	17.840	17.832	36.251	26.295	34.814	42.945	26.500	232	0.9	0.05	0.1	47
321	68	68	17.280	17.268	36.327	26.492	35.029	43.176	26.789	210	1.8	0.20	3.5	68
322	98	97	16.560	16.544	36.231	26.593	35.155	43.327	27.023	207	2.3	0.32	5.8	97
323	198	197	14.990	14.959	35.963	26.753	35.375	43.601	27.626	217	3.2	0.44	7.3	197
324	299	297	14.270	14.225	35.900	26.866	35.515	43.768	28.186	214	4.0	0.53	8.8	297
101	1230	1218	4.473	4.370	34.954	27.748	36.845	45.512	33.396	267	10.9	1.13	16.6	1218
102	1456	1441	4.317	4.194	34.973	27.782	36.887	45.563	34.455	268	11.3	1.15	17.1	1441
103	1616	1598	4.118	3.983	34.966	27.798	36.915	45.601	35.199	270	11.5	1.16	16.9	1598
104	1852	1831	3.910	3.755	34.954	27.812	36.941	45.638	36.280	273	11.8	1.14	17.1	1831
105	2007	1983	3.788	3.619	34.954	27.825	36.961	45.665	36.992	274	12.2	1.15	17.0	1983
106	2226	2198	3.632	3.444	34.949	27.838	36.984	45.696	37.989	275	12.5	1.14	16.8	2198
107	2521	2488	3.465	3.250	34.952	27.859	37.015	45.737	39.327	275	14.2	1.15	17.1	2488
115	2712	2675	3.309	3.077	34.954	27.877	37.042	45.772	40.198	272	16.0	1.16	17.6	2675
116	2712	2675	3.309	3.077	34.954	27.877	37.042	45.772	40.198	272	16.0	1.17	17.5	2675
117	2712	2675	3.309	3.077	34.957	27.879	37.044	45.775	40.200	273	16.3	1.15	17.3	2675
118	2712	2675	3.309	3.077	34.953	27.876	37.041	45.772	40.197	272	16.0	1.18	17.4	2675
119	2712	2675	3.309	3.077	34.952	27.875	37.040	45.771	40.196	272	16.0	1.16	17.7	2675
120	2712	2675	3.309	3.077	34.953	27.876	37.041	45.772	40.197	272	15.9	1.17	17.6	2675
108	2770	2732	3.266	3.029	34.954	27.881	37.049	45.782	40.460	273	16.2	1.16	17.4	2732
109	3011	2968	3.067	2.808	34.944	27.893	37.073	45.817	41.545	274	17.3	1.16	17.2	2968
110	3204	3157	2.927	2.651	34.941	27.904	37.093	45.845	42.411	274	18.1	1.15	17.0	3157
111	3634	3577	2.578	2.263	34.911	27.913	37.123	45.895	44.321	276	24.1	1.18	17.3	3577
112	4055	3988	2.348	1.991	34.903	27.928	37.153	45.940	46.176	273	28.0	1.21	17.9	3988

BOTTOM DEPTH FOR CAST 1 IS 4708

STATION: 27 LEG: III POSITION: 42° 0' N 42° 2' W DATE: 12 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
8201	3	3	22.45	22.45	36.06 D	24.918	33.298	41.298	24.931					3
801	7	7	22.43	22.43	36.062	24.924	33.305	41.305	24.955	218	0.8	0.03	0.1	7
803	27	27	22.13	22.12	36.106	25.044	33.432	41.440	25.160	221	0.7	0.03	0.0	27
804	73	73	17.61	17.60	36.362	26.438	34.963	43.100	26.757	208	1.8	0.17	1.0	73
805	103	102	17.11	17.09	36.382	26.577	35.119	43.271	27.027	212	2.1	0.22	4.0	102
806	142	141	16.42	16.40	36.215	26.616	35.183	43.360	27.238	204	2.9	0.35	6.2	141
802	183	182	15.85	15.82	36.124	26.681	35.270	43.466	27.484	211	3.1	0.38	6.5	182
807	254	252	15.21	15.17	36.005	26.738	35.351	43.571	27.855	215	3.5	0.42	7.2	252
808	322	320	14.41	14.36	35.874	26.817	35.461	43.709	28.237	210	4.2	0.52	9.0	320
809	394	391	14.11	14.05	35.883	26.891	35.546	43.805	28.629	212	4.5	0.55	9.4	391
810	465	462	13.52	13.45	35.783	26.940	35.620	43.901	28.996	208	5.4	0.65	10.9	462
811	535	531	12.32	12.25	35.608	27.050	35.778	44.105	29.426	201	6.9	0.81	13.4	531
812	604	599	11.334	11.254	35.462	27.126	35.897	44.263	29.820	192	8.5	0.97	15.5	599
815	678	673	10.010	9.927	35.298	27.237	36.066	44.485	30.278	167	11.9	1.26	19.8	673
816	749	743	8.772	8.687	35.190	27.357	36.243	44.714	30.736	167	13.7	1.36	21.3	743
817	777	771	8.053	7.969	35.073	27.377	36.296	44.799	30.894	172	14.3	1.41	21.5	771
818	808	801	7.540	7.456	35.037	27.424	36.368	44.893	31.090	180	14.3	1.38	21.1	801
819	839	832	6.764	6.681	34.941	27.457	36.439	44.999	31.278	190	14.2	1.38	20.5	832
820	888	880	6.235	6.151	34.946	27.531	36.538	45.123	31.585	203	13.7	1.32	19.8	880
821	941	933	6.610	6.517	35.111	27.613	36.600	45.165	31.896	207	13.3	1.30	19.5	933
822	1010	1001	6.122	6.026	35.103	27.671	36.682	45.270	32.277	219	13.3	1.25	18.7	1001
823	1162	1151	5.077	4.975	35.027	27.738	36.803	45.440	33.059	246	12.3	1.19	17.9	1151
401	1256	1244	5.018	4.907	35.061G	27.773	36.841	45.481	33.520	246	12.4	1.21	17.4	1244
824	1281	1269	4.704	4.594	35.010	27.768	36.852	45.508	33.638	257	12.1	1.16	17.3	1269
402	1455	1440	4.508	4.383	35.036G	27.812	36.906	45.572	34.472	257	12.2	1.19	17.3	1440
403	1661	1643	4.218	4.077	34.990	27.807	36.919	45.600	35.406	266	12.2	1.18	16.8	1643
404	1853	1832	3.972	3.816	34.971	27.819	36.945	45.638	36.289	270	12.5	1.18	16.9	1832
405	2053	2029	3.779	3.606	34.960	27.831	36.968	45.672	37.204	272	13.1	1.18	17.0	2029
406	2259	2231	3.645	3.453	34.958	27.845	36.989	45.701	38.141	273	13.8	1.18	16.8	2231
407	2466	2435	3.500	3.290	34.954	27.857	37.010	45.731	39.080	273	14.6	1.18	17.0	2435
408	2664	2629	3.340	3.112	34.950	27.870	37.033	45.762	39.978	273	15.6	1.18	16.9	2629
409	2878	2839	3.197	2.950	34.949	27.884	37.056	45.793	40.943	273	16.8	1.19	16.8	2839

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS

STATION: 27 LEG: III POSITION: 42° 0′ N 42° 2′ W DATE: 12 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
410	3080	3036	3.026	2.761	34.943	27.896	37.079	45.825	41.853	274	17.6	1.18	16.8	3036
411	3286	3238	2.894	2.609	34.937	27.905	37.095	45.850	42.772	274	19.1	1.19	17.1	3238
412	3494	3441	2.732	2.428	34.930	27.914	37.115	45.879	43.701	274	20.7	1.19	17.1	3441
415	3711	3653	2.575	2.251	34.922	27.922	37.133	45.906	44.664	273	23.0	1.20	17.3	3653
416	3916	3853	2.457	2.113	34.913	27.926	37.145	45.925	45.564	273	24.8	1.21	17.6	3853
417	4122	4054	2.360	1.995	34.906	27.930	37.155	45.941	46.464	273	27.5	1.23	17.7	4054
115	4275	4203	2.328	1.946	34.903	27.931	37.159	45.948	47.124	272	28.9	1.25	17.3	4203
418	4328	4254	2.315	1.927	34.902	27.932	37.161	45.951	47.353	272	29.5	1.24	18.1	4254
419	4463	4386	2.297	1.893	34.900	27.933	37.164	45.956	47.932	272	30.2	1.25	18.3	4386
420	4564	4484	2.287	1.871	34.899	27.934	37.166	45.959	48.364	272	30.7	1.26	18.2	4484
421	4656	4574	2.288	1.860	34.898	27.934	37.167	45.960	48.755	272	30.5	1.26	18.1	4574
116	4706	4622	2.289	1.855	34.900	27.936	37.169	45.963	48.969	272	30.5	1.26	18.0	4622
422	4761	4676	2.290	1.849	34.900	27.936	37.169	45.964	49.202	273	29.7	1.24	17.7	4676
117	4778	4692	2.290	1.847	34.900	27.937	37.170	45.964	49.274	273	29.3	1.25	17.3	4692
118	4801	4714	2.292	1.846	34.902	27.938	37.172	45.966	49.373	273	28.6	1.24	17.5	4714
119	4825	4738	2.290	1.841	34.902	27.939	37.172	45.967	49.475	274	28.4	1.24	17.5	4738
423	4852	4764	2.293	1.840	34.903	27.939	37.173	45.968	49.590	274	28.0	1.22	17.6	4764
120	4858	4770	2.288	1.835	34.901	27.938	37.172	45.967	49.614	275	27.7	1.23	17.3	4770
121	4882	4793	2.290	1.834	34.902	27.939	37.173	45.968	49.717	275	27.5	1.22	17.3	4793
122	4905	4815	2.289	1.830	34.902	27.939	37.174	45.969	49.814	276	26.5	1.20	17.1	4815
123	4932	4842	2.289	1.826	34.904	27.941	37.176	45.971	49.930	278	24.5	1.17	16.5	4842
424	4946	4855	2.296	1.831	34.906D	27.943	37.177	45.972	49.989	277	25.4	1.18	16.9	4855
124	4959	4868	2.279	1.813	34.908	27.945	37.181	45.976	50.049	281	21.5	1.13	16.0	4868

BOTTOM DEPTH FOR CAST 4 IS 4892 — CAST 1 IS 4885

STATION: 28 LEG: III POSITION: 39° 0′ N 43° 59′ W DATE: 15 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
8201	3	3	25.00	25.00	36.39 D	24.418	32.724	40.652	24.431					3
715	7	7	25.00	25.00	36.388	24.419	32.725	40.652	24.448	208	0.6	0.04	0.0	7
802	9	9	24.98	24.98	36.374	24.414	32.721	40.649	24.452	210	0.6	0.02	0.0	9
716	14	14	25.00	25.00	36.390	24.421	32.727	40.654	24.480	209	0.6	0.03	0.0	14
717	20	20	25.00	25.00	36.39 D	24.421	32.727	40.655	24.506	209	0.6	0.03	0.0	20
718	27	27	24.98	24.97	36.387	24.425	32.732	40.660	24.540	209	0.6	0.03	0.0	27
719	35	35	24.31	24.30	36.380	24.621	32.945	40.892	24.770	214	0.7	0.03	0.0	35
803	42	42	21.00	20.99	36.330	25.528	33.947	41.984	25.710	236	0.7	0.03	0.0	42
720	51	51	22.00	21.99	36.424	25.323	33.711	41.720	25.542	217	0.9	0.04	0.0	51
721	72	72	19.30	19.29	36.346	25.997	34.467	42.553	26.309	215	0.6	0.06	0.3	72
804	73	73	18.98	18.97	36.395	26.117	34.597	42.692	26.434	208	1.3	0.12	2.0	73
722	122	121	17.87	17.85	36.393	26.399	34.916	43.044	26.931	204	1.8	0.21	3.7	121
805	125	124	17.71	17.69	36.396	26.442	34.963	43.097	26.986	210	1.6	0.17	3.3	124
806	187	186	17.01	16.98	36.323	26.560	35.106	43.263	27.376	206	2.1	0.26	4.8	186
723	193	192	17.195	17.162	36.367	26.549	35.088	43.239	27.391	203	2.0	0.29	5.1	192
807	247	245	16.51	16.47	36.261	26.634	35.199	43.372	27.715	204	2.7	0.35	6.4	245
724	302	300	15.939	15.890	36.143	26.680	35.265	43.459	28.003	215	2.5	0.36	6.1	300
808	305	303	15.76	15.71	36.109	26.695	35.288	43.488	28.032	217	2.7	0.35	6.2	303
809	408	405	14.90	14.84	36.002	26.811	35.436	43.666	28.604	212	3.6	0.46	8.0	405
810	511	507	13.891	13.814	35.840	26.908	35.573	43.841	29.162	198	5.1	0.64	11.0	507
811	607	603	12.904	12.817	35.693	27.001	35.707	44.011	29.688	188	6.6	0.82	13.8	603
812	707	702	11.721	11.625	35.536	27.114	35.869	44.219	30.257	193	7.9	0.94	15.3	702
815	820	813	9.551	9.453	35.284	27.306	36.156	44.595	30.987	189	12.3	1.30	20.8	813
816	862	855	8.802	8.703	35.205	27.366	36.251	44.721	31.249	166	13.4	1.36	21.7	855
817	908	901	8.291	8.190	35.187	27.432	36.340	44.832	31.530	168	13.7	1.37	21.5	901
818	957	949	7.318	7.219	35.073	27.486	36.440	44.976	31.826	173	14.4	1.39	21.6	949
819	1006	997	6.930	6.828	35.104	27.565	36.537	45.089	32.133	183	13.8	1.34	20.7	997
820	1056	1047	6.472	6.368	35.091	27.617	36.611	45.184	32.421	203	13.7	1.32	20.2	1047
821	1101	1091	6.318	6.211	35.115	27.656	36.658	45.237	32.666	211	13.3	1.29	19.7	1091
822	1154	1144	5.922	5.813	35.096	27.692	36.714	45.311	32.952	222	13.1	1.25	18.8	1144
823	1208	1197	5.776	5.663	35.124	27.733	36.762	45.366	33.239	231	12.7	1.22	18.7	1197
824	1314	1302	5.335	5.215	35.095	27.764	36.816	45.441	33.761	240	12.5	1.20	18.3	1302
401	1359	1346	5.257	5.133	35.098	27.776	36.832	45.461	33.978	241	12.6	1.20	17.9	1346
402	1511	1496	4.830	4.696	35.060	27.796	36.875	45.525	34.696	252	12.4	1.18	17.8	1496
403	1663	1646	4.451	4.307	35.021	27.808	36.907	45.576	35.405	261	12.4	1.17	17.4	1646
404	1815	1795	4.267	4.110	35.017	27.825	36.935	45.614	36.111	263	12.9	1.17	17.5	1795

STATION: 28 LEG: III POSITION: 39° 0′ N 43° 59′ W DATE: 15 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
405	1967	1945	3.944	3.777	34.993	27.841	36.968	45.663	36.821	267	13.2	1.17	17.5	1945
406	2120	2096	3.832	3.651	34.981	27.844	36.978	45.679	37.511	269	14.0	1.17	17.4	2096
407	2271	2244	3.706	3.512	34.975	27.852	36.994	45.703	38.198	269	15.0	1.17	17.6	2244
408	2424	2394	3.550	3.343	34.966	27.861	37.012	45.729	38.895	271	15.9	1.18	17.6	2394
409	2577	2544	3.427	3.207	34.962	27.871	37.029	45.753	39.589	269	17.1	1.18	17.6	2544
410	2727	2691	3.318	3.084	34.959	27.880	37.045	45.775	40.266	269	18.6	1.19	17.9	2691
411	2876	2838	3.193	2.946	34.952	27.887	37.059	45.796	40.937	269	19.7	1.20	18.0	2838
412	3025	2984	3.067	2.807	34.947	27.895	37.075	45.819	41.609	269	20.7	1.21	18.0	2984
415	3232	3186	2.907	2.628	34.935	27.901	37.091	45.845	42.532	271	21.2	1.19	17.8	3186
416	3434	3384	2.729	2.432	34.925	27.910	37.110	45.874	43.436	273	20.9	1.17	17.4	3384
417	3585	3531	2.606	2.296	34.920	27.917	37.125	45.896	44.110	272	24.2	1.20	17.8	3531
418	3787	3728	2.482	2.152	34.914	27.924	37.140	45.918	45.003	273	26.0	1.19	17.8	3728
419	3990	3926	2.376	2.026	34.905	27.927	37.150	45.935	45.892	272	27.4	1.22	18.1	3926
420	4193	4124	2.305	1.933	34.898	27.928	37.157	45.947	46.773	271	30.3	1.25	18.5	4124
421	4405	4331	2.278	1.882	34.893	27.928	37.160	45.952	47.683	271	31.2	1.26	18.6	4331
115	4547	4469	2.260	1.847	34.891	27.929	37.163	45.957	48.291	268	32.8	1.29	18.2	4469
422	4606	4526	2.277	1.856	34.893	27.930	37.163	45.957	48.540	271	31.4	1.25	18.0	4526
423	4763	4679	2.271	1.831	34.893	27.932	37.166	45.962	49.209	271	31.6	1.25	18.4	4679
116	4781	4696	2.261	1.819	34.889	27.930	37.165	45.961	49.284	268	32.4	1.29	18.6	4696
117	4818	4732	2.261	1.814	34.890	27.931	37.166	45.963	49.442	268	32.6	1.29	18.5	4732
118	4847	4761	2.261	1.810	34.889	27.930	37.166	45.962	49.564	269	32.2	1.28	18.4	4761
119	4877	4790	2.261	1.806	34.890	27.932	37.167	45.964	49.692	269	32.1	1.27	18.3	4790
120	4901	4813	2.261	1.803	34.892	27.933	37.169	45.966	49.795	270	31.7	1.27	18.2	4813
121	4920	4832	2.261	1.801	34.892	27.934	37.170	45.966	49.875	270	30.9	1.26	18.2	4832
424	4921	4832	2.278	1.817	34.895	27.935	37.170	45.966	49.879	274	28.2	1.21	17.8	4832
122	4937	4848	2.261	1.799	34.892	27.934	37.170	45.967	49.947	271	30.2	1.25	18.1	4848
123	4953	4864	2.270	1.805	34.896	27.936	37.172	45.969	50.016	275	26.8	1.20	17.5	4864
124	4969	4879	2.275	1.808	34.903G	27.942	37.177	45.973	50.088	277	23.6	1.16	16.9	4879

BOTTOM DEPTH FOR CAST 1 IS 4897 — CAST 4 IS 4903

STATION: 29 LEG: III POSITION: 35° 58′ N 47° 0′ W DATE: 17 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1401	3	3	25.22	25.22	36.03 D	24.084	32.388	40.314	24.097	209				3
1014	4	4	25.22	25.22	36.033	24.084	32.388	40.314	24.101	210	1.3	0.05	0.0	4
1015	19	19	24.89	24.89	36.020	24.175	32.488	40.423	24.256	211	1.2	0.04	0.0	19
1016	60	60	22.91	22.90	36.375	25.028	33.391	41.375	25.284	215	0.9	0.04	0.0	60
1017	101	101	19.74	19.72	36.485	25.988	34.444	42.516	26.425	205	1.1	0.10	1.6	101
1018	151	150	18.52	18.49	36.446	26.278	34.772	42.881	26.933	210	1.2	0.11	2.0	150
1019	181	180	18.14	18.11	36.449	26.377	34.884	43.005	27.164	210	1.5	0.15	2.7	180
1020	241	240	17.68	17.64	36.430	26.480	35.003	43.138	27.529	212	1.8	0.19	3.5	240
1021	302	300	17.33	17.28	36.407	26.551	35.086	43.232	27.867	200	2.2	0.30	5.5	300
1022	363	361	16.84	16.78	36.317	26.603	35.156	43.319	28.186	205	2.4	0.33	5.9	361
1023	434	431	15.95	15.88	36.147	26.685	35.271	43.466	28.584	209	2.8	0.39	6.6	431
701	445	442	15.71	15.64	36.088	26.696	35.291	43.494	28.644	207	3.1	0.44	7.2	442
702	495	492	15.26	15.18	36.040	26.763	35.375	43.594	28.933	211	3.3	0.44	7.4	492
1024	506	503	15.32	15.24	36.059	26.764	35.374	43.591	28.982	213	3.1	0.43	7.2	503
703	544	540	14.71	14.63	35.955	26.821	35.455	43.693	29.211	204	3.5	0.55	9.0	540
704	645	641	13.00	12.91	35.687	26.978	35.680	43.982	29.831	177	7.2	0.90	14.7	641
705	751	746	10.84	10.74	35.392	27.166	35.959	44.345	30.518	157	11.4	1.26	19.8	746
706	801	795	9.33	9.24	35.219	27.291	36.152	44.600	30.892	152	14.1	1.46	22.1	795
707	850	844	7.78	7.69	34.980	27.345	36.279	44.795	31.196	174	13.6	1.41	21.2	844
708	906	899	7.56	7.46	35.070	27.449	36.392	44.916	31.554	170	15.3	1.50	22.8	899
709	952	944	6.81	6.71	35.064	27.549	36.527	45.085	31.878	189	14.7	1.43	21.5	944
710	1000	992	6.23	6.13	35.024	27.594	36.601	45.186	32.153	203	14.4	1.38	20.6	992
711	1051	1042	5.64	5.54	34.999	27.649	36.685	45.297	32.453	221	13.4	1.29	19.6	1042
712	1101	1092	5.34	5.24	35.021	27.702	36.754	45.379	32.740	233	12.9	1.25	18.6	1092
714	1215	1204	4.841	4.736	34.995	27.740	36.818	45.467	33.308	249	12.2	1.21	18.0	1204
715	1315	1303	4.646	4.533	34.997	27.764	36.852	45.511	33.790	256	12.2	1.19	17.6	1303
716	1415	1402	4.483	4.362	34.993	27.780	36.876	45.543	34.262	259	12.2	1.18	17.4	1402
717	1522	1507	4.360	4.231	34.985	27.787	36.891	45.564	34.756	263	12.3	1.17	17.5	1507
718	1620	1604	4.184	4.047	34.984	27.806	36.919	45.601	35.222	265	12.3	1.17	17.5	1604
719	1721	1704	4.059	3.914	34.977	27.814	36.934	45.623	35.689	267	12.5	1.17	17.2	1704

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR, BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS

STATION: 29 LEG: III POSITION: 35° 58' N 47° 0' W DATE: 17 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
720	1921	1901	3.881	3.719	34.972	27.830	36.960	45.659	36.608	270	12.9	1.17	17.1	1901
721	2130	2106	3.728	3.548	34.968	27.843	36.983	45.690	37.562	269	14.4	1.18	16.9	2106
722	2335	2308	3.576	3.378	34.968	27.860	37.008	45.724	38.498	270	15.3	1.19	17.4	2308
723	2536	2505	3.404	3.188	34.962	27.873	37.032	45.757	39.411	269	17.2	1.18	17.3	2505
501	2733	2698	3.188	2.956	34.952	27.886	37.058	45.794	40.308	269	18.9	1.19	17.5	2698
724	2738	2703	3.206	2.973	34.952	27.885	37.055	45.791	40.327	269	18.6	1.19	17.3	2703
502	2947	2908	2.938	2.689	34.941	27.901	37.087	45.837	41.282	270	20.9	1.21	17.2	2908
503	3139	3096	2.848	2.581	34.935	27.905	37.098	45.854	42.135	271	21.3	1.21	17.4	3096
504	3343	3296	2.699	2.413	34.928	27.914	37.115	45.880	43.047	271	23.2	1.22	17.4	3296
505	3547	3495	2.507	2.204	34.920	27.925	37.138	45.913	43.962	271	26.0	1.24	17.7	3495
506	3750	3694	2.392	2.069	34.906	27.924	37.145	45.928	44.852	271	27.9	1.25	17.9	3694
507	3953	3892	2.288	1.945	34.898	27.927	37.155	45.945	45.743	269	31.3	1.28	18.2	3892
508	4155	4089	2.253	1.887	34.895	27.929	37.161	45.953	46.617	268	32.9	1.30	18.4	4089
515	4158	4092	2.253	1.887	34.893	27.928	37.159	45.951	46.628	268	33.6U	1.30	18.5	4092
509	4359	4288	2.242	1.852	34.891	27.929	37.162	45.956	47.491	268	34.0	1.30	18.6	4288
510	4565	4488	2.257	1.842	34.891	27.930	37.163	45.958	48.368	268	34.5	1.31	18.5	4488
115	4649	4570	2.257	1.831	34.887	27.927	37.162	45.957	48.723	267	35.5	1.31	18.6	4570
511	4770	4688	2.270	1.829	34.890	27.930	37.164	45.960	49.237	268	35.1	1.30	18.6	4688
116	4856	4771	2.275	1.823	34.886	27.927	37.162	45.958	49.597	267	35.4	1.32	18.9	4771
117	4917	4830	2.280	1.820	34.885	27.927	37.162	45.958	49.854	267	35.6	1.33	18.6	4830
118	4961	4873	2.285	1.819	34.884	27.926	37.161	45.957	50.038	267	35.5	1.31	18.6	4873
119	4982	4894	2.287	1.818	34.887	27.928	37.163	45.959	50.128	267	35.2	1.32	18.3	4894
512	4998	4909	2.289	1.818	34.888	27.929	37.164	45.960	50.196	267	35.5	1.30	18.7	4909
120	5003	4914	2.289	1.817	34.886	27.928	37.163	45.959	50.216	267	35.0	1.32	18.3	4914
121	5026	4936	2.291	1.816	34.887	27.928	37.164	45.960	50.314	267	35.2	1.32	18.7	4936
122	5047	4957	2.294	1.816	34.887	27.928	37.164	45.960	50.402	267	35.4	1.32	18.7	4957
123	5058	4967	2.296	1.817	34.887	27.928	37.164	45.960	50.448	267	35.5	1.32	18.8	4967
124	5069	4978	2.296	1.816	34.886	27.928	37.163	45.959	50.493	267	35.5	1.32	18.9	4978

BOTTOM DEPTH FOR CAST 5 IS 4996 — CAST 1 IS 4995

STATION: 30 LEG: III POSITION: 31° 48' N 50° 46' W DATE: 20 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
701	2	2	26.64	26.64	36.595	24.072	32.333	40.216	24.080	205	0.9	0.04	0.1	2
912	3	3	26.77	26.77	36.603	24.037	32.295	40.175	24.050	205				3
913	10	10	26.59	26.59	36.596	24.089	32.351	40.236	24.131	207				10
914	17	17	26.58	26.58	36.576	24.077	32.340	40.225	24.149	205				17
915	24	24	26.57	26.56	36.574	24.079	32.343	40.228	24.181	205				24
916	39	39	25.53	25.52	36.635	24.447	32.736	40.648	24.612	222				39
702	50	50	21.75	21.74	36.540	25.481	33.875	41.889	25.696	234	0.6	0.03	0.1	50
917	61	61	21.68	21.67	36.550	25.509	33.905	41.921	25.771	234				61
918	89	89	19.60	19.58	36.516	26.048	34.508	42.583	26.434	221				89
919	121	120	18.53	18.51	36.463	26.287	34.781	42.889	26.812	212				120
920	151	150	18.09	18.06	36.449	26.389	34.897	43.019	27.045	211				150
703	152	151	18.07	18.04	36.448	26.393	34.902	43.024	27.054	211	1.7	0.15	2.9	151
921	180	179	17.83	17.80	36.435	26.444	34.961	43.091	27.228	214				179
704	203	202	17.75	17.71	36.434	26.464	34.984	43.117	27.348	215	1.7	0.17	3.2	202
922	221	220	17.68	17.64	36.429	26.479	35.001	43.136	27.441	215				220
705	253	252	17.59	17.55	36.427	26.501	35.026	43.164	27.602	213	1.8	0.19	3.6	252
923	261	260	17.56	17.51	36.431	26.511	35.038	43.177	27.648	210				260
924	301	299	17.37	17.32	36.416	26.548	35.082	43.227	27.859	202				299
706	303	301	17.39	17.34	36.421	26.547	35.080	43.224	27.867	201	2.2	0.28	5.4	301
707	354	352	17.06	17.00	36.376	26.595	35.140	43.295	28.138	202	2.3	0.29	5.9	352
708	404	402	16.56	16.49	36.282	26.645	35.208	43.381	28.408	201	2.8	0.35	6.8	402
709	454	451	15.84	15.77	36.141	26.707	35.297	43.495	28.693	199	3.4	0.44	8.1	451
710	503	500	15.14	15.06	36.033	26.784	35.401	43.624	28.991	190	4.3	0.56	10.2	500
711	554	550	14.36	14.27	35.901	26.856	35.503	43.754	29.293	189	5.1	0.65	11.5	550
712	594	590	13.55	13.46	35.789	26.943	35.622	43.903	29.564	185	6.0	0.75	13.2	590
714	656	652	12.31	12.22	35.611	27.057	35.787	44.115	29.968	172	8.1	0.98	16.5	652
715	707	702	11.64	11.54	35.510	27.109	35.867	44.221	30.254	166	9.6	1.11	18.4	702
716	808	802	9.509	9.412	35.298	27.324	36.175	44.615	30.952	162	13.3	1.36	21.8	802
717	911	904	7.711	7.614	35.162	27.499	36.434	44.950	31.623	173	15.3	1.45	22.8	904
718	963	956	7.210	7.111	35.145	27.558	36.516	45.055	31.926	180	15.5	1.46	23.0	956

STATION: 30 LEG: III POSITION: 31° 48' N 50° 46' W DATE: 20 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
719	1013	1005	6.817	6.715	35.150	27.617	36.594	45.150	32.219	190	15.2	1.42	22.2	1005
720	1063	1055	6.583	6.478	35.170	27.664	36.653	45.219	32.497	202	14.8	1.36	21.1	1055
721	1114	1105	5.892	5.787	35.106	27.703	36.726	45.325	32.784	219	14.2	1.30	19.6	1105
722	1214	1204	5.277	5.168	35.072	27.751	36.806	45.433	33.301	238	13.2	1.23	19.0	1204
723	1315	1304	5.036	4.919	35.082	27.788	36.855	45.494	33.800	244	13.5	1.22	18.3	1304
401	1407	1394	4.862	4.738	35.082	27.809	36.885	45.533	34.240	247	13.9	1.20	18.1	1394
724	1416	1403	4.670	4.547	35.050	27.805	36.891	45.548	34.284	253	12.9	1.19	18.1	1403
402	1611	1596	4.567	4.426	35.077	27.839	36.931	45.594	35.198	252	14.6	1.20	18.4	1596
403	1814	1796	3.970	3.817	35.005	27.846	36.971	45.664	36.141	265	14.7	1.19	17.8	1796
404	2016	1995	3.752	3.583	34.993D	27.860	36.997	45.702	37.069	265	16.1	1.20	18.0	1995
405	2220	2195	3.583	3.396	34.995	27.880	37.027	45.741	38.006	262	19.7	1.23	18.5	2195
406	2422	2394	3.376	3.172	34.982	27.890	37.050	45.775	38.926	261	23.0	1.26	18.8	2394
407	2628	2596	3.215	2.993	34.970	27.897	37.066	45.801	39.854	259	25.2	1.27	19.3	2596
408	2831	2795	3.079	2.839	34.959	27.902	37.080	45.822	40.763	259	27.4	1.29	19.5	2795
409	3034	2994	2.939	2.681	34.947	27.906	37.093	45.844	41.669	260	29.0	1.31	19.6	2994
410	3238	3194	2.811	2.534	34.936	27.910	37.105	45.863	42.575	260	30.7	1.32	19.7	3194
411	3443	3395	2.658	2.362	34.924	27.915	37.119	45.887	43.487	262	32.2	1.31	19.7	3395
412	3648	3595	2.544	2.228	34.919	27.922	37.134	45.908	44.394	264	32.7	1.31	19.7	3595
414	3843	3786	2.437	2.102	34.903	27.919	37.138	45.919	45.245	265	33.4	1.32	19.6	3786
415	4047	3985	2.344	1.988	34.899	27.925	37.150	45.937	46.139	265	36.2	1.34	19.9	3985
416	4254	4187	2.284	1.906	34.887	27.922	37.152	45.943	47.030	265	38.3	1.35	19.9	4187
417	4459	4386	2.220	1.819	34.880	27.923	37.158	45.954	47.914	262	43.1	1.37	20.5	4386
418	4664	4586	2.163	1.739	34.871	27.921	37.161	45.962	48.792	259	47.8	1.43	21.4	4586
419	4871	4787	2.130	1.681	34.866	27.922	37.165	45.968	49.674	258	50.1	1.47	21.7	4787
420	5077	4987	2.121	1.646	34.861	27.920	37.165	45.971	50.543	256	52.2	1.49	21.9	4987
421	5284	5188	2.135	1.633	34.861	27.921	37.167	45.973	51.412	256	53.7	1.49	21.6	5188
114	5440	5340	2.150	1.626	34.859	27.920	37.166	45.973	52.062	255	54.3	1.51	21.7	5340
422	5490	5388	2.156	1.626	34.860	27.921	37.167	45.974	52.270	255	53.1	1.50	22.1	5388
115	5541	5438	2.161	1.623	34.859	27.920	37.167	45.973	52.482	255	53.7	1.52	22.0	5438
116	5643	5537	2.175	1.623	34.860	27.921	37.168	45.974	52.905	255	53.7	1.52	21.8	5537
423	5696	5588	2.184	1.624	34.860	27.921	37.167	45.974	53.124	255	53.7	1.51	21.9	5588
117	5745	5635	2.188	1.622	34.859	27.920	37.167	45.974	53.327	255	53.4	1.53	22.1	5635
118	5801	5690	2.196	1.622	34.858	27.920	37.166	45.973	53.557	255	53.7	1.52	22.0	5690
119	5846	5733	2.203	1.622	34.858	27.920	37.166	45.973	53.743	255	53.9	1.53	22.0	5733
120	5877	5763	2.207	1.622	34.857	27.919	37.165	45.972	53.870	255	53.3	1.52	22.1	5763
121	5902	5787	2.210	1.621	34.858	27.920	37.166	45.973	53.974	255	53.7	1.52	22.2	5787
424	5903	5788	2.211	1.622	34.859	27.920	37.167	45.974	53.978	255	53.5	1.52	22.0	5788
122	5923	5808	2.213	1.621	34.858	27.920	37.166	45.973	54.060	255	53.7	1.52	22.2	5808
123	5938	5822	2.216	1.622	34.859	27.920	37.167	45.974	54.122	255	53.4	1.51	22.1	5822
124	5949	5833	2.217	1.621	34.857	27.919	37.166	45.972	54.166	255	53.6	1.52	22.2	5833

BOTTOM DEPTH FOR CAST 1 IS 5850 — CAST 4 IS 5846

STATION: 31 LEG: III POSITION: 27° 0' N 53° 32' W DATE: 22 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
601	1	1	27.442	27.442	36.901	24.050	32.288	40.148	24.055	202	1.0	0.06	0.1	1
602	29	29	26.992	26.985	36.923	24.211	32.460	40.331	24.333	215	0.9	0.03	0.0	29
603	61	61	22.921	22.908	36.790	25.339	33.697	41.676	25.600	233	0.8	0.04	0.0	61
604	101	101	21.214	21.194	36.943	25.939	34.344	42.369	26.373	224	0.7	0.03	0.0	101
605	153	152	19.570	19.541	36.710	26.207	34.666	42.740	26.869	218	0.6	0.03	0.0	152
606	204	203	18.191	18.154	36.470	26.382	34.887	43.006	27.268	214	0.9	0.06	1.2	203
607	254	253	17.651	17.606	36.433	26.490	35.014	43.150	27.596	212	1.5	0.16	3.6	253
608	304	302	17.123	17.071	36.403	26.599	35.140	43.293	27.924	213	1.8	0.25	4.9	302
609	406	404	16.940	16.870	36.375	26.626	35.175	43.334	28.395	218	1.9	0.24	4.7	404
610	507	504	15.817	15.734	36.157	26.726	35.318	43.516	28.944	195	3.3	0.46	8.6	504
611	608	604	13.815	13.724	35.831	26.920	35.589	43.860	29.600	185	5.4	0.71	12.7	604
612	709	704	11.789	11.693	35.561	27.120	35.872	44.220	30.272	167	8.9	1.05	17.6	704
614	807	802	9.844	9.746	35.331	27.293	36.130	44.556	30.911	158	12.9	1.35	21.8	802
615	862	856	8.923	8.823	35.261	27.391	36.269	44.734	31.271	159	14.6	1.46	23.2	856
616	910	904	8.212	8.112	35.195	27.451	36.362	44.857	31.559	162	16.0	1.53	23.8	904
617	960	953	7.589	7.487	35.146	27.505	36.446	44.968	31.851	168	17.3	1.56	24.1	953
618	1013	1005	7.099	6.995	35.123	27.557	36.521	45.065	32.152	174	17.2	1.56	24.0	1005
619	1063	1055	6.609	6.503	35.115	27.618	36.605	45.171	32.450	184	17.1	1.53	23.4	1055
620	1114	1105	6.300	6.192	35.121	27.663	36.666	45.246	32.733	194	16.7	1.48	22.7	1105
621	1215	1205	5.850	5.735	35.125	27.725	36.750	45.351	33.260	212	16.2	1.40	20.4	1205

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
U UNCERTAIN DATA

STATION: 31 LEG: III POSITION: 27° 0′ N 53° 32′ W DATE: 22 SEP 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
622	1316	1305	5.457	5.336	35.128	27.776	36.821	45.440	33.777	224	15.5	1.34	20.3	1305
623	1417	1405	5.076	4.948	35.112	27.809	36.873	45.511	34.277	235	15.5	1.29	19.4	1405
301	1522	1508	4.778	4.643	35.095	27.830	36.910	45.562	34.780	244	15.5	1.26	18.6	1508
302	1725	1709	4.311	4.162	35.071	27.863	36.969	45.644	35.743	250	16.7	1.25	19.0	1709
303	1929	1910	3.887	3.724	35.032	27.877	37.006	45.703	36.690	252	20.5	1.28	19.0	1910
304	2132	2110	3.514	3.337	35.003	27.892	37.042	45.759	37.630	254	23.0	1.29	19.4	2110
305	2336	2310	3.299	3.106	34.984	27.898	37.061	45.790	38.557	255	25.6	1.31	19.7	2310
306	2540	2511	3.123	2.912	34.965	27.900	37.074	45.813	39.475	255	28.7	1.33	20.0	2511
307	2742	2709	2.992	2.763	34.952	27.903	37.085	45.832	40.379	254	30.7	1.35	20.2	2709
308	2946	2909	2.874	2.627	34.942	27.907	37.097	45.850	41.289	255	32.3	1.36	20.3	2909
309	3150	3109	2.786	2.519	34.935	27.911	37.106	45.865	42.194	257	33.1	1.36	20.3	3109
310	3345	3300	2.623	2.339	34.920	27.914	37.119	45.888	43.062	260	32.6	1.33	20.0	3300
311	3559	3509	2.503	2.198	34.912	27.919	37.132	45.908	44.009	262	33.8	1.34	20.0	3509
312	3662	3610	2.452	2.137	34.907	27.920	37.137	45.916	44.461	262	35.7	1.33	20.1	3610
314	3764	3710	2.407	2.082	34.901	27.919	37.139	45.921	44.907	262	37.3	1.35	20.4	3710
315	3970	3911	2.301	1.956	34.888	27.919	37.146	45.935	45.806	259	42.3	1.40	21.0	3911
316	4175	4111	2.224	1.857	34.880	27.920	37.153	45.947	46.697	257	46.0	1.44	21.5	4111
317	4278	4211	2.193	1.815	34.876	27.920	37.155	45.951	47.142	257	47.9	1.45	21.6	4211
318	4380	4311	2.171	1.781	34.873	27.920	37.157	45.955	47.580	257	47.5	1.46	21.8	4311
319	4585	4510	2.137	1.724	34.869	27.921	37.162	45.963	48.459	255	48.3	1.48	22.1	4510
320	4792	4712	2.117	1.679	34.865	27.921	37.164	45.968	49.341	255	50.4	1.50	22.2	4712
321	4997	4911	2.111	1.647	34.864	27.923	37.168	45.973	50.209	255	53.0	1.51	22.0	4911
322	5203	5111	2.114	1.623	34.860	27.921	37.168	45.974	51.075	254	53.1	1.52	22.5	5111
323	5409	5311	2.126	1.608	34.856	27.919	37.167	45.974	51.934	254	54.2	1.53	22.4	5311
324	5616	5512	2.136	1.589	34.860	27.924	37.172	45.980	52.801	253	54.4	1.53	22.7	5512
114	5641H	5536	2.138	1.588	34.854	27.919	37.167	45.976	52.900	252	55.8	1.51	22.2	5536
115	5745H	5637	2.145	1.580	34.855	27.920	37.169	45.978	53.333	252	55.9	1.55	22.5	5637
116	5849H	5738	2.155	1.576	34.852	27.918	37.167	45.977	53.761	253	56.2	1.54	22.3	5738
117	5953H	5839	2.166	1.572	34.854	27.920	37.169	45.979	54.191	253	55.8	1.54	22.5	5839
118	5999H	5883	2.171	1.570	34.854	27.920	37.170	45.979	54.381	253	56.4	1.52	22.6	5883
119	6041H	5924	2.175	1.568	34.851	27.918	37.168	45.977	54.551	253	56.5	1.54	22.5	5924
120	6082H	5964	2.180	1.567	34.854	27.920	37.170	45.980	54.722	253	56.4	1.54	22.6	5964
121	6113H	5994	2.185	1.567	34.851	27.918	37.168	45.977	54.847	253	56.5	1.55	22.7	5994
122	6134H	6014	2.187	1.566	34.850	27.917	37.167	45.977	54.932	253	56.2	1.56	22.7	6014
624	6134	6014	2.188	1.567	34.856	27.922	37.172	45.981	54.937	253	56.0	1.55	22.6	6014
123	6149H	6028	2.189	1.566	34.851	27.918	37.168	45.978	54.995	253	55.9	1.56	22.8	6028
124	6160H	6039	2.190	1.566	34.852	27.919	37.169	45.978	55.041	253	55.6	1.55	22.7	6039

BOTTOM DEPTH FOR CAST 1 IS 6055 — CAST 6 IS 6039

STATION: 32 LEG: III POSITION: 23° 50′ N 53° 59′ W DATE: 24 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
714	2	2	27.62	27.62	36.017	23.329	31.572	39.437	23.338	225				2
715	2	2	27.62	27.62	36.012	23.325	31.569	39.433	23.334	225				2
601	6	6	27.54	27.54	36.039	23.371	31.616	39.483	23.397	207	2.2	0.04	0.1	6
716	11	11	27.40	27.40	36.085	23.451	31.698	39.568	23.497	216				11
717	11	11	27.40	27.40	36.084	23.450	31.698	39.567	23.496	215				11
718	21	21	27.67	27.66	36.890	23.971	32.204	40.058	24.060	207				21
719	21	21	27.67	27.66	36.901	23.980	32.212	40.066	24.068	207				21
720	25	25	27.65	27.64	36.956	24.028	32.260	40.114	24.133	208				25
721	39	39	26.87	26.86	37.016	24.320	32.571	40.444	24.485	203				39
722	39	39	26.87	26.86	37.000	24.308	32.559	40.432	24.472	203				39
602	40	40	26.77	26.76	36.907	24.269	32.524	40.401	24.438	204	1.4	0.04	0.0	40
603	76	76	23.49	23.47	36.838	25.211	33.553	41.516	25.535	227	0.9	0.04	0.1	76
723	76	76	23.41	23.39	36.928	25.302	33.646	41.610	25.627	203				76
724	76	76	23.41	23.39	36.930	25.304	33.647	41.611	25.628	202				76
604	135	135	21.19	21.16	36.990	25.983	34.389	42.413	26.563	208	0.7	0.03	0.1	135
605	210	209	18.69	18.65	36.685	26.419	34.906	43.007	27.330	186	1.3	0.10	2.5	209
606	277	276	17.51	17.46	36.467	26.552	35.080	43.220	27.758	195	1.9	0.25	5.1	276
607	329	327	17.08	17.02	36.416	26.620	35.163	43.317	28.054	201	2.1	0.27	5.5	327
608	403	401	16.34	16.27	36.288	26.701	35.272	43.452	28.462	196	2.7	0.38	7.2	401
609	481	478	14.77	14.69	36.022	26.857	35.487	43.722	28.971	187	4.3	0.59	10.4	478
610	556	553	13.31	13.23	35.807	27.005	35.693	43.982	29.463	177	6.0	0.77	13.6	553
611	631	627	11.86	11.77	35.614	27.146	35.894	44.238	29.952	165	8.3	0.98	17.0	627

STATION: 32 LEG: III POSITION: 23° 50′ N 53° 59′ W DATE: 24 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
612	706	702	10.83	10.74	35.482	27.236	36.029	44.414	30.389	158	10.5	1.16	19.6	702
614	781	776	9.576	9.482	35.326	27.334	36.182	44.619	30.841	152	13.9	1.40	22.7	776
615	858	852	8.334	8.239	35.183	27.422	36.327	44.817	31.296	150	17.1	1.59	25.1	852
616	934	928	7.362	7.265	35.097	27.498	36.450	44.983	31.734	156	19.3	1.68	26.1	928
617	1009	1002	6.723	6.622	35.056	27.555	36.538	45.100	32.142	164	20.0	1.68	26.0	1002
618	1111	1103	6.176	6.069	35.048	27.622	36.632	45.218	32.681	181	19.2	1.60	24.5	1103
619	1211	1202	5.606	5.494	35.041	27.688	36.726	45.339	33.214	202	18.3	1.51	23.1	1202
620	1314	1303	5.197	5.079	35.049	27.744	36.803	45.435	33.746	219	17.3	1.42	21.5	1303
621	1414	1402	4.830	4.706	35.047	27.785	36.863	45.513	34.249	234	16.5	1.34	20.0	1402
622	1514	1501	4.629	4.497	35.054	27.813	36.902	45.562	34.734	241	16.3	1.30	19.6	1501
623	1666	1651	4.363	4.219	35.056	27.845	36.948	45.621	35.459	245	17.8	1.29	19.4	1651
624	1818	1801	4.208	4.051	35.042	27.851	36.963	45.645	36.153	248	19.9	1.29	19.6	1801
401	1872	1854	3.948A	3.790	35.032	27.870	36.996	45.690	36.425	249	21.1	1.28	19.1	1854
402	2075	2054	3.614A	3.441	35.004	27.882	37.027	45.739	37.361	252	24.3	1.27	19.4	2054
403	2278	2254	3.320A	3.132	34.978	27.891	37.052	45.780	38.291	253	27.3	1.29	19.3	2254
404	2482	2454	3.099A	2.895	34.963	27.900	37.075	45.815	39.220	254	29.8	1.32	19.9	2454
405	2686	2655	2.954A	2.732	34.953	27.907	37.090	45.838	40.138	254	32.1	1.29	20.1	2655
406	2890	2855	2.835A	2.594	34.940	27.908	37.100	45.855	41.047	255	34.6	1.31	20.1	2855
407	3094	3055	2.708A	2.449	34.928	27.911	37.111	45.873	41.955	256	35.8	1.31	20.1	3055
408	3196	3155	2.653A	2.384	34.922	27.912	37.115	45.881	42.407	256	37.0	1.36	20.5	3155
409	3298	3255	2.595A	2.317	34.921	27.916	37.123	45.893	42.862	258	36.6	1.35	20.4	3255
410	3502	3455	2.478A	2.180	34.910D	27.919	37.133	45.910	43.763	260	36.9	1.30	20.3	3455
411	3707	3655	2.411A	2.092	34.903	27.920	37.140	45.921	44.660	262	38.0	1.31	20.1	3655
412	3912	3855	2.336A	1.996	34.900	27.925	37.150	45.937	45.559	262	38.6	1.30	20.0	3855
414	4117	4055	2.290A	1.928	34.896	27.927	37.156	45.946	46.447	264	38.2	1.31	19.8	4055
415	4219	4155	2.277A	1.903	34.889	27.923	37.154	45.945	46.883	264	39.7	1.34	20.1	4155
416	4322	4255	2.256A	1.870	34.885	27.923	37.155	45.948	47.325	265	38.3	1.33	19.9	4255
417	4424	4355	2.229A	1.832	34.879	27.921	37.155	45.951	47.762	263	42.1	1.36	20.3	4355
418	4527	4455	2.179A	1.771	34.870	27.918	37.156	45.955	48.205	259	46.5	1.43	21.2	4455
419	4730	4653	2.151A	1.719	34.863	27.916	37.158	45.959	49.069	257	50.6	1.48	21.9	4653
420	4939	4856	2.087	1.631	34.854	27.916	37.162	45.968	49.961	255	53.4	1.51	22.2	4856
421	5147	5058	2.066	1.584	34.849	27.915	37.164	45.973	50.840	254	55.5	1.52	21.9	5058
422	5352	5258	2.053	1.545	34.848	27.917	37.168	45.979	51.704	253	57.3	1.54	22.4	5258
114	5441	5344	2.055	1.535	34.852D	27.921	37.173	45.984	52.080	252	57.2	1.52	22.2	5344
115	5541	5441	2.060	1.527	34.851D	27.921	37.173	45.985	52.497	252	57.6	1.54	22.5	5441
423	5556	5456	2.057	1.522	34.841U	27.913	37.166	45.978	52.553	253	58.4	1.56	22.8	5456
116	5644	5541	2.068	1.520	34.849D	27.920	37.172	45.984	52.924	252	58.0	1.55	22.5	5541
117	5748	5642	2.079	1.517	34.849	27.920	37.173	45.985	53.355	252	58.0	1.55	22.8	5642
424	5760	5653	2.079	1.515	34.843U	27.915	37.168	45.981	53.400	253	58.5	1.56	23.0	5653
118	5809	5701	2.087	1.516	34.848D	27.919	37.172	45.984	53.606	252	57.9	1.55	22.8	5701
119	5850	5741	2.093	1.516	34.849D	27.920	37.173	45.985	53.776	252	57.0	1.55	22.7	5741
120	5881	5771	2.097	1.516	34.849D	27.920	37.173	45.985	53.904	253	56.7	1.56	22.8	5771
121	5906	5795	2.100	1.515	34.848D	27.919	37.172	45.985	54.007	252	57.1	1.54	22.9	5795
122	5925	5813	2.102	1.514	34.849D	27.920	37.173	45.985	54.086	253	58.0	1.56	22.9	5813
123	5940	5828	2.104	1.514	34.849D	27.920	37.173	45.985	54.147	253	58.1	1.56	23.0	5828
124	5949	5836	2.105	1.514	34.848D	27.919	37.172	45.985	54.184	252	57.9	1.56	23.0	5836

BOTTOM DEPTH FOR CAST 1 IS 5847 — CAST 4 IS 5730

STATION: 33 LEG: III POSITION: 21° 0′ N 54° 0′ W DATE: 26 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
7201	2	2	27.21	27.21	35.97 D	23.424	31.678	39.553	23.432					2
701	13	13	27.211	27.208	35.971	23.424	31.678	39.554	23.480	202	2.4	0.04	0.1	13
702	38	38	26.895	26.886	37.114	24.386	32.635	40.506	24.546	214	1.2	0.03	0.1	38
703	70	70	24.902	24.886	37.294	25.136	33.435	41.356	25.434	223	0.8	0.04	0.0	70
704	96	96	23.250	23.229	37.313	25.642	33.985	41.949	26.051	213	0.7	0.03	0.0	96
705	159	158	21.087	21.055	37.081	26.082	34.490	42.516	26.765	191	0.8	0.04	0.3	158
706	218	217	18.628	18.588	36.659	26.416	34.905	43.008	27.361	184	1.7	0.16	4.0	217
707	298	297	16.862	16.811	36.360	26.628	35.180	43.341	27.929	185	2.6	0.35	7.0	297
708	398	396	15.101	15.038	36.049	26.802	35.419	43.642	28.550	177	4.2	0.60	10.8	396
709	499	496	13.313	13.240	35.786	26.987	35.674	43.963	29.194	164	6.3	0.85	14.7	496
710	596	593	11.647	11.567	35.563	27.146	35.903	44.255	29.800	157	9.2	1.07	18.8	593
711	696	692	9.671	9.588	35.307	27.301	36.145	44.578	30.428	141	14.4	1.40	23.6	692
712	797	792	8.061	7.975	35.128	27.419	36.337	44.839	31.025	137	18.9	1.65	26.6	792

A. DATA TAKEN FROM CTD DOWN TRACE
D. DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H. THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U. UNCERTAIN DATA

STATION: 33 LEG: III POSITION: 21° 0' N 54° 0' W DATE: 26 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
714	847	841	7.408	7.320	35.058	27.460	36.410	44.941	31.304	140	20.5	1.76	27.8	841
715	899	893	6.858	6.768	35.014	27.502	36.479	45.035	31.592	145	21.6	1.80	28.2	893
716	950	943	6.470	6.378	34.985	27.532	36.528	45.101	31.860	151	22.6	1.83	28.2	943
717	999	992	5.988	5.894	34.942	27.560	36.580	45.177	32.121	160	22.9	1.82	27.9	992
718	1051	1043	5.729	5.632	34.936	27.588	36.621	45.229	32.390	168	22.5	1.80	27.3	1043
719	1101	1093	5.531	5.431	34.945	27.620	36.663	45.280	32.653	176	22.3	1.75	26.7	1093
720	1208	1199	5.156	5.049	34.990	27.701	36.762	45.397	33.227	201	19.8	1.57	23.8	1199
721	1308	1298	4.955	4.840	35.002	27.734	36.806	45.450	33.717	215	18.7	1.43	21.8	1298
722	1409	1397	4.688	4.566	35.016	27.776	36.862	45.518	34.223	232	16.6	1.36	20.8	1397
723	1510	1497	4.445	4.316	35.014	27.801	36.900	45.569	34.712	243	15.9	1.30	19.7	1497
301	1515	1502	4.478	4.348	35.014	27.798	36.895	45.562	34.730	240	16.5	1.32	19.6	1502
302	1616	1602	4.281	4.143	35.012	27.818	36.926	45.603	35.212	249	16.0	1.27	19.2	1602
724	1626	1612	4.191	4.054	35.013	27.828	36.941	45.622	35.270	251	16.1	1.27	19.4	1612
303	1820	1803	3.979	3.826	35.019	27.856	36.980	45.673	36.178	252	18.3	1.27	19.0	1803
304	2022	2002	3.672	3.503	34.998	27.872	37.013	45.722	37.111	252	21.1	1.29	19.6	2002
305	2224	2201	3.396	3.212	34.984	27.888	37.045	45.769	38.043	254	24.2	1.30	19.5	2201
306	2426	2400	3.139	2.940	34.965	27.898	37.070	45.807	38.966	255	27.6	1.31	19.6	2400
307	2629	2599	2.961	2.745	34.951	27.904	37.087	45.834	39.883	256	30.0	1.33	19.8	2599
308	2832	2798	2.843	2.608	34.940	27.907	37.098	45.852	40.790	256	32.4	1.34	20.0	2798
309	3034	2597	2.742	2.488	34.933	27.912	37.109	45.870	41.690	255	34.0	1.36	20.4	2997
310	3136	3097	2.692	2.429	34.927	27.912	37.113	45.876	42.142	257	34.4	1.35	20.3	3097
311	3236	3195	2.649	2.376	34.924	27.914	37.117	45.884	42.584	257	34.8	1.35	20.2	3195
312	3337	3293	2.605	2.322	34.923	27.917	37.124	45.893	43.032	259	35.2	1.34	20.3	3293
314	3448	3402	2.563	2.269	34.915	27.915	37.125	45.897	43.518	259	36.3	1.35	20.3	3402
315	3648	3598	2.469	2.155	34.911	27.921	37.137	45.915	44.400	261	36.5	1.34	20.2	3598
316	3851	3796	2.373	2.039	34.902	27.923	37.146	45.930	45.290	260	39.2	1.36	20.5	3796
317	4056	3996	2.302	1.946	34.895	27.925	37.153	45.942	46.182	263	39.9	1.35	20.2	3996
318	4158	4096	2.275	1.908	34.892	27.925	37.155	45.947	46.624	262	39.9	1.36	20.3	4096
319	4260	4195	2.246	1.868	34.890	27.927	37.159	45.952	47.065	263	40.5	1.37	20.4	4195
320	4360	4293	2.204	1.816	34.882	27.924	37.160	45.956	47.496	261	43.1	1.41	20.8	4293
321	4463	4393	2.172	1.772	34.878	27.925	37.162	45.961	47.939	261	45.6	1.42	20.5	4393
322	4668	4593	2.094	1.672	34.867	27.923	37.167	45.971	48.820	258	50.6	1.48	21.4	4593
114	4801	4723	2.007	1.571	34.847	27.914	37.164	45.973	49.387	254	57.2	1.51	21.9	4723
323	4874	4794	1.994	1.550	34.847	27.916	37.167	45.978	49.699	254	57.8	1.54	22.3	4794
115	4905	4824	1.984	1.536	34.850	27.919	37.171	45.982	49.834	253	58.9	1.54	22.3	4824
116	5008	4924	1.983	1.522	34.845	27.916	37.169	45.981	50.267	253	59.2	1.56	22.4	4924
324	5079	4993	1.981	1.511	34.846	27.918	37.171	45.984	50.568	252	59.1	1.56	22.9	4993
117	5116	5029	1.984	1.509	34.846	27.918	37.171	45.984	50.724	252	59.4	1.57	22.8	5029
118	5168	5079	1.989	1.508	34.848	27.920	37.173	45.986	50.943	252	59.6	1.55	22.1	5079
119	5211	5121	1.993	1.506	34.846	27.918	37.172	45.985	51.122	252	59.8	1.57	22.9	5121
120	5243	5152	1.995	1.504	34.848	27.920	37.174	45.987	51.258	253	59.8	1.57	22.9	5152
121	5268	5177	1.996	1.501	34.848	27.920	37.174	45.987	51.363	252	60.0	1.56	22.9	5177
122	5290	5198	1.997	1.499	34.844	27.917	37.171	45.984	51.452	252	59.9	1.57	22.9	5198
123	5303	5211	1.997	1.498	34.843	27.916	37.170	45.984	51.506	252	59.3	1.56	23.2	5211
124	5317	5224	1.997	1.496	34.848	27.921	37.174	45.988	51.569	252	59.5	1.56	23.3	5224

BOTTOM DEPTH FOR CAST 3 IS 5098 — CAST 1 IS 5241

STATION: 34 LEG: III POSITION: 18° 1' N 53° 59' W DATE: 28 SEP 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1214	2	2	27.674	27.674	34.841	22.428	30.683	38.559	22.437					2
1215	2	2	27.674	27.674	34.840	22.428	30.682	38.558	22.436					2
1001	5	5	27.552	27.551	34.884	22.499	30.757	38.635	22.521	202	3.6	0.03	0.1	5
1216	15	15	27.562	27.558	34.846	22.468	30.726	38.604	22.532					15
1217	24	24	27.561	27.555	34.858	22.478	30.736	38.614	22.580					24
1218	35	35	27.565	27.556	35.064	22.633	30.888	38.764	22.781					35
1219	35	35	27.581	27.572	35.069	22.632	30.887	38.762	22.780					35
1002	46	46	26.920	26.909	36.659	24.036	32.290	40.165	24.230	215	1.7	0.03	0.1	46
1220	50	50	26.872	26.860	36.876	24.215	32.467	40.342	24.426					50
1221	50	50	26.776	26.764	36.888	24.254	32.508	40.386	24.465					50
1222	70	70	25.055	25.039	37.052	24.907	33.205	41.125	25.205					70
1223	70	70	25.083	25.067	37.055	24.901	33.198	41.117	25.199					70
1003	73	73	25.441	25.424	37.037	24.779	33.067	40.976	25.089	220	1.2	0.04	0.1	73

STATION: 34 LEG: III POSITION: 18° 1' N 53° 59' W DATE: 28 SEP 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_2 µM/KG	DEPTH M
1224	98	98	23.866	23.844	37.066	25.275	33.604	41.555	25.692					98
1004	99	99	23.765	23.743	37.078	25.313	33.645	41.599	25.735	219	1.0	0.03	0.1	99
1005	150	150	22.054	22.023	37.097	25.824	34.204	42.203	26.466	197	0.9	0.04	0.4	150
1006	192	191	19.824	19.787	36.831	26.234	34.684	42.749	27.063	180	1.2	0.08	2.1	191
1007	243	242	17.821	17.778	36.526	26.519	35.036	43.165	27.576	190	1.9	0.22	4.9	242
1008	320	319	16.721	16.667	36.338	26.646	35.203	43.369	28.043	189	2.7	0.38	7.3	319
1009	394	392	14.881	14.819	36.026	26.833	35.458	43.689	28.565	177	4.5	0.63	11.3	392
1010	496	494	12.532	12.463	35.642	27.033	35.753	44.071	29.235	150	8.2	1.05	18.1	494
1011	596	593	10.701	10.625	35.40 D	27.193	35.991	44.382	29.860	134	12.3	1.39	23.1	593
1012	645	641	9.719	9.642	35.249	27.247	36.089	44.521	30.146	130	15.0	1.59	25.5	641
1014	706	702	8.466	8.388	35.086	27.323	36.223	44.708	30.515	126	18.2	1.83	28.6	702
1015	755	750	7.391	7.313	34.941	27.369	36.321	44.854	30.800	130	21.3	1.99	30.6	750
1016	805	800	6.612	6.534	34.841	27.398	36.388	44.957	31.070	134	23.7	2.08	31.6	800
1017	857	852	6.232	6.151	34.809	27.423	36.432	45.019	31.338	137	25.1	2.10	31.7	852
1018	908	902	5.964	5.880	34.819	27.465	36.488	45.086	31.616	143	25.0	2.07	31.2	902
1019	958	952	5.709	5.622	34.825	27.502	36.537	45.147	31.885	150	25.2	2.05	30.6	952
1020	1009	1002	5.627	5.535	34.865	27.544	36.583	45.197	32.160	159	24.3	1.96	29.3	1002
1021	1109	1101	5.389	5.289	34.874	27.580	36.632	45.257	32.654	181	22.1	1.76	25.9	1101
1022	1210	1201	5.237	5.129	34.982	27.685	36.743	45.373	33.218	199	19.6	1.62	24.4	1201
1023	1359	1348	4.806	4.687	35.011	27.758	36.838	45.489	33.977	226	17.0	1.42	21.3	1348
801	1508	1495	4.468	4.339	35.013	27.798	36.896	45.563	34.699	239	15.7	1.30	19.7	1495
1024	1510	1497	4.475	4.345	35.013	27.797	36.894	45.562	34.707	243	15.5	1.32	20.0	1497
802	1660	1646	4.110	3.970	35.002	27.828	36.945	45.631	35.426	251	15.6	1.26	19.3	1646
803	1812	1795	3.847	3.696	34.998	27.853	36.984	45.683	36.145	252	17.9	1.28	19.3	1795
804	1964	1945	3.658	3.495	34.994	27.869	37.011	45.720	36.851	255	19.2	1.27	19.3	1945
805	2115	2094	3.458	3.284	34.983	27.881	37.034	45.754	37.547	255	21.3	1.27	19.4	2094
806	2269	2246	3.211	3.026	34.968	27.893	37.060	45.793	38.259	259	23.1	1.28	19.3	2246
807	2420	2394	3.075	2.877	34.958	27.898	37.074	45.814	38.944	259	24.1	1.28	19.5	2394
808	2573	2545	2.950	2.740	34.947	27.901	37.085	45.832	39.634	259	26.5	1.29	19.7	2545
809	2725	2694	2.854	2.630	34.945	27.909	37.099	45.852	40.320	259	28.0	1.30	19.7	2694
810	2882	2848	2.780	2.541	34.939	27.912	37.106	45.864	41.020	259	29.5	1.31	19.9	2848
811	3038	3001	2.713	2.460	34.932	27.913	37.112	45.874	41.712	259	31.0	1.31	19.8	3001
812	3188	3148	2.634	2.367	34.929	27.919	37.123	45.890	42.380	259	32.6	1.32	20.0	3148
814	3340	3297	2.550	2.268	34.919	27.919	37.128	45.900	43.052	259	34.3	1.37	20.4	3297
815	3492	3446	2.486	2.189	34.911	27.919	37.133	45.909	43.719	259	36.1	1.37	20.5	3446
816	3644	3595	2.422	2.110	34.908	27.923	37.141	45.922	44.389	260	36.9	1.38	20.7	3595
817	3798	3745	2.337	2.010	34.900	27.924	37.148	45.934	45.065	259	39.8	1.38	20.6	3745
818	3957	3901	2.269	1.926	34.893	27.925	37.154	45.944	45.760	259	40.8	1.39	21.0	3901
819	4110	4050	2.219	1.860	34.885	27.924	37.156	45.950	46.422	259	42.2	1.41	21.1	4050
820	4261	4197	2.159	1.784	34.879	27.924	37.162	45.959	47.077	258	45.5	1.44	21.5	4197
515	4323	4258	2.135	1.753	34.872	27.921	37.160	45.960	47.342	257	49.3	1.49	20.8	4258
821	4420	4352	2.115	1.722	34.874	27.925	37.166	45.967	47.763	257	49.0	1.46	21.2	4352
516	4424	4356	2.101	1.708	34.870	27.923	37.164	45.966	47.779	256	50.6	1.51	21.6	4356
517	4526	4456	2.091	1.686	34.868	27.923	37.166	45.969	48.216	255	51.7	1.50	21.5	4456
822	4574	4502	2.078	1.668	34.866	27.923	37.167	45.971	48.421	256	51.5	1.49	22.0	4502
518	4590	4518	2.077	1.665	34.864	27.921	37.165	45.970	48.488	255	52.6	1.50	21.8	4518
519	4638	4565	2.054	1.637	34.859	27.919	37.165	45.971	48.693	255	54.2	1.54	22.1	4565
520	4681	4607	2.045	1.623	34.858	27.920	37.166	45.973	48.877	255	54.7	1.54	22.2	4607
521	4714	4639	2.043	1.617	34.856	27.918	37.165	45.972	49.017	254	53.9	1.55	22.3	4639
522	4745	4669	2.034	1.604	34.857	27.920	37.168	45.975	49.151	254	53.7	1.54	22.5	4669
523	4766	4689	2.035	1.603	34.852	27.916	37.164	45.972	49.236	254	54.1	1.55	22.4	4689
823	4769	4692	2.036	1.603	34.857	27.920	37.168	45.975	49.253	255	56.0	1.53	22.1	4692
824	4769	4692	2.034	1.601	34.861	27.923	37.171	45.979	49.256	254	55.0	1.53	22.5	4692
524	4782	4705	2.033	1.599	34.854	27.918	37.166	45.974	49.306	254	54.5	1.56	22.7	4705

BOTTOM DEPTH FOR CAST 5 IS 4724 — CAST 8 IS 4731

STATION: 36 LEG: IV POSITION: 15° 0' N 53° 56' W DATE: 11 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	0	0	27.81	27.81	35.37 D	22.780	31.026	38.892	22.780	201				0
401	4	4	27.82	27.82	35.367	22.778	31.023	38.889	22.794	201	2.8	0.04	0.1	4
402	22	22	27.79	27.78	35.408	22.819	31.065	38.932	22.912	202	2.6	0.03	0.1	22
4202	37	37	27.81	27.80	35.43 D	22.831	31.076	38.942	22.987					37

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 36 LEG: IV POSITION: 15° 0′ N 53° 56′ W DATE: 11 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
403	83	83	25.10	25.08	37.037	24.883	33.180	41.099	25.236	218	0.9	0.05	0.1	83
4203	101	101	24.34	24.32	37.14 D	25.190	33.506	41.444	25.620					101
4204	126	126	23.17	23.14	37.20 D	25.581	33.928	41.896	26.119					126
404	149	149	21.99	21.96	37.151	25.883	34.264	42.264	26.521	181	0.9	0.11	1.5	149
405	221	220	17.47	17.43	36.485	26.573	35.102	43.243	27.536	156	2.8	0.50	9.0	220
406	290	289	15.15	15.10	35.985	26.738	35.354	43.575	28.013	147	5.7	0.86	14.3	289
407	362	360	12.73	12.68	35.545	26.915	35.627	43.939	28.523	131	9.0	1.26	20.3	360
408	433	431	11.69	11.63	35.459	27.053	35.808	44.160	28.985	128	10.5	1.35	22.4	431
409	502	500	10.23	10.17	35.257	27.163	35.982	44.393	29.417	122	13.6	1.60	25.6	500
410	572	569	8.65	8.59	35.038	27.254	36.146	44.624	29.842	123	17.6	1.84	28.8	569
411	643	639	7.34	7.27	34.876	27.323	36.278	44.814	30.251	124	20.9	2.01	31.0	639
412	715	711	6.660	6.591	34.783	27.344	36.333	44.900	30.609	126	23.6	2.12	32.2	711
415	784	779	6.001	5.929	34.720	27.381	36.403	45.000	30.970	132	26.0	2.20	33.1	779
416	855	850	5.753	5.676	34.718	27.411	36.445	45.054	31.327	140	26.9	2.19	32.8	850
417	924	918	5.539	5.456	34.738	27.453	36.498	45.117	31.687	140	27.5	2.18	32.4	918
418	1016	1009	5.310	5.220	34.775	27.510	36.567	45.196	32.167	153	26.7	2.06	30.8	1009
419	1117	1109	5.205	5.106	34.857	27.589	36.649	45.283	32.704	169	24.1	1.89	28.3	1109
420	1216	1207	5.131	5.023	34.915	27.644	36.708	45.345	33.208	185	22.1	1.74	26.2	1207
421	1317	1307	4.973	4.857	34.972	27.708	36.780	45.424	33.732	202	19.8	1.59	23.8	1307
422	1420	1409	4.747	4.623	34.985	27.745	36.828	45.483	34.240	216	19.4	1.51	22.3	1409
423	1518	1506	4.434	4.304	34.990	27.784	36.883	45.553	34.731	233	17.6	1.40	21.1	1506
424	1621	1607	4.172	4.035	34.996	27.817	36.930	45.613	35.237	244	16.8	1.33	19.7	1607
701	1815H	1799	3.698H	3.549	34.983	27.855	36.994	45.701	36.168	262	16.6	1.22	18.3	1799
1201	2030	2011	3.480	3.314	34.979D	27.875	37.027	45.745	37.160					2011
705	2233H	2210	3.25 H	3.07	34.959	27.881	37.047	45.778	38.085	253	21.2	1.25	18.9	2210
1202	2483	2456	3.036	2.833	34.954D	27.899	37.077	45.820	39.227					2456
710	2630H	2601	2.932H	2.716	34.942	27.899	37.084	45.833	39.885	261	25.8	1.27	18.9	2601
1203	2737	2706	2.881	2.655	34.943D	27.905	37.093	45.845	40.367					2706
1204	2878	2844	2.819	2.580	34.938D	27.908	37.100	45.856	40.995					2844
715	3044H	3007	2.735H	2.480	34.929	27.909	37.107	45.868	41.732	259	31.3	1.33	19.7	3007
1205	3221	3181	2.664	2.392	34.926D	27.914	37.117	45.882	42.518					3181
1206	3400	3356	2.586	2.297	34.920D	27.917	37.125	45.896	43.308					3356
719	3555H	3508	2.518H	2.213	34.913	27.918	37.131	45.906	43.990	265	30.5	1.29	19.3	3508
1207	3709	3659	2.433	2.113	34.906D	27.921	37.139	45.919	44.668					3659
1208	3885	3831	2.374	2.036	34.902D	27.924	37.146	45.931	45.437					3831
724	4066H	4008	2.32 H	1.96	34.893	27.922	37.149	45.938	46.221	265	35.6	1.34	19.3	4008
1209	4275	4212	2.285	1.904	34.892D	27.926	37.156	45.947	47.124					4212
1210	4479	4410	2.257	1.852	34.885D	27.924	37.157	45.952	47.997					4410
1211	4686	4612	2.196	1.768	34.876D	27.923	37.161	45.960	48.883					4612
1212	4887	4808	2.085	1.636	34.860D	27.920	37.166	45.972	49.746					4808
1213	5094	5009	1.964	1.493	34.842D	27.916	37.170	45.984	50.632					5009
115	5342	5250	1.923	1.421	34.837	27.917	37.175	45.993	51.681	249	65.1	1.62	23.3	5250
116	5384	5291	1.918	1.411	34.829	27.911	37.170	45.989	51.852	250	65.4	1.64	23.6	5291
117	5414	5320	1.915	1.404	34.828	27.911	37.170	45.989	51.978	249	66.2	1.64	23.6	5320
118	5446	5351	1.910	1.395	34.825	27.909	37.169	45.988	52.111	249	66.5	1.62	23.7	5351
119	5465	5370	1.907	1.390	34.827	27.911	37.171	45.991	52.192	250	66.3	1.63	23.7	5370
120	5487	5391	1.897	1.378	34.825	27.910	37.171	45.992	52.285	247	68.1	1.64	23.5	5391
121	5503	5406	1.896	1.374	34.828	27.913	37.174	45.994	52.355	248	67.4	1.65	23.8	5406
122	5518	5421	1.897	1.373	34.825	27.911	37.172	45.992	52.415	249	67.3	1.65	23.7	5421
123	5530	5433	1.899	1.374	34.825	27.911	37.172	45.992	52.465	249	67.3	1.65	23.7	5433
124	5538	5440	1.900	1.374	34.828	27.913	37.174	45.994	52.500	249	66.9	1.65	23.9	5440

BOTTOM DEPTH FOR CAST 1 IS 5449

STATION: 37 LEG: IV POSITION: 12° 1′ N 50° 59′ W DATE: 13 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6201	0	0	28.04	28.04	35.91 D	23.115	31.349	39.204	23.115					0
6202	10	10	28.04	28.04	35.91 D	23.116	31.350	39.205	23.158					10
601	15	15	27.833	27.829	35.953	23.215	31.453	39.313	23.278	199	0.9	0.00	0.1	15
602	39	39	26.254	26.245	36.456	24.090	32.362	40.257	24.255	214	1.0	0.00	0.0	39
603	59	59	25.491	25.477	36.458	24.326	32.619	40.534	24.577	214	1.0	0.00	0.0	59
604	115	115	21.107	21.084	36.751	25.823	34.234	42.264	26.318	168	1.8	0.21	3.0	115
605	178	177	14.811	14.783	35.920	26.759	35.387	43.621	27.544	112	6.3	1.04	17.9	177
606	228	227	12.402	12.371	35.479	26.925	35.651	43.975	27.941	105	9.5	1.38	22.5	227

STATION: 37 LEG: IV POSITION: 12° 1′ N 50° 59′ W DATE: 13 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
607	279	278	10.576	10.541	35.232	27.077	35.882	44.278	28.332	117	11.6	1.50	24.3	278
608	354	352	9.830	9.788	35.109	27.113	35.951	44.378	28.709	120	13.5	1.59	25.8	352
609	455	453	8.461	8.411	34.900	27.173	36.075	44.562	29.237	119	16.8	1.83	28.8	453
610	555	552	7.267	7.211	34.743	27.228	36.187	44.728	29.758	120	20.7	2.01	31.6	552
611	655	651	6.498	6.436	34.670	27.276	36.274	44.850	30.272	126	23.8	2.12	32.6	651
612	756	751	6.068	5.998	34.668	27.331	36.350	44.946	30.793	127	25.7	2.15	33.1	751
615	855	850	5.391	5.316	34.643	27.395	36.448	45.075	31.320	136	28.4	2.20	33.3	850
616	956	950	5.086	5.004	34.666	27.449	36.518	45.160	31.840	145	29.2	2.16	32.6	950
617	1082	1074	5.155	5.060	34.821	27.565	36.629	45.266	32.524	162	25.6	1.92	29.3	1074
618	1208	1199	5.003	4.897	34.903	27.649	36.720	45.363	33.181	179	23.0	1.73	26.8	1199
619	1309	1299	4.876	4.762	34.959	27.709	36.785	45.434	33.700	205	19.4	1.53	23.7	1299
620	1411	1400	4.587	4.466	34.978	27.757	36.848	45.510	34.217	222	18.0	1.42	22.1	1400
621	1511	1499	4.392	4.263	34.992	27.789	36.891	45.563	34.707	236	16.7	1.31	20.4	1499
622	1613	1599	4.154	4.018	34.989	27.813	36.927	45.611	35.198	249	15.5	1.23	19.5	1599
623	1714	1699	3.817	3.676	34.986	27.845	36.978	45.678	35.699	257	15.2	1.20	18.9	1699
301	1808	1792	3.747	3.598	34.981	27.849	36.985	45.690	36.128	261	15.9	1.18	18.7	1792
624	1865	1848	3.702	3.548	34.978	27.851	36.991	45.697	36.388	262	16.4	1.19	18.6	1848
302	1959	1941	3.529	3.369	34.969	27.861	37.010	45.726	36.827	262	17.6	1.21	18.7	1941
303	2112	2091	3.332	3.160	34.963	27.876	37.037	45.763	37.536	264	19.0	1.20	18.5	2091
304	2264	2241	3.190	3.006	34.956	27.885	37.054	45.788	38.231	265	20.6	1.19	18.6	2241
305	2417	2392	3.085	2.888	34.949	27.890	37.065	45.805	38.922	263	22.4	1.23	18.8	2392
306	2568	2540	2.984	2.773	34.942	27.894	37.076	45.822	39.603	262	25.1	1.24	19.2	2540
307	2722	2691	2.884	2.660	34.937	27.900	37.088	45.840	40.296	261 D	26.3	1.25	19.2	2691
308	2874	2841	2.787	2.549	34.928	27.903	37.097	45.854	40.975	256	31.8	1.30	19.9	2841
309	3078	3041	2.682	2.425	34.921	27.907	37.108	45.872	41.884	258	33.1	1.32	20.1	3041
310	3282	3241	2.599	2.322	34.915	27.911	37.118	45.887	42.787	254	36.1	1.34	20.5	3241
311	3488	3443	2.517	2.220	34.906	27.912	37.125	45.899	43.693	259	35.7	1.33	20.4	3443
312	3488	3443	2.517	2.220	34.908	27.914	37.126	45.901	43.694	258	35.1	1.32	20.2	3443
315	3652	3603	2.452	2.138	34.908	27.920	37.137	45.916	44.419	264	33.2	1.28	19.7	3603
316	3754	3703	2.402	2.078	34.900	27.919	37.139	45.921	44.863	265	33.4	1.27	19.5	3703
317	3934	3879	2.351	2.008	34.895	27.920	37.145	45.931	45.647	265	34.3	1.27	19.5	3879
318	4113	4054	2.294	1.932	34.891	27.923	37.152	45.942	46.426	265	36.5	1.28	19.7	4054
319	4266	4203	2.272	1.893	34.889	27.924	37.155	45.947	47.085	265	36.2	1.29	19.6	4203
320	4440	4373	2.244	1.845	34.884	27.924	37.158	45.952	47.832	264	37.8	1.31	19.8	4373
321	4626	4554	2.171	1.751	34.873	27.922	37.161	45.961	48.631	260	43.8	1.37	20.8	4554
322	4832	4755	1.864	1.430	34.841	27.920	37.177	45.994	49.541	250	61.2	1.56	23.4	4755
115	4856	4778	1.908	1.469	34.839	27.915	37.171	45.986	49.633	250	58.1	1.54	22.5	4778
116	4934	4854	1.776	1.332	34.820	27.910	37.173	45.996	49.975	248	65.4	1.63	23.9	4854
323	4986	4905	1.680	1.234	34.810	27.908	37.178	46.006	50.207	245	70.9	1.67	24.7	4905
117	5001	4919	1.706	1.257	34.813	27.909	37.177	46.004	50.267	244	69.0	1.66	24.3	4919
118	5040	4957	1.674	1.221	34.809	27.908	37.178	46.007	50.436	245	72.1	1.69	24.7	4957
119	5072	4988	1.653	1.197	34.804	27.906	37.178	46.008	50.571	244	73.0	1.71	25.0	4988
120	5102	5017	1.651	1.191	34.804	27.906	37.178	46.009	50.699	245	73.5	1.70	24.9	5017
324	5107	5022	1.647	1.187	34.805	27.907	37.180	46.010	50.721	245	73.6	1.70	25.0	5022
121	5117	5032	1.645	1.183	34.804D	27.907	37.179	46.010	50.763	244	74.3	1.71	25.0	5032
122	5133	5048	1.632	1.169	34.801	27.905	37.179	46.010	50.831	243	74.6	1.72	25.2	5048
123	5143	5057	1.629	1.165	34.801	27.906	37.179	46.011	50.874	243	74.6	1.72	25.2	5057
124	5152	5066	1.632	1.167	34.804	27.908	37.181	46.013	50.914	243	74.6	1.72	25.1	5066

BOTTOM DEPTH FOR CAST 3 IS 5039 — CAST 1 IS 5073

STATION: 38 LEG: IV POSITION: 9° 45′ N 47° 10′ W DATE: 15 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
115	5	5	28.705	28.704	33.512	21.103	29.348	37.211	21.125	198				5
1201	25	25	27.80	27.80	36.10 D	23.336	31.574	39.433	23.441					25
1202	50	50	25.49	25.48	36.26 D	24.179	32.474	40.390	24.391					50
1203	76	76	22.48	22.46	36.26 D	25.064	33.441	41.438	25.390					76
1204	99	99	19.58	19.56	36.58 D	26.104	34.563	42.639	26.532					99
116	124	124	15.271	15.251	35.784	26.550	35.163	43.382	27.096	109				124
1205	150	150	12.77	12.75	35.40 D	26.790	35.502	43.813	27.458					150
1206	178	177	11.16	11.13	35.16 D	26.917	35.698	44.072	27.716					177
1207	200	199	10.541	10.516	35.06 D	26.945	35.753	44.152	27.845					199
1208	250	249	9.72	9.69	34.96 D	27.010	35.854	44.288	28.139					249

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 38 LEG: IV POSITION: 9° 45' N 47° 10' W DATE: 15 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1209	299	298	8.96	8.93	34.86 D	27.057	35.937	44.402	28.413					298
1210	347	345	8.50	8.47	34.80 D	27.088	35.989	44.475	28.664					345
1211	397	395	8.13	8.09	34.78 D	27.126	36.045	44.547	28.932					395
1212	451	449	7.74	7.69	34.75 D	27.161	36.098	44.618	29.215					449
1213	503	500	7.38	7.33	34.72 D	27.193	36.148	44.683	29.486					500
1214	703	699	6.14	6.07	34.65 D	27.311	36.327	44.919	30.531					699
1215	846	841	5.42	5.35	34.64 D	27.391	36.443	45.069	31.275					841
1216	1000	993	4.991	4.905	34.702D	27.489	36.562	45.208	32.082					993
1217	1249	1240	4.889	4.780	34.924D	27.679	36.755	45.403	33.399					1240
1218	1501	1489	4.395	4.267	34.997D	27.793	36.894	45.566	34.665					1489
1219	1595	1582	4.188	4.054	34.991D	27.811	36.923	45.605	35.114					1582
117	1609	1596	4.172	4.037	34.991	27.812	36.926	45.609	35.179	252				1596
1220	2366	2342	3.171	2.977	34.953D	27.885	37.055	45.791	38.685					2342
1221	2506	2479	3.067	2.861	34.949D	27.892	37.069	45.810	39.320					2479
1222	3003	2968	2.745	2.495	34.927D	27.906	37.103	45.864	41.549					2968
1223	3498	3453	2.532	2.233	34.913D	27.917	37.128	45.902	43.739					3453
1224	4001	3945	2.314	1.964	34.896D	27.924	37.151	45.939	45.944					3945
1225	4503	4435	2.197	1.791	34.880D	27.925	37.161	45.959	48.107					4435
118	4752	4677	1.891	1.466	34.838	27.915	37.171	45.986	49.194	251				4677
119	4822	4745	1.794	1.364	34.825	27.911	37.173	45.994	49.500	245				4745
120	4843	4766	1.794	1.361	34.825	27.912	37.174	45.994	49.589	245				4766
121	4863	4785	1.788	1.353	34.826	27.913	37.175	45.997	49.676	244				4785
122	4882	4804	1.784	1.347	34.823	27.911	37.174	45.996	49.755	245				4804
123	4897	4818	1.782	1.343	34.823	27.911	37.174	45.996	49.819	242				4818
124	4907	4828	1.759	1.319	34.823	27.913	37.177	46.000	49.866	243				4828

BOTTOM DEPTH FOR CAST 1 IS 4834

STATION: 39 LEG: IV POSITION: 7° 57' N 43° 51' W DATE: 17 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
501	1	1	28.656	28.656	35.482	22.597	-30.820	38.664	22.601	193	1.2	0.00	0.1	1
5201	21	21	28.19	28.18	35.54 D	22.791	31.026	38.881	22.880					21
502	33	33	27.680	27.672	35.833	23.174	31.418	39.284	23.314	209	1.1	0.00	0.0	33
5202	49	49	22.96	22.95	36.32 D	24.971	33.333	41.316	25.181					49
503	63	63	20.798	20.786	36.202	25.487	33.914	41.958	25.759	163	3.2	0.40	6.0	63
5203	75	75	17.88	17.87	35.98 D	26.079	34.600	42.733	26.406					75
5204	100	100	15.44	15.42	35.74 D	26.477	35.084	43.299	26.917					100
504	124	124	13.236	13.218	35.391	26.686	35.380	43.674	27.237	115	9.5	1.37	21.5	124
5205	151	151	12.21	12.19	35.27 D	26.799	35.535	43.868	27.473					151
505	204	203	10.014	9.990	34.968	26.969	35.800	44.221	27.889	127	13.2	1.64	25.4	203
506	307	306	9.080	9.045	34.854	27.037	35.911	44.372	28.428	114	15.4	1.87	28.9	306
507	390	388	8.246	8.204	34.764	27.099	36.012	44.509	28.871	115	17.6	1.97	30.5	388
508	480	478	7.613	7.564	34.707	27.149	36.093	44.618	29.336	116	19.5	2.06	32.1	478
509	515	512	7.740	7.687	34.771	27.181	36.119	44.638	29.525	91	20.3	2.17	34.3	512
510	577	574	7.197	7.139	34.733	27.230	36.193	44.737	29.861	100	22.0	2.19	34.7	574
511	661	657	6.409	6.347	34.678	27.294	36.296	44.876	30.319	107	24.7	2.29	35.3	657
512	763	758	5.730	5.662	34.641	27.351	36.388	44.999	30.852	121	27.1	2.28	34.8	758
515	864	859	5.482	5.406	34.651	27.390	36.439	45.062	31.354	124	28.1	2.31	34.7	859
516	968	962	5.104	5.020	34.677	27.456	36.524	45.164	31.901	135	28.9	2.26	33.6	962
517	1049	1042	4.899	4.809	34.706	27.503	36.581	45.231	32.320	150	28.5	2.16	32.2	1042
518	1128	1120	4.821	4.725	34.751	27.548	36.630	45.283	32.725	159	27.8	2.07	30.8	1120
519	1210	1201	4.842	4.738	34.814	27.597	36.677	45.328	33.143	169	26.2	1.93	28.8	1201
520	1311	1301	4.875	4.760	34.926	27.683	36.760	45.409	33.683	197	21.6	1.65	25.0	1301
521	1411	1400	4.651	4.529	34.966	27.740	36.829	45.488	34.198	214	18.9	1.49	22.9	1400
522	1511	1499	4.385	4.256	34.983	27.783	36.885	45.557	34.701	236	16.8	1.35	20.6	1499
523	1607	1594	4.173	4.038	34.984	27.807	36.921	45.603	35.165	246	16.3	1.29	19.9	1594
101	1659	1645	4.029	3.891	34.985	27.823	36.944	45.634	35.420	248	16.4	1.27	19.5	1645
524	1703	1688	3.962	3.820	34.981	27.827	36.952	45.645	35.625	253	16.9	1.28	19.5	1688
102	1808	1792	3.754	3.605	34.973	27.842	36.978	45.682	36.121	253	17.6	1.26	19.1	1792
103	1958	1940	3.526	3.366	34.964	27.858	37.007	45.723	36.820	254	19.3	1.26	19.3	1940
104	2113	2093	3.406	3.233	34.961	27.868	37.024	45.747	37.528	260	20.4	1.26	19.2	2093
105	2266	2243	3.280	3.094	34.957	27.878	37.042	45.771	38.227	262	20.7	1.25	19.0	2243

STATION: 39 LEG: IV POSITION: 7° 57' N 43° 51' W DATE: 17 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
106	2419	2394	3.164	2.965	34.951	27.885	37.056	45.792	38.921	263	21.5	1.24	18.9	2394
107	2569	2541	3.037	2.825	34.944	27.891	37.070	45.813	39.600	262	24.4	1.27	19.3	2541
108	2721	2691	2.973	2.747	34.941	27.896	37.079	45.826	40.281	263	24.7	1.26	19.2	2691
109	2871	2838	2.866	2.627	34.931	27.898	37.088	45.842	40.952	260	27.9	1.29	19.6	2838
110	3016	2980	2.760	2.508	34.926	27.904	37.101	45.861	41.603	259	30.2	1.30	19.8	2980
111	3169	3131	2.677	2.411	34.920	27.908	37.110	45.874	42.283	260	31.6	1.31	19.7	3131
112	3323	3282	2.599	2.318	34.915	27.911	37.118	45.888	42.966	260	33.0	1.32	20.0	3282
115	3485	3440	2.516	2.219	34.912	27.917	37.129	45.904	43.684	261	34.3	1.30	19.8	3440
116	3640	3592	2.439	2.127	34.905	27.919	37.136	45.916	44.366	265	32.9	1.28	19.6	3592
117	3796	3745	2.342	2.015	34.896	27.920	37.144	45.930	45.053	265	35.0	1.29	19.7	3745
118	3949	3894	2.305	1.962	34.898	27.926	37.153	45.941	45.722	267	32.9	1.25	19.3	3894
119	4101	4043	2.270	1.910	34.894	27.927	37.157	45.948	46.381	267	33.8	1.27	19.4	4043
120	4250	4188	2.223	1.847	34.886	27.925	37.159	45.953	47.024	265	37.0	1.30	19.7	4188
121	4402	4336	2.124	1.733	34.872	27.923	37.163	45.963	47.682	259	45.9	1.40	20.9	4336
122	4554	4485	1.779	1.382	34.833	27.917	37.177	45.997	48.367	251	63.2	1.58	23.7	4485
315	4568	4498	1.693	1.297	34.820	27.912	37.178	46.002	48.433	248	68.2	1.60	23.7	4498
316	4643	4571	1.633	1.230	34.810	27.909	37.178	46.006	48.757	246	72.1	1.66	24.5	4571
123	4680	4607	1.635	1.228	34.811	27.909	37.179	46.008	48.915	245	72.9	1.68	24.8	4607
317	4709	4636	1.585	1.176	34.801	27.905	37.178	46.009	49.040	244	75.2	1.68	25.0	4636
318	4750	4676	1.578	1.164	34.805	27.909	37.182	46.014	49.220	244	73.5	1.67	25.0	4676
319	4780	4705	1.579	1.162	34.804	27.908	37.182	46.014	49.346	244	73.7	1.69	25.0	4705
124	4801	4725	1.581	1.161	34.806	27.910	37.183	46.015	49.437	244	75.4	1.71	25.1	4725
320	4811	4735	1.578	1.157	34.803	27.908	37.182	46.014	49.478	246	74.6	1.69	25.2	4735
321	4827	4750	1.578	1.155	34.804	27.909	37.183	46.015	49.547	243	75.6	1.70	25.0	4750
322	4844	4767	1.580	1.155	34.804D	27.909	37.183	46.015	49.619	244	75.1	1.71	25.3	4767
323	4855	4778	1.580	1.154	34.803	27.908	37.182	46.014	49.665	244	75.7	1.71	25.3	4778
324	4867	4789	1.580	1.152	34.803	27.908	37.182	46.015	49.716	244	75.4	1.72	25.4	4789

BOTTOM DEPTH FOR CAST 1 IS 4793—CAST 3 IS 4797

STATION: 40 LEG: IV POSITION: 3° 56' N 38° 31' W DATE: 19 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
701	1	1	27.637	27.637	35.986	23.300	31.543	39.408	23.305	189	1.2	0.07	0.0	1
702	36	36	27.563	27.554	35.993	23.332	31.577	39.443	23.484	199	1.1	0.06	0.0	36
703	80	80	27.531	27.511	36.032	23.375	31.620	39.488	23.712	200	1.1	0.06	0.0	80
7201	101	101	26.968	26.943	36.14 D	23.631	31.890	39.771	24.058					101
7202	126	126	23.57	23.54	36.26 D	24.750	33.097	41.065	25.288					126
704	135	135	21.274	21.247	36.304	25.439	33.850	41.880	26.019	163	2.9	0.41	5.7	135
7203	151	151	15.23	15.21	35.17 D	26.089	34.712	42.940	26.755					151
7204	199	199	11.02	10.99	35.04 D	26.849	35.637	44.018	27.743					199
705	215	214	10.709	10.682	35.006	26.876	35.678	44.071	27.843	157	10.7	1.38	20.8	214
7205	249	248	10.06	10.03	34.92 D	26.927	35.757	44.178	28.050					248
706	297	296	9.481	9.447	34.872	26.985	35.842	44.286	28.328	140	13.9	1.66	25.2	296
707	376	375	8.321	8.281	34.754	27.079	35.989	44.483	28.788	127	17.2	1.89	29.2	375
708	446	444	7.582	7.537	34.662	27.118	36.063	44.591	29.151	145 /	18.5	1.89	28.9	444
709	521	519	6.894	6.843	34.638	27.196	36.175	44.733	29.578	120	22.1	2.16	32.9	519
710	595	592	6.150	6.095	34.589	27.256	36.272	44.864	29.985	124	24.8	2.24	34.2	592
711	671	667	5.474	5.416	34.548	27.308	36.358	44.982	30.394	136	27.9	2.28	34.4	667
712	747	743	5.058	4.995	34.543	27.353	36.424	45.068	30.794	145	29.7	2.26	34.1	743
715	816	811	4.845	4.777	34.564	27.394	36.476	45.130	31.154	147	31.1	2.26	33.9	811
716	888	883	4.710	4.637	34.594	27.433	36.522	45.182	31.524	150	31.2	2.24	33.5	883
717	946	940	4.618	4.540	34.617	27.462	36.556	45.220	31.819	153	31.6	2.20	32.9	940
718	1005	999	4.565	4.482	34.655	27.499	36.594	45.261	32.125	157	31.4	2.15	32.1	999
719	1065	1058	4.613	4.524	34.713	27.540	36.633	45.296	32.438	161	29.4	2.08	31.1	1058
720	1131	1123	4.544	4.450	34.733	27.564	36.660	45.327	32.763	167	28.5	2.04	30.4	1123
721	1182	1174	4.582	4.483	34.792	27.607	36.701	45.365	33.036	173	26.7	1.94	28.9	1174
722	1230	1221	4.589	4.485	34.826	27.634	36.727	45.390	33.279	181	25.5	1.84	27.8	1221
723	1294	1285	4.608	4.498	34.885	27.679	36.771	45.433	33.612	194	23.4	1.71	25.9	1285
101	1311	1301	4.603	4.491	34.895	27.688	36.779	45.442	33.698	196	23.2	1.70	25.7	1301
724	1356	1346	4.509	4.394	34.913	27.713	36.809	45.476	33.929	206	22.4	1.64	24.3	1346
102	1412	1401	4.414	4.295	34.932	27.739	36.840	45.511	34.210	214	21.1	1.56	23.1	1401
103	1565	1552	4.260	4.128	34.971	27.787	36.896	45.575	34.953	235	18.0	1.38	20.8	1552

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 40 LEG: IV POSITION: 3° 56′ N 38° 31′ W DATE: 19 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
104	1717	1703	4.021	3.877	34.976	27.817	36.939	45.630	35.675	245	17.1	1.31	20.1	1703
105	1867	1851	3.781	3.626	34.969	27.837	36.972	45.675	36.378	252	17.8	1.28	19.3	1851
106	2010	1992	3.603	3.437	34.964	27.851	36.997	45.709	37.041	253	19.3	1.27	19.2	1992
107	2161	2140	3.388	3.210	34.958	27.868	37.025	45.749	37.743	253	21.7	1.28	19.5	2140
108	2313	2290	3.200	3.011	34.949	27.879	37.048	45.781	38.442	257	23.3	1.28	19.5	2290
109	2465	2440	3.073	2.871	34.943	27.887	37.063	45.804	39.133	258	24.9	1.28	19.4	2440
110	2617	2589	2.944	2.729	34.937	27.894	37.078	45.827	39.822	258	26.8	1.28	19.8	2589
111	2772	2741	2.832	2.604	34.930	27.900	37.090	45.845	40.520	259	28.6	1.30	19.7	2741
112	2923	2890	2.746	2.504	34.921	27.901	37.097	45.857	41.192	259	30.3	1.30	20.0	2890
115	3089	3053	2.652	2.395	34.919	27.908	37.111	45.877	41.936	259	32.4	1.30	20.1	3053
116	3241	3202	2.608	2.336	34.915	27.910	37.116	45.885	42.606	260	32.2	1.29	20.1	3202
117	3395	3352	2.553	2.265	34.912	27.913	37.123	45.896	43.286	263	31.5	1.26	19.6	3352
118	3549	3503	2.495	2.192	34.913	27.920	37.134	45.910	43.967	265	31.5	1.25	19.3	3503
119	3704	3655	2.383	2.065	34.901	27.920	37.142	45.924	44.651	266	31.9	1.26	19.4	3655
120	3857	3805	2.300	1.968	34.892	27.921	37.148	45.936	45.321	266	33.9	1.26	19.6	3805
121	4012	3956	2.197	1.850	34.884	27.924	37.157	45.951	46.003	263	39.1	1.33	20.3	3956
122	4114	4056	2.048	1.694	34.864	27.919	37.162	45.964	46.454	260	47.5	1.41	21.3	4056
123	4217	4156	1.850	1.490	34.841	27.915	37.170	45.984	46.915	253	58.7	1.53	22.6	4156
124	4307	4244	1.655	1.291	34.823	27.915	37.181	46.005	47.323	248	69.1	1.65	24.0	4244

BOTTOM DEPTH FOR CAST 1 IS 4273

STATION: 41 LEG: IV POSITION: 2° 0′ N 37° 21′ W DATE: 21 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1201	10	10	27.69	27.69	36.05 D	23.329	31.570	39.433	23.371					10
115	75	75	27.63	27.61	36.092	23.388	31.630	39.494	23.704					75
1202	125	125	21.00	20.98	36.24 D	25.465	33.886	41.924	26.004					125
116	188	188	12.09	12.07	35.163	26.740	35.482	43.821	27.580					188
1203	274	273	11.79	11.76	35.14 D	26.784	35.539	43.890	28.009					273
1204	349	348	10.36	10.32	34.97 D	26.916	35.733	44.141	28.485					348
1205	434	432	7.845	7.800	34.74 D	27.138	36.071	44.585	29.114					432
1206	498	496	6.771	6.723	34.59 D	27.177	36.162	44.726	29.456					496
1207	617	614	6.069	6.013	34.53 D	27.223	36.244	44.841	30.054					614
1208	701	697	5.723	5.661	34.58 D	27.300	36.338	44.950	30.519					697
1209	765	761	5.229	5.164	34.55 D	27.338	36.401	45.036	30.858					761
117	914	908	4.636	4.561	34.603	27.449	36.541	45.205	31.660					908
1210	1052	1045	4.569	4.482	34.727D	27.556	36.650	45.316	32.395					1045
1211	1183	1175	4.686	4.586	34.867D	27.655	36.742	45.401	33.084					1175
1212	1334	1324	4.327	4.216	34.936D	27.750	36.855	45.530	33.873					1324
1213	1478	1466	4.302	4.178	34.975D	27.785	36.892	45.568	34.558					1466
1214	1611	1598	4.129	3.994	34.979D	27.807	36.923	45.608	35.185					1598
1215	1766	1751	3.800	3.654	34.972D	27.836	36.970	45.672	35.924					1751
1216	1944	1926	3.684	3.523	34.977D	27.853	36.994	45.702	36.744					1926
118	2027	2008	3.444	3.279	34.969	27.870	37.024	45.744	37.144					2008
1217	2226	2204	3.213	3.032	34.957D	27.883	37.051	45.783	38.059					2204
1218	2397	2373	3.036	2.842	34.950D	27.895	37.073	45.815	38.841					2373
119	2534	2507	2.996	2.789	34.946	27.896	37.077	45.822	39.453					2507
1219	2706	2676	2.916	2.693	34.942D	27.901	37.087	45.837	40.224					2676
120	2788	2757	2.839	2.609	34.933	27.901	37.092	45.847	40.591					2757
1220	2957	2923	2.726	2.481	34.929D	27.909	37.107	45.868	41.351					2923
121	3042	3006	2.686	2.433	34.930	27.914	37.114	45.878	41.732					3006
1221	3266	3226	2.583	2.308	34.922D	27.918	37.125	45.895	42.725					3226
1222	3442	3399	2.503	2.211	34.912D	27.918	37.131	45.906	43.499					3399
122	3549	3503	2.454	2.152	34.909	27.920	37.136	45.915	43.971					3503
1223	3752	3702	2.388	2.065	34.906D	27.925	37.146	45.928	44.862					3702
1224	3918	3864	2.301	1.961	34.899D	27.927	37.154	45.942	45.590					3864
1225	4056	3999	2.155	1.804	34.881D	27.925	37.161	45.957	46.198					3999
1226	4168	4108	1.832	1.478	34.845D	27.919	37.174	45.989	46.710					4108
1227	4279	4217	1.479	1.124	34.806D	27.912	37.188	46.022	47.221					4217
123	4309	4246	1.349	0.995	34.787	27.906	37.189	46.030	47.359					4246
1228	4366	4302	1.181	0.827	34.765D	27.898	37.192	46.042	47.617					4302
124	4409	4344	1.175	0.816	34.769	27.902	37.196	46.047	47.806					4344

BOTTOM DEPTH FOR CAST 1 IS 4368

STATION: 42 LEG: IV POSITION: 0° 58′ N 37° 4′ W DATE: 21 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
501	7	7	27.299	27.297	35.933	23.368	31.620	39.493	23.397	197	1.2	0.07	0.0	7
502	37	37	27.236	27.227	35.970	23.418	31.671	39.546	23.574	198	1.2	0.07	0.0	37
503	82	82	27.217	27.197	35.973	23.429	31.683	39.559	23.776	198	1.2	0.07	0.0	82
504	114	114	23.185	23.160	36.102	24.745	33.104	41.084	25.232	173	2.5	0.32	2.9	114
505	145	145	14.295	14.273	35.573	26.604	35.255	43.510	27.245	155	6.6	0.96	13.4	145
506	195	194	12.240	12.214	35.185	26.728	35.464	43.798	27.599	149	8.9	1.26	18.4	194
507	265	264	12.080	12.044	35.164	26.745	35.488	43.828	27.928	152	9.0	1.26	18.3	264
508	348	347	10.656	10.613	34.990	26.876	35.681	44.077	28.440	137	11.8	1.54	23.2	347
509	424	422	8.187	8.142	34.733	27.084	36.001	44.501	29.011	140	17.0	1.82	27.0	422
510	498	496	7.305	7.255	34.641	27.141	36.101	44.640	29.414	129	20.0	2.04	31.5	496
511	580	577	6.468	6.413	34.570	27.200	36.201	44.779	29.856	140	22.3	2.10	32.1	577
512	660	657	5.927	5.867	34.549	27.253	36.281	44.884	30.282	142	24.4	2.14	32.3	657
515	748	744	5.126	5.063	34.514	27.322	36.391	45.031	30.766	147	29.5	2.23	33.6	744
516	829	824	4.760	4.692	34.522	27.370	36.457	45.116	31.191	152	31.5	2.24	33.3	824
517	909	903	4.593	4.519	34.575	27.431	36.526	45.192	31.621	155	32.3	2.22	32.5	903
518	981	975	4.503	4.423	34.634	27.488	36.587	45.257	32.008	160	31.9	2.15	32.5	975
519	1053	1046	4.437	4.351	34.693	27.543	36.645	45.317	32.391	167	29.9	2.08	31.3	1046
520	1149	1141	4.575	4.479	34.784	27.601	36.695	45.360	32.880	177	26.9	1.92	28.9	1141
521	1266	1257	4.459	4.353	34.897	27.704	36.803	45.472	33.516	204	22.3	1.65	25.1	1257
522	1367	1357	4.306	4.192	34.928	27.746	36.853	45.529	34.019	217	20.8	1.54	23.4	1357
523	1468	1457	4.220	4.097	34.952	27.775	36.886	45.566	34.506	229	19.1	1.42	21.6	1457
101	1511	1499	4.200	4.074	34.961	27.785	36.897	45.578	34.710	235	18.8	1.40	21.3	1499
524	1576	1563	4.199	4.066	34.967	27.790	36.903	45.584	35.008	237	18.2	1.37	21.1	1563
102	1660	1646	4.032	3.893	34.968	27.809	36.930	45.620	35.411	241	18.3	1.35	20.5	1646
103	1815	1799	3.804	3.654	34.971	27.835	36.969	45.671	36.143	250	18.2	1.26	19.3	1799
104	1968	1950	3.691	3.527	34.970	27.847	36.988	45.696	36.845	254	18.7	1.27	19.3	1950
105	2119	2099	3.496	3.321	34.966	27.864	37.015	45.733	37.546	259	19.0	1.24	19.0	2099
106	2250	2228	3.365	3.179	34.961	27.873	37.032	45.758	38.146	261	19.8	1.21	18.7	2228
107	2402	2378	3.102	2.906	34.949	27.888	37.063	45.802	38.853	261	23.7	1.24	19.1	2378
108	2524	2498	3.017	2.810	34.941	27.890	37.070	45.814	39.401	260	26.0	1.28	19.6	2498
109	2749	2719	2.874	2.647	34.931	27.897	37.085	45.838	40.412	257	29.4	1.28	19.8	2719
110	2870	2838	2.826	2.588	34.934	27.904	37.096	45.851	40.956	261	28.1	1.27	19.4	2838
111	3033	2998	2.705	2.452	34.920	27.904	37.104	45.866	41.682	256	33.1	1.32	20.1	2998
112	3186	3148	2.664	2.396	34.920	27.909	37.112	45.877	42.360	259	31.8	1.28	20.0	3148
115	3349	3307	2.591	2.307	34.918	27.915	37.122	45.892	43.083	262	31.5	1.26	19.5	3307
116	3502	3457	2.481	2.183	34.911	27.919	37.134	45.910	43.764	266	31.7	1.23	19.3	3457
117	3652	3604	2.432	2.119	34.906	27.920	37.138	45.918	44.420	265	32.6	1.24	19.3	3604
118	3856	3804	2.346	2.012	34.901	27.925	37.149	45.934	45.316	266	33.9	1.26	19.3	3804
119	4019	3963	2.213	1.865	34.886	27.924	37.157	45.950	46.032	264	39.3	1.33	20.2	3963
120	4132	4073	1.972	1.618	34.854	27.917	37.164	45.970	46.537	257	52.5	1.46	22.1	4073
121	4272	4210	1.247	0.901	34.777	27.903	37.192	46.039	47.210	238	88.3	1.85	27.0	4210
315	4302	4239	1.168	0.821	34.770	27.903	37.196	46.047	47.347	236	92.2	1.91	27.4	4239
122	4353	4289	1.065	0.716	34.755	27.897	37.197	46.054	47.574	234	97.1	1.93	28.4	4289
316	4379	4314	1.045	0.694	34.751	27.895	37.197	46.055	47.686	233	97.7	1.99	28.2	4314
123	4433	4367	1.028	0.671	34.750	27.896	37.198	46.058	47.921	232	99.2	1.96	28.7	4367
317	4446	4380	1.033	0.675	34.752	27.897	37.200	46.059	47.977	233	97.5	1.99	28.3	4380
318	4486	4419	1.033	0.670	34.749	27.895	37.198	46.057	48.147	232	97.6	2.00	28.5	4419
319	4517	4449	1.026	0.660	34.745	27.893	37.196	46.056	48.278	232	98.5	2.01	28.5	4449
320	4548	4479	1.028	0.658	34.746	27.893	37.197	46.057	48.412	233	99.1	2.00	28.3	4479
321	4563	4494	1.026	0.655	34.750	27.897	37.200	46.061	48.480	232	99.4	2.01	28.3	4494
124	4569	4500	1.022	0.650	34.748	27.896	37.199	46.060	48.505	232	100.8	1.98	28.8	4500
322	4577	4507	1.024	0.651	34.747	27.895	37.199	46.059	48.538	232	99.6	2.01	28.5	4507
323	4589	4519	1.026	0.652	34.745	27.893	37.197	46.057	48.587	230	99.8	2.01	28.6	4519
324	4597	4527	1.024	0.649	34.745	27.893	37.197	46.058	48.622	232	99.2	2.01	28.7	4527

BOTTOM DEPTH FOR CAST 1 IS 4535 — CAST 3 IS 4534

STATION: 43 LEG: IV POSITION: 0° 31′ N 36° 31′ W DATE: 22 OCT 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1201	8	8	27.11	27.11	35.98 D	23.465	31.722	39.600	23.499					8
115	61	61	27.10	27.09	35.984	23.472	31.729	39.607	23.730	203				61
1202	125	125	22.14	22.11	36.41 D	25.273	33.659	41.663	25.809					125
1203	141	141	17.79	17.77	35.96 D	26.088	34.613	42.750	26.703					141

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 43 LEG: IV POSITION: 0° 31' N 36° 31' W DATE: 22 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
116	168	168	13.79	13.76	35.401	26.580	35.253	43.529	27.325	150				168
1204	199	198	12.52	12.49	35.23 D	26.705	35.429	43.752	27.592					198
1205	252	251	11.91	11.88	35.14 D	26.759	35.509	43.855	27.885					251
1206	307	306	10.80	10.76	35.00 D	26.860	35.658	44.049	28.238					306
1207	450	448	7.651	7.605	34.67 D	27.114	36.057	44.581	29.165					448
1208	597	594	6.073	6.019	34.53 D	27.222	36.242	44.839	29.961					594
1209	732	728	5.225	5.163	34.49 D	27.294	36.358	44.994	30.663					728
117	819	814	4.883	4.815	34.514	27.350	36.431	45.084	31.123	154				814
1210	959	953	4.477	4.399	34.59 D	27.452	36.553	45.225	31.872					953
1211	1092	1085	4.429	4.340	34.667D	27.523	36.626	45.299	32.549					1085
1212	1204	1196	4.606	4.504	34.840D	27.643	36.735	45.397	33.170					1196
1213	1278	1269	4.498	4.390	34.882D	27.689	36.785	45.453	33.553					1269
1214	1357	1347	4.392	4.278	34.922D	27.732	36.834	45.506	33.957					1347
1215	1555	1543	4.177	4.047	34.956D	27.784	36.897	45.580	34.908					1543
1216	1760	1745	3.948	3.801	34.973D	27.822	36.948	45.643	35.877					1745
1217	1962	1944	3.675	3.512	34.968D	27.847	36.988	45.697	36.819					1944
118	2090	2070	3.523	3.350	34.966	27.861	37.011	45.728	37.412	259				2070
1218	2166	2145	3.474	3.295	34.962D	27.863	37.016	45.736	37.756					2145
119	2266	2244	3.290	3.104	34.958	27.877	37.041	45.770	38.226	265				2244
1219	2304	2281	3.177	2.989	34.954D	27.885	37.054	45.789	38.409					2281
1220	2442	2417	3.089	2.889	34.945D	27.887	37.062	45.802	39.030					2417
1221	2610	2582	2.943	2.729	34.936D	27.893	37.078	45.826	39.790					2582
1222	2757	2727	2.838	2.611	34.930D	27.899	37.089	45.844	40.452					2727
1223	2915	2882	2.779	2.537	34.926D	27.902	37.097	45.855	41.155					2882
1224	3065	3029	2.730	2.473	34.926D	27.907	37.106	45.867	41.823					3029
120	3325	3284	2.581	2.300	34.913	27.911	37.119	45.890	42.976	262				3284
1226	3489	3445	2.477	2.181	34.909D	27.918	37.132	45.909	43.706					3445
1227	3603	3556	2.463	2.155	34.909D	27.920	37.136	45.914	44.205					3556
1228	3745	3695	2.383	2.061	34.903D	27.922	37.144	45.927	44.830					3695
1229	3894	3841	2.344	2.006	34.901D	27.925	37.149	45.936	45.480					3841
121	4044	3987	2.231	1.879	34.890	27.926	37.158	45.951	46.139	268				3987
1230	4173	4113	1.866	1.511	34.852D	27.923	37.176	45.988	46.731					4113
122	4308	4245	1.163	0.816	34.765	27.899	37.193	46.044	47.370	236				4245
123	4465	4398	1.042	0.681	34.751	27.896	37.198	46.057	48.057	234				4398
1231	4549	4480	0.993	0.624	34.745D	27.895	37.200	46.062	48.422					4480
124	4599	4529	0.998	0.623	34.746	27.895	37.201	46.063	48.636	232				4529

BOTTOM DEPTH FOR CAST 1 IS 4536

STATION: 44 LEG: IV POSITION: 0° 1' N 35° 58' W DATE: 22 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	15	15	26.7	26.7	36.0 D	23.576	31.843	39.732	23.640					15
115	42	42	26.66	26.65	36.022	23.637	31.904	39.794	23.815	204				42
1202	101	101	23.5	23.5	36.7 D	25.102	33.446	41.410	25.533					101
1203	151	151	15.16	15.14	35.57 D	26.410	35.031	43.256	27.076					151
1204	173	173	14.40	14.37	35.46 D	26.495	35.144	43.397	27.260					173
1205	261	260	11.07	11.04	35.04 D	26.840	35.626	44.005	28.011					260
1206	319	318	10.20	10.17	34.94 D	26.916	35.740	44.155	28.352					318
116	358	357	9.812	9.770	34.880	26.938	35.780	44.211	28.552	160				357
1208	423	421	7.892	7.848	34.70 D	27.100	36.031	44.545	29.026					421
1209	503	501	6.787	6.739	34.59 D	27.169	36.154	44.717	29.471					501
1210	611	608	5.625	5.572	34.51 D	27.257	36.299	44.917	30.067					608
1211	691	687	5.277	5.218	34.48 D	27.278	36.339	44.973	30.459					687
1212	750	746	4.880	4.818	34.49 D	27.328	36.409	45.062	30.786					746
1213	827	822	4.679	4.611	34.53 D	27.385	36.476	45.138	31.198					822
117	909	903	4.456	4.383	34.530	27.410	36.513	45.186	31.603	160				903
1214	928	922	4.424	4.349	34.55 D	27.426	36.531	45.205	31.707					922
1215	979	973	4.495	4.415	34.59 D	27.456	36.556	45.227	31.967					973
1216	1037	1030	4.400	4.316	34.633D	27.499	36.604	45.278	32.276					1030
1217	1172	1164	4.535	4.437	34.826D	27.639	36.734	45.400	33.023					1164
1218	1223	1214	4.423	4.321	34.869D	27.686	36.786	45.457	33.304					1214
1219	1290	1281	4.483	4.374	34.893D	27.699	36.797	45.465	33.618					1281
1220	1364	1354	4.369	4.255	34.908D	27.724	36.827	45.501	33.981					1354

STATION: 44 LEG: IV POSITION: 0° 1' N 35° 58' W DATE: 22 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1221	1513	1501	4.217	4.090	34.962D	27.784	36.895	45.576	34.718					1501
1222	1669	1655	4.075	3.935	34.973D	27.809	36.928	45.616	35.449					1655
1223	1848	1832	3.743	3.590	34.970D	27.841	36.978	45.683	36.299					1832
118	2115	2095	3.462	3.288	34.963	27.864	37.018	45.738	37.531	257				2095
1225	2327	2304	3.196	3.005	34.953D	27.882	37.051	45.785	38.508					2304
119	2618	2590	2.917	2.703	34.938	27.897	37.083	45.833	39.831	260				2590
1226	2787	2756	2.806	2.577	34.930D	27.902	37.094	45.851	40.590					2756
1227	3042	3006	2.737	2.483	34.926D	27.907	37.104	45.865	41.721					3006
120	3225	3186	2.618	2.347	34.916	27.910	37.115	45.883	42.535	260				3186
1228	3303	3262	2.571	2.293	34.914D	27.913	37.121	45.892	42.883					3262
1229	3653	3605	2.408	2.096	34.902D	27.919	37.138	45.920	44.426					3605
1230	3807	3756	2.348	2.020	34.899D	27.922	37.146	45.931	45.102					3756
121	3987	3932	2.253	1.907	34.891	27.925	37.155	45.946	45.890	265				3932
1231	4116	4058	1.869	1.520	34.850D	27.920	37.173	45.985	46.483					4058
122	4241	4180	1.263	0.920	34.778	27.903	37.191	46.036	47.074	238				4180
1232	4320	4257	1.149	0.801	34.769D	27.903	37.198	46.050	47.428					4257
123	4442	4376	1.025	0.667	34.749	27.895	37.198	46.058	47.959	232				4376
124	4596	4526	0.985	0.611	34.746	27.896	37.202	46.065	48.626	231				4526

BOTTOM DEPTH FOR CAST 1 IS 4534

STATION: 45 LEG: IV POSITION: 0° 30' S 34° 59' W DATE: 23 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	12	12	26.5	26.5	36.2 D	23.786	32.056	39.948	23.837					12
1202	32	32	26.5	26.5	36.2 D	23.814	32.083	39.975	23.950					32
115	60	60	26.28	26.27	36.107	23.820	32.096	39.994	24.074	202				60
1203	95	95	25.6	25.6	36.6 D	24.407	32.695	40.605	24.809					95
1204	129	129	16.89	16.87	35.87 D	26.240	34.796	42.961	26.804					129
116	162	162	14.03	14.01	35.416	26.540	35.204	43.470	27.258	170				162
1205	189	188	12.57	12.54	35.23 D	26.698	35.420	43.741	27.540					188
1206	220	219	12.35	12.32	35.20 D	26.719	35.451	43.780	27.700					219
1207	261	260	11.39	11.36	35.10 D	26.826	35.598	43.965	27.995					260
1208	338	337	10.02	9.98	34.93 D	26.938	35.771	44.193	28.462					337
1209	404	402	7.995	7.953	34.67 D	27.064	35.990	44.499	28.902					402
1210	506	504	7.046	6.996	34.61 D	27.154	36.126	44.678	29.466					504
1211	587	584	5.811	5.759	34.53 D	27.253	36.286	44.894	29.950					584
1212	645	642	5.384	5.329	34.49 D	27.274	36.329	44.958	30.243					642
1213	732	728	5.071	5.010	34.48 D	27.299	36.371	45.014	30.671					728
117	819	814	4.661	4.594	34.503	27.366	36.458	45.122	31.144	157				814
1214	909	903	4.477	4.404	34.56 D	27.429	36.531	45.202	31.622					903
1215	1010	1003	4.400	4.318	34.62 D	27.488	36.592	45.267	32.142					1003
1216	1111	1103	4.482	4.390	34.749D	27.583	36.682	45.351	32.693					1103
1217	1211	1202	4.438	4.337	34.858D	27.675	36.775	45.446	33.239					1202
1218	1362	1352	4.349	4.235	34.915D	27.731	36.836	45.510	33.980					1352
1219	1520	1508	4.165	4.038	34.962D	27.789	36.903	45.586	34.757					1508
1220	1674	1660	3.976	3.837	34.976D	27.821	36.945	45.638	35.488					1660
1221	1852	1836	3.775	3.621	34.977D	27.843	36.979	45.682	36.318					1836
1222	2036	2017	3.575	3.407	34.966D	27.855	37.003	45.716	37.163					2017
118	2186	2165	3.413	3.233	34.964	27.870	37.027	45.749	37.856	261				2165
1223	2331	2308	3.218	3.027	34.956D	27.883	37.051	45.784	38.525					2308
1224	2484	2458	3.039	2.836	34.946D	27.892	37.070	45.813	39.224					2458
1225	2634	2606	2.978	2.761	34.945D	27.898	37.080	45.827	39.898					2606
119	2746	2716	2.877	2.650	34.936	27.900	37.089	45.841	40.402	262				2716
1226	2920	2887	2.811	2.568	34.929D	27.902	37.095	45.851	41.175					2887
1227	3093	3056	2.740	2.480	34.925D	27.906	37.104	45.865	41.944					3056
1228	3273	3233	2.590	2.315	34.916D	27.913	37.120	45.889	42.750					3233
1229	3428	3385	2.495	2.205	34.904D	27.912	37.125	45.901	43.433					3385
120	3562	3516	2.464	2.160	34.907	27.918	37.134	45.911	44.025	265				3516
1230	3730	3680	2.380	2.060	34.896D	27.917	37.138	45.922	44.760					3680
1231	3862	3809	2.340	2.006	34.893D	27.919	37.143	45.929	45.336					3809
1232	3972	3917	2.268	1.923	34.886D	27.920	37.149	45.939	45.819					3917
121	4073	4016	2.163	1.810	34.880	27.923	37.159	45.956	46.269	262				4016
1233	4166	4106	1.758	1.407	34.830D	27.912	37.172	45.990	46.703					4106
1234	4247	4186	1.402	1.054	34.790D	27.904	37.184	46.022	47.085					4186

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 45 LEG: IV POSITION: 0° 30' S 34° 59' W DATE: 23 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
122	4326	4263	1.142	0.794	34.763	27.899	37.194	46.047	47.450	235				4263
123	4447	4381	1.024	0.666	34.748	27.895	37.198	46.057	47.980	233				4381
124	4561	4492	0.951	0.583	34.740	27.893	37.201	46.065	48.477	231				4492

BOTTOM DEPTH FOR CAST 1 IS 4499

STATION: 46 LEG: IV POSITION: 0° 59' S 34° 2' W DATE: 23 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	0	0	26.66	26.66	36.06 D	23.660	31.926	39.815	23.660					0
501	9	9	26.66	26.66	36.056	23.660	31.927	39.816	23.698	204	1.3	0.07	0.0	9
5202	20	20	26.66	26.66	36.06 D	23.661	31.928	39.817	23.746					20
5203	30	30	26.66	26.65	36.06 D	23.662	31.929	39.818	23.789					30
5204	50	50	26.66	26.65	36.06 D	23.663	31.930	39.819	23.875					50
502	73	73	26.23	26.21	36.094	23.827	32.105	40.004	24.136	202	1.4	0.09	0.0	73
503	93	93	24.49	24.47	36.612	24.746	33.064	41.003	25.142	192	1.3	0.16	0.3	93
504	153	153	13.02	13.00	35.296	26.657	35.361	43.665	27.338	139	8.0	1.22	18.3	153
505	218	217	12.12	12.09	35.173	26.743	35.484	43.822	27.717	110	10.2	1.49	23.4	217
506	283	282	11.10	11.06	35.054	26.844	35.629	44.008	28.114	101	12.0	1.67	26.3	282
507	348	347	8.98	8.94	34.799	27.011	35.891	44.357	28.588	124	15.0	1.80	28.2	347
5205	389	387	7.52	7.48	34.65 D	27.116	36.065	44.595	28.892	150D				387
508	413	411	7.49	7.45	34.652	27.123	36.073	44.604	29.007	135	18.8	2.04	31.2	411
509	471	469	7.17	7.12	34.617	27.141	36.107	44.653	29.292	133	20.7	2.06	31.8	469
510	543	540	6.51	6.46	34.575	27.198	36.196	44.772	29.685	136	22.5	2.11	32.5	540
511	614	611	5.81	5.76	34.530	27.252	36.286	44.894	30.073	141	25.1	2.17	33.4	611
512	688	684	5.27	5.21	34.494	27.289	36.350	44.985	30.457	157	27.9	2.18	33.0	684
515	705	701	4.93	4.87	34.461	27.302	36.381	45.031	30.554	171G	29.0	2.16	32.2	701
516	798	793	4.649	4.584	34.505	27.369	36.461	45.125	31.051	158	31.7	2.25	33.6	793
517	896	890	4.438	4.366	34.555	27.432	36.535	45.209	31.566	160	32.8	2.23	33.3	890
518	972	966	4.385	4.307	34.627	27.495	36.600	45.276	31.977	163	32.1	2.16	32.1	966
519	1073	1066	4.451	4.363	34.738	27.577	36.678	45.349	32.516	174	28.6	1.98	29.9	1066
520	1115	1107	4.475	4.383	34.809	27.631	36.730	45.399	32.759	176	28.2	1.97	29.6	1107
521	1203	1194	4.436	4.336	34.854	27.672	36.772	45.443	33.200	196	24.5	1.75	26.4	1194
522	1263	1254	4.426	4.321	34.884	27.698	36.798	45.469	33.497	204	22.9	1.61	25.4	1254
523	1295	1286	4.415	4.307	34.897	27.709	36.811	45.482	33.653	208	21.9	1.61	24.8	1286
101	1355	1345	4.322	4.209	34.920	27.738	36.844	45.519	33.956	217	21.4	1.53	23.6	1345
524	1373	1363	4.312	4.197	34.922	27.741	36.847	45.523	34.041	216	20.8	1.53	23.6	1363
102	1406	1395	4.308	4.190	34.923	27.742	36.849	45.525	34.191	219	21.0	1.51	23.4	1395
103	1506	1494	4.218	4.092	34.929	27.757	36.869	45.550	34.660	228	19.8	1.43	22.5	1494
104	1607	1594	4.141	4.006	34.962	27.793	36.908	45.593	35.152	239	18.4	1.32	20.9	1594
105	1709	1695	4.086	3.942	34.973	27.808	36.927	45.614	35.628	245	17.7	1.26	20.1	1695
106	1860	1844	3.782	3.628	34.966	27.834	36.969	45.672	36.344	253	18.5	1.24	19.6	1844
107	2011	1992	3.593	3.427	34.963	27.851	36.997	45.710	37.046	256	19.5	1.21	19.6	1992
108	2306	2283	3.297	3.107	34.958	27.877	37.040	45.770	38.403	265G	20.0	1.18	18.8	2283
109	2520	2494	3.029	2.822	34.937	27.886	37.065	45.809	39.379	258	27.4	1.25	19.8	2494
110	2672	2643	2.950	2.730	34.934	27.892	37.076	45.824	40.062	258	28.3	1.26	19.9	2643
111	2825	2793	2.855	2.621	34.929	27.897	37.087	45.841	40.749	259	29.3	1.26	20.0	2793
112	3028	2993	2.772	2.518	34.928	27.905	37.101	45.860	41.655	264	28.3	1.21	19.3	2993
115	3210	3171	2.656	2.386	34.922	27.911	37.115	45.881	42.468	262	31.3	1.25	19.5	3171
116	3445	3401	2.521	2.229	34.907	27.912	37.124	45.899	43.505	262	33.7	1.27	19.8	3401
117	3747	3697	2.418	2.095	34.902	27.919	37.138	45.920	44.832	267	31.9	1.23	19.2	3697
118	3877	3824	2.356	2.020	34.897	27.921	37.145	45.930	45.402	266	33.4	1.24	19.3	3824
119	3994	3938	2.258	1.911	34.888	27.922	37.152	45.943	45.917	265	36.9	1.27	19.7	3938
120	4043	3986	2.237	1.885	34.885	27.922	37.153	45.946	46.130	265	38.1	1.29	19.9	3986
121	4096	4038	2.042	1.690	34.861	27.917	37.160	45.963	46.375	258	50.2	1.42	21.3	4038
122	4203	4143	1.581	1.232	34.803	27.903	37.172	46.001	46.873	244	77.3	1.70	25.2	4143
315	4298	4235	1.327	0.975	34.784	27.904	37.189	46.031	47.313	242	85.3	1.79	26.6	4235
123	4347	4283	1.221	0.867	34.765	27.896	37.187	46.035	47.528	237	92.7	1.84	27.1	4283
316	4358	4294	1.144	0.792	34.759	27.896	37.191	46.044	47.584	236	95.8	1.86	27.7	4294
317	4385	4320	1.100	0.746	34.754	27.895	37.193	46.048	47.705	235	97.0	1.88	28.0	4320
318	4411	4346	1.067	0.712	34.754	27.897	37.197	46.054	47.822	234	98.2	1.91	28.4	4346
319	4433	4367	1.017	0.661	34.749	27.896	37.199	46.059	47.922	233	101.1	1.92	28.4	4367
320	4455	4388	0.922	0.567	34.736	27.891	37.200	46.065	48.023	232	105.1	1.98	29.0	4388
321	4471	4404	0.913	0.556	34.737	27.892	37.202	46.067	48.095	230	104.8	1.99	29.2	4404

STATION: 46 LEG: IV POSITION: 0° 59' S 34° 2' W DATE: 23 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
322	4486	4419	0.912	0.553	34.735	27.891	37.201	46.066	48.158	232	104.4	1.98	29.3	4419
124	4494	4427	0.907	0.548	34.738	27.893	37.204	46.070	48.195	230	106.7	2.00	29.1	4427
323	4497	4429	0.914	0.554	34.734	27.890	37.200	46.065	48.204	231	104.1	1.97	29.1	4429
324	4505	4437	0.914	0.553	34.736D	27.892	37.20,	46.067	48.240	238U	104.2	2.00	29.3	4437

BOTTOM DEPTH FOR CAST 1 IS 4440 — CAST 3 IS 4444

STATION: 47 LEG: IV POSITION: 1° 58' S 32° 31' W DATE: 24 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	11	11	26.6	26.6	36.1 D	23.708	31.976	39.866	23.755					11
115	50	50	26.78	26.77	36.184	23.722	31.985	39.869	23.934	205				50
1202	72	72	26.4	26.4	36.2 D	23.826	32.099	39.993	24.131					72
1203	86	86	25.7	25.7	36.3 D	24.109	32.398	40.310	24.473					86
1204	112	112	20.1	20.1	36.4 D	25.794	34.241	42.304	26.278					112
1205	120	120	15.42	15.40	35.48 D	26.284	34.896	43.114	26.813					120
116	143	143	13.15	13.13	35.311	26.642	35.341	43.639	27.278	165				143
1206	204	203	12.30	12.27	35.18 D	26.715	35.449	43.780	27.625					203
1207	253	252	11.70	11.67	35.11 D	26.771	35.531	43.885	27.903					252
1208	311	310	10.68	10.64	35.01 D	26.887	35.690	44.085	28.284					310
1209	391	389	7.825	7.785	34.68 D	27.095	36.029	44.545	28.876					389
1210	507	505	6.705	6.657	34.55 D	27.148	36.137	44.705	29.469					505
1211	609	606	5.947	5.892	34.51 D	27.219	36.246	44.848	30.015					606
117	705	701	5.050	4.991	34.456	27.284	36.357	45.002	30.534	162				701
1212	716	712	4.866	4.807	34.45 D	27.299	36.381	45.035	30.602					712
1213	844	839	4.431	4.364	34.54 D	27.420	36.524	45.198	31.317					839
1214	947	941	4.365	4.289	34.62 D	27.488	36.595	45.271	31.856					941
1215	1033	1026	4.414	4.330	34.677D	27.532	36.636	45.309	32.290					1026
1216	1157	1149	4.446	4.350	34.751D	27.589	36.690	45.361	32.909					1149
1217	1262	1253	4.415	4.310	34.880D	27.696	36.797	45.468	33.491					1253
1218	1365	1355	4.347	4.233	34.918D	27.734	36.838	45.513	33.996					1355
1219	1515	1503	4.229	4.102	34.954D	27.776	36.887	45.567	34.719					1503
1220	1689	1675	3.980	3.839	34.973D	27.818	36.943	45.635	35.553					1675
1221	1875	1858	3.739	3.584	34.974D	27.845	36.982	45.687	36.424					1858
118	2014	1995	3.569	3.403	34.969	27.858	37.005	45.719	37.068	261				1995
1222	2227	2205	3.375	3.191	34.958D	27.869	37.028	45.753	38.040					2205
1223	2432	2407	3.110	2.911	34.952D	27.890	37.064	45.803	38.987					2407
1224	2583	2556	3.031	2.818	34.947D	27.894	37.074	45.817	39.666					2556
119	2718	2688	2.949	2.724	34.940	27.897	37.082	45.830	40.270	262				2688
1225	2937	2903	2.774	2.530	34.928D	27.904	37.099	45.858	41.255					2903
1226	3169	3131	2.620	2.355	34.921D	27.913	37.118	45.886	42.293					3131
1227	3403	3360	2.558	2.269	34.914D	27.915	37.124	45.896	43.321					3360
1228	3627	3580	2.467	2.156	34.911D	27.921	37.137	45.915	44.310					3580
120	3840	3788	2.418	2.084	34.905	27.922	37.142	45.924	45.237	266				3788
1229	3966	3911	2.393	2.045	34.899D	27.920	37.143	45.927	45.781					3911
121	4146	4087	1.596	1.253	34.817	27.913	37.181	46.008	46.636	246				4087
1230	4275	4213	1.251	0.905	34.782D	27.907	37.196	46.042	47.226					4213
122	4403	4338	0.929	0.579	34.739	27.892	37.201	46.065	47.801	231				4338
123	4481	4414	0.919	0.561	34.738	27.893	37.202	46.067	48.137	236				4414
124	4569	4500	0.919	0.551	34.739	27.894	37.204	46.070	48.516	231				4500

BOTTOM DEPTH FOR CAST 1 IS 4506

STATION: 48 LEG: IV POSITION: 4° 0' S 29° 0' W DATE: 25 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
9201	0	0	26.30	26.30	36.08 D	23.789	32.065	39.962	23.789					0
901	11	11	26.15	26.15	36.08	23.836	32.116	40.017	23.883	208	1.3	0.15	0.1	11
902	30	30	26.07	26.06	36.08	23.862	32.144	40.048	23.990	207	1.1	0.15	0.0	30
903	61	61	26.02	26.01	36.08	23.880	32.163	40.068	24.139	213	1.1	0.14	0.0	61
1002	65	65	25.96	25.94	36.07	23.891	32.176	40.083	24.167	207				65
904	82	82	24.90	24.88	36.05	24.199	32.512	40.446	24.548	203	1.4	0.21	0.2	82
9202	101	101	20.86	20.84	36.46 D	25.669	34.091	42.130	26.104					101
905	119	119	17.12	17.10	35.80	26.130	34.678	42.838	26.650	123	4.8	1.02	14.7	119

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR, BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS
U UNCERTAIN DATA

STATION: 48 LEG: IV POSITION: 4° 0′ S 29° 0′ W DATE: 25 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
906	154	154	13.74	13.72	35.38	26.573	35.248	43.525	27.257	137	7.3	1.18	17.7	154
907	194	193	11.40	11.37	35.09	26.815	35.586	43.952	27.685	116	10.4	1.55	23.9	193
908	275	274	9.87	9.84	34.89	26.934	35.773	44.201	28.175	117	13.2	1.74	27.3	274
1003	289	288	9.60	9.57	34.85	26.948	35.800	44.240	28.254	115	14.3	1.80	27.9	288
909	355	353	8.32	8.28	34.72	27.052	35.963	44.458	28.666	111	17.3	1.98	31.1	353
910	435	433	7.19	7.15	34.63	27.148	36.112	44.657	29.136	104	21.0	2.20	34.6	433
911	515	512	6.11	6.06	34.53	27.214	36.232	44.827	29.579	129	24.3	2.24	34.5	512
912	597	594	5.34	5.29	34.48	27.269	36.326	44.957	30.020	143	27.6	2.24	34.3	594
915	685	681	4.714	4.659	34.46	27.325	36.415	45.075	30.489	156	31.4	2.27	34.4	681
916	764	760	4.439	4.379	34.47	27.363	36.467	45.141	30.894	163	33.4	2.23	33.9	760
917	847	842	4.296	4.229	34.50	27.403	36.514	45.195	31.316	163	34.7	2.23	33.6	842
918	926	920	4.250	4.177	34.54	27.440	36.553	45.236	31.715	167	34.5	2.20	32.9	920
919	1008	1001	4.254	4.174	34.60	27.488	36.600	45.282	32.137	167	33.6	2.17	32.4	1001
920	1098	1090	4.211	4.123	34.67	27.549	36.663	45.346	32.608	172	32.1	2.07	31.2	1090
921	1187	1179	4.355	4.257	34.78	27.622	36.727	45.402	33.080	184	27.6	1.88	28.3	1179
922	1277	1268	4.400	4.294	34.85	27.674	36.776	45.448	33.537	197	24.6	1.71	26.4	1268
923	1368	1358	4.360	4.245	34.88	27.702	36.807	45.481	33.978	207	23.0	1.63	24.9	1358
101	1413	1402	4.352	4.233	34.915D	27.732	36.836	45.510	34.210	219	20.6	1.47	23.3	1402
924	1458	1447	4.308	4.185	34.92	27.741	36.847	45.524	34.424	222	21.2	1.50	23.0	1447
102	1590	1577	4.063	3.931	34.947D	27.788	36.908	45.597	35.075	237	18.9	1.34	21.2	1577
103	1768	1753	3.798	3.652	34.959D	27.826	36.960	45.662	35.923	249	19.2	1.24	19.9	1753
104	1970	1952	3.553	3.391	34.955D	27.848	36.996	45.711	36.862	255	20.6	1.24	19.6	1952
105	2173	2152	3.348	3.170	34.947D	27.863	37.023	45.749	37.794	257	22.9	1.22	19.5	2152
106	2375	2351	3.148	2.954	34.932D	27.870	37.042	45.779	38.713	253	27.2	1.27	20.1	2351
107	2579	2551	2.967	2.756	34.921D	27.879	37.062	45.809	39.637	253	30.2	1.30	20.2	2551
108	2783	2752	2.836	2.607	34.921D	27.892	37.083	45.838	40.560	255	31.8	1.30	19.7	2752
109	2987	2952	2.715	2.467	34.918D	27.901	37.100	45.862	41.476	253	32.5	1.23	19.8	2952
110	3191	3152	2.645	2.377	34.915D	27.907	37.110	45.877	42.381	258	32.8	1.27	20.0	3152
111	3395	3352	2.585	2.296	34.913D	27.912	37.120	45.891	43.281	261	32.2	1.25	19.7	3352
112	3599	3552	2.526	2.216	34.906D	27.912	37.125	45.900	44.174	263	31.5	1.20	19.3	3552
115	3803	3752	2.387	2.058	34.898D	27.919	37.140	45.924	45.077	263	34.8	1.24	19.7	3752
116	3956	3901	2.131	1.792	34.865D	27.913	37.149	45.947	45.758	259	46.0	1.33	21.1	3901
117	4110	4052	1.713	1.370	34.822D	27.909	37.170	45.991	46.464	247	66.6	1.57	24.1	4052
118	4263	4201	1.321	0.974	34.783D	27.904	37.188	46.031	47.162	239	84.8	1.77	27.0	4201
119	4416	4350	1.072	0.716	34.752D	27.895	37.195	46.052	47.841	234	94.4	1.90	28.6	4350
120	4568	4498	0.960	0.590	34.741D	27.893	37.201	46.065	48.506	232	101.1	1.97	29.4	4498
121	4722	4649	0.863	0.479	34.729D	27.890	37.204	46.074	49.174	229	106.8	2.03	30.0	4649
122	4874	4797	0.736	0.339	34.710D	27.883	37.205	46.083	49.833	227	113.9	2.06	30.9	4797
1004	4890	4812	0.717	0.319	34.710D	27.884	37.208	46.087	49.904	227	114.5	2.12	30.3	4812
1005	4941	4862	0.701	0.298	34.707D	27.883	37.208	46.088	50.123	226	118.0	2.09	30.1	4862
1006	4993	4912	0.683	0.274	34.705D	27.882	37.209	46.090	50.346					4912
123	5026	4944	0.661	0.249	34.703D	27.882	37.210	46.093	50.489	226	118.1	2.11	31.3	4944
1008	5042	4960	0.665	0.251	34.703D	27.882	37.210	46.093	50.556	226	119.7	2.14	30.5	4960
1009	5042	4960	0.665	0.251	34.703D	27.882	37.210	46.093	50.556	226	120.1	2.13	30.4	4960
1007	5043	4961	0.664	0.250	34.703D	27.882	37.210	46.093	50.561					4961
1010	5061	4978	0.642	0.227	34.701D	27.882	37.211	46.095	50.640					4978
1012	5078	4995	0.641	0.224	34.700D	27.881	37.211	46.095	50.712	226	119.5	2.15	30.3	4995
1011	5079	4996	0.641	0.224	34.699D	27.880	37.210	46.094	50.715					4996
1015	5090	5007	0.642	0.223	34.699	27.880	37.210	46.094	50.762	227				5007
1016	5090	5007	0.642	0.223	34.699D	27.880	37.210	46.094	50.762	226				5007
1017	5090	5007	0.642	0.223	34.699D	27.880	37.210	46.094	50.762	225	119.9	2.13	30.4	5007
1020	5100	5016	0.639	0.219	34.699D	27.880	37.210	46.095	50.805	226	119.8	2.14	31.0	5016
1019	5102	5018	0.638	0.218	34.699D	27.881	37.211	46.095	50.813					5018
1018	5104	5020	0.637	0.217	34.699D	27.881	37.211	46.095	50.822					5020
1021	5110	5026	0.635	0.214	34.698D	27.880	37.210	46.095	50.847	225	119.5	2.15	30.9	5026
1024	5114	5030	0.633	0.212	34.699D	27.881	37.211	46.096	50.866	225	120.8	2.17	31.2	5030
1022	5117	5033	0.632	0.210	34.699D	27.881	37.211	46.096	50.878					5033
1023	5117	5033	0.632	0.210	34.699D	27.881	37.211	46.096	50.878					5033
124	5160	5075	0.639	0.212	34.695D	27.878	37.208	46.093	51.057	225	120.6	2.15	31.5	5075

BOTTOM DEPTH FOR CAST 1 IS 5079 — CAST 10 IS 5038

STATION: 49 LEG: IV POSITION: 7° 56′ S 28° 12′ W DATE: 29 OCT 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
501	2	2	26.11	26.11	36.282	24.000	32.278	40.179	24.009	207	1.2	0.11	0.1	2
502	32	32	26.07	26.06	36.275	24.009	32.289	40.190	24.145	207	1.2	0.10	0.0	32
503	64	64	26.06	26.04	36.274	24.014	32.294	40.196	24.285	207	1.2	0.09	0.0	64
504	90	90	25.47	25.45	36.533	24.392	32.684	40.599	24.773	210	1.2	0.10	0.0	90
505	116	116	22.51	22.49	36.493	25.235	33.608	41.602	25.731	194	1.7	0.26	0.7	116
506	144	144	19.14	19.11	36.159	25.899	34.378	42.471	26.523	164	3.0	0.66	6.7	144
507	170	170	16.09	16.06	35.697	26.297	34.883	43.077	27.043	124	5.5	1.09	15.7	170
508	196	195	13.67	13.64	35.414	26.616	35.293	43.572	27.485	116	7.4	1.30	19.4	195
509	257	256	11.30	11.27	35.100	26.843	35.618	43.988	27.995	101	10.9	1.64	25.1	256
510	303	302	9.51	9.47	34.869	26.978	35.833	44.277	28.348	103	14.5	1.87	28.8	302
511	350	349	7.76	7.72	34.662	27.090	36.028	44.547	28.686	141	17.1	1.90	28.9	349
512	396	394	7.17	7.13	34.609	27.134	36.099	44.645	28.944	139	19.1	1.99	30.3	394
515	461	459	6.73	6.69	34.587	27.177	36.164	44.730	29.288	121	21.8	2.18	33.6	459
516	511	508	6.42	6.37	34.562	27.199	36.202	44.782	29.542	117	23.7	2.23	34.7	508
517	613	610	5.78	5.73	34.516	27.245	36.280	44.890	30.062	126	26.3	2.30	34.8	610
518	715	711	5.08	5.02	34.475	27.296	36.367	45.011	30.591	141	29.2	2.31	34.9	711
519	815	810	4.628	4.562	34.466	27.340	36.435	45.100	31.101	150	31.8	2.34	34.9	810
520	915	909	4.201	4.129	34.495	27.409	36.526	45.211	31.636	160	35.5	2.29	34.0	909
521	1016	1009	4.024	3.945	34.556	27.476	36.602	45.295	32.168	167	36.3	2.23	33.0	1009
522	1114	1106	3.986	3.899	34.630	27.540	36.666	45.361	32.679	174	35.3	2.11	31.5	1106
523	1214	1205	4.133	4.035	34.737	27.611	36.729	45.415	33.199	182	30.9	1.96	29.2	1205
101	1295	1285	4.164	4.058	34.801	27.659	36.775	45.459	33.613	192	28.5	1.85	27.5	1285
524	1414	1403	4.220	4.103	34.878	27.716	36.828	45.509	34.204	208	24.0	1.65	24.7	1403
102	1496	1484	4.104	3.980	34.924	27.765	36.883	45.569	34.627	226	21.5	1.51	22.8	1484
103	1700	1686	3.803	3.664	34.953	27.820	36.954	45.655	35.612	245	19.9	1.33	20.4	1686
104	1905	1888	3.491	3.337	34.947	27.847	36.998	45.716	36.574	249	23.1	1.34	20.5	1888
105	2105	2085	3.272	3.102	34.939	27.862	37.026	45.756	37.495	252	25.8	1.32	20.4	2085
106	2304	2281	3.034	2.849	34.922	27.872	37.050	45.792	38.406	248	32.2	1.40	21.0	2281
107	2507	2481	2.883	2.681	34.915	27.881	37.068	45.819	39.326	246	35.5	1.42	21.5	2481
108	2710	2680	2.783	2.562	34.910	27.887	37.081	45.838	40.237	247	37.3	1.41	21.6	2680
109	2913	2880	2.721	2.481	34.911	27.895	37.093	45.854	41.144	250	36.2	1.39	21.0	2880
110	3117	3080	2.658	2.398	34.911	27.902	37.104	45.870	42.051	253	35.8	1.35	20.9	3080
111	3321	3280	2.589	2.308	34.910	27.908	37.116	45.886	42.955	257	35.1	1.34	20.6	3280
112	3526	3480	2.498	2.197	34.904	27.912	37.126	45.902	43.860	259	36.0	1.32	20.2	3480
115	3743	3693	2.308	1.988	34.888	27.916	37.142	45.929	44.823	259	42.4	1.37	21.1	3693
116	3951	3896	1.971	1.638	34.848	27.910	37.156	45.962	45.751	251	57.7	1.50	23.3	3896
117	4156	4096	1.542	1.199	34.803	27.905	37.176	46.006	46.677	242	75.6	1.72	25.8	4096
118	4362	4297	1.139	0.787	34.762	27.899	37.194	46.047	47.605	235	93.0	1.90	28.0	4297
119	4571	4501	0.918	0.550	34.737	27.893	37.203	46.069	48.523	231	102.2	2.01	29.3	4501
120	4777	4702	0.823	0.434	34.724	27.889	37.206	46.078	49.413	229	107.2	2.06	30.1	4702
121	4984	4903	0.749	0.339	34.714	27.886	37.209	46.087	50.302	228	110.7	2.10	30.6	4903
122	5190	5104	0.671	0.239	34.708	27.887	37.215	46.099	51.188	226	114.2	2.13	30.8	5104
123	5396	5304	0.644	0.188	34.697	27.881	37.212	46.099	52.057	225	116.6	2.15	31.2	5304
124	5618	5519	0.621	0.138	34.699	27.885	37.219	46.109	52.998	225	118.6	2.15	31.3	5519

BOTTOM DEPTH FOR CAST 1 IS 5536

STATION: 50 LEG: V POSITION: 8° 26′ S 34° 11′ W DATE: 5 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
115	6	6	27.11	27.11	36.351	23.741	31.994	39.868	23.767	197	1.2	0.13	0.2	6
116	86	86	25.76	25.74	37.062	24.702	32.981	40.882	25.066	212	1.0	0.13	0.1	86
1201	128	128	22.79	22.76	36.83 D	25.410	33.772	41.754	25.957					128
1202	178	178	17.08	17.05	35.79 D	26.134	34.684	42.845	26.912					178
117	200	199	14.89	14.86	35.642	26.528	35.158	43.392	27.410	192	2.9	0.62	7.2	199
118	399	397	8.49	8.45	34.735	27.039	35.942	44.429	28.850	118	15.7	1.96	30.1	397
119	609	606	5.62	5.57	34.489	27.243	36.286	44.904	30.044	148	25.6	2.22	34.1	606
120	815	810	4.45	4.39	34.445	27.342	36.447	45.121	31.107	169	32.5	2.28	34.1	810
121	1014	1007	3.91	3.83	34.542	27.477	36.608	45.307	32.163	169	37.0	2.19	32.6	1007
122	1184	1176	4.06	3.97	34.680	27.573	36.695	45.386	33.027	176	32.6	2.04	30.2	1176
1205	1273	1264	4.175	4.071	34.742D	27.611	36.727	45.412	33.465					1264
1206	1378	1368	4.295	4.180	34.794D	27.641	36.750	45.429	33.965					1368
123	1488	1476	4.31	4.18	34.845	27.681	36.789	45.467	34.500	198	24.9	1.74	26.0	1476
1207	1570	1557	4.275	4.142	34.893D	27.724	36.833	45.512	34.912					1557

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 50 LEG: V POSITION: 8° 26′ S 34° 11′ W DATE: 5 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1208	1676	1662	4.096	3.955	34.941D	27.781	36.900	45.587	35.453					1662
1209	1777	1762	3.842	3.695	34.959D	27.822	36.954	45.654	35.958					1762
124	1856	1840	3.70	3.55	34.961	27.838	36.978	45.685	36.334	246	19.4	1.29	19.9	1840

BOTTOM DEPTH FOR CAST 1 IS 1859

STATION: 51 LEG: V POSITION: 8° 38′ S 33° 47′ W DATE: 5 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
115	7	7	26.94	26.94	36.262	23.728	31.985	39.864	23.758	201	1.2	0.09	0.1	7
1201	16	16	26.97	26.96	36.26 D	23.718	31.975	39.854	23.786					16
1202	28	28	27.01	27.00	36.26 D	23.706	31.962	39.840	23.825					28
1203	36	36	27.02	27.01	36.27 D	23.711	31.966	39.844	23.863					36
1204	52	52	27.02	27.01	36.27 D	23.712	31.968	39.845	23.932					52
1205	78	78	26.30	26.28	36.74 D	24.292	32.561	40.452	24.623					78
116	98	98	25.68	25.66	36.955	24.646	32.929	40.833	25.062	208	1.1	0.12	0.1	98
1206	125	125	22.92	22.89	36.78 D	25.339	33.698	41.677	25.873					125
1207	150	150	20.44	20.41	36.54 D	25.845	34.279	42.330	26.492					150
1208	176	176	17.31	17.28	35.97 D	26.215	34.756	42.908	26.984					176
1209	202	201	15.24	15.20	35.66 D	26.462	35.079	43.301	27.352					201
1210	249	248	12.24	12.20	35.27 D	26.792	35.528	43.861	27.903					248
117	301	300	10.19	10.15	34.936	26.915	35.740	44.155	28.271	93	13.2	1.86	28.8	300
1211	350	349	8.53	8.49	34.75 D	27.042	35.943	44.428	28.632					349
1212	398	396	7.76	7.72	34.67 D	27.099	36.037	44.556	28.913					396
1213	455	453	7.08	7.03	34.60 D	27.141	36.111	44.661	29.221					453
1214	505	503	6.46	6.41	34.56 D	27.189	36.190	44.769	29.504					503
118	600	597	5.69	5.64	34.503	27.245	36.285	44.900	30.004	131	25.8	2.28	34.9	597
1215	700	696	5.01	4.95	34.47 D	27.297	36.372	45.019	30.525					696
1216	798	793	4.65	4.58	34.48 D	27.346	36.439	45.104	31.028					793
1217	900	894	4.24	4.17	34.50 D	27.405	36.520	45.204	31.563					894
119	982	976	4.07	3.99	34.544	27.462	36.585	45.276	31.998	163	35.8	2.25	33.3	976
1218	1098	1091	4.051	3.964	34.624D	27.528	36.652	45.343	32.593					1091
1219	1202	1193	4.057	3.961	34.699D	27.588	36.710	45.401	33.125					1193
120	1361	1351	4.28	4.17	34.850	27.687	36.796	45.474	33.934	199	24.6	1.72	26.1	1351
1220	1500	1488	4.307	4.180	34.910D	27.733	36.841	45.517	34.605					1488
121	1749	1734	3.92	3.77	34.961	27.815	36.943	45.639	35.822	245	18.7	1.32	20.4	1734
1221	2004	1985	3.395	3.233	34.960D	27.867	37.024	45.746	37.042					1985
122	2152	2131	3.03	2.86	34.942	27.887	37.064	45.805	37.743	260	24.6	1.25	19.4	2131
1222	2502	2476	2.819	2.618	34.932D	27.900	37.090	45.844	39.327					2476
123	2664	2635	2.73	2.52	34.916	27.896	37.092	45.851	40.047	255	32.6	1.35	20.4	2635
1223	2752	2721	2.708	2.485	34.915D	27.898	37.095	45.857	40.439					2721
1224	3000	2965	2.668	2.420	34.912D	27.901	37.102	45.867	41.536					2965
124	3350	3308	2.57	2.29	34.909	27.909	37.118	45.889	43.084	258	34.5	1.34	20.3	3308

BOTTOM DEPTH FOR CAST 1 IS 3336

STATION: 52 LEG: V POSITION: 8° 54′ S 33° 17′ W DATE: 5 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
115	8	8	26.97	26.97	36.228	23.693	31.950	39.829	23.727	203	1.2	0.12	0.1	8
1201	14	14	26.91	26.91	36.23 D	23.713	31.971	39.852	23.772					14
1202	27	27	26.90	26.90	36.23 D	23.716	31.975	39.855	23.830					27
1203	38	38	26.90	26.89	36.23 D	23.716	31.975	39.856	23.877					38
1204	52	52	26.89	26.88	36.23 D	23.719	31.978	39.859	23.938					52
1205	75	75	26.26	26.24	36.52 D	24.134	32.406	40.300	24.451					75
116	110	110	22.94	22.92	36.723	25.285	33.644	41.624	25.756	213	1.0	0.21	0.1	110
1206	137	137	21.06	21.03	36.45 D	25.609	34.025	42.060	26.199					137
1207	153	153	19.18	19.15	36.24 D	25.951	34.427	42.519	26.614					153
1208	177	177	16.57	16.54	35.88 D	26.327	34.893	43.069	27.102					177
1209	201	200	14.56	14.53	35.59 D	26.562	35.204	43.450	27.450					200
1210	249	248	11.40	11.37	35.19 D	26.892	35.662	44.026	28.007					248
117	300	299	9.89	9.85	34.917	26.952	35.790	44.217	28.306	89	14.0	1.93	29.9	299

STATION: 52 LEG: V POSITION: 8° 54′ S 33° 17′ W DATE: 5 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
1211	346	345	8.53	8.49	34.81 D	27.094	35.994	44.479	28.665					345
1212	400	398	7.68	7.64	34.69 D	27.125	36.065	44.588	28.948					398
1213	452	450	7.05	7.01	34.62 D	27.161	36.133	44.684	29.228					450
118	505	503	6.35	6.30	34.571	27.215	36.221	44.804	29.531	114	22.5	2.29	35.0	503
1214	548	545	6.15	6.10	34.53 D	27.211	36.227	44.820	29.726					545
1215	601	598	5.80	5.75	34.52 D	27.243	36.277	44.886	30.005					598
1216	698	694	5.23	5.17	34.47 D	27.273	36.336	44.973	30.487					694
119	807	802	4.63	4.56	34.461	27.336	36.430	45.096	31.060	151	32.0	2.36	35.0	802
1217	897	891	4.10	4.03	34.48 D	27.410	36.532	45.222	31.556					891
1218	1004	997	3.958	3.880	34.559D	27.485	36.614	45.311	32.124					997
1219	1101	1093	4.054	3.967	34.660D	27.557	36.679	45.370	32.634					1093
1220	1198	1189	4.140	4.044	34.740D	27.612	36.730	45.416	33.128					1189
1221	1302	1292	4.096	3.991	34.806D	27.670	36.789	45.477	33.658					1292
1222	1400	1389	4.244	4.128	34.892D	27.724	36.835	45.515	34.149					1389
120	1514	1502	4.10	3.97	34.937	27.776	36.894	45.580	34.719	231	20.0	1.46	22.3	1502
1223	1600	1587	3.899	3.768	34.953D	27.810	36.938	45.634	35.148					1587
1224	1698	1684	3.700	3.562	34.960D	27.836	36.975	45.681	35.623					1684
1225	1802	1786	3.595	3.449	34.957D	27.844	36.989	45.701	36.104					1786
1226	1904	1887	3.487	3.333	34.956D	27.854	37.006	45.723	36.577					1887
1227	2004	1985	3.381	3.219	34.953D	27.863	37.020	45.744	37.038					1985
1228	2200	2178	3.295	3.115	34.953D	27.872	37.035	45.764	37.927					2178
121	2323	2300	3.17	2.98	34.949	27.882	37.052	45.787	38.491	258	24.5	1.31	19.7	2300
1229	2498	2472	3.086	2.880	34.942D	27.885	37.061	45.801	39.276					2472
1230	2750	2719	2.917	2.689	34.930D	27.892	37.078	45.829	40.409					2719
1231	2904	2871	2.819	2.577	34.921D	27.895	37.087	45.843	41.097					2871
122	3138	3100	2.71	2.45	34.914	27.900	37.100	45.863	42.137	256	33.6	1.30	20.4	3100
1232	3252	3212	2.668	2.393	34.910D	27.901	37.104	45.870	42.640					3212
1233	3500	3455	2.614	2.313	34.905D	27.904	37.111	45.881	43.728					3455
1234	3752	3702	2.443	2.118	34.888D	27.906	37.124	45.905	44.838					3702
123	3956	3901	1.83	1.50	34.830	27.906	37.160	45.973	45.784	247	63.9	1.65	24.1	3901
1235	3996	3940	1.764	1.432	34.826D	27.907	37.165	45.982	45.965					3940
1236	4202	4141	1.342	1.001	34.785D	27.904	37.187	46.027	46.897					4141
1237	4404	4338	1.007	0.654	34.748D	27.895	37.199	46.059	47.798					4338
1238	4598	4527	0.917	0.545	34.738D	27.894	37.204	46.070	48.640					4527
124	4796	4720	0.68	0.29	34.711	27.886	37.211	46.092	49.510	226	112.2	2.14	30.7	4720

BOTTOM DEPTH FOR CAST 1 IS 4776

STATION: 53 LEG: V POSITION: 11° 59′ S 27° 59′ W DATE: 7 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
501	7	7	26.03	26.03	36.620	24.280	32.556	40.455	24.310	203	1.3	0.11	0.1	7
502	46	46	25.63	25.62	36.835	24.567	32.852	40.759	24.762	210	1.2	0.11	0.0	46
503	95	95	24.15	24.13	36.901	25.066	33.389	41.334	25.470	216	1.0	0.16	0.0	95
504	149	149	20.01	19.98	36.399	25.854	34.302	42.368	26.497	205	1.4	0.29	0.5	149
505	200	199	15.31	15.28	35.610	26.410	35.025	43.245	27.290	168	3.9	0.80	10.6	199
506	274	273	11.70	11.66	35.095	26.764	35.524	43.879	27.990	138	8.4	1.34	20.1	273
507	361	359	9.03	8.99	34.796	27.001	35.878	44.343	28.636	126	14.1	1.79	27.4	359
508	428	426	7.36	7.32	34.634	27.127	36.084	44.621	29.081	138	17.7	1.97	30.0	426
509	544	541	6.07	6.02	34.523	27.214	36.234	44.831	29.711	143	22.3	2.14	32.6	541
510	653	649	5.20	5.14	34.455	27.266	36.331	44.969	30.275	158	25.9	2.19	33.0	649
511	804	799	4.44	4.38	34.432	27.333	36.438	45.113	31.048	167	31.9	2.27	33.7	799
512	904	898	4.07	4.00	34.447	27.384	36.508	45.201	31.564	174	35.9	2.25	33.3	898
515	1004	997	3.93	3.85	34.511	27.450	36.581	45.280	32.090	170	37.2	2.24	33.3	997
516	1078	1071	3.83	3.75	34.565	27.503	36.639	45.342	32.483	176	38.0	2.17	32.2	1071
517	1155	1147	3.86	3.77	34.636	27.557	36.691	45.392	32.887	181	35.6	2.08	30.8	1147
518	1231	1222	3.91	3.81	34.715	27.616	36.746	45.443	33.289	186	32.4	1.97	29.3	1222
519	1306	1296	3.991	3.886	34.774	27.655	36.780	45.474	33.665	193	30.0	1.86	27.8	1296
520	1383	1372	4.019	3.907	34.832	27.699	36.822	45.514	34.056	204	27.3	1.74	26.0	1372
521	1457	1445	4.033	3.914	34.877	27.735	36.856	45.547	34.424	213	24.9	1.63	24.4	1445
522	1535	1522	3.950	3.824	34.902	27.763	36.889	45.584	34.808	222	23.5	1.55	23.4	1522
523	1610	1597	3.821	3.690	34.913	27.786	36.919	45.619	35.173	229	23.3	1.49	22.7	1597
201	1680	1666	3.741	3.605	34.924	27.803	36.940	45.645	35.508	235	23.6	1.46	22.0	1666
524	1714	1699	3.680	3.541	34.930	27.814	36.954	45.662	35.675	238	23.1	1.43	21.8	1699

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 53 LEG: V POSITION: 11° 59' S 27° 59' W DATE: 7 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
202	1881	1864	3.453	3.302	34.935	27.841	36.994	45.714	36.462	246	24.0	1.39	20.9	1864
203	2087	2067	3.222	3.055	34.931	27.860	37.027	45.759	37.416	250	26.5	1.37	20.5	2067
204	2290	2267	3.024	2.840	34.922	27.873	37.051	45.794	38.345	250	30.1	1.39	20.9	2267
205	2492	2466	2.874	2.673	34.911	27.878	37.066	45.817	39.258	250	34.2	1.41	21.2	2466
206	2698	2668	2.775	2.556	34.905	27.884	37.078	45.835	40.182	247	37.4	1.42	21.5	2668
207	2903	2869	2.711	2.472	34.904	27.890	37.088	45.850	41.096	248	38.8	1.43	21.5	2869
208	3110	3072	2.648	2.389	34.900	27.894	37.097	45.863	42.014	248	40.1	1.44	21.6	3072
209	3317	3275	2.583	2.303	34.898	27.899	37.107	45.878	42.929	250	40.3	1.42	21.5	3275
210	3522	3476	2.492	2.192	34.894	27.905	37.119	45.896	43.836	252	41.1	1.42	21.3	3476
211	3679	3630	2.373	2.059	34.884	27.907	37.129	45.913	44.531	252	44.4	1.44	21.7	3630
212	3835	3782	2.193	1.866	34.870	27.911	37.144	45.937	45.228	250	50.8	1.51	22.5	3782
215	3949	3894	2.007	1.673	34.848	27.908	37.152	45.956	45.736	247	58.0	1.57	23.4	3894
216	4050	3992	1.818	1.479	34.826	27.904	37.159	45.974	46.189	245	67.7	1.64	24.4	3992
217	4205	4144	1.455	1.110	34.789	27.900	37.177	46.011	46.893	239	81.2	1.80	26.1	4144
218	4358	4293	1.180	0.827	34.764	27.898	37.191	46.042	47.582	235	90.7	1.92	27.8	4293
219	4564	4494	0.964	0.595	34.740	27.892	37.200	46.063	48.487	231	100.2	2.00	28.9	4494
220	4768	4693	0.838	0.450	34.724	27.888	37.204	46.075	49.372	229	105.2	2.06	29.7	4693
221	4976	4895	0.761	0.351	34.718	27.889	37.210	46.087	50.269	228	110.1	2.09	30.1	4895
222	5180	5093	0.712	0.280	34.706	27.883	37.209	46.090	51.136	227	114.1	2.13	30.6	5093
223	5386	5294	0.652	0.197	34.698	27.881	37.212	46.098	52.014	226	117.8	2.17	30.9	5294
716	5387	5294	0.652	0.197	34.697	27.880	37.211	46.097	52.017	226	117.0	2.11	31.0	5294
717	5481	5386	0.613	0.148	34.696	27.882	37.216	46.105	52.421	226	117.8	2.15	31.3	5386
718	5535	5438	0.602	0.130	34.695	27.882	37.217	46.107	52.650	227	118.2	2.16	31.4	5438
719	5565	5467	0.597	0.122	34.692	27.880	37.216	46.106	52.775	227	119.5	2.17	31.4	5467
720	5586	5488	0.591	0.113	34.691	27.880	37.216	46.107	52.864	228	120.4	2.17	31.5	5488
721	5593	5494	0.590	0.112	34.692D	27.880	37.217	46.108	52.894	226	120.3	2.16	31.3	5494
722	5605	5506	0.584	0.104	34.690D	27.879	37.216	46.107	52.944	227	119.8	2.17	31.3	5506
723	5616	5517	0.580	0.099	34.691	27.880	37.217	46.109	52.992	225	121.0	2.18	31.4	5517
724	5626	5526	0.577	0.095	34.695	27.884	37.221	46.113	53.038	226	121.3	2.18	31.5	5526
224	5632	5532	0.581	0.098	34.695	27.884	37.221	46.112	53.062	225	119.8	2.19	31.4	5532

BOTTOM DEPTH FOR CAST 2 IS 5537 — CAST 7 IS 5531

STATION: 54 LEG: V POSITION: 15° 2' S 29° 32' W DATE: 8 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	0	0	26.35	26.35	36.83 D	24.335	32.601	40.489	24.335	205				0
501	8	8	26.32	26.32	36.825	24.345	32.611	40.501	24.379	205	1.2	0.09	0.1	8
502	67	67	25.22	25.20	37.038	24.847	33.140	41.055	25.131	212	1.1	0.12	0.1	67
503	139	139	22.91	22.88	36.831	25.378	33.736	41.715	25.972	213	1.1	0.19	0.1	139
504	190	189	19.04	19.00	36.157	25.926	34.408	42.504	26.749	195	1.8	0.43	3.0	189
505	240	239	15.62	15.58	35.619	26.348	34.952	43.162	27.403	179	3.6	0.71	8.9	239
506	300	299	13.11	13.07	35.252D	26.609	35.311	43.613	27.942	153	6.8	1.13	16.2	299
507	327	326	12.16	12.12	35.148	26.719	35.459	43.797	28.177	135	8.4	1.37	20.1	326
508	367	365	10.66	10.61	34.950	26.845	35.650	44.047	28.493	140	10.7	1.53	22.6	365
509	443	441	8.20	8.15	34.674	27.036	35.953	44.454	29.049	153	15.6	1.79	26.6	441
510	494	492	6.90	6.85	34.557	27.131	36.111	44.670	29.391	160	19.3	1.94	29.3	492
511	594	591	5.28	5.23	34.427	27.234	36.295	44.930	29.972	180	25.5	2.08	30.8	591
512	695	691	4.36	4.31	34.395	27.311	36.420	45.099	30.528	187	32.6	2.17	31.8	691
515	805	800	3.88	3.82	34.419	27.380	36.514	45.216	31.111	188	37.6	2.21	32.3	800
516	907	901	3.72	3.65	34.468	27.435	36.577	45.287	31.638	184	39.8	2.21	32.5	901
517	1008	1001	3.68	3.60	34.533	27.492	36.635	45.346	32.157	183	40.9	2.19	31.8	1001
518	1108	1100	3.76	3.68	34.631	27.563	36.701	45.407	32.681	185	38.6	2.09	30.5	1100
519	1209	1200	3.86	3.77	34.715	27.621	36.753	45.453	33.195	189	34.1	1.97	29.0	1200
520	1310	1300	3.90	3.80	34.801	27.686	36.815	45.513	33.716	202	30.3	1.79	26.8	1300
521	1410	1399	3.88	3.77	34.860	27.736	36.866	45.563	34.219	214	27.5	1.66	24.8	1399
522	1511	1499	3.75	3.63	34.890	27.773	36.910	45.614	34.717	225	26.9	1.56	23.5	1499
523	1613	1599	3.61	3.48	34.906	27.800	36.945	45.656	35.210	233	26.8	1.50	22.6	1599
201	1700	1685	3.49	3.36	34.925	27.828	36.978	45.695	35.634	240	25.9	1.42	21.6	1685
524	1713	1698	3.50	3.36	34.924	27.826	36.976	45.693	35.691	240	26.0	1.43	21.8	1698
202	1901	1883	3.26	3.11	34.928	27.853	37.017	45.746	36.574	248	27.3	1.39	20.9	1883
203	2102	2081	3.06	2.89	34.918	27.865	37.040	45.780	37.496	249	30.6	1.41	21.1	2081
204	2306	2282	2.92	2.74	34.914	27.875	37.059	45.807	38.425	247	33.8	1.42	21.4	2282
205	2510	2483	2.83	2.63	34.907	27.879	37.069	45.823	39.341	247	36.4	1.43	21.6	2483

STATION: 54 LEG: V POSITION: 15° 2' S 29° 32' W DATE: 8 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
206	2715	2684	2.77	2.55	34.905	27.884	37.079	45.837	40.258	248	38.0	1.44	21.5	2684
207	2920	2886	2.71	2.47	34.904	27.890	37.089	45.851	41.171	248	39.1	1.44	21.5	2886
208	3124	3086	2.641	2.380	34.904	27.898	37.101	45.868	42.079	249	39.4	1.44	21.4	3086
2201	3194	3154	2.620	2.352	34.901D	27.897	37.103	45.871	42.387	252D				3154
2202	3296	3254	2.582	2.304	34.901D	27.901	37.109	45.880	42.840	255D				3254
209	3328	3286	2.612	2.330	34.909	27.906	37.112	45.881	42.981	256	35.6	1.37	20.4	3286
2203	3371	3328	2.597	2.311	34.909D	27.907	37.115	45.885	43.171	257D				3328
2204	3430	3386	2.551	2.259	34.904D	27.907	37.118	45.891	43.433	255D				3386
210	3535	3488	2.493	2.191	34.900	27.910	37.124	45.900	43.897	255	40.4	1.41	21.0	3488
211	3737	3686	2.343	2.023	34.887	27.913	37.136	45.922	44.790	256	43.8	1.43	21.2	3686
212	3940	3884	2.038	1.704	34.857	27.913	37.155	45.957	45.699	251	56.2	1.54	22.7	3884
215	4052	3994	1.831	1.491	34.836	27.911	37.166	45.980	46.203	246	64.0	1.64	24.0	3994
216	4154	4093	1.638	1.292	34.813	27.907	37.173	45.998	46.660	242	73.8	1.73	25.1	4093
217	4360	4294	1.323	0.964	34.785	27.906	37.191	46.034	47.581	236	87.7	1.86	26.9	4294
218	4464	4396	1.164	0.799	34.763	27.899	37.194	46.046	48.040	234	94.2	1.94	28.0	4396
219	4564	4493	1.058	0.685	34.750	27.895	37.197	46.055	48.478	232	97.5	1.98	28.5	4493
220	4669	4595	0.958	0.577	34.740	27.893	37.202	46.066	48.939	230	102.3	2.02	29.2	4595
221	4761	4685	0.875	0.486	34.731	27.891	37.205	46.075	49.340	229	106.5	2.06	29.6	4685
222	4873	4794	0.778	0.380	34.719	27.888	37.208	46.084	49.827	228	111.0	2.07	30.1	4794
815	4955	4874	0.624	0.222	34.711	27.890	37.219	46.104	50.200	226				4874
223	4972	4890	0.610	0.207	34.701	27.883	37.213	46.099	50.267	226	116.1	2.16	30.8	4890
816	5028	4945	0.534	0.127	34.693	27.880	37.216	46.106	50.514	225				4945
817	5069	4985	0.502	0.091	34.695	27.884	37.222	46.113	50.696	225				4985
818	5099	5014	0.473	0.060	34.691	27.882	37.222	46.115	50.826	225				5014
819	5120	5034	0.471	0.055	34.689	27.881	37.221	46.115	50.914	225				5034
820	5135	5049	0.473	0.056	34.690	27.882	37.221	46.115	50.978	225				5049
821	5145	5059	0.473	0.054	34.691	27.883	37.222	46.116	51.021	225				5059
822	5155	5068	0.470	0.050	34.690	27.882	37.222	46.116	51.063	225				5068
823	5167	5080	0.467	0.046	34.689	27.881	37.222	46.116	51.114	225				5080
824	5170	5083	0.465	0.044	34.691	27.883	37.223	46.118	51.129	225				5083
224	5176	5089	0.455	0.033	34.691	27.884	37.225	46.120	51.156	225	121.1	2.21	31.7	5089

BOTTOM DEPTH FOR CAST 2 IS 5102 — CAST 8 IS 5091

STATION: 55 LEG: V POSITION: 18° 0' S 31° 0' W DATE: 11 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
301	3	3	25.72	25.72	37.255	24.853	33.131	41.031	24.866	206	1.0	0.14	0.1	3
302	28	28	25.28	25.27	37.261	24.994	33.283	41.194	25.113	210	1.0	0.16	0.1	28
303	48	48	24.72	24.71	37.187	25.109	33.413	41.340	25.313	213	1.0	0.15	0.1	48
304	83	83	24.14	24.12	37.142	25.250	33.571	41.514	25.604	216	1.0	0.16	0.1	83
305	128	128	23.57	23.54	37.110	25.397	33.734	41.692	25.942	212	1.0	0.14	0.1	128
306	177	176	19.82	19.79	36.278	25.814	34.270	42.342	26.578	205	1.4	0.30	0.8	176
307	266	265	15.33	15.29	35.516	26.336	34.951	43.173	27.506	197	3.2	0.61	7.0	265
308	340	338	12.81	12.76	35.180	26.616	35.330	43.644	28.127	172	6.0	1.05	14.7	338
309	438	436	10.09	10.04	34.842	26.862	35.693	44.115	28.833	181	9.9	1.35	19.4	436
310	540	537	7.37	7.32	34.571	27.078	36.035	44.573	29.540	182	16.5	1.75	25.8	537
311	636	632	5.47	5.42	34.424	27.210	36.262	44.888	30.137	186	24.2	2.02	29.8	632
312	683	679	4.82	4.76	34.395	27.262	36.347	45.004	30.415	188	28.2	2.10	30.9	679
315	788	783	4.05	3.99	34.400	27.348	36.473	45.167	30.997	189	36.5	2.18	32.0	783
316	887	881	3.69	3.62	34.441	27.417	36.561	45.272	31.528	188	40.9	2.22	32.4	881
317	989	982	3.581	3.508	34.514	27.486	36.635	45.351	32.067	186	42.7	2.19	31.9	982
318	1093	1085	3.643	3.561	34.607	27.555	36.700	45.412	32.609	187	40.8	2.10	30.8	1085
319	1198	1189	3.770	3.677	34.694	27.613	36.750	45.455	33.140	191	36.7	1.98	29.3	1189
320	1304	1294	3.922	3.818	34.794	27.678	36.806	45.503	33.681	202	31.5	1.81	27.0	1294
321	1408	1397	3.889	3.776	34.848	27.725	36.855	45.552	34.199	213	28.6	1.68	25.2	1397
322	1505	1492	3.797	3.676	34.879	27.760	36.894	45.596	34.675	222	27.1	1.58	23.8	1492
323	1611	1597	3.646	3.517	34.897	27.790	36.932	45.642	35.189	231	26.8	1.51	23.0	1597
101	1655	1641	3.539	3.408	34.905	27.807	36.955	45.670	35.409	229	27.4	1.50	22.5	1641
324	1712	1697	3.507	3.371	34.909	27.813	36.963	45.680	35.673	236	27.9	1.47	22.3	1697
102	1804	1787	3.349	3.206	34.911	27.831	36.989	45.714	36.111	241	28.2	1.45	21.8	1787
103	1954	1935	3.285	3.129	34.932G	27.854	37.017	45.745	36.811	251	26.2	1.37	20.6	1935
104	2108	2087	3.137	2.969	34.927	27.865	37.036	45.773	37.519	251	28.7	1.37	20.8	2087
105	2262	2239	3.039	2.858	34.923	27.872	37.049	45.791	38.218	251	30.2	1.37	20.7	2239

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR, BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS

STATION: 55 LEG: V POSITION: 18° 0' S 31° 0' W DATE: 11 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
106	2413	2387	2.958	2.764	34.922	27.879	37.062	45.809	38.902	252	31.2	1.37	20.7	2387
107	2566	2538	2.885	2.677	34.920	27.885	37.072	45.824	39.592	252	32.6	1.37	20.7	2538
108	2718	2687	2.820	2.598	34.915	27.888	37.080	45.835	40.271	252	34.4	1.40	21.0	2687
109	2871	2837	2.767	2.530	34.914	27.893	37.088	45.847	40.954	252	35.3	1.39	20.9	2837
110	3024	2987	2.734	2.482	34.915	27.898	37.096	45.857	41.634	254	34.7	1.36	20.7	2987
111	3176	3136	2.680	2.413	34.911	27.900	37.102	45.867	42.306	254	35.8	1.36	20.8	3136
112	3328	3285	2.631	2.349	34.912	27.907	37.112	45.880	42.980	256	35.5	1.35	20.5	3285
115	3492	3446	2.544	2.246	34.910	27.913	37.124	45.898	43.709	257	37.1	1.37	20.4	3446
116	3643	3594	2.411	2.100	34.893	27.911	37.131	45.912	44.375	257	40.8	1.40	21.0	3594
117	3796	3743	2.256	1.932	34.877	27.912	37.141	45.931	45.053	253	46.8	1.49	21.9	3743
118	3950	3894	2.030	1.695	34.854	27.911	37.154	45.957	45.741	250	56.1	1.56	23.0	3894
119	4052	3993	1.832	1.492	34.831	27.907	37.162	45.976	46.199	246	65.4	1.67	24.2	3993
120	4156	4095	1.580	1.236	34.802	27.902	37.171	45.999	46.670	241	77.2	1.78	25.9	4095
121	4260	4196	1.320	0.973	34.778	27.900	37.184	46.027	47.146	237	87.2	1.88	27.3	4196
122	4414	4346	1.038	0.683	34.746	27.892	37.194	46.053	47.834	232	97.0	1.99	28.8	4346
123	4567	4495	0.675	0.316	34.712	27.886	37.210	46.089	48.530	227	110.5	2.12	30.6	4495
716	4571	4499	0.723	0.362	34.714	27.885	37.206	46.083	48.540	227				4499
717	4638	4565	0.512	0.151	34.699	27.884	37.218	46.107	48.854	225				4565
718	4672	4598	0.421	0.059	34.684	27.877	37.216	46.110	49.005	225				4598
719	4698	4623	0.412	0.048	34.680	27.874	37.214	46.109	49.115	225				4623
720	4723	4647	0.406	0.039	34.683	27.877	37.218	46.113	49.225	225				4647
721	4748	4672	0.380	0.011	34.683	27.878	37.221	46.117	49.337	225				4672
124	4763	4686	0.382	0.011	34.683D	27.878	37.221	46.117	49.401	225	120.3	2.21	31.7	4686
722	4768	4691	0.382	0.011	34.681	27.877	37.219	46.116	49.421	224				4691
723	4779	4702	0.382	0.010	34.682	27.878	37.220	46.117	49.469	225				4702
724	4781	4704	0.383	0.010	34.684	27.879	37.222	46.118	49.479	225				4704

BOTTOM DEPTH FOR CAST 1 IS 4694 — CAST 7 IS 4718

STATION: 56 LEG: V POSITION: 21° 0' S 33° 0' W DATE: 12 NOV 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
501	14	14	24.707	24.704	37.069	25.021	33.327	41.255	25.081	210	1.1	0.08	0.1	14
502	77	77	23.697	23.680	37.069	25.325	33.659	41.614	25.654	214	1.0	0.08	0.1	77
503	117	117	22.665	22.640	36.881	25.485	33.849	41.834	25.985	211	1.0	0.11	0.1	117
504	138	137	20.952	20.924	36.573	25.731	34.149	42.186	26.326	206	1.2	0.18	0.3	137
505	157	156	19.979	19.949	36.382	25.850	34.299	42.366	26.528	206	1.3	0.21	0.5	156
506	178	177	18.925	18.892	36.183	25.975	34.460	42.560	26.746	206	1.4	0.24	1.1	177
507	199	198	17.671	17.636	35.904	26.078	34.608	42.749	26.946	206	1.8	0.34	2.3	198
508	218	217	16.909	16.872	35.788	26.175	34.732	42.899	27.128	207	2.1	0.40	3.2	217
509	237	236	16.130	16.091	35.660	26.262	34.847	43.040	27.301	208	2.2	0.42	3.9	236
510	303	302	14.210	14.164	35.356	26.460	35.118	43.380	27.799	211	3.0	0.59	7.0	302
511	359	357	12.833	12.782	35.175	26.608	35.321	43.634	28.203	202	4.6	0.83	10.9	357
512	419	417	11.691	11.635	35.036	26.724	35.485	43.842	28.595	200	6.0	1.01	13.9	417
514	475	473	10.477	10.418	34.893	26.836	35.650	44.055	28.968	197	7.7	1.21	16.9	473
515	528	525	9.117	9.057	34.723	26.933	35.809	44.271	29.319	193	10.8	1.44	20.6	525
516	609	606	7.138	7.078	34.531	27.080	36.049	44.598	29.858	189	16.2	1.77	25.7	606
517	698	694	5.482	5.421	34.418	27.204	36.256	44.882	30.414	186	23.6	2.05	29.9	694
518	800	795	4.251	4.189	34.374	27.307	36.422	45.107	31.007	195	31.6	2.15	31.4	795
519	900	894	3.681	3.614	34.407	27.391	36.536	45.248	31.562	195	39.3	2.21	32.1	894
520	1000	993	3.411	3.338	34.475	27.471	36.630	45.355	32.107	190	44.9	2.21	32.0	993
521	1102	1094	3.513	3.431	34.576	27.543	36.695	45.414	32.641	190	41.9	2.12	30.9	1094
522	1203	1194	3.723	3.630	34.680	27.606	36.746	45.453	33.158	193	36.5	1.99	29.3	1194
101	1250	1240	3.843	3.745	34.741	27.643	36.776	45.477	33.404	196	33.8	1.89	28.0	1240
523	1305	1295	3.986	3.881	34.805	27.681	36.805	45.498	33.685	203	29.2	1.79	26.5	1295
102	1401	1389	4.038	3.924	34.888	27.742	36.863	45.553	34.179	218	23.8	1.60	24.0	1389
524	1405	1393	4.046	3.931	34.888	27.741	36.862	45.551	34.196	219	23.8	1.60	23.7	1393
103	1552	1539	3.938	3.811	34.924	27.782	36.909	45.603	34.903	233	21.9	1.47	22.2	1539
104	1708	1693	3.777	3.637	34.952	27.822	36.957	45.660	35.651	245	20.4	1.36	20.6	1693
105	1860	1842	3.585	3.434	34.952	27.842	36.988	45.700	36.362	252	21.1	1.29	20.0	1842
106	1987	1968	3.428	3.267	34.950	27.856	37.011	45.732	36.953	255	21.9	1.29	19.7	1968
107	2162	2140	3.276	3.100	34.945	27.867	37.031	45.761	37.754	256	23.6	1.29	19.7	2140

STATION: 56 LEG: V POSITION: 21° 0' S 33° 0' W DATE: 12 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
108	2164	2142	3.276	3.100	34.945	27.867	37.031	45.761	37.763	256	23.8	1.30	19.8	2142
109	2316	2291	3.138	2.950	34.937	27.875	37.047	45.784	38.455	255	26.1	1.31	19.9	2291
110	2461	2434	3.033	2.832	34.933	27.882	37.061	45.804	39.113	255	28.3	1.32	20.0	2434
111	2616	2586	2.947	2.732	34.927	27.886	37.070	45.818	39.809	255	29.7	1.33	20.3	2586
112	2765	2733	2.868	2.640	34.923	27.891	37.080	45.833	40.477	254	31.2	1.34	20.3	2733
115	2926	2891	2.790	2.547	34.920	27.896	37.091	45.848	41.198	255	32.1	1.36	20.4	2891
116	3070	3032	2.727	2.470	34.915	27.899	37.098	45.859	41.837	257	32.8	1.36	20.4	3032
117	3217	3176	2.625	2.355	34.910	27.904	37.109	45.877	42.494	257	34.0	1.37	20.4	3176
118	3370	3326	2.472	2.189	34.899	27.909	37.123	45.900	43.180	256	38.3	1.40	20.8	3326
119	3526	3478	2.236	1.942	34.876	27.910	37.138	45.928	43.883	255	46.5	1.47	21.9	3478
715	3562	3514	2.144	1.849	34.870	27.912	37.146	45.941	44.050	252	49.7	1.51	22.4	3514
716	3663	3612	1.933	1.633	34.845	27.908	37.154	45.961	44.506	249	59.2	1.61	23.7	3612
120	3686	3635	1.904	1.602	34.840	27.907	37.155	45.963	44.607	249	60.5	1.62	23.7	3635
717	3733	3681	1.792	1.489	34.831	27.908	37.162	45.976	44.824	246	65.4	1.68	24.5	3681
718	3836	3782	1.567	1.259	34.805	27.903	37.171	45.997	45.289	242	74.8	1.77	25.9	3782
121	3837	3783	1.587	1.278	34.809	27.904	37.171	45.997	45.293	242	73.6	1.75	25.6	3783
719	3884	3828	1.486	1.175	34.794	27.899	37.172	46.004	45.503	240	78.7	1.81	26.4	3828
720	3981	3923	1.310	0.994	34.778	27.898	37.182	46.023	45.941	237	86.1	1.88	27.4	3923
122	4018	3959	1.273	0.954	34.772	27.896	37.182	46.026	46.103	236	86.1	1.88	27.5	3959
721	4063	4003	1.165	0.845	34.764	27.897	37.189	46.038	46.310	234	92.7	1.94	28.1	4003
722	4148	4086	1.015	0.691	34.745	27.891	37.192	46.051	46.689	232	99.1	2.00	29.0	4086
123	4198	4135	1.000	0.671	34.744	27.891	37.194	46.053	46.907	232	97.6	2.00	28.8	4135
723	4253	4189	0.907	0.575	34.739	27.893	37.201	46.066	47.157	230	104.1	2.04	29.6	4189
724	4370	4303	0.739	0.400	34.720	27.887	37.206	46.081	47.677	227	111.2	2.11	30.4	4303
124	4381	4313	0.727	0.387	34.718	27.887	37.206	46.082	47.725	227	110.2	2.11	30.3	4313
714	4384	4316	0.740	0.399	34.720	27.887	37.206	46.081	47.737	227	111.7	2.12	30.5	4316

BOTTOM DEPTH FOR CAST 7 IS 4322 — CAST 1 IS 4323

STATION: 57 LEG: V POSITION: 23° 59' S 35° 0' W DATE: 15 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6201	0	0	23.58	23.58	36.70 D	25.075	33.415	41.377	25.075	215				0
601	12	12	23.576	23.573	36.699	25.077	33.418	41.380	25.128	215	1.1	0.04	0.1	12
6202	30	30	23.576	23.569	36.83 D	25.178	33.518	41.478	25.307					30
602	47	47	23.168	23.158	36.864	25.322	33.673	41.644	25.523	217	1.1	0.04	0.1	47
603	78	78	21.797	21.781	36.665	25.564	33.956	41.967	25.899	221	1.1	0.04	0.1	78
604	117	117	20.437	20.414	36.428	25.760	34.195	42.247	26.265	215	1.1	0.11	0.2	117
605	169	168	17.876	17.846	35.990	26.092	34.614	42.747	26.828	211	1.6	0.25	1.2	168
606	219	218	16.153	16.117	35.665	26.260	34.844	43.036	27.220	211	2.1	0.37	3.5	218
607	289	288	14.687	14.642	35.470	26.444	35.083	43.327	27.718	217	2.2	0.47	5.3	288
608	338	336	14.055	14.004	35.411	26.537	35.200	43.467	28.030	218	2.6	0.55	6.8	336
609	388	386	13.114	13.059	35.271	26.626	35.328	43.629	28.347	215	3.4	0.70	9.2	386
610	470	467	11.082	11.022	34.97 D	26.784	35.572	43.953	28.888	204	8.5	1.21	17.4	467
611	520	517	9.914	9.852	34.835	26.889	35.728	44.156	29.229	203	10.6	1.37	19.9	517
612	590	587	8.000	7.938	34.613	27.020	35.948	44.459	29.700	199	13.0	1.55	22.6	587
615	649	645	6.758	6.695	34.488	27.098	36.086	44.653	30.063	204	16.0	1.72	25.7	645
616	699	695	5.724	5.662	34.393	27.156	36.196	44.811	30.366	212	19.1	1.85	27.3	695
617	749	744	5.015	4.952	34.343	27.199	36.276	44.925	30.651	216	22.3	1.94	28.4	744
618	799	794	4.469	4.406	34.333	27.251	36.356	45.031	30.943	214	27.2	2.03	29.7	794
619	849	843	4.029	3.964	34.327	27.292	36.420	45.117	31.222	213	31.2	2.07	30.5	843
620	900	894	3.792	3.725	34.344	27.330	36.470	45.178	31.499	208	35.3	2.13	31.3	894
621	951	944	3.624	3.554	34.378	27.373	36.522	45.238	31.780	201	40.2	2.18	31.8	944
201	993	986	3.446	3.374	34.396	27.405	36.563	45.287	32.009	196	42.9	2.18	31.8	986
622	1005	998	3.392	3.319	34.404	27.416	36.577	45.304	32.076	197	44.7	2.21	32.2	998
623	1103	1095	3.237	3.158	34.488	27.498	36.666	45.400	32.610	190	49.9	2.21	32.3	1095
202	1197	1188	3.248	3.161	34.562	27.557	36.724	45.456	33.097	189	50.2	2.15	31.5	1188
624	1205	1196	3.226	3.138	34.582	27.575	36.742	45.476	33.152	191	49.6	2.13	31.0	1196
203	1340	1329	3.418	3.317	34.707	27.658	36.814	45.536	33.842	199	43.9	1.94	28.7	1329
204	1493	1480	3.654	3.536	34.832	27.736	36.879	45.588	34.604	215	33.9	1.69	25.4	1480
205	1644	1629	3.458	3.329	34.893	27.805	36.957	45.676	35.361	233	30.6	1.47	22.9	1629
206	1799	1782	3.592	3.446	34.941	27.832	36.977	45.690	36.078	246	23.4	1.34	20.7	1782
207	1951	1932	3.465	3.307	34.949	27.851	37.004	45.723	36.785	252	23.7	1.32	20.1	1932

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 57 LEG: V POSITION: 23° 59' S 35° 0' W DATE: 15 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
208	2104	2083	3.331	3.160	34.949	27.865	37.026	45.752	37.490	255	24.5	1.29	19.9	2083
209	2256	2232	3.200	3.016	34.943	27.874	37.042	45.776	38.183	255	26.3	1.30	20.0	2232
210	2410	2384	3.089	2.892	34.941	27.883	37.058	45.798	38.884	255	27.5	1.29	20.0	2384
211	2556	2527	2.996	2.786	34.936	27.888	37.069	45.815	39.543	255	30.2	1.31	20.3	2527
212	2723	2691	2.909	2.684	34.931	27.893	37.080	45.831	40.292	255	30.9	1.33	20.1	2691
215	2876	2841	2.820	2.581	34.925	27.897	37.090	45.846	40.976	255	31.8	1.34	20.3	2841
216	3026	2988	2.747	2.494	34.924	27.904	37.101	45.862	41.647	256	32.3	1.34	20.4	2988
217	3179	3138	2.656	2.389	34.918	27.908	37.111	45.877	42.329	256	34.5	1.36	20.5	3138
218	3334	3290	2.528	2.248	34.910	27.913	37.124	45.897	43.022	256	37.8	1.37	20.7	3290
219	3484	3437	2.352	2.060	34.892	27.914	37.135	45.919	43.692	254	44.2	1.43	21.6	3437
815	3581	3532	2.249	1.949	34.874	27.908	37.136	45.925	44.118	252	45.3	1.46	22.1	3532
220	3634	3584	1.992	1.694	34.855	27.912	37.154	45.958	44.378	249	57.3	1.56	23.3	3584
816	3727	3675	1.856	1.551	34.831	27.903	37.154	45.965	44.787	246	61.5	1.64	24.2	3675
221	3785	3731	1.637	1.333	34.812	27.903	37.167	45.990	45.061	241	74.2	1.73	25.6	3731
817	3883	3827	1.420	1.112	34.787	27.898	37.175	46.010	45.504	239	79.1	1.82	26.8	3827
222	3935	3878	1.287	0.977	34.776D	27.898	37.182	46.025	45.744	235	87.0	1.86	27.4	3878
818	4041	3981	1.073	0.758	34.746	27.887	37.185	46.040	46.217	231	94.4	1.97	28.8	3981
223	4115	4053	0.808	0.494	34.729	27.889	37.203	46.072	46.569	227	104.7	2.06	29.8	4053
819	4197	4133	0.532	0.219	34.688	27.872	37.202	46.087	46.939	225	113.1	2.15	31.3	4133
820	4249	4184	0.343	0.030	34.686	27.880	37.221	46.116	47.194	226	118.0	2.20	31.8	4184
821	4263	4198	0.249	-0.062	34.675	27.876	37.222	46.123	47.262	225	120.5	2.21	32.1	4198
822	4276	4211	0.249	-0.063	34.674	27.875	37.222	46.123	47.318	226	121.5	2.20	32.2	4211
824	4287	4221	0.250	-0.063	34.677	27.877	37.224	46.125	47.368	225	120.8	2.19	32.0	4221
823	4288	4222	0.250	-0.063	34.680	27.880	37.227	46.127	47.374	225	120.7	2.20	32.1	4222
224	4292	4226	0.250	-0.064	34.681	27.881	37.227	46.128	47.392	225	121.3	2.21	32.0	4226

BOTTOM DEPTH FOR CAST 2 IS 4234 – CAST 8 IS 4236

STATION: 58 LEG: V POSITION: 27° 0' S 37° 1' W DATE: 16 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
609	2419	2392	3.098	2.900	34.935	27.878	37.052	45.792	38.918	255	26.2	1.31	20.2	2392
610	2595	2565	2.983	2.770	34.929	27.884	37.066	45.813	39.712	255	28.9	1.32	20.3	2565
611	2773	2739	2.854	2.625	34.917	27.887	37.077	45.831	40.510	254	32.1	1.35	20.7	2739
612	2952	2915	2.785	2.539	34.920	27.897	37.092	45.850	41.313	256	32.3	1.34	20.4	2915
615	3141	3100	2.671	2.408	34.911	27.901	37.103	45.868	42.155	256	34.4	1.34	20.4	3100
616	3321	3276	2.529	2.250	34.900	27.905	37.116	45.889	42.957	256	37.4	1.37	20.9	3276
617	3497	3449	2.290	1.998	34.879	27.908	37.133	45.920	43.749	253	45.9	1.45	21.9	3449
618	3675	3623	1.819	1.521	34.830	27.904	37.157	45.970	44.566	245	65.4	1.64	24.5	3623
619	3858	3801	1.402	1.097	34.785	27.897	37.175	46.011	45.397	237	81.9	1.82	27.0	3801
620	4007	3947	1.091	0.780	34.749	27.889	37.185	46.038	46.068	230	96.7	1.97	28.8	3947
621	4165	4101	0.717	0.401	34.714	27.883	37.202	46.076	46.790	226	109.3	2.10	30.6	4101
622	4320	4252	0.274	-0.044	34.677	27.876	37.222	46.122	47.507	225	122.7	2.24	32.3	4252
623	4498	4426	0.224	-0.111	34.673	27.876	37.226	46.130	48.281	225	126.2	2.25	32.4	4426
115	4570	4496	0.223	-0.120	34.672D	27.876	37.226	46.130	48.591	222	124.1	2.24	32.2	4496
116	4582	4507	0.217	-0.127	34.670	27.875	37.226	46.130	48.642	223	125.9	2.26	32.4	4507
117	4592	4517	0.211	-0.134	34.670	27.875	37.226	46.131	48.687	224	125.7	2.26	32.4	4517
118	4604	4529	0.212	-0.134	34.671	27.876	37.227	46.132	48.739	224	125.3	2.26	32.4	4529
119	4615	4539	0.212	-0.136	34.669	27.874	37.226	46.131	48.785	225	125.3	2.26	32.4	4539
120	4626	4550	0.213	-0.136	34.668	27.874	37.225	46.130	48.831	225	125.1	2.26	32.4	4550
121	4639	4563	0.214	-0.136	34.672	27.877	37.228	46.133	48.890	225	125.4	2.24	32.4	4563
122	4649	4573	0.215	-0.136	34.670	27.875	37.227	46.131	48.931	225	125.3	2.24	32.3	4573
624	4658	4581	0.217	-0.136	34.672	27.877	37.228	46.133	48.971	225	127.2	2.26	32.4	4581
124	4659	4582	0.217	-0.136	34.672	27.877	37.228	46.133	48.975	225	126.5	2.21	32.2	4582
123	4660	4583	0.218	-0.135	34.670	27.875	37.226	46.131	48.978	225	125.2	2.24	32.2	4583

BOTTOM DEPTH FOR CAST 1 IS 4592

STATION: 58 LEG: V POSITION: 27° 0' S 37° 1' W DATE: 16 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
9201	0	0	21.83	21.83	36.40 D	25.352	33.746	41.758	25.352	220				0
901	13	13	21.826	21.823	36.406	25.356	33.749	41.762	25.412	220	0.6	0.03	0.1	13
902	58	58	20.819	20.807	36.583	25.771	34.192	42.232	26.021	225	0.8	0.04	0.1	58
903	87	87	18.652	18.636	36.124	25.995	34.489	42.597	26.373	222	0.9	0.12	0.3	87
904	119	118	17.358	17.337	35.898	26.147	34.687	42.837	26.667	211	1.4	0.28	2.3	118
905	159	158	16.241	16.215	35.715	26.275	34.856	43.044	26.973	211	1.7	0.34	3.1	158
906	199	198	15.489	15.457	35.614	26.373	34.981	43.195	27.248	215	1.9	0.38	4.0	198
907	239	238	14.858	14.821	35.541	26.459	35.091	43.328	27.513	218	2.0	0.44	5.1	238
908	280	279	14.307	14.265	35.465	26.522	35.176	43.432	27.759	218	2.4	0.52	6.5	279
909	326	324	13.500	13.453	35.329	26.590	35.275	43.562	28.034	217	3.2	0.63	8.3	324
910	380	378	12.367	12.315	35.159	26.688	35.421	43.751	28.380	212	4.4	0.81	11.1	378
911	430	428	11.369	11.313	35.011	26.765	35.540	43.909	28.688	208	6.0	0.98	13.9	428
912	470	467	10.544	10.486	34.930	26.852	35.663	44.066	28.962	207	6.7	1.08	15.4	467
915	532	529	9.021	8.961	34.719	26.945	35.825	44.292	29.350	207	9.5	1.32	19.4	529
916	600	596	7.754	7.692	34.562	27.017	35.957	44.479	29.745	209	12.3	1.54	22.8	596
917	673	669	6.352	6.289	34.440	27.114	36.122	44.708	30.195	215	15.4	1.71	25.2	669
918	742	737	5.308	5.244	34.353	27.174	36.235	44.870	30.588	221	20.0	1.85	27.3	737
919	813	807	4.530	4.465	34.320	27.235	36.337	45.009	30.989	220	24.8	1.96	28.9	807
920	882	876	4.035	3.967	34.334	27.298	36.425	45.121	31.379	213	31.3	2.06	30.5	876
921	954	947	3.752	3.681	34.352	27.340	36.483	45.193	31.758	208	36.3	2.13	31.1	947
922	1025	1017	3.451	3.376	34.377	27.389	36.548	45.272	32.140	203	41.8	2.18	31.9	1017
923	1096	1087	3.301	3.222	34.423	27.440	36.606	45.338	32.519	196	46.5	2.20	32.4	1087
924	1165	1156	3.179	3.095	34.480	27.497	36.669	45.406	32.895	192	50.4	2.19	32.2	1156
601	1200	1190	3.149	3.062	34.500	27.516	36.689	45.428	33.074	190	49.7	2.18	32.1	1190
602	1350	1338	2.998	2.901	34.595	27.606	36.787	45.532	33.853	192	52.2	2.12	31.2	1338
603	1477	1464	3.106	2.996	34.714	27.693	36.866	45.604	34.511	203	46.4	1.93	28.6	1464
604	1650	1635	3.234	3.107	34.810	27.759	36.925	45.656	35.353	218	38.9	1.72	25.7	1635
605	1806	1788	3.374	3.231	34.889	27.811	36.968	45.692	36.100	237	29.5	1.44	22.5	1788
606	1957	1937	3.363	3.206	34.922	27.839	36.998	45.723	36.806	248	25.6	1.37	21.2	1937
607	2110	2088	3.242	3.072	34.925	27.854	37.020	45.751	37.511	251	26.1	1.35	20.9	2088
608	2263	2238	3.165	2.981	34.930	27.866	37.037	45.773	38.209	253	25.8	1.33	20.5	2238

STATION: 59 LEG: V POSITION: 30° 12' S 39° 18' W DATE: 20 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	0	0	21.03	21.03	36.25 D	25.458	33.877	41.913	25.458	226				0
401	9	9	21.030	21.028	36.251	25.458	33.877	41.914	25.497	226	0.6	0.05	0.0	9
4202	44	44	20.85	20.84	36.25 D	25.510	33.934	41.976	25.699					44
402	65	65	19.853	19.841	36.269	25.792	34.247	42.318	26.074	231	0.6	0.06	0.0	65
403	109	108	17.548	17.529	35.864	26.074	34.608	42.753	26.550	238	0.8	0.12	0.0	108
404	160	159	16.350	16.324	35.742	26.271	34.847	43.031	26.972	226	1.1	0.26	1.5	159
405	214	213	15.224	15.190	35.566	26.396	35.014	43.238	27.338	218	1.7	0.39	3.6	213
406	265	264	14.801	14.760	35.547	26.477	35.111	43.350	27.646	220	1.8	0.44	5.0	264
407	342	340	13.943	13.892	35.424	26.570	35.238	43.509	28.083	220	2.3	0.58	7.1	340
408	411	409	12.954	12.896	35.280	26.666	35.374	43.681	28.490	216	3.3	0.72	9.6	409
409	472	469	11.844	11.781	35.105	26.750	35.504	43.855	28.855	211	4.3	0.90	12.4	469
410	532	529	10.535	10.469	34.908	26.838	35.650	44.053	29.224	208	6.4	1.11	15.9	529
411	623	619	8.357	8.289	34.637	26.986	35.898	44.393	29.809	209	9.9	1.45	20.9	619
412	692	687	6.849	6.781	34.467	27.070	36.054	44.618	30.229	222	12.1	1.61	23.3	687
415	805	799	5.230	5.161	34.328	27.164	36.230	44.869	30.867	234	16.7	1.81	26.1	799
416	876	870	4.622	4.551	34.285	27.198	36.296	44.965	31.238	240	19.4	1.89	27.4	870
417	952	945	3.972	3.899	34.276	27.258	36.391	45.091	31.662	234	25.4	2.01	29.0	945
418	1027	1019	3.572	3.496	34.305	27.321	36.474	45.194	32.077	225	32.8	2.10	30.2	1019
419	1105	1096	3.279	3.199	34.345	27.380	36.549	45.282	32.502	215	39.4	2.15	31.1	1096
420	1179	1169	3.140	3.055	34.384	27.424	36.600	45.340	32.888	208	44.5	2.20	31.6	1169
421	1254	1243	3.005	2.916	34.434	27.477	36.659	45.406	33.287	201	49.4	2.21	32.0	1243
422	1330	1319	2.897	2.803	34.480	27.523	36.711	45.462	33.683	194	54.4	2.23	32.3	1319
423	1405	1393	2.846	2.746	34.535	27.572	36.762	45.516	34.075	193	56.9	2.20	32.0	1393
101	1505	1491	2.807	2.699	34.603	27.630	36.822	45.577	34.589	193	58.5	2.13	31.6	1491
424	1506	1492	2.816	2.708	34.610	27.635	36.826	45.580	34.598	193	58.5	2.13	30.9	1492
102	1649	1633	2.815	2.694	34.678	27.691	36.881	45.635	35.300	198	56.4	2.04	30.1	1633
103	1799	1781	2.852	2.717	34.744	27.741	36.929	45.681	36.026	208	52.9	1.90	28.2	1781
104	1957	1937	2.905	2.755	34.810	27.791	36.975	45.724	36.783	222	46.7	1.74	26.0	1937
105	2107	2084	2.949	2.784	34.851	27.821	37.003	45.750	37.482	233	41.0	1.57	24.0	2084
106	2258	2233	2.952	2.773	34.885	27.849	37.032	45.778	38.184	242	36.3	1.50	22.8	2233
107	2409	2381	3.017	2.822	34.918	27.871	37.050	45.794	38.873	251	30.7	1.40	21.3	2381
108	2560	2530	2.936	2.727	34.917	27.878	37.063	45.812	39.555	252	31.3	1.40	21.1	2530
109	2714	2681	2.845	2.623	34.914	27.885	37.075	45.830	40.249	253	32.8	1.40	21.1	2681

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 59 LEG: V POSITION: 30° 12′ S 39° 18′ W DATE: 20 NOV 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
110	2866	2830	2.793	2.556	34.916	27.892	37.086	45.844	40.929	254	33.4	1.38	21.0	2830
111	3014	2975	2.694	2.444	34.911	27.898	37.098	45.861	41.593	255	35.0	1.39	21.0	2975
112	3166	3124	2.573	2.310	34.904	27.903	37.111	45.881	42.275	255	37.8	1.41	21.2	3124
115	3330	3285	2.419	2.142	34.897	27.911	37.128	45.907	43.013	254	42.1	1.43	21.6	3285
116	3478	3429	2.193	1.906	34.870	27.908	37.139	45.930	43.676	252	49.7	1.52	22.7	3429
117	3627	3575	1.867	1.573	34.837	27.906	37.156	45.966	44.354	246	62.1	1.66	24.3	3575
118	3880	3822	1.485	1.175	34.799	27.903	37.176	46.008	45.489	239	78.8	1.82	26.7	3822
119	4031	3970	0.984	0.673	34.734	27.883	37.186	46.045	46.179	225	103.0	2.07	30.1	3970
120	4182	4117	0.478	0.168	34.691	27.877	37.210	46.097	46.885	222	119.0	2.22	32.0	4117
121	4332	4263	0.255	-0.063	34.678	27.878	37.225	46.126	47.562	223	123.8	2.26	32.5	4263
715	4416	4345	0.225	-0.101	34.679	27.881	37.230	46.133	47.932					4345
716	4468	4395	0.201	-0.130	34.673	27.877	37.228	46.133	48.156					4395
717	4520	4446	0.179	-0.157	34.672	27.878	37.230	46.136	48.383					4446
718	4575	4500	0.178	-0.164	34.674	27.880	37.233	46.139	48.622					4500
122	4587	4511	0.175	-0.168	34.670	27.877	37.230	46.137	48.671	225	126.4	2.28	32.8	4511
719	4627	4550	0.179	-0.169	34.671	27.878	37.231	46.138	48.844					4550
720	4678	4600	0.181	-0.172	34.673	27.879	37.233	46.140	49.064					4600
721	4727	4648	0.182	-0.177	34.675	27.881	37.235	46.142	49.276					4648
123	4741	4661	0.185	-0.176	34.671	27.878	37.232	46.139	49.332	226	126.4	2.27	32.8	4661
722	4783	4702	0.191	-0.175	34.674	27.880	37.234	46.141	49.514					4702
723	4833	4751	0.197	-0.174	34.675	27.881	37.235	46.142	49.728					4751
724	4885	4801	0.199	-0.178	34.676	27.882	37.236	46.143	49.951					4801
124	4890	4806	0.198	-0.180 ✗	34.673	27.880	37.234	46.141	49.970	226	125.3	2.27	32.5	4806

BOTTOM DEPTH FOR CAST 7 IS 4827 — CAST 1 IS 4826

STATION: 60 LEG: V POSITION: 32° 58′ S 42° 30′ W DATE: 22 NOV 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
401	3	3	18.497	18.496	35.990	25.929	34.429	42.543	25.942	238	1.0	0.09	0.0	3
402	23	23	18.406	18.402	35.985	25.949	34.452	42.569	26.049	239	0.9	0.09	0.0	23
403	66	66	17.588	17.576	36.005	26.170	34.700	42.842	26.458	244	0.9	0.10	0.0	66
404	96	95	16.868	16.852	35.912	26.275	34.831	42.997	26.696	235	1.1	0.18	0.9	95
405	118	117	16.663	16.643	35.890	26.308	34.871	43.044	26.825	231	1.2	0.21	1.3	117
406	127	126	16.658	16.637	35.89 D	26.313	34.876	43.049	26.869	226	1.4	0.25	2.1	126
407	168	167	15.830	15.803	35.716	26.372	34.966	43.168	27.110	217	1.7	0.38	4.1	167
408	195	194	15.480	15.449	35.671	26.418	35.026	43.240	27.276	215	1.7	0.43	4.7	194
409	246	245	15.010	14.972	35.631	26.495	35.120	43.351	27.579	219	1.8	0.47	5.4	245
410	284	282	14.593	14.549	35.564	26.537	35.178	43.424	27.789	217	2.1	0.54	6.4	282
411	356	354	13.541	13.489	35.379	26.621	35.304	43.589	28.197	216	2.8	0.66	8.5	354
412	437	434	12.187	12.127	35.147	26.716	35.456	43.793	28.662	211	4.1	0.87	11.7	434
415	538	534	9.436	9.373	34.755	26.906	35.767	44.217	29.333	213	7.3	1.25	17.9	534
416	634	630	7.090	7.027	34.467	27.036	36.009	44.561	29.929	225	10.9	1.59	22.9	630
417	736	731	5.350	5.287	34.302	27.128	36.189	44.822	30.515	245	13.5	1.74	25.2	731
418	836	830	4.603	4.536	34.263	27.182	36.281	44.951	31.040	247	17.6	1.85	26.8	830
419	937	930	4.026	3.954	34.272	27.250	36.379	45.077	31.583	240	23.3	1.99	28.6	930
420	1047	1039	3.497	3.420	34.271	27.301	36.459	45.183	32.152	232	30.5	2.09	30.2	1039
421	1158	1148	3.059	2.977	34.309	27.372	36.552	45.298	32.743	222	38.6	2.18	31.6	1148
422	1275	1264	2.940	2.850	34.378	27.438	36.625	45.375	33.347	207	46.9	2.23	32.3	1264
423	1389	1376	2.813	2.715	34.431	27.492	36.685	45.442	33.924	199	52.2	2.26	32.7	1376
424	1500	1486	2.793	2.686	34.518	27.564	36.757	45.514	34.501	191	56.8	2.24	32.5	1486
102	1594	1579	2.823	2.707	34.574	27.607	36.798	45.553	34.968	189	58.5	2.19	32.0	1579
103	1743	1726	2.851	2.722	34.655	27.670	36.859	45.612	35.703	194	56.8	2.08	30.5	1726
104	1895	1875	3.000	2.855	34.743	27.729	36.909	45.654	36.438	204	51.3	1.91	28.2	1875
105	2096	2073	3.141	2.974	34.833	27.790	36.962	45.700	37.391	224	41.7	1.63	24.8	2073
106	2299	2273	3.206	3.018	34.890	27.831	37.000	45.735	38.333	239	34.0	1.50	22.6	2273
107	2496	2466	3.210	3.002	34.919	27.856	37.025	45.760	39.230	249	29.4	1.41	21.3	2466
108	2702	2669	3.105	2.878	34.930	27.876	37.052	45.792	40.167	255	27.7	1.35	20.6	2669
109	2907	2870	2.928	2.684	34.918	27.883	37.070	45.821	41.090	253	31.9	1.39	21.0	2870
110	3110	3069	2.765	2.503	34.906	27.889	37.086	45.846	41.999	252	36.0	1.41	21.3	3069
111	3259	3215	2.609	2.335	34.898	27.896	37.103	45.872	42.671	252	39.6	1.44	21.7	3215
112	3360	3313	2.466	2.184	34.883	27.897	37.112	45.888	43.125	249	44.3	1.49	22.3	3313
115	3471	3422	2.080	1.797	34.829	27.883	37.121	45.919	43.632	236	63.0	1.71	25.0	3422

STATION: 60 LEG: V POSITION: 32° 58′ S 42° 30′ W DATE: 22 NOV 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
815	3576	3525	1.789	1.503	34.814	27.893	37.147	45.961	44.127	233	73.5	1.78	26.0	3525
116	3682	3628	1.394	1.108	34.769	27.884	37.161	45.996	44.620	227	89.0	1.94	28.2	3628
117	3784	3728	1.091	0.803	34.739	27.879	37.174	46.026	45.091	222	98.8	2.06	29.7	3728
118	3885	3826	0.752	0.464	34.711	27.877	37.192	46.063	45.564	222	109.4	2.16	30.8	3826
119	3991	3930	0.458	0.169	34.694	27.879	37.212	46.100	46.060	222	115.7	2.21	31.7	3930
120	4082	4019	0.303	0.009	34.678	27.874	37.217	46.114	46.469	222	120.5	2.26	32.5	4019
121	4194	4128	0.177	-0.124	34.672	27.876	37.227	46.131	46.972	225	122.7	2.27	32.4	4128
816	4268	4200	0.121	-0.186	34.669	27.877	37.231	46.139	47.300	226	126.4	2.30	32.4	4200
122	4294	4225	0.126	-0.184	34.670	27.878	37.232	46.139	47.413	226	124.1	2.28	32.6	4225
817	4310	4241	0.109	-0.202	34.667	27.876	37.231	46.140	47.483					4241
818	4340	4270	0.101	-0.213	34.669D	27.878	37.234	46.143	47.616					4270
819	4370	4299	0.098	-0.219	34.669	27.878	37.235	46.144	47.746					4299
820	4397	4326	0.095	-0.225	34.666	27.876	37.233	46.143	47.861		127.3	2.31	32.4	4326
123	4398	4327	0.097	-0.223	34.668	27.878	37.234	46.144	47.867	226	125.5	2.28	32.7	4327
821	4421	4349	0.098	-0.224	34.669	27.879	37.235	46.145	47.967					4349
822	4442	4369	0.099	-0.226	34.669	27.879	37.235	46.145	48.058					4369
823	4464	4391	0.102	-0.225	34.666	27.876	37.233	46.143	48.150					4391
824	4481	4407	0.105	-0.224	34.667D	27.877	37.234	46.143	48.224		126.6	2.30	32.4	4407
124	4490	4416	0.107	-0.223	34.667	27.877	37.234	46.143	48.262	225	125.5	2.29	32.6	4416

BOTTOM DEPTH FOR CAST 1 IS 4425 — CAST 8 IS 4416

STATION: 61 LEG: V POSITION: 36° 0′ S 45° 0′ W DATE: 24 NOV 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
501	6	6			35.825					241	1.2	0.13	0.0	6
502	52	52	17.389	17.380	35.931	26.162	34.700	42.848	26.389	240	1.2	0.13	0.0	52
503	87	87	16.111	16.097	35.783	26.355	34.938	43.130	26.737	226	1.5	0.31	2.8	87
504	150	150	15.101	15.078	35.641	26.479	35.100	43.327	27.140	224	1.8	0.43	4.7	150
505	190	190	14.926	14.896	35.628	26.509	35.137	43.371	27.347	229	1.8	0.40	4.1	190
506	226	225	14.897	14.862	35.661	26.542	35.171	43.405	27.539	235	1.8	0.40	4.2	225
507	271	270	14.797	14.755	35.646	26.555	35.188	43.425	27.749	235	1.8	0.41	4.5	270
508	320	319	14.324	14.275	35.540	26.578	35.230	43.485	27.990	228	2.1	0.52	6.1	319
509	367	365	13.362	13.309	35.326	26.617	35.308	43.600	28.244	215	3.1	0.72	9.1	365
510	430	428	12.103	12.045	35.140	26.726	35.470	43.810	28.642	224	3.6	0.83	10.7	428
511	490	487	12.178	12.111	35.242	26.792	35.532	43.868	28.973	244	3.1	0.72	9.1	487
512	540	537	11.609	11.537	35.134	26.819	35.583	43.942	29.227	244	3.4	0.80	10.3	537
515	602	598	9.290	9.220	34.720	26.904	35.772	44.228	29.619	240	5.7	1.15	15.7	598
516	653	649	7.071	7.006	34.433	27.013	35.987	44.541	29.991	242	8.8	1.49	21.0	649
517	699	695	6.264	6.199	34.336	27.043	36.058	44.649	30.245	247	10.7	1.65	23.0	695
518	753	748	5.237	5.173	34.246	27.097	36.164	44.804	30.564	263	11.0	1.68	23.7	748
519	800	795	4.953	4.886	34.249	27.132	36.214	44.867	30.819	259	13.2	1.73	24.7	795
520	855	849	4.715	4.645	34.254	27.163	36.257	44.921	31.106	254	15.6	1.80	25.7	849
521	903	897	4.382	4.310	34.232	27.181	36.293	44.974	31.351	256	17.1	1.85	26.4	897
522	1006	998	3.852	3.776	34.224	27.229	36.369	45.076	31.883	251	22.3	1.94	28.0	998
523	1157	1148	3.436	3.351	34.265	27.303	36.464	45.192	32.658	233	31.3	2.09	30.1	1148
524	1321	1310	2.910	2.816	34.325	27.398	36.588	45.341	33.519	216	43.2	2.22	31.9	1310
101	1401	1389	2.773	2.674	34.364	27.442	36.638	45.398	33.931	208	48.6	2.22	32.7	1389
102	1550	1536	2.668	2.558	34.457	27.526	36.727	45.492	34.696	194	57.4	2.31	33.3	1536
103	1728	1711	2.761	2.634	34.572	27.611	36.806	45.565	35.582	187	61.0	2.22	32.3	1711
104	1890	1871	2.829	2.687	34.655	27.673	36.864	45.619	36.370	189	60.4	2.13	31.1	1871
105	2053	2031	2.874	2.716	34.728	27.729	36.917	45.669	37.154	198	58.1	1.91	28.8	2031
106	2213	2188	2.896	2.723	34.776	27.766	36.953	45.705	37.905	207	56.0	1.89	27.8	2188
107	2376	2349	3.013	2.821	34.844	27.812	36.993	45.738	38.669	224	45.8	1.69	25.0	2349
108	2537	2507	2.936	2.730	34.858	27.831	37.017	45.766	39.407	229	45.1	1.64	24.2	2507
109	2701	2668	2.807	2.587	34.866	27.850	37.043	45.799	40.160	234	46.1	1.61	23.8	2668
110	2864	2827	2.755	2.519	34.884	27.870	37.066	45.826	40.902	241	43.0	1.52	22.8	2827
111	3023	2983	2.652	2.402	34.886	27.881	37.084	45.850	41.620	245	43.3	1.50	22.4	2983
112	3211	3167	2.114	1.858	34.812	27.865	37.099	45.894	42.475	222	70.6	1.80	26.3	3167
115	3413	3365	1.694	1.428	34.774	27.866	37.125	45.943	43.399	218	87.0	1.95	28.1	3365
815	3550	3499	1.479	1.204	34.760	27.870	37.142	45.972	44.022					3499
116	3600	3548	1.363	1.087	34.748	27.868	37.147	45.984	44.250	217	96.5	2.05	29.6	3548
117	3787	3730	1.042	0.756	34.722	27.868	37.167	46.022	45.099	215	106.6	2.16	30.8	3730

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 61 LEG: V POSITION: 36° 0′ S 45° 0′ W DATE: 24 NOV 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
118	3975	3914	0.697	0.402	34.698	27.870	37.189	46.064	45.955	217	116.0	2.23	31.7	3914
119	4164	4098	0.448	0.141	34.683	27.872	37.206	46.096	46.806	220	122.1	2.27	32.3	4098
120	4351	4280	0.302	-0.020	34.676	27.874	37.219	46.117	47.635	222	124.4	2.28	32.4	4280
121	4541	4465	0.206	-0.133	34.671	27.876	37.227	46.132	48.468	225	125.3	2.28	32.4	4465
122	4730	4649	0.168	-0.191	34.668	27.876	37.231	46.139	49.286	226	126.4	2.29	32.5	4649
816	4788	4705	0.154	-0.211	34.667	27.876	37.232	46.141	49.537					4705
817	4838	4754	0.152	-0.218	34.665	27.875	37.231	46.141	49.750					4754
818	4891	4805	0.149	-0.227	34.667	27.877	37.234	46.144	49.979					4805
123	4913	4827	0.152	-0.227	34.666	27.876	37.233	46.143	50.072	226	127.3	2.30	32.6	4827
819	4915	4829	0.153	-0.226	34.665	27.876	37.232	46.142	50.079					4829
820	4932	4845	0.153	-0.228	34.666	27.876	37.233	46.143	50.153					4845
821	4953	4866	0.153	-0.230	34.667D	27.877	37.234	46.145	50.243					4866
822	4973	4885	0.152	-0.234	34.668D	27.878	37.236	46.146	50.330					4885
823	4994	4905	0.154	-0.234	34.668D	27.878	37.236	46.146	50.419					4905
124	5015	4926	0.157	-0.234	34.666D	27.877	37.234	46.144	50.507	226	127.4	2.30	32.6	4926
824	5017	4928	0.157	-0.234	34.668D	27.878	37.236	46.146	50.517					4928

BOTTOM DEPTH FOR CAST 1 IS 4943 — CAST 8 IS 4934

STATION: 63 LEG: VI POSITION: 37° 14′ S 52° 0′ W DATE: 4 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	1	1	18.71	18.71	33.46 D	23.945	32.470	40.608	23.950					1
1202	10	10	18.71	18.71	33.46 D	23.946	32.471	40.608	23.989					10
1203	20	20	18.18	18.18	33.98 D	24.475	33.011	41.159	24.562					20
1204	30	30	16.79	16.78	34.54 D	25.241	33.816	42.001	25.372					30
1205	50	50	12.38	12.37	34.28 D	25.996	34.739	43.078	26.220					50
101	67	67	10.12	10.11	34.083	26.258	35.097	43.525	26.561	237	3.7	1.13	13.8	67
1206	75	75	12.68	12.67	34.77 D	26.317	35.041	43.363	26.652					75
1207	100	99	13.18	13.17	34.87 D	26.294	34.997	43.300	26.739					99
1208	125	124	11.25	11.23	34.79 D	26.608	35.389	43.765	27.170					124
1209	150	149	11.13	11.11	34.856D	26.682	35.468	43.847	27.356					149
102	191	190	10.11	10.09	34.854	26.863	35.692	44.111	27.725	210	6.3	1.18	16.7	190
103	244	243	8.60	8.57	34.659	26.960	35.858	44.341	28.069	213	9.7	1.35	20.5	243
104	284	282	7.50	7.47	34.534	27.027	35.977	44.509	28.325	217	11.8	1.53	23.3	282
105	471	468	4.95	4.91	34.282	27.156	36.235	44.887	29.335	248	17.8	1.64	26.1	468
106	682	677	4.15	4.10	34.290	27.249	36.371	45.061	30.411	228	26.6	1.99	30.0	677
107	796	790	3.79	3.73	34.315	27.306	36.446	45.154	30.998	219	32.7	2.09	31.4	790
108	1057	1048	2.92	2.85	34.395	27.452	36.638	45.389	32.363	203	48.9	2.24	33.3	1048
109	1358	1345	2.86	2.76	34.558	27.589	36.777	45.530	33.877	190	57.8	2.20	32.8	1345
110	1514	1499	2.79	2.68	34.620	27.645	36.837	45.593	34.645	189	62.1	2.18	32.4	1499
111	1666	1649	2.79	2.67	34.677	27.692	36.884	45.639	35.380	191	63.6	2.08	31.5	1649
112	1920	1899	2.65	2.51	34.734	27.751	36.951	45.713	36.591	196	67.6	2.02	30.2	1899
115	2091	2067	2.85	2.69	34.806	27.793	36.982	45.734	37.389	215	54.3	1.79	27.1	2067
116	2348	2320	2.84	2.65	34.861	27.840	37.029	45.783	38.583	232	46.4	1.61	24.6	2320
117	2499	2468	2.62	2.42	34.840	27.843	37.045	45.810	39.272	226	54.6	1.70	25.8	2468
118	2706	2671	2.59	2.37	34.869	27.870	37.075	45.842	40.218	238	49.2	1.59	24.0	2671
119	3069	3027	1.86	1.62	34.786	27.862	37.109	45.917	41.869	216	81.4	1.93	28.6	3027
120	3579	3526	0.94	0.68	34.718	27.870	37.173	46.032	44.202	215	111.7	2.16	31.8	3526
121	3901	3840	0.34	0.06	34.682	27.875	37.214	46.108	45.678	221	124.1	2.25	33.1	3840
122	3908	3847	0.33	0.05	34.680	27.874	37.214	46.108	45.708	222	124.1	2.25	33.2	3847
123	3933	3871	0.29	0.01	34.678	27.874	37.217	46.113	45.822	222	125.1	2.26	33.2	3871
124	3935	3873	0.28	0.00	34.680	27.876	37.219	46.116	45.834	222	125.9	2.26	33.1	3873

BOTTOM DEPTH FOR CAST 1 IS 3908

STATION: 64 LEG: VI POSITION: 39° 5′ S 48° 33′ W DATE: 6 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
9201	3	3	14.22	14.22	34.37 D	25.691	34.361	42.633	25.705	268				3
901	12	12	14.107	14.105	34.374	25.716	34.390	42.666	25.769	268	1.4	0.49	3.7	12

STATION: 64 LEG: VI POSITION: 39° 5′ S 48° 33′ W DATE: 6 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
902	38	38	12.397	12.392	34.468	26.138	34.877	43.213	26.308	275	1.5	0.58	5.5	38
903	70	70	9.413	9.405	34.418	26.638	35.503	43.955	26.956	278	1.9	0.93	11.2	70
904	111	110	7.044	7.033	34.301	26.905	35.880	44.434	27.415	275	4.8	1.23	17.3	110
905	160	159	6.742	6.727	34.361	26.994	35.982	44.550	27.730	264	6.8	1.48	20.5	159
906	209	208	5.856	5.838	34.250	27.021	36.055	44.664	27.986	270	8.1	1.62	22.3	208
907	287	285	5.064	5.041	34.224	27.095	36.169	44.815	28.425	270	10.1	1.72	24.3	285
908	368	365	4.542	4.514	34.191	27.127	36.229	44.901	28.836	270	11.9	1.81	25.6	365
909	448	445	4.438	4.404	34.206	27.151	36.258	44.935	29.230	268	15.1	1.85	26.2	445
910	519	515	4.048	4.010	34.191	27.180	36.308	45.004	29.592	268	16.0	1.89	26.9	515
911	586	581	3.837	3.795	34.201	27.209	36.348	45.055	29.934	265	19.7	1.94	27.5	581
912	668	663	3.476	3.429	34.211	27.252	36.410	45.135	30.362	255	23.9		28.9	663
915	744	738	3.367	3.315	34.238	27.285	36.448	45.178	30.747	243	27.3	2.04	29.8	738
916	825	818	3.225	3.168	34.264	27.319	36.490	45.227	31.157	233	33.3	2.17	31.0	818
917	901	893	2.982	2.921	34.275	27.350	36.534	45.283	31.543	229	37.4	2.23	31.7	893
918	998	989	2.861	2.793	34.327	27.402	36.593	45.347	32.045	216	44.5	2.29	32.6	989
919	1107	1097	2.765	2.690	34.386	27.458	36.653	45.412	32.604	204	51.7	2.33	33.3	1097
920	1212	1201	2.657	2.575	34.417	27.492	36.694	45.458	33.123	200	55.1	2.35	33.4	1201
921	1310	1297	2.605	2.515	34.456	27.529	36.732	45.499	33.608	194	57.6	2.37	33.5	1297
922	1416	1402	2.554	2.456	34.514	27.580	36.786	45.554	34.144	191	64.5	2.36	33.9	1402
701	1496	1481	2.571	2.467	34.553	27.610	36.815	45.582	34.538	183	66.9	2.35	33.3	1481
923	1520	1504	2.595	2.488	34.563	27.616	36.820	45.586	34.652	184	68.4	2.35	33.1	1504
924	1629	1612	2.603	2.487	34.613	27.656	36.859	45.625	35.186	183	70.3	2.29	32.5	1612
702	1644	1627	2.584	2.467	34.619	27.663	36.866	45.633	35.261	183	68.8	2.28	32.6	1627
703	1849	1829	2.746	2.609	34.702	27.717	36.912	45.670	36.233	192	63.0	2.11	30.6	1829
704	2073	2049	2.953	2.792	34.791	27.772	36.955	45.703	37.282	210	52.7	1.89	27.4	2049
705	2175	2149	2.730	2.563	34.772	27.777	36.973	45.732	37.756	206	61.3	1.98	28.4	2149
706	2361	2332	2.810	2.624	34.828	27.816	37.008	45.763	38.619	220	52.9	1.81	25.9	2332
707	2533	2501	2.835	2.631	34.863	27.844	37.034	45.789	39.408	231	45.6	1.65	23.9	2501
708	2686	2651	2.752	2.535	34.868	27.856	37.052	45.811	40.103	235	46.3	1.65	23.9	2651
709	2869	2830	2.459	2.230	34.834	27.854	37.067	45.842	40.932	225	58.1	1.78	25.7	2830
710	2972	2931	2.403	2.164	34.837	27.861	37.078	45.857	41.397	229	58.2	1.76	25.5	2931
711	3127	3083	2.192	1.942	34.817	27.863	37.092	45.883	42.097	224	66.7	1.83	25.1	3083
712	3279	3232	1.939	1.680	34.794	27.864	37.108	45.913	42.787	221	77.3	1.92	26.5	3232
715	3493	3441	1.540	1.270	34.752	27.859	37.128	45.955	43.757	212	95.1	2.07	29.7	3441
716	3697	3640	1.191	0.910	34.725	27.861	37.151	45.997	44.684	210	106.0	2.17	31.3	3640
717	3996	3932	0.828	0.526	34.702	27.866	37.178	46.045	46.028	214	114.4	2.23	31.9	3932
718	4297	4225	0.508	0.185	34.687	27.873	37.205	46.092	47.375	219	121.1	2.26	32.2	4225
719	4550	4471	0.323	-0.021	34.675	27.874	37.218	46.116	48.490	225	122.7	2.29	32.7	4471
720	4745	4661	0.239	-0.124	34.672	27.876	37.227	46.131	49.341	225	125.6	2.29	32.7	4661
721	4985	4894	0.221	-0.169	34.670	27.877	37.230	46.137	50.370	226	123.6	2.30	32.7	4894
1115	5035	4943	0.211	-0.184	34.672	27.879	37.233	46.141	50.587	225	125.4	2.29	32.7	4943
722	5138	5043	0.202	-0.205	34.669	27.878	37.233	46.142	51.025	226	124.7	2.30	32.7	5043
1116	5174	5078	0.199	-0.212	34.669	27.878	37.234	46.143	51.179	227	124.2	2.30	32.6	5078
1117	5250	5151	0.198	-0.222	34.668	27.878	37.234	46.144	51.501	226	124.8	2.29	32.7	5151
723	5291	5191	0.195	-0.230	34.668	27.878	37.235	46.145	51.676	226	124.9	2.30	32.7	5191
1118	5304	5204	0.195	-0.231	34.668	27.878	37.235	46.146	51.731	227	124.8	2.30	32.8	5204
1119	5344	5242	0.193	-0.238	34.667	27.878	37.235	46.146	51.900	228	125.2	2.29	32.7	5242
1120	5376	5273	0.191	-0.244	34.668	27.879	37.237	46.148	52.037	227	125.7	2.29	32.9	5273
1121	5397	5294	0.192	-0.245	34.667	27.878	37.236	46.147	52.125	227	125.9	2.30	32.7	5294
1122	5418	5314	0.193	-0.247	34.666	27.877	37.235	46.147	52.213	227	126.7	2.29	32.8	5314
724	5419	5315	0.196	-0.244	34.668	27.879	37.237	46.148	52.218	226	126.1	2.31	32.7	5315
1123	5430	5326	0.195	-0.246	34.667	27.878	37.236	46.147	52.264	226	126.9	2.29	32.9	5326
1124	5447	5342	0.197	-0.247	34.667	27.878	37.236	46.147	52.336	226	125.8	2.29	32.6	5342

BOTTOM DEPTH FOR CAST 7 IS 5353 — CAST 11 IS 5350

STATION: 66 LEG: VI POSITION: 41° 32′ S 50° 57′ W DATE: 8 DEC 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	3	3	17.69	17.69	35.77 D	25.959	34.488	42.629	25.972					3
401	15	15	17.524	17.521	35.776	26.009	34.543	42.690	26.074	241	0.7	0.15	0.0	15
402	40	40	17.450	17.443	35.770	26.023	34.561	42.710	26.198	241	0.6	0.15	0.0	40
403	61	61	17.462	17.451	35.879	26.105	34.640	42.788	26.371	238	0.6	0.16	0.2	61

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 66 LEG: VI POSITION: 41° 32′ S 50° 57′ W DATE: 8 DEC 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
404	85	84	17.372	17.357	35.880	26.128	34.667	42.818	26.500	232	0.7	0.18	0.7	84
405	136	135	16.299	16.277	35.751	26.288	34.866	43.052	26.885	220	1.7	0.36	3.3	135
406	190	189	14.918	14.889	35.558	26.457	35.087	43.321	27.295	220	2.1	0.49	5.5	189
407	235	233	14.456	14.420	35.523	26.533	35.180	43.431	27.571	225	2.1	0.51	6.1	233
408	285	283	14.459	14.416	35.581	26.579	35.225	43.475	27.837	234	2.2	0.47	5.4	283
409	334	332	14.110	14.060	35.505	26.597	35.258	43.521	28.073	233	2.4	0.53	6.3	332
410	384	381	12.854	12.800	35.264	26.673	35.385	43.696	28.379	220	3.4	0.74	9.9	381
411	428	425	11.736	11.679	35.068	26.740	35.500	43.855	28.651	221	4.4	0.89	12.4	425
412	509	505	9.025	8.967	34.623	26.869	35.750	44.218	29.171	210	5.6	1.17	16.5	505
415	594	590	7.223	7.164	34.437	26.994	35.960	44.507	29.703	241	8.5	1.44	21.1	590
416	675	670	5.515	5.456	34.259	27.074	36.127	44.753	30.180	262	10.5	1.61	23.8	670
417	722	716	5.143	5.082	34.250	27.111	36.182	44.826	30.438	263	11.4	1.65	24.5	716
418	854	847	4.436	4.368	34.222	27.167	36.276	44.954	31.112	264	15.2	1.77	26.2	847
419	985	976	3.794	3.720	34.206	27.221	36.363	45.073	31.780	261	19.8	1.87	27.8	976
420	985	976	3.794	3.720	34.207	27.221	36.364	45.074	31.781	262	19.8	1.87	27.9	976
421	1132	1122	3.367	3.284	34.263	27.307	36.472	45.203	32.550	235	30.2	2.07	30.7	1122
422	1284	1272	3.099	3.006	34.323	27.380	36.559	45.303	33.325	216	38.8	2.17	32.3	1272
423	1466	1451	2.826	2.721	34.402	27.468	36.661	45.418	34.251	200	49.2	2.28	33.2	1451
101	1506	1491	2.779	2.671	34.440	27.503	36.698	45.457	34.469	196	56.4	2.31	33.4	1491
424	1646	1629	2.871	2.750	34.530	27.568	36.757	45.511	35.164	190		2.22	32.7	1629
102	1709	1691	2.762	2.637	34.545	27.589	36.785	45.544	35.475	190	62.1	2.29	33.1	1691
103	1912	1891	2.837	2.693	34.649	27.668	36.858	45.613	36.463	189	61.5	2.17	31.6	1891
104	2114	2089	2.812	2.650	34.710	27.720	36.912	45.668	37.423	193	63.1	2.10	30.4	2089
105	2317	2289	2.661	2.482	34.736	27.755	36.956	45.720	38.373	197	67.9	2.07	30.0	2289
106	2520	2488	2.578	2.381	34.773	27.793	36.999	45.767	39.319	205	66.5	1.97	28.7	2488
107	2724	2688	2.591	2.373	34.806	27.820	37.025	45.794	40.248	215	63.4	1.86	27.4	2688
108	2929	2889	2.476	2.240	34.811	27.835	37.048	45.823	41.176	217	65.3	1.85	27.2	2889
109	3134	3090	2.243	1.992	34.796	27.842	37.069	45.858	42.104	213	72.9	1.91	28.0	3090
110	3339	3290	1.928	1.663	34.767	27.844	37.089	45.896	43.031	207	87.3	2.03	29.6	3290
111	3545	3492	1.698	1.418	34.751	27.848	37.108	45.927	43.958	207	95.3	2.09	30.3	3492
112	3752	3694	1.432	1.138	34.734	27.854	37.130	45.964	44.891	206	105.7	2.17	31.2	3694
115	3965	3902	1.264	0.952	34.732	27.864	37.151	45.995	45.844	212	105.7	2.12	30.9	3902
116	4168	4099	0.980	0.655	34.710	27.865	37.169	46.030	46.755	212	114.9	2.19	31.9	4099
117	4373	4299	0.669	0.332	34.696	27.872	37.195	46.074	47.683	218	121.1	2.24	32.4	4299
118	4583	4503	0.453	0.100	34.685	27.875	37.213	46.104	48.617	220	126.4	2.26	32.4	4503
119	4797	4711	0.321	-0.051	34.676	27.876	37.222	46.122	49.552	223	126.0	2.27	32.7	4711
120	5010	4918	0.292	-0.103	34.676	27.878	37.228	46.131	50.468	225	127.2	2.27	32.7	4918
121	5239	5140	0.249	-0.172	34.671	27.878	37.231	46.138	51.447	226	126.4	2.27	32.7	5140
122	5440	5335	0.258	-0.187	34.671	27.879	37.233	46.141	52.297	226	128.2	2.28	33.0	5335
615	5600	5490	0.273	-0.193	34.671	27.879	37.233	46.142	52.970	225	127.3	2.25	32.6	5490
123	5641	5530	0.262	-0.208	34.671	27.880	37.235	46.144	53.145	227	128.5	2.28	32.8	5530
616	5681	5568	0.279	-0.197	34.669	27.877	37.232	46.141	53.309	226	128.9	2.26	32.7	5568
617	5747	5632	0.282	-0.202	34.671	27.879	37.235	46.143	53.587	227	128.3	2.26	32.7	5632
618	5789	5673	0.285	-0.205	34.670	27.879	37.234	46.143	53.762	227	127.7	2.27	32.7	5673
619	5823	5706	0.287	-0.207	34.670	27.879	37.234	46.143	53.904	228	128.3	2.27	32.8	5706
124	5839	5721	0.278	-0.218	34.671	27.880	37.236	46.146	53.974	226	126.1	2.27	32.5	5721
620	5854	5736	0.290	-0.208	34.670	27.879	37.234	46.143	54.034	226	128.1	2.27	32.6	5736
621	5869	5750	0.290	-0.210	34.670	27.879	37.234	46.144	54.097	227	128.4	2.26	32.6	5750
622	5883	5764	0.291	-0.211	34.669	27.878	37.234	46.143	54.154	226	128.6	2.26	32.6	5764
623	5897	5777	0.290	-0.214	34.670	27.879	37.235	46.144	54.214	226	128.2	2.28	32.5	5777
624	5907	5787	0.290	-0.215	34.670	27.879	37.235	46.144	54.256	226	128.8	2.28	32.7	5787

BOTTOM DEPTH CAST 1 IS 5742 — CAST 6 IS 5791

STATION: 67 LEG: VI POSITION: 44° 58′ S 51° 3′ W DATE: 9 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	3	3	12.28	12.28	34.59 D	26.254	34.996	43.335	26.268					3
401	10	10	11.982	11.981	34.561	26.290	35.044	43.394	26.335	298	0.4	0.55	5.0	10
402	42	42	9.950	9.945	34.593	26.684	35.523	43.951	26.874	320	0.4	0.60	6.3	42
403	62	62	9.477	9.470	34.625	26.789	35.648	44.095	27.070	286	0.7	0.83	9.3	62
404	102	101	9.263	9.252	34.631	26.829	35.698	44.153	27.292	283	2.5	0.89	10.5	101
405	152	151	8.614	8.598	34.631	26.934	35.831	44.314	27.626	274	3.9	1.01	13.6	151

STATION: 67 LEG: VI POSITION: 44° 58′ S 51° 3′ W DATE: 9 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
406	200	199	7.865	7.845	34.579	27.008	35.940	44.456	27.921	276	4.5	1.11	15.1	199
407	253	251	5.823	5.801	34.311	27.074	36.108	44.718	28.241	263	8.1	1.53	21.8	251
408	302	300	5.052	5.028	34.223	27.096	36.171	44.818	28.495	274	10.1	1.68	24.1	300
409	356	353	4.529	4.502	34.185	27.124	36.226	44.899	28.777	272	11.5	1.75	25.0	353
410	408	405	4.284	4.254	34.183	27.148	36.264	44.948	29.045	274	13.1	1.76	25.3	405
411	449	445	4.133	4.100	34.178	27.160	36.284	44.976	29.248	270	14.6	1.81	26.2	445
412	449	445	4.133	4.100	34.178	27.160	36.284	44.976	29.248	273	14.8	1.82	26.2	445
415	564	559	3.686	3.646	34.184	27.210	36.357	45.071	29.836	264	19.6	1.89	27.4	559
416	664	658	3.404	3.358	34.194	27.246	36.408	45.136	30.338	254	24.0	2.00	28.7	658
417	767	760	3.148	3.096	34.229	27.297	36.473	45.214	30.870	242	30.8	2.08	30.1	760
418	865	857	2.966	2.908	34.271	27.347	36.533	45.282	31.376	228	37.4	2.17	31.4	857
419	963	954	2.865	2.800	34.311	27.389	36.579	45.334	31.871	216	42.9	2.23	32.3	954
420	1064	1054	2.614	2.543	34.337	27.431	36.635	45.402	32.384	213	48.3	2.28	32.9	1054
421	1138	1127	2.684	2.607	34.390	27.468	36.668	45.431	32.759	201	53.8	2.30	33.1	1127
422	1330	1316	2.573	2.482	34.481	27.551	36.756	45.524	33.723	188	63.2	2.33	33.6	1316
423	1453	1438	2.615	2.514	34.545	27.600	36.802	45.567	34.330	184	65.8	2.29	33.1	1438
101	1515	1499	2.572	2.466	34.565	27.620	36.824	45.592	34.634	183	69.5	2.32	33.4	1499
424	1607	1589	2.712	2.596	34.619	27.652	36.848	45.608	35.077	185	65.5	2.21	32.0	1589
102	1761	1741	2.548	2.421	34.642	27.685	36.891	45.659	35.814	183	74.2	2.26	32.5	1741
103	1982	1959	2.548	2.402	34.699	27.732	36.938	45.707	36.857	189	74.0	2.13	31.2	1959
104	2220	2192	2.752	2.580	34.788	27.788	36.983	45.741	37.967	208	61.5	1.92	27.9	2192
105	2423	2392	2.761	2.570	34.825	27.819	37.013	45.771	38.901	220	56.6	1.80	26.1	2392
106	2608	2573	2.599	2.393	34.830	27.837	37.042	45.809	39.751	222	58.5	1.77	25.9	2573
107	2796	2758	2.480	2.257	34.829	27.848	37.059	45.833	40.602	226	61.3	1.76	25.9	2758
108	3023	2980	2.193	1.954	34.802	27.850	37.079	45.869	41.627	217	72.7	1.88	27.3	2980
109	3238	3190	1.919	1.665	34.779	27.853	37.099	45.904	42.599	213	83.9	1.97	28.5	3190
110	3496	3442	1.593	1.321	34.751	27.855	37.120	45.945	43.760	209	97.9	2.08	30.1	3442
111	3656	3599	1.377	1.094	34.729	27.853	37.131	45.968	44.478	211	106.8	2.16	31.2	3599
112	3656	3599	1.377	1.094	34.730	27.853	37.132	45.969	44.479	207	107.5	2.16	31.1	3599
115	3902	3838	1.161	0.859	34.717	27.858	37.150	46.000	45.576	207	115.6	2.20	31.6	3838
116	4101	4032	0.938	0.622	34.706	27.863	37.170	46.032	46.469	212	117.5	2.23	31.8	4032
117	4293	4219	0.749	0.418	34.696	27.867	37.186	46.059	47.324	215	120.4	2.24	32.1	4219
118	4500	4421	0.577	0.229	34.687	27.870	37.200	46.084	48.240	218	123.6	2.26	32.3	4421
119	4715	4630	0.416	0.050	34.676	27.871	37.211	46.106	49.184	221	126.2	2.28	32.5	4630
120	4927	4836	0.324	-0.063	34.673	27.874	37.221	46.122	50.106	224	128.4	2.29	32.6	4836
121	5145	5047	0.267	-0.143	34.669	27.875	37.227	46.132	51.043	225	128.0	2.31	32.6	5047
122	5404	5298	0.267	-0.174	34.667	27.875	37.228	46.135	52.140	226	128.4	2.29	32.6	5298
715	5634	5521	0.253	-0.216	34.671	27.880	37.236	46.145	53.117	226	128.6	2.31	32.9	5521
716	5709	5593	0.254	-0.224	34.667	27.877	37.234	46.144	53.430	226	128.6	2.32	33.2	5593
123	5747	5630	0.255	-0.228	34.665	27.876	37.232	46.143	53.588	227	129.4	2.30	32.8	5630
717	5779	5661	0.253	-0.234	34.665	27.876	37.233	46.144	53.723	226	129.5	2.32	33.1	5661
718	5815	5696	0.257	-0.235	34.668	27.878	37.236	46.146	53.875	226	128.8	2.31	33.2	5696
719	5848	5728	0.262	-0.234	34.667	27.878	37.235	46.145	54.012	226	129.1	2.32	33.2	5728
720	5880	5759	0.266	-0.235	34.668	27.878	37.236	46.146	54.146	226	127.5	2.31	33.3	5759
721	5896	5774	0.269	-0.234	34.667	27.877	37.235	46.145	54.212	226	128.0	2.32	33.2	5774
722	5915	5793	0.270	-0.235	34.666	27.877	37.234	46.145	54.290	226	127.8	2.32	33.2	5793
124	5921	5798	0.265	-0.241	34.666	27.877	37.235	46.146	54.316	227	129.8	2.31	32.8	5798
723	5927	5804	0.272	-0.235	34.669	27.879	37.236	46.147	54.342	226	127.3	2.32	33.2	5804
724	5939	5816	0.273	-0.235	34.667	27.878	37.235	46.145	54.391	226	126.5	2.31	33.1	5816

BOTTOM DEPTH FOR CAST 7 IS 5824 — CAST 1 IS 5813

STATION: 68 LEG: VI POSITION: 48° 39′ S 45° 59′ W DATE: 13 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	1	1	9.08	9.08	34.26 D	26.567	35.449	43.917	26.572					1
501	10	10	9.078	9.077	34.260	26.568	35.449	43.918	26.614	331	0.2	0.73	10.4	10
502	40	40	6.455	6.451	34.222	26.921	35.925	44.506	27.106	311	2.6	1.22	16.1	40
5202	50	50	5.98	5.98	34.21 D	26.968	35.996	44.599	27.200					50
5203	75	74	5.16	5.15	34.20 D	27.059	36.128	44.769	27.408					74
503	90	89	4.934	4.927	34.178	27.072	36.152	44.805	27.490	287	9.2	1.58	22.1	89
504	140	139	4.289	4.279	34.169	27.135	36.249	44.932	27.788	284	11.7	1.67	23.8	139
505	190	189	3.935	3.922	34.162	27.166	36.298	44.999	28.053	286	12.7	1.70	24.2	189

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 68 LEG: VI POSITION: 48° 39′ S 45° 59′ W DATE: 13 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
506	240	238	3.647	3.631	34.161	27.193	36.342	45.057	28.315	283	15.4	1.77	25.1	238
507	290	288	3.404	3.385	34.170	27.224	36.385	45.112	28.581	281	18.9	1.85	26.5	288
508	389	386	3.125	3.100	34.199	27.273	36.449	45.190	29.094	258	25.2	1.96	28.2	386
509	490	486	2.917	2.886	34.243	27.327	36.514	45.265	29.620	236	33.6	2.09	30.1	486
510	590	585	2.693	2.656	34.290	27.384	36.583	45.345	30.146	223	41.3	2.17	31.3	585
511	637	631	2.689	2.649	34.313	27.403	36.602	45.364	30.383	216	44.9	2.21	31.8	631
512	687	681	2.667	2.623	34.345	27.431	36.631	45.393	30.643	210	49.5	2.24	32.2	681
515	796	789	2.504	2.454	34.390	27.481	36.689	45.460	31.201	200	57.3	2.29	32.7	789
516	897	888	2.457	2.400	34.458	27.540	36.750	45.522	31.727	187	63.6	2.33	33.3	888
517	997	987	2.488	2.423	34.522	27.589	36.796	45.567	32.236	183	66.4	2.29	32.8	987
518	1047	1036	2.430	2.362	34.536	27.605	36.816	45.589	32.484	181	70.2	2.30	32.9	1036
519	1097	1086	2.379	2.308	34.545	27.617	36.830	45.606	32.727	178	72.3	2.32	33.2	1086
520	1198	1186	2.523	2.443	34.606	27.654	36.860	45.628	33.223	182	69.5	2.21	32.1	1186
521	1296	1282	2.500	2.412	34.628	27.674	36.881	45.650	33.692	183	71.3	2.21	31.8	1282
522	1395	1380	2.538	2.442	34.674	27.709	36.913	45.680	34.176	188	70.2	2.14	30.9	1380
523	1499	1482	2.612	2.506	34.711	27.733	36.933	45.696	34.671	191	66.9	2.05	29.7	1482
524	1550	1532	2.631	2.521	34.728	27.745	36.944	45.706	34.914	194	66.3	2.01	29.2	1532
102	1551	1533	2.433	2.325	34.694	27.734	36.944	45.717	34.916	185	73.8	2.19	31.2	1533
101	1551	1533	2.433	2.325	34.697	27.737	36.947	45.719	34.918	185	75.1	2.19	31.2	1533
103	1761	1740	2.389	2.265	34.732	27.770	36.982	45.758	35.905	192	74.3	2.12	30.1	1740
104	1955	1931	2.346	2.205	34.761	27.797	37.013	45.791	36.811	199	74.0	2.04	29.1	1931
105	2162	2134	2.296	2.138	34.783	27.820	37.039	45.821	37.766	208	71.1	1.95	28.0	2134
106	2162	2134	2.296	2.138	34.784	27.821	37.040	45.821	37.767	208	70.7	1.94	28.0	2134
107	2319	2289	2.164	1.994	34.781	27.830	37.057	45.846	38.487	209	75.1	1.97	28.3	2289
108	2520	2486	1.942	1.758	34.769	27.838	37.079	45.880	39.408	207	81.3	2.01	28.8	2486
109	2727	2689	1.732	1.533	34.755	27.843	37.097	45.910	40.349	206	88.3	2.07	29.5	2689
110	2931	2888	1.465	1.253	34.737	27.848	37.118	45.946	41.280	205	99.2	2.13	30.4	2888
111	3186	3138	1.237	1.006	34.723	27.853	37.137	45.979	42.431	207	105.0	2.15	30.9	3138
112	3438	3384	1.029	0.779	34.713	27.860	37.157	46.011	43.565	208	109.4	2.20	31.3	3384
115	3755	3693	0.801	0.525	34.701	27.865	37.177	46.045	44.981	213	115.4	2.19	31.6	3693
116	4062	3993	0.573	0.273	34.687	27.868	37.195	46.077	46.345	217	117.3	2.25	31.8	3993
117	4369	4291	0.367	0.041	34.678	27.873	37.214	46.109	47.704		121.4	2.27	32.3	4291
118	4676	4590	0.273	-0.084	34.672	27.874	37.222	46.124	49.039	224	123.5	2.25	32.1	4590
119	4676	4590	0.273	-0.084	34.672	27.874	37.222	46.124	49.039	224	123.1	2.24	32.1	4590
120	4981	4886	0.237	-0.153	34.670	27.876	37.228	46.134	50.350	225	125.1	2.22	32.2	4886
121	5290	5185	0.223	-0.203	34.669	27.878	37.233	46.142	51.667	226	125.3	2.26	32.2	5185
122	5600	5485	0.234	-0.230	34.665	27.876	37.233	46.143	52.973	227	125.3	2.24	32.3	5485
715	5701	5583	0.239	-0.238	34.666D	27.877	37.234	46.145	53.398	227	129.0	2.23	32.2	5583
716	5795	5674	0.244	-0.245	34.666	27.877	37.235	46.146	53.792	227	127.6	2.24	32.1	5674
717	5866	5743	0.250	-0.248	34.664	27.876	37.234	46.145	54.088	227	127.0	2.24	32.1	5743
123	5910	5785	0.256	-0.248	34.665	27.877	37.235	46.146	54.271	228	126.2	2.25	32.2	5785
718	5914	5789	0.251	-0.253	34.667	27.878	37.237	46.148	54.291	227	127.5	2.23	32.2	5789
719	5949	5823	0.255	-0.254	34.666	27.878	37.236	46.148	54.436	229	127.5	2.24	32.4	5823
720	5982	5855	0.259	-0.254	34.664	27.876	37.234	46.146	54.571	226	127.4	2.24	32.2	5855
721	5999	5871	0.261	-0.255	34.667	27.878	37.237	46.148	54.644	227	127.0	2.24	32.3	5871
722	6016	5888	0.262	-0.256	34.665D	27.877	37.236	46.147	54.714	227	127.4	2.22	32.2	5888
723	6022	5893	0.264	-0.255	34.665	27.877	37.235	46.147	54.738	227	128.4	2.23	32.3	5893
724	6028	5899	0.264	-0.256	34.666	27.878	37.236	46.148	54.764	227	127.8	2.23	32.3	5899
124	6090	5959	0.270	-0.258	34.667	27.879	37.237	46.149	55.022	228	127.9	2.27	32.2	5959

BOTTOM DEPTH FOR CAST 1 IS 5970 — CAST 7 IS 5907

STATION: 69 LEG: VI POSITION: 52° 31′ S 46° 22′ W DATE: 15 DEC 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	1	1	4.33	4.33	34.05 D	27.037	36.150	44.833	27.041					1
401	11	11	4.330	4.329	34.052	27.037	36.150	44.833	27.088	325	13.1	1.63	23.5	11
402	32	32	3.975	3.973	34.036	27.060	36.193	44.893	27.210	330	13.8	1.67	24.0	32
403	59	59	1.249	1.246	33.978	27.240	36.523	45.363	27.521	338	17.3	1.88	26.2	59
404	92	91	1.928	1.923	34.065	27.263	36.505	45.309	27.698	320	18.9	1.92	26.7	91
405	131	130	2.002	1.995	34.109	27.292	36.530	45.330	27.912	305	21.2	1.97	28.0	130
406	170	169	2.254	2.245	34.159	27.313	36.537	45.322	28.115	284	25.4	2.05	29.2	169
407	191	189	2.012	2.002	34.148	27.323	36.560	45.358	28.225	288	25.4	2.06	29.3	189
408	228	226	2.248	2.235	34.191	27.339	36.563	45.348	28.414	270	30.3	2.12	30.3	226
409	282	280	2.177	2.161	34.223	27.371	36.598	45.387	28.700	253	36.4	2.21	31.6	280

STATION: 69 LEG: VI POSITION: 52° 31′ S 46° 22′ W DATE: 15 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
410	325	322	2.267	2.248	34.272	27.403	36.625	45.408	28.933	234	43.0	2.29	32.7	322
411	394	390	2.623	2.599	34.361	27.446	36.646	45.410	29.295	204	53.6	2.39	34.0	390
412	448	444	2.204	2.178	34.359	27.478	36.702	45.488	29.584	207	56.0	2.41	34.4	444
415	491	487	2.037	2.009	34.366	27.497	36.730	45.524	29.806	210	59.0	2.39	34.2	487
416	545	540	2.322	2.289	34.446	27.539	36.755	45.534	30.096	190	66.8	2.46	35.0	540
417	591	585	2.333	2.297	34.469	27.557	36.772	45.550	30.328	184	69.4	2.46		585
418	681	674	2.308	2.267	34.525	27.604	36.820	45.599	30.794	179	75.7	2.45	35.1	674
419	760	753	2.253	2.207	34.560	27.637	36.856	45.637	31.194	176	79.3	2.45	35.1	753
420	882	873	2.194	2.140	34.608	27.680	36.902	45.686	31.804	174	84.6	2.42	34.8	873
421	1003	992	2.141	2.078	34.639	27.710	36.935	45.721	32.393	174	87.9	2.39	34.4	992
422	1144	1132	2.046	1.974	34.673	27.745	36.975	45.766	33.081	176	91.9	2.36	34.0	1132
101	1285	1271	1.963	1.882	34.690	27.766	37.001	45.796	33.751	179	94.6	2.36	33.6	1271
423	1296	1281	1.967	1.885	34.690	27.766	37.000	45.796	33.802	179	95.3	2.34	33.5	1281
424	1412	1396	1.886	1.796	34.704	27.783	37.023	45.823	34.354	181	98.0	2.33	33.4	1396
102	1474	1457	1.852	1.758	34.705	27.787	37.029	45.831	34.642	177	97.7	2.34	33.2	1457
103	1675	1655	1.678	1.571	34.714	27.808	37.060	45.871	35.587	188	101.5	2.31	32.9	1655
104	1675	1655	1.678	1.571	34.717	27.810	37.062	45.874	35.590	188	101.8	2.32	32.9	1655
105	1884	1860	1.481	1.360	34.719	27.827	37.090	45.913	36.565	193	105.6	2.30	32.7	1860
106	2032	2006	1.326	1.196	34.717	27.836	37.109	45.941	37.254	197	110.4	2.30	32.5	2006
107	2217	2187	1.203	1.060	34.717	27.845	37.126	45.965	38.106	199	112.8	2.30	32.7	2187
108	2480	2445	1.001	0.840	34.710	27.853	37.147	45.998	39.310	204	118.5	2.30	32.8	2445
109	2480	2445	1.001	0.840	34.710	27.853	37.147	45.998	39.310	204	117.3	2.30	32.8	2445
110	2716	2677	0.715	0.540	34.701	27.864	37.175	46.042	40.399	210	125.9	2.31	32.8	2677
111	2919	2875	0.546	0.357	34.691	27.866	37.188	46.066	41.321	215	123.2	2.32	33.0	2875
112	3113	3065	0.484	0.279	34.687D	27.868	37.194	46.076	42.189					3065
115	3297	3245	0.456	0.235	34.686D	27.869	37.198	46.082	43.008	218	127.9	2.32	32.9	3245
116	3352	3298	0.453	0.227	34.685	27.869	37.198	46.083	43.251	218	125.9	2.32	33.0	3298
117	3352	3298	0.453	0.227	34.683	27.867	37.197	46.081	43.249	218	126.4	2.32	33.1	3298
118	3398	3343	0.438	0.208	34.684	27.869	37.200	46.085	43.455	219	126.4	2.32	33.0	3343
119	3422	3367	0.399	0.168	34.681	27.869	37.202	46.090	43.565	219	127.8	2.32	33.3	3367
120	3440	3384	0.378	0.146	34.680	27.869	37.204	46.093	43.646	219	128.4	2.32	33.3	3384
121	3456	3400	0.343	0.110	34.679	27.870	37.207	46.098	43.721	220	129.3	2.32	33.3	3400
122	3471	3415	0.343	0.109	34.679	27.870	37.207	46.098	43.788	220	128.7	2.32	33.3	3415
123	3471	3415	0.343	0.109	34.679	27.870	37.207	46.098	43.788	220	129.1	2.32	33.3	3415
124	3481	3424	0.345	0.110	34.680	27.871	37.208	46.099	43.832	220	128.5	2.32	33.3	3424

BOTTOM DEPTH FOR CAST 1 IS 3429

STATION: 70 LEG: VI POSITION: 53° 3′ S 47° 43′ W DATE: 16 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
115	10	10	3.671	3.670	34.043	27.096	36.244	44.959	27.143	330	15.5	1.72	24.5	10
1201	21	21	3.66	3.66	34.04 D	27.094	36.243	44.959	27.193					21
1202	32	32	3.59	3.59	34.04 D	27.101	36.253	44.972	27.251					32
1203	42	42	2.40	2.40	34.08 D	27.239	36.455	45.234	27.438					42
116	86	85	2.342	2.337	34.082	27.244	36.464	45.246	27.650	327	17.2	1.86	25.6	85
1204	101	100	2.14	2.14	34.08 D	27.254	36.485	45.277	27.732					100
1205	127	126	1.64	1.63	34.10 D	27.315	36.574	45.392	27.917					126
117	157	156	1.450	1.442	34.098	27.323	36.593	45.421	28.068	306	23.1	2.03	28.7	156
1206	174	173	1.46	1.45	34.11 D	27.333	36.602	45.430	28.158					173
1207	199	197	1.60	1.59	34.14 D	27.350	36.611	45.431	28.292					197
1208	250	248	1.87	1.86	34.20 D	27.373	36.617	45.422	28.554					248
1209	301	298	2.10	2.09	34.22 D	27.376	36.607	45.400	28.795					298
1210	352	349	2.10	2.08	34.30 D	27.437	36.668	45.459	29.095					349
1211	401	397	2.31	2.29	34.35 D	27.465	36.683	45.463	29.350					397
118	464	460	2.386	2.358	34.407	27.502	36.715	45.491	29.681	195	58.5	2.46	35.0	460
1212	474	470	2.36	2.33	34.41 D	27.508	36.723	45.499	29.734					470
1213	502	497	2.30	2.27	34.42 D	27.518	36.736	45.516	29.875					497
1214	603	597	2.32	2.28	34.49 D	27.571	36.787	45.565	30.398					597
1215	704	697	2.29	2.25	34.53 D	27.606	36.824	45.603	30.903					697
1216	799	791	2.23	2.18	34.57 D	27.647	36.868	45.650	31.386					791
1217	901	892	2.19	2.13	34.60 D	27.678	36.900	45.684	31.889					892
119	1001	990	2.148	2.086	34.640	27.710	36.934	45.721	32.384	175	81.8	2.43	34.4	990
1218	1203	1190	2.034	1.958	34.674D	27.747	36.978	45.770	33.354					1190
120	1407	1391	1.905	1.815	34.698	27.777	37.016	45.815	34.324	181	89.5	2.33	33.4	1391

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 70 LEG: VI POSITION: 53° 3' S 47° 43' W DATE: 16 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1219	1600	1581	1.776	1.673	34.714D	27.801	37.047	45.853	35.234					1581
121	1815	1792	1.639	1.521	34.717	27.814	37.068	45.883	36.232	190	95.3	2.30	32.8	1792
1220	1999	1973	1.442	1.313	34.722D	27.832	37.099	45.924	37.094					1973
122	2325	2293	1.166	1.015	34.719	27.850	37.133	45.974	38.599	201	107.1	2.28	32.6	2293
1221	2402	2369	1.095	0.939	34.716D	27.852	37.140	45.985	38.952					2369
123	2528	2492	0.835	0.673	34.705	27.860	37.163	46.023	39.543	209	112.8	2.30	32.9	2492
124	2715	2675	0.609	0.436	34.694	27.864	37.182	46.055	40.403	214	115.3	2.32	32.9	2675

BOTTOM DEPTH FOR CAST 1 IS 2711

STATION: 71 LEG: VI POSITION: 53° 7' S 48° 24' W DATE: 16 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	34	34	2.665	2.663	33.953	27.115	36.319	45.086	27.275	339	14.9	1.67	24.6	34
102	126	125	-0.076	-0.080	33.971	27.309	36.669	45.582	27.913	340	24.3	2.01	27.8	125
103	189	187	0.775	0.767	34.130	27.392	36.700	45.564	28.292	285	34.9	2.21	31.1	187
104	289	286	1.569	1.554	34.306	27.482	36.742	45.561	28.849	227	52.0	2.41	34.1	286
105	342	339	1.720	1.702	34.350	27.507	36.757	45.568	29.122	218	55.9	2.44	34.7	339
106	389	385	1.971	1.949	34.412	27.538	36.774	45.571	29.371	201	61.7	2.49	35.0	385
107	492	487	2.078	2.050	34.483	27.587	36.816	45.606	29.900	187	68.1	2.50	35.4	487
108	590	584	2.053	2.019	34.538	27.634	36.863	45.655	30.404	184	73.3	2.51	35.0	584
108	590	584	2.053	2.019	34.538	27.634	36.863	45.655	30.404	184	73.3		35.0	584
109	743	736	2.120	2.075	34.619	27.694	36.919	45.706	31.175	182	79.5	2.46	34.5	736
110	887	878	2.115	2.061	34.653	27.723	36.948	45.735	31.871	174	83.9	2.44	34.3	878
111	988	978	2.053	1.992	34.666	27.738	36.967	45.758	32.355	177	85.4	2.42	34.0	978
112	1186	1173	1.947	1.873	34.689	27.766	37.001	45.797	33.297	179	89.1	2.39	33.6	1173
115	1397	1381	1.802	1.714	34.711	27.795	37.039	45.843	34.300	184	92.3	2.33	33.1	1381
116	1597	1578	1.658	1.557	34.717	27.811	37.064	45.876	35.236	188	97.2	2.30	32.8	1578
117	1798	1775	1.457	1.343	34.721	27.829	37.094	45.918	36.179	195	100.8	2.30	32.6	1775
118	2103	2075	1.185	1.052	34.717	27.846	37.127	45.966	37.593	200	107.1	2.30	32.6	2075
119	2257	2226	1.077	0.933	34.714	27.851	37.139	45.985	38.300	203	109.4	2.30	32.6	2226
120	2407	2373	0.921	0.768	34.708	27.856	37.154	46.009	38.991	206	112.6	2.31	32.8	2373
121	2558	2521	0.848	0.683	34.706	27.860	37.162	46.022	39.677	208	114.2	2.32	32.9	2521
122	2713	2673	0.757	0.581	34.702	27.863	37.171	46.036	40.381	210D	116.1	2.33	32.8	2673
123	2888	2845	0.678	0.489	34.700	27.866	37.181	46.050	41.171	213	115.6	2.33	32.8	2845
124	2982	2936	0.669	0.471	34.697	27.865	37.180	46.051	41.589	213	116.0	2.31	32.8	2936

BOTTOM DEPTH FOR CAST 1 IS 2950

STATION: 72 LEG: VI POSITION: 53° 4' S 48° 50' W DATE: 16 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	30	30	3.269	3.267	33.947	27.057	36.228	44.965	27.198	341	15.6	1.69	24.7	30
102	123	122	-0.106	-0.110	33.936	27.282	36.645	45.560	27.872	349	21.8	1.96	26.9	122
103	142	141	-0.043	-0.048	33.946	27.287	36.646	45.558	27.967	346	23.5	2.00	27.2	141
104	180	178	0.027	0.021	34.034	27.355	36.708	45.615	28.216	321	29.6	2.10	29.3	178
105	232	230	0.692	0.682	34.139	27.404	36.716	45.585	28.508	286	37.0	2.22	31.6	230
106	281	279	1.161	1.148	34.248	27.463	36.747	45.588	28.796	247	47.8	2.35	33.6	279
107	362	359	1.690	1.671	34.362	27.519	36.771	45.583	29.228	214	58.7	2.44	35.0	359
108	437	433	1.821	1.797	34.414	27.551	36.795	45.600	29.611	203	63.4	2.46	35.6	433
109	533	528	1.878	1.848	34.482	27.602	36.842	45.643	30.109	192	70.1	2.46	35.6	528
110	624	618	1.966	1.930	34.535	27.638	36.873	45.669	30.569	186	74.8	2.45	35.2	618
111	788	780	2.018	1.971	34.611	27.696	36.927	45.719	31.388	180	80.9	2.43	34.8	780
112	895	886	2.026	1.972	34.642	27.721	36.951	45.743	31.908	179	84.4	2.38	34.2	886
115	1004	993	1.992	1.931	34.667	27.744	36.976	45.770	32.436	179	86.4	2.37	33.9	993
116	1290	1275	1.846	1.766	34.705	27.787	37.028	45.829	33.799	181	95.3	2.32	33.4	1275
117	1573	1554	1.706	1.606	34.715	27.806	37.056	45.866	35.119	186	98.4	2.31	33.0	1554
118	1861	1837	1.496	1.377	34.724	27.830	37.092	45.914	36.463	193	102.4	2.28	32.7	1837
119	2108	2080	1.297	1.161	34.721	27.842	37.117	45.950	37.605	198	108.0	2.30	32.7	2080
120	2352	2319	1.139	0.986	34.716	27.849	37.134	45.977	38.722	202	110.8	2.30	32.8	2319
121	2638	2600	0.851	0.680	34.707	27.861	37.164	46.023	40.036	209	115.9	2.29	33.0	2600
122	2844	2801	0.823	0.634	34.704	27.861	37.167	46.029	40.958	209	116.3	2.30	33.0	2801

STATION: 72 LEG: VI POSITION: 53° 4' S 48° 50' W DATE: 16 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
123	3051	3004	0.798	0.591	34.704	27.864	37.172	46.036	41.883	210	116.7	2.30	33.0	3004
124	3200	3150	0.747	0.527	34.699	27.863	37.175	46.043	42.547	212	116.9	2.30	33.0	3150

BOTTOM DEPTH FOR CAST 1 IS 3200

STATION: 73 LEG: VI POSITION: 53° 2' S 49° 31' W DATE: 17 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	5	5	5.44	5.44	34.15 D	26.987	36.043	44.671	27.011					5
1202	16	16	5.02	5.02	34.15 D	27.038	36.115	44.763	27.113					16
115	51	51	4.605	4.601	34.148	27.084	36.181	44.850	27.321	317	8.7	1.58	22.7	51
1204	76	75	4.13	4.12	34.17 D	27.148	36.270	44.961	27.503					75
1205	102	101	3.85	3.84	34.17 D	27.184	36.320	45.025	27.661					101
1206	124	123	3.76	3.75	34.18 D	27.195	36.337	45.046	27.776					123
1207	151	150	3.66	3.65	34.18 D	27.209	36.356	45.070	27.916					150
1208	177	176	3.50	3.49	34.18 D	27.221	36.376	45.099	28.050					176
1209	201	199	3.42	3.41	34.18 D	27.228	36.388	45.114	28.169					199
1210	250	248	3.24	3.22	34.18 D	27.249	36.419	45.154	28.420					248
1211	298	295	3.08	3.06	34.19 D	27.267	36.445	45.189	28.663					295
116	345	342	2.893	2.871	34.191	27.287	36.475	45.228	28.905	278	22.7	2.00	29.2	342
1212	402	398	2.75	2.73	34.21 D	27.317	36.513	45.272	29.202					398
1213	450	446	2.69	2.66	34.22 D	27.329	36.528	45.291	29.439					446
1214	501	496	2.61	2.58	34.23 D	27.342	36.546	45.313	29.691					496
117	556	551	2.350	2.317	34.239	27.371	36.589	45.370	29.980	250	35.6	2.19	32.4	551
1215	604	598	2.57	2.53	34.30 D	27.404	36.610	45.378	30.233					598
118	649	643	2.610	2.569	34.342	27.433	36.636	45.401	30.469	213	48.3	2.33	34.2	643
1216	701	694	2.61	2.56	34.39 D	27.470	36.672	45.438	30.748					694
1217	802	794	2.58	2.53	34.44 D	27.517	36.720	45.486	31.262					794
1218	905	896	2.44	2.38	34.52 D	27.591	36.801	45.574	31.815					896
119	1057	1046	2.311	2.243	34.594	27.661	36.877	45.656	32.589	171	79.9	2.45	35.9	1046
1219	1101	1089	2.293	2.222	34.602D	27.669	36.886	45.666	32.800					1089
1220	1199	1186	2.241	2.163	34.620D	27.688	36.908	45.691	33.270					1186
120	1310	1295	2.166	2.081	34.653	27.721	36.945	45.731	33.814	174	83.9	2.39	35.1	1295
1221	1398	1382	2.129	2.037	34.665D	27.734	36.960	45.749	34.231					1382
1222	1503	1485	2.102	2.003	34.673D	27.743	36.971	45.761	34.721					1485
121	1614	1595	2.037	1.930	34.686	27.759	36.991	45.784	35.245	177	90.0	2.34	34.6	1595
1223	1700	1679	1.996	1.882	34.692D	27.767	37.002	45.798	35.646					1679
1224	1804	1782	1.931	1.810	34.701D	27.780	37.019	45.818	36.133					1782
122	1941	1916	1.826	1.695	34.711	27.797	37.041	45.847	36.775	183	96.0	2.29	34.1	1916
1225	2000	1974	1.774	1.639	34.713D	27.802	37.050	45.858	37.050					1974
1226	2253	2223	1.694	1.539	34.716D	27.812	37.065	45.879	38.204					2223
123	2377	2344	1.595	1.431	34.719	27.822	37.081	45.900	38.776	191	102.2	2.22	33.7	2344
1227	2502	2467	1.526	1.352	34.719D	27.827	37.091	45.915	39.346					2467
124	2704	2665	1.368	1.179	34.720	27.840	37.114	45.946	40.271	197	107.5	2.22	33.5	2665

BOTTOM DEPTH FOR CAST 1 IS 2676

STATION: 74 LEG: VI POSITION: 55° 0' S 50° 4' W DATE: 17 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	3	3	3.37	3.37	33.99 D	27.082	36.247	44.978	27.096	335				3
501	8	8	3.368	3.367	33.99	27.082	36.247	44.978	27.120	335	13.4	1.62	24.3	8
502	26	26	2.716	2.714	33.95	27.108	36.309	45.074	27.231	341	16.8	1.71	25.4	26
503	58	58	2.018	2.015	33.97	27.180	36.419	45.219	27.454	343	17.6	1.75	25.7	58
504	92	91	0.998	0.994	34.01	27.282	36.578	45.432	27.720	341	20.5	1.87	27.0	91
505	127	126	0.843	0.838	34.05	27.323	36.628	45.490	27.928	330	23.3	1.96	28.3	126
801	141	140	2.296	2.288	34.169	27.318	36.539	45.322	27.983					140
802	141	140	2.296	2.288	34.168	27.317	36.538	45.321	27.982					140
803	141	140	2.296	2.288	34.167	27.316	36.537	45.320	27.981					140
506	167	166	0.970	0.963	34.11	27.364	36.661	45.514	28.158	304	29.9	2.09	30.2	166
507	210	208	1.342	1.332	34.18	27.396	36.671	45.504	28.392		37.1	2.20	31.9	208
508	248	246	1.216	1.204	34.21	27.429	36.710	45.549	28.605	262	43.0	2.27	32.8	246
509	311	308	1.681	1.665	34.30	27.470	36.723	45.536	28.939	233	51.2	2.35	34.1	308

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 74 LEG: VI POSITION: 55° 0′ S 50° 4′ W DATE: 17 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
510	344	341	1.932	1.913	34.35	27.491	36.730	45.530	29.113	215	56.4	2.39	34.8	341
511	386	382	2.107	2.085	34.39	27.510	36.739	45.529	29.327	203	60.5	2.42	35.1	382
512	420	416	2.141	2.117	34.41	27.524	36.750	45.538	29.500	197	63.3	2.43	35.1	416
515	465	461	1.891	1.865	34.42	27.551	36.791	45.592	29.741	200	64.5	2.40	35.2	461
516	516	511	2.128	2.098	34.48	27.581	36.807	45.595	30.006	188	69.9	2.42	35.2	511
517	561	556	2.166	2.133	34.51	27.603	36.826	45.612	30.236	183	71.9	2.41	35.1	556
518	608	602	2.159	2.123	34.54	27.627	36.851	45.637	30.480	180	73.4	2.40	35.1	602
519	608	602	2.159	2.123	34.54	27.627	36.851	45.637	30.480	180	73.5	2.41	35.0	602
804	650	644	2.256	2.217	34.547	27.625	36.844	45.625	30.672					644
805	650	644	2.256	2.217	34.546	27.625	36.843	45.624	30.671					644
806	650	644	2.256	2.217	34.540	27.620	36.839	45.619	30.666					644
520	656	650	2.187	2.148	34.56	27.641	36.864	45.647	30.717	177	76.9	2.37	34.9	650
521	737	730	2.178	2.134	34.59	27.666	36.889	45.673	31.118	176	80.1	2.38	34.5	730
522	839	830	2.141	2.090	34.62	27.694	36.918	45.704	31.619	175	83.8	2.34	34.0	830
101	881	872	2.120	2.066	34.630	27.704	36.929	45.716	31.824	176	89.4	2.31	33.9	872
102	928	918	2.081	2.024	34.641	27.716	36.943	45.733	32.054	177	89.6	2.31	33.8	918
523	997	986	2.051	1.990	34.65	27.726	36.955	45.746	32.384	176	88.8	2.34	33.5	986
524	998	987	2.051	1.990	34.65	27.726	36.955	45.746	32.388	176	88.6	2.34	33.4	987
103	1009	998	2.070	2.008	34.657	27.730	36.958	45.748	32.443	176	91.2	2.30	33.6	998
104	1074	1062	2.066	1.999	34.671	27.742	36.970	45.760	32.754	178	89.6	2.28	33.3	1062
105	1218	1204	1.980	1.903	34.686	27.761	36.995	45.789	33.439	179	98.4	2.29	33.1	1204
106	1376	1360	1.905	1.818	34.701	27.779	37.018	45.817	34.184	182	96.1	2.25	32.8	1360
107	1376	1360	1.905	1.818	34.702	27.780	37.018	45.817	34.185	183	95.7	2.27	32.8	1360
807	1509	1491	1.815	1.719	34.711	27.795	37.038	45.842	34.811					1491
808	1509	1491	1.815	1.719	34.710	27.794	37.038	45.842	34.810					1491
809	1509	1491	1.815	1.719	34.710	27.794	37.038	45.842	34.810					1491
108	1695	1674	1.704	1.595	34.720	27.811	37.061	45.872	35.680	189	101.5	2.23	32.4	1674
109	2013	1986	1.487	1.356	34.721	27.829	37.093	45.915	37.151	194	107.7	2.22	32.3	1986
110	2013	1986	1.487	1.356	34.721	27.829	37.093	45.915	37.151	193	108.0	2.22	32.4	1986
111	2388	2354	1.250	1.092	34.719	27.845	37.124	45.961	38.871	201	114.9	2.21	32.3	2354
112	2388	2354	1.250	1.092	34.718	27.844	37.123	45.960	38.871	202	114.7	2.23	32.3	2354
115	2598	2560	1.108	0.934	34.713	27.850	37.138	45.984	39.828	203	120.9	2.23	32.2	2560
116	2806	2764	0.990	0.801	34.709	27.855	37.151	46.004	40.770	206	121.2	2.25	32.4	2764
810	2939	2894	0.846	0.648	34.706	27.862	37.167	46.028	41.380					2894
811	2939	2894	0.846	0.648	34.703	27.859	37.164	46.026	41.378					2894
812	2939	2894	0.846	0.648	34.704	27.860	37.165	46.026	41.378					2894
117	3023	2976	0.851	0.645	34.703	27.860	37.165	46.026	41.750	209	123.1	2.25	32.5	2976
118	3231	3179	0.733	0.511	34.696	27.862	37.175	46.044	42.684	212	123.1	2.25	32.5	3179
119	3395	3340	0.694	0.457	34.692	27.862	37.178	46.050	43.410	213	123.1	2.26	32.6	3340
120	3549	3490	0.612	0.363	34.690	27.865	37.187	46.064	44.099	216	124.0	2.26	32.6	3490
121	3700	3637	0.516	0.255	34.685	27.867	37.195	46.078	44.773	218	123.1	2.28	32.7	3637
815	3834	3768	0.458	0.185	34.682	27.869	37.201	46.088	45.366	221	124.1	2.27	32.7	3768
122	3904	3836	0.436	0.156	34.678	27.867	37.201	46.089	45.672	221	123.4	2.28	32.6	3836
816	3911	3843	0.453	0.172	34.680	27.868	37.201	46.088	45.702	221	123.9	2.28	32.8	3843
817	3975	3905	0.454	0.167	34.680	27.868	37.201	46.089	45.981	221	122.9	2.28	32.7	3905
818	4016	3945	0.446	0.155	34.681	27.869	37.203	46.092	46.161	221	122.5	2.28	32.7	3945
819	4047	3975	0.426	0.132	34.678	27.868	37.203	46.093	46.297	222	122.2	2.28	32.6	3975
123	4056	3984	0.403	0.109	34.675	27.867	37.204	46.095	46.338	222	123.5	2.29	32.6	3984
820	4081	4008	0.336	0.041	34.673	27.869	37.210	46.105	46.456	225	122.2	2.28	32.8	4008
821	4096	4023	0.335	0.039	34.676	27.871	37.212	46.107	46.524	224	122.6	2.28	32.6	4023
822	4111	4037	0.329	0.032	34.673	27.869	37.211	46.106	46.587	225	123.3	2.28	32.4	4037
823	4122	4048	0.319	0.021	34.672	27.869	37.211	46.107	46.636	225	123.2	2.28	32.6	4048
824	4133	4059	0.317	0.018	34.674	27.871	37.213	46.109	46.686	225	123.0	2.28	32.6	4059
124	4180	4104	0.351	0.046	34.672	27.868	37.208	46.103	46.883	224	123.6	2.29	32.6	4104

BOTTOM DEPTH FOR CAST 1 IS 4134 — CAST 8 IS 4063

STATION: 75 LEG: VI POSITION: 56° 2′ S 61° 2′ W DATE: 20 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
4201	2	2	6.65	6.65	34.14 D	26.830	35.826	44.400	26.840					2
401	35	35	5.969	5.966	34.149	26.925	35.954	44.559	27.087	310	3.7	1.42	19.8	35
402	44	44	5.544	5.540	34.159	26.985	36.035	44.659	27.189	309	4.6	1.47	20.2	44
403	85	84	4.658	4.652	34.187	27.109	36.204	44.869	27.505	303	7.8	1.62	21.6	84

STATION: 75 LEG: VI POSITION: 56° 2′ S 61° 2′ W DATE: 20 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
404	135	134	4.373	4.363	34.203	27.153	36.262	44.941	27.782	299	10.2	1.67	23.2	134
405	185	183	4.217	4.204	34.198	27.166	36.283	44.970	28.028	300	11.2	1.69	23.8	183
406	238	236	4.017	4.000	34.197	27.186	36.314	45.010	28.296	295	12.6	1.75	24.4	236
407	289	286	3.854	3.834	34.191	27.197	36.334	45.039	28.546	295	13.2	1.74	24.8	286
408	339	336	3.728	3.704	34.186	27.206	36.350	45.061	28.788	297	13.4	1.75	24.9	336
409	388	384	3.581	3.554	34.183	27.218	36.370	45.089	29.029	293	14.8	1.82	25.4	384
410	440	436	3.525	3.495	34.181	27.222	36.377	45.099	29.276	290	15.4	1.84	25.9	436
411	491	486	3.420	3.387	34.189	27.239	36.400	45.127	29.530	281	18.4	1.92	26.9	486
412	542	537	3.115	3.079	34.189	27.267	36.444	45.187	29.799	274	22.0	2.00	27.9	537
415	602	596	2.913	2.874	34.192	27.287	36.476	45.228	30.101	270	24.6	2.03	28.9	596
416	653	647	2.847	2.805	34.202	27.301	36.493	45.249	30.353	266	26.9	2.07	29.3	647
417	703	696	2.625	2.581	34.202	27.320	36.525	45.292	30.608	265	28.9	2.08	29.7	696
418	786	778	2.689	2.638	34.254	27.357	36.557	45.321	31.027	241	36.9	2.21	31.2	778
419	805	797	2.746	2.693	34.275	27.369	36.566	45.326	31.126	232	39.4	2.25	31.8	797
420	833	825	2.646	2.592	34.285	27.386	36.588	45.353	31.274	230	41.4	2.26	32.2	825
421	906	897	2.728	2.668	34.356	27.436	36.633	45.393	31.659	206	51.0	2.36	33.4	897
101	907	898	2.724	2.664	34.342	27.425	36.622	45.383	31.653	206	50.9	2.35	33.3	898
102	907	898	2.724	2.664	34.342	27.425	36.622	45.383	31.653	207	50.3	2.34	33.3	898
422	956	946	2.737	2.673	34.394	27.466	36.662	45.421	31.918	195	57.2	2.38	33.7	946
423	956	946	2.737	2.673	34.394	27.466	36.662	45.421	31.918	194	56.9	2.39	33.8	946
424	1008	997	2.707	2.640	34.425	27.493	36.691	45.452	32.186	188	60.5	2.43	34.2	997
103	1012	1001	2.720	2.652	34.415	27.484	36.681	45.441	32.195	188	60.1	2.43	34.3	1001
104	1223	1209	2.553	2.471	34.508	27.574	36.779	45.547	33.257	174	72.8	2.47	35.0	1209
105	1465	1448	2.349	2.250	34.594	27.660	36.876	45.655	34.456	169	83.4	2.45	34.6	1448
106	1465	1448	2.349	2.250	34.594	27.660	36.876	45.655	34.456	169	83.4	2.45	34.6	1448
107	1664	1644	2.239	2.125	34.643	27.709	36.932	45.715	35.414	171	85.9	2.41	34.0	1644
108	1874	1850	2.128	1.998	34.677	27.747	36.975	45.765	36.407	172	91.4	2.36	33.5	1850
109	2089	2061	1.976	1.830	34.698	27.776	37.014	45.812	37.414	176	98.3	2.35	33.3	2061
110	2296	2264	1.860	1.698	34.707	27.793	37.038	45.843	38.368	180	101.4	2.33	33.1	2264
111	2517	2481	1.747	1.567	34.715	27.809	37.061	45.873	39.379	184	104.2	2.29	32.7	2481
112	2718	2678	1.637	1.441	34.719	27.821	37.080	45.899	40.295	189	105.4	2.28	32.5	2678
115	2729	2689	1.633	1.436	34.720	27.822	37.082	45.900	40.345	190	107.3	2.27	32.4	2689
116	2942	2897	1.499	1.285	34.721	27.833	37.101	45.928	41.311	194	107.4	2.26	32.4	2897
117	3156	3106	1.343	1.112	34.719	27.843	37.121	45.957	42.280	198	111.3	2.27	32.4	3106
118	3369	3314	1.170	0.923	34.715	27.852	37.141	45.987	43.242	201	116.9	2.27	32.4	3314
119	3627	3566	1.071	0.800	34.713	27.858	37.154	46.007	44.388	204	118.7	2.27	32.6	3566
120	3627	3566	1.071	0.800	34.714	27.859	37.155	46.008	44.389	204	118.7	2.28	32.5	3566
121	3694	3631	1.045	0.768	34.712	27.859	37.157	46.012	44.684	205	118.5	2.28	32.5	3631
122	3898	3830	0.990	0.694	34.710	27.862	37.164	46.023	45.581	207	119.6	2.28	32.6	3830
123	4102	4029	0.939	0.622	34.706	27.863	37.170	46.032	46.473	208	120.3	2.28	32.5	4029
124	4197	4121	0.934	0.607	34.706	27.864	37.171	46.035	46.885		122.3	2.29	32.7	4121

BOTTOM DEPTH FOR CAST 1 IS 4153

STATION: 76 LEG: VII POSITION: 57° 44′ S 66° 8′ W DATE: 31 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
7201	3	3	4.54	4.54	33.94 D	26.926	36.030	44.704	26.940	327				3
701	13	13	4.540	4.539	33.940	26.926	36.030	44.704	26.986	327	2.4	1.29	22.1	13
702	27	27	4.518	4.516	33.937	26.926	36.031	44.707	27.052	328	2.4	1.29	22.0	27
703	53	53	3.918	3.914	33.904	26.961	36.099	44.804	27.210	330	3.0	1.44	22.5	53
704	74	73	1.757	1.753	33.848	27.101	36.357	45.173	27.452	347	5.3	1.55	23.7	73
705	95	94	0.444	0.440	33.836	27.174	36.506	45.392	27.628	351	12.1	1.77	24.7	94
706	120	119	-0.269	-0.273	33.864	27.232	36.605	45.531	27.807	350	17.2	1.88	25.8	119
707	145	144	-0.410	-0.415	33.895	27.263	36.644	45.577	27.959	347	18.4	1.91	26.3	144
708	160	159	-0.340	-0.345	33.922	27.282	36.658	45.587	28.049	344	18.7	1.91	26.8	159
709	187	185	-0.218	-0.224	33.952	27.300	36.669	45.591	28.196	339	19.2	1.92	27.6	185
710	237	235	0.250	0.241	34.016	27.329	36.670	45.564	28.461	328	20.6	1.96	27.8	235
711	287	284	0.844	0.831	34.090	27.356	36.660	45.522	28.720	303	27.7	2.04	29.5	284
712	388	384	1.309	1.290	34.194	27.410	36.687	45.522	29.246	266	38.9	2.18	31.6	384
715	501	496	1.986	1.958	34.340	27.480	36.716	45.514	29.837	214	54.1	2.32	33.7	496
716	603	597	2.190	2.154	34.424	27.532	36.756	45.542	30.362	193	61.0	2.35	34.0	597
717	702	695	2.279	2.236	34.474	27.566	36.784	45.565	30.854	184	67.2	2.36	34.3	695
718	806	798	2.266	2.216	34.527	27.610	36.828	45.609	31.380	179	73.5	2.35	34.4	798

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 76 LEG: VII POSITION: 57° 44' S 66° 8' W DATE: 31 DEC 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
719	908	898	2.281	2.224	34.573	27.646	36.863	45.643	31.887	176	75.5	2.32	33.8	898
301	999	988	2.275	2.212	34.583	27.655	36.873	45.653	32.316	175	76.6	2.31	34.2	988
720	1009	998	2.253	2.189	34.600	27.670	36.889	45.671	32.378	176	77.6	2.30	33.4	998
721	1059	1047	2.251	2.184	34.630	27.694	36.913	45.695	32.633	176	79.8	2.28	33.4	1047
722	1109	1097	2.223	2.152	34.634	27.700	36.921	45.703	32.869	176	80.6	2.27	33.3	1097
302	1123	1110	2.230	2.158	34.617	27.686	36.907	45.689	32.920	176	79.7	2.29	33.6	1110
723	1158	1145	2.192	2.118	34.648	27.714	36.936	45.721	33.109	176	82.0	2.25	33.0	1145
724	1212	1198	2.177	2.099	34.658	27.724	36.947	45.732	33.367	177	82.9	2.24	32.6	1198
303	1253	1239	2.181	2.100	34.651	27.718	36.941	45.726	33.550	176	81.5	2.26	33.0	1239
304	1391	1375	2.110	2.019	34.684	27.751	36.978	45.766	34.216	179	85.5	2.21	32.9	1375
305	1549	1530	2.038	1.936	34.699	27.769	37.001	45.793	34.959	182	88.0	2.20	32.6	1530
306	1719	1697	1.938	1.824	34.705	27.782	37.020	45.819	35.749	181	94.4	2.21	32.4	1697
307	1726	1704	1.929	1.814	34.709	27.786	37.024	45.823	35.786	181	93.6	2.21	32.4	1704
308	1855	1831	1.812	1.688	34.714	27.799	37.045	45.850	36.390	182	99.0	2.20	32.2	1831
309	1995	1969	1.769	1.634	34.720	27.808	37.056	45.865	37.034	188	95.9	2.17	31.9	1969
310	2148	2119	1.620	1.475	34.720	27.819	37.077	45.893	37.744	191	101.7	2.18	31.9	2119
311	2408	2374	1.431	1.267	34.721	27.835	37.104	45.931	38.939	196	106.4	2.17	31.9	2374
312	2627	2588	1.324	1.143	34.718	27.840	37.117	45.951	39.932	198	110.3	2.17	31.9	2588
315	2844	2801	1.203	1.005	34.719	27.850	37.134	45.976	40.917	201	113.2	2.17	31.9	2801
316	3018	2971	1.052	0.842	34.714	27.857	37.150	46.001	41.708	203	119.6	2.18	32.2	2971
317	3221	3169	0.995	0.767	34.711	27.859	37.157	46.011	42.613	205	121.5	2.18	31.8	3169
318	3424	3367	0.954	0.707	34.711	27.862	37.164	46.021	43.514	206	122.4	2.18	31.9	3367
319	3626	3564	0.960	0.693	34.711	27.863	37.165	46.024	44.399	206	119.9	2.19	32.1	3564
320	3828	3761	0.965	0.677	34.709	27.863	37.166	46.025	45.280	207	120.9	2.20	32.1	3761
321	4051	3978	0.967	0.655	34.709	27.864	37.168	46.029	46.249	206	124.3	2.21	32.1	3978
322	4261	4183	0.974	0.639	34.710	27.866	37.171	46.033	47.158	207	123.2	2.21	32.2	4183
115	4348	4267	0.970	0.625	34.709	27.866	37.172	46.034	47.533	208	127.6	2.21	32.1	4267
323	4397	4315	0.979	0.628	34.709	27.865	37.171	46.033	47.743	207	124.5	2.21	32.0	4315
116	4438	4355	0.973	0.618	34.709	27.866	37.173	46.035	47.921	208	125.6	2.21	32.2	4355
117	4513	4428	0.981	0.617	34.709	27.866	37.173	46.035	48.242	207	125.2	2.20	32.2	4428
118	4572	4485	0.988	0.617	34.711	27.868	37.174	46.037	48.495	209	124.9	2.20	32.0	4485
324	4578	4491	0.995	0.623	34.709	27.866	37.172	46.034	48.518	207	124.6	2.20	32.0	4491
119	4609	4521	0.992	0.617	34.709	27.866	37.173	46.036	48.652	209	123.6	2.20	31.9	4521
120	4645	4556	0.996	0.616	34.709	27.866	37.173	46.036	48.805	208	124.1	2.21	31.9	4556
121	4669	4579	0.999	0.617	34.711	27.868	37.174	46.037	48.909	208	124.7	2.20	31.8	4579
124	4681	4591	1.000	0.616	34.711	27.868	37.174	46.037	48.960	209	124.5	2.19	31.7	4591
122	4684	4594	1.000	0.616	34.710	27.867	37.173	46.036	48.972	208	123.4	2.23	31.8	4594
123	4685	4595	1.000	0.616	34.710	27.867	37.174	46.036	48.976	208	124.0	2.34U	31.7	4595

BOTTOM DEPTH FOR CAST 3 IS 4596 – CAST 1 IS 4598

STATION: 77 LEG: VII POSITION: 59° 39' S 64° 30' W DATE: 2 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	0	0	2.29	2.29	33.74 D	26.975	36.203	44.992	26.975					0
1202	22	22	2.16	2.16	33.74 D	26.985	36.220	45.016	27.089					22
101	41	41	1.525	1.523	33.775	27.059	36.329	45.158	27.254	340	19.2	1.68	25.1	41
102	77	76	-0.449	-0.451	33.864	27.239	36.623	45.559	27.609	363	21.7	1.75	25.2	76
103	88	87	-0.751	-0.753	33.881	27.265	36.667	45.620	27.689	359	23.9	1.81	26.1	87
104	108	107	-1.308	-1.310	33.936	27.328	36.764	45.747	27.850	345	29.7	1.96	27.6	107
105	143	142	-0.660	-0.664	34.052	27.400	36.793	45.738	28.087	313	37.2	2.08	29.7	142
106	184	182	0.584	0.576	34.193	27.454	36.771	45.645	28.330	266	46.8	2.21	32.0	182
107	236	234	1.347	1.336	34.328	27.515	36.786	45.617	28.633	226	58.3	2.31	33.0	234
108	286	283	1.682	1.667	34.397	27.547	36.799	45.611	28.898	207	63.5	2.35	34.0	283
109	388	384	2.114	2.092	34.504	27.601	36.827	45.615	29.427	183	71.1	2.36	34.3	384
110	488	483	2.085	2.057	34.560	27.648	36.876	45.664	29.942	179	74.6	2.35	34.0	483
111	591	585	2.085	2.050	34.596	27.678	36.905	45.693	30.452	178	76.5	2.32	33.7	585
112	693	686	2.109	2.068	34.634	27.707	36.932	45.719	30.955	178	79.8	2.29	32.8	686
115	820	811	2.074	2.025	34.676	27.744	36.971	45.759	31.582	179	81.8	2.24	32.4	811
116	945	935	1.996	1.939	34.696	27.766	36.998	45.791	32.185	182	84.4	2.21	32.0	935
117	1354	1338	1.710	1.626	34.719	27.808	37.057	45.865	34.119	190	93.8	2.17	31.3	1338
118	1760	1737	1.426	1.316	34.723	27.833	37.099	45.924	36.011	196	101.2	2.17	31.3	1737
119	2160	2130	1.175	1.037	34.717	27.847	37.129	45.969	37.852	201	107.6	2.18	31.5	2130
120	2564	2526	0.882	0.716	34.707	27.859	37.159	46.017	39.700	206	117.5	2.21	31.9	2526

STATION: 77 LEG: VII POSITION: 59° 39' S 64° 30' W DATE: 2 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
121	2974	2927	0.688	0.491	34.705	27.870	37.184	46.054	41.557	209	123.0	2.23	32.0	2927
122	3381	3325	0.676	0.441	34.702	27.871	37.188	46.060	43.359	210	125.9	2.22	32.1	3325
123	3482	3423	0.684	0.439	34.700	27.869	37.186	46.059	43.801	210	126.1	2.23	32.1	3423
124	3612	3550	0.694	0.436	34.702	27.871	37.188	46.061	44.373	211	126.7	2.24	32.2	3550

BOTTOM DEPTH FOR CAST 1 IS 3591

STATION: 78 LEG: VII POSITION: 61° 3' S 62° 58' W DATE: 3 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
5201	3	3	1.35	1.35	33.83 D	27.115	36.394	45.231	27.129	346				3
501	6	6	1.345	1.345	33.833	27.117	36.397	45.235	27.146	346	20.0	1.69	25.1	6
502	41	41	1.348	1.346	33.832	27.116	36.396	45.234	27.311	346	20.0	1.71	25.1	41
503	66	65	-0.506	-0.508	33.888	27.261	36.648	45.587	27.578	354	23.6	1.88	26.4	65
504	82	81	-0.947	-0.949	33.925	27.308	36.721	45.684	27.703	350	26.3	1.94	27.2	81
505	97	96	-0.965	-0.967	33.975	27.349	36.762	45.726	27.816	336	29.9	2.05	28.6	96
506	127	126	0.007	0.003	34.094	27.404	36.757	45.664	28.012	299	36.8	2.12	30.7	126
507	152	151	0.764	0.758	34.184	27.436	36.743	45.607	28.160	270	44.9	2.22	32.1	151
508	202	200	1.428	1.418	34.300	27.487	36.754	45.581	28.444	233	54.7	2.31	33.7	200
509	253	251	1.690	1.677	34.360	27.517	36.769	45.580	28.713	214	60.4	2.36	34.3	251
510	304	301	1.887	1.871	34.431	27.559	36.799	45.600	28.994	199	66.3	2.40	34.6	301
511	404	400	2.113	2.090	34.532	27.623	36.849	45.637	29.524	181	73.9	2.39	34.6	400
512	444	440	2.122	2.097	34.552	27.639	36.864	45.651	29.727	179	75.5	2.38	34.3	440
515	505	500	2.115	2.086	34.578	27.661	36.886	45.673	30.033	178	77.1	2.36	33.8	500
109	505	500	2.116	2.087	34.579	27.661	36.887	45.673	30.034	178	76.8	2.33	33.9	500
516	606	600	2.102	2.066	34.619	27.695	36.921	45.708	30.539	183	79.8	2.33	33.3	600
517	707	700	2.070	2.028	34.653	27.725	36.952	45.741	31.039	179	82.8	2.27	32.6	700
518	808	799	2.036	1.988	34.684	27.753	36.982	45.772	31.537	181	85.3	2.25	32.4	799
519	910	900	1.990	1.935	34.700	27.770	37.001	45.794	32.027	183	86.9	2.23	32.1	900
520	1009	998	1.938	1.877	34.707	27.780	37.015	45.810	32.496	185	88.6	2.21	31.6	998
521	1112	1099	1.848	1.780	34.721	27.798	37.038	45.839	32.992	188	92.3	2.19	31.4	1099
522	1237	1222	1.754	1.678	34.723	27.807	37.053	45.859	33.580	190	96.2	2.19	31.6	1222
523	1363	1346	1.644	1.561	34.722	27.815	37.067	45.879	34.170	192	100.3	2.18	31.6	1346
524	1508	1489	1.526	1.433	34.730	27.830	37.090	45.908	34.854	195	104.0	2.17	31.5	1489
110	1525	1506	1.470	1.377	34.730	27.834	37.097	45.919	34.938	196	103.3	2.17	31.4	1506
111	1729	1706	1.332	1.225	34.727	27.842	37.114	45.943	35.884	199	106.9	2.17	31.6	1706
112	1932	1906	1.209	1.089	34.723	27.848	37.127	45.964	36.819	200	110.6	2.18	31.6	1906
115	2146	2116	1.076	0.941	34.719	27.854	37.142	45.987	37.802	203	114.1	2.20	31.7	2116
116	2349	2315	0.944	0.795	34.713	27.859	37.155	46.008	38.731	205	118.5	2.21	31.8	2315
117	2450	2414	0.872	0.716	34.709	27.860	37.161	46.018	39.191	206	121.2	2.21	31.7	2414
118	2552	2514	0.791	0.628	34.708	27.865	37.171	46.033	39.659	208	123.1	2.23	32.0	2514
119	2757	2714	0.670	0.492	34.703	27.869	37.182	46.052	40.590	210	127.4	2.24	32.0	2714
120	2960	2913	0.596	0.402	34.703	27.874	37.193	46.067	41.506	210	129.5	2.25	32.2	2913
121	3164	3112	0.562	0.351	34.705	27.878	37.200	46.078	42.419	212	131.4	2.26	32.3	3112
122	3366	3309	0.518	0.289	34.697	27.875	37.201	46.082	43.312	213	132.7	2.26	32.0	3309
715	3564	3502	0.561	0.312	34.696	27.873	37.198	46.077	44.178	212	132.9	2.23	32.2	3502
123	3573	3511	0.440	0.193	34.691	27.875	37.207	46.093	44.231	216	133.4	2.26	32.2	3511
716	3660	3596	0.541	0.283	34.696	27.875	37.201	46.082	44.602	214D	133.3	2.24	32.2	3596
124	3680	3616	0.426	0.169	34.692	27.877	37.210	46.098	44.704	216	134.6	2.26	32.3	3616
717	3734	3668	0.488	0.224	34.691D	27.874	37.203	46.088	44.931	215	132.0	2.24	32.1	3668
718	3792	3725	0.500	0.230	34.691	27.873	37.203	46.087	45.183	215	132.2	2.24	32.1	3725
719	3823	3755	0.472	0.199	34.688	27.873	37.204	46.090	45.320	216	131.9	2.24	32.1	3755
720	3852	3783	0.467	0.192	34.689D	27.874	37.206	46.092	45.449	217	132.1	2.24	32.0	3783
721	3854	3785	0.467	0.191	34.688	27.873	37.205	46.091	45.457	215	132.2	2.24	32.0	3785
722	3865	3796	0.467	0.190	34.688	27.873	37.205	46.091	45.505	216	132.6	2.24	31.8	3796
723	3870	3801	0.467	0.190	34.691	27.876	37.207	46.094	45.529	216	132.8	2.23	32.0	3801
724	3875	3805	0.467	0.189	34.687	27.872	37.204	46.091	45.548	216	132.4	2.23	31.9	3805

BOTTOM DEPTH FOR CAST 1 IS 3696 – CAST 7 IS 3816

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
U UNCERTAIN DATA

STATION: 79 LEG: VII POSITION: 59° 56′ S 45° 2′ W DATE: 6 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	1.78	1.78	34.06 D	27.269	36.520	45.331	27.284	352				3
101	4	4	1.783	1.783	34.061	27.270	36.520	45.331	27.289	352	41.4	1.38	21.5	4
102	23	23	1.776	1.775	34.059	27.269	36.520	45.331	27.378	352	41.6	1.41	21.5	23
103	73	72	0.489	0.486	34.306	27.550	36.870	45.747	27.898	342	83.8	1.87	26.7	72
104	125	124	0.177	0.172	34.381	27.627	36.965	45.857	28.224	329	87.2	2.02	28.4	124
105	184	182	-0.243	-0.249	34.425	27.683	37.045	45.961	28.564	306	88.0	2.12	29.7	182
106	219	217	-0.598	-0.605	34.435	27.707	37.090	46.025	28.757	290	91.5	2.14	30.3	217
107	269	266	-0.544	-0.553	34.469	27.732	37.112	46.043	29.021	281	93.5	2.15	30.7	266
108	342	339	-0.292	-0.304	34.516	27.759	37.123	46.040	29.394	266	94.7	2.15	31.1	339
109	441	437	-0.232	-0.248	34.547	27.781	37.142	46.055	29.886	250	98.8	2.17	31.3	437
110	542	536	-0.179	-0.200	34.576	27.802	37.159	46.069	30.384	243	102.5	2.19	31.4	536
111	637	630	-0.105	-0.130	34.598	27.817	37.169	46.075	30.846	236	105.0	2.22	31.7	630
112	707	699	-0.081	-0.110	34.620	27.834	37.184	46.089	31.192	227	110.6	2.25	32.1	699
115	749	741	0.084	0.052	34.631	27.834	37.175	46.070	31.387	225	111.3	2.24	31.9	741
116	843	834	0.132	0.095	34.646	27.844	37.182	46.075	31.837	221	114.1	2.26	32.1	834
117	941	930	0.130	0.088	34.654	27.851	37.189	46.082	32.303	219	116.7	2.26	32.0	930
118	1032	1020	0.129	0.082	34.655	27.852	37.191	46.084	32.729	218	117.1	2.29	32.5	1020
119	1131	1118	0.130	0.078	34.659	27.856	37.194	46.088	33.194	218	118.9	2.29	32.4	1118
120	1229	1214	0.152	0.094	34.669	27.863	37.201	46.093	33.656	219	119.3	2.28	32.5	1214
121	1337	1321	0.088	0.025	34.658	27.858	37.200	46.096	34.154	224	118.4	2.26	32.3	1321
122	1481	1463	0.061	-0.011	34.661	27.862	37.206	46.104	34.825	225	119.2	2.25	32.3	1463
123	1517	1498	0.050	-0.024	34.663	27.864	37.209	46.108	34.994	225	120.7	2.25	32.2	1498
501	1564	1544	-0.014	-0.090	34.660	27.865	37.214	46.116	35.215	224	120.2	2.25	32.5	1544
124	1612	1591	0.005	-0.074	34.658	27.863	37.211	46.112	35.433	226	119.7	2.26	32.4	1591
502	1666	1644	-0.041	-0.123	34.661	27.867	37.218	46.122	35.689	226	120.3	2.25	32.6	1644
503	1819	1795	-0.070	-0.161	34.663	27.871	37.224	46.130	36.396	228	120.6	2.24	32.5	1795
504	1920	1894	-0.084	-0.182	34.656	27.866	37.220	46.128	36.855	229	120.1	2.24	32.5	1894
505	2023	1995	-0.102	-0.207	34.655	27.867	37.222	46.131	37.327	231	120.6	2.24	32.4	1995
506	2123	2093	-0.123	-0.234	34.657	27.869	37.227	46.137	37.787	232	120.2	2.23	32.4	2093
507	2224	2192	-0.155	-0.273	34.653	27.868	37.228	46.141	38.248	233	123.3	2.23	32.3	2192
508	2377	2342	-0.178	-0.306	34.653	27.870	37.231	46.146	38.945	235	122.0	2.23	32.4	2342
509	2530	2492	-0.215	-0.354	34.656	27.874	37.239	46.156	39.644	236	120.6	2.22	32.3	2492
510	2732	2690	-0.251	-0.405	34.653	27.874	37.242	46.162	40.557	239	120.2	2.23	32.2	2690
511	2936	2890	-0.276	-0.446	34.653	27.876	37.246	46.169	41.475	241	119.0	2.24	32.3	2890
512	3133	3082	-0.307	-0.493	34.651	27.876	37.249	46.175	42.358	244	118.4	2.23	32.1	3082
515	3325	3270	-0.328	-0.530	34.645	27.873	37.248	46.176	43.211	245	116.9	2.23	32.1	3270
516	3436	3378	-0.340	-0.551	34.644	27.873	37.250	46.178	43.704	246	116.9	2.24	32.1	3378
517	3658	3594	-0.356	-0.587	34.644	27.875	37.253	46.184	44.687	248	116.4	2.23	31.9	3594
518	3903	3833	-0.361	-0.615	34.642	27.874	37.255	46.187	45.764	249	114.5	2.23	31.9	3833
519	4111	4035	-0.356	-0.630	34.642	27.875	37.256	46.189	46.673	249	113.1	2.24	31.7	4035
315	4169	4092	-0.358	-0.640										4092
316	4319	4238	-0.349	-0.646										4238
520	4324	4242	-0.344	-0.640	34.641	27.875	37.257	46.190	47.598	250	113.9	2.23	31.8	4242
317	4455	4370	-0.339	-0.651										4370
521	4537	4449	-0.330	-0.649	34.646	27.879	37.262	46.196	48.523	250	114.6	2.24	32.0	4449
318	4603	4513	-0.327	-0.655										4513
319	4710	4617	-0.318	-0.658										4617
522	4750	4656	-0.313	-0.656	34.647	27.880	37.263	46.197	49.439	250	115.3	2.24	32.0	4656
320	4798	4703	-0.310	-0.660										4703
321	4858	4761	-0.305	-0.661										4761
322	4893	4795	-0.302	-0.662										4795
323	4917	4818	-0.300	-0.663										4818
324	4946	4846	-0.298	-0.664										4846
523	4963	4863	-0.292	-0.659	34.647	27.880	37.263	46.198	50.350	249D	115.7	2.25	32.0	4863
524	5170	5063	-0.271	-0.662	34.643	27.877	37.260	46.195	51.228	249	117.5	2.24	32.0	5063

BOTTOM DEPTH FOR CAST 3 IS 4860 — CAST 5 IS 5182

STATION: 80 LEG: VII POSITION: 57° 47′ S 29° 44′ W DATE: 10 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	0.547	0.547	32.96 D	26.517	35.922	44.878	26.531					3
101	4	4	0.547	0.547	32.964	26.517	35.922	44.878	26.536	356	51.6	1.62	24.7	4
1202	22	22	-0.599	-0.600	32.96 D	26.515	35.924	44.883	26.622					22

STATION: 80 LEG: VII POSITION: 57° 47′ S 29° 44′ W DATE: 10 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1203	33	33	-1.019	-1.020	33.31 D	26.813	36.241	45.219	26.972					33
1204	50	50	-1.557	-1.558	33.95 D	27.347	36.797	45.795	27.589					50
102	64	63	-1.634	-1.635	33.933	27.335	36.790	45.793	27.645	340	65.3	1.81	27.1	63
1205	76	75	-1.580	-1.581	34.01 D	27.396	36.847	45.845	27.764					75
1206	101	100	-1.323	-1.325	34.10 D	27.462	36.895	45.877	27.950					100
103	119	118	-1.020	-1.023	34.185	27.521	36.934	45.897	28.094	296	71.7	1.98	29.7	118
1207	127	126	-0.938	-0.941	34.21 D	27.538	36.946	45.904	28.149					126
1208	151	150	-0.296	-0.301	34.29 D	27.576	36.944	45.865	28.300					150
1209	202	200	0.187	0.179	34.42 D	27.654	36.991	45.882	28.618					200
104	244	242	0.621	0.611	34.527	27.720	37.030	45.896	28.881	227	85.7	2.16	31.7	242
1210	302	299	0.840	0.826	34.58 D	27.750	37.046	45.900	29.184					299
105	399	395	1.020	1.001	34.647	27.793	37.078	45.921	29.682	208	93.4	2.14	31.7	395
106	497	492	0.959	0.935	34.663	27.810	37.099	45.945	30.161	208	98.2	2.15	31.7	492
107	596	590	0.832	0.804	34.669	27.823	37.119	45.972	30.642	210	101.3	2.15	31.5	590
108	747	739	0.807	0.771	34.681	27.834	37.132	45.987	31.362	209	106.1	2.14	31.7	739
109	849	840	0.659	0.618	34.674	27.838	37.145	46.008	31.845	212	109.3	2.14	31.7	840
110	1000	989	0.546	0.497	34.676	27.847	37.161	46.030	32.561	213	112.3	2.17	32.0	989
111	1252	1237	0.451	0.388	34.680	27.856	37.176	46.052	33.744	215	116.8	2.20	32.2	1237
112	1404	1387	0.366	0.295	34.678	27.859	37.185	46.066	34.454	215	117.4	2.19	32.1	1387
115	1587	1567	0.256	0.175	34.671	27.860	37.193	46.081	35.304	216	119.8	2.22	32.5	1567
116	1790	1767	0.188	0.094	34.670	27.864	37.201	46.093	36.243	220	119.4	2.23	32.4	1767
117	1992	1965	0.097	-0.009	34.666	27.866	37.210	46.107	37.173	223	120.2	2.21	32.4	1965
118	2195	2164	0.028	-0.091	34.663	27.867	37.216	46.119	38.103	225	120.0	2.24	32.4	2164
119	2398	2363	-0.030	-0.163	34.660	27.868	37.222	46.128	39.029	229	120.3	2.24	32.4	2363
120	2602	2563	-0.073	-0.221	34.660	27.871	37.228	46.138	39.955	230	121.1	2.23	32.4	2563
121	2805	2762	-0.108	-0.271	34.657	27.871	37.231	46.143	40.870	232	122.3	2.24	32.4	2762
122	3009	2961	-0.125	-0.305	34.657	27.873	37.234	46.149	41.785	233	122.2	2.24	32.5	2961
123	3215	3163	-0.128	-0.326	34.656	27.873	37.236	46.152	42.703	233	124.2	2.24	32.5	3163
124	3421	3364	-0.125	-0.341	34.655	27.873	37.237	46.153	43.616	235	124.0	2.22	32.5	3364

BOTTOM DEPTH FOR CAST 1 IS 3391

STATION: 81 LEG: VII POSITION: 55° 58′ S 26° 26′ W DATE: 11 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	0.142	0.142	33.40 D	26.838	36.195	45.105	26.853					3
1202	10	10	-0.031	-0.031	33.41 D	26.856	36.223	45.143	26.904					10
1203	20	20	-0.199	-0.200	33.42 D	26.868	36.244	45.174	26.964					20
1204	31	31	-0.378	-0.379	33.46 D	26.910	36.297	45.235	27.059					31
1205	51	51	-1.296	-1.297	33.87 D	27.273	36.708	45.693	27.520					51
1206	79	78	-1.473	-1.475	34.08 D	27.449	36.892	45.883	27.831					78
115	94	93	-1.384	-1.386	34.156	27.509	36.945	45.930	27.963	310	74.7	2.01	29.2	93
1207	129	128	-0.860	-0.864	34.29 D	27.598	37.000	45.952	28.219					128
1208	155	154	-0.425	-0.430	34.37 D	27.644	37.018	45.945	28.388					154
116	205	203	0.155	0.147	34.485	27.712	37.050	45.942	28.691	240	87.3	2.19	31.7	203
1209	260	258	0.652	0.641	34.59 D	27.769	37.076	45.940	29.005					258
1210	314	311	0.674	0.660	34.61 D	27.786	37.092	45.954	29.27b					311
117	375	371	0.737	0.720	34.646	27.809	37.111	45.969	29.589	211	100.2	2.20	31.9	371
1211	521	516	0.679	0.655	34.67 D	27.831	37.136	45.997	30.300					516
1212	627	621	0.607	0.578	34.67 D	27.837	37.146	46.012	30.806					621
1213	727	719	0.538	0.504	34.67 D	27.840	37.154	46.024	31.280					719
1214	836	827	0.445	0.406	34.67 D	27.846	37.165	46.041	31.798					827
1215	1046	1034	0.367	0.317	34.672D	27.853	37.178	46.058	32.788					1034
1216	1268	1253	0.271	0.209	34.672D	27.859	37.190	46.076	33.829					1253
118	1413	1396	0.203	0.134	34.669	27.861	37.196	46.086	34.504	218	118.7	2.25	32.2	1396
119	1718	1696	0.071	-0.016	34.664	27.864	37.209	46.107	35.919	222	121.0	2.24	32.3	1696
1217	2027	2000	-0.018	-0.124	34.665D	27.871	37.221	46.126	37.344					2000
120	2531	2494	-0.183	-0.323	34.659	27.875	37.238	46.153	39.647	234	121.2	2.24	32.3	2494
1218	3048	3000	-0.325	-0.503	34.657D	27.882	37.255	46.181	41.986					3000
121	3246	3194	-0.352	-0.546	34.649	27.877	37.253	46.181	42.866	245	119.2	2.21	32.0	3194
122	3661	3598	-0.370	-0.601	34.647	27.878	37.257	46.189	44.705	247	117.0	2.21	32.0	3598
1219	4078	4005	-0.386	-0.656	34.642D	27.876	37.259	46.194	46.533					4005
123	4282	4203	-0.368	-0.659	34.646	27.879	37.262	46.197	47.423	250	116.0	2.20	31.9	4203
124	4570	4483	-0.344	-0.666	34.644	27.878	37.262	46.197	48.666	249	116.2	2.20	32.0	4483

BOTTOM DEPTH FOR CAST 1 IS 4587

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

STATION: 82 LEG: VII POSITION: 56° 15′ S 24° 55′ W DATE: 11 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
615	1	1	0.976	0.976	33.732	27.060	36.362	45.221	27.065	344	45.1	1.65	24.5	1
616	28	28	0.803	0.802	33.753	27.087	36.399	45.267	27.221	346	42.7	1.67	24.4	28
617	47	47	0.320	0.318	33.819	27.167	36.506	45.400	27.392	347	42.2	1.72	24.8	47
618	68	67	-0.619	-0.621	33.912	27.285	36.678	45.623	27.612	342	49.9	1.85	26.5	67
619	83	82	-0.703	-0.705	33.972	27.337	36.734	45.683	27.736	331	53.7	1.93	27.3	82
620	98	97	-0.725	-0.728	34.042	27.394	36.792	45.740	27.866	316	57.8	2.00	28.7	97
621	119	118	-0.368	-0.372	34.169	27.482	36.856	45.782	28.053	286	61.7	2.11	30.5	118
622	158	157	0.534	0.528	34.346	27.579	36.897	45.771	28.333	242	69.2	2.23	32.2	157
401	202	200	0.765	0.756	34.455	27.654	36.956	45.816	28.615	226	77.5	2.22	32.3	200
623	209	207	1.265	1.255	34.502	27.660	36.933	45.765	28.651	207	76.7	2.30	33.1	207
402	285	282	1.435	1.421	34.609	27.734	36.997	45.818	29.082	196	84.7	2.24	32.5	282
624	289	286	1.267	1.253	34.588	27.729	37.001	45.831	29.098	202	83.5	2.25	32.7	286
403	375	371	1.648	1.628	34.673	27.771	37.020	45.830	29.541	187	88.6	2.20	31.9	371
404	436	432	1.634	1.611	34.685	27.782	37.032	45.842	29.838	188	90.7	2.21	32.0	432
405	588	582	1.529	1.497	34.711	27.811	37.067	45.882	30.580	196	91.3	2.13	30.9	582
406	841	832	1.150	1.106	34.708	27.835	37.113	45.950	31.793	202	99.6	2.16	31.0	832
407	992	981	0.929	0.877	34.706	27.848	37.139	45.988	32.514	205	104.7	2.18	31.4	981
408	1092	1080	0.920	0.862	34.705	27.848	37.140	45.990	32.979	206	107.4	2.19	31.5	1080
409	1194	1180	0.707	0.645	34.687	27.847	37.152	46.014	33.457	209	109.8	2.21	31.8	1180
410	1396	1379	0.571	0.498	34.684	27.853	37.167	46.036	34.403	211	112.4	2.23	32.0	1379
411	1597	1577	0.447	0.363	34.682	27.859	37.181	46.058	35.339	213	114.9	2.24	32.1	1577
412	1799	1776	0.362	0.265	34.679	27.862	37.189	46.072	36.273	216	117.8	2.22	32.2	1776
1401	1810H	1787	0.282H	0.186	34.672	27.860	37.193	46.080	36.326	216	119.7	2.23	31.9	1787
1402	2013H	1986			34.669					219	119.6	2.24	32.2	1986
1403	2217H	2186			34.667					222	119.5	2.24	32.1	2186
1404	2422H	2387	0.08 H	-0.06	34.665	27.868	37.214	46.115	39.129	224	120.2	2.23	32.0	2387
1405	2628H	2589			34.663					227	120.4	2.24	32.0	2589
1406	2834H	2791			34.661					229	120.7	2.24	32.1	2791
1407	3038H	2990	-0.085H	-0.268	34.660	27.873	37.233	46.145	41.912	231	121.2	2.24	32.0	2990
1408	3244H	3191			34.656					234	121.5	2.23	32.0	3191
1409	3450H	3392			34.653					238	119.6	2.22	31.9	3392
1410	3657H	3594	-0.285H	-0.518	34.651	27.877	37.252	46.179	44.678	242	119.2	2.21	31.9	3594
1411	3854H	3786			34.647					245	119.1	2.20	31.6	3786
1412	4073H	4000			34.646					247	117.2	2.20	31.6	4000
1415	4382H	4300	-0.350H	-0.652	34.647	27.880	37.263	46.197	47.855	248	115.8	2.19	31.7	4300
1416	4694H	4603			34.644					250	115.5	2.19	32.0	4603
1417	5007H	4906	-0.36 H	-0.73	34.644	27.881	37.268	46.207	50.549	251	114.1	2.18	31.5	4906
1418	5318H	5208			34.646					252	113.0	2.18	31.3	5208
1419	5629H	5509			34.644					252	112.2	2.20	31.6	5509
1420	5936H	5806	-0.302H	-0.784	34.645	27.884	37.274	46.216	54.477	253	111.8	2.19	31.4	5806
1421	6251H	6109			34.647					253	112.6	2.18	31.5	6109
1423	6566H	6412			34.646					254	112.0	2.19	31.7	6412
1424	6669H	6511	-0.23 H	-0.81	34.647	27.886	37.278	46.221	57.517	254	112.5	2.18	31.7	6511

BOTTOM DEPTH FOR CAST 14 IS 7810

STATION: 83 LEG: VII POSITION: 56° 48′ S 22° 22′ W DATE: 17 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	1.38	1.38	33.51 D	26.856	36.139	44.980	26.871					3
115	7	7	1.377	1.377	33.506	26.853	36.136	44.977	26.887	341	27.2	1.34	21.8	7
116	14	14	1.380	1.379	33.502	26.850	36.133	44.974	26.917	341	27.2	1.42	22.1	14
1202	20	20	1.370	1.369	33.51 D	26.857	36.140	44.982	26.952					20
1203	30	30	1.353	1.352	33.52 D	26.863	36.147	44.990	27.006					30
1204	50	50	0.921	0.919	33.66 D	27.003	36.310	45.173	27.241					50
117	82	81	0.M0	0.107	33.827	27.184	36.535	45.441	27.577	345	34.7	1.65	24.0	81
1205	101	100	-0.551	-0.554	33.92 D	27.288	36.677	45.618	27.773					100
1206	126	125	-0.616	-0.620	34.00 D	27.355	36.747	45.690	27.961					125
1207	151	150	-0.623	-0.627	34.04 D	27.390	36.782	45.725	28.116					150
118	167	166	-0.474	-0.479	34.074	27.410	36.792	45.726	28.211	308	56.9	2.01	29.6	166
1208	202	200	-0.351	-0.358	34.21 D	27.513	36.885	45.810	28.481					200
119	268	266	0.274	0.263	34.395	27.633	36.966	45.853	28.911	245	78.0	2.18	32.0	266
1209	303	300	0.677	0.664	34.51 D	27.705	37.012	45.876	29.145					300
120	415	411	0.986	0.966	34.638	27.788	37.075	45.920	29.753	202	91.1	2.20	32.2	411

STATION: 83 LEG: VII POSITION: 56° 48′ S 22° 22′ W DATE: 17 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
121	612	606	0.955	0.925	34.671	27.817	37.106	45.953	30.709	205	99.6	2.19	32.0	606
122	820	811	1.067	1.025	34.711	27.843	37.126	45.966	31.705	203	104.7	2.15	31.4	811
123	1069	1057	0.873	0.817	34.703	27.849	37.144	45.996	32.875	207	110.3	2.18	31.6	1057
201	1232H	1218	0.710H	0.646	34.695	27.853	37.158	46.020	33.640	208	114.0	2.16	31.7	1218
124	1324	1308	0.618	0.549	34.691	27.856	37.166	46.033	34.071	210	114.2	2.18	32.0	1308
202	1487H	1469	0.51 H	0.43	34.684	27.857	37.175	46.048	34.829	211	116.4	2.19	32.1	1469
203	1737H	1715	0.410H	0.317	34.682	27.861	37.186	46.066	35.986	214	117.8	2.20	32.3	1715
204	2044H	2016	0.247H	0.135	34.674	27.865	37.200	46.090	37.400	219	119.5	2.19	32.4	2016
205	2347H	2314	0.13 H	-0.01	34.669	27.868	37.212	46.109	38.786	222	120.6	2.21	32.5	2314
206	2654H	2614	0.025H	-0.129	34.664	27.870	37.221	46.126	40.180	226	119.5	2.20	32.4	2614
207	2958H	2912	-0.056H	-0.233	34.660	27.872	37.229	46.140	41.551	230	121.5	2.22	32.5	2912
208	3163H	3112	-0.11 H	-0.31	34.659	27.874	37.236	46.151	42.472	232	121.9	2.21	32.1	3112
209	3370H	3314	-0.192H	-0.402	34.658	27.878	37.245	46.165	43.402	236	122.1	2.20	31.7	3314
210	3572H	3511	-0.25 H	-0.47	34.655	27.879	37.251	46.175	44.301	240	119.8	2.20	31.9	3511
211	3778H	3712	-0.30 H	-0.54	34.653	27.880	37.256	46.184	45.214	243	119.5	2.20	31.8	3712
212	4085H	4011	-0.34 H	-0.62	34.651	27.882	37.262	46.194	46.564	246	117.3	2.19	31.8	4011
215	4391H	4309	-0.34 H	-0.65	34.650	27.882	37.265	46.198	47.896	248	117.5	2.14	31.0	4309
216	4694H	4603	-0.362H	-0.697	34.648	27.883	37.268	46.205	49.207	250	116.1	2.18	31.7	4603

BOTTOM DEPTH FOR CAST 2 IS 4636

STATION: 84 LEG: VII POSITION: 56° 55′ S 19° 49′ W DATE: 18 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	1.15	1.15	33.25 D	26.662	35.963	44.820	26.677					3
101	11H	11	1.032H	1.032	33.307	26.715	36.022	44.885	26.768	346	26.8	1.34	21.9	11
1202	37	37	0.763	0.762	33.42 D	26.822	36.142	45.018	26.999					37
102	61H	61	0.02 H	0.01	33.708	27.093	36.452	45.364	27.385	352	31.3	1.62	23.9	61
1203	81	80	-0.47	-0.47	33.88 D	27.253	36.638	45.575	27.642					80
103	103H	102	-0.705H	-0.708	33.927	27.300	36.699	45.648	27.796	335	49.1	1.91	27.5	102
1204	120	119	-0.61	-0.61	34.00 D	27.356	36.747	45.690	27.933					119
1205	146	145	-0.02	-0.03	34.09 D	27.402	36.757	45.665	28.101					145
104	174H	173	0.533H	0.526	34.255	27.506	36.826	45.701	28.336	255	64.6	2.19	32.3	173
1206	254	252	1.585	1.572	34.51 D	27.640	36.896	45.711	28.842					252
1207	308	305	1.759	1.743	34.57 D	27.680	36.925	45.730	29.134					305
1208	404	400	1.789	1.767	34.63 D	27.722	36.965	45.767	29.627					400
105	537H	532	1.608H	1.579	34.662	27.766	37.018	45.830	30.295	188	90.0	2.21	32.6	532
106	709H	702	1.576H	1.537	34.704	27.802	37.056	45.870	31.136	193	93.9	2.15	31.9	702
107	892H	882	1.404H	1.355	34.717	27.825	37.089	45.913	32.014	198	97.6	2.13	31.5	882
108	1268H	1253	0.87 H	0.80	34.693	27.842	37.138	45.991	33.789	206	111.8	2.17	32.3	1253
109	1621H	1601	0.550H	0.462	34.682	27.853	37.169	46.041	35.439	211	118.2	2.20	32.5	1601
110	1926H	1901	0.401H	0.295	34.678	27.859	37.185	46.066	36.848	213	121.1	2.21	32.4	1901
111	2231H	2200	0.23 H	0.11	34.673	27.866	37.203	46.094	38.252	218	124.0	2.23	32.7	2200
112	2538H	2501	0.119H	-0.028	34.667	27.867	37.212	46.112	39.649	223	124.7	2.22	32.7	2501
115	2843H	2800	0.016H	-0.153	34.663	27.870	37.223	46.129	41.029	228	125.1	2.21	32.7	2800
116	3049H	3001	-0.04 H	-0.23	34.661	27.872	37.229	46.139	41.956	229	126.0	2.22	32.4	3001
117	3254H	3201	-0.107H	-0.309	34.658	27.874	37.236	46.150	42.875	234	126.3	2.19	32.4	3201
118	3462H	3404			34.659					236	125.9	2.20	32.4	3404
119	3775H	3709	-0.26 H	-0.50	34.655	27.880	37.253	46.179	45.196	242	125.0	2.21	32.5	3709
120	4086H	4012	-0.29 H	-0.56	34.652	27.880	37.257	46.186	46.561	246	124.0	2.21	32.1	4012
121	4402H	4319	-0.30 H	-0.60	34.650	27.880	37.260	46.192	47.936	246	124.1	2.20	32.3	4319
122	4717H	4625	-0.30 H	-0.64	34.649	27.881	37.263	46.197	49.297	247				4625
123	5037H	4936	-0.265	-0.641	34.649	27.881	37.263	46.197	50.664	247				4936
124	5205H	5098	-0.258	-0.654	34.649	27.882	37.264	46.199	51.380	248				5098

BOTTOM DEPTH FOR CAST 1 IS 5132

STATION: 85 LEG: VII POSITION: 57° 30′ S 17° 23′ W DATE: 18 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
3201	3	3	1.10	1.10	33.56 D	26.914	36.212	45.067	26.928					3
311	15	15	1.093	1.092	33.564	26.918	36.216	45.072	26.989	344	22.0	1.42	22.7	15

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 85 LEG: VII POSITION: 57° 30' S 17° 23' W DATE: 18 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
3202	30	30	1.093	1.092	33.56 D	26.918	36.216	45.072	27.061					30
3203	50	50	0.788	0.786	33.60 D	26.965	36.280	45.152	27.204					50
312	70	69	0.236	0.233	33.618	27.009	36.357	45.258	27.345	346	23.4	1.49	22.8	69
3204	103	102	-0.357	-0.360	33.86 D	27.232	36.611	45.542	27.727					102
3205	126	125	-0.424	-0.428	33.90 D	27.267	36.649	45.583	27.872					125
315	148	147	-0.398	-0.403	33.942	27.300	36.680	45.612	28.010	328	45.0	1.88	27.4	147
316	207	205	1.024	1.015	34.329	27.537	36.827	45.674	28.520	233	67.4	2.24	33.7	205
317	276	274	1.468	1.454	34.491	27.637	36.900	45.721	28.943	198	76.8	2.27	34.4	274
318	358	355	1.608	1.589	34.580	27.699	36.952	45.765	29.390	188	83.5	2.27	33.9	355
319	440	436	1.677	1.653	34.634	27.738	36.986	45.795	29.812	186	88.7	2.24	33.1	436
320	566	560	1.642	1.611	34.680	27.776	37.028	45.838	30.442	189	92.6	2.17	32.2	560
321	666	659	1.514	1.478	34.687	27.793	37.050	45.867	30.927	192	94.8	2.13	31.8	659
322	766	758	1.462	1.420	34.702	27.809	37.069	45.889	31.410	202	97.2	2.11	31.7	758
323	866	857	1.390	1.342	34.711	27.821	37.086	45.910	31.890	198	98.8	2.09	31.5	857
306	955H	945	1.219H	1.167	34.707	27.830	37.105	45.938	32.316	199	103.4	2.09	31.7	945
324	968	957	1.230	1.177	34.706	27.829	37.103	45.936	32.375	200	103.2	2.10	31.7	957
307	1005H	994	1.126H	1.072	34.702	27.832	37.113	45.951	32.553	201	104.9	2.13	32.1	994
308	1107H	1094	1.026H	0.966	34.700	27.837	37.124	45.968	33.034	203	107.9	2.14	32.2	1094
309	1208H	1194	0.851H	0.787	34.692	27.842	37.139	45.993	33.513	205	110.7	2.15	32.3	1194
212	1288	1273	1.007	0.936	34.705	27.843	37.132	45.977	33.878	204	110.1	2.17	32.1	1273
310	1312H	1296			34.689					206	112.9	2.16	32.3	1296
215	1408	1391	0.833	0.756	34.698	27.849	37.148	46.003	34.443	206	113.9	2.17	31.6	1391
216	1546	1527	0.725	0.640	34.692	27.851	37.157	46.018	35.084	209	116.9	2.18	32.5	1527
217	1722	1700	0.572	0.477	34.685	27.855	37.170	46.041	35.903	211	120.1	2.14	32.3	1700
218	1925	1899	0.448	0.341	34.681	27.859	37.182	46.061	36.841	212	123.7	2.19	32.4	1899
219	2127	2098	0.349	0.229	34.677	27.862	37.192	46.076	37.769	215	123.5	2.22	32.7	2098
220	2331	2298	0.250	0.116	34.673	27.865	37.201	46.092	38.702	219	124.7	2.20	32.4	2298
221	2533	2496	0.170	0.022	34.670	27.867	37.209	46.106	39.622	221	126.4	2.21	32.7	2496
201	2704H	2663	0.100H	-0.060	34.667	27.869	37.216	46.117	40.398	223	125.8	2.20	32.6	2663
222	2737	2696	0.099	-0.064	34.666	27.868	37.216	46.116	40.546	224	126.4	2.21	32.5	2696
202	2907H	2862	0.036H	-0.139	34.664	27.871	37.222	46.127	41.314	226	125.7	2.22	32.9	2862
203	3109H	3059	-0.023H	-0.214	34.662	27.873	37.229	46.138	42.222	228	127.0	2.22	32.4	3059
204	3313H	3259	-0.101H	-0.308	34.660	27.875	37.237	46.152	43.138	232	126.2	2.22	32.9	3259
205	3518H	3459	-0.173H	-0.397	34.658	27.878	37.245	46.165	44.054	235	126.6	2.21	32.8	3459
206	3725H	3660	-0.250H	-0.490	34.653	27.878	37.251	46.176	44.974	240	125.2	2.22	32.6	3660
207	3932H	3862	-0.281H	-0.540	34.652	27.879	37.255	46.183	45.886	242	125.2	2.21	32.6	3862
208	4142H	4066	-0.313H	-0.592	34.652	27.881	37.260	46.191	46.809	244	124.5	2.20	32.6	4066
209	4349H	4268	-0.303H	-0.603	34.652	27.882	37.262	46.193	47.708	245	123.9	2.20	32.2	4268
210	4563H	4475	-0.30 H	-0.62	34.651	27.882	37.263	46.195	48.633	245	123.9	2.19	32.7	4475
211	4776H	4682	-0.280H	-0.627	34.651	27.882	37.263	46.196	49.549	245	123.9	2.19	32.7	4682
223	4818	4723	-0.279	-0.630	34.650	27.881	37.263	46.196	49.728	246	125.2	2.19	32.4	4723
224	4818	4723	-0.279	-0.630	34.649	27.881	37.262	46.195	49.727	242	125.0	2.17	32.4	4723

BOTTOM DEPTH FOR CAST 2 IS 4758

STATION: 86 LEG: VII POSITION: 57° 52' S 14° 32' W DATE: 19 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1201	3	3	0.779	0.779	33.49 D	26.875	36.192	45.066	26.889					3
112	6	6	0.779	0.779	33.487A	26.875	36.192	45.066	26.903	345	27.2	1.38	22.1	6
1202	25	25	0.779	0.778	33.49 D	26.878	36.196	45.070	26.997					25
1203	50	50	0.574	0.572	33.63 D	26.999	36.326	45.209	27.238					50
1204	76	75	-0.240	-0.242	33.90 D	27.256	36.627	45.551	27.621					75
1205	101	100	-0.611	-0.614	33.94 D	27.305	36.697	45.641	27.791					100
115	134	133	-0.384	-0.388	34.028	27.369	36.746	45.676	28.012	311	51.5	1.99	29.5	133
1206	201	199	1.130	1.121	34.34 D	27.538	36.822	45.663	28.492					199
116	263	261	1.644	1.630	34.501	27.633	36.885	45.697	28.876	191	76.9	2.33	34.6	261
117	418	414	1.764	1.741	34.621	27.721	36.965	45.769	29.691	183	87.2	2.24	33.0	414
118	569	563	1.719	1.688	34.672	27.766	37.012	45.818	30.443	185	91.8	2.18	32.5	563
119	670	663	1.646	1.609	34.690	27.786	37.036	45.846	30.936	189	93.3	2.16	32.2	663
120	873	864	1.456	1.408	34.706	27.813	37.074	45.895	31.912	196	98.1	2.11	31.6	864
121	1023	1012	1.268	1.212	34.707	27.827	37.099	45.930	32.627	200	103.3	2.14	31.3	1012
122	1246	1231	0.979	0.911	34.701	27.842	37.131	45.978	33.683	205	111.7	2.14	32.0	1231
123	1530	1511	0.743	0.659	34.692	27.850	37.154	46.015	35.009	208	116.7	2.16	32.0	1511

STATION: 86 LEG: VII POSITION: 57° 52' S 14° 32' W DATE: 19 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
124	1762	1739	0.536	0.439	34.684	27.856	37.174	46.047	36.089	209	120.9	2.19	32.3	1739
101	2006H	1979	0.416H	0.304	34.677	27.858	37.184	46.064	37.211	212	123.1	2.20	32.4	1979
102	2261H	2229	0.309H	0.179	34.676	27.864	37.197	46.084	38.381	216	125.9	2.22	33.0	2229
103	2514H	2477	0.195H	0.048	34.672	27.868	37.208	46.103	39.535	220	125.9	2.22	32.9	2477
104	2770H	2728	0.094H	-0.071	34.667	27.870	37.217	46.119	40.695	224	126.5	2.22	32.7	2728
105	3023H	2975	0.002H	-0.182	34.663	27.872	37.226	46.134	41.836	227	126.9	2.23	32.7	2975
106	3278H	3224	-0.10 H	-0.30	34.660	27.875	37.236	46.151	42.982	232	127.2	2.22	32.5	3224
107	3533H	3473	-0.182H	-0.407	34.657	27.877	37.245	46.165	44.121	236	128.8	2.21	32.5	3473
108	3790H	3724	-0.250H	-0.497	34.652	27.877	37.251	46.176	45.259	239	128.7	2.20	32.4	3724
109	4045H	3972	-0.275H	-0.546	34.652	27.879	37.256	46.184	46.380	241	128.0	2.21	32.5	3972
110	4302H	4222	-0.268H	-0.565	34.652	27.880	37.258	46.187	47.498	244	126.8	2.20	32.5	4222
111	4561H	4474	-0.264	-0.588	34.651	27.880	37.259	46.190	48.619	244	126.7	2.20	32.2	4474

BOTTOM DEPTH FOR CAST 1 IS 4523

STATION: 87 LEG: VII POSITION: 58° 38' S 9° 26' W DATE: 20 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
102	2	2	0.182	0.182	33.559A	26.964	36.316	45.221	26.974	352	50.2	1.36	22.7	2
101	2	2	0.182	0.182	33.562	26.967	36.318	45.224	26.977	351	50.8	1.36	22.5	2
103	32	32	-1.245	-1.246	33.902	27.299	36.731	45.711	27.454	349	60.1	1.71	25.4	32
1201	50	50	-1.461	-1.462	34.19 D	27.540	36.980	45.969	27.782					50
1202	76	75	-1.39	-1.39	34.33 D	27.650	37.083	46.065	28.017					75
104	108	107	-1.337	-1.339	34.358	27.671	37.101	46.079	28.192	302	84.8	2.05	29.9	107
1203	126	125	-1.05	-1.05	34.43 D	27.723	37.134	46.095	28.330					125
105	168	166	-0.382	-0.387	34.501	27.751	37.120	46.042	28.556	252	93.5	2.15	31.9	166
1204	202	200	1.112	1.103	34.66 D	27.799	37.078	45.916	28.757					200
1205	252	250	1.070	1.058	34.67 D	27.810	37.092	45.931	29.005					250
106	340	337	0.941	0.925	34.687	27.830	37.119	45.965	29.442	203	107.8	2.19	32.3	337
107	490	485	0.712	0.690	34.689	27.846	37.148	46.008	30.168	206	115.6	2.20	32.7	485
108	682	675	0.495	0.464	34.679	27.851	37.167	46.038	31.080	202	120.5	2.26	32.9	675
109	898	888	0.384	0.342	34.680	27.858	37.181	46.060	32.102	202	124.3	2.29	33.6	888
110	1101	1088	0.281	0.229	34.678	27.863	37.193	46.077	33.056	204	128.0	2.28	33.6	1088
111	1304	1288	0.188	0.125	34.674	27.865	37.201	46.091	34.005	209	130.4	2.29	33.6	1288
112	1761	1738	-0.023	-0.111	34.666	27.871	37.221	46.124	36.128	221	129.6	2.27	32.8	1738
115	2024	1996	-0.112	-0.217	34.662	27.873	37.229	46.138	37.338	226	132.1	2.21	32.2	1996
116	2280	2247	-0.186	-0.307	34.657	27.873	37.235	46.149	38.509	232	128.6	2.22	32.7	2247
117	2533	2495	-0.253	-0.392	34.656	27.876	37.243	46.162	39.662	236	129.4	2.20	31.9	2495
118	2788	2745	-0.297	-0.454	34.655	27.878	37.249	46.172	40.816	239	129.0	2.20	32.2	2745
119	3041	2992	-0.340	-0.517	34.654	27.880	37.254	46.181	41.954	242	126.9	2.21	32.2	2992
120	3298	3243	-0.384	-0.582	34.651	27.880	37.258	46.189	43.103	245	125.8	2.18	31.7	3243
121	3555	3494	-0.418	-0.638	34.650	27.882	37.263	46.197	44.246	247	125.7	2.19	31.9	3494
122	3811	3744	-0.454	-0.696	34.648	27.883	37.268	46.205	45.378	249	122.2	2.17	31.8	3744
123	4057	3983	-0.458	-0.724	34.647	27.883	37.270	46.208	46.457	251	121.5	2.17	32.0	3983
124	4259	4179	-0.466	-0.752	34.646	27.883	37.272	46.212	47.338	252	120.9	2.17	31.6	4179

BOTTOM DEPTH FOR CAST 1 IS 4196

STATION: 88 LEG: VII POSITION: 59° 20' S 4° 51' W DATE: 21 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
2201	3	3	0.68	0.68	34.04 D	27.325	36.639	45.509	27.339					3
201	9H	9	0.678H	0.678	34.041A	27.326	36.640	45.510	27.369	349	62.2	1.39	23.7	9
2202	25	25	0.15	0.15	34.08 D	27.386	36.730	45.629	27.505					25
202	44H	44	0.079H	0.077	34.102	27.407	36.755	45.658	27.618	347	63.1	1.56	24.4	44
2203	76	75	-1.29	-1.29	34.34 D	27.655	37.082	46.058	28.022					75
203	105H	104	-1.42 H	-1.42	34.381	27.692	37.126	46.109	28.199	308	80.0	2.03	29.5	104
204	124H	123	-1.39 H	-1.39	34.414	27.718	37.150	46.130	28.317	300	81.2	2.06	30.0	123
2204	151	150	-1.18	-1.18	34.47 D	27.753	37.171	46.138	28.480					150
2205	202	200	-0.37	-0.38	34.55 D	27.786	37.153	46.074	28.753					200
2206	252	250	0.10	0.09	34.62 D	27.824	37.163	46.056	29.027					250
2207	303	300	0.362	0.350	34.66 D	27.842	37.165	46.043	29.285					300

A DATA TAKEN FROM CTD DOWN TRACE

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 88 LEG: VII POSITION: 59° 20' S 4° 51' W DATE: 21 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
205	403H	399	0.47 H	0.45	34.684	27.856	37.172	46.044	29.770	199	113.8	2.28	33.4	399
206	548H	542	0.454H	0.430	34.693	27.864	37.182	46.055	30.463	196	118.8	2.32	33.5	542
207	799H	790	0.338H	0.302	34.685	27.865	37.190	46.070	31.646	201	122.6	2.31	33.7	790
208	1100H	1087	0.20 H	0.15	34.676	27.866	37.200	46.089	33.057	211	122.6	2.27	33.2	1087
209	1402H	1385	0.077H	0.010	34.671	27.869	37.212	46.108	34.466	218	125.0	2.27	32.8	1385
210	1705H	1683	-0.019H	-0.104	34.667	27.871	37.221	46.124	35.871	223	124.4	2.27	32.6	1683
211	2007H	1979	-0.121H	-0.224	34.661	27.872	37.229	46.139	37.261	229	124.4	2.25	32.6	1979
212	2309H	2276	-0.224H	-0.347	34.657	27.875	37.239	46.156	38.645	234	123.6	2.23	32.5	2276
215	2619	2579	-0.308	-0.452	34.652	27.875	37.246	46.169	40.054	247	124.0	2.21	32.4	2579
216	2922	2876	-0.348	-0.515	34.652	27.878	37.252	46.179	41.421	241	122.2	2.23	32.3	2876
217	3223	3170	-0.379	-0.570	34.652	27.881	37.258	46.188	42.769	245	124.0	2.13	32.3	3170
218	3527	3467	-0.414	-0.631	34.650	27.881	37.263	46.196	44.122	247	122.5	2.13	32.0	3467
219	3682	3618	-0.439	-0.670	34.650	27.883	37.267	46.202	44.810	249	120.6	2.15	32.1	3618
220	3941	3870	-0.484	-0.738	34.649	27.885	37.273	46.212	45.954	252	117.8	2.11	31.8	3870
221	4356	4273	-0.526	-0.819	34.643	27.883	37.276	46.220	47.768	255	113.0	2.16	31.8	4273
222	4775	4680	-0.513	-0.851	34.643	27.885	37.279	46.225	49.578	256	111.1	2.19	31.7	4680
223	5202	5094	-0.476	-0.863	34.643	27.885	37.281	46.227	51.402	257	111.1	2.16	31.7	5094
224	5621	5499	-0.427	-0.865	34.642	27.884	37.280	46.226	53.172	258	111.5	2.19	31.7	5499

BOTTOM DEPTH FOR CAST 2 IS 5526

STATION: 89 LEG: VII POSITION: 60° 1' S 0° 1' E DATE: 22 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
401	1	1	0.965	0.965	34.103	27.358	36.655	45.509	27.363	348	55.5	1.31	22.3	1
815	2	2	1.751	1.751	34.080	27.287	36.539	45.352	27.297					2
816	8	8	1.696	1.696	34.080	27.291	36.547	45.362	27.329					8
817	12	12	1.547	1.546	34.085	27.306	36.569	45.393	27.363					12
818	18	18	0.817	0.816	34.090	27.357	36.662	45.524	27.443					18
819	23	23	0.468	0.467	34.078	27.367	36.693	45.574	27.477					23
402	24	24	0.191	0.190	34.101	27.400	36.742	45.638	27.516	353	54.2	1.34	22.5	24
820	33	33	0.390	0.389	34.091	27.382	36.712	45.597	27.540					33
403	40	40	0.023	0.022	34.116	27.421	36.772	45.678	27.613	345	58.6	1.55	23.3	40
821	43	43	0.022	0.021	34.104	27.411	36.763	45.669	27.617					43
822	48	48	-0.386	-0.387	34.162	27.477	36.852	45.779	27.708					48
404	50	50	-1.139	-1.140	34.279	27.601	37.019	45.988	27.842	326	70.4	1.99	26.9	50
823	58	57	-1.646	-1.647	34.328	27.656	37.105	46.102	27.937					57
405	75	74	-1.829	-1.830	34.383	27.705	37.165	46.171	28.068	318	73.9	1.99	28.7	74
824	83	82	-1.820	-1.821	34.386	27.707	37.166	46.172	28.109					82
406	96	95	-1.826	-1.828	34.396	27.716	37.175	46.181	28.181	315	73.8	1.98	28.8	95
407	146	145	-0.528	-0.533	34.543	27.791	37.168	46.097	28.491	245	96.4	2.18	32.1	145
408	176	174	0.379	0.372	34.644	27.828	37.150	46.027	28.667	199	110.9	2.29	33.7	174
409	223	221	0.537	0.528	34.678	27.846	37.159	46.027	28.908	186	118.3	2.34	34.5	221
410	339	336	0.495	0.481	34.687	27.856	37.171	46.042	29.468	186	122.0	2.35	34.5	336
411	441	437	0.435	0.416	34.683	27.857	37.175	46.050	29.952	187	124.9	2.34	34.6	437
412	543	537	0.386	0.363	34.683	27.860	37.182	46.059	30.437	190	125.8	2.33	34.3	537
415	654	647	0.332	0.303	34.685	27.865	37.190	46.070	30.965	195	128.0	2.26	33.4	647
416	756	748	0.283	0.250	34.680	27.864	37.192	46.075	31.444	198	127.5	2.30	34.0	748
417	858	848	0.242	0.204	34.676	27.863	37.194	46.080	31.923	202	128.6	2.25	33.7	848
418	960	949	0.200	0.157	34.678	27.867	37.201	46.089	32.405	205	128.3	2.28	33.3	949
419	1111	1098	0.130	0.079	34.673	27.867	37.205	46.098	33.112	210	128.2	2.28	33.5	1098
420	1314	1298	0.052	-0.010	34.670	27.869	37.213	46.111	34.060	215	127.7	2.24	32.8	1298
421	1518	1499	-0.025	-0.098	34.670	27.873	37.222	46.125	35.012	219	127.6	2.24	32.9	1499
422	1721	1698	-0.098	-0.183	34.664	27.873	37.227	46.134	35.950	224	127.4	2.22	32.7	1698
211	1833	1808	-0.139	-0.230	34.663	27.874	37.231	46.141	36.467	225	126.9	2.24	32.5	1808
423	1923	1897	-0.163	-0.260	34.662	27.875	37.234	46.145	36.882	227	127.3	2.24	32.7	1897
212	2040	2012	-0.192	-0.296	34.659	27.874	37.235	46.149	37.418	229	126.9	2.22	32.4	2012
424	2126	2096	-0.211	-0.321	34.661	27.877	37.239	46.155	37.814	231	126.2	2.26	32.8	2096
201	2229H	2197	-0.248H	-0.364	34.661	27.879	37.244	46.162	38.287	234	124.6	2.17	31.8	2197
215	2438	2402	-0.270	-0.401	34.657	27.877	37.245	46.164	39.235	235	125.6	2.11U	31.5	2402
202	2635H	2595	-0.310H	-0.455	34.654	27.877	37.248	46.171	40.128	239	124.4	2.18	31.9	2595
216	2857	2812	-0.330	-0.492	34.654	27.879	37.252	46.177	41.129	239	124.1	2.21	32.2	2812
203	3045H	2998	-0.355H	-0.532	34.654	27.881	37.256	46.183	41.974	243	123.2	2.19	31.9	2996
217	3268	3214	-0.369	-0.565	34.652	27.880	37.257	46.187	42.968	243	123.9	2.13U	31.6	3214

STATION: 89 LEG: VII POSITION: 60° 1' S 0° 1' E DATE: 22 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
204	3351H	3295	-0.39 H	-0.59	34.651	27.881	37.260	46.190	43.339	246	123.2	2.16	31.8	3295
218	3473	3414	-0.395	-0.608	34.651	27.881	37.261	46.193	43.881	245	123.9	2.18	31.8	3414
205	3556H	3494	-0.42 H	-0.63	34.651	27.882	37.264	46.197	44.251	247	122.3	2.20	31.8	3494
219	3679	3614	-0.419	-0.650	34.651	27.883	37.266	46.200	44.794	247	123.3	2.21	31.9	3614
206	3763H	3696	-0.439H	-0.677	34.651	27.884	37.268	46.204	45.167	249	122.9	2.18	31.9	3696
220	3935	3864	-0.452	-0.706	34.651	27.885	37.271	46.208	45.925	249	122.3	2.14	31.4	3864
207	4070H	3995	-0.471	-0.738	34.650	27.886	37.273	46.213	46.518	252	119.2	2.20	31.8	3995
221	4253	4173	-0.500	-0.784	34.650	27.888	37.278	46.220	47.321	252	117.8	2.14	31.6	4173
208	4383H	4299	-0.516H	-0.812	34.650	27.889	37.281	46.224	47.889	255	115.6	2.16	31.8	4299
222	4593	4503	-0.524	-0.842	34.649	27.889	37.283	46.228	48.799	255	114.7	2.11	31.5	4503
209	4796H	4700	-0.53 H	-0.87	34.648	27.890	37.285	46.232	49.676	256	111.9	2.15	31.7	4700
223	5027	4924	-0.512	-0.877	34.647	27.889	37.285	46.232	50.663	257	112.0	2.10	31.4	4924
1015	5169	5062	-0.501	-0.883	34.648	27.890	37.286	46.234	51.269					5062
210	5212H	5103	-0.498H	-0.885	34.648	27.890	37.287	46.234	51.453	257	111.5	2.15	31.6	5103
1016	5247	5137	-0.492	-0.883	34.647	27.889	37.286	46.233	51.600					5137
1017	5314	5202	-0.486	-0.885	34.647	27.889	37.286	46.233	51.884					5202
1018	5355	5242	-0.482	-0.886	34.646	27.888	37.285	46.233	52.057					5242
1019	5388	5273	-0.478	-0.886	34.647	27.889	37.286	46.234	52.198					5273
1020	5417	5301	-0.475	-0.887	34.647	27.889	37.286	46.234	52.320					5301
224	5425	5309	-0.474	-0.887	34.649	27.891	37.288	46.235	52.356	257	112.9	2.14	31.8	5309
1021	5432	5316	-0.473	-0.886	34.648	27.890	37.287	46.235	52.384					5316
1022	5447	5331	-0.471	-0.886	34.647	27.889	37.286	46.234	52.447					5331
1023	5459	5342	-0.473	-0.890	34.647	27.889	37.286	46.234	52.498					5342
1024	5470	5353	-0.471	-0.889	34.647	27.889	37.286	46.234	52.544					5353

BOTTOM DEPTH FOR CAST 2 IS 5363—CAST 10 IS 5367

STATION: 90 LEG: VII POSITION: 56° 25' S 4° 30' E DATE: 26 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
301	2	2	1.235	1.235	33.835	27.126	36.412	45.255	27.136	346	36.9	1.52	23.6	2
303	4	4	1.233	1.233	33.831	27.123	36.409	45.253	27.142	347	37.0	1.53	23.6	4
302	25	25	1.226	1.225	33.831	27.124	36.410	45.254	27.243	347	37.1	1.53	23.6	25
304	31	31	1.215	1.214	33.833	27.126	36.413	45.258	27.274	347	36.8	1.53	23.6	31
305	81	80	0.244	0.241	33.893	27.230	36.573	45.469	27.618	343	44.4	1.62	24.4	80
3201	97	96	-0.50	-0.50	33.97 D	27.327	36.712	45.649	27.793					96
306	116	115	-0.717	-0.720	34.038	27.391	36.788	45.736	27.949	313	57.0	2.02	28.7	115
3202	129	128	-0.42	-0.42	34.12 D	27.445	36.823	45.753	28.064					128
3203	143	142	-0.03	-0.04	34.21 D	27.500	36.853	45.760	28.184					142
307	153	152	0.241	0.235	34.259	27.525	36.862	45.753	28.256	261	67.6	2.22	31.8	152
308	182	180	0.740	0.732	34.392	27.604	36.910	45.771	28.471	230	75.2	2.29	32.7	180
309	216	214	1.324	1.314	34.515	27.666	36.936	45.764	28.690	199	81.1	2.34	33.7	214
310	279	276	1.524	1.510	34.591	27.714	36.971	45.788	29.033	190	85.3	2.33	33.4	276
311	304	301	1.333	1.318	34.597	27.732	37.000	45.827	29.170	192	86.6	2.32	33.3	301
312	370	367	1.488	1.469	34.641	27.757	37.015	45.834	29.505	191	90.1	2.28	32.7	367
315	659	652	1.343	1.308	34.703	27.817	37.084	45.910	30.922	199	98.5	2.19	31.6	652
316	787	779	1.220	1.179	34.706	27.829	37.103	45.935	31.533	200	104.4	2.19	31.4	779
317	901	891	1.060	1.013	34.700	27.835	37.118	45.960	32.074	202	106.5	2.18	31.8	891
318	991	980	0.949	0.897	34.700	27.842	37.132	45.980	32.503	204	110.4	2.15	31.9	980
319	1199	1185	0.679	0.617	34.689	27.850	37.157	46.020	33.485	206	117.2	2.23	32.3	1185
320	1404	1387	0.566	0.493	34.689	27.857	37.171	46.041	34.444	208	120.4	2.21	32.2	1387
321	1608	1588	0.439	0.354	34.684	27.861	37.183	46.061	35.392	208	123.2	2.27	32.9	1588
322	1801	1778	0.318	0.222	34.678	27.863	37.194	46.078	36.286	212	123.9	2.29	32.8	1778
101	1884	1859	0.307	0.205	34.678	27.864	37.195	46.081	36.667	210	124.4	2.21	32.2	1859
323	1899	1874	0.272	0.170	34.676	27.865	37.198	46.086	36.737	213	123.8	2.28	32.9	1874
324	1996	1969	0.230	0.121	34.675	27.866	37.202	46.093	37.184	215	124.3	2.29	32.9	1969
102	2025	1998	0.240	0.129	34.675	27.866	37.201	46.092	37.315	214	127.0	2.22	32.3	1998
103	2229	2198	0.144	0.020	34.671	27.868	37.210	46.107	38.251	219	127.2	2.24	32.4	2198
104	2432	2397	0.077	-0.061	34.669	27.871	37.218	46.118	39.177	221	128.2	2.18	32.1	2397
105	2637	2598	0.004	-0.148	34.666	27.873	37.225	46.130	40.108	225	129.1	2.25	32.4	2598
106	2841	2797	-0.058	-0.226	34.664	27.875	37.231	46.142	41.030	227	129.0	2.24	32.4	2797
107	3007	2960	-0.096	-0.276	34.662	27.875	37.235	46.148	41.777	230	129.6	2.23	32.3	2960
108	3105	3056	-0.123	-0.311	34.660	27.875	37.237	46.152	42.216	232	129.1	2.22	32.4	3056
109	3205	3153	-0.155	-0.351	34.658	27.876	37.240	46.157	42.664	234	127.5	2.19	32.1	3153
110	3345	3290	-0.175	-0.383	34.656	27.876	37.242	46.161	43.287	235	127.5	2.21	32.2	3290

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 90 LEG: VII POSITION: 56° 25' S 4° 30' E DATE: 26 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
111	3502	3443	-0.200	-0.421	34.656	27.877	37.246	46.167	43.985	233	126.5	2.23	32.3	3443
112	3655	3592	-0.216	-0.451	34.659	27.881	37.251	46.174	44.665	239	127.1	2.22	31.8	3592
115	3769	3703	-0.235	-0.480	34.656	27.880	37.252	46.176	45.167	240	126.5	2.07U	30.2U	3703
116	3820	3753	-0.242	-0.492	34.654	27.879	37.252	46.177	45.391	240	127.4	2.21	31.9	3753
117	3893	3824	-0.248	-0.505	34.654	27.879	37.253	46.179	45.712	241	127.0	2.08U	31.4	3824
118	3964	3893	-0.252	-0.515	34.654	27.880	37.254	46.181	46.024	241	126.9	2.16	31.8	3893
119	4038	3965	-0.252	-0.523	34.655	27.881	37.256	46.182	46.348	242	126.5	2.19	32.1	3965
120	4106	4032	-0.253	-0.531	34.654	27.880	37.256	46.183	46.644	242	126.5	2.14	31.4	4032
121	4176	4100	-0.267	-0.551	34.656	27.883	37.259	46.188	46.953	243	124.6	2.19	32.0	4100
122	4281	4202	-0.302	-0.596	34.654	27.883	37.262	46.193	47.414	245	125.2	2.14	31.6	4202
123	4362	4281	-0.327	-0.628	34.654	27.885	37.266	46.199	47.770	247	124.0	2.17	31.8	4281
124	4408	4325	-0.364	-0.668	34.652	27.885	37.268	46.203	47.974	248	123.4	2.17	31.8	4325

BOTTOM DEPTH FOR CAST 1 IS 4339

STATION: 91 LEG: VII POSITION: 49° 34' S 11° 28' E DATE: 29 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
401	2	2	4.302	4.302	33.841	26.872	35.990	44.678	26.882	326	0.5	1.29	20.0	2
615	3	3	4.299	4.299	33.841	26.872	35.991	44.678	26.886					3
616	6	6	4.299	4.299	33.842	26.873	35.991	44.679	26.901					6
617	15	15	4.294	4.293	33.842	26.874	35.992	44.680	26.944					15
618	21	21	4.270	4.269	33.842	26.876	35.996	44.685	26.974					21
619	29	29	4.132	4.130	33.842	26.891	36.018	44.713	27.026					29
620	39	39	4.081	4.078	33.844	26.897	36.027	44.725	27.080					39
402	45	45	4.124	4.121	33.839	26.889	36.017	44.713	27.100	325D	0.5	1.30	20.0	45
621	53	53	4.068	4.064	33.842	26.897	36.028	44.727	27.145					53
622	74	73	4.046	4.041	33.842	26.900	36.031	44.731	27.246					73
403	79	78	4.053	4.047	33.842	26.899	36.030	44.730	27.268	325	0.8	1.34	20.0	78
623	90	89	3.898	3.892	33.846	26.918	36.057	44.764	27.339					89
624	109	108	2.924	2.917	33.884	27.038	36.229	44.984	27.551					108
404	131	130	2.044	2.037	33.896	27.119	36.358	45.158	27.738	322	16.0	1.88	24.4	130
405	156	155	1.759	1.751	33.906	27.148	36.403	45.218	27.887	323	19.3	1.86	25.4	155
406	180	179	1.734	1.725	33.931	27.170	36.426	45.242	28.022	316	21.7	1.88	26.4	179
407	230	228	1.881	1.869	34.082	27.280	36.526	45.332	28.367	273	31.1	2.11	29.9	228
408	317	314	1.932	1.915	34.269	27.426	36.666	45.467	28.922	216	49.9	2.35	33.4	314
409	391	388	2.017	1.995	34.367	27.499	36.733	45.528	29.340	204	59.1	2.39	34.3	388
410	491	487	2.085	2.057	34.447	27.558	36.787	45.578	29.867	190	66.3	2.42	34.3	487
411	594	589	2.025	1.991	34.498	27.604	36.836	45.629	30.394	183	71.9	2.43	34.4	589
412	695	688	2.166	2.124	34.554	27.638	36.862	45.647	30.896	179	75.2	2.39	33.8	688
415	754	747	2.170	2.124	34.582	27.661	36.884	45.669	31.192	177	77.6	2.38	33.5	747
416	806	798	2.174	2.125	34.605	27.679	36.902	45.686	31.451	177	78.0	2.36	33.4	798
417	908	899	2.161	2.105	34.638	27.707	36.930	45.715	31.951	178	80.4	2.32	32.8	899
418	1111	1099	2.153	2.083	34.694	27.754	36.977	45.762	32.934	186	80.7	2.22	30.9	1099
419	1315	1301	2.079	1.994	34.731	27.790	37.018	45.807	33.909	194	81.1	2.12	30.2	1301
420	1519	1502	1.950	1.851	34.748	27.815	37.050	45.846	34.870	201	82.2	2.07	29.5	1502
421	1590	1572	1.915	1.811	34.751	27.820	37.058	45.856	35.201	203	83.0	2.05	29.3	1572
101	1690	1670	1.803	1.693	34.746	27.825	37.069	45.874	35.666	201	87.5	2.07	29.8	1670
422	1722	1701	1.746	1.634	34.739	27.823	37.071	45.879	35.813	201	88.6	2.10	29.9	1701
102	1797	1775	1.694	1.577	34.741	27.829	37.080	45.891	36.162	202	90.8	2.11	30.1	1775
423	1823	1801	1.628	1.510	34.736	27.830	37.085	45.899	36.284	202	92.8	2.12	30.1	1801
103	1908	1884	1.579	1.455	34.736	27.834	37.092	45.909	36.676	202	93.9	2.12	30.2	1884
424	2028	2002	1.437	1.305	34.726	27.836	37.103	45.928	37.229	203	98.5	2.16	30.6	2002
104	2063	2037	1.416	1.282	34.727	27.838	37.107	45.933	37.391	202	100.1	2.15	30.6	2037
105	2224	2195	1.271	1.126	34.721	27.844	37.121	45.956	38.132	205	104.1	2.17	30.9	2195
106	2374	2342	1.189	1.033	34.721	27.850	37.132	45.972	38.818	207	105.7	2.16	30.8	2342
107	2531	2496	1.080	0.913	34.714	27.852	37.142	45.988	39.532	208	109.2	2.19	31.1	2496
108	2681	2643	0.975	0.797	34.710	27.856	37.152	46.005	40.215	210	111.7	2.20	31.3	2643
109	2834	2793	0.859	0.670	34.699	27.855	37.158	46.019	40.905	209	117.2	2.22	31.9	2793
110	2881	2839	0.854	0.661	34.700	27.856	37.160	46.021	41.116	211	116.4	2.22	31.7	2839
111	3030	2985	0.808	0.603	34.699	27.859	37.167	46.030	41.784	211	117.1	2.23	31.8	2985
112	3126	3078	0.793	0.579	34.698	27.859	37.168	46.033	42.212	212	118.2	2.23	31.7	3078
115	3239	3189	0.750	0.527	34.693	27.859	37.171	46.039	42.714	212	121.7	2.25	31.9	3189
116	3335	3283	0.702	0.471	34.690	27.859	37.175	46.046	43.143	212	122.8	2.26	32.1	3283

STATION: 91 LEG: VII POSITION: 49° 34' S 11° 28' E DATE: 29 JAN 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
117	3430	3376	0.679	0.439	34.689	27.860	37.178	46.050	43.565	212	125.2	2.27	32.1	3376
118	3530	3473	0.647	0.398	34.686	27.860	37.180	46.055	44.007	214	125.2	2.27	32.2	3473
119	3676	3616	0.611	0.349	34.685	27.862	37.185	46.062	44.653	213	128.4	2.27	32.3	3616
120	3831	3767	0.562	0.286	34.684	27.865	37.191	46.072	45.338	215	129.2	2.27	32.4	3767
121	3933	3866	0.527	0.242	34.681	27.865	37.194	46.077	45.787	216	131.8	2.28	32.3	3866
122	4038	3968	0.512	0.216	34.681	27.866	37.196	46.082	46.246	217	131.0	2.28	32.4	3968
123	4138	4066	0.507	0.201	34.679	27.865	37.197	46.083	46.680	218	131.9	2.28	32.3	4066
124	4244	4169	0.507	0.189	34.678	27.865	37.197	46.084	47.139	217	132.1	2.28	32.3	4169

BOTTOM DEPTH FOR CAST 1 IS 4192

STATION: 92 LEG: VII POSITION: 46° 11' S 14° 36' E DATE: 31 JAN 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
301	2	2	7.376	7.376	33.824	26.483	35.449	43.995	26.492	302	1.0	1.20	17.4	2
302	12	12	7.378	7.377	33.823	26.482	35.448	43.994	26.537	303	1.0	1.20	17.3	12
3201	24	24	7.344	7.342	33.83 D	26.489	35.456	44.004	26.599					24
3202	50	50	7.190	7.185	33.82 D	26.509	35.484	44.039	26.739					50
3203	76	75	7.119	7.112	33.82 D	26.518	35.497	44.055	26.868					75
303	92	91	6.045	6.037	33.847	26.678	35.708	44.314	27.104	304	4.0	1.38	18.5	91
304	110	109	4.882	4.874	33.907	26.863	35.950	44.609	27.375	307	6.2	1.52	20.4	109
305	141	140	4.499	4.489	33.963	26.949	36.056	44.732	27.606	304	7.2	1.56	21.5	140
306	172	171	4.390	4.377	34.112	27.079	36.189	44.869	27.881	289	9.4	1.65	23.2	171
307	210	208	4.162	4.147	34.132	27.119	36.240	44.931	28.098	273	13.3	1.80	25.3	208
308	273	271	3.819	3.800	34.141	27.161	36.301	45.008	28.436	270	16.2	1.86	26.3	271
309	344	341	3.459	3.436	34.152	27.205	36.364	45.089	28.813	262	21.1	1.97	28.1	341
310	446	442	3.061	3.032	34.178	27.262	36.442	45.187	29.349	250	28.4	2.08	29.8	442
311	545	540	2.819	2.784	34.211	27.310	36.503	45.260	29.861	240	35.2	2.17	31.3	540
312	646	640	2.578	2.538	34.256	27.367	36.573	45.341	30.391	229	42.7	2.24	32.4	640
315	759	752	2.417	2.370	34.318	27.430	36.644	45.420	30.981	215	52.0	2.32	33.2	752
316	857	849	2.361	2.307	34.364	27.472	36.689	45.467	31.477	206	58.0	2.35	33.7	849
317	957	948	2.325	2.265	34.430	27.528	36.746	45.526	31.996	199	65.4	2.37	34.1	948
318	1061	1051	2.365	2.297	34.498	27.580	36.795	45.572	32.525	185	71.5	2.36	33.6	1051
319	1146	1134	2.557	2.480	34.562	27.616	36.820	45.587	32.945	183	70.0	2.30	33.0	1134
320	1293	1280	2.468	2.381	34.599	27.654	36.863	45.634	33.659	182	74.6	2.31	32.9	1280
321	1489	1473	2.579	2.475	34.691	27.720	36.922	45.687	34.614	191	71.0	2.12	30.8	1473
322	1623	1605	2.548	2.433	34.721	27.747	36.951	45.718	35.250	196	71.1	2.06	30.2	1605
323	1825	1804	2.454	2.323	34.751	27.780	36.989	45.761	36.202	202	70.3	1.99	29.2	1804
101	1855	1833	2.344	2.212	34.743	27.783	36.998	45.776	36.345	198	75.0	2.02	29.3	1833
102	2006	1982	2.254	2.110	34.751	27.797	37.018	45.801	37.045	201	77.0	2.00	29.1	1982
324	2027	2002	2.258	2.113	34.761	27.805	37.026	45.808	37.147	206	77.6	1.98	28.8	2002
103	2112	2086	2.224	2.072	34.770	27.815	37.038	45.823	37.541	209	75.0	1.94	28.2	2086
104	2218	2190	2.214	2.052	34.781	27.826	37.049	45.835	38.028	213	71.4	1.89	27.8	2190
105	2372	2341	2.138	1.964	34.783	27.834	37.063	45.853	38.730	216	74.1	1.88	27.5	2341
106	2504	2471	2.037	1.852	34.790	27.848	37.083	45.879	39.339	219	74.9	1.86	27.2	2471
107	2595	2560	1.994	1.802	34.789	27.851	37.089	45.887	39.750	219	76.6	1.87	27.3	2560
108	2682	2645	1.924	1.725	34.781	27.850	37.092	45.895	40.141	218	80.2	1.88	27.7	2645
109	2816	2776	1.794	1.585	34.770	27.852	37.102	45.912	40.747	217	85.2	1.93	28.2	2776
110	2938	2896	1.690	1.472	34.764	27.855	37.112	45.928	41.299	217	89.4	1.95	28.3	2896
111	3144	3097	1.520	1.286	34.751	27.857	37.125	45.951	42.225	216	95.0	1.99	29.1	3097
112	3245	3196	1.459	1.216	34.744	27.857	37.128	45.958	42.674	216	97.4	2.02	29.4	3196
115	3360	3309	1.401	1.148	34.739	27.857	37.132	45.966	43.185	216	99.4	2.05	29.8	3309
116	3514	3459	1.318	1.052	34.730	27.856	37.137	45.976	43.867	215	103.3	2.08	30.3	3459
117	3616	3559	1.219	0.945	34.720	27.855	37.142	45.987	44.321	214	106.8	2.11	30.7	3559
118	3749	3688	1.119	0.834	34.715	27.858	37.152	46.003	44.915	215	109.0	2.13	30.9	3688
119	3923	3858	0.985	0.686	34.704	27.858	37.161	46.020	45.686	214	113.9	2.17	31.3	3858
120	4129	4059	0.854	0.537	34.694	27.859	37.170	46.038	46.595	215	119.2	2.20	31.7	4059
121	4282	4208	0.769	0.438	34.689	27.860	37.178	46.050	47.268	216	124.3	2.23	31.9	4208
122	4386	4309	0.722	0.382	34.686	27.861	37.182	46.058	47.723	217	124.4	2.24	32.0	4309
123	4436	4357	0.679	0.335	34.684	27.862	37.186	46.064	47.944	218	126.8	2.24	32.0	4357
124	4590	4507	0.611	0.252	34.680	27.863	37.192	46.075	48.616	219	129.5	2.24	32.0	4507

BOTTOM DEPTH FOR CAST 1 IS 4553

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
U UNCERTAIN DATA

STATION: 93 LEG: VII POSITION: 41° 46′ S 18° 27′ E DATE: 2 FEB 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
4201	3	3	13.71	13.71	34.85 D	26.167	34.849	43.133	26.181					3
409	11	11	13.670	13.668	34.853	26.177	34.861	43.147	26.226	266	1.4	0.47	4.2	11
4202	20	20	13.51	13.51	34.87 D	26.225	34.915	43.206	26.314					20
4203	30	30	13.32	13.32	34.87 D	26.264	34.961	43.259	26.398					30
410	49	49	13.438	13.431	35.053	26.381	35.071	43.362	26.599	237	3.5	0.61	6.4	49
4204	76	76	13.27	13.26	35.07 D	26.431	35.128	43.425	26.769					76
4205	101	100	12.98	12.97	35.06 D	26.482	35.190	43.498	26.932					100
4206	126	125	12.22	12.20	34.99 D	26.581	35.320	43.656	27.144					125
411	145	144	12.018	11.999	34.984	26.614	35.362	43.706	27.263	237	4.0	0.78	9.3	144
412	188	187	11.324	11.300	34.910	26.689	35.466	43.837	27.533	242	4.4	0.86	10.6	187
4207	202	201	11.26	11.23	34.90 D	26.690	35.470	43.843	27.596					201
615	248H	246	10.24 H	10.21	34.732	26.746	35.572	43.987	27.865	253	4.4	0.86	12.1	246
616	317H	315	10.12 H	10.08	34.774	26.801	35.631	44.051	28.230	231	6.5	0.98	14.4	315
617	387H	384	9.13 H	9.08	34.652	26.873	35.749	44.211	28.625	233	7.7	1.11	16.6	384
618	447H	444	7.971H	7.924	34.522	26.951	35.881	44.394	28.985	231	9.6	1.30	19.7	444
619	498H	494	7.39 H	7.34	34.508	27.025	35.983	44.521	29.297	218	13.0	1.45	22.5	494
620	648H	643	5.66 H	5.60	34.391	27.161	36.204	44.822	30.140	216	22.9	1.75	26.8	643
621	751H	745	4.60 H	4.54	34.329	27.234	36.332	45.001	30.703	222	27.6	1.85	28.7	745
622	804H	797			34.343					217	30.8	1.90	29.5	797
415	910	902	4.171	4.100	34.407	27.342	36.462	45.150	31.547	196	43.0	2.23	30.9	902
416	1008	999	3.837	3.760	34.439	27.402	36.539	45.243	32.063	187	50.5	2.31	32.1	999
417	1082	1072	3.380	3.301	34.436	27.443	36.605	45.332	32.456	189	54.1	2.35	32.4	1072
418	1211	1200	3.183	3.095	34.507	27.519	36.690	45.427	33.126	179	62.0	2.38	32.9	1200
419	1363	1350	3.024	2.925	34.584	27.595	36.775	45.519	33.900	174	68.5	2.35	32.7	1350
420	1464	1449	2.931	2.825	34.620	27.633	36.817	45.566	34.400	176	70.4	2.33	32.4	1449
421	1619	1602	2.770	2.652	34.679	27.695	36.887	45.644	35.171	185	67.8	2.20	30.8	1602
422	1767	1748	2.725	2.595	34.730	27.741	36.935	45.694	35.887	195	65.2	2.08	29.4	1748
423	1917	1895	2.691	2.548	34.767	27.774	36.971	45.731	36.598	204	61.9	1.97	28.0	1895
101	2021	1998	2.664	2.512	34.788	27.794	36.992	45.754	37.086	209	60.0	1.85	27.1	1998
102	2174	2148	2.615	2.450	34.803	27.811	37.013	45.777	37.792	215	59.9	1.80	26.4	2148
424	2223	2196	2.599	2.430	34.808	27.817	37.019	45.785	38.018	216	58.5	1.85	26.4	2196
103	2326	2297	2.562	2.384	34.812	27.824	37.029	45.797	38.487	218	59.3	1.77	25.9	2297
104	2480	2449	2.482	2.291	34.820	27.838	37.048	45.820	39.192	221	59.3	1.75	25.7	2449
105	2631	2597	2.406	2.201	34.821	27.846	37.061	45.838	39.875	223	60.3	1.74	25.5	2597
106	2785	2748	2.354	2.135	34.824	27.853	37.072	45.852	40.568	225	61.3	1.73	25.4	2748
107	2938	2898	2.298	2.065	34.825	27.860	37.082	45.866	41.254	226	62.6	1.73	25.3	2898
108	3061	3018	2.222	1.978	34.821	27.863	37.090	45.879	41.805	226	65.6	1.74	25.6	3018
109	3180	3134	2.123	1.870	34.810	27.863	37.096	45.891	42.336	223	70.4	1.79	26.1	3134
110	3194	3148	2.131	1.876	34.813	27.865	37.098	45.892	42.398	224	70.1	1.78	25.8	3148
111	3297	3249	2.106	1.841	34.816	27.870	37.105	45.901	42.857	226	69.5	1.76	25.8	3249
112	3399	3349	2.022	1.748	34.810	27.872	37.112	45.913	43.312	226	72.8	1.79	26.2	3349
115	3510	3457	1.916	1.633	34.800	27.872	37.119	45.926	43.807	224	78.2	1.83	26.6	3457
116	3634	3578	1.797	1.504	34.787	27.871	37.125	45.940	44.358	222	82.8	1.87	27.1	3578
117	3715	3657	1.686	1.388	34.777	27.871	37.132	45.953	44.721	222	87.7	1.92	27.7	3657
118	3776	3717	1.583	1.281	34.763	27.867	37.135	45.961	44.993	219	93.7	1.97	28.2	3717
119	3867	3806	1.480	1.172	34.753	27.867	37.141	45.973	45.398	218	97.6	2.01	28.8	3806
120	4022	3957	1.308	0.988	34.740	27.868	37.153	45.995	46.090	219	104.0	2.04	29.2	3957
121	4176	4107	1.180	0.847	34.731	27.870	37.163	46.013	46.771	218	108.3	2.08	29.7	4107
122	4329	4256	1.060	0.714	34.721	27.870	37.171	46.028	47.445	219	114.2	2.12	30.2	4256
123	4484	4407	0.937	0.578	34.711	27.870	37.179	46.044	48.126	219	117.2	2.15	30.5	4407
124	4587	4507	0.865	0.497	34.708	27.872	37.186	46.055	48.579	220	119.4	2.17	30.5	4507

BOTTOM DEPTH FOR CAST 1 IS 4953

STATION: 94 LEG: VII POSITION: 38° 18′ S 19° 23′ E DATE: 3 FEB 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	2	2	22.336	22.336	35.51	24.530	32.920	40.929	24.539	220	2.1	0.08	0.0	2
102	2	2	22.34	22.34	35.50	24.522	32.912	40.921	24.531	220	2.1	0.07	0.0	2
1201	25	25	21.53	21.52	35.53 D	24.774	33.187	41.218	24.882					25
103	56	56	19.760	19.749	35.53	25.255	33.721	41.803	25.497	231	2.1	0.09	0.0	56
1202	75	75	19.62	19.61	35.53 D	25.292	33.762	41.849	25.617					75
1203	100	100	19.28	19.26	35.56 D	25.404	33.886	41.982	25.838					100
1204	125	124	18.64	18.62	35.54 D	25.554	34.057	42.172	26.098					124
104	156	155	17.84	17.81	35.51	25.736	34.264	42.405	26.416	185	3.3	0.27	2.5	155
1205	202	201	17.27	17.24	35.48 D	25.852	34.400	42.559	26.734					201
1206	303	301	15.58	15.53	35.43 D	26.214	34.822	43.037	27.545					301
105	364	362	14.292	14.237	35.32	26.418	35.074	43.334	28.025	207	5.7	0.65	8.3	362
1207	404	402	13.92	13.86	35.28 D	26.466	35.137	43.410	28.252					402
106	519	516	12.640	12.567	35.18	26.651	35.373	43.694	28.955	222	5.3	0.75	10.3	516
107	723	718	10.225	10.136	34.85	26.855	35.681	44.098	30.095	220	7.9	1.09	15.4	718
108	980	972	7.230	7.129	34.66	27.171	36.136	44.681	31.619	163	37.0	1.90	27.2	972
109	1076	1067	6.482	6.377	34.64	27.261	36.262	44.841	32.158	152	47.4	2.09	29.5	1067
110	1185	1175	5.249	5.144	34.53	27.321	36.386	45.023	32.746	174	46.7	2.12	30.4	1175
111	1268	1257	3.898	3.798	34.39	27.359	36.495	45.198	33.203	200	44.3	2.14	31.3	1257
112	1638	1622	2.926	2.805	34.58	27.600	36.786	45.536	35.157	178	68.8	2.24	32.6	1622

BOTTOM DEPTH FOR CAST 1 IS 4796

STATION: 100 LEG: VIII POSITION: 33° 9′ S 13° 17′ E DATE: 11 FEB 73

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6101	0	0	21.52	21.52	35.63 D	24.849	33.260	41.290	24.849					0
6102	10	10	21.52	21.52	35.62 D	24.846	33.258	41.288	24.889					10
6103	20	20	21.41	21.41	35.62 D	24.876	33.292	41.325	24.963					20
6104	30	30	21.36	21.35	35.61 D	24.883	33.300	41.335	25.012					30
6105	50	50	20.42	20.41	35.58 D	25.117	33.562	41.625	25.333					50
6106	76	76	16.87	16.86	35.44 D	25.910	34.472	42.643	26.243					76
6107	101	101	15.33	15.31	35.36 D	26.209	34.826	43.048	26.654					101
6108	126	125	14.41	14.39	35.29 D	26.362	35.013	43.267	26.919					125
6109	151	150	13.76	13.74	35.23 D	26.454	35.130	43.409	27.124					150
6110	176	175	12.80	12.78	35.12 D	26.567	35.282	43.596	27.351					175
6111	202	201	12.22	12.19	35.04 D	26.621	35.360	43.696	27.523					201
6112	252	251	11.62	11.59	35.01 D	26.709	35.473	43.832	27.837					251
6113	302	300	10.91	10.87	34.93 D	26.785	35.580	43.967	28.141					300
6114	353	351	10.01	9.97	34.83 D	26.863	35.698	44.122	28.454					351
6115	403	400	9.11	9.06	34.72 D	26.930	35.805	44.268	28.754					400
6116	454	451	8.44	8.39	34.65 D	26.983	35.890	44.381	29.044					451
6117	505	502	7.43	7.38	34.56 D	27.061	36.016	44.551	29.364					502
6118	555	551	6.82	6.76	34.51 D	27.105	36.090	44.653	29.643					551
6119	606	602	5.77	5.72	34.41 D	27.162	36.199	44.811	29.948					602
6120	656	651	5.03	4.98	34.36 D	27.208	36.283	44.931	30.234					651
6121	707	702	4.82	4.76	34.37 D	27.241	36.327	44.984	30.505					702
6122	757	751	4.39	4.33	34.37 D	27.284	36.393	45.070	30.785					751
6123	808	802	4.00	3.94	34.36 D	27.320	36.449	45.146	31.063					802
6124	858	851	3.75	3.68	34.36 D	27.350	36.492	45.201	31.327					851
6125	908	901	3.71	3.64	34.42 D	27.394	36.538	45.248	31.601					901
6126	959	951	3.46	3.39	34.43 D	27.432	36.589	45.312	31.880					951
6127	1010	1002	3.33	3.26	34.46 D	27.467	36.631	45.360	32.152					1002
6128	1111	1102	3.06	2.98	34.515D	27.535	36.713	45.455	32.690					1102
6129	1212	1201	2.97	2.88	34.574D	27.591	36.773	45.519	33.209					1201
6130	1314	1302	2.84	2.75	34.625D	27.644	36.832	45.584	33.732					1302
6131	1415	1402	2.79	2.69	34.671D	27.686	36.876	45.631	34.235					1402
6132	1516	1502	2.77	2.66	34.721D	27.728	36.920	45.675	34.737					1502
6133	1617	1601	2.75	2.63	34.760D	27.762	36.954	45.710	35.229					1601
6134	1720	1703	2.73	2.60	34.787D	27.785	36.979	45.736	35.719					1703
6201	1821	1802	2.72	2.59	34.809D	27.804	36.998	45.756	36.194					1802
6202	1922	1902	2.68	2.53	34.822D	27.819	37.016	45.776	36.665					1902
6203	2024	2002	2.65	2.50	34.839D	27.836	37.035	45.796	37.142					2002
6204	2227	2202	2.54	2.37	34.848D	27.854	37.059	45.827	38.075					2202
6205	2431	2402	2.44	2.26	34.854D	27.868	37.079	45.852	39.005					2402
6206	2634	2601	2.36	2.15	34.856D	27.878	37.095	45.874	39.923					2601
6207	2838	2802	2.27	2.05	34.854D	27.884	37.107	45.892	40.839					2802
6208	3042	3002	2.20	1.96	34.855D	27.892	37.119	45.909	41.751					3002
6209	3246	3201	2.07	1.81	34.842D	27.893	37.129	45.926	42.659					3201
6210	3451	3402	1.78	1.51	34.814D	27.892	37.146	45.960	43.582					3402

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 100 LEG: VIII POSITION: 33° 9′ S 13° 17′ E DATE: 11 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6211	3656	3602	1.46	1.17	34.789D	27.895	37.169	46.000	44.511					3602
6212	3860	3801	1.17	0.88	34.761D	27.892	37.183	46.031	45.425					3801
6213	4042	3979	1.03	0.72	34.745D	27.889	37.189	46.045	46.227					3979

BOTTOM DEPTH FOR CAST 6 IS 4014

STATION: 101 LEG: VIII POSITION: 31° 58′ S 10° 48′ E DATE: 12 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1101	0	0	22.29	22.29	35.79 D	24.759	33.147	41.153	24.759					0
1102	10	10	22.25	22.25	35.78 D	24.762	33.151	41.159	24.805					10
1103	20	20	22.04	22.04	35.77 D	24.815	33.211	41.225	24.902					20
1104	30	30	21.89	21.88	35.78 D	24.862	33.261	41.280	24.991					30
1105	50	50	19.90	19.89	35.62 D	25.287	33.748	41.825	25.504					50
1106	76	76	17.72	17.71	35.55 D	25.786	34.318	42.461	26.118					76
1107	101	101	17.08	17.06	35.53 D	25.931	34.485	42.648	26.373					101
1108	126	125	16.79	16.77	35.52 D	25.992	34.555	42.729	26.544					125
1109	151	150	16.39	16.37	35.50 D	26.074	34.652	42.838	26.737					150
1110	202	201	15.76	15.73	35.46 D	26.195	34.795	43.003	27.083					201
1111	252	251	15.46	15.42	35.45 D	26.254	34.866	43.084	27.363					251
1112	302	300	14.73	14.68	35.36 D	26.349	34.989	43.233	27.681					300
1113	353	351	13.80	13.75	35.25 D	26.468	35.143	43.421	28.030					351
1114	403	401	13.04	12.98	35.19 D	26.576	35.282	43.587	28.364					401
1115	454	451	12.29	12.23	35.13 D	26.679	35.415	43.749	28.700					451
1116	505	502	11.46	11.39	35.01 D	26.749	35.521	43.887	29.005					502
1117	555	552	10.88	10.81	34.95 D	26.810	35.607	43.996	29.294					552
1118	605	601	9.51	9.44	34.77 D	26.908	35.766	44.212	29.633					601
1125	655	651	8.75	8.68	34.68 D	26.958	35.852	44.330	29.919					651
1126	706	701	7.91	7.84	34.58 D	27.011	35.944	44.459	30.214					701
1127	756	751	6.90	6.83	34.49 D	27.082	36.063	44.624	30.529					751
1128	807	801	5.82	5.75	34.39 D	27.142	36.178	44.789	30.842					801
1129	858	852	5.14	5.07	34.34 D	27.186	36.257	44.901	31.133					852
1130	908	901	4.98	4.90	34.36 D	27.220	36.299	44.950	31.397					901
1131	959	952	4.42	4.34	34.32 D	27.251	36.360	45.038	31.675					952
1132	1010	1002	4.04	3.96	34.32 D	27.289	36.417	45.114	31.955					1002

BOTTOM DEPTH FOR CAST 1 IS 4849

STATION: 102 LEG: VIII POSITION: 31° 31′ S 9° 26′ E DATE: 12 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6201	0	0	22.30	22.30	35.76 D	24.732	33.120	41.127	24.732					0
601	6H	6	22.27 H	22.27	35.753	24.736	33.124	41.132	24.761	226	2.1	0.08	0.1	6
602	46H	46	20.59 H	20.58	35.672	25.140	33.580	41.636	25.339	236	1.2	0.08	0.1	46
603	76H	76	18.23 H	18.22	35.541	25.656	34.172	42.299	25.988	247	2.3	0.10	0.0	76
604	194H	193	15.66 H	15.63	35.467	26.221	34.824	43.035	27.074	234	3.7	0.42	4.6	193
605	230H	229	15.47 H	15.43	35.457	26.257	34.868	43.086	27.269	232	3.7	0.41	4.3	229
606	366H	364	13.72 H	13.67	35.271	26.500	35.179	43.459	28.120	214	4.9	0.67	8.5	364
607	557H	554	10.98 H	10.91	34.945	26.788	35.581	43.967	29.280	221	6.3	1.00	13.7	554
608	728H	723	7.54 H	7.46	34.569	27.055	36.006	44.537	30.364	207	16.6	1.62	23.3	723
609	808H	802	5.78 H	5.71	34.401	27.156	36.194	44.807	30.861	218	19.8	1.85	26.5	802
610	900H	893	4.85 H	4.78	34.335	27.213	36.299	44.956	31.357	225	24.0	1.96	28.2	893
611	1001H	993	3.97 H	3.89	34.305	27.282	36.414	45.114	31.909	226	29.8	2.07	29.9	993
612	1102H	1093	3.58 H	3.50	34.340	27.349	36.501	45.220	32.447	210	39.6	2.19	31.3	1093
615	1201H	1191	3.30 H	3.21	34.402	27.425	36.591	45.324	32.983	199	48.7	2.27	32.4	1191
616	1302H	1291	3.08 H	2.99	34.475	27.503	36.681	45.424	33.529	187	56.2	2.30	32.9	1291
617	1401H	1389	2.95 H	2.85	34.523	27.554	36.738	45.486	34.035	185	60.6	2.30	32.8	1389
618	1501H	1487	2.95 H	2.84	34.605	27.620	36.803	45.551	34.554	184	61.2	2.23	31.7	1487
619	1604H	1589	2.93 H	2.81	34.659	27.665	36.849	45.598	35.067	188	60.6	2.15	30.8	1589
620	1706H	1690	2.96 H	2.83	34.720	27.712	36.894	45.641	35.573	195	56.6	2.02	29.3	1690
621	1806H	1788	2.92 H	2.78	34.762	27.750	36.934	45.682	36.063	202	53.0	1.93	28.0	1788
501	1824H	1806	2.97 H	2.83	34.774	27.755	36.936	45.682	36.147	205	51.2	1.86	27.6	1806

STATION: 102 LEG: VIII POSITION: 31° 31′ S 9° 26′ E DATE: 12 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
622	1908H	1889			34.791					209	51.2	1.86	27.2	1889
623	2011H	1990	2.91 H	2.76	34.818	27.797	36.982	45.731	37.031	215	48.8	1.78	26.1	1990
624	2021H	2000	2.91 H	2.75	34.818	27.797	36.982	45.731	37.076	215	48.9	1.77	26.1	2000
502	2130H	2107	2.86 H	2.69	34.834	27.815	37.003	45.754	37.584	219	48.1	1.70	25.3	2107
503	2438H	2410	2.70 H	2.51	34.848	27.842	37.040	45.801	38.994	227	49.8	1.64	24.6	2410
504	2642H	2610	2.61 H	2.40	34.862	27.862	37.066	45.832	39.925	233	49.6	1.59	24.0	2610
505	2847H	2811	2.51 H	2.28	34.860	27.870	37.080	45.853	40.847	234	52.2	1.62	24.0	2811
506	3053H	3013	2.43 H	2.18										3013
507	3258H	3214	2.34 H	2.07	34.858	27.886	37.107	45.890	42.680	236	56.4	1.63	24.2	3214
508	3516H	3466	2.31 H	2.02	34.859	27.891	37.115	45.902	43.813	235	58.9	1.62	24.1	3466
509	3773H	3718	2.11 H	1.79	34.840	27.893	37.130	45.928	44.950	233	66.8	1.65	25.1	3718
510	4031H	3969	1.78 H	1.44	34.798	27.884	37.142	45.959	46.092	222	82.7	1.85	27.2	3969
511	4289H	4221	1.35 H	1.00	34.759	27.883	37.166	46.008	47.251	222	98.9	2.00	29.0	4221
512	4444H	4372	1.23 H	0.87	34.745	27.880	37.172	46.020	47.928	221	105.3	2.03	29.6	4372
515	4652H	4574	1.14 H	0.75	34.739	27.882	37.180	46.035	48.832	221	107.2	2.07	30.1	4574
516	4703H	4624	1.13 H	0.74	34.737	27.881	37.180	46.036	49.050	220	109.7	2.06	30.2	4624
517	4756H	4676	1.12 H	0.72	34.734	27.880	37.180	46.037	49.276	219	109.8	2.07	30.2	4676
518	4818H	4736	1.13 H	0.73	34.736	27.881	37.181	46.038	49.541	220	110.2	2.08	30.2	4736
519	4896H	4812	1.12 H	0.71	34.734	27.881	37.182	46.039	49.873	219	110.2	2.09	30.3	4812
520	4963H	4877	1.12 H	0.70	34.734	27.881	37.183	46.041	50.158	219	110.7	2.09	30.3	4877
521	4978H	4891	1.13 H	0.71	34.733	27.880	37.181	46.039	50.219	221	110.8	2.10	30.3	4891
522	4994H	4907	1.11 H	0.68	34.734	27.882	37.184	46.043	50.292	219	109.9	2.11	30.3	4907
523	5006H	4919	1.114H	0.687	34.732	27.880	37.183	46.041	50.341	219	110.9	2.10	30.3	4919
524	5016H	4928	1.116H	0.688	34.734	27.882	37.184	46.043	50.384	220	110.3	2.10	30.3	4928

BOTTOM DEPTH FOR CAST 5 IS 4940

STATION: 103 LEG: VIII POSITION: 23° 59′ S 8° 30′ E DATE: 17 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
6201	0	0	23.43	23.43	35.59 D	24.280	32.638	40.616	24.280					0
601	5H	5	23.42 H	23.42	35.591	24.284	32.642	40.620	24.305	217	1.4	0.17	0.1	5
6202	10	10	23.37	23.37	35.60 D	24.302	32.661	40.641	24.344					10
602	14H	14	23.28 H	23.28	35.598	24.330	32.692	40.674	24.390	219	1.2	0.15	0.1	14
603	29H	29	22.48 H	22.47	35.699	24.637	33.020	41.023	24.761	221	1.4	0.13	0.1	29
604	55H	55	H		35.606					249	1.7	0.13	0.0	55
605	77H	77	16.72 H	16.71	35.523	26.012	34.578	42.752	26.350	242	2.1	0.18	0.0	77
606	103H	103	15.85 H	15.83	35.484	26.187	34.783	42.987	26.640	232	2.5	0.33	1.8	103
607	133H	132	15.42 H	15.40	35.464	26.271	34.883	43.101	26.856	228	2.7	0.38	3.5	132
608	175H	174	13.78 H	13.75	35.221	26.443	35.119	43.396	27.219	208	4.2	0.70	8.6	174
609	226H	225	12.40 H	12.37	35.069	26.608	35.339	43.669	27.616	191	6.1	1.00	13.8	225
610	287H	286	11.27 H	11.23	34.968	26.746	35.525	43.898	28.033	167	8.4	1.30	18.8	286
611	367H	365	9.35 H	9.31	34.767	26.926	35.790	44.242	28.586	131	13.9	1.78	26.3	365
612	456H	453	7.81 H	7.76	34.628	27.058	35.994	44.512	29.134	111	18.7	2.16	32.1	453
615	617H	613	5.77 H	5.72	34.499	27.233	36.269	44.879	30.068	110	26.9	2.48	36.9	613
616	728H	723	4.85 H	4.79	34.451	27.303	36.386	45.041	30.661	138	31.6	2.43	35.8	723
617	756H	751	4.65 H	4.59	34.445	27.321	36.414	45.079	30.811	147	32.9	2.41	35.5	751
618	808H	803	4.37 H	4.31	34.450	27.355	36.463	45.141	31.089	149	35.5	2.42	35.2	803
619	1063H	1055	3.62 H	3.54	34.542	27.505	36.652	45.366	32.423	171	44.2	2.28	32.8	1055
620	1318H	1307	3.40 H	3.30	34.689	27.645	36.802	45.526	33.730	184	45.6	2.07	30.1	1307
621	1574H	1560	3.34 H	3.22	34.816	27.754	36.913	45.639	35.000	206	37.4	1.79	26.4	1560
622	1829H	1811	3.27 H	3.13	34.868	27.804	36.967	45.697	36.201	223	34.2	1.63	24.1	1811
623	2085H	2064	3.118H	2.953	34.897	27.843	37.015	45.753	37.395	231	35.1	1.55	23.1	2064
624	2343H	2317	2.98 H	2.79	34.898	27.858	37.039	45.785	38.568	235	37.1	1.53	22.7	2317
301	2581H	2551	2.68 H	2.47	34.869	27.862	37.061	45.823	39.650	238	45.7	1.60	23.5	2551
302	2782H	2749	2.58 H	2.36	34.866	27.869	37.075	45.843	40.553	236	48.1	1.59	23.6	2749
303	2980H	2943	2.49 H	2.25	34.862	27.875	37.086	45.860	41.438	237	50.2	1.60	23.6	2943
304	3189H	3148	2.42 H	2.16	34.861	27.881	37.098	45.877	42.367	236	53.1	1.61	23.8	3148
305	3393H	3348	2.36 H	2.08	34.854	27.882	37.103	45.886	43.265	235	55.7	1.64	23.9	3348
306	3593H	3543	2.28 H	1.98	34.846	27.883	37.110	45.899	44.144	235	59.1	1.66	24.3	3543
307	3904H	3847	1.90 H	1.57	34.819	27.892	37.142	45.951	45.538	229	74.6	1.81	26.1	3847
308	4109H	4047	1.63 H	1.29	34.776	27.877	37.144	45.969	46.438	223	91.4	1.95	28.2	4047
309	4314H	4247	1.21 H	0.86	34.743	27.879	37.171	46.020	47.371	221	104.4	2.08	29.6	4247
310	4519H	4447	1.12 H	0.75	34.739	27.882	37.181	46.036	48.266	220	109.1	2.11	30.3	4447

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 103 LEG: VIII POSITION: 23° 59′ S 8° 30′ E DATE: 17 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
311	4539H	4467	1.11 H	0.74	34.736	27.881	37.179	46.035	48.351	219	109.6	2.11	30.3	4467
312	4569H	4496	1.12 H	0.74	34.733	27.878	37.177	46.032	48.475	219	110.0	2.12	30.3	4496
315	4601H	4527	1.11 H	0.73	34.739	27.883	37.183	46.039	48.619	221	110.4	2.12	30.3	4527
316	4631H	4556	1.10 H	0.72	34.735	27.881	37.181	46.038	48.746	219	110.6	2.12	30.4	4556
317	4647H	4572	1.11 H	0.73	34.734	27.880	37.179	46.036	48.812	218	110.8	2.12	30.3	4572
318	4663H	4587	1.11 H	0.72	34.735	27.881	37.181	46.037	48.881	219	111.2	2.11	30.3	4587

BOTTOM DEPTH FOR CAST 3 IS 4660

STATION: 104 LEG: VIII POSITION: 22° 0′ S 7° 14′ E DATE: 18 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
151	0	0	23.22	23.22	35.487	24.263	32.627	40.612	24.263	224	0.4	0.29	0.1	0
152	9	9	22.73	22.73	35.479	24.398	32.776	40.775	24.436	228	0.3	0.25	0.1	9
153	19	19	22.53	22.53	35.486	24.460	32.845	40.849	24.542	229				19
154	29	29	22.45	22.44	35.487	24.485	32.871	40.877	24.609	231	0.1	0.30	0.0	29
155	48	48	20.71	20.70	35.404	24.904	33.343	41.399	25.112		1.0	0.38	0.0	48
157	68	68	16.87	16.86	35.505	25.962	34.523	42.693	26.260	234	2.8	0.39	3.2	68
158	88	88	15.90	15.89	35.424	26.129	34.724	42.927	26.516	225	4.3	0.55	7.0	88
159	120	120	14.57	14.55	35.310	26.341	34.985	43.234	26.871	212	4.1	0.67	8.6	120
161	150	149	13.28	13.26	35.173	26.509	35.205	43.500	27.176	216	4.7	0.79	11.0	149
163	201	200	12.21	12.18						217	4.8	0.80	11.0	200
164	250	249	11.14	11.11	34.954	26.759	35.543	43.921	27.880	213	6.1	0.94	14.0	249
165	298	297	10.09	10.05	34.834	26.853	35.684	44.104	28.196	183	9.6	1.34	19.5	297
166	347	345	8.86	8.82	34.699	26.952	35.838	44.311	28.525	173	13.0	1.56	23.3	345
201	362	360	8.67	8.63	34.684	26.970	35.866	44.346	28.613	179	13.2	1.60	23.9	360
202	436	434	7.27	7.23	34.564	27.085	36.047	44.589	29.076	145	18.6	2.01	30.2	434
255	512	509	6.28	6.23	34.497	27.166	36.176	44.764	29.515	141	22.6	2.09	32.6	509
251	587	583	5.63	5.58	34.468	27.225	36.268	44.886	29.926	143	25.7	2.12	34.0	583
257	663	659	4.92	4.87	34.445	27.290	36.369	45.021	30.350	150	30.7	2.24	34.7	659
252	764	759	4.38	4.32	34.443	27.348	36.455	45.133	30.880	172U	34.8	1.84U	34.5	759
259	841	835	4.11	4.05	34.479	27.405	36.526	45.216	31.295	159	38.5	2.20	34.5	835
253	890	884	3.94	3.87	34.487	27.429	36.559	45.257	31.548	164	39.8	2.21	34.1	884
261	1067	1059	3.63	3.55	34.590	27.542	36.688	45.401	32.478	176	42.2	2.03	31.7	1059
258	1218	1208	3.47	3.38	34.663	27.617	36.770	45.490	33.245	183	43.7	1.96	30.5	1208
263	1420	1408	3.47	3.36	34.780	27.712	36.864	45.583	34.256	199	38.7	1.76	27.4	1408
264	1622	1607	3.41	3.28	34.847	27.772	36.928	45.650	35.232	211				1607
265	1828	1810	3.25	3.11	34.887	27.821	36.985	45.715	36.214	227	34.2	1.48	23.7	1810
266	2030	2010	3.14	2.98	34.900	27.843	37.014	45.750	37.148	229	35.4	1.41	23.2	2010
267	2233	2209	3.03	2.85	34.906	27.859	37.037	45.779	38.077	236	36.8	1.32	22.8	2209
268	2385	2359	2.98	2.79	34.907	27.865	37.047	45.792	38.763	238	37.6	1.32	22.7	2359
269	2539	2510	2.86	2.65	34.901	27.872	37.061	45.813	39.461	238	39.8	1.36	22.7	2510
271	2744	2712	2.71	2.49	34.894	27.881	37.079	45.840	40.387	240	43.6	1.47	22.8	2712
272	2896	2861	2.548	2.314	34.882	27.885	37.093	45.863	41.074	240	48.3	1.51	23.2	2861
273	2947	2911	2.49	2.25	34.887	27.894	37.106	45.879	41.312	239	49.7	1.50	23.3	2911
274	2998	2961	2.425	2.183	34.883	27.897	37.112	45.889	41.544	237	51.9	1.51	23.4	2961

BOTTOM DEPTH FOR CAST 2 IS 2963

STATION: 105 LEG: VIII POSITION: 20° 0′ S 2° 0′ E DATE: 20 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
502	1H	1	24.73 H	24.73	35.920	24.146	32.465	40.404	24.150	214	0.2	0.20	0.0	1
301	2H	2	24.62 H	24.62	35.908	24.170	32.491	40.434	24.179	215	0.2	0.21	0.1	2
503	11H	11	24.49 H	24.49	35.897	24.201	32.526	40.473	24.248	215	0.2	0.20	0.0	11
504	31H	31	23.54 H	23.53	35.799	24.408	32.760	40.733	24.540	221	0.3	0.24	0.0	31
505	51H	51	20.89 H	20.88	35.723	25.098	33.528	41.575	25.318	243	0.8	0.23	0.0	51
506	78H	78	18.58 H	18.57	35.727	25.710	34.212	42.326	26.050	243	1.0	0.25	0.0	78
302	99H	99	16.86 H	16.84	35.568	26.014	34.574	42.744	26.447	202	2.1	0.58	6.2	99
507	103H	103	17.37 H	17.35	35.628	25.937	34.479	42.633	26.387	214	1.9	0.46	3.7	103
510	128H	128	15.20 H	15.18	35.425	26.290	34.910	43.137	26.854	190	3.1	0.74	9.4	128
508	152H	151	14.24 H	14.22	35.304	26.408	35.066	43.326	27.081	184	4.1	0.85	11.7	151

STATION: 105 LEG: VIII POSITION: 20° 0′ S 2° 0′ E DATE: 20 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
509	182H	181	13.35 H	13.32	35.199	26.516	35.208	43.501	27.325	165	5.1	1.06	15.0	181
303	199H	198	13.04 H	13.01	35.155	26.546	35.251	43.556	27.431	157	6.1	1.17	16.8	198
304	250H	249	11.93 H	11.90	35.051	26.686	35.436	43.783	27.803	154	7.2	1.29	18.9	249
305	279H	278	11.03 H	10.99	34.938	26.767	35.556	43.939	28.019	187	7.5	1.20	17.2	278
306	318H	316	10.22 H	10.18	34.852	26.845	35.670	44.085	28.277	170	9.8	1.42	20.7	316
307	347H	345	9.46 H	9.42	34.778	26.917	35.775	44.222	28.485	154	12.1	1.62	24.0	345
308	398H	396	8.42 H	8.38	34.677	27.004	35.911	44.402	28.812	143	15.1	1.84	27.5	396
309	496H	493	6.85 H	6.80	34.551	27.133	36.115	44.676	29.402	123	20.9	2.20	33.0	493
310	516H	513			34.521					135	21.8	2.19	32.7	513
311	531H	528	6.36 H	6.31	34.513	27.169	36.175	44.759	29.603	132	22.6	2.22	33.3	528
312	596H	592	5.81 H	5.76	34.502	27.230	36.264	44.873	29.969	123	25.8	2.35	35.4	592
315	697H	693	5.09 H	5.03	34.471	27.292	36.362	45.005	30.504	127	30.2	2.44	36.5	693
316	747H	742	4.71 H	4.65	34.459	27.325	36.415	45.077	30.773	137	32.2	2.43	36.1	742
317	797H	792	4.49 H	4.43	34.463	27.352	36.454	45.126	31.033	140	34.3	2.41	36.0	792
318	898H	892	4.11 H	4.04	34.485	27.410	36.532	45.222	31.562	151	37.5	2.40	35.2	892
319	999H	992	3.83 H	3.75	34.527	27.472	36.608	45.312	32.092	163	40.1	2.30	33.8	992
320	1101H	1093	3.71 H	3.63	34.581	27.528	36.670	45.379	32.616	170	41.2	2.23	32.6	1093
321	1201H	1192	3.62 H	3.53	34.644	27.587	36.733	45.446	33.134	180	39.6	2.10	30.8	1192
322	1303H	1293	3.606H	3.506	34.705	27.638	36.784	45.497	33.648	189	37.7	1.99	29.3	1293
101	1379H	1368	3.60 H	3.49	34.745	27.671	36.817	45.531	34.026	196	36.4	1.93	28.0	1368
102	1626H	1612	3.46 H	3.33	34.845	27.766	36.919	45.639	35.242	218	32.4	1.68	24.8	1612
103	1880H	1862	3.25 H	3.10	34.888	27.822	36.987	45.717	36.449	233	32.0	1.55	22.9	1862
104	2133H	2111			34.902					241	33.8	1.50	22.2	2111
105	2384H	2358	2.87 H	2.68	34.903	27.871	37.059	45.810	38.772	241	37.1	1.50	22.3	2358
106	2640H	2610	2.70 H	2.49	34.895	27.881	37.079	45.840	39.929	241	41.5	1.52	22.5	2610
107	2895H	2860	2.59 H	2.35	34.895	27.892	37.098	45.866	41.073	236	45.2	1.54	22.9	2860
108	3149H	3109	2.51 H	2.25	34.890	27.897	37.108	45.882	42.200	235	49.0	1.56	23.3	3109
109	3301H	3258	2.47 H	2.19	34.889	27.901	37.115	45.891	42.871	234	50.2	1.57	23.3	3258
110	3553H	3505	2.45 H	2.15	34.889	27.904	37.121	45.900	43.974	234	50.9	1.56	23.2	3505
111	3808H	3754	2.41 H	2.08	34.887	27.908	37.129	45.911	45.086	234	51.9	1.56	23.3	3754
112	4062H	4002	2.41 H	2.05	34.886	27.910	37.132	45.916	46.181	235	52.2	1.56	23.3	4002
115	4317H	4251	2.41 H	2.02	34.887	27.913	37.137	45.922	47.277	236	52.6	1.55	23.3	4251
116	4573H	4501	2.42 H	2.00	34.884	27.912	37.137	45.924	48.366	237	53.1	1.55	23.2	4501
117	4828H	4749	2.43 H	1.98	34.883	27.913	37.139	45.927	49.446	236	53.7	1.54	23.2	4749
118	5084H	4998	2.47 H	1.98	34.883	27.913	37.139	45.926	50.519	237	53.7	1.55	23.1	4998
119	5345H	5252	2.48 H	1.96	34.882	27.914	37.141	45.930	51.612	238	53.7	1.55	23.1	5252
120	5406H	5311	2.51 H	1.98	34.882	27.912	37.139	45.926	51.861	237	53.7	1.55	23.2	5311
121	5456H	5359	2.50 H	1.96	34.881	27.913	37.140	45.929	52.072	237	53.3	1.56	23.2	5359
122	5499H	5401	2.507H	1.961	34.882	27.913	37.141	45.929	52.251	237	53.5	1.56	23.2	5401
123	5529H	5430	2.506H	1.956	34.882	27.914	37.141	45.930	52.376	238	53.6	1.56	23.2	5430
124	5552H	5452	2.511H	1.958	34.881	27.913	37.140	45.929	52.470	239	53.5	1.55	23.1	5452
125	5566H	5466	2.52 H	1.96	34.883	27.914	37.141	45.929	52.528	238	53.6	1.47U	22.6	5466
126	5580H	5480	2.52 H	1.96	34.881	27.912	37.140	45.928	52.585	236	53.2	1.51	23.0	5480
127	5592H	5491	2.52 H	1.96	34.880	27.912	37.139	45.928	52.634	237	53.5	1.53	23.1	5491
128	5601H	5500	2.52 H	1.96	34.882	27.914	37.141	45.930	52.673	239	53.5	1.53	23.2	5500

BOTTOM DEPTH FOR CAST 1 IS 5508

STATION: 106 LEG: VIII POSITION: 15° 59′ S 1° 58′ E DATE: 21 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
151	1	1	24.63	24.63	36.436	24.565	32.881	40.818	24.570	214	0.9	0.20	0.0	1
152	10	10	24.35	24.35	36.434	24.648	32.971	40.915	24.691	216	0.8	0.18	0.0	10
153	20	20	24.25	24.25	36.435	24.679	33.005	40.952	24.764	216	0.7	0.20	0.0	20
154	30	30	23.95	23.94	36.472	24.796	33.130	41.084	24.924	220	0.6	0.19	0.0	30
155	50	50	19.50	19.49	35.888	25.594	34.064	42.150	25.811	245	1.2	0.27	0.0	50
157	81	81	17.79	17.78	35.826	25.984	34.510	42.648	26.337	198	2.0	0.60	6.3	81
158	110	110	14.78	14.76	35.401	26.364	35.000	43.241	26.850	167	4.4	0.98	13.9	110
159	148	147	13.30	13.28	35.254	26.568	35.261	43.555	27.226	103	7.8	1.45	23.2	147
161	199	198	12.01	11.98	35.118	26.721	35.467	43.810	27.611	57	11.2	1.83	29.7	198
163	273	272	10.39	10.36	34.938	26.881	35.698	44.105	28.110	61	13.9	2.00	31.7	272
164	306	305	9.71	9.67	34.867	26.944	35.790	44.225	28.325	61	15.7	2.08	33.2	305
165	366	364	8.66	8.62	34.761	27.032	35.927	44.407	28.693	64	18.2	2.19	35.3	364
166	442	440	7.59	7.55	34.662	27.116	36.062	44.589	29.132	74	21.1	2.20	36.6	440

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 106 LEG: VIII POSITION: 15° 59′ S 1° 58′ E DATE: 21 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
167	493	490	6.88	6.83	34.604	27.171	36.151	44.710	29.426	85	22.9	2.27	37.0	490
168	543	540	6.21	6.16	34.550	27.217	36.230	44.820	29.708	105	24.9	2.42	37.4	540
169	591	588	5.72	5.67	34.515	27.251	36.289	44.902	29.969	109	27.2	2.38	36.9	588
171	691	687	5.04	4.98	34.478	27.303	36.376	45.021	30.488	125	31.1	2.43	37.0	687
172	791	786	4.50	4.44	34.473	27.359	36.460	45.131	31.013	137	34.5	2.38	36.8	786
173	942	936	4.02	3.95	34.518	27.446	36.572	45.266	31.800		38.6	2.16	34.7	936
174	1096	1088	3.79	3.71	34.614	27.546	36.683	45.388	32.609	165	39.3	2.10	32.5	1088
355	1193	1184	3.72	3.63	34.678	27.605	36.745	45.452	33.111	177	38.5	2.11	31.1	1184
351	1395	1384	3.64	3.53	34.794	27.707	36.850	45.560	34.132	195	34.8	1.82	27.9	1384
357	1647	1633	3.52	3.39	34.884	27.792	36.941	45.657	35.359	216	30.5	1.59	24.3	1633
352	1901	1883	3.34	3.19	34.911	27.832	36.992	45.718	36.549	226	31.1	1.51	23.3	1883
359	2103	2082	3.19	3.02	34.943	27.873	37.041	45.775	37.501	229	33.5	1.52	22.9	2082
353	2307	2283	3.05	2.86	34.915U	27.865	37.042	45.784	38.411	231	36.2	1.49	22.7	2283
354	2511	2484	2.89	2.69	34.927U	27.890	37.077	45.827	39.352	233	39.3	1.52	22.8	2484
361	2766	2734	2.72	2.49	34.902	27.886	37.084	45.845	40.489	235	43.6	1.51	22.9	2734
458	3004	2968	2.58	2.33	34.897	27.896	37.102	45.871	41.556	235	47.5	1.55	23.3	2968
463	3261	3220	2.48	2.21	34.891	27.901	37.114	45.890	42.696	234	50.1	1.56	23.5	3220
464	3515	3469	2.43	2.13	34.890	27.906	37.124	45.904	43.813	233	51.8	1.57	23.5	3469
465	3770	3718	2.39	2.06	34.889	27.911	37.132	45.915	44.926	238	52.2	1.54	23.3	3718
466	4026	3968	2.38	2.03	34.888	27.913	37.137	45.922	46.033	235	52.5	1.52	23.2	3968
467	4282	4218	2.38	2.00	34.886	27.914	37.139	45.926	47.132	237	52.6	1.54	23.2	4218
468	4539	4469	2.41	1.99	34.884	27.913	37.138	45.925	48.223	237	52.9	1.54	23.1	4469
469	4796	4719	2.42	1.97	34.884	27.914	37.141	45.929	49.313		53.4	1.54	23.1	4719
471	5052	4968	2.45	1.97	34.881	27.912	37.139	45.928	50.387	242	53.6	1.53	23.1	4968
472	5313	5222	2.47	1.95	34.880	27.913	37.140	45.930	51.479	240	53.9	1.53	22.9	5222
473	5567	5468	2.49	1.94	34.879	27.913	37.142	45.932	52.536	241	53.7	1.50	23.0	5468
474	5620	5520	2.49	1.93	34.878	27.913	37.142	45.932	52.756	242	53.6	1.52	23.1	5520

BOTTOM DEPTH FOR CAST 4 IS 5550

STATION: 107 LEG: VIII POSITION: 12° 0′ S 2° 0′ E DATE: 22 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
301	3H	3	25.40 H	25.40	36.739	24.562	32.853	40.767	24.575	206	1.2	0.18	0.0	3
302	12H	12	25.31 H	25.31	36.735	24.587	32.881	40.797	24.638	211	1.2	0.17	0.0	12
303	32H	32	25.06 H	25.05	36.732	24.662	32.962	40.885	24.798	211	1.2	0.17	0.0	32
304	51H	51	21.93 H	21.92	36.542	25.432	33.821	41.830	25.651	242	1.4	0.16	0.0	51
305	82H	82	18.42 H	18.41	36.075	26.017	34.519	42.634	26.373	171	3.1	0.70	8.3	82
306	111H	111	13.72 H	13.70	35.387	26.582	35.257	43.534	27.074	73	8.0	1.61	24.9	111
307	152H	151	12.37 H	12.35	35.207	26.719	35.449	43.777	27.397	71	10.0	1.70	26.8	151
310	203H	202	11.32 H	11.29	35.074	26.818	35.593	43.962	27.728	68	12.1	1.84	29.2	202
308	252H	251	10.63 H	10.60	34.997	26.884	35.689	44.086	28.018	68	13.2	1.90	30.1	251
309	302H	301	10.13 H	10.09	34.939	26.928	35.755	44.173	28.289	67	14.5	2.02	32.2	301
311	353H	351	9.40 H	9.36	34.850	26.983	35.843	44.291	28.579	50	16.2	2.16	34.5	351
312	404H	402	8.69 H	8.65	34.785	27.047	35.940	44.419	28.879	43	18.2	2.31	36.7	402
315	504H	501	7.49 H	7.44	34.675	27.142	36.092	44.623	29.439	48	21.4	2.45	38.9	501
316	583H	580	6.24 H	6.19	34.571	27.230	36.242	44.830	29.903	66	25.4	2.56	39.9	580
317	704H	700	5.34 H	5.28	34.513	27.296	36.354	44.984	30.535	91	29.4	2.54	39.3	700
318	805H	800	4.71 H	4.64	34.498	27.356	36.446	45.107	31.069	114	33.0	2.50	37.8	800
319	904H	898	4.33 H	4.26	34.522	27.417	36.527	45.206	31.590	132	35.0	2.41	36.0	898
320	1056H	1049	4.06 H	3.98	34.602	27.510	36.632	45.324	32.383	150	36.2	2.26	33.7	1049
321	1205H	1196	3.92 H	3.83	34.706	27.608	36.737	45.434	33.162	164	34.6	2.09	31.1	1196
322	1405H	1394			34.831					193	30.3	1.80	27.0	1394
323	1604H	1590	3.661H	3.533	34.893	27.785	36.927	45.636	35.152	212	28.3	1.62	24.4	1590
501	1903H	1885	3.40 H	3.25	34.919	27.833	36.989	45.712	36.556	226	29.8	1.53	22.8	1885
324	1907H	1889	3.391H	3.238	34.920	27.835	36.992	45.715	36.576	228	29.3	1.49	22.7	1889
502	2205H	2183	3.14 H	2.96	34.921	27.861	37.033	45.769	37.947	230	33.9	1.51	22.5	2183
503	2508H	2481	2.92 H	2.72	34.913	27.876	37.061	45.811	39.323	234	37.5	1.50	22.3	2481
504	2814H	2782	2.73 H	2.50	34.905	27.888	37.085	45.846	40.702	235	41.8	1.52	22.5	2782
505	3219H	3179	2.51 H	2.24	34.893	27.900	37.112	45.885	42.509	232	49.6	1.57	23.2	3179
506	3524H	3478	2.43 H	2.13	34.890	27.906	37.124	45.904	43.852	229	52.1	1.58	23.4	3478
507	3829H	3776	2.37 H	2.04	34.886	27.911	37.133	45.918	45.183	234	52.3	1.56	23.1	3776
508	4136H	4076	2.38 H	2.01	34.885	27.912	37.136	45.922	46.504	236	53.0	1.55	23.0	4076
509	4445H	4378	2.38 H	1.98	34.881	27.912	37.138	45.926	47.825	235	53.1	1.55	23.0	4378

STATION: 107 LEG: VIII POSITION: 12° 0′ S 2° 0′ E DATE: 22 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
510	4750H	4675	2.41 H	1.97	34.878	27.910	37.137	45.925	49.115	238	53.3	1.54	23.0	4675
511	5056H	4973	2.42 H	1.94	34.879	27.913	37.142	45.931	50.408	238	53.5	1.53	22.9	4973
512	5364H	5272	2.46 H	1.93	34.875	27.910	37.139	45.929	51.691	241	53.5	1.53	22.9	5272
515	5418H	5324	2.45 H	1.92	34.874	27.910	37.140	45.931	51.918	251U	53.6	1.52	22.9	5324
516	5502H	5406	2.458H	1.914	34.875	27.911	37.141	45.933	52.268	242	53.6	1.52	22.9	5406
517	5555H	5457	2.455H	1.904	34.875	27.912	37.143	45.934	52.490	241	53.4	1.52	22.9	5457
518	5571H	5473	2.473H	1.919	34.875	27.911	37.141	45.932	52.553	241	53.1	1.53	22.7	5473
519	5597H	5498	2.470H	1.912	34.877	27.913	37.143	45.934	52.664	242	53.0	1.53	22.8	5498
520	5627H	5527	2.478H	1.916	34.875	27.911	37.141	45.932	52.785	243	53.0	1.53	22.8	5527
521	5648H	5548	2.47 H	1.91	34.876	27.913	37.143	45.935	52.875	242	53.2	1.53	22.9	5548
522	5664H	5563	2.480H	1.913	34.877	27.913	37.143	45.934	52.940	242	53.3	1.53	22.9	5563
523	5669H	5568	2.476H	1.908	34.876	27.913	37.143	45.934	52.961	243	53.3	1.53	22.9	5568
524	5674H	5573	2.485H	1.916	34.877	27.913	37.143	45.934	52.981	242	53.0	1.54	22.9	5573

BOTTOM DEPTH FOR CAST 5 IS 5581

STATION: 108 LEG: VIII POSITION: 5° 20′ S 2° 25′ W DATE: 25 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
151	2	2	28.10	28.10	35.768	22.990	31.224	39.079	22.998	196	1.3	0.13	0.2	2
152	12	12	28.10	28.10	35.766	22.989	31.223	39.078	23.040	199	1.2	0.13	0.2	12
153	22	22	28.09	28.08	35.769	22.995	31.230	39.085	23.088	200	1.2	0.13	0.2	22
154	37	37	28.05	28.04	35.779	23.017	31.252	39.108	23.173	205	1.0	0.12	0.1	37
155	52	52	22.78	22.77	35.914	24.715	33.088	41.080	24.938	220	2.0	0.28	0.1	52
157	84	84	16.26	16.25	35.600	26.180	34.760	42.949	26.549	110	6.2	1.16	17.3	84
158	114	114	14.56	14.54	35.478	26.472	35.115	43.362	26.976	103	7.1	1.33	19.8	114
159	144	144	13.70	13.68	35.38	26.582	35.258	43.536	27.221	118	8.5	1.45	21.7	144
161	184	183	12.56	12.53	35.224	26.695	35.418	43.739	27.516	121	9.1	1.43	21.4	183
163	226	225	11.44	11.41	35.081	26.801	35.571	43.936	27.814	110	10.5	1.56	23.6	225
164	305	304	10.47	10.43	34.968	26.891	35.704	44.108	28.263	96	12.6	1.80	27.8	304
165	355	353	10.01	9.97	34.916	26.932	35.765	44.188	28.531	95	13.6	1.88	29.0	353
166	406	404	9.20	9.15	34.829	27.000	35.870	44.327	28.836	87	15.9	1.88	31.8	404
167	507	504	7.38	7.33	34.661	27.147	36.102	44.638	29.459	72	21.6	2.05	37.3	504
168	606	603	6.12	6.06	34.557	27.235	36.253	44.847	30.015	96	25.3	2.38	37.3	603
169	781	776	4.74	4.68	34.484	27.342	36.430	45.090	30.944	139	31.9	2.27	35.1	776
171	831	826	4.56	4.49	34.494	27.370	36.468	45.136	31.205	144	33.1	2.35	35.3	826
172	906	900	4.35	4.28	34.513	27.408	36.516	45.195	31.590	152	34.3	2.28	34.0	900
255	1030	1023	4.19	4.11	34.581	27.479	36.596	45.281	32.231	160	34.7	2.06	31.6	1023
173	1108	1100	4.15	4.06	34.663	27.549	36.667	45.353	32.656	165	33.0	2.03	31.5	1100
257	1183	1175	4.17	4.07	34.730	27.601	36.717	45.402	33.047	175	30.7	1.90	29.2	1175
259	1335	1325	4.09	3.98	34.836	27.695	36.814	45.502	33.832	194	27.4	1.75	26.6	1325
253	1437	1426	3.98	3.86	34.875	27.738	36.863	45.555	34.339	208	25.6	1.52	24.1	1426
254	1538	1526	3.94	3.81	34.912	27.772	36.899	45.594	34.830	220	24.1	1.56	23.6	1526
261	1691	1677	3.79	3.65	34.932	27.805	36.939	45.642	35.557	230	23.6	1.46	22.2	1677
258	1945	1927	3.47	3.31	34.941	27.845	36.997	45.716	36.751	241	25.4	1.38	21.2	1927
263	2201	2180	3.20	3.02	34.933	27.865	37.033	45.767	37.930	243	29.9	1.34	21.2	2180
264	2457	2431	2.98	2.78	34.924	27.879	37.061	45.807	39.096	243	34.8	1.32	20.5	2431
265	2711	2681	2.779	2.558	34.912	27.889	37.083	45.840	40.244	243	38.9	1.43	21.4	2681
266	2966	2932	2.627	2.383	34.905	27.898	37.102	45.868	41.388	241	42.2	1.47	22.1	2932
267	3222	3183	2.528	2.260	34.901	27.905	37.115	45.888	42.525	243	44.9	1.45	22.2	3183
268	3478	3434	2.470	2.175	34.896	27.908	37.123	45.900	43.649	242	46.5	1.55U	22.5	3434
269	3734	3684	2.421	2.099	34.893	27.911	37.131	45.912	44.768	239	48.1	1.55U	22.5	3684
271	3991	3935	2.393	2.042	34.889	27.913	37.135	45.920	45.881	245	49.3	1.31U	21.2	3935
272	4249	4187	2.356	1.976	34.881	27.911	37.138	45.926	46.991	243	49.9	1.55U	22.6	4187
273	4508	4440	2.297	1.887	34.875	27.913	37.145	45.937	48.105	243	51.4	1.41U	22.5	4440
274	4611	4540	2.284	1.862	34.875	27.915	37.148	45.942	48.547	249	51.7	1.43	22.6	4540

BOTTOM DEPTH FOR CAST 2 IS 4552

H. THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U. UNCERTAIN DATA

STATION: 109 LEG: VIII POSITION: 2° 0′ S 4° 30′ W DATE: 26 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
403	2H	2	28.94 H	28.94	35.045	22.177	30.399	38.240	22.186	197	0.9	0.01	0.0	2
404	12H	12	28.84 H	28.84	35.041	22.208	30.432	38.276	22.258	204	0.9	0.01	0.0	12
405	22H	22	28.77 H	28.76	35.072	22.254	30.479	38.325	22.347	201	0.8	0.01	0.0	22
406	32H	32			35.296					203	0.8	0.02	0.0	32
407	42H	42	27.70 H	27.69	35.631	23.017	31.263	39.129	23.194	205	1.0	0.05	0.0	42
3201	50	50	24.97	24.96	35.63 D	23.859	32.175	40.112	24.072					50
3202	75	75	16.50	16.49	35.63 D	26.148	34.719	42.900	26.477					75
408	77H	77	15.81 H	15.80	35.632	26.309	34.904	43.108	26.647	132	5.9	1.11	15.8	77
409	103H	103	15.28 H	15.26	35.589	26.397	35.012	43.234	26.851	144	6.0	1.07	15.0	103
410	143H	143	14.40 H	14.38	35.462	26.495	35.145	43.397	27.128	125	7.1	1.25	18.2	143
411	173H	172	14.21 H	14.18	35.442	26.522	35.179	43.439	27.288	114	7.7	1.33	19.6	172
412	244H	243	13.32 H	13.28	35.321	26.618	35.310	43.603	27.701	110	8.8	1.44	21.6	243
415	284H	283	12.43 H	12.39	35.206	26.710	35.438	43.765	27.975	84	10.7	1.66	25.7	283
416	355H	354	10.38 H	10.34	34.974	26.913	35.729	44.137	28.510	72	14.3	1.95	30.7	354
417	424H	422	8.32 H	8.27	34.741	27.070	35.980	44.475	28.996	95	17.7	2.11	32.6	422
601	487H	485	7.09 H	7.04	34.621	27.155	36.125	44.675	29.380	112	20.9	2.21	33.6	485
602	558H	555	6.38 H	6.33	34.567	27.209	36.214	44.796	29.766	115	23.6	2.31	35.0	555
418	715H	711	5.16 H	5.10	34.482	27.293	36.360	44.999	30.586	140	28.5	2.35	34.6	711
419	867H	862	4.41 H	4.34	34.516	27.403	36.509	45.184	31.406	153	33.5	2.33	33.9	862
420	1011H	1004	4.34 H	4.26	34.656	27.523	36.631	45.308	32.183	164	31.9	2.14	31.4	1004
421	1316H	1306	4.29 H	4.18	34.875	27.705	36.813	45.491	33.749	204	23.7	1.69	25.0	1306
603	1598H	1585	3.98 H	3.85	34.961	27.808	36.932	45.624	35.134	240	19.2	1.38	21.0	1585
422	1620H	1607	3.95 H	3.82	34.959	27.810	36.935	45.629	35.236	242	18.9	1.36	20.6	1607
423	1823H	1807	3.64 H	3.49	34.961	27.843	36.986	45.696	36.195	252	20.1	1.30	19.7	1807
604	1987H	1969	3.48 H	3.32	34.959	27.858	37.010	45.729	36.952	255	21.4	1.29	19.9	1969
424	2026H	2007	3.40 H	3.24	34.952	27.860	37.017	45.740	37.133	253	23.0	1.30	19.8	2007
605	2243H	2221	3.24 H	3.06	34.944	27.871	37.037	45.769	38.120	251	26.2	1.34	20.5	2221
606	2497H	2471	2.91 H	2.71	34.924	27.886	37.071	45.821	39.285	246	33.9	1.41	21.5	2471
607	2754H	2724	2.75 H	2.53	34.913	27.893	37.088	45.847	40.440	243	38.0	1.44	21.8	2724
608	3012H	2977	2.65 H	2.40	34.906	27.897	37.100	45.865	41.588	245	40.0	1.43	21.9	2977
609	3269H	3229	2.58 H	2.31	34.900	27.900	37.108	45.879	42.722	243	42.7	1.47	22.3	3229
610	3526H	3481	2.49 H	2.19	34.894	27.905	37.119	45.896	43.853	243	44.5	1.47	22.3	3481
611	3781H	3730	2.42 H	2.09	34.889	27.909	37.129	45.910	44.969	247	45.4	1.47	22.1	3730
612	4038H	3981	2.38 H	2.02	34.884	27.910	37.134	45.919	46.082	247	46.3	1.45	22.1	3981
616	4556H	4487	2.28 H	1.87	34.871	27.912	37.145	45.938	48.310	248	50.7	1.49	22.7	4487
617	4812H	4736	2.24 H	1.79	34.866	27.913	37.150	45.948	49.402	248	52.7	1.48	22.7	4736
618	5071H	4988	2.20 H	1.72	34.860	27.914	37.155	45.956	50.501	247	54.2	1.51	23.0	4988
619	5121H	5037	2.20 H	1.72	34.860	27.914	37.156	45.957	50.712	247	54.9	1.50	23.0	5037
620	5148H	5063	2.21 H	1.72	34.859	27.913	37.154	45.955	50.823	247	54.8	1.51	23.0	5063
621	5173H	5088	2.21 H	1.72	34.861	27.915	37.156	45.957	50.930	247	54.3	1.51	23.0	5088
622	5188H	5102	2.23 H	1.74	34.858	27.911	37.151	45.952	50.987	247	54.3	1.53	23.1	5102
623	5204H	5118	2.21 H	1.72	34.858	27.913	37.154	45.956	51.058	248	54.4	1.52	23.1	5118
624	5214H	5127	2.213H	1.717	34.858	27.913	37.154	45.956	51.099	248	54.6	1.53	23.1	5127
625	5219H	5132	2.210H	1.713	34.860	27.914	37.156	45.958	51.122	248	54.5	1.52	23.1	5132
626	5224H	5137	2.213H	1.716	34.859	27.914	37.155	45.957	51.142	248	54.8	1.52	23.1	5137

BOTTOM DEPTH FOR CAST 6 IS 5148

STATION: 110 LEG: VIII POSITION: 0° 0′ S 9° 11′ W DATE: 28 FEB 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
151	5	5	28.49	28.49	35.299	22.513	30.743	38.593	22.534	196	1.3	0.01	0.1	5
152	20	20	28.26	28.25	35.373	22.643	30.878	38.733	22.728	201	1.1	0.01	0.0	20
153	30	30	27.38	27.37	35.707	23.174	31.427	39.301	23.301	201	1.0	0.05	0.0	30
154	39	39	25.99	25.98	36.006	23.832	32.117	40.023	23.997	201	1.4	0.11	0.0	39
155	49	49	24.57	24.56	36.234	24.434	32.754	40.695	24.643	195	1.7	0.18	0.0	49
157	58	58	22.45	22.44	36.282	25.088	33.466	41.463	25.337	184	2.1	0.34	1.6	58
158	68	68	18.94	18.93	36.027	25.847	34.333	42.433	26.142	166	3.4	0.65	7.6	68
159	83	83	16.85	16.84	35.816	26.206	34.763	42.930	26.569	173	4.2	0.71	9.2	83
161	99	99	16.00	15.98	35.690	26.310	34.899	43.095	26.745	171	4.9	0.81	10.8	99
163	113	113	15.00	14.98	35.556	26.435	35.061	43.292	26.934	161	6.0	0.95	13.5	113
164	138	138	14.41	14.39	35.473	26.501	35.150	43.403	27.112		6.6	1.03	15.0	138
165	188	187	13.60	13.57	35.366	26.593	35.274	43.556	27.427	140	7.7	1.19	17.9	187
166	238	237	13.00	12.97	35.283	26.654	35.359	43.664	27.712	115	9.4	1.38	21.6	237
167	287	286	10.78	10.74	35.012	26.870	35.669	44.060	28.159	92	12.9	1.74	28.1	286
168	387	385	8.63	8.59	34.779	27.051	35.947	44.428	28.807	100	13.6	2.05	32.1	385
169	487	485	6.78	6.73	34.587	27.171	36.156	44.719	29.400	135	21.2	2.07	31.8	485
171	586	583	5.58	5.53	34.513	27.266	36.311	44.931	29.963	145	26.5	2.21	33.4	583
172	686	682	5.22	5.16	34.498	27.298	36.362	44.998	30.457	143	28.5	2.27	34.4	682
173	787	782	4.64	4.58	34.515	27.377	36.471	45.135	31.009	156	31.8	2.19	33.8	782
174	890	884	4.47	4.40	34.554	27.428	36.529	45.201	31.533	157	32.6	2.23	33.2	884
255	929	923	4.48	4.40	34.565	27.436	36.537	45.208	31.719	157	32.4	2.24	33.0	923
251	1005	998	4.39	4.31	34.630	27.497	36.602	45.278	32.129	162	31.9	2.14	32.2	998
257	1080	1073	4.39	4.30	34.706	27.558	36.663	45.337	32.530	169	30.2	2.02	30.6	1073
252	1281	1272	4.41	4.30	34.877	27.694	36.795	45.467	33.575	202	22.9	1.64	25.4	1272
259	1534	1522	4.07	3.94	34.961	27.798	36.917	45.605	34.832	236	18.8	1.39	21.3	1522
253	1786	1770	3.82	3.67	34.969	27.832	36.965	45.666	36.009	248	18.7	1.29	19.9	1770
254	2041	2022	3.56	3.39	34.960	27.852	37.000	45.715	37.183	252	20.8	1.27	19.8	2022
261	2294	2271	3.11	2.92	34.940	27.879	37.053	45.791	38.364	250	28.5	1.32	20.4	2271
258	2549	2522	2.89	2.68	34.927	27.890	37.077	45.828	39.521	247	33.8	1.36	21.1	2522
263	2806	2775	2.723	2.494	34.913	27.895	37.093	45.853	40.674	249	38.2	1.41	21.4	2775
264	3064	3028	2.611	2.357	34.907	27.902	37.107	45.875	41.823	246	40.9	1.40	21.6	3028
265	3320	3279	2.49	2.21	34.901	27.909	37.122	45.897	42.960	249	42.3	1.42	21.6	3279
266	3577	3531	2.446	2.141	34.897	27.911	37.128	45.907	44.085	249	43.9	1.41	21.8	3531
267	3833	3781	2.37	2.04	34.890	27.914	37.137	45.921	45.203	249	45.8	1.42	21.8	3781
268	4092	4034	2.318	1.958	34.884	27.915	37.143	45.931	46.326	251	48.0	1.47	22.2	4034
269	4350	4286	2.273	1.884	34.875	27.914	37.145	45.938	47.434	251	49.9	1.44	22.1	4286
271	4608	4538	2.272	1.851	34.872	27.914	37.147	45.942	48.534	249	51.8	1.48	22.4	4538
272	4814	4738	2.244	1.798	34.868	27.915	37.151	45.948	49.411	248	53.1	1.48	22.6	4738
273	5021	4940	2.190	1.720	34.860	27.914	37.155	45.957	50.292	248	55.7	1.49	22.9	4940
274	5125	5041	2.180	1.697	34.858	27.914	37.156	45.959	50.731	250	56.2	1.52	23.0	5041

BOTTOM DEPTH FOR CAST 2 IS 5047

STATION: 111 LEG: VIII POSITION: 2° 0′ N 14° 1′ W DATE: 1 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
501	2H	2	29.12 H	29.12	35.456	22.428	30.640	38.473	22.436	205	1.1	0.03	0.0	2
502	12H	12	29.09 H	29.09	35.452	22.435	30.649	38.482	22.486	205	1.0	0.03	0.0	12
503	32H	32	28.88 H	28.87	35.446	22.500	30.719	38.558	22.635	206	1.1	0.03	0.0	32
504	42H	42	28.75 H	28.74	35.480	22.568	30.790	38.632	22.745	209	1.0	0.03	0.0	42
505	52H	52	24.98 H	24.97	36.074	24.191	32.501	40.433	24.412	192	1.8	0.13	0.0	52
506	76H	76	17.29 H	17.28	35.735	26.037	34.581	42.735	26.369	121	4.7	1.13	15.3	76
4201	101	101	15.10	15.08	35.55 D	26.408	35.030	43.258	26.853					101
507	104H	104	14.95 H	14.93	35.536	26.430	35.058	43.291	26.889	109	7.3	1.36	19.4	104
4202	126	126	14.31	14.29	35.45 D	26.505	35.158	43.414	27.063					126
4203	151	151	13.78	13.76	35.39 D	26.573	35.246	43.521	27.242					151
508	164H	164	13.54 H	13.52	35.356	26.597	35.280	43.564	27.325	107	8.7	1.48	21.6	164
509	215H	214	12.67 H	12.64	35.243	26.689	35.407	43.724	27.646	106	9.7	1.58	23.1	214
510	276H	275	11.73 H	11.69	35.130	26.786	35.544	43.897	28.020	95	11.2	1.76	26.1	275
511	317H	316	10.73 H	10.69	35.011	26.879	35.680	44.073	28.303	97	12.9	1.87	27.9	316
512	367H	365	9.29 H	9.25	34.854	27.004	35.870	44.322	28.664	123	14.8	1.89	27.9	365
515	419H	417	8.35 H	8.30	34.756	27.077	35.986	44.479	28.980	141	16.9	2.01	29.3	417
516	508H	506	6.56 H	6.51	34.593	27.205	36.201	44.774	29.532	141	22.3	2.21	32.1	506
517	631H	628	5.52 H	5.47	34.527	27.285	36.333	44.955	30.188	143	27.0	2.36	33.5	628
518	712H	708	5.04 H	4.98	34.517	27.334	36.406	45.051	30.615	149	29.5	2.38	34.1	708
519	813H	808	4.74 H	4.67	34.540	27.387	36.474	45.133	31.135	149	31.1	2.41	34.2	808
520	1014H	1007	4.46 H	4.38	34.615	27.478	36.580	45.252	32.149	158	31.8	2.32	32.7	1007
521	1218H	1209	4.43 H	4.33	34.821	27.647	36.748	45.419	33.243	184	26.1	1.95	28.0	1209
522	1422H	1411			34.951					229	9.1	1.50	22.1	1411
523	1625H	1612	3.95 H	3.82	34.961	27.811	36.937	45.631	35.260	240	18.9	1.40	20.9	1612
524	1827H	1811	3.69 H	3.54	34.963	27.840	36.980	45.688	36.207	249	19.6	1.33	20.3	1811
201	1852H	1836	3.68 H	3.53	34.963	27.841	36.982	45.690	36.321	249	20.0	1.34	20.2	1836
202	2054H	2035	3.40 H	3.23	34.954	27.862	37.019	45.742	37.260	250	23.3	1.35	20.5	2035
203	2310H	2287	3.09 H	2.90	34.938	27.880	37.054	45.794	38.436	250	28.3	1.37	20.8	2287
204	2564H	2537	2.92 H	2.71	34.930	27.890	37.075	45.825	39.585	251	31.5	1.39	21.0	2537
205	2819H	2787	2.80 H	2.57	34.920	27.895	37.088	45.845	40.724	246	35.8	1.43	21.5	2787
206	3076H	3040	2.66 H	2.40	34.910	27.900	37.103	45.868	41.870	246	39.0	1.46	21.8	3040

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 111 LEG: VIII POSITION: 2° 0' N 14° 1' W DATE: 1 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
207	3332H	3291	2.52 H	2.24	34.902	27.907	37.119	45.893	43.009	247	42.1	1.47	22.0	3291
208	3586H	3539	2.46 H	2.15	34.896	27.910	37.126	45.904	44.121	248	42.9	1.45	21.9	3539
209	3894H	3841	2.40 H	2.06	34.890	27.912	37.134	45.917	45.462	251	43.4	1.45	21.7	3841
210	4205H	4144	2.36 H	1.99	34.884	27.913	37.139	45.926	46.804	252	45.9	1.48	21.9	4144
211	4515H	4447	2.27 H	1.86	34.873	27.914	37.147	45.941	48.139	249	49.7	1.50	22.3	4447
212	4773H	4698	2.25 H	1.81	34.865	27.911	37.147	45.944	49.234	250	51.6	1.52	22.6	4698
215	5032H	4950	2.21 H	1.74	34.862	27.914	37.154	45.955	50.336	251	52.9	1.54	22.7	4950
216	5084H	5001	2.19 H	1.71	34.859	27.914	37.156	45.958	50.558	252	53.9	1.54	22.8	5001
217	5136H	5052	2.19 H	1.71	34.860	27.915	37.157	45.959	50.777	249	53.6	1.55	22.7	5052
218	5162H	5077	2.20 H	1.71	34.860	27.915	37.156	45.958	50.884	250	54.1	1.53	22.6	5077
219	5188H	5102	2.20 H	1.71	34.860	27.915	37.157	45.959	50.994	250	53.8	1.54	22.7	5102
220	5214H	5127	2.20 H	1.70	34.860	27.915	37.157	45.959	51.104	250	54.0	1.54	22.8	5127
221	5219H	5132	2.20 H	1.70	34.860	27.915	37.157	45.960	51.125	250	54.1	1.55	22.7	5132
222	5229H	5142	2.202H	1.704	34.858	27.914	37.156	45.958	51.165	249	54.2	1.55	22.8	5142
223	5234H	5147	2.200H	1.702	34.858	27.914	37.156	45.958	51.186	250	54.0	1.54	22.7	5147
224	5239H	5152	2.189H	1.691	34.858	27.915	37.157	45.960	51.209	250	54.2	1.54	22.8	5152

BOTTOM DEPTH FOR CAST 2 IS 5160

STATION: 112 LEG: VIII POSITION: 6° 20' N 17° 16' W DATE: 3 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
151	0	0	27.14	27.14	35.361	22.987	31.249	39.133	22.987	206	1.8	0.04	0.0	0
152	12	12	27.17	27.17	35.453	23.048	31.308	39.190	23.099	208	1.7	0.03	0.0	12
153	22	22	26.36	26.35	35.820	23.577	31.854	39.753	23.670	207	1.8	0.06	0.0	22
154	32	32	21.31	21.30	35.834	25.066	33.482	41.516	25.204	178	3.3	0.21	0.0	32
155	47	47	17.21	17.20	35.640	25.983	34.530	42.688	26.188	91	5.6	1.27	18.7	47
157	57	57	16.40	16.39	35.616	26.158	34.733	42.918	26.409	74	6.5	1.45	22.0	57
158	72	72	15.78	15.77	35.578	26.274	34.871	43.076	26.591	71	7.3	1.51	23.2	72
159	103	103	14.78	14.76	35.501	26.441	35.076	43.315	26.896	78	7.9	1.53	23.6	103
161	128	128	14.45	14.43	35.463	26.485	35.132	43.383	27.051	80	8.3	1.57	23.8	128
163	173	172	13.87	13.84	35.395	26.558	35.228	43.500	27.325	85	8.8	1.54	23.8	172
164	230	229	13.06	13.03	35.300	26.655	35.357	43.660	27.677	76	10.2	1.69	26.0	229
165	304	303	11.16	11.12	35.097	26.867	35.649	44.025	28.230	63	13.3	1.94	30.6	303
166	353	351	9.94	9.90	34.979	26.993	35.828	44.253	28.584	57	16.0	2.08	33.8	351
167	404	402	8.97	8.92	34.867	27.067	35.946	44.412	28.896	70	17.1	2.15	34.4	402
168	503	500	7.66	7.61	34.750	27.176	36.117	44.640	29.467	82	20.2	2.33	36.1	500
169	602	599	6.80	6.74	34.683	27.245	36.228	44.790	29.996	87	23.8	2.37	36.8	599
171	676	672	6.29	6.23	34.668	27.302	36.310	44.895	30.396	93	25.6	2.49	37.2	672
172	751	747	5.75	5.68	34.648	27.354	36.390	45.000	30.799	107	27.2	2.43	36.5	747
173	827	822	5.40	5.33	34.652	27.400	36.453	45.080	31.198	119	28.7	2.35	35.8	822
174	903	897	5.10	5.02	34.665	27.446	36.514	45.155	31.596	127	29.4	2.26	34.8	897
255	928	922	5.09	5.01	34.666	27.448	36.517	45.158	31.712	130	29.8	2.32	34.6	922
251	1028	1021	4.87	4.78	34.730	27.525	36.604	45.255	32.248	143	28.9	2.16	32.7	1021
257	1230	1221	4.55	4.45	34.860	27.665	36.759	45.424	33.311	176	25.9	1.85	28.1	1221
252	1433	1422	4.09	3.97	34.915	27.759	36.877	45.564	34.337	206	24.1	1.63	24.7	1422
259	1636	1622	3.86	3.73	34.95	27.808	36.938	45.637	35.310	223	23.2	1.50	22.6	1622
253	1838	1822	3.62	3.47	34.951	27.837	36.982	45.692	36.257	235	23.6	1.43	21.6	1822
254	2044	2025	3.43	3.26	34.949	27.855	37.010	45.732	37.207	239	25.5	1.42	21.3	2025
261	2245	2223	3.21	3.03	34.947	27.876	37.043	45.777	38.136	242	26.1	1.38	21.0	2223
258	2448	2422	3.03	2.83	34.937	27.885	37.064	45.807	39.059	242	31.3	1.40	21.1	2422
263	2705	2675	2.86	2.64	34.93	27.896	37.085	45.838	40.218	245	34.6	1.43	21.2	2675
264	2961	2927	2.71	2.46	34.922	27.905	37.104	45.866	41.366	244	37.4	1.43	21.2	2927
265	3167	3129	2.624	2.359	34.915	27.908	37.113	45.880	42.279	247	39.0	1.44	21.6	3129
266	3422	3379	2.53	2.24	34.909	27.913	37.124	45.898	43.405	244	41.2	1.45	21.6	3379
267	3680	3631	2.461	2.144	34.902	27.915	37.132	45.911	44.534	247	43.4	1.45	21.8	3631
268	3939	3884	2.417	2.072	34.895	27.915	37.136	45.919	45.657	247	45.6	1.48	22.1	3884
269	4197	4136	2.34	1.97	34.889	27.919	37.145	45.934	46.777	246	48.1	1.48	22.3	4136
271	4455	4388	2.302	1.899	34.880	27.917	37.147	45.939	47.882	244U	52.2	1.33U	22.2	4388
272	4715	4642	2.276	1.842	34.874	27.916	37.150	45.945	48.990	251	52.9	1.46	22.6	4642
273	4920	4841	2.27	1.81	34.871	27.916	37.152	45.949	49.858	244	53.2	1.48	22.9	4841
274	5025	4943	2.280	1.806	34.872	27.917	37.153	45.950	50.300	247	53.2	1.40U	21.8U	4943

BOTTOM DEPTH FOR CAST 2 IS 4955

STATION: 113 LEG: VIII POSITION: 10° 59' N 20° 32' W DATE: 5 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
601	3H	3	24.11 H	24.11	35.778	24.223	32.560	40.518	24.236	215	0.8	0.03	0.0	3
602	13H	13	24.10 H	24.10	35.777	24.226	32.563	40.521	24.281	215	0.8	0.04	0.0	13
603	23H	23	24.03 H	24.02	35.782	24.251	32.590	40.550	24.349	215	0.9	0.03	0.0	23
604	32H	32	23.99 H	23.98	35.785	24.266	32.606	40.567	24.402	215	0.9	0.04	0.0	32
605	47H	47	20.00 H	19.99	35.626	25.263	33.721	41.795	25.467	174	1.7	0.60	7.5	47
606	62H	62	16.24 H	16.23	35.583	26.171	34.752	42.942	26.443	82	5.9	1.43	21.1	62
607	94H	94	14.28 H	14.27	35.432	26.497	35.150	43.407	26.913	80	8.7	1.59	24.4	94
608	123H	123	13.37 H	13.35	35.340	26.619	35.308	43.599	27.166	92	9.2	1.54	23.7	123
609	162H	161	12.47 H	12.45	35.249	26.732	35.458	43.782	27.454	86	10.6	1.67	25.9	161
610	225H	224	11.64 H	11.61	35.183	26.843	35.603	43.959	27.850	69	12.2	1.82	28.8	224
611	273H	272	11.06 H	11.03	35.140	26.918	35.704	44.082	28.143	61	13.3	1.92	30.8	272
612	329H	327	10.59 H	10.55	35.124	26.992	35.797	44.195	28.470	51	14.4	2.01	32.6	327
615	380H	378	10.10 H	10.05	35.105	27.064	35.891	44.308	28.775	47	17.1	2.11	34.0	378
616	429H	427	9.46 H	9.41	35.040	27.123	35.978	44.422	29.059	46	18.2	2.19	35.2	427
905	499H	496	9.07 H	9.01	35.055	27.200	36.072	44.532	29.454	57	18.4	2.22	35.5	496
908	598H	595	7.58 H	7.52	34.847	27.266	36.209	44.735	29.986	65	22.2	2.42	37.6	595
909	700H	696	6.77 H	6.70	34.797	27.340	36.324	44.886	30.535	86	24.4	2.40	37.1	696
910	800H	795	6.13 H	6.06	34.766	27.401	36.416	45.007	31.060	98	26.2	2.38	36.1	795
911	902H	896	5.63 H	5.55	34.756	27.456	36.496	45.111	31.588	117	27.6	2.32	34.7	896
912	1003H	996	5.33 H	5.24	34.801	27.528	36.583	45.212	32.125	137	27.3	2.19	32.6	996
301	1087H	1079	5.35 H	5.25	34.859	27.573	36.626	45.253	32.549	138	26.7	2.11	31.5	1079
915	1108H	1100	5.23 H	5.13	34.880	27.604	36.663	45.295	32.678	147	26.2	2.05	30.5	1100
916	1206H	1197	4.87 H	4.77	34.912	27.671	36.748	45.397	33.198	169	24.9	1.90	28.2	1197
302	1339H	1329	4.62 H	4.51	34.962	27.740	36.829	45.490	33.875	190	23.7	1.73	26.0	1329
303	1592H	1579	3.95 H	3.82	34.955	27.806	36.932	45.625	35.106	221	22.7	1.53	23.0	1579
304	1844H	1827	3.63 H	3.48	34.955	27.840	36.983	45.694	36.286	234	23.7	1.46	21.9	1827
305	2094H	2074	3.35 H	3.18	34.953	27.866	37.026	45.751	37.446		25.7	1.41	21.3	2074
306	2347H	2323	3.12 H	2.93	34.947	27.885	37.058	45.796	38.604	243	29.6	1.42	21.3	2323
307	2601H	2573	2.92 H	2.71	34.934	27.894	37.079	45.829	39.752	244	32.6	1.41	21.3	2573
308	2854H	2821	2.76 H	2.52	34.926	27.903	37.098	45.857	40.890	246	35.2	1.43	21.3	2821
309	3110H	3072	2.65 H	2.39	34.918	27.908	37.111	45.877	42.027	248	37.6	1.43	21.4	3072
310	3366H	3323	2.56 H	2.28	34.909	27.910	37.119	45.891	43.156	245	40.4	1.44	21.6	3323
311	3623H	3575	2.471H	2.160	34.902	27.914	37.130	45.908	44.285	239	43.1	1.47	21.8	3575
312	3883H	3829	2.42 H	2.08	34.895	27.914	37.135	45.917	45.415	243	45.4	1.48	22.1	3829
315	4146H	4086	2.367H	1.999	34.891	27.918	37.143	45.929	46.554	245	46.8	1.49	22.1	4086
316	4410H	4344	2.33 H	1.93	34.883	27.917	37.145	45.936	47.687	243	49.4	1.51	22.5	4344
317	4622H	4550	2.30 H	1.88	34.879	27.917	37.149	45.943	48.593	242	51.4	1.53	22.8	4550
330	4665H	4592			34.877					242	52.1	1.50	22.6	4592
318	4772H	4696			34.879					236	52.9	1.53	23.0	4696
329	4814H	4737			34.879					239	53.1	1.49	23.0	4737
319	4836H	4759	2.31 H	1.86	34.880	27.920	37.153	45.947	49.501	240	53.1	1.54	23.1	4759
328	4878H	4800			34.879					238	53.5	1.53	23.2	4800
320	4905H	4826	2.33 H	1.87	34.877	27.916	37.149	45.942	49.787	237	53.7	1.53	23.2	4826
327	4916H	4837			34.880					239	53.5	1.48	22.5	4837
321	4943H	4863	2.33 H	1.86	34.879	27.919	37.151	45.945	49.950	239	53.5	1.53	23.1	4863
322	4960H	4879	2.332H	1.864	34.877	27.917	37.150	45.943	50.019	241	53.7	1.52	23.1	4879
326	4975H	4894			34.880					239	53.7	1.54	23.1	4894
325	4986H	4905			34.879					239	53.7	1.54	23.2	4905
323	4992H	4911	2.34 H	1.86	34.879	27.918	37.151	45.945	50.155	238	53.7	1.52	23.2	4911
324	4997H	4915	2.34 H	1.86	34.879	27.918	37.151	45.945	50.176	238	53.8	1.53	23.2	4915

BOTTOM DEPTH FOR CAST 3 IS 4950

STATION: 114 LEG: IX POSITION: 21° 10' N 21° 46' W DATE: 12 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	16	16	19.97	19.97	36.798	26.161	34.606	42.667	26.231	235	0.5	0.05	0.3	16
102	106	106	19.81	19.79	36.843	26.243	34.692	42.757	26.701	227	0.8	0.11	0.8	106
103	136	135	18.15	18.13	36.645	26.523	35.027	43.144	27.114	177	2.0	0.37	7.0	135
104	166	165	17.49	17.46	36.517	26.590	35.118	43.257	27.314	177	2.4	0.42	8.0	165
105	226	225	16.15	16.11	36.219	26.686	35.263	43.449	27.676	156	4.1	0.68	12.3	225
106	266	265	15.08	15.04	36.044	26.798	35.415	43.638	27.968	151	5.2	0.78	14.3	265
107	311	309	14.30	14.25	35.953	26.901	35.548	43.799	28.273	170	4.7	0.71	13.3	309

H. THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U. UNCERTAIN DATA

STATION: 114 LEG: IX POSITION: 21° 10' N 21° 46' W DATE: 12 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
108	366	364	12.68	12.63	35.757	27.089	35.801	44.111	28.715	147	6.9	0.96	17.7	364
109	424	422	12.12	12.06	35.632	27.104	35.840	44.173	28.992	133	8.5	1.17	20.5	422
110	486	483	11.20	11.14	35.478	27.160	35.936	44.306	29.333	110	11.1	1.40	24.8	483
111	539	536	10.51	10.44	35.336	27.176	35.983	44.381	29.592	87	13.9	1.73	29.2	536
112	561	558	10.12	10.05	35.288	27.207	36.031	44.446	29.726	79	14.9	1.85	30.7	558
115	597	593	10.009	9.936	35.309	27.244	36.072	44.491	29.924	99	14.6	1.73	28.6	593
116	645	641	9.383	9.307	35.250	27.304	36.161	44.605	30.208	103	15.8	1.78	29.2	641
117	695	690	8.612	8.534	35.164	27.361	36.254	44.731	30.501	103	18.0	1.91	30.6	690
118	741	736	8.085	8.005	35.105	27.396	36.314	44.815	30.751	109	19.2	1.93	30.7	736
119	793	788	7.525	7.442	35.044	27.431	36.376	44.902	31.030	112	21.0	2.00	31.6	788
120	849	843	7.207	7.120	35.033	27.468	36.428	44.968	31.326	117	21.6	2.00	31.3	843
121	900	894	6.704	6.615	34.968	27.487	36.472	45.035	31.585	119	23.1	2.05	31.9	894
122	1001	994	6.351	6.254	34.986	27.549	36.551	45.130	32.110	135	23.2	1.96	30.5	994
123	1102	1094	6.086	5.981	35.029	27.618	36.633	45.223	32.640	153	22.5	1.82	28.4	1094
510	1165	1156	6.029	5.918	35.069	27.657	36.675	45.268	32.964	163	22.3	1.77	26.9	1156
124	1204	1194	5.943	5.828	35.094	27.688	36.710	45.306	33.172	170	21.3	1.69	26.3	1194
701	1304 H	1293	5.66 H	5.54	35.117	27.743	36.778	45.388	33.684	182	21.4	1.61	24.7	1293
702	1455 H	1442	5.10 H	4.97	35.100	27.797	36.861	45.497	34.435	198	21.9	1.55	23.5	1442
511	1470	1457	5.079	4.946	35.099	27.799	36.864	45.501	34.505	197	22.3	1.54	23.6	1457
703	1608 H	1594	4.59 H	4.45	35.069	27.831	36.922	45.583	35.175	208	23.2	1.52	23.0	1594
704	1759 H	1742	4.13 H	3.98	35.037	27.855	36.971	45.655	35.896	218	24.6	1.49	22.5	1742
512	1774	1757	4.161	4.009	35.036	27.851	36.965	45.649	35.958	219	25.0	1.45	22.5	1757
705	1912 H	1893	3.86 H	3.70	35.012	27.863	36.994	45.693	36.602	225	26.1	1.46	21.8	1893
715	2063 H	2042	3.61 H	3.44	34.994	27.875	37.020	45.732	37.300	231	27.4	1.45	21.7	2042
515	2237	2213	3.409	3.224	34.984	27.887	37.044	45.767	38.099	235	29.1	1.44	21.6	2213
716	2369 H	2343	3.28 H	3.08	34.973	27.891	37.056	45.786	38.698	235	30.9	1.44	21.5	2343
717	2520 H	2492	3.12 H	2.91	34.962	27.898	37.072	45.811	39.384	238	32.4	1.43	21.5	2492
718	2674 H	2643	3.03 H	2.81	34.951	27.899	37.078	45.822	40.072	239	33.6	1.44	21.4	2643
719	2825 H	2791	2.91 H	2.67	34.950	27.909	37.096	45.847	40.757	242	35.3	1.43	21.4	2791
720	2979 H	2942	2.81 H	2.56	34.940	27.911	37.104	45.861	41.443	242	37.5	1.45	21.4	2942
516	3157	3117	2.702	2.436	34.931	27.914	37.115	45.878	42.235	242	39.7	1.45	21.7	3117
517	3310	3267	2.610	2.330	34.919	27.914	37.120	45.889	42.911	239	42.6	1.49	22.0	3267
518	3463	3416	2.545	2.250	34.915	27.917	37.128	45.901	43.586	240	44.0	1.49	22.0	3416
519	3615	3565	2.477	2.167	34.908	27.918	37.133	45.911	44.254	242	45.8	1.49	22.2	3565
520	3769	3716	2.432	2.106	34.901	27.917	37.136	45.917	44.924	244	47.0	1.48	22.2	3716
521	3922	3865	2.406	2.063	34.898	27.918	37.140	45.923	45.588	245	47.5	1.49	22.2	3865
522	4074	4014	2.386	2.026	34.895	27.919	37.142	45.927	46.244	247	48.0	1.49	22.2	4014
721	4116 H	4055	2.39 H	2.02	34.891	27.916	37.139	45.924	46.421	245				4055
722	4189 H	4126	2.40 H	2.03	34.892	27.916	37.140	45.925	46.734	245				4126
523	4239	4175	2.39	2.01	34.892	27.918	37.142	45.928	46.950	246	48.9	1.50	22.3	4175
723	4261 H	4196	2.39 H	2.01	34.892	27.918	37.142	45.928	47.044	246				4196
724	4304 H	4238			34.893					245				4238
725	4336 H	4269	2.39 H	2.00	34.892	27.919	37.144	45.930	47.366	245				4269
726	4357 H	4290	2.39 H	2.00	34.891	27.918	37.143	45.930	47.455	245				4290
727	4380 H	4312	2.40 H	2.00	34.892	27.918	37.143	45.929	47.552	245				4312
728	4401 H	4333	2.40 H	2.00	34.892	27.918	37.143	45.930	47.642	246				4333
524	4411	4342	2.403	2.002	34.892	27.918	37.143	45.929	47.684	247	48.8	1.50	22.3	4342
729	4412 H	4343	2.401 H	2.000	34.890	27.917	37.142	45.928	47.687	245				4343
730	4422 H	4353	2.402 H	1.999	34.891	27.918	37.143	45.929	47.730	245				4353

BOTTOM DEPTH FOR CAST 5 IS 4359 — CAST 7 IS 4368

STATION: 115 LEG: IX POSITION: 28° 1' N 26° 0' W DATE: 15 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
301	18	18	19.100	19.097	36.974	26.525	34.994	43.078	26.603	238	0.8	0.01	0.1	18
302	47	47	19.024	19.015	36.968	26.541	35.013	43.100	26.745	234	0.6	0.01	0.1	47
303	88	88	18.938	18.922	36.960	26.560	35.034	43.124	26.941	234	0.6	0.03	0.3	88
901	113 H	112	18.86 H	18.84	36.956	26.578	35.055	43.147	27.068	231	0.5	0.01	0.1	112
902	162 H	161	18.61 H	18.58	36.895	26.598	35.084	43.185	27.301	226	0.6	0.04	0.9	161
903	214 H	213	17.18 H	17.14	36.552	26.695	35.233	43.381	27.628	208	1.4	0.21	4.1	213
304	239	238	16.451	16.411	36.399	26.754	35.318	43.492	27.799	213	2.0	0.28	5.2	238
305	289	287	16.136	16.088	36.359	26.799	35.375	43.560	28.064	215	2.0	0.30	5.5	287

STATION: 115 LEG: IX POSITION: 28° 1' N 26° 0' W DATE: 15 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
306	390	388	14.147	14.088	35.968	26.948	35.601	43.858	28.669	201	3.9	0.59	10.4	388
307	494	491	12.806	12.736	35.755	27.066	35.773	44.080	29.256	197	5.4	0.77	13.2	491
308	593	589	11.685	11.605	35.608	27.173	35.928	44.279	29.814	187	6.9	0.96	16.0	589
309	743	738	10.055	9.963	35.440	27.341	36.167	44.583	30.670	161	11.6	1.32	21.2	738
310	794	788	9.583	9.488	35.408	27.397	36.244	44.679	30.961	162	12.6	1.38	21.9	788
311	869	863	8.727	8.628	35.345	27.488	36.374	44.845	31.402	160	14.8	1.50	23.3	863
312	945	938	8.019	7.916	35.265	27.535	36.454	44.957	31.804	157	16.9	1.46	24.6	938
315	1005	997	7.797	7.688	35.282	27.582	36.512	45.023	32.124	165	17.0	1.58	24.2	997
316	1107	1098	7.389	7.272	35.308	27.663	36.612	45.141	32.670	180	16.8	1.50	23.2	1098
317	1158	1148	7.141	7.020	35.307	27.698	36.658	45.199	32.940	184	17.0	1.47	22.7	1148
318	1209	1199	7.343	7.215	35.399	27.743	36.693	45.223	33.205	186	16.6	1.42	21.7	1199
319	1305	1294	6.892	6.757	35.363	27.779	36.751	45.302	33.683	194	16.9	1.40	21.5	1294
321	1353	1341	6.723	6.584	35.359	27.799	36.779	45.338	33.922	196	17.1	1.39	21.3	1341
322	1353	1341	6.723	6.584	35.358	27.798	36.778	45.337	33.921	196	17.1	1.39	21.3	1341
320	1353	1341	6.723	6.584	35.355	27.796	36.776	45.335	33.919	197	17.2	1.40	21.3	1341
323	1405	1392			35.350						17.2	1.38	21.0	1392
324	1505	1491	6.02	5.87	35.290	27.838	36.854	45.446	34.663	209	17.7	1.37	20.8	1491
904	1587 H	1572	5.44 H	5.29	35.226	27.859	36.905	45.524	35.073	220	18.6	1.33	20.4	1572
905	1791 H	1773	4.77 H	4.61	35.158	27.884	36.965	45.618	36.037	232	20.0	1.33	20.1	1773
906	1995 H	1974	4.25 H	4.07	35.101	27.896	37.006	45.685	36.984	240	21.3	1.32	19.8	1974
907	2196 H	2172	3.79 H	3.60	35.042	27.897	37.033	45.736	37.904	247	23.5	1.33	19.7	2172
908	2402 H	2375	3.36 H	3.16	35.001	27.907	37.067	45.792	38.854	252	26.5	1.33	20.0	2375
909	2608 H	2577	3.14 H	2.92	34.976	27.908	37.081	45.819	39.782	249	29.1	1.35	20.1	2577
910	2814 H	2779	2.97 H	2.73	34.957	27.910	37.093	45.841	40.704	252	31.9	1.37	20.4	2779
911	3017 H	2978	2.79 H	2.54	34.942	27.915	37.109	45.867	41.615	252	35.1	1.40	20.8	2978
912	3278 H	3234	2.66 H	2.38	34.927	27.916	37.119	45.885	42.769	251	38.6	1.45	21.1	3234
915	3527 H	3477	2.58 H	2.27	34.916	27.916	37.125	45.897	43.860	249	41.3	1.46	21.5	3477
916	3789 H	3734	2.507 H	2.176	34.910	27.919	37.134	45.911	45.004	249	43.3	1.48	21.7	3734
917	4052 H	3990	2.49 H	2.13	34.902	27.916	37.134	45.914	46.136	248	45.1	1.48	21.9	3990
918	4266 H	4199	2.47 H	2.08	34.898	27.917	37.137	45.919	47.056	249	46.4	1.49	22.0	4199
919	4473 H	4401	2.45 H	2.04	34.901 U	27.923	37.145	45.929	47.947	249	47.1	1.48	22.0	4401
920	4684 H	4606	2.42 H	1.98	34.889	27.917	37.143	45.930	48.841	250	48.0	1.51	22.1	4606
921	4896 H	4812	2.42 H	1.96	34.888	27.918	37.146	45.934	49.739	249	48.6	1.50	22.2	4812
922	5106 H	5017	2.43 H	1.94	34.886	27.918	37.147	45.936	50.622	249	49.0	1.51	22.2	5017
923	5238 H	5145			34.886					249	49.0	1.51	22.3	5145
924	5259 H	5165	2.454 H	1.943	34.887	27.919	37.147	45.936	51.261	249	49.0	1.51	22.3	5165
925	5280 H	5186			34.886					250	49.0	1.51	22.2	5186
926	5301 H	5206			34.886					249	49.0	1.50	22.3	5206
927	5311 H	5216	2.458 H	1.940	34.885	27.917	37.146	45.936	51.477	250	48.9	1.51	22.3	5216
928	5322 H	5226			34.884					249	48.8	1.51	22.2	5226
931	5343 H	5247			34.886					249	49.2	1.43 U	21.9	5247
929	5364 H	5267			34.886					249	49.3	1.51	22.3	5267
932	5384 H	5286			34.886					249	49.2	1.45 U	22.2	5286
933	5395 H	5297			34.886					249	49.1	1.46 U	22.0	5297
930	5401 H	5303	2.465 H	1.934	34.886	27.919	37.147	45.937	51.853	249	48.9	1.48	22.2	5303
935	5406 H	5308			34.887					246	48.8	1.48	22.0	5308

BOTTOM DEPTH FOR CAST 9 IS 5313

STATION: 116 LEG: IX POSITION: 29° 56' N 30° 24' W DATE: 18 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
201	17	17	18.302	18.299	36.571	26.422	34.922	43.034	26.496	240	0.7	0.01	0.3	17
202	40	40	18.310	18.303	36.571	26.421	34.920	43.033	26.595	240	0.6	0.01	0.1	40
203	98	97	18.011	17.994	36.537	26.473	34.983	43.106	26.900	231	0.8	0.06	1.4	97
204	190	189	17.241	17.208	36.401	26.563	35.101	43.249	27.392	207	1.9	0.24	4.9	189
205	292	290	16.280	16.231	36.265	26.693	35.266	43.447	27.971	208	2.3	0.34	6.3	290
206	393	391	14.679	14.618	35.990	26.850	35.483	43.721	28.579	211	3.3	0.47	8.4	391
207	441	438	14.003	13.937	35.899	26.927	35.587	43.850	28.873	207	3.9	0.56	9.9	438
208	511	508	13.087	13.013	35.778	27.027	35.724	44.020	29.289	208	4.7	0.65	11.2	508
209	598	594	12.254	12.171	35.668	27.111	35.842	44.170	29.766	212	5.2	0.72	12.1	594
210	693	688	10.847	10.758	35.481	27.232	36.024	44.408	30.327	183	8.7	1.07	17.5	688

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 116 LEG: IX POSITION: 29° 56′ N 30° 24′ W DATE: 18 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
211	744	739	10.325	10.232	35.460	27.310	36.124	44.529	30.639	181	9.6	1.13	18.4	739
212	894	887	8.964	8.860	35.428	27.516	36.390	44.851	31.536	177	12.4	1.31	20.4	887
215	1006	998	8.274	8.161	35.434 G	27.630	36.536	45.025	32.164	186	13.2	1.31	20.4	998
216	1105	1096	7.668	7.549	35.415	27.707	36.641	45.157	32.697	194	14.1	1.30	20.4	1096
217	1154	1144	7.370	7.248	35.398	27.737	36.686	45.215	32.954	197	14.3	1.30	20.3	1144
218	1205	1195	7.112	6.986	35.386	27.765	36.726	45.266	33.216	203	14.8	1.30	20.1	1195
219	1255	1244	6.891	6.762	35.375	27.787	36.759	45.310	33.468	207	14.8	1.30	20.0	1244
220	1305	1294	6.643	6.510	35.355	27.806	36.790	45.352	33.717	211	15.2	1.28	19.9	1294
221	1352	1340	6.458	6.322	35.34 D	27.819	36.812	45.383	33.947	209U	15.0	1.29	19.8	1340
222	1402	1389	6.175	6.037	35.311	27.833	36.841	45.425	34.194	221	15.2	1.26	19.5	1389
223	1453	1440	5.971	5.829	35.291	27.844	36.862	45.456	34.439	223	15.4	1.27	19.4	1440
607	1454 H	1441	5.91 H	5.77	35.287	27.848	36.869	45.466	34.450	223	15.4	1.26	19.2	1441
224	1499	1485	5.830	5.685	35.274	27.849	36.874	45.475	34.655	226	15.6	1.26	19.4	1485
608	1581 H	1566	5.32 H	5.17	35.224	27.871	36.923	45.548	35.063	233	15.9	1.25	19.1	1566
609	1707 H	1690			35.171					240	16.8	1.26	19.1	1690
610	1833 H	1814	4.54 H	4.38	35.134	27.890	36.984	45.648	36.241	242	18.6	1.28	19.3	1814
611	1961 H	1941	4.23 H	4.06	35.095	27.893	37.004	45.684	36.830	245	19.9	1.29	19.3	1941
612	2113 H	2090	3.81 H	3.63	35.048	27.899	37.033	45.735	37.536	249	22.0	1.30	19.4	2090
615	2265 H	2240	3.58 H	3.39	35.021	27.901	37.048	45.762	38.227	253	23.0	1.30	19.3	2240
616	2418 H	2390	3.33 H	3.13	34.994	27.904	37.066	45.793	38.924	254	25.5	1.31	19.5	2390
617	2571 H	2540	3.17 H	2.96	34.978	27.907	37.078	45.814	39.615	255	28.1	1.34	19.8	2540
618	2724 H	2691	2.99 H	2.76	34.961	27.910	37.092	45.839	40.307	255	30.0	1.34	19.8	2691
619	2879 H	2843	2.88 H	2.64	34.954	27.916	37.104	45.857	41.003	254	32.0	1.36	20.1	2843
620	3033 H	2994	2.78 H	2.53	34.940	27.914	37.109	45.868	41.685	254	34.5	1.40	20.4	2994
621	3187 H	3144	2.72 H	2.45	34.934	27.916	37.115	45.878	42.366	252	36.1	1.41	20.7	3144
622	3341 H	3295	2.66 H	2.38	34.931	27.920	37.123	45.890	43.047	252	37.6	1.43	21.0	3295
623	3498 H	3449	2.58 H	2.28	34.919	27.918	37.127	45.898	43.736	251	40.3	1.45	21.2	3449
624	3654 H	3601	2.55 H	2.23	34.914	27.918	37.129	45.903	44.415	250	41.5	1.46	21.3	3601
625	3809 H	3753	2.51 H	2.18	34.909	27.918	37.133	45.910	45.089	249	42.9	1.47	21.6	3753
626	3964 H	3904	2.50 H	2.15	34.908	27.919	37.136	45.914	45.760	250	43.3	1.48	21.7	3904
627	4120 H	4056	2.500 H	2.131	34.904	27.918	37.135	45.915	46.428	249	44.0	1.48	21.8	4056
628	4274 H	4207	2.493 H	2.105	34.901	27.917	37.136	45.917	47.088	249	44.7	1.48	21.8	4207
629	4430 H	4359	2.49 H	2.08	34.900	27.918	37.138	45.920	47.755	249	45.0	1.50	21.9	4359
334	4440 H	4368			34.900					246	45.1	1.50	22.0	4368
326	4451 H	4379	2.49 H	2.08	34.898	27.917	37.137	45.919	47.843	249	45.0	1.51	22.0	4379
335	4493 H	4420			34.899					249	45.1	1.50	21.9	4420
336	4575 H	4500			34.897					249	45.3	1.51	22.1	4500
630	4577 H	4502	2.470 H	2.046	34.895	27.917	37.139	45.924	48.381	250	45.8	1.50	21.9	4502
327	4596 H	4520	2.474 H	2.047	34.898	27.919	37.142	45.925	48.464	249	45.5	1.51	22.2	4520
328	4648 H	4571	2.46 H	2.03	34.894	27.918	37.141	45.926	48.685	250	45.7	1.51	22.1	4571
331	4690 H	4612			34.893					250	45.9	1.50	22.1	4612
329	4709 H	4630	2.465 H	2.025	34.891	27.916	37.139	45.924	48.940	249	46.1	1.49	22.0	4630
332	4730 H	4651			34.895					249	45.9	1.50	22.1	4651
333	4742 H	4662			34.892					249	46.2	1.50	22.2	4662
330	4752 H	4672	2.474 H	2.028	34.898	27.921	37.144	45.929	49.126	248	46.2	1.54	22.1	4672

BOTTOM DEPTH FOR CAST 6 IS 4617 – CAST 3 IS 4682

STATION: 117 LEG: IX POSITION: 30° 40′ N 38° 58′ W DATE: 20 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
301	8	8	19.361	19.359	36.692	26.241	34.705	42.785	26.276	232	0.7	0.00	0.0	8
302	21	21	19.373	19.369	36.690	26.237	34.701	42.781	26.328	232	0.6	0.00	0.0	21
303	89	89	19.264	19.247	36.678	26.260	34.728	42.811	26.646	230	0.6	0.01	0.0	89
304	139	138	18.953	18.927	36.659	26.329	34.807	42.900	26.931	224	0.7	0.04	0.9	138
305	159	158	18.786	18.757	36.621	26.344	34.828	42.926	27.033	218	0.9	0.07	1.5	158
306	189	188	18.093	18.059	36.528	26.450	34.958	43.078	27.272	207	1.2	0.14	2.9	188
307	260	259	17.435	17.390	36.450	26.557	35.087	43.230	27.689	205	1.6	0.22	4.7	259
308	342	340	16.605	16.547	36.336	26.673	35.234	43.404	28.166	206	2.1	0.31	6.0	340
801	426	423	15.868	15.798	36.166	26.718	35.307	43.504	28.583	204	2.6	0.42	7.7	423
309	543	539	13.903	13.821	35.873	26.932	35.596	43.863	29.326	201	4.2	0.63	10.8	539
310	644	640	12.717	12.625	35.709	27.052	35.765	44.076	29.904	193	5.7	0.80	13.4	640
311	695	690	11.905	11.810	35.605	27.132	35.878	44.221	30.220	185	7.0	0.95	15.6	690

STATION: 117 LEG: IX POSITION: 30° 40′ N 38° 58′ W DATE: 20 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
312	746	741	11.091	10.993	35.511	27.213	35.994	44.369	30.538	176	8.7	1.10	17.8	741
315	806	800	10.321	10.220	35.424	27.284	36.099	44.505	30.888	172	10.6	1.23	19.6	800
316	857	851	9.829	9.724	35.385	27.339	36.176	44.602	31.179	169	11.4	1.30	20.5	851
317	909	902	9.004	8.898	35.307	27.415	36.289	44.750	31.502	169	12.8	1.39	21.6	902
318	959	952	8.455	8.347	35.278	27.480	36.379	44.863	31.801	175	13.5	1.41	21.6	952
319	1010	1002	7.864	7.754	35.291	27.580	36.506	45.015	32.142	184	14.0	1.40	21.4	1002
320	1060	1052	7.554	7.441	35.291	27.626	36.566	45.089	32.419	189	14.1	1.39	21.2	1052
321	1162	1152	6.972	6.852	35.263	27.687	36.656	45.204	32.951	199	13.9	1.34	20.5	1152
322	1296	1285	6.149	6.023	35.238	27.778	36.787	45.373	33.666	224	13.1	1.25	19.1	1285
323	1416	1403	5.552	5.419	35.193	27.817	36.857	45.471	34.263	237	13.3	1.22	18.7	1403
324	1517	1503	5.208	5.069	35.172	27.842	36.900	45.531	34.753	242	13.9	1.22	18.8	1503
803	1593	1578	5.160	5.013	35.185	27.859	36.919	45.553	35.111	239	14.9	1.24	18.9	1578
802	1593	1578	5.160	5.013	35.187	27.861	36.921	45.554	35.113	240	14.9	1.25	18.9	1578
804	1704	1687	4.647	4.496	35.134	27.877	36.965	45.623	35.648	246	16.1	1.25	18.9	1687
805	1705	1688	4.643	4.492	35.133	27.877	36.964	45.623	35.652	246	16.1	1.25	19.0	1688
807	1909	1889	4.160	3.995	35.071	27.880	36.995	45.678	36.590	252	17.1	1.24	18.7	1889
806	1909	1889	4.160	3.995	35.075	27.884	36.998	45.681	36.593	254	16.9	1.24	18.6	1889
808	2010	1989	3.862	3.691	35.053	27.897	37.028	45.726	37.072	255	19.0	1.24	18.8	1989
810	2114	2091	3.661	3.483	35.024	27.894	37.036	45.746	37.544	257	20.1	1.26	19.0	2091
809	2114	2091	3.661	3.483	35.023	27.893	37.036	45.745	37.543	257	20.1	1.26	19.0	2091
811	2215	2191	3.418	3.235	34.995	27.895	37.051	45.773	38.008	260	21.1	1.25	18.9	2191
812	2317	2291	3.286	3.095	34.978	27.894	37.058	45.787	38.469	262	22.4	1.26	18.9	2291
815	2327	2301	3.284	3.092	34.982	27.898	37.061	45.791	38.517	262	22.7	1.26	19.0	2301
817	2525	2495	3.126	2.917	34.963	27.898	37.072	45.810	39.406	260	25.2	1.28	19.3	2495
816	2525	2495	3.126	2.917	34.965 D	27.900	37.074	45.812	39.408	261D	25.1	1.28	19.1	2495
818	2780	2745	2.968	2.736	34.953	27.906	37.090	45.838	40.551	259	29.0	1.31	19.6	2745
819	3038	2998	2.853	2.596	34.943	27.911	37.102	45.857	41.698	256	32.3	1.36	20.2	2998
820	3038	2998	2.853	2.596	34.942	27.910	37.101	45.856	41.697	256	32.4	1.36	20.1	2998
821	3291	3246	2.773	2.491	34.935	27.913	37.110	45.871	42.813	251	35.2	1.39	20.6	3246
822	3548	3498	2.714	2.405	34.927	27.914	37.116	45.881	43.936	253	37.4	1.41	20.9	3498
823	3548	3498	2.714	2.405	34.927	27.914	37.116	45.881	43.936	252	37.3	1.41	20.8	3498
824	3617	3565	2.695	2.378	34.927	27.916	37.119	45.886	44.239	251	37.8	1.41	20.9	3565

BOTTOM DEPTH FOR CAST 8 IS 3582

STATION: 118 LEG: IX POSITION: 31° 18′ N 45° 38′ W DATE: 23 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
201	1	1	20.25	20.25	36.776	26.069	34.505	42.558	26.073	226	0.8	0.01	0.0	1
202	21	21	20.175	20.171	36.777	26.091	34.529	42.584	26.182	228	0.7	0.01	0.0	21
601	57 H	57	19.94 H	19.93	36.741	26.128	34.574	42.637	26.375	227	0.5	0.01	0.0	57
602	79 H	79	19.79 H	19.77	36.725	26.157	34.608	42.675	26.499	228	0.5	0.01	0.0	79
203	84	84	19.733	19.717	36.724	26.171	34.624	42.693	26.535	228	0.6	0.00	0.0	84
603	99 H	98	19.77 H	19.75	36.729	26.166	34.618	42.686	26.594	228	0.4	0.01	0.0	98
204	109	108	18.791	18.771	36.547	26.283	34.768	42.867	26.757	232	0.7	0.02	0.2	108
604	119 H	118	19.71 H	19.69	36.725	26.180	34.634	42.704	26.695	227	0.5	0.01	0.1	118
205	159	158	18.268	18.239	36.425	26.326	34.829	42.945	27.017	231	0.8	0.05	0.9	158
206	208	207	17.701	17.664	36.424	26.469	34.991	43.125	27.375	207	1.6	0.19	4.1	207
207	308	306	17.214	17.161	36.378	26.557	35.097	43.247	27.900	201	2.0	0.27	5.7	306
605	472 H	469	14.52 H	14.45	35.931	26.842	35.482	43.727	28.919	191	4.5	0.62	10.9	469
208	506	503	14.753	14.674	35.999	26.844	35.475	43.711	29.068	195	3.9	0.54	9.8	503
209	606	602	13.081	12.993	35.716	26.983	35.682	43.980	29.664	182	6.5	0.82	14.1	602
210	705	700	10.718	10.628	35.381	27.178	35.976	44.367	30.328	159	11.1	1.24	20.1	700
211	806	800	8.936	8.843	35.255	27.383	36.261	44.724	31.013	167	12.9	1.35	21.6	800
212	906	899	7.550	7.455	35.177	27.534	36.476	44.999	31.639	181	14.3	1.40	22.0	899
225	965	957	7.14	7.04	35.168	27.586	36.547	45.089	31.965	190	14.6	1.33	21.7	957
226	1017	1009	6.92	6.82	35.203	27.644	36.616	45.167	32.261	198	14.2	1.34	21.0	1009
215	1116	1107	6.384	6.275	35.200	27.715	36.713	45.288	32.790	214	13.8	1.26	20.1	1107
216	1214	1204	5.883	5.768	35.186	27.769	36.791	45.390	33.298	226	13.8	1.22	19.1	1204
217	1313	1301	5.573	5.451	35.176	27.800	36.838	45.451	33.784	233	13.8	1.20	19.0	1301
218	1411	1398	5.294	5.165	35.163	27.824	36.877	45.503	34.257	240	14.1	1.18	18.6	1398
219	1514	1500	4.962	4.826	35.141	27.846	36.916	45.559	34.753	242	14.9	1.17	18.5	1500
220	1615	1599	4.666	4.523	35.113	27.857	36.944	45.601	35.229	250	15.3	1.17	18.4	1599

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 118 LEG: IX POSITION: 31° 18′ N 45° 38′ W DATE: 23 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
221	1716	1699	4.428	4.278	35.089	27.865	36.964	45.634	35.699	252	16.0	1.18	18.5	1699
222	1819	1801	4.190	4.034	35.067	27.873	36.986	45.667	36.179	255	17.2	1.18	18.5	1801
223	1919	1899	3.996	3.832	35.050	27.880	37.004	45.695	36.643	256	18.5	1.20	18.5	1899
224	2021	1999	3.823	3.652	35.030	27.882	37.016	45.716	37.109	258	19.7	1.21	18.6	1999
629	2230H	2205	3.48 H	3.29	34.995	27.889	37.042	45.761	38.066	261	21.6	1.23	18.8	2205
607	2458H	2429	3.28 H	3.07	34.977	27.895	37.060	45.790	39.096	261	23.8	1.25	19.2	2429
608	2687H	2654	3.07 H	2.85	34.962	27.904	37.081	45.824	40.131	259	27.1	1.29	19.3	2654
609	2887H	2850	2.97 H	2.73	34.953	27.907	37.091	45.839	41.022	260	28.9	1.30	19.6	2850
610	3090H	3049	2.82 H	2.56	34.938	27.910	37.103	45.860	41.927	261	31.0	1.31	19.8	3049
611	3294H	3249	2.71 H	2.43	34.929	27.913	37.114	45.878	42.832	265	32.2	1.32	19.9	3249
612	3498H	3448	2.61 H	2.31	34.920	27.916	37.123	45.893	43.731	262	33.6	1.33	19.8	3448
615	3700H	3646	2.46 H	2.14	34.909	27.921	37.138	45.917	44.626	264	35.4	1.35	20.0	3646
616	3906H	3847	2.36 H	2.02	34.908	27.930	37.153	45.938	45.535	264	37.3	1.35	20.1	3847
617	4114H	4050	2.29 H	1.93	34.893	27.925	37.154	45.944	46.432	264	38.8	1.36	20.2	4050
618	4318H	4249	2.23 H	1.85	34.886	27.925	37.159	45.954	47.314	265	40.4	1.36	20.3	4249
619	4417H	4345			34.884					264	41.0	1.38	20.4	4345
620	4422H	4350	2.23 H	1.83	34.885	27.926	37.160	45.955	47.758	263	41.0	1.38	20.4	4350
621	4515H	4441	2.21 H	1.80	34.883	27.926	37.162	45.959	48.158	262	42.0	1.39	20.6	4441
622	4562H	4486	2.22 H	1.81	34.880	27.924	37.159	45.956	48.354	263	42.4	1.39	20.6	4486
623	4567H	4491	2.219H	1.805	34.883	27.926	37.162	45.959	48.378	262	42.9	1.39	20.6	4491
624	4577H	4501			34.881					262	42.8	1.38	20.6	4501
625	4588H	4512	2.22 H	1.80	34.894U	27.935	37.171	45.967	48.475	260	41.8	1.38	20.6	4512
626	4599H	4522			34.882					262	42.9	1.39	20.6	4522
627	4602H	4525	2.22 H	1.80	34.880	27.924	37.160	45.957	48.524	261	42.7	1.39	20.6	4525
628	4607H	4530			34.880					261	42.8	1.37	20.7	4530

BOTTOM DEPTH FOR CAST 6 IS 4573

STATION: 119 LEG: IX POSITION: 31° 49′ N 50° 53′ W DATE: 25 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
101	5H	5	21.09 H	21.09	36.691	25.776	34.188	42.218	25.798	230	0.8	0.01	0.0	5
102	54H	54	20.10 H	20.09	36.751	26.093	34.534	42.592	26.326	228	0.7	0.01	0.0	54
103	152H	151	19.13 H	19.10	36.644	26.272	34.745	42.833	26.930		0.9	0.04	1.1	151
104	200H	199	18.18 H	18.14	36.526	26.427	34.932	43.050	27.296	204	1.3	0.13	3.0	199
105	249H	248	17.62 H	17.58	36.434	26.498	35.023	43.160	27.582	209	1.5	0.20	4.0	248
106	297H	295	17.32 H	17.27	36.435	26.575	35.110	43.256	27.869	212	1.8	0.25	5.0	295
107	347H	345	17.00 H	16.94	36.390	26.620	35.167	43.324	28.133	204	2.0	0.28	5.6	345
108	396H	394	16.60 H	16.53	36.308	26.655	35.216	43.387	28.383	201	2.3	0.34	6.6	394
109	446H	443	16.18 H	16.11	36.232	26.698	35.275	43.460	28.646	201	2.7	0.38	7.3	443
110	495H	492	15.40 H	15.32	36.084	26.765	35.372	43.585	28.934	195	3.4	0.51	9.2	492
111	544H	540	14.69 H	14.61	35.979	26.844	35.478	43.716	29.234	196	3.8	0.57	10.2	540
112	584H	580	14.17 H	14.08	35.891	26.890	35.545	43.802	29.461	192	4.5	0.65	11.4	580
115	644H	640	13.06 H	12.97	35.726	26.996	35.695	43.994	29.844	184	6.1	0.83	14.1	640
116	694H	689	12.24 H	12.14	35.632	27.088	35.821	44.151	30.167	177	7.4	0.95	15.9	689
117	794H	788	10.10 H	10.00	35.324	27.244	36.070	44.486	30.799	159	11.7	1.32	21.3	788
118	895H	888	8.17 H	8.07	35.173	27.439	36.353	44.850	31.482	173	13.9	1.44	22.5	888
119	946H	939			35.142					180	14.4	1.44	22.4	939
120	996H	988			35.127					190	14.6	1.42	22.2	988
121	1098H	1089	6.05 H	5.95	35.109	27.686	36.701	45.292	32.690	214	13.6	1.33	20.4	1089
122	1200H	1190	5.90 H	5.79	35.174	27.757	36.779	45.376	33.223	226	13.0	1.23	19.2	1190
123	1303H	1292	5.45 H	5.33	35.145	27.790	36.835	45.454	33.733	237	12.7	1.21	18.8	1292
125	1405H	1392	4.95 B	4.83	35.098	27.812	36.883	45.526	34.231	247	12.5	1.20	18.4	1392
201	1580H	1565	4.35 H	4.21	35.028	27.823	36.927	45.600	35.052	262	12.7	1.16	18.1	1565
202	1991H	1970	3.89 H	3.72	35.013	27.862	36.992	45.690	36.952	263	15.7	1.18	18.3	1970
203	2397H	2369	3.40 B	3.20	34.979	27.885	37.044	45.768	38.808	264	19.9	1.22	18.6	2369
204	2804H	2769	3.08 H	2.84	34.957	27.900	37.078	45.820	40.642	264	24.2	1.25	19.0	2769
205	3211H	3168	2.85 H	2.57	34.934	27.905	37.098	45.854	42.449	264	27.9	1.28	19.2	3168
206	3619H	3567	2.51 H	2.20	34.913	27.920	37.133	45.909	44.269	266	30.9	1.28	19.3	3567
207	4029H	3967	2.32 H	1.97	34.895	27.923	37.150	45.938	46.062	265	37.4	1.35	20.0	3967
208	4442H	4370	2.21 H	1.81	34.878	27.922	37.157	45.954	47.842	262	43.2	1.40	20.8	4370
209	4859H	4775	2.15 H	1.70	34.868	27.922	37.164	45.966	49.621	259	47.7	1.45	21.5	4775
210	5276H	5181	2.18 H	1.68	34.868	27.924	37.167	45.970	51.374	259	49.1	1.47	21.6	5181

STATION: 119 LEG: IX POSITION: 31° 49′ N 50° 53′ W DATE: 25 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
211	5383H	5284	2.19 H	1.67	34.864	27.921	37.164	45.968	51.818	257	49.6	1.47	21.7	5284
212	5447H	5346	2.19 H	1.66	34.863	27.921	37.165	45.969	52.086	257	49.7	1.48	21.7	5346
215	5594H	5489	2.21 H	1.66	34.864	27.921	37.166	45.970	52.697	257	50.2	1.49	21.8	5489
216	5657H	5550	2.24 H	1.68	34.863	27.919	37.162	45.966	52.952	257	50.7	1.49	21.9	5550
217	5700H	5592	2.21 H	1.65	34.861	27.920	37.165	45.970	53.136	257	50.9	1.49	21.9	5592
226	5790H	5679	2.22 H	1.65	34.864	27.923	37.168	45.973	53.511	256	50.8	1.49	21.8	5679
219	5834H	5721	2.23 H	1.65	34.866	27.924	37.169	45.974	53.693	256	50.6	1.49	21.8	5721
220	5865H	5752	2.22 H	1.64	34.864	27.923	37.169	45.975	53.822	257	50.5	1.48	21.8	5752
221	5877H	5763	2.24 H	1.65	34.866	27.924	37.168	45.973	53.869	258	50.7	1.49	21.8	5763
222	5888H	5774			34.869					256	50.3	1.49	21.8	5774
223	5905H	5790	2.24 H	1.65	34.861	27.920	37.165	45.970	53.981	257	50.6	1.49	21.7	5790
225	5911H	5796	2.235H	1.644	34.862	27.921	37.167	45.972	54.008	258	50.7	1.48	21.8	5796

BOTTOM DEPTH FOR CAST 2 IS 5805

STATION: 120 LEG: IX POSITION: 33° 16′ N 56° 33′ W DATE: 27 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
401	3H	3	18.04 H	18.04	36.417	26.370	34.880	43.002	26.383	236	0.7	0.04	1.0	3
402	28H	28	18.02 H	18.02	36.417	26.376	34.887	43.010	26.498	235	0.6	0.04	1.0	28
403	79H	79	18.02 H	18.01	36.417	26.378	34.889	43.013	26.723	235	0.5	0.04	1.1	79
404	154H	153	17.98 H	17.95	36.403	26.381	34.894	43.019	27.051	236	0.6	0.06	1.5	153
405	229H	228	17.53 H	17.49	36.381	26.479	35.007	43.147	27.477	215	1.3	0.19	4.1	228
406	304H	302	17.10 H	17.05	36.356	26.568	35.112	43.266	27.893	207	1.7	0.27	5.6	302
407	405H	402	16.02 H	15.95	36.170	26.686	35.269	43.460	28.457	201	2.6	0.40	7.8	402
408	506H	503	14.45 H	14.37	35.908	26.840	35.484	43.731	29.067		4.4	0.64	11.3	503
409	606H	602	12.74 H	12.65	35.649	27.000	35.713	44.024	29.685	185	7.0	0.93	15.6	602
410	657H	652	11.68 H	11.59	35.506	27.097	35.854	44.206	30.021	170	8.8	1.07	17.9	652
411	708H	703	10.61 H	10.52	35.361	27.182	35.985	44.380	30.347	159	11.0	1.28	20.6	703
412	807H	801	9.05 H	8.96	35.216	27.335	36.207	44.667	30.967	160	13.1	1.43	22.7	801
415	907H	900	7.25 H	7.16	35.094	27.511	36.468	45.006	31.628	183	14.0	1.42	22.3	900
416	1007H	999	6.27 H	6.17	35.091	27.642	36.646	45.228	32.231	209	13.5	1.33	20.7	999
417	1160H	1150	5.44 H	5.33	35.082	27.740	36.785	45.405	33.040	235	12.7	1.24	19.2	1150
418	1358H	1346	4.90 H	4.78	35.059	27.786	36.860	45.506	33.996	248	12.5	1.19	18.5	1346
419	1461H	1447	4.55 H	4.42	35.041	27.811	36.904	45.567	34.497	257	12.6	1.17	18.3	1447
420	1615H	1599	4.28 H	4.14	35.022	27.826	36.934	45.611	35.215	262	13.0	1.17	18.2	1599
421	1667H	1650	4.223H	4.081	35.020	27.831	36.942	45.622	35.456	262	13.2	1.17	18.2	1650
422	1718H	1701	4.177H	4.031	35.018	27.835	36.948	45.630	35.690	263	13.5	1.16	18.2	1701
423	1768H	1750	4.098H	3.948	35.011	27.838	36.955	45.642	35.921	265	13.7	1.17	18.2	1750
424	1821H	1802	4.05 H	3.90	35.012	27.844	36.964	45.654	36.166	264	13.9	1.17	18.2	1802
101	1907H	1887	3.93 H	3.77	35.003	27.849	36.977	45.672	36.562	264	14.7	1.18	18.1	1887
102	2009H	1987	3.81 H	3.64	34.992	27.853	36.988	45.690	37.028	267	15.1	1.17	18.1	1987
103	2213H	2188	3.66 H	3.47	34.986	27.865	37.008	45.719	37.956	265	17.2	1.20	18.4	2188
104	2416H	2387	3.46 H	3.26	34.976	27.878	37.033	45.754	38.881	265	19.6	1.21	18.7	2387
105	2620H	2588	3.27 H	3.05	34.963	27.887	37.053	45.785	39.804	266	21.0	1.23	18.7	2588
106	2825H	2789	3.08 H	2.84	34.952	27.896	37.074	45.817	40.731	268	21.5	1.21	18.5	2789
107	3029H	2989	2.95 H	2.69	34.942	27.901	37.087	45.838	41.641	271	22.8	1.22	18.6	2989
108	3235H	3191	2.80 H	2.52	34.931	27.907	37.103	45.861	42.560	272	24.0	1.20	18.6	3191
109	3440H	3391	2.63 H	2.34	34.922	27.916	37.122	45.890	43.477	272	26.1	1.23	18.7	3391
110	3645H	3592	2.50 H	2.19	34.913	27.921	37.135	45.911	44.384	273	27.2	1.23	18.7	3592
111	3850H	3792	2.41 H	2.08	34.904	27.922	37.143	45.925	45.281	274	29.2	1.24	18.9	3792
112	4108H	4043	2.31 H	1.95	34.895	27.925	37.153	45.942	46.404	274	32.0	1.27	19.1	4043
115	4368H	4297	2.27 H	1.88	34.891	27.927	37.159	45.951	47.524	272	34.4	1.27	19.3	4297
116	4628H	4550	2.242H	1.819	34.883	27.925	37.160	45.956	48.633	267	37.6	1.34	19.8	4550
117	4891H	4806	2.20 H	1.75	34.874	27.923	37.163	45.963	49.751	267	41.9	1.37	20.4	4806
118	5151H	5058	2.19 H	1.70	34.868	27.922	37.164	45.966	50.846	265	45.4	1.42	20.8	5058
119	5414H	5314	2.18 H	1.66	34.866	27.923	37.168	45.972	51.952	262	47.5	1.45	21.3	5314
120	5467H	5365	2.18 H	1.65	34.863	27.921	37.166	45.971	52.171	261	48.3	1.44	21.4	5365
121	5520H	5416	2.20 H	1.66	34.864	27.921	37.166	45.970	52.390	262	48.5	1.45	21.4	5416
122	5546H	5441	2.195H	1.655	34.863	27.921	37.166	45.971	52.499	262	48.9	1.47	21.5	5441
123	5573H	5468			34.862					261	48.8	1.46	21.5	5468
124	5598H	5492			34.864					261	48.9	1.46	21.5	5492
125	5606H	5500	2.20 H	1.65	34.862	27.921	37.165	45.970	52.747	262	48.9	1.51	21.6	5500

B TEMPERATURE CALCULATED FROM UNPROTECTED THERMOMETER
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 120 LEG: IX POSITION: 33° 16′ N 56° 33′ W DATE: 27 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
126	5629 H	5522			34.861					260	49.0	1.47	21.6	5522
127	5640 H	5533			34.863					259	49.0	1.46	21.5	5533
128	5647 H	5539			34.862					262	49.0	1.47	21.6	5539
131	5655 H	5547			34.862					260	49.0	1.46	21.6	5547
130	5662 H	5554	2.204 H	1.648	34.863	27.922	37.167	45.972	52.981	259	49.2	1.47	21.6	5554
132	5669 H	5561			34.865					259	48.7	1.47	21.5	5561
133	5677 H	5568			34.862					261	49.1	1.43	21.5	5568

BOTTOM DEPTH FOR CAST 1 IS 5574

STATION: 121 LEG: IX POSITION: 35° 59′ N 67° 59′ W DATE: 30 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
115	3	3	19.120	19.119	36.430	26.104	34.579	42.669	26.117	229	0.9	0.05	0.7	3
215	7 H	7	19.12 H	19.12	36.430	26.104	34.579	42.669	26.135	229	0.7	0.04	0.7	7
116	13	13	19.129	19.127	36.429	26.102	34.576	42.666	26.158	229	0.9	0.05	0.7	13
117	22	22	19.097	19.093	36.427	26.109	34.585	42.676	26.204		0.8	0.04	0.6	22
118	22	22	19.097	19.093	36.427	26.109	34.585	42.676	26.204	228				22
119	31	31	19.093	19.087	36.427	26.110	34.586	42.677	26.245	228	0.8	0.05	0.7	31
216	55 H	55	19.06 H	19.05	36.427	26.120	34.597	42.689	26.359	229	0.8	0.04	0.6	55
120	82	82	19.093	19.078	36.426	26.112	34.588	42.680	26.468	228	0.8	0.05	0.7	82
217	154 H	153	19.06 H	19.03	36.428	26.125	34.603	42.696	26.793	228	0.8	0.04	0.7	153
121	181	180	19.099	19.065	36.428	26.117	34.593	42.685	26.901	226	0.8	0.06	0.7	180
218	202 H	201	18.54 H	18.50	36.434	26.266	34.760	42.869	27.142	222	1.0	0.09	1.7	201
122	211	210	18.605	18.566	36.438	26.253	34.745	42.852	27.168	221	1.1	0.09	1.7	210
219	301 H	299	18.07 H	18.02	36.468	26.415	34.925	43.047	27.722	200	1.6	0.20	4.1	299
123	303	301	18.050	17.996	36.468	26.420	34.930	43.054	27.736	200				301
124	304	302	18.049	17.995	36.470	26.422	34.932	43.056	27.742	199	1.6	0.22	4.2	302
201	351	349	17.77 H	17.71	36.462	26.487	35.007	43.140	28.012	198	1.8	0.24	4.9	349
202	403 H	400	17.52 H	17.45	36.438	26.533	35.062	43.202	28.285	196	2.0	0.29	5.7	400
203	503 H	500	16.78 H	16.69	36.321	26.626	35.182	43.348	28.817	198	2.7	0.37	6.9	500
204	606 H	602	15.21 H	15.11	36.038	26.776	35.391	43.612	29.431	186	4.4	0.59	10.5	602
205	708 H	703	13.10 H	13.00	35.666	26.944	35.643	43.941	30.071	150	8.8	1.07	17.9	703
206	809 H	803	11.73 H	11.62	35.455	27.052	35.808	44.160	30.645	141	11.6	1.32	21.4	803
207	860 H	853	10.66 H	10.55	35.352	27.169	35.971	44.366	31.007	149	12.6	1.35	21.9	853
208	911 H	904	9.55 H	9.44	35.249	27.281	36.132	44.571	31.366	152	14.2	1.47	23.2	904
209	962 H	954	8.45 B	8.34	35.146	27.377	36.278	44.764	31.713	160	15.3	1.52	23.9	954
210	1012 H	1004	7.55 H	7.44	35.097	27.473	36.417	44.942	32.053	174	15.4	1.48	23.2	1004
211	1114 H	1105	5.91 H	5.81	35.035	27.645	36.668	45.267	32.725	211	14.5	1.37	21.1	1105
212	1266 H	1255	4.99 H	4.88	35.021	27.745	36.814	45.456	33.538	236	13.4	1.25	19.4	1255
225	1420 H	1407	4.65 H	4.53	35.012	27.777	36.865	45.523	34.275	251	12.7	1.20	18.7	1407
226	1574 H	1559	4.38 H	4.25	34.994	27.793	36.896	45.568	34.994	260	12.4	1.16	18.2	1559
326	1648 H	1632	4.23 H	4.09	34.984	27.801	36.912	45.592	35.341	265	12.8	1.18	17.8	1632
228	1881 H	1861			34.974					269	13.0	1.15	17.9	1861
325	1953 H	1932	3.924 H	3.758	34.973	27.827	36.955	45.651	36.746	269	13.6	1.16	17.8	1932
301	2159 H	2135	3.74 H	3.56	34.967	27.842	36.981	45.687	37.688	270	14.4	1.17	17.8	2135
302	2311 H	2284	3.64 H	3.44	34.965	27.851	36.996	45.709	38.379	271	15.1	1.16	17.9	2284
303	2454 H	2425	3.53 H	3.32	34.967	27.864	37.016	45.734	39.032	269	16.5	1.18	18.1	2425
304	2600 H	2568	3.42 H	3.20	34.962	27.872	37.030	45.755	39.692	269	17.7	1.18	18.2	2568
305	2751 H	2716	3.30 H	3.06	34.958	27.881	37.047	45.778	40.374	269	18.7	1.19	18.2	2716
306	2901 H	2863	3.14 H	2.89	34.948	27.889	37.064	45.804	41.053	270	19.8	1.19	18.2	2863
307	3055 H	3014	3.04 H	2.78	34.943	27.895	37.076	45.822	41.742	270	21.4	1.21	18.2	3014
308	3205 H	3161	2.88 H	2.60	34.934	27.903	37.094	45.848	42.418	272	22.7	1.20	18.1	3161
309	3358 H	3311	2.75 H	2.46	34.928	27.910	37.109	45.871	43.103	274	23.6	1.20	18.1	3311
310	3510 H	3459	2.61 H	2.31	34.920	27.916	37.124	45.894	43.783	276	22.9	1.17	17.7	3459
311	3663 H	3609	2.52 H	2.20	34.912	27.918	37.132	45.907	44.458	275	24.5	1.19	17.7	3609
312	3816 H	3758	2.42 H	2.09	34.909	27.925	37.145	45.926	45.136	275	26.0	1.20	17.8	3758
315	3971 H	3909	2.38 H	2.03	34.902	27.924	37.147	45.931	45.807	274	28.5	1.21	18.2	3909
316	4126 H	4061			34.899					274	29.4	1.22	18.2	4061
317	4281 H	4212	2.31 H	1.93	34.895	27.926	37.155	45.945	47.147	272	31.5	1.23	18.5	4212
318	4436 H	4363	2.29 H	1.89	34.892	27.927	37.158	45.950	47.812	272	32.3	1.24	18.7	4363
319	4591 H	4514	2.27 H	1.85	34.889	27.927	37.161	45.955	48.475	271	33.8	1.24	18.8	4514
320	4695 H	4615	2.27 H	1.84	34.889	27.928	37.162	45.957	48.917	269	35.0	1.26	19.0	4615
321	4748 H	4666	2.28 H	1.84	34.887	27.927	37.160	45.955	49.139	269	35.5	1.27	19.0	4666

STATION: 121 LEG: IX POSITION: 35° 59′ N 67° 59′ W DATE: 30 MAR 73

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	DEPTH M
322	4800 U	4717	2.267 H	1.822	34.891	27.931	37.166	45.962	49.365	267	36.2	1.29	19.1	4717
327	4852 U	4767			34.890					270	35.5	1.27	19.1	4767
330	4862 U	4777			34.886					269	36.2	1.27	19.1	4777
323	4917 U	4830	2.26 H	1.80	34.883	27.926	37.163	45.960	49.856	267	38.4	1.29	19.3	4830
331	4925 U	4838			34.883					266	38.6	1.30	19.4	4838
332	4959 U	4871			34.882					266	38.6	1.30	19.6	4871
333	4967 U	4879			34.886					268	35.4	1.25	18.9	4879
334	4986 U	4898			34.888					268	35.4	1.27	19.1	4898
324	4993 U	4904	2.268 H	1.798	34.884	27.927	37.164	45.961	50.176	267	36.8	1.30	19.2	4904
335	5001 U	4912			34.888					269	35.1	1.25	19.1	4912
336	5008 U	4919			34.888					268	35.4	1.27	19.0	4919

BOTTOM DEPTH FOR CAST 3 IS 4933

B TEMPERATURE CALCULATED FROM UNPROTECTED THERMOMETER
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

Chapter 3

CARBONATE CHEMISTRY

In this chapter, various quantities in the carbonate chemistry of seawater calculated from the alkalinity and total CO_2 concentration data are presented. The sample number, calculated depth, *in situ* temperature, salinity, total alkalinity, and total CO_2 concentrations determined by both the potentiometric titration and gas chromatographic methods are listed in the first seven columns. The concentrations of various carbon species, partial pressure of carbon dioxide (pCO_2), hydrogen ion activity (a_H), pH, the ion concentration product (ICP = $[Ca^{++}][CO_3^{=}]$), and the difference between the *in situ* $CO_3^{=}$ concentration in seawater and the saturation $CO_3^{=}$ concentration for calcite and aragonite at the *in situ* temperature and pressure (DELTA $CO_3^{=}$ (CALC) and DELTA $CO_3^{=}$ (ARAG)) have been calculated using the alkalinity, titration total CO_2 concentration, temperature, salinity, and depth data. The total CO_2 concentration determined by the gas chromatographic method of Weiss and Craig (1) is listed under GC TCO_2 for comparison only, and is not used in the calculations. DELTA $CO_3^{=}$ (CALC) and DELTA $CO_3^{=}$ (ARAG) indicate the degree of saturation of calcite and aragonite in seawater at the *in situ* temperature and pressure condition. The positive values represent supersaturation, whereas the negative values indicate undersaturation of these crystalline $CaCO_3$ species in seawater as discussed by Broecker and Takahashi (2, 3). The ratio of ICP to the apparent solubility product for $CaCO_3$ (e.g., Edmond (4), Takahashi (5), Morse (6), and Morse and Berner (7) and the difference between the pH in seawater and that in the seawater saturated with calcite or aragonite (Δ pH) (e.g., Berner and Morse (8)) have been also used to express the degree of saturation of $CaCO_3$ in seawater. These quantities can be readily computed using the ICP and pH values listed in the following tables.

The alkalinity and total CO_2 values used for the calculation were obtained by means of the automated potentiometric acid titration method developed by A. E. Bainbridge and M. Morrione of the Scripps Institution of Oceanography (see Bos and Williams (9)). This method is based upon the techniques described by Gran (10), Dyrssen (11), and Edmond (12). The titrators used in the present investigation were calibrated using the sodium borate decahydrate solutions prepared gravimetrically (Bos and Williams (9)). A Baker analytical grade HCl solution (0.5N) was diluted to 0.25N, and used as a titrant. The ionic strength of the standard solutions was adjusted to that of seawater (0.7), using NaCl (for all legs except Leg 6) or KCl (for Leg 6). It was observed that the halide added to the borate standard solutions appeared to contain a minor quantity of alkalinity blank. Therefore, the blank was incorporated into the "effective" volume for the titrator cell for processing of the data. The "effective" cell volume also includes a correction for the normality of the acid titrant used. An average blank value of 21 μEq/kg was used throughout the computation of the alkalinity and total CO_2 concentration. However, the nature of the alkalinity blank has not been clearly understood and, therefore, the alkalinity values reported in this section may be subject to a systematic error of no greater than 21 μEq/kg. Since the blank was included in the "effective" cell volume, it affects the total CO_2 concentration in the same proportion as the alkalinity, and thus it does not affect the ratio of the alkalinity to total CO_2.

The titration data were processed using the Gran-plot computer program formulated originally by the late A. E. Bainbridge. However, because of his untimely death in 1979, the complete documentation of this program used for the data reduction of the Atlantic GEOSECS titration data has been lost. Although the second generation of the Bainbridge program, which was used for the Pacific and Indian Oceans GEOSECS, is available, this is not necessarily the same one used for the Atlantic GEOSECS data reduction. Recently, Bradshaw and Brewer (13) have found with a close collaboration with Williams and Bos that the effect of $CO_3^{=}$ ion on the Gran F_1' function was omitted in the Bainbridge program. They have shown that such omission would cause an overestimation of the total CO_2 value by about 12 μM/kg, whereas it would not affect the alkalinity value more than 1 μEq/kg. Therefore, the alkalinity and total CO_2 values listed in the following tables bear some uncertainties stemming from the incomplete documentation of the Bainbridge program used for the data processing. However, as described below, the alkalinity and total CO_2 data of the Atlantic GEOSECS appear to be consistent with the available pCO_2 data (Takahashi *et al.* (14)). Furthermore, as described by Takahashi *et al.* (15), the alkalinity values obtained for the surface waters of the Atlantic Ocean appear to be consistent with those obtained for the Pacific and Indian Oceans surface waters during the subsequent GEOSECS Expeditions. The alkalinity and total CO_2 values for the Atlantic sector of the Circumpolar waters in the Antarctic region appear to be also consistent with those for the Pacific and Indian sectors as discussed by Broecker and Takahashi (3). Thus, the circumstantial evidence appears to support the data presented here.

Takahashi *et al.* (14) compared the measured pCO_2 values with those calculated using the alkalinity and total CO_2 data to test the internal consistency among these three parameters. They found that these quantities are internally consistent with the solubility of CO_2 in seawater determined by Murray and Riley (16) and Weiss (17), the first and second apparent dissociation constants of carbonic acid in seawater determined by Mehrbach *et al.* (18), and the first apparent dissociation constant of boric acid in seawater determined by Lyman (19). Therefore, these sets of constants have been used for computation of various carbonate chemistry parameters listed in the following tables. The method of calculation of pCO_2, H_2CO_3, HCO_3^-, $CO_3^{=}$, a_H and pH at 1 atmosphere total pressure and the *in situ* pressure is briefly described by Broecker and Takahashi (3). The constants used in the calculation of these parameters are listed below:

1. The solubility of CO_2 in seawater, after Weiss (17):
   $\ln \alpha_S$ (M/kg·atm) = $A_1 + A_2(100/T) + A_3\ln(T/100) + S[B_1 + B_2(T/100) + B_3(T/100)^2]$

where ln = the natural logarithm, T = absolute temperature (°K), S = salinity (°/₀₀), A_1 = -60.2409, A_2 = 93.4517, A_3 = 23.3585, B_1 = 0.023517, B_2 = -0.023656, and B_3 = 0.0047036.

2. The first and second apparent dissociation constants of carbonic acid in seawater (K_1' and K_2'), determined by Mehrbach *et al.* (18):

   $\log K_1' = A_1 + A_2T + A_3/T + B_1S/T + B_2\sqrt{S}$,

   where log = the base 10 logarithm, A_1 = 13.7201, A_2 = -0.031334, A_3 = -3235.76, B_1 = -1.3×10^{-5}, and B_2 = 0.1032.

   $\log K_2' = A_1 + A_2T + A_3/T + A_4\log T + B_1S + B_2 \log S + C_1S\,T + C_2(\log S)/T + C_3S/T$,

   where A_1 = -5371.9645, A_2 = -1.671221, A_3 = 128375.28, A_4 = 2194.3055, B_1 = -0.22913, B_2 = -18.3802, C_1 = 8.0944×10^{-4}, C_2 = 5617.11, and C_3 = -2.136.

3. The first apparent dissociation constant of boric acid in seawater, determined by Lyman (19):

   $\log K_B' = -9.26 + 0.00886\,S + 0.01\,t$,

   where t = temperature (°C).

4. The total borate concentration (TB) in seawater, assumed to be proportional to salinity based upon the summary of Culkin (20):

   TB (M/kg) = 4.106×10^{-4} (S/35).

5. The effect of pressure on the dissociation constants of carbonic and boric acid in seawater, determined by Culberson and Pytkowicz (21):

   $K_1'(P) = K_1'(1)\cdot\exp((24.2 - 0.085\,t)CP)$,

   $K_2'(P) = K_2'(1)\cdot\exp((26.4 - 0.040\,t)CP)$,

   $K_B'(P) = K_B'(1)\cdot\exp((27.5 - 0.095\,t)CP)$, and $CP = (P-1)/83.143\,T$,

   where t = temperature (°C), T = absolute temperature (°K), and P = pressure (bars). P and 1 in the parentheses denote the pressure conditions.

6. The apparent solubility product for calcite in seawater at 1 atmosphere (atm) total pressure, determined by Ingle *et al.* (22):

   K_{sp}' (calcite, 1 atm, in $(M/kg)^2$) = $(-34.452 - 39.866\,S^{1/3} + 110.21 \log S - 7.5752\times10^{-6}\,T^2)10^{-7}$,

   where T = absolute temperature (°K).

7. The apparent solubility product for aragonite in seawater, based upon Berner (23):

   K_{sp}' (aragonite, 1 atm, in $(M/kg)^2$) = 1.45 K_{sp}' (calcite, 1 atm).

8. The effect of pressure on the solubility of calcite and aragonite, summarized by Culberson (21):

   K_{sp}' (calcite,P) + K_{sp}' (calcite,1)·exp ((36.0 - 0.20 t)CP),

   K_{sp}' (aragonite,P) = K_{sp}' (aragonite,1)·exp ((33.3 - 0.22t)CP), and CP = (P-1)/83.143 T,

   where P = pressure (bars), T = temperature (°K), and t = temperature (°C).

9. The total calcium concentration in seawater, assumed to be proportional to salinity based upon the summary of Culkin (20):

   (Ca^{++}) (M/kg) = 1.026×10^{-2}(S/35).

Taro Takahashi, LDGO
Robert T. Williams, SIO
David L. Bos, SIO
July 1980

GAS CHROMATOGRAPHIC TOTAL CO_2 MEASUREMENTS

Measurements of total inorganic carbon (ΣCO_2) during the GEOSECS Atlantic and Pacific expeditions were carried out both by the titration technique described in Chapter 1 of this volume, and by the gas chromatographic method described by Weiss and Craig (1). In the chromatographic method, a 2ml aliquot of seawater is acidified and stripped of its dissolved gases by a continuous flow of helium carrier gas. The CO_2 in the sample is then separated and detected by classical chromatographic techniques. The reader is referred to the original publication for the details of the method and its performance. During the GEOSECS work, the areas of the peaks generated by the instrument were integrated by a system developed by the GEOSECS Operations Group using the shipboard IBM 1800 computer. On those occasions when data processing capability was lost, peak areas were determined using the Disc integrator fitted to the chromatograph's chart recorder.

The usual practice during the GEOSECS expeditions was to match the sample analyses with an approximately equal number of standard gas injections to calibrate the sensitivity of the instrument. These calibrations were carried out in groups of 5 to 10 sequential injections interspersed throughout the period required to analyze the complete set of seawater samples from each station. In addition, standard Na_2CO_3 solutions were prepared at each station using Na_2CO_3 which had been preweighed in the shorebased laboratory after drying to constant weight. The shipboard solutions were prepared volumetrically using calibrated glassware, and the distilled water used to make these solutions was checked for CO_2 blanks by analysis on the chromatograph. As described by Weiss and Craig (1), the standard solution analyses were used to calibrate the relative size of the gas and liquid sampling volumes in the instrument, completely independently of the gas calibrations which provided a running check of the sensitivity of the detector. The solution

standards also served to check the integrity of the sampling system, inasmuch as the results of this check yield a constant volume ratio as long as the sampling valves remain intact and operate properly. Fortunately, no such malfunctions were detected throughout the course of the Atlantic and Pacific expeditions and the grand averages of these calibrations for each ocean were used to calculate the final GEOSECS results.

Although the practice before the main GEOSECS expeditions had been to chill the seawater samples and the Na_2CO_3 standard solutions prior to injection, during the first legs of the Atlantic work the GEOSECS technicians requested that the Na_2CO_3 standards be injected without chilling in order to minimize the time which the Na_2CO_3 standard analyses added to the ~20 hours already required to complete each station. This modification in the procedure was adopted on the argument that it was a relatively simple matter to measure the temperature of the fluid and to correct for its thermal expansion.

Unfortunately, we were unaware at that time of the fact that Teflon, the material of which the liquid sampling loop was made, undergoes a major phase transition at about 20°C. This became apparent following the Pacific work, when many replicate samples and Na_2CO_3 standards were run at both temperatures. The results of these tests, corrected for fluid expansion, predicted a 1.59% change in the Teflon volume between the mean chilled sample analysis temperature of 2.5°C and the mean room temperature analysis temperature of 22.5°C. These observations were confirmed by the following values for Teflon volume expansion over the same temperature interval taken from the literature:

1.4%	Rigby and Bunn (24)
1.6%	Quinn *et. al.* (25)
1.3%	Kirby (26)

Kirby pointed out that the high expansion observed by some workers is due to the use of Teflon which had not been annealed, the method of extrusion of moulding apparently being critical. The sample loop tubing used in the GEOSECS work was extruded and was not annealed. The results of our measurements are therefore in good agreement with the literature values, and the final GEOSECS results were corrected accordingly, using our own measurement of the expansibility.

Ray F. Weiss, SIO
September 1980

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STATION: 24 LEG: III — POSITION: 53° 45' N 33° 37' W — DATE: 7 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
615	5	11.25	34.686	2295	2104		393.4	16.6	1950.0	137.4	8.159	16.6	1950.0	137.4	6.936	8.159	1.397	91.5	70.9
616	16	10.61	34.687	2294	2105	2052	387.3	16.7	1952.5	135.9	8.163	16.7	1952.5	135.8	6.883	8.162	1.381	89.8	69.2
617	24	10.41	34.695	2297	2102		371.6	16.1	1946.4	139.5	8.178	16.1	1946.5	139.4	6.647	8.177	1.418	93.4	72.7
618	64	7.77	34.583			2099													
619	89	7.13	34.871	2295	2139	2115	413.7	20.0	2004.2	114.8	8.125	20.0	2004.4	114.6	7.555	8.122	1.172	68.0	47.1
620	113	6.43	34.869	2304	2167	2125	458.5	22.7	2040.2	104.1	8.084	22.7	2040.4	103.9	8.319	8.080	1.062	57.0	36.0
621	153	6.25	34.905	2308	2168	2130	447.8	22.3	2039.9	105.8	8.093	22.3	2040.2	105.5	8.175	8.088	1.079	58.4	37.3
622	202	6.15	34.931	2306	2173	2133	467.1	23.4	2047.8	101.8	8.076	23.3	2048.3	101.4	8.545	8.068	1.039	53.9	32.8
623	277	6.18	34.983			2142													
301	301	6.04	34.949	2305	2177	2142	481.2	24.2	2053.9	99.0	8.064	24.1	2054.5	98.4	8.867	8.052	1.009	50.3	28.8
624	353	5.83	34.977			2144													
302	365	5.89	34.963	2313	2179		461.9	23.3	2053.3	102.4	8.081	23.2	2054.0	101.8	8.578	8.067	1.043	53.1	31.5
303	404	5.78	34.979	2306	2185		500.6	25.4	2064.5	95.1	8.047	25.2	2065.3	94.4	9.295	8.032	.968	45.5	23.8
304	426	5.72	34.981	2310	2184	2156	483.8	24.6	2061.5	97.9	8.061	24.4	2062.4	97.2	9.019	8.045	.996	48.0	26.3
305	462	5.53	34.973	2311	2192		504.2	25.8	2072.1	94.1	8.044	25.6	2073.0	93.3	9.407	8.027	.957	43.9	22.1
306	501	5.46	34.999	2310	2189	2186	495.8	25.4	2068.5	95.1	8.050	25.3	2069.5	94.3	9.308	8.031	.967	44.5	22.6
307	540	5.21	34.987	2309	2195	2158	515.3	26.7	2077.1	91.3	8.034	26.5	2078.1	90.4	9.700	8.013	.927	40.4	18.3
308	571	5.08	34.985	2313	2196	2179	503.2	26.2	2076.9	92.9	8.044	26.0	2078.0	92.0	9.515	8.022	.944	41.7	19.6
309	613	4.96	34.985	2307	2191		502.4	26.2	2072.6	92.2	8.043	26.0	2073.8	91.2	9.570	8.019	.936	40.6	18.4
310	667	4.69	34.972	2308	2194	2156	504.4	26.6	2076.3	91.1	8.040	26.4	2077.6	90.0	9.671	8.015	.923	39.0	16.6
311	701	4.51	34.962	2309	2183		460.6	24.4	2061.0	97.5	8.076	24.2	2062.4	96.4	8.943	8.049	.988	45.0	22.6
312	742	4.39	34.957	2309	2186	2171	468.1	25.0	2065.2	95.9	8.069	24.7	2066.6	94.7	9.118	8.040	.970	43.0	20.4
315	798	4.29	34.951	2307	2188		478.8	25.6	2068.7	93.7	8.059	25.3	2070.3	92.4	9.371	8.028	.946	40.2	17.5
316	909	4.06	34.939	2302	2184	2164	476.1	25.7	2065.3	93.0	8.060	25.4	2067.1	91.5	9.455	8.024	.937	38.4	15.4
317	1103	3.84	34.936	2308	2187		464.0	25.2	2067.1	94.7	8.070	24.9	2069.3	92.9	9.396	8.027	.951	38.2	14.6
318	1296	3.70	34.951	2308	2181	2164	442.9	24.2	2058.9	97.9	8.088	23.8	2061.5	95.7	9.177	8.037	.980	39.3	15.2
319	1501	3.55	34.962	2307	2162		389.8	21.4	2032.8	107.8	8.137	21.0	2036.0	105.1	8.343	8.079	1.077	46.9	22.2
320	1714	3.37	34.973	2311	2187	2153	447.5	24.8	2066.0	96.3	8.083	24.2	2069.4	93.4	9.641	8.016	.957	33.2	7.9
321	1908	3.25	34.993	2306	2177		429.2	23.8	2054.3	98.8	8.098	23.2	2058.2	95.6	9.477	8.023	.980	33.5	7.7
322	2083	3.12	34.999	2308	2189	2158	458.5	25.6	2069.9	93.5	8.072	24.9	2074.1	90.0	10.234	7.990	.923	26.2	-.2
323	2263	3.04	34.997	2312	2192		455.0	25.5	2072.4	94.1	8.075	24.7	2077.0	90.3	10.321	7.986	.926	24.7	-2.2
324	2462	3.01	34.997	2309	2184	2153	438.1	24.6	2062.7	96.7	8.089	23.7	2067.7	92.5	10.167	7.993	.949	24.8	-2.7

STATION: 25 LEG: III — POSITION: 47° 36' N 39° 53' W — DATE: 10 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
115	5	20.24	35.627	2329	2092		469.7	15.1	1906.0	170.9	8.124	15.1	1906.0	170.9	7.524	8.124	1.785	125.5	105.1
122	991	4.94	34.982	2314	2200		511.4	26.7	2082.0	91.3	8.037	26.4	2083.9	89.7	10.034	7.999	.920	36.1	12.9
123	4328	2.21	34.914	2315	2195		440.9	25.5	2075.4	94.1	8.085	24.0	2084.1	86.8	12.203	7.914	.889	-4.1	-38.3
124	4541	2.17	34.913	2311	2194		448.4	26.0	2075.7	92.4	8.078	24.4	2084.7	84.8	12.669	7.897	.868	-9.2	-44.2

STATION: 26 LEG: III — POSITION: 44° 57' N 42° 4' W — DATE: 11 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
315	4	21.81	35.754	2331	2085		481.1	14.8	1892.8	177.4	8.120	14.8	1892.8	177.4	7.592	8.120	1.859	132.1	111.7
316	9	21.81	35.753	2333	2088	2014	484.4	14.9	1896.3	176.8	8.118	14.9	1896.3	176.8	7.633	8.117	1.853	131.5	111.1
317	13	21.80	35.755	2334	2089		484.7	14.9	1897.2	176.9	8.118	14.9	1897.3	176.8	7.637	8.117	1.853	131.5	111.1
318	18	21.81	35.768	2332	2084	2007	476.7	14.6	1890.7	178.7	8.123	14.6	1890.7	178.6	7.540	8.123	1.873	133.2	112.8
319	29	19.74	36.036	2365	2124	2042	468.6	15.2	1935.0	173.8	8.127	15.2	1935.0	173.8	7.478	8.126	1.836	128.3	107.8
320	47	17.84	36.251	2374	2142	2077	459.0	15.7	1959.2	167.1	8.130	15.7	1959.3	167.0	7.449	8.128	1.774	121.3	100.8
321	68	17.28	36.327	2376	2145	2087	452.1	15.7	1963.2	166.1	8.133	15.7	1963.4	165.9	7.395	8.131	1.767	120.2	99.6
322	97	16.56	36.231	2374	2148		448.4	15.9	1969.5	162.6	8.134	15.9	1969.7	162.4	7.398	8.131	1.725	116.4	95.7
323	197	14.99	35.963	2352	2177	2109	546.7	20.4	2026.2	130.4	8.052	20.3	2026.6	130.0	9.021	8.045	1.371	83.2	62.3
324	297	14.27	35.900	2357	2155	2117	454.2	17.3	1991.4	146.3	8.121	17.2	1992.0	145.7	7.761	8.110	1.534	98.2	77.1
101	1218	4.47	34.954	2313	2194	2162	484.1	25.7	2074.4	93.9	8.057	25.3	2076.8	91.9	9.787	8.009	.941	36.3	12.5

STATION: 27 LEG: III — POSITION: 42° 0' N 42° 2' W — DATE: 12 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
801	7	22.43	36.062	2370	2096		446.2	13.5	1886.1	196.5	8.154	13.5	1886.1	196.4	7.018	8.154	2.077	151.2	130.8
803	27	22.13	36.106	2371	2020		307.4	9.3	1764.3	246.4	8.285	9.3	1764.4	246.3	5.200	8.284	2.607	200.9	180.5
804	73	17.61	36.362	2387	2074		308.0	10.6	1844.7	218.7	8.275	10.6	1844.9	218.6	5.340	8.272	2.330	172.8	152.2
806	141	16.42	36.215	2388	2095		320.7	11.4	1878.3	205.3	8.258	11.4	1878.6	205.0	5.578	8.254	2.176	158.7	137.9
802	182	15.85	36.124	2382	2097		322.9	11.7	1885.6	199.7	8.254	11.7	1886.0	199.3	5.654	8.248	2.110	152.7	131.8
807	252	15.21	36.005	2373	2095		321.6	11.9	1888.4	194.7	8.253	11.9	1889.0	194.1	5.701	8.244	2.049	147.0	126.0
808	320	14.41	35.874	2373	2093		306.5	11.6	1885.7	195.6	8.269	11.6	1886.5	194.9	5.528	8.257	2.049	147.2	126.1
809	391	14.11	35.883	2350	2100		345.7	13.2	1911.1	175.7	8.220	13.2	1912.0	174.8	6.214	8.207	1.839	126.7	105.3
810	462	13.52	35.783	2361	2171		471.2	18.4	2013.7	138.9	8.105	18.3	2014.7	138.0	8.151	8.089	1.448	89.3	67.8
811	531	12.32	35.608	2346	2164		462.2	18.7	2012.1	133.2	8.107	18.6	2013.2	132.2	8.174	8.088	1.380	82.9	61.2
812	599	11.33	35.462	2340	2180		502.9	21.1	2039.2	119.7	8.070	20.9	2040.5	118.7	8.942	8.049	1.233	68.8	46.9
815	673	10.01	35.298	2339	2199		538.5	23.6	2067.6	107.8	8.040	23.4	2069.0	106.6	9.670	8.015	1.103	56.1	33.9
816	743	8.77	35.190	2345	2221		570.4	26.0	2096.3	98.6	8.014	25.8	2097.8	97.4	10.334	7.986	1.005	46.2	23.8
818	801	7.54	35.037	2330	2206		535.3	25.5	2082.6	97.9	8.032	25.2	2084.2	96.5	9.968	8.001	.992	44.7	22.2
819	832	6.76	34.941	2313	2199		548.9	26.9	2080.3	91.8	8.016	26.6	2081.9	90.5	10.367	7.984	.927	38.4	15.7
820	880	6.24	34.946	2316	2203		542.4	27.1	2084.7	91.2	8.019	26.8	2086.4	89.8	10.339	7.986	.920	37.2	14.4
821	933	6.61	35.111	2336	2207		501.2	24.7	2082.0	100.4	8.055	24.3	2083.8	98.8	9.567	8.019	1.017	45.9	22.9
822	1001	6.12	35.103	2332	2204		493.4	24.7	2079.7	99.6	8.058	24.4	2081.7	97.9	9.549	8.020	1.007	44.4	21.2
823	1151	5.08	35.027	2317	2195		487.6	25.3	2074.0	95.7	8.057	25.0	2076.3	93.8	9.724	8.012	.963	38.9	15.3
401	1244	5.02	35.061	2328	2205		487.0	25.4	2083.2	96.5	8.059	24.9	2085.7	94.4	9.759	8.011	.970	38.7	14.8
824	1269	4.70	35.010	2329	2199		458.2	24.1	2074.6	100.3	8.082	23.7	2077.2	98.1	9.274	8.033	1.007	42.1	18.2
402	1440	4.51	35.036	2321	2184		431.7	22.9	2057.2	103.9	8.103	22.4	2060.2	101.3	8.969	8.047	1.041	43.8	19.4
403	1643	4.22	34.990	2325	2205		480.2	25.8	2084.6	94.6	8.061	25.2	2087.9	91.9	10.071	7.997	.943	32.6	7.5
404	1832	3.97	34.971	2316	2193		462.8	25.0	2072.0	96.0	8.073	24.4	2075.7	92.9	9.965	8.002	.952	31.8	6.2
405	2029	3.78	34.960	2319	2224		562.5	30.7	2112.0	81.4	7.995	29.9	2115.8	78.3	12.152	7.915	.803	15.2	-10.9
406	2231	3.64	34.958	2320	2198		461.2	25.3	2077.2	95.5	8.074	24.5	2081.7	91.8	10.315	7.987	.940	26.6	-.2
407	2435	3.50	34.954	2328	2190		413.4	22.8	2062.8	104.4	8.117	22.0	2067.9	100.1	9.491	8.023	1.026	32.9	5.4
408	2629	3.34	34.950	2320	2188		425.5	23.6	2063.6	100.9	8.104	22.7	2069.0	96.3	9.964	8.002	.987	27.0	-1.1
409	2839	3.20	34.949	2328	2197		428.3	23.9	2072.6	100.5	8.102	22.9	2078.5	95.6	10.199	7.991	.979	23.9	-4.9
410	3036	3.03	34.943	2319	2191		431.6	24.2	2068.2	98.6	8.097	23.2	2074.4	93.4	10.516	7.978	.957	19.4	-10.0
411	3238	2.89	34.937	2330	2206		444.6	25.0	2084.2	96.7	8.087	24.0	2090.8	91.2	10.972	7.960	.934	14.8	-15.3
412	3441	2.73	34.930	2325	2163		342.5	19.4	2025.8	117.8	8.187	18.5	2033.4	111.1	8.846	8.053	1.138	32.2	1.4
415	3653	2.57	34.922	2330	2174		354.9	20.2	2039.3	114.5	8.174	19.2	2047.3	107.5	9.307	8.031	1.101	25.9	-5.7
416	3853	2.46	34.913	2326	2189		398.9	22.8	2062.5	103.7	8.127	21.7	2070.6	96.8	10.574	7.976	.991	12.5	-19.9
418	4254	2.32	34.902	2324	2236		561.4	32.3	2125.9	77.8	7.991	30.7	2133.8	71.5	15.118	7.820	.732	-18.3	-52.2
419	4386	2.30	34.900	2341	2205		403.1	23.2	2078.3	103.5	8.125	21.9	2087.5	95.7	11.158	7.952	.979	4.0	-30.5
420	4484	2.29	34.899	2333	2199		406.2	23.4	2073.4	102.2	8.121	22.0	2082.7	94.2	11.377	7.944	.964	1.1	-33.7
421	4574	2.29	34.898	2342	2212		419.9	24.2	2087.6	100.2	8.109	22.7	2097.0	92.2	11.782	7.929	.943	-2.2	-37.4
422	4676	2.29	34.900	2332	2200		411.5	23.7	2075.2	101.1	8.115	22.2	2084.9	92.8	11.723	7.931	.950	-3.1	-38.7
423	4764	2.29	34.903	2340	2206		408.3	23.5	2080.1	102.4	8.120	22.0	2090.1	93.9	11.692	7.932	.961	-3.4	-39.3
424	4855	2.30	34.906	2329	2192		397.2	22.9	2065.4	103.7	8.129	21.4	2075.5	95.0	11.549	7.937	.973	-3.6	-39.9

STATION: 28 LEG: III | POSITION: 39° 0' N 43° 59' W | DATE: 15 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
802	9	24.98	36.374	2394	2054		374.2	10.6	1802.4	241.0	8.226	10.6	1802.4	241.0	5.947	8.226	2.570	195.9	175.7
803	42	21.00	36.330	2389	2042	2039	305.1	9.6	1789.1	243.3	8.287	9.5	1789.2	243.2	5.185	8.285	2.590	197.8	177.3
804	73	18.98	36.395	2391	2101		366.1	12.1	1884.0	204.9	8.217	12.1	1884.2	204.7	6.097	8.215	2.184	159.0	138.5
805	124	17.71	36.396	2386	2087	2093	330.6	11.3	1866.0	209.7	8.250	11.3	1866.3	209.4	5.682	8.246	2.234	163.3	142.6
807	245	16.51	36.261	2379	2103	2091	347.7	12.4	1896.5	194.1	8.228	12.3	1897.2	193.5	6.032	8.220	2.057	146.6	125.7
808	303	15.76	36.109			2233													
809	405	14.90	36.002	2369	2112	2107	351.5	13.1	1917.8	181.0	8.219	13.1	1918.8	180.1	6.238	8.205	1.901	132.0	110.6
810	507	13.89	35.840	2364	2140	2163	397.1	15.3	1964.8	159.9	8.171	15.2	1966.0	158.8	7.030	8.153	1.668	109.8	88.2
811	603	12.90	35.693	2350	2145	2143	416.8	16.6	1981.0	147.4	8.148	16.4	1982.4	146.2	7.473	8.126	1.529	96.4	74.6
812	702	11.72	35.536			2263													
815	813	9.55	35.284	2333	2183		492.9	21.9	2048.0	113.1	8.071	21.7	2049.7	111.7	9.098	8.041	1.155	60.0	37.5
816	855	8.80	35.205			2220													
817	901	8.29	35.187	2333	2184	2187	469.9	21.8	2050.1	112.0	8.085	21.5	2052.0	110.4	8.877	8.052	1.139	58.0	35.2
818	949	7.32	35.073			2229													
819	997	6.93	35.104	2329		2182													
820	1047	6.47	35.091	2332	2195	2200	470.8	23.3	2067.1	104.7	8.078	22.9	2069.2	102.9	9.157	8.038	1.058	49.0	25.7
821	1091	6.32	35.115	2330	2183		437.7	21.8	2051.1	110.2	8.105	21.4	2053.4	108.2	8.629	8.064	1.114	54.0	30.6
822	1144	5.92	35.096	2330	2183	2226	430.6	21.7	2051.2	110.0	8.110	21.4	2053.7	108.0	8.574	8.067	1.111	53.3	29.7
823	1197	5.78	35.124	2328	2178	2175	419.5	21.3	2045.1	111.6	8.119	20.9	2047.7	109.4	8.435	8.074	1.127	54.3	30.6
401	1346	5.26	35.098	2336	2177		389.9	20.1	2040.0	116.8	8.147	19.7	2043.0	114.3	8.014	8.096	1.176	57.8	33.7
402	1496	4.83	35.060	2330	2174		388.7	20.4	2038.8	114.9	8.146	19.9	2042.0	112.1	8.148	8.089	1.152	54.2	29.6
403	1646	4.45	35.021	2327	2173		386.7	20.6	2038.9	113.6	8.146	20.1	2042.4	110.5	8.255	8.083	1.135	51.2	26.2
404	1795	4.27	35.017	2328	2175		386.6	20.7	2041.3	113.0	8.146	20.2	2045.2	109.7	8.375	8.077	1.126	48.9	23.5
405	1945	3.94	34.993	2328	2172		374.2	20.3	2037.1	114.6	8.158	19.7	2041.3	111.0	8.268	8.083	1.138	48.7	22.8
406	2096	3.83	34.981	2319	2168		382.2	20.8	2035.7	111.5	8.147	20.2	2040.2	107.7	8.581	8.066	1.104	43.9	17.6
407	2244	3.71	34.975	2328	2173		373.0	20.4	2038.6	114.0	8.158	19.7	2043.4	109.8	8.485	8.071	1.126	44.6	17.8
408	2394	3.55	34.966	2323	2185		412.9	22.7	2058.0	104.3	8.117	21.9	2063.0	100.1	9.461	8.024	1.026	33.2	6.0
409	2544	3.43	34.962	2329	2179		381.2	21.0	2046.8	111.2	8.149	20.3	2052.2	106.5	8.910	8.050	1.091	38.0	10.3
410	2691	3.32	34.959	2327	2173		369.4	20.5	2039.1	113.4	8.160	19.7	2045.0	108.3	8.792	8.056	1.110	38.3	10.0
411	2838	3.19	34.952	2332	2177		366.5	20.4	2042.5	114.1	8.164	19.6	2048.7	108.7	8.838	8.054	1.114	37.0	8.3
412	2984	3.07	34.947	2330	2173		359.5	20.1	2037.7	115.1	8.170	19.3	2044.3	109.5	8.820	8.055	1.121	36.1	6.8
415	3186	2.91	34.935	2333	2177		360.3	20.3	2042.1	114.6	8.170	19.4	2049.1	108.6	9.002	8.046	1.112	32.8	2.9
416	3384	2.73	34.925	2329	2171		352.2	20.0	2035.4	115.6	8.177	19.0	2042.8	109.2	9.010	8.045	1.117	30.9	.3
417	3531	2.61	34.920	2332	2177		358.0	20.4	2042.6	114.0	8.171	19.4	2050.3	107.3	9.268	8.033	1.098	27.2	-4.0
418	3728	2.48	34.914	2331	2180		365.4	20.9	2047.4	111.7	8.162	19.8	2055.5	104.7	9.627	8.017	1.071	22.0	-9.9
420	4124	2.31	34.898	2338	2194		381.6	22.0	2064.1	107.9	8.146	20.7	2073.0	100.3	10.371	7.984	1.026	12.3	-21.1
421	4331	2.28	34.893	2342	2193		369.9	21.3	2060.9	110.8	8.159	20.1	2070.2	102.7	10.259	7.989	1.051	11.8	-22.4
422	4526	2.28	34.893	2338	2189		368.9	21.3	2057.0	110.7	8.159	19.9	2066.8	102.2	10.433	7.982	1.046	8.5	-26.5
423	4679	2.27	34.893	2338	2193		378.5	21.8	2062.7	108.5	8.149	20.4	2072.7	99.8	10.834	7.965	1.021	3.8	-31.8
424	4832	2.28	34.895	2327	2174		356.7	20.6	2040.7	112.7	8.170	19.2	2051.3	103.5	10.454	7.981	1.059	5.2	-31.0

STATION: 29 LEG: III | POSITION: 35° 58' N 35° 0' W | DATE: 17 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
1014	4	25.22	36.033	2376	2024	2011	348.9	9.8	1765.2	249.0	8.250	9.8	1765.2	249.0	5.629	8.250	2.630	203.9	183.6
1015	19	24.89	36.020	2374	2016		334.4	9.5	1753.8	252.7	8.263	9.5	1753.8	252.7	5.461	8.263	2.668	207.5	187.1
1016	60	22.91	36.375	2394	2049	2051	335.7	10.0	1795.8	243.3	8.258	10.0	1795.9	243.1	5.540	8.257	2.592	197.6	177.2
1017	101	19.74	36.485	2402	2087		340.0	11.0	1854.2	221.8	8.247	11.0	1854.5	221.5	5.707	8.244	2.370	175.7	155.2
1018	150	18.52	36.446	2395	2091	2078	337.3	11.3	1866.0	213.7	8.246	11.3	1866.4	213.3	5.745	8.241	2.279	167.1	146.5
1019	180	18.14	36.449	2397	2086		321.6	10.9	1857.1	218.0	8.262	10.9	1857.6	217.6	5.547	8.256	2.325	171.2	150.4
1020	240	17.68	36.430	2398	2092	2095	322.9	11.1	1866.4	214.5	8.260	11.0	1867.0	213.9	5.603	8.252	2.285	167.1	146.3
1022	361	16.84	36.317	2388	2109	2111	350.6	12.3	1900.2	196.5	8.227	12.3	1901.1	195.6	6.101	8.215	2.082	147.9	126.8
701	442	15.71	36.088	2380	2116		355.2	12.9	1916.8	186.2	8.219	12.9	1917.9	185.2	6.259	8.204	1.959	136.9	115.5
702	492	15.26	36.040	2372	2115	2113	358.2	13.2	1920.4	181.3	8.213	13.1	1921.7	180.2	6.363	8.196	1.904	131.5	110.0
1024	503	15.32	36.059	2376	2114	2121	351.4	13.0	1916.4	184.6	8.221	12.9	1917.7	183.5	6.256	8.204	1.939	134.7	113.2
703	540	14.71	35.955	2370	2129	2131	378.6	14.2	1943.8	171.0	8.192	14.1	1945.1	169.8	6.719	8.173	1.790	120.7	99.1
704	641	13.00	35.687	2360	2159	2166	431.3	17.1	1996.6	145.3	8.137	17.0	1998.0	144.0	7.687	8.114	1.507	94.0	72.1
705	746	10.84	35.392	2343	2183	2187	492.8	21.0	2042.4	119.6	8.077	20.8	2044.0	118.3	8.915	8.050	1.227	67.3	45.0
706	795	9.33	35.219	2330	2198	2196	547.8	24.5	2070.6	102.8	8.029	24.3	2072.2	101.5	10.016	7.999	1.048	50.0	27.5
707	844	7.78	34.980	2326	2192	2198	502.9	23.8	2064.8	103.4	8.057	23.5	2066.5	101.9	9.446	8.025	1.045	49.8	27.2
708	899	7.56	35.070	2335	2207	2206	523.4	24.9	2081.9	100.2	8.041	24.6	2083.7	98.7	9.832	8.007	1.014	46.1	23.3
709	944	6.81	35.064	2333	2195	2195	474.1	23.2	2066.4	105.4	8.077	22.9	2068.4	103.7	9.097	8.041	1.066	50.7	27.8
710	992	6.23	35.024	2332	2198	2192	474.9	23.7	2071.3	103.0	8.074	23.4	2073.4	101.3	9.201	8.036	1.040	47.8	24.7
711	1042	5.64	34.999	2326	2193	2191	464.8	23.7	2067.2	102.1	8.079	23.3	2069.3	100.3	9.135	8.039	1.029	46.4	23.1
712	1092	5.34	35.021	2327	2180	2180	419.1	21.6	2048.6	109.8	8.119	21.2	2050.9	107.9	8.379	8.077	1.107	53.5	30.0
714	1204	4.84	34.995	2331	2185	2177	414.4	21.7	2054.0	109.3	8.122	21.4	2056.6	107.1	8.402	8.076	1.099	51.7	27.9
715	1303	4.65	34.997	2329	2179	2174	400.1	21.1	2046.4	111.4	8.134	20.7	2049.2	109.0	8.235	8.084	1.119	52.8	28.7
716	1402	4.48	34.993	2328	2172	2179	382.2	20.3	2036.9	114.8	8.151	19.9	2040.0	112.2	7.988	8.098	1.150	55.0	30.7
717	1507	4.36	34.985	2333	2167	2170	358.2	19.1	2027.2	120.6	8.177	18.7	2030.6	117.7	7.603	8.119	1.207	59.6	35.0
718	1604	4.18	34.984	2327	2173	2169	382.3	20.5	2038.9	113.5	8.150	20.1	2042.4	110.5	8.159	8.088	1.134	51.5	26.6
719	1704	4.06	34.977	2326	2172	2177	380.1	20.5	2038.0	113.5	8.152	20.0	2041.7	110.3	8.202	8.086	1.131	50.4	25.2
720	1901	3.88	34.972	2326	2177		389.8	21.2	2045.2	110.6	8.141	20.6	2049.3	107.1	8.554	8.068	1.098	45.3	19.5
721	2106	3.73	34.968	2327	2177	2179	385.2	21.0	2044.8	111.2	8.145	20.4	2049.3	107.3	8.629	8.064	1.100	43.4	17.0
722	2308	3.58	34.968	2329	2175	2183	373.7	20.5	2041.0	113.5	8.157	19.8	2046.0	109.1	8.556	8.068	1.119	43.2	16.2
723	2505	3.40	34.962	2331	2183	2175	386.4	21.4	2051.6	110.1	8.144	20.6	2056.9	105.5	8.983	8.047	1.081	37.5	9.8
501	2698	3.19	34.952	2332	2177	2184	366.4	20.4	2042.5	114.1	8.164	19.6	2048.4	109.0	8.727	8.059	1.116	38.8	10.5
724	2703	3.21	34.952	2332	2183	2180	381.2	21.2	2051.1	110.7	8.149	20.4	2056.9	105.6	9.046	8.044	1.082	35.5	7.2
502	2908	2.94	34.941	2329	2187	2182	394.1	22.2	2058.2	106.6	8.134	21.3	2064.4	101.3	9.535	8.021	1.038	28.8	-.2
503	3096	2.85	34.935	2332	2188	2186	388.3	21.9	2058.3	107.8	8.140	21.0	2064.9	102.1	9.567	8.019	1.046	27.4	-2.3
504	3296	2.70	34.928	2332	2180	2187	366.4	20.8	2046.9	112.3	8.162	19.8	2054.1	106.1	9.256	8.034	1.086	28.9	-1.4
505	3495	2.51	34.920	2337	2183	2193	360.3	20.6	2048.9	113.5	8.169	19.6	2056.5	106.9	9.281	8.032	1.094	27.2	-3.9
506	3694	2.39	34.906	2337	2187	2193	367.9	21.1	2054.6	111.3	8.160	20.0	2062.6	104.3	9.644	8.016	1.068	22.1	-9.7
507	3892	2.29	34.898	2339	2185		357.6	20.6	2050.8	113.6	8.171	19.5	2059.3	106.2	9.570	8.019	1.086	21.3	-11.3
508	4089	2.25	34.895			2197													
509	4288	2.24	34.891	2346	2199	2198	375.2	21.7	2067.5	109.8	8.154	20.4	2076.8	101.8	10.341	7.985	1.041	11.5	-22.6
510	4488	2.26	34.891	2351	2200	2205	367.1	21.2	2066.6	112.2	8.163	19.9	2076.4	103.7	10.299	7.987	1.061	10.5	-24.3
511	4688	2.27	34.890	2345	2201	2202	382.8	22.1	2070.8	108.1	8.146	20.7	2080.9	99.5	10.923	7.962	1.017	3.3	-32.3
512	4909	2.29	34.888	2344	2202	2204	387.9	22.4	2072.7	106.9	8.141	20.9	2083.2	98.0	11.283	7.948	1.002	-1.6	-38.0

STATION: 30 LEG: III | POSITION: 31° 48' N 50° 46' W | DATE: 20 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
701	2	26.64	36.595	2407	2040	2031	361.5	9.8	1770.5	259.7	8.243	9.8	1770.5	259.7	5.711	8.243	2.786	214.8	194.6
702	50	21.75	36.540	2408	2039	2042	292.3	9.0	1771.4	258.6	8.305	9.0	1771.5	258.5	4.973	8.303	2.769	213.1	192.7
703	151	18.07	36.448	2398	2087		320.9	10.9	1858.1	218.0	8.263	10.9	1858.5	217.6	5.525	8.258	2.325	171.4	150.7
704	202	17.75	36.434	2394	2079	2082	309.5	10.6	1848.1	220.3	8.274	10.6	1848.7	219.8	5.401	8.268	2.347	173.2	152.4
705	252	17.59	36.427	2401	2085	2092	307.7	10.6	1853.3	221.1	8.277	10.6	1854.0	220.4	5.388	8.269	2.354	173.5	152.7
706	301	17.39	36.421	2398	2111	2107	349.2	12.1	1896.8	202.1	8.231	12.0	1897.6	201.4	6.014	8.221	2.150	154.2	133.2
707	352	17.06	36.376	2396	2128	2104	376.8	13.2	1925.1	189.8	8.203	13.1	1925.9	189.0	6.449	8.190	2.015	141.4	120.3
708	402	16.56	36.282	2390	2130	2110	381.0	13.5	1932.2	184.3	8.196	13.4	1933.1	183.4	6.567	8.183	1.951	135.4	114.2
709	451	15.84	36.141	2386	2139		392.1	14.2	1949.1	175.7	8.184	14.1	1950.1	174.7	6.788	8.168	1.851	126.4	105.0
710	500	15.14	36.033	2377	2140	2123	396.8	14.7	1956.4	168.9	8.176	14.6	1957.6	167.8	6.936	8.159	1.772	119.0	97.5
711	550	14.36	35.901	2373	2134	2137	377.2	14.3	1950.0	169.7	8.193	14.2	1951.3	168.5	6.710	8.173	1.773	119.3	97.6
714	652	12.31	35.611	2352	2150	2158	413.2	16.8	1987.9	145.4	8.150	16.6	1989.3	144.1	7.470	8.127	1.504	93.9	71.9
715	702	11.64	35.510	2354	2187	2166	493.3	20.5	2042.2	124.3	8.081	20.3	2043.7	123.0	8.798	8.056	1.281	72.4	50.3
716	802	9.51	35.298	2337	2193	2189	513.1	22.8	2060.4	109.8	8.056	22.6	2062.0	108.4	9.413	8.026	1.121	56.8	34.3
717	904	7.71	35.162	2343	2211	2198	516.5	24.5	2084.0	102.6	8.048	24.2	2085.8	101.0	9.681	8.014	1.042	48.5	25.7
718	956	7.21	35.145	2342	2203	2196	482.5	23.2	2073.5	106.3	8.073	22.9	2075.5	104.6	9.191	8.037	1.078	51.6	28.6
719	1005	6.82	35.150	2342	2208	2206	491.0	24.0	2080.7	103.3	8.064	23.7	2082.7	101.6	9.413	8.026	1.047	48.1	25.0
720	1055	6.58	35.170	2338	2202	2194	478.9	23.6	2074.2	104.3	8.073	23.2	2076.3	102.4	9.281	8.032	1.056	48.5	25.3
722	1204	5.28	35.072	2335	2188		420.9	21.7	2056.3	110.0	8.118	21.3	2058.8	107.8	8.477	8.072	1.109	52.5	28.8
723	1304	5.04	35.082	2341	2193	2188	416.0	21.6	2060.7	110.7	8.122	21.2	2063.5	108.3	8.463	8.073	1.114	52.1	28.1
401	1394	4.86	35.082	2340	2195	2187	421.0	22.0	2064.1	108.9	8.117	21.6	2067.0	106.4	8.641	8.063	1.094	49.4	25.1
724	1403	4.67	35.050	2327	2184	2180	419.3	22.1	2054.5	107.4	8.116	21.7	2057.4	104.9	8.674	8.062	1.078	47.7	23.4
402	1596	4.57	35.077	2334	2188		411.7	21.8	2057.0	109.2	8.124	21.3	2060.4	106.3	8.666	8.062	1.093	47.5	22.6
403	1796	3.97	35.005	2337	2185	2171	386.9	20.9	2051.5	112.6	8.146	20.4	2055.3	109.3	8.376	8.077	1.121	48.4	23.0
404	1995	3.75	34.993	2340	2179	2181	362.9	19.8	2041.4	117.8	8.171	19.2	2045.8	114.0	8.056	8.094	1.169	51.2	25.1
405	2195	3.58	34.995	2341	2187	2175	377.2	20.7	2052.5	113.8	8.155	20.1	2057.3	109.7	8.502	8.070	1.125	44.9	18.2
406	2394	3.38	34.982	2340	2189		381.1	21.1	2055.9	112.0	8.151	20.4	2061.1	107.6	8.756	8.058	1.103	40.7	13.4
407	2596	3.21	34.970	2345	2200	2196	395.1	22.0	2069.3	108.7	8.137	21.2	2074.8	104.0	9.207	8.036	1.066	34.9	7.0
408	2795	3.08	34.959	2342	2197	2184	392.1	21.9	2066.4	108.6	8.139	21.1	2072.4	103.5	9.333	8.030	1.061	32.3	3.7

STATION: 30 LEG: III — POSITION: 31° 48' N 50° 46' W — DATE: 20 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
409	2994	2.94	34.947	2350	2189	2188	353.8	19.9	2051.2	117.9	8.180	19.0	2057.8	112.2	8.642	8.063	1.149	38.6	9.3
410	3194	2.81	34.936	2348	2200	2197	381.9	21.6	2068.0	110.5	8.149	20.6	2074.9	104.5	9.450	8.025	1.071	28.6	-1.4
411	3395	2.66	34.924			2196													
412	3595	2.54	34.919	2351	2199	2192	369.0	21.1	2065.2	112.8	8.162	20.0	2073.0	106.0	9.513	8.022	1.085	25.1	-6.4
414	3786	2.44	34.903	2347	2192	2199	359.4	20.6	2057.0	114.4	8.171	19.5	2065.3	107.2	9.474	8.023	1.096	23.7	-8.4
415	3985	2.34	34.899	2352	2206	2202	380.8	21.9	2074.7	109.4	8.149	20.7	2083.3	102.0	10.159	7.993	1.044	15.9	-17.0
416	4187	2.28	34.887	2350	2204	2189	379.3	21.9	2072.8	109.3	8.150	20.6	2081.8	101.6	10.324	7.986	1.039	12.7	-21.0
417	4386	2.22	34.880	2357	2215	2215	390.2	22.5	2085.2	107.3	8.140	21.2	2094.6	99.2	10.766	7.968	1.015	7.5	-27.0
418	4586	2.16	34.871	2361	2213	2209	375.4	21.7	2080.5	110.8	8.156	20.4	2090.5	102.2	10.570	7.976	1.044	7.5	-27.8
419	4787	2.13	34.866	2364	2224	2205	395.8	23.0	2094.7	106.3	8.136	21.5	2104.9	97.6	11.292	7.947	.998	-.2	-36.2
420	4987	2.12	34.861	2359	2221	2217	399.5	23.2	2092.7	105.1	8.131	21.6	2103.3	96.1	11.626	7.935	.982	-4.8	-41.7
421	5188	2.14	34.861	2365	2227		401.4	23.3	2098.5	105.2	8.130	21.7	2109.5	95.9	11.859	7.926	.980	-8.2	-45.9
422	5388	2.16	34.860	2358	2223	2211	407.9	23.6	2096.0	103.4	8.123	21.9	2107.3	93.8	12.293	7.910	.958	-13.6	-52.1
423	5588	2.18	34.860	2365	2215	2221	371.7	21.5	2081.5	112.0	8.160	19.9	2093.6	101.5	11.457	7.941	1.037	-9.3	-48.7
424	5788	2.21	34.859	2353	2223		421.3	24.4	2098.1	100.5	8.110	22.5	2110.1	90.4	13.161	7.881	.923	-23.9	-64.1

STATION: 31 LEG: III — POSITION: 27° 0' N 53° 32' W — DATE: 22 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
601	1	27.44	36.901	2426	2041		354.4	9.4	1759.5	272.1	8.254	9.4	1759.5	272.1	5.577	8.254	2.944	227.3	207.2
602	29	26.99	36.923	2421	2057	2044	379.7	10.2	1789.0	257.8	8.228	10.2	1789.1	257.7	5.928	8.227	2.790	212.8	192.6
603	61	22.92	36.790	2418	2078	2037	355.0	10.5	1827.3	240.2	8.241	10.5	1827.5	240.0	5.769	8.239	2.588	194.7	174.3
604	101	21.21	36.943	2431	2098	2056	346.2	10.7	1852.5	234.8	8.247	10.7	1852.8	234.5	5.709	8.243	2.540	188.9	168.5
605	152	19.57	36.710	2414	2070	2080	300.6	9.8	1819.6	240.7	8.291	9.7	1820.0	240.3	5.180	8.286	2.586	194.2	173.6
606	203	18.19	36.470	2397	2098	2081	341.4	11.5	1876.2	210.3	8.241	11.5	1876.7	209.8	5.834	8.234	2.243	163.2	142.5
607	253	17.65	36.433			2105													
608	302	17.12	36.403	2395	2112	2103	350.9	12.2	1900.5	199.3	8.228	12.2	1901.2	198.6	6.055	8.218	2.119	151.4	130.4
609	404	16.94	36.375	2395	2088		310.0	10.9	1862.5	214.7	8.272	10.8	1863.5	213.7	5.516	8.258	2.278	165.7	144.5
610	504	15.82	36.157	2376	2135	2126	401.0	14.6	1948.8	171.6	8.174	14.5	1950.0	170.5	6.977	8.156	1.807	121.8	100.3
611	604	13.82	35.831	2365	2154	2150	425.4	16.4	1985.7	151.9	8.145	16.3	1987.1	150.6	7.518	8.124	1.582	101.0	79.2
612	704	11.79	35.561	2351	2159	2152	427.2	17.6	2002.3	139.1	8.136	17.5	2003.9	137.7	7.756	8.110	1.435	87.1	65.0
614	802	9.84	35.331	2348	2205		528.1	23.2	2072.1	109.6	8.048	23.0	2073.8	108.2	9.590	8.018	1.121	56.7	34.2
615	856	8.92	35.261	2346	2204	2194	510.1	23.2	2072.2	108.6	8.058	22.9	2073.9	107.2	9.422	8.026	1.108	55.1	32.5
616	904	8.21	35.195			2195													
617	953	7.59	35.146	2339	2215	2207	541.0	25.7	2091.2	98.0	8.029	25.4	2093.1	96.5	10.166	7.993	.994	43.5	20.6
618	1005	7.10	35.123	2336	2211	2209	525.4	25.4	2087.2	98.4	8.038	25.1	2089.2	96.7	10.003	8.000	.996	43.2	20.1
619	1055	6.61	35.115	2341	2209	2187	492.8	24.2	2082.6	102.2	8.062	23.9	2084.7	100.4	9.505	8.022	1.033	46.5	23.2
620	1105	6.30	35.121	2340	2210		493.1	24.5	2084.5	100.9	8.061	24.2	2086.8	99.1	9.585	8.018	1.020	44.7	21.3
621	1205	5.85	35.125	2348	2190	2202	405.4	20.5	2052.8	116.7	8.136	20.1	2055.4	114.5	8.116	8.091	1.179	59.3	35.6
622	1305	5.46	35.128	2349	2202	2196	428.6	22.0	2069.7	110.4	8.114	21.6	2072.4	108.0	8.635	8.064	1.112	51.9	27.9
623	1405	5.08	35.112	2341	2199	2181	433.7	22.5	2069.2	107.3	8.106	22.1	2072.2	104.8	8.863	8.052	1.078	47.7	23.4
301	1508	4.78	35.095	2336	2197	2189	435.5	22.9	2068.7	105.4	8.103	22.4	2071.9	102.7	9.022	8.045	1.057	44.7	20.1
302	1709	4.31	35.071			2183													
303	1910	3.89	35.032	2341	2193	2191	397.2	21.6	2061.0	110.4	8.136	21.0	2065.1	106.9	8.658	8.063	1.098	45.0	19.2
305	2310	3.30	34.984	2342	2199	2197	400.9	22.2	2069.2	107.5	8.131	21.5	2074.1	103.3	9.097	8.041	1.060	37.3	10.3
306	2511	3.12	34.965	2341	2209	2205	428.1	23.9	2083.7	101.4	8.105	23.1	2088.9	97.0	9.853	8.006	.994	28.8	1.1
307	2709	2.99	34.952	2345	2205	2190	404.7	22.7	2076.4	105.9	8.127	21.9	2082.1	101.0	9.526	8.021	1.035	30.7	2.3
308	2909	2.87	34.942	2342	2208	2183	418.4	23.6	2081.9	102.5	8.113	22.6	2088.0	97.3	10.023	7.999	.997	24.8	-4.3
309	3109	2.79	34.935	2345	2205	2197	401.3	22.7	2076.4	105.9	8.129	21.7	2083.0	100.3	9.824	8.008	1.027	25.3	-4.4
310	3300	2.62	34.920	2346	2205		396.3	22.6	2076.0	106.5	8.134	21.5	2083.0	100.5	9.894	8.005	1.028	23.2	-7.2
311	3509	2.50	34.912	2344	2206		401.8	23.0	2078.3	104.7	8.128	21.9	2085.7	98.4	10.233	7.990	1.007	18.5	-12.6
312	3610	2.45	34.907	2347	2205	2197	391.3	22.4	2075.6	107.0	8.138	21.3	2083.3	100.4	10.073	7.997	1.028	19.3	-12.2
314	3710	2.41	34.901	2345	2207	2198	400.5	23.0	2079.3	104.7	8.129	21.8	2087.1	98.1	10.397	7.983	1.003	15.6	-16.3
315	3911	2.30	34.888	2349	2215	2204	410.7	23.7	2088.7	102.6	8.119	22.4	2096.9	95.7	10.830	7.965	.978	10.5	-22.1
316	4111	2.22	34.880	2356	2219	2212	403.2	23.3	2091.3	104.5	8.127	22.0	2099.9	97.1	10.822	7.966	.992	9.2	-24.2
317	4211	2.19	34.876	2354	2203	2201	366.8	21.2	2069.5	112.3	8.164	20.0	2078.7	104.3	10.030	7.999	1.067	15.0	-18.8
318	4311	2.17	34.873	2357	2219		399.9	23.2	2090.8	105.0	8.131	21.8	2100.0	97.2	10.941	7.961	.994	6.5	-27.6
319	4510	2.14	34.869	2358	2221	2214	402.3	23.3	2093.2	104.5	8.128	21.9	2102.7	96.4	11.202	7.951	.985	2.8	-32.2
320	4712	2.12	34.865	2364	2221	2209	387.9	22.5	2090.5	108.0	8.144	21.1	2100.6	99.3	11.010	7.958	1.015	2.7	-33.0
321	4911	2.11	34.864	2359	2229	2211	421.4	24.5	2103.9	100.7	8.110	22.9	2114.1	92.0	12.130	7.916	.941	-7.7	-44.2
322	5111	2.11	34.860	2355	2222		411.9	23.9	2095.9	102.2	8.119	22.3	2106.6	93.1	12.115	7.917	.952	-9.7	-47.1

STATION: 31 LEG: III — POSITION: 27° 0' N 53° 32' W — DATE: 22 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
323	5311	2.13	34.856	2361	2223		400.1	23.2	2094.7	105.1	8.131	21.6	2105.9	95.5	11.980	7.922	.976	-10.6	-48.8
324	5512	2.14	34.860	2366	2226	2217	396.4	23.0	2096.6	106.4	8.136	21.3	2108.4	96.3	12.071	7.918	.985	-13.2	-52.2
624	6014	2.19	34.856	2363	2230	2205	415.2	24.0	2103.5	102.4	8.117	22.1	2116.1	91.8	13.204	7.879	.937	-26.7	-67.9

STATION: 32 LEG: III — POSITION: 23° 50' N 53° 59' W — DATE: 24 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
601	6	27.54	36.039			1988													
602	40	26.77	36.907	2427	2040	2027	342.4	9.2	1757.6	273.2	8.264	9.2	1757.7	273.1	5.464	8.262	2.955	228.1	207.9
604	135	21.19	36.990	2432	2106		357.8	11.1	1864.8	230.1	8.235	11.1	1865.1	229.8	5.880	8.231	2.492	184.0	163.5
605	209	18.69	36.685			2115													
607	327	17.08	36.416			2107													
608	401	16.34	36.288	2391	2132	2113	379.7	13.6	1934.9	183.6	8.197	13.5	1935.9	182.7	6.555	8.183	1.943	134.7	113.5
610	553	13.31	35.807	2364	2143	2149	393.4	15.5	1969.8	157.7	8.173	15.3	1971.1	156.5	7.028	8.153	1.643	107.2	85.5
611	627	11.86	35.614			2168													
612	702	10.83	35.482	2347	2192		510.9	21.8	2053.5	116.8	8.064	21.5	2054.9	115.5	9.165	8.038	1.202	64.8	42.7
614	776	9.58	35.326	2339	2191	2194	502.4	22.3	2056.6	112.1	8.065	22.1	2058.2	110.7	9.206	8.036	1.147	59.4	37.0
615	852	8.33	35.183			2205													
616	928	7.36	35.097	2335	2221		572.4	27.4	2101.0	92.5	8.005	27.1	2102.8	91.0	10.716	7.970	.937	38.2	15.3
617	1002	6.72	35.056			2206													
620	1303	5.20	35.049	2333	2205	2178	475.3	24.6	2081.0	99.4	8.070	24.2	2083.7	97.2	9.558	8.020	.998	41.0	17.0
621	1402	4.83	35.047			2185													
622	1501	4.63	35.054	2333	2179		391.3	20.7	2044.6	113.8	8.143	20.2	2047.8	111.0	8.207	8.086	1.140	53.0	28.4
623	1651	4.36	35.056			2188													
624	1801	4.21	35.042			2191													
401	1854	3.95	35.032			2191													
402	2054	3.61	35.004	2340	2192	2197	392.4	21.5	2060.1	110.3	8.140	20.9	2064.6	106.6	8.701	8.060	1.093	43.2	16.9
404	2454	3.10	34.963	2341	2205	2201	416.3	23.3	2078.2	103.6	8.115	22.5	2083.3	99.2	9.558	8.020	1.017	31.7	4.1
405	2655	2.95	34.953			2193													
406	2855	2.83	34.940	2347	2208	2206	405.3	22.9	2079.7	105.4	8.126	22.0	2085.8	100.2	9.675	8.014	1.027	28.2	-.6
407	3055	2.71	34.928			2191													
408	3155	2.65	34.922	2348	2209	2206	402.6	22.9	2080.7	105.4	8.128	21.9	2087.4	99.7	9.895	8.005	1.021	24.2	-5.7
410	3455	2.48	34.910	2349	2206	2196	389.7	22.3	2076.1	107.6	8.140	21.2	2083.5	101.3	9.884	8.005	1.037	22.1	-8.8
412	3855	2.34	34.900	2349	2210		397.9	22.9	2081.7	105.4	8.132	21.7	2089.9	98.4	10.463	7.980	1.007	14.0	-18.4
414	4055	2.29	34.896	2348	2210	2206	399.5	23.0	2082.2	104.8	8.130	21.8	2090.8	97.5	10.706	7.970	.997	10.4	-22.8
416	4255	2.26	34.885	2347	2193	2195	359.0	20.7	2058.5	113.8	8.171	19.5	2067.8	105.7	9.897	8.005	1.081	15.8	-18.1
417	4355	2.23	34.879			2214													
418	4455	2.18	34.870	2351	2213		398.4	23.1	2085.1	104.9	8.131	21.7	2094.5	96.8	11.073	7.956	.990	4.1	-30.7
420	4856	2.09	34.854	2358	2227		417.8	24.3	2101.5	101.2	8.113	22.7	2111.7	92.6	11.981	7.922	.946	-6.2	-42.6
421	5058	2.07	34.849			2214													
422	5258	2.05	34.848	2359	2221	2218	398.4	23.2	2092.7	105.1	8.132	21.5	2103.9	95.6	11.895	7.925	.976	-9.7	-47.8
423	5456	2.06	34.841			2216													
424	5653	2.08	34.843	2365	2229	2217	405.7	23.6	2101.3	104.1	8.126	21.8	2113.2	94.0	12.507	7.903	.960	-18.0	-57.7

STATION: 33 LEG: III — POSITION: 21° 0' N 54° 0' W — DATE: 26 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
701	13	27.21	35.971			1995													
702	38	26.90	37.114			2032													
703	70	24.90	37.294	2467	2086	2060	341.3	9.6	1807.1	269.3	8.264	9.6	1807.3	269.1	5.468	8.262	2.942	224.0	203.7
704	96	23.25	37.313	2456	2113	2085	372.4	10.9	1859.2	242.8	8.228	10.9	1859.5	242.6	5.952	8.225	2.654	197.2	176.9
705	158	21.09	37.081	2453	2105		329.4	10.2	1849.6	245.1	8.267	10.2	1850.1	244.7	5.479	8.261	2.660	198.8	178.3
706	217	18.63	36.659	2415	2139	2125	396.5	13.2	1929.6	196.1	8.190	13.2	1930.2	195.6	6.562	8.183	2.102	149.1	128.3
707	297	16.86	36.360	2399	2150	2120	412.0	14.5	1957.8	177.8	8.170	14.4	1958.5	177.1	6.924	8.160	1.888	129.9	108.9
708	396	15.10	36.049	2379	2155	2133	425.5	15.8	1978.4	160.8	8.151	15.7	1979.3	160.0	7.298	8.137	1.691	111.9	90.6
709	496	13.31	35.786	2371	2180	2147	467.9	18.4	2022.0	139.7	8.109	18.2	2023.0	138.7	8.106	8.091	1.455	89.8	68.2

STATION: 33 LEG: III — POSITION: 21° 0′ N 54° 0′ W — DATE: 26 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
710	593	11.65	35.563	2364	2192	2180	482.7	20.0	2044.5	127.5	8.091	19.8	2045.8	126.4	8.523	8.069	1.317	76.6	54.7
711	692	9.67	35.307	2353	2218	2202	554.1	24.5	2088.3	105.2	8.029	24.3	2089.6	104.0	9.916	8.004	1.077	53.3	31.1
712	792	8.06	35.128	2342	2223		571.6	26.7	2100.6	95.6	8.010	26.5	2102.2	94.3	10.477	7.980	.971	42.7	20.1
714	841	7.41	35.058	2348	2246	2224	629.0	30.1	2129.3	86.6	7.970	29.8	2130.9	85.3	11.526	7.938	.877	33.2	10.5
715	893	6.86	35.014	2344	2237	2228	591.6	28.9	2119.2	88.9	7.992	28.5	2120.9	87.5	11.019	7.958	.898	34.9	12.1
716	943	6.47	34.985	2346	2237	2231	574.6	28.4	2118.7	89.9	8.003	28.1	2120.5	88.4	10.807	7.966	.907	35.4	12.4
717	992	5.99	34.942	2341	2239		590.2	29.7	2123.3	86.0	7.989	29.3	2125.2	84.5	11.198	7.951	.865	31.0	7.9
718	1043	5.73	34.936	2343	2222	2224	511.3	26.0	2100.0	96.0	8.045	25.6	2102.1	94.3	9.880	8.005	.966	40.4	17.1
720	1199	5.16	34.990	2344	2229		522.2	27.1	2109.3	92.7	8.035	26.6	2111.6	90.7	10.272	7.988	.931	35.4	11.7
721	1298	4.96	35.002	2349	2215	2200	456.4	23.8	2088.1	103.1	8.088	23.4	2090.8	100.8	9.167	8.038	1.034	44.6	20.6
722	1397	4.69	35.016	2339	2200		434.0	22.9	2071.6	105.5	8.105	22.4	2074.5	103.0	8.896	8.051	1.058	45.9	21.7
723	1497	4.45	35.014	2342	2202		427.9	22.8	2073.2	106.1	8.110	22.3	2076.3	103.4	8.872	8.052	1.061	45.4	20.8
301	1502	4.48	35.014	2346	2197	2199	405.0	21.5	2064.2	111.3	8.132	21.1	2067.4	108.5	8.431	8.074	1.114	50.5	25.9
302	1602	4.28	35.012	2342	2201	2185	422.3	22.6	2071.8	106.6	8.114	22.1	2075.2	103.7	8.864	8.052	1.065	44.8	19.9
303	1803	3.98	35.019	2353	2198	2197	384.1	20.8	2062.5	114.7	8.152	20.2	2066.4	111.3	8.273	8.082	1.143	50.5	25.0
304	2002	3.67	34.998	2351	2213	2191	423.2	23.2	2084.8	105.0	8.113	22.5	2089.0	101.5	9.225	8.035	1.041	38.6	12.5
305	2201	3.40	34.984	2349	2192	2197	369.4	20.4	2055.9	115.7	8.164	19.8	2060.7	111.5	8.335	8.079	1.143	46.6	19.9
306	2400	3.14	34.965	2351	2207	2194	398.1	22.2	2076.5	108.3	8.135	21.5	2081.6	103.9	9.093	8.041	1.065	36.9	9.6
307	2599	2.96	34.951	2356	2211		394.0	22.1	2079.9	109.0	8.139	21.3	2085.5	104.2	9.169	8.038	1.068	35.1	7.1
308	2798	2.84	34.940	2357	2204	2201	372.6	21.0	2069.4	113.5	8.160	20.2	2075.6	108.3	8.881	8.052	1.109	36.9	8.2
309	2997	2.74	34.933	2364	2211		372.9	21.1	2076.2	113.7	8.161	20.2	2082.7	108.0	9.032	8.044	1.106	34.4	5.1
310	3097	2.69	34.927	2355	2204	2210	374.6	21.3	2070.4	112.3	8.157	20.3	2077.2	106.5	9.189	8.037	1.091	31.7	2.0
311	3195	2.65	34.924	2356	2206		376.6	21.4	2072.8	111.8	8.155	20.4	2079.7	105.8	9.317	8.031	1.083	29.8	-.2
312	3293	2.61	34.923	2354	2216	2201	406.2	23.1	2087.9	105.0	8.125	22.1	2094.9	99.1	10.082	7.996	1.014	21.9	-8.5
314	3402	2.56	34.915	2351	2201	2209	374.0	21.3	2068.0	111.6	8.157	20.3	2075.4	105.3	9.461	8.024	1.077	26.8	-4.0
315	3598	2.47	34.911	2355	2217	2202	404.3	23.1	2088.9	105.0	8.127	22.0	2096.5	98.5	10.331	7.986	1.008	17.5	-13.9
316	3796	2.37	34.902	2365	2224	2197	397.5	22.8	2094.2	106.9	8.135	21.6	2102.4	100.0	10.325	7.986	1.023	16.4	-15.8
317	3996	2.30	34.895	2355	2204	2205	368.8	21.2	2070.5	112.3	8.162	20.1	2079.2	104.8	9.868	8.006	1.072	18.5	-14.5
318	4096	2.28	34.892	2361	2212	2203	374.7	21.6	2079.1	111.3	8.157	20.4	2088.0	103.6	10.082	7.996	1.060	16.0	-17.3
319	4195	2.25	34.890	2360	2218		391.5	22.6	2088.1	107.3	8.140	21.3	2097.0	99.7	10.597	7.975	1.019	10.6	-23.1
320	4293	2.20	34.882	2359	2221	2203	401.0	23.2	2092.7	105.1	8.130	21.8	2101.8	97.3	10.939	7.961	.995	6.9	-27.2
321	4393	2.17	34.878	2362	2219		388.3	22.5	2088.6	108.0	8.143	21.1	2098.0	99.9	10.707	7.970	1.021	8.0	-26.5
322	4593	2.09	34.867	2365	2236	2206	425.7	24.7	2111.0	100.3	8.107	23.2	2120.6	92.2	11.865	7.926	.943	-2.7	-37.9
323	4794	1.99	34.847	2366	2239	2223	430.0	25.1	2114.7	99.2	8.103	23.5	2124.7	90.9	12.206	7.913	.928	-7.1	-43.2
324	4993	1.98	34.846	2367	2230	2225	402.1	23.4	2101.8	104.7	8.130	21.9	2112.4	95.7	11.680	7.933	.978	-5.4	-42.3

STATION: 34 LEG: III — POSITION: 18° 1′ N 54° 0′ W — DATE: 28 SEP 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
1001	5	27.55	34.884	2313	1941	1949	319.5	8.5	1669.7	262.8	8.282	8.5	1669.7	262.8	5.229	8.282	2.687	217.6	197.3
1002	46	26.92	36.659	2420	2061		383.8	10.3	1795.8	254.9	8.225	10.3	1795.9	254.8	5.975	8.224	2.738	209.7	189.4
1003	73	25.44	37.037	2441	2046		318.8	8.9	1758.8	278.3	8.286	8.8	1759.0	278.1	5.200	8.284	3.020	232.9	212.6
1004	99	23.77	37.078	2439	2092	2059	366.0	10.6	1835.9	245.5	8.234	10.6	1836.1	245.3	5.873	8.231	2.666	199.8	179.5
1005	150	22.05	37.097	2442	2097		344.7	10.4	1843.3	243.3	8.251	10.4	1843.7	242.9	5.670	8.246	2.642	197.1	176.6
1006	191	19.82	36.831	2421	2115		365.1	11.8	1887.1	216.1	8.223	11.7	1887.6	215.7	6.067	8.217	2.329	169.4	148.7
1007	242	17.82	36.526	2401	2105	2106	342.5	11.7	1885.2	208.1	8.239	11.7	1885.8	207.6	5.875	8.231	2.222	160.8	139.9
1008	319	16.72	36.338	2386	2131	2118	392.9	13.9	1936.1	181.0	8.185	13.8	1936.9	180.3	6.699	8.174	1.921	132.9	111.9
1009	392	14.88	36.026	2374	2128	2144	373.4	14.0	1939.8	174.2	8.198	13.9	1940.7	173.4	6.549	8.184	1.831	125.3	104.0
1010	494	12.53	35.642	2352	2184	2174	510.0	20.5	2038.3	125.2	8.071	20.4	2039.3	124.3	8.853	8.053	1.299	75.3	53.6
1011	593	10.70	35.400	2347	2208		562.2	24.1	2076.3	107.7	8.026	23.9	2077.5	106.7	9.897	8.004	1.107	56.8	34.9
1012	641	9.72	35.249	2338	2223	2229	628.9	27.8	2101.2	94.0	7.978	27.6	2102.5	93.0	11.129	7.954	.961	42.6	20.5
1014	702	8.47	35.086			2224													
1015	750	7.39	34.941	2328	2221		597.3	28.6	2103.6	88.7	7.988	28.4	2105.1	87.6	10.984	7.959	.897	36.1	13.7
1016	800	6.61	34.841	2323	2237	2238	671.9	33.1	2126.2	77.7	7.937	32.8	2127.7	76.6	12.409	7.906	.782	24.6	2.0
1017	852	6.23	34.809	2327	2223	2237	580.5	29.0	2107.2	86.8	7.995	28.7	2108.8	85.5	10.915	7.962	.873	33.2	10.4
1018	902	5.96	34.819	2324	2236		645.2	32.5	2124.9	78.5	7.951	32.2	2126.6	77.2	12.135	7.916	.788	24.4	1.5
1019	952	5.71	34.825	2336	2237		593.2	30.2	2122.5	84.3	7.986	29.8	2124.3	82.9	11.253	7.949	.846	29.6	6.6
1020	1002	5.63	34.865	2330	2224	2224	560.5	28.6	2107.7	87.7	8.007	28.2	2109.6	86.2	10.768	7.968	.881	32.6	9.4
1021	1101	5.39	34.874	2340	2227	2206	531.6	27.4	2108.0	91.6	8.028	27.0	2110.2	89.8	10.334	7.986	.919	35.4	11.9
1022	1201	5.24	34.982	2330	2211	2198	504.8	26.1	2090.4	94.5	8.046	25.7	2092.8	92.5	10.007	8.000	.949	37.2	13.5
1023	1348	4.81	35.011	2332	2203	2200	464.1	24.4	2078.8	99.8	8.078	23.9	2081.6	97.5	9.428	8.026	1.001	40.9	16.7
801	1495	4.47	35.013	2329	2189	2197	424.5	22.6	2060.7	105.7	8.111	22.1	2063.8	103.1	8.851	8.053	1.058	45.1	20.5
1024	1497	4.48	35.013	2334	2191		417.7	22.2	2061.3	107.5	8.118	21.7	2064.4	104.9	8.706	8.060	1.076	46.9	22.3
802	1646	4.11	35.002	2331	2188	2199	410.8	22.1	2058.5	107.4	8.122	21.6	2062.0	104.4	8.732	8.059	1.072	45.0	20.0
803	1795	3.85	34.998	2336	2191	2188	402.7	21.9	2060.5	108.6	8.130	21.3	2064.3	105.3	8.695	8.061	1.081	44.5	19.0
804	1945	3.66	34.994	2336	2187	2209	389.4	21.3	2054.9	110.8	8.143	20.7	2059.0	107.2	8.565	8.067	1.100	44.9	19.0
805	2094	3.46	34.983	2341	2195		395.3	21.8	2064.0	109.2	8.137	21.2	2068.5	105.4	8.797	8.056	1.081	41.6	15.2
806	2246	3.21	34.968	2338	2194	2187	395.7	22.0	2064.0	108.0	8.135	21.3	2068.8	103.9	8.960	8.048	1.065	38.5	11.6
807	2394	3.07	34.958	2336	2198		408.9	22.9	2070.6	104.6	8.121	22.1	2075.6	100.3	9.375	8.028	1.028	33.3	6.0
808	2545	2.95	34.947	2341	2202		405.5	22.8	2074.0	105.2	8.125	22.0	2079.3	100.7	9.424	8.026	1.031	32.1	4.3
809	2694	2.85	34.945	2341	2202	2188	404.0	22.8	2074.0	105.2	8.126	21.9	2079.7	100.4	9.529	8.021	1.028	30.2	1.8
810	2848	2.78	34.939	2342	2204		405.8	23.0	2076.4	104.7	8.124	22.1	2082.4	99.6	9.705	8.013	1.020	27.6	-1.2
811	3001	2.71	34.932	2356	2205	2212	375.2	21.3	2071.4	112.4	8.157	20.4	2077.9	106.7	9.118	8.040	1.093	33.0	3.7
812	3148	2.63	34.929	2346	2203		391.4	22.3	2073.2	107.6	8.139	21.3	2079.9	101.8	9.648	8.016	1.042	26.4	-3.5
814	3297	2.55	34.919	2345	2203	2216	392.3	22.4	2073.6	107.0	8.137	21.4	2080.7	101.0	9.813	8.008	1.034	23.7	-6.7
815	3446	2.49	34.911	2347	2209	2216	402.4	23.0	2081.2	104.8	8.128	21.9	2088.5	98.6	10.177	7.992	1.009	19.5	-11.4
816	3595	2.42	34.908	2348	2206	2189	391.1	22.4	2076.5	107.0	8.139	21.3	2084.2	100.5	10.055	7.998	1.028	19.5	-12.0
817	3745	2.34	34.900	2352	2212	2224	396.0	22.8	2083.2	106.0	8.134	21.6	2091.2	99.2	10.302	7.987	1.015	16.3	-15.7
818	3901	2.27	34.893	2354	2212	2214	390.3	22.5	2082.3	107.2	8.140	21.3	2090.6	100.1	10.310	7.987	1.023	15.0	-17.6
819	4050	2.22	34.885	2352	2218	2207	410.2	23.7	2091.6	102.7	8.120	22.4	2100.1	95.5	10.954	7.960	.976	8.4	-24.7
820	4197	2.16	34.879	2354	2215	2230	396.3	23.0	2086.5	105.5	8.134	21.6	2095.5	97.9	10.754	7.968	1.001	8.8	-25.0
821	4352	2.11	34.874	2352	2220	2212	414.0	24.0	2094.4	101.6	8.116	22.6	2103.5	93.9	11.370	7.944	.960	2.5	-31.8
822	4502	2.08	34.866	2357	2221	2209	403.8	23.5	2093.6	103.9	8.127	22.0	2103.1	95.8	11.245	7.949	.980	2.3	-32.6
823	4692	2.04	34.857	2359	2226	2234	411.7	24.0	2099.7	102.3	8.119	22.5	2109.6	94.0	11.646	7.934	.960	-2.4	-38.1
824	4692	2.03	34.861	2357	2220		400.4	23.3	2092.2	104.5	8.130	21.8	2102.2	96.0	11.359	7.945	.981	-.4	-36.1

STATION: 36 LEG: IV — POSITION: 15° 0′ N 53° 56′ W — DATE: 11 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
401	4	27.82	35.367	2341	1964	1978	329.0	8.7	1688.9	266.4	8.274	8.7	1688.9	266.4	5.318	8.274	2.762	221.3	201.0
402	22	27.79	35.408	2343	1966	1982	329.6	8.7	1690.9	266.4	8.274	8.7	1690.9	266.3	5.333	8.273	2.764	221.1	200.8
403	83	25.10	37.037	2437	2039	2081	309.2	8.7	1750.4	280.0	8.295	8.7	1750.6	279.8	5.097	8.293	3.037	234.5	214.1
404	149	21.99	37.151			2118													
405	220	17.47	36.485	2393	2156	2149	449.4	15.5	1970.2	170.3	8.138	15.5	1970.7	169.8	7.400	8.131	1.816	123.1	102.3
406	289	15.15	35.985	2370	2167		474.6	17.6	2001.6	147.8	8.109	17.5	2002.3	147.2	7.968	8.099	1.553	99.8	78.7
407	360	12.73	35.545	2348	2172	2201	487.3	19.5	2022.5	130.0	8.088	19.4	2023.3	129.3	8.403	8.076	1.347	81.2	59.9
408	431	11.69	35.459	2347	2191	2213	526.0	21.8	2051.4	117.8	8.056	21.7	2052.3	117.0	9.122	8.040	1.216	68.4	46.8
409	500	10.23	35.257	2337	2213	2259	603.3	26.2	2087.8	99.0	7.996	26.1	2088.7	98.2	10.541	7.977	1.015	48.9	27.2
410	569	8.65	35.038	2330	2219		613.0	28.1	2099.6	91.3	7.983	27.9	2100.7	90.4	10.934	7.961	.929	40.5	18.5
411	639	7.34	34.876	2324	2226	2251	633.7	30.4	2111.6	84.0	7.964	30.2	2112.8	83.0	11.501	7.939	.849	32.4	10.2
412	711	6.66	34.783	2323	2235	2272	662.3	32.6	2123.7	78.7	7.943	32.3	2125.0	77.7	12.136	7.916	.792	26.5	4.1
415	779	6.00	34.720	2316	2227	2259	636.8	32.1	2116.0	78.9	7.955	31.8	2117.5	77.8	11.883	7.925	.791	25.9	3.3
416	850	5.75	34.718			2268													
417	918	5.54	34.738	2321	2240	2232	666.6	34.1	2130.9	74.9	7.936	33.8	2132.6	73.7	12.589	7.900	.750	20.7	-2.3
418	1009	5.31	34.775	2325	2231	2246	601.1	31.0	2118.6	81.4	7.977	30.6	2120.5	79.9	11.544	7.938	.815	26.2	2.9
419	1109	5.21	34.857	2324	2224	2243	573.5	29.7	2109.9	84.4	7.995	29.3	2112.0	82.7	11.178	7.952	.845	28.1	4.6
420	1207	5.13	34.915	2329	2216		523.1	27.2	2097.6	91.2	8.032	26.7	2100.0	89.3	10.355	7.985	.914	33.9	10.2
421	1307	4.97	34.972	2327	2207	2228	495.0	25.8	2086.3	94.9	8.052	25.4	2088.9	92.7	9.961	8.002	.951	36.5	12.4
422	1409	4.75	34.985	2331	2200	2230	456.2	24.0	2075.1	100.9	8.084	23.5	2078.0	98.5	9.340	8.030	1.010	41.3	17.0
423	1506	4.43	34.990	2327	2193	2235	440.5	23.4	2067.2	102.4	8.096	22.9	2070.3	99.7	9.169	8.038	1.023	41.7	17.0
424	1607	4.17	34.996	2328	2174	2212	382.5	20.5	2039.9	113.6	8.150	20.1	2043.4	110.6	8.164	8.088	1.134	51.5	26.6
701	1799	3.70	34.983	2325	2179	2166	394.6	21.6	2048.6	108.8	8.136	21.0	2052.4	105.6	8.589	8.066	1.083	44.7	19.2
705	2210	3.25	34.959	2331	2181	2207	379.2	21.1	2048.7	111.2	8.151	20.4	2053.5	107.1	8.613	8.065	1.098	42.1	15.3
710	2601	2.93	34.942	2331	2188	2225	391.9	22.0	2058.7	107.2	8.137	21.2	2064.3	102.5	9.222	8.035	1.050	33.3	5.3
715	3007	2.74	34.929	2343	2183	2197	351.3	19.9	2045.9	117.2	8.180	19.1	2052.6	111.4	8.640	8.063	1.140	37.6	8.2
719	3508	2.52	34.913	2339	2194	2232	382.6	21.9	2063.6	108.5	8.146	20.8	2071.2	102.0	9.803	8.009	1.044	22.2	-8.9
724	4008	2.32	34.893	2342	2197	2232	380.3	21.9	2066.5	108.6	8.148	20.7	2075.1	101.2	10.211	7.991	1.035	14.7	-18.2

STATION: 37 LEG: IV — POSITION: 12° 1' N 50° 59' W — DATE: 13 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
601	15	27.83	35.953	2376	1992		335.7	8.8	1711.8	271.4	8.270	8.8	1711.8	271.3	5.375	8.270	2.860	226.3	206.0
602	39	26.25	36.456	2404	2028		339.9	9.3	1753.1	265.7	8.264	9.3	1753.2	265.6	5.465	8.262	2.838	220.4	200.1
603	59	25.49	36.458	2407	2031		330.4	9.2	1756.4	265.4	8.272	9.2	1756.5	265.3	5.371	8.270	2.835	220.0	199.6
604	115	21.11	36.751	2420	2113		382.7	11.9	1883.4	217.7	8.210	11.9	1883.7	217.4	6.217	8.206	2.342	171.7	151.2
605	177	14.81	35.920	2370	2188		526.8	19.7	2033.3	135.0	8.068	19.7	2033.6	134.7	8.668	8.062	1.418	88.0	67.1
606	227	12.40	35.479	2350	2198		557.2	22.6	2059.5	115.9	8.036	22.5	2060.0	115.5	9.372	8.028	1.202	68.3	47.2
607	278	10.58	35.232	2340	2206		573.0	24.6	2076.6	104.8	8.018	24.5	2077.2	104.3	9.827	8.008	1.077	56.6	35.3
608	352	9.83	35.109	2334	2196		537.2	23.7	2065.7	106.6	8.040	23.6	2066.4	106.0	9.408	8.026	1.091	57.7	36.3
609	453	8.46	34.900	2325	2218		621.9	28.7	2100.2	89.1	7.976	28.6	2101.1	88.4	10.997	7.959	.904	39.2	17.5
610	552	7.27	34.743	2321	2230		662.0	31.9	2117.7	80.4	7.946	31.7	2118.7	79.6	11.894	7.925	.810	29.6	7.6
611	651	6.50	34.670	2324	2237		661.7	32.8	2126.0	78.2	7.944	32.5	2127.2	77.3	12.065	7.918	.786	26.5	4.3
612	751	6.07	34.668	2323	2233		635.6	32.0	2121.5	79.6	7.958	31.7	2122.8	78.5	11.786	7.929	.798	26.9	4.4
615	850	5.39	34.643	2325	2243		657.8	33.9	2133.6	75.5	7.942	33.5	2135.2	74.3	12.348	7.908	.755	21.9	-1.0
616	950	5.09	34.666	2327	2233		595.0	31.0	2120.6	81.4	7.981	30.6	2122.4	80.0	11.383	7.944	.813	26.7	3.6
617	1074	5.15	34.821	2333	2231		566.7	29.4	2115.9	85.6	8.001	29.0	2118.0	84.0	10.984	7.959	.857	29.7	6.3
618	1199	5.00	34.903	2338	2208		465.2	24.3	2083.1	100.6	8.079	23.9	2085.6	98.6	9.274	8.033	1.009	43.2	19.5
619	1299	4.88	34.959	2337	2209		469.5	24.6	2085.0	99.4	8.074	24.2	2087.6	97.2	9.457	8.024	.997	41.0	17.0
620	1400	4.59	34.978	2335	2190		414.0	21.9	2059.3	108.8	8.122	21.5	2062.3	106.2	8.546	8.068	1.089	49.1	24.8
621	1499	4.39	34.992	2338	2188		398.6	21.2	2055.2	111.6	8.136	20.8	2058.4	108.8	8.340	8.079	1.116	50.8	26.2
622	1599	4.15	34.989	2334	2181		386.2	20.8	2047.1	113.1	8.147	20.3	2050.5	110.2	8.211	8.086	1.130	51.2	26.3
623	1699	3.82	34.986	2335	2177		369.4	20.1	2040.9	116.0	8.163	19.6	2044.7	112.7	7.983	8.098	1.156	52.8	27.6
301	1792	3.75	34.981	2336	2177		366.3	20.0	2040.5	116.5	8.167	19.5	2044.4	113.1	7.990	8.097	1.160	52.3	26.8
624	1848	3.70	34.978	2332	2173		364.6	19.9	2036.6	116.4	8.167	19.4	2040.7	112.9	8.012	8.096	1.158	51.5	25.9
302	1941	3.53	34.969	2335	2175		360.5	19.8	2038.1	117.1	8.172	19.3	2042.4	113.3	8.002	8.097	1.162	51.0	25.1
303	2091	3.33	34.963	2338	2182		367.8	20.4	2046.8	114.8	8.164	19.8	2051.4	110.9	8.261	8.083	1.136	47.0	20.6
304	2241	3.19	34.956	2336	2177		358.3	20.0	2040.6	116.5	8.173	19.3	2045.5	112.2	8.196	8.086	1.149	46.8	20.0
305	2392	3.08	34.949	2339	2184		366.7	20.5	2049.3	114.2	8.164	19.8	2054.5	109.7	8.482	8.071	1.124	42.8	15.4
306	2540	2.98	34.942	2340	2180		354.1	19.9	2043.0	117.1	8.178	19.1	2048.6	112.2	8.333	8.079	1.149	43.7	15.9
307	2691	2.88	34.937	2344	2187		360.5	20.3	2051.2	115.5	8.171	19.5	2057.1	110.3	8.578	8.067	1.130	40.2	11.9
308	2841	2.79	34.928	2349	2193		362.6	20.5	2057.5	115.0	8.169	19.7	2063.7	109.6	8.732	8.059	1.122	37.8	8.9
309	3041	2.68	34.921	2349	2201		380.2	21.6	2068.9	110.5	8.151	20.7	2075.5	104.8	9.289	8.032	1.073	30.7	1.2
310	3241	2.60	34.915	2353	2200		367.9	21.0	2065.6	113.4	8.164	20.0	2072.7	107.3	9.174	8.037	1.098	30.7	.5
311	3443	2.52	34.906	2353	2201		369.0	21.1	2067.1	112.8	8.162	20.1	2074.6	106.3	9.377	8.028	1.088	27.3	-3.6
312	3443	2.52	34.908	2353	2196		357.4	20.4	2059.9	115.7	8.175	19.4	2067.5	109.1	9.110	8.040	1.116	30.0	-.9
315	3603	2.45	34.908	2348	2198		371.6	21.3	2065.2	111.6	8.159	20.2	2073.0	104.8	9.601	8.018	1.072	23.7	-7.7
317	3879	2.35	34.895	2347	2202		382.1	22.0	2071.3	108.7	8.147	20.8	2079.7	101.5	10.111	7.995	1.039	16.8	-15.6
318	4054	2.29	34.891	2348	2193		357.6	20.6	2058.0	114.4	8.173	19.4	2066.9	106.7	9.674	8.014	1.091	19.6	-13.6
319	4203	2.27	34.889	2350	2195		357.7	20.6	2059.9	114.4	8.173	19.4	2069.2	106.4	9.804	8.009	1.088	17.3	-16.4
320	4373	2.24	34.884	2351	2199		364.5	21.0	2065.2	112.8	8.166	19.8	2074.7	104.5	10.127	7.995	1.068	12.9	-21.5
322	4755	1.86	34.841	2363	2225		396.6	23.2	2096.6	105.2	8.134	21.7	2106.7	96.6	11.318	7.946	.986	-.9	-36.9
323	4905	1.68	34.810	2370	2234		400.6	23.6	2106.1	104.2	8.130	22.1	2116.5	95.4	11.574	7.937	.974	-4.6	-41.2
324	5022	1.65	34.805	2373	2236		398.2	23.5	2107.6	104.9	8.133	21.9	2118.3	95.8	11.624	7.935	.977	-6.1	-43.2

STATION: 39 LEG: IV — POSITION: 7° 57' N 43° 51' W — DATE: 17 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
501	1	28.66	35.482	2341	1961	1968	336.6	8.7	1683.9	268.4	8.268	8.7	1683.9	268.4	5.392	8.268	2.791	223.3	203.1
502	33	27.68	35.833	2365	1959	1992	299.1	7.9	1665.3	285.8	8.308	7.9	1665.4	285.7	4.937	8.307	3.001	240.5	220.2
503	63	20.80	36.202	2389	2104	2106	402.6	12.7	1888.3	203.0	8.189	12.7	1888.4	202.9	6.507	8.187	2.153	157.3	136.8
504	124	13.24	35.391	2345	2183	2204	538.9	21.3	2039.7	122.1	8.052	21.2	2039.9	121.9	8.967	8.047	1.264	75.3	54.5
505	203	10.01	34.968	2325	2194	2209	561.8	24.6	2066.7	102.6	8.022	24.6	2067.1	102.3	9.678	8.014	1.048	55.0	33.9
506	306	9.08	34.854	2322	2204	2227	588.3	26.6	2082.3	95.1	8.000	26.5	2082.9	94.6	10.270	7.988	.967	46.6	25.2
507	388	8.25	34.764	2318	2215	2224	629.7	29.3	2098.9	86.8	7.969	29.2	2099.6	86.2	11.103	7.955	.878	37.5	15.9
508	478	7.61	34.707	2315	2201		565.5	26.9	2081.8	92.3	8.009	26.8	2082.7	91.5	10.213	7.991	.931	42.1	20.3
509	512	7.74	34.771	2318	2236	2250	721.0	34.2	2125.8	76.0	7.913	34.0	2126.7	75.3	12.781	7.893	.767	25.7	3.8
510	574	7.20	34.733	2319	2239	2253	716.2	34.6	2129.5	74.9	7.914	34.4	2130.5	74.1	12.835	7.892	.754	23.9	1.9
511	657	6.41	34.678	2319	2241	2236	704.0	35.0	2132.3	73.7	7.918	34.7	2133.5	72.8	12.825	7.892	.740	21.9	-.3
512	758	5.73	34.641	2322	2238	2246	655.4	33.4	2128.1	76.5	7.944	33.0	2129.5	75.4	12.177	7.914	.766	23.7	1.2
515	859	5.48	34.651	2321	2236	2263	643.9	33.1	2126.0	76.9	7.950	32.7	2127.6	75.7	12.125	7.916	.769	23.2	.3
516	962	5.10	34.677	2326	2236	2244	613.2	31.9	2124.7	79.4	7.969	31.5	2126.5	78.0	11.721	7.931	.793	24.6	1.5
517	1042	4.90	34.706	2326	2231	2243	586.5	30.7	2118.4	81.9	7.985	30.3	2120.4	80.3	11.356	7.945	.817	26.2	2.9

STATION: 39 LEG: IV — POSITION: 7° 57' N 43° 51' W — DATE: 17 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
518	1120	4.82	34.751	2332	2221	2252	523.1	27.5	2103.2	90.3	8.031	27.1	2105.4	88.5	10.280	7.988	.901	33.8	10.2
519	1201	4.84	34.814	2330	2221	2231	531.2	27.9	2104.0	89.1	8.025	27.4	2106.3	87.2	10.513	7.978	.890	31.8	8.1
520	1301	4.88	34.926	2335	2204		459.0	24.0	2078.9	101.1	8.083	23.6	2081.6	98.8	9.271	8.033	1.012	42.6	18.6
521	1400	4.65	34.966	2335	2194	2203	426.0	22.5	2065.0	106.5	8.111	22.0	2067.9	104.0	8.763	8.057	1.066	46.9	22.6
522	1499	4.38	34.983	2333	2177	2197	382.0	20.4	2041.7	114.9	8.152	19.9	2045.0	112.1	8.043	8.095	1.149	54.0	29.5
523	1594	4.17	34.984	2336	2181	2184	382.1	20.5	2046.1	114.4	8.152	20.1	2049.6	111.4	8.120	8.090	1.142	52.4	27.6
101	1645	4.03	34.985	2334	2174		367.5	19.8	2037.0	117.1	8.166	19.4	2040.6	114.0	7.895	8.103	1.169	54.6	29.5
524	1688	3.96	34.981	2333	2180	2188	383.0	20.7	2046.2	113.1	8.150	20.2	2049.8	109.9	8.232	8.084	1.127	50.1	25.0
102	1792	3.75	34.973	2328	2169	2201	364.2	19.9	2032.8	116.3	8.167	19.4	2036.7	112.9	7.974	8.098	1.158	52.1	26.6
103	1940	3.53	34.964	2334	2181	2179	376.7	20.7	2047.2	113.0	8.155	20.1	2051.5	109.4	8.325	8.080	1.121	47.1	21.2
104	2093	3.41	34.961	2332	2170	2196	353.5	19.5	2032.4	118.1	8.178	18.9	2037.0	114.1	7.988	8.098	1.169	50.3	23.9
105	2243	3.28	34.957	2333	2177	2198	365.7	20.3	2042.0	114.7	8.165	19.6	2046.9	110.4	8.352	8.078	1.132	45.1	18.2
106	2394	3.16	34.951	2333	2169	2189	346.0	19.3	2030.5	119.3	8.186	18.6	2035.8	114.6	8.065	8.093	1.174	47.7	20.3
107	2541	3.04	34.944	2339	2180	2196	356.8	20.0	2043.5	116.5	8.175	19.3	2049.1	111.6	8.390	8.076	1.144	43.1	15.3
108	2691	2.97	34.941	2337	2177		353.1	19.8	2040.1	117.0	8.178	19.1	2046.1	111.9	8.438	8.074	1.146	41.7	13.4
109	2838	2.87	34.931	2341	2182	2193	354.9	20.0	2045.4	116.6	8.177	19.2	2051.7	111.1	8.582	8.066	1.138	39.3	10.5
110	2980	2.76	34.926	2342	2184	2205	355.9	20.1	2047.9	116.0	8.175	19.3	2054.4	110.3	8.720	8.059	1.129	36.8	7.6
111	3131	2.68	34.920	2346	2190	2199	360.3	20.5	2054.6	114.9	8.171	19.5	2061.5	109.0	8.931	8.049	1.116	33.8	4.0
112	3282	2.60	34.915	2346	2187	2198	352.4	20.1	2050.3	116.7	8.179	19.1	2057.5	110.3	8.881	8.052	1.129	33.3	3.0
115	3440	2.52	34.912	2350	2191	2211	352.2	20.1	2054.1	116.8	8.180	19.1	2061.7	110.1	8.998	8.046	1.127	31.1	.2
116	3592	2.44	34.905	2344	2183		345.2	19.8	2045.5	117.7	8.186	18.8	2053.5	110.8	8.989	8.046	1.133	29.8	-1.6
117	3745	2.34	34.896	2347	2191	2189	355.7	20.5	2055.6	114.9	8.175	19.4	2063.8	107.8	9.362	8.029	1.102	24.8	-7.2
118	3894	2.31	34.898	2342	2180	2192	340.8	19.6	2042.1	118.3	8.191	18.5	2050.8	110.6	9.151	8.039	1.132	25.7	-6.8
119	4043	2.27	34.894	2347	2187	2195	345.8	19.9	2049.8	117.2	8.186	18.8	2058.8	109.4	9.383	8.028	1.119	22.4	-10.7
120	4188	2.22	34.886	2347	2191	2203	354.0	20.5	2055.6	114.9	8.176	19.3	2064.8	106.9	9.716	8.013	1.093	17.9	-15.7
121	4336	2.12	34.872	2353	2200	2221	360.9	20.9	2065.7	113.4	8.170	19.7	2075.2	105.1	10.007	8.000	1.075	14.0	-20.2
122	4485	1.78	34.833	2361	2210	2235	362.5	21.3	2076.2	112.4	8.168	20.0	2086.1	103.9	10.189	7.992	1.061	10.4	-24.5
123	4607	1.63	34.811	2366	2231	2236	401.6	23.7	2103.7	103.6	8.129	22.3	2113.4	95.3	11.311	7.946	.973	-.1	-35.6
124	4725	1.58	34.806	2366	2225	2249	385.1	22.8	2095.3	106.9	8.145	21.3	2105.4	98.3	11.008	7.958	1.003	1.0	-35.0

STATION: 40 LEG: IV — POSITION: 3° 56' N 38° 31' W — DATE: 19 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
701	1	27.64	35.986	2366	2006	2012	367.2	9.7	1741.4	254.9	8.237	9.7	1741.4	254.9	5.791	8.237	2.689	209.9	189.6
702	36	27.56	35.993	2366	2005	2019	364.5	9.7	1739.8	255.5	8.240	9.7	1739.9	255.4	5.776	8.238	2.695	210.2	189.9
703	80	27.53	36.032	2370	2011		369.1	9.8	1746.9	254.3	8.236	9.8	1747.2	254.1	5.847	8.233	2.684	208.6	188.3
704	135	21.27	36.304	2387	2096	2109	399.5	12.4	1876.6	207.0	8.192	12.4	1877.0	206.7	6.492	8.188	2.199	160.7	140.1
705	214	10.71	35.006	2321	2160	2175	474.8	20.4	2019.8	119.8	8.089	20.3	2020.3	119.5	8.300	8.081	1.226	72.2	51.1
706	296	9.48	34.872	2313	2184	2191	551.4	24.6	2058.4	101.0	8.025	24.5	2058.9	100.5	9.677	8.014	1.028	52.6	31.3
707	375	8.32	34.754	2311	2203	2216	606.4	28.2	2085.6	89.2	7.983	28.1	2086.3	88.7	10.737	7.969	.903	40.1	18.5
708	444	7.58	34.662	2308	2193	2213	557.6	26.6	2073.7	92.7	8.013	26.4	2074.6	92.0	10.082	7.996	.934	42.8	21.1
709	519	6.89	34.638	2309	2222	2230	665.7	32.5	2111.5	78.0	7.940	32.3	2112.4	77.3	12.014	7.920	.785	27.5	5.6
710	592	6.15	34.589	2306	2224	2246	669.5	33.6	2115.1	75.3	7.935	33.3	2116.2	74.4	12.258	7.912	.755	24.1	1.9
711	667	5.47	34.548	2310	2225	2245	638.0	32.8	2115.5	76.7	7.952	32.5	2116.8	75.7	11.862	7.926	.767	24.7	2.4
712	743	5.06	34.543	2309	2221	2237	613.2	32.0	2111.0	78.0	7.966	31.7	2112.4	77.0	11.565	7.937	.779	25.3	2.7
715	811	4.85	34.564	2312	2230	2251	637.9	33.5	2121.4	75.1	7.950	33.2	2122.9	74.0	12.084	7.918	.749	21.7	-1.0
716	883	4.71	34.594	2313	2227	2244	616.3	32.5	2117.4	77.0	7.963	32.2	2119.0	75.8	11.795	7.928	.768	23.0	.0
717	940	4.62	34.617	2316	2226	2226	597.3	31.6	2115.3	79.1	7.976	31.3	2117.0	77.7	11.515	7.939	.788	24.4	1.3
718	999	4.57	34.655	2317	2223	2246	579.3	30.7	2111.2	81.1	7.988	30.4	2113.1	79.6	11.260	7.948	.809	25.8	2.6
719	1058	4.61	34.713	2324	2227	2232	570.9	30.2	2114.0	82.8	7.995	29.8	2116.0	81.2	11.135	7.953	.826	26.9	3.5
720	1123	4.54	34.733	2319	2214	2228	535.6	28.4	2098.8	86.7	8.019	28.0	2101.0	85.0	10.592	7.975	.865	30.2	6.6
721	1174	4.58	34.792	2323	2217	2243	534.6	28.3	2101.3	87.3	8.020	27.9	2103.6	85.5	10.607	7.974	.872	30.3	6.6
722	1221	4.59	34.826	2321	2201		483.9	25.6	2080.7	94.7	8.059	25.2	2083.1	92.7	9.732	8.012	.946	37.1	13.3
723	1285	4.61	34.885	2322	2202	2211	485.3	25.7	2081.6	94.7	8.058	25.2	2084.2	92.6	9.813	8.008	.947	36.4	12.4
101	1301	4.60	34.895	2329	2196		445.9	23.6	2070.4	102.0	8.092	23.2	2073.1	99.7	9.074	8.042	1.020	43.4	19.4
724	1346	4.51	34.913	2326	2186	2222	423.2	22.5	2057.8	105.7	8.112	22.0	2060.6	103.4	8.710	8.060	1.058	46.7	22.5
102	1401	4.41	34.932	2325	2189	2188	433.0	23.1	2062.5	103.4	8.102	22.6	2065.4	101.0	8.949	8.048	1.034	43.8	19.5
103	1552	4.26	34.971	2326	2180		403.4	21.6	2049.4	109.0	8.129	21.1	2052.7	106.2	8.521	8.070	1.089	47.7	22.9
104	1703	4.02	34.976	2324	2172		383.9	20.7	2039.0	112.3	8.147	20.2	2042.6	109.1	8.285	8.082	1.119	49.2	24.0
105	1851	3.78	34.969	2326	2172	2198	375.9	20.5	2038.1	113.4	8.155	19.9	2042.1	110.0	8.250	8.084	1.127	48.6	22.9
106	1992	3.60	34.964	2325	2168		365.9	20.1	2032.8	115.1	8.165	19.5	2037.2	111.3	8.172	8.088	1.141	48.5	22.5
107	2140	3.39	34.958	2330	2172	2262	361.8	20.0	2036.2	115.8	8.169	19.4	2040.9	111.7	8.197	8.086	1.144	47.4	20.9

STATION: 40 LEG: IV — POSITION: 3° 56' N 38° 31' W — DATE: 19 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
				MEASURED PARAMETERS			CALCULATED PARAMETERS P = 1 ATM, T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
108	2290	3.20	34.949	2332	2170	2182	350.6	19.5	2032.4	118.1	8.181	18.9	2037.5	113.7	8.085	8.092	1.164	47.8	20.8
109	2440	3.07	34.943	2331	2176		364.5	20.4	2041.6	114.0	8.165	19.7	2046.9	109.4	8.499	8.071	1.121	42.0	14.5
110	2589	2.94	34.937	2333	2176		358.5	20.2	2040.6	115.2	8.172	19.4	2046.3	110.3	8.491	8.071	1.129	41.2	13.2
111	2741	2.83	34.930	2341	2183	2182	356.6	20.1	2046.9	116.0	8.175	19.3	2052.9	110.7	8.549	8.068	1.134	40.0	11.5
112	2890	2.75	34.921	2336	2199	2186	406.2	23.0	2072.0	104.0	8.123	22.1	2078.1	98.8	9.776	8.010	1.012	26.4	-2.6
115	3053	2.65	34.919	2339	2189	2222	372.2	21.2	2056.5	111.3	8.157	20.2	2063.1	105.6	9.163	8.038	1.081	31.3	1.8
116	3202	2.61	34.915	2336	2182		361.4	20.6	2047.9	113.5	8.168	19.6	2054.9	107.5	9.056	8.043	1.100	31.4	1.3
117	3352	2.55	34.912	2339	2185		361.3	20.6	2050.8	113.6	8.168	19.6	2058.1	107.2	9.173	8.037	1.098	29.3	-1.2
118	3503	2.50	34.913	2335	2171	2228	337.4	19.3	2032.5	119.2	8.194	18.3	2040.3	112.4	8.762	8.057	1.150	32.6	1.5
119	3655	2.38	34.901	2335	2183	2203	362.5	20.8	2049.8	112.3	8.166	19.8	2057.8	105.4	9.490	8.023	1.079	23.7	-8.0
120	3805	2.30	34.892	2337	2178	2190	346.0	19.9	2041.7	116.4	8.184	18.9	2050.1	109.0	9.221	8.035	1.115	25.3	-6.9
121	3956	2.20	34.884	2342	2191	2196	363.9	21.0	2058.0	112.0	8.165	19.9	2066.6	104.5	9.778	8.010	1.069	18.7	-14.1
122	4056	2.05	34.864	2346	2192	2235	355.8	20.7	2057.5	113.8	8.174	19.5	2066.5	106.0	9.665	8.015	1.084	18.8	-14.5
123	4156	1.85	34.841	2353	2210		380.9	22.3	2080.0	107.7	8.148	21.0	2088.9	100.1	10.371	7.984	1.022	11.3	-22.3
124	4244	1.65	34.823	2358	2213		374.3	22.1	2081.9	109.0	8.155	20.8	2091.1	101.1	10.290	7.988	1.032	11.0	-23.1

STATION: 42 LEG: IV — POSITION: 0° 58' N 37° 4' W — DATE: 21 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
				MEASURED PARAMETERS			CALCULATED PARAMETERS P = 1 ATM, T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
501	7	27.30	35.933	2370	2009	2019	361.5	9.6	1743.7	255.7	8.243	9.6	1743.7	255.7	5.723	8.242	2.693	210.6	190.4
502	37	27.24	35.970	2367	1994	2008	341.3	9.1	1721.4	263.4	8.261	9.1	1721.5	263.3	5.492	8.260	2.777	218.1	197.8
503	82	27.22	35.973	2370	2013		367.2	9.8	1750.2	252.9	8.237	9.8	1750.4	252.7	5.832	8.234	2.665	207.3	186.9
504	114	23.18	36.102	2375	2057		375.0	11.1	1820.4	225.5	8.219	11.1	1820.7	225.2	6.095	8.215	2.383	179.4	158.8
505	145	14.30	35.573	2353	2143		429.7	16.4	1975.1	151.5	8.142	16.4	1975.5	151.2	7.296	8.137	1.576	104.6	83.8
506	194	12.24	35.185	2327	2142	2161	441.3	18.0	1989.2	134.8	8.122	17.9	1989.6	134.4	7.667	8.115	1.386	87.4	66.3
507	264	12.08	35.164	2331	2151	2173	452.7	18.6	2000.6	131.9	8.113	18.5	2001.2	131.4	7.882	8.103	1.354	83.8	62.6
508	347	10.66	34.990	2318	2164		494.0	21.2	2027.1	115.7	8.073	21.1	2027.8	115.1	8.707	8.060	1.180	66.9	45.5
509	422	8.19	34.733	2313	2190		543.1	25.4	2067.4	97.3	8.027	25.2	2068.2	96.6	9.754	8.011	.984	47.7	26.0
510	496	7.30	34.641	2308	2202		587.8	28.3	2085.9	87.8	7.991	28.1	2086.8	87.0	10.654	7.973	.884	37.5	15.6
511	577	6.47	34.570	2307	2208		596.9	29.6	2094.5	83.9	7.982	29.4	2095.6	83.0	10.969	7.960	.842	32.8	10.7
512	657	5.93	34.549	2306	2205	2231	575.0	29.1	2091.2	84.8	7.995	28.8	2092.4	83.8	10.735	7.969	.848	32.9	10.6
515	744	5.13	34.514	2311	2225	2239	624.5	32.5	2115.4	77.1	7.959	32.2	2116.7	76.0	11.743	7.930	.769	24.4	1.8
516	824	4.76	34.522	2313	2214	2240	559.4	29.5	2100.9	83.6	8.002	29.2	2102.4	82.4	10.716	7.970	.834	30.1	7.3
517	903	4.59	34.575	2319	2220		558.5	29.6	2106.7	83.7	8.003	29.3	2108.4	82.3	10.773	7.968	.835	29.4	6.4
518	975	4.50	34.634	2318	2211		525.5	27.9	2095.3	87.8	8.026	27.6	2097.1	86.3	10.270	7.988	.876	32.7	9.5
519	1046	4.44	34.693	2322	2223		557.7	29.7	2109.6	83.7	8.003	29.3	2111.6	82.1	10.914	7.962	.835	28.0	4.6
520	1141	4.57	34.784	2323	2200	2228	473.8	25.1	2078.5	96.4	8.068	24.7	2080.8	94.5	9.468	8.024	.963	39.6	15.9
521	1257	4.46	34.897	2328	2196	2213	446.1	23.7	2070.9	101.3	8.091	23.3	2073.5	99.2	9.059	8.043	1.015	43.3	19.3
522	1357	4.31	34.928	2326	2184	2201	414.5	22.2	2055.0	106.8	8.119	21.7	2057.9	104.4	8.574	8.067	1.069	47.6	23.4
523	1457	4.22	34.952	2327	2186		416.4	22.3	2057.4	106.2	8.117	21.9	2060.5	103.6	8.692	8.061	1.062	45.9	21.4
101	1499	4.20	34.961	2327	2186		416.2	22.3	2057.4	106.2	8.117	21.9	2060.6	103.5	8.723	8.059	1.061	45.5	20.9
524	1563	4.20	34.967	2323	2170		383.7	20.6	2036.5	112.9	8.148	20.1	2039.9	110.0	8.168	8.088	1.127	51.3	26.5
102	1646	4.03	34.968	2326	2169	2181	372.3	20.1	2033.7	115.2	8.160	19.6	2037.3	112.1	8.013	8.096	1.149	52.7	27.6
103	1799	3.80	34.971	2329	2178	2171	384.4	20.9	2045.3	111.8	8.147	20.4	2049.1	108.5	8.367	8.077	1.112	47.6	22.1
104	1950	3.69	34.970	2326	2171	2188	372.2	20.4	2036.7	114.0	8.158	19.8	2040.9	110.3	8.257	8.083	1.131	48.0	22.0
105	2099	3.50	34.966	2328	2173	2182	369.9	20.4	2038.6	114.0	8.161	19.8	2043.2	110.0	8.330	8.079	1.128	46.2	19.8
106	2228	3.36	34.961	2329	2162	2174	341.3	18.9	2022.2	120.9	8.191	18.3	2027.2	116.5	7.847	8.105	1.194	51.4	24.6
107	2378	3.10	34.949	2332	2179	2188	369.9	20.7	2045.4	112.9	8.160	20.0	2050.6	108.4	8.560	8.068	1.111	41.7	14.4
108	2498	3.02	34.941	2335	2170	2182	342.3	19.2	2030.9	119.9	8.190	18.5	2036.5	115.0	8.067	8.093	1.178	46.9	19.2
109	2719	2.87	34.931	2343	2178	2188	342.3	19.3	2038.6	120.1	8.191	18.5	2044.7	114.7	8.213	8.086	1.175	44.3	15.9
110	2838	2.83	34.934	2334	2177	2199	357.1	20.2	2041.6	115.2	8.173	19.4	2047.9	109.8	8.659	8.063	1.124	38.0	9.2
111	2998	2.71	34.920	2342	2190	2193	369.0	20.9	2056.5	112.6	8.161	20.0	2063.0	106.9	9.029	8.044	1.095	33.3	3.9
112	3148	2.66	34.920	2342	2180	2183	345.7	19.6	2042.1	118.3	8.186	18.8	2049.1	112.2	8.633	8.064	1.148	36.7	6.9
115	3307	2.59	34.918	2341	2187	2189	362.4	20.6	2052.7	113.7	8.168	19.7	2059.9	107.4	9.150	8.039	1.099	30.0	-.4
116	3457	2.48	34.911	2341	2180	2186	345.1	19.7	2042.6	117.7	8.186	18.8	2050.3	110.9	8.884	8.051	1.135	31.7	.8
117	3604	2.43	34.906	2344	2176	2188	330.3	18.9	2035.3	121.8	8.203	18.0	2043.4	114.6	8.649	8.063	1.173	33.5	2.0
118	3804	2.35	34.901	2342	2176	2188	332.9	19.1	2036.3	120.6	8.200	18.1	2044.9	113.0	8.883	8.051	1.157	29.3	-2.9
119	3963	2.21	34.886	2345	2194	2182	364.9	21.1	2060.9	112.0	8.164	19.9	2069.5	104.6	9.795	8.009	1.069	18.7	-14.2
120	4073	1.97	34.854	2353	2204	2211	368.1	21.5	2071.4	111.1	8.162	20.3	2080.3	103.5	9.962	8.002	1.057	15.9	-17.4
121	4210	1.25	34.777	2371	2248	2241	430.4	25.8	2125.1	97.1	8.101	24.4	2133.8	89.9	11.655	7.934	.916	-.0	-34.1
122	4289	1.06	34.755	2374	2248	2249	419.4	25.3	2123.8	98.8	8.111	23.9	2132.8	91.3	11.471	7.940	.931	.2	-34.2

STATION: 42 LEG: IV — POSITION: 0° 58' N 37° 4' W — DATE: 21 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
				MEASURED PARAMETERS			CALCULATED PARAMETERS P = 1 ATM, T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
123	4367	1.03	34.750	2378	2253	2261	422.7	25.6	2129.0	98.4	8.109	24.1	2138.1	90.8	11.625	7.935	.925	-1.5	-36.2
124	4500	1.02	34.748	2374	2250		424.4	25.7	2126.6	97.8	8.106	24.1	2135.9	89.9	11.832	7.927	.916	-4.3	-39.6

STATION: 46 LEG: IV — POSITION: 0° 59' S 34° 2' W — DATE: 23 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
				MEASURED PARAMETERS			CALCULATED PARAMETERS P = 1 ATM, T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
501	9	26.66	36.056	2375	1998	2036	331.0	9.0	1723.0	266.1	8.271	9.0	1723.0	266.0	5.359	8.271	2.812	221.0	200.7
502	73	26.23	36.094	2374	2021	2040	361.9	9.9	1761.2	249.9	8.239	9.9	1761.4	249.7	5.796	8.237	2.642	204.2	183.9
504	153	13.02	35.296	2330	2156		489.7	19.5	2007.9	128.7	8.086	19.4	2008.2	128.4	8.316	8.080	1.328	81.6	60.7
505	217	12.12	35.173	2329	2184		563.3	23.1	2049.5	111.4	8.029	23.0	2049.9	111.1	9.533	8.021	1.145	63.8	42.8
506	282	11.10	35.054	2319	2186		578.7	24.5	2057.5	104.0	8.013	24.4	2058.1	103.5	9.939	8.003	1.064	55.8	34.6
507	347	8.98	34.799	2312	2200		606.4	27.6	2080.8	91.6	7.986	27.4	2081.5	91.1	10.643	7.973	.929	42.7	21.3
508	411	7.49	34.652	2307	2204	2234	605.0	29.0	2088.8	86.3	7.981	28.8	2089.6	85.6	10.843	7.965	.870	36.7	15.1
509	469	7.17	34.617			2205													
510	540	6.51	34.575	2306	2206	2220	593.2	29.4	2092.2	84.4	7.984	29.2	2093.2	83.6	10.872	7.964	.847	33.6	11.6
511	611	5.81	34.530	2307	2216		616.6	31.3	2105.0	79.7	7.967	31.1	2106.1	78.8	11.407	7.943	.797	28.2	6.0
512	684	5.27	34.494	2309	2212	2229	577.4	29.9	2099.5	82.6	7.991	29.6	2100.8	81.6	10.855	7.964	.825	30.4	8.0
515	701	4.93	34.461	2308	2209	2231	560.6	29.4	2096.0	83.6	8.001	29.1	2097.4	82.5	10.617	7.974	.833	31.2	8.7
516	793	4.65	34.505	2312	2218	2216	577.4	30.6	2106.4	81.0	7.989	30.3	2107.9	79.9	11.018	7.958	.808	27.8	5.1
517	890	4.44	34.555	2312	2226	2232	608.9	32.5	2116.5	77.0	7.967	32.1	2118.2	75.7	11.706	7.932	.767	22.8	-.2
518	966	4.38	34.627			2238													
519	1066	4.45	34.738	2322	2218		538.6	28.7	2103.0	86.3	8.017	28.3	2105.1	84.6	10.590	7.975	.862	30.3	6.9
520	1107	4.48	34.809	2319	2207		508.9	27.1	2089.6	90.4	8.039	26.7	2091.7	88.6	10.105	7.995	.904	33.9	10.4
521	1194	4.44	34.854	2323	2200		472.0	25.1	2078.5	96.3	8.069	24.7	2080.9	94.3	9.500	8.022	.964	38.9	15.2
522	1254	4.43	34.884	2325	2190		435.6	23.2	2063.9	102.9	8.100	22.8	2066.5	100.7	8.875	8.052	1.030	44.8	20.9
523	1286	4.41	34.897	2322	2190		443.6	23.6	2065.2	101.2	8.093	23.2	2067.8	99.0	9.061	8.043	1.012	42.8	18.8
101	1345	4.32	34.920	2331	2191	2223	421.7	22.5	2062.6	105.8	8.113	22.1	2065.5	103.4	8.679	8.062	1.059	46.7	22.6
524	1363	4.31	34.922			2204													
102	1395	4.31	34.923	2324	2188	2203	430.8	23.0	2061.6	103.4	8.104	22.6	2064.4	101.0	8.915	8.050	1.034	43.8	19.5
103	1494	4.22	34.929	2326	2186	2204	418.6	22.5	2057.9	105.7	8.115	22.0	2061.0	103.0	8.764	8.057	1.055	45.0	20.4
104	1594	4.14	34.962	2327	2168		369.4	19.9	2031.7	116.4	8.163	19.4	2035.2	113.4	7.907	8.102	1.162	54.5	29.6
105	1695	4.09	34.973	2327	2175	2185	385.6	20.8	2041.8	112.4	8.146	20.3	2045.5	109.2	8.298	8.081	1.120	49.4	24.2
106	1844	3.78	34.966	2325	2165	2188	361.5	19.7	2028.5	116.8	8.170	19.2	2032.5	113.3	7.964	8.099	1.162	52.0	26.4
107	1992	3.59	34.963	2329	2175	2172	373.9	20.5	2041.0	113.5	8.157	19.9	2045.3	109.7	8.320	8.080	1.125	47.0	20.9
108	2283	3.30	34.958	2329	2160		336.1	18.7	2019.3	122.1	8.197	18.0	2024.4	117.6	7.785	8.109	1.205	51.8	24.8
109	2494	3.03	34.937	2335	2180	2189	364.8	20.4	2045.4	114.1	8.165	19.7	2050.9	109.4	8.537	8.069	1.120	41.4	13.7
110	2643	2.95	34.934	2334	2177	2184	358.8	20.2	2041.6	115.2	8.171	19.4	2047.4	110.2	8.534	8.069	1.128	40.6	12.4
111	2793	2.86	34.929	2339	2183		361.0	20.4	2047.9	114.8	8.170	19.6	2054.0	109.5	8.689	8.061	1.121	38.2	9.5
112	2993	2.77	34.928	2335	2173	2191	345.4	19.5	2035.3	118.1	8.186	18.7	2042.0	112.3	8.523	8.069	1.150	38.7	9.4
115	3171	2.66	34.922	2340	2183	2187	356.2	20.2	2047.4	115.4	8.174	19.3	2054.4	109.3	8.896	8.051	1.119	33.6	3.7
116	3401	2.52	34.907	2340	2174	2205	334.7	19.1	2034.3	120.5	8.198	18.2	2042.0	113.8	8.598	8.066	1.165	35.3	4.5
117	3697	2.42	34.902	2338	2183	2194	356.8	20.5	2048.4	114.1	8.172	19.4	2056.5	107.1	9.375	8.028	1.096	24.8	-7.0
118	3824	2.36	34.897	2341	2173	2188	328.6	18.9	2032.4	121.7	8.205	17.9	2041.1	114.1	8.798	8.056	1.167	30.1	-2.2
119	3938	2.26	34.888	2344	2189	2195	356.0	20.5	2054.2	114.3	8.174	19.4	2062.8	106.8	9.555	8.020	1.092	21.2	-11.5
120	3986	2.24	34.885	2343	2177	2197	331.6	19.1	2037.3	120.6	8.201	18.1	2046.2	112.7	9.005	8.046	1.152	26.5	-6.4
121	4038	2.04	34.861	2350	2203	2217	373.2	21.7	2071.4	109.9	8.156	20.5	2080.1	102.4	10.061	7.997	1.046	15.4	-17.8
122	4143	1.58	34.803	2360	2222	2244	391.2	23.2	2093.7	105.1	8.138	21.9	2102.6	97.6	10.615	7.974	.996	8.8	-24.8
123	4283	1.22	34.765	2372	2244	2252	415.7	25.0	2119.2	99.9	8.115	23.5	2128.1	92.3	11.360	7.945	.941	1.4	-32.9
124	4427	.91	34.738	2373	2251	2268	428.0	26.0	2128.3	96.6	8.102	24.5	2137.5	89.0	11.868	7.926	.906	-4.3	-39.2

STATION: 48 LEG: IV — POSITION: 4° 0' S 29° 0' W — DATE: 25 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
				MEASURED PARAMETERS			CALCULATED PARAMETERS P = 1 ATM, T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
901	11	26.15	36.080	2384	2038	2042	375.5	10.3	1782.1	245.6	8.228	10.3	1782.1	245.6	5.923	8.227	2.598	200.5	180.2
902	30	26.07	36.080	2384	2025		353.1	9.7	1761.1	254.2	8.249	9.7	1761.2	254.1	5.652	8.248	2.688	208.9	188.6

STATION: 48 LEG: IV — POSITION: 4° 0' S 29° 0' W — DATE: 25 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
903	61	26.02	36.080	2383	2035	2042	369.8	10.2	1777.9	246.9	8.233	10.2	1778.1	246.7	5.880	8.231	2.610	201.3	181.0
904	82	24.90	36.050	2382	2043	2060	367.3	10.4	1792.1	240.5	8.232	10.4	1792.4	240.3	5.899	8.229	2.539	194.7	174.3
905	119	17.12	35.800	2365	2159	2168	503.2	17.6	1990.6	150.8	8.093	17.6	1990.8	150.6	8.145	8.089	1.580	104.4	83.7
906	154	13.74	35.380	2340	2150	2167	463.5	18.0	1993.2	138.8	8.110	18.0	1993.5	138.5	7.855	8.105	1.437	91.8	70.9
907	193	11.40	35.090	2327	2187	2217	562.9	23.6	2055.2	108.3	8.026	23.5	2055.5	107.9	9.569	8.019	1.110	60.8	39.8
908	274	9.87	34.890	2322	2160	2218	454.6	20.0	2019.8	120.1	8.103	20.0	2020.4	119.6	8.072	8.093	1.224	71.9	50.6
909	353	8.32	34.720	2315	2215	2226	643.6	29.9	2099.9	85.2	7.961	29.8	2100.6	84.7	11.295	7.947	.862	36.2	14.7
910	433	7.19	34.630	2309	2226	2259	694.2	33.6	2116.3	76.1	7.925	33.4	2117.1	75.5	12.355	7.908	.767	26.4	4.7
911	512	6.11	34.530	2309	2227	2244	668.7	33.6	2118.1	75.3	7.936	33.4	2119.0	74.6	12.141	7.916	.755	24.9	2.9
912	594	5.34	34.480	2308	2210	2240	574.2	29.7	2097.2	83.1	7.993	29.4	2098.3	82.3	10.708	7.970	.831	31.8	9.6
915	681	4.71	34.460	2317	2228	2247	602.2	31.8	2117.5	78.7	7.973	31.5	2118.8	77.7	11.304	7.947	.785	26.5	4.1
916	760	4.44	34.470	2317	2224	2250	578.3	30.9	2112.5	80.6	7.988	30.6	2114.0	79.5	10.998	7.959	.803	27.6	5.0
917	842	4.30	34.500	2319	2230		593.7	31.8	2119.5	78.6	7.978	31.5	2121.1	77.4	11.363	7.944	.783	24.9	2.0
918	920	4.25	34.540			2249													
919	1001	4.25	34.600	2326	2224	2235	541.9	29.1	2109.6	85.4	8.015	28.7	2111.5	83.8	10.579	7.976	.850	30.0	6.7
920	1090	4.21	34.670	2326	2214	2235	504.2	27.1	2096.4	90.5	8.043	26.7	2098.5	88.8	9.991	8.000	.902	34.2	10.7
921	1179	4.35	34.780	2331	2216	2236	499.3	26.7	2097.1	92.2	8.048	26.3	2099.4	90.3	9.956	8.002	.921	35.1	11.3
922	1268	4.40	34.850	2330	2202		457.5	24.4	2078.4	99.2	8.082	24.0	2081.0	97.1	9.271	8.033	.992	41.0	17.1
923	1358	4.36	34.880	2333	2204		454.9	24.3	2079.9	99.8	8.084	23.8	2082.7	97.5	9.293	8.032	.997	40.7	16.5
101	1402	4.35	34.915	2333	2196	2212	431.2	23.0	2068.8	104.2	8.105	22.6	2071.7	101.7	8.891	8.051	1.041	44.6	20.2
924	1447	4.31	34.920	2329	2186	2217	412.6	22.1	2056.5	107.4	8.122	21.6	2059.5	104.8	8.595	8.066	1.073	47.3	22.8
102	1577	4.06	34.947	2330	2180	2204	390.9	21.1	2047.6	111.3	8.142	20.6	2050.9	108.4	8.301	8.081	1.111	49.6	24.8
103	1753	3.80	34.959	2333	2181	2198	382.8	20.9	2047.7	112.5	8.149	20.3	2051.4	109.2	8.288	8.082	1.119	48.8	23.4
104	1952	3.55	34.955	2333	2170	2201	353.5	19.4	2031.8	118.8	8.179	18.9	2036.1	115.0	7.872	8.104	1.178	52.6	26.6
105	2152	3.35	34.947	2339	2185	2187	372.8	20.6	2050.6	113.7	8.159	20.0	2055.3	109.7	8.403	8.076	1.123	45.3	18.7
106	2351	3.15	34.932	2340	2178	2197	351.7	19.6	2040.1	118.3	8.181	19.0	2045.3	113.8	8.130	8.090	1.165	47.3	20.1
107	2551	2.97	34.921	2344	2196		383.0	21.5	2064.1	110.4	8.148	20.7	2069.6	105.7	8.938	8.049	1.082	37.0	9.2
108	2752	2.84	34.921	2345	2187	2197	357.6	20.2	2050.7	116.1	8.174	19.4	2056.8	110.8	8.563	8.067	1.134	40.0	11.4
109	2952	2.71	34.918	2347	2192		363.3	20.6	2057.0	114.4	8.168	19.7	2063.5	108.8	8.848	8.053	1.114	35.7	6.5
110	3152	2.64	34.915	2344	2181	2206	343.7	19.5	2042.5	118.9	8.189	18.7	2049.6	112.8	8.586	8.066	1.154	37.3	7.4
111	3352	2.58	34.913	2348	2192	2201	359.4	20.5	2056.5	115.0	8.172	19.5	2063.9	108.6	9.093	8.041	1.111	30.7	.1
112	3552	2.53	34.906	2344	2186	2197	353.0	20.2	2049.8	116.0	8.178	19.1	2057.7	109.2	9.130	8.040	1.117	28.8	-2.5
115	3752	2.39	34.898	2347	2194	2208	363.3	20.9	2059.9	113.2	8.167	19.8	2068.1	106.1	9.543	8.020	1.086	23.1	-8.9
116	3901	2.13	34.865	2353	2192	2217	343.1	19.9	2054.1	118.0	8.189	18.8	2062.9	110.4	9.185	8.037	1.128	25.2	-7.4
117	4052	1.71	34.822	2367	2227	2237	390.0	23.0	2097.6	106.4	8.141	21.7	2106.3	99.0	10.451	7.981	1.011	11.6	-21.7
118	4201	1.32	34.783	2374	2237	2264	393.5	23.5	2108.6	104.9	8.137	22.2	2117.5	97.3	10.698	7.971	.992	7.6	-26.4
119	4350	1.07	34.752	2381	2257	2266	427.1	25.8	2133.3	97.9	8.105	24.3	2142.3	90.4	11.698	7.932	.921	-1.7	-36.3
120	4498	.96	34.741	2381	2253	2270	413.8	25.1	2127.8	100.1	8.117	23.6	2137.2	92.2	11.532	7.938	.939	-2.1	-37.3
121	4649	.86	34.729	2385	2272	2289	458.2	27.9	2152.0	92.1	8.077	26.2	2161.4	84.4	12.852	7.891	.859	-12.3	-48.2
122	4797	.74	34.710	2382	2269	2293	455.0	27.9	2149.1	92.1	8.079	26.1	2158.9	84.0	12.980	7.887	.855	-15.0	-51.5
123	4944	.66	34.703	2387	2275	2274	458.3	28.1	2155.2	91.7	8.077	26.3	2165.3	83.4	13.233	7.878	.848	-18.0	-55.2
124	5075	.64	34.695	2385	2273	2290	457.3	28.1	2153.3	91.6	8.077	26.3	2163.6	83.1	13.381	7.874	.846	-20.4	-58.2

STATION: 49 LEG: IV — POSITION: 7° 56' S 28° 12' W — DATE: 29 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
501	2	26.11	36.282	2392	2029	2031	352.1	9.7	1762.5	256.8	8.250	9.7	1762.5	256.8	5.621	8.250	2.731	211.8	191.6
502	32	26.07	36.275	2394	2015		328.2	9.0	1738.5	267.5	8.274	9.0	1738.6	267.4	5.328	8.273	2.844	222.3	202.0
503	64	26.06	36.274	2393	2027	2032	347.0	9.5	1758.6	258.8	8.255	9.5	1758.8	258.7	5.582	8.253	2.751	213.3	193.0
504	90	25.47	36.533	2410	2035	2040	333.2	9.3	1761.0	264.7	8.269	9.3	1761.2	264.5	5.418	8.266	2.833	219.0	198.7
505	116	22.51	36.493	2408	2088	2088	375.8	11.3	1849.7	227.0	8.220	11.3	1850.0	226.7	6.084	8.216	2.425	180.9	160.4
506	144	19.14	36.159	2380	2112	2140	404.3	13.3	1907.8	190.9	8.181	13.3	1908.1	190.6	6.662	8.176	2.020	144.4	123.7
507	170	16.09	35.697	2356	2160	2165	504.8	18.2	1997.8	144.0	8.087	18.2	1998.2	143.6	8.289	8.082	1.503	97.0	76.2
508	195	13.67	35.414	2338	2147		459.1	17.9	1989.9	139.3	8.113	17.8	1990.3	138.9	7.830	8.106	1.442	91.9	71.0
509	256	11.30	35.100	2322	2194		605.3	25.4	2067.2	101.4	7.997	25.4	2067.7	101.0	10.301	7.987	1.039	53.4	32.3
510	302	9.51	34.869	2314	2193	2217	583.5	26.0	2070.3	96.7	8.003	25.9	2070.9	96.2	10.184	7.992	.983	48.2	26.9
511	349	7.76	34.662	2310	2198		574.5	27.2	2079.6	91.2	8.003	27.1	2080.3	90.6	10.248	7.989	.921	42.2	20.7
512	394	7.17	34.609	2305	2197		574.7	27.8	2080.4	88.7	7.999	27.7	2081.2	88.1	10.367	7.984	.894	39.3	17.7
515	459	6.73	34.587	2309	2229	2226	696.7	34.2	2120.2	74.5	7.922	34.1	2121.0	73.9	12.479	7.904	.749	24.6	2.8
516	508	6.42	34.562	2306	2221	2238	660.9	32.8	2111.3	76.8	7.941	32.6	2112.3	76.1	11.987	7.921	.771	26.4	4.5
517	610	5.78	34.516	2306	2228	2242	679.2	34.5	2120.2	73.3	7.927	34.3	2121.3	72.4	12.484	7.904	.733	21.9	-.3

STATION: 49 LEG: IV — POSITION: 7° 56' S 28° 12' W — DATE: 29 OCT 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
518	711	5.08	34.475	2308	2223	2227	626.5	32.7	2113.8	76.5	7.957	32.4	2115.1	75.5	11.759	7.930	.763	24.1	1.7
519	810	4.63	34.466	2312	2231	2243	636.0	33.7	2122.7	74.6	7.950	33.4	2124.2	73.5	12.067	7.918	.742	21.2	-1.5
520	909	4.20	34.495	2317	2216	2238	540.3	29.1	2102.3	84.6	8.014	28.7	2104.0	83.2	10.499	7.979	.842	30.2	7.1
521	1009	4.02	34.556	2320	2232	2226	593.0	32.1	2121.8	78.1	7.977	31.7	2123.7	76.6	11.558	7.937	.776	22.7	-.6
522	1106	3.99	34.630	2324	2214	2222	505.9	27.4	2097.2	89.4	8.040	27.0	2099.3	87.6	10.063	7.997	.890	32.9	9.4
523	1205	4.13	34.737	2322	2217	2214	528.1	28.5	2101.8	86.7	8.023	28.0	2104.2	84.8	10.566	7.976	.864	29.3	5.5
101	1285	4.16	34.801	2328	2202		458.4	24.7	2079.3	98.0	8.080	24.2	2081.9	95.9	9.327	8.030	.978	39.7	15.6
524	1403	4.22	34.878	2326	2187	2200	420.9	22.6	2059.3	105.1	8.113	22.1	2062.2	102.6	8.732	8.059	1.050	45.4	21.1
102	1484	4.10	34.924	2327	2163	2203	357.0	19.2	2024.5	119.3	8.176	18.8	2027.7	116.5	7.596	8.119	1.192	58.5	33.9
103	1686	3.80	34.953	2330	2178	2177	382.0	20.8	2044.8	112.4	8.150	20.3	2048.4	109.3	8.232	8.084	1.120	49.4	24.3
104	1888	3.49	34.947	2329	2172	2210	365.2	20.1	2036.7	115.2	8.166	19.6	2040.8	111.6	8.077	8.093	1.143	49.8	24.0
105	2085	3.27	34.939	2337	2180	2191	364.1	20.2	2044.4	115.4	8.167	19.6	2049.0	111.4	8.189	8.087	1.141	47.6	21.2
106	2281	3.03	34.922	2340	2182	2196	359.1	20.1	2045.9	116.0	8.173	19.5	2050.9	111.6	8.239	8.084	1.143	45.8	18.8
107	2481	2.88	34.915	2345	2193	2217	372.2	21.0	2059.3	112.7	8.159	20.2	2064.7	108.0	8.660	8.063	1.106	40.1	12.4
108	2680	2.78	34.910	2345	2164	2201	309.4	17.5	2017.0	129.5	8.230	16.8	2023.2	124.0	7.479	8.126	1.269	53.9	25.6
109	2880	2.72	34.911	2346	2193	2182	367.8	20.9	2058.9	113.2	8.163	20.0	2065.2	107.8	8.891	8.051	1.103	35.5	6.5
110	3080	2.66	34.911	2345	2162	2215	304.3	17.3	2014.1	130.7	8.236	16.5	2021.2	124.2	7.647	8.117	1.272	49.6	20.0
111	3280	2.59	34.910	2343	2191	2198	367.5	20.9	2057.5	112.6	8.162	20.0	2064.6	106.4	9.236	8.035	1.089	29.4	-.9
112	3480	2.50	34.904	2344	2176	2197	331.2	18.9	2035.3	121.8	8.203	18.0	2043.1	114.9	8.566	8.067	1.176	35.4	4.3
115	3693	2.31	34.888	2349	2196		362.6	20.9	2061.8	113.3	8.168	19.8	2069.9	106.3	9.476	8.023	1.087	24.0	-7.8
116	3896	1.97	34.848	2354	2197	2212	349.8	20.4	2060.9	115.7	8.181	19.3	2069.5	108.2	9.356	8.029	1.105	23.0	-9.6
117	4096	1.54	34.803	2365	2231	2227	402.5	23.9	2104.1	103.0	8.127	22.5	2112.8	95.7	10.833	7.965	.976	7.6	-25.9
118	4297	1.14	34.762	2373	2221	2263	354.0	21.3	2086.3	113.3	8.177	20.0	2095.9	105.1	9.820	8.008	1.071	13.9	-20.5
119	4501	.92	34.737	2377	2256	2266	432.3	26.3	2133.5	96.2	8.099	24.7	2142.8	88.5	12.037	7.919	.901	-5.9	-41.2
120	4702	.82	34.724	2380	2257	2270	425.6	26.0	2133.7	97.4	8.105	24.3	2143.5	89.2	12.084	7.918	.908	-8.3	-44.4
121	4903	.75	34.714	2381	2269	2283	458.2	28.0	2149.5	91.5	8.076	26.3	2159.4	83.3	13.199	7.879	.848	-17.4	-54.3
122	5104	.67	34.708	2380	2261	2266	434.8	26.7	2139.1	95.2	8.096	24.9	2149.6	86.5	12.822	7.892	.880	-17.5	-55.4
123	5304	.64	34.697	2384	2270		450.8	27.7	2149.7	92.6	8.083	25.8	2160.5	83.7	13.492	7.870	.852	-23.7	-62.4
124	5519	.62	34.699	2383	2246	2287	384.9	23.7	2117.2	105.2	8.145	21.9	2129.0	95.1	11.889	7.925	.967	-16.1	-55.8

STATION: 53 LEG: V — POSITION: 11° 59' S 27° 59' W — DATE: 7 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
501	7	26.03	36.620	2409	2027	2075	331.2	9.1	1748.5	269.4	8.272	9.1	1748.5	269.4	5.350	8.272	2.892	224.5	204.2
502	46	25.63	36.835	2425	2047		338.5	9.4	1770.8	266.8	8.265	9.4	1770.9	266.7	5.453	8.263	2.880	221.6	201.3
503	95	24.15	36.901	2435	2065		333.4	9.6	1794.3	261.1	8.268	9.6	1794.6	260.8	5.436	8.265	2.822	215.4	195.0
504	149	20.01	36.399	2403	2085		338.7	10.9	1850.0	224.1	8.250	10.9	1850.4	223.7	5.695	8.245	2.387	177.6	157.0
505	199	15.31	35.610	2348	2120	2141	405.4	15.0	1942.0	163.0	8.166	14.9	1942.5	162.6	6.934	8.159	1.697	115.7	94.8
506	273	11.70	35.095	2318	2165		520.7	21.6	2027.8	115.6	8.056	21.5	2028.4	115.1	8.995	8.046	1.184	67.4	46.2
507	359	9.03	34.796	2314	2186	2223	544.3	24.7	2061.0	100.3	8.029	24.6	2061.7	99.8	9.646	8.016	1.018	51.3	29.9
508	426	7.36	34.634	2304	2200		596.1	28.7	2084.7	86.7	7.985	28.5	2085.5	86.0	10.736	7.969	.873	37.0	15.3
509	541	6.07	34.523	2305	2205		581.8	29.3	2091.4	84.3	7.990	29.1	2092.5	83.5	10.727	7.970	.845	33.5	11.4
510	649	5.20	34.455			2233													
511	799	4.44	34.432	2312	2216		563.3	30.1	2103.9	82.0	7.998	29.8	2105.4	80.8	10.792	7.967	.816	28.7	5.9
512	898	4.07	34.447	2315	2210	2239	520.8	28.2	2095.2	86.7	8.028	27.8	2096.9	85.3	10.158	7.993	.861	32.3	9.3
515	997	3.93	34.511	2318	2222		555.3	30.2	2109.8	82.0	8.003	29.8	2111.7	80.5	10.880	7.963	.815	26.7	3.4
516	1071	3.83	34.565	2322	2220		531.3	29.0	2105.8	85.2	8.020	28.6	2107.9	83.5	10.513	7.978	.846	29.1	5.6
517	1147	3.86	34.636	2323	2214	2239	506.8	27.6	2097.6	88.8	8.039	27.2	2099.8	87.0	10.135	7.994	.883	31.9	8.2
518	1222	3.91	34.715	2328	2207		468.8	25.5	2086.2	95.3	8.071	25.0	2088.7	93.3	9.485	8.023	.949	37.6	13.7
519	1296	3.99	34.774			2218													
520	1372	4.02	34.832	2326	2195		440.2	23.8	2070.5	100.7	8.095	23.4	2073.3	98.3	9.084	8.042	1.004	41.3	17.1
521	1445	4.03	34.877	2325	2199	2220	456.0	24.6	2076.5	97.9	8.081	24.2	2079.4	95.5	9.447	8.025	.976	37.8	13.3
522	1522	3.95	34.902	2327	2185		408.8	22.2	2056.1	106.8	8.123	21.7	2059.3	104.0	8.617	8.085	1.064	45.7	21.0
523	1597	3.82	34.913	2330	2179		384.4	20.9	2046.2	111.9	8.147	20.4	2049.6	108.9	8.208	8.086	1.115	49.9	25.0
201	1666	3.74	34.924	2329	2180		388.0	21.2	2048.1	110.7	8.143	20.7	2051.7	107.6	8.340	8.079	1.102	48.0	22.8
524	1699	3.68	34.930	2329	2176	2198	377.3	20.6	2042.4	113.0	8.154	20.1	2046.1	109.8	8.161	8.088	1.124	49.8	24.6
202	1864	3.45	34.935	2332	2165	2214	343.0	18.9	2025.0	121.0	8.190	18.4	2029.2	117.4	7.612	8.118	1.202	55.8	30.1
203	2067	3.22	34.931	2333	2170	2212	348.8	19.4	2031.9	118.7	8.183	18.8	2036.5	114.7	7.883	8.103	1.174	51.1	24.8
204	2267	3.02	34.922	2338	2179		356.2	20.0	2042.5	116.5	8.175	19.3	2047.5	112.2	8.176	8.087	1.148	46.5	19.5
205	2466	2.87	34.911	2340	2185	2223	363.7	20.5	2050.2	114.3	8.167	19.8	2055.6	109.6	8.486	8.071	1.121	41.8	14.2
206	2668	2.78	34.905	2342	2188	2223	365.1	20.7	2053.6	113.7	8.166	19.9	2059.5	108.7	8.674	8.062	1.112	38.7	10.5

STATION: 53 LEG: V — POSITION: 11° 59' S 27° 59' W — DATE: 7 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
207	2869	2.71	34.904	2348	2194		365.7	20.7	2059.4	113.9	8.166	19.9	2065.7	108.4	8.830	8.054	1.110	36.2	7.3
208	3072	2.65	34.900	2347	2191	2223	359.9	20.5	2055.6	115.0	8.172	19.6	2062.3	109.1	8.874	8.052	1.116	34.6	5.0
209	3275	2.58	34.898	2348	2192	2209	359.3	20.5	2056.5	115.0	8.172	19.5	2063.7	108.7	9.025	8.045	1.113	31.8	1.5
210	3476	2.49	34.894	2346	2188		353.0	20.2	2051.7	116.1	8.178	19.2	2059.4	109.4	9.061	8.043	1.119	29.9	-1.1
211	3630	2.37	34.884	2347	2186	2221	344.9	19.8	2048.4	117.8	8.187	18.8	2056.4	110.8	9.006	8.045	1.133	29.3	-2.3
212	3782	2.19	34.870	2350	2205	2209	380.3	22.0	2074.2	108.8	8.149	20.8	2082.4	101.8	9.984	8.001	1.040	18.3	-13.9
215	3894	2.01	34.848	2354	2209		378.5	22.1	2078.1	108.9	8.151	20.9	2086.5	101.7	10.045	7.998	1.039	16.6	-16.1
216	3992	1.82	34.826	2357	2219	2258	394.1	23.1	2090.8	105.0	8.135	21.9	2099.3	97.8	10.526	7.978	.998	11.3	-21.8
217	4144	1.46	34.789	2367	2229		391.1	23.3	2100.4	105.3	8.139	21.9	2109.3	97.7	10.596	7.975	.997	8.9	-24.8
218	4293	1.18	34.764	2370	2240		408.9	24.6	2114.5	100.9	8.121	23.2	2123.5	93.3	11.214	7.950	.951	2.2	-32.2
219	4494	.96	34.740	2370	2246	2281	422.3	25.6	2122.7	97.7	8.107	24.1	2132.1	89.8	11.799	7.928	.915	-4.4	-39.6
220	4693	.84	34.724	2376	2252		421.8	25.7	2128.5	97.8	8.108	24.1	2138.2	89.6	11.993	7.921	.913	-7.7	-43.7
221	4895	.76	34.718	2379	2257		427.2	26.1	2134.1	96.8	8.104	24.4	2144.2	88.3	12.360	7.908	.899	-12.2	-49.1
222	5093	.71	34.706	2379	2264	2285	447.4	27.4	2143.5	93.0	8.085	25.6	2153.9	84.5	13.155	7.881	.859	-19.3	-57.1
223	5294	.65	34.698	2379	2265		449.5	27.6	2144.9	92.5	8.083	25.7	2155.7	83.6	13.471	7.871	.851	-23.6	-62.3
224	5532	.58	34.695	2377	2266		457.3	28.2	2147.0	90.9	8.076	26.2	2158.1	81.7	14.023	7.853	.831	-29.7	-69.5

STATION: 54 LEG: V — POSITION: 15° 3' S 29° 31' W — DATE: 8 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
501	8	26.32	36.825	2424	2041	2038	340.3	9.3	1761.3	270.4	8.265	9.3	1761.3	270.4	5.440	8.264	2.919	225.5	205.3
502	67	25.22	37.038	2442	2064	2065	340.0	9.5	1787.6	266.9	8.264	9.5	1787.7	266.8	5.473	8.262	2.896	221.6	201.3
503	139	22.91	36.831	2432	2061	2058	313.7	9.3	1790.6	261.1	8.286	9.3	1791.0	260.7	5.234	8.281	2.815	214.9	194.4
504	189	19.04	36.157	2387	2092	2107	354.8	11.7	1871.9	208.4	8.229	11.7	1872.4	207.9	5.989	8.223	2.204	161.5	140.7
505	239	15.62	35.619	2351	2109	2112	382.3	14.0	1923.0	172.0	8.189	14.0	1923.6	171.5	6.596	8.181	1.790	124.4	103.4
506	299	13.11	35.252	2329	2135	2160	435.7	17.3	1977.1	140.7	8.130	17.2	1977.7	140.1	7.594	8.120	1.448	92.4	71.2
507	326	12.16	35.148	2323	2156	2171	488.6	20.0	2012.0	124.0	8.083	19.9	2012.7	123.4	8.492	8.071	1.272	75.5	54.2
508	365	10.66	34.950	2316	2169	2178	515.6	22.1	2035.2	111.7	8.056	22.0	2035.9	111.0	9.064	8.043	1.138	62.7	41.2
509	441	8.20	34.674	2306	2172	2186	500.9	23.4	2045.4	103.2	8.057	23.2	2046.3	102.5	9.101	8.041	1.041	53.4	31.7
510	492	6.90	34.557	2307	2181	2199	500.7	24.5	2058.1	98.4	8.053	24.3	2059.1	97.6	9.236	8.035	.989	48.0	26.2
511	591	5.28	34.427	2304	2194	2203	522.8	27.1	2077.6	89.3	8.030	26.9	2078.8	88.4	9.841	8.007	.892	37.9	15.7
512	691	4.36	34.395	2313	2195	2220	478.7	25.6	2075.8	93.6	8.063	25.4	2077.2	92.5	9.207	8.036	.932	41.2	18.7
515	800	3.88	34.419	2316	2208	2228	505.9	27.6	2092.2	88.2	8.039	27.3	2093.8	87.0	9.815	8.008	.877	34.7	12.0
516	901	3.72	34.468	2323	2217	2234	512.9	28.1	2101.6	87.3	8.034	27.8	2103.3	85.9	10.023	7.999	.868	32.8	9.8
517	1001	3.68	34.533	2321	2218		523.6	28.7	2103.6	85.7	8.025	28.3	2105.6	84.1	10.326	7.986	.851	30.2	6.9
518	1100	3.76	34.631	2327	2216	2222	498.8	27.3	2098.8	90.0	8.046	26.9	2100.9	88.2	9.940	8.003	.895	33.5	9.9
519	1200	3.86	34.715	2326	2209	2209	480.6	26.2	2089.7	93.1	8.060	25.7	2092.1	91.1	9.695	8.013	.928	35.6	11.8
520	1300	3.90	34.801	2329	2201		447.8	24.3	2077.6	99.1	8.088	23.9	2080.2	96.9	9.164	8.038	.988	40.5	16.4
521	1399	3.88	34.860	2330	2189	2209	410.8	22.3	2060.4	106.3	8.122	21.9	2063.3	103.8	8.553	8.068	1.061	46.5	22.2
522	1499	3.75	34.890	2331	2189	2203	406.6	22.2	2060.0	106.8	8.126	21.7	2063.1	104.1	8.560	8.068	1.065	46.0	21.3
523	1599	3.61	34.906	2330	2182		388.7	21.3	2050.5	110.1	8.142	20.8	2054.0	107.2	8.308	8.080	1.097	48.1	23.2
201	1685	3.49	34.925	2331	2182	2198	384.8	21.2	2050.1	110.7	8.146	20.7	2053.7	107.6	8.306	8.081	1.102	47.7	22.5
524	1698	3.50	34.924	2333	2175	2187	363.8	20.0	2039.1	115.9	8.168	19.5	2042.8	112.7	7.899	8.102	1.153	52.6	27.4
202	1883	3.26	34.928	2333	2172	2200	353.7	19.7	2034.8	117.6	8.178	19.1	2038.9	113.9	7.849	8.105	1.167	52.1	26.3
203	2081	3.06	34.918	2338	2181	2203	361.2	20.2	2045.4	115.4	8.170	19.6	2050.0	111.4	8.140	8.089	1.140	47.6	21.2
204	2282	2.92	34.914			2209													
205	2483	2.83	34.907	2345	2190	2210	364.3	20.6	2055.0	114.4	8.167	19.8	2060.5	109.7	8.499	8.071	1.122	41.7	14.0
206	2684	2.77	34.905	2341	2190	2203	371.9	21.0	2057.0	112.0	8.158	20.2	2062.8	107.0	8.836	8.054	1.094	36.8	8.5
207	2886	2.71	34.904	2344	2185		353.2	20.0	2048.3	116.6	8.178	19.2	2054.7	111.1	8.585	8.066	1.137	38.7	9.7
208	3086	2.64	34.904	2345	2187	2201	354.8	20.2	2050.7	116.1	8.177	19.3	2057.6	110.1	8.779	8.057	1.127	35.4	5.8
209	3286	2.61	34.909	2344	2183	2200	347.5	19.8	2045.4	117.8	8.184	18.9	2052.8	111.4	8.780	8.056	1.140	34.3	4.0
210	3488	2.49	34.900	2348	2186		344.7	19.7	2047.8	118.4	8.188	18.7	2055.6	111.6	8.872	8.052	1.142	32.0	1.0
211	3686	2.34	34.887	2346	2191	2206	357.7	20.6	2056.1	114.4	8.173	19.5	2064.2	107.3	9.361	8.029	1.098	25.1	-6.7
212	3884	2.04	34.857	2351	2198	2221	359.1	20.9	2063.8	113.3	8.171	19.8	2072.3	105.9	9.577	8.019	1.083	21.0	-11.6
215	3994	1.83	34.836	2363	2209	2231	356.8	20.9	2073.9	114.2	8.175	19.8	2082.7	106.6	9.590	8.018	1.088	20.0	-13.0
216	4093	1.64	34.813	2364	2218	2236	373.0	22.0	2086.3	109.7	8.157	20.8	2095.2	102.1	10.094	7.996	1.041	14.0	-19.4
217	4294	1.32	34.785	2369	2233	2250	394.8	23.6	2105.2	104.2	8.135	22.2	2114.3	96.4	10.846	7.965	.983	5.4	-28.9
218	4396	1.16	34.763	2368	2236		402.7	24.2	2109.8	102.0	8.126	22.8	2119.1	94.1	11.173	7.952	.959	1.5	-33.3
219	4493	1.06	34.750	2373	2246	2261	416.1	25.1	2121.5	99.4	8.114	23.6	2130.9	91.5	11.610	7.935	.932	-2.7	-37.8
220	4595	.96	34.740	2372	2249	2264	425.7	25.8	2126.0	97.2	8.105	24.2	2135.5	89.2	11.989	7.921	.908	-6.5	-42.2

STATION: 54 LEG: V — POSITION: 15° 3' S 29° 31' W — DATE: 8 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
221	4685	.88	34.731	2375	2253	2274	428.0	26.1	2130.2	96.7	8.103	24.4	2140.0	88.6	12.148	7.915	.902	-8.6	-44.6
222	4794	.78	34.719	2375	2253	2275	426.4	26.1	2130.2	96.7	8.104	24.4	2140.2	88.4	12.241	7.912	.900	-10.5	-47.0
223	4890	.61	34.701	2381	2262	2278	434.0	26.7	2140.1	95.2	8.097	25.0	2150.2	86.9	12.552	7.901	.884	-13.7	-50.7
224	5089	.45	34.691	2377	2268	2280	461.6	28.6	2149.6	89.8	8.072	26.7	2159.9	81.4	13.596	7.867	.828	-22.5	-60.4

STATION: 55 LEG: V — POSITION: 18° 0' S 31° 0' W — DATE: 11 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
301	3	25.72	37.255	2456	2074	2055	347.7	9.6	1794.4	270.0	8.259	9.6	1794.4	270.0	5.513	8.259	2.948	225.2	205.1
302	28	25.26	37.261	2456	2079	2080	348.9	9.7	1802.8	266.4	8.256	9.7	1802.9	266.4	5.553	8.255	2.910	221.5	201.3
303	48	24.72	37.187	2455	2076	2102	337.0	9.5	1798.9	267.6	8.267	9.5	1799.0	267.5	5.426	8.266	2.916	222.4	202.2
304	83	24.14	37.142	2450	2091	2062	356.7	10.2	1826.8	253.9	8.246	10.2	1827.0	253.7	5.716	8.243	2.763	208.4	188.1
305	128	23.57	37.110	2447	2059	2092	306.2	8.9	1777.3	272.8	8.296	8.9	1777.7	272.4	5.103	8.292	2.964	226.8	206.4
306	176	19.82	36.278	2393	2080	2106	339.8	11.0	1848.4	220.6	8.247	11.0	1848.9	220.1	5.741	8.241	2.341	173.8	153.1
307	265	15.33	35.516	2345	2084	2088	339.5	12.6	1887.7	183.7	8.231	12.5	1888.4	183.1	6.000	8.222	1.907	135.8	114.8
308	338	12.81	35.180	2325	2114	2143	388.4	15.6	1947.7	150.8	8.172	15.5	1948.4	150.1	6.919	8.160	1.548	102.1	80.8
309	436	10.09	34.842	2315	2143	2168	428.4	18.8	1998.3	125.9	8.126	18.6	1999.2	125.1	7.769	8.110	1.278	76.2	54.6
310	537	7.37	34.571	2304	2166	2179	469.5	22.6	2038.3	105.1	8.080	22.4	2039.4	104.2	8.723	8.059	1.056	54.4	32.4
311	632	5.47	34.424	2305	2183	2212	484.0	24.9	2062.3	95.8	8.061	24.7	2063.6	94.8	9.186	8.037	.956	44.0	21.8
312	679	4.82	34.395	2309	2180	2217	450.2	23.7	2056.7	99.6	8.088	23.5	2058.1	98.4	8.676	8.062	.992	47.3	24.9
315	783	4.05	34.400	2315	2197	2217	473.6	25.6	2077.8	93.6	8.066	25.4	2079.3	92.3	9.214	8.036	.931	40.2	17.5
316	881	3.69	34.441	2318	2212	2234	510.4	28.0	2096.8	87.2	8.035	27.7	2098.5	85.8	9.981	8.001	.866	32.9	9.9
317	982	3.58	34.514	2322	2218	2247	517.9	28.5	2103.3	86.2	8.030	28.1	2105.2	84.7	10.209	7.991	.857	30.9	7.7
318	1085	3.64	34.607	2326	2205	2241	462.2	25.4	2084.3	95.3	8.075	25.0	2086.5	93.5	9.270	8.033	.948	38.9	15.3
319	1189	3.77	34.694	2326	2209	2234	478.7	26.1	2089.7	93.1	8.062	25.7	2092.1	91.2	9.657	8.015	.927	35.7	11.9
320	1294	3.92	34.794	2327	2199	2223	447.5	24.3	2075.6	99.1	8.088	23.9	2078.3	96.9	9.158	8.038	.988	40.5	16.5
321	1397	3.89	34.848	2330	2188	2209	408.1	22.2	2059.0	106.9	8.125	21.7	2061.9	104.4	8.499	8.071	1.066	47.1	22.8
322	1492	3.80	34.879	2328	2191	2221	420.2	22.9	2064.1	104.0	8.112	22.4	2067.2	101.3	8.818	8.055	1.036	43.3	18.6
323	1597	3.65	34.897	2328	2180	2202	388.6	21.3	2048.6	110.1	8.142	20.8	2052.0	107.2	8.308	8.080	1.096	48.1	23.2
101	1641	3.54	34.905	2333	2172	2198	357.3	19.7	2034.7	117.6	8.175	19.2	2038.3	114.5	7.729	8.112	1.171	55.0	29.9
324	1697	3.51	34.909	2331	2175		367.9	20.3	2040.0	114.7	8.163	19.8	2043.7	111.5	7.983	8.098	1.141	51.5	26.3
102	1787	3.35	34.911	2331	2180		377.6	20.9	2047.3	111.8	8.153	20.4	2051.1	108.5	8.251	8.083	1.110	47.6	22.1
103	1935	3.29	34.932	2333	2174		358.6	19.9	2037.7	116.4	8.173	19.3	2041.9	112.7	7.981	8.098	1.154	50.4	24.5
104	2087	3.14	34.927	2336	2166	2194	333.4	18.6	2024.5	122.8	8.201	18.0	2029.3	118.7	7.583	8.120	1.215	54.9	28.5
105	2239	3.04	34.923	2339	2174		343.4	19.2	2034.8	120.0	8.190	18.6	2039.8	115.6	7.889	8.103	1.184	50.3	23.4
106	2387	2.96	34.922	2337	2182	2176	364.2	20.5	2047.4	114.2	8.166	19.8	2052.6	109.7	8.441	8.074	1.123	42.7	15.4
107	2538	2.89	34.920	2340	2177	2187	345.9	19.5	2038.7	118.8	8.186	18.8	2044.3	113.9	8.165	8.088	1.166	45.4	17.6
108	2687	2.82	34.915	2339	2186		367.4	20.8	2052.2	113.1	8.163	20.0	2058.0	108.0	8.745	8.058	1.105	37.9	9.5
109	2837	2.77	34.914	2342	2180	2188	347.0	19.6	2042.1	118.3	8.185	18.8	2048.4	112.8	8.413	8.075	1.154	41.0	12.2
110	2987	2.73	34.915	2341	2179	2185	346.3	19.6	2041.1	118.3	8.186	18.8	2047.7	112.5	8.519	8.070	1.151	38.9	9.6
111	3136	2.68	34.911	2341	2184		356.7	20.3	2048.4	115.4	8.174	19.4	2055.3	109.4	8.872	8.052	1.120	34.1	4.3
112	3285	2.63	34.912	2339	2181	2191	353.3	20.1	2045.0	115.9	8.177	19.2	2052.2	109.6	8.926	8.049	1.122	32.5	2.2
115	3446	2.54	34.910	2341	2181	2195	348.1	19.9	2044.0	117.1	8.183	18.9	2051.7	110.4	8.939	8.049	1.130	31.4	.5
116	3594	2.41	34.893	2342	2182		346.5	19.9	2045.0	117.1	8.185	18.9	2053.0	110.2	9.028	8.044	1.127	29.2	-2.3
117	3743	2.26	34.877	2347	2188	2184	347.7	20.1	2051.3	116.7	8.184	19.0	2059.6	109.4	9.176	8.037	1.119	26.5	-5.6
118	3894	2.03	34.854	2351	2185		330.6	19.2	2044.9	120.8	8.203	18.2	2053.7	113.1	8.896	8.051	1.155	28.0	-4.6
119	3993	1.83	34.831	2356	2208		369.1	21.6	2075.7	110.6	8.161	20.4	2084.4	103.1	9.916	8.004	1.053	16.6	-16.4
120	4095	1.58	34.802	2362	2225	2236	394.3	23.4	2097.0	104.6	8.135	22.0	2105.8	97.2	10.636	7.973	.992	9.1	-24.4
121	4196	1.32	34.778	2368	2228	2223	384.1	23.0	2098.6	106.4	8.145	21.6	2107.6	98.7	10.485	7.979	1.007	9.1	-24.9
122	4346	1.04	34.746	2369	2246		426.2	25.8	2123.1	97.1	8.104	24.3	2132.1	89.6	11.732	7.931	.912	-2.4	-37.0
123	4495	.67	34.712	2376	2256	2267	430.8	26.4	2133.9	95.6	8.099	24.9	2143.2	87.9	12.033	7.920	.895	-6.5	-41.8
124	4686	.38	34.683	2375	2257	2252	431.6	26.8	2135.7	94.6	8.098	25.1	2145.3	86.6	12.317	7.910	.880	-11.0	-47.2

STATION: 56 LEG: V — POSITION: 21° 0′ S 33° 0′ W — DATE: 12 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
501	14	24.71	37.069	2433	2056	2074	331.9	9.4	1781.0	265.6	8.270	9.4	1781.1	265.6	5.382	8.269	2.886	220.6	200.4
502	77	23.70	37.069	2437	2057	2080	315.3	9.2	1780.6	267.2	8.285	9.1	1780.9	267.0	5.214	8.283	2.901	221.7	201.4
503	117	22.66	36.881	2424	2059	2088	316.8	9.5	1793.0	256.5	8.280	9.4	1793.3	256.2	5.291	8.276	2.770	210.6	190.1
504	137	20.95	36.573	2419	2079	2097	324.9	10.2	1829.4	239.4	8.268	10.2	1829.8	239.0	5.451	8.264	2.563	193.1	172.5
505	156	19.98	36.382	2392	2067	2103	324.2	10.4	1828.3	228.3	8.263	10.4	1828.7	227.9	5.520	8.258	2.430	181.7	161.1
506	177	18.92	36.183	2383	2068	2104	320.3	10.6	1836.3	221.1	8.264	10.6	1836.8	220.6	5.515	8.258	2.340	174.2	153.5
507	198	17.67	35.904	2365	2070	2103	326.0	11.2	1851.7	207.1	8.253	11.2	1852.2	206.6	5.667	8.247	2.175	160.0	139.1
508	217	16.91	35.788	2360	2079	2098	335.3	11.8	1869.6	197.6	8.241	11.8	1870.1	197.1	5.840	8.234	2.068	150.3	129.4
509	236	16.13	35.660	2352	2068	2111	316.2	11.4	1857.6	199.0	8.259	11.4	1858.2	198.4	5.607	8.251	2.074	151.4	130.4
510	302	14.21	35.356	2334	2081	2108	332.6	12.7	1890.4	177.8	8.234	12.7	1891.2	177.2	5.974	8.224	1.836	129.5	108.3
511	357	12.83	35.175	2324	2089	2126	340.3	13.6	1909.8	165.6	8.221	13.5	1910.6	164.8	6.189	8.208	1.700	116.7	95.4
512	417	11.69	35.036	2318	2108	2146	369.0	15.3	1943.2	149.5	8.187	15.2	1944.1	148.6	6.728	8.172	1.527	100.0	78.5
514	473	10.48	34.893	2312	2123	2160	392.6	17.0	1969.9	136.1	8.159	16.9	1971.0	135.2	7.207	8.142	1.383	86.1	64.4
515	525	9.12	34.723	2304	2132	2173	406.8	18.4	1988.3	125.3	8.141	18.3	1989.4	124.3	7.564	8.121	1.265	74.7	52.8
516	606	7.14	34.531	2296	2156	2192	455.9	22.1	2027.9	106.0	8.089	21.9	2029.1	104.9	8.589	8.066	1.062	54.6	32.4
517	694	5.48	34.418	2301	2183	2223	496.6	25.5	2063.9	93.5	8.050	25.3	2065.3	92.4	9.470	8.024	.933	41.2	18.8
518	795	4.25	34.374	2308	2183	2223	452.1	24.3	2061.5	97.2	8.084	24.0	2063.1	95.9	8.848	8.053	.966	43.8	21.0
519	894	3.68	34.407	2315	2209	2242	508.8	27.9	2093.9	87.1	8.036	27.6	2095.7	85.7	9.974	8.001	.865	32.7	9.7
520	993	3.41	34.475	2321	2217	2245	513.7	28.5	2102.4	86.2	8.032	28.1	2104.3	84.6	10.161	7.993	.855	30.7	7.4
521	1094	3.51	34.576	2326	2210	2245	475.9	26.3	2091.2	92.6	8.063	25.9	2093.3	90.8	9.539	8.020	.920	36.1	12.5
522	1194	3.72	34.680	2322	2204	2233	473.1	25.9	2084.6	93.5	8.065	25.5	2087.0	91.6	9.577	8.019	.931	36.1	12.3
101	1240	3.84	34.741	2331	2197	2215	428.9	23.4	2071.2	102.5	8.106	22.9	2073.7	100.3	8.758	8.058	1.022	44.4	20.5
523	1295	3.99	34.805	2320	2188	2223	434.6	23.5	2063.4	101.1	8.099	23.1	2066.0	98.9	8.940	8.049	1.009	42.5	18.5
102	1389	4.04	34.888	2328	2180	2223	394.5	21.3	2048.5	110.2	8.138	20.9	2051.5	107.7	8.235	8.084	1.101	50.5	26.2
104	1693	3.78	34.952	2327	2173	2203	375.9	20.5	2039.0	113.5	8.155	20.0	2042.7	110.3	8.131	8.090	1.130	50.4	25.2
105	1842	3.58	34.952	2323	2158	2197	347.0	19.0	2019.3	119.6	8.185	18.5	2023.4	116.1	7.696	8.114	1.189	54.7	29.1
106	1968	3.43	34.950	2329	2161	2188	339.9	18.8	2020.7	121.5	8.193	18.2	2025.1	117.7	7.634	8.117	1.205	55.1	29.0
107	2140	3.28	34.945	2328	2163	2198	344.0	19.1	2024.2	119.7	8.188	18.5	2028.9	115.6	7.850	8.105	1.184	51.2	24.7
108	2142	3.28	34.945	2330	2168	2202	351.1	19.5	2030.5	118.0	8.180	18.9	2035.2	113.9	7.989	8.098	1.167	49.6	23.0
109	2291	3.14	34.937	2327	2160	2191	337.6	18.8	2020.3	120.8	8.194	18.2	2025.4	116.3	7.838	8.106	1.191	50.5	23.4
110	2434	3.03	34.933	2333	2170	2209	346.3	19.4	2031.9	118.7	8.185	18.7	2037.3	113.9	8.109	8.091	1.167	46.6	19.1
111	2586	2.95	34.927	2336	2163	2203	324.9	18.3	2020.2	124.6	8.210	17.6	2026.1	119.4	7.763	8.110	1.222	50.3	22.4
112	2733	2.87	34.923	2339	2177	2195	347.6	19.6	2039.2	118.2	8.184	18.8	2045.2	112.9	8.352	8.078	1.156	42.3	13.8
115	2891	2.79	34.920	2334	2174	2204	349.7	19.8	2037.3	116.9	8.181	19.0	2043.7	111.4	8.541	8.068	1.140	38.9	10.0
116	3032	2.73	34.915	2339	2173	2208	337.1	19.1	2033.4	120.5	8.196	18.3	2040.2	114.6	8.358	8.078	1.173	40.5	11.1
117	3176	2.63	34.910	2340	2173	2199	333.9	19.0	2032.9	121.1	8.199	18.1	2040.0	114.8	8.400	8.076	1.175	39.1	9.1
118	3326	2.47	34.899	2343	2179	2211	338.9	19.4	2040.1	119.5	8.193	18.5	2047.6	112.9	8.630	8.064	1.155	35.3	4.8
119	3478	2.24	34.876	2344	2181	2218	338.0	19.5	2042.6	118.9	8.194	18.5	2050.4	112.1	8.746	8.058	1.146	32.5	1.4
120	3635	1.90	34.840	2351	2200	2219	361.8	21.2	2066.7	112.2	8.168	20.1	2074.6	105.3	9.438	8.025	1.076	23.6	-8.2
121	3783	1.59	34.809	2357	2218	2249	388.0	23.0	2089.5	105.6	8.140	21.8	2097.5	98.7	10.205	7.991	1.007	14.8	-17.5
122	3959	1.27	34.772	2364	2230	2254	397.9	23.9	2103.2	103.0	8.131	22.6	2111.6	95.9	10.621	7.974	.977	9.5	-23.6
123	4135	1.00	34.744	2367	2239	2262	410.7	24.9	2114.4	99.8	8.118	23.5	2123.0	92.5	11.133	7.953	.942	3.5	-30.3
124	4313	.73	34.718	2373	2255	2288	436.9	26.8	2133.8	94.5	8.094	25.2	2142.6	87.2	11.994	7.921	.887	-4.6	-39.1

STATION: 57 LEG: V — POSITION: 23° 59′ S 35° 1′ W — DATE: 15 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
601	12	23.58	36.699	2421	2047	2047	314.0	9.2	1774.6	263.2	8.286	9.2	1774.6	263.2	5.184	8.285	2.832	218.2	197.9
602	47	23.17	36.864	2431	2058	2030	314.4	9.3	1786.3	262.4	8.285	9.3	1786.4	262.3	5.204	8.284	2.835	217.1	196.8
603	78	21.80	36.665	2423	2054	2065	298.0	9.1	1785.9	259.0	8.300	9.1	1786.1	258.8	5.039	8.296	2.782	213.3	192.9
604	117	20.44	36.428	2406	2060	2078	304.6	9.7	1807.5	242.8	8.288	9.7	1807.9	242.5	5.198	8.284	2.589	196.6	176.0
605	168	17.88	35.990	2384	2080	2023	321.0	11.0	1855.4	213.6	8.262	11.0	1855.8	213.2	5.542	8.256	2.249	166.8	146.0
606	218	16.15	35.665			2092													
607	288	14.69	35.470	2348	2085	2094	327.2	12.3	1887.9	184.8	8.243	12.3	1888.6	184.1	5.844	8.233	1.914	136.6	115.5
608	336	14.05	35.411	2345	2089	2093	328.7	12.6	1896.4	179.9	8.240	12.6	1897.3	179.2	5.917	8.228	1.860	131.3	110.0
609	386	13.11	35.271	2338	2093	2106	331.2	13.1	1907.5	172.4	8.234	13.1	1908.4	171.5	6.024	8.220	1.773	123.2	101.8
610	467	11.08	34.966	2315	2132	2151	419.1	17.8	1981.4	132.8	8.137	17.6	1982.4	132.0	7.587	8.120	1.353	82.9	61.3
611	517	9.91	34.835			2160													
612	587	8.00	34.613	2308	2154	2159	435.3	20.5	2019.0	114.5	8.112	20.3	2020.2	113.5	8.131	8.090	1.151	63.3	41.3
615	645	6.76	34.488	2305	2159		433.6	21.3	2028.2	109.5	8.109	21.1	2029.5	108.4	8.235	8.084	1.096	57.7	35.4
617	744	5.01	34.343	2308	2176	2198	443.6	23.2	2051.5	101.3	8.094	23.0	2053.0	100.0	8.593	8.066	1.007	48.4	25.8

STATION: 57 LEG: V — POSITION: 23° 59′ S 35° 1′ W — DATE: 15 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
618	794	4.47	34.333	2309	2186	2217	462.2	24.7	2065.1	96.2	8.076	24.4	2066.7	94.9	9.001	8.046	.955	42.8	20.1
619	843	4.03	34.327			2203													
620	894	3.79	34.344			2211													
621	944	3.62	34.378	2322	2208	2221	481.1	26.5	2090.0	91.5	8.059	26.1	2091.9	90.0	9.495	8.023	.907	36.6	13.4
201	986	3.45	34.396	2333	2228	2245	513.5	28.4	2112.6	87.0	8.035	28.1	2114.5	85.5	10.092	7.996	.862	31.7	8.4
623	1095	3.24	34.488	2331	2224	2242	502.6	28.0	2108.0	87.9	8.042	27.6	2110.2	86.2	10.030	7.999	.871	31.5	7.9
202	1188	3.25	34.562	2335	2228	2259	505.0	28.1	2111.9	88.0	8.040	27.7	2114.2	86.1	10.147	7.994	.873	30.6	6.8
624	1196	3.23	34.582			2244													
203	1329	3.42	34.707	2336	2216	2239	465.6	25.8	2095.3	94.9	8.073	25.3	2098.0	92.7	9.530	8.021	.943	36.0	11.8
204	1480	3.65	34.832			2227													
205	1629	3.46	34.893	2334	2185	2221	384.8	21.2	2053.0	110.8	8.146	20.7	2056.5	107.8	8.254	8.083	1.103	48.4	23.4
206	1782	3.59	34.941	2335	2213	2197	464.6	25.5	2091.6	95.9	8.073	24.9	2095.2	92.9	9.915	8.004	.951	32.1	6.6
207	1932	3.46	34.949	2337	2174	2204	353.2	19.5	2035.7	118.8	8.180	18.9	2040.0	115.1	7.847	8.105	1.179	52.9	27.0
208	2083	3.33	34.949	2336	2179	2200	364.8	20.2	2043.4	115.3	8.167	19.6	2048.0	111.4	8.200	8.086	1.141	47.7	21.3
209	2232	3.20	34.943	2342	2178	2197	348.6	19.4	2039.1	119.5	8.185	18.8	2044.0	115.2	7.971	8.099	1.180	49.9	23.1
210	2384	3.09	34.941	2337	2180	2204	361.6	20.2	2044.5	115.3	8.170	19.5	2049.7	110.8	8.374	8.077	1.135	43.9	16.6
211	2527	3.00	34.936	2341	2180	2204	352.2	19.8	2042.5	117.7	8.180	19.0	2048.1	112.8	8.278	8.082	1.156	44.5	16.7
212	2691	2.91	34.931	2340	2176	2199	344.2	19.4	2037.2	119.4	8.188	18.6	2043.2	114.2	8.239	8.084	1.169	44.0	15.7
215	2841	2.82	34.925	2345	2184	2212	350.7	19.8	2046.4	117.8	8.182	19.0	2052.7	112.3	8.484	8.071	1.150	40.5	11.6
216	2988	2.75	34.924	2341	2183	2199	355.4	20.1	2046.9	116.0	8.176	19.3	2053.5	110.2	8.721	8.059	1.129	36.7	7.4
217	3138	2.66	34.918	2344	2184	2208	350.4	19.9	2046.9	117.2	8.181	19.0	2053.9	111.1	8.725	8.059	1.137	35.8	6.0
218	3290	2.53	34.910	2346	2182	2210	340.4	19.4	2043.0	119.5	8.192	18.5	2050.4	113.1	8.623	8.064	1.157	35.9	5.5
219	3437	2.35	34.892	2349	2192	2219	354.1	20.4	2056.1	115.6	8.177	19.4	2063.7	109.0	9.057	8.043	1.115	29.9	-1.0
220	3584	1.99	34.855	2357	2207	2216	367.0	21.4	2073.8	111.8	8.163	20.3	2081.7	105.0	9.486	8.023	1.073	24.0	-7.5
221	3731	1.64	34.812	2367	2228	2247	391.4	23.1	2099.0	105.8	8.139	21.9	2107.0	99.0	10.190	7.992	1.011	15.9	-16.2
222	3878	1.29	34.776	2367	2236		407.1	24.4	2110.2	101.4	8.122	23.1	2118.4	94.5	10.750	7.969	.963	9.2	-23.5
223	4053	.81	34.729	2378	2252	2276	416.2	25.4	2127.7	98.9	8.114	24.0	2136.2	91.8	11.160	7.952	.935	3.9	-29.7
224	4226	.25	34.681	2381	2261	2297	425.2	26.5	2138.7	95.8	8.104	25.0	2147.5	88.5	11.628	7.934	.900	-2.3	-36.6

STATION: 58 LEG: V — POSITION: 27° 0′ S 37° 1′ W — DATE: 16 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
901	13	21.83	36.406	2400	2044	2063	307.2	9.4	1784.6	250.0	8.287	9.4	1784.6	250.0	5.164	8.287	2.668	204.8	184.4
902	58	20.82	36.583	2411	2057	2066	301.4	9.5	1799.3	248.2	8.293	9.5	1799.5	248.0	5.120	8.291	2.660	202.5	182.1
903	87	18.65	36.124			2080													
904	118	17.36	35.898	2369	2061	2095	303.2	10.5	1835.0	215.5	8.279	10.5	1835.3	215.2	5.309	8.275	2.264	169.0	148.3
905	158	16.24	35.715	2362	2074	2104	314.7	11.3	1860.8	201.9	8.263	11.3	1861.2	201.5	5.530	8.257	2.109	155.0	134.2
906	198	15.49	35.614			2094													
907	238	14.86	35.541	2353	2073	2103	304.5	11.4	1865.8	195.8	8.270	11.4	1866.4	195.2	5.470	8.262	2.034	148.1	127.0
908	279	14.31	35.465			2109													
909	324	13.50	35.329			2099													
910	378	12.37	35.159	2334	2106	2128	349.2	14.2	1930.5	161.3	8.212	14.1	1931.4	160.5	6.333	8.198	1.654	112.2	90.8
911	428	11.37	35.011			2141													
912	467	10.54	34.930	2321	2125	2141	380.8	16.4	1968.0	140.6	8.173	16.3	1969.0	139.7	6.989	8.156	1.430	90.6	68.9
915	529	9.02	34.719	2313	2128	2165	376.8	17.1	1977.7	133.2	8.171	17.0	1978.8	132.2	7.055	8.152	1.345	82.5	60.6
916	596	7.75	34.562			2161													
917	669	6.35	34.440	2304	2154	2189	414.7	20.7	2021.7	111.7	8.124	20.5	2023.1	110.5	7.958	8.099	1.115	59.5	37.2
918	737	5.31	34.353			2189													
919	807	4.53	34.320	2313	2173	2203	413.4	22.0	2045.2	105.8	8.121	21.8	2046.9	104.4	8.128	8.090	1.050	52.2	29.4
920	876	4.04	34.334	2312	2202	2209	499.3	27.1	2085.7	89.3	8.045	26.7	2087.4	87.9	9.759	8.011	.884	35.0	12.1
921	947	3.75	34.352	2315	2189	2223	442.1	24.2	2066.9	97.9	8.092	23.9	2068.8	96.3	8.805	8.055	.970	42.8	19.7
922	1017	3.45	34.377	2321	2207	2223	477.6	26.4	2089.1	91.5	8.061	26.1	2091.1	89.8	9.513	8.022	.905	35.8	12.4
923	1087	3.30	34.423			2244													
924	1156	3.18	34.480			2248													
601	1190	3.15	34.500	2336	2218	2255	464.8	26.0	2098.1	93.9	8.073	25.6	2100.5	91.9	9.407	8.027	.930	36.4	12.5
602	1338	3.00	34.595	2339	2233	2249	505.5	28.4	2117.0	87.5	8.040	27.9	2119.7	85.4	10.308	7.987	.866	28.5	4.3
603	1464	3.11	34.714	2340	2213	2221	439.5	24.6	2089.7	98.7	8.095	24.1	2092.7	96.2	9.168	8.038	.979	38.3	13.7
604	1635	3.23	34.810	2338	2194	2211	394.5	22.0	2064.0	108.1	8.137	21.4	2067.4	105.1	8.443	8.073	1.073	45.6	20.5
605	1788	3.37	34.889	2339	2179	2205	358.7	19.9	2041.9	117.2	8.174	19.3	2045.9	113.8	7.850	8.105	1.164	52.9	27.4
606	1937	3.36	34.922	2332	2177		368.6	20.4	2042.5	114.1	8.162	19.8	2046.7	110.5	8.179	8.087	1.131	48.2	22.2
607	2088	3.24	34.925	2339	2175	2197	348.3	19.4	2036.2	119.5	8.185	18.8	2040.8	115.4	7.867	8.104	1.181	51.6	25.2

STATION: 58 LEG: V — POSITION: 27° 0' S 37° 1' W — DATE: 16 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
608	2238	3.17	34.930	2334	2173	2193	352.7	19.7	2035.8	117.6	8.179	19.0	2040.7	113.3	8.085	8.092	1.160	47.9	21.1
609	2392	3.10	34.935	2338	2171	2181	339.8	19.0	2030.9	121.1	8.194	18.3	2036.2	116.4	7.922	8.101	1.192	49.5	22.2
610	2565	2.98	34.929	2340	2173	2202	338.7	19.0	2032.8	121.2	8.195	18.3	2038.6	116.1	8.025	8.096	1.189	47.3	19.4
611	2739	2.85	34.917	2341	2178	2193	345.7	19.5	2039.6	118.9	8.187	18.7	2045.7	113.5	8.309	8.080	1.162	42.8	14.4
612	2915	2.79	34.920	2343	2174	2188	332.6	18.8	2032.8	122.4	8.202	18.0	2039.4	116.6	8.154	8.089	1.194	43.9	14.8
615	3100	2.67	34.911	2343	2171	2205	325.0	18.5	2028.4	124.1	8.210	17.6	2035.5	117.9	8.129	8.090	1.207	43.0	13.3
616	3276	2.53	34.900	2347	2191	2190	358.3	20.5	2055.6	115.0	8.173	19.5	2062.8	108.7	9.013	8.045	1.112	31.7	1.4
617	3449	2.29	34.879	2354	2186	2203	330.7	19.1	2044.9	122.1	8.204	18.1	2052.7	115.2	8.514	8.070	1.178	36.0	5.0
618	3623	1.82	34.830	2359	2218	2228	387.0	22.7	2088.5	106.8	8.143	21.6	2096.3	100.1	9.999	8.000	1.022	18.5	-13.2
619	3801	1.40	34.785	2367	2224	2239	377.6	22.5	2093.4	108.1	8.152	21.3	2101.6	101.0	9.950	8.002	1.030	16.9	-15.6
620	3947	1.09	34.749	2373	2244	2265	411.0	24.8	2118.7	100.5	8.119	23.5	2127.0	93.5	10.910	7.962	.952	7.1	-25.9
621	4101	.72	34.714	2377	2251	2281	414.4	25.4	2126.7	98.9	8.115	24.0	2135.3	91.7	11.180	7.952	.933	3.0	-30.7
622	4252	.27	34.677	2381	2263		431.5	26.9	2141.4	94.7	8.098	25.4	2150.2	87.4	11.811	7.928	.889	-3.7	-38.1
623	4426	.22	34.673	2381	2260	2291	421.8	26.3	2137.3	96.3	8.107	24.8	2146.5	88.7	11.761	7.930	.901	-5.1	-40.2
624	4581	.22	34.672	2378	2264	2292	441.8	27.6	2143.9	92.5	8.088	25.9	2153.3	84.8	12.477	7.904	.862	-11.3	-47.1

STATION: 59 LEG: V — POSITION: 30° 12' S 39° 18' W — DATE: 20 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
401	9	21.03	36.251	2385	2040	2033	306.5	9.6	1788.4	242.0	8.285	9.6	1788.4	242.0	5.193	8.285	2.572	196.7	176.4
402	65	19.85	36.269	2385	2047		301.0	9.7	1800.6	236.6	8.288	9.7	1800.8	236.5	5.173	8.286	2.514	190.8	170.3
403	108	17.55	35.864	2364	2034	2069	274.3	9.5	1794.7	229.8	8.314	9.5	1795.0	229.5	4.892	8.311	2.413	183.4	162.7
404	159	16.35	35.742	2355	2059		302.5	10.8	1841.4	206.8	8.276	10.8	1841.8	206.4	5.365	8.270	2.163	159.9	139.1
405	213	15.22	35.566	2348	2070	2107	311.3	11.5	1863.9	194.5	8.262	11.5	1864.5	194.0	5.560	8.255	2.023	147.1	126.1
406	264	14.80	35.547	2346	2075		315.9	11.9	1873.4	189.7	8.256	11.8	1874.0	189.1	5.668	8.247	1.971	141.8	120.7
407	340	13.94	35.424	2339	2083	2092	325.7	12.6	1890.8	179.6	8.242	12.5	1891.6	178.9	5.891	8.230	1.857	131.0	109.7
408	409	12.95	35.280	2334	2093	2117	335.0	13.3	1910.0	169.6	8.228	13.3	1911.0	168.7	6.110	8.214	1.745	120.3	98.8
409	469	11.84	35.105	2326	2101	2138	344.4	14.2	1927.8	159.0	8.214	14.1	1928.9	158.0	6.346	8.198	1.626	109.0	87.4
410	529	10.54	34.908	2314	2111	2140	363.3	15.7	1950.7	144.6	8.189	15.6	1951.9	143.6	6.762	8.170	1.469	94.0	72.2
411	619	8.36	34.637	2305	2128	2168	381.7	17.7	1982.3	128.0	8.163	17.6	1983.6	126.8	7.246	8.140	1.288	76.4	54.3
412	687	6.85	34.467	2297	2144	2172	413.2	20.2	2010.4	113.3	8.126	20.0	2011.9	112.1	7.933	8.101	1.133	61.1	38.7
415	799	5.23	34.328	2298	2152	2164	404.2	21.0	2022.1	109.0	8.130	20.7	2023.7	107.5	7.957	8.099	1.082	55.5	32.8
416	870	4.62	34.285	2296	2157	2175	412.4	21.9	2030.3	104.8	8.119	21.6	2032.1	103.3	8.203	8.086	1.038	50.6	27.7
417	945	3.97	34.276	2307	2164	2194	394.4	21.4	2035.4	107.2	8.136	21.1	2037.3	105.5	7.943	8.100	1.060	52.1	29.0
418	1019	3.57	34.305	2305	2177	2213	429.6	23.7	2054.6	98.7	8.101	23.3	2056.7	97.0	8.681	8.061	.975	42.9	19.6
419	1096	3.28	34.345	2315	2189	2226	434.1	24.2	2067.0	97.8	8.097	23.8	2069.2	95.9	8.815	8.055	.966	41.2	17.6
420	1169	3.14	34.384	2320	2198		445.8	25.0	2077.3	95.7	8.087	24.6	2079.7	93.7	9.089	8.041	.945	38.4	14.6
421	1243	3.00	34.434	2324	2209	2252	467.7	26.3	2090.7	92.0	8.068	25.9	2093.2	90.0	9.561	8.019	.908	33.9	9.9
422	1319	2.90	34.480	2330	2223	2247	495.7	28.0	2107.1	87.9	8.046	27.5	2109.7	85.8	10.145	7.994	.867	29.0	4.8
423	1393	2.85	34.535	2335	2230	2240	504.2	28.5	2114.6	86.9	8.039	28.0	2117.3	84.7	10.363	7.984	.858	27.3	2.9
101	1491	2.81	34.603	2338	2225		477.1	27.0	2106.8	91.2	8.061	26.5	2109.8	88.7	9.936	8.003	.900	30.5	5.7
424	1492	2.82	34.610	2336	2219		463.5	26.2	2099.5	93.2	8.073	25.7	2102.5	90.8	9.683	8.014	.921	32.5	7.8
102	1633	2.82	34.678	2335	2222	2223	477.2	27.0	2103.9	91.1	8.061	26.4	2107.2	88.4	10.085	7.996	.899	28.8	3.7
103	1781	2.85	34.744	2344	2209	2240	413.7	23.4	2082.4	103.2	8.118	22.8	2086.2	100.0	8.939	8.049	1.019	39.1	13.6
104	1937	2.90	34.810	2342	2205		409.1	23.1	2077.7	104.2	8.122	22.4	2081.8	100.8	8.983	8.047	1.028	38.4	12.4
105	2084	2.95	34.851	2341	2198	2192	394.0	22.2	2068.3	107.5	8.137	21.5	2072.8	103.7	8.799	8.056	1.060	39.9	13.5
106	2233	2.95	34.885	2342	2180	2212	349.2	19.6	2042.0	118.4	8.184	19.0	2047.0	114.0	7.998	8.097	1.166	48.7	21.8
107	2381	3.02	34.918	2331	2176	2180	363.4	20.4	2041.6	114.0	8.166	19.7	2046.8	109.5	8.436	8.074	1.121	42.7	15.4
108	2530	2.94	34.917	2340	2180	2175	353.2	19.9	2043.0	117.1	8.179	19.1	2048.6	112.3	8.309	8.080	1.149	43.8	16.0
109	2681	2.85	34.914	2340	2178	2200	347.5	19.6	2040.1	118.3	8.185	18.9	2046.1	113.1	8.308	8.081	1.157	43.0	14.7
110	2830	2.79	34.916	2338	2177	2191	348.5	19.7	2039.7	117.6	8.183	18.9	2045.9	112.1	8.454	8.073	1.148	40.4	11.6
111	2975	2.69	34.911	2340	2183	2196	356.6	20.2	2047.4	115.4	8.174	19.4	2053.9	109.7	8.745	8.058	1.122	36.3	7.0
112	3124	2.57	34.904	2345	2175	2198	328.2	18.7	2033.3	123.0	8.206	17.9	2040.4	116.8	8.220	8.085	1.195	41.6	11.8
115	3285	2.42	34.897	2349	2188	2191	346.1	19.8	2050.3	117.9	8.186	18.9	2057.6	111.5	8.747	8.058	1.141	34.3	4.0
116	3429	2.19	34.870	2348	2187	2211	342.7	19.8	2049.3	117.8	8.189	18.9	2057.0	111.2	8.805	8.055	1.136	32.1	1.2
117	3575	1.87	34.837	2359	2210	2234	368.0	21.6	2077.2	111.3	8.162	20.5	2085.0	104.5	9.505	8.022	1.068	23.5	-8.0
118	3822	1.49	34.799	2361	2224		392.6	23.3	2096.1	104.6	8.136	22.1	2104.2	97.6	10.348	7.985	.996	13.2	-19.3
119	3970	.98	34.734	2372	2250	2270	428.9	26.0	2127.4	96.6	8.102	24.6	2135.6	89.8	11.392	7.943	.914	3.1	-30.1
120	4117	.48	34.691	2374	2265	2287	461.1	28.5	2146.7	89.8	8.072	27.0	2155.1	83.0	12.416	7.906	.844	-6.1	-40.0
121	4263	.26	34.678	2376	2271		471.0	29.4	2153.9	87.7	8.063	27.8	2162.5	80.8	12.864	7.891	.821	-10.5	-45.0
122	4511	.18	34.670	2378	2267	2282	450.5	28.2	2147.9	90.9	8.080	26.5	2157.1	83.4	12.630	7.899	.848	-11.6	-47.2
123	4661	.18	34.671	2379	2268	2285	451.0	28.2	2148.8	90.9	8.080	26.5	2158.3	83.2	12.813	7.892	.845	-14.2	-50.3
124	4806	.20	34.673	2376	2265		450.4	28.2	2146.0	90.9	8.080	26.4	2155.7	82.9	12.987	7.887	.842	-16.7	-53.5

STATION: 60 LEG: V — POSITION: 32° 58' S 42° 30' W — DATE: 22 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
401	3	18.50	35.990	2382	2045	2051	282.2	9.5	1800.0	235.5	8.309	9.5	1800.1	235.5	4.915	8.308	2.484	190.1	169.6
402	23	18.41	35.985	2375	2040	2049	281.9	9.5	1796.7	233.8	8.308	9.5	1796.7	233.8	4.932	8.307	2.466	188.2	167.8
403	66	17.59	36.005	2377	2047	2066	279.1	9.6	1807.3	230.0	8.310	9.6	1807.5	229.9	4.927	8.307	2.426	184.0	163.5
404	95	16.87	35.912	2370	2055	2079	287.6	10.1	1825.2	219.7	8.297	10.1	1825.4	219.4	5.087	8.294	2.310	173.4	152.7
405	117	16.66	35.890	2370	2061	2089	293.0	10.4	1834.9	215.7	8.290	10.4	1835.2	215.4	5.180	8.286	2.266	169.2	148.5
406	126	16.66	35.894	2367	2063	2077	299.3	10.6	1840.0	212.3	8.282	10.6	1840.4	212.0	5.280	8.277	2.231	165.8	145.0
407	167	15.83	35.716	2360	2076	2089	314.7	11.5	1865.6	198.9	8.261	11.4	1866.0	198.5	5.552	8.256	2.079	151.9	131.1
408	194	15.48	35.671	2356	2082		324.3	11.9	1877.8	192.3	8.249	11.9	1878.3	191.8	5.722	8.242	2.006	145.0	124.1
409	245	15.01	35.631	2356	2070	2092	299.1	11.2	1859.2	199.7	8.277	11.1	1859.8	199.1	5.385	8.269	2.080	151.9	130.9
410	282	14.59	35.564	2349	2086	2099	327.0	12.4	1889.0	184.6	8.243	12.3	1889.7	184.0	5.845	8.233	1.918	136.5	115.4
411	354	13.54	35.379	2340	2087		325.0	12.7	1896.7	177.6	8.242	12.6	1897.6	176.8	5.898	8.229	1.833	128.8	107.4
412	434	12.19	35.147	2329	2105	2122	352.6	14.4	1932.0	158.6	8.207	14.3	1933.0	157.7	6.436	8.191	1.625	109.0	87.4
415	534	9.44	34.755	2314	2118	2143	359.9	16.1	1961.9	140.0	8.190	16.0	1963.1	138.9	6.757	8.170	1.415	89.3	67.4
416	630	7.09	34.467	2299	2132	2149	382.1	18.6	1991.8	121.6	8.158	18.4	1993.2	120.4	7.343	8.134	1.217	69.8	47.6
417	731	5.35	34.302	2296	2136	2163	369.9	19.1	1999.9	117.0	8.164	18.9	2001.5	115.6	7.305	8.136	1.163	64.1	41.6
418	830	4.60	34.263	2300	2152	2172	389.0	20.7	2021.3	110.0	8.143	20.4	2023.1	108.5	7.743	8.111	1.090	56.1	33.3
419	930	4.03	34.272	2304	2165	2174	405.0	22.0	2038.1	104.9	8.126	21.7	2040.1	103.3	8.131	8.090	1.037	50.0	26.9
420	1039	3.50	34.271	2310	2187	2203	444.6	24.6	2066.3	96.1	8.088	24.2	2068.4	94.4	8.957	8.048	.948	40.1	16.7
421	1148	3.06	34.309	2313	2201	2218	474.0	26.6	2084.2	90.2	8.062	26.2	2086.5	88.3	9.623	8.017	.888	33.1	9.4
422	1264	2.94	34.378	2325	2213	2216	476.3	26.9	2095.7	90.4	8.061	26.4	2098.2	88.4	9.738	8.012	.891	32.1	8.1
423	1376	2.81	34.431	2332	2225	2245	494.1	28.0	2109.1	87.9	8.047	27.5	2111.8	85.7	10.164	7.993	.865	28.5	4.1
424	1486	2.79	34.518	2347	2228	2252	458.8	26.0	2107.4	94.6	8.079	25.5	2110.4	92.2	9.541	8.020	.933	33.9	9.2
102	1579	2.82	34.574	2343	2227	2259	468.5	26.5	2107.6	92.9	8.070	25.9	2110.8	90.3	9.826	8.008	.915	31.2	6.3
103	1726	2.85	34.655	2350	2224	2237	440.5	24.9	2100.7	98.4	8.095	24.3	2104.2	95.5	9.388	8.027	.970	35.1	9.7
104	1875	3.00	34.743	2346	2216		430.9	24.2	2091.3	100.5	8.103	23.6	2095.2	97.3	9.334	8.030	.991	35.5	9.7
105	2073	3.14	34.833	2345	2194	2223	377.5	21.1	2060.7	112.2	8.155	20.5	2065.2	108.3	8.427	8.074	1.106	44.6	18.3
106	2273	3.21	34.890	2338	2178	2202	356.1	19.8	2041.0	117.1	8.176	19.2	2046.0	112.8	8.162	8.088	1.153	47.1	20.1
107	2466	3.21	34.919	2337	2170	2193	340.8	19.0	2029.9	121.1	8.193	18.3	2035.4	116.3	7.990	8.097	1.190	48.6	21.1
108	2669	3.11	34.930	2336	2176	2196	354.6	19.8	2039.1	117.0	8.177	19.1	2045.0	111.9	8.443	8.074	1.146	42.0	13.8
109	2870	2.93	34.918	2337	2184	2191	368.4	20.7	2050.2	113.0	8.162	19.9	2056.5	107.6	8.911	8.050	1.102	35.5	6.6
110	3069	2.76	34.906	2345	2183	2191	347.6	19.7	2044.9	118.4	8.185	18.8	2051.8	112.4	8.594	8.066	1.150	38.0	8.4
111	3215	2.61	34.898	2345	2181	2200	341.1	19.4	2042.0	119.5	8.192	18.5	2049.2	113.2	8.576	8.067	1.158	37.0	6.9
112	3313	2.47	34.883	2350	2187	2201	342.5	19.6	2048.3	119.1	8.191	18.7	2055.7	112.6	8.677	8.062	1.151	35.1	4.7
115	3422	2.08	34.829	2354	2215	2197	394.6	22.9	2086.5	105.5	8.135	21.8	2093.8	99.3	9.986	8.001	1.014	20.3	-10.6
815	3525	1.79	34.814	2359	2213	2231	373.9	22.0	2081.5	109.6	8.156	20.9	2089.1	103.0	9.607	8.017	1.051	22.6	-8.8
116	3628	1.39	34.769	2364	2238	2261	421.9	25.2	2114.2	98.6	8.108	23.9	2121.8	92.3	10.857	7.964	.941	10.3	-21.5
117	3728	1.09	34.739	2373	2241	2256	402.7	24.3	2114.6	102.1	8.127	23.1	2122.5	95.5	10.491	7.979	.972	12.1	-20.2
118	3826	.75	34.711	2374	2258	2272	443.6	27.1	2137.4	93.5	8.088	25.8	2145.3	87.0	11.619	7.935	.885	2.1	-30.6
119	3930	.46	34.694	2373	2254	2280	429.4	26.6	2132.4	95.0	8.099	25.2	2140.5	88.3	11.425	7.942	.898	1.8	-31.3
120	4019	.30	34.678	2376	2254	2277	418.8	26.1	2131.2	96.7	8.109	24.7	2139.6	89.8	11.263	7.948	.913	2.0	-31.5
121	4128	.18	34.672	2381	2257	2295	412.5	25.8	2133.2	98.0	8.116	24.4	2141.9	90.7	11.212	7.950	.922	1.3	-32.7
122	4225	.13	34.670	2379	2267	2278	446.9	28.0	2147.5	91.5	8.083	26.4	2156.2	84.4	12.205	7.913	.858	-6.4	-40.8
123	4327	.10	34.668	2378	2271	2288	462.1	29.0	2153.2	88.8	8.070	27.4	2161.9	81.7	12.726	7.895	.830	-10.6	-45.4
124	4416	.11	34.667	2380	2264	2287	434.5	27.3	2143.1	93.6	8.095	25.7	2152.2	86.1	12.101	7.917	.875	-7.5	-42.7

STATION: 61 LEG: V — POSITION: 36° 0' S 45° 0' W — DATE: 24 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P=1 ATM, T=INSITU PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	CALC P, T=INSITU H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
501	6		35.825	2365	2040	2032													
502	52	17.39	35.931	2370	2042	2041	276.9	9.6	1803.9	228.5	8.311	9.6	1804.1	228.3	4.905	8.309	2.405	182.6	162.0
503	87	16.11	35.783	2362	2057	2085	288.7	10.4	1834.0	212.6	8.293	10.4	1834.2	212.4	5.131	8.290	2.228	166.3	145.7
504	150	15.10	35.641	2352	2075	2075	312.9	11.6	1869.5	193.8	8.261	11.6	1869.9	193.5	5.555	8.255	2.021	146.9	126.1
505	190	14.93	35.628	2351	2067	2060	299.6	11.2	1857.6	198.2	8.276	11.2	1858.1	197.7	5.382	8.269	2.065	150.9	130.0
506	225	14.90	35.661	2354	2066	2069	294.4	11.0	1854.2	200.8	8.282	11.0	1854.8	200.2	5.317	8.274	2.093	153.2	132.2
507	270	14.80	35.646	2353	2066	2082	294.2	11.0	1854.9	200.1	8.282	11.0	1855.6	199.4	5.337	8.273	2.084	152.1	131.0
508	319	14.32	35.540	2365	2079	2081	291.8	11.1	1868.2	199.7	8.286	11.1	1869.0	198.9	5.308	8.275	2.072	151.2	130.0
509	365	13.36	35.326	2333	2081	2099	321.8	12.7	1891.7	176.7	8.244	12.6	1892.6	175.9	5.874	8.231	1.821	127.7	106.4
510	428	12.10	35.140	2327	2087	2090	321.6	13.2	1905.4	168.5	8.240	13.1	1906.4	167.5	5.955	8.225	1.725	118.8	97.3
511	487	12.18	35.242	2329	2083	2088	313.9	12.8	1898.0	172.2	8.249	12.7	1899.2	171.1	5.860	8.232	1.767	122.0	100.4
512	537	11.61	35.134	2328	2092	2106	322.0	13.4	1912.9	165.7	8.239	13.3	1914.2	164.5	6.032	8.220	1.694	115.1	93.3
515	598	9.29	34.720	2307	2106	2120	345.2	15.5	1947.7	142.8	8.204	15.4	1949.0	141.6	6.575	8.182	1.441	91.4	69.4

STATION: 61 LEG: V — POSITION: 36° 0' S 45° 0' W — DATE: 24 NOV 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P = 1 ATM, T = INSITU PCO_2 µATM	CALC P = 1 ATM, T = INSITU H_2CO_3 µM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- µM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ µM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 µM/KG	CALC P, T = INSITU HCO_3^- µM/KG	CALC P, T = INSITU $CO_3^=$ µM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
516	649	7.07	34.433	2296	2114	2119	346.9	16.9	1966.8	130.4	8.194	16.7	1968.2	129.1	6.762	8.170	1.303	78.4	56.1
517	695	6.26	34.336	2290	2125	2135	370.4	18.5	1986.5	120.0	8.166	18.3	1988.0	118.7	7.253	8.139	1.195	67.5	45.1
518	748	5.24	34.246	2287	2125	2132	360.7	18.7	1988.4	117.9	8.172	18.5	1990.0	116.5	7.182	8.144	1.170	64.8	42.3
519	795	4.95	34.249	2289	2133	2131	371.2	19.5	1999.1	114.4	8.160	19.2	2000.8	112.9	7.412	8.130	1.134	60.9	38.2
520	849	4.71	34.254	2294	2145	2157	386.4	20.4	2014.1	110.5	8.145	20.2	2015.9	108.9	7.720	8.112	1.094	56.4	33.6
521	897	4.38	34.232	2290	2142	2161	382.6	20.5	2011.8	109.7	8.147	20.2	2013.7	108.1	7.718	8.112	1.085	55.2	32.2
522	998	3.85	34.224	2296	2153	2170	389.0	21.2	2024.8	106.9	8.140	20.9	2026.9	105.2	7.923	8.101	1.055	51.3	28.0
523	1148	3.44	34.265	2303	2172	2191	417.6	23.1	2048.5	100.3	8.111	22.8	2050.9	98.3	8.574	8.067	.988	43.2	19.5
524	1310	2.91	34.325	2315	2197	2205	452.3	25.6	2078.0	93.4	8.080	25.1	2080.7	91.2	9.364	8.029	.918	34.6	10.4
101	1389	2.77	34.364	2325	2213	2206	473.1	26.9	2095.7	90.4	8.063	26.4	2098.5	88.2	9.804	8.009	.888	30.8	6.4
103	1711	2.76	34.572			2264													
104	1871	2.83	34.655	2345	2235	2252	490.6	27.7	2117.5	89.7	8.052	27.1	2121.2	86.7	10.524	7.978	.881	24.9	-.9
105	2031	2.87	34.728	2344	2222	2252	452.2	25.5	2100.4	96.1	8.083	24.8	2104.5	92.7	9.914	8.004	.943	29.3	3.0
106	2188	2.90	34.776			2247													
107	2349	3.01	34.844	2343	2209		419.8	23.6	2082.9	102.6	8.113	22.8	2087.8	98.4	9.532	8.021	1.006	31.9	4.7
108	2507	2.94	34.858	2344	2191	2221	369.8	20.8	2056.9	113.3	8.162	20.1	2062.4	108.5	8.623	8.064	1.109	40.4	12.6
109	2668	2.81	34.866			2230													
110	2827	2.75	34.884			2213													
111	2983	2.65	34.886	2342	2189	2212	365.5	20.8	2055.1	113.1	8.165	19.9	2061.6	107.5	8.943	8.048	1.100	34.0	4.7
112	3167	2.11	34.812	2359	2225	2252	409.7	23.8	2098.3	102.9	8.121	22.7	2105.0	97.3	10.071	7.997	.993	21.4	-8.7
115	3365	1.69	34.774	2362	2236	2265	426.2	25.1	2112.3	98.6	8.105	24.0	2119.3	92.7	10.668	7.972	.945	14.2	-16.5
116	3548	1.36	34.748	2369	2242	2274	419.7	25.1	2117.7	99.3	8.111	23.9	2125.1	93.1	10.705	7.970	.948	12.1	-19.4
117	3730	1.04	34.722			2283													
118	3914	.70	34.698	2371	2255	2287	441.8	27.1	2134.5	93.4	8.089	25.7	2142.6	86.8	11.689	7.932	.883	.7	-32.4
119	4098	.45	34.683	2378	2260	2294	433.5	26.8	2138.5	94.6	8.097	25.4	2147.0	87.6	11.683	7.932	.891	-1.2	-35.0
120	4280	.30	34.676	2377	2262	2290	439.9	27.4	2141.6	93.0	8.090	25.8	2150.4	85.8	12.073	7.918	.872	-5.7	-40.3
121	4465	.21	34.671	2378	2267	2288	451.1	28.2	2147.9	90.9	8.080	26.5	2157.0	83.5	12.584	7.900	.848	-10.8	-46.2
122	4649	.17	34.668			2288													
123	4827	.15	34.666	2377	2272		469.4	29.4	2154.8	87.8	8.064	27.6	2164.5	79.9	13.529	7.869	.812	-20.1	-56.9
124	4926	.16	34.666	2384	2259	2288	410.1	25.7	2134.7	98.6	8.118	24.0	2145.1	89.9	11.998	7.921	.914	-11.6	-48.9

STATION: 64 LEG: VI — POSITION: 39° 3' S 48° 33' W — DATE: 5 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P = 1 ATM, T = INSITU PCO_2 µATM	CALC P = 1 ATM, T = INSITU H_2CO_3 µM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- µM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ µM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 µM/KG	CALC P, T = INSITU HCO_3^- µM KG	CALC P, T = INSITU $CO_3^=$ µM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
705	2149	2.73	34.772	2331	2219	2255	479.0	27.2	2101.5	90.4	8.058	26.4	2105.7	86.9	10.641	7.973	.886	22.3	-4.3
706	2332	2.81	34.828	2336	2212	2235	443.7	25.1	2090.0	96.9	8.089	24.3	2094.8	92.9	10.061	7.997	.949	26.5	-.7
707	2501	2.83	34.863	2331	2191		397.5	22.4	2063.0	105.6	8.131	21.7	2068.3	101.1	9.260	8.033	1.033	32.9	5.2
708	2651	2.75	34.868	2331	2193	2232	401.6	22.8	2065.8	104.4	8.127	21.9	2071.4	99.7	9.484	8.023	1.019	29.9	1.7
709	2830	2.46	34.834	2335	2206	2237	422.8	24.2	2082.2	99.6	8.106	23.3	2088.1	94.6	10.115	7.995	.966	22.8	-6.1
710	2931	2.40	34.837	2341	2216		435.4	25.0	2093.5	97.5	8.096	24.0	2099.5	92.5	10.468	7.980	.945	19.5	-9.7
711	3083	2.19	34.817	2338	2209	2248	419.2	24.3	2085.1	99.6	8.109	23.2	2091.5	94.2	10.287	7.988	.962	19.4	-10.4
712	3232	1.94	34.794	2349	2231	2258	451.0	26.4	2110.7	93.9	8.081	25.2	2117.3	88.5	11.133	7.953	.903	11.7	-18.5
715	3441	1.54	34.752	2356	2240	2261	452.1	26.8	2120.2	93.0	8.080	25.6	2127.1	87.3	11.391	7.943	.889	7.8	-23.3
716	3640	1.19	34.725	2360	2252	2284	473.1	28.5	2134.7	88.9	8.062	27.1	2141.9	82.9	12.131	7.916	.844	.7	-31.1
717	3932	.83	34.702	2358	2248	2283	459.3	28.0	2130.1	89.9	8.072	26.6	2138.0	83.4	12.189	7.914	.848	-2.9	-35.9
718	4225	.51	34.687	2362	2260		481.7	29.8	2144.4	85.8	8.052	28.1	2152.8	79.0	13.127	7.882	.804	-11.5	-45.8
719	4471	.32	34.675	2365	2258	2295	462.3	28.8	2140.7	88.5	8.068	27.1	2149.7	81.2	12.937	7.888	.825	-13.2	-48.5
720	4661	.24	34.672	2366	2266	2283	485.0	30.3	2150.8	84.9	8.049	28.5	2160.0	77.5	13.785	7.861	.787	-19.8	-55.9
721	4894	.22	34.670	2363	2256	2294	460.0	28.7	2138.8	88.5	8.070	26.9	2148.6	80.4	13.425	7.872	.817	-20.5	-57.7
722	5043	.20	34.669			2278													
723	5191	.20	34.668	2365	2256	2294	453.6	28.4	2138.1	89.5	8.075	26.5	2148.5	81.0	13.617	7.866	.823	-24.9	-63.3
724	5315	.20	34.668	2367		2295													

STATION: 66 LEG: VI — POSITION: 41° 32' S 50° 57' W — DATE: 8 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P = 1 ATM, T = INSITU PCO_2 µATM	CALC P = 1 ATM, T = INSITU H_2CO_3 µM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- µM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ µM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 µM/KG	CALC P, T = INSITU HCO_3^- µM KG	CALC P, T = INSITU $CO_3^=$ µM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
401	15	17.52	35.776			2059													
402	40	17.45	35.770	2362	2037	2062	278.3	9.7	1800.8	226.5	8.309	9.6	1800.9	226.4	4.925	8.308	2.374	180.7	160.2
403	61	17.46	35.879			2067													
404	84	17.37	35.880	2367	2048	2064	287.4	10.0	1815.4	222.6	8.298	10.0	1815.7	222.4	5.071	8.295	2.339	176.4	155.8
405	135	16.30	35.751			2091													
406	189	14.92	35.558	2344	2068	2100	309.2	11.6	1863.5	192.9	8.263	11.5	1864.0	192.5	5.535	8.257	2.006	145.7	124.7
407	233	14.46	35.523			2096													
408	283	14.46	35.581	2347	2067	2104	298.1	11.3	1860.4	195.2	8.276	11.3	1861.2	194.6	5.421	8.266	2.029	147.1	126.0
409	332	14.11	35.505			2103													
410	381	12.85	35.264	2334	2091	2111	329.9	13.2	1907.0	170.8	8.234	13.1	1907.9	170.0	6.020	8.220	1.757	121.7	100.3
411	425	11.74	35.068			2125													
412	505	9.02	34.623	2303	2096	2124	327.9	14.9	1934.8	146.3	8.222	14.8	1936.0	145.3	6.256	8.204	1.474	95.8	73.9
415	590	7.22	34.437			2140													
416	670	5.51	34.259			2147													
417	716	5.14	34.250			2154													
418	847	4.44	34.222	2291	2127	2165	345.8	18.5	1989.5	119.0	8.186	18.2	1991.4	117.4	7.014	8.154	1.177	64.8	42.0
419	976	3.79	34.206			2172													
420	976	3.79	34.207	2295	2153	2175	390.2	21.4	2025.3	106.3	8.138	21.1	2027.3	104.6	7.937	8.100	1.049	50.9	27.7
421	1122	3.37	34.263			2200													
422	1272	3.10	34.323	2315	2186	2226	422.0	23.7	2062.9	99.4	8.108	23.3	2065.5	97.2	8.743	8.058	.978	41.0	16.9
423	1451	2.83	34.402			2239													
101	1491	2.78	34.440			2235													
424	1629	2.87	34.530	2331	2220	2255	482.1	27.2	2102.8	90.0	8.057	26.6	2106.0	87.3	10.174	7.993	.884	27.8	2.7
102	1691	2.76	34.545	2335	2239	2263	536.9	30.5	2126.3	82.3	8.014	29.8	2129.5	79.7	11.297	7.947	.807	19.6	-5.7
103	1891	2.84	34.649			2264													
104	2089	2.81	34.710	2342	2230	2247	483.1	27.3	2112.0	90.7	8.057	26.6	2116.1	87.3	10.603	7.975	.888	23.3	-3.1
105	2289	2.66	34.736			2257													
106	2488	2.58	34.773	2353	2224	2261	429.2	24.5	2099.5	100.1	8.104	23.6	2104.6	95.7	9.849	8.007	.976	27.6	-.1
107	2688	2.59	34.806			2230													
108	2889	2.48	34.811	2351	2228	2234	445.3	25.5	2105.8	96.7	8.089	24.5	2111.7	91.8	10.590	7.975	.937	19.3	-9.8
109	3090	2.24	34.796			2250													
110	3290	1.93	34.767			2262													
111	3492	1.70	34.751			2276													
112	3694	1.43	34.734	2362	2253	2277	474.6	28.3	2135.3	89.5	8.062	26.9	2142.6	83.4	12.184	7.914	.849	.7	-31.4
115	3902	1.26	34.732			2266													
116	4099	.98	34.710	2369	2258	2280	461.9	28.0	2139.3	90.7	8.072	26.5	2147.6	83.9	12.364	7.908	.854	-4.6	-38.3
117	4299	.67	34.696			2275													
118	45[illegible]	.45	34.685	2372	2269	2270	480.2	29.7	2152.7	86.6	8.055	28.0	2161.7	79.3	13.386	7.873	.807	-15.4	-50.8
119	4711	.32	34.676			2274													

STATION: 64 LEG: VI — POSITION: 39° 3' S 48° 33' W — DATE: 5 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P = 1 ATM, T = INSITU PCO_2 µATM	CALC P = 1 ATM, T = INSITU H_2CO_3 µM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- µM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ µM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 µM/KG	CALC P, T = INSITU HCO_3^- µM KG	CALC P, T = INSITU $CO_3^=$ µM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
901	12	14.11	34.374	2284	2008	2045	274.3	10.6	1805.2	192.2	8.300	10.6	1805.3	192.1	5.019	8.299	1.936	146.3	125.7
902	38	12.40	34.468	2292	2026	2060	270.8	11.0	1830.1	184.8	8.301	11.0	1830.2	184.7	5.016	8.300	1.867	138.7	118.0
903	70	9.41	34.418	2285	2060	2087	295.0	13.2	1889.5	157.2	8.261	13.2	1889.7	157.1	5.521	8.258	1.585	110.7	89.9
904	110	7.04	34.301	2282	2096	2127	333.4	16.2	1947.3	132.5	8.207	16.2	1947.5	132.3	6.264	8.203	1.330	85.5	64.5
905	159	6.74	34.361	2278	2102	2141	349.6	17.2	1958.5	126.3	8.187	17.2	1958.9	125.9	6.587	8.181	1.269	78.8	57.7
906	208	5.86	34.250	2275	2109	2136	357.3	18.1	1970.8	120.1	8.176	18.1	1971.2	119.7	6.791	8.168	1.202	72.1	50.9
907	285	5.06	34.224	2277	2122	2162	371.8	19.4	1989.0	113.6	8.158	19.3	1989.6	113.0	7.122	8.147	1.134	64.9	43.4
908	365	4.54	34.191			2164													
909	445	4.44	34.206	2281	2134	2168	383.2	20.5	2004.6	108.9	8.145	20.4	2005.5	108.1	7.448	8.128	1.084	58.7	36.9
910	515	4.05	34.191	2281	2144	2173	403.5	21.9	2018.9	103.2	8.124	21.7	2019.9	102.3	7.876	8.104	1.026	52.4	30.3
911	581	3.84	34.201	2281	2143	2173	397.6	21.7	2017.5	103.7	8.129	21.5	2018.7	102.7	7.833	8.106	1.030	52.2	30.0
912	663	3.48	34.211	2290	2158	2188	411.2	22.8	2034.7	100.6	8.116	22.5	2036.0	99.4	8.130	8.090	.997	48.3	25.8
915	738	3.37	34.238	2289	2169	2201	445.2	24.7	2050.3	93.9	8.084	24.5	2051.8	92.7	8.812	8.055	.931	40.9	18.3
916	818	3.22	34.264	2298	2182	2222	458.5	25.6	2064.4	92.0	8.073	25.3	2066.0	90.6	9.099	8.041	.910	38.2	15.4
917	893	2.98	34.275	2298	2187		471.0	26.5	2071.2	89.3	8.061	26.2	2072.9	87.8	9.411	8.026	.883	34.8	11.7
918	989	2.86	34.327	2306	2204		503.8	28.5	2090.8	84.7	8.035	28.1	2092.7	83.2	10.082	7.996	.837	29.3	6.0
919	1097	2.76	34.386	2310	2209	2245	507.7	28.8	2095.9	84.3	8.033	28.4	2098.0	82.6	10.252	7.989	.832	27.8	4.1
920	1201	2.66	34.417	2318	2229	2242	556.0	31.7	2118.9	78.4	7.997	31.2	2121.2	76.6	11.237	7.949	.773	20.9	-3.1
921	1297	2.61	34.456	2320	2222	2256	520.0	29.7	2109.4	82.9	8.024	29.2	2111.9	80.9	10.654	7.972	.818	24.4	.2
922	1402	2.55	34.514	2329	2232	2267	526.4	30.1	2119.3	82.6	8.020	29.6	2122.0	80.5	10.851	7.965	.814	23.0	-1.5
701	1481	2.57	34.553			2267													
923	1504	2.60	34.563	2330	2230	2265	516.7	29.5	2116.3	84.2	8.028	28.9	2119.3	81.8	10.761	7.968	.829	23.4	-1.4
924	1612	2.60	34.613	2335	2242	2271	546.5	31.2	2130.1	80.7	8.006	30.5	2133.2	78.3	11.429	7.942	.794	18.9	-6.2
702	1627	2.58	34.619	2335	2244	2266	554.4	31.7	2132.6	79.7	8.000	31.0	2135.7	77.3	11.601	7.936	.784	17.7	-7.4
703	1829	2.75	34.702	2332	2228	2260	507.1	28.8	2113.0	86.2	8.036	28.1	2116.6	83.4	10.880	7.963	.848	21.9	-3.8
704	2049	2.95	34.791	2334	2211		448.2	25.2	2089.4	96.4	8.085	24.5	2093.6	92.9	9.887	8.005	.947	29.4	3.1

STATION: 66 LEG: VI — POSITION: 41° 32' S 50° 57' W — DATE: 8 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P,T=INSITU H_2CO_3 µM/KG	CALC P,T=INSITU HCO_3^- µM/KG	CALC P,T=INSITU $CO_3^=$ µM/KG	CALC P,T=INSITU AH (10^{-9})	CALC P,T=INSITU PH	CALC P,T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
120	4918	.29	34.676	2374	2258	2282	435.9	27.1	2137.4	93.5	8.093	25.4	2147.5	85.1	12.721	7.895	.865	-16.2	-53.4
121	5140	.25	34.671			2279													
122	5335	.26	34.671	2373	2272	2275	483.8	30.2	2156.2	85.6	8.051	28.2	2166.8	77.0	14.607	7.835	.783	-31.3	-70.3
123	5530	.26	34.671			2283													
124	5721	.28	34.671	2371	2262	2272	456.7	28.5	2143.8	89.7	8.074	26.4	2155.4	80.3	14.351	7.843	.816	-34.9	-75.6

STATION: 67 LEG: VI — POSITION: 44° 58' S 51° 3' W — DATE: 9 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P,T=INSITU H_2CO_3 µM/KG	CALC P,T=INSITU HCO_3^- µM/KG	CALC P,T=INSITU $CO_3^=$ µM/KG	CALC P,T=INSITU AH (10^{-9})	CALC P,T=INSITU PH	CALC P,T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	10	11.98	34.561	2297	2038	2057	277.8	11.5	1846.4	180.2	8.291	11.5	1846.4	180.1	5.119	8.291	1.825	134.2	113.6
402	42	9.95	34.593	2297	2015	2059	226.6	10.0	1811.5	193.5	8.359	10.0	1811.6	193.4	4.385	8.358	1.962	147.2	126.5
403	62	9.48	34.625	2298	2065	2088	287.7	12.9	1889.7	162.4	8.271	12.9	1889.9	162.2	5.382	8.269	1.647	115.9	95.1
404	101	9.26	34.631	2297	2065	2105	286.5	12.9	1890.5	161.6	8.272	12.9	1890.7	161.4	5.391	8.268	1.638	114.8	93.9
405	151	8.61	34.631	2294	2092	2113	329.5	15.2	1934.0	142.8	8.218	15.1	1934.4	142.5	6.138	8.212	1.446	95.5	74.5
406	199	7.87	34.579	2294	2088	2116	311.7	14.7	1928.3	144.9	8.236	14.7	1928.8	144.5	5.903	8.229	1.465	97.1	76.0
407	251	5.82	34.311	2277	2120	2150	379.2	19.3	1985.9	114.9	8.153	19.2	1986.4	114.4	7.186	8.144	1.151	66.5	45.2
408	300	5.05	34.223	2283	2128	2153	373.2	19.5	1994.8	113.7	8.158	19.4	1995.4	113.2	7.140	8.146	1.135	64.9	43.4
409	353	4.53	34.185	2279	2122		359.5	19.2	1988.2	114.6	8.170	19.1	1989.0	114.0	6.977	8.156	1.142	65.3	43.7
410	405	4.28	34.183	2282	2122	2165	349.9	18.8	1986.8	116.4	8.180	18.7	1987.7	115.6	6.850	8.164	1.159	66.5	44.8
411	445	4.13	34.178	2285	2145	2163	397.7	21.5	2018.5	105.0	8.130	21.4	2019.4	104.3	7.706	8.113	1.045	54.8	33.0
412	445	4.13	34.178	2284	2138	2158	381.7	20.6	2009.0	108.4	8.146	20.5	2009.9	107.6	7.431	8.129	1.078	58.2	36.3
415	559	3.69	34.184	2284	2156	2172	424.1	23.3	2034.4	98.3	8.103	23.1	2035.6	97.3	8.286	8.082	.975	47.0	24.8
416	658	3.40	34.194	2294	2158	2187	399.9	22.2	2032.9	102.9	8.127	22.0	2034.3	101.7	7.916	8.101	1.020	50.6	28.2
417	760	3.15	34.229	2296	2183	2204	466.1	26.1	2066.6	90.3	8.066	25.8	2068.0	89.1	9.199	8.036	.894	37.1	14.4
418	857	2.97	34.271	2307	2187	2221	444.0	25.0	2067.6	94.3	8.086	24.7	2069.4	92.9	8.857	8.053	.933	40.1	17.1
419	954	2.86	34.311	2303	2211	2225	541.6	30.7	2100.8	79.6	8.006	30.3	2102.6	78.1	10.755	7.968	.786	24.5	1.3
420	1054	2.61	34.337	2317	2201	2241	454.4	26.0	2082.7	92.3	8.077	25.6	2084.8	90.6	9.207	8.036	.912	36.1	12.6
421	1127	2.68	34.390	2315	2224	2247	546.9	31.1	2113.5	79.3	8.003	30.7	2115.7	77.6	11.000	7.959	.782	22.5	-1.2
422	1316	2.57	34.481	2337	2232	2268	498.9	28.5	2116.5	87.0	8.043	28.0	2119.1	84.9	10.208	7.991	.858	28.1	3.9
423	1438	2.61	34.545	2332	2247	2265	578.6	33.0	2137.3	76.7	7.983	32.4	2140.0	74.6	11.867	7.926	.755	16.7	-7.8
101	1499	2.57	34.565	2332	2245		569.3	32.5	2134.8	77.7	7.989	31.9	2137.6	75.4	11.762	7.930	.764	17.1	-7.7
424	1589	2.71	34.619	2336	2233		510.3	29.0	2118.2	85.9	8.034	28.4	2121.3	83.4	10.686	7.971	.846	24.2	-.8
102	1741	2.55	34.642	2354	2239	2252	471.0	26.9	2119.5	92.6	8.068	26.3	2123.0	89.7	10.010	8.000	.911	29.1	3.6
103	1959	2.55	34.699	2343	2244	2263	525.4	30.0	2130.1	83.9	8.023	29.3	2133.9	80.9	11.352	7.945	.823	18.1	-7.9
104	2192	2.75	34.788	2338	2221	2243	465.0	26.4	2101.4	93.2	8.071	25.6	2105.9	89.6	10.364	7.984	.913	24.6	-2.2
105	2392	2.76	34.825	2344	2217	2229	436.1	24.7	2093.6	98.7	8.097	23.9	2098.5	94.6	9.929	8.003	.966	27.6	.2
106	2573	2.60	34.830	2337	2211	2222	434.5	24.8	2088.3	98.0	8.097	23.9	2093.5	93.6	10.106	7.995	.955	24.6	-3.4
107	2758	2.48	34.829	2343	2218	2224	437.2	25.0	2095.4	97.6	8.095	24.1	2101.1	92.9	10.324	7.986	.948	21.8	-6.8
108	2980	2.19	34.802	2347	2221	2254	430.3	24.9	2097.9	98.2	8.101	23.9	2104.0	93.1	10.398	7.983	.950	19.4	-10.0
109	3190	1.92	34.779	2351	2240	2253	473.8	27.7	2122.0	90.3	8.062	26.5	2128.4	85.0	11.601	7.936	.867	8.8	-21.4
110	3442	1.59	34.751	2354	2236	2263	446.1	26.4	2115.5	94.0	8.085	25.2	2122.6	88.2	11.255	7.949	.899	8.8	-22.3
111	3599	1.38	34.729	2363	2262	2266	501.9	30.0	2146.7	85.3	8.039	28.6	2153.8	79.6	12.726	7.895	.811	-1.9	-33.6
112	3599	1.38	34.730	2366	2244	2284	433.5	25.9	2121.6	96.5	8.098	24.6	2129.1	90.3	11.092	7.955	.919	8.7	-23.0
115	3838	1.16	34.717	2358	2265	2266	526.1	31.7	2152.2	81.1	8.019	30.2	2159.6	75.2	13.666	7.864	.766	-9.6	-42.2
116	4032	.94	34.706	2363	2252		459.4	27.9	2133.6	90.5	8.073	26.4	2141.7	83.9	12.263	7.911	.853	-3.7	-37.1
117	4219	.75	34.696	2361	2269	2264	522.6	32.0	2156.3	80.7	8.020	30.3	2164.5	74.2	14.130	7.850	.755	-16.1	-50.3
118	4421	.58	34.687	2363	2248		440.6	27.1	2128.2	92.7	8.088	25.6	2137.2	85.2	12.281	7.911	.866	-8.2	-43.2
119	4630	.42	34.676	2363	2273	2267	524.3	32.5	2160.7	79.8	8.018	30.7	2169.7	72.7	14.782	7.830	.739	-24.0	-59.9
120	4836	.32	34.673	2364	2255	2281	455.5	28.3	2137.1	89.5	8.074	26.6	2146.9	81.5	13.207	7.879	.829	-18.4	-55.3
121	5047	.27	34.669	2362	2277	2272	540.9	33.7	2166.0	77.3	8.005	31.7	2175.6	69.7	15.875	7.799	.708	-33.7	-71.5
122	5298	.27	34.667	2365	2255	2264	451.6	28.2	2136.8	90.1	8.078	26.2	2147.5	81.3	13.683	7.864	.826	-26.4	-65.2
123	5630	.26	34.665	2364	2271		510.0	31.8	2157.9	81.3	8.029	29.6	2168.8	72.6	15.850	7.800	.738	-40.9	-81.3
124	5798	.27	34.666	2371	2261	2275	453.2	28.3	2142.5	90.2	8.077	26.2	2154.2	80.6	14.353	7.843	.819	-36.0	-77.1

STATION: 68 LEG: VI — POSITION: 48° 39' S 45° 59' W — DATE: 13 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P,T=INSITU H_2CO_3 µM/KG	CALC P,T=INSITU HCO_3^- µM/KG	CALC P,T=INSITU $CO_3^=$ µM/KG	CALC P,T=INSITU AH (10^{-9})	CALC P,T=INSITU PH	CALC P,T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
501	10	9.08	34.260			2073													
502	40	6.46	34.222			2128													
504	139	4.29	34.169			2175													
505	189	3.93	34.162			2177													
506	238	3.65	34.161			2156													
507	288	3.40	34.170			2197													
508	386	3.13	34.199			2208													
509	486	2.92	34.243			2199													
510	585	2.69	34.290			2246													
511	631	2.69	34.313			2233													
512	681	2.67	34.345			2248													
515	789	2.50	34.390			2286													
516	888	2.46	34.458			2265													
517	987	2.49	34.522			2277													
518	1036	2.43	34.536			2306													
519	1086	2.38	34.545			2271													
520	1186	2.52	34.606			2281													
522	1380	2.54	34.674			2257													
523	1482	2.61	34.711			2281													
524	1532	2.63	34.728			2285													
102	1533	2.43	34.694	2355	2245	2265	486.8	27.9	2127.2	89.9	8.055	27.4	2130.2	87.4	10.137	7.994	.889	28.7	3.8
101	1533	2.43	34.697	2352	2233	2271	456.1	26.2	2112.2	94.6	8.080	25.6	2115.3	92.1	9.560	8.020	.936	33.3	8.5
103	1740	2.39	34.732	2347	2241	2264	498.0	28.6	2124.8	87.6	8.044	28.0	2128.2	84.8	10.593	7.975	.864	24.2	-1.3
104	1931	2.35	34.761	2357	2227	2256	423.5	24.4	2101.9	100.7	8.109	23.7	2106.0	97.3	9.258	8.033	.992	34.8	8.8
105	2134	2.30	34.783	2353	2237		464.6	26.8	2117.2	93.0	8.072	26.0	2121.5	89.4	10.289	7.988	.912	24.9	-1.7
106	2134	2.30	34.784	2355	2225	2201	422.4	24.4	2100.0	100.6	8.110	23.6	2104.5	96.9	9.422	8.026	.988	32.4	5.7
107	2289	2.16	34.781			2255													
108	2486	1.94	34.769	2359	2230	2290	420.6	24.6	2105.3	100.1	8.111	23.7	2110.5	95.8	9.710	8.013	.976	27.5	-.3
109	2689	1.73	34.755	2360	2250	2249	476.3	28.1	2132.0	89.9	8.061	27.1	2137.4	85.6	11.112	7.954	.872	15.0	-13.5
110	2888	1.47	34.737			2272													
111	3138	1.24	34.723			2275													
112	3384	1.03	34.713	2367	2235	2282	399.9	24.2	2108.8	102.0	8.129	23.1	2116.0	95.9	10.130	7.994	.976	16.9	-14.1
115	3693	.80	34.701			2273													
116	3993	.57	34.687			2241													
117	4291	.37	34.678			2275													
118	4590	.27	34.672			2280													
119	4590	.27	34.672	2372	2266	2280	466.8	29.1	2148.8	88.1	8.066	27.4	2158.0	80.7	13.169	7.880	.820	-15.5	-51.3
120	4886	.24	34.670	2370	2257	2252	443.0	27.7	2137.6	91.8	8.086	25.9	2147.5	83.6	12.909	7.889	.850	-17.3	-54.3
121	5185	.22	34.669			2279													
122	5485	.23	34.665			2285													
123	5785	.26	34.665	2369	2265	2287	472.2	29.5	2148.5	87.0	8.060	27.3	2160.0	77.7	14.918	7.826	.789	-38.7	-79.7
124	5959	.27	34.667			2279													

STATION: 69 LEG: VI — POSITION: 52° 31' S 46° 22' W — DATE: 15 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P,T=INSITU H_2CO_3 µM/KG	CALC P,T=INSITU HCO_3^- µM/KG	CALC P,T=INSITU $CO_3^=$ µM/KG	CALC P,T=INSITU AH (10^{-9})	CALC P,T=INSITU PH	CALC P,T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	11	4.33	34.052			2108													
402	32	3.97	34.036			2084													
403	59	1.25	33.978			2181													
404	91	1.93	34.065			2162													
405	130	2.00	34.109			2160													
406	169	2.25	34.159			2179													
407	189	2.01	34.148			2176													
408	226	2.25	34.191			2190													
409	280	2.18	34.223			2207													
410	322	2.27	34.272			2215													
411	390	2.62	34.361			2242													
412	444	2.20	34.359			2263													
415	487	2.04	34.366			2125													
416	540	2.32	34.446			2265													
417	585	2.33	34.469			2284													

STATION: 69 LEG: VI — POSITION: 52° 31′ S 46° 22′ W — DATE: 15 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P = 1 ATM, T = INSITU PCO_2 μATM	CALC P = 1 ATM, T = INSITU H_2CO_3 μM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- μM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ μM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 μM/KG	CALC P, T = INSITU HCO_3^- μM/KG	CALC P, T = INSITU $CO_3^=$ μM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
418	674	2.31	34.525			2251													
419	753	2.25	34.560			2278													
420	873	2.19	34.608			2263													
421	992	2.14	34.639			2278													
422	1132	2.05	34.673			2287													
101	1271	1.96	34.690			2289													
424	1396	1.89	34.704			2275													
102	1457	1.85	34.705			2274													
103	1655	1.68	34.714			2344													
104	1655	1.68	34.717			2272													
105	1860	1.48	34.719			2276													
107	2187	1.20	34.717			2283													
108	2445	1.00	34.710			2295													
109	2445	1.00	34.710			2283													
110	2677	.72	34.701			2241													
111	2875	.55	34.691			2280													
116	3298	.45	34.685			2279													
122	3415	.34	34.679			2278													

STATION: 74 LEG: VI — POSITION: 55° 0′ S 50° 4′ W — DATE: 17 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P = 1 ATM, T = INSITU PCO_2 μATM	CALC P = 1 ATM, T = INSITU H_2CO_3 μM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- μM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ μM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 μM/KG	CALC P, T = INSITU HCO_3^- μM KG	CALC P, T = INSITU $CO_3^=$ μM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
501	8	3.37	33.990			2098													
502	26	2.72	33.950			2130													
503	58	2.02	33.970			2044													
504	91	1.00	34.010			2128													
505	126	.84	34.050			2046													
506	166	.97	34.110			2198													
507	208	1.34	34.180			2177													
508	246	1.22	34.210			2214													
509	308	1.68	34.300			2220													
510	341	1.93	34.350			2241													
511	382	2.11	34.390			2252													
512	416	2.14	34.410			2236													
515	461	1.89	34.420			2243													
516	511	2.13	34.480			2247													
518	602	2.16	34.540			2252													
519	602	2.16	34.540			2255													
520	650	2.19	34.560			2264													
521	730	2.18	34.590			2276													
522	830	2.14	34.620			2261													
101	872	2.12	34.630			2337													
102	918	2.08	34.641			2312													
523	986	2.05	34.650			2307													
524	987	2.05	34.650			2276													
103	998	2.07	34.657			2305													
104	1062	2.07	34.671			2289													
105	1204	1.98	34.686			2302													
106	1360	1.90	34.701			2319													
107	1360	1.90	34.702			2295													
108	1674	1.70	34.720			2282													
109	1986	1.49	34.721			2278													
110	1986	1.49	34.721			2310													
111	2354	1.25	34.719			2246													
112	2354	1.25	34.718			2305													
115	2560	1.11	34.713			2263													
116	2764	.99	34.709			2270													
117	2976	.85	34.703			2274													
118	3179	.73	34.696			2046													
119	3340	.69	34.692			2259													
120	3490	.61	34.690			2289													

STATION: 74 LEG: VI — POSITION: 55° 0′ S 50° 4′ W — DATE: 17 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P = 1 ATM, T = INSITU PCO_2 μATM	CALC P = 1 ATM, T = INSITU H_2CO_3 μM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- μM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ μM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 μM/KG	CALC P, T = INSITU HCO_3^- μM KG	CALC P, T = INSITU $CO_3^=$ μM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
121	3637	.52	34.685			2311													
122	3836	.44	34.678			2271													
123	3984	.40	34.675			2276													
124	4104	.35	34.672			2278													

STATION: 75 LEG: VI — POSITION: 56° 2′ S 61° 2′ W — DATE: 20 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P = 1 ATM, T = INSITU PCO_2 μATM	CALC P = 1 ATM, T = INSITU H_2CO_3 μM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- μM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ μM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 μM/KG	CALC P, T = INSITU HCO_3^- μM KG	CALC P, T = INSITU $CO_3^=$ μM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
401	35	5.97	34.149			2134													
402	44	5.54	34.159			2139													
403	84	4.66	34.187			2021													
404	134	4.37	34.203			2158													
405	183	4.22	34.198			2128													
406	236	4.02	34.197			2167													
407	286	3.85	34.191			2157													
408	336	3.73	34.186			2176													
409	384	3.58	34.183			2159													
410	436	3.53	34.181			2155													
411	486	3.42	34.189			2141													
412	537	3.11	34.189			2177													
415	596	2.91	34.192			2186													
416	647	2.85	34.202			2176													
417	696	2.63	34.202			2199													
418	778	2.69	34.254			2205													
419	797	2.75	34.275			2196													
420	825	2.65	34.285			2218													
421	897	2.73	34.356			2202													
101	898	2.72	34.342			2219													
102	898	2.72	34.342			2238													
422	946	2.74	34.394			2236													
424	997	2.71	34.425			2261													
103	1001	2.72	34.415			2218													
104	1209	2.55	34.508			2263													
106	1448	2.35	34.594			2273													
107	1644	2.24	34.643			2282													
108	1850	2.13	34.677			2298													
109	2061	1.98	34.698			2304													
110	2264	1.86	34.707			2311													
111	2481	1.75	34.715			2255													
112	2678	1.64	34.719			2273													
115	2689	1.63	34.720			2265													
116	2897	1.50	34.721			2240													
117	3106	1.34	34.719			2280													
118	3314	1.17	34.715			2284													
119	3566	1.07	34.713			2294													
120	3566	1.07	34.714			2292													
121	3631	1.04	34.712			2309													
122	3830	.99	34.710			2304													
123	4029	.94	34.706			2303													
124	4121	.93	34.706			2302													

STATION: 76 LEG: VII — POSITION: 57° 44′ S 66° 8′ W — DATE: 31 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	CALC P = 1 ATM, T = INSITU PCO_2 μATM	CALC P = 1 ATM, T = INSITU H_2CO_3 μM/KG	CALC P = 1 ATM, T = INSITU HCO_3^- μM/KG	CALC P = 1 ATM, T = INSITU $CO_3^=$ μM/KG	CALC P = 1 ATM, T = INSITU PH	CALC P, T = INSITU H_2CO_3 μM/KG	CALC P, T = INSITU HCO_3^- μM KG	CALC P, T = INSITU $CO_3^=$ μM/KG	CALC P, T = INSITU AH (10^{-9})	CALC P, T = INSITU PH	CALC P, T = INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
701	13	4.54	33.940	2288	2097	2120	290.9	15.5	1946.3	135.1	8.253	15.5	1946.4	135.1	5.589	8.253	1.344	88.9	68.1
702	27	4.52	33.937	2295	2093	2115	273.8	14.6	1936.4	142.0	8.277	14.6	1936.5	141.9	5.295	8.276	1.412	95.6	74.8

STATION: 76 LEG: VII | POSITION: 57° 44' S 66° 8' W | DATE: 31 DEC 72

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC (P=1 ATM, T=INSITU) PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC (P, T = INSITU) H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
703	53	3.92	33.904	2289	2101	2133	289.0	15.8	1952.0	133.2	8.254	15.8	1952.1	133.1	5.598	8.252	1.323	86.6	65.7
704	73	1.76	33.848	2291	2111	2132	279.3	16.5	1966.3	128.2	8.260	16.5	1966.5	128.0	5.527	8.258	1.270	81.3	60.3
705	94	.44	33.836	2284	2118	2127	288.7	18.0	1980.4	119.7	8.242	17.9	1980.6	119.5	5.778	8.238	1.185	72.5	51.4
706	119	0.00	33.864	2292	2126	2156	286.0	18.1	1988.0	119.9	8.245	18.1	1988.3	119.6	5.747	8.241	1.188	72.4	51.3
707	144	0.00	33.895	2287	2123	2141	288.9	18.3	1986.2	118.6	8.240	18.2	1986.5	118.3	5.824	8.235	1.175	70.9	49.7
708	159	0.00	33.922	2290	2141	2161	319.3	20.2	2010.8	110.0	8.202	20.2	2011.2	109.7	6.370	8.196	1.091	62.2	40.9
709	185	0.00	33.952	2288	2135	2158	310.9	19.7	2003.1	112.2	8.212	19.6	2003.6	111.8	6.240	8.205	1.113	64.1	42.8
710	235	.25	34.016	2298	2149	2160	324.9	20.3	2018.5	110.1	8.197	20.3	2019.0	109.7	6.485	8.188	1.094	61.6	40.2
711	284	.84	34.090	2302	2158	2171	344.9	21.1	2029.5	107.4	8.177	21.0	2030.2	106.8	6.830	8.166	1.068	58.4	36.9
712	384	1.31	34.194	2313	2195	2111	423.8	25.5	2076.3	93.3	8.099	25.3	2077.1	92.6	8.237	8.084	.928	43.4	21.7
715	496	1.99	34.340	2321	2214	2249	474.5	27.8	2098.7	87.6	8.058	27.6	2099.6	86.8	9.147	8.039	.874	36.8	14.8
716	597	2.19	34.424	2336	2244	2259	539.9	31.3	2132.4	80.3	8.010	31.1	2133.6	79.3	10.320	7.986	.801	28.6	6.3
717	695	2.28	34.474	2338	2234		497.2	28.7	2118.8	86.4	8.043	28.5	2120.2	85.3	9.640	8.016	.862	33.8	11.2
718	798	2.27	34.527	2342	2254	2270	561.3	32.4	2143.2	78.4	7.996	32.1	2144.7	77.2	10.871	7.964	.781	24.8	2.0
719	898	2.28	34.573	2346	2256	2298	555.2	32.1	2144.5	79.5	8.001	31.7	2146.2	78.1	10.845	7.965	.792	24.9	1.8
301	988	2.28	34.583	2353	2251		510.4	29.5	2135.8	85.7	8.035	29.1	2137.7	84.2	10.091	7.996	.853	30.2	6.9
720	998	2.25	34.600	2351	2258	2279	544.3	31.5	2145.5	81.1	8.009	31.1	2147.4	79.5	10.731	7.969	.807	25.5	2.1
721	1047	2.25	34.630	2352	2254	2272	525.3	30.4	2140.0	83.6	8.023	29.9	2142.1	82.0	10.429	7.982	.832	27.5	4.0
722	1097	2.22	34.634	2357	2258	2299	522.6	30.2	2143.5	84.2	8.026	29.8	2145.7	82.5	10.409	7.983	.838	27.7	4.0
302	1110	2.23	34.617	2350	2263	2274	568.6	32.9	2152.1	78.0	7.991	32.4	2154.2	76.4	11.298	7.947	.775	21.4	-2.3
723	1145	2.19	34.648	2352	2254		524.4	30.4	2140.0	83.6	8.024	29.9	2142.3	81.8	10.514	7.978	.831	26.5	2.7
724	1198	2.18	34.658	2357	2251		496.2	28.8	2134.4	87.9	8.046	28.3	2136.8	85.9	10.022	7.999	.873	30.2	6.2
303	1239	2.18	34.651	2355	2248	2255	492.0	28.5	2131.2	88.3	8.049	28.0	2133.6	86.3	9.989	8.000	.877	30.2	6.2
304	1375	2.11	34.684	2361	2251	2278	482.5	28.0	2132.9	90.0	8.058	27.5	2135.7	87.8	9.920	8.003	.893	30.5	6.0
305	1530	2.04	34.699	2361	2256	2277	498.9	29.1	2139.5	87.4	8.044	28.5	2142.6	85.0	10.385	7.984	.864	26.2	1.3
306	1697	1.94	34.705	2367	2268	2254	521.0	30.5	2153.1	84.4	8.028	29.8	2156.4	81.8	10.962	7.960	.832	21.4	-3.9
307	1704	1.93	34.709	2369	2260	2280	485.4	28.4	2141.9	89.7	8.056	27.7	2145.4	86.9	10.267	7.989	.884	26.5	1.1
308	1831	1.81	34.714	2374	2255	2283	452.0	26.5	2133.3	95.1	8.085	25.9	2137.1	92.0	9.721	8.012	.936	30.4	4.6
309	1969	1.77	34.720	2367	2257		478.6	28.2	2138.7	90.1	8.061	27.4	2142.7	86.9	10.411	7.983	.885	23.9	-2.3
310	2119	1.62	34.720	2372	2272	2276	512.8	30.3	2156.6	85.1	8.033	29.5	2160.8	81.7	11.248	7.949	.832	17.2	-9.5
311	2374	1.43	34.721	2372	2263	2291	477.4	28.5	2144.8	89.7	8.061	27.5	2149.6	85.8	10.799	7.967	.874	18.6	-8.9
312	2588	1.32	34.718	2375	2266		476.4	28.5	2147.7	89.8	8.062	27.5	2152.9	85.5	10.991	7.959	.871	16.0	-12.3
315	2801	1.20	34.719	2373	2252		435.5	26.2	2129.7	96.1	8.097	25.2	2135.5	91.3	10.341	7.985	.929	19.3	-9.6
316	2971	1.05	34.714	2379	2266		459.6	27.8	2146.2	92.0	8.076	26.7	2152.3	87.0	11.030	7.957	.886	13.0	-16.5
317	3169	1.00	34.711	2374	2268		480.4	29.1	2150.7	88.2	8.057	27.9	2157.1	83.0	11.737	7.930	.845	6.6	-23.6
318	3367	.95	34.711	2374	2268	2274	479.6	29.1	2150.7	88.2	8.058	27.8	2157.5	82.7	11.944	7.923	.842	3.9	-27.1
319	3564	.96	34.711	2374	2254	2256	434.8	26.4	2132.0	95.6	8.097	25.1	2139.4	89.5	11.103	7.955	.911	8.2	-23.5
320	3761	.97	34.709	2377	2261	2259	448.0	27.2	2140.3	93.5	8.085	25.8	2148.0	87.2	11.609	7.935	.887	3.3	-29.1
321	3978	.97	34.709	2374	2263	2287	463.1	28.1	2144.1	90.8	8.072	26.6	2152.1	84.2	12.232	7.912	.857	-2.6	-35.8
322	4183	.97	34.710	2375	2267	2276	473.5	28.7	2149.0	89.3	8.063	27.2	2157.4	82.4	12.722	7.895	.838	-7.3	-41.3
323	4315	.98	34.709	2374	2256	2274	441.2	26.8	2134.7	94.5	8.091	25.2	2143.6	87.2	12.061	7.919	.887	-4.4	-38.9
324	4491	1.00	34.709	2374	2264	2282	466.9	28.3	2145.4	90.3	8.069	26.6	2154.5	82.9	12.922	7.889	.843	-11.3	-46.5

STATION: 78 LEG: VII | POSITION: 61° 3' S 62° 58' W | DATE: 3 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC (P=1 ATM, T=INSITU) PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC (P, T = INSITU) H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
517	700	2.07	34.653	2351	2257	2272	537.3	31.3	2144.2	81.5	8.013	31.0	2145.6	80.5	10.340	7.985	.817	28.9	6.3
518	799	2.04	34.684	2355	2253	2278	507.7	29.6	2137.7	85.7	8.036	29.3	2139.3	84.4	9.894	8.005	.859	32.0	9.2
519	900	1.99	34.700	2357	2254	2294	504.0	29.4	2138.3	86.3	8.039	29.1	2140.1	84.8	9.916	8.004	.863	31.6	8.5
520	998	1.94	34.707	2356	2256	2273	513.8	30.0	2141.3	84.7	8.031	29.6	2143.2	83.1	10.195	7.992	.846	29.0	5.6
521	1099	1.85	34.721	2361	2251		478.2	28.1	2133.0	90.0	8.060	27.6	2135.2	88.2	9.623	8.017	.898	33.3	9.6
522	1222	1.75	34.723	2364	2254	2277	477.5	28.1	2135.8	90.1	8.061	27.6	2138.3	88.1	9.715	8.013	.896	32.0	8.0
523	1346	1.64	34.722	2366	2264	2277	504.1	29.8	2148.3	85.9	8.039	29.3	2150.9	83.8	10.333	7.986	.853	26.6	2.3
524	1489	1.53	34.730	2369	2253	2271	455.3	27.0	2132.6	93.4	8.080	26.5	2135.7	90.9	9.535	8.021	.925	32.4	7.6
110	1506	1.47	34.730	2368	2256	2270	467.0	27.8	2137.0	91.2	8.069	27.2	2140.1	88.7	9.784	8.009	.903	30.1	5.2
111	1706	1.33	34.727	2370	2261	2282	475.1	28.4	2142.9	89.7	8.062	27.8	2146.4	86.9	10.131	7.994	.884	26.3	.9
112	1906	1.21	34.723	2370	2264	2276	483.1	29.0	2146.9	88.1	8.055	28.3	2150.7	85.0	10.493	7.979	.865	22.5	-3.6
115	2116	1.08	34.719	2370	2266	2277	487.6	29.5	2149.5	87.0	8.051	28.6	2153.7	83.6	10.806	7.966	.851	19.0	-7.8
116	2315	.94	34.713	2372	2263	2271	468.8	28.5	2144.8	89.7	8.066	27.6	2149.5	85.9	10.618	7.974	.874	19.1	-8.2
117	2414	.87	34.709	2373	2263	2265	464.5	28.3	2144.5	90.3	8.070	27.4	2149.4	86.3	10.628	7.974	.878	18.4	-9.3
118	2514	.79	34.708	2371	2263		469.1	28.7	2145.2	89.2	8.065	27.7	2150.3	85.0	10.844	7.965	.865	16.1	-12.0
119	2714	.67	34.703	2373	2262	2280	457.7	28.1	2143.1	90.8	8.075	27.1	2148.7	86.3	10.804	7.966	.878	15.1	-13.7
120	2913	.60	34.703	2374	2262	2276	453.5	27.9	2142.8	91.3	8.078	26.8	2148.7	86.5	10.917	7.962	.880	13.0	-16.5
121	3112	.56	34.705	2375	2264	2286	456.5	28.1	2145.0	90.8	8.076	27.0	2151.4	85.7	11.187	7.951	.871	9.8	-20.3
122	3309	.52	34.697	2374	2270	2290	478.6	29.5	2153.3	87.1	8.057	28.3	2159.9	81.8	11.918	7.924	.832	3.5	-27.4
123	3511	.44	34.691	2372	2265	2268	466.5	28.9	2147.5	88.7	8.066	27.6	2154.5	82.9	11.877	7.925	.843	2.0	-29.6
124	3616	.43	34.692	2372	2267	2283	473.0	29.3	2150.1	87.6	8.061	27.9	2157.3	81.7	12.151	7.915	.831	-.5	-32.5
721	3785	.47	34.688	2370	2261		459.8	28.4	2142.9	89.7	8.072	27.0	2150.6	83.4	12.026	7.920	.848	-1.1	-33.7
722	3796	.47	34.688	2373	2265		463.9	28.7	2147.1	89.2	8.069	27.3	2154.8	83.0	12.124	7.916	.844	-1.7	-34.3
723	3801	.47	34.691	2363	2258		471.1	29.1	2141.5	87.4	8.061	27.7	2149.1	81.2	12.357	7.908	.826	-3.5	-36.1
724	3805	.47	34.687	2373	2267		470.5	29.1	2149.7	88.2	8.063	27.7	2157.4	82.0	12.296	7.910	.833	-2.8	-35.5

STATION: 78 LEG: VII | POSITION: 61° 3' S 62° 58' W | DATE: 3 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC (P=1 ATM, T=INSITU) PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC (P, T = INSITU) H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
501	6	1.35	33.833	2295	2132	2120	306.7	18.4	1995.3	118.3	8.224	18.4	1995.3	118.3	5.976	8.224	1.173	72.0	51.1
502	41	1.35	33.832	2293	2137	2139	320.4	19.3	2003.6	114.2	8.207	19.2	2003.7	114.1	6.237	8.205	1.131	67.5	46.6
503	65	0.00	33.888	2296	2146	2146	318.3	20.1	2015.1	110.7	8.205	20.1	2015.3	110.6	6.280	8.202	1.099	63.8	42.8
504	81	0.00	33.925	2298	2146	2154	314.9	19.9	2014.2	111.9	8.209	19.9	2014.4	111.7	6.227	8.206	1.111	64.8	43.8
505	96	0.00	33.975	2299	2151	2170	324.0	20.5	2020.9	109.6	8.198	20.5	2021.1	109.4	6.396	8.194	1.090	62.4	41.3
506	126	.01	34.094	2305	2184	2200	392.5	24.8	2064.5	94.7	8.124	24.8	2064.8	94.5	7.610	8.119	.944	47.2	26.1
507	151	.76	34.184	2310	2200	2218	438.8	26.9	2084.2	88.9	8.083	26.9	2084.5	88.7	8.374	8.077	.888	41.2	20.0
508	200	1.43	34.300	2320	2215	2236	470.7	28.1	2100.4	86.5	8.059	28.0	2100.8	86.2	8.886	8.051	.867	38.4	17.1
509	251	1.69	34.360	2325	2224	2237	491.7	29.1	2110.4	84.5	8.044	29.0	2110.9	84.2	9.254	8.034	.848	36.0	14.6
510	301	1.89	34.431	2329	2239	2263	539.7	31.7	2128.3	79.1	8.008	31.5	2128.9	78.6	10.099	7.996	.793	30.1	8.5
511	400	2.11	34.532	2343	2252	2275	546.1	31.7	2140.4	79.9	8.006	31.6	2141.1	79.3	10.230	7.990	.802	30.0	8.2
512	440	2.12	34.552	2345	2252	2274	539.1	31.3	2139.7	80.9	8.012	31.1	2140.6	80.3	10.139	7.994	.813	30.7	8.8
515	500	2.11	34.578	2345	2254		547.3	31.8	2142.3	79.9	8.005	31.6	2143.2	79.2	10.342	7.985	.802	29.2	7.1
109	500	2.12	34.579	2347	2254	2274	540.0	31.4	2141.7	81.0	8.011	31.2	2142.6	80.2	10.204	7.991	.813	30.2	8.1
516	600	2.10	34.619	2349	2258		548.9	31.9	2146.1	80.0	8.005	31.7	2147.3	79.1	10.452	7.981	.803	28.3	6.0

STATION: 79 LEG: VII | POSITION: 59° 56' S 45° 2' W | DATE: 6 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC (P=1 ATM, T=INSITU) PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC (P, T = INSITU) H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
101	4	1.78	34.061	2320	2133	2131	275.5	16.3	1983.8	133.0	8.270	16.3	1983.8	133.0	5.377	8.269	1.328	86.7	65.9
102	23	1.78	34.059	2320	2123	2147	259.5	15.3	1968.7	139.0	8.292	15.3	1968.7	138.9	5.113	8.291	1.387	92.5	71.7
103	72	.49	34.306	2338	2201	2192	367.9	22.8	2074.0	104.2	8.156	22.8	2074.1	104.1	7.032	8.153	1.047	57.3	36.2
104	124	.18	34.381	2345	2204	2219	356.5	22.3	2075.1	106.6	8.168	22.3	2075.3	106.4	6.874	8.163	1.072	59.1	38.0
105	182	0.00	34.425	2343	2223	2228	408.6	25.8	2102.3	95.0	8.113	25.7	2102.6	94.7	7.837	8.106	.955	47.0	25.6
106	217	0.00	34.435	2344	2221	2218	400.5	25.3	2099.1	96.6	8.121	25.2	2099.6	96.2	7.719	8.112	.971	48.3	26.9
107	266	0.00	34.469	2346	2232	2238	427.4	27.0	2113.2	91.8	8.096	26.9	2113.8	91.4	8.222	8.085	.923	43.0	21.5
108	339	0.00	34.516	2350	2231	2253	414.2	26.1	2110.3	94.6	8.109	26.0	2111.0	94.0	8.035	8.095	.951	45.1	23.4
109	437	0.00	34.547	2349	2248	2252	471.0	29.7	2133.3	85.0	8.057	29.5	2134.1	84.3	9.123	8.040	.854	34.7	12.7
110	536	0.00	34.576	2354	2243	2253	440.0	27.7	2124.9	90.4	8.085	27.5	2126.0	89.5	8.636	8.064	.907	39.0	16.8
111	630	0.00	34.598	2356	2252	2245	463.4	29.2	2136.0	86.8	8.065	29.0	2137.3	85.7	9.129	8.040	.869	34.5	12.0
112	699	0.00	34.620	2357	2248	2262	447.6	28.2	2130.4	89.4	8.079	27.9	2131.8	88.2	8.898	8.051	.895	36.4	13.7
115	741	.08	34.631	2360	2257	2268	469.7	29.5	2141.2	86.3	8.060	29.2	2142.7	85.1	9.319	8.031	.864	33.0	10.2
116	834	.13	34.646	2361	2253	2261	454.4	28.5	2135.6	88.9	8.074	28.2	2137.3	87.6	9.111	8.040	.889	34.7	11.6
117	930	.13	34.654	2362	2256	2264	461.3	28.9	2139.2	87.9	8.068	28.5	2141.1	86.4	9.317	8.031	.878	32.7	9.4
118	1020	.13	34.655	2363	2259	2277	468.2	29.4	2142.8	86.9	8.062	28.9	2144.8	85.2	9.521	8.021	.866	30.7	7.2
119	1118	.13	34.659	2363	2263	2268	482.0	30.2	2148.0	84.8	8.051	29.8	2150.2	83.0	9.869	8.006	.844	27.7	3.8
120	1214	.15	34.669	2366	2254	2277	443.7	27.8	2135.1	91.2	8.084	27.3	2137.6	89.1	9.213	8.036	.906	32.9	8.8
121	1321	.09	34.658	2364	2260	2274	467.9	29.4	2143.7	86.9	8.063	28.8	2146.4	84.8	9.784	8.009	.861	27.6	3.2
122	1463	.06	34.661	2367	2253	2244	436.2	27.4	2133.3	92.2	8.091	26.9	2136.4	89.8	9.286	8.032	.912	31.3	6.4
123	1498	.05	34.663	2365	2259	2266	460.9	29.0	2142.0	88.0	8.069	28.4	2145.1	85.5	9.810	8.008	.869	26.7	1.8
501	1544	0.00	34.660	2362	2254	2256	452.7	28.5	2136.5	89.0	8.075	27.9	2139.7	86.4	9.706	8.013	.878	27.1	2.0
124	1591	.00	34.658	2366	2252	2278	435.0	27.4	2132.4	92.2	8.091	26.8	2135.7	89.5	9.382	8.028	.910	29.8	4.6
502	1644	0.00	34.661	2363	2250		437.2	27.5	2130.8	91.6	8.089	26.9	2134.2	88.9	9.484	8.023	.903	28.6	3.2
503	1795	0.00	34.663	2366	2257	2259	450.6	28.4	2139.0	89.6	8.077	27.7	2142.7	86.6	9.877	8.005	.880	24.9	-.9
504	1894	0.00	34.656	2360	2252	2264	452.1	28.5	2134.6	88.9	8.075	27.7	2138.5	85.8	10.022	7.999	.872	23.1	-3.1
505	1995	0.00	34.655	2364	2251	2270	437.4	27.6	2131.8	91.6	8.089	26.8	2135.9	88.3	9.797	8.009	.897	24.6	-1.9
506	2093	0.00	34.657	2360	2250		445.7	28.1	2132.0	90.0	8.081	27.3	2136.2	86.5	10.076	7.997	.879	21.8	-5.0
507	2192	0.00	34.653	2363	2252	2250	443.3	27.9	2133.5	90.6	8.083	27.1	2138.0	86.9	10.106	7.995	.883	21.2	-5.9
508	2342	0.00	34.653	2360	2249	2261	442.5	27.9	2130.6	90.5	8.084	27.0	2135.4	86.6	10.243	7.990	.880	19.3	-8.3
509	2492	0.00	34.656	2363	2251	2262	440.2	27.7	2132.2	91.1	8.086	26.8	2137.3	86.9	10.325	7.986	.883	18.0	-10.1

STATION: 79 LEG: VII — POSITION: 59° 56' S 45° 2' W — DATE: 6 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
510	2690	0.00	34.653			2263													
511	2890	0.00	34.653	2363	2242	2262	413.4	26.0	2120.1	95.9	8.111	25.0	2126.1	90.9	10.109	7.995	.923	17.4	-12.0
512	3082	0.00	34.651	2361	2254	2258	455.5	28.7	2136.9	88.4	8.072	27.5	2143.1	83.4	11.268	7.948	.847	7.6	-22.5
515	3270	0.00	34.645	2362	2250	2238	439.9	27.7	2131.2	91.1	8.086	26.5	2137.9	85.6	11.094	7.955	.869	7.5	-23.3
516	3378	0.00	34.644	2356	2236	2249	414.3	26.1	2114.7	95.2	8.109	24.9	2121.7	89.4	10.628	7.974	.908	9.9	-21.2
517	3594	0.00	34.644			2244													
518	3833	0.00	34.642	2362	2232	2252	388.3	24.5	2106.7	100.8	8.135	23.2	2114.9	93.9	10.419	7.982	.954	8.5	-24.4
519	4035	0.00	34.642	2359	2241	2247	420.9	26.5	2120.3	94.2	8.103	25.1	2128.6	87.3	11.451	7.941	.886	-.9	-34.6
520	4242	0.00	34.641	2359	2242	2255	423.8	26.7	2121.6	93.7	8.101	25.2	2130.4	86.4	11.750	7.930	.878	-4.7	-39.2
521	4449	0.00	34.646			2265													
522	4656	0.00	34.647	2360	2244	2271	427.1	26.9	2123.9	93.1	8.098	25.3	2133.5	85.2	12.298	7.910	.866	-12.2	-48.3
523	4863	0.00	34.647	2358	2247	2251	441.9	27.8	2128.7	90.4	8.084	26.1	2138.6	82.3	12.954	7.888	.836	-18.3	-55.4
524	5063	0.00	34.643	2356	2247	2258	447.6	28.2	2129.5	89.3	8.078	26.4	2139.7	81.0	13.370	7.874	.822	-22.9	-60.9

STATION: 82 LEG: VII — POSITION: 56° 15' S 24° 55' W — DATE: 11 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
615	1	.98	33.732	2288	2130	2129	309.9	18.9	1995.9	115.2	8.218	18.9	1995.9	115.2	6.059	8.218	1.139	69.0	48.1
616	28	.80	33.753	2289	2134	2148	314.4	19.3	2001.2	113.5	8.212	19.3	2001.2	113.5	6.159	8.210	1.123	67.0	46.1
617	47	.32	33.819	2294	2130	2140	293.1	18.3	1992.9	118.8	8.237	18.3	1993.0	118.7	5.813	8.236	1.177	72.1	51.1
618	67	0.00	33.912	2301	2166	2142	353.4	22.4	2041.3	102.4	8.165	22.3	2041.4	102.3	6.887	8.162	1.017	55.4	34.4
619	82	0.00	33.972	2302	2169	2166	359.1	22.7	2045.0	101.3	8.158	22.7	2045.2	101.1	6.997	8.155	1.007	54.2	33.1
620	97	0.00	34.042	2305	2189	2169	405.9	25.7	2071.3	92.0	8.110	25.6	2071.5	91.9	7.824	8.107	.917	44.8	23.7
621	118	0.00	34.169	2314	2195	2202	401.1	25.3	2075.8	93.8	8.116	25.3	2076.1	93.6	7.734	8.112	.938	46.4	25.3
622	157	.53	34.346	2326	2237	2217	515.1	31.8	2126.7	78.5	8.021	31.8	2127.0	78.2	9.677	8.014	.788	30.7	9.5
401	200	.76	34.455	2334	2231	2256	471.9	28.9	2116.4	85.7	8.057	28.8	2116.8	85.4	8.923	8.049	.863	37.6	16.3
623	207	1.26	34.502	2336	2239	2266	503.5	30.2	2126.1	82.7	8.034	30.2	2126.5	82.4	9.428	8.026	.833	34.6	13.2
402	282	1.44	34.609	2346	2253	2278	526.4	31.4	2140.7	80.9	8.018	31.3	2141.3	80.5	9.842	8.007	.816	32.1	10.6
624	286	1.27	34.588	2344	2255	2263	538.0	32.3	2143.9	78.8	8.008	32.2	2144.4	78.4	10.069	7.997	.795	30.0	8.5
403	371	1.65	34.673	2354	2248	2269	485.7	28.7	2131.6	87.7	8.052	28.6	2132.3	87.1	9.172	8.038	.886	38.1	16.4
404	432	1.63	34.685	2358	2253	2279	490.3	29.0	2136.7	87.3	8.049	28.8	2137.6	86.6	9.291	8.032	.881	37.1	15.2
405	582	1.53	34.711	2357	2247	2265	471.3	28.0	2129.1	89.9	8.064	27.8	2130.3	88.9	9.098	8.041	.905	38.2	15.9
406	832	1.15	34.708	2360	2255	2261	482.4	29.1	2138.6	87.3	8.054	28.7	2140.3	86.0	9.535	8.021	.875	33.2	10.2
407	981	.93	34.706	2361	2258	2272	485.7	29.5	2142.2	86.3	8.050	29.1	2144.2	84.7	9.744	8.011	.862	30.7	7.3
408	1080	.92	34.705	2365	2253	2262	456.4	27.7	2134.1	91.1	8.076	27.3	2136.4	89.3	9.274	8.033	.909	34.4	10.7
409	1180	.71	34.687	2360	2260	2263	491.8	30.1	2145.1	84.7	8.044	29.7	2147.5	82.9	10.065	7.997	.843	27.0	3.1
410	1379	.57	34.684	2362	2259	2267	479.3	29.5	2143.1	86.3	8.054	29.0	2145.9	84.1	10.019	7.999	.855	26.5	1.9
411	1577	.45	34.682	2361	2260	2268	483.8	29.9	2144.8	85.3	8.050	29.3	2147.9	82.8	10.309	7.987	.841	23.3	-1.9
412	1776	.36	34.679	2364	2254	2269	453.0	28.1	2135.8	90.0	8.076	27.5	2139.5	87.1	9.879	8.005	.885	25.7	-.1
1401	1787	.28	34.672	2363	2258	2268	467.7	29.1	2141.5	87.4	8.063	28.4	2145.1	84.5	10.197	7.992	.859	22.9	-2.9
1402	1986		34.669	2364	2270	2257													
1403	2186		34.667	2363	2254	2255													
1404	2387	.08	34.665	2368	2274	2267	504.2	31.7	2160.4	81.9	8.033	30.7	2165.1	78.2	11.564	7.937	.794	10.4	-17.3
1405	2589		34.663	2365	2258	2257													
1406	2791		34.661	2365	2262	2271													
1407	2990	0.00	34.660	2362	2268	2266	500.9	31.6	2154.7	81.8	8.035	30.3	2160.6	77.1	12.203	7.914	.783	2.4	-27.4
1408	3191		34.656	2363	2259	2246													
1409	3392		34.653	2360	2255	2259													
1410	3594	0.00	34.651	2362	2253	2256	449.4	28.3	2135.2	89.5	8.078	27.0	2142.5	83.5	11.666	7.933	.849	1.3	-30.6
1411	3786		34.647	2359	2247	2240													
1412	4000		34.646	2360	2250	2254													
1415	4300	0.00	34.647	2359	2239	2242	415.1	26.2	2117.6	95.3	8.109	24.6	2126.5	87.9	11.589	7.936	.892	-4.2	-38.9
1416	4603		34.644	2359	2256	2249													
1417	4906	0.00	34.644	2360	2239	2254	412.5	26.0	2117.2	95.8	8.111	24.3	2127.4	87.3	12.185	7.914	.887	-14.0	-51.2
1418	5208		34.646	2362	2248	2247													
1419	5509		34.644	2359	2245	2250													
1420	5806	0.00	34.645	2361	2251	2248	445.8	28.1	2132.9	90.0	8.081	26.0	2144.6	80.4	14.254	7.846	.816	-36.7	-77.9
1421	6109		34.647	2359	2249	2251													
1423	6412		34.646	2359	2248	2254													
1424	6511	0.00	34.647	2361	2251	2249	445.9	28.1	2132.9	90.0	8.081	25.8	2146.0	79.2	15.236	7.817	.804	-51.8	-96.4

STATION: 85 LEG: VII — POSITION: 57° 30' S 17° 23' W — DATE: 18 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
311	15	1.09	33.564	2277	2102	2106	275.8	16.8	1960.2	125.0	8.262	16.8	1960.3	125.0	5.482	8.261	1.230	78.6	57.8
312	69	.24	33.618	2283	2119	2106	288.2	18.1	1982.3	118.6	8.243	18.1	1982.4	118.5	5.756	8.240	1.168	71.7	50.7
315	147	0.00	33.942	2301	2168	2170	358.6	22.7	2044.1	101.3	8.159	22.6	2044.4	101.0	7.030	8.153	1.005	53.6	32.4
316	205	1.02	34.329	2328	2233	2241	501.9	30.4	2121.0	81.5	8.033	30.4	2121.4	81.2	9.437	8.025	.817	33.4	12.1
317	274	1.47	34.491	2337	2240	2265	507.5	30.2	2127.0	82.7	8.032	30.1	2127.6	82.3	9.532	8.021	.832	34.0	12.5
318	355	1.61	34.580	2347	2264	2272	570.9	33.8	2154.2	76.0	7.987	33.7	2154.9	75.5	10.656	7.972	.765	26.5	4.8
319	436	1.68	34.634	2350	2256	2275	528.8	31.2	2143.3	81.5	8.018	31.1	2144.1	80.8	9.987	8.001	.821	31.3	9.4
320	560	1.64	34.680	2356	2251	2268	489.8	29.0	2134.8	87.3	8.049	28.7	2135.9	86.4	9.398	8.027	.878	35.8	13.6
321	659	1.51	34.687	2358	2247	2272	467.7	27.8	2128.8	90.4	8.067	27.5	2130.1	89.4	9.095	8.041	.909	38.0	15.5
322	758	1.46	34.702	2361	2269	2268	536.7	32.0	2156.3	80.7	8.013	31.6	2157.8	79.6	10.412	7.982	.809	27.4	4.7
323	857	1.39	34.711	2360	2249	2273	466.4	27.8	2130.7	90.5	8.068	27.5	2132.4	89.1	9.243	8.034	.906	36.1	13.1
306	945	1.22	34.707	2360	2267	2272	527.7	31.7	2154.1	81.2	8.018	31.3	2156.0	79.7	10.460	7.980	.811	26.0	2.7
324	957	1.23	34.706	2360	2261	2269	505.3	30.3	2146.4	84.2	8.036	30.0	2148.3	82.7	10.057	7.998	.842	28.9	5.6
307	994	1.13	34.702	2361	2229	2269	399.6	24.1	2103.1	101.8	8.128	23.8	2105.2	100.1	8.147	8.089	1.018	45.9	22.5
308	1094	1.03	34.700	2364	2271		525.1	31.8	2157.9	81.3	8.020	31.3	2160.1	79.6	10.559	7.976	.810	24.6	.9
309	1194	.85	34.692	2364	2251	2271	451.7	27.5	2131.9	91.6	8.079	27.1	2134.3	89.6	9.291	8.032	.911	33.7	9.7
212	1273	1.01	34.705	2366	2257	2266	468.0	28.4	2139.1	89.6	8.066	27.9	2141.7	87.5	9.648	8.016	.890	30.9	6.6
310	1296		34.689	2365	2268	2275													
215	1391	.83	34.698			2275													
216	1527	.73	34.692	2367	2265	2276	487.1	29.8	2149.2	85.9	8.050	29.2	2152.3	83.5	10.272	7.988	.849	24.5	-.5
218	1899	.45	34.681	2365	2275	2279	525.6	32.5	2162.7	79.8	8.018	31.7	2166.4	76.9	11.455	7.941	.782	14.3	-11.9
219	2098	.35	34.677	2364	2258	2271	465.8	28.9	2141.1	87.9	8.065	28.1	2145.3	84.5	10.445	7.981	.859	19.9	-6.9
220	2298	.25	34.673	2364	2271	2271	510.0	31.8	2157.9	81.3	8.029	30.9	2162.4	77.7	11.589	7.936	.790	10.9	-16.5
221	2496	.17	34.670	2364	2258	2286	462.7	29.0	2141.1	88.0	8.067	28.0	2146.1	83.9	10.792	7.967	.852	14.9	-13.1
201	2663	.10	34.667	2363	2252	2258	445.1	27.9	2133.5	90.6	8.082	26.9	2139.0	86.1	10.586	7.975	.875	15.3	-13.4
222	2696	.10	34.666	2366	2267	2268	485.9	30.5	2152.1	84.4	8.048	29.4	2157.5	80.1	11.508	7.939	.814	8.9	-19.9
202	2862	.04	34.664	2363	2276	2267	528.6	33.3	2164.5	78.3	8.013	32.1	2170.0	73.9	12.672	7.897	.751	.8	-28.5
204	3259	0.00	34.660	2364	2264	2268	480.0	30.2	2148.9	84.9	8.052	29.0	2155.4	79.7	12.016	7.920	.809	1.7	-29.0
205	3459	0.00	34.658	2362	2245	2252	424.8	26.8	2124.5	93.7	8.100	25.5	2131.7	87.8	10.934	7.961	.892	7.4	-24.1
206	3660	0.00	34.653	2361	2260	2251	475.6	30.0	2144.7	85.3	8.055	28.5	2152.0	79.4	12.383	7.907	.807	-3.6	-35.9
207	3862	0.00	34.652			2266													
208	4066	0.00	34.652	2363	2261		472.8	29.8	2145.3	85.9	8.058	28.2	2153.5	79.3	12.781	7.893	.806	-9.3	-43.1
209	4268	0.00	34.652	2361	2248	2272	436.6	27.5	2128.9	91.6	8.089	26.0	2137.6	84.4	12.099	7.917	.857	-7.1	-41.7
210	4475	0.00	34.651	2360	2257	2259	468.5	29.5	2141.2	86.3	8.061	27.8	2150.1	79.1	13.185	7.880	.803	-15.5	-51.0
211	4682	0.00	34.651	2361	2248	2258	436.6	27.5	2128.9	91.6	8.089	25.8	2138.5	83.7	12.576	7.900	.850	-14.1	-50.4
223	4723	0.00	34.650	2359	2249	2257	445.3	28.1	2131.0	89.9	8.081	26.3	2140.6	82.1	12.873	7.890	.834	-16.3	-52.8
224	4723	0.00	34.649	2360	2266	2268	500.2	31.5	2152.8	81.7	8.035	29.7	2162.0	74.4	14.356	7.843	.755	-24.1	-60.5

STATION: 87 LEG: VII — POSITION: 58° 38' S 9° 26' W — DATE: 20 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
102	2	.18	33.559	2290	2124		285.0	17.9	1986.0	120.0	8.248	17.9	1986.0	120.0	5.649	8.248	1.181	73.8	52.9
101	2	.18	33.562	2288	2112		267.2	16.8	1969.3	125.9	8.272	16.8	1969.3	125.9	5.342	8.272	1.238	79.6	58.8
103	32	-1.24	33.902	2307	2158		309.0	20.5	2026.9	110.5	8.213	20.5	2027.0	110.5	6.138	8.212	1.098	63.9	42.9
104	107	-1.34	34.358	2340	2224		399.1	26.6	2104.6	92.9	8.117	26.5	2104.8	92.7	7.719	8.112	.934	45.5	24.4
105	166	0.00	34.501	2346	2238		446.4	28.2	2121.2	88.6	8.078	28.1	2121.6	88.4	8.479	8.072	.894	40.8	19.5
106	337	.94	34.687	2365	2268		508.5	30.9	2153.8	83.3	8.033	30.7	2154.5	82.8	9.561	8.019	.842	34.0	12.3
107	485	.71	34.689	2364	2258		472.2	28.9	2141.1	87.9	8.061	28.7	2142.1	87.2	9.079	8.042	.886	37.2	15.1
108	675	.49	34.679	2363	2273		525.9	32.5	2160.7	79.8	8.017	32.2	2162.1	78.7	10.229	7.990	.800	27.2	4.6
109	888	.38	34.680	2357	2263		506.7	31.4	2149.9	81.6	8.031	31.1	2151.7	80.2	10.117	7.995	.816	26.9	3.7
110	1088	.28	34.678	2367	2275		515.3	32.1	2162.0	80.9	8.025	31.6	2164.2	79.2	10.437	7.981	.805	24.1	.4
111	1288	.19	34.674	2363	2262		479.7	30.0	2146.7	85.3	8.053	29.5	2149.3	83.3	9.977	8.001	.846	26.4	2.1
112	1738	0.00	34.666	2363	2262		476.4	30.0	2146.6	85.3	8.055	29.3	2150.1	82.6	10.356	7.985	.839	21.4	-4.3
115	1996	0.00	34.662	2363	2257		459.5	28.9	2140.1	87.9	8.069	28.2	2144.2	84.7	10.259	7.989	.860	21.0	-5.5
116	2247	0.00	34.657	2364	2259		463.0	29.2	2142.4	87.4	8.066	28.3	2146.9	83.8	10.571	7.976	.851	17.5	-9.8
117	2495	0.00	34.656	2361	2254		455.6	28.7	2136.9	88.4	8.072	27.7	2141.9	84.3	10.669	7.972	.857	15.3	-12.8
118	2745	0.00	34.655	2363	2254		449.7	28.3	2136.2	89.5	8.078	27.3	2141.7	85.0	10.781	7.967	.863	13.2	-15.8
120	3243	0.00	34.651	2364	2259		462.9	29.2	2142.4	87.4	8.066	27.9	2148.9	82.2	11.597	7.936	.835	4.4	-26.3
121	3494	0.00	34.650	2366	2247		419.9	26.5	2125.6	94.9	8.105	25.2	2132.9	88.9	10.834	7.965	.903	8.0	-23.6
122	3744	0.00	34.648	2360	2259		475.3	29.9	2143.8	85.3	8.055	28.5	2151.2	79.3	12.477	7.904	.805	-4.9	-37.5
123	3983	0.00	34.647	2369	2231		369.8	23.3	2102.3	105.4	8.156	22.0	2110.9	98.1	10.072	7.997	.996	10.6	-22.9
124	4179	0.00	34.646	2361	2247		433.4	27.3	2127.6	92.1	8.092	25.8	2136.1	85.1	11.918	7.924	.864	-5.2	-39.4

STATION: 89 LEG: VII — POSITION: 60° 0′ S 0° 2′ E — DATE: 22 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
401	1	.97	34.103	2329	2149	2151	281.0	17.1	2002.9	129.0	8.261	17.1	2002.9	129.0	5.487	8.261	1.289	82.7	61.8
402	24	.19	34.101	2326	2159	2145	295.4	18.5	2019.3	121.2	8.238	18.5	2019.3	121.2	5.788	8.237	1.211	74.7	53.8
403	40	.02	34.116			2163													
404	50	-1.14	34.279	2333	2198	2211	350.2	23.1	2071.8	103.1	8.168	23.1	2071.9	103.0	6.824	8.166	1.035	56.2	35.2
405	74	-1.83	34.383	2342	2210	2220	352.0	23.9	2084.4	101.7	8.164	23.9	2084.6	101.6	6.894	8.162	1.024	54.6	33.5
406	95	-1.83	34.396	2339	2219		381.7	25.9	2098.0	95.1	8.132	25.9	2098.2	94.9	7.442	8.128	.957	47.8	26.6
407	145	0.00	34.543	2351	2241	2260	441.9	27.9	2123.4	89.8	8.083	27.8	2123.7	89.5	8.371	8.077	.907	42.1	20.9
408	174	.38	34.644	2355	2261	2278	505.6	31.4	2148.0	81.6	8.031	31.3	2148.4	81.3	9.455	8.024	.826	33.7	12.4
409	221	.54	34.678	2361	2272	2291	530.0	32.7	2160.1	79.2	8.014	32.6	2160.5	78.9	9.881	8.005	.802	30.9	9.5
410	336	.49	34.687			2292													
411	437	.44	34.683	2364	2269	2281	506.1	31.3	2155.4	82.3	8.033	31.2	2156.2	81.6	9.659	8.015	.830	32.0	10.0
412	537	.39	34.683	2362	2274	2283	531.4	33.0	2162.3	78.7	8.013	32.7	2163.3	77.9	10.212	7.991	.792	27.5	5.3
415	647	.33	34.685	2366	2275	2295	519.9	32.3	2162.3	80.3	8.022	32.0	2163.6	79.3	10.099	7.996	.807	28.0	5.5
416	748	.28	34.680	2363	2271	2272	514.2	32.0	2158.2	80.8	8.025	31.7	2159.7	79.6	10.108	7.995	.809	27.4	4.6
417	848	.24	34.676	2365	2270	2280	502.8	31.4	2156.3	82.3	8.035	31.0	2158.0	81.0	9.988	8.001	.823	28.0	4.9
418	949	.20	34.678	2361	2272	2279	523.5	32.7	2160.1	79.2	8.018	32.3	2161.9	77.8	10.489	7.979	.791	23.9	.5
419	1098	.13	34.673	2361	2266	2261	499.5	31.3	2152.5	82.2	8.036	30.8	2154.6	80.5	10.189	7.992	.818	25.3	1.5
420	1298	.05	34.670	2362	2264	2273	487.5	30.6	2149.6	83.8	8.046	30.1	2152.2	81.7	10.154	7.993	.831	24.7	.4
421	1499	0.00	34.670	2365	2260		463.4	29.2	2143.3	87.5	8.066	28.6	2146.4	85.0	9.866	8.006	.864	26.2	1.2
422	1698	0.00	34.664	2363	2259	2261	466.1	29.4	2142.7	86.9	8.063	28.7	2146.2	84.1	10.112	7.995	.855	23.4	-2.2
211	1808	0.00	34.663	2364	2248	2235	428.4	27.0	2127.8	93.2	8.097	26.3	2131.5	90.2	9.447	8.025	.916	28.3	2.4
423	1897	0.00	34.662	2364	2259	2271	463.1	29.2	2142.4	87.4	8.066	28.4	2146.2	84.3	10.234	7.990	.857	21.6	-4.5
212	2012	0.00	34.659	2361	2255	2259	458.9	28.9	2138.2	87.9	8.069	28.1	2142.3	84.6	10.270	7.988	.860	20.7	-5.8
424	2096	0.00	34.661	2363	2255	2245	453.0	28.5	2137.5	89.0	8.075	27.7	2141.7	85.5	10.218	7.991	.869	20.8	-6.0
201	2197	0.00	34.661	2362	2263	2281	483.0	30.4	2148.3	84.3	8.049	29.5	2152.7	80.8	10.951	7.961	.821	15.0	-12.1
215	2402	0.00	34.657	2360	2254	2274	458.6	28.9	2137.2	87.9	8.069	28.0	2142.1	83.9	10.646	7.973	.853	16.0	-11.8
202	2595	0.00	34.654	2358	2249	2262	448.3	28.2	2131.4	89.4	8.078	27.3	2136.6	85.1	10.622	7.974	.864	15.0	-13.4
216	2812	0.00	34.654	2359	2259	2246	478.5	30.1	2144.1	84.7	8.052	29.0	2149.7	80.2	11.513	7.939	.815	7.7	-21.5
203	2996	0.00	34.654	2359	2253	2249	458.3	28.9	2136.3	87.8	8.070	27.7	2142.3	82.9	11.250	7.949	.843	8.2	-21.6
217	3214	0.00	34.652	2361	2255		458.8	28.9	2138.2	87.9	8.069	27.7	2144.7	82.6	11.484	7.940	.839	5.3	-25.3
204	3295	0.00	34.651	2361	2253	2260	452.3	28.5	2135.6	88.9	8.075	27.2	2142.2	83.5	11.418	7.942	.848	5.1	-25.7
218	3414	0.00	34.651	2362	2252	2266	446.2	28.1	2133.9	90.0	8.081	26.8	2140.8	84.3	11.395	7.943	.857	4.5	-26.8
205	3494	0.00	34.651	2359	2250	2251	448.5	28.3	2132.3	89.4	8.078	26.9	2139.4	83.6	11.551	7.937	.850	2.7	-28.9
219	3614	0.00	34.651	2360	2250	2259	445.6	28.1	2132.0	90.0	8.081	26.7	2139.3	84.0	11.607	7.935	.853	1.5	-30.6
206	3696	0.00	34.651	2361	2248	2235	436.6	27.5	2128.9	91.6	8.089	26.1	2136.5	85.4	11.469	7.940	.867	1.8	-30.6
220	3864	0.00	34.651	2359	2249	2238	445.3	28.1	2131.0	89.9	8.081	26.6	2138.8	83.5	11.879	7.925	.848	-2.3	-35.3
207	3995	0.00	34.650	2359	2249	2260	445.3	28.1	2131.0	89.9	8.081	26.6	2139.1	83.3	12.025	7.920	.846	-4.3	-37.8
221	4173	0.00	34.650	2358	2244	2256	432.7	27.3	2124.7	92.0	8.092	25.8	2133.2	85.0	11.907	7.924	.863	-5.2	-39.4
208	4299	0.00	34.650	2359	2243	2245	426.9	26.9	2123.0	93.1	8.098	25.4	2131.8	85.8	11.893	7.925	.872	-6.2	-40.9
222	4503	0.00	34.649	2359	2244		429.9	27.1	2124.3	92.6	8.095	25.5	2133.6	85.0	12.201	7.914	.863	-10.1	-45.6
209	4700	0.00	34.648	2358	2250	2253	451.4	28.4	2132.7	88.9	8.075	26.7	2142.2	81.1	13.015	7.886	.824	-17.0	-53.3
223	4924	0.00	34.647	2356	2245	2254	441.3	27.8	2126.8	90.4	8.084	26.0	2136.8	82.2	13.024	7.885	.835	-19.5	-56.8
210	5103	0.00	34.648	2359	2247		439.1	27.7	2128.3	91.0	8.087	25.8	2138.7	82.5	13.163	7.881	.838	-22.1	-60.2
224	5309	0.00	34.649	2357	2245	2253	438.5	27.6	2126.4	90.9	8.087	25.7	2137.2	82.1	13.417	7.872	.834	-26.0	-65.0

STATION: 90 LEG: VII — POSITION: 56° 25′ S 4° 30′ E — DATE: 26 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
301	2	1.24	33.835	2300	2130	2150	293.3	17.7	1989.8	122.5	8.241	17.7	1989.8	122.5	5.736	8.241	1.215	76.2	55.4
303	4	1.23	33.831	2300	2128	2146	289.6	17.5	1986.8	123.7	8.246	17.5	1986.9	123.7	5.673	8.246	1.226	77.4	56.6
302	25	1.23	33.831	2305	2144		311.5	18.8	2007.8	117.4	8.219	18.8	2007.9	117.3	6.051	8.218	1.164	70.9	50.0
304	31	1.22	33.833	2298	2138		311.8	18.8	2002.6	116.6	8.218	18.8	2002.6	116.5	6.077	8.216	1.156	70.1	49.2
305	80	.24	33.893	2305	2136	2152	286.1	17.9	1996.1	122.0	8.248	17.9	1996.3	121.8	5.689	8.245	1.210	74.9	53.9
306	115	0.00	34.038	2316	2183		363.2	23.0	2058.4	101.6	8.156	22.9	2058.7	101.4	7.054	8.152	1.012	54.2	33.1
307	152	.24	34.259	2322	2213	2216	437.8	27.4	2097.0	88.6	8.084	27.3	2097.3	88.4	8.362	8.078	.888	40.9	19.7
308	180	.74	34.392	2334	2230		467.3	28.7	2115.1	86.3	8.061	28.6	2115.4	86.0	8.825	8.054	.867	38.3	17.1
309	214	1.32	34.515	2338	2233	2250	476.7	28.6	2117.6	86.9	8.056	28.5	2118.0	86.5	8.961	8.048	.875	38.7	17.3
311	301	1.33	34.597	2348	2252	2253	513.4	30.7	2138.8	82.5	8.028	30.6	2139.4	82.0	9.635	8.016	.831	33.5	11.9
312	367	1.49	34.641	2352	2246		481.8	28.7	2129.6	87.7	8.055	28.5	2130.4	87.1	9.121	8.040	.884	38.1	16.3
315	652	1.34	34.703	2359	2250	2253	471.8	28.2	2132.4	89.4	8.063	28.0	2133.7	88.3	9.176	8.037	.899	37.1	14.6
316	779	1.22	34.706	2363	2254		470.9	28.3	2136.2	89.5	8.064	28.0	2137.8	88.2	9.262	8.033	.897	35.9	13.1

STATION: 90 LEG: VII — POSITION: 56° 25′ S 4° 30′ E — DATE: 26 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
317	891	1.06	34.700	2362	2259	2246	488.3	29.5	2143.1	86.3	8.049	29.2	2144.9	84.9	9.694	8.013	.864	31.6	8.5
318	980	.95	34.700	2367	2261		477.4	29.0	2144.0	88.0	8.058	28.6	2146.0	86.4	9.564	8.019	.879	32.4	9.0
319	1185	.68	34.689	2366	2260	2254	472.2	29.0	2143.0	88.0	8.062	28.5	2145.4	86.1	9.680	8.014	.875	30.2	6.2
320	1387	.57	34.689	2367	2263		477.3	29.4	2146.6	87.0	8.057	28.9	2149.4	84.7	9.968	8.001	.862	27.0	2.4
321	1588	.44	34.684	2362	2255	2262	463.5	28.7	2137.9	88.4	8.067	28.1	2141.1	85.8	9.917	8.004	.873	26.2	1.0
322	1778	.32	34.678	2369	2253		434.9	27.1	2132.6	93.3	8.093	26.4	2136.3	90.3	9.502	8.022	.918	28.9	3.1
101	1859	.31	34.678	2362	2262		485.1	30.2	2147.0	84.8	8.049	29.4	2150.7	81.8	10.620	7.974	.832	19.6	-6.5
323	1874	.27	34.676	2363	2257	2267	464.2	28.9	2140.1	87.9	8.066	28.2	2143.9	84.9	10.210	7.991	.863	22.5	-3.6
324	1969	.23	34.675	2365	2265		484.5	30.3	2149.9	84.9	8.049	29.5	2153.8	81.7	10.714	7.970	.831	18.4	-8.0
102	1998	.24	34.675	2364	2253		447.7	27.9	2134.5	90.6	8.081	27.2	2138.6	87.2	9.989	8.000	.887	23.6	-2.9
103	2198	.14	34.671	2364	2259	2278	465.6	29.2	2142.4	87.4	8.065	28.3	2146.8	83.9	10.562	7.976	.852	18.1	-9.0
104	2397	.08	34.669	2366	2262		468.4	29.4	2145.6	87.0	8.062	28.5	2150.5	83.1	10.817	7.966	.844	15.2	-12.6
105	2598	.00	34.666	2364	2258	2290	459.9	29.0	2141.1	88.0	8.069	28.0	2146.3	83.7	10.854	7.964	.851	13.6	-14.9
106	2797	0.00	34.664	2364	2261		469.8	29.6	2145.0	86.4	8.061	28.5	2150.6	81.9	11.279	7.948	.832	9.5	-19.6
107	2960	0.00	34.662	2363	2256	2274	456.2	28.7	2138.8	88.5	8.072	27.6	2144.8	83.6	11.148	7.953	.849	9.3	-20.4
108	3056	0.00	34.660	2365	2258		456.8	28.8	2140.7	88.5	8.072	27.6	2146.9	83.5	11.251	7.949	.848	8.0	-22.0
109	3153	0.00	34.658	2363	2249	2264	434.1	27.3	2129.5	92.1	8.092	26.2	2136.0	86.8	10.838	7.965	.882	10.2	-20.2
110	3290	0.00	34.656	2365	2253		440.8	27.8	2134.1	91.1	8.086	26.5	2140.8	85.6	11.125	7.954	.870	7.3	-23.5
111	3443	0.00	34.656	2360	2248	2266	439.4	27.7	2129.3	91.0	8.086	26.4	2136.3	85.3	11.275	7.948	.866	5.0	-26.4
115	3703	0.00	34.656	2361	2247	2266	433.5	27.3	2127.6	92.1	8.092	26.0	2135.2	85.9	11.403	7.943	.872	2.2	-30.2
116	3753	0.00	34.654	2363	2256		456.1	28.7	2138.8	88.5	8.072	27.3	2146.4	82.3	12.002	7.921	.836	-2.0	-34.6
117	3824	0.00	34.654	2360	2244	2266	427.2	26.9	2123.9	93.1	8.098	25.5	2131.8	86.6	11.381	7.944	.880	1.4	-31.5
118	3893	0.00	34.654	2362	2252		446.2	28.1	2133.9	90.0	8.081	26.7	2141.8	83.5	11.918	7.924	.849	-2.7	-35.8
119	3965	0.00	34.655	2364	2253	2268	443.6	27.9	2134.5	90.6	8.083	26.5	2142.5	84.0	11.924	7.924	.853	-3.2	-36.6
120	4032	0.00	34.654	2362	2255		455.8	28.7	2137.8	88.4	8.072	27.2	2146.0	81.8	12.317	7.909	.831	-6.3	-40.0
121	4100	0.00	34.656	2362	2242	2265	416.0	26.2	2120.5	95.3	8.108	24.8	2129.0	88.3	11.384	7.944	.897	-.9	-34.8
122	4202	0.00	34.654	2362	2253		449.4	28.3	2135.2	89.5	8.078	26.8	2143.7	82.5	12.349	7.908	.838	-8.1	-42.4
123	4281	0.00	34.654	2360	2249	2264	442.5	27.9	2130.6	90.5	8.084	26.3	2139.3	83.4	12.273	7.911	.847	-8.4	-43.0
124	4325	0.00	34.652	2362	2250		439.9	27.7	2131.2	91.1	8.086	26.1	2140.0	83.8	12.246	7.912	.852	-8.6	-43.4

STATION: 91 LEG: VII — POSITION: 49° 34′ S 11° 28′ E — DATE: 29 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
401	2	4.30	33.841	2296	2102	1932	284.1	15.3	1949.5	137.2	8.263	15.3	1949.5	137.2	5.456	8.263	1.361	91.1	70.3
402	45	4.12	33.839	2293	2105	2097	291.7	15.8	1955.7	133.5	8.252	15.8	1955.8	133.4	5.619	8.250	1.323	86.9	66.1
403	78	4.05	33.842	2295	2097		274.5	14.9	1942.6	139.5	8.275	14.9	1942.7	139.4	5.343	8.272	1.383	92.7	71.7
404	130	2.04	33.896	2291	2141	2135	342.2	20.0	2010.3	110.7	8.183	20.0	2010.6	110.5	6.636	8.178	1.097	63.3	42.1
405	155	1.76	33.906	2294	2130	2130	309.9	18.3	1992.9	118.8	8.221	18.3	1993.2	118.5	6.098	8.215	1.178	71.1	49.9
406	179	1.73	33.931	2290	2144	2128	347.3	20.6	2015.1	108.3	8.176	20.5	2015.5	108.0	6.778	8.169	1.074	60.4	39.2
407	228	1.88	34.082	2301	2172	2162	396.6	23.3	2049.6	99.0	8.126	23.2	2050.1	98.6	7.636	8.117	.986	50.7	29.3
408	314	1.93	34.269	2317	2209	2212	468.1	27.4	2093.5	88.0	8.063	27.3	2094.1	87.5	8.900	8.051	.879	39.0	17.4
409	388	2.02	34.367	2325	2231		524.3	30.6	2119.4	81.0	8.019	30.5	2120.1	80.4	9.910	8.004	.810	31.3	9.5
410	487	2.08	34.447	2334	2238	2252	521.7	30.4	2125.4	82.2	8.023	30.2	2126.4	81.5	9.919	8.004	.823	31.6	9.5
411	589	2.03	34.498	2340	2250	2244	546.9	31.9	2138.8	79.3	8.005	31.7	2139.9	78.4	10.443	7.981	.793	27.7	5.4
412	688	2.17	34.554	2344	2249	2264	531.8	30.8	2136.2	81.9	8.017	30.6	2137.6	80.9	10.242	7.990	.819	29.4	6.8
415	747	2.17	34.582	2347	2251	2261	529.2	30.7	2137.8	82.5	8.019	30.4	2139.3	81.3	10.242	7.990	.825	29.4	6.7
416	798	2.17	34.605	2346	2257		557.5	32.3	2145.7	78.9	7.998	32.0	2147.3	77.7	10.802	7.966	.789	25.4	2.5
417	899	2.16	34.638	2352	2245	2262	490.6	28.5	2128.3	88.3	8.050	28.1	2130.1	86.8	9.671	8.015	.881	33.6	10.5
418	1099	2.15	34.694	2356	2246	2271	481.9	27.9	2128.1	89.9	8.058	27.5	2130.3	88.1	9.678	8.014	.896	33.2	9.6
419	1301	2.08	34.731	2357	2243	2257	467.9	27.2	2123.8	92.0	8.069	26.7	2126.4	89.9	9.601	8.018	.915	33.2	9.0
420	1502	1.95	34.748	2360	2234		429.5	25.1	2110.4	98.5	8.103	24.6	2113.5	95.9	9.043	8.044	.977	37.4	12.6
421	1572	1.92	34.751	2358	2234	2254	434.3	25.4	2111.2	97.4	8.098	24.8	2114.5	94.7	9.205	8.036	.965	35.5	10.5
101	1670	1.80	34.746	2359	2248	2254	473.8	27.8	2129.7	90.5	8.063	27.2	2133.1	87.7	10.066	7.997	.893	27.6	2.3
422	1701	1.75	34.739	2360	2242	2199	450.3	26.5	2121.3	94.2	8.083	25.9	2124.8	91.3	9.635	8.016	.930	30.9	5.5
102	1775	1.69	34.741	2361	2244	2240	452.8	26.7	2123.6	93.7	8.081	26.1	2127.2	90.7	9.753	8.011	.924	29.6	3.9
423	1801	1.63	34.736	2362	2250		468.1	27.7	2131.3	91.1	8.068	27.0	2134.9	88.1	10.081	7.996	.897	26.7	1.0
103	1884	1.58	34.736	2364	2246		448.6	26.6	2125.1	94.3	8.085	25.9	2129.0	91.1	9.765	8.010	.928	28.9	2.9
424	2002	1.44	34.726	2366	2251	2268	456.1	27.2	2131.1	92.7	8.078	26.4	2135.2	89.4	10.030	7.999	.910	26.0	-.4
104	2037	1.42	34.727	2366	2251	2262	455.8	27.2	2131.1	92.7	8.078	26.4	2135.3	89.3	10.057	7.998	.909	25.6	-.9
105	2195	1.27	34.721	2367	2254	2255	459.9	27.6	2134.7	91.7	8.074	26.8	2139.2	88.0	10.302	7.987	.896	22.6	-4.3
106	2342	1.19	34.721	2363	2263	2263	501.9	30.2	2148.0	84.8	8.039	29.3	2152.6	81.1	11.352	7.945	.825	14.1	-13.3

STATION: 91 LEG: VII — POSITION: 49° 34' S 11° 28' E — DATE: 29 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
107	2496	1.08	34.714	2369	2252	2268	444.6	26.9	2131.3	93.9	8.087	25.9	2136.4	89.7	10.277	7.988	.912	21.0	-7.0
108	2643	.98	34.710	2367	2259		471.2	28.6	2141.4	89.1	8.064	27.6	2146.7	84.7	11.014	7.958	.862	14.4	-14.0
109	2793	.86	34.699	2370	2252	2271	438.0	26.7	2130.9	94.4	8.093	25.7	2136.6	89.7	10.439	7.981	.912	17.7	-11.3
110	2839	.85	34.700	2371	2259	2267	457.0	27.8	2139.9	91.3	8.076	26.8	2145.7	86.5	10.899	7.963	.880	14.0	-15.1
111	2985	.81	34.699	2372	2259	2274	453.3	27.7	2139.5	91.8	8.079	26.6	2145.6	86.8	10.965	7.960	.883	12.6	-17.1
112	3078	.79	34.698	2368	2259	2261	464.8	28.4	2141.0	89.6	8.069	27.2	2147.2	84.5	11.342	7.945	.860	9.2	-20.8
115	3189	.75	34.693	2373	2254	2269	434.0	26.6	2132.4	95.0	8.096	25.4	2139.0	89.6	10.735	7.969	.911	12.9	-17.5
116	3283	.70	34.690	2369	2264	2260	476.9	29.2	2147.2	87.5	8.058	28.0	2153.8	82.2	11.846	7.926	.836	4.3	-26.4
117	3376	.68	34.689	2373	2265	2257	467.5	28.7	2147.1	89.2	8.067	27.4	2153.9	83.7	11.714	7.931	.851	4.6	-26.4
118	3473	.65	34.686	2371	2260		456.6	28.0	2141.2	90.7	8.076	26.8	2148.3	85.0	11.575	7.936	.864	4.7	-26.7
119	3616	.61	34.685	2372	2264		466.0	28.7	2146.1	89.2	8.068	27.3	2153.4	83.2	11.957	7.922	.846	1.1	-30.9
120	3767	.56	34.684	2373	2262	2256	455.7	28.1	2143.1	90.8	8.076	26.7	2150.8	84.5	11.877	7.925	.859	.3	-32.2
121	3866	.53	34.681	2375	2257	2271	433.9	26.8	2135.7	94.6	8.096	25.4	2143.6	88.0	11.447	7.941	.894	2.4	-30.5
122	3968	.51	34.681	2371	2259	2265	451.1	27.9	2139.9	91.3	8.080	26.4	2148.0	84.7	12.004	7.921	.861	-2.3	-35.6
123	4066	.51	34.679	2372	2260	2262	451.2	27.9	2140.8	91.3	8.080	26.4	2149.1	84.5	12.114	7.917	.859	-3.8	-37.5
124	4169	.51	34.678	2373	2256	2263	436.0	26.9	2135.1	94.0	8.094	25.4	2143.7	86.9	11.840	7.927	.883	-2.9	-37.0

STATION: 92 LEG: VII — POSITION: 46° 11' S 14° 36' E — DATE: 31 JAN 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
301	2	7.38	33.824	2270	2073	2064	309.3	14.9	1918.7	139.4	8.237	14.9	1918.7	139.4	5.802	8.236	1.382	93.3	72.6
302	12	7.38	33.823	2275	2079		312.4	15.1	1925.0	138.9	8.234	15.1	1925.0	138.9	5.845	8.233	1.377	92.8	72.1
303	91	6.04	33.847	2273	2086		312.1	15.8	1937.3	132.9	8.229	15.8	1937.5	132.7	5.944	8.226	1.317	86.0	65.1
304	109	4.88	33.907	2275	2103		327.8	17.3	1962.1	123.6	8.207	17.2	1962.4	123.4	6.270	8.203	1.226	76.5	55.5
305	140	4.50	33.963			2120													
306	171	4.39	34.112	2286	2121	2134	340.7	18.3	1983.3	119.5	8.191	18.2	1983.6	119.2	6.532	8.185	1.192	71.8	50.6
307	208	4.16	34.132	2279	2127	2137	365.6	19.7	1995.5	111.7	8.162	19.7	1996.0	111.3	7.010	8.154	1.114	63.7	42.4
308	271	3.82	34.141	2293	2144		371.7	20.3	2013.4	110.3	8.157	20.2	2013.9	109.8	7.136	8.147	1.099	61.7	40.2
309	341	3.46	34.152	2292	2153	2160	391.7	21.7	2026.8	104.5	8.135	21.6	2027.5	103.9	7.553	8.122	1.041	55.3	33.6
310	442	3.06	34.178	2299	2170		415.3	23.4	2047.6	99.1	8.112	23.2	2048.5	98.3	8.042	8.095	.985	48.8	27.0
311	540	2.82	34.211	2307	2174	2187	402.8	22.9	2049.7	101.4	8.124	22.7	2050.8	100.5	7.887	8.103	1.008	50.2	28.1
312	640	2.58	34.256	2316	2198		446.2	25.5	2079.1	93.4	8.084	25.3	2080.3	92.4	8.723	8.059	.927	41.3	18.9
315	752	2.42	34.318	2323	2217		486.2	28.0	2101.8	87.2	8.051	27.7	2103.3	86.0	9.524	8.021	.865	34.0	11.3
316	849	2.36	34.364	2327	2227		508.7	29.3	2113.5	84.1	8.033	29.0	2115.2	82.8	10.011	8.000	.834	30.0	7.1
317	948	2.32	34.430	2333	2235	2240	518.2	29.9	2121.9	83.2	8.026	29.5	2123.7	81.8	10.261	7.989	.825	28.2	4.9
318	1051	2.36	34.498	2339	2243		529.5	30.5	2130.2	82.3	8.019	30.1	2132.2	80.7	10.542	7.977	.816	26.2	2.7
319	1134	2.56	34.562	2343	2234	2245	487.3	27.9	2117.0	89.2	8.053	27.4	2119.2	87.3	9.809	8.008	.885	32.2	8.4
320	1280	2.47	34.599	2346	2237		487.0	27.9	2119.9	89.2	8.053	27.4	2122.4	87.1	9.935	8.003	.884	30.7	6.6
321	1473	2.58	34.691	2349	2238	2243	484.1	27.6	2120.1	90.3	8.056	27.1	2123.0	87.9	10.040	7.998	.894	29.8	5.1
322	1605	2.55	34.721	2353	2233		455.4	26.0	2111.8	95.2	8.081	25.4	2115.1	92.5	9.597	8.018	.941	33.1	8.1
323	1804	2.45	34.751	2352	2234	2249	460.2	26.4	2113.6	94.1	8.076	25.7	2117.2	91.1	9.883	8.005	.928	29.8	4.2
101	1833	2.34	34.743	2354	2233		449.3	25.9	2111.4	95.7	8.086	25.2	2115.2	92.6	9.697	8.013	.943	31.1	5.3
102	1982	2.25	34.751	2354	2235	2256	454.2	26.2	2114.1	94.6	8.081	25.5	2118.2	91.3	9.936	003	.930	28.3	2.1
324	2002	2.26	34.761	2357	2238		455.2	26.3	2117.0	94.7	8.081	25.6	2121.1	91.3	9.963	8.002	.931	28.1	1.9
103	2086	2.22	34.770	2355	2230	2224	435.7	25.2	2106.9	97.9	8.097	24.5	2111.2	94.3	9.657	8.015	.961	30.2	3.7
104	2190	2.21	34.781	2352	2231	2234	447.0	25.8	2109.5	95.6	8.087	25.1	2114.0	91.9	9.994	8.000	.937	26.8	-.0
105	2341	2.14	34.783	2357	2230		429.1	24.9	2106.1	99.0	8.103	24.1	2111.0	95.0	9.748	8.011	.968	28.3	1.0
106	2471	2.04	34.790	2358	2231		427.8	24.9	2107.1	99.0	8.104	24.1	2112.2	94.7	9.845	8.007	.966	26.7	-1.1
107	2560	1.99	34.789	2357	2226		415.4	24.2	2100.6	101.2	8.115	23.4	2106.0	96.7	9.669	8.015	.986	27.6	-.4
108	2645	1.92	34.781	2361	2231	2225	418.1	24.4	2105.8	100.7	8.113	23.6	2111.4	96.1	9.794	8.009	.980	26.1	-2.2
110	2896	1.69	34.764	2363	2244	2242	447.3	26.4	2122.8	94.8	8.086	25.4	2128.7	89.9	10.680	7.971	.916	17.0	-12.2
111	3097	1.52	34.751	2365	2245		441.9	26.2	2123.4	95.4	8.091	25.1	2129.7	90.1	10.767	7.968	.918	14.8	-15.1
112	3196	1.46	34.744	2367	2251	2232	453.8	27.0	2130.7	93.3	8.080	25.9	2137.2	87.9	11.135	7.953	.896	11.4	-18.8
116	3459	1.32	34.730	2369	2254	2243	455.0	27.2	2134.0	92.8	8.079	26.0	2141.0	87.0	11.445	7.941	.886	7.2	-24.0
117	3559	1.22	34.720	2368	2257		465.8	28.0	2138.4	90.7	8.069	26.7	2145.5	84.8	11.825	7.927	.863	3.6	-27.9
118	3688	1.12	34.715	2367	2268	2251	505.4	30.5	2153.1	84.4	8.036	29.1	2160.4	78.6	12.935	7.888	.800	-4.3	-36.4
119	3858	.99	34.704	2374	2255		438.2	26.6	2133.4	95.1	8.094	25.2	2141.3	88.5	11.486	7.940	.900	3.3	-29.4
120	4059	.85	34.694	2375	2263	2244	458.1	27.9	2143.7	91.4	8.076	26.4	2152.0	84.6	12.210	7.913	.861	-3.4	-37.0
122	4309	.72	34.686	2376	2271	2247	479.2	29.4	2153.9	87.7	8.058	27.7	2162.5	80.7	13.053	7.884	.821	-10.9	-45.5
123	4357	.68	34.684	2372	2264		467.2	28.7	2146.2	89.2	8.067	27.0	2154.9	82.0	12.830	7.892	.834	-10.4	-45.1
124	4507	.61	34.680	2373	2261	2250	453.3	27.9	2141.8	91.3	8.079	26.2	2151.0	83.8	12.653	7.898	.852	-10.9	-46.2

STATION: 93 LEG: VII — POSITION: 41° 46' S 18° 27' E — DATE: 2 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
409	11	13.67	34.853		2018	2029													
410	49	13.44	35.053			2070													
411	144	12.02	34.984	2317	2073	2101	309.8	12.7	1889.5	170.8	8.253	12.7	1889.8	170.5	5.652	8.248	1.748	123.7	102.8
412	187	11.32	34.910	2314	2098	2078	348.9	14.7	1930.3	153.0	8.207	14.6	1930.8	152.6	6.310	8.200	1.562	105.5	84.5
615	246	10.24	34.732	2306	2086	2100	322.3	14.1	1917.1	154.9	8.232	14.0	1917.7	154.3	5.978	8.223	1.571	106.8	85.6
616	315	10.12	34.774	2308	2109	2121	362.4	15.9	1951.2	142.0	8.188	15.8	1951.9	141.3	6.656	8.177	1.441	93.3	71.9
617	384	9.13	34.652	2305	2104	2132	341.7	15.5	1945.8	142.7	8.207	15.4	1946.7	141.9	6.410	8.193	1.442	93.3	71.8
618	444	7.97	34.522	2302	2129	2138	383.0	18.0	1985.5	125.5	8.160	17.9	1986.4	124.7	7.183	8.144	1.262	75.5	53.8
619	494	7.39	34.508			2153													
620	643	5.66	34.391	2309	2166	2185	423.4	21.6	2036.7	107.6	8.115	21.4	2038.1	106.5	8.119	8.091	1.074	55.7	33.4
621	745	4.60	34.329	2309	2167	2199	408.0	21.7	2038.5	106.8	8.126	21.4	2040.1	105.5	7.996	8.097	1.062	53.8	31.2
622	797		34.343	2311	2188	2199													
415	902	4.17	34.407	2323	2197	2204	452.4	24.4	2074.5	98.1	8.086	24.1	2076.3	96.6	8.895	8.051	.974	43.6	20.6
416	999	3.84	34.439	2332	2225	2230	514.1	28.0	2108.9	88.1	8.036	27.7	2110.8	86.5	10.082	7.996	.873	32.7	9.4
417	1072	3.38	34.436	2333	2222	2242	491.1	27.2	2104.6	90.1	8.052	26.9	2106.7	88.4	9.771	8.010	.893	33.9	10.4
418	1200	3.18	34.507	2342	2244		539.4	30.1	2130.3	83.5	8.015	29.7	2132.6	81.7	10.766	7.968	.826	26.0	2.2
419	1350	3.02	34.584	2352	2249	2257	521.1	29.3	2133.4	86.3	8.030	28.7	2136.1	84.2	10.553	7.977	.853	27.2	2.9
420	1449	2.93	34.620	2353	2251	2264	523.8	29.5	2135.7	85.8	8.027	29.0	2138.5	83.5	10.709	7.970	.848	25.6	1.1
421	1602	2.77	34.679	2350	2244	2211	505.6	28.7	2127.6	87.7	8.040	28.0	2130.8	85.2	10.546	7.977	.866	25.9	.9
422	1748	2.72	34.730	2352	2237		474.6	26.9	2117.6	92.5	8.065	26.3	2121.1	89.6	10.084	7.996	.912	29.0	3.5
423	1895	2.69	34.767	2351	2229		451.6	25.7	2107.1	96.2	8.084	25.0	2111.0	93.0	9.774	8.010	.948	30.9	5.1
101	1998	2.66	34.788	2350	2230	2230	457.3	26.0	2108.9	95.1	8.079	25.3	2113.0	91.7	9.990	8.000	.936	28.7	2.5
102	2148	2.61	34.803	2352	2223	2217	429.8	24.5	2098.5	100.0	8.103	23.8	2103.0	96.3	9.566	8.019	.982	31.7	5.1
424	2196	2.60	34.808	2351	2224	2201	435.2	24.8	2100.3	98.9	8.098	24.1	2104.8	95.1	9.724	8.012	.971	30.1	3.2
103	2297	2.56	34.812	2351	2217	2211	414.5	23.7	2090.6	102.7	8.117	22.9	2095.4	98.7	9.390	8.027	1.007	32.6	5.5
104	2449	2.48	34.820	2352	2215	2225	405.4	23.2	2087.4	104.4	8.126	22.4	2092.6	100.0	9.334	8.030	1.021	32.3	4.7
105	2597	2.41	34.821	2352	2221	2225	420.9	24.2	2095.8	101.1	8.111	23.3	2101.2	96.5	9.797	8.009	.985	27.2	-.9
106	2748	2.35	34.824	2352	2225	2205	431.7	24.8	2101.3	98.9	8.101	23.9	2107.0	94.1	10.172	7.993	.961	23.1	-5.4
107	2898	2.30	34.825	2357	2209	2223	375.8	21.7	2076.6	110.7	8.155	20.8	2082.9	105.3	9.074	8.042	1.075	32.6	3.5
108	3018	2.22	34.821	2359	2222	2228	403.3	23.3	2094.1	104.6	8.128	22.3	2100.5	99.1	9.783	8.010	1.012	25.0	-4.5
109	3134	2.12	34.810	2359	2227	2211	415.4	24.1	2101.1	101.8	8.116	23.1	2107.7	96.3	10.167	7.993	.982	20.8	-9.2
110	3148	2.13	34.813			2226													
111	3249	2.11	34.816	2362	2217	2197	381.7	22.2	2085.7	109.1	8.150	21.1	2092.7	103.1	9.500	8.022	1.052	26.2	-4.1
112	3349	2.02	34.810	2360	2246	2218	468.7	27.3	2126.6	92.1	8.068	26.1	2133.4	86.5	11.599	7.936	.883	8.4	-22.3
115	3457	1.92	34.800	2366	2228	2235	397.7	23.3	2099.5	105.3	8.134	22.1	2106.8	99.0	10.056	7.998	1.010	19.5	-11.6
116	3578	1.80	34.787	2367	2236	2218	415.0	24.4	2110.2	101.4	8.117	23.2	2117.7	95.1	10.583	7.975	.970	14.0	-17.5
117	3657	1.69	34.777	2368	2238	2232	416.3	24.6	2112.5	100.9	8.115	23.3	2120.2	94.5	10.698	7.971	.963	12.3	-19.5
118	3717	1.58	34.763	2371	2245	2250	426.8	25.3	2120.9	98.8	8.106	24.0	2128.7	92.3	11.005	7.958	.941	9.3	-22.8
119	3806	1.48	34.753	2370	2249	2231	439.6	26.1	2126.8	96.0	8.093	24.8	2134.7	89.5	11.420	7.942	.912	5.3	-27.1
120	3957	1.31	34.740	2372	2260	2257	465.5	27.9	2140.8	91.3	8.071	26.4	2148.8	84.7	12.228	7.913	.863	-1.6	-34.7
121	4107	1.18	34.731	2375	2256	2251	441.9	26.6	2134.3	95.1	8.091	25.1	2142.8	88.1	11.817	7.928	.897	-.4	-34.0
122	4256	1.06	34.721	2378	2260	2242	443.8	26.8	2138.6	94.6	8.090	25.3	2147.3	87.4	12.029	7.920	.890	-3.3	-37.5
123	4407	.94	34.711	2378	2243	2250	393.4	23.9	2115.2	103.9	8.136	22.5	2124.6	95.9	10.927	7.961	.976	3.0	-31.9
124	4507	.86	34.708	2381	2251	2265	406.5	24.8	2125.0	101.2	8.124	23.2	2134.5	93.2	11.363	7.945	.948	-1.3	-36.6

STATION: 102 LEG: VIII — POSITION: 31° 31' S 9° 26' E — DATE: 12 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T=INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
601	6	22.27	35.753	2351	2016	2041	323.3	9.8	1770.4	235.8	8.266	9.8	1770.4	235.8	5.421	8.266	2.471	190.5	170.1
602	46	20.59	35.672	2344	2004		291.7	9.3	1756.8	237.9	8.297	9.3	1756.9	237.8	5.061	8.296	2.487	192.2	171.7
603	76	18.23	35.541	2334	2013	2033	284.2	9.7	1779.5	223.8	8.300	9.6	1779.7	223.6	5.042	8.297	2.330	177.7	157.1
604	193	15.66	35.467	2331	2046		301.2	11.0	1836.1	198.9	8.273	11.0	1836.6	198.4	5.415	8.266	2.063	151.6	130.7
605	229	15.47	35.457	2333	2048	2080	299.1	11.0	1838.2	198.8	8.275	11.0	1838.7	198.3	5.402	8.267	2.061	151.2	130.2
606	364	13.72	35.271	2329	2085		339.2	13.2	1900.0	171.8	8.225	13.1	1900.9	171.0	6.132	8.212	1.768	122.9	101.6
607	554	10.98	34.945	2313	2098	2136	345.9	14.7	1931.2	152.1	8.209	14.6	1932.4	151.0	6.477	8.189	1.547	101.3	79.5
608	723	7.54	34.569	2306	2131		373.2	17.8	1986.6	126.6	8.169	17.6	1988.2	125.2	7.209	8.142	1.269	73.9	51.5
609	802	5.78	34.401	2300	2152	2188	409.1	20.8	2020.9	110.3	8.127	20.6	2022.6	108.8	8.004	8.097	1.097	56.8	34.1
610	893	4.85	34.335	2299	2178		472.6	24.9	2058.1	95.0	8.067	24.6	2059.9	93.5	9.271	8.033	.941	40.7	17.7
611	993	3.97	34.305			2209													
612	1093	3.58	34.340	2313	2197		470.3	25.9	2078.7	92.4	8.067	25.5	2080.9	90.6	9.461	8.024	.912	35.9	12.4
615	1191	3.30	34.402			2241													

STATION: 102 LEG: VIII — POSITION: 31° 31' S 9° 26' E — DATE: 12 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC 1 ATM, INSITU PCO_2 µATM	CALC 1 ATM, INSITU H_2CO_3 µM/KG	CALC 1 ATM, INSITU HCO_3^- µM/KG	CALC 1 ATM, INSITU $CO_3^=$ µM/KG	CALC 1 ATM, INSITU PH	CALC P, T INSITU H_2CO_3 µM/KG	CALC P, T INSITU HCO_3^- µM KG	CALC P, T INSITU $CO_3^=$ µM/KG	CALC P, T INSITU AH (10^{-9})	CALC P, T INSITU PH	CALC P, T INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
616	1291	3.08	34.475	2329	2233		540.6	30.3	2120.5	82.2	8.012	29.8	2123.0	80.2	10.944	7.961	.811	23.8	-.4
617	1389	2.95	34.523	2335	2234	2263	521.0	29.4	2119.8	84.9	8.027	28.8	2122.5	82.7	10.665	7.972	.837	25.4	1.0
618	1487	2.95	34.605	2336	2243		554.0	31.2	2131.0	80.8	8.002	30.6	2133.9	78.5	11.394	7.943	.797	20.3	-4.4
619	1589	2.93	34.659			2257													
620	1690	2.96	34.720	2341	2230		489.1	27.5	2112.3	90.1	8.052	26.9	2115.7	87.4	10.332	7.986	.890	27.3	2.1
621	1788	2.92	34.762	2337	2224	2251	480.8	27.1	2105.8	91.1	8.058	26.4	2109.4	88.2	10.285	7.988	.898	27.2	1.6
501	1806	2.97	34.774	2342	2219		450.7	25.3	2097.1	96.6	8.085	24.7	2100.8	93.5	9.686	8.014	.953	32.4	6.8
622	1889		34.791	2339	2219														
623	1990	2.91	34.818	2336	2204	2237	421.6	23.7	2079.0	101.3	8.109	23.1	2083.1	97.8	9.298	8.032	.998	34.9	8.7
624	2000	2.91	34.818	2337	2210		436.5	24.6	2086.8	98.6	8.096	23.9	2090.9	95.1	9.602	8.018	.971	32.1	5.9
502	2107	2.86	34.834	2340	2218	2241	452.0	25.5	2096.6	95.9	8.082	24.8	2100.9	92.4	10.005	8.000	.943	28.3	1.8
503	2410	2.70	34.848	2346	2199	2236	381.4	21.7	2067.5	109.9	8.149	20.9	2072.7	105.4	8.804	8.055	1.077	38.2	10.7
504	2610	2.61	34.862	2345	2205		397.9	22.7	2076.4	105.9	8.132	21.8	2082.0	101.2	9.328	8.030	1.034	31.8	3.7
505	2811	2.51	34.860	2347	2205		391.7	22.4	2075.6	107.1	8.138	21.5	2081.6	101.9	9.367	8.028	1.042	30.3	1.5
507	3214	2.34	34.858	2354	2211		388.4	22.3	2080.9	107.8	8.142	21.3	2087.8	101.9	9.633	8.016	1.041	25.5	-4.6
508	3466	2.31	34.859	2355	2224	2243	420.6	24.2	2098.6	101.1	8.111	23.1	2105.9	95.0	10.599	7.975	.971	15.6	-15.4
509	3718	2.11	34.840	2362	2221	2250	392.1	22.8	2091.4	106.9	8.139	21.6	2099.3	100.1	10.163	7.993	1.022	17.3	-14.6
510	3969	1.78	34.798	2363	2242		443.1	26.0	2120.1	95.9	8.090	24.7	2128.2	89.1	11.674	7.933	.909	2.9	-30.1
511	4221	1.35	34.759	2374	2245		415.3	24.8	2119.7	100.5	8.116	23.4	2128.5	93.0	11.258	7.949	.948	3.1	-31.0
512	4372	1.23	34.745	2375	2248		419.3	25.2	2123.4	99.4	8.112	23.7	2132.5	91.8	11.527	7.938	.935	-.5	-35.1
515	4574	1.14	34.739	2376	2262	2280	457.3	27.6	2142.0	92.4	8.078	25.9	2151.3	84.8	12.740	7.895	.863	-10.5	-46.0
516	4624	1.13	34.737	2379	2257	2274	433.2	26.1	2134.1	96.8	8.099	24.5	2143.7	88.8	12.157	7.915	.905	-7.2	-42.9
518	4736	1.13	34.736	2380	2260	2278	439.5	26.5	2137.8	95.7	8.094	24.8	2147.5	87.6	12.444	7.905	.892	-10.1	-46.3
520	4877	1.12	34.734	2378	2263		454.3	27.4	2142.6	93.0	8.081	25.7	2152.5	84.8	13.015	7.886	.864	-15.1	-51.9
522	4907	1.11	34.734	2380	2267		461.1	27.8	2147.2	92.0	8.075	26.0	2157.1	83.8	13.225	7.879	.854	-16.6	-53.5
524	4928	1.12	34.734	2379	2267		464.1	28.0	2147.6	91.5	8.072	26.2	2157.5	83.3	13.338	7.875	.848	-17.5	-54.5

STATION: 103 LEG: VIII — POSITION: 23° 59' S 8° 30' E — DATE: 17 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC 1 ATM, INSITU PCO_2 µATM	CALC 1 ATM, INSITU H_2CO_3 µM/KG	CALC 1 ATM, INSITU HCO_3^- µM/KG	CALC 1 ATM, INSITU $CO_3^=$ µM/KG	CALC 1 ATM, INSITU PH	CALC P, T INSITU H_2CO_3 µM/KG	CALC P, T INSITU HCO_3^- µM KG	CALC P, T INSITU $CO_3^=$ µM/KG	CALC P, T INSITU AH (10^{-9})	CALC P, T INSITU PH	CALC P, T INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
601	5	23.42	35.591	2360	2037	2045	360.0	10.6	1797.2	229.2	8.234	10.6	1797.2	229.2	5.841	8.233	2.391	183.9	163.5
602	14	23.28	35.598	2356	2031	2049	353.4	10.5	1790.3	230.2	8.239	10.5	1790.3	230.2	5.772	8.239	2.402	184.9	164.5
603	29	22.48	35.699	2359	2029	2047	335.8	10.1	1785.8	233.0	8.255	10.1	1785.9	233.0	5.571	8.254	2.438	187.5	167.1
604	55		35.606			2041													
606	103	15.85	35.484	2341	2062	2080	315.7	11.5	1855.0	195.5	8.258	11.5	1855.3	195.2	5.564	8.255	2.031	149.0	128.3
607	132	15.42	35.464	2340	2069	2084	322.1	11.9	1867.1	190.1	8.250	11.9	1867.4	189.8	5.686	8.245	1.973	143.3	122.5
608	174	13.78	35.221	2331	2082	2116	331.3	12.9	1894.0	175.1	8.235	12.8	1894.4	174.7	5.910	8.228	1.804	127.9	107.0
609	225	12.40	35.069	2320	2117	2143	396.7	16.1	1955.2	145.7	8.162	16.0	1955.8	145.2	7.009	8.154	1.493	97.9	76.9
610	286	11.27	34.968	2315	2148	2168	465.7	19.6	2004.9	123.5	8.097	19.5	2005.5	123.0	8.187	8.087	1.260	75.2	54.0
611	365	9.35	34.767	2311	2187	2216	565.3	25.4	2063.4	98.2	8.015	25.3	2064.1	97.6	9.967	8.001	.995	49.2	27.7
612	453	7.81	34.628	2308	2216	2248	664.6	31.5	2103.8	80.8	7.945	31.3	2104.6	80.1	11.819	7.927	.813	30.9	9.2
615	613	5.77	34.499	2307	2238	2266	728.3	37.0	2131.9	69.0	7.900	36.8	2133.0	68.2	13.319	7.876	.690	17.6	-4.6
616	723	4.85	34.451	2311	2230	2263	640.9	33.7	2121.7	74.6	7.948	33.4	2123.0	73.6	12.034	7.920	.743	22.1	-.4
617	751	4.65	34.445	2312	2236	2257	661.2	35.0	2128.8	72.2	7.935	34.7	2130.1	71.2	12.439	7.905	.719	19.4	-3.2
618	803	4.37	34.450	2316	2230	2260	607.3	32.5	2120.4	77.1	7.968	32.2	2121.9	75.9	11.564	7.937	.767	23.7	1.0
619	1055	3.62	34.542	2325	2232	2258	563.9	31.0	2120.4	80.6	7.996	30.6	2122.4	79.1	11.100	7.955	.800	24.7	1.3
620	1307	3.40	34.689	2333	2232	2251	531.5	29.4	2117.8	84.8	8.020	28.9	2120.3	82.8	10.756	7.968	.842	26.3	2.1
621	1560	3.34	34.816			2229													
622	1811	3.27	34.868	2336	2194	2216	400.3	22.2	2064.9	106.9	8.131	21.7	2068.7	103.6	8.701	8.060	1.059	42.5	16.9
623	2064	3.12	34.897			2209													
624	2317	2.98	34.898	2342	2193	2211	380.0	21.3	2060.7	110.9	8.151	20.6	2065.7	106.6	8.694	8.061	1.091	40.4	13.3
301	2551	2.68	34.869	2348	2205	2220	392.0	22.3	2075.1	107.7	8.139	21.5	2080.5	103.0	9.136	8.039	1.053	34.3	6.4
302	2749	2.58	34.866	2351	2210	2227	396.5	22.6	2080.8	106.6	8.135	21.7	2086.6	101.6	9.396	8.027	1.039	30.7	2.2
303	2943	2.49	34.862	2354	2207	2228	380.6	21.8	2075.2	110.1	8.151	20.9	2081.5	104.6	9.212	8.036	1.069	31.5	2.3
304	3148	2.42	34.861	2356	2224	2225	419.8	24.1	2098.2	101.7	8.112	23.0	2104.8	96.2	10.262	7.989	.983	20.6	-9.3
305	3348	2.36	34.854	2360	2217	2235	390.3	22.4	2086.6	107.9	8.141	21.4	2093.8	101.8	9.766	8.010	1.040	23.8	-6.8
306	3543	2.28	34.846	2362	2230	2233	419.1	24.2	2104.0	101.9	8.114	23.0	2111.4	95.6	10.611	7.974	.977	15.2	-16.1
307	3847	1.90	34.819	2371	2226	2250	381.1	22.3	2094.4	109.3	8.151	21.1	2102.7	102.2	10.004	8.000	1.043	17.7	-14.8
308	4047	1.63	34.776	2376	2250	2263	429.1	25.4	2125.7	98.9	8.105	24.0	2134.1	91.9	11.371	7.944	.937	4.5	-28.8
309	4247	1.21	34.743	2381	2254	2261	420.5	25.3	2129.2	99.6	8.112	23.8	2138.1	92.1	11.401	7.943	.938	1.7	-32.5
310	4447	1.12	34.739	2382	2275	2269	481.8	29.1	2157.1	88.9	8.058	27.4	2166.0	81.6	13.193	7.880	.831	-11.8	-46.8
317	4572	1.11	34.734	2385	2260	2282	425.7	25.7	2135.7	98.6	8.107	24.1	2145.3	90.6	11.877	7.925	.923	-4.7	-40.2

STATION: 105 LEG: VIII — POSITION: 20° 0' S 2° 0' E — DATE: 20 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC 1 ATM, INSITU PCO_2 µATM	CALC 1 ATM, INSITU H_2CO_3 µM/KG	CALC 1 ATM, INSITU HCO_3^- µM/KG	CALC 1 ATM, INSITU $CO_3^=$ µM/KG	CALC 1 ATM, INSITU PH	CALC P, T INSITU H_2CO_3 µM/KG	CALC P, T INSITU HCO_3^- µM KG	CALC P, T INSITU $CO_3^=$ µM/KG	CALC P, T INSITU AH (10^{-9})	CALC P, T INSITU PH	CALC P, T INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
502	1	24.73	35.920	2375	2033		356.3	10.1	1780.5	242.3	8.242	10.1	1780.5	242.3	5.734	8.242	2.551	197.2	176.9
301	2	24.62	35.908	2373	2031	2051	353.9	10.1	1778.7	242.2	8.243	10.1	1778.7	242.2	5.711	8.243	2.549	197.1	176.7
503	11	24.49	35.897	2373	2033	2050	355.1	10.2	1782.0	240.8	8.242	10.2	1782.0	240.8	5.735	8.242	2.534	195.6	175.3
504	31	23.54	35.799	2368	2030		342.0	10.0	1780.9	239.0	8.252	10.0	1781.0	239.0	5.609	8.251	2.508	193.6	173.2
505	51	20.89	35.723	2358	2036		325.7	10.3	1799.0	226.8	8.261	10.3	1799.1	226.6	5.498	8.260	2.373	181.0	160.5
506	78	18.58	35.727	2358	2055		322.7	10.8	1831.2	212.9	8.259	10.8	1831.4	212.7	5.543	8.256	2.228	166.8	146.2
302	99	16.86	35.568	2344	2088	2124	372.2	13.2	1893.4	181.4	8.201	13.1	1893.6	181.2	6.339	8.198	1.890	135.1	114.4
507	103	17.37	35.628	2351	2075		346.5	12.1	1868.3	194.7	8.230	12.0	1868.5	194.4	5.941	8.226	2.030	148.3	127.6
510	128	15.20	35.425	2334	2100		384.4	14.3	1919.3	166.4	8.184	14.3	1919.6	166.2	6.618	8.179	1.726	119.7	98.9
508	151	14.24	35.304	2328	2106		390.6	14.9	1932.7	158.4	8.174	14.9	1933.0	158.0	6.775	8.169	1.636	111.4	90.5
509	181	13.35	35.199	2319	2139		473.9	18.7	1988.2	132.2	8.098	18.6	1988.6	131.8	8.105	8.091	1.360	84.9	64.0
303	198	13.04	35.155	2318	2135	2157	458.5	18.2	1983.0	133.8	8.109	18.2	1983.4	133.4	7.905	8.102	1.375	86.4	65.4
304	249	11.93	35.051	2315	2136	2182	445.9	18.4	1986.8	130.8	8.116	18.3	1987.3	130.4	7.818	8.107	1.339	82.9	61.8
305	278	11.03	34.938	2311	2130	2161	421.7	17.9	1980.6	131.5	8.134	17.8	1981.2	131.0	7.521	8.124	1.342	83.3	62.1
306	316	10.22	34.852	2311	2151	2169	463.0	20.2	2011.9	118.9	8.096	20.1	2012.6	118.3	8.242	8.084	1.209	70.3	48.9
307	345	9.46	34.778	2307	2171	2196	522.1	23.4	2042.9	104.8	8.046	23.2	2043.5	104.2	9.268	8.033	1.062	55.9	34.5
308	396	8.42	34.677	2304	2184	2216	555.7	25.8	2062.7	95.5	8.017	25.6	2063.5	94.9	9.947	8.002	.965	46.2	24.6
309	493	6.85	34.551	2310	2229	2241	694.5	34.0	2119.9	75.1	7.924	33.8	2120.8	74.4	12.457	7.905	.754	24.8	3.0
310	513		34.521	2304	2220	2242													
311	528	6.36	34.513	2301	2213	2238	641.9	32.0	2102.8	78.2	7.952	31.8	2103.8	77.4	11.715	7.931	.783	27.6	5.6
312	592	5.81	34.502	2306	2226	2251	669.4	34.0	2117.8	74.2	7.934	33.8	2118.8	73.4	12.291	7.910	.742	23.0	.8
315	693	5.09	34.471	2306	2233	2265	686.5	35.8	2126.5	70.7	7.920	35.5	2127.7	69.8	12.791	7.893	.705	18.5	-3.9
316	742	4.71	34.459	2305	2230	2257	665.5	35.2	2123.3	71.6	7.931	34.9	2124.6	70.5	12.534	7.902	.713	18.9	-3.7
317	792	4.49	34.463	2319	2231	2255	602.2	32.1	2120.7	78.2	7.973	31.8	2122.2	77.0	11.436	7.942	.778	24.9	2.2
318	892	4.11	34.485	2317	2238	2253	635.1	34.3	2130.1	73.6	7.949	33.9	2131.7	72.4	12.184	7.914	.732	19.4	-3.6
319	992	3.83	34.527	2321	2226	2250	558.5	30.5	2113.9	81.6	8.000	30.1	2115.8	80.1	10.932	7.961	.811	26.3	3.0
320	1093	3.71	34.581			2253													
321	1192	3.62	34.644	2327	2222	2252	518.2	28.5	2106.7	86.8	8.030	28.0	2109.1	84.9	10.396	7.983	.862	29.4	5.6
322	1293	3.61	34.705			2230													
101	1368	3.60	34.745			2240													
102	1612	3.468	34.845	2328	2192	2226	417.2	23.0	2065.6	103.4	8.114	22.5	2069.0	100.5	8.882	051	1.027	41.3	16.3
103	1862	3.25	34.888	2330	2188	2211	398.5	22.2	2059.1	106.7	8.131	21.6	2063.1	103.3	8.731	8.059	1.057	41.7	16.0
104	2111		34.902	2335	2194	2205													
105	2358	2.87	34.903	2338	2190	2232	379.8	21.4	2058.4	110.2	8.150	20.7	2063.4	105.9	8.747	8.058	1.083	39.2	12.0
106	2610	2.70	34.895	2344	2182	2219	346.4	19.7	2044.0	118.4	8.186	18.9	2049.8	113.3	8.229	8.085	1.159	43.9	15.8
107	2860	2.59	34.895	2346	2205	2224	395.6	22.5	2076.0	106.5	8.135	21.6	2082.1	101.3	9.492	8.023	1.036	29.1	.2
108	3109	2.51	34.890	2356	2204	2237	369.5	21.1	2070.0	112.9	8.162	20.2	2076.7	107.1	9.098	8.041	1.095	32.0	2.3
109	3258	2.47	34.889	2357	2208	2236	376.4	21.5	2075.2	111.2	8.155	20.6	2082.3	105.2	9.377	8.028	1.075	28.3	-1.9
111	3754	2.41	34.887			2245													
112	4002	2.41	34.886	2364	2218	2234	384.8	22.1	2086.2	109.7	8.148	20.9	2094.8	102.3	10.211	7.991	1.046	16.0	-16.9
115	4251	2.41	34.887	2357	2257	2243	525.7	30.2	2142.2	84.7	8.024	28.6	2150.4	78.0	13.989	7.854	.798	-11.7	-45.6
116	4501	2.42	34.884	2365	2223	2229	395.4	22.7	2092.8	107.5	8.137	21.3	2102.4	99.3	10.948	7.961	1.015	6.0	-28.8
117	4749	2.43	34.883	2365	2197	2199	335.1	19.2	2055.4	122.4	8.201	17.9	2066.2	112.9	9.631	8.016	1.155	15.9	-19.9
118	4998	2.47	34.883	2369	2224	2243	389.5	22.3	2092.4	109.3	8.144	20.8	2103.2	100.1	11.272	7.948	1.023	-.7	-37.5
119	5252	2.48	34.882	2368	2224	2237	391.9	22.4	2092.9	108.7	8.141	20.8	2104.1	99.0	11.606	7.935	1.013	-5.8	-43.6
123	5430	2.51	34.882	2368	2219		379.7	21.7	2085.7	111.5	8.154	20.1	2097.5	101.4	11.456	7.941	1.037	-6.4	-45.0

STATION: 107 LEG: VIII — POSITION: 12° 0' S 2° 0' E — DATE: 22 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC 1 ATM, INSITU PCO_2 µATM	CALC 1 ATM, INSITU H_2CO_3 µM/KG	CALC 1 ATM, INSITU HCO_3^- µM/KG	CALC 1 ATM, INSITU $CO_3^=$ µM/KG	CALC 1 ATM, INSITU PH	CALC P, T INSITU H_2CO_3 µM/KG	CALC P, T INSITU HCO_3^- µM KG	CALC P, T INSITU $CO_3^=$ µM/KG	CALC P, T INSITU AH (10^{-9})	CALC P, T INSITU PH	CALC P, T INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
301	3	25.40	36.739	2425	2079	2067	384.8	10.7	1822.5	245.8	8.220	10.7	1822.5	245.7	6.020	8.220	2.647	200.8	180.6
302	12	25.31	36.735	2429	2069	2061	361.7	10.1	1803.8	255.1	8.242	10.1	1803.8	255.1	5.728	8.242	2.747	210.1	189.9
303	32	25.06	36.732	2421	2070	2056	369.8	10.4	1810.9	248.7	8.233	10.4	1811.0	248.7	5.864	8.232	2.678	203.6	183.3
304	51	21.93	36.542	2409	2064	1961	328.0	10.0	1811.0	243.0	8.266	10.0	1811.2	242.8	5.444	8.264	2.601	197.4	177.0
305	82	18.42	36.075	2378	2113		396.4	13.4	1911.1	188.6	8.186	13.3	1911.3	188.4	6.553	8.184	1.992	142.5	121.9
306	111	13.72	35.387	2328	2198	2214	667.6	26.0	2068.4	103.7	7.968	25.9	2068.6	103.5	10.871	7.964	1.074	57.1	36.3
307	151	12.37	35.207	2317	2216	2241	762.9	31.0	2097.8	87.3	7.908	30.9	2098.0	87.1	12.507	7.903	.898	40.3	19.4
310	202	11.32	35.074	2310	2235	2325	879.5	36.9	2124.3	73.7	7.846	36.9	2124.7	73.5	14.496	7.839	.755	26.3	5.2
308	251	10.63	34.997	2316	2218	2237	722.2	31.0	2102.0	85.0	7.923	30.9	2102.4	84.6	12.188	7.914	.868	37.1	15.9
309	301	10.13	34.939	2310	2218	2273	735.8	32.2	2104.2	81.6	7.913	32.0	2104.8	81.2	12.538	7.902	.831	33.2	11.9
311	351	9.40	34.850	2307	2244	2261	887.7	39.8	2136.9	67.3	7.834	39.6	2137.5	66.9	15.106	7.821	.683	18.6	-2.9

STATION: 107 LEG: VIII — POSITION: 12° 0' S 2° 0' E — DATE: 22 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
312	402	8.69	34.785	2306	2254	2277	939.5	43.1	2148.7	62.2	7.808	42.9	2149.3	61.7	16.123	7.793	.629	13.0	-8.6
315	501	7.49	34.675	2309	2174	2302	484.3	23.2	2047.3	103.6	8.068	23.0	2048.3	102.7	8.923	8.049	1.044	53.1	31.3
316	580	6.24	34.571	2303	2260	2271	912.4	45.6	2156.7	57.6	7.809	45.4	2157.7	56.9	16.364	7.786	.577	6.7	-15.4
317	700	5.34	34.513	2301	2282	2269	1070.3	55.3	2178.6	48.2	7.739	54.9	2179.7	47.4	19.459	7.711	.480	-3.9	-26.3
318	800	4.71	34.498	2307	2254	2321	793.6	41.9	2150.5	61.6	7.860	41.6	2151.8	60.6	14.853	7.828	.613	8.5	-14.3
319	898	4.33	34.522	2313	2247	2258	707.7	37.9	2141.6	67.5	7.906	37.5	2143.2	66.3	13.483	7.870	.671	13.3	-9.7
320	1049	4.06	34.602	2318	2241	2258	645.8	34.9	2133.4	72.7	7.942	34.5	2135.3	71.2	12.567	7.901	.722	17.0	-6.4
321	1196	3.92	34.706	2321	2228	2254	571.3	31.0	2116.4	80.5	7.991	30.6	2118.7	78.7	11.378	7.944	.801	23.3	-.6
322	1394		34.831	2325	2218	2265													
323	1590	3.66	34.893	2327	2197	2205	438.1	24.0	2073.0	100.1	8.095	23.5	2076.2	97.3	9.256	8.034	.995	38.3	13.4
501	1885	3.40	34.919			2209													
324	1889	3.39	34.920	2331	2193	2221	412.1	22.8	2065.7	104.5	8.119	22.2	2069.7	101.1	9.008	8.045	1.035	39.3	13.5
502	2183	3.14	34.921	2336	2198	2209	409.6	22.9	2070.5	104.6	8.121	22.2	2075.1	100.7	9.202	8.036	1.031	35.9	9.2
504	2782	2.73	34.905	2346	2209	2230	408.5	23.2	2081.6	104.2	8.122	22.3	2087.5	99.3	9.692	8.014	1.016	28.0	-.6
505	3179	2.51	34.893	2352	2214	2230	403.9	23.1	2086.0	104.9	8.127	22.1	2092.7	99.2	9.943	8.002	1.015	23.4	-6.6
506	3478	2.43	34.890	2363	2224	2229	402.9	23.1	2095.1	105.8	8.130	22.0	2102.5	99.5	10.158	7.993	1.017	20.0	-11.1
507	3776	2.37	34.886	2364	2217	2240	381.7	21.9	2084.8	110.3	8.151	20.8	2093.0	103.3	9.935	8.003	1.056	19.9	-12.2
508	4076	2.38	34.885	2365	2222	2230	392.2	22.5	2091.4	108.1	8.140	21.3	2100.2	100.6	10.460	7.980	1.028	13.2	-20.0
509	4378	2.38	34.881	2361	2214	2221	381.0	21.9	2081.9	110.2	8.151	20.6	2091.4	102.1	10.488	7.979	1.044	10.5	-23.8
510	4675	2.41	34.878			2223													
511	4973	2.42	34.879			2215													
512	5272	2.46	34.875	2361	2228	2229	419.2	24.0	2101.6	102.4	8.114	22.3	2112.6	93.1	12.410	7.906	.951	-12.1	-50.0
518	5473	2.47	34.875	2358	2214	2232	389.1	22.3	2083.3	108.5	8.143	20.6	2095.0	98.4	11.814	7.928	1.006	-10.1	-48.9
523	5568	2.48	34.876	2359	2216	2241	392.0	22.4	2085.7	107.9	8.140	20.8	2097.5	97.7	11.993	7.921	.999	-12.4	-51.6

STATION: 109 LEG: VIII — POSITION: 2° 0' S 4° 30' W — DATE: 26 FEB 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
403	2	28.94	35.045	2304	1937	1949	343.5	8.9	1669.1	259.1	8.259	8.9	1669.1	259.1	5.514	8.258	2.662	214.0	193.7
404	12	28.84	35.041	2300	1924	1943	327.3	8.5	1650.7	264.9	8.274	8.5	1650.7	264.9	5.324	8.274	2.721	219.7	199.4
405	22	28.77	35.072	2304	1933	1961	335.4	8.7	1662.7	261.7	8.266	8.7	1662.7	261.6	5.428	8.265	2.690	216.4	196.1
406	32		35.296	2321	1952	1989													
407	42	27.70	35.631	2340	1982	2010	358.8	9.5	1719.3	253.2	8.243	9.5	1719.4	253.1	5.732	8.242	2.643	207.8	187.4
408	77	15.81	35.632	2345	2142	2183	474.6	17.3	1976.9	147.8	8.108	17.3	1977.1	147.6	7.844	8.105	1.542	101.6	80.9
409	103	15.28	35.589	2342	2147	2187	484.0	17.9	1986.5	142.6	8.099	17.9	1986.7	142.4	8.034	8.095	1.485	96.1	75.4
410	143	14.40	35.462	2336	2159	2189	514.2	19.6	2008.2	131.2	8.072	19.5	2008.5	131.0	8.569	8.067	1.361	84.4	63.6
411	172	14.21	35.442	2335	2169	2234	544.6	20.8	2023.5	124.6	8.049	20.8	2023.9	124.3	9.051	8.043	1.292	77.5	56.6
412	243	13.32	35.321	2329	2176	2204	564.8	22.2	2037.2	116.5	8.032	22.2	2037.7	116.1	9.488	8.023	1.202	68.8	47.7
415	283	12.43	35.206	2320	2203	2229	684.7	27.7	2079.4	95.8	7.952	27.6	2080.0	95.4	11.440	7.942	.984	47.7	26.6
416	354	10.38	34.974	2311	2215	2240	722.8	31.3	2099.9	83.7	7.921	31.2	2100.6	83.2	12.359	7.908	.853	34.9	13.5
417	422	8.32	34.741	2301	2223	2251	752.8	35.0	2114.2	73.8	7.895	34.8	2114.9	73.3	13.208	7.879	.746	24.3	2.7
601	485	7.09	34.621	2299	2216	2240	687.2	33.4	2106.8	75.9	7.927	33.2	2107.7	75.2	12.360	7.908	.763	25.7	3.8
602	555	6.38	34.567	2299	2213	2224	652.3	32.5	2103.4	77.1	7.945	32.2	2104.4	76.3	11.931	7.923	.774	26.3	4.2
418	711	5.16	34.482	2301	2225	2235	670.8	34.9	2118.1	72.0	7.929	34.6	2119.4	71.1	12.556	7.901	.718	19.7	-2.8
419	862	4.41	34.516	2310	2233	2251	650.3	34.7	2125.7	72.6	7.940	34.4	2127.3	71.4	12.422	7.906	.722	18.7	-4.2
420	1004	4.34	34.656	2316	2220	2252	565.5	30.3	2107.7	82.0	7.996	29.9	2109.6	80.5	11.046	7.957	.818	26.7	3.4
421	1306	4.29	34.875	2320	2197	2263	468.7	25.1	2075.7	96.2	8.070	24.6	2078.3	94.0	9.561	8.020	.961	37.7	13.6
603	1585	3.98	34.961	2320	2175	2198	399.9	21.6	2045.1	108.2	8.131	21.2	2048.5	105.4	8.522	8.069	1.080	46.5	21.6
422	1607	3.95	34.959	2322	2176	2196	397.4	21.5	2045.6	108.8	8.133	21.0	2049.0	105.9	8.485	8.071	1.085	46.8	21.9
423	1807	3.64	34.961	2320	2172	2190	387.0	21.2	2041.0	109.8	8.142	20.7	2044.8	106.5	8.467	8.072	1.092	45.5	20.0
604	1969	3.48	34.959	2327	2161	2195	344.4	19.0	2021.7	120.3	8.188	18.4	2026.1	116.5	7.729	8.112	1.194	53.9	27.9
424	2007	3.40	34.952	2326	2178	2189	384.9	21.3	2046.8	110.0	8.144	20.7	2051.1	106.3	8.577	8.067	1.089	43.3	17.2
605	2221	3.24	34.944	2329	2175	2159	368.7	20.5	2041.1	113.4	8.161	19.8	2045.9	109.2	8.413	8.075	1.119	44.1	17.3
606	2471	2.91	34.924			2214													
607	2724	2.75	34.913	2338	2187	2198	370.9	21.0	2054.1	111.9	8.159	20.2	2060.0	106.8	8.860	8.053	1.093	36.2	7.8
608	2977	2.65	34.906	2338	2194	2175	386.7	22.0	2064.1	107.9	8.142	21.1	2070.4	102.5	9.423	8.026	1.049	29.0	-.3
609	3229	2.58	34.900	2340	2202		401.8	22.9	2074.5	104.6	8.127	21.9	2081.3	98.8	9.982	8.001	1.011	22.4	-7.7
610	3481	2.49	34.894	2346	2198	2194	376.4	21.5	2066.1	110.4	8.153	20.5	2073.6	103.9	9.608	8.017	1.063	24.4	-6.7
611	3730	2.42	34.889	2346	2205	2193	393.0	22.5	2076.0	106.4	8.136	21.4	2084.0	99.7	10.230	7.990	1.019	16.9	-15.0
612	3981	2.38	34.884	2349	2194	2217	358.9	20.6	2058.9	114.4	8.172	19.5	2067.7	106.8	9.629	8.016	1.093	20.8	-12.1
618	4988	2.20	34.860	2350	2214	2215	403.7	23.3	2086.9	103.8	8.126	21.8	2097.4	94.8	11.770	7.929	.969	-6.0	-42.9
625	5132	2.21	34.860	2354	2217	2210	402.2	23.3	2089.3	104.4	8.128	21.7	2100.2	95.2	11.865	7.926	.973	-7.9	-45.4

STATION: 111 LEG: VIII — POSITION: 2° 0' N 14° 1' W — DATE: 1 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
501	2	29.12	35.456	2330	1955	1973	346.4	8.9	1681.4	264.7	8.258	8.9	1681.4	264.7	5.518	8.258	2.751	219.7	199.4
502	12	29.09	35.452	2328	1951	1956	342.2	8.8	1676.2	266.0	8.262	8.8	1676.3	265.9	5.475	8.262	2.764	220.9	200.6
503	32	28.88	35.446			1988													
504	42	28.75	35.480	2330	1957	1989	344.8	8.9	1684.8	263.3	8.259	8.9	1684.9	263.2	5.528	8.257	2.737	217.9	197.6
505	52	24.98	36.074	2374	2056	2071	403.2	11.4	1818.2	226.4	8.198	11.4	1818.4	226.2	6.362	8.196	2.393	180.9	160.5
506	76	17.29	35.735	2353	2121	2195	435.0	15.2	1939.1	166.7	8.146	15.1	1939.3	166.5	7.184	8.144	1.745	120.6	100.0
507	104	14.95	35.536	2338	2174	2200	571.4	21.4	2028.8	123.9	8.034	21.3	2029.0	123.7	9.329	8.030	1.288	77.4	56.7
508	164	13.54	35.356	2331	2177	2205	567.7	22.2	2037.6	117.2	8.031	22.1	2037.9	117.0	9.447	8.025	1.212	70.2	49.3
509	214	12.67	35.243	2325	2184	2229	591.0	23.8	2050.9	109.3	8.011	23.7	2051.4	108.9	9.922	8.003	1.125	61.8	40.7
510	275	11.73	35.130	2319	2197	2217	641.1	26.6	2072.2	98.2	7.975	26.5	2072.7	97.8	10.839	7.965	1.007	50.1	28.9
511	316	10.73	35.011	2315	2202	2228	651.3	27.9	2081.2	92.9	7.965	27.8	2081.8	92.4	11.146	7.953	.948	44.4	23.1
512	365	9.29	34.854	2318	2144	2249	410.3	18.5	1998.7	126.8	8.140	18.4	1999.5	126.1	7.476	8.126	1.289	77.7	56.2
515	417	8.35	34.756	2307	2201	2229	614.4	28.5	2084.4	88.1	7.978	28.4	2085.2	87.5	10.921	7.962	.891	38.6	16.9
516	506	6.56	34.593	2309	2191	2234	523.4	25.9	2071.1	94.0	8.035	25.7	2072.1	93.2	9.653	8.015	.945	43.5	21.6
517	628	5.52	34.527	2305	2217	2231	622.7	32.0	2107.0	78.1	7.961	31.7	2108.2	77.1	11.573	7.937	.781	26.4	4.2
518	708	5.04	34.517	2312	2203	2240	525.4	27.4	2086.7	88.9	8.028	27.2	2088.1	87.8	9.989	8.000	.888	36.4	13.9
519	808	4.74	34.540	2310	2226	2235	624.6	33.0	2117.0	76.0	7.957	32.6	2118.5	74.9	11.867	7.926	.758	22.7	-.1
520	1007	4.46	34.615	2317	2197	2275	477.7	25.5	2076.9	94.7	8.064	25.1	2078.9	93.0	9.447	8.025	.944	39.2	15.9
521	1209	4.43	34.821	2317	2208	2217	518.5	27.6	2091.7	88.7	8.031	27.2	2094.0	86.8	10.389	7.983	.886	31.3	7.5
522	1411		34.951	2323	2160	2211													
523	1612	3.95	34.961	2323	2176	2207	395.1	21.4	2045.2	109.4	8.136	20.9	2048.6	106.5	8.441	8.074	1.091	47.4	22.4
524	1811	3.69	34.963	2329	2138	2225	298.7	16.3	1986.6	135.1	8.243	15.9	1990.8	131.3	6.700	8.174	1.346	70.3	44.7
201	1836	3.68	34.963	2325	2176	2214	386.4	21.1	2044.3	110.6	8.144	20.6	2048.2	107.2	8.458	8.073	1.098	45.9	20.3
202	2035	3.40	34.954	2325	2177	2200	384.7	21.3	2045.8	109.9	8.145	20.7	2050.2	106.2	8.598	8.066	1.088	43.0	16.7
203	2287	3.09	34.938	2332	2183	2219	379.3	21.2	2051.1	110.6	8.150	20.5	2056.1	106.4	8.685	8.061	1.090	40.6	13.5
204	2537	2.92	34.930	2334	2186	2206	379.8	21.4	2054.5	110.1	8.149	20.6	2060.0	105.4	8.900	8.051	1.079	36.9	9.1
205	2787	2.80	34.920	2339	2191	2209	379.3	21.4	2059.3	110.2	8.150	20.6	2065.3	105.1	9.084	8.042	1.075	33.8	5.2
206	3040	2.66	34.910	2341	2197	2221	387.7	22.0	2067.0	108.0	8.142	21.1	2073.5	102.4	9.486	8.023	1.048	28.3	-1.2
207	3291	2.52	34.902	2353	2168	2217	300.8	17.2	2018.8	132.0	8.241	16.3	2026.5	125.1	7.698	8.114	1.280	48.0	17.6
208	3539	2.46	34.896	2348	2200	2219	376.5	21.6	2068.0	110.4	8.154	20.5	2075.7	103.8	9.657	8.015	1.062	23.6	-7.7
209	3841	2.40	34.890			2222													
210	4144	2.36	34.884	2348	2200	2217	374.9	21.6	2068.0	110.4	8.155	20.3	2077.0	102.7	10.175	7.992	1.050	14.4	-19.0
211	4447	2.27	34.873	2351	2207	2213	384.2	22.2	2076.6	108.2	8.146	20.8	2086.1	100.1	10.693	7.971	1.023	7.5	-27.2
212	4698	2.25	34.865	2354	2205	2216	372.3	21.5	2072.4	111.2	8.158	20.1	2082.5	102.3	10.618	7.974	1.046	6.0	-29.6
215	4950	2.21	34.862	2350	2209	2220	390.6	22.6	2079.9	106.5	8.139	21.1	2090.4	97.5	11.379	7.944	.997	-2.7	-39.4
216	5001	2.19	34.859			2215													
223	5147	2.20	34.858	2354	2207	2237	376.4	21.8	2075.2	110.0	8.154	20.2	2086.3	100.4	11.180	7.952	1.026	-2.9	-40.4

STATION: 113 LEG: VIII — POSITION: 10° 59' N 20° 31' W — DATE: 5 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
601	3	24.11	35.778			2021													
602	13	24.10	35.777	2361	1969	2026	273.2	7.9	1686.2	274.9	8.330	7.9	1686.2	274.9	4.687	8.329	2.883	229.6	209.2
603	23	24.03	35.782	2354	2004	2006	326.2	9.5	1747.9	246.7	8.268	9.5	1747.9	246.6	5.407	8.267	2.587	201.3	180.9
604	32	23.99	35.785	2356	2005	2089	324.8	9.4	1748.2	247.4	8.269	9.4	1748.3	247.3	5.390	8.268	2.594	201.9	181.5
605	47	20.00	35.626	2346	2086	2116	418.5	13.5	1886.6	185.9	8.168	13.5	1886.7	185.8	6.818	8.166	1.940	140.1	119.6
606	62	16.24	35.583	2345	2119	2211	425.1	15.3	1941.5	162.2	8.151	15.3	1941.6	162.1	7.101	8.149	1.691	116.2	95.6
607	94	14.26	35.432	2331	2191	2244	641.8	24.5	2056.9	109.6	7.986	24.5	2057.1	109.5	10.416	7.982	1.137	63.2	42.5
608	123	13.37	35.340	2335	2135	2236	428.5	16.8	1973.6	144.5	8.138	16.8	1973.9	144.3	7.351	8.134	1.495	97.8	77.0
609	161	12.47	35.249	2322	2201	2221	668.7	27.1	2075.9	98.0	7.962	27.0	2076.2	97.8	11.074	7.956	1.010	51.0	30.0
610	224	11.64	35.183	2330	2168	2271	496.0	20.6	2026.4	121.0	8.076	20.5	2026.9	120.6	8.550	8.068	1.244	73.3	52.2
611	272	11.06	35.140	2315	2227	2254	793.0	33.6	2113.4	80.1	7.887	33.5	2113.9	79.7	13.268	7.877	.821	32.0	10.8
612	327	10.59	35.124	2326	2184	2283	537.2	23.1	2051.9	108.9	8.041	23.0	2052.6	108.4	9.355	8.029	1.116	60.3	39.0
615	378	10.10	35.105	2314	2243	2277	865.9	37.8	2133.7	71.4	7.848	37.7	2134.4	70.9	14.674	7.833	.730	22.5	1.0
616	427	9.46	35.040	2317	2202	2272	610.9	27.3	2081.3	93.4	7.985	27.1	2082.1	92.8	10.739	7.969	.953	43.9	22.3
905	496	9.07	35.055	2317	2246	2301	831.6	37.6	2137.3	71.1	7.860	37.4	2138.1	70.5	14.410	7.841	.724	21.1	-.7
908	595	7.58	34.847	2311	2249	2296	834.2	39.8	2142.9	66.4	7.852	39.5	2143.9	65.6	14.826	7.829	.670	15.3	-6.7
909	696	6.77	34.797	2311	2246	2298	788.4	38.6	2139.9	67.5	7.872	38.3	2141.1	66.6	14.309	7.844	.679	15.5	-6.9
910	795	6.13	34.766	2312	2248	2278	774.8	38.9	2142.3	66.9	7.876	38.5	2143.6	65.8	14.293	7.845	.671	13.9	-8.7
911	896	5.63	34.756	2312	2237	2284	697.2	35.6	2129.5	71.9	7.917	35.2	2131.1	70.6	13.138	7.881	.720	17.9	-5.1
912	996	5.33	34.801	2317	2227	2235	617.1	31.8	2116.0	79.2	7.965	31.4	2117.8	77.8	11.854	7.926	.793	24.1	.9

STATION: 113 LEG: VIII — POSITION: 10° 59' N 20° 31' W — DATE: 5 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
301	1079	5.35	34.859	2322	2226	2281	593.3	30.6	2113.1	82.3	7.982	30.2	2115.1	80.7	11.495	7.940	.825	26.4	3.0
915	1100	5.23	34.880	2320	2224	2269	590.0	30.5	2111.2	82.2	7.983	30.1	2113.3	80.6	11.484	7.940	.824	26.1	2.6
916	1197	4.87	34.912	2324	2207	2232	501.7	26.3	2087.5	93.2	8.046	25.9	2089.9	91.2	10.004	8.000	.934	35.9	12.2
302	1329	4.62	34.962	2324	2203	2285	483.7	25.6	2082.2	95.3	8.059	25.1	2084.8	93.1	9.819	8.008	.954	36.5	12.4
303	1579	3.95	34.955	2325	2189	2211	425.5	23.0	2062.6	103.3	8.107	22.5	2065.9	100.6	8.992	8.046	1.030	41.7	16.9
304	1827	3.63	34.955	2324	2177	2212	390.4	21.4	2046.2	109.4	8.139	20.8	2050.1	106.0	8.536	8.069	1.087	44.9	19.3
305	2074	3.35	34.953	2330	2183	2207	387.8	21.5	2052.0	109.5	8.142	20.8	2056.5	105.7	8.677	8.062	1.083	42.1	15.7
306	2323	3.12	34.947	2335	2197	2240	409.3	22.9	2069.6	104.6	8.121	22.1	2074.5	100.4	9.320	8.031	1.029	34.2	7.1
307	2573	2.92	34.934	2338	2191	2213	383.4	21.6	2059.8	109.6	8.146	20.8	2065.3	104.9	8.991	8.046	1.074	36.0	8.1
308	2821	2.76	34.926	2340	2189	2207	371.7	21.0	2056.0	111.9	8.158	20.2	2062.1	106.7	8.948	8.048	1.092	35.0	6.3
309	3072	2.65	34.918	2343	2196	2215	380.6	21.6	2064.6	109.8	8.149	20.7	2071.2	104.1	9.350	8.029	1.065	29.5	-.1
310	3323	2.56	34.909	2343	2199	2272	386.7	22.1	2068.9	108.1	8.143	21.0	2076.0	102.0	9.714	8.013	1.043	24.4	-6.1
311	3575	2.47	34.902	2349	2206	2233	389.5	22.3	2076.1	107.6	8.141	21.2	2083.7	101.1	9.988	8.001	1.034	20.4	-11.0
312	3829	2.42	34.895	2349	2210	2255	399.1	22.9	2081.7	105.4	8.131	21.7	2089.8	98.5	10.456	7.981	1.007	14.5	-17.8
315	4086	2.37	34.891	2353	2209	2126	386.3	22.2	2078.5	108.3	8.144	21.0	2087.3	100.8	10.380	7.984	1.031	13.3	-19.9
316	4344	2.33	34.883	2355	2206	2244	373.9	21.5	2073.3	111.2	8.157	20.2	2082.7	103.0	10.308	7.987	1.054	12.0	-22.3
317	4550	2.30	34.879	2359	2215	2243	386.8	22.3	2084.3	108.5	8.144	20.9	2094.0	100.1	10.821	7.966	1.023	6.0	-29.1
329	4737		34.879	2367	2226	2267													
320	4826	2.33	34.877	2366	2221	2261	386.6	22.2	2089.5	109.2	8.146	20.8	2099.9	100.3	11.053	7.957	1.025	2.1	-34.1
323	4911	2.33	34.879	2371	2227	2268	390.5	22.5	2095.8	108.8	8.143	21.0	2106.3	99.7	11.220	7.950	1.020	.2	-36.3

STATION: 114 LEG: VIII — POSITION: 21° 10' N 21° 46' W — DATE: 12 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
101	16	19.97	36.798	2409	2086	2113	335.7	10.8	1848.3	226.9	8.252	10.8	1848.4	226.8	5.608	8.251	2.447	181.6	161.3
102	106	19.81	36.843	2403	2111		384.1	12.4	1892.2	206.4	8.202	12.4	1892.4	206.2	6.327	8.199	2.227	160.4	139.9
103	135	18.15	36.645	2392	2139	2159	427.4	14.5	1944.0	180.5	8.158	14.4	1944.4	180.2	7.024	8.153	1.936	134.1	113.5
104	165	17.49	36.517	2385	2116	2154	379.9	13.1	1912.8	190.1	8.198	13.1	1913.2	189.7	6.415	8.193	2.031	143.4	122.7
105	225	16.15	36.219	2368	2132	2169	415.7	14.9	1948.7	168.4	8.160	14.9	1949.2	167.9	7.042	8.152	1.782	121.0	100.1
106	265	15.08	36.044	2355	2143	2177	445.5	16.6	1973.8	152.7	8.130	16.5	1974.4	152.2	7.581	8.120	1.608	104.9	83.9
107	309	14.30	35.953	2357	2147	2182	435.4	16.6	1979.3	151.2	8.136	16.5	1980.0	150.5	7.492	8.125	1.587	103.0	81.8
108	364	12.68	35.757	2343	2156	2178	456.3	18.3	2001.6	136.1	8.112	18.2	2002.4	135.4	7.968	8.099	1.420	87.3	66.0
109	422	12.12	35.632	2336	2169	2205	498.4	20.3	2024.7	123.9	8.075	20.2	2025.6	123.2	8.707	8.060	1.287	74.6	53.1
110	483	11.20	35.478	2329	2191	2218	571.8	24.1	2060.1	106.8	8.018	23.9	2061.1	106.0	9.988	8.001	1.103	57.0	35.3
111	536	10.51	35.336	2322	2223	2252	721.8	31.1	2106.4	85.5	7.923	30.9	2107.4	84.7	12.501	7.903	.877	35.2	13.4
112	558	10.12	35.288	2323	2219	2256	685.0	29.9	2101.2	87.9	7.943	29.7	2102.2	87.1	11.975	7.922	.901	37.4	15.5
115	593	10.01	35.309	2319	2212	2251	666.1	29.2	2093.5	89.3	7.952	29.0	2094.6	88.4	11.742	7.930	.915	38.5	16.5
116	641	9.38	35.250	2321	2214	2233	649.3	29.0	2095.8	89.2	7.961	28.8	2097.0	88.2	11.575	7.936	.911	37.8	15.7
117	690	8.61	35.164	2304	2223	2254	752.7	34.6	2113.1	75.4	7.896	34.3	2114.3	74.4	13.511	7.869	.767	23.6	1.3
118	736	8.08	35.105	2319	2220	2263	649.6	30.4	2105.1	84.5	7.955	30.1	2106.5	83.4	11.825	7.927	.859	32.2	9.8
119	788	7.52	35.044	2299	2225	2254	756.3	36.1	2117.4	71.6	7.889	35.7	2118.8	70.5	13.863	7.858	.724	18.8	-3.8
120	843	7.21	35.033			2262													
121	894	6.70	34.968	2310	2234	2267	724.3	35.6	2125.9	72.5	7.905	35.2	2127.5	71.3	13.490	7.870	.731	18.7	-4.2
122	994	6.35	34.986			2238													
123	1094	6.09	35.029	2326	2225	2248	592.6	29.7	2110.2	85.1	7.985	29.3	2112.2	83.5	11.408	7.943	.857	29.1	5.8
510	1156	6.03	35.069	2326	2203	2241	506.3	25.4	2080.9	96.7	8.047	25.0	2083.2	94.8	9.941	8.003	.974	40.0	16.4
124	1194	5.94	35.094	2327	2201	2240	494.9	24.9	2077.8	98.3	8.056	24.5	2080.1	96.3	9.776	8.010	.991	41.2	17.5
701	1293	5.66	35.117	2324	2206	2231	516.6	26.3	2085.9	93.8	8.037	25.8	2088.4	91.7	10.298	7.987	.944	35.7	11.8
702	1442	5.10	35.100	2330	2200	2226	466.8	24.2	2075.4	100.3	8.076	23.8	2078.4	97.9	9.544	8.020	1.007	40.5	16.1
511	1457	5.08	35.099			2224													
703	1594	4.59	35.069	2325	2189	2218	437.5	23.1	2062.5	103.4	8.098	22.6	2065.8	100.6	9.185	8.037	1.034	41.8	16.9
704	1742	4.13	35.037	2325	2185	2219	418.0	22.5	2057.0	105.5	8.115	21.9	2060.6	102.4	8.969	8.047	1.052	42.2	16.9
512	1757	4.16	35.036	2328	2185	2212	411.1	22.1	2055.6	107.3	8.122	21.5	2059.3	104.1	8.834	8.054	1.070	43.7	18.4
705	1893	3.86	35.012	2322	2174	2220	391.4	21.3	2042.8	109.9	8.139	20.7	2046.9	106.4	8.597	8.066	1.092	44.7	18.9
715	2042	3.61	34.994	2330	2184	2213	394.7	21.6	2053.4	109.0	8.136	21.0	2057.8	105.2	8.771	8.057	1.079	42.0	15.8
515	2213	3.41	34.984	2333	2185	2228	387.3	21.4	2053.5	110.1	8.143	20.7	2058.2	106.1	8.762	8.057	1.088	41.1	14.3
716	2343	3.28	34.973	2330	2177	2219	372.2	20.7	2043.5	112.9	8.158	20.0	2048.6	108.5	8.573	8.067	1.112	42.1	15.0
717	2492	3.12	34.962	2333	2177	2214	363.5	20.3	2042.1	114.6	8.167	19.6	2047.5	109.9	8.509	8.070	1.126	42.0	14.3
718	2643	3.03	34.951	2334	2187	2225	384.1	21.5	2055.9	109.5	8.145	20.7	2061.6	104.7	9.069	8.042	1.072	35.1	6.9
719	2791	2.91	34.950	2342	2192	2198	377.0	21.2	2059.3	111.4	8.153	20.4	2065.4	106.2	9.019	8.045	1.088	35.0	6.3
720	2942	2.81	34.940	2343	2189	2211	366.2	20.7	2054.6	113.7	8.165	19.8	2061.0	108.2	8.910	8.050	1.108	35.2	6.0

STATION: 114 LEG: VIII — POSITION: 21° 10' N 21° 46' W — DATE: 12 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
516	3117	2.70	34.931	2348	2190	2227	356.6	20.2	2053.6	116.1	8.175	19.3	2060.5	110.2	8.830	8.054	1.128	35.1	5.4
517	3267	2.61	34.919	2348	2199	2221	376.4	21.4	2066.6	111.0	8.154	20.4	2073.6	104.9	9.407	8.027	1.074	28.0	-2.2
518	3416	2.54	34.915	2354	2204	2232	374.6	21.4	2070.9	111.7	8.157	20.4	2078.3	105.3	9.475	8.023	1.078	26.6	-4.2
519	3565	2.48	34.908	2353	2204	2237	375.7	21.5	2071.4	111.1	8.155	20.4	2079.1	104.5	9.641	8.016	1.069	23.9	-7.5
520	3716	2.43	34.901	2357	2197	2230	350.5	20.1	2059.4	117.5	8.183	19.0	2067.7	110.3	9.167	8.038	1.129	27.8	-4.1
521	3865	2.41	34.898	2350	2201	2233	373.8	21.4	2068.5	111.0	8.156	20.3	2076.9	103.8	9.881	8.005	1.062	19.3	-13.1
522	4014	2.39	34.895	2354	2201	2231	365.0	21.0	2066.6	113.4	8.166	19.8	2075.4	105.8	9.786	8.009	1.082	19.3	-13.7
523	4175	2.39	34.892	2360	2201	2216	352.8	20.3	2063.7	117.0	8.181	19.1	2073.0	108.9	9.604	8.018	1.114	20.3	-13.3
524	4342	2.40	34.892	2355	2202		365.5	21.0	2067.6	113.5	8.166	19.7	2077.1	105.2	10.087	7.996	1.076	14.2	-20.0

STATION: 115 LEG: IX — POSITION: 28° 1' N 26° 0' W — DATE: 15 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
301	18	19.10	36.974	2432	2098	2117	315.3	10.4	1853.6	234.0	8.275	10.4	1853.7	234.0	5.322	8.274	2.536	188.8	168.4
302	47	19.02	36.968	2430	2091	2119	306.7	10.1	1843.8	237.1	8.284	10.1	1843.9	237.0	5.221	8.282	2.569	191.6	171.3
303	88	18.94	36.960	2430	2090	2112	304.1	10.0	1842.2	237.8	8.287	10.0	1842.4	237.5	5.204	8.284	2.573	191.9	171.4
901	112	18.86	36.956	2424		2111													
902	161	18.61	36.895	2434	2103	2112	312.8	10.4	1860.6	231.9	8.277	10.4	1861.1	231.5	5.353	8.271	2.504	185.4	164.8
903	213	17.18	36.552	2404	2113	2128	342.3	11.9	1896.5	204.6	8.238	11.9	1897.1	204.0	5.877	8.231	2.186	157.4	136.6
304	238	16.45	36.399	2390	2101		329.6	11.7	1886.7	202.5	8.248	11.7	1887.4	202.0	5.754	8.240	2.155	155.1	134.2
305	287	16.14	36.359	2390	2113	2137	344.4	12.4	1905.9	194.7	8.232	12.3	1906.6	194.0	6.001	8.222	2.068	146.8	125.8
306	388	14.15	35.968	2368	2119	2138	354.0	13.5	1929.9	175.5	8.214	13.5	1930.9	174.7	6.299	8.201	1.842	126.6	105.3
307	491	12.81	35.755	2356	2147	2172	408.4	16.3	1980.8	149.9	8.156	16.2	1982.0	148.9	7.268	8.139	1.560	99.9	78.3
308	589	11.68	35.608	2348	2141	2175	389.9	16.1	1976.9	147.9	8.169	16.0	1978.3	146.7	7.112	8.148	1.532	97.0	75.1
309	738	10.05	35.440	2346	2190	2194	490.7	21.4	2051.6	117.0	8.076	21.2	2053.1	115.7	8.930	8.049	1.202	64.6	42.3
310	788	9.58	35.408	2347		2221													
311	863	8.73	35.345	2348	2202	2218	494.8	22.6	2068.6	110.8	8.069	22.3	2070.4	109.3	9.188	8.037	1.132	57.2	34.5
312	938	8.02	35.265	2343	2201	2219	490.7	23.0	2069.8	108.2	8.069	22.7	2071.8	106.6	9.251	8.034	1.102	53.8	30.9
315	997	7.80	35.282	2346	2212		513.9	24.2	2084.0	103.7	8.051	23.9	2086.1	102.0	9.706	8.013	1.055	48.7	25.7
316	1098	7.39	35.308	2349	2200	2227	459.4	22.0	2066.0	112.0	8.093	21.6	2068.3	110.1	8.875	8.052	1.139	55.9	32.6
317	1148	7.14	35.307	2356	2217	2219	487.7	23.5	2087.0	106.5	8.070	23.2	2089.3	104.5	9.403	8.027	1.082	49.9	26.5
318	1199	7.34	35.399		2187	2224													
319	1294	6.89	35.363	2356	2204	2216	444.4	21.6	2068.7	113.7	8.105	21.2	2071.4	111.3	8.784	8.056	1.154	55.5	31.7
321	1341	6.72	35.359	2357	2201	2230	430.5	21.1	2064.0	116.0	8.117	20.7	2066.8	113.5	8.583	8.066	1.176	57.3	33.3
322	1341	6.72	35.358	2355	2199	2211	429.9	21.0	2062.1	115.9	8.117	20.6	2064.9	113.4	8.579	8.067	1.176	57.2	33.2
320	1341	6.72	35.355	2355	2194	2204	416.5	20.4	2054.8	118.8	8.129	20.0	2057.7	116.3	8.340	8.079	1.205	60.0	36.1
323	1392		35.350	2355	2202	2208													
324	1491	6.02	35.290	2350	2189	2222	402.8	20.2	2050.3	118.5	8.139	19.8	2053.6	115.6	8.266	8.083	1.196	58.0	33.6
904	1572	5.44	35.226			2212													
905	1773	4.77	35.158	2347	2190	2203	390.9	20.5	2053.7	115.8	8.146	20.0	2057.5	112.5	8.349	8.078	1.159	52.1	26.7
906	1974	4.25	35.101	2344	2178	2202	360.6	19.3	2037.9	120.8	8.175	18.8	2042.3	117.0	7.952	8.100	1.204	54.6	28.6
907	2172	3.79	35.042			2202													
909	2577	3.14	34.976	2347	2195	2199	377.0	21.0	2061.2	112.7	8.155	20.3	2066.8	107.9	8.811	8.055	1.106	39.0	11.1
910	2779	2.97	34.957			2201													
911	2978	2.79	34.942			2214													
912	3234	2.66	34.927	2356	2196	2216	353.5	20.1	2058.4	117.5	8.180	19.2	2065.6	111.2	8.829	8.054	1.139	34.8	4.7
915	3477	2.58	34.916	2361	2208	2227	369.7	21.1	2073.3	113.6	8.163	20.0	2080.9	107.0	9.384	8.028	1.096	27.6	-3.4
916	3734	2.51	34.910	2364	2205	2221	355.5	20.3	2067.5	117.1	8.179	19.2	2075.8	109.9	9.268	8.033	1.125	27.2	-4.7
917	3990	2.49	34.902	2358	2209	2215	377.1	21.6	2076.2	111.3	8.155	20.4	2084.8	103.8	10.031	7.999	1.062	17.7	-15.2
918	4199	2.47	34.898			2225													
919	4401	2.45	34.901	2362	2213	2218	377.6	21.6	2080.0	111.4	8.155	20.3	2089.6	103.1	10.412	7.982	1.055	11.3	-23.1
920	4606	2.42	34.889			2219													
921	4812	2.42	34.888	2364	2218	2229	384.9	22.1	2086.2	109.7	8.148	20.6	2096.6	100.8	10.995	7.959	1.031	2.9	-33.2
922	5017	2.43	34.886	2365	2206	2218	354.5	20.3	2068.5	117.2	8.180	18.9	2079.6	107.4	10.385	7.984	1.099	6.3	-30.5
925	5186		34.886	2364	2207														
927	5216	2.46	34.885			2221													
930	5303	2.46	34.886	2365	2205	2224	352.8	20.2	2067.1	117.7	8.182	18.7	2078.8	107.4	10.606	7.974	1.099	1.7	-36.3

STATION: 116 LEG: IX | POSITION: 29° 56′ N 30° 24′ W | DATE: 18 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P, T=INSITU H_2CO_3 µM/KG	CALC P, T=INSITU HCO_3^- µM/KG	CALC P, T=INSITU $CO_3^=$ µM/KG	CALC P, T=INSITU AH (10^{-9})	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
201	17	18.30	36.571	2395	2070	2092	304.0	10.2	1832.8	226.9	8.282	10.2	1832.9	226.9	5.236	8.281	2.432	181.5	161.1
202	40	18.31	36.571	2401	2066	2091	292.0	9.8	1822.5	233.7	8.297	9.8	1822.6	233.6	5.066	8.295	2.504	188.1	167.6
203	97	18.01	36.537	2392	2072	2085	306.1	10.4	1838.2	223.4	8.278	10.4	1838.4	223.2	5.311	8.275	2.390	177.3	156.8
204	189	17.24	36.401	2391	2076	2117	301.7	10.5	1845.7	219.9	8.282	10.5	1846.2	219.4	5.304	8.275	2.341	172.9	152.1
205	290	16.28	36.265			2129													
206	391	14.68	35.990	2360	2094	2131	330.0	12.4	1895.3	186.3	8.240	12.3	1896.3	185.4	5.938	8.226	1.956	137.3	116.0
207	438	14.00	35.899			2149													
208	508	13.09	35.778			2146													
209	594	12.25	35.668	2345	2102	2149	327.9	13.3	1918.4	170.3	8.234	13.2	1919.8	169.0	6.119	8.213	1.767	119.2	97.4
210	688	10.85	35.481	2343	2132	2198	365.3	15.5	1966.5	149.9	8.191	15.4	1968.1	148.5	6.827	8.166	1.544	97.9	75.8
211	739	10.33	35.460	2338	2157	2184	423.4	18.3	2007.2	131.5	8.132	18.1	2008.8	130.0	7.844	8.105	1.352	79.0	56.8
212	887	8.96	35.428	2340	2169	2202	425.3	19.3	2024.7	125.0	8.126	19.0	2026.6	123.3	8.060	8.094	1.281	71.1	48.4
215	998	8.27	35.434	2345	2189	2219	455.6	21.1	2051.7	116.2	8.098	20.8	2053.8	114.4	8.686	8.061	1.188	61.2	38.2
217	1144	7.37	35.398	2344	2189	2206	441.2	21.1	2052.7	115.2	8.108	20.8	2055.1	113.2	8.619	8.065	1.174	58.7	35.2
218	1195	7.11	35.386	2348	2178	2216	398.5	19.2	2034.8	123.9	8.147	18.9	2037.5	121.6	7.912	8.102	1.262	66.7	43.1
219	1244	6.89	35.375	2345	2187	2203	424.6	20.7	2049.5	116.8	8.121	20.3	2052.2	114.5	8.434	8.074	1.188	59.1	35.4
220	1294	6.64	35.355	2339	2179	2200	413.1	20.3	2041.0	117.7	8.130	19.9	2043.8	115.3	8.303	8.081	1.195	59.5	35.6
221	1340	6.46	35.340	2343	2188	2220	424.3	21.0	2052.1	114.9	8.119	20.6	2055.0	112.5	8.538	8.069	1.165	56.2	32.2
222	1389	6.18	35.311	2346	2174	2206	377.7	18.9	2030.4	124.8	8.164	18.5	2033.5	122.1	7.739	8.111	1.263	65.3	41.2
223	1440	5.97	35.291	2340	2185	2196	414.7	20.8	2049.4	114.7	8.126	20.4	2052.5	112.1	8.483	8.071	1.159	54.9	30.6
607	1441	5.91	35.287	2341	2186	2192	413.9	20.9	2050.4	114.7	8.127	20.4	2053.5	112.1	8.471	8.072	1.159	54.8	30.5
224	1485	5.83	35.274	2343	2165	2214	358.0	18.1	2018.8	128.1	8.183	17.7	2022.1	125.2	7.472	8.127	1.294	67.5	43.1
608	1566	5.32	35.224	2327	2160	2210	370.5	19.1	2019.8	121.1	8.165	18.6	2023.3	118.1	7.840	8.106	1.220	59.7	35.0
609	1690		35.171	2339	2173	2191													
610	1814	4.54	35.134	2337	2181		386.9	20.5	2045.6	114.9	8.148	20.0	2049.5	111.5	8.352	8.078	1.149	50.7	25.2
611	1941	4.23	35.095	2337	2180	2190	379.4	20.3	2044.2	115.5	8.154	19.8	2048.4	111.8	8.322	8.080	1.150	49.7	23.8
612	2090	3.81	35.048			2198													
615	2240	3.58	35.021	2330	2185	2198	397.1	21.8	2054.8	108.4	8.133	21.1	2059.6	104.3	8.983	8.047	1.071	39.1	12.3
616	2390	3.33	34.994	2337	2178	2204	360.8	20.0	2041.5	116.5	8.171	19.3	2046.8	111.9	8.347	8.078	1.148	45.1	17.8
617	2540	3.17	34.978	2340	2179	2200	354.7	19.8	2041.5	117.7	8.178	19.0	2047.2	112.8	8.333	8.079	1.157	44.3	16.6
618	2691	2.99	34.961	2338	2183	2204	365.3	20.5	2048.3	114.2	8.165	19.7	2054.2	109.1	8.694	8.061	1.118	39.0	10.7
619	2843	2.88	34.954	2344	2192	2210	372.3	21.0	2058.4	112.6	8.159	20.1	2064.6	107.3	8.955	8.048	1.099	35.4	6.6
620	2994	2.78	34.940	2345	2194	2204	373.4	21.1	2060.8	112.1	8.157	20.2	2067.3	106.5	9.107	8.041	1.090	32.9	3.5
621	3144	2.72	34.934	2349	2196	2216	368.8	20.9	2061.8	113.3	8.163	20.0	2068.7	107.4	9.117	8.040	1.100	32.0	2.2
622	3295	2.66	34.931	2351	2210	2218	398.3	22.6	2080.8	106.6	8.133	21.6	2087.8	100.6	9.912	8.004	1.030	23.4	-6.9
623	3449	2.58	34.919	2350	2200	2209	374.1	21.3	2067.1	111.6	8.157	20.3	2074.6	105.2	9.504	8.022	1.076	26.1	-4.8
624	3601	2.55	34.914	2351	2206	2224	386.2	22.0	2075.1	108.8	8.144	20.9	2082.9	102.2	9.919	8.004	1.046	21.2	-10.3
625	3753	2.51	34.909			2222													
626	3904	2.50	34.908	2352	2201	2223	370.9	21.2	2067.6	112.2	8.160	20.1	2076.1	104.9	9.829	8.008	1.073	19.9	-12.6
627	4056	2.50	34.904	2354	2204	2217	373.8	21.4	2070.9	111.7	8.157	20.2	2079.7	104.1	10.027	7.999	1.065	17.1	-16.0
628	4207	2.49	34.901	2356	2203	2218	367.0	21.0	2068.5	113.5	8.165	19.8	2077.7	105.5	9.990	8.000	1.079	16.5	-17.2
629	4359	2.49	34.900	2354	2206	2221	378.5	21.6	2073.8	110.6	8.153	20.3	2083.2	102.5	10.425	7.982	1.048	11.3	-23.0
326	4379	2.49	34.898	2343	2180	2220	341.3	19.5	2041.6	118.9	8.191	18.3	2051.4	110.3	9.550	8.020	1.128	18.8	-15.5
630	4502	2.47	34.895	2355	2205	2221	373.6	21.4	2071.9	111.8	8.158	20.1	2081.6	103.3	10.433	7.982	1.057	10.0	-24.8
333	4662		34.892	2360	2215	2217													

STATION: 117 LEG: IX | POSITION: 30° 40′ N 38° 58′ W | DATE: 20 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P, T=INSITU H_2CO_3 µM/KG	CALC P, T=INSITU HCO_3^- µM/KG	CALC P, T=INSITU $CO_3^=$ µM/KG	CALC P, T=INSITU AH (10^{-9})	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
312	741	11.09	35.511	2344	2154	2189	416.9	17.6	1999.1	137.3	8.142	17.4	2000.7	135.9	7.677	8.115	1.415	85.0	62.7
315	800	10.32	35.424	2344	2168	2200	437.7	19.0	2020.3	128.7	8.121	18.7	2022.1	127.2	8.098	8.092	1.321	75.7	53.3
316	851	9.83	35.385	2342	2178	2201	460.5	20.3	2036.3	121.4	8.100	20.0	2038.1	119.9	8.546	8.068	1.243	68.0	45.4
317	902	9.00	35.307	2338	2184	2211	471.6	21.4	2047.4	115.2	8.087	21.1	2049.3	113.6	8.842	8.053	1.176	61.2	38.5
318	952	8.45	35.278	2338	2186	2217	466.7	21.5	2050.6	113.9	8.089	21.2	2052.6	112.2	8.838	8.054	1.160	59.3	36.5
319	1002	7.86	35.291	2343	2187	2207	445.8	21.0	2050.0	116.1	8.106	20.7	2052.1	114.2	8.550	8.068	1.182	60.9	37.9
320	1052	7.55	35.291	2339	2188	2211	453.2	21.6	2053.5	113.0	8.097	21.2	2055.7	111.1	8.753	8.058	1.149	57.3	34.2
321	1152	6.97	35.263	2341	2188	2215	437.3	21.2	2052.8	114.0	8.110	20.9	2055.2	111.9	8.589	8.066	1.156	57.2	33.8
322	1285	6.15	35.238	2339	2177	2201	398.7	19.9	2038.3	118.8	8.142	19.6	2041.0	116.4	8.066	8.093	1.202	60.5	36.7
323	1403	5.55	35.193	2336	2175	2195	390.5	19.9	2037.1	118.0	8.148	19.5	2040.1	115.4	8.050	8.094	1.190	58.4	34.2
324	1503	5.21	35.172	2335	2170	2206	375.1	19.4	2030.4	120.2	8.162	19.0	2033.7	117.3	7.863	8.104	1.210	59.4	34.9
802	1578	5.16	35.187	2334	2178	2201	396.2	20.5	2042.5	115.0	8.140	20.1	2045.9	112.0	8.319	8.080	1.156	53.5	28.7
804	1687	4.65	35.134	2339	2174	2179	367.6	19.4	2034.4	120.2	8.168	18.9	2038.1	116.9	7.874	8.104	1.204	57.3	32.2
806	1889	4.16	35.075	2332	2170	2186	365.1	19.6	2032.2	118.2	8.168	19.1	2036.4	114.6	8.023	8.096	1.178	52.9	27.2
809	2091	3.66	35.023	2335	2172	2185	356.1	19.5	2033.7	118.8	8.177	18.9	2038.4	114.7	8.014	8.096	1.178	51.0	24.7
812	2291	3.29	34.978			2183													
816	2495	3.13	34.965	2335	2171	2197	346.1	19.3	2032.4	119.3	8.186	18.6	2037.9	114.4	8.138	8.089	1.173	46.4	18.8
818	2745	2.97	34.953	2338	2181	2185	360.2	20.2	2045.4	115.3	8.171	19.4	2051.5	110.1	8.630	8.064	1.128	39.4	10.9
819	2998	2.85	34.943	2343	2193	2197	376.4	21.2	2060.3	111.5	8.154	20.3	2066.8	105.9	9.177	8.037	1.084	32.3	2.9
821	3246	2.77	34.935	2346	2194	2215	371.1	21.0	2060.3	112.7	8.160	20.0	2067.4	106.6	9.261	8.033	1.091	30.0	-.1
822	3498	2.71	34.927	2349	2193	2190	361.6	20.5	2057.5	115.0	8.170	19.5	2065.2	108.3	9.248	8.034	1.109	28.7	-2.3
824	3565	2.69	34.927	2349	2191	2198	356.8	20.2	2054.6	116.2	8.175	19.2	2062.5	109.3	9.194	8.037	1.119	28.8	-2.4

STATION: 118 LEG: IX | POSITION: 31° 18′ N 45° 38′ W | DATE: 23 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	CALC P=1 ATM, T=INSITU H_2CO_3 µM/KG	CALC P=1 ATM, T=INSITU HCO_3^- µM/KG	CALC P=1 ATM, T=INSITU $CO_3^=$ µM/KG	CALC P=1 ATM, T=INSITU PH	CALC P, T=INSITU H_2CO_3 µM/KG	CALC P, T=INSITU HCO_3^- µM/KG	CALC P, T=INSITU $CO_3^=$ µM/KG	CALC P, T=INSITU AH (10^{-9})	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
201	1	20.25	36.776	2418	2064	2080	297.6	9.5	1806.8	247.7	8.296	9.5	1806.8	247.7	5.058	8.296	2.670	202.6	182.3
202	21	20.17	36.777	2416	2067	2087	302.8	9.7	1813.0	244.3	8.290	9.7	1813.1	244.2	5.142	8.289	2.633	199.0	178.7
601	57	19.94	36.741	2410	2059		295.2	9.5	1804.2	245.3	8.297	9.5	1804.4	245.1	5.067	8.295	2.640	199.7	179.2
602	79	19.79	36.725	2409	2067	2069	305.0	9.8	1817.9	239.3	8.285	9.8	1818.1	239.1	5.215	8.283	2.574	193.5	173.0
203	84	19.73	36.724	2412	2053	2079	282.7	9.1	1793.3	250.5	8.312	9.1	1793.6	250.3	4.907	8.309	2.694	204.6	184.2
603	98	19.77	36.729			2073													
204	108	18.79	36.547	2402	2065		295.5	9.8	1819.8	235.4	8.294	9.8	1820.1	235.1	5.126	8.290	2.519	189.2	168.7
604	118	19.71	36.725	2410	2062	2068	296.1	9.6	1809.2	243.2	8.296	9.6	1809.5	242.9	5.109	8.292	2.615	197.0	176.5
205	158	18.27	36.425	2394	2060	2089	289.8	9.8	1817.2	233.0	8.299	9.8	1817.7	232.6	5.089	8.293	2.483	186.3	165.6
206	207	17.70	36.424	2390	2089	2106	328.7	11.3	1866.7	211.0	8.252	11.2	1867.2	210.5	5.685	8.245	2.248	163.9	143.2
207	306	17.21	36.378	2392	2097	2126	331.3	11.5	1878.5	207.0	8.249	11.5	1879.3	206.3	5.778	8.238	2.200	159.0	138.0
605	469	14.52	35.931	2368	2122	2124	365.0	13.8	1934.3	173.9	8.204	13.7	1935.4	172.9	6.488	8.188	1.821	124.3	102.8
208	503	14.75	35.999	2370	2121	2133	364.2	13.7	1931.4	175.9	8.206	13.6	1932.6	174.8	6.483	8.188	1.845	126.0	104.5
209	602	13.08	35.716	2356	2139	2167	394.8	15.6	1968.4	155.0	8.170	15.5	1969.8	153.7	7.106	8.148	1.609	104.0	82.2
210	700	10.72	35.381	2340	2173	2202	468.3	20.0	2029.4	123.6	8.096	19.8	2030.9	122.3	8.505	8.070	1.268	71.6	49.4
211	800	8.94	35.255	2339	2182		461.1	20.9	2044.1	117.0	8.096	20.7	2045.7	115.6	8.589	8.066	1.194	63.9	41.4
212	899	7.55	35.177	2345	2203	2206	481.0	22.9	2072.0	108.1	8.076	22.6	2073.8	106.6	9.082	8.042	1.099	54.0	31.2
225	957	7.14	35.168			2224													
226	1009	6.92	35.203	2340	2189	2204	441.0	21.5	2054.7	112.8	8.106	21.2	2056.8	111.0	8.550	8.068	1.146	57.5	34.4
215	1107	6.38	35.200	2339	2185	2194	423.0	21.0	2049.7	114.3	8.120	20.6	2052.1	112.3	8.352	8.078	1.159	57.9	34.6
216	1204	5.88	35.186	2339	2182	2210	406.6	20.5	2045.6	115.9	8.134	20.2	2048.2	113.7	8.167	8.088	1.172	58.4	34.7
217	1301	5.57	35.176	2338	2178	2202	393.6	20.1	2040.4	117.5	8.145	19.7	2043.2	115.1	8.027	8.095	1.186	59.0	35.0
218	1398	5.29	35.163	2337	2174	2184	381.6	19.7	2035.2	119.1	8.156	19.3	2038.3	116.5	7.898	8.103	1.201	59.5	35.3
219	1500	4.96	35.141	2336	2179	2193	390.7	20.4	2043.0	115.6	8.145	19.9	2046.3	112.8	8.165	8.088	1.162	54.8	30.3
220	1599	4.67	35.113			2180													
221	1699	4.43	35.089	2335	2172	2167	367.6	19.6	2033.5	118.9	8.167	19.1	2037.3	115.6	7.908	8.102	1.189	55.8	30.7
222	1801	4.19	35.067	2335	2175	2196	370.9	19.9	2038.0	117.1	8.163	19.4	2041.9	113.7	8.061	8.094	1.169	52.9	27.4
223	1899	4.00	35.050	2337	2178	2179	370.8	20.0	2041.4	116.6	8.163	19.5	2045.5	113.0	8.137	8.090	1.161	51.2	25.4
224	1999	3.82	35.030	2337	2174	2187	358.9	19.5	2035.6	118.9	8.175	19.0	2040.0	115.0	7.986	8.098	1.181	52.2	26.1
629	2205	3.48	34.995	2334	2170	2178	350.9	19.3	2031.4	119.3	8.182	18.7	2036.3	115.0	8.005	8.097	1.180	50.1	23.4
607	2429	3.28	34.977	2335	2172	2171	350.5	19.5	2033.8	118.7	8.182	18.8	2039.2	114.0	8.170	8.088	1.169	46.8	19.3
608	2654	3.07	34.962	2338	2176	2197	350.5	19.6	2038.2	118.2	8.182	18.9	2044.1	113.1	8.342	8.079	1.159	43.4	15.2
609	2850	2.97	34.953	2338	2178	2187	353.5	19.9	2041.1	117.1	8.178	19.0	2047.4	111.6	8.564	8.067	1.143	39.7	10.9
610	3049	2.82	34.938	2341	2182	2184	354.3	20.0	2045.4	116.5	8.177	19.1	2052.2	110.7	8.739	8.059	1.134	36.5	7.0
611	3249	2.71	34.929	2345	2176		332.2	18.8	2034.7	122.4	8.202	18.0	2042.1	116.0	8.393	8.076	1.187	39.4	9.2

STATION: 118 LEG: IX — POSITION: 31° 18' N 45° 38' W — DATE: 23 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
612	3448	2.61	34.920	2339	2182	2186	355.3	20.2	2046.4	115.3	8.175	19.2	2054.0	108.7	9.109	8.041	1.113	29.7	-1.2
615	3646	2.46	34.909	2344	2190	2182	361.3	20.7	2055.6	113.7	8.169	19.6	2063.6	106.8	9.410	8.026	1.093	25.2	-6.4
616	3847	2.36	34.908			2201													
617	4050	2.29	34.893	2345	2188	2196	352.2	20.3	2052.2	115.5	8.178	19.1	2061.2	107.7	9.552	8.020	1.101	20.6	-12.5
619	4345		34.884	2350	2197	2199													
622	4486	2.22	34.880	2349	2186	2203	339.1	19.6	2047.4	119.0	8.193	18.4	2057.4	110.2	9.591	8.018	1.127	17.0	-17.8
627	4525	2.22	34.880			2192													

STATION: 119 LEG: IX — POSITION: 31° 49' N 50° 53' W — DATE: 25 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
101	5	21.09	36.691	2411	2058		307.2	9.6	1800.9	247.5	8.286	9.6	1800.9	247.5	5.175	8.286	2.662	202.4	182.0
102	54	20.10	36.751	2419	2062	2080	291.8	9.3	1803.0	249.7	8.303	9.3	1803.1	249.5	5.001	8.301	2.688	204.1	183.7
103	151	19.13	36.644	2408	2094	2084	335.9	11.1	1862.2	220.7	8.250	11.0	1862.6	220.3	5.690	8.245	2.367	174.2	153.6
104	199	18.18	36.526			2103													
105	248	17.62	36.434			2101													
106	295	17.32	36.435	2397	2100	2102	331.6	11.5	1880.1	208.4	8.249	11.5	1880.8	207.7	5.766	8.239	2.219	160.6	139.6
107	345	17.00	36.390	2388	2102	2116	341.8	12.0	1889.1	200.9	8.236	11.9	1890.0	200.1	5.964	8.224	2.135	152.6	131.5
108	394	16.60	36.308	2390	2103	2111	334.2	11.8	1889.7	201.5	8.244	11.8	1890.7	200.6	5.882	8.231	2.135	152.7	131.4
109	443	16.18	36.232	2372	2102	2111	350.8	12.6	1899.5	189.9	8.223	12.5	1900.6	188.8	6.201	8.208	2.006	140.6	119.2
110	492	15.40	36.084	2377	2116	2135	355.0	13.1	1918.9	184.0	8.218	13.0	1920.1	182.9	6.299	8.201	1.935	134.2	112.8
111	540	14.69	35.979	2369	2125	2128	372.3	14.0	1938.2	172.8	8.197	13.9	1939.5	171.6	6.629	8.179	1.810	122.5	100.9
112	580	14.17	35.891	2368	2124	2138	362.9	13.9	1937.6	172.5	8.206	13.8	1939.0	171.2	6.529	8.185	1.802	121.8	100.1
115	640	13.06	35.726	2358	2147	2162	408.6	16.2	1979.5	151.3	8.157	16.0	1981.0	150.0	7.338	8.134	1.571	100.0	78.1
116	689	12.24	35.632	2356	2150	2152	404.2	16.4	1985.7	147.9	8.159	16.3	1987.3	146.4	7.345	8.134	1.530	96.0	74.0
117	788	10.10	35.324	2344	2182	2194	471.5	20.6	2040.9	120.5	8.092	20.4	2042.6	119.1	8.649	8.063	1.233	67.7	45.2
118	888	8.17	35.173	2340	2193		475.8	22.2	2059.8	111.1	8.081	21.9	2061.6	109.5	8.951	8.048	1.129	57.1	34.3
119	939		35.142	2340	2191	2194													
120	988		35.127	2339	2190	2198													
121	1089	6.05	35.109	2340	2187		419.4	21.0	2052.2	113.7	8.123	20.7	2054.5	111.8	8.291	8.081	1.150	57.5	34.1
122	1190	5.90	35.174	2343	2184	2185	402.8	20.3	2046.5	117.2	8.138	20.0	2049.1	114.9	8.073	8.093	1.185	59.8	36.2
123	1292	5.45	35.145	2342	2175	2180	375.7	19.3	2034.1	121.6	8.163	18.9	2036.9	119.2	7.689	8.114	1.228	63.1	39.2
201	1565	4.35	35.028	2334	2172	2179	367.9	19.6	2034.0	118.3	8.166	19.2	2037.5	115.3	7.825	8.106	1.184	56.7	31.9
202	1970	3.89	35.013	2334	2165	2171	345.7	18.8	2024.0	122.3	8.189	18.2	2028.4	118.4	7.707	8.113	1.215	55.9	29.9
203	2369	3.40	34.979	2341	2179	2182	355.9	19.7	2041.0	118.3	8.177	19.0	2046.2	113.8	8.208	8.086	1.167	47.2	19.9
204	2769	3.08	34.957	2341	2181	2181	355.8	19.9	2044.0	117.1	8.176	19.1	2050.1	111.8	8.531	8.069	1.146	40.9	12.3
205	3168	2.85	34.934	2345	2187	2186	357.9	20.2	2050.7	116.1	8.174	19.3	2057.7	110.0	8.897	8.051	1.127	34.4	4.5
206	3567	2.51	34.913	2345	2181	2189	340.0	19.4	2042.1	119.5	8.193	18.4	2050.1	112.5	8.836	8.054	1.151	31.9	.6
207	3967	2.32	34.895	2353	2194	2189	350.2	20.2	2057.0	116.8	8.182	19.0	2065.8	109.1	9.396	8.027	1.116	23.3	-9.6
208	4370	2.21	34.878	2354	2201	2207	362.4	20.9	2066.6	113.4	8.169	19.7	2076.2	105.1	10.062	7.997	1.075	13.6	-20.8
209	4775	2.15	34.868	2362	2207	2200	358.9	20.8	2071.4	114.8	8.173	19.4	2082.0	105.6	10.319	7.986	1.080	8.0	-27.9
210	5181	2.18	34.868	2361	2205	2206	356.8	20.6	2069.0	115.3	8.176	19.2	2080.5	105.4	10.651	7.973	1.077	1.4	-36.2
212	5346	2.19	34.863	2360	2207	2208	363.5	21.0	2072.4	113.6	8.168	19.5	2084.1	103.4	11.001	7.959	1.057	-3.2	-41.6
216	5550	2.24	34.863	2360	2206		361.9	20.9	2070.9	114.2	8.170	19.3	2083.1	103.6	11.155	7.953	1.058	-6.5	-45.7
221	5763	2.24	34.866	2365	2208	2210	356.3	20.6	2071.4	116.0	8.177	19.0	2084.2	104.9	11.190	7.951	1.072	-8.9	-49.0

STATION: 120 LEG: IX — POSITION: 33° 16' N 56° 33' W — DATE: 27 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
401	3	18.04	36.417	2385	2052	2074	285.9	9.7	1810.4	231.9	8.302	9.7	1810.4	231.8	4.995	8.301	2.475	186.5	166.1
402	28	18.02	36.417	2382	2054	2069	291.6	9.9	1815.6	228.5	8.294	9.9	1815.7	228.4	5.090	8.293	2.438	182.9	162.5
403	79	18.02	36.417	2383	2047	2074	281.3	9.6	1803.7	233.7	8.307	9.6	1803.9	233.5	4.963	8.304	2.493	187.7	167.2
404	153	17.98	36.403	2382	2054	2081	290.9	9.9	1815.6	228.5	8.295	9.9	1816.0	228.1	5.131	8.290	2.434	181.8	161.1
405	228	17.53	36.381	2379	2073	2099	315.2	10.9	1848.3	213.8	8.265	10.8	1848.9	213.3	5.528	8.257	2.274	166.5	145.7

STATION: 120 LEG: IX — POSITION: 33° 16' N 56° 33' W — DATE: 27 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
406	302	17.10	36.356	2378	2086	2110	330.4	11.5	1869.9	204.5	8.247	11.5	1870.7	203.8	5.794	8.237	2.172	156.6	135.6
407	402	16.02	36.170	2368	2101	2121	351.9	12.7	1900.5	187.8	8.221	12.6	1901.5	186.9	6.209	8.207	1.982	138.9	117.6
408	503	14.45	35.908	2359	2115	2130	364.8	13.8	1928.8	172.4	8.203	13.7	1930.0	171.3	6.528	8.185	1.803	122.4	100.9
409	602	12.74	35.649	2341	2131	2157	399.2	16.0	1964.9	150.1	8.162	15.8	1966.3	148.9	7.230	8.141	1.556	99.1	77.3
410	652	11.68	35.506	2333	2151	2181	444.4	18.4	2000.0	132.6	8.118	18.2	2001.4	131.3	8.053	8.094	1.367	81.1	59.1
411	703	10.61	35.361	2331	2162	2188	457.3	19.6	2017.9	124.4	8.103	19.4	2019.4	123.1	8.366	8.078	1.276	72.4	50.2
412	801	9.05	35.216	2322	2174	2209	484.5	21.9	2040.6	111.5	8.074	21.7	2042.3	110.1	9.026	8.045	1.136	58.4	35.9
415	900	7.25	35.094	2326	2194	2203	500.4	24.1	2067.9	102.0	8.056	23.8	2069.7	100.5	9.504	8.022	1.034	47.9	25.0
416	999	6.27	35.091			2194													
417	1150	5.44	35.082			2188													
418	1346	4.90	35.059	2318	2163	2187	388.9	20.3	2028.7	114.0	8.144	20.0	2031.6	111.5	8.079	8.093	1.146	54.9	30.8
419	1447	4.55	35.041	2315	2169	2170	405.7	21.5	2038.8	108.7	8.126	21.1	2041.8	106.1	8.503	8.070	1.090	48.6	24.1
420	1599	4.28	35.022			2183													
421	1650	4.22	35.020	2319	2155	2173	357.5	19.2	2016.8	119.0	8.174	18.7	2020.4	115.9	7.741	8.111	1.190	56.5	31.4
422	1701	4.18	35.018	2316	2160	2182	374.7	20.1	2025.5	114.4	8.156	19.6	2029.2	111.2	8.122	8.090	1.141	51.3	26.1
423	1750	4.10	35.011	2320	2154	2172	351.5	18.9	2014.9	120.2	8.181	18.5	2018.7	116.8	7.698	8.114	1.199	56.5	31.1
424	1802	4.05	35.012	2316	2162	2166	377.6	20.4	2028.4	113.2	8.152	19.9	2032.3	109.8	8.262	8.083	1.127	49.0	23.5
101	1887	3.93	35.003	2319	2151	2182	344.6	18.7	2011.0	121.3	8.188	18.2	2015.2	117.6	7.670	8.115	1.207	55.9	30.2
102	1987	3.81	34.992			2173													
103	2188	3.66	34.986	2321	2170	2167	380.3	20.8	2037.6	111.6	8.149	20.2	2042.3	107.5	8.620	8.064	1.103	42.8	16.2
104	2387	3.46	34.976	2322	2165		363.2	20.0	2030.0	115.0	8.166	19.3	2035.2	110.4	8.433	8.074	1.132	43.7	16.4
105	2588	3.27	34.963			2183													
106	2789	3.08	34.952	2322	2170	2175	369.4	20.7	2037.3	112.1	8.159	19.9	2043.3	106.8	8.910	8.050	1.095	35.7	7.1
107	2989	2.95	34.942	2324	2164	2180	349.6	19.6	2027.7	116.7	8.180	18.8	2034.3	110.9	8.636	8.064	1.136	37.5	8.2
108	3191	2.80	34.931	2328	2168	2171	348.5	19.7	2031.5	116.8	8.181	18.8	2038.6	110.6	8.768	8.057	1.133	34.7	4.8
109	3391	2.63	34.922	2325	2168	2183	352.1	20.0	2033.0	115.0	8.176	19.1	2040.5	108.5	9.038	8.044	1.110	30.1	-.6
110	3592	2.50	34.913	2329	2172	2198	351.3	20.1	2036.9	115.0	8.177	19.1	2044.8	108.2	9.181	8.037	1.107	27.3	-4.2
111	3792	2.41	34.904	2326	2166	2185	342.6	19.7	2029.7	116.7	8.186	18.6	2038.1	109.3	9.161	8.038	1.119	25.8	-6.3
112	4043	2.31	34.895	2333	2182		363.3	20.9	2049.4	111.7	8.164	19.7	2058.1	104.1	9.865	8.006	1.065	17.2	-15.9
115	4297	2.27	34.891	2333	2181	2199	360.4	20.8	2047.9	112.3	8.167	19.5	2057.3	104.2	10.026	7.999	1.065	13.7	-20.4
116	4550	2.24	34.883	2339	2188	2209	363.8	21.0	2055.1	111.9	8.165	19.7	2065.0	103.3	10.324	7.986	1.056	9.2	-25.9
117	4806	2.20	34.874	2340	2184	2199	351.9	20.3	2048.9	114.8	8.178	19.0	2059.5	105.5	10.252	7.989	1.079	7.5	-28.6
118	5058	2.19	34.868	2343	2192	2216	363.9	21.1	2059.0	112.0	8.165	19.6	2070.0	102.4	10.805	7.966	1.047	.5	-36.6
119	5314	2.18	34.866	2343	2189	2214	356.8	20.7	2054.7	113.7	8.173	19.2	2066.3	103.6	10.864	7.964	1.058	-2.6	-40.8
122	5441	2.19	34.863	2348	2197	2212	365.2	21.1	2063.7	112.1	8.164	19.6	2075.6	101.9	11.201	7.951	1.041	-6.4	-45.1
125	5500	2.20	34.862	2345	2193	2223	362.2	20.9	2059.4	112.6	8.167	19.4	2071.4	102.2	11.189	7.951	1.044	-7.1	-46.0
130	5554	2.20	34.863	2346	2198	2204	372.0	21.5	2066.1	110.4	8.157	19.9	2078.1	100.0	11.518	7.939	1.022	-10.2	-49.4

STATION: 121 LEG: IX — POSITION: 35° 59' N 67° 59' W — DATE: 30 MAR 73

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALC P=1 ATM, T=INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALC P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM KG	$CO_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM KG
215	7	19.12	36.430			2061													
216	55	19.06	36.427	2400	2059	2061	292.1	9.6	1811.0	238.3	8.299	9.6	1811.2	238.2	5.048	8.297	2.544	192.6	172.1
217	153	19.06	36.428	2397	2051	2064	284.8	9.4	1800.1	241.5	8.307	9.4	1800.5	241.1	4.990	8.302	2.575	194.9	174.3
218	201	18.54	36.434	2392	2067	2084	305.2	10.2	1829.6	227.2	8.281	10.2	1830.1	226.7	5.320	8.274	2.421	180.2	159.4
219	299	18.07	36.468	2414	2117	2085	347.8	11.8	1895.7	209.5	8.237	11.8	1896.5	208.8	5.936	8.226	2.232	161.6	140.7
201	349	17.77	36.462	2399	2096	2110	329.4	11.3	1872.1	212.6	8.253	11.2	1873.0	211.8	5.740	8.241	2.264	164.3	143.2
202	400	17.52	36.438			2106													
203	500	16.78	36.321	2393	2087	2120	308.4	10.9	1862.2	213.9	8.274	10.8	1863.5	212.7	5.539	8.257	2.265	164.1	142.7
204	602	15.21	36.038	2373	2130	2141	384.5	14.2	1943.2	172.5	8.188	14.1	1944.7	171.2	6.815	8.167	1.809	121.7	100.0
205	703	13.10	35.666	2361	2159	2190	430.8	17.0	1995.9	146.0	8.138	16.9	1997.5	144.6	7.707	8.113	1.512	94.2	72.1
206	803	11.73	35.455			2204													
207	853	10.66	35.352	2348	2178	2201	461.0	19.8	2032.7	125.5	8.103	19.5	2034.5	123.9	8.472	8.072	1.284	72.1	49.6
208	904	9.55	35.249	2339	2190	2209	497.7	22.1	2055.2	112.7	8.069	21.9	2057.0	111.1	9.225	8.035	1.148	58.8	36.0
209	954	8.45	35.146			2216													
210	1004	7.55	35.097	2335	2189	2208	464.4	22.1	2056.7	110.2	8.088	21.8	2058.8	108.4	8.911	8.050	1.115	55.0	31.9
211	1105	5.91	35.035	2336	2181	2195	409.8	20.7	2045.5	114.8	8.131	20.3	2047.9	112.8	8.150	8.089	1.158	58.3	34.9
212	1255	4.99	35.021	2329	2175	2189	395.5	20.6	2040.6	113.8	8.140	20.3	2043.3	111.4	8.090	8.092	1.144	55.6	31.8
225	1407	4.65	35.012	2328	2172	2176	384.9	20.3	2036.9	114.8	8.149	19.9	2039.9	112.2	8.030	8.095	1.151	55.0	30.7
226	1559	4.38	34.994	2325	2170	2177	382.3	20.4	2035.5	114.1	8.150	19.9	2038.9	111.2	8.119	8.090	1.141	52.6	27.9

STATION: 121 LEG: IX | POSITION: 35° 59' N 67° 59' W | DATE: 30 MAR 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK μEQ/KG	TITRATOR TCO_2 μM/KG	GC TCO_2 μM/KG	PCO_2 μATM	H_2CO_3 μM/KG	HCO_3^- μM/KG	$CO_3^=$ μM/KG	PH	H_2CO_3 μM/KG	HCO_3^- μM KG	$CO_3^=$ μM/KG	AH (10^{-9})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM KG
326	1632	4.23	34.984	2329	2164	2179	357.6	19.2	2024.9	119.9	8.176	18.7	2028.5	116.8	7.697	8.114	1.198	57.5	32.5
228	1861		34.974			2171													
325	1932	3.92	34.973			2178													
301	2135	3.74	34.967	2327	2164		354.6	19.4	2026.0	118.6	8.177	18.8	2030.7	114.5	8.031	8.095	1.174	50.4	23.9
302	2284	3.64	34.965			2168													
303	2425	3.53	34.967	2329	2166	2170	352.3	19.4	2028.0	118.6	8.180	18.7	2033.4	113.9	8.203	8.086	1.168	46.8	19.4
304	2568	3.42	34.962	2330	2164	2181	344.4	19.0	2024.6	120.4	8.188	18.3	2030.3	115.4	8.148	8.089	1.182	46.7	18.8
305	2716	3.30	34.958	2328	2168	2180	355.5	19.7	2031.4	116.8	8.175	19.0	2037.4	111.6	8.511	8.070	1.144	41.3	13.0
306	2863	3.14	34.948	2331	2170	2181	351.7	19.6	2032.9	117.5	8.179	18.8	2039.2	111.9	8.545	8.068	1.147	40.0	11.1
307	3014	3.04	34.943	2330	2169	2189	350.1	19.6	2032.0	117.4	8.181	18.8	2038.6	111.6	8.637	8.064	1.143	37.9	8.5
308	3161	2.88	34.934	2332	2174	2169	355.1	20.0	2038.2	115.7	8.175	19.1	2045.2	109.7	8.871	8.052	1.123	34.2	4.3
309	3311	2.75	34.928	2329	2168		345.8	19.6	2031.0	117.4	8.184	18.7	2038.4	111.0	8.804	8.055	1.136	33.6	3.2
310	3459	2.61	34.920	2335	2168	2190	332.6	18.9	2028.1	121.0	8.200	18.0	2035.9	114.1	8.606	8.065	1.168	34.9	4.0
311	3609	2.52	34.912	2332	2171	2196	343.4	19.6	2034.0	117.4	8.187	18.6	2042.0	110.4	8.997	8.046	1.130	29.3	-2.2
312	3758	2.42	34.909	2335	2178	2189	351.6	20.2	2042.6	115.2	8.178	19.1	2050.9	108.0	9.315	8.031	1.105	24.9	-7.1
315	3909	2.38	34.902	2336	2178	2192	349.1	20.0	2042.2	115.8	8.180	18.9	2050.8	108.3	9.380	8.028	1.108	23.2	-9.4
316	4061		34.899	2338	2178	2196													
317	4212	2.31	34.895	2341	2182	2196	347.1	20.0	2045.5	116.5	8.183	18.8	2054.8	108.3	9.579	8.019	1.108	19.1	-14.6
318	4363	2.29	34.892	2343	2182	2192	342.9	19.8	2044.5	117.7	8.188	18.6	2054.2	109.2	9.600	8.018	1.117	17.8	-16.5
319	4514	2.27	34.889	2342	2184	2188	349.0	20.1	2047.9	116.0	8.181	18.9	2057.9	107.2	9.893	8.005	1.097	13.7	-21.3
321	4666	2.28	34.887	2345	2189		354.3	20.4	2053.7	114.9	8.176	19.1	2064.0	105.9	10.156	7.993	1.083	10.1	-25.4
327	4767		34.890	2342	2184	2203													
323	4830	2.26	34.883	2348	2189	2211	348.0	20.1	2052.2	116.7	8.183	18.7	2062.9	107.3	10.132	7.994	1.098	9.0	-27.2
332	4871		34.882	2349	2195	2200													
324	4904	2.27	34.884	2349	2193	2195	355.1	20.5	2057.5	115.0	8.176	19.1	2068.3	105.6	10.384	7.984	1.080	6.1	-30.3

Chapter 4

RADON DATA

STATION: 2 LEG: I POSITION: 47° 58′ N 42° 32′ W DATE: 26 JUL 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
525	3944	2.133H	1.788	34.920	45.990	11.0	0.9	117	
526	3984			34.916		14.7	0.8	77	
527	4004	2.06 H	1.707	34.915	46.001	14.1	1.8	57	
528	4014			34.921		14.1	2.5	47	
529	4024	2.059H	1.706	34.916	46.002	14.8	0.7	37	
530	4034			34.918		17.2	1.8	27	
531	4044			34.920		15.8	0.9	17	
532	4055	2.067H	1.710	34.914	46.000	15.7	2.4	7	

STATION: 3 LEG: I POSITION: 51° 1′ N 43° 7′ W DATE: 28 JUL 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
1017	4105	2.068	1.705	34.911	45.998	9.3	0.5	145	
1018	4144	2.057	1.690	34.919	46.007	9.8	1.0	101	
1019	4185	2.044	1.672	34.914	46.007	9.6	0.6	63	
1020	4205	2.024	1.651	34.911	46.008	10.7	1.6	45	
1021	4214	2.018	1.644	34.918	46.015	11.6	0.7	33	
1022	4225	2.012	1.637	34.913	46.013	10.2	1.8	25	
1023	4236	2.011	1.634	34.910	46.011	14.5	1.3	16	
1024	4245	2.012	1.634	34.919	46.018	16.6	2.9	7	

STATION: 4 LEG: I POSITION: 54° 5′ N 42° 57′ W DATE: 30 JUL 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	3208	2.662	2.386	34.943	45.897	12.9	1.0	307	
118	3414	2.538	2.242	34.932	45.915	10.6	0.5	113	
119	3452	2.536	2.236	34.933	45.917	12.9	0.8	73	
120	3472	2.535	2.233	34.932	45.917	12.8	0.6	52	DATA SUSPECT
121	3491	2.537	2.232	34.932	45.917	13.5	1.7	35	DATA SUSPECT
122	3501	2.532	2.226	34.927	45.914	12.5	1.5	26	
123	3510	2.525	2.219	34.933	45.920	21.3	2.5	17	
124	3520	2.525	2.217	34.931	45.919	21.0	2.2	8	

STATION: 5 LEG: I POSITION: 56° 56′ N 42° 33′ W DATE: 31 JUL 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
118	3271	2.203	1.932	34.924	45.967	10.7	1.2	119	DATA SUSPECT
119	3313	2.150	1.876	34.923	45.976	9.6	1.6	77	
120	3332	2.092	1.817	34.921	45.986	15.1	1.0	56	
121	3352	2.079	1.802	34.915	45.984	16.0	1.6	37	
122	3362	2.075	1.797	34.925	45.992	16.4	2.3	25	DATA SUSPECT
123	3371	2.068	1.789	34.913	45.985	19.8	0.7	18	
124	3381	2.066	1.786	34.918	45.989	20.3	2.3	8	

STATION: 8 LEG: I POSITION: 60° 30′ N 40° 1′ W DATE: 3 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
525	2334	2.129H	1.955	34.909	45.951	9.5	0.6	153	
526	2375			34.905		9.4	0.5	112	
527	2404			34.904		10.1	0.6	82	
528	2425			34.906		13.7	0.5	62	
529	2445			34.901		14.4	1.1	42	
530	2455	1.70 H	1.526	34.905	46.026	6.2	0.6	32	DATA SUSPECT
531	2465			34.900		17.1	1.7	22	DATA SUSPECT
532	2476			34.898		18.3	2.1	11	

STATION: 11 LEG: I POSITION: 63° 31′ N 35° 13′ W DATE: 5 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
118	2285	1.605	1.445	34.883	46.024	10.6	0.8	116	
119	2323	1.282	1.125	34.877	46.077	9.8	0.6	76	
120	2344	1.247	1.089	34.876	46.082	9.8	0.6	54	
121	2363	1.234	1.075	34.870	46.080	11.5	0.6	36	
122	2374	1.245	1.084	34.875	46.082	15.3	0.5	26	
123	2385	1.257	1.095	34.878	46.083	16.3	1.9	16	
124	2393	1.257	1.094	34.878	46.083	19.9	2.1	8	

STATION: 14 LEG: II POSITION: 65° 55′ N 27° 27′ W DATE: 13 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
517	568	-0.487	-0.508	34.910	46.377	15.5	1.2	84	
518	585	-0.487	-0.508	34.922	46.387	14.1	1.6	67	
519	597	-0.487	-0.509	34.916	46.382	13.4	0.8	55	
520	620	-0.484	-0.507	34.922	46.386	14.6	1.4	32	
521	629	-0.484	-0.507	34.922	46.387	15.6	1.0	23	
522	637	-0.481	-0.505	34.923	46.387	14.5	1.7	15	
523	638	-0.483	-0.507	34.918	46.383	15.0	0.4	14	
524	645	-0.488	-0.512	34.920	46.386	13.9	1.4	7	

STATION: 15 LEG: II POSITION: 69° 0′ N 20° 1′ W DATE: 15 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
513	16	2.77	2.77	33.02	26.36	4.4	0.4	344	0.1	0.10	0.0	
514	16	2.77	2.77	33.02	26.36	3.5	0.3	344	0.1	0.10	0.0	
516	38	1.20	1.20	33.81	27.11	7.2	0.7	378	0.2	0.07	0.0	
517	48	-0.91	-0.91	34.13	27.47	7.5	1.0	356	0.9	0.36	4.5	
518	48	-0.91	-0.91	34.13	27.47	7.9	0.3	356	0.9	0.36	4.5	
519	57	-1.58	-1.58	34.22	27.56	7.4	0.9	323	5.9	0.68	6.5I (I)	
520	65	-1.53	-1.53	34.27	27.60	7.3	0.7	323	5.7	0.67	7.1I (I)	
521	101	-1.01	-1.01	34.45	27.73	7.9	0.5	317	6.6	0.75	9.6I (I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
125	1393			34.918		9.4	0.8	138	
126	1435	-0.77 H	-0.834	34.917	46.435	8.5	1.3	98	
127	1455			34.919		9.1	1.2	78	
128	1475	-0.829H	-0.890	34.915	46.442	10.3	1.2	58	
129	1495			34.914		15.1	2.1	38	
130	1505			34.914		22.2	1.0	28	
131	1515			34.914		24.4	2.4	18	
132	1526	-0.86 H	-0.926	34.915	46.447	24.1	2.0	8	

STATION: 16 LEG: II POSITION: 72° 2′ N 8° 26′ W DATE: 16 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
601	1	4.11	4.11	33.27	26.44	4.9	0.7	329	0.6	0.04	0.0	
602	5	4.10	4.10	33.27	26.44	4.5	0.3	330	0.6	0.05	0.0	
603	5	4.10	4.10	33.27	26.44	4.9	0.5	330	0.6	0.05	0.0	
604	15	3.45	3.45	33.76	26.89	6.7	0.7	346	1.0	0.11	1.2	
605	31	-1.10	-1.10	34.35	27.65	7.8	0.5	382	1.3	0.30	4.4	
606	41	-1.47	-1.47	34.46	27.76	8.2	0.3	331	3.6	0.71	10.6	
607	51	-1.45	-1.45	34.55	27.83	7.6	0.5	332	4.5	0.72	11.5	
608	75	-1.28	-1.28	34.65	27.91	7.3	0.9	332	5.1	0.76	11.3	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CID)
(I) = INTERPOLATED DATA

STATION: 16 LEG: II POSITION: 72° 2′ N 8° 26′ W DATE: 16 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	2451	-1.162	-1.279	34.898	46.489	15.2	2.3	93	
118	2471	-1.150	-1.268	34.900	46.489	18.9	2.1	73	
119	2490	-1.150	-1.270	34.893	46.484	18.3	2.3	53	
120	2510	-1.152	-1.273	34.901	46.490	24.0	1.9	33	
121	2518	-1.151	-1.273	34.895	46.486	23.7	3.3	25	
122	2528	-1.151	-1.273	34.890	46.482	21.3	2.1	15	
123	2537	-1.150	-1.273	34.897	46.487	21.2	1.8	5	
124	2537	-1.150	-1.273	34.893	46.484	20.4	1.0	5	

STATION: 17 LEG: II POSITION: 74° 56′ N 1° 7′ W DATE: 18 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	3410	-1.119	-1.312	34.898	46.494	13.0	1.4	280	
116	3516	-1.110	-1.313	34.891	46.489	10.8	0.7	174	
117	3556	-1.106	-1.312	34.895	46.492	13.0	1.9	134	DATA SUSPECT
118	3597	-1.102	-1.312	34.892	46.489	10.2	0.9	91	DATA SUSPECT
119	3618	-1.100	-1.312	34.894	46.491	11.7	1.3	71	
120	3641	-1.097	-1.311	34.894	46.491	13.7	1.9	47	
121	3652	-1.097	-1.312	34.893	46.490	12.2	0.8	37	DATA SUSPECT
122	3662	-1.096	-1.312	34.897	46.493	12.5	1.4	26	DATA SUSPECT
123	3673	-1.095	-1.312	34.894	46.491	12.3	1.2	17	DATA SUSPECT
124	3682	-1.094	-1.312	34.894	46.491	15.5	2.4	7	DATA SUSPECT

STATION: 18 LEG: II POSITION: 70° 0′ N 0° 0′ W DATE: 22 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1018	1	9.42	9.42	35.08	27.15	5.5	0.4					
1019	9	9.42	9.42	35.07	27.15	4.6	0.7	280(I)	2.5(I)	0.21(I)	1.7(I)	
1020	9	9.42	9.42	35.07	27.15	5.0	0.6	280(I)	2.5(I)	0.21(I)	1.7(I)	
1021	21	9.42	9.42	35.08	27.15	5.5	0.6	280(I)	2.7(I)	0.26(I)	2.2(I)	
1022	37	9.41	9.41	35.08	27.15	5.4	0.4	282(I)	4.1(I)	0.53(I)	5.4(I)	
1023	56	6.98	6.97	35.15	27.58	7.0	1.0	282(I)	5.4(I)	0.79(I)	10.6(I)	
1024	80	6.30	6.29	35.15	27.68	8.2	0.2	285(I)	5.7(I)	0.86(I)	13.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	2902	-0.886	-1.043	34.915	46.466	9.7	0.6	339	
117	3107	-0.875	-1.049	34.910	46.463	9.7	1.2	139	
118	3149	-0.874	-1.052	34.912	46.465	9.0	1.3	97	
119	3169	-0.875	-1.054	34.912	46.465	9.0	0.8	77	
120	3188	-0.875	-1.056	34.910	46.464	12.5	1.5	57	
121	3210	-0.873	-1.056	34.911	46.465	15.4	1.6	36	
122	3220	-0.872	-1.056	34.910	46.464	16.3	0.8	26	
123	3232	-0.869	-1.054	34.914	46.467	18.2	2.6	16	
124	3243	-0.869	-1.055	34.910	46.464	18.5	1.6	7	DATA SUSPECT

STATION: 19 LEG: II POSITION: 64° 12′ N 5° 34′ W DATE: 24 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	3060	-0.873	-1.043	34.909	46.461	8.9	1.0	137	DATA SUSPECT
118	3102	-0.869	-1.043	34.913	46.464	9.2	0.9	95	
119	3121	-0.867	-1.042	34.910	46.462	10.4	1.5	75	
120	3140	-0.865	-1.042	34.913	46.464	9.4	0.8	57	
121	3157	-0.865	-1.044	34.907	46.460	13.0	1.9	39	
122	3168	-0.862	-1.042	34.909	46.461	10.7	0.6	28	
123	3179	-0.862	-1.042	34.910	46.462	12.0	1.2	17	
124	3189	-0.861	-1.042	34.909	46.461	13.8	2.2	7	

STATION: 22 LEG: II POSITION: 61° 39′ N 14° 17′ W DATE: 27 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
102	11	11.38	11.38	35.15	26.86	5.7	0.5	272	0.9	0.21	2.6	
103	26	11.37	11.37	35.15	26.86	5.7	0.4	272	1.0	0.20	2.6	
105	34	11.36	11.36	35.15	26.86	5.8	0.7	271	0.8	0.21	2.5	
106	43	11.35	11.34	35.16	26.87	6.5	0.2	268	1.4	0.30	4.5	
108	73	8.99	8.98	35.22	27.33	7.7	0.9	263	5.2	0.78	13.5	
110	149	8.60	8.58	35.21	27.39	7.8	0.5	263	6.0	0.80	13.7	

STATION: 23 LEG: II POSITION: 60° 24′ N 18° 37′ W DATE: 28 AUG 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	2198	3.49	3.304	34.976	45.745	9.8	1.0	327	
117	2385	3.19	2.990	35.002	45.826	9.5	1.4	139	
118	2423	3.04	2.839	35.001	45.855	8.9	0.5	101	
119	2443	2.95	2.749	35.001	45.872	9.5	1.1	81	
120	2464	2.81	2.609	35.000	45.898	9.5	1.2	60	
121	2487	2.54	2.342	34.995	45.945	9.2	0.9	37	
122	2500	2.36	2.165	34.993	45.976	14.2	1.4	27	
123	2508	2.33	2.135	34.990	45.980	18.8	1.8	17	
124	2516	2.29	2.095	34.991	45.988	27.8	4.2	7	

STATION: 24 LEG: III POSITION: 53° 45′ N 33° 37′ W DATE: 7 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
615	5	11.25	11.25	34.69	26.52	5.3	0.6	291	2.1	0.41	5.2	
616	16	10.61	10.61	34.69	26.64	5.7	0.3	292	2.0	0.42	5.2	
617	24	10.41	10.41	34.70	26.68	6.2	0.5	291	2.2	0.45	5.6	
618	64	7.77	7.76	34.58	27.02	7.1	0.4	283	4.6	0.77	10.6	
619	89	7.13	7.12	34.87	27.34	7.6	0.2	283	5.8	0.85	12.5	
620	113	6.43	6.42	34.87	27.44	6.8	0.8	279	8.1	1.02	14.6	
621	153	6.25	6.23	34.91	27.49	7.8	0.5	276	8.5	1.04	15.3	
622	202	6.15	6.13	34.93	27.52	6.5	0.4	277	8.6	1.03	15.5	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	2380	3.009	2.813	34.998	45.857	11.3	1.5	170	
118	2399	3.013	2.815	35.002	45.860	10.9	1.2	151	
119	2419	3.011	2.811	35.002	45.861	13.6	1.1	131	
120	2443	3.013	2.811	35.001	45.860	11.8	0.9	106	
121	2465	3.015	2.810	35.000	45.859	14.5	1.3	85	
122	2486	3.017	2.810	35.000	45.859	11.4	1.0	63	
123	2509	3.021	2.812	35.001	45.860	12.1	1.1	41	
124	2532	3.021	2.809	35.001	45.860	11.5	0.8	17	

STATION: 25 LEG: III POSITION: 47° 36′ N 39° 53′ W DATE: 10 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
115	5	20.24	20.24	35.63	25.20	4.1	0.5	229				DATA SUSPECT
116	11	20.21	20.20	35.63	25.21	3.0	0.2	229				DATA SUSPECT
117	15	20.21	20.21	35.63	25.21	3.8	0.4	230				
118	20	20.19	20.18	35.63	25.21	3.6	0.2	230				
119	25	20.20	20.20	35.63	25.21	3.9	0.2	230				
120	34	17.13	17.13	36.01	26.29	6.6	0.8	232				
121	48	16.90	16.90	36.21	26.50	7.1	0.5	214				
124	4540	2.17	1.75	34.91	27.95	11.9	0.7	288				

(I) = INTERPOLATED DATA

STATION: 26 LEG: III POSITION: 44° 57' N 42° 4' W DATE: 11 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
315	4	21.81	21.81	35.75	24.86	4.4	0.5	220	0.6	0.04	0.1	
316	9	21.81	21.81	35.75	24.86	4.6	0.2	220	0.6	0.03	0.0	DATA SUSPECT
317	13	21.80	21.80	35.76	24.87	2.0	0.2	220	0.6	0.04	0.1	DATA SUSPECT
318	18	21.81	21.81	35.77	24.88	3.4	0.4	221	0.5	0.03	0.0	DATA SUSPECT
319	29	19.74	19.73	36.04	25.64	8.9	0.7	247	0.7	0.04	0.0	DATA SUSPECT
320	47	17.84	17.83	36.25	26.30	6.6	0.4	232	0.9	0.05	0.1	DATA SUSPECT
321	68	17.28	17.27	36.33	26.49	9.2	0.5	210	1.8	0.20	3.5	DATA SUSPECT
322	97	16.56	16.54	36.23	26.59	6.7	0.4	207	2.3	0.31	5.8	

STATION: 27 LEG: III POSITION: 42° 0' N 42° 2' W DATE: 12 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	4692	2.290	1.847	34.900	45.964	11.9	1.6	170	
118	4714	2.292	1.846	34.902	45.966	11.4	1.2	155	
119	4738	2.290	1.841	34.902	45.967	13.0	1.0	137	
120	4770	2.288	1.835	34.901	45.967	12.6	0.9	113	
121	4793	2.290	1.834	34.902	45.968	13.5	1.3	90	
122	4815	2.289	1.830	34.902	45.969	11.5	1.0	64	
123	4842	2.289	1.826	34.904	45.971	27.5	2.3	38	
124	4868	2.279	1.813	34.908	45.976	23.9	1.3	15	

STATION: 28 LEG: III POSITION: 39° 0' N 43° 59' W DATE: 15 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
716	7	25.00	25.00	36.39	24.42	5.6	0.6	208	0.6	0.05	0.0	
717	20	25.00	25.00	36.39 D	24.42	5.7	0.5	209	0.6	0.03	0.0	
718	27	24.98	24.97	36.39	24.43	5.1	0.3	209	0.6	0.03	0.0	
719	35	24.31	24.30	36.38	24.62	6.6	0.2	214	0.7	0.03	0.0	
720	51	22.00	21.99	36.42	25.32	6.8	0.8	217	0.9	0.04	0.0	
721	72	19.30	19.29	36.35	26.00	8.0	0.5	215	0.6	0.06	0.3	
722	121	17.87	17.85	36.39	26.40	7.3	0.4	204	1.8	0.21	3.7	

SAMPLE No	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	4732	2.261	1.814	34.890	45.963	13.1	1.8	154	
118	4761	2.261	1.810	34.889	45.962	13.0	1.4	128	
119	4790	2.261	1.806	34.890	45.964	13.5	1.0	102	
120	4813	2.261	1.803	34.892	45.966	13.1	0.9	79	
121	4832	2.261	1.801	34.892	45.966	14.4	1.3	58	
122	4848	2.261	1.799	34.892	45.967	12.9	1.1	47	
123	4864	2.270	1.805	34.896	45.969	12.9	1.1	34	
124	4879	2.275	1.808	34.903G	45.973	17.8	1.0	19	

STATION: 29 LEG: III POSITION: 35° 58' N 47° 0' W DATE: 17 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1014	4	25.22	25.22	36.03	24.08	5.8	0.6	210	1.3	0.05	0.0	
1015	19	24.89	24.89	36.02	24.17	5.9	0.4	211	1.2	0.04	0.0	
1016	60	22.91	22.90	36.38	25.03	8.4	0.7	215	0.9	0.05	0.0	
1017	101	19.74	19.72	36.49	25.99	8.2	0.4	205	1.1	0.11	1.6	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	4830	2.280	1.820	34.885	45.958	18.7	2.5	164	
118	4873	2.285	1.819	34.884	45.957	16.8	1.8	121	

STATION: 29 LEG: III POSITION: 35° 58' N 47° 0' W DATE: 17 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
119	4894	2.287	1.818	34.887	45.959	18.3	1.4	101	
120	4914	2.289	1.817	34.886	45.959	20.3	1.4	81	
121	4936	2.291	1.816	34.887	45.960	18.4	1.7	58	
122	4957	2.294	1.816	34.887	45.960	18.6	1.6	38	
123	4967	2.296	1.817	34.887	45.960	17.5	1.6	28	
124	4978	2.296	1.816	34.886	45.959	19.8	1.1	18	

STATION: 30 LEG: III POSITION: 31° 48' N 50° 46' W DATE: 20 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
912	3	26.77	26.77	36.60	24.04	6.8	0.7	205	0.9(I)	0.04(I)	0.1(I)	
913	10	26.59	26.59	36.60	24.09	6.5	0.2	207	0.8(I)	0.04(I)	0.1(I)	
914	17	26.58	26.58	36.58	24.08	6.8	0.6	205	0.7(I)	0.04(I)	0.1(I)	
915	24	26.57	26.56	36.57	24.08	5.7	0.4	205	0.7(I)	0.03(I)	0.1(I)	
916	39	25.53	25.52	36.64	24.45	7.4	0.3	222	0.6(I)	0.03(I)	0.1(I)	
917	61	21.68	21.67	36.55	25.51	7.5	0.7	234	0.7(I)	0.04(I)	0.4(I)	
918	89	19.60	19.58	36.52	26.05	7.8	0.3	221	1.0(I)	0.08(I)	1.2(I)	
919	120	18.53	18.51	36.46	26.29	7.8	0.4	212	1.3(I)	0.12(I)	2.0(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	5635	2.188	1.622	34.859	45.974	25.8	2.3	222	
118	5690	2.196	1.622	34.858	45.973	26.1	2.2	176	
119	5733	2.203	1.622	34.858	45.973	25.5	2.2	119	
120	5763	2.207	1.622	34.857	45.972	23.6	1.4	89	
121	5787	2.210	1.621	34.858	45.973	33.9	4.6	64	
122	5808	2.213	1.621	34.858	45.973	34.8	3.8	44	
123	5822	2.216	1.622	34.859	45.974	41.2	3.1	30	
124	5833	2.217	1.621	34.857	45.972	37.1	2.5	20	

STATION: 31 LEG: III POSITION: 27° 0' N 53° 32' W DATE: 22 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5637	2.145	1.580	34.855	45.978	16.9	0.5	418	
117	5839	2.166	1.572	34.854	45.979	20.1	2.8	218	
118	5883	2.171	1.570	34.854	45.979	20.6	2.3	173	
119	5924	2.175	1.568	34.851	45.977	23.8	1.8	133	
120	5964	2.180	1.567	34.854	45.980	27.4	1.9	93	
121	5994	2.185	1.567	34.851	45.977	41.9	3.6	63	
122	6014	2.187	1.566	34.850	45.977	60.8	3.1	43	
123	6028	2.189	1.566	34.851	45.978	68.2	5.6	28	
124	6039	2.190	1.566	34.852	45.978	79.6	4.2	18	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
624	6014	2.188	1.567	34.856	45.981	39.4	3.7	27	

STATION: 32 LEG: III POSITION: 23° 50' N 53° 59' W DATE: 24 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
714	2	27.62	27.62	36.02	23.33	5.0	0.5	225				
715	2	27.62	27.62	36.02	23.33	4.8	0.2	225				
716	11	27.40	27.40	36.09	23.45	5.8	0.5	216	2.1(I)	0.04(I)	0.1(I)	
717	11	27.40	27.40	36.09	23.45	4.9	0.3	216	2.1(I)	0.04(I)	0.1(I)	

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
G DATA APPEARING TO BE IN ERROR BUT WHICH HAS BEEN VERIFIED BY OTHER MEASUREMENTS
(I) = INTERPOLATED DATA

STATION: 32 LEG: III POSITION: 23° 50' N 53° 59' W DATE: 24 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
718	21	27.67	27.66	36.89	23.97	7.3	0.3	207	1.8(I)	0.04(I)	0.0(I)	
720	25	27.65	27.64	36.96	24.03	6.6	0.6	208	1.7(I)	0.04(I)	0.0(I)	
722	39	26.87	26.86	37.02	24.32	7.9	0.3	203	1.4(I)	0.04(I)	0.0(I)	
724	76	23.41	23.39	36.93	25.30	7.2	0.4	202	0.9(I)	0.04(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5441	2.060	1.527	34.851D	45.985	15.9	1.7	408	
116	5541	2.068	1.520	34.849D	45.984	19.0	1.7	308	
117	5642	2.079	1.517	34.849	45.985	23.2	1.5	207	
119	5741	2.093	1.516	34.849D	45.985	34.4	2.9	108	
120	5771	2.097	1.516	34.849D	45.985	41.6	3.4	79	
121	5795	2.100	1.515	34.848D	45.985	45.0	3.1	54	
122	5813	2.102	1.514	34.849D	45.985	50.8	2.6	36	
124	5836	2.105	1.514	34.848D	45.985	47.5	0.8	13	

STATION: 33 LEG: III POSITION: 21° 0' N 54° 0' W DATE: 26 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	5029	1.984	1.509	34.846	45.984	24.2	1.5	218	
118	5079	1.989	1.508	34.848	45.986	31.9	3.5	168	
119	5121	1.993	1.506	34.846	45.985	35.6	3.0	128	
120	5152	1.995	1.504	34.848	45.987	29.2	2.4	88	
121	5177	1.996	1.501	34.848	45.987	21.5	1.5	63	
122	5198	1.997	1.499	34.844	45.984	31.4	1.6	43	
123	5211	1.997	1.498	34.843	45.984	56.1	4.4	28	
124	5224	1.997	1.496	34.848	45.988	66.0	1.0	18	

STATION: 34 LEG: III POSITION: 18° 1' N 53° 59' W DATE: 28 SEP 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1214	2	27.67	27.67	34.84	22.43	5.1	0.5					
1215	2	27.67	27.67	34.84	22.43	5.2	0.2					
1216	15	27.56	27.56	34.85	22.47	6.3	0.5	205(I)	3.0(I)	0.03(I)	0.1(I)	
1217	24	27.56	27.56	34.86	22.48	5.3	0.4	208(I)	2.5(I)	0.03(I)	0.1(I)	
1218	35	27.57	27.56	35.06	22.63	7.1	0.3	212(I)	2.0(I)	0.03(I)	0.1(I)	
1220	50	26.87	26.86	36.88	24.21	7.2	0.7	216(I)	1.6(I)	0.03(I)	0.1(I)	
1222	70	25.06	25.04	37.05	24.91	7.5	0.3	219(I)	1.2(I)	0.04(I)	0.1(I)	
1224	98	23.87	23.84	37.07	25.27	7.9	0.4	219(I)	1.0(I)	0.04(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
517	4456	2.091	1.686	34.868	45.969	16.7	1.1	210	
518	4518	2.077	1.665	34.864	45.970	17.5	1.9	160	
519	4565	2.054	1.637	34.859	45.971	18.1	1.5	120	
520	4607	2.045	1.623	34.858	45.973	22.4	1.9	90	
521	4639	2.043	1.617	34.856	45.972	23.5	1.7	65	
522	4669	2.034	1.604	34.857	45.975	26.1	1.4	45	
523	4689	2.035	1.603	34.852	45.972	28.0	2.3	30	
524	4705	2.033	1.599	34.854	45.974	36.5	0.7	20	

STATION: 36 LEG: IV POSITION: 15° 0' N 53° 56' W DATE: 11 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
615	1	27.81(I)	27.81	35.48	22.78	5.0	0.3	201(I)				
616	10	27.81(I)	27.81	35.48	22.79	5.3	0.2	201(I)	2.8(I)	0.04(I)	0.1(I)	

STATION: 36 LEG: IV POSITION: 15° 0' N 53° 56' W DATE: 11 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
617	20	27.79(I)	27.79	35.52	22.81	5.0	0.2	201(I)	2.7(I)	0.03(I)	0.1(I)	
618	30	27.80(I)	27.79	35.64	22.83	6.0	0.3	204(I)	2.4(I)	0.03(I)	0.1(I)	
619	40	27.68(I)	27.67	36.22	22.95	8.7	0.3	208(I)	2.1(I)	0.04(I)	0.1(I)	DATA SUSPECT
620	60	26.61(I)	26.60	36.75	23.81	8.0	0.6	213(I)	1.5(I)	0.04(I)	0.1(I)	
621	80	25.25(I)	25.23	37.02	24.78	7.7	0.2	217(I)	0.9(I)	0.05(I)	0.1(I)	
622	100	24.34(I)	24.32	37.14	25.19	8.7	0.3	210(I)	0.9(I)	0.06(I)	0.5(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	5320	1.915	1.404	34.828	45.989	18.1	0.6	130	
118	5351	1.910	1.395	34.825	45.988	18.1	0.8	100	
119	5370	1.907	1.390	34.827	45.991	17.8	0.7	80	
120	5391	1.897	1.378	34.825	45.992	27.1	1.9	60	
121	5406	1.896	1.374	34.828	45.994	36.3	2.1	45	
122	5421	1.897	1.373	34.825	45.992	35.7	1.9	30	
123	5433	1.899	1.374	34.825	45.992	40.3	1.2	20	
124	5440	1.900	1.374	34.828	45.994	45.8	3.7	10	

STATION: 37 LEG: IV POSITION: 12° 1' N 50° 59' W DATE: 13 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4778	1.908	1.469	34.839	45.986	18.3	1.0	298	
116	4854	1.776	1.332	34.820	45.996	21.4	0.6	223	
117	4919	1.706	1.257	34.813	46.004	38.2	1.1	158	
118	4957	1.674	1.221	34.809	46.007	37.6	1.6	118	
119	4988	1.653	1.197	34.804	46.008	31.8	1.0	88	
120	5017	1.651	1.191	34.804	46.009	29.8	2.0	58	
121	5032	1.645	1.183	34.804D	46.010	28.4	1.7	43	
122	5048	1.632	1.169	34.801	46.010	27.9	1.6	28	
123	5057	1.629	1.165	34.801	46.011	29.8	1.0	18	
124	5066	1.632	1.167	34.804	46.013	33.3	2.8	8	

STATION: 38 LEG: IV POSITION: 9° 45' N 47° 10' W DATE: 15 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
118	4677	1.891	1.466	34.838	45.986	16.9	0.6	170	
119	4745	1.794	1.364	34.825	45.994	18.1	0.8	100	
120	4766	1.794	1.361	34.825	45.994	18.3	0.6	80	
121	4785	1.788	1.353	34.826	45.997	22.8	1.6	60	
122	4804	1.784	1.347	34.823	45.996	32.0	1.8	40	
123	4818	1.782	1.343	34.823	45.996	37.6	2.0	20	
124	4828	1.759	1.319	34.823	46.000	47.6	1.4	8	

STATION: 39 LEG: IV POSITION: 7° 57' N 43° 51' W DATE: 17 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
625	3	28.66	28.66	35.47	22.62	4.7	0.3	194(I)	1.2(I)	0.00(I)	0.1(I)	
627	20	28.21	28.21	35.52	22.78	5.4	0.2	202(I)	1.1(I)	0.00(I)	0.0(I)	
628	30	27.79	27.79	35.62	23.03	6.6	0.3	207(I)	1.1(I)	0.00(I)	0.0(I)	
629	40	25.58	25.57	36.18	23.95	7.6	0.3	200(I)	1.5(I)	0.07(I)	1.1(I)	
630	60	21.02	21.00	36.18	25.41	7.5	0.6	168(I)	2.9(I)	0.34(I)	5.2(I)	
631	80	17.34	17.32	35.88	26.24	7.4	0.2	144(I)	5.0(I)	0.68(I)	10.6(I)	
632	100	15.36	15.34	35.59	26.49	8.5	0.3	127(I)	7.0(I)	0.99(I)	15.8(I)	

D = DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
(I) = INTERPOLATED DATA

STATION: 39 LEG: IV POSITION: 7° 57′ N 43° 51′ W DATE: 17 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
315	4498	1.693	1.297	34.820	46.002	19.0	0.8	301	DATA SUSPECT
317	4636	1.585	1.176	34.801	46.009	22.6	0.8	162	
318	4676	1.578	1.164	34.805	46.014	23.5	1.0	123	
319	4705	1.579	1.162	34.804	46.014	21.8	0.7	94	
320	4735	1.578	1.157	34.803	46.014	30.4	2.1	63	
321	4750	1.578	1.155	34.804	46.015	30.1	1.8	48	
322	4767	1.580	1.155	34.804D	46.015	24.2	1.4	32	
323	4778	1.580	1.154	34.803	46.014	26.6	0.9	22	
324	4789	1.580	1.152	34.803	46.015	38.1	3.1	9	

STATION: 40 LEG: IV POSITION: 3° 56′ N 38° 31′ W DATE: 19 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
933	5	27.58	27.58	36.01	23.30	6.1	0.4	190(I)	1.2(I)	0.07(I)	0.0(I)	
925	25	27.57	27.56	36.02	23.32	6.1	0.3	196(I)	1.1(I)	0.07(I)	0.0(I)	
926	50	27.52	27.51	36.01	23.35	5.7	0.3	199(I)	1.1(I)	0.07(I)	0.0(I)	DATA SUSPECT
927	75	27.52	27.50	36.03	23.37	6.5	0.3	199(I)	1.1(I)	0.06(I)	0.0(I)	
928	95	27.15	27.13	36.09	23.53	7.4	0.3	190(I)	1.3(I)	0.12(I)	1.0(I)	
929	115	25.39	25.36	36.17	24.20	8.2	0.6	177(I)	2.0(I)	0.24(I)	3.0(I)	
930	135	20.25	20.22	36.30	25.44	7.6	0.3	163(I)	2.9(I)	0.41(I)	5.7(I)	
931	150	15.75	15.72	35.75	26.09	8.5	0.5	161(I)	4.4(I)	0.60(I)	8.6(I)	
934	175	11.71	11.69	35.12	26.67	7.8	0.4	159(I)	6.8(I)	0.90(I)	13.5(I)	
932	200	11.04	11.01	35.05	26.85	8.6	0.8	158(I)	9.3(I)	1.20(I)	18.2(I)	

STATION: 41 LEG: IV POSITION: 2° 0′ N 37° 21′ W DATE: 21 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
225	5	27.69	27.69	36.05		6.2	0.4					CASTS 1 & 2
226	25	27.69	27.68	36.05	23.34	6.4	0.2					DONE TOGETHER
227	50	27.66	27.64	36.05	23.37	6.2	0.2					
228	100	27.40	27.38	36.10	24.45	7.6	0.3					
229	120	24.20	24.18	36.17	25.30	7.7	0.6					
230	135	14.62	14.60	35.47	25.85	8.5	0.3					
231	150	11.10	13.76	35.37(I)	26.27	9.3	0.5					
232	225	11.94	11.91	35.14	26.76	9.1	0.4					

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
115	75	27.63	27.61	36.09	23.39	7.4	0.3					
116	188	12.09	12.07	35.16	26.74	8.7	0.4					

STATION: 42 LEG IV POSITION: 0° 58′ N 37° 4′ W DATE: 21 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
632	3	27.30	27.30	36.06	23.37	6.0	0.4	197(I)				
631	10	27.28	27.28	35.99	23.37	6.0	0.2	197(I)	1.2(I)	0.07(I)	0.0(I)	
630	20	27.30	27.29	35.97	23.39	6.3	0.3	197(I)	1.2(I)	0.07(I)	0.0(I)	
629	30	27.27	27.26	35.97	23.40	5.8	0.3	197(I)	1.2(I)	0.07(I)	0.0(I)	
628	40	27.22	27.21	35.98	23.42	6.0	0.5	198(I)	1.2(I)	0.07(I)	0.0(I)	
627	60	27.21	27.20	35.98	23.42	6.3	0.4	198(I)	1.2(I)	0.07(I)	0.0(I)	
626	90	27.23	27.20	35.98	23.68	6.4	0.3	192(I)	1.3(I)	0.10(I)	0.2(I)	
625	120	20.88	20.86	35.98	25.15	9.0	0.3	168(I)	3.3(I)	0.44(I)	4.9(I)	

STATION: 42 LEG IV POSITION: 0° 58′ N 37° 4′ W DATE: 21 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
317	4380	1.033	0.675	34.752	46.059	20.1	0.7	158	
318	4419	1.033	0.670	34.749	46.057	22.5	1.0	118	
319	4449	1.026	0.660	34.745	46.056	22.1	0.8	88	DATA SUSPECT
321	4494	1.026	0.655	34.750	46.061	38.1	2.1	43	
322	4507	1.024	0.651	34.747	46.059	36.2	1.9	28	
323	4519	1.026	0.652	34.745	46.057	37.7	1.1	18	DATA SUSPECT
324	4527	1.024	0.649	34.745	46.058	40.9	3.4	8	

STATION: 46 LEG: IV POSITION: 0° 59′ S 34° 2′ W DATE: 23 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
625	5	27.01	27.01	36.05	23.66	6.6	0.4					
626	25	27.01	27.00	36.05	23.66	5.9	0.2	203(I)	1.3(I)	0.07(I)	0.0(I)	
627	50	26.86	26.85	36.05	23.66	6.2	0.2	202(I)	1.3(I)	0.08(I)	0.0(I)	
628	75	26.52	26.50	36.10	23.91	7.1	0.4	201(I)	1.4(I)	0.09(I)	0.0(I)	
629	100	23.76	23.74	36.63	25.05	7.9	0.3	185(I)	1.9(I)	0.27(I)	2.1(I)	
630	120	15.81	15.79	35.72	25.80	7.9	0.6	168(I)	4.0(I)	0.61(I)	7.7(I)	
631	150	13.03	13.01	35.30	26.62	8.2	0.3	140(I)	7.7(I)	1.18(I)	17.6(I)	
632	200	12.32	12.29	35.20	26.72	9.1	0.5	115(I)	9.9(I)	1.47(I)	22.9(I)	
615	250	11.62	11.59	35.12	26.79	9.5	0.4	105(I)	11.1(I)	1.59(I)	25.0(I)	
614	300	10.54	10.50	34.98	26.89	8.3	0.3	104(I)	12.7(I)	1.70(I)	26.8(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
317	4320	1.100	0.746	34.754	46.048	20.9	0.7	125	
318	4346	1.067	0.712	34.754	46.054	20.4	0.9	100	
319	4367	1.017	0.661	34.749	46.059	21.9	0.8	80	
320	4388	0.922	0.567	34.736	46.065	28.8	2.0	60	
321	4404	0.913	0.556	34.737	46.067	33.4	1.9	45	
322	4419	0.912	0.553	34.735	46.066	32.4	1.7	30	
323	4429	0.914	0.554	34.734	46.065	30.1	0.9	20	
324	4437	0.914	0.553	34.736D	46.067	34.5	2.9	8	

STATION: 48 LEG: IV POSITION: 4° 0′ S 29° 0′ W DATE: 25 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN μM/KG	SiO_3 μM/KG	PO_4 μM/KG	NO_3 μM/KG	COMMENTS
814	5	26.28	26.22	36.08(I)	23.81	6.1	0.5					
815	25	26.09	26.07	36.08(I)	23.86	6.8	0.2	207(I)	1.1(I)	0.15(I)	0.0(I)	
825	50	26.07	26.06	36.09	23.87	6.8	0.2	210(I)	1.1(I)	0.14(I)	0.0(I)	
826	75	25.97	25.96	36.07	24.07	6.6	0.3	203(I)	1.3(I)	0.18(I)	0.1(I)	
827	100	23.66	23.64	36.41	25.59	6.5	0.3	163(I)	2.8(I)	0.59(I)	6.9(I)	
828	125	17.16	17.13	35.90	26.24	8.5	0.7	123(I)	5.3(I)	1.07(I)	15.5(I)	
829	150	14.40	14.38	35.68	26.55	7.9	0.2	134(I)	7.1(I)	1.18(I)	17.6(I)	
830	175	12.99	12.96	35.27	26.73	8.1	0.5	127(I)	9.1(I)	1.39(I)	21.1(I)	
831	200	11.66	11.64	35.09	26.83	8.5	0.4	116(I)	10.6(I)	1.58(I)	24.5(I)	
832	250	10.52	10.49	34.94	26.90	8.4	0.3	116(I)	12.3(I)	1.71(I)	26.9(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
1003	288	9.60	9.566	34.850	44.240	10.2	0.4		
1004	4812	0.717	0.319	34.710D	46.087	20.4	0.9	247	
1005	4862	0.701	0.298	34.707D	46.088	23.9	0.7	197	
1008	4960	0.665	0.251	34.703D	46.093	23.2	1.0	97	
1009	4960	0.665	0.251	34.703D	46.093	22.3	0.7	97	
1012	4995	0.641	0.224	34.700D	46.095	25.9	1.8	57	
1017	5007	0.642	0.223	34.699D	46.094	26.6	1.5	42	
1020	5016	0.639	0.219	34.699D	46.095	37.0	2.0	27	
1021	5026	0.635	0.214	34.698D	46.095	48.6	2.1	17	
1024	5030	0.633	0.212	34.699D	46.096	67.4	8.8	9	

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
(I) = INTERPOLATED DATA

STATION: 49 LEG: IV POSITION: 7° 56′ S 28° 12′ W DATE: 29 OCT 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
415	5	26.10(I)	26.10	36.28	24.00	5.7	0.5	207(I)	1.2(I)	0.11(I)	0.1(I)	
414	25	26.08(I)	26.07	36.28	24.01	6.1	0.3	207(I)	1.2(I)	0.10(I)	0.0(I)	
425	50	26.06(I)	26.05	36.28	24.01	5.7	0.3	207(I)	1.2(I)	0.09(I)	0.0(I)	
426	75	25.81(I)	25.79	36.31	24.12	6.0	0.4	208(I)	1.2(I)	0.10(I)	0.0(I)	
427	100	24.49(I)	24.47	36.62	24.70	6.4	0.3	205(I)	1.3(I)	0.15(I)	0.3(I)	
428	125	21.39(I)	21.37	36.44	25.48	6.8	0.6	185(I)	2.0(I)	0.38(I)	2.2(I)	
429	150	18.28(I)	18.25	36.02	26.02	6.7	0.5	152(I)	3.7(I)	0.77(I)	9.3(I)	
430	175	15.47(I)	15.44	36.65	26.38	7.3	0.3	122(I)	6.0(I)	1.12(I)	16.9(I)	
431	200	13.39(I)	13.36	35.34	26.65	7.9	0.4	114(I)	7.7(I)	1.30(I)	20.0(I)	
432	250	11.43(I)	11.40	35.06	26.84	8.0	0.4	101(I)	10.6(I)	1.57(I)	24.7(I)	

STATION: 50 LEG: V POSITION: 8° 26′ S 34° 11′ W DATE: 5 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
214	3	27.12	27.12	36.35		5.2	0.4					
215	10	27.13	27.13	36.35	23.78	5.5	0.5	198(I)	1.2(I)	0.13(I)	0.2(I)	
225	20	27.13	27.13	36.34	23.87	5.6	0.3	201(I)	1.1(I)	0.13(I)	0.2(I)	
226	30	27.14	27.13	36.35	23.97	6.0	0.3	204(I)	1.1(I)	0.13(I)	0.2(I)	
227	40	27.15	27.14	36.35	24.08	5.0	0.3	206(I)	1.1(I)	0.13(I)	0.2(I)	
228	50	27.11	27.10	36.35	24.20	5.1	0.4	208(I)	1.1(I)	0.13(I)	0.1(I)	
229	75	25.97	25.95	36.89	24.54	7.5	0.2	211(I)	1.0(I)	0.14(I)	0.1(I)	
230	100	24.52	24.50	37.05	24.94	8.1	0.4	211(I)	1.0(I)	0.18(I)	0.6(I)	
231	150	20.32	20.29	36.51	25.75	7.6	0.5	204(I)	1.7(I)	0.36(I)	3.3(I)	
232	200	15.40	15.37	35.67	26.53	7.2	0.4	191(I)	3.0(I)	0.62(I)	7.3(I)	

STATION: 52 LEG: V POSITION: 8° 54′ S 33° 17′ W DATE: 5 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
215	3	27.04	27.04	36.23		6.3	0.7					
225	18	26.89	26.89	36.23	23.71	6.4	0.4	203(I)	1.2(I)	0.14(I)	0.1(I)	
226	33	26.90	26.89	36.23	23.72	6.4	0.3	205(I)	1.1(I)	0.15(I)	0.1(I)	
228	48	26.89	26.88	36.23	23.72	7.2	0.4	206(I)	1.1(I)	0.16(I)	0.1(I)	
229	63	26.88	26.86	36.23	23.87	6.0	0.5	208(I)	1.1(I)	0.17(I)	0.1(I)	
230	85	25.38	25.36	36.61	24.47	7.0	0.4	210(I)	1.0(I)	0.19(I)	0.1(I)	
231	95	23.96	23.94	36.79	24.80	7.8	0.3	211(I)	1.0(I)	0.20(I)	0.1(I)	
232	120	22.04	22.01	36.64	25.45	8.0	0.9	206(I)	1.5(I)	0.30(I)	1.5(I)	

STATION: 53 LEG: V POSITION: 11° 59′ S 27° 59′ W DATE: 7 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
114	3	25.92	25.92	36.60	24.26	5.5	0.4	203(I)				
115	5	25.92	25.92	36.59	24.27	5.5	0.5	203(I)				DATA SUSPECT
125	10	25.92	25.92	36.59	24.30	5.6	0.3	203(I)	1.3(I)	0.11(I)	0.1(I)	DATA SUSPECT
126	15	25.92	25.92	36.59	24.33	5.4	0.2	204(I)	1.3(I)	0.11(I)	0.1(I)	
127	20	25.92	25.92	36.59	24.36	5.4	0.3	204(I)	1.2(I)	0.11(I)	0.1(I)	
128	25	25.92	25.91	36.59	24.39	4.8	0.4	205(I)	1.2(I)	0.11(I)	0.0(I)	DATA SUSPECT
129	30	25.92	25.91	36.59	24.43	5.4	0.2	206(I)	1.2(I)	0.11(I)	0.0(I)	
130	50	25.46	25.45	36.87	24.60	7.8	0.4	210(I)	1.1(I)	0.11(I)	0.0(I)	
131	70	24.98	24.96	37.00	24.79	8.4	0.4	214(I)	1.0(I)	0.12(I)	0.0(I)	
132	100	23.86	23.84	36.90	25.15	7.5	0.3	214(I)	1.0(I)	0.16(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
223	5294	0.652	0.197	34.698	46.098	24.8	2.5	250	
224	5532	0.581	0.098	34.695	46.112	84.0	6.0	6	

STATION: 53 LEG: V POSITION: 11° 59′ S 27° 59′ W DATE: 7 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
716	5294	0.652	0.197	34.697	46.097	23.7	0.4	238	
717	5386	0.613	0.148	34.696	46.105	20.8	1.1	147	
718	5438	0.602	0.130	34.695	46.107	22.5	1.0	94	
719	5467	0.597	0.122	34.692	46.106	23.5	0.5	65	
720	5488	0.591	0.113	34.691	46.107	23.6	1.0	45	
721	5494	0.590	0.112	34.692D	46.108	20.8	2.1	38	
722	5506	0.584	0.104	34.690D	46.107	22.8	1.2	26	DATA SUSPECT
723	5517	0.580	0.099	34.691	46.109	22.5	1.0	16	
724	5526	0.577	0.095	34.695	46.113	46.5	3.6	6	

STATION: 54 LEG: V POSITION: 15° 2′ S 29° 32′ W DATE: 8 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1219	1	26.29(I)	26.29	36.83(I)	24.34	5.2	0.4	205(I)				LANGMUIR CELL
1208	1	26.29(I)	26.29	36.83(I)	24.34	5.9	0.6	205(I)				EXPERIMENT
1217	5	26.07(I)	26.07	36.84(I)	24.34	6.0	0.4	205(I)				
1218	14	26.04(I)	26.04	36.82(I)	24.38	6.2	0.4	205(I)	1.2(I)	0.10(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
914	5	26.07	26.07	36.84	24.34	5.5	0.6	205(I)				
915	13	26.07	26.07	36.83	24.37	6.3	0.4	205(I)	1.2(I)	0.10(I)	0.1(I)	
927	21	25.91	25.90	36.82	24.43	6.5	0.4	206(I)	1.1(I)	0.10(I)	0.1(I)	
928	29	25.79	25.78	36.85	24.49	7.4	0.4	207(I)	1.1(I)	0.11(I)	0.1(I)	
929	37	25.74	25.73	36.88	24.55	6.1	0.5	208(I)	1.1(I)	0.11(I)	0.1(I)	
930	45	25.64	25.63	36.96	24.63	7.5	0.5	209(I)	1.1(I)	0.11(I)	0.1(I)	
931	53	25.11	25.10	36.98	24.70	4.8	0.2	210(I)	1.1(I)	0.12(I)	0.1(I)	
932	70	24.92	24.90	37.05	24.87	7.0	0.8	212(I)	1.1(I)	0.13(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
815	4874	0.624	0.222	34.711	46.104	25.8	1.8	210	
816	4945	0.534	0.127	34.693	46.106	46.6	4.0	150	
817	4985	0.502	0.091	34.695	46.113	32.8	1.5	110	
818	5014	0.473	0.060	34.691	46.115	40.7	2.4	80	
819	5034	0.471	0.055	34.689	46.115	39.5	0.9	60	
820	5049	0.473	0.056	34.690	46.115	41.5	5.7	45	
821	5059	0.473	0.054	34.691	46.116	41.7	1.0	35	
822	5068	0.470	0.050	34.690	46.116	40.4	1.9	25	
823	5080	0.467	0.046	34.689	46.116	46.0	1.6	13	
824	5083	0.465	0.044	34.691	46.118	40.3	1.1	10	

STATION: 55 LEG: V POSITION: 18° 0′ S 31° 0′ W DATE: 11 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
425	3	25.83	25.83	37.27	24.85	5.6	0.6	206(I)	1.0(I)	0.14(I)	0.1(I)	
426	7	25.83	25.83	37.27	24.88	5.2	0.5	206(I)	1.0(I)	0.14(I)	0.1(I)	
427	11	25.82	25.82	37.27	24.90	5.2	0.4	207(I)	1.0(I)	0.15(I)	0.1(I)	
428	15	25.77	25.77	37.27	24.92	4.9	0.3	207(I)	1.0(I)	0.15(I)	0.1(I)	
429	19	25.63	25.63	37.27	24.94	4.9	0.3	208(I)	1.0(I)	0.15(I)	0.1(I)	
430	30	25.42	25.41	37.24	25.01	6.9	0.3	210(I)	1.0(I)	0.16(I)	0.1(I)	
431	40	25.16	25.15	37.22	25.06	7.7	0.4	211(I)	1.0(I)	0.16(I)	0.1(I)	
432	50	24.82	24.81	37.18	25.12	7.7	0.8	213(I)	1.0(I)	0.16(I)	0.1(I)	

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

(I) = INTERPOLATED DATA

STATION: 55 LEG: V POSITION: 18° 0' S 31° 0' W DATE: 11 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
123	4495	0.675	0.316	34.712	46.089	23.9	1.5	207	
124	4686	0.382	0.011	34.683D	46.117	50.5	2.3	8	DATA SUSPECT

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
716	4499	0.723	0.362	34.714	46.080	21.2	0.6	219	
717	4565	0.512	0.151	34.699	46.107	25.2	2.1	154	
718	4598	0.421	0.059	34.684	46.110	23.6	3.0	121	
719	4623	0.412	0.048	34.680	46.109	24.3	1.1	96	
720	4647	0.406	0.039	34.683	46.113	23.4	0.7	65	
721	4672	0.380	0.011	34.683	46.117	46.5	1.5	47	
722	4691	0.382	0.011	34.681	46.116	48.0	1.1	28	
723	4702	0.382	0.010	34.682	46.117	60.9	3.6	17	
724	4704	0.383	0.010	34.684	46.118	47.2	2.2	15	

STATION: 56 LEG: V POSITION 21° 0' S 33° 0' W DATE 12 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
715	3514	2.144	1.849	34.870	45.941	15.2	0.4	809	
716	3612	1.933	1.633	34.845	45.961	16.9	1.4	710	
717	3681	1.792	1.489	34.831	45.976	18.5	2.3	642	
718	3782	1.567	1.259	34.805	45.997	18.9	0.8	542	
719	3828	1.486	1.175	34.794	46.004	18.6	1.9	495	
720	3923	1.310	0.994	34.778	46.023	17.9	0.8	400	
721	4003	1.165	0.845	34.764	46.038	18.8	0.4	320	
722	4086	1.015	0.691	34.745	46.051	21.5	1.0	237	
723	4189	0.907	0.575	34.739	46.066	21.0	1.6	134	
724	4303	0.739	0.400	34.720	46.081	54.8	3.1	20	
714	4316	0.740	0.399	34.720	46.081	64.7	3.4	7	

STATION: 57 LEG: V POSITION: 23° 59' S 35° 0' W DATE: 15 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
325	3	23.56	23.56	36.68	25.08	6.3	0.4	215(I)				
326	10	23.56	23.56	36.68	25.08	5.0	0.2	215(I)				
327	17	23.58	23.58	36.68	25.10	5.9	0.5	215(I)	1.1(I)	0.04(I)	0.1(I)	
328	25	23.59	23.58	36.70	25.14	5.0	0.7	215(I)	1.1(I)	0.04(I)	0.1(I)	
329	32	23.59	23.58	36.75	25.19	5.6	1.0	215(I)	1.1(I)	0.04(I)	0.1(I)	
330	40	23.52	23.51	36.71	25.26	5.3	0.3	216(I)	1.1(I)	0.04(I)	0.1(I)	
331	55	22.49	22.48	36.80	25.39	8.0	0.4	218(I)	1.1(I)	0.04(I)	0.1(I)	
332	80	21.62	21.60	36.64	25.58	8.1	0.9	220(I)	1.1(I)	0.04(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
815	3532	2.249	1.949	34.874	45.925	15.8	1.6	690	
816	3675	1.856	1.551	34.831	45.965	17.4	1.3	540	
817	3827	1.420	1.112	34.787	46.010	20.8	1.1	390	
818	3981	1.073	0.758	34.746	46.040	21.1	1.1	240	
819	4133	0.532	0.219	34.688	46.087	20.2	0.9	90	
820	4184	0.343	0.030	34.686	46.116	42.9	0.9	45	
821	4198	0.249	-0.062	34.675	46.123	80.0	4.2	35	
822	4211	0.249	-0.063	34.674	46.123	80.1	3.3	25	
824	4221	0.250	-0.063	34.677	46.125	70.8	1.2	15	
823	4222	0.250	-0.063	34.680	46.127	81.9	2.2	15	

STATION: 57 LEG: V POSITION: 23° 59' S 35° 0' W DATE: 15 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
223	4053	0.808	0.494	34.729	46.072	22.7	3.6	183	
224	4226	0.250	-0.064	34.681	46.128	99.5	3.1	10	

STATION: 58 LEG: V POSITION: 27° 0' S 37° 1' W DATE: 16 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1735	1	22.00 (I)	22.00	36.42(I)	25.35	4.6	0.3	220(I)				LANGMUIR CELL
1719	1	22.00 (I)	22.00	36.42(I)	25.35	5.1	0.5	220(I)				EXPERIMENT
1717	14	21.90 (I)	21.90	36.42(I)	25.37	6.0	0.3	220(I)	0.6(I)	0.03(I)	0.1(I)	
1736	14	21.90 (I)	21.90	36.42(I)	25.37	6.1	0.8	220(I)	0.6(I)	0.03(I)	0.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
825	3	22.23	22.23	36.45	25.35	4.7	0.2	220(I)				
826	8	22.23	22.23	36.45	25.35	4.6	0.4	220(I)				
827	13	22.22	22.22	36.46	25.36	5.6	0.4	220(I)	0.6(I)	0.03(I)	0.1(I)	
828	18	22.22	22.22	36.47	25.41	4.5	0.3	220(I)	0.6(I)	0.03(I)	0.1(I)	DATA SUSPECT
829	22	22.22	22.22	36.47	25.46	5.0	0.9	221(I)	0.6(I)	0.03(I)	0.1(I)	
830	35	22.28	22.27	36.71	25.63	6.8	0.2	222(I)	0.7(I)	0.03(I)	0.1(I)	
831	56	21.40	21.39	36.63	25.76	8.1	0.3	224(I)	0.8(I)	0.04(I)	0.1(I)	
832	100	18.65	18.63	36.13	26.07	8.5	0.9	217(I)	1.1(I)	0.19(I)	1.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4496	0.223	-0.120	34.672D	46.130	61.8	3.6	90	
116	4507	0.217	-0.127	34.670	46.130	55.2	2.4	80	
117	4517	0.211	-0.134	34.670	46.131	48.1	3.8	70	
118	4529	0.212	-0.134	34.671	46.132	48.3	5.6	60	
119	4539	0.212	-0.136	34.669	46.131	46.2	2.0	50	
120	4550	0.213	-0.136	34.668	46.130	49.6	1.0	40	
121	4563	0.214	-0.136	34.672	46.133	54.5	2.4	30	
122	4573	0.215	-0.136	34.670	46.131	53.1	2.3	20	
124	4582	0.217	-0.136	34.672	46.133	56.6	3.1	10	
123	4583	0.218	-0.135	34.670	46.131	46.4	3.3	10	

STATION: 59 LEG: V POSITION: 30° 12' S 39° 18' W DATE: 20 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
232	3	20.78	20.78	36.28	25.46	6.0	0.7	226(I)				
231	10	20.78	20.78	36.28	25.46	6.2	0.5	226(I)	0.6(I)	0.05(I)	0.0(I)	
230	20	20.78	20.78	36.28	25.48	6.4	0.4	226(I)	0.6(I)	0.05(I)	0.0(I)	
229	30	20.79	20.78	36.28	25.49	5.4	0.4	227(I)	0.6(I)	0.06(I)	0.0(I)	
228	40	20.76	20.75	36.28	25.50	6.3	1.1	228(I)	0.6(I)	0.06(I)	0.0(I)	
227	50	20.17	20.16	36.28	25.59	6.0	0.3	229(I)	0.6(I)	0.06(I)	0.0(I)	
226	60	19.59	19.58	36.27	25.73	7.0	0.4	230(I)	0.6(I)	0.07(I)	0.0(I)	
225	75	19.33	19.32	36.21	25.89	8.6	0.4	233(I)	0.6(I)	0.08(I)	0.0(I)	
215	90	18.56	18.54	36.10	25.99	6.9	0.6	235(I)	0.7(I)	0.10(I)	0.0(I)	
214	120	17.21	17.19	35.86	26.13	7.2	0.6	235(I)	0.8(I)	0.15(I)	0.3(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
715	4345	0.225	-0.101	34.679	46.133	32.4	1.9	477	
716	4395	0.201	-0.130	34.673	46.133	39.3	1.8	427	
717	4446	0.179	-0.157	34.672	46.136	58.7	4.6	377	
718	4500	0.178	-0.164	34.674	46.139	63.0	7.3	327	
719	4550	0.179	-0.169	34.671	46.138	65.2	10.3	277	
720	4600	0.181	-0.172	34.673	46.140	65.7	1.3	227	

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)

(I) = INTERPOLATED DATA

STATION: 59 LEG: V POSITION: 30° 12' S 39° 18' W DATE: 20 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
721	4648	0.182	-0.177	34.675	46.142	54.7	3.0	177	
722	4702	0.191	-0.175	34.674	46.141	70.1	3.0	127	DATA SUSPECT
723	4751	0.197	-0.174	34.675	46.142	66.1	2.0	77	
724	4801	0.199	-0.178	34.676	46.143	65.2	3.4	27	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
122	4511	0.175	-0.168	34.670	46.137	61.1	2.6	316	
124	4806	0.198	-0.180	34.673	46.141	62.8	1.1	21	DATA SUSPECT

STATION: 60 LEG: V POSITION: 32° 58' S 42° 30' W DATE: 22 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	3	18.50	18.50	35.99	25.93	5.5	0.6	238(I)	1.0(I)	0.09(I)	0.0(I)	
226	13	18.41	18.41	35.99	25.94	6.3	0.8	238(I)	0.9(I)	0.09(I)	0.0(I)	
227	23	18.40	18.40	35.99	25.95	5.3	0.3	239(I)	0.9(I)	0.09(I)	0.0(I)	
228	33	18.39	18.38	35.99	26.00	5.4	0.3	241(I)	0.9(I)	0.09(I)	0.0(I)	
229	43	18.36	18.35	35.99	26.05	6.0	0.4	242(I)	0.9(I)	0.10(I)	0.0(I)	
230	47	18.15	18.14	35.99	26.07	5.3	0.5	242(I)	0.9(I)	0.10(I)	0.0(I)	
231	60	17.54	17.53	36.01	26.14	6.9	0.6	243(I)	0.9(I)	0.11(I)	0.0(I)	
232	75	17.22	17.21	35.97	26.21	8.0	0.3	241(I)	0.9(I)	0.13(I)	0.3(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
816	4200	0.121	-0.186	34.669	46.139	21.0	2.1	217	
817	4241	0.109	-0.202	34.667	46.140	22.3	1.0	177	
818	4270	0.101	-0.213	34.669D	46.143	21.0	1.7	147	
819	4299	0.098	-0.219	34.669	46.144	27.1	3.2	117	
820	4326	0.095	-0.225	34.666	46.143	25.6	1.2	92	
821	4349	0.098	-0.224	34.669	46.145	26.8	1.9	67	
822	4369	0.099	-0.226	34.669	46.145	32.2	1.4	47	
823	4391	0.102	-0.225	34.666	46.143	31.6	0.6	27	

STATION: 61 LEG: V POSITION: 36° 0' S 45° 0' W DATE 24 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	3	17.50	17.50	35.77	26.07	5.6	0.4	241(I)				
226	10	17.40	17.40	35.77	26.09	4.8	0.3	240(I)	1.2(I)	0.13(I)	0.0(I)	
227	18	17.41	17.41	35.81	26.10	6.3	1.1	240(I)	1.2(I)	0.12(I)	0.0(I)	
228	26	17.45	17.45	35.86	26.12	5.9	0.3	240(I)	1.2(I)	0.12(I)	0.0(I)	
229	34	17.47	17.46	35.88	26.13	6.2	0.5	240(I)	1.2(I)	0.12(I)	0.0(I)	
230	42	17.47	17.46	35.93	26.15	5.8	0.3	240(I)	1.2(I)	0.12(I)	0.0(I)	
231	50	17.42	17.41	35.93	26.16	6.3	0.6	240(I)	1.2(I)	0.12(I)	0.0(I)	
232	90	16.84	16.82	35.80	26.37	7.9	0.5	225(I)	1.5(I)	0.32(I)	3.1(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
815	3499	1.479	1.204	34.760	45.972	19.4	1.2	1438	
816	4705	0.154	-0.211	34.667	46.141	20.0	1.5	231	
817	4754	0.152	-0.218	34.665	46.141	21.5	1.2	182	
818	4805	0.149	-0.227	34.667	46.144	22.2	1.2	131	
819	4829	0.153	-0.226	34.665	46.142	22.3	3.5	110	
820	4845	0.153	-0.228	34.666	46.143	21.5	0.5	91	
821	4866	0.153	-0.230	34.667D	46.145	24.6	1.4	71	
822	4885	0.152	-0.234	34.668D	46.146	37.2	1.6	51	
823	4905	0.154	-0.234	34.668D	46.146	38.9	1.2	31	
824	4928	0.157	-0.234	34.668D	46.146	46.0	1.0	8	

(I) INTERPOLATED DATA

STATION: 61 LEG: V POSITION: 36°0' S 45° 0' W DATE: 24 NOV 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
123	4827	0.152	-0.227	34.666	46.143	21.3	2.2	118	
124	4926	0.157	-0.234	34.666D	46.144	43.9	2.0	19	

STATION: 63 LEG: VI POSITION: 37° 14' S 52° 0' W DATE: 4 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
121	3840	0.34	0.064	34.682	46.108	22.5	1.1	60	
122	3847	0.33	0.053	34.680	46.108	19.1	1.6	53	
123	3871	0.29	0.012	34.678	46.113	19.2	0.7	39	
124	3873	0.28	0.002	34.680	46.116	20.1	1.3	36	

STATION: 64 LEG: VI POSITION: 39° 5' S 48° 33' W DATE: 6 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
1117	5151	0.198	-0.222	34.668	46.144	20.2	1.2	200	
1118	5204	0.195	-0.231	34.668	46.146	19.9	1.2	147	
1119	5242	0.193	-0.238	34.667	46.146	20.8	1.0	109	
1120	5273	0.191	-0.244	34.668	46.148	30.1	5.0	78	
1121	5294	0.192	-0.245	34.667	46.147	31.3	1.1	58	
1122	5314	0.193	-0.247	34.666	46.147	35.0	4.1	38	
1123	5326	0.195	-0.246	34.667	46.147	37.6	2.8	26	
1124	5342	0.197	-0.247	34.667	46.147	32.0	3.1	9	

STATION: 66 LEG: VI POSITION: 41° 32' S 50° 57' W DATE: 8 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	1	17.50	17.50	35.72		5.4	0.4					
226	15	17.50	17.50	35.71	26.01	5.3	0.3	241(I)	0.7(I)	0.16(I)	0.0(I)	
227	30	17.50	17.49	35.72	26.02	6.6	0.7	241(I)	0.6(I)	0.15(I)	0.0(I)	
228	45	17.50	17.49	35.72	26.04	7.0	0.6	240(I)	0.6(I)	0.15(I)	0.0(I)	
229	70	17.40	17.39	35.72	26.12	7.4	0.7	235(I)	0.6(I)	0.16(I)	0.3(I)	
230	90	17.30	17.28	35.72	26.14	7.4	0.6	230(I)	0.8(I)	0.20(I)	1.0(I)	
231	100	17.30	17.28	35.73	26.17	7.6	0.4	227(I)	1.0(I)	0.24(I)	1.4(I)	
232	130	15.80	15.78	35.54	26.27	8.3	0.4	220(I)	1.6(I)	0.34(I)	3.0(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
615	5490	0.273	-0.193	34.671	46.142	40.6	1.4	302	
616	5568	0.279	-0.197	34.669	46.141	31.6	2.1	224	DATA SUSPECT
617	5632	0.282	-0.202	34.671	46.143	43.7	1.0	160	
618	5673	0.285	-0.205	34.670	46.143	37.6	2.8	120	
620	5736	0.290	-0.208	34.670	46.143	27.9	2.1	57	
621	5750	0.290	-0.210	34.670	46.144	32.3	2.6	42	
623	5777	0.290	-0.214	34.670	46.144	32.1	4.2	15	
624	5787	0.290	-0.215	34.670	46.144	39.9	5.8	6	

STATION: 67 LEG: VI POSITION: 44° 58' S 51° 3' W DATE: 9 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
717	5661	0.253	-0.234	34.665	46.144	22.5	0.8	164	DATA SUSPECT
718	5696	0.257	-0.235	34.668	46.146	25.8	1.1	129	
719	5728	0.262	-0.234	34.667	46.145	27.4	4.8	97	
720	5759	0.266	-0.235	34.668	46.146	27.3	2.7	66	
721	5774	0.269	-0.234	34.667	46.145	30.0	2.4	50	
722	5793	0.270	-0.235	34.666	46.145	30.6	2.5	32	
723	5804	0.272	-0.235	34.669	46.147	26.2	1.7	20	DATA SUSPECT
724	5816	0.273	-0.235	34.667	46.145	26.0	2.0	9	

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
(I) = INTERPOLATED DATA

STATION: 68 LEG: VI POSITION: 48° 39' S 45° 59' W DATE: 13 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1127	1	9.10	9.10	34.18	26.57	8.2	0.5					
1128	11	9.00	9.00	34.19	26.58	7.8	0.7	330(I)	0.3(I)	0.75(I)	10.6(I)	
1129	21	8.60	8.60	34.18	26.68	8.9	0.9	323(I)	1.0(I)	0.94(I)	12.7(I)	
1130	31	7.10	7.10	34.14	26.80	10.4	0.8	316(I)	1.8(I)	1.10(I)	14.6(I)	
1131	46	6.40	6.40	34.13	26.95	9.9	0.4	307(I)	3.5(I)	1.29(I)	17.1(I)	
1132	61	6.30	6.29	34.15	27.02	8.2	0.6	298(I)	5.5(I)	1.42(I)	19.2(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
715	5583	0.239	-0.238	34.666D	46.145	20.8	0.9	316	
717	5743	0.250	-0.248	34.664	46.145	23.3	1.4	163	
718	5789	0.251	-0.253	34.667	46.148	24.2	1.9	120	
719	5823	0.255	-0.254	34.666	46.148	26.7	2.7	86	
720	5855	0.259	-0.254	34.664	46.146	28.7	5.3	54	POSSIBLE REVERSAL OF 20&21
721	5871	0.261	-0.255	34.667	46.148	31.1	1.1	38	
723	5890	0.264	-0.255	34.665	46.147	37.3	3.4	16	DATA SUSPECT
724	5899	0.264	-0.256	34.666	46.148	35.6	1.3	10	DATA SUSPECT

STATION: 69 LEG: VI POSITION: 52° 31' S 46° 22' W DATE: 15 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
525	1	4.70	4.70	33.99	27.04	7.7	0.8					DATA SUSPECT
526	5	4.70	4.70	33.99	27.04	10.0	1.0					DATA SUSPECT
527	10	4.70	4.70	33.99	27.04	5.9	0.8					DATA SUSPECT
528	15	4.70	4.70	33.99	27.04	9.1	0.1	325(I)	13.2(I)	1.67(I)	23.6(I)	
529	20	4.00	4.00	33.89	27.05	9.2	0.7	327(I)	13.4(I)	1.68(I)	23.7(I)	DATA SUSPECT
530	30	2.90	2.90	33.97	27.08	11.2	0.6	329(I)	13.7(I)	1.71(I)	23.9(I)	
531	50	1.10	1.10	33.87	27.18	15.1	1.4	336(I)	16.1(I)	1.86(I)	25.4(I)	
532	80	1.50	1.50	33.96	27.25	11.5	0.5	328(I)	18.5(I)	1.96(I)	26.6(I)	DATA SUSPECT

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	3245	0.456	0.235	34.686D	46.082	29.5	1.7	184	
117	3298	0.453	0.227	34.683	46.081	30.2	1.7	131	
118	3343	0.438	0.208	34.684	46.085	34.3	3.9	86	
119	3367	0.399	0.168	34.681	46.090	29.6	2.2	62	
120	3384	0.378	0.146	34.680	46.093	28.1	2.7	45	
121	3400	0.343	0.110	34.679	46.098	28.1	0.9	29	
123	3415	0.343	0.109	34.679	46.098	31.8	5.2	14	
124	3424	0.345	0.110	34.680	46.099	29.7	1.3	5	

STATION: 74 LEG: VI POSITION: 55° 0' S 50° 4' W DATE: 17 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	1	4.80	4.80	34.03 D		9.5	1.0					
226	5	4.80	4.80	34.03	27.08	10.9	2.0	335(I)				
227	10	4.80	4.80	34.03	27.08	11.8	0.9	335(I)	13.9(I)	1.64(I)	24.4(I)	
228	20	4.60	4.60	34.04	27.10	13.8	0.7	338(I)	15.9(I)	1.69(I)	25.1(I)	DATA SUSPECT
229	30	4.50	4.50	34.05	27.12	12.3	1.4	341(I)	16.9(I)	1.72(I)	25.5(I)	
230	40	4.00	4.00	34.05	27.14	12.7	0.8	341(I)	17.2(I)	1.73(I)	25.6(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
815	3768	0.458	0.185	34.682	46.088	35.3	4.4	297	
816	3843	0.453	0.172	34.680	46.088	30.6	3.1	222	
817	3905	0.454	0.167	34.680	46.089	34.1	1.2	159	
818	3945	0.446	0.155	34.681	46.092	34.7	2.4	120	

STATION: 74 LEG: VI POSITION: 55° 0' S 50° 4' W DATE: 17 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
819	3975	0.426	0.132	34.678	46.093	54.4	4.5	89	
820	4008	0.336	0.041	34.673	46.105	18.1	1.2	57	
822	4037	0.329	0.032	34.673	46.106	17.8	1.0	27	DATA SUSPECT
823	4048	0.319	0.021	34.672	46.107	22.1	1.1	17	
824	4059	0.317	0.018	34.674	46.109	31.4	1.1	5	

STATION: 76 LEG: VII POSITION: 57° 44' S 66° 8' W DATE: 31 DEC 72

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4267	0.970	0.625	34.709	46.034	33.9	3.3	331	
117	4428	0.981	0.617	34.709	46.035	42.0	5.3	170	
118	4485	0.988	0.617	34.711	46.037	27.9	1.4	113	DATA SUSPECT
119	4521	0.992	0.617	34.709	46.036	42.8	3.2	77	
120	4556	0.996	0.616	34.709	46.036	40.1	2.3	41	
121	4579	0.999	0.617	34.711	46.037	42.1	1.8	18	
124	4591	1.000	0.616	34.711	46.037	44.1	2.6	6	
123	4595	1.000	0.616	34.710	46.036	61.6	4.6	2	BOTTOM MUD IN SAMPLE

STATION: 78 LEG: VII POSITION: 61° 3' S 62° 58' W DATE: 3 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
715	3502	0.561	0.312	34.696	46.077	31.7	1.6	315	
716	3596	0.541	0.283	34.696	46.082	39.3	1.6	221	
717	3668	0.488	0.224	34.691D	46.088	36.9	1.2	149	
718	3725	0.500	0.230	34.691	46.087	52.6	4.3	92	
719	3755	0.472	0.199	34.688	46.090	30.5	1.8	62	DATA SUSPECT
720	3783	0.467	0.192	34.689D	46.092	37.5	1.2	34	
721	3785	0.467	0.191	34.688	46.091	33.2	2.0	32	
722	3796	0.467	0.190	34.688	46.091	42.7	1.8	20	DATA SUSPECT
723	3801	0.467	0.190	34.691	46.094	45.3	1.3	15	
724	3805	0.467	0.189	34.687	46.091	48.5	2.3	11	DATA SUSPECT

STATION: 79 LEG: VII POSITION: 59° 56' S 45° 2' W DATE: 6 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
315	4092	-0.358	-0.640			16.7	1.4	771	
316	4238	-0.349	-0.646			20.8	1.3	625	
317	4370	-0.339	-0.651			17.3	0.6	482	
318	4513	-0.327	-0.655			20.6	1.2	349	
319	4617	-0.318	-0.658			21.2	2.6	243	
320	4703	-0.310	-0.660			18.8	0.8	159	
321	4761	-0.305	-0.661			19.6	1.1	100	
322	4795	-0.302	-0.662			19.0	0.9	63	
323	4818	-0.300	-0.663			19.2	1.1	43	
324	4846	-0.298	-0.664			26.1	2.0	15	

STATION: 80 LEG: VII POSITION: 57° 47' S 29° 44' W DATE: 10 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	1	-0.58	-0.58	32.95		10.6	0.6					
226	7	-0.57	-0.57	32.95	26.52	10.7	0.7	355(I)	52.4(I)	1.59(I)	24.8(I)	
227	11	-0.57	-0.57	32.95	26.52	10.0	0.9	354(I)	53.6(I)	1.60(I)	24.9(I)	
228	17	-0.57	-0.57	32.95	26.52	9.3	0.4	352(I)	55.2(I)	1.62(I)	25.2(I)	
229	23	-0.58	-0.58	32.96	26.54	9.5	0.5	350(I)	56.8(I)	1.64(I)	25.4(I)	
230	29	-0.79	-0.79	32.98	26.69	10.8	0.5	349(I)	58.3(I)	1.66(I)	25.6(I)	
231	39	-1.42	-1.42	33.70	27.03	14.3	0.6	346(I)	60.6(I)	1.69(I)	26.1(I)	
233	78	-1.55	-1.55	34.00	27.41	13.6	0.5	328(I)	67.4(I)	1.81(I)	27.8(I)	
234	98	-1.37	-1.38	34.09	27.46	15.1	1.8	313(I)	69.7(I)	1.86(I)	28.8(I)	DATA SUSPECT

D DATA EXTRACTED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
(I) = INTERPOLATED DATA

STATION: 82 LEG VII POSITION: 56° 15' S 24° 55' W DATE: 11 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1201	4	1.30	1.30	33.73	27.04	11.0	0.6	344(I)	44.7(I)	1.64(I)	24.4(I)	
1202	9	1.30	1.30	33.72	27.03	11.9	0.6	344(I)	44.2(I)	1.64(I)	24.4(I)	
1215	14	1.30	1.30	33.72	27.03	8.9	0.4	345(I)	43.7(I)	1.64(I)	24.4(I)	
1216	19	1.27	1.27	33.72	27.03	10.1	0.4	345(I)	43.3(I)	1.65(I)	24.4(I)	DATA SUSPECT
1217	24	1.21	1.21	33.72	27.04	9.1	0.5	345(I)	43.0(I)	1.65(I)	24.4(I)	
1218	32	0.99	0.99	33.72	27.05	10.1	0.9	346(I)	42.6(I)	1.66(I)	24.4(I)	
1219	46	0.86	0.86	33.75	27.08	11.2	0.5	346(I)	42.2(I)	1.70(I)	24.8(I)	DATA SUSPECT
1220	69	-0.03	-0.03	33.81	27.18	15.2	0.6	341(I)	50.2(I)	1.82(I)	26.6(I)	
1221	96	-0.77	-0.77	33.95	27.32	15.5	0.7	317(I)	57.5(I)	1.97(I)	28.6(I)	

STATION: 85 LEG: VII POSITION: 57° 30' S 17° 23' W DATE: 18 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIL µM/KG	PO4 µM/KG	NO3 µM/KG	COMMENTS
101	5	1.32	1.32	33.65	26.91	9.4	0.5					
102	10	1.32	1.32	33.64	26.92	9.5	0.5					
103	15	1.32	1.32	33.66	26.92	7.8	0.4	344(I)	22.0(I)	1.39(I)	22.7(I)	
104	20	1.32	1.32	33.66	26.92	7.3	0.4	344(I)	22.1(I)	1.40(I)	22.7(I)	
105	25	1.31	1.31	33.70	26.92	9.5	0.8	344(I)	22.3(I)	1.40(I)	22.7(I)	
106	32	1.32	1.32	33.70	26.92	8.0	0.3	344(I)	22.4(I)	1.41(I)	22.7(I)	
107	39	1.42	1.42	33.69	26.94	11.1	0.4	344(I)	22.6(I)	1.42(I)	22.7(I)	DATA SUSPECT
108	49	1.44	1.44	33.70	26.96	11.8	1.3	345(I)	22.9(I)	1.43(I)	22.8(I)	DATA SUSPECT
109	68	1.33	1.33	33.79	27.00	13.8	0.5	345(I)	23.3(I)	1.45(I)	22.8(I)	
110	97	0.06	0.05	33.90	27.20	13.4	0.8	339(I)	29.1(I)	1.56(I)	23.9(I)	

STATION: 89 LEG: VII POSITION: 60° 1' S 0° 1' E DATE: 22 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SIL µM/KG	PO4 µM/KG	NO3 µM/KG	COMMENTS
815	2	1.75	1.75	34.08	27.29	12.4	0.6	348(I)	55.5(I)	1.27(I)	22.3(I)	
816	8	1.70	1.70	34.08	27.29	11.9	0.6	349(I)	55.1(I)	1.28(I)	22.4(I)	
817	12	1.55	1.55	34.09	27.31	12.2	0.5	350(I)	54.9(I)	1.29(I)	22.4(I)	
818	18	0.82	0.82	34.09	27.36	11.8	0.6	351(I)	54.5(I)	1.29(I)	22.4(I)	
819	23	0.47	0.47	34.08	27.37	14.6	1.2	352(I)	54.2(I)	1.30(I)	22.5(I)	
820	33	0.39	0.39	34.09	27.38	15.3	0.4	348(I)	56.6(I)	1.37(I)	22.9(I)	
821	43	0.02	0.02	34.10	27.41	16.9	0.6	339(I)	62.1(I)	1.61(I)	24.3(I)	
822	48	-0.39	-0.39	34.16	27.48	18.0	0.6	329(I)	68.0(I)	1.81(I)	26.1(I)	
823	57	-1.65	-1.65	34.33	27.66	17.6	1.0	323(I)	71.4(I)	1.89(I)	27.4(I)	DATA SUSPECT
824	82	-1.82	-1.82	34.39	27.71	16.1	1.6	317(I)	73.9(I)	1.88(I)	28.8(I)	DATA SUSPECT

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
1015	5062	-0.501	-0.883	34.648	46.234	20.0	1.2	306	
1016	5137	-0.492	-0.883	34.647	46.233	19.5	1.6	231	
1017	5202	-0.486	-0.885	34.647	46.233	18.1	0.8	167	
1018	5242	-0.482	-0.886	34.646	46.233	18.9	0.5	127	
1019	5273	-0.478	-0.886	34.647	46.234	19.0	1.3	95	
1020	5301	-0.475	-0.887	34.647	46.234	23.5	1.2	67	
1021	5316	-0.473	-0.886	34.648	46.235	23.0	1.1	53	
1022	5331	-0.471	-0.886	34.647	46.234	27.4	0.9	38	DATA SUSPECT
1023	5342	-0.473	-0.890	34.647	46.234	27.2	1.0	26	
1024	5353	-0.471	-0.889	34.647	46.234	53.3	3.6	16	

STATION: 91 LEG: VII POSITION: 49° 34' S 11° 28' E DATE: 29 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
615	3	4.30	4.30	33.84	26.87	10.5	0.6	325(I)	0.5(I)	1.28(I)	20.0(I)	
616	6	4.30	4.30	33.84	26.87	9.8	0.6	325(I)	0.5(I)	1.28(I)	20.0(I)	
617	15	4.29	4.29	33.84	26.87	9.1	0.4	325(I)	0.5(I)	1.28(I)	20.0(I)	
618	21	4.27	4.27	33.84	26.88	9.3	0.5	325(I)	0.5(I)	1.29(I)	20.0(I)	

(I) INTERPOLATED DATA

STATION: 91 LEG: VII POSITION: 49° 34' S 11° 28' E DATE: 29 JAN 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
619	29	4.13	4.13	33.84	26.89	10.3	0.9	325(I)	0.5(I)	1.29(I)	20.0(I)	
620	39	4.08	4.08	33.84	26.90	10.3	0.4	325(I)	0.5(I)	1.29(I)	20.0(I)	
621	53	4.07	4.06	33.84	26.90	11.2	0.4	325(I)	0.6(I)	1.30(I)	20.0(I)	
622	73	4.05	4.04	33.84	26.90	9.9	0.4	325(I)	0.7(I)	1.32(I)	20.0(I)	
623	89	3.90	3.89	33.85	26.92	13.9	0.8	324(I)	3.7(I)	1.45(I)	20.9(I)	
624	108	2.92	2.92	33.88	27.04	13.3	1.4	323(I)	9.2(I)	1.65(I)	22.4(I)	

STATION: 102 LEG: VIII POSITION: 31° 31' S 9° 26' E DATE: 12 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	1	22.30(I)	22.29	35.79	24.73	4.9	0.4					
226	5	22.27(I)	22.27	35.79	24.73	5.3	0.3					
227	10	22.12	22.12	35.78	24.75	5.9	0.7	226(I)	2.0(I)	0.08(I)	0.1(I)	
228	20	21.71	21.71	35.74	24.82	6.1	0.3	228(I)	1.7(I)	0.08(I)	0.1(I)	
229	40	20.94	20.93	35.68	25.05	6.1	0.6	234(I)	1.3(I)	0.08(I)	0.1(I)	
230	70	18.90	18.89	35.57	25.57	7.2	0.6	245(I)	2.1(I)	0.09(I)	0.0(I)	
231	90	17.79	17.77	35.52	25.73	7.7	0.8	245(I)	2.5(I)	0.14(I)	0.6(I)	
232	110	17.34	17.32	35.52	25.82	7.5	0.6	243(I)	2.7(I)	0.20(I)	1.4(I)	DATA SUSPECT

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
515	4574	1.14 H	0.754	34.739	46.035	21.0	1.1	366	
516	4624	1.13 H	0.739	34.737	46.036	23.2	1.1	316	DATA SUSPECT
517	4676	1.12 H	0.723	34.734	46.037	19.9	2.5	265	
518	4736	1.13 H	0.725	34.736	46.038	19.8	0.7	205	
519	4812	1.12 H	0.706	34.734	46.039	19.9	0.9	129	
520	4877	1.12 H	0.698	34.734	46.041	22.0	0.5	64	
521	4891	1.13 H	0.706	34.733	46.039	25.5	2.1	50	
522	4907	1.11 H	0.685	34.734	46.043	91.9	1.4	34	
523	4919	1.114H	0.687	34.732	46.041	92.5	2.4	23	
524	4928	1.116H	0.688	34.734	46.043	95.6	11.3	13	

STATION: 103 LEG: VIII POSITION: 23° 59' S 8° 30' E DATE: 17 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
430	2	24.70	24.70	35.59	24.28	4.5	0.4					
425	4	24.60	24.60	35.58	24.28	4.1	0.5					
419	12	23.70	23.70	35.65	24.31	6.3	0.5	218(I)	1.2(I)	0.16(I)	0.1(I)	
420	22	23.40	23.40	35.66	24.47	6.3	0.6	220(I)	1.2(I)	0.14(I)	0.1(I)	
421	37	23.30	23.29	35.71	24.90	7.9	0.4	230(I)	1.4(I)	0.13(I)	0.1(I)	
422	62	17.80	17.79	35.53	25.64	8.9	0.9	248(I)	1.8(I)	0.15(I)	0.0(I)	
424	72	17.30	17.29	35.51	25.91	6.1	0.4	244(I)	2.0(I)	0.17(I)	0.0(I)	DATA SUSPECT
423	102	16.50 H	16.48	35.49	26.19	7.4	0.5	232(I)	2.5(I)	0.33(I)	1.8(I)	DATA SUSPECT

STATION: 105 LEG: VIII POSITION: 20° 0' S 2° 0' E DATE: 20 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
423	2	25.60	25.60	35.92	24.17	3.5	0.4	215(I)	0.2(I)	0.21(I)	0.1(I)	
424	7	25.50	25.50	35.92	24.19	4.4	0.3	215(I)	0.2(I)	0.20(I)	0.0(I)	
426	26	25.50	25.49	35.80	24.32	6.6	0.7	219(I)	0.3(I)	0.22(I)	0.0(I)	
427	41	24.00	23.99	35.84	24.73	6.0	0.5	232(I)	0.5(I)	0.23(I)	0.0(I)	
428	61	20.00	19.99	35.72	25.37	8.1	0.4	243(I)	0.9(I)	0.23(I)	0.0(I)	
429	81	19.10	19.08	35.74	25.77	7.8	0.7	229(I)	1.3(I)	0.35(I)	1.2(I)	
430	101	17.80 H	17.78	35.65	25.89	7.3	0.5	210(I)	1.9(I)	0.49(I)	4.3(I)	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CID)
(I) = INTERPOLATED DATA

STATION: 105 LEG: VIII POSITION: 20° 0′ S 2° 0′ E DATE: 20 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
119	5252	2.48 H	1.956	34.882	45.930	27.1	0.9	260	
120	5311	2.51 H	1.977	34.882	45.926	30.5	0.8	199	
121	5359	2.50 H	1.960	34.881	45.929	29.9	0.7	150	
122	5401	2.507H	1.961	34.882	45.929	45.5	2.1	110	DATA SUSPECT
123	5430	2.506H	1.956	34.882	45.930	44.1	2.5	80	DATA SUSPECT
124	5452	2.511H	1.958	34.881	45.929	34.7	1.2	57	
125	5466	2.52 H	1.965	34.883	45.929	36.0	3.0	44	
126	5480	2.52 H	1.963	34.881	45.928	38.7	1.7	30	
127	5491	2.52 H	1.961	34.880	45.928	34.4	4.2	19	
128	5500	2.52 H	1.960	34.882	45.930	38.4	4.8	10	MUD ON PINGER

STATION: 107 LEG: VIII POSITION: 12° 0′ S 2° 0′ E DATE: 22 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
123	1	26.60	26.60	36.75		5.1	0.7					
124	6	26.20	26.20	36.74	24.57	3.8	0.5	208(I)	1.2(I)	0.18(I)	0.0(I)	
125	14	26.20	26.20	36.74	24.59	5.3	0.5	211(I)	1.2(I)	0.18(I)	0.0(I)	
126	23	26.00	25.99	36.73	24.63	6.7	0.3	211(I)	1.2(I)	0.18(I)	0.0(I)	
127	35	25.50	25.49	36.60	24.77	7.6	0.6	216(I)	1.2(I)	0.17(I)	0.0(I)	
128	50	22.60	22.59	36.40	25.39	6.9	0.7	240(I)	1.4(I)	0.16(I)	0.0(I)	
129	80	18.50	18.49	35.66	25.99	7.0	0.7	178(I)	2.9(I)	0.64(I)	7.5(I)	
130	100	15.30	15.28	35.39	26.38	6.9	0.5	108(I)	6.0(I)	1.24(I)	18.6(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
515	5324	2.45 H	1.918	34.874	45.931	20.0	0.6	256	
517	5457	2.455H	1.904	34.875	45.934	18.4	0.7	122	
519	5498	2.470H	1.912	34.877	45.934	20.4	1.1	82	
520	5527	2.478H	1.916	34.875	45.932	26.3	1.3	54	
521	5548	2.47 H	1.905	34.876	45.935	34.0	2.9	34	
522	5563	2.480H	1.913	34.877	45.934	70.5	1.2	19	
524	5573	2.485H	1.916	34.877	45.934	93.5	1.4	10	

STATION: 109 LEG: VIII POSITION: 2° 0′ S 4° 30′ W DATE: 26 FEB 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
123	2	29.50	29.50	35.08	22.18	6.0	0.3	197(I)	0.9(I)	0.01(I)	0.0(I)	
124	6	29.50	29.50	35.08	22.19	5.4	0.6	200(I)	0.9(I)	0.01(I)	0.0(I)	
125	11	29.50	29.50	35.09	22.20	5.5	0.8	203(I)	0.9(I)	0.01(I)	0.0(I)	
126	16	29.50	29.50	35.10	22.23	5.7	0.8	203(I)	0.8(I)	0.01(I)	0.0(I)	
127	21	29.50	29.49	35.13	22.25	5.9	0.3	201(I)	0.8(I)	0.01(I)	0.0(I)	
128	71	16.40	16.39	35.62	25.82	8.3	0.9	145(I)	5.0(I)	0.92(I)	12.9(I)	
129	101	15.80	15.78	35.60	26.39	9.3	0.7	143(I)	6.0(I)	1.08(I)	15.1(I)	
130	121	15.50	15.48	35.58	26.45	8.9	0.8	137(I)	6.5(I)	1.14(I)	16.3(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
618	4988	2.20 H	1.723	34.860	45.956	19.5	1.1	161	
619	5037	2.20 H	1.717	34.860	45.957	23.6	1.2	112	
620	5063	2.21 H	1.723	34.859	45.955	32.8	1.8	86	
621	5088	2.21 H	1.719	34.861	45.957	29.3	2.6	62	
622	5102	2.23 H	1.737	34.858	45.952	22.4	0.8	47	
623	5118	2.21 H	1.715	34.858	45.956	35.1	0.8	32	
624	5127	2.213H	1.717	34.858	45.956	54.0	1.6	22	
626	5137	2.213H	1.716	34.859	45.957	53.6	1.0	12	

STATION: 111 LEG: VIII POSITION: 2° 0′ N 14° 1′ W DATE: 1 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
701	1			35.46		5.7	0.5					DATA SUSPECT
702	7	29.11(I)	29.11	35.46	22.43	6.5	0.6	205(I)	1.0(I)	0.03(I)	0.0(I)	DATA SUSPECT
725	15	29.07(I)	29.06	35.46	22.44	6.4	0.7	205(I)	1.0(I)	0.03(I)	0.0(I)	DATA SUSPECT
726	28	28.93(I)	28.93	35.54	22.48	8.2	0.5	205(I)	1.1(I)	0.03(I)	0.0(I)	
727	45	27.79(I)	27.78	35.45	23.00	6.2	0.3	205(I)	1.2(I)	0.04(I)	0.0(I)	
728	75	17.54(I)	17.52	36.04	26.00	7.4	0.7	123(I)	4.6(I)	1.07(I)	14.6(I)	DATA SUSPECT
729	95	15.26(I)	15.24	35.69	26.33	7.6	0.3	112(I)	6.6(I)	1.27(I)	19.0(I)	
730	115	14.54(I)	14.52	35.50	26.48	7.9	0.4	108(I)	7.6(I)	1.36(I)	19.9(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
216	5001	2.19 H	1.709	34.859	45.958	16.0	0.6	151	
217	5052	2.19 H	1.707	34.860	45.959	18.1	0.4	100	
218	5077	2.20 H	1.713	34.860	45.958	18.9	1.5	75	
219	5102	2.20 H	1.708	34.860	45.959	16.6	0.5	50	
220	5127	2.20 H	1.704	34.860	45.959	30.2	3.8	35	
221	5132	2.20 H	1.702	34.860	45.960	34.1	4.3	30	
222	5142	2.202H	1.704	34.858	45.958	40.3	1.2	20	
224	5152	2.189H	1.691	34.858	45.960	50.2	1.0	10	

STATION: 113 LEG: VIII POSITION: 10° 59′ N 20° 32′ W DATE: 5 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
823	1	24.80	24.80	35.78		5.1	0.5					
824	6	24.80	24.80	35.78	24.22	5.2	0.5	215(I)	0.8(I)	0.04(I)	0.0(I)	DATA SUSPECT
825	14	24.80	24.80	35.78	24.23	4.9	0.3	215(I)	0.8(I)	0.04(I)	0.0(I)	
826	23	24.70	24.69	35.79	24.25	5.4	0.6	215(I)	0.9(I)	0.03(I)	0.0(I)	DATA SUSPECT
827	33	24.70	24.69	35.62	24.31	7.9	0.4	213(I)	0.9(I)	0.06(I)	0.3(I)	
828	45	18.80	18.79	35.55	25.10	7.1	0.4	182(I)	1.6(I)	0.49(I)	6.1(I)	
829	70	15.50	15.49	35.47	26.25	7.5	0.3	81(I)	7.1(I)	1.44(I)	22.0(I)	
830	100	14.40	14.38	35.38	26.54	7.5	0.3	82(I)	8.9(I)	1.54(I)	24.3(I)	

STATION: 114 LEG: IX POSITION 21° 10′ N 21° 46′ W DATE: 12 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	2	20.00	20.00	36.80	26.15	5.8	0.4					
226	11	20.00	20.00	36.80	26.16	5.8	0.3					
227	21	20.00	20.00	36.80	26.17	5.6	0.6	234(I)	0.5(I)	0.05(I)	0.3(I)	
228	41	20.00	19.99	36.83	26.18	6.2	0.4	232(I)	0.6(I)	0.07(I)	0.4(I)	
229	61	19.90	19.89	36.85	26.20	7.4	0.4	230(I)	0.6(I)	0.08(I)	0.5(I)	
230	81	19.80	19.78	36.84	26.22	7.5	0.7	229(I)	0.7(I)	0.09(I)	0.6(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
328	96	19.80	19.78	36.84	26.23	7.5	0.5	227(I)	0.8(I)	0.10(I)	0.7(I)	
327	116	19.80	19.78	36.64	26.35	7.6	0.3	207(I)	1.3(I)	0.21(I)	3.2(I)	
326	136	18.20	18.18	36.62	26.53	7.3	0.4	177(I)	2.1(I)	0.37(I)	7.1(I)	DATA SUSPECT
325	156	17.80	17.77	36.52	26.58	7.1	0.2	177(I)	2.4(I)	0.40(I)	7.7(I)	DATA SUSPECT

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
721	4055	2.39 H	2.025	34.891	45.924	18.2	1.0	308	DATA SUSPECT
722	4126	2.40 H	2.026	34.892	45.925	18.4	0.9	238	DATA SUSPECT
723	4196	2.39 H	2.007	34.892	45.928	19.7	0.6	168	
724	4238			34.893		22.5	1.9	127	
725	4269	2.39 H	1.998	34.892	45.930	22.8	1.5	97	
726	4290	2.39 H	1.996	34.891	45.930	22.5	0.7	77	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CID)
(I) = INTERPOLATED DATA

STATION: 114 LEG: IX POSITION 21° 10' N 21° 46' W DATE: 12 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
727	4312	2.40 H	2.003	34.892	45.929	26.4	2.2	57	
728	4333	2.40 H	2.000	34.892	45.930	29.1	2.5	37	DATA SUSPECT
729	4343	2.401H	2.000	34.890	45.928	28.1	1.3	27	DATA SUSPECT
730	4353	2.402H	1.999	34.891	45.929	32.3	1.4	17	

STATION: 115 LEG: IX POSITION: 28° 1' N 26° 0' W DATE: 15 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
127	1	19.10	19.10	36.97	26.52	6.2	0.6					
128	10	19.10	19.10	36.96	26.52	6.0	0.5					
129	20	19.10	19.10	36.97	26.53	6.1	0.5	237(I)	0.8(I)	0.01(I)	0.1(I)	
130	35	19.10	19.09	36.96	26.53	6.7	0.6	235(I)	0.6(I)	0.01(I)	0.1(I)	
131	60	19.00	18.99	36.97	26.55	7.0	0.4	234(I)	0.6(I)	0.02(I)	0.2(I)	
132	90	18.90	18.88	36.96	26.56	4.9	0.5	233(I)	0.6(I)	0.03(I)	0.3(I)	
133	130	18.50	18.48	36.83	26.58	6.6	0.3	229(I)	0.5(I)	0.02(I)	0.4(I)	
134	170	17.10	17.07	36.57	26.61	7.5	0.3	221(I)	0.7(I)	0.07(I)	1.4(I)	
135	190	16.80	16.77	36.57	26.65	7.7	0.7	214(I)	1.0(I)	0.13(I)	2.6(I)	
136	230	16.60	16.56	36.50	26.74	7.7	0.4	211(I)	1.8(I)	0.26(I)	4.9(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
923	5145			34.886		19.0	1.8	167	
924	5165	2.454H	1.943	34.887	45.936	17.1	0.8	147	
925	5186			34.886		18.3	0.7	127	
926	5206			34.886		22.5	1.0	107	
928	5226			34.884		27.1	0.8	87	
931	5247			34.886		52.8	2.2	67	
929	5267			34.886		46.1	3.7	47	
932	5286			34.886		47.7	3.1	27	
933	5297			34.886		69.8	5.6	17	
935	5308			34.887		100.9	6.4	7	

STATION: 116 LEG: IX POSITION: 29° 56' N 30° 24' W DATE: 18 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
136	5	18.30	18.30	36.57	26.42	6.8	0.6	240(I)				
126	10	18.30	18.30	36.57	26.42	6.0	0.5	240(I)				
127	20	18.30	18.30	36.57	26.42	6.2	0.6	240(I)	0.7(I)	0.01(I)	0.3(I)	
128	40	18.30	18.29	36.57	26.42	6.0	0.3	240(I)	0.6(I)	0.01(I)	0.1(I)	
129	80	18.10	18.09	36.57	26.45	6.7	0.4	234(I)	0.7(I)	0.04(I)	0.8(I)	
132	140	17.60	17.58	36.54	26.51	7.1	0.3	218(I)	1.3(I)	0.15(I)	3.0(I)	
133	200	17.10	17.07	36.41	26.58	8.4	0.4	207(I)	1.9(I)	0.25(I)	5.1(I)	
130	250	16.60	16.56	36.35	26.64	7.8	0.2	207(I)	2.2(I)	0.30(I)	5.9(I)	
135	300	16.00	15.95	36.28	26.71	7.5	0.3	208(I)	2.4(I)	0.34(I)	6.5(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
334	4368			34.900		21.3	1.7	311	
335	4420			34.899		21.7	1.4	261	
336	4500			34.897		21.0	2.0	211	
327	4520	2.474H	2.047	34.898	45.925	17.0	0.7	161	
328	4571	2.46 H	2.027	34.894	45.926	17.9	0.9	111	
331	4612			34.893		25.5	2.2	71	
329	4630	2.465H	2.025	34.891	45.924	29.3	2.0	51	
332	4651			34.895		62.2	1.9	31	
330	4672	2.474H	2.028	34.898	45.929	75.5	5.8	11	

STATION: 117 LEG: IX POSITION: 30° 40' N 38° 58' W DATE: 20 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
125	1	19.50	19.50	36.72	26.24	6.9	0.6	232(I)				
126	10	19.50	19.50	36.72	26.24	6.3	0.5	232(I)	0.7(I)	0.00(I)	0.0(I)	
127	20	19.40	19.40	36.72	26.24	6.6	0.7	232(I)	0.6(I)	0.00(I)	0.0(I)	
128	40	19.30	19.29	36.72	26.24	7.2	0.7	231(I)	0.6(I)	0.00(I)	0.0(I)	
129	70	19.30	19.29	36.72	26.25	7.5	0.4	230(I)	0.6(I)	0.01(I)	0.0(I)	
130	110	19.20	19.18	36.69	26.29	6.6	0.4	228(I)	0.6(I)	0.02(I)	0.3(I)	
131	140	19.10	19.07	36.67	26.33	8.2	0.7	223(I)	0.7(I)	0.04(I)	0.9(I)	
132	170	18.30	18.27	36.59	26.38	7.7	0.6	213(I)	1.0(I)	0.10(I)	2.1(I)	DATA SUSPECT
133	230	17.70	17.66	36.49	26.53	7.7	0.2	205(I)	1.5(I)	0.20(I)	4.2(I)	
134	300	17.00	16.95	36.40	26.62	7.5	0.3	205(I)	1.8(I)	0.27(I)	5.4(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
803	1578	5.160	5.013	35.185	45.553	9.9	1.0	1998	
805	1688	4.643	4.492	35.133	45.623	11.1	0.9	1888	
807	1889	4.160	3.995	35.071	45.678	9.9	0.5	1687	
810	2091	3.661	3.483	35.024	45.746	10.9	0.5	1486	
811	2191	3.418	3.235	34.995	45.773	12.4	1.0	1387	
b15	2301	3.284	3.092	34.982	45.791	11.7	0.7	1278	DATA SUSPECT
317	2495	3.126	2.917	34.963	45.810	12.1	0.5	1084	
820	2998	2.853	2.596	34.942	45.856	13.3	0.7	582	
823	3498	2.714	2.405	34.927	45.881	18.9	0.7	85	

STATION: 118 LEG: IX POSITION: 31° 18' N 45° 38' W DATE: 23 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
127	1	20.20	20.20	36.76	26.07	6.1	0.3	226(I)	0.8(I)	0.01(I)	0.0(I)	
128	5	20.20	20.20	36.75	26.07	6.5	0.5	226(I)	0.8(I)	0.01(I)	0.0(I)	
129	10	20.20	20.20	36.75	26.08	7.5	0.5	227(I)	0.7(I)	0.01(I)	0.0(I)	DATA SUSPECT
130	25	20.00	20.00	36.74	26.09	7.3	0.4	227(I)	0.7(I)	0.01(I)	0.0(I)	
131	50	19.70	19.69	36.73	26.12	6.9	0.3	227(I)	0.5(I)	0.01(I)	0.0(I)	
132	75	19.60	19.59	36.47	26.15	7.4	0.4	227(I)	0.5(I)	0.01(I)	0.0(I)	
133	100	18.50	18.48	36.45	26.19	7.1	0.3	229(I)	0.5(I)	0.01(I)	0.0(I)	
134	175	17.90	17.87	36.43	26.38	8.6	0.5	223(I)	1.1(I)	0.10(I)	2.0(I)	
135	225	17.50	17.46	36.41	26.49	7.4	0.3	205(I)	1.7(I)	0.21(I)	4.6(I)	
136	300	17.10	17.05	36.38	26.56	8.9	0.4	201(I)	1.9(I)	0.27(I)	5.7(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
618	4249	2.23 H	1.846	34.886	45.954	14.7	0.8	320	
620	4350	2.23 H	1.833	34.885	45.955	16.1	0.7	220	
621	4441	2.21 H	1.803	34.883	45.959	15.3	0.4	131	
623	4491	2.219H	1.805	34.883	45.959	18.6	0.6	81	
624	4501			34.881		31.6	2.6	71	
625	4512	2.22 H	1.803	34.894U	45.967	30.2	2.9	61	
626	4522			34.882		35.0	2.8	51	
628	4530			34.880		40.2	2.7	42	

STATION: 119 LEG: IX POSITION: 31° 49' N 50° 53' W DATE: 25 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
211	5284	2.19 H	1.672	34.864	45.968	17.7	1.5	536	
215	5489	2.21 H	1.663	34.864	45.970	19.9	0.7	336	
217	5592	2.21 H	1.649	34.861	45.970	22.1	1.5	236	
226	5679	2.22 H	1.646	34.864	45.973	35.1	1.5	151	
219	5721	2.23 H	1.650	34.866	45.974	39.7	1.7	86	
220	5752	2.22 H	1.636	34.864	45.975	39.5	2.1	56	
222	5774			34.869		38.0	0.8	36	
223	5790	2.24 H	1.649	34.861	45.970	43.1	1.3	21	
225	5796	2.235H	1.644	34.862	45.972	44.5	3.6	11	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CID)
(I) = INTERPOLATED DATA
U UNCERTAIN DATA

STATION: 120 LEG: IX POSITION: 33° 16′ N 56° 33′ W DATE: 27 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
615	1	18.00	18.00	36.43		6.4	0.6					
616	10	18.13 H	18.13	36.43	26.36	6.9	0.3	235(I)	0.7(I)	0.04(I)	1.0(I)	
617	20	18.00	18.00	36.43	26.36	6.3	0.7	235(I)	0.6(I)	0.04(I)	1.0(I)	
618	30	18.00	17.99	36.43	26.38	5.2	0.3	235(I)	0.6(I)	0.04(I)	1.0(I)	
619	40	18.00	17.99	36.42	26.37	6.4	0.3	235(I)	0.6(I)	0.04(I)	1.0(I)	
620	60	18.09 H	18.08	36.42	26.36	6.0	0.4	235(I)	0.5(I)	0.04(I)	1.0(I)	
622	120	18.00	17.98	36.42	26.38	7.0	0.5	235(I)	0.5(I)	0.05(I)	1.3(I)	
623	180	17.80	17.77	36.41	26.41	6.7	0.3	228(I)	0.8(I)	0.10(I)	2.4(I)	
624	250	17.26 H	17.22	36.36	26.53	7.5	0.5	211(I)	1.4(I)	0.21(I)	4.6(I)	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
120	5365	2.18 H	1.652	34.863	45.971	17.1	1.4	207	
121	5416	2.20 H	1.664	34.864	45.970	17.0	1.1	157	
123	5468			34.862		18.2	1.2	107	
124	5492			34.864		18.6	0.8	82	
126	5522			34.861		19.6	1.1	52	
127	5533			34.863		17.5	0.5	42	
128	5539			34.862		17.8	0.6	35	
131	5547			34.862		20.9	1.8	28	
132	5561			34.865		18.7	1.0	14	DATA SUSPECT
133	5568			34.862		19.0	0.7	7	

STATION: 121 LEG: IX POSITION: 35° 59′ N 67° 59′ W DATE: 30 MAR 73

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
115	3	19.12	19.12	36.43	26.10	6.7	0.5	229	0.9	0.05	0.7	
116	13	19.13	19.13	36.43	26.10	3.7	0.4	229	0.9	0.05	0.7	
117	22	19.10	19.09	36.43	26.11	6.6	0.6	228(I)	0.8	0.05	0.6	
119	31	19.09	19.09	36.43	26.11	6.3	0.3	228	0.8	0.05	0.7	
120	82	19.09	19.08	36.43	26.11	7.4	0.5	228	0.8	0.05	0.7	
121	180	19.10	19.07	36.43	26.12	6.6	0.4	226	0.8	0.06	0.7	
122	210	18.61	18.57	36.44	26.25	7.0	0.3	221	1.1	0.09	1.7	
124	302	18.05	17.99	36.47	26.42	8.3	0.4	199	1.6	0.21	4.2	

SAMPLE No.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
320	4615	2.27 H	1.838	34.889	45.957	13.5	1.2	315	
322	4717	2.267H	1.822	34.891	45.962	13.6	1.0	215	
330	4777			34.886		14.8	1.4	155	
331	4838			34.883		21.9	1.9	95	
333	4879			34.886		12.5	0.9	55	
334	4898			34.888		5.6	0.4	36	DATA SUSPECT
335	4912			34.888		14.0	0.6	22	
336	4919			34.888		14.4	0.8	15	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

Chapter 5

ARGON AND NITROGEN DATA

STA 36 15° 0' N 53° 56' W 11 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
402	22	0.2120	0.2158	8.53	8.22
403	83	0.2250	0.2231	8.97	8.45
405	220			9.96	9.58
406	289	0.2696	0.2687	10.47	10.01
407	360	0.2794	0.2829	10.88	10.50
408	431	0.2868	0.2892	11.02	10.71
409	500	0.2979	0.2987		
410	569	0.3054	0.3096	11.70	11.41
411	639			12.21	11.74
412	711	0.3183	0.3244	12.12	11.91
415	779	0.3230	0.3295	12.31	12.09
416	850	0.3259	0.3314	12.40	12.16
417	918	0.3345	0.3331	12.60	12.21
418	1009	0.3290	0.3348	12.55	12.27
419	1109	0.3284	0.3355		
421	1307	0.3321	0.3372	12.60	12.35
422	1409	0.3345	0.3390	12.66	12.41
424	1607	0.3414	0.3438	12.98	12.57
701	1799	0.3456	0.3479	12.95	12.71
705	2210	0.3454	0.3520	13.04	12.85
710	2601	0.3515	0.3551	13.31	12.96
719	3508	0.3545	0.3596	13.25	13.11
724	4008	0.3538	0.3620	13.35	13.19

STA 37 12° 1' N 50° 59' W 13 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
601	15	0.2118	0.2149	8.45	8.18
603	59	0.2271	0.2225	8.99	8.44
605	177	0.2741	0.2705	10.52	10.07
607	278	0.2926	0.2964	11.22	10.96
609	453	0.3092	0.3111		
611	651	0.3389	0.3258		
615	850	0.3309	0.3344	12.33	12.26
617	1074	0.3502	0.3360	12.96	12.31
619	1299	0.3447	0.3380	12.77	12.38
621	1499	0.3382	0.3419	12.65	12.51
623	1699	0.3590	0.3468	13.33	12.67
301	1792	0.3458	0.3475	12.98	12.70
302	1941	0.3391	0.3494	12.78	12.76
304	2241	0.3460	0.3526	12.86	12.87
305	2392	0.3584	0.3536	13.32	12.90
307	2691	0.3496	0.3556	12.99	12.97
308	2841			13.02	13.01
309	3041	0.3586	0.3577	13.21	13.04
312	3443	0.3549	0.3596	13.12	13.11
317	3879	0.3574	0.3615	13.16	13.17
318	4054	0.3583	0.3622		
319	4203	0.3569	0.3626	13.30	13.21
320	4373	0.3577	0.3630	13.23	13.22
321	4554	0.3579	0.3639	13.27	13.25
322	4755	0.3606	0.3669	13.39	13.36
323	4905	0.3659	0.3688	13.47	13.42
324	5022	0.3610	0.3693	13.38	13.44

STA 39 7° 57' N 43° 51' W 17 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	1	0.2163	0.2127	8.55	8.11
502	33	0.2276	0.2156	9.03	8.21
503	63	0.2486	0.2414	9.66	9.08

STA 39 7° 57' N 43° 51' W 17 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
504	124	0.2806	0.2801	10.76	10.41
505	203	0.3096	0.3005	11.61	11.10
506	306	0.3100	0.3069	11.70	11.32
507	388	0.3167	0.3129	11.93	11.52
509	512	0.3265	0.3165	12.28	11.65
510	574	0.3314	0.3205	12.39	11.78
511	657	0.3314	0.3264	12.42	11.99
512	758	0.3438	0.3317	12.71	12.17
515	859	0.3287	0.3337	12.29	12.23
516	962	0.3359	0.3366	12.47	12.33
517	1042	0.3325	0.3383	12.41	12.39
518	1120	0.3434	0.3388	12.73	12.41
519	1201	0.3640	0.3386	13.49	12.40
520	1301	0.3342	0.3381	12.43	12.38
521	1400	0.3363	0.3398	12.61	12.44
522	1499	0.3522	0.3420	13.11	12.51
523	1594	0.3392	0.3438	12.64	12.57
101	1645	0.3450	0.3450	12.79	12.61
524	1688	0.3628	0.3456	13.18	12.63
102	1792	0.3424	0.3474	12.71	12.69
103	1940	0.3431	0.3495	12.77	12.76
104	2093	0.3471	0.3506	12.83	12.80
105	2243	0.3483	0.3518	12.93	12.84
106	2394	0.3472	0.3529	12.97	12.88
107	2541	0.3465	0.3542	12.91	12.92
108	2691	0.3477	0.3548	12.95	12.95
109	2838	0.3540	0.3559	13.15	12.98
110	2980	0.3487	0.3570	13.02	13.02
111	3131	0.3480	0.3579	13.00	13.05
112	3282	0.3494	0.3587	13.07	13.08
115	3440	0.3507	0.3596	12.96	13.11
116	3592	0.3527	0.3604	13.13	13.14
117	3745	0.3563	0.3614	13.18	13.17
118	3894	0.3575	0.3619	13.26	13.19
119	4043	0.3560	0.3624	13.16	13.20
120	4188	0.3600	0.3630	13.30	13.22
121	4336	0.3563	0.3641	13.19	13.26
122	4485	0.3598	0.3674	13.30	13.37
123	4607	0.3642	0.3689	13.49	13.42
124	4725	0.3595	0.3695	13.38	13.45

STA 40 3° 56' N 38° 31' W 19 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
701	1	0.2277	0.2155	9.05	8.20
703	80	0.2150	0.2159	8.45	8.22
704	135	0.2567	0.2393	10.03	9.01
705	214	0.2929	0.2960	11.20	10.95
706	296	0.3017	0.3042	11.44	11.23
707	375	0.3375	0.3123	12.57	11.51
708	444	0.3173	0.3178	11.85	11.69
709	519	0.3189	0.3229	11.96	11.87
710	592	0.3271	0.3285	12.36	12.06
711	667	0.3283	0.3339	12.28	12.24
712	743	0.3321	0.3372	12.37	12.35
715	811	0.3502	0.3389	12.95	12.41
716	883	0.3354	0.3399	12.48	12.44
717	940	0.3424	0.3406	12.70	12.47
718	999	0.3428	0.3410	12.81	12.48
719	1058	0.3351	0.3405	12.49	12.46
720	1123	0.3441	0.3411	12.80	12.48
101	1301			12.67	12.46
102	1401			12.57	12.51
103	1552			13.22	12.55
104	1703			12.73	12.62

STA 40 3° 56' N 38° 31' W 19 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
105	1851			12.67	12.69
106	1992	0.3547	0.3489	12.81	12.74
107	2140			12.90	12.81
108	2290			13.06	12.87
110	2589			12.98	12.95
111	2741			13.15	12.99
112	2890	0.3671	0.3570	13.44	13.02
115	3053			13.10	13.05
116	3202			13.29	13.07
118	3503			13.16	13.12
119	3655			13.51	13.15
120	3805	0.3685	0.3619	13.50	13.19
121	3956			13.95	13.22
122	4056	0.3631	0.3645	13.23	13.27
123	4156	0.3631	0.3664	13.37	13.34
124	4244			13.35	13.40

STA 42 0° 58' N 37° 4' W 21 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	7	0.2170	0.2167	8.52	8.25
502	37	0.2134	0.2169	8.56	8.25
507	264	0.2888	0.2874	10.95	10.66
508	347	0.2940	0.2965	11.16	10.97
515	744	0.3326	0.3367	12.35	12.34
516	824	0.3349	0.3397	12.45	12.44
520	1141	0.3347	0.3407	12.48	12.47
521	1257	0.3363	0.3414	12.52	12.49
522	1357	0.3382	0.3427	12.63	12.53
102	1646			12.72	12.61
103	1799	0.3540	0.3470	13.15	12.68
104	1950	0.3689	0.3481	13.49	12.72
106	2228	0.3856	0.3511	14.13	12.82
107	2378	0.3342	0.3535	12.90	12.90
108	2498			12.85	12.93
109	2719	0.3734	0.3558	13.72	12.98
110	2838	0.3668	0.3563	13.58	12.99
111	2998	0.3773	0.3575	13.56	13.04
112	3148	0.3503	0.3580	12.99	13.05
115	3307	0.3572	0.3588	13.22	13.08
116	3457	0.3667	0.3599	13.31	13.12
117	3604	0.3729	0.3605		
118	3804	0.3537	0.3615	13.06	13.17
119	3963	0.3610	0.3628	13.33	13.22
120	4073	0.3597	0.3652	13.25	13.30
121	4210	0.3752	0.3721	13.81	13.53
122	4289	0.3954	0.3739	14.32	13.59
123	4367	0.3666	0.3743	13.55	13.61

STA 46 0° 59' S 34° 2' W 23 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	9	0.2176	0.2188	8.61	8.32
502	73	0.2201	0.2203	8.65	8.37
503	93	0.2276	0.2260	8.94	8.56
504	153	0.2864	0.2816	10.83	10.46
505	217	0.2890	0.2871	10.93	10.64
508	411	0.3184	0.3184	11.91	11.72
509	469	0.3204	0.3209	12.00	11.80
510	540	0.3396	0.3258	12.61	11.97

STA 46 0° 59' S 34° 2' W 23 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
515	701			12.60	12.39
516	793	0.3384	0.3406	12.90	12.47
517	890	0.3444	0.3422	12.81	12.52
518	966	0.3384	0.3425	12.57	12.53
521	1194	0.3399	0.3417	12.73	12.50
522	1254	0.3392	0.3417	12.66	12.50
523	1286	0.3364	0.3418	12.60	12.51
101	1345	0.3400	0.3426	12.64	12.53
524	1363	0.3414	0.3427	12.64	12.53
102	1395	0.3537	0.3427	13.06	12.53
103	1494	0.3537	0.3435	13.08	12.56
104	1594	0.3423	0.3441	12.60	12.58
105	1695	0.3555	0.3446	13.03	12.60
106	1844	0.3473	0.3473	12.83	12.69
107	1992	0.3434	0.3489	12.73	12.75
108	2283	0.3569	0.3517	13.15	12.84
109	2494	0.3654	0.3542	13.41	12.92
111	2793	0.3650	0.3560	13.32	12.99
112	2993	0.3581	0.3569	13.24	13.02
115	3171	0.3571	0.3581	13.28	13.06
116	3401	0.3611	0.3595	13.25	13.10
117	3697	0.3604	0.3607	13.30	13.15
118	3824	0.3637	0.3614	13.11	13.17
119	3938	0.3695	0.3624	13.54	13.20
120	3986	0.3779	0.3627	13.99	13.21
121	4038	0.3581	0.3645	13.33	13.27
122	4143	0.3635	0.3689	13.41	13.42
123	4283	0.3732	0.3724	13.68	13.54
124	4427	0.3697	0.3756	13.55	13.65

STA 48 4° 0' S 29° 0' W 25 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
901	11	0.2211	0.2206	8.73	8.38
903	61	0.2272	0.2211	9.04	8.39
904	82	0.2517	0.2253	9.72	8.54
905	119	0.2891	0.2590	11.02	9.68
906	154	0.2806	0.2773	10.75	10.31
907	193	0.2994	0.2916	11.31	10.80
908	274	0.3203	0.3016	11.57	11.14
909	353	0.3277	0.3124	12.19	11.51
910	433	0.3326	0.3207	12.32	11.79
911	512	0.3278	0.3289	12.22	12.07
912	594	0.3742	0.3350	12.53	12.28
915	681	0.3419	0.3401	12.66	12.45
916	760	0.3421	0.3423	12.72	12.53
917	842	0.3395	0.3435	12.62	12.57
918	920	0.3448	0.3438	12.80	12.58
919	1001	0.3478	0.3437	12.91	12.57
920	1090	0.3420	0.3439	12.66	12.58
921	1179	0.3527	0.3425	13.05	12.53
101	1402	0.3425	0.3424	12.73	12.52
924	1447	0.3487	0.3428	12.89	12.54
102	1577	0.3572	0.3448	13.21	12.60
103	1753	0.3473	0.3471	13.01	12.68
104	1952	0.3502	0.3493	13.01	12.76
105	2152	0.3656	0.3512	13.49	12.82
106	2351	0.3497	0.3531	12.99	12.89
107	2551	0.3525	0.3548	13.20	12.95
108	2752	0.3670	0.3561	13.56	12.99
110	3152	0.3645	0.3582	13.49	13.06
111	3352	0.3610	0.3589	13.41	13.08
112	3552	0.3578	0.3596	13.21	13.11
115	3752	0.3655	0.3611	13.39	13.16
116	3901	0.3659	0.3636	13.46	13.24

STA 48 4° 0' S 29° 0' W 25 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
117	4052	0.3629	0.3676	13.42	13.38
118	4201	0.3683	0.3714	13.60	13.51
120	4498	0.3693	0.3752	13.61	13.64
121	4649	0.3828	0.3762	14.04	13.67
122	4797	0.3871	0.3777	14.11	13.72
123	4944	0.3757	0.3786	13.74	13.75
124	5075	0.3988	0.3789	14.45	13.77

STA 49 7° 56' S 28° 12' W 29 OCT 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	2	0.2160	0.2205	8.62	8.37
502	32	0.2197	0.2206	8.61	8.38
503	64	0.2183	0.2207	8.60	8.38
504	90	0.2234	0.2225	8.75	8.44
505	116	0.2356	0.2339	9.20	8.83
506	144	0.2488	0.2489	9.65	9.34
507	170	0.2641	0.2643	10.24	9.87
508	195	0.2750	0.2777	10.54	10.32
509	256	0.2909	0.2922	11.01	10.82
510	302	0.3025	0.3040	11.43	11.22
511	349	0.3123	0.3164	11.74	11.65
515	459	0.3215	0.3241	12.10	11.91
516	508	0.3230	0.3265	12.09	11.99
517	610	0.3249	0.3315	12.22	12.16
518	711	0.3314	0.3372	12.36	12.35
519	810	0.3353	0.3409	12.49	12.48
520	909	0.3373	0.3443	12.61	12.59
521	1009	0.3414	0.3457	12.65	12.64
522	1106	0.3406	0.3459	12.70	12.65
101	1285	0.3423	0.3441	13.04	12.58
524	1403	0.3379	0.3435	12.61	12.56
102	1484	0.3412	0.3444	12.68	12.59
104	1888	0.3428	0.3498	12.73	12.77
105	2085	0.3485	0.3518	12.95	12.84
106	2281	0.3509	0.3540	13.03	12.92
107	2481	0.3467	0.3555	12.89	12.97
108	2680	0.3525	0.3565	13.08	13.00
109	2880	0.3516	0.3573	13.04	13.03
110	3080	0.3518	0.3580	12.97	13.05
111	3280	0.3528	0.3588	13.07	13.08
112	3480	0.3615	0.3598	13.42	13.11
116	3896	0.3601	0.3650	13.27	13.29
117	4096	0.3631	0.3692	13.39	13.43
118	4297	0.3657	0.3732	13.53	13.57
119	4501	0.3697	0.3755	13.59	13.65
120	4702	0.3700	0.3767	13.59	13.69
121	4903	0.3694	0.3777		
122	5104	0.3711	0.3786	13.70	13.76
123	5304	0.3709	0.3792	13.71	13.77
124	5519	0.3708	0.3797	13.70	13.79

STA 53 11° 59' S 27° 59' W 7 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	7	0.2186	0.2203	8.63	8.36
503	95	0.2284	0.2269	9.11	8.58
505	199	0.2663	0.2685	10.24	10.01
507	359	0.3039	0.3074	11.56	11.34

STA 53 11° 59' S 27° 59' W 7 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
510	649	0.3295	0.3362	12.33	12.32
512	898	0.3412	0.3455	12.65	12.64
515	997	0.3410	0.3466	12.74	12.67
517	1147	0.3404	0.3469	12.70	12.68
519	1296	0.3391	0.3456	12.68	12.64
521	1445	0.3417	0.3451	12.77	12.62
201	1666	0.3451	0.3476	12.79	12.70
524	1699	0.3447	0.3481	12.87	12.72
203	2067	0.3488	0.3522	12.96	12.86
204	2267	0.3543	0.3541	13.40	12.92
205	2466	0.3526	0.3556	13.04	12.97
206	2668	0.3486	0.3566	13.10	13.01
207	2869	0.3557	0.3574	13.13	13.03
208	3072	0.3519	0.3581	13.01	13.06
209	3275			13.67	13.08
210	3476	0.3438	0.3599	13.17	13.12
211	3630	0.3552	0.3611	13.20	13.16
212	3782	0.3604	0.3629	13.35	13.22
215	3894	0.3584	0.3647	13.31	13.28
216	3992	0.3610	0.3665	13.34	13.34
218	4293	0.3286	0.3728	13.54	13.56
219	4494	0.3687	0.3751	13.62	13.64
221	4895	0.3706	0.3775	13.70	13.72
222	5093	0.3704	0.3783	13.73	13.74
223	5294	0.3737	0.3791	13.83	13.77

STA 54 15° 2' S 29° 32' W 8 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	8	0.2186	0.2189	8.72	8.31
502	67	0.2225	0.2227	8.77	8.44
503	139	0.2303	0.2318	9.06	8.75
504	189	0.2515	0.2494	9.78	9.35
505	239	0.2663	0.2669	10.16	9.96
506	299	0.2830	0.2812	10.74	10.45
507	326	0.2858	0.2870	10.87	10.64
508	365	0.2971	0.2965	11.33	10.97
509	441	0.3106	0.3134	11.70	11.54
510	492	0.3197	0.3230	12.05	11.87
511	591	0.3314	0.3356	12.36	12.30
512	691	0.3391	0.3431	12.61	12.56
515	800	0.3425	0.3471	12.71	12.69
516	901	0.3430	0.3483	12.78	12.73
517	1001	0.3433	0.3486	12.74	12.74
518	1100	0.3433	0.3477	12.79	12.71
519	1200	0.3423	0.3468	12.73	12.68
520	1300	0.3403	0.3463	12.72	12.66
521	1399	0.3476	0.3464	12.84	12.66
522	1499	0.3445	0.3474	12.78	12.70
523	1599	0.3445	0.3486	12.78	12.74
201	1685	0.3461	0.3497	12.93	12.77
524	1698	0.3445	0.3496	12.86	12.77
202	1883	0.3477	0.3518	12.95	12.84
203	2081	0.3537	0.3536	13.09	12.91
204	2282	0.3510	0.3550	13.01	12.95
205	2483	0.3521	0.3560	13.02	12.98
206	2684	0.3510	0.3567	13.06	13.01
207	2886	0.3499	0.3574	13.03	13.03
208	3086	0.3546	0.3582	13.09	13.06
209	3286	0.3538	0.3586	13.08	13.07
210	3488	0.3608	0.3599	13.30	13.12
211	3686	0.3559	0.3614	13.20	13.17
212	3884	0.3583	0.3644	13.27	13.27
215	3994	0.3604	0.3664	13.35	13.34
216	4093	0.3627	0.3683	13.39	13.40

STA 54 15° 2' S 29° 32' W 8 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
217	4294	0.3643	0.3715	13.49	13.51
218	4396	0.3644	0.3731	13.51	13.57
219	4493	0.3671	0.3742	13.59	13.60
220	4595	0.3680	0.3753	13.63	13.64
221	4685	0.3689	0.3762	13.64	13.67
222	4794	0.3706	0.3772	13.72	13.71
223	4890	0.3728	0.3790	13.73	13.77
224	5089	0.3726	0.3807	13.78	13.83

STA 55 18° 0' S 31° 0' W 11 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
301	3	0.2201	0.2205	8.81	8.36
302	28	0.2234	0.2221	8.74	8.42
303	48	0.2251	0.2243	8.81	8.49
304	83	0.2323	0.2266	9.58	8.57
305	128	0.2306	0.2288	8.99	8.65
306	176	0.2474	0.2457	9.57	9.23
307	265	0.2707	0.2686	10.36	10.01
308	338	0.2840	0.2831	10.77	10.51
309	436	0.3009	0.3004	11.32	11.10
310	537	0.3172	0.3196	11.92	11.76
311	632	0.3307	0.3342	12.34	12.25
312	679	0.3360	0.3394	12.50	12.43
315	783	0.3425	0.3457	12.69	12.64
316	881	0.3484	0.3487	12.84	12.74
317	982	0.3468	0.3495		
318	1085	0.3465	0.3488	12.79	12.74
319	1189	0.3459	0.3476	12.77	12.70
320	1294	0.3430	0.3461	12.73	12.65
321	1397	0.3447	0.3463	12.72	12.66
322	1492	0.3450	0.3471	12.79	12.68
323	1597	0.3463	0.3484	12.94	12.73
101	1641	0.3497	0.3493	13.20	12.76
102	1787	0.3477	0.3510	12.91	12.82
105	2239	0.3471	0.3539	13.00	12.92
106	2387	0.3561	0.3548	13.18	12.94
107	2538	0.3571	0.3555	13.61	12.97
108	2687	0.3552	0.3562	13.13	12.99
109	2837	0.3543	0.3568	13.08	13.01
110	2987	0.3519	0.3572	13.08	13.03
111	3136	0.3537	0.3579	13.12	13.05
112	3285	0.3564	0.3584	13.20	13.07
115	3446	0.3530	0.3593	13.17	13.10
116	3594	0.3565	0.3607	13.15	13.15
117	3743	0.3580	0.3623	13.27	13.20
118	3894	0.3621	0.3645	13.33	13.27
119	3993	0.3608	0.3664	13.50	13.34
120	4095	0.3644	0.3689	13.49	13.42
121	4196	0.3686	0.3714	13.64	13.51
122	4346	0.3678	0.3742	13.62	13.61
123	4495	0.3707	0.3779	13.76	13.73
124	4686	0.3732	0.3809	13.79	13.83

STA 56 21° 0' S 33° 0' W 12 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	14			8.81	8.50
502	77	0.2252	0.2284	8.99	8.63
503	117	0.2328	0.2327	9.05	8.78
504	137	0.2376	0.2403	9.44	9.04

STA 56 21° 0' S 33° 0' W 12 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
505	156	0.2434	0.2448	9.52	9.20
506	177	0.2484	0.2498	9.61	9.37
507	198	0.2586	0.2562	10.01	9.59
508	217	0.2614	0.2601	10.03	9.72
509	236	0.2597	0.2642	10.06	9.86
510	302	0.2721	0.2749	10.56	10.23
511	357	0.2854	0.2830	10.76	10.51
512	417	0.2900	0.2901	10.95	10.75
514	473	0.2974	0.2979	11.26	11.02
516	606	0.3214	0.3214	12.22	11.82
517	694	0.3297	0.3341	12.41	12.25
518	795	0.3465	0.3441	12.92	12.59
519	894	0.3523	0.3488	13.11	12.75
520	993	0.3485	0.3510	12.84	12.82
521	1094	0.3467	0.3499	12.82	12.78
522	1194	0.3459	0.3480	12.89	12.72
101	1240	0.3504	0.3469	13.27	12.68
523	1295	0.3446	0.3456	12.78	12.63
102	1389	0.3432	0.3450	12.80	12.61
524	1393	0.3414	0.3449	12.71	12.61
103	1539	0.3428	0.3458	12.79	12.64
105	1842	0.3471	0.3489	12.86	12.75
106	1968	0.3452	0.3503	12.91	12.79
107	2140	0.3510	0.3518	13.05	12.84
108	2142	0.3501	0.3518	12.92	12.84
109	2291	0.3484	0.3531	13.03	12.89
110	2434	0.3515	0.3541	13.07	12.92
111	2586	0.3523	0.3550	13.09	12.95
112	2733	0.3496	0.3558	13.05	12.98
116	3032	0.3527	0.3573	13.13	13.03
117	3176	0.3513	0.3584	13.10	13.07
118	3326	0.3539	0.3599	13.25	13.12
119	3478	0.3569	0.3622	13.21	13.19
120	3635			13.44	13.30
121	3783	0.3656	0.3684	13.59	13.41
122	3959	0.3644	0.3716	13.53	13.52
123	4135	0.3658	0.3744	13.67	13.61
124	4313	0.3704	0.3772	13.72	13.71

STA 57 23° 59' S 35° 0' W 15 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
602	47	0.2273	0.2307	8.97	8.71
603	78	0.2462	0.2365	9.48	8.91
604	117	0.2429	0.2427	9.45	9.12
605	160	0.2588	0.2550	10.02	9.55
606	218	0.2679	0.2641	10.18	9.66
607	288	0.2741	0.2721	10.44	10.13
608	336	0.2785	0.2757	10.56	10.26
609	386	0.2825	0.2813	10.65	10.45
610	467	0.3018	0.2940	11.34	10.88
611	517	0.3090	0.3017	11.62	11.14
612	587	0.3158	0.3151	11.76	11.60
616	695	0.3325	0.3323	12.30	12.19
617	744	0.3352	0.3380	12.41	12.38
618	794	0.3468	0.3425	12.79	12.53
619	843	0.3440	0.3461	12.71	12.66
620	894	0.3470	0.3481	12.73	12.72
621	944	0.3562	0.3494	13.05	12.77
201	986	0.3472	0.3509	12.88	12.82
202	1168	0.3496	0.3523	13.07	12.86
624	1196	0.3616	0.3524	13.16	12.87
203	1329	0.3462	0.3506	12.95	12.80
204	1480	0.3456	0.3484	12.81	12.73
205	1629	0.3394	0.3500	12.88	12.78

STA 57 23° 59' S 35° 0' W 15 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
206	1782	0.3478	0.3488	12.88	12.74
207	1932	0.3482	0.3500		
209	2232	0.3496	0.3525	12.97	12.87
210	2384	0.3477	0.3536	12.97	12.90
211	2527	0.3510	0.3545	13.07	12.94
212	2691	0.3503	0.3554	13.05	12.97
215	2841	0.3526	0.3563	13.00	13.00
216	2988	0.3529	0.3571	13.09	13.02
217	3138	0.3571	0.3581	13.12	13.06
218	3290	0.3564	0.3593	13.19	13.10
219	3437	0.3609	0.3611	13.20	13.16
220	3584	0.3620	0.3645	13.11	13.27
222	3878	0.3619	0.3714	13.55	13.51
223	4053	0.3739	0.3761	13.71	13.67
224	4226	0.3736	0.3817	13.83	13.86

STA 58 27° 0' S 37° 1' W 16 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
901	13	0.2428	0.2368	9.26	8.92
902	58	0.2518	0.2407	9.75	9.06
903	87	0.2493	0.2511		
904	118	0.2583	0.2576	10.02	9.64
905	158	0.2669	0.2635	10.14	9.84
906	198	0.2643	0.2676	10.26	9.98
907	238	0.2757	0.2711	10.47	10.10
908	279			10.54	10.20
909	324	0.2785	0.2789	10.60	10.37
910	378	0.2855	0.2858	10.89	10.60
911	428	0.2968	0.2921	11.21	10.82
912	467	0.2993	0.2974	11.26	11.00
915	529	0.3072	0.3078	11.61	11.35
916	596	0.3207	0.3169	12.21	11.66
917	669	0.3228	0.3274	12.17	12.02
918	737	0.3367	0.3357	12.64	12.30
919	807	0.3385	0.3420	12.60	12.52
920	876	0.3453	0.3461	12.76	12.66
921	947	0.3467	0.3484	12.85	12.74
922	1017	0.3489	0.3509	13.04	12.82
923	1087	0.3482	0.3521	13.01	12.86
924	1156	0.3495	0.3531	13.03	12.89
602	1338	0.3545	0.3544	13.01	12.94
603	1464	0.3532	0.3533	13.00	12.90
604	1635			13.11	12.85
605	1788	0.3571	0.3508	12.94	12.81
606	1937	0.3469	0.3509	12.93	12.81
607	2088			12.90	12.85
609	2392	0.3545	0.3535	12.97	12.90
610	2565	0.3539	0.3547	13.00	12.94
611	2739	0.3535	0.3560	13.07	12.98
612	2915	0.3579	0.3567	13.12	13.01
616	3276	0.3597	0.3593	13.13	13.10
617	3449	0.3611	0.3617	13.31	13.18
618	3623	0.3663	0.3661	13.35	13.33
619	3801	0.3682	0.3702		
620	3947	0.3717	0.3733	13.62	13.57
621	4101	0.3715	0.3771	13.69	13.70
622	4252	0.3773	0.3815	13.82	13.85
623	4426	0.3794	0.3822	13.91	13.88
624	4581	0.3796	0.3824	13.82	13.88

STA 59 30° 12' S 39° 18' W 20 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	9	0.2443	0.2403	9.47	9.05
403	108	0.2622	0.2568	9.95	9.61
405	213			10.38	10.03
407	340	0.2789	0.2763		
409	469	0.2955	0.2891		
410	529	0.3045	0.2975	11.42	11.00
411	619	0.3199	0.3125	11.85	11.52
412	667	0.3317	0.3237	12.24	11.90
415	799			12.49	12.33
416	870	0.3448	0.3414	12.66	12.50
417	945	0.3518	0.3468	12.80	12.68
418	1019	0.3528	0.3501	12.99	12.79
419	1096	0.3542	0.3525		
421	1243			13.10	12.95
422	1319			13.15	12.98
423	1393	0.3607	0.3559	13.17	12.99
101	1491	0.3511	0.3562	13.09	13.00
424	1492	0.3602	0.3561	13.22	12.99
102	1633	0.3576	0.3560	13.17	12.99
103	1781	0.3531	0.3556	13.12	12.98
104	1937	0.3505	0.3551	13.00	12.96
105	2084	0.3527	0.3548	13.10	12.94
106	2233	0.3506	0.3548	13.05	12.94
107	2381	0.3491	0.3543	13.01	12.93
108	2530	0.3555	0.3551	13.19	12.95
109	2681	0.3524	0.3560	13.08	12.99
110	2830	0.3536	0.3566	13.06	13.01
111	2975	0.3524	0.3576	13.13	13.04
112	3124			13.03	13.08
115	3285	0.3631	0.3603	13.20	13.13
116	3429	0.3576	0.3625	13.23	13.21
117	3575	0.3598	0.3656	13.16	13.31
118	3822	0.3703	0.3694	13.64	13.44
119	3970	0.3678	0.3744	13.62	13.61
120	4117	0.3703	0.3794		
121	4263	0.3800	0.3817	14.00	13.86
122	4511	0.3781	0.3828	13.96	13.90
123	4661	0.3710	0.3828	13.92	13.90
124	4806	0.3784	0.3829	13.95	13.90

STA 60 32° 58' S 42° 30' W 22 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	3	0.2548	0.2520	9.86	9.44
402	23	0.2528	0.2524	9.76	9.46
403	66	0.2589	0.2563	9.97	9.59
404	95	0.2611	0.2600	10.08	9.72
406	126	0.2618	0.2611	10.07	9.75
407	167	0.2666	0.2656	10.18	9.91
408	194	0.2730	0.2675	10.42	9.98
409	245	0.2726	0.2701	10.40	10.06
410	282	0.2699	0.2725	10.41	10.14
411	354	0.2802	0.2786	10.64	10.36
412	434	0.2874	0.2869	11.00	10.64
415	534	0.3018	0.3050	11.50	11.26
416	630	0.3227	0.3219	12.04	11.84
417	731	0.3307	0.3355	12.40	12.30
418	830	0.3372	0.3416	12.60	12.51
419	930	0.3460	0.3463	12.80	12.67
420	1039	0.3474	0.3508	12.97	12.82
421	1148	0.3514	0.3545	13.00	12.94
422	1264	0.3619	0.3555	13.32	12.97
423	1376	0.3522	0.3565	13.17	13.01
424	1486	0.3545	0.3565	13.12	13.01
102	1579	0.3518	0.3562	13.14	13.00

STA 60 32° 58' S 42° 30' W 22 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
103	1726	0.3525	0.3558	13.17	12.98
105	2073	0.3540	0.3532	13.08	12.89
106	2273	0.3474	0.3526	12.98	12.87
107	2466	0.3528	0.3527	13.08	12.87
108	2669	0.3513	0.3537	13.03	12.91
109	2870	0.3553	0.3555	13.06	12.97
110	3069	0.3649	0.3571	13.34	13.02
112	3313	0.3561	0.3600	13.21	13.12
115	3422	0.3686	0.3636	13.55	13.24
116	3628	0.3663	0.3701	13.52	13.47
117	3728	0.3638	0.3731	13.60	13.57
118	3826	0.3707	0.3764		
119	3930	0.3755	0.3794	13.79	13.78
120	4019	0.3747	0.3810	13.84	13.84
121	4128	0.3784	0.3823	13.92	13.88
122	4225	0.3793	0.3829	14.06	13.90
123	4327	0.3756	0.3833	13.93	13.91
124	4416	0.3809	0.3833	14.09	13.92

STA 61 36° 0' S 45° 0' W 24 NOV 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	6	0.2555		9.92	
502	52	0.2564	0.2574	9.85	9.63
503	87	0.2643	0.2640	10.13	9.85
504	150	0.2664	0.2695	10.21	10.04
505	190	0.2753	0.2705	10.59	10.08
506	225	0.2683	0.2706	10.26	10.08
507	270	0.2699	0.2712		
508	319	0.2713	0.2740		
509	365	0.2793	0.2797	10.63	10.39
510	428	0.2849	0.2874	10.82	10.66
511	487	0.2837	0.2868	10.81	10.64
512	537	0.2889	0.2905	10.92	10.76
515	598	0.3052	0.3061	11.42	11.29
516	649	0.3172	0.3221	11.96	11.84
517	695	0.3281	0.3284	12.24	12.06
518	748	0.3284	0.3365	12.33	12.33
519	795	0.3339	0.3388	12.44	12.41
520	849	0.3335	0.3407	12.44	12.48
521	897	0.3376	0.3435	12.59	12.57
522	998	0.3430	0.3479	12.70	12.72
523	1148	0.3458	0.3514	12.85	12.84
524	1310	0.3497	0.3559	13.02	12.99
101	1389	0.3535	0.3570	13.11	13.03
102	1536	0.3536	0.3578	13.06	13.05
103	1711	0.3512	0.3568	13.09	13.02
104	1871	0.3504	0.3561	13.05	12.99
105	2031	0.3561	0.3557	13.26	12.98
106	2188	0.3522	0.3555	13.02	12.97
107	2349	0.3503	0.3545	12.99	12.93
108	2507	0.3503	0.3552	13.01	12.96
109	2668	0.3542	0.3564	13.17	13.00
111	2983	0.3518	0.3580	13.04	13.05
112	3167	0.3593	0.3631	13.21	13.23
115	3365	0.3601	0.3672	13.34	13.37
116	3548	0.3634	0.3704	13.44	13.48
117	3730	0.3631	0.3736	13.53	13.59
119	4098	0.3709	0.3797	13.70	13.79
120	4280	0.3672	0.3813	13.76	13.85
121	4465	0.3729	0.3824	13.84	13.88
122	4649	0.3764	0.3830	13.84	13.90
123	4827	0.3736	0.3834	13.83	13.92
124	4926	0.3746	0.3834	13.94	13.92

STA 64 39° 5' S 48° 33' W 6 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
901	12	0.2783	0.2771	10.55	10.32
902	38	0.2881	0.2867	10.87	10.64
903	70	0.3065	0.3055	11.84	11.28
904	110	0.3190	0.3222	11.86	11.85
905	159	0.3211	0.3244	11.95	11.92
906	208	0.3369	0.3313	12.48	12.16
907	285	0.3302	0.3376	12.34	12.37
908	365	0.3381	0.3419	12.47	12.52
909	445	0.3329	0.3428	12.51	12.55
910	515	0.3415	0.3461	12.58	12.66
911	581	0.3422	0.3479	12.61	12.72
912	663	0.3470	0.3509	12.91	12.82
915	738	0.3451	0.3518	12.83	12.85
916	818	0.3477	0.3530	12.82	12.89
917	893	0.3497	0.3551	12.96	12.96
919	1097	0.3506	0.3568	12.98	13.02
920	1201	0.3451	0.3578	13.09	13.05
921	1297	0.3527	0.3582	13.06	13.07
922	1402	0.3517	0.3586	13.06	13.08
701	1481	0.3503	0.3584	13.04	13.07
924	1612	0.3553	0.3580	13.18	13.06
702	1627	0.3463	0.3582	13.00	13.06
703	1829	0.3469	0.3567	12.96	13.01
705	2149	0.3509	0.3569	13.11	13.02
706	2332			12.91	12.99
707	2501	0.3452	0.3561	12.85	12.99
708	2651	0.3445	0.3569	12.95	13.02
709	2830	0.3503	0.3597	13.07	13.11
711	3083	0.3515	0.3623	13.12	13.20
712	3232	0.3555	0.3648	13.21	13.28
715	3441	0.3576	0.3687		
716	3640	0.3582	0.3721	13.45	13.54
717	3932	0.3650	0.3759	13.65	13.66
718	4225	0.3664	0.3792	13.58	13.78
719	4471	0.3691	0.3813	13.75	13.85
720	4661	0.3701	0.3823	13.78	13.88
721	4894	0.3665	0.3828	13.56	13.90
722	5043	0.3708	0.3831	13.83	13.91
723	5191	0.3686	0.3834	13.82	13.92
724	5315	0.3725	0.3835	13.81	13.92

STA 66 41° 32' S 50° 57' W 8 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	15	0.2621	0.2570	10.00	9.62
402	40	0.2597	0.2574	9.89	9.63
403	61	0.2577	0.2571	9.81	9.62
404	84	0.2609	0.2576	9.96	9.64
405	135	0.2641	0.2631	10.08	9.83
406	189	0.2707	0.2707	10.34	10.08
407	233	0.2736	0.2732	10.40	10.17
408	283	0.2695	0.2731		
409	332	0.2746	0.2752	10.38	10.24
410	381	0.2832	0.2828	10.69	10.50
411	425	0.2911	0.2898	11.02	10.74
412	505	0.3100	0.3080	11.54	11.36
415	590	0.3196	0.3210	11.90	11.80
416	670	0.3318	0.3343	12.31	12.26
417	716	0.3342	0.3372	12.43	12.36
418	847	0.3401	0.3430	12.58	12.56
419	976	0.3426	0.3485	12.97	12.74
420	976	0.3434	0.3485	12.71	12.74
421	1122	0.3484	0.3520	12.87	12.86
422	1272	0.3528	0.3542	13.02	12.93
101	1491	0.3544	0.3569	13.13	13.02

STA 66 41° 32' S 50° 57' W 8 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
424	1629	0.3529	0.3559	13.12	12.99
102	1691	0.3580	0.3569	13.09	13.02
103	1891	0.3517	0.3561	13.17	12.99
104	2089	0.3550	0.3563	13.09	13.00
105	2289	0.3595	0.3577	13.24	13.05
106	2488	0.3494	0.3585	13.11	13.07
107	2688	0.3565	0.3585	13.16	13.07
108	2889	0.3690	0.3597	13.92	13.11
109	3090	0.3534	0.3619	13.26	13.19
110	3290	0.3628	0.3650	13.33	13.29
111	3492	0.3661	0.3673	13.61	13.37
112	3694	0.3589	0.3700	13.46	13.46
116	4099	0.3678	0.3746	13.62	13.62
117	4299	0.3747	0.3778	14.02	13.73
118	4503	0.3778	0.3801	13.82	13.80
119	4711	0.3783	0.3816	13.99	13.86
120	4918	0.3737	0.3821	13.89	13.87
121	5140	0.3830	0.3828		
122	5335	0.3707	0.3830	13.82	13.90
123	5530	0.3776	0.3832	13.95	13.91
124	5721	0.3783	0.3833	13.92	13.91

STA 67 44° 58' S 51° 3' W 9 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	10	0.2896	0.2890	11.06	10.72
402	42	0.3011	0.3016	11.42	11.14
404	101	0.2999	0.3060	11.44	11.30
405	151	0.3079	0.3105	11.59	11.44
406	199	0.3166	0.3158	12.00	11.63
407	251	0.3214	0.3315	12.19	12.16
408	300	0.3321	0.3377	12.41	12.38
410	405	0.3333	0.3441	12.55	12.59
411	445	0.3413	0.3454	12.70	12.64
412	445	0.3504	0.3454	12.84	12.64
415	559	0.3392	0.3491	12.78	12.76
416	658	0.3472	0.3516	12.92	12.85
417	760	0.3514	0.3537	13.01	12.92
418	857	0.3526	0.3552	13.10	12.97
419	954	0.3517	0.3561	13.09	13.00
420	1054	0.3586	0.3583	13.20	13.07
421	1127	0.3522	0.3576	13.14	13.05
422	1316	0.3597	0.3584	13.29	13.07
423	1438	0.3568	0.3580	13.27	13.06
101	1499	0.3535	0.3583	13.24	13.07
102	1741	0.3545	0.3585	13.18	13.07
103	1959	0.3547	0.3585	13.20	13.07
104	2192	0.3522	0.3567	13.14	13.01
105	2392	0.3493	0.3567	13.13	13.01
106	2573	0.3538	0.3583	13.14	13.06
107	2758	0.3544	0.3595		
108	2980	0.3515	0.3623	13.29	13.20
109	3190	0.3593	0.3650	13.39	13.29
110	3442	0.3620	0.3682	13.46	13.40
111	3599	0.3635	0.3704	13.51	13.48
112	3599	0.3612	0.3704	13.56	13.48
115	3838	0.3684	0.3726	13.59	13.55
116	4032	0.3636	0.3749	13.67	13.63
117	4219	0.3698	0.3769	13.80	13.70
118	4421	0.3733	0.3788	13.83	13.76
119	4630	0.3712	0.3806	13.87	13.82
120	4836	0.3663	0.3817	13.86	13.86
121	5047	0.3737	0.3825	13.89	13.89
122	5298	0.3743	0.3828	13.91	13.90

STA 67 44° 58' S 51° 3' W 9 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
123	5630	0.3760	0.3834	13.97	13.92
124	5798	0.3768	0.3835	14.02	13.92

STA 68 48° 39' S 45° 59' W 13 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	10	0.3201	0.3080	12.00	11.37
502	40	0.3342	0.3267	12.33	12.00
503	89	0.3360	0.3386	12.53	12.41
504	139	0.3440	0.3439	12.70	12.59
505	189	0.3456	0.3469	12.84	12.69
506	238	0.3387	0.3493	12.76	12.77
507	288	0.3481	0.3514	12.93	12.84
508	386	0.3504	0.3538	13.00	12.92
509	485	0.3510	0.3555	13.06	12.98
510	585	0.3611	0.3574	13.23	13.04
511	631	0.3593	0.3574	13.29	13.04
512	681	0.3596	0.3575	13.04	13.05
515	789	0.3606	0.3589	13.37	13.09
516	888	0.3571	0.3592	13.25	13.10
517	987	0.3553	0.3588	13.35	13.09
518	1036	0.3603	0.3593	13.38	13.10
519	1086	0.3591	0.3598	13.29	13.12
520	1186	0.3521	0.3584	13.17	13.07
521	1282	0.3583	0.3586	13.33	13.08
522	1380	0.3557	0.3582	13.22	13.07
523	1482	0.3569	0.3576	13.28	13.04
524	1532	0.3590	0.3574	13.32	13.04
102	1533	0.3608	0.3592	13.65	13.10
103	1740	0.3592	0.3597	13.38	13.11
104	1931	0.3585	0.3601	13.41	13.13
106	2134	0.3587	0.3607	13.32	13.15
107	2289	0.3588	0.3620	13.38	13.19
108	2486	0.3661	0.3641		
109	2689	0.3669	0.3662	13.52	13.33
110	2888	0.3662	0.3689	13.54	13.42
111	3138	0.3677	0.3712	13.57	13.50
112	3384	0.3697	0.3734	13.78	13.58
115	3693	0.3710	0.3759	13.77	13.66
116	3993	0.3746	0.3784	13.83	13.75
117	4291	0.3783	0.3807	13.99	13.82
118	4590	0.3763	0.3819	13.90	13.87
119	4590	0.3809	0.3819	14.06	13.87
120	4886	0.3804	0.3826	14.02	13.89
121	5185	0.3760	0.3831	13.98	13.91
122	5485	0.3809	0.3834	13.96	13.92
123	5785	0.3802	0.3836	14.07	13.92
124	5959	0.3789	0.3837	14.01	13.93

STA 69 52° 31' S 46° 22' W 15 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	11	0.3464	0.3438	12.79	12.58
402	32	0.3523	0.3468	12.97	12.69
403	59	0.3770	0.3711	13.87	13.51
404	91	0.3633	0.3646	13.32	13.29
405	130	0.3556	0.3638	13.20	13.26
406	169	0.3661	0.3614	13.56	13.18
407	189	0.3560	0.3636	13.19	13.26

STA 69 52° 31' S 46° 22' W 15 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
408	226	0.3552	0.3614	13.16	13.18
409	280	0.3643	0.3620	13.25	13.20
410	322	0.3613	0.3611	13.13	13.17
411	390	0.3609	0.3577		
412	444	0.3720	0.3615	13.54	13.18
415	487	0.3594	0.3630	13.27	13.23
416	540	0.3584	0.3602	13.13	13.14
417	585	0.3587	0.3601	13.18	13.13
418	674	0.3591	0.3602	13.23	13.13
419	753	0.3634	0.3607	13.37	13.15
420	873	0.3621	0.3611	13.21	13.16
421	992	0.3592	0.3616	13.39	13.18
422	1132	0.3724	0.3624	13.54	13.21
101	1271	0.3560	0.3632	13.31	13.23
423	1281	0.3663	0.3632	13.30	13.23
424	1396	0.3598	0.3640	13.36	13.26
102	1457	0.3606	0.3643	13.44	13.27
103	1655	0.3689	0.3660	13.47	13.33
104	1655	0.3610	0.3660	13.37	13.33
106	2006	0.3675	0.3695	13.56	13.44
107	2187	0.3671	0.3707	13.59	13.49
108	2445	0.3736	0.3728	13.67	13.56
109	2445	0.3689	0.3728	13.68	13.56
110	2677	0.3701	0.3757	13.59	13.66
111	2875	0.3726	0.3775	13.77	13.72
112	3065	0.3739	0.3783	13.43	13.74
116	3298	0.3786	0.3788	13.84	13.76
122	3415	0.3811	0.3800	14.06	13.80

STA 74 55° 0' S 50° 4' W 17 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	8	0.3523	0.3520	13.23	12.86
502	26	0.3614	0.3578	13.36	13.06
503	58	0.3542	0.3640	13.42	13.27
504	91	0.3681	0.3734	13.65	13.59
505	126	0.3647	0.3748	13.56	13.63
506	166	0.3635	0.3734	13.49	13.59
507	208	0.3587	0.3697	13.37	13.46
508	246	0.3241	0.3708	13.38	13.50
509	308	0.3615	0.3663	13.26	13.34
510	341	0.3570	0.3639	13.24	13.26
511	382	0.3527	0.3622	13.27	13.20
512	416	0.3554	0.3619	13.22	13.19
515	461	0.3562	0.3641	13.23	13.27
516	511	0.3516	0.3618	13.22	13.19
518	602	0.3564	0.3615	13.08	13.18
519	602	0.3518	0.3615	13.27	13.18
520	650	0.3529	0.3612	13.29	13.17
521	730	0.3547	0.3612	13.19	13.17
522	830	0.3554	0.3615	13.17	13.18
101	872	0.3602	0.3617	13.34	13.18
102	918	0.3617	0.3621	13.41	13.20
523	986	0.3547	0.3624	13.42	13.20
524	987	0.3634	0.3624	13.46	13.20
103	998	0.3497	0.3622	13.35	13.20
104	1062	0.3726	0.3622		
105	1204	0.3679	0.3630	13.49	13.23
106	1360	0.3534	0.3638	13.37	13.25
107	1360	0.3681	0.3638	13.60	13.25
108	1674	0.3714	0.3658	13.56	13.32
109	1986	0.3643	0.3680	13.70	13.39
110	1986	0.3652	0.3680	13.55	13.39
111	2354	0.3743	0.3704	14.14	13.48

STA 74 55° 0' S 50° 4' W 17 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
112	2354	0.3595	0.3704	13.51	13.48
115	2560	0.3509	0.3719	13.64	13.53
116	2764	0.3645	0.3732	13.63	13.57
117	2976			14.00	13.62
118	3179	0.3759	0.3760	13.77	13.67
119	3340			13.74	13.69
120	3490	0.3685	0.3775	13.79	13.72
121	3637	0.3707	0.3786	13.90	13.75
122	3836	0.3656	0.3795	13.79	13.79
123	3984	0.3723	0.3800	13.80	13.80
124	4104	0.3820	0.3806	14.16	13.82

STA 75 56° 2' S 61° 2' W 20 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	35	0.3312	0.3306	12.23	12.13
402	44	0.3309	0.3339	12.24	12.24
403	84	0.3360	0.3408	12.43	12.48
404	134	0.3340	0.3431	12.37	12.56
405	183	0.3778	0.3445	12.49	12.60
406	236	0.3400	0.3462	12.55	12.66
407	286	0.3379	0.3475	12.62	12.71
408	336	0.3380	0.3486	12.62	12.75
409	384	0.3463	0.3499	12.71	12.79
410	436	0.3389	0.3504	12.60	12.81
411	486	0.3441	0.3513	12.74	12.84
412	537	0.3411	0.3540	12.87	12.93
415	596	0.3462	0.3558	12.85	12.99
416	647	0.3484	0.3563		
417	696	0.3416	0.3583	12.98	13.07
418	778	0.3519	0.3576	12.98	13.05
419	797	0.3489	0.3571	12.97	13.03
420	825	0.3483	0.3580	13.00	13.06
421	897	0.3497	0.3571	13.08	13.03
101	898			12.84	13.03
102	898	0.3655	0.3572	13.26	13.03
422	946	0.3527	0.3570	13.03	13.03
423	946	0.3537	0.3570	13.23	13.03
424	997	0.3590	0.3572	13.25	13.03
103	1001	0.3586	0.3571	13.09	13.03
104	1209	0.3640	0.3584	13.31	13.07
105	1448	0.3726	0.3602	13.49	13.13
106	1448	0.3583	0.3602	13.13	13.13
107	1644	0.3677	0.3612	13.51	13.16
108	1850	0.3608	0.3622	13.38	13.20
109	2061	0.3618	0.3637	13.29	13.25
110	2264	0.3659	0.3649	13.58	13.29
111	2481	0.3699	0.3660	13.51	13.33
112	2678	0.3585	0.3672	13.29	13.37
115	2689	0.3730	0.3672	13.90	13.37
116	2897	0.3662	0.3686	13.46	13.42
117	3106	0.3619	0.3702	13.38	13.47
118	3314	0.3775	0.3720	13.73	13.53
119	3566	0.3662	0.3732	13.56	13.57
120	3566	0.3682	0.3732	13.39	13.57
121	3631	0.3709	0.3735	13.57	13.58
122	3830	0.3734	0.3742	13.54	13.61
123	4029	0.3693	0.3749	13.55	13.63
124	4121	0.3775	0.3751	13.89	13.64

STA 76 57° 44′ S 66° 8′ W 31 DEC 72

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
701	13	0.3450	0.3424	12.74	12.54
702	27	0.3420	0.3426	12.70	12.54
703	53	0.3497	0.3476	12.86	12.72
704	73	0.3659	0.3667	13.39	13.36
705	94	0.3760	0.3792	13.92	13.79
706	119	0.3800	0.3862	13.90	14.02
707	144	0.3787	0.3876	13.93	14.07
708	159	0.3720	0.3868	13.83	14.04
709	185	0.3760	0.3855	13.82	14.00
710	235	0.3692	0.3806	13.67	13.83
711	284	0.3621	0.3747	13.51	13.63
712	384	0.3648	0.3701		
715	496	0.3562	0.3635	13.29	13.25
716	597	0.3556	0.3615		
718	798	0.3571	0.3607	13.25	13.15
719	898	0.3546	0.3605	13.26	13.14
301	988	0.3595	0.3605	13.45	13.14
720	998	0.3575	0.3607	13.30	13.15
721	1047	0.3547	0.3607		
722	1097	0.3559	0.3609	13.30	13.16
302	1110	0.3596	0.3609	13.24	13.16
303	1239	0.3591	0.3614	13.28	13.17
304	1375	0.3567	0.3620	13.34	13.19
305	1530	0.3605	0.3627	13.33	13.22
306	1697	0.3600	0.3637	13.42	13.25
307	1704	0.3610	0.3638	13.34	13.25
308	1831	0.3607	0.3649	13.45	13.29
310	2119	0.3641	0.3669	13.49	13.36
311	2374	0.3604	0.3688	13.45	13.42
312	2588	0.3675	0.3700	13.64	13.46
315	2801	0.3650	0.3712	13.51	13.51
316	2971			13.60	13.56
318	3367	0.3776	0.3741	13.62	13.60
319	3564	0.3713	0.3742	13.75	13.61
320	3761	0.3730	0.3744		
321	3978	0.3690	0.3746	13.63	13.62
322	4183	0.3764	0.3748		
323	4315	0.3681	0.3749	13.67	13.63
324	4491	0.3687	0.3749	13.68	13.63

STA 78 61° 3′ S 62° 58′ W 3 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
501	6	0.3683	0.3706	13.55	13.50
502	41	0.3679	0.3706	13.68	13.49
503	65	0.3811	0.3885	14.03	14.10
504	81	0.3827	0.3929	14.05	14.25
505	96	0.3811	0.3930	14.03	14.25
506	126	0.3694	0.3828	13.72	13.90
507	151			13.50	13.64
508	200	0.3619	0.3686	13.40	13.42
509	251	0.3651	0.3660	13.69	13.33
510	301	0.3561	0.3641	13.28	13.27
511	400	0.3563	0.3618	13.25	13.19
512	440	0.3563	0.3617	13.26	13.18
109	500	0.3566	0.3617	13.25	13.18
517	700	0.3838	0.3620	14.30	13.19
518	799	0.3547	0.3623	13.26	13.20
519	900	0.3586	0.3627	13.26	13.22
520	998	0.3569	0.3632	13.38	13.23
522	1222	0.3598	0.3650	13.35	13.29
523	1346	0.3566	0.3661	13.38	13.33
524	1489	0.3589	0.3672	13.44	13.37
110	1506	0.3582	0.3677		
111	1706	0.3634	0.3692	13.47	13.43

STA 78 61° 3′ S 62° 58′ W 3 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
112	1906	0.3633	0.3705	13.53	13.48
115	2116	0.3613	0.3719	13.53	13.53
116	2315	0.3653	0.3733	13.63	13.57
117	2414	0.3644	0.3740	13.62	13.60
118	2514	0.3653	0.3749	13.67	13.63
119	2714	0.3675	0.3762	13.69	13.67
120	2913	0.3663	0.3771	13.74	13.70
121	3112	0.3668	0.3776	13.70	13.72
122	3309	0.3715	0.3782	13.78	13.74
123	3511	0.3714	0.3791	13.74	13.77

STA 79 59° 56′ S 45° 2′ W 6 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
101	4	0.3615	0.3659	13.39	13.33
102	23	0.3647	0.3659	13.38	13.33
103	72	0.3737	0.3774	13.78	13.72
104	124	0.3783	0.3802	13.85	13.81
105	182	0.3785	0.3843	13.90	13.95
106	217	0.3759	0.3879	13.93	14.07
107	266	0.3777	0.3872	13.90	14.05
108	339	0.3751	0.3846	13.84	13.96
109	437	0.3737	0.3839	13.81	13.94
110	536	0.3727	0.3834	13.78	13.92
111	630	0.3721	0.3826	13.84	13.89
112	699	0.3699	0.3823	13.77	13.88
115	741	0.3682	0.3807	13.76	13.83
116	834	0.3695	0.3802	13.75	13.81
117	930	0.3676	0.3803	13.80	13.81
118	1020	0.3718	0.3803	13.76	13.81
120	1214	0.3699	0.3802	13.77	13.81
121	1321	0.3828	0.3809	13.75	13.83
122	1463	0.3725	0.3812	14.17	13.84
123	1498	0.3712	0.3814	13.79	13.85
501	1544	0.3743	0.3820	13.84	13.87
124	1591	0.3729	0.3819	13.80	13.87
502	1644	0.3719	0.3823	13.83	13.88
503	1795	0.3726	0.3827	13.88	13.89
504	1894	0.3746	0.3830	13.86	13.90
505	1995	0.3703	0.3832	13.86	13.91
506	2093			13.89	13.92
507	2192	0.3740	0.3839	13.89	13.93
508	2342	0.3740	0.3842	13.92	13.94
509	2492	0.3747	0.3847	13.94	13.96
510	2690	0.3746	0.3852	13.92	13.98
511	2890	0.3746	0.3856	14.00	13.99
512	3082	0.3756	0.3861	13.98	14.01
515	3270	0.3788	0.3865	14.03	14.02
516	3378	0.3736	0.3867	14.03	14.03
517	3594	0.3781	0.3871	14.09	14.04
518	3833	0.3784	0.3873	14.06	14.05
519	4035	0.3732	0.3875	14.05	14.06
520	4242	0.3771	0.3876	14.07	14.06
521	4449	0.3782	0.3877	14.03	14.06
522	4656	0.3759	0.3877	14.09	14.06
523	4863	0.3828	0.3878	14.39	14.07
524	5063	0.3788	0.3878	14.13	14.07

STA 82 56° 15′ S 24° 55′ W 11 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
615	1	0.3695	0.3744	13.59	13.62
616	28	0.3721	0.3760	13.72	13.68

STA 82 56° 15′ S 24° 55′ W 11 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
617	47	0.3777	0.3805	13.88	13.83
618	67	0.3834	0.3896	14.04	14.14
619	82	0.3813	0.3903	14.01	14.16
620	97	0.3801	0.3903	14.02	14.16
621	118	0.3757	0.3863	13.88	14.02
622	157	0.3682	0.3769	13.64	13.70
401	200	0.3634	0.3744	13.52	13.61
623	207	0.3638	0.3695	13.46	13.45
402	282	0.3619	0.3677	13.41	13.39
624	286	0.3634	0.3693	13.43	13.44
403	371	0.3579	0.3656	13.31	13.31
404	432	0.3595	0.3657	13.36	13.32
405	582	0.3574	0.3667	13.39	13.35
406	832	0.3624	0.3703	13.46	13.47
407	981	0.3611	0.3725	13.46	13.55
408	1080	0.3648	0.3726	13.54	13.55
409	1180	0.3661	0.3748	13.63	13.62
410	1379	0.3679	0.3762	13.61	13.67
411	1577	0.3690	0.3775	13.70	13.72
412	1776	0.3672	0.3785	13.70	13.75
1408	3191	0.3648		13.54	
1409	3392	0.3660		13.63	

STA 85 57° 30′ S 17° 23′ W 18 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
311	15	0.3826	0.3737	13.98	13.61
312	69	0.3944	0.3819	14.40	13.88
315	147	0.4112	0.3873	15.00	14.06
316	205	0.3735	0.3723	13.75	13.55
317	274	0.3680	0.3677	13.58	13.39
318	355	0.3689	0.3662	13.64	13.34
319	436	0.3784	0.3655	13.93	13.31
320	560	0.3821	0.3657	14.09	13.32
321	659	0.3845	0.3669	14.04	13.36
322	758	0.3876	0.3674	14.34	13.38
323	857	0.3658	0.3681	13.54	13.40
306	945	0.3836	0.3698	14.18	13.46
324	957	0.3825	0.3697	14.14	13.45
307	994	0.3856	0.3707	14.23	13.49
308	1094	0.3758	0.3717	13.94	13.52
309	1194	0.3745	0.3734	13.61	13.58
212	1273	0.3786	0.3719	14.07	13.53
310	1296	0.3787		14.05	
215	1391	0.3652	0.3737	13.63	13.59
218	1899	0.3698	0.3777	13.76	13.72
219	2098	0.3708	0.3788	13.83	13.76
220	2298	0.3710	0.3800	13.76	13.80
221	2496	0.3693	0.3809	13.78	13.83
201	2663	0.3672	0.3817	13.80	13.86
222	2696	0.3782	0.3817	14.04	13.86
202	2862	0.3719	0.3825	13.91	13.89
204	3259	0.3713	0.3842	13.83	13.94
205	3459	0.3953	0.3851	14.74	13.97
206	3660	0.3864	0.3860	14.34	14.01
207	3862	0.3805	0.3866	14.11	14.02
209	4268	0.3803	0.3872	14.28	14.05
210	4475	0.3837	0.3874	14.36	14.05
211	4682	0.3930	0.3874	14.59	14.05
223	4723	0.3853	0.3875	14.26	14.06
224	4723	0.3742	0.3875	13.97	14.06

STA 87 58° 38′ S 9° 26′ W 20 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
102	2	0.3874	0.3826	14.52	13.91
103	32	0.3797	0.3961	14.27	14.36
104	107	0.3933	0.3957	14.60	14.34
105	166	0.3488	0.3855	14.33	13.99
106	337	0.3784	0.3721	14.03	13.53
107	485	0.3806	0.3743	14.23	13.61
108	675	0.3106	0.3765	14.39	13.69
109	888	0.3758	0.3777	14.17	13.72
110	1088	0.3820	0.3788	14.39	13.76
111	1288	0.3773	0.3799	14.20	13.80
112	1738	0.3839	0.3822	14.52	13.88

STA 89 60° 1′ S 0° 1′ E 22 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	1	0.3796	0.3734		
402	24	0.3743	0.3809	13.83	13.84
403	40	0.3797	0.3825	13.81	13.90
404	50	0.3926	0.3939	14.66	14.28
405	74	0.3886	0.4009	14.33	14.51
407	145	0.3806	0.3868	13.99	14.03
408	174	0.3713	0.3775	13.92	13.72
410	336	0.3806	0.3764	13.99	13.68
411	437	0.3735	0.3770	13.98	13.70
412	537	0.3701	0.3775	13.89	13.72
415	647	0.3730	0.3781	13.79	13.74
416	748	0.3721	0.3786	12.49	13.76
417	848	0.3724	0.3791	14.04	13.77
418	949	0.3885	0.3795	14.31	13.79
419	1098	0.3768	0.3803	14.13	13.81
420	1298	0.3778	0.3812	14.08	13.84
422	1698	0.3753	0.3829		
211	1808	0.3736	0.3834	14.14	13.92
423	1897	0.3763	0.3837	14.05	13.93
212	2012	0.3847	0.3841	14.18	13.94
424	2096	0.3823	0.3843	14.25	13.95
215	2402	0.3768	0.3851	14.08	13.98
202	2595	0.3823	0.3857	14.21	14.00
216	2812	0.3766	0.3861	14.18	14.01
203	2996	0.3876	0.3865	14.55	14.02
204	3295	0.3814	0.3871	14.38	14.04
218	3414	0.3833	0.3872	14.41	14.05
205	3494	0.3819	0.3875	14.27	14.06
219	3614	0.3818	0.3877	14.41	14.06
206	3696	0.3843	0.3879	14.21	14.07
220	3864	0.8833	0.3883	19.72	14.08
207	3995	0.3860	0.3886	14.46	14.09
221	4173	0.3945	0.3890	14.54	14.11
208	4299	0.3811	0.3893	14.20	14.12
222	4503	0.3808	0.3896	14.36	14.13
223	4924	0.3911	0.3900	14.44	14.14
224	5309	0.3886	0.3901	14.48	14.14

STA 91 49° 34′ S 11° 28′ E 29 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	2	0.2582	0.3446	12.71	12.61
402	45	0.3594	0.3461	13.34	12.66
404	130	0.3651	0.3640	13.27	13.27
407	228	0.3585	0.3650	13.41	13.30

STA 91 49° 34' S 11° 28' E 29 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
408	314	0.3796	0.3641	13.87	13.27
410	487	0.3820	0.3623	14.04	13.21
412	683	0.3946	0.3614	14.51	13.17
415	747	0.3717	0.3613	13.90	13.17
418	1099	0.3604	0.3614	13.37	13.17
419	1301	0.3818	0.3621	11.98	13.20
421	1572	0.3845	0.3637	14.25	13.25
101	1670	0.3640	0.3648	13.63	13.29
102	1775	0.3613	0.3659	13.48	13.32
103	1884	0.3656	0.3670	13.68	13.36
424	2002	0.3719	0.3684	13.74	13.41
104	2037	0.3725	0.3686	13.97	13.42
105	2195	0.3669	0.3701	13.69	13.47
106	2342	0.3590	0.3710	12.56	13.50
108	2643	0.3664	0.3733	13.72	13.57
109	2793	0.3710	0.3745	13.83	13.62
110	2839			13.79	13.62
111	2985	0.3732	0.3752	14.18	13.64
112	3078	0.3671	0.3754	13.84	13.65
115	3189	0.3679	0.3759	13.68	13.66
116	3283	0.3725	0.3764	13.93	13.68
117	3376	0.3729	0.3768	13.92	13.69
119	3616	0.3604	0.3776	13.54	13.72
120	3767	0.3836	0.3783	14.26	13.74
121	3866	0.3676	0.3787	13.86	13.76
122	3968	0.3724	0.3789	13.92	13.77
123	4066	0.3778	0.3791		
124	4169	0.3715	0.3792		

STA 92 46° 11' S 14° 36' E 31 JAN 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
301	2	0.3350	0.3209	12.54	11.81
306	171	0.3377	0.3433	12.86	12.56
307	208	0.3434	0.3451	12.90	12.63
309	341	0.3484	0.3510	13.09	12.83
311	540	0.3572	0.3565	13.41	13.01
317	948	0.3634	0.3605	13.53	13.14
319	1134	0.3586	0.3582	13.45	13.07
321	1473	0.3569	0.3579	13.39	13.05
323	1804	0.3546	0.3591	13.41	13.09
102	1982	0.3570	0.3610	13.20	13.16
103	2086	0.3639	0.3613	13.62	13.17
104	2190	0.3615	0.3614	13.33	13.17
106	2471	0.3740	0.3632	13.97	13.23
108	2645	0.3745	0.3644	14.05	13.27
110	2896	0.3654	0.3668	13.51	13.35
112	3196	0.3779	0.3692	14.08	13.44
116	3459	0.3758	0.3708	14.42	13.49
118	3688	0.3716	0.3729	13.73	13.56
120	4059	0.3769	0.3758	14.42	13.66
122	4309	0.3740	0.3773	13.98	13.71

STA 93 41° 46' S 18° 27' E 2 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
409	11	0.2817	0.2786	10.63	10.36
410	49	0.2811	0.2796	10.61	10.39
411	144	0.2881	0.2880	10.85	10.68

STA 93 41° 46' S 18° 27' E 2 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
412	187	0.2945	0.2924	11.02	10.83
615	246	0.3042	0.2996	11.22	11.07
616	315	0.3035	0.3003	11.28	11.10
617	384	0.3234	0.3071	12.18	11.33
618	444	0.3157	0.3154	11.77	11.61
619	494	0.3191	0.3196	11.90	11.76
620	643	0.3315	0.3328	12.42	12.21
621	745	0.3414	0.3414	12.58	12.50
622	797	0.3420		12.70	
415	902	0.3542	0.3448	13.16	12.61
416	999	0.3466	0.3475	12.89	12.70
417	1072	0.3500	0.3514	12.98	12.84
419	1350	0.3534	0.3543	13.14	12.93
420	1449	0.3696	0.3550	13.68	12.96
421	1602	0.3567	0.3564	13.29	13.00
101	1998	0.3524	0.3573	13.12	13.03
102	2148	0.3575	0.3578	13.50	13.05
424	2196	0.3588	0.3580	13.50	13.05
103	2297	0.3628	0.3584	13.39	13.07
104	2449	0.3569	0.3592	13.19	13.10
105	2597	0.3611	0.3600	13.58	13.12
106	2748	0.3693	0.3606	13.71	13.14
107	2898	0.3537	0.3612	13.28	13.16
108	3018	0.3696	0.3620	13.94	13.19
109	3134	0.3741	0.3630	13.81	13.22
110	3148	0.3568	0.3629	13.32	13.22
111	3249	0.3192	0.3633	13.55	13.23
112	3349	0.3672	0.3641	13.63	13.26
115	3457	0.3597	0.3652	13.42	13.30
116	3578	0.3698	0.3664	14.09	13.34
117	3657	0.3822	0.3675	14.23	13.38
118	3717	0.3679	0.3685	13.76	13.41
119	3806	0.3776	0.3696	14.12	13.45
120	3957	0.3875	0.3714	14.33	13.51
121	4107	0.3687	0.3727	13.71	13.55
122	4256	0.3746	0.3740	14.12	13.60
123	4407	0.3733	0.3753	14.01	13.64
124	4507	0.3687	0.3761	13.74	13.67

STA 102 31° 31' S 9° 26' E 12 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
601	6	0.2582	0.2360	9.75	8.90
603	76	0.2725	0.2541	10.33	9.52
605	229	0.2701	0.2680	10.10	9.99
607	554	0.2990	0.2947	11.14	10.91
609	802	0.3287	0.3320	12.31	12.18
611	993	0.3518	0.3468	13.22	12.68
615	1191	0.3577	0.3523	13.09	12.87
617	1389	0.3505	0.3551	13.09	12.96
619	1589	0.3543	0.3550	13.15	12.96
621	1788	0.3534	0.3550	13.16	12.95
501	1806	0.3415	0.3546	12.91	12.94
623	1990	0.3492	0.3551	13.08	12.96
502	2107	0.3535	0.3556	13.05	12.97
503	2410	0.3596	0.3572	13.29	13.03
504	2610	0.3470	0.3581	13.03	13.06
507	3214	0.3510	0.3610	13.15	13.16
508	3466	0.3590	0.3616	13.23	13.17
509	3718	0.3624	0.3636	13.45	13.24
510	3969	0.3580	0.3669	13.38	13.36
515	4574	0.3700	0.3736	13.66	13.58
516	4624	0.3669	0.3737	13.54	13.59
518	4736	0.3709	0.3739	13.79	13.59

STA 103 23° 59' S 8° 30' E 17 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
601	5	0.2267	0.2316	8.56	8.76
602	14	0.2243	0.2321	8.52	8.77
603	29	0.2309	0.2352	8.82	8.88
604	55	0.2423		9.18	
606	103	0.2511	0.2659	9.57	9.92
607	132	0.2545	0.2682		
608	174	0.2647	0.2775	10.01	10.32
609	225	0.2771	0.2856	10.38	10.60
610	286	0.2796	0.2927	10.55	10.84
611	365	0.2987	0.3054	11.15	11.27
612	453	0.2988	0.3163	11.28	11.64
615	613	0.3152	0.3317	11.83	12.17
616	723	0.3208	0.3390	11.99	12.42
617	751	0.3213	0.3407	12.02	12.47
618	803	0.3261	0.3430	12.11	12.55
619	1055	0.3285	0.3491	12.36	12.76
620	1307	0.3327	0.3507	12.37	12.81
621	1560	0.3330	0.3511	12.36	12.82
622	1811	0.3319	0.3518	12.41	12.84
623	2064	0.3345	0.3532	12.44	12.89
624	2317	0.3241	0.3546	12.54	12.94
301	2551	0.3279	0.3574	12.43	13.04
302	2749	0.3309	0.3585	12.41	13.07
303	2943	0.3286	0.3595	12.37	13.10
304	3148	0.3316	0.3603	12.43	13.13
305	3348	0.3303	0.3610	12.43	13.16
306	3543	0.3282	0.3619	12.54	13.19
307	3847	0.3347	0.3657	12.56	13.31
308	4047	0.3481	0.3684	12.95	13.41
309	4247	0.3423	0.3725	12.77	13.55
310	4447	0.3549	0.3736	13.20	13.59
317	4572	0.3424	0.3739	12.85	13.59

STA 105 20° 0' S 2° 0' E 20 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
301	2	0.2116	0.2265	8.30	8.58
503	11	0.2183	0.2270	8.33	8.60
302	99	0.2516	0.2606	9.52	9.74
303	198	0.2672	0.2818	10.16	10.46
304	249	0.2742	0.2885	10.40	10.69
305	278	0.2776	0.2942	10.55	10.89
306	316	0.2855	0.2995	10.73	11.07
307	345	0.2874	0.3046	10.88	11.24
308	396	0.2922	0.3119	11.10	11.49
309	493	0.3163	0.3234	11.89	11.88
310	513	0.3075		11.54	
311	528	0.3082	0.3271	11.57	12.01
312	592	0.3113	0.3313	11.72	12.16
315	693	0.3199	0.3371	11.88	12.35
316	742	0.3201	0.3402	12.01	12.45
317	792	0.3217	0.3420	12.07	12.52
318	892	0.3222	0.3451	12.14	12.62
319	992	0.3322	0.3473	12.35	12.70
320	1093	0.3278	0.3483	12.24	12.73
321	1192	0.3275	0.3489	12.26	12.75
322	1293	0.3250	0.3490	12.25	12.75
101	1368	0.3195	0.3490	12.21	12.75
102	1612	0.3261	0.3501	12.24	12.79
103	1862	0.3394	0.3519	12.64	12.85
104	2111	0.3289		12.31	
105	2358	0.3340	0.3555	12.42	12.97
106	2610	0.3392	0.3572	12.68	13.03
107	2860	0.3291	0.3584	12.42	13.07

STA 105 20° 0' S 2° 0' E 20 FEB 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
108	3109	0.3353	0.3594	12.55	13.10
109	3258	0.3371	0.3599	12.71	13.12
110	3505	0.3361	0.3603	12.56	13.13
111	3754	0.3452	0.3609	13.06	13.15
112	4007	0.3384	0.3612	12.71	13.16
115	4251	0.3368	0.3614	12.59	13.17
116	4501	0.3395	0.3616	12.70	13.18
117	4749	0.3414	0.3618	12.68	13.18
118	4998	0.3352	0.3618	12.65	13.18
119	5252	0.3427	0.3620	12.84	13.19
120	5430	0.3467	0.3620		

STA 114 21° 10' N 21° 46' W 12 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
101	16	0.2418	0.2440	9.39	9.17
102	106	0.2411	0.2447	9.41	9.19
103	135	0.2559	0.2526	9.85	9.46
104	165	0.2515	0.2560	9.82	9.57
105	225	0.2611	0.2631		
106	265	0.2712	0.2690	10.29	10.02
107	309	0.2794	0.2733	10.81	10.17
108	364	0.2783	0.2828	10.78	10.49
109	422	0.2868	0.2863	10.92	10.61
110	483	0.2847	0.2922	10.95	10.82
111	536	0.2936	0.2968	11.21	10.97
112	558	0.3039	0.2994	11.55	11.06
115	593	0.2950	0.3001	11.26	11.08
116	641	0.2985	0.3043	11.47	11.23
118	736	0.3050	0.3135	11.70	11.54
119	788	0.3180	0.3176	11.92	11.68
120	843	0.3507	0.3199	13.00	11.76
121	894	0.3139	0.3237	12.01	11.89
122	994	0.3249	0.3264	12.26	11.98
510	1156	0.3288	0.3287	12.34	12.06
124	1194	0.3217	0.3293	12.21	12.08
701	1293	0.3346	0.3315	12.32	12.15
702	1442	0.3362	0.3360	12.44	12.31
703	1594	0.3383	0.3402	12.59	12.45
704	1742	0.3423	0.3441	12.71	12.58
512	1757	0.3436	0.3439	12.74	12.57
705	1893	0.3483	0.3465		
715	2042	0.3492	0.3488	12.92	12.74
515	2213	0.3482	0.3506	12.95	12.80
716	2343	0.3498	0.3519	12.96	12.84
717	2492	0.3536	0.3534	13.00	12.90
718	2643	0.3547	0.3543	12.96	12.93
719	2791	0.3617	0.3555	13.28	12.97
720	2942	0.3531	0.3565	13.05	13.00
516	3117	0.3596	0.3576	13.27	13.04
517	3267	0.3634	0.3586	13.36	13.07
518	3416	0.3593	0.3593	13.30	13.10
519	3565	0.3608	0.3601	13.21	13.12
520	3716	0.3586	0.3606	13.24	13.14
521	3865	0.3649	0.3610	13.37	13.16
522	4014	0.3571	0.3614	13.27	13.17
523	4175	0.3609	0.3615	13.19	13.17
524	4342	0.3601	0.3616	13.28	13.18

STA 115 28° 1' N 26° 0' W 15 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
301	18	0.2509	0.2476	9.53	9.29
302	47	0.2494	0.2480	9.55	9.30
303	68			9.57	9.31
401	112	0.2491	0.2468	9.64	9.33
902	161	0.2488	0.2501	9.60	9.37
903	213	0.2545	0.2574	9.85	9.62
305	287	0.2674	0.2630	10.08	9.81
306	388	0.2709	0.2742	10.43	10.20
307	491	0.2838	0.2822	10.65	10.47
308	589	0.2933	0.2891	10.96	10.71
309	738	0.3086	0.2996	11.60	11.07
310	788	0.3105	0.3028	11.36	11.18
311	863	0.3232	0.3086	11.97	11.37
312	938	0.3124	0.3137	11.76	11.55
315	997	0.3197	0.3153	11.81	11.60
316	1098	0.3253	0.3182	11.96	11.70
317	1148	0.3206	0.3200	12.00	11.76
318	1199	0.3401	0.3184	12.44	11.70
319	1294	0.3432	0.3218	12.60	11.82
321	1341	0.3263	0.3230		
320	1341	0.3261	0.3231	12.17	11.86
323	1392	0.3259		12.19	
324	1491	0.3311	0.3285	12.20	12.05
904	1572	0.3290	0.3332	12.34	12.21
905	1773	0.3346	0.3387	12.49	12.40
906	1974	0.3371	0.3432	12.61	12.55
907	2172	0.3433	0.3473	12.77	12.69
908	2375			12.86	12.82
909	2577	0.3484	0.3532		
910	2779	0.3493	0.3549	13.00	12.95
911	2978	0.3498	0.3567		
912	3234	0.3528	0.3581	13.08	13.06
915	3477	0.3547	0.3591		
916	3734	0.3539	0.3600	13.18	13.12
917	3990	0.3562	0.3604	13.22	13.14
918	4199	0.3595	0.3608	13.18	13.15
919	4401	0.3588	0.3612	13.19	13.16
920	4606	0.3597	0.3617	13.21	13.18
921	4812	0.3588	0.3620	13.20	13.19
922	5017	0.3576	0.3622	13.26	13.20
927	5216	0.3585	0.3622	13.25	13.19
930	5303	0.3592	0.3622	13.23	13.20

STA 116 29° 56' N 30° 24' W 18 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
201	17	0.2506	0.2519	9.65	9.44
202	40	0.2545	0.2519	9.66	9.44
204	189	0.2551	0.2574	9.79	9.62
205	290	0.2594	0.2624	9.98	9.80
206	391	0.2807	0.2713	10.63	10.10
207	438	0.2746	0.2751	10.38	10.23
208	508	0.2797	0.2805	10.62	10.42
209	594	0.2871	0.2856	10.86	10.59
210	688	0.2936	0.2945	11.03	10.89
211	739	0.2997	0.2979	11.21	11.01
212	887	0.3080	0.3069	11.61	11.31
215	998	0.3136	0.3116	11.65	11.47
216	1096			11.81	11.62
217	1144	0.3206	0.3181	11.97	11.70
218	1195	0.3203	0.3200	11.95	11.76
219	1244	0.3204	0.3217	12.00	11.82
220	1294	0.3379	0.3236	12.55	11.88
221	1340	0.3201	0.3250	12.02	11.93
223	1440	0.3451	0.3288	12.81	12.06

STA 116 29° 56' N 30° 24' W 18 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
607	1441	0.3258	0.3293	12.20	12.08
224	1485	0.3269	0.3300	12.22	12.10
608	1566	0.3320	0.3341	12.35	12.24
609	1690	0.3348		12.48	
610	1814	0.3393	0.3406	12.65	12.46
611	1941	0.3340	0.3434	12.35	12.55
612	2090	0.3473	0.3470	12.83	12.68
615	2240	0.3448	0.3491	12.81	12.75
616	2390	0.3478	0.3514	12.85	12.83
617	2540	0.3466	0.3529		
618	2691	0.3513	0.3547	12.97	12.94
619	2843	0.3499	0.3558	12.98	12.98
620	2994	0.3551	0.3568	13.09	13.01
621	3144	0.3527	0.3575	13.08	13.03
622	3295	0.3516	0.3581	13.04	13.06
623	3449	0.3530	0.3590	13.13	13.09
624	3601	0.3543	0.3595	13.12	13.10
626	3904	0.3560	0.3602		
628	4207	0.3546	0.3606	13.15	13.14
629	4359	0.3560	0.3608	13.19	13.15
326	4379	0.3572	0.3609	13.16	13.15
630	4502	0.3592	0.3612	13.22	13.16
333	4662	0.3576		13.21	

STA 117 30° 40' N 38° 58' W 20 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
301	8	0.2447	0.2469	9.53	9.26
302	21	0.2434	0.2468	9.55	9.26
303	89	0.2447	0.2474	9.56	9.28
304	138	0.2443	0.2489	9.56	9.33
305	158	0.2493	0.2497	9.65	9.36
306	188	0.2567	0.2531	9.93	9.48
307	259	0.2500	0.2564	9.84	9.59
308	340			10.29	9.74
601	423	0.2653	0.2648	10.21	9.88
309	539	0.2766	0.2758	10.52	10.26
310	640	0.2793	0.2829	10.70	10.50
311	690	0.2842	0.2879	10.94	10.67
312	741	0.2896	0.2930	11.08	10.84
315	800	0.2928	0.2980	11.28	11.01
316	851	0.3075	0.3013	11.68	11.12
317	902	0.3051	0.3069	11.58	11.32
318	952	0.3121	0.3107	11.70	11.45
319	1002	0.3138	0.3148	11.84	11.58
320	1052	0.3154	0.3170	11.91	11.66
321	1152	0.3172	0.3213	12.04	11.81
323	1403	0.3282	0.3322	12.35	12.18
324	1503	0.3278	0.3350	12.41	12.27
602	1578	0.3296	0.3354	12.41	12.28
604	1687	0.3362	0.3397	12.53	12.43
806	1889	0.3346	0.3439	12.65	12.57
809	2091	0.3360	0.3483	12.77	12.72
812	2291	0.3434	0.3517	12.88	12.84
816	2495	0.3435	0.3533	12.91	12.89
819	2998	0.3433	0.3562	13.00	12.99
822	3498	0.3473	0.3579	13.08	13.05
824	3565	0.3492	0.3581	13.08	13.06

STA 118 31° 18' N 45° 38' W 23 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
201	1	0.2406	0.2428	9.39	9.13
202	21	0.2426	0.2432	9.41	9.14
602	79	0.2450	0.2450	9.46	9.20
203	84	0.2454	0.2452	9.54	9.21
603	98	0.2474	0.2451	9.63	9.20
604	118	0.2457	0.2454	9.44	9.21
205	158	0.2499	0.2525	9.70	9.46
206	207	0.2526	0.2552	9.83	9.55
207	306	0.2514	0.2577	9.85	9.63
208	503	0.2714	0.2710	10.43	10.09
209	602	0.2875	0.2808	10.92	10.42
210	700	0.2960	0.2956	11.18	10.93
212	899	0.3145	0.3172	11.90	11.67
225	957	0.3159	0.3202	11.98	11.77
215	1107	0.3216	0.3257	12.19	11.96
216	1204	0.3253	0.3296	12.29	12.09
217	1301	0.3323	0.3320	12.40	12.17
219	1500	0.3359	0.3370	12.48	12.34
220	1599	0.3404	0.3395	12.66	12.42
221	1699	0.3369	0.3416	12.60	12.49
222	1801	0.3403	0.3436	12.66	12.56
223	1899			12.81	12.62
224	1999	0.3462	0.3469	12.87	12.68
629	2205	0.3445	0.3500	12.91	12.78
607	2429	0.3487	0.3519	12.92	12.85
608	2654	0.3492	0.3539	13.02	12.92
609	2850	0.3432	0.3550	12.83	12.95
610	3049	0.3737	0.3565	13.58	13.00
612	3448	0.3576	0.3588	13.27	13.08
615	3646	0.3669	0.3603	13.64	13.13
616	3847	0.3574	0.3614	13.24	13.17
617	4050	0.3581	0.3623	13.35	13.20
619	4345	0.3626		13.39	
627	4525	0.3562	0.3634	13.22	13.24

STA 119 31° 49' N 50° 53' W 25 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
101	5	0.2450	0.2394	9.51	9.01
102	54	0.2416	0.2436	9.40	9.15
103	151	0.2500	0.2481	9.68	9.31
105	248	0.2543	0.2556	9.78	9.56
106	295	0.2539	0.2570	9.78	9.61
107	345	0.2557	0.2587	9.86	9.67
108	394	0.2603	0.2609	10.09	9.74
109	443	0.2710	0.2631	10.43	9.82
110	492	0.2680	0.2674	10.25	9.97
111	540	0.2727	0.2714	10.35	10.10
112	580	0.2738	0.2744	10.49	10.21
115	640	0.2807	0.2809	10.66	10.43
116	689	0.2884	0.2858	10.95	10.60
117	788	0.3192	0.2996	11.89	11.07
118	888	0.3152	0.3128	11.77	11.52
119	939	0.3192		12.00	
120	988	0.3234		12.16	
121	1089	0.3282	0.3284	12.26	12.05
122	1190	0.3344	0.3295	12.41	12.08
123	1292	0.3311	0.3331	12.40	12.20
201	1565	0.3385	0.3422	12.66	12.52
202	1970	0.3600	0.3463	13.35	12.66
203	2369	0.3463	0.3509	12.90	12.81
204	2769	0.3514	0.3540	13.00	12.92
205	3168			13.18	13.00
206	3567	0.3557	0.3598	13.26	13.11
207	3967	0.3581	0.3619	13.28	13.19

STA 119 31° 49' N 50° 53' W 25 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
208	4370	0.3599	0.3633	13.34	13.24
209	4775	0.3609	0.3644	13.37	13.27
210	5181	0.3613	0.3646	13.34	13.28
212	5346	0.3627	0.3647	13.44	13.28
216	5550	0.3624	0.3646	13.44	13.28
221	5763	0.3629	0.3648	13.40	13.29

STA 120 33° 16' N 56° 33' W 27 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
401	3	0.2522	0.2534	9.64	9.49
402	28	0.2567	0.2535	9.88	9.49
403	79	0.2656	0.2536	9.71	9.49
404	153	0.2521	0.2538	9.67	9.50
405	228	0.2541	0.2561	9.77	9.58
406	302	0.2813	0.2582	9.96	9.65
407	402	0.2638	0.2640	10.07	9.85
408	503			10.44	10.15
409	602	0.3062	0.2828	10.79	10.50
410	652	0.2902	0.2894	10.98	10.72
412	801	0.3357	0.3067	11.82	11.31
415	900	0.3209	0.3195	12.02	11.75
416	999	0.3412	0.3267	12.23	11.99
417	1150	0.3540	0.3332	12.58	12.21
419	1447	0.3526	0.3405	12.70	12.46
420	1599	0.3607	0.3428	12.89	12.54
421	1650	0.3422	0.3434	12.77	12.56
422	1701	0.3553	0.3438	12.73	12.57
423	1750	0.3732	0.3445	12.88	12.59
424	1802	0.3444	0.3449	12.86	12.61
101	1887	0.3365	0.3460	12.69	12.65
102	1987	0.3409	0.3471	12.80	12.68
103	2188	0.3418	0.3485	12.71	12.73
104	2387	0.3409	0.3504	12.83	12.79
105	2588	0.3486	0.3522	12.95	12.86
106	2789	0.3496	0.3540	12.97	12.92
107	2989	0.3479	0.3553	12.97	12.96
108	3191	0.3543	0.3568	13.17	13.01
109	3391	0.3545	0.3585	13.13	13.07
110	3592	0.3502	0.3599	13.09	13.12
111	3792	0.3573	0.3609	13.28	13.15
115	4297	0.3545	0.3627	13.20	13.21
116	4550	0.3548	0.3633	13.22	13.23
117	4806	0.3571	0.3640	13.28	13.26
118	5058	0.3574	0.3644	13.26	13.27
119	5314	0.3565	0.3648	13.27	13.28
122	5441	0.3573	0.3648	13.30	13.29
125	5500	0.3555	0.3648	13.30	13.29
130	5554	0.3562	0.3649	13.32	13.29

STA 121 35° 59' N 67° 59' W 30 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
215	7	0.2513	0.2484	9.82	9.32
216	55	0.2450	0.2487	9.56	9.33
217	153	0.2480	0.2488	9.58	9.33
218	201	0.2512	0.2512	9.99	9.41
219	299	0.2528	0.2534	9.72	9.49
201	349	0.2547	0.2549	9.79	9.54
202	400	0.2510	0.2562	9.81	9.58

STA 121 35° 59' N 67° 59' W 30 MAR 73

SAMPLE No.	DEPTH M	ARGON CONC ML/KG	ARGON SOL ML/KG	NITROGEN CONC ML/KG	NITROGEN SOL ML/KG
203	500	0.2561	0.2600	9.99	9.71
204	602	0.2658	0.2686	10.30	10.01
205	703	0.2806	0.2808	10.76	10.43
206	803	0.3033	0.2893	11.54	10.72
207	853	0.2961	0.2961	11.23	10.95
208	904	0.3029	0.3034	11.47	11.20
209	954	0.3098	0.3110	11.74	11.46
210	1004	0.3199	0.3174	12.11	11.68
211	1105	0.3317	0.3297		
212	1255	0.3335	0.3369	12.63	12.34
225	1407	0.3489	0.3397	13.11	12.43
226	1559	0.3353	0.3421	12.67	12.51
326	1632	0.3455	0.3434	12.76	12.56
228	1861	0.3438		12.88	
325	1932	0.3432	0.3461	12.81	12.65
301	2135	0.3457	0.3479	12.78	12.71
302	2284	0.3502	0.3488	12.97	12.74
303	2425	0.3460	0.3498	12.94	12.78
304	2568	0.3464	0.3509	12.86	12.81
305	2716	0.3721	0.3521	13.80	12.85
306	2863	0.3679	0.3536	13.59	12.90
307	3014	0.3458	0.3546	12.77	12.94
308	3161	0.3637	0.3561	13.39	12.99
309	3311	0.3556	0.3574	13.12	13.03
310	3459	0.3539	0.3588	13.11	13.08
311	3609	0.3636	0.3597	13.34	13.11
312	3758	0.3632	0.3608	13.42	13.15
315	3909	0.3581	0.3613	13.21	13.16
316	4061	0.3624		13.33	
317	4212	0.3615	0.3623	13.39	13.20
318	4363	0.3558	0.3626	13.08	13.21
319	4514	0.3643	0.3630	13.49	13.22
321	4666	0.3609	0.3631	13.33	13.23
327	4767	0.3677		13.58	
323	4830	0.3561	0.3634	13.24	13.24
332	4871	0.3615		13.29	
324	4904	0.3646	0.3634	13.61	13.24

Chapter 6

INTERCALIBRATION STATIONS

Introduction

The first GEOSECS field work in the Atlantic Ocean, and the second test and intercalibration exercise during the GEOSECS program, took place from 25 August to 2 September 1970. It was designated as KNORR 9, the ninth expedition of R/V KNORR, operated by Woods Hole Oceanographic Institution. (The first GEOSECS effort at sea occurred in September 1969 aboard R/V MELVILLE. The shipboard results of that and other test and/or intercalibration cruises to the location off Baja California known as "GEOSECS I" are presented in Volume 3 of the GEOSECS Atlas Series.) During a seven day period, 41 casts were made at or near the position 35°47′N, 68°00′W, named "GEOSECS II" to a depth of 4980 to 5080 meters. Three standard hydrocasts were made using teflon lined Nansen bottles. The remaining casts were oriented towards the collection of samples for intercalibration or test purposes. Sampling devices included 30 liter Niskin bottles, 200 liter Gerard barrels, and 1000 liter Niskin bags. Water was also collected by pumping at depths to 100 meters. Samples were collected for shipboard measurement of salinity, dissolved oxygen, silicate, phosphate, nitrate, total CO_2, alkalinity, ^{90}Sr, and ^{222}Rn, and for shorebased determinations of ^{13}C, ^{14}C, ^{3}H, ^{228}Ra, ^{226}Ra, ^{90}Sr, and other isotopes, and trace elements. A more complete description of the results of the expedition to GEOSECS II may be found in *Earth and Planetary Science Letters*, (1972), 16, 47-145, the collected papers of the Geochemical Ocean Sections Program during the period 1970-1971.

The shakedown cruise, KNORR 29, immediately preceding the GEOSECS Atlantic Expedition, afforded the next opportunity to visit the GEOSECS II location, in July 1972. This time, R/V KNORR, sailing on the Fourth of July, was equipped with the full array of sampling, analytical, and computer equipment to be used on the main expedition. The first station of KNORR 29, Station 248, was taken at 38°45′N, 70°00′W, to test rosette sampling equipment. After 4 casts a decision was made to return to Woods Hole to put ashore some failing computer equipment needed for Leg 1.

On 7 July, R/V KNORR sailed for the GEOSECS II position, where 12 casts were completed as Station 249 in the period 9-11 July. The deep pumping system, used to take large volume samples in the upper 400 meters, was deployed on 3 casts to collect samples for ^{14}C, ^{222}Rn, ^{226}Ra, ^{228}Ra, and for filtration. Four casts were made with the new 270 liter, stainless steel Gerard barrels for ^{14}C, ^{226}Ra, ^{228}Ra, and ^{210}Pb. Three rosette casts were completed for small volume samples and near bottom ^{222}Rn. The first of two Niskin bag casts for ^{32}Si was unsuccessful, failing to open because the rigging fouled the wire, preventing the messengers from falling. These samplers were designed to contain bundles of chemically treated synthetic fibers on which could be absorbed ^{32}Si and ^{228}Ra. By opening the flow-through samplers at the desired depth, trace elements and isotopes could be extracted from thousands of liters of seawater in a soaking period of 8-12 hours. A subsequent test was carried out with divers observing the deployment of the bags. It quickly became apparent that with the ship moving at about 1 knot, the bags would stream aft, clearing the wire. This procedure was tried successfully on the following cast and was adopted as standard procedure.

R/V KNORR arrived back in Woods Hole on the morning of 13 July 1972, to make final preparations for the beginning of Leg 1 of the GEOSECS Atlantic Expedition.

Lists of participants, station and cast descriptions, and reports of shipboard data from KNORR 9 and KNORR 29 expeditions are presented on the following pages.

The third occupation of the GEOSECS II station position took place on 30-31 March 1973, during which time Station 121, the final station of the 9 month GEOSECS Atlantic Expedition, KNORR 30, was completed. The shipboard data from Station 121 appears in Chapter 2, Hydrographic Data.

Robert T. Williams, SIO
June 1980

LIST OF PARTICIPANTS

GEOSECS II

Derek W. Spencer, Chief Scientist
Woods Hole Oceanographic Institution

BATTELLE NORTHWEST

R. Campbell
Wyatt Silker

HEIDELBERG UNIVERSITY

Karl O. Munnich

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Pierre E. Biscaye
Wallace S. Broecker
John G. Goddard
R. Pardee
Robert Trier

SCRIPPS INSTITUTION OF OCEANOGRAPHY

George C. Anderson
Yu-Chia Chung
Harmon Craig
Peter M. Kroopnick
Arnold W. Mantyla

TELEDYNE ISOTOPES

David R. Schink

TRAPELO, INC.

W. Major

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Shmuel Ben-Yaakov

UNIVERSITY OF MIAMI

Shale Niskin

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Susan Kadar
E. Ross
Peter L. Sachs

YALE UNIVERSITY

K. Kilmer

STATION AND CAST DESCRIPTION

GEOSECS II R/V KNORR

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	REMARKS
1	1	1	26 AUG 70	SDT	35° 46.0' N	67° 59.0' W	0130			* SDT 1500 M
1	1	2	26 AUG 70	NAN	35° 46.5' N	67° 58.8' W	0300	5000	1510	* SHALLOW NANSEN
1	1	3	26 AUG 70	GER	35° 46.0' N	67° 56.0' W	0610		400	* SHALLOW GERARD, C-14
1	1	4	26 AUG 70	NAN	35° 46.8' N	67° 59.8' W	1150	5000	4915	* DEEP NANSEN
1	1	5	26 AUG 70	BAG	35° 46.8' N	67° 59.0' W	1415			* SHALLOW NISKIN BAG
1	1	6	26 AUG 70	SPE	35° 47.0' N	67° 56.0' W	1700			* EH/PH PROBE
1	1	7	26 AUG 70	BAG	35° 47.0' N	67° 59.0' W	2300		891	* SHALLOW NISKIN BAG, C-14
1	1	8	27 AUG 70	NIS	35° 49.0' N	68° 0.0' W	0215			* NISKIN/NANSEN TRACE ELEMENTS
1	1	9	27 AUG 70	SAT	35° 49.5' N	68° 1.0' W	1025			* SATUROMETER
1	1	11	27 AUG 70	NIS	35° 47.5' N	68° 2.0' W	1505			* SHALLOW NISKIN, TRITIUM
1	1	12	27 AUG 70	NIS	35° 51.0' N	67° 59.0' W	2200			* INTERMEDIATE NISKIN/NANSEN
1	1	13	28 AUG 70	BAG	35° 47.5' N	68° 1.5' W	0430		1790	* INTERMEDIATE NISKIN BAG, C-14
1	1	14	28 AUG 70	NIS	35° 47.3' N	67° 57.0' W	0830			* INTERMEDIATE NISKIN, RA-226
1	1	15	28 AUG 70	NIS	35° 45.0' N	68° 0.0' W	1215			* INT. NISKIN, TRACE ELEMENTS
1	1	16	28 AUG 70	BAG	35° 45.0' N	68° 0.0' W	1400		2516	* INTERMEDIATE NISKIN BAG
1	1	17	28 AUG 70	NIS	35° 45.0' N	68° 0.0' W	1600			* NISKIN, RADIUM INTERCOMP
1	1	18	28 AUG 70	NAN	35° 45.0' N	68° 0.0' W	1755		725	* SHALLOW NANSEN
1	1	19	28 AUG 70	NIS	35° 45.0' N	68° 0.0' W	1848			* INTERMEDIATE NISKIN/NANSEN
1	1	20	28 AUG 70	NIS	35° 47.0' N	67° 59.0' W	2050			* NISKIN/NANSEN, TRACE ELEMENTS
1	1	21	28 AUG 70	BAG	35° 47.5' N	67° 58.0' W	2330		3500	* INTERMEDIATE NISKIN BAG, C-14
1	1	22	29 AUG 70	NIS	35° 46.0' N	68° 0.0' W	0450			* NISKIN/NANSEN, CO2, H3
1	1	23	29 AUG 70	NIS	35° 46.7' N	68° 0.0' W	1155			* SHALLOW NISKIN/NANSEN, RA-226
1	1	24	29 AUG 70	BAG	35° 46.7' N	68° 0.0' W	1230		4570	* DEEP NISKIN BAG, C-14
1	1	25	30 AUG 70	NIS	32° 22.7' N	64° 38.6' W	1315			* SURFACE NISKIN, RADON
1	1	26	31 AUG 70	BAG	35° 46.9' N	68° 0.0' W	1110	5020	4893	* DEEP NISKIN BAG, C-14
1	1	27	31 AUG 70	NIS	35° 46.5' N	67° 59.0' W	1500			* SURFACE NISKIN, RADON
1	1	29	31 AUG 70	NIS	35° 46.5' N	67° 59.0' W	1615			* PCO2 TEST, NEPHELOMETER
1	1	30	31 AUG 70	NIS	35° 46.5' N	67° 59.0' W	1735			* BOTTOM NISKIN, RA-226
1	1	31	1 SEP 70	NIS	35° 48.0' N	68° 0.5' W	0010	4958		* DEEP NISKIN/NANSEN
1	1	32	1 SEP 70	BAG	35° 46.0' N	67° 57.0' W	0400		320	* SHALLOW NISKIN BAG, C-14
1	1	33	1 SEP 70	SAT	35° 46.0' N	67° 57.0' W	0500			* SATUROMETER (TEST)
1	1	34	1 SEP 70	NIS	35° 48.0' N	68° 2.0' W	1045			* BOTTOM NISKIN, RADON
1	1	35	1 SEP 70	NIS	35° 48.0' N	68° 2.2' W	1200			* NEPHELOMETER/SUSPENDED MATTER
1	1	36	1 SEP 70	NIS	35° 46.0' N	68° 2.0' W	1730	5000	1972	* INTERMEDIATE NISKIN/NANSEN
1	1	37	1 SEP 70	NIS	35° 46.0' N	68° 0.0' W	1830			* SURFACE RADON
1	1	38	1 SEP 70	NIS	35° 46.0' N	68° 2.0' W	1913			* NISKIN/NANSEN, H3
1	1	39	1 SEP 70	NIS	35° 44.8' N	68° 2.0' W	2210			* NISKIN/NANSEN, H3
1	1	40	1 SEP 70	NIS	35° 45.0' N	68° 3.0' W	2320			* NISKIN/NANSEN, H3
1	1	41	2 SEP 70	NIS	35° 45.0' N	68° 3.0' W	0005	5080		* NISKIN, BOTTOM RADON

STATION: 1 LEG: I POSITION: 35° 46' N 67° 58' W DATE: 26 AUG 70

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
201		0	26.59	26.59	36.069	23.691	31.960	39.850	23.691	205	1.0	0.03	0.0	0
1850		1	26.77	26.77	35.925	23.527	31.792	39.679	23.531					1
202		25	26.58	26.57	36.061	23.690	31.959	39.850	23.797	203	2.9	0.02	0.0	25
1851		30	26.37	26.36	35.986	23.699	31.974	39.871	23.827					30
203		50	23.81	23.80	36.306	24.713	33.033	41.013	24.928	213	1.0	0.04	0.0	50
1852		63	22.96	22.95	36.412	25.041	33.403	41.385	25.313					63
204		76	21.73	21.71	36.526	25.477	33.873	41.887	25.806	196	1.0	0.04	0.5	76
205		101	20.30	20.28	36.543	25.883	34.321	42.376	26.323	195	1.0	0.12	2.4	101
1853		105	20.88	20.86	36.605	25.774	34.193	42.231	26.230					105
206		152	18.72	18.69	36.539	26.298	34.785	42.886	26.962	205	2.0	0.14	2.5	152
1854		167	18.77	18.74	36.542	26.288	34.773	42.874	27.018					167
207		213	18.10	18.06	36.534	26.454	34.961	43.082	27.387	211	2.0	0.14	2.9	213
1855		219	18.25	18.21	36.532	26.415	34.918	43.034	27.374					219
1856		262	17.93	17.88	36.521	26.489	35.002	43.129	27.637					262
208		280	17.85	17.80	36.514	26.504	35.020	43.149	27.731	213	2.0	0.16	3.2	280
3601		304			36.510						2.0	0.20	4.3	304
1857		316	17.78	17.72	36.505	26.516	35.035	43.167	27.901					316
209		355	17.67	17.61	36.499	26.541	35.063	43.198	28.096	212	2.0	0.18	3.7	355
1858		419	17.55	17.48	36.481	26.559	35.087	43.226	28.395					419
210		430	17.55	17.47	36.487	26.564	35.092	43.231	28.448	212	2.0	0.21	3.7	430
211		505			36.444						2.0	0.22	5.0	505
212		506	17.28	17.19	36.436	26.595	35.132	43.281	28.813	208	2.0	0.24	4.6	506
1859		521	17.27	17.18	36.437	26.598	35.136	43.285	28.882					521
213		581	16.88	16.78	36.356	26.633	35.185	43.348	29.182	202	2.9	0.32	6.3	581

STATION: 1 LEG: I POSITION: 35° 46' N 67° 58' W DATE: 26 AUG 70

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
214		657	15.91	15.80	36.163	26.716	35.304	43.501	29.609	186	3.9	0.52	9.5	657
1860		725	14.84	14.72	35.964	26.806	35.436	43.671	30.012					725
215		758	14.04	13.92	35.834	26.880	35.541	43.805	30.243	170	5.9	0.79	13.9	758
3602		858			35.613						8.8	0.95	16.8	858
216		861	11.98	11.86	35.536	27.069	35.814	44.156	30.922	157	9.8	1.03	18.3	861
3603		885	12.10	11.98	35.541	27.050	35.791	44.129	31.008		9.8	1.06	18.1	885
3604		909	11.48	11.36	35.455	27.102	35.869	44.230	31.178		10.7	1.12	19.6	909
3605		931	10.92	10.80	35.383	27.149	35.940	44.324	31.335		11.7	1.18	20.7	931
3606		942	10.71	10.59	35.359	27.168	35.968	44.361	31.407		11.7	1.19	21.2	942
3607		951	10.47	10.35	35.324	27.184	35.995	44.397	31.468		12.7	1.28	21.9	951
3608		962	10.20	10.08	35.294	27.207	36.030	44.444	31.547		12.7	1.41	22.3	962
217		963	9.50	9.38	25.228	27.274	36.128	44.570	31.633	154	13.7	1.50	23.4	963
3609		973	9.94	9.82	35.262	27.227	36.062	44.486	31.621		13.7	1.49	22.8	973
3610		983	9.70	9.58	35.233	27.245	36.090	44.525	31.690		14.7	1.48	23.3	983
3611		993	9.44	9.32	35.206	27.267	36.124	44.569	31.763		14.7	1.49	23.5	993
3612		1013	9.02	8.90	35.158	27.298	36.174	44.637	31.893		16.6	1.52	24.3	1013
3613		1064	8.02	7.90	35.095	27.404	36.326	44.832	32.253		16.6	1.43	24.3	1064
218		1065	7.20	7.09	35.064	27.497	36.458	44.999	32.372	173	14.7	1.45	23.0	1065
3614		1114	6.97	6.85	35.049	27.518	36.490	45.042	32.620		14.7	1.46	22.0	1114
3615		1165	6.13	6.02	35.016	27.603	36.616	45.206	32.961		15.6	1.35	20.8	1165
219		1193	5.44	5.33	34.990	27.667	36.715	45.336	33.173	220	13.7	1.30	19.9	1193
401		1218	5.19	5.08	34.989	27.696	36.756	45.389	33.324	228	13.7	1.25	19.5	1218
3616		1255	5.40	5.28	35.010	27.689	36.738	45.361	33.479		13.7	1.29	19.3	1255
220		1319	4.84	4.72	34.990	27.738	36.816	45.465	33.838	241	12.7	1.21	19.0	1319
3617		1367	4.99	4.87	35.009	27.736	36.807	45.450	34.050		12.7	1.20	18.7	1367
402		1425	4.56	4.44	34.985	27.765	36.858	45.522	34.360	247	12.7	1.21	18.4	1425
3618		1465	4.71	4.58	35.010	27.769	36.854	45.511	34.540		12.7	1.23	18.2	1465
221		1510	4.53	4.40	34.984	27.769	36.864	45.529	34.752	255	11.7	1.16	18.1	1510
3619		1566	4.43	4.29	34.990	27.785	36.885	45.555	35.027		12.7	1.14	18.0	1566
403		1631	4.22	4.08	34.976	27.796	36.908	45.588	35.343	259	12.7	1.16	17.9	1631
3620		1669	4.28	4.14	34.978	27.792	36.901	45.579	35.510		11.7	1.19	17.8	1669
3621		1771	4.13	3.98	34.971	27.803	36.920	45.606	35.991		12.7	1.14	17.6	1771
404		1837	4.01	3.85	34.962	27.808	36.932	45.624	36.302	265	12.7	1.17	17.7	1837
3622		1872	4.00	3.84	34.967	27.814	36.938	45.631	36.467		12.7	1.22	17.5	1872
3623		1972	3.92	3.75	34.966	27.822	36.951	45.648	36.933		12.7	1.21		1972
405		2042	3.87	3.69	34.961	27.823	36.955	45.655	37.255	263	13.7	1.15	17.7	2042
406		2246	3.72	3.53	34.967	27.845	36.986	45.694	38.207	264	13.7	1.17	17.7	2246
407		2400	3.58	3.37	34.958	27.852	37.002	45.717	38.918	265	20.5	1.14	17.8	2400
408		2542	3.49	3.27	34.956	27.861	37.015	45.736	39.571	264	15.6	1.16	18.0	2542
409		2704	3.36	3.12	34.960	27.877	37.040	45.768	40.324	267	16.6	1.17	17.8	2704
410		2857	3.19	2.94	34.951	27.887	37.059	45.797	41.032	266	19.5	1.16	17.8	2857
411		3014	3.07	2.81	34.941	27.891	37.071	45.815	41.748	265	18.6	1.21	18.0	3014
412		3169	2.94	2.66	34.940	27.903	37.090	45.842	42.462	268	21.5	1.22	18.1	3169
413		3323	2.82	2.53	34.929	27.905	37.100	45.859	43.161	266	21.5	1.22	18.1	3323
414		3477	2.69	2.38	34.921	27.911	37.114	45.880	43.863	268	22.5	1.20	18.1	3477
415		3679	2.55	2.22	34.926	27.928	37.140	45.914	44.789	269	24.4	1.21	18.1	3679
416		3887	2.41	2.06	34.901	27.921	37.142	45.925	45.716	266	27.4	1.17		3887
417		4125	2.37	2.00	34.895	27.921	37.146	45.933	46.769	267	28.3	1.19	18.6	4125
418		4402	2.31	1.90	34.899	27.931	37.162	45.953	48.001	263	30.3	1.20	18.9	4402
419		4655	2.30	1.86	34.886	27.924	37.157	45.951	49.100	259	33.2	1.28	19.3	4655
420		4915	2.27	1.80	34.880	27.924	37.161	45.958	50.235	255	36.2	1.24	19.8	4915

BOTTOM DEPTH FOR CAST 2 IS 5000M

LIST OF PARTICIPANTS

KNORR 29

Derek W. Spencer, Chief Scientist
Woods Hole Oceanographic Institution

Arnold E. Bainbridge, Associate Scientist
Scripps Institution of Oceanography, GEOSECS Operations Group/NSF

Wallace S. Broecker, Associate Scientist
Lamont-Doherty Geological Observatory

Harmon Craig, Associate Scientist
Scripps Institution of Oceanography

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

John G. Goddard

OREGON STATE UNIVERSITY

Edward A. Seifert, Analyst

SCRIPPS INSTITUTION OF OCEANOGRAPHY
GEOSECS OPERATIONS GROUP/NSF

Richard E. Ackermann, Associate Development Engineer
George C. Anderson, Analyst
David L. Bos, Analyst
David G. Brader, Electronics Technician
Leonard M. Cunningham, Chief Marine Technician
Thomas J. Digre, Chief Programmer
Robert W. Fong, Electronics Engineer
Arthur W. Hester, Senior Analyst
Ross M. Horowitz, Marine Technician
Donald E. Lingle, Analyst
Michael T. Morrione, Analyst
William H. Price, Marine Technician
Marston D. Robertson, Analyst
Edward J. Slater, Analyst
Martiñ V. Smith, Computer Engineer
Jack W. Spiegelberg, Programmer
Charles R. Toy, Marine Technician
Romeo J. Vadnais, Electronics Engineer
W. Bruce Waldorf, Marine Technician
Robert T. Williams, Chief Analyst

WOODS HOLE OCEANOGRAPHIC INSTITUTION

C. Dana Densmore, Senior Marine Technician

STATION AND CAST DESCRIPTION

KNORR 29 R/V KNORR

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	* REMARKS
1	248	1	5 JUL 72	PMP	38° 46.1' N	70° 1.9' W	1600		350	* SURFACE PUMP, RA-228
1	248	2	5 JUL 72	ROS	38° 48.5' N	70° 0.0' W	1647	2978	130	* BOTTOM ROSETTE
1	248	3	5 JUL 72	NAN	38° 49.2' N	70° 2.6' W	2137	2978		* SHALLOW NANSEN
1	248	4	6 JUL 72	SDT	28° 50.0' N	70° 3.2' W	0330			* SDT (TEST)
2	249	1	9 JUL 72	PMP	35° 55.0' N	67° 56.0' W	0420		208	* SURFACE C14,RA228,RA226,RN222
2	249	2	9 JUL 72	GER	35° 55.0' N	67° 59.2' W	1152		915	* SHALLOW GERARD, C14, RA226
2	249	3	9 JUL 72	ROS	35° 54.0' N	67° 56.0' W	1130	4871		* DEEP ROSETTE
2	249	4	10 JUL 72	GER	35° 55.4' N	67° 55.5' W	0152		2666	* INTERMEDIATE GERARD, C14,RA226
2	249	5	10 JUL 72	BAG	35° 57.0' N	67° 54.9' W	0720			* DEEP NISKIN BAG
2	249	6	10 JUL 72	GER	35° 52.4' N	67° 54.2' W	2010		3875	* DEEP GERARD, C14, RA226
2	249	7	10 JUL 72	PMP	35° 53.0' N	67° 54.3' W	2330			* SURFACE PUMP, FILTERING
2	249	8	10 JUL 72	ROS	35° 54.9' N	67° 55.0' W	2342	4920		* SHALLOW ROSETTE
2	249	9	11 JUL 72	GER	35° 55.5' N	67° 55.0' W	0937	4920	4782	* DEEP GERARD, C14,RA226,PB210
2	249	10	11 JUL 72	BAG	35° 56.0' N	67° 55.0' W	1230			* NISKIN BAG (TEST)
2	249	11	11 JUL 72	ROS	35° 58.0' N	67° 56.0' W	1300	4931		* BOTTOM ROSETTE, RN222
2	249	12	11 JUL 72	PMP	36° 0.0' N	67° 56.0' W	2130		350	* SURFACE PUMP, RA228

STATION: 248 LEG: I POSITION: 38° 48' N 70° 0' W DATE: 5 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
215	2448	2422	3.158	2.956	34.951	27.885	37.057	45.794	39.050	269	18.0	1.22	18.8	2422
216	2856	2822	2.872	2.634	34.936	27.902	37.091	45.844	40.888	273	18.8	1.21	18.4	2822
217	2907	2867	2.830	2.588	34.931	27.902	37.094	45.849	41.116	274	18.3	1.19	17.8	2867
218	2930	2890	2.815	2.571	34.934	27.906	37.098	45.855	41.222	274	18.2	1.19	18.0	2890
219	2953	2913	2.791	2.545	34.931	27.905	37.100	45.857	41.325	274	19.2	1.20	18.0	2913
220	2977	2936	2.765	2.517	34.930	27.907	37.103	45.862	41.434	274	19.3	1.20	18.0	2936
221	2994	2953	2.738	2.489	34.931	27.910	37.107	45.868	41.514	275	19.3	1.19	18.2	2953
222	3005	2964	2.729	2.479	34.928	27.909	37.106	45.868	41.561	274	19.5	1.20	18.1	2964
223	3016	2974	2.730	2.479	34.926	27.907	37.105	45.866	41.608	274	19.7	1.20	18.2	2974
224	3021	2978	2.730	2.478	34.930	27.910	37.108	45.869	41.633	274	19.7	1.17	18.5	2978

BOTTOM DEPTH FOR CAST 2 IS 2978

STATION: 249 LEG: II POSITION: 35° 54' N 67° 56' W DATE: 9 JUL 72

SAMPLE No.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
802	16	15	25.649	25.645	36.114	24.016	32.308	40.222	24.084	207	1.0	0.00	0.1	15
803	72	76	22.457	22.442	36.391	25.170	33.546	41.542	25.479	211	0.5	0.00	0.1	76
804	128	127	20.917	20.891	36.472	25.664	34.084	42.122	26.215	199	0.7	0.06	1.0	127
805	205	203	19.251	19.213	36.518	26.147	34.618	42.704	27.034	205	0.7	0.06	1.1	203
806	306	303	18.131	18.076	36.444	26.381	34.890	43.011	27.710	218	0.8	0.08	1.3	303
807	382	378	17.757	17.689	36.443	26.477	34.998	43.131	28.137	213	1.1	0.13	2.1	378
808	483	479	17.359	17.274	36.429	26.569	35.104	43.250	28.668	201	1.5	0.23	4.1	479
809	559	554	16.978	16.882	36.283U	26.552	35.102	43.262	28.984	199	2.3	0.36	6.1	554
810	635	630	16.243	16.137	36.254	26.707	35.283	43.467	29.475	196	2.4	0.38	6.4	630
811	737	730	14.678	14.562	35.985	26.858	35.493	43.733	30.089	184	4.1	0.61	10.6	730
812	813	796	13.183	13.064	35.761	27.004	35.698	43.993	30.589	162	6.6	0.90	15.6	796
814	864	856	11.865	11.747	35.496	27.060	35.810	44.157	30.892	142	10.3	1.25	21.4	856
815	916	897	10.698	10.580	35.360	27.170	35.971	44.364	31.254	141	12.2	1.40	23.7	897
816	967	957	9.580	9.463	35.214	27.250	36.100	44.539	31.583	138	14.8	1.55	26.3	957
817	1017	1007	8.514	8.399	35.116	27.345	36.244	44.728	31.924	146	16.2	1.63	27.2	1007
818	1119	1108	6.847	6.734	35.042	27.529	36.507	45.064	32.606	179	15.3	1.50	24.5	1108
819	1221	1203	5.635	5.522	35.032	27.677	36.715	45.327	33.248	219	13.2	1.29	20.8	1203
312	1332	1315	5.116	4.997	35.038	27.745	36.808	45.444	33.830	236	12.5	1.19	20.1	1315
820	1346	1333	5.006	4.886	35.019	27.742	36.811	45.453	33.895	242	12.2	1.21	19.2	1333
311	1500	1473	4.470	4.341	34.988	27.778	36.876	45.544	34.643	255	11.9	1.14	19.3	1473
821	1575	1557	4.482	4.346	35.009	27.794	36.891	45.559	34.995	257	11.6	1.15	18.4	1557
310	1588	1570	4.317	4.182	34.984	27.792	36.898	45.574	35.058	260	11.9	1.13	18.8	1570
309	1711	1691	4.121	3.976	34.977	27.808	36.925	45.610	35.635	274	11.9	1.12	18.8	1691
822	1727	1705	4.237	4.089	34.996	27.811	36.922	45.602	35.704	264	11.9	1.14	18.1	1705
308	1869	1837	3.963	3.805	34.970	27.819	36.946	45.640	36.361	274	12.4	1.12	18.7	1837
823	1878	1856	3.968	3.809	34.976	27.824	36.950	45.643	36.406	269	12.2	1.13	18.0	1856
307	2024	1999	3.835	3.664	34.968	27.832	36.965	45.667	37.072	268	13.2	1.14	18.6	1999
824	2029	2005	3.854	3.682	34.976	27.837	36.969	45.669	37.098	269	12.9	1.14	18.2	2005
306	2126	2100	3.736	3.556	34.970	27.844	36.983	45.690	37.544	273	13.7	1.14	18.5	2100
305	2380	2350	3.505	3.303	34.966	27.865	37.018	45.737	38.707	267	15.5	1.15	18.5	2350
304	2532	2499	3.383	3.168	34.960	27.873	37.033	45.759	39.395	268	17.3	1.16	19.0	2499
303	2735	2698	3.266	3.032	34.958	27.884	37.051	45.784	40.309	268	17.8	1.20	19.1	2698
302	2996	2956	3.109	2.851	34.949	27.893	37.070	45.812	41.476	267	19.0	1.16	18.9	2956
301	3157	3114	2.999	2.726	34.945	27.901	37.085	45.833	42.197	260U	19.7	1.16	19.0	3114
324	3315	3266	2.870	2.583	34.937	27.907	37.099	45.855	42.903	267	20.9	1.15	19.2	3266
323	3421	3371	2.742	2.446	34.929	27.912	37.112	45.875	43.380	269	22.2	1.17	19.3	3371
322	3573	3519	2.619	2.310	34.921	27.917	37.124	45.894	44.057	287U	23.5	1.14	19.3	3519
321	3693	3637	2.527	2.207	34.916	27.921	37.134	45.910	44.590	278U	24.4	1.15	19.3	3637
320	3900	3837	2.423	2.082	34.909	27.926	37.146	45.928	45.498	267	26.7	1.17	19.3	3837
319	4057	3992	2.365	2.007	34.903	27.927	37.151	45.937	46.181	269	28.3	1.18	19.4	3992
318	4203	4134	2.330	1.956	34.901	27.929	37.156	45.945	46.814	268	29.6	1.19	19.7	4134
317	4363	4290	2.301	1.909	34.896	27.929	37.158	45.950	47.501	286U	31.3	1.21	19.7	4290
316	4517	4439	2.292	1.881	34.893	27.928	37.160	45.952	48.158	264	32.4	1.22	19.9	4439
315	4667	4587	2.291	1.862	34.893	27.930	37.162	45.956	48.797	265	33.1	1.24	20.1	4587
1115	4931	4843	2.295	1.832	34.890	27.930	37.164	45.959	49.914	267	34.2	1.30	20.3	4843
1116	4949	4860	2.297	1.832	34.889	27.929	37.163	45.958	49.989	268	34.3	1.29	20.1	4860
1122	4963	4869	2.299	1.832	34.889	27.929	37.163	45.958	50.047	268	34.0	1.27	20.5	4869
1117	4970	4881	2.298	1.830	34.889	27.929	37.163	45.959	50.077	268	34.2	1.29	20.4	4881
1118	4978	4889	2.300	1.831	34.891	27.931	37.165	45.960	50.112	267	33.7	1.28	20.5	4889
1123	4982	4892	2.302	1.833	34.890	27.930	37.164	45.959	50.128	268	34.1	1.26	20.5	4892

U. UNCERTAIN DATA

STATION: 249 LEG: II POSITION: 35° 54' N 67° 56' W DATE: 9 JUL 72

SAMPLE No	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	DEPTH M
1119	4989	4900	2.301	1.831	34.890	27.930	37.164	45.959	50.158	268	34.1	1.28	20.2	4900
1120	4999	4905	2.303	1.831	34.890	27.930	37.164	45.959	50.199	267	34.8	1.28	20.3	4905
1124	4998	4908	2.304	1.832	34.891	27.930	37.165	45.960	50.196	268	34.2	1.26	20.5	4908
1121	5009	4918	2.304	1.831	34.890	27.930	37.164	45.959	50.241	268	34.7	1.28	20.2	4918

BOTTOM DEPTH FOR CAST 3 IS 4871 — CAST 11 IS 4931