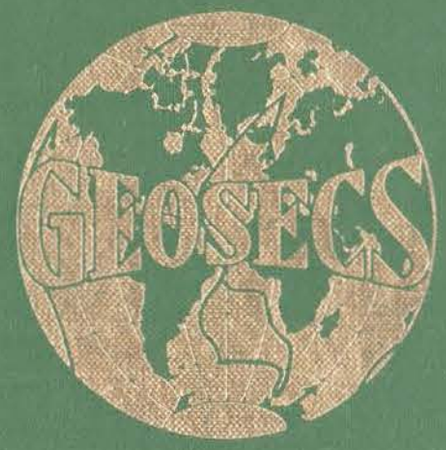

PACIFIC EXPEDITION

Volume 3

Hydrographic Data

National Science Foundation · Washington, D.C.

GEOSECS
PACIFIC EXPEDITION

Volume 3
HYDROGRAPHIC DATA
1973-1974

By
Wallace S. Broecker, Derek W. Spencer,
and Harmon Craig

Sponsored by
International Decade of Ocean Exploration
National Science Foundation

October 1982

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 Pacific Expedition was carried out on R/V MELVILLE. Captain Alan W. Phinney and the crew of the MELVILLE contributed significantly to all aspects of the seagoing operation. Major credit for the Pacific 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, Kris Stewart and Cathy Carroll of SIO, Barbara Stickney of RSMAS, and Bruna Williams 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 Marine Facilities Group at SIO. Without the efforts and dedication of all these people and many others, 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

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Leonard M. Cunningham
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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 HAKUHŌ-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 Radioactivités 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 "CTD 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 "CTD stations"; for example, Stations 205 and 207-210 in the Hawaiian Deep on Pacific Leg 1, and Stations 271, 274, and 276 on Leg 6.

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. This discontinuity was first mapped in 1970 on the GEOSECS intercalibration leg of Antipode Expedition. Figures 1 and 2 are two profiles obtained on Legs 6 and 8 of the GEOSECS Pacific Expedition in 1974. The dramatic change in properties across the discontinuity beautifully mark the sharp transition from South Pacific Deep Water to Antarctic Bottom Water.

"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 PACIFIC EXPEDITION
STATION 269

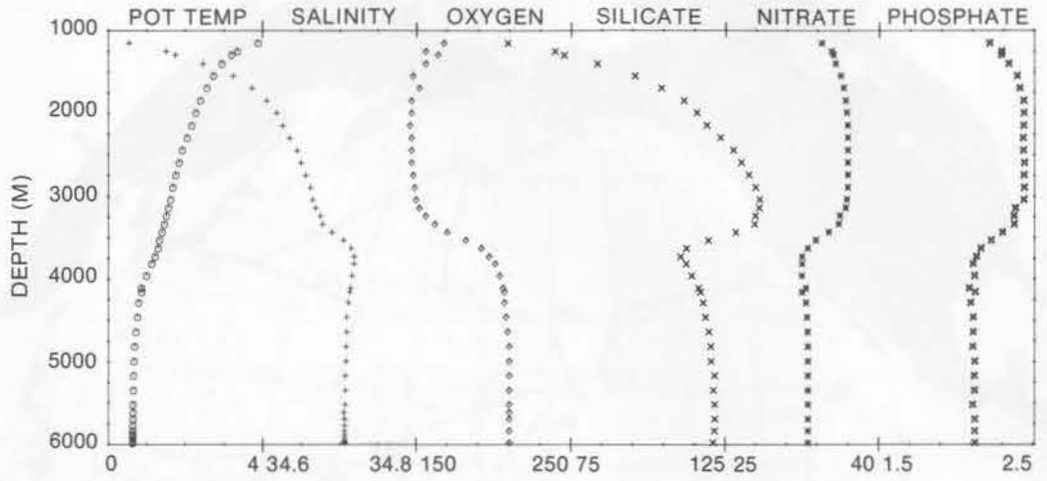
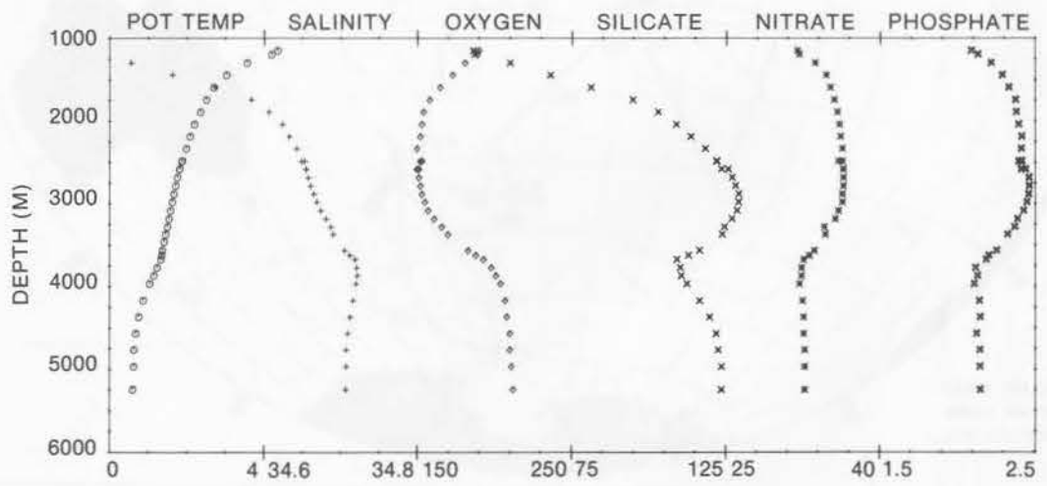


FIGURE 2
GEOSECS PACIFIC EXPEDITION
STATION 305

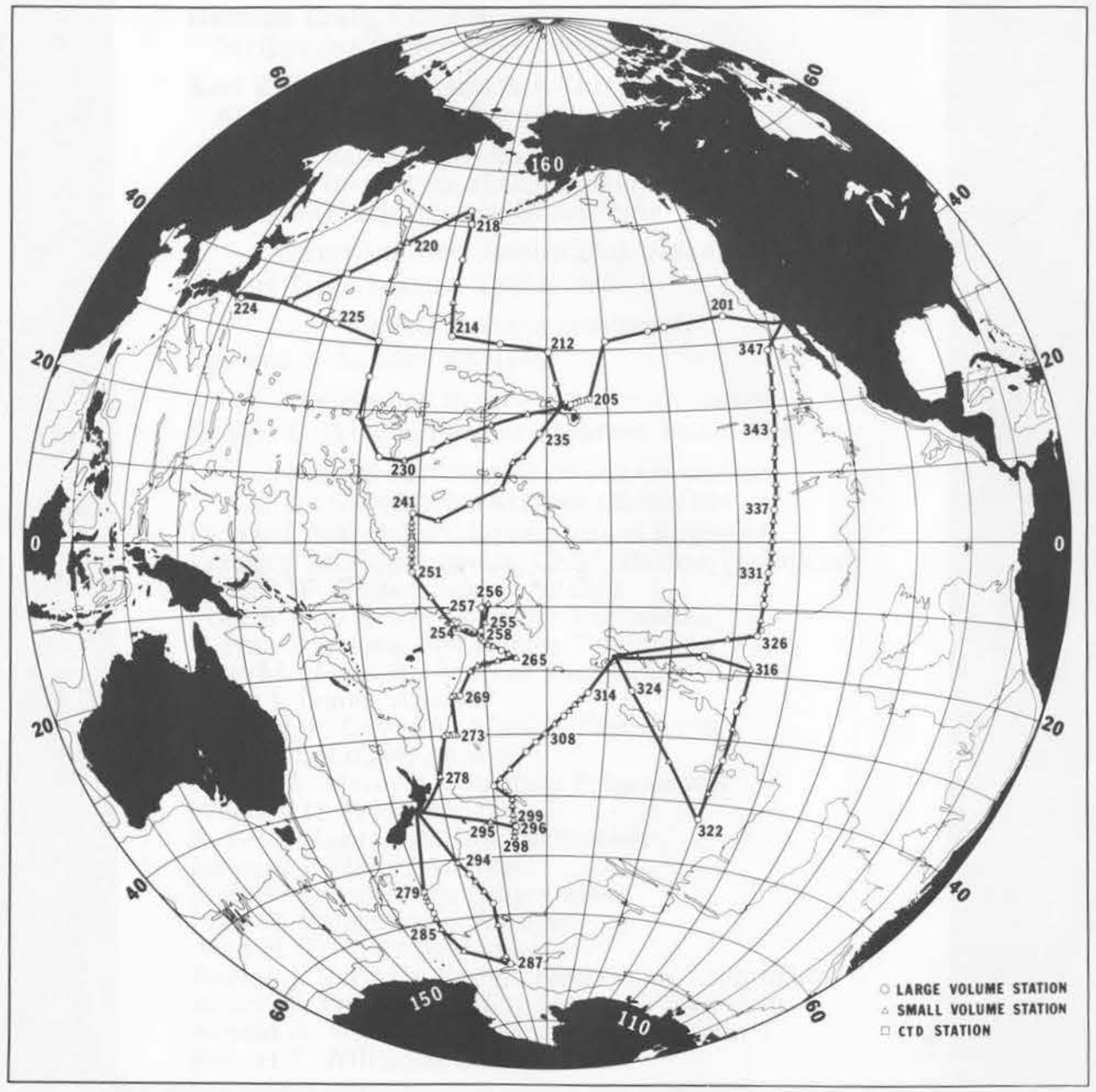


GEOSECS Pacific Expedition

Itinerary of R/V MELVILLE

	DEPART	ARRIVE
LEG 1	San Diego, California 22 August 1973	Honolulu, Hawaii 10 September 1973
LEG 2	Honolulu, Hawaii 15 September 1973	Adak, Alaska 6 October 1973
LEG 3	Adak, Alaska 7 October 1973	Tokyo, Japan 26 October 1973
LEG 4	Tokyo, Japan 31 October 1973	Honolulu, Hawaii 29 November 1973
LEG 5	Honolulu, Hawaii 4 December 1973	Pago Pago, American Samoa 29 December 1973
LEG 6	Pago Pago, American Samoa 2 January 1974	Wellington, New Zealand 29 January 1974
LEG 7	Wellington, New Zealand 5 February 1974	Wellington, New Zealand 9 March 1974
LEG 8	Wellington, New Zealand 13 March 1974	Papeete, Tahiti 8 April 1974
LEG 9	Papeete, Tahiti 12 April 1974	Papeete, Tahiti 9 May 1974
LEG 10	Papeete, Tahiti 13 May 1974	San Diego, California 10 June 1974

TRACK OF R/V MELVILLE, GEOSECS PACIFIC EXPEDITION, 1973-74



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

LIST OF PARTICIPANTS

Leg 1

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Jack W. Spiegelberg, Programmer
Joan W. Spiegelberg, Analyst
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STATION AND CAST DESCRIPTION

GEOSECS PACIFIC R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
1	201	1	25 AUG 73	ROS	34DEG 10.5MIN N	127DEG 53.8MIN W	1636	4825	4804	*	DEEP ROSETTE,3 BTLS TRIPPED
1	201	2	26 AUG 73	GER	34DEG 10.4MIN N	127DEG 54.2MIN W	0045	4784	2413	*	DEEP GERARD,3 BOTTLES,C-14
1	201	3	26 AUG 73	GER	34DEG 10.0MIN N	127DEG 55.0MIN W	0434	4738	4707	*	DEEP GERARD, C-14
1	201	4	26 AUG 73	ROS	34DEG 8.2MIN N	127DEG 53.1MIN W	0902	4654	2696	*	INTERMEDIATE ROSETTE
1	201	5	26 AUG 73	GER	34DEG 3.8MIN N	127DEG 59.5MIN W	1446	4660	1535	*	INTERMEDIATE GERARD, C-14
1	201	6	26 AUG 73	ROS	34DEG 3.5MIN N	127DEG 58.0MIN W	2002	4717	4695	*	DEEP ROSETTE, BOTTOM RADON
1	201	7	27 AUG 73	GER	34DEG 4.3MIN N	128DEG 57.1MIN W	0207	4688	4681	*	DEEP GERARD, PB-210
1	201	8	27 AUG 73	ROS	34DEG 5.6MIN N	128DEG 0.0MIN W	0705	4716		*	SHALLOW ROSETTE (ABORTED)
1	201	9	27 AUG 73	ROS	34DEG 7.5MIN N	128DEG 0.0MIN W				*	SHALLOW ROSETTE (TEST)
1	201	10	27 AUG 73	NIS	34DEG 7.5MIN N	128DEG 0.0MIN W	1441	4688	964	*	SHALLOW NISKIN,20 BOTTLES
1	201	11	27 AUG 73	GER	34DEG 8.3MIN N	128DEG 0.0MIN W	1728	4688	1183	*	SHALLOW GERARD, C-14, PB-210
1	201	12	27 AUG 73	ESS	34DEG 8.0MIN N	128DEG 0.0MIN W	1930		0	*	ESSO BUCKET, POLONIUM-210
1	202	1	30 AUG 73	ROS	33DEG 6.0MIN N	139DEG 34.4MIN W	0645	4999	4984	*	DEEP ROSETTE, BOTTOM RADON
1	202	2	30 AUG 73	GER	33DEG 8.6MIN N	139DEG 33.2MIN W	1217	5137	2437	*	DEEP GERARD, 2 BOTTLES, C-14
1	202	3	30 AUG 73	GER	33DEG 11.2MIN N	139DEG 32.0MIN W	1644	5038	4524	*	DEEP GERARD, C-14
1	202	4	31 AUG 73	ROS	33DEG 9.7MIN N	139DEG 36.4MIN W	0413	5137	3046	*	INTERMEDIATE ROSETTE
1	202	5	31 AUG 73	PMP	33DEG 7.2MIN N	139DEG 38.0MIN W	0845	5044	4000	*	DEEP LAL PUMP
1	202	6	31 AUG 73	GER	33DEG 4.8MIN N	139DEG 37.1MIN W	2018	4994	1847	*	INTERMEDIATE GERARD, C-14
1	202	7	31 AUG 73	ROS	33DEG 5.4MIN N	139DEG 37.4MIN W	2321	4994	947	*	SHALLOW ROSETTE
1	202	8	1 SEP 73	GER	33DEG 8.8MIN N	139DEG 38.4MIN W	0225		240	*	SHALLOW GERARD, C-14
1	202	9	1 SEP 73	BAG	33DEG 11.0MIN N	139DEG 39.0MIN W	1700	4994	4592	*	SI-32 BAG
1	202	10	1 SEP 73	NIS	33DEG 9.5MIN N	139DEG 36.3MIN W	2349	4994	3187	*	Q CAST ON WIRE
1	202	11	1 SEP 73	PMP	33DEG 13.5MIN N	139DEG 38.8MIN W	1035		5	*	BOW PUMP, BE-7
1	202	12	2 SEP 73	ESS	33DEG 9.0MIN N	139DEG 36.0MIN W	0117		0	*	ESSO BUCKET, POLONIUM-210
1	203	1	2 SEP 73	GER	32DEG 43.0MIN N	142DEG 5.9MIN W	2127	5215	5191	*	DEEP GERARD, RA-228
1	203	2	3 SEP 73	GER	32DEG 42.4MIN N	142DEG 14.5MIN W	0239	5247	4507	*	INTERMEDIATE GERARD, RA-228
1	204	1	5 SEP 73	ROS	31DEG 22.8MIN N	150DEG 2.1MIN W	0058	5410	5382	*	DEEP ROSETTE", BOTTOM RADON
1	204	2	5 SEP 73	GER	31DEG 22.0MIN N	150DEG 1.4MIN W	0659	5365	5292	*	DEEP GERARD, C-14
1	204	3	5 SEP 73	ROS	31DEG 22.6MIN N	150DEG 0.4MIN W	1122	5354	3447	*	INTERMEDIATE ROSETTE
1	204	4	5 SEP 73	GER	31DEG 22.7MIN N	150DEG 0.3MIN W	1546	5369	2090	*	INTERMEDIATE GERARD, C-14
1	204	5	5 SEP 73	ROS	31DEG 23.1MIN N	150DEG 0.0MIN W	2005	5324	1315	*	SHALLOW ROSETTE
1	204	6	5 SEP 73	GER	31DEG 20.5MIN N	150DEG 0.1MIN W	2319	5324	304	*	SHALLOW GERARD, C-14
1	204	7	5 SEP 73	GER	31DEG 20.5MIN N	150DEG 0.1MIN W	2400	5324	430	*	SHALLOW GERARD,1 BOTTLE,C-14
1	204	8	5 SEP 73	PMP	31DEG 21.5MIN N	150DEG 1.4MIN W	2300		5	*	BOW PUMP, BE-7
1	204	9	7 SEP 73	ROS	27DEG 31.9MIN N	151DEG 2.0MIN W	0103	5356		*	SPECIAL Q CAST,CTD TO 1500M
1	204	10	6 SEP 73	ESS	31DEG 20.0MIN N	150DEG 0.0MIN W	0020		0	*	ESSO BUCKET, POLONIUM-210
1	205	1	8 SEP 73	CTD	22DEG 22.2MIN N	152DEG 57.0MIN W	1234	5109	5071	*	CTD WITH 1 CHECK SAMPLE
1	206	1	8 SEP 73	ROS	22DEG 9.7MIN N	153DEG 50.7MIN W	2249	4634	4615	*	DEEP ROSETTE
1	206	2	9 SEP 73	ESS	22DEG 10.0MIN N	153DEG 51.0MIN W	0300		0	*	ESSO BUCKET, POLONIUM-210
1	207	1	9 SEP 73	CTD	22DEG 1.9MIN N	154DEG 31.3MIN W	0900	4631	4593	*	CTD WITH 1 CHECK SAMPLE
1	207	2	9 SEP 73	PMP	22DEG 1.0MIN N	154DEG 33.0MIN W	0845		5	*	BOW PUMP, BE-7
1	208	1	9 SEP 73	CTD	21DEG 51.2MIN N	155DEG 2.0MIN W	1512	4802	4774	*	CTD WITH 1 CHECK SAMPLE
1	209	1	9 SEP 73	CTD	21DEG 41.3MIN N	155DEG 30.0MIN W	2139	5256	5217	*	CTD WITH 1 CHECK SAMPLE
1	210	1	10 SEP 73	CTD	21DEG 30.2MIN N	156DEG 4.2MIN W	0452	5751	5660	*	CTD WITH 1 CHECK SAMPLE
2	211	1	17 SEP 73	NIS	24DEG 16.8MIN N	158DEG 19.2MIN W	0129	4574	85	*	SURFACE RADON
2	211	2	17 SEP 73	NIS	24DEG 16.8MIN N	158DEG 19.2MIN W	0210	4574	85	*	SURFACE RADON
2	212	1	18 SEP 73	ROS	30DEG 0.0MIN N	159DEG 50.5MIN W	1848	5733	5714	*	DEEP ROSETTE, BOTTOM RADON
2	212	2	19 SEP 73	GER	29DEG 59.8MIN N	159DEG 47.6MIN W	0037	5728	5638	*	DEEP GERARD, C-14
2	212	3	19 SEP 73	ROS	30DEG 0.3MIN N	159DEG 52.6MIN W	0436	5791	2993	*	INTERMEDIATE ROSETTE
2	212	4	19 SEP 73	GER	29DEG 57.7MIN N	159DEG 55.0MIN W	0819	5877	956	*	INT. GERARD,C-14(MALFUNCTION)
2	212	5	19 SEP 73	GER	29DEG 58.1MIN N	159DEG 55.7MIN W	0931	5850	2090	*	INT. GERARD, C-14 (REPEAT)
2	212	6	19 SEP 73	ROS	29DEG 58.3MIN N	159DEG 56.5MIN W	1143	5830	605	*	SHALLOW ROSETTE
2	212	7	19 SEP 73	PMP	29DEG 57.9MIN N	159DEG 57.8MIN W	1330		330	*	SURFACE PUMP,BE-7,C-14,RA-228
2	212	8	19 SEP 73	ESS	29DEG 58.2MIN N	159DEG 58.5MIN W	1640	5830		*	ESSO (MALFUNCTION)
2	212	9	19 SEP 73	PMP	29DEG 59.3MIN N	159DEG 58.8MIN W	2050	5801	4000	*	DEEP LAL PUMP
2	212	10	20 SEP 73	ESS	29DEG 58.9MIN N	160DEG 0.9MIN W	0645	5781	420	*	ESSO ROSETTE (REPEAT)
2	212	11	20 SEP 73	ROS	29DEG 57.3MIN N	160DEG 1.9MIN W	0742	5781	100	*	SURFACE RADON
2	212	12	20 SEP 73	ESS	29DEG 57.0MIN N	160DEG 2.0MIN W	0835		0	*	ESSO BUCKET, POLONIUM-210
2	213	1	22 SEP 73	GER	30DEG 58.1MIN N	168DEG 28.5MIN W	0625	5733	5614	*	DEEP GERARD, C-14
2	213	2	22 SEP 73	ROS	31DEG 0.3MIN N	168DEG 27.5MIN W	1132	5683	5675	*	DEEP ROSETTE, BOTTOM RADON
2	213	3	22 SEP 73	GER	31DEG 1.2MIN N	168DEG 27.0MIN W	1744	5672	5629	*	INTER. GERARD, C-14, PB-210
2	213	4	22 SEP 73	ROS	31DEG 1.3MIN N	168DEG 27.0MIN W	2211	5671	3005	*	INTERMEDIATE ROSETTE
2	213	5	23 SEP 73	GER	31DEG 2.9MIN N	168DEG 27.0MIN W	0305	5677	1197	*	SHALLOW GERARD, C-14
2	213	6	23 SEP 73	ROS	31DEG 4.6MIN N	168DEG 25.0MIN W	0510	5671	760	*	SHALLOW ROSETTE
2	213	7	23 SEP 73	GER	31DEG 5.8MIN N	168DEG 24.6MIN W	0904	5731	1984	*	SHALLOW GERARD, C-14, PB-210
2	213	8	23 SEP 73	PMP	31DEG 6.0MIN N	168DEG 24.0MIN W	1120		60	*	SURFACE PUMP, C-14
2	213	9	23 SEP 73	NIS	31DEG 6.3MIN N	168DEG 23.6MIN W	1109	5733	100	*	SURFACE RADON
2	213	10	23 SEP 73	ESS	31DEG 6.0MIN N	168DEG 24.0MIN W	1145	5733	0	*	ESSO BUCKET
2	213	11	21 SEP 73	PMP	31DEG 0.0MIN N	168DEG 30.0MIN W	1530		5	*	SURFACE PUMP, BE-7, RA-228
2	214	1	25 SEP 73	ROS	32DEG 1.5MIN N	176DEG 59.9MIN W	1440	5306	5298	*	DEEP ROSETTE, BOTTOM RADON
2	214	2	25 SEP 73	GER	32DEG 2.1MIN N	176DEG 59.0MIN W	2005	5377	5335	*	DEEP GERARD, C-14
2	214	3	26 SEP 73	GER	32DEG 1.0MIN N	177DEG 0.0MIN W	0448	5291	5261	*	DEEP GERARD, MOORE RA-228
2	214	4	26 SEP 73	ROS	32DEG 1.5MIN N	177DEG 4.5MIN W	0946	5364	3005	*	INTERMEDIATE ROSETTE
2	214	5	26 SEP 73	GER	32DEG 3.3MIN N	177DEG 6.6MIN W	1351	5352	1840	*	INTER. GERARD, C-14, RA-228
2	214	6	26 SEP 73	ROS	32DEG 4.1MIN N	177DEG 7.6MIN W	1615	5089	610	*	SHALLOW ROSETTE
2	214	7	26 SEP 73	GER	32DEG 4.7MIN N	177DEG 8.4MIN W	2019	5179	4657	*	DEEP GERARD, RA-228
2	214	8	27 SEP 73	GER	32DEG 6.1MIN N	177DEG 11.4MIN W	0005		633	*	SHALLOW GERARD, C-14, RA-228
2	214	9	27 SEP 73	PMP	32DEG 7.3MIN N	177DEG 10.8MIN W	0130		60	*	SURFACE PUMP,BE-7,C-14,RA-228
2	214	10	27 SEP 73	NIS	32DEG 8.0MIN N	177DEG 11.0MIN W	0150		101	*	SURFACE RADON
2	214	11	27 SEP 73	ESS	32DEG 8.0MIN N	177DEG 11.0MIN W	0214		0	*	ESSO BUCKET
2	215	1	28 SEP 73	ROS	37DEG 28.6MIN N	177DEG 19.4MIN W	1329	5539	5525	*	DEEP ROSETTE, BOTTOM RADON
2	215	2	28 SEP 73	PMP	37DEG 27.6MIN N	177DEG 20.9MIN W	1040	5523	150	*	SURFACE PUMP, BE-7, RA-228
2	215	3	28 SEP 73	ROS	37DEG 26.5MIN N	177DEG 21.4MIN W	2251	5523	2556	*	INTERMEDIATE ROSETTE
2	215	4	29 SEP 73	NIS	37DEG 24.8MIN N	177DEG 23.6MIN W	0750		100	*	SURFACE RADON
2	215	5	29 SEP 73	ROS	37DEG 22.2MIN N	177DEG 26.8MIN W	0939	5489	1604	*	SHALLOW & INTER. ROSETTE
2	215	6	29 SEP 73	ESS	37DEG 22.0MIN N	177DEG 27.0MIN W	1225		0	*	ESSO BUCKET, POLONIUM-210
2	216	1	30 SEP 73	ROS	40DEG 46.3MIN N	176DEG 58.3MIN W	1022	5899	5846	*	DEEP ROSETTE, INTERMED. RADON
2	217	1	1 OCT 73	GER	44DEG 36.8MIN N	176DEG 50.2MIN W	1421	6092	5717	*	DEEP GERARD, PB-210
2	217	2	1 OCT 73	BAG	44DEG 36.7MIN N	176DEG 49.9MIN W	2002	5983	5185	*	SI-32 BAG
2	217	3	2 OCT 73	PMP	44DEG 38.1MIN N	176DEG 53.8MIN W	0715	5726	210	*	SURFACE PUMP,BE-7,C-14,RA-228
2	217	4	2 OCT 73	GER	44DEG 39.9MIN N	177DEG 1.4MIN W	0941	5600	5534	*	DEEP GERARD, C-14
2	217	5	2 OCT 73	ROS	44DEG 40.1MIN N	177DEG 3.1MIN W	1426	5762	5496	*	DEEP ROSETTE, INTERMED. RADON
2	217	6	2 OCT 73	GER	44DEG 40.8MIN N	177DEG 1.2MIN W	2035	5436	4987	*	DEEP GERARD, SPENCER FILTERS
2	217	7	3 OCT 73	ROS	44DEG 40.1MIN N	177DEG 0.8MIN W	0013	5768	2306	*	INTERMEDIATE ROSETTE
2	217	8	3 OCT 73	GER	44DEG 39.6MIN N	177DEG 1.5MIN W	0358	5475	2085	*	INTERMEDIATE GERARD, C-14
2	217	9	3 OCT 73	ROS	44DEG 39.4MIN N	177DEG 2.8MIN W	0613	5553	275	*	SHALLOW ROSETTE,SURFACE RADON
2	217	10	3 OCT 73	GER	44DEG 38.5MIN N	177DEG 4.6MIN W	0845	5638	356	*	SHALLOW GERARD, C-14, PB-210
2	217	11	3 OCT 73	ESS	44DEG 38.5MIN N	177DEG 4.6MIN W	1045		0	*	ESSO BUCKET, POLONIUM-210
2	218	1	4 OCT 73	ROS	50DEG 26.8MIN N	176DEG 35.0MIN W	2248	7295	6000	*	DEEP ROSETTE, INTERMED. RADON
2	218	2	4 OCT 73	PMP	50DEG 27.4MIN N	176DEG 30.8MIN W	2340		180	*	SURFACE PUMP,BE-7,C-14,RA-228
2	218	3	5 OCT 73	GER	50DEG 26.2MIN N	176DEG 29.9MIN W	0431	7293	5378	*	DEEP GERARD, C-14
2	218	4	5 OCT 73	ROS	50DEG 26.0MIN N	176DEG 28.6MIN W	0839	7301	2351	*	SHALLOW & INTER. ROSETTE
2	218	5	5 OCT 73	GER	50DEG 27.9MIN N	176DEG 26.1MIN W	1244	7293	1888	*	INTERMEDIATE GERARD, C-14
2	218	6	5 OCT 73	ESS	50DEG 28.2MIN N	176DEG 22.2MIN W	1650	7293	2777	*	ESSO ROSETTE (MALFUNCTION)
2	218	7	5 OCT 73	ESS	50DEG 25.9MIN N	176DEG 21.5MIN W	2015	7293	1299	*	ESSO ROSETTE (REPEAT)
2	218	8	6 OCT 73	GER	50DEG 26.0MIN N	176DEG 20.6MIN W	0225	7302	7233	*	DP GERARD,NISKIN,C-14,BTM RN
2	218	9	6 OCT 73	NIS	50DEG 26.9MIN N	176DEG 20.9MIN W	0809		88	*	SURFACE NISKIN
2	218	10	6 OCT 73	ESS	50DEG 27.0MIN N	176DEG 21.0MIN W	0835		0	*	ESSO BUCKET
3	219	1	8 OCT 73	PMP	53DEG 6.4MIN N	177DEG 18.4MIN W	1120	3723	250	*	SURFACE PUMP,BE-7,C-14,RA-228
3	219	2	8 OCT 73	ROS	53DEG 6.6MIN N	177DEG 17.5MIN W	1511	3727	3711	*	DEEP ROSETTE, BOTTOM RADON
3	219	3	8 OCT 73	GER	53DEG 7.1MIN N	177DEG 16.4MIN W	2030	3724	3702	*	DEEP GERARD, C-14
3	219	4	9 OCT 73	ROS	53DEG 7.4MIN N	177DEG 15.1MIN W	0036	3723	725	*	SHALLOW ROSETTE,SURFACE RADON
3	219	5	9 OCT 73	ESS	53DEG 6.4MIN N	177DEG 18.4MIN W	1100	3721	0	*	ESSO BUCKET
3	220	1	13 OCT 73	ROS	46DEG 22.6MIN N	170DEG 27.2MIN E	1545	6298	6282	*	DEEP ROSETTE, BOTTOM RADON
3	221	1	14 OCT 73	ROS	45DEG 13.8MIN N	169DEG 25.5MIN E	0538	6060	6047	*	DEEP ROSETTE, BOTTOM RADON
3	221	2	14 OCT 73	PMP	45DEG 13.7MIN N	169DEG 24.0MIN E	0420	6043	300	*	SURFACE PUMP, BE-7, RA-228
3	221	3	14 OCT 73	ROS	45DEG 13.3MIN N	169DEG 23.5MIN E	1328	5654		*	INTERMEDIATE ROSETTE,LOST
3	221	4	14 OCT 73	NIS	45DEG 17.5MIN N	169DEG 22.9MIN E	2312	5640	3554	*	INTERMEDIATE NISKIN
3	221	5	14 OCT 73	NIS	45DEG 17.4MIN N	169DEG 23.3MIN E	0235	5645	74	*	SHALLOW NISKIN, SURFACE RADON
3	221	6	14 OCT 73	ESS	45DEG 17.0MIN N	169DEG 23.0MIN E	0250		0	*	ESSO BUCKET, POLONIUM-210
3	222	1	16 OCT 73	GER	40DEG 10.0MIN N	160DEG 30.0MIN E	1120	5542	3095	*	DEEP GERARD,C-14(MALFUNCTION)
3	222	2	16 OCT 73	GER	40DEG 10.0MIN N	160DEG 30.0MIN E	1349	5542	2640	*	DEEP GERARD, C-14, PB-210
3	222	3	16 OCT 73	ROS	40DEG 10.0MIN N	160DEG 30.0MIN E	1825	5579	5528	*	DEEP ROSETTE, BOTTOM RADON
3	222	4	16 OCT 73	PMP	40DEG 10.0MIN N	160DEG 30.0MIN E	1510		330	*	SURFACE PUMP,BE-7,C-14,RA-228
3	222	5	17 OCT 73	GER	40DEG 10.0MIN N	160DEG 30.0MIN E	0122	5569	1990	*	SHALLOW GERARD, C-14, PB-210
3	222	6	17 OCT 73	NIS	40DEG 10.0MIN N	160DEG 30.0MIN E	0616	5570	5449	*	DEEP NISKIN
3	222	7	17 OCT 73	GER	40DEG 10.0MIN N	160DEG 30.0MIN E	1218	5622	4760	*	DP.GERARD,C-14,PB-210(MALF)
3	222	8	17 OCT 73	NIS	40DEG 10.0MIN N	160DEG 30.0MIN E	1730	5594	1882	*	INTERMEDIATE NISKIN
3	222	9	17 OCT 73	ROS	40DEG 10.0MIN N	160DEG 30.0MIN E	2229	5647	656	*	SHALLOW ROSETTE,SURFACE RADON
3	222	10	18 OCT 73	ESS	40DEG 18.8MIN N	160DEG 40.5MIN E	0024		0	*	ESSO BUCKET
3	223	1	20 OCT 73	GER	34DEG 58.4MIN N	151DEG 50.6MIN E	1010	6141	5618	*	DEEP GERARD, C-14
3	223	2	20 OCT 73	ROS	34DEG 58.4MIN N	151DEG 50.6MIN E	1520	6131	6094	*	DEEP ROSETTE, BOTTOM RADON
3	223	3	20 OCT 73	PMP	34DEG 58.4MIN N	151DEG 50.6MIN E	1310		300	*	SURFACE PUMP, BE-7, C-14
3	223	4	20 OCT 73	GER	35DEG 0.3MIN N	151DEG 43.4MIN E	2016	6134	2091	*	INTERMEDIATE GERARD, C-14
3	223	5	20 OCT 73	ROS	35DEG 0.0MIN N	151DEG 45.0MIN E	2310	6128	3001	*	INTERMEDIATE ROSETTE
3	223	6	21 OCT 73	GER	34DEG 58.4MIN N	151DEG 48.1MIN E	0549	6133	6103	*	BOTTOM GERARD, RA-228
3	223	7	21 OCT 73	GER	34DEG 58.4MIN N	151DEG 48.1MIN E	1225	6060	5452	*	DEEP GERARD, RA-228
3	223	8	21 OCT 73	ROS	34DEG 58.4MIN N	151DEG 48.1MIN E	1624	6112	440	*	SHALLOW ROSETTE,SURFACE RADON
3	223	9	24 OCT 73	ESS	34DEG 58.4MIN N	151DEG 48.1MIN E	0430	6124	0	*	ESSO BUCKET, ZODIAC SAMPLES
3	224	1	24 OCT 73	ROS	34DEG 15.6MIN N	141DEG 58.0MIN E	0611	9739	6000	*	DEEP ROSETTE, INTERMED. RADON
3	224	2	24 OCT 73	GER	34DEG 18.2MIN N	142DEG 4.3MIN E	1215	9102	5950	*	DEEP & INTER. GERARD, C-14
3	224	3	24 OCT 73	GER	34DEG 13.4MIN N	141DEG 57.2MIN E	2119	9180	800	*	TRENCH GERARD, NISKIN, C-14
3	224	4	25 OCT 73	PMP	34DEG 14.8MIN N	142DEG 0.0MIN E	0430		250	*	SURFACE PUMP,BE-7,C-14,RA-228
3	224	5	25 OCT 73	ROS	34DEG 15.3MIN N	142DEG 0.5MIN E	0446		1303	*	SHALLOW & INTER. ROSETTE
3	224	6	25 OCT 73	ESS	34DEG 15.0MIN N	142DEG 0.0MIN E	0620		0	*	ESSO BUCKET, POLONIUM-210
4	225	1	5 NOV 73	PMP	32DEG 37.0MIN N	161DEG 55.5MIN E	2320		350	*	SURFACE PUMP, C-14, RA-228
4	225	2	6 NOV 73	NIS	32DEG 37.0MIN N	161DEG 55.0MIN E	0633	5948	5935	*	DEEP NISKIN, BOTTOM RADON
4	225	3	6 NOV 73	GER	32DEG 38.5MIN N	161DEG 53.0MIN E	1325	5942	5608	*	DEEP GERARD, C-14
4	225	4	6 NOV 73	CTD	32DEG 39.5MIN N	161DEG 50.5MIN E	1800			*	ABORTED AT 900 METERS
4	225	5	6 NOV 73	NIS	32DEG 39.5MIN N	161DEG 49.5MIN E	2104	5958	2218	*	INTERMEDIATE NISKIN
4	225	6	6 NOV 73	NIS	32DEG 39.5MIN N	161DEG 48.0MIN E	2303	5955	3218	*	INTERMEDIATE NISKIN
4	225	7	7 NOV 73	GER	32DEG 39.5MIN N	161DEG 47.0MIN E	0126	5945	2487	*	INTERMEDIATE GERARD, C-14
4	225	8	7 NOV 73	NIS	32DEG 40.0MIN N	161DEG 47.0MIN E	0432	5939	644	*	SHALLOW NISKIN
4	225	9	7 NOV 73	CTD	32DEG 40.0MIN N	161DEG 47.0MIN E	0725	5917		*	CTD (TEST)
4	225	10	7 NOV 73	ESS	32DEG 40.0MIN N	161DEG 47.0MIN E	1010		0	*	ESSO BUCKET

STATION AND CAST DESCRIPTION

GEOSECS PACIFIC R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
4	226	1	9 NOV 73	PMP	30DEG 34.0MIN N	170DEG 38.5MIN E	0845		350	*	SURFACE PUMP, C-14, RA-228
4	226	2	9 NOV 73	ROS	30DEG 34.0MIN N	170DEG 36.5MIN E	1328	5491	5478	*	DEEP ROSETTE, BOTTOM RADON
4	226	3	9 NOV 73	GER	30DEG 35.0MIN N	170DEG 36.5MIN E	1857	5485	1542	*	INTERMEDIATE GERARD, C-14
4	226	4	9 NOV 73	NIS	30DEG 36.0MIN N	170DEG 36.5MIN E	2229	5485	4784	*	INTERMEDIATE NISKIN
4	226	5	10 NOV 73	GER	30DEG 37.0MIN N	170DEG 40.5MIN E	0355	5467	5434	*	DEEP GERARD, C-14, RA-228
4	226	6	10 NOV 73	SPE	30DEG 40.0MIN N	170DEG 40.0MIN E	1400	5603	3995	*	LAL PUMP
4	226	7	10 NOV 73	NIS	30DEG 42.0MIN N	170DEG 38.0MIN E	2104	5603	653	*	SHALLOW NISKIN, SURFACE RADON
4	226	8	10 NOV 73	GER	30DEG 41.0MIN N	170DEG 38.0MIN E	2309	5591	4020	*	INTERMEDIATE GERARD, C-14
4	226	9	11 NOV 73	ESS	30DEG 40.5MIN N	170DEG 38.0MIN E	0120		0	*	ESSO BUCKET
4	227	1	12 NOV 73	PMP	24DEG 59.5MIN N	170DEG 5.0MIN E	0930		350	*	SURFACE PUMP, C-14, RA-228
4	227	2	12 NOV 73	ROS	25DEG 0.0MIN N	170DEG 5.0MIN E	1212	5900	5886	*	DEEP ROSETTE, BOTTOM RADON
4	227	3	12 NOV 73	GER	25DEG 4.5MIN N	170DEG 4.0MIN E	1837	5956	2490	*	INTERMEDIATE GERARD, C-14
4	227	4	12 NOV 73	ROS	25DEG 4.5MIN N	170DEG 3.0MIN E	2142	5964	3274	*	INTERMEDIATE ROSETTE
4	227	5	13 NOV 73	GER	25DEG 5.0MIN N	170DEG 3.0MIN E	0307	6059	5957	*	DEEP GERARD, C-14
4	227	6	13 NOV 73	BAG	25DEG 7.0MIN N	170DEG 3.0MIN E	1308	5964	5744	*	SI-32 BAG
4	227	7	14 NOV 73	NIS	25DEG 12.0MIN N	170DEG 6.5MIN E	0225	5964	548	*	SHALLOW NISKIN, SURFACE RADON
4	227	8	14 NOV 73	ESS	25DEG 12.0MIN N	170DEG 6.5MIN E	0315		0	*	ESSO BUCKET
4	228	1	15 NOV 73	PMP	19DEG 1.0MIN N	169DEG 21.0MIN E	1545		350	*	SURFACE PUMP, RA-228
4	228	2	15 NOV 73	ROS	19DEG 1.0MIN N	169DEG 21.0MIN E	1833	5307	5294	*	DEEP ROSETTE, BOTTOM RADON
4	228	3	16 NOV 73	ROS	19DEG 4.0MIN N	169DEG 24.0MIN E	0302	5299	2887	*	INTERMEDIATE ROSETTE
4	228	4	16 NOV 73	ESS	19DEG 4.0MIN N	169DEG 25.0MIN E	0537	5297	1489	*	ESSO ROSETTE
4	228	5	16 NOV 73	NIS	19DEG 4.0MIN N	169DEG 25.0MIN E	0754	5297	1610	*	SHALLOW NISKIN
4	228	6	16 NOV 73	ESS	19DEG 4.0MIN N	169DEG 25.0MIN E	0915		0	*	ESSO BUCKET
4	229	1	18 NOV 73	PMP	12DEG 53.0MIN N	173DEG 28.0MIN E	1110		50	*	SURFACE PUMP, C-14, RA-228
4	229	2	18 NOV 73	GER	12DEG 53.0MIN N	173DEG 28.0MIN E	1258	5721	345	*	SHALLOW GERARD, C-14
4	229	3	18 NOV 73	ROS	12DEG 53.0MIN N	173DEG 28.0MIN E	1615	5730	5721	*	DEEP ROSETTE, BOTTOM RADON
4	229	4	18 NOV 73	GER	12DEG 54.5MIN N	173DEG 28.0MIN E	2033	5719	2286	*	INTERMEDIATE GERARD, C-14
4	229	5	18 NOV 73	ROS	12DEG 55.5MIN N	173DEG 28.0MIN E	2313	5715	3134	*	INTERMEDIATE ROSETTE
4	229	6	19 NOV 73	GER	12DEG 56.0MIN N	173DEG 25.0MIN E	0259	5719	5689	*	DEEP GERARD, C-14
4	229	7	19 NOV 73	NIS	12DEG 56.0MIN N	173DEG 23.0MIN E	0641	5729	1683	*	SHALLOW NISKIN, SURFACE RADON
4	229	8	19 NOV 73	ESS	12DEG 56.0MIN N	173DEG 23.0MIN E	0745		0	*	ESSO BUCKET, POLONIUM-210
4	230	1	20 NOV 73	ROS	12DEG 29.5MIN N	177DEG 26.2MIN E	1235	5751	5742	*	DEEP ROSETTE, PB-210
4	231	1	21 NOV 73	PMP	14DEG 6.5MIN N	178DEG 38.0MIN W	2115		140	*	SURFACE PUMP, C-14, RA-228
4	231	2	21 NOV 73	GER	14DEG 6.5MIN N	178DEG 38.0MIN W	2329	5695	5620	*	DEEP GERARD, PB-210
4	231	3	22 NOV 73	ROS	14DEG 7.0MIN N	178DEG 34.0MIN W	0505	5616		*	DEEP ROSETTE (MALFUNCTION)
4	231	4	22 NOV 73	GER	14DEG 8.0MIN N	178DEG 36.0MIN W	1036	5270	2574	*	INTER. GERARD, C-14, RA-228
4	231	5	22 NOV 73	NIS	14DEG 9.0MIN N	178DEG 35.0MIN W	1517	5663	5651	*	DEEP NISKIN, BOTTOM RADON
4	231	6	22 NOV 73	GER	14DEG 9.5MIN N	178DEG 34.0MIN W	1958	5671	5596	*	DEEP GERARD, C-14
4	231	7	23 NOV 73	NIS	14DEG 11.0MIN N	178DEG 34.5MIN W	0010	5699	3871	*	SHALLOW NISKIN
4	231	8	23 NOV 73	GER	14DEG 11.5MIN N	178DEG 34.0MIN W	0308	5675	2775	*	SHALLOW GERARD, C-14
4	231	9	23 NOV 73	NIS	14DEG 11.0MIN N	178DEG 36.0MIN W	0453	5675	552	*	SURFACE RADON
4	231	10	23 NOV 73	GER	14DEG 10.0MIN N	178DEG 37.5MIN W	0615		803	*	SHALLOW GERARD, PB-210
4	231	11	23 NOV 73	ESS	14DEG 10.0MIN N	178DEG 37.0MIN W	0715		0	*	ESSO BUCKET
4	232	1	24 NOV 73	ROS	15DEG 24.0MIN N	176DEG 13.0MIN W	0224	5661	5646	*	DEEP ROSETTE
4	233	1	26 NOV 73	PMP	18DEG 13.0MIN N	169DEG 8.0MIN W	0500		350	*	SURFACE PUMP, RA-228
4	233	2	26 NOV 73	ROS	18DEG 14.0MIN N	169DEG 8.0MIN W	0810	5004	88	*	DEEP ROS FAILED,ONLY SURF RN
4	233	3	26 NOV 73	ROS	18DEG 14.0MIN N	169DEG 8.0MIN W	1138	4977	4969	*	DEEP ROSETTE
4	233	4	26 NOV 73	NIS	18DEG 14.0MIN N	169DEG 8.0MIN W	1636	4903	1382	*	SHALLOW & INTERMEDIATE NISKIN
4	233	5	26 NOV 73	ESS	18DEG 14.0MIN N	169DEG 8.0MIN W	1740		0	*	ESSO BUCKET
4	234	1	28 NOV 73	ROS	19DEG 52.0MIN N	163DEG 14.8MIN W	0627	5051	5029	*	DEEP ROSETTE
5	235	1	6 DEC 73	PMP	16DEG 45.6MIN N	161DEG 19.8MIN W	0245	5564	130	*	SURFACE PUMP,BE-7,C-14,RA-228
5	235	2	6 DEC 73	ROS	16DEG 45.4MIN N	161DEG 23.7MIN W	0503	5564		*	DEEP ROSETTE (MALFUNCTION)
5	235	3	6 DEC 73	GER	16DEG 45.6MIN N	161DEG 19.8MIN W	0948	5557	5510	*	DEEP GERARD, C-14
5	235	4	6 DEC 73	NIS	16DEG 45.4MIN N	161DEG 23.7MIN W	1432	5539	5530	*	DEEP NISKIN, BOTTOM RADON
5	235	5	6 DEC 73	GER	16DEG 47.3MIN N	161DEG 23.2MIN W	1846	5481	2690	*	INTERMEDIATE GERARD,BE-7,C-14
5	235	6	6 DEC 73	ROS	16DEG 47.3MIN N	161DEG 23.2MIN W	2119	5564	1006	*	SHALLOW ROSETTE
5	235	7	6 DEC 73	GER	16DEG 47.0MIN N	161DEG 23.0MIN W	2347	5564	592	*	SHALLOW GERARD, C-14
5	235	8	7 DEC 73	ROS	16DEG 47.4MIN N	161DEG 22.9MIN W	0259	5481	4096	*	INTERMEDIATE ROSETTE
5	235	9	7 DEC 73	ESS	16DEG 47.4MIN N	161DEG 22.9MIN W	0520		0	*	ESSO BUCKET
5	236	1	8 DEC 73	ROS	13DEG 16.4MIN N	163DEG 58.2MIN W	0803	5348	5331	*	DEEP ROSETTE
5	237	1	8 DEC 73	ROS	12DEG 30.3MIN N	165DEG 25.8MIN W	2240	5036	5021	*	DEEP ROSETTE, BOTTOM RADON
5	237	2	9 DEC 73	NIS	12DEG 28.7MIN N	165DEG 25.3MIN W	0308	5163	2372	*	SHALLOW & INTERMEDIATE NISKIN
5	237	3	9 DEC 73	ESS	12DEG 29.7MIN N	165DEG 25.3MIN W	0420		0	*	ESSO BUCKET
5	238	1	10 DEC 73	PMP	8DEG 11.9MIN N	167DEG 4.5MIN W	0700		300	*	SURF PUMP,RA-228 GLASS FILTER
5	238	2	10 DEC 73	ROS	8DEG 11.9MIN N	167DEG 4.5MIN W	1004	5205	5188	*	DEEP ROSETTE, BOTTOM RADON
5	238	3	10 DEC 73	ROS	8DEG 11.9MIN N	167DEG 4.5MIN W	1724	5193	4841	*	SHALLOW & INTER. ROSETTE
5	238	4	10 DEC 73	NIS	8DEG 11.9MIN N	167DEG 4.5MIN W	2120	5189	3303	*	INTERMEDIATE NISKIN
5	238	5	10 DEC 73	NIS	8DEG 11.9MIN N	167DEG 4.5MIN W	2312	5191	242	*	SHALLOW NISKIN, SURFACE RADON
5	238	6	11 DEC 73	ESS	8DEG 11.9MIN N	167DEG 4.5MIN W	0001		0	*	ESSO BUCKET
5	239	1	12 DEC 73	ROS	5DEG 53.0MIN N	172DEG 0.9MIN W	1249	5613	5605	*	DEEP ROSETTE, BOTTOM RADON
5	239	2	12 DEC 73	GER	5DEG 53.0MIN N	171DEG 59.8MIN W	1801	5636	5491	*	DEEP GERARD, C-14
5	239	3	12 DEC 73	ROS	5DEG 54.8MIN N	172DEG 0.8MIN W	2237	5774	5755	*	INTERMEDIATE ROSETTE
5	239	4	13 DEC 73	GER	5DEG 55.5MIN N	172DEG 1.4MIN W	0305	5779	3839	*	INTERMEDIATE GERARD, C-14
5	239	5	13 DEC 73	NIS	5DEG 53.3MIN N	172DEG 2.2MIN W	0548	5779	1038	*	SHALLOW NISKIN
5	239	6	13 DEC 73	GER	5DEG 55.6MIN N	172DEG 0.9MIN W	0754	5868	1044	*	SHALLOW GERARD, C-14
5	239	7	13 DEC 73	PMP	5DEG 58.2MIN N	172DEG 1.5MIN W	1139	5789	5494	*	LAL PUMP
5	239	8	13 DEC 73	PMP	5DEG 58.4MIN N	172DEG 1.2MIN W	1502		50	*	SURFACE PUMP,BE-7,C-14,RA-228
5	239	9	14 DEC 73	BAG	5DEG 59.1MIN N	172DEG 0.0MIN W	0103	5789	5422	*	SI-32 BAG
5	239	10	14 DEC 73	ESS	6DEG 4.6MIN N	171DEG 55.8MIN W	1150		0	*	ESSO BUCKET
5	240	1	15 DEC 73	PMP	3DEG 23.2MIN N	177DEG 11.1MIN W	2130		300	*	SURF PUMP,RA-228 GLASS FILTER
5	240	2	15 DEC 73	ROS	3DEG 22.3MIN N	177DEG 13.3MIN W	2358	5178	5170	*	DEEP ROSETTE
5	240	3	16 DEC 73	NIS	3DEG 20.9MIN N	177DEG 15.2MIN W	0449		230	*	SURFACE NISKIN, SURFACE RADON
5	240	4	16 DEC 73	NIS	3DEG 21.1MIN N	177DEG 13.3MIN W	0642	5317	2412	*	INTERMEDIATE NISKIN
5	240	5	16 DEC 73	ESS	3DEG 21.1MIN N	177DEG 13.3MIN W	0750		0	*	ESSO BUCKET
5	241	1	17 DEC 73	ROS	4DEG 33.8MIN N	179DEG 0.2MIN E	0800	5738	5728	*	DEEP ROSETTE, BOTTOM RADON
5	241	2	17 DEC 73	GER	4DEG 33.5MIN N	178DEG 59.5MIN E	1547	5695	5670	*	DEEP GERARD, C-14
5	241	3	17 DEC 73	ROS	4DEG 32.9MIN N	178DEG 59.1MIN E	2100	5691		*	INTERMEDIATE ROSETTE (FAILED)
5	241	4	17 DEC 73	NIS	4DEG 32.7MIN N	178DEG 59.3MIN E	2249	5707	1076	*	SHALLOW NISKIN
5	241	5	18 DEC 73	GER	4DEG 32.3MIN N	178DEG 59.5MIN E	0208	5679		*	DP GERARD,RA-228 (PRETRIPPED)
5	241	6	18 DEC 73	GER	4DEG 32.4MIN N	179DEG 0.6MIN E	0740	5683	2990	*	INTER. GERARD, C-14, PB-210
5	241	7	18 DEC 73	ROS	4DEG 32.2MIN N	179DEG 0.0MIN E	1008	5685	4092	*	INTERMEDIATE ROSETTE
5	241	8	18 DEC 73	GER	4DEG 31.4MIN N	179DEG 0.0MIN E	1456	5594	947	*	SHALLOW GERARD, C-14
5	241	9	18 DEC 73	GER	4DEG 30.5MIN N	179DEG 0.1MIN E	1836	5654	5596	*	DEEP GERARD, PB-210
5	241	10	18 DEC 73	ESS	4DEG 30.6MIN N	179DEG 0.0MIN E	2115		0	*	ESSO BUCKET
5	241	11	17 DEC 73	PMP	4DEG 34.0MIN N	179DEG 0.0MIN E	0800		5	*	BOW PUMP, BE-7
5	242	1	19 DEC 73	ROS	3DEG 4.8MIN N	178DEG 55.8MIN E	0811	5447	5437	*	DEEP ROSETTE
5	243	1	19 DEC 73	ROS	2DEG 0.5MIN N	178DEG 56.1MIN E	2210	5529	5517	*	DEEP ROSETTE
5	244	1	20 DEC 73	ROS	1DEG 1.5MIN N	178DEG 55.8MIN E	1100	5708	5685	*	DEEP ROSETTE
5	244	2	20 DEC 73	NIS	1DEG 1.5MIN N	178DEG 56.0MIN E	1424	5642	691	*	SHALLOW NISKIN, SURFACE RADON
5	244	3	20 DEC 73	ROS	1DEG 1.6MIN N	178DEG 52.0MIN E	1607	5575	2594	*	INTERMEDIATE ROSETTE
5	245	1	21 DEC 73	ROS	0DEG 31.5MIN N	178DEG 59.6MIN E	0101	5419	5404	*	DEEP ROSETTE
5	246	1	21 DEC 73	PMP	0DEG 0.0MIN S	179DEG 0.0MIN E	0720		350	*	SURFACE PUMP,BE-7,C-14,RA-228
5	246	2	21 DEC 73	ROS	0DEG 0.0MIN S	178DEG 59.0MIN E	1025	5412	5403	*	DEEP ROSETTE, BOTTOM RADON
5	246	3	21 DEC 73	NIS	0DEG 1.5MIN S	178DEG 54.4MIN E	1833	5416	3479	*	INTERMEDIATE NISKIN
5	246	4	21 DEC 73	GER	0DEG 0.7MIN S	178DEG 53.0MIN E	2143	5422	2981	*	INTERMEDIATE GERARD, C-14
5	246	5	22 DEC 73	ROS	0DEG 0.9MIN S	178DEG 53.0MIN E	0023	5404	651	*	SHALLOW ROSETTE,SURFACE RADON
5	246	6	22 DEC 73	ESS	0DEG 1.5MIN S	178DEG 52.3MIN E	0210		0	*	ESSO BUCKET
5	247	1	22 DEC 73	ROS	0DEG 28.7MIN S	178DEG 59.0MIN E	0821	5445	5420	*	DEEP ROSETTE
5	248	1	22 DEC 73	ROS	1DEG 2.0MIN S	179DEG 2.0MIN E	1620	5447	5435	*	DEEP ROSETTE
5	248	2	22 DEC 73	NIS	1DEG 2.0MIN S	179DEG 2.0MIN E	1858	5431	274	*	SURFACE NISKIN, SURFACE RADON
5	248	3	22 DEC 73	ROS	1DEG 0.1MIN S	178DEG 58.8MIN E	2054	5429	2519	*	INTERMEDIATE ROSETTE
5	248	4	22 DEC 73	ESS	1DEG 0.1MIN S	178DEG 58.8MIN E	2315		0	*	ESSO BUCKET
5	249	1	23 DEC 73	ROS	2DEG 1.8MIN S	179DEG 1.2MIN E	0753	5469	5458	*	DEEP ROSETTE
5	250	1	23 DEC 73	ROS	2DEG 59.0MIN S	178DEG 59.0MIN E	1826	5453	5436	*	DEEP ROSETTE
5	251	1	24 DEC 73	GER	4DEG 34.0MIN S	179DEG 0.0MIN E	0904	5554	5537	*	DEEP GERARD, C-14, RA-228
5	251	2	24 DEC 73	PMP	4DEG 32.0MIN S	178DEG 58.0MIN E	0830		185	*	SURFACE PUMP,BE-7,C-14,RA-228
5	251	3	24 DEC 73	GER	4DEG 31.0MIN S	178DEG 57.5MIN E	1420	5475	5462	*	DEEP GERARD, C-14, RA-228
5	251	4	24 DEC 73	ROS	4DEG 34.0MIN S	178DEG 57.0MIN E	1920	5376	5357	*	DEEP ROSETTE
5	251	5	25 DEC 73	GER	4DEG 33.0MIN S	178DEG 55.0MIN E	0159	5214	4541	*	DEEP GERARD, C-14
5	251	6	25 DEC 73	ROS	4DEG 34.0MIN S	178DEG 53.0MIN E	0538	5300	2018	*	INTERMEDIATE ROSETTE
5	251	7	25 DEC 73	GER	4DEG 33.4MIN S	178DEG 51.7MIN E	0849	5309	2186	*	INTERMEDIATE GERARD, C-14
5	251	8	25 DEC 73	ESS	4DEG 33.4MIN S	178DEG 51.7MIN E	1015		0	*	ESSO BUCKET, POLONIUM-210
5	252	1	26 DEC 73	ROS	8DEG 29.1MIN S	178DEG 5.8MIN W	1826	5369	5357	*	DEEP ROSETTE
5	252	2	26 DEC 73	NIS	8DEG 29.1MIN S	178DEG 5.8MIN W	2152	5353	1673	*	INTERMEDIATE NISKIN,SURF RN
5	252	3	26 DEC 73	ESS	8DEG 29.1MIN S	178DEG 5.8MIN W	2245		0	*	ESSO BUCKET
5	253	1	28 DEC 73	ROS	12DEG 40.9MIN S	175DEG 3.0MIN W	0636	4664	4651	*	DEEP ROSETTE, BOTTOM RADON
5	254	1	28 DEC 73	ROS	13DEG 14.5MIN S	173DEG 48.5MIN W	1917	4736	4717	*	DEEP ROSETTE, BOTTOM RADON
6	255	1	3 JAN 74	ROS	12DEG 11.1MIN S	169DEG 54.0MIN W	2145	5057	5032	*	DEEP ROSETTE
6	255	2	3 JAN 74	PMP	12DEG 11.1MIN S	169DEG 54.0MIN W	2010		10	*	SURFACE PUMP, RA-228
6	256	1	5 JAN 74	ROS	9DEG 11.5MIN S	169DEG 0.5MIN W	0345	5073	5054	*	DEEP ROSETTE, BOTTOM RADON
6	256	2	5 JAN 74	NIS	9DEG 11.5MIN S	169DEG 0.5MIN W	0815	5122	2623	*	INTERMEDIATE NISKIN
6	256	3	5 JAN 74	PMP	9DEG 11.5MIN S	169DEG 0.5MIN W	0549		5	*	BOW PUMP, RA-228
6	257	1	5 JAN 74	ROS	10DEG 10.5MIN S	169DEG 58.6MIN W	1956	5180	5166	*	DEEP ROSETTE, BOTTOM RADON
6	257	2	6 JAN 74	PMP	10DEG 10.0MIN S	170DEG 0.0MIN W	0115		100	*	BOW PUMP, C-14, RA-228
6	257	3	6 JAN 74	GER	10DEG 10.2MIN S	169DEG 55.0MIN W	0042	5180	5073	*	DEEP GERARD, C-14
6	257	4	6 JAN 74	ROS	10DEG 10.0MIN S	170DEG 0.0MIN W	0521	5138	3340	*	INTERMEDIATE ROSETTE
6	257	5	6 JAN 74	GER	10DEG 7.0MIN S	169DEG 58.9MIN W	0903	4962	2095	*	INTERMEDIATE GERARD, C-14
6	257	6	6 JAN 74	NIS	10DEG 7.2MIN S	169DEG 59.0MIN W	1037	5156	251	*	SHALLOW NISKIN
6	257	7	6 JAN 74	GER	10DEG 5.8MIN S	169DEG 59.3MIN W	1200	5156	397	*	SHALLOW GERARD, C-14
6	257	8	6 JAN 74	ESS	10DEG 5.0MIN S	169DEG 59.0MIN W	1315		0	*	ESSO BUCKET, POLONIUM-210
6	258	1	7 JAN 74	CTD	13DEG 38.4MIN S	170DEG 21.2MIN W	1219	4656	4629	*	CTD WITH 10 CHECK SAMPLES
6	259	1	8 JAN 74	ROS	15DEG 3.7MIN S	170DEG 22.7MIN W	0350	4715	4700	*	DEEP ROSETTE, BOTTOM RADON
6	259	2	8 JAN 74	NIS	15DEG 3.6MIN S	170DEG 20.8MIN W	0709	4705	1481	*	SHALLOW NISKIN

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
6	260	1	8 JAN 74	PMP	15DEG 13.0MIN S	170DEG 2.0MIN W	1130		200	*	SURFACE PUMP, RA-228
6	260	2	8 JAN 74	ROS	15DEG 16.3MIN S	169DEG 54.4MIN W	1316	5036	5022	*	BOTTOM ROSETTE, RADON
6	260	3	8 JAN 74	ROS	15DEG 16.5MIN S	170DEG 0.0MIN W	1914	5010	3374	*	INTERMEDIATE ROSETTE
6	260	4	8 JAN 74	NIS	15DEG 14.1MIN S	170DEG 1.9MIN W	2250	4999	616	*	SHALLOW NISKIN, SURFACE RADON
6	260	5	8 JAN 74	ESS	15DEG 13.8MIN S	170DEG 2.4MIN W	2335		0	*	ESSO BUCKET, POLONIUM-210
6	261	1	9 JAN 74	ROS	15DEG 46.5MIN S	169DEG 11.0MIN W	0812	5237	5219	*	DEEP ROSETTE
6	261	2	9 JAN 74	NIS	15DEG 45.6MIN S	169DEG 9.7MIN W	1206	5206	689	*	SHALLOW NISKIN
6	262	1	9 JAN 74	ROS	16DEG 1.5MIN S	168DEG 28.8MIN W	1926	5208	5185	*	DEEP ROSETTE
6	263	1	10 JAN 74	PMP	16DEG 41.9MIN S	167DEG 3.7MIN W	0040		250	*	SURFACE PUMP,BE-7,C-14,RA-228
6	263	2	10 JAN 74	GER	16DEG 40.9MIN S	167DEG 3.9MIN W	1018	5734	5693	*	DEEP GERARD, PB-210
6	263	3	10 JAN 74	ROS	16DEG 39.8MIN S	167DEG 4.6MIN W	1455	5713	5698	*	DEEP ROSETTE, BOTTOM RADON
6	263	4	10 JAN 74	GER	16DEG 38.8MIN S	167DEG 6.1MIN W	2029	5716	5676	*	DEEP GERARD, C-14
6	263	5	11 JAN 74	ROS	16DEG 38.7MIN S	167DEG 7.8MIN W	0019	5555	3529	*	INTERMEDIATE ROSETTE
6	263	6	11 JAN 74	GER	16DEG 38.1MIN S	167DEG 8.8MIN W	0330	5623	1242	*	SHALLOW GERARD, C-14
6	263	7	11 JAN 74	NIS	16DEG 37.3MIN S	167DEG 7.8MIN W	0537	5600	787	*	SHALLOW NISKIN
6	263	8	11 JAN 74	GER	16DEG 37.7MIN S	167DEG 7.9MIN W	0712	5600	2193	*	INTERMEDIATE GERARD, PB-210
6	263	9	11 JAN 74	BAG	16DEG 36.3MIN S	167DEG 4.6MIN W	1229	5648	5390	*	SI-32 BAG
6	263	10	12 JAN 74	GER	16DEG 39.1MIN S	167DEG 6.3MIN W	0641	5677	4921	*	DP GER,C-14,RA-228,FIBER NISK
6	263	11	12 JAN 74	GER	16DEG 38.2MIN S	167DEG 6.5MIN W	1232	5536	5486	*	DP GER,C-14,RA-228,FIBER NISK
6	263	12	12 JAN 74	GER	16DEG 37.9MIN S	167DEG 7.6MIN W	2047	5673	5638	*	DEEP GER,RA-228, FIBER NISKIN
6	263	13	13 JAN 74	ROS	16DEG 36.3MIN S	167DEG 11.0MIN W	0018	5654	162	*	SURFACE RADON
6	263	14	13 JAN 74	GER	16DEG 36.8MIN S	167DEG 11.1MIN W	0212	5550	3275	*	INTERMEDIATE GERARD, C-14
6	263	15	13 JAN 74	ESS	16DEG 37.0MIN S	167DEG 11.0MIN W	0355		0	*	ESSO BUCKET, POLONIUM-210
6	264	1	13 JAN 74	ROS	17DEG 16.4MIN S	166DEG 0.3MIN W	1457	5474	5443	*	DEEP ROSETTE
6	265	1	14 JAN 74	PMP	17DEG 46.5MIN S	164DEG 59.7MIN W	1229		300	*	SURFACE PUMP, RA-228
6	265	2	14 JAN 74	ROS	17DEG 48.0MIN S	164DEG 58.8MIN W	0234	5420	5404	*	DEEP ROSETTE, BOTTOM RADON
6	265	3	14 JAN 74	ROS	17DEG 47.4MIN S	164DEG 59.4MIN W	0936	5368	3431	*	INTERMEDIATE ROSETTE
6	265	4	14 JAN 74	NIS	17DEG 46.8MIN S	164DEG 59.7MIN W	1213	5418	91	*	SURFACE RADON
6	265	5	14 JAN 74	ESS	17DEG 46.5MIN S	164DEG 59.7MIN W	1250		0	*	ESSO BUCKET, POLONIUM-210
6	266	1	15 JAN 74	ROS	18DEG 29.0MIN S	168DEG 3.0MIN W	0710	5372	5339	*	DEEP ROSETTE
6	267	1	16 JAN 74	PMP	19DEG 15.4MIN S	171DEG 24.7MIN W	2000		350	*	SURFACE PUMP, RA-228
6	267	2	16 JAN 74	ESS	19DEG 15.0MIN S	171DEG 24.0MIN W	0901	5479	1981	*	ESSO ROSETTE
6	267	3	16 JAN 74	NIS	19DEG 15.3MIN S	171DEG 25.5MIN W	1243	5488	689	*	SHALLOW NISKIN, SURFACE RADON
6	267	4	16 JAN 74	NIS	19DEG 15.5MIN S	171DEG 27.6MIN W	1535		3388	*	INTERMEDIATE NISKIN
6	267	5	16 JAN 74	ROS	19DEG 15.0MIN S	171DEG 27.9MIN W	2118	5499	5482	*	DEEP ROSETTE, BOTTOM RADON
6	267	6	17 JAN 74	ESS	19DEG 15.0MIN S	171DEG 28.0MIN W	0010		0	*	ESSO, BUCKET, POLONIUM-210
6	268	1	17 JAN 74	ROS	20DEG 30.6MIN S	172DEG 48.4MIN W	1300	6286	5971	*	DEEP ROSETTE
6	268	2	17 JAN 74	NIS	20DEG 28.9MIN S	172DEG 48.6MIN W	1721	6305	2786	*	INTERMEDIATE NISKIN
6	269	1	18 JAN 74	PMP	23DEG 57.9MIN S	174DEG 31.3MIN W	1809		150	*	SURFACE PUMP,BE-7,C-14,RA-228
6	269	2	18 JAN 74	GER	23DEG 58.0MIN S	174DEG 28.5MIN W	1915	5939	1798	*	INTERMEDIATE GERARD, PB-210
6	269	3	18 JAN 74	ROS	23DEG 59.0MIN S	174DEG 26.0MIN W	2332	5999	5986	*	DEEP ROSETTE, BOTTOM RADON
6	269	4	19 JAN 74	GER	23DEG 59.6MIN S	174DEG 24.9MIN W	0457	5958	5902	*	DEEP GERARD,MOORE NISKIN,C-14
6	269	5	19 JAN 74	NIS	24DEG 0.1MIN S	174DEG 24.5MIN W	0834	5966	1292	*	SHALLOW NISKIN
6	269	6	19 JAN 74	GER	23DEG 59.8MIN S	174DEG 24.2MIN W	1110	5950	5911	*	DEEP GERARD, PB-210
6	269	7	19 JAN 74	ROS	23DEG 59.2MIN S	174DEG 26.9MIN W	1603	6371	4155	*	INTERMEDIATE ROSETTE
6	269	8	19 JAN 74	GER	23DEG 59.3MIN S	174DEG 29.0MIN W	1935	6145	3350	*	INTERMEDIATE GERARD, C-14
6	269	9	20 JAN 74	PMP	24DEG 0.5MIN S	174DEG 26.0MIN W	0723		5514	*	LAL PUMP
6	269	10	20 JAN 74	GER	23DEG 57.2MIN S	174DEG 33.0MIN W	1008	6294	1153	*	SHALLOW GERARD, C-14
6	269	11	20 JAN 74	ESS	23DEG 58.0MIN S	174DEG 31.6MIN W	0320		0	*	ESSO ZODIAC, POLONIUM-210
6	270	1	20 JAN 74	ROS	23DEG 58.7MIN S	175DEG 15.3MIN W	1727	7674	4777	*	DEEP ROSETTE
6	271	1	20 JAN 74	CTD	24DEG 1.9MIN S	175DEG 29.1MIN W	2255	5986	5930	*	CTD WITH 2 CHECK SAMPLES
6	272	1	21 JAN 74	ROS	24DEG 2.6MIN S	175DEG 43.1MIN W	0341	3707	3692	*	DEEP ROSETTE, BOTTOM RADON
6	273	1	22 JAN 74	PMP	29DEG 57.2MIN S	175DEG 43.9MIN W	1845		80	*	SURFACE PUMP, BE-7, RA-228
6	273	2	22 JAN 74	ROS	29DEG 57.0MIN S	175DEG 42.7MIN W	2045	5812	5797	*	DEEP ROSETTE, BOTTOM RADON
6	273	3	23 JAN 74	NIS	29DEG 56.0MIN S	175DEG 41.2MIN W	0057	5349	3587	*	INTERMEDIATE NISKIN
6	273	4	23 JAN 74	NIS	29DEG 56.1MIN S	175DEG 41.1MIN W	0233		51	*	SURFACE RADON
6	273	5	23 JAN 74	ESS	29DEG 56.1MIN S	175DEG 41.1MIN W	0310		0	*	ESSO BUCKET, POLONIUM-210
6	274	1	23 JAN 74	CTD	29DEG 59.5MIN S	176DEG 18.5MIN W	0811	8320	5998	*	CTD WITH 2 CHECK SAMPLES
6	275	1	23 JAN 74	ROS	30DEG 1.5MIN S	176DEG 54.5MIN W	1502	5564	5551	*	DEEP ROSETTE
6	276	1	23 JAN 74	CTD	29DEG 58.5MIN S	177DEG 11.3MIN W	2103	4678	4661	*	CTD WITH 2 CHECK SAMPLES
6	277	1	24 JAN 74	ROS	30DEG 7.1MIN S	177DEG 34.9MIN W	0201	3680	3665	*	DEEP ROSETTE, BOTTOM RADON
6	278	1	26 JAN 74	ROS	36DEG 31.3MIN S	179DEG 36.0MIN W	1314	4061	4038	*	DEEP ROSETTE
6	278	2	26 JAN 74	ESS	36DEG 31.3MIN S	179DEG 36.0MIN W	1605		0	*	ESSO BUCKET, POLONIUM-210
7	279	1	8 FEB 74	CTD	55DEG 6.1MIN S	170DEG 6.5MIN E	0924	3718	3705	*	CTD WITH 5 CHECK SAMPLES
7	280	1	8 FEB 74	ROS	56DEG 1.0MIN S	170DEG 3.0MIN E	2033	5235	5222	*	DEEP ROSETTE (MALFUNCTION)
7	280	2	9 FEB 74	ESS	55DEG 59.9MIN S	170DEG 6.1MIN E	0145			*	ESSO ROSETTE (ABORTED)
7	280	3	9 FEB 74	NIS	56DEG 0.0MIN S	170DEG 6.0MIN E	0426	5257	3788	*	INTERMEDIATE NISKIN
7	280	4	9 FEB 74	NIS	56DEG 0.0MIN S	170DEG 6.0MIN E	0650	5257	154	*	SHALLOW NISKIN, SURFACE RADON
7	280	5	9 FEB 74	ESS	56DEG 0.0MIN S	170DEG 6.0MIN E			0	*	ESSO BUCKET, POLONIUM-210
7	281	1	9 FEB 74	ROS	56DEG 45.0MIN S	170DEG 5.0MIN E	1707	5211	5196	*	DEEP ROSETTE
7	282	1	10 FEB 74	PMP	57DEG 31.0MIN S	169DEG 47.0MIN E	2000		10	*	SURFACE PUMP, C-14, RA-228
7	282	2	10 FEB 74	GER	57DEG 31.0MIN S	169DEG 47.0MIN E	0505	5502		*	DEEP GERARD (PRETRIPPED)
7	282	3	10 FEB 74	NIS	57DEG 35.0MIN S	169DEG 36.0MIN E	1914		665	*	SHALLOW NISKIN
7	282	4	10 FEB 74	GER	57DEG 40.8MIN S	169DEG 35.8MIN E	2259	5341	4750	*	DEEP GERARD,C-14(PART. PTRIP)
7	282	5	11 FEB 74	GER	57DEG 41.0MIN S	169DEG 35.0MIN E	0231	5341		*	DEEP GERARD, C-14 (ABORTED)
7	282	6	11 FEB 74	NIS	57DEG 41.0MIN S	169DEG 35.0MIN E	0455	5430	1927	*	INTERMEDIATE NISKIN
7	282	7	11 FEB 74	NIS	57DEG 41.5MIN S	169DEG 35.0MIN E	0700	5430	3459	*	INTERMEDIATE NISKIN
7	282	8	11 FEB 74	GER	57DEG 41.5MIN S	169DEG 35.0MIN E	0958	4579	824	*	SHALLOW GERARD, C-14
7	282	9	11 FEB 74	ROS	57DEG 42.0MIN S	169DEG 35.0MIN E	1300			*	DEEP ROSETTE (ABORTED)
7	282	10	11 FEB 74	GER	57DEG 42.5MIN S	169DEG 35.0MIN E	1851	4976	2405	*	SHALLOW GERARD, PB-210
7	282	11	12 FEB 74	BAG	57DEG 43.0MIN S	169DEG 35.0MIN E	0040	5283	4664	*	SI-32 BAG
7	282	12	12 FEB 74	GER	57DEG 47.0MIN S	169DEG 30.0MIN E	1534	5078	4721	*	INTERMEDIATE GERARD, C-14
7	282	13	12 FEB 74	NIS	57DEG 50.0MIN S	169DEG 23.0MIN E	2036	5213	5191	*	DEEP NISKIN
7	282	14	13 FEB 74	GER	57DEG 52.0MIN S	169DEG 20.0MIN E	0150	5227	5194	*	DEEP GERARD, C-14, PB-210
7	282	15	13 FEB 74	NIS	57DEG 54.5MIN S	169DEG 20.0MIN E	0604	5159	139	*	SURFACE RADON
7	282	16	13 FEB 74	GER	57DEG 55.5MIN S	169DEG 20.0MIN E	0756	5159	1784	*	INTERMEDIATE GERARD, C-14
7	282	17	13 FEB 74	ESS	57DEG 56.0MIN S	169DEG 20.0MIN E	0920		0	*	ESSO BUCKET
7	283	1	13 FEB 74	CTD	58DEG 45.0MIN S	170DEG 6.0MIN E	1652	5236	5223	*	CTD WITH 2 CHECK SAMPLES
7	284	1	14 FEB 74	ROS	59DEG 31.0MIN S	170DEG 0.0MIN E	0231	5096	5084	*	DEEP ROSETTE
7	285	1	14 FEB 74	NIS	61DEG 29.1MIN S	169DEG 58.0MIN E	2242	3885	3867	*	DEEP NISKIN
7	285	2	15 FEB 74	NIS	61DEG 29.5MIN S	170DEG 5.0MIN E	0245	4038	1591	*	INTERMEDIATE NISKIN
7	285	3	15 FEB 74	NIS	61DEG 29.7MIN S	170DEG 10.0MIN E	0642	4061	85	*	SHALLOW NISKIN, SURFACE RADON
7	285	4	15 FEB 74	ESS	61DEG 29.7MIN S	170DEG 10.0MIN E	0730		0	*	ESSO BUCKET
7	285	5	15 FEB 74	PMP	61DEG 29.7MIN S	170DEG 10.0MIN E	0430		5	*	SURFACE PUMP, RA-228
7	286	1	17 FEB 74	NIS	66DEG 5.0MIN S	173DEG 40.0MIN E	1803	3408	3345	*	DEEP NISKIN
7	286	2	17 FEB 74	NIS	66DEG 5.0MIN S	173DEG 45.0MIN E	2353	3431	784	*	SHALLOW NISKIN, SURFACE RADON
7	286	3	18 FEB 74	NIS	66DEG 5.0MIN S	173DEG 45.0MIN E	0120	3431	1642	*	SHALLOW NISKIN, INTER. RADON
7	286	4	18 FEB 74	ESS	66DEG 6.0MIN S	173DEG 45.0MIN E	0200		0	*	ESSO BUCKET
7	286	5	18 FEB 74	PMP	66DEG 6.0MIN S	173DEG 45.0MIN E	0116		5	*	SURFACE PUMP, RA-228
7	287	1	19 FEB 74	PMP	69DEG 18.0MIN S	173DEG 30.0MIN W	1835		80	*	SURFACE PUMP,BE-7,C-14,RA-228
7	287	2	19 FEB 74	GER	69DEG 8.0MIN S	173DEG 30.5MIN W	2028	4115	3893	*	DEEP GERARD, PB-210
7	287	3	20 FEB 74	ROS	69DEG 5.0MIN S	173DEG 30.0MIN W	0141	4116	4100	*	DEEP ROSETTE, BOTTOM RADON
7	287	4	20 FEB 74	GER	69DEG 2.0MIN S	173DEG 34.5MIN W	0607	4126	4107	*	DEEP GERARD, C-14
7	287	5	20 FEB 74	NIS	69DEG 5.0MIN S	173DEG 15.0MIN W	1009	4115	352	*	SHALLOW NISKIN
7	287	6	20 FEB 74	GER	69DEG 6.2MIN S	173DEG 15.7MIN W	1804	4125	3228	*	INTERMEDIATE GERARD, C-14
7	287	7	21 FEB 74	NIS	69DEG 5.0MIN S	173DEG 10.0MIN W	0132	4132	3083	*	INTERMEDIATE NISKIN
7	287	8	21 FEB 74	GER	69DEG 5.0MIN S	173DEG 14.0MIN W	0419	4132	1004	*	INTERMEDIATE GERARD, C-14
7	287	9	21 FEB 74	NIS	69DEG 4.0MIN S	173DEG 18.0MIN W	0552	4132	77	*	SURFACE RADON
7	287	10	21 FEB 74	GER	69DEG 4.1MIN S	173DEG 0.0MIN W	0845	4149	1888	*	SHALLOW GERARD, PB-210
7	287	11	21 FEB 74	GER	69DEG 2.0MIN S	173DEG 4.0MIN W	1647	4154	4121	*	DEEP GERARD, C-14, PB-210
7	287	12	21 FEB 74	ESS	69DEG 0.0MIN S	173DEG 6.0MIN W	1910		0	*	ESSO BUCKET, POLONIUM-210
7	288	1	22 FEB 74	NIS	67DEG 42.5MIN S	173DEG 59.0MIN W	0720	3820	3762	*	DEEP NISKIN
7	289	1	24 FEB 74	NIS	61DEG 59.2MIN S	174DEG 0.0MIN W	0217	4079	3741	*	DEEP NISKIN
7	289	2	24 FEB 74	NIS	61DEG 55.0MIN S	173DEG 55.0MIN W	0411	4060	185	*	SHALLOW NISKIN, SURFACE RADON
7	290	1	25 FEB 74	GER	58DEG 1.0MIN S	174DEG 0.0MIN W	1426	4833	4793	*	DEEP GERARD, C-14
7	290	2	25 FEB 74	NIS	58DEG 0.0MIN S	174DEG 0.0MIN W	1855	5316	5287	*	DEEP NISKIN, BOTTOM RADON
7	290	3	25 FEB 74	GER	57DEG 59.0MIN S	174DEG 0.0MIN W	2244	5116	1791	*	INTERMEDIATE GERARD, C-14
7	290	4	26 FEB 74	NIS	57DEG 58.0MIN S	174DEG 0.0MIN W	0136	5116	1010	*	SHALLOW NISKIN
7	290	5	26 FEB 74	GER	57DEG 57.0MIN S	174DEG 0.0MIN W	0408	5002	596	*	SHALLOW GERARD, C-14
7	290	6	26 FEB 74	NIS	57DEG 56.0MIN S	174DEG 0.0MIN W	0613	4968	4038	*	INTERMEDIATE NISKIN
7	290	7	26 FEB 74	NIS	57DEG 56.0MIN S	174DEG 0.0MIN W	0819	4968	195	*	SURFACE RADON
7	290	8	26 FEB 74	PMP	57DEG 56.0MIN S	174DEG 0.0MIN W	0740		10	*	SURFACE PUMP, C-14, RA-228
7	290	9	26 FEB 74	ESS	57DEG 55.0MIN S	174DEG 0.0MIN W	0845		0	*	ESSO BUCKET, POLONIUM-210
7	291	1	27 FEB 74	NIS	56DEG 0.0MIN S	175DEG 35.0MIN W	0536	5114	5097	*	DEEP NISKIN, BOTTOM RADON
7	291	2	27 FEB 74	NIS	55DEG 59.0MIN S	175DEG 35.0MIN W	1118	5005	2829	*	SHALLOW NISKIN
7	291	3	27 FEB 74	ESS	55DEG 59.0MIN S	175DEG 35.0MIN W	1235		0	*	ESSO BUCKET, POLONIUM-210
7	292	1	28 FEB 74	NIS	54DEG 5.0MIN S	176DEG 58.0MIN W	1759	5428	5060	*	DEEP NISKIN
7	293	1	1 MAR 74	GER	52DEG 35.0MIN S	178DEG 2.0MIN W	1106	5256	2778	*	INTERMEDIATE GERARD, C-14
7	293	2	1 MAR 74	NIS	52DEG 40.0MIN S	178DEG 5.0MIN W	1436	5335	5318	*	DEEP NISKIN
7	293	3	1 MAR 74	GER	52DEG 45.0MIN S	178DEG 10.5MIN W	1849	5313	5168	*	DEEP GERARD, C-14
7	293	4	1 MAR 74	NIS	52DEG 49.3MIN S	178DEG 10.1MIN W	2226	5291	1262	*	SHALLOW NISKIN
7	293	5	2 MAR 74	GER	52DEG 54.0MIN S	178DEG 11.0MIN W	0327		695	*	SHALLOW GERARD, C-14
7	293	6	2 MAR 74	NIS	52DEG 56.0MIN S	178DEG 11.0MIN W	0601	5308	3868	*	INTERMEDIATE NISKIN
7	293	7	2 MAR 74	NIS	52DEG 58.0MIN S	178DEG 12.0MIN W	0817	5312	101	*	SURFACE NISKIN, SURFACE RADON
7	293	8	2 MAR 74	GER	53DEG 4.0MIN S	178DEG 13.0MIN W	1508	5318		*	DEEP GERARD, RA-228 (PRETRIP)
7	293	9	2 MAR 74	GER	53DEG 8.0MIN S	178DEG 14.0MIN W	2043	5454	5427	*	DEEP GERARD, RA-228
7	293	10	2 MAR 74	PMP	52DEG 59.0MIN S	178DEG 12.0MIN W	1007		50	*	SURFACE PUMP, C-14, RA-228
7	293	11	3 MAR 74	GER	53DEG 10.0MIN S	178DEG 12.0MIN W	0148	5319	4750	*	DEEP GERARD, RA-228
7	293	12	3 MAR 74	ESS	53DEG 12.0MIN S	178DEG 11.0MIN W	0425		0	*	ESSO BUCKET, POLONIUM-210
7	294	1	4 MAR 74	NIS	50DEG 38.0MIN S	179DEG 59.0MIN W	0035	4505	2588	*	SHALLOW NISKIN
7	294	2	4 MAR 74	ESS	50DEG 38.0MIN S	179DEG 59.0MIN W	0240		0	*	ESSO BUCKET, POLONIUM-210
8	295	1	15 MAR 74	ROS	44DEG 11.1MIN S	171DEG 29.5MIN W	1608	3508	3285	*	DEEP SINGLE ROSETTE
8	296	1	16 MAR 74	GER	44DEG 56.9MIN S	166DEG 39.5MIN W	1724	5325	5284	*	DEEP GERARD, C-14, PB-210
8	296	2	16 MAR 74	ROS	44DEG 59.0MIN S	166DEG 42.0MIN W	2215	5342	5325	*	DEEP ROSETTE, BOTTOM RADON
8	296	3	17 MAR 74	GER	45DEG 0.8MIN S	166DEG 48.0MIN W	0233	5334	3591	*	INTER. GERARD, C-14, PB-210

STATION AND CAST DESCRIPTION

GEOSECS PACIFIC R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
8	296	4	17 MAR 74	ROS	45DEG 2.0MIN S	166DEG 48.3MIN W	0623	5338	3383	*	INTERMEDIATE ROSETTE
8	296	5	17 MAR 74	GER	45DEG 2.1MIN S	166DEG 49.3MIN W	1138	5340	2254	*	INTER. GERARD, C-14, PB-210
8	296	6	17 MAR 74	NIS	45DEG 1.1MIN S	166DEG 50.2MIN W	1439	5336	1138	*	SHALLOW NISKIN
8	296	7	17 MAR 74	NIS	45DEG 1.0MIN S	166DEG 50.0MIN W	1615	5336	1346	*	SHALLOW NISKIN
8	296	8	17 MAR 74	GER	45DEG 1.0MIN S	166DEG 50.0MIN W	1752	5330	803	*	SHALLOW GERARD, C-14, PB-210
8	296	9	17 MAR 74	ESS	45DEG 1.0MIN S	166DEG 50.0MIN W	1900		0	*	ESSO BUCKET
8	297	1	18 MAR 74	ROS	46DEG 0.0MIN S	166DEG 45.0MIN W	0427	5428	4123	*	DEEP SINGLE ROSETTE
8	298	1	18 MAR 74	SPE	46DEG 43.0MIN S	166DEG 56.0MIN W	1530			*	SDT WIRE TEST, WT ONLY TO 5KM
8	298	2	18 MAR 74	ROS	46DEG 41.3MIN S	166DEG 50.3MIN W	1852	5434	5326	*	DEEP SINGLE ROSETTE
8	298	3	18 MAR 74	NIS	46DEG 40.2MIN S	166DEG 51.0MIN W	2252	5339	2723	*	SHALLOW NISKIN, SURFACE RADON
8	299	1	19 MAR 74	ROS	44DEG 13.0MIN S	166DEG 46.0MIN W	2309	5332	5287	*	DEEP SINGLE ROSETTE
8	299	2	20 MAR 74	CTD	44DEG 13.0MIN S	166DEG 46.0MIN W	1410	5334		*	CTD (TEST)
8	300	1	20 MAR 74	NIS	43DEG 15.0MIN S	166DEG 46.0MIN W	1319	5265	2486	*	SHALLOW NISKIN
8	300	2	20 MAR 74	NIS	43DEG 15.0MIN S	166DEG 46.0MIN W	1848	5247	5182	*	DEEP NISKIN
8	301	1	21 MAR 74	NIS	41DEG 33.5MIN S	166DEG 50.0MIN W	1155	4838	1982	*	SHALLOW NISKIN
8	301	2	21 MAR 74	CTD	41DEG 35.0MIN S	166DEG 54.0MIN W	1439	4811		*	CTD (TEST)
8	301	3	21 MAR 74	NIS	41DEG 36.5MIN S	166DEG 55.5MIN W	1830	* 4723	4674	*	DEEP NISKIN
8	301	4	21 MAR 74	ESS	41DEG 36.0MIN S	166DEG 55.0MIN W	2045		0	*	ESSO BUCKET
8	302	1	22 MAR 74	ROS	40DEG 30.5MIN S	166DEG 42.0MIN W	0613	5030	5002	*	DEEP ROSETTE
8	302	2	22 MAR 74	NIS	40DEG 30.5MIN S	166DEG 42.0MIN W	0942	5028	966	*	SHALLOW NISKIN, SURFACE RADON
8	303	1	23 MAR 74	ROS	38DEG 22.9MIN S	170DEG 4.3MIN W	1750	4841	4820	*	DEEP ROSETTE, BOTTOM RADON
8	303	2	23 MAR 74	GER	38DEG 19.7MIN S	170DEG 3.3MIN W	2321	4867	2508	*	INTERMEDIATE GERARD, C-14
8	303	3	24 MAR 74	ROS	38DEG 19.5MIN S	170DEG 2.8MIN W	0236	4868	3229	*	INTERMEDIATE ROSETTE
8	303	4	24 MAR 74	GER	38DEG 19.9MIN S	170DEG 2.0MIN W	0658	4871	4800	*	DEEP GERARD, C-14
8	303	5	24 MAR 74	NIS	38DEG 20.1MIN S	170DEG 1.2MIN W	0954	4870	1088	*	SHALLOW NISKIN
8	303	6	24 MAR 74	GER	38DEG 20.0MIN S	170DEG 1.0MIN W	1138	4870	702	*	SHALLOW GERARD, C-14
8	303	7	24 MAR 74	ESS	38DEG 20.0MIN S	170DEG 1.0MIN W	1245		0	*	ESSO BUCKET
8	304	1	25 MAR 74	ROS	37DEG 3.8MIN S	168DEG 36.2MIN W	0256	4897	4853	*	INTERMEDIATE ROSETTE
8	304	2	25 MAR 74	ROS	37DEG 5.6MIN S	168DEG 34.4MIN W	0837	4893	4476	*	DEEP ROSETTE
8	305	1	26 MAR 74	NIS	35DEG 40.0MIN S	166DEG 47.0MIN W	1128	4886	1190	*	SHALLOW NISKIN
8	305	2	26 MAR 74	ROS	35DEG 40.0MIN S	166DEG 47.0MIN W	1433	5277	5244	*	DEEP ROSETTE
8	305	3	26 MAR 74	NIS	35DEG 40.0MIN S	166DEG 47.0MIN W	1834	5275	2577	*	INTERMEDIATE NISKIN
8	305	4	26 MAR 74	ESS	35DEG 40.0MIN S	166DEG 47.0MIN W	1945		0	*	ESSO BUCKET
8	306	1	27 MAR 74	ROS	32DEG 50.0MIN S	163DEG 38.0MIN W	2023	5624	5605	*	DEEP ROSETTE, BOTTOM RADON
8	306	2	28 MAR 74	GER	32DEG 49.0MIN S	163DEG 35.5MIN W	0128	5648	4122	*	INT. GERARD, C-14, PB-210
8	306	3	28 MAR 74	PMP	32DEG 49.0MIN S	163DEG 35.0MIN W	0000		5	*	BOW PUMP, BE-7, RA-228
8	306	4	28 MAR 74	ROS	32DEG 49.1MIN S	163DEG 32.2MIN W	0455	5364	3823	*	INTERMEDIATE ROSETTE
8	306	5	28 MAR 74	GER	32DEG 49.7MIN S	163DEG 33.5MIN W	0950	5643	5601	*	DEEP GERARD C-14, PB-210
8	306	6	28 MAR 74	ROS	32DEG 47.2MIN S	163DEG 33.8MIN W	1321	5707	1340	*	SHALLOW ROSETTE
8	306	7	28 MAR 74	SPE	32DEG 50.0MIN S	163DEG 42.7MIN W	1930	5648	5512	*	LAL PUMP
8	306	8	29 MAR 74	GER	32DEG 51.0MIN S	163DEG 42.4MIN W	0556	5469	2956	*	INTER. GERARD, C-14, PB-210
8	306	9	29 MAR 74	SPE	32DEG 55.0MIN S	163DEG 40.8MIN W	1100		5330	*	MOORE FIBERS (FAILED)
8	306	10	29 MAR 74	NIS	32DEG 56.7MIN S	163DEG 39.6MIN W	1546	5321	203	*	SURFACE RADON
8	306	11	29 MAR 74	GER	32DEG 51.0MIN S	163DEG 42.0MIN W	1710	5321	1661	*	SHALLOW GERARD, C-14, PB-210
8	306	12	30 MAR 74	BAG	32DEG 55.8MIN S	163DEG 40.0MIN W	0543	5527	4868	*	SI-32 BAG
8	306	13	30 MAR 74	GER	32DEG 58.0MIN S	163DEG 35.5MIN W	1123	5671	612	*	SHALLOW GERARD, C-14, PB-210
8	306	14	30 MAR 74	PMP	32DEG 58.0MIN S	163DEG 35.5MIN W	1136		5	*	BOW PUMP, RA-228
8	306	15	30 MAR 74	ESS	32DEG 58.0MIN S	163DEG 35.5MIN W	1310		0	*	ESSO BUCKET
8	307	1	31 MAR 74	CTD	31DEG 26.0MIN S	161DEG 58.0MIN W	0540	5402		*	CTD WITH 1 CHECK SAMPLE
8	307	2	31 MAR 74	PMP	31DEG 26.0MIN S	161DEG 58.0MIN W	0630		5	*	BOW PUMP,RA-228
8	308	1	31 MAR 74	NIS	29DEG 59.5MIN S	160DEG 20.9MIN W	2210	5286	1793	*	SHALLOW NISKIN
8	308	2	1 APR 74	CTD	29DEG 59.2MIN S	160DEG 20.2MIN W	0210	5280		*	CTD WITH 1 CHECK SAMPLE
8	308	3	1 APR 74	NIS	29DEG 59.2MIN S	160DEG 20.2MIN W	0524	5280	5121	*	DEEP NISKIN
8	308	4	1 APR 74	ESS	29DEG 59.0MIN S	160DEG 20.0MIN W	0848		0	*	ESSO BUCKET
8	309	1	2 APR 74	ROS	28DEG 29.0MIN S	158DEG 48.1MIN W	0127	5370	5312	*	DEEP SINGLE ROSETTE
8	309	2	2 APR 74	NIS	28DEG 29.0MIN S	158DEG 48.1MIN W	0444	5349	2583	*	SHALLOW NISKIN
8	310	1	3 APR 74	ROS	26DEG 57.5MIN S	157DEG 9.5MIN W	0030	5393	5109	*	DEEP ROSETTE
8	310	2	3 APR 74	GER	26DEG 55.8MIN S	157DEG 11.1MIN W	0624	5454	5379	*	DEEP GERARD, C-14
8	310	3	3 APR 74	ROS	26DEG 56.0MIN S	157DEG 11.4MIN W	1030	5450	3036	*	INTERMEDIATE ROSETTE
8	310	4	3 APR 74	GER	26DEG 55.4MIN S	157DEG 11.5MIN W	1351	5448	2447	*	INTERMEDIATE GERARD, C-14
8	310	5	3 APR 74	ROS	26DEG 55.1MIN S	157DEG 11.3MIN W	1723	5442	999	*	SHALLOW ROSETTE,SURFACE RADON
8	310	6	3 APR 74	GER	26DEG 55.1MIN S	157DEG 11.6MIN W	1930	5437	750	*	SHALLOW GERARD, C-14
8	310	7	3 APR 74	PMP	26DEG 54.8MIN S	157DEG 11.5MIN W	1950		5	*	BOW PUMP, RA-228
8	310	8	3 APR 74	ESS	26DEG 54.8MIN S	157DEG 11.5MIN W	2040		0	*	ESSO BUCKET
8	311	1	4 APR 74	ROS	26DEG 17.6MIN S	156DEG 24.8MIN W	0435	5188	5121	*	DEEP ROSETTE
8	312	1	4 APR 74	ROS	25DEG 28.4MIN S	155DEG 38.6MIN W	1807	4796	4786	*	DEEP ROSETTE
8	313	1	5 APR 74	ROS	24DEG 24.6MIN S	154DEG 25.8MIN W	0719	5064	5022	*	DEEP ROSETTE
8	314	1	5 APR 74	GER	23DEG 44.0MIN S	153DEG 37.0MIN W	1900	4585	4547	*	DEEP GERARD, PB-210, RA-228
8	314	2	5 APR 74	ROS	23DEG 44.0MIN S	153DEG 37.0MIN W	2250	4608	4570	*	DEEP ROSETTE, BOTTOM RADON
8	314	3	6 APR 74	GER	23DEG 43.0MIN S	153DEG 35.0MIN W	0402	4410	1901	*	SHALLOW GERARD,PB-210,RA-228
8	314	4	6 APR 74	NIS	23DEG 43.6MIN S	153DEG 33.0MIN W	0618	4410	360	*	SHALLOW NISKIN
8	314	5	6 APR 74	NIS	23DEG 43.7MIN S	153DEG 30.5MIN W	0804	4410	2131	*	INTERMEDIATE NISKIN
8	314	6	6 APR 74	PMP	23DEG 43.7MIN S	153DEG 30.5MIN W	0150	4410	5	*	BOW PUMP, BE-7, RA-228
8	314	7	6 APR 74	ESS	23DEG 43.0MIN S	153DEG 30.5MIN W	0900		0	*	ESSO BUCKET
9	315	1	16 APR 74	CTD	17DEG 0.3MIN S	134DEG 52.3MIN W	2048	4482	4442	*	CTD (Q CAST)
9	316	1	19 APR 74	ROS	18DEG 51.8MIN S	126DEG 36.0MIN W	0304	4121	4092	*	DEEP ROSETTE
9	316	2	19 APR 74	NIS	18DEG 51.9MIN S	126DEG 35.9MIN W	0610	4121	946	*	SHALLOW NISKIN, SURFACE RADON
9	316	3	19 APR 74	PMP	18DEG 51.8MIN S	126DEG 36.0MIN W	0530		5	*	BOW PUMP, RA-228
9	316	4	19 APR 74	ESS	18DEG 51.9MIN S	126DEG 35.9MIN W	0655		0	*	ESSO BUCKET, POLONIUM-210
9	317	1	20 APR 74	GER	23DEG 38.0MIN S	127DEG 9.3MIN W	1318	3664	1794	*	INTERMEDIATE GERARD, C-14
9	317	2	20 APR 74	ROS	23DEG 37.3MIN S	127DEG 11.3MIN W	1740	3589	3572	*	DEEP ROSETTE, BOTTOM RADON
9	317	3	20 APR 74	GER	23DEG 35.6MIN S	127DEG 12.2MIN W	2204	3480	3436	*	DEEP GERARD, C-14
9	317	4	21 APR 74	NIS	23DEG 35.1MIN S	127DEG 12.5MIN W	0100	3404	1736	*	SHALLOW NISKIN
9	317	5	21 APR 74	GER	23DEG 35.2MIN S	127DEG 13.0MIN W	0411	3421	703	*	SHALLOW GERARD, C-14
9	317	6	21 APR 74	BAG	23DEG 37.9MIN S	127DEG 12.6MIN W	0826	3519	3340	*	SI-32 BAG
9	317	7	21 APR 74	PMP	23DEG 39.7MIN S	127DEG 10.6MIN W	1300		5	*	BOW PUMP, BE-7, RA-228
9	317	8	21 APR 74	ESS	23DEG 45.5MIN S	127DEG 7.0MIN W	2020		0	*	ESSO BUCKET, POLONIUM-210
9	318	1	22 APR 74	CTD	25DEG 33.4MIN S	127DEG 49.9MIN W	1126	3744	3729	*	CTD WITH 6 CHECK SAMPLES
9	319	1	23 APR 74	ROS	28DEG 30.0MIN S	127DEG 47.1MIN W	1113	4043	3997	*	DEEP ROSETTE
9	319	2	23 APR 74	NIS	28DEG 30.8MIN S	127DEG 48.9MIN W	1531	4100	1043	*	SHALLOW NISKIN, SURFACE RADON
9	319	3	23 APR 74	PMP	28DEG 30.8MIN S	127DEG 48.9MIN W			5	*	SURFACE PUMP, RA-228
9	319	4	23 APR 74	ESS	28DEG 30.8MIN S	127DEG 48.9MIN W	1635		0	*	ESSO BUCKET, POLONIUM-210
9	320	1	24 APR 74	GER	33DEG 20.7MIN S	128DEG 24.2MIN W	2253	4123	2000	*	INTERMEDIATE GERARD, C-14
9	320	2	25 APR 74	ROS	33DEG 20.9MIN S	128DEG 24.2MIN W	0142	4142	4131	*	DEEP ROSETTE, BOTTOM RADON
9	320	3	25 APR 74	PMP	33DEG 21.0MIN S	128DEG 24.2MIN W	0100		125	*	SURFACE PUMP, BE-7, RA-228
9	320	4	25 APR 74	GER	33DEG 20.5MIN S	128DEG 24.4MIN W	0541	4158	4098	*	DEEP GERARD, C-14
9	320	5	25 APR 74	NIS	33DEG 20.7MIN S	128DEG 24.6MIN W	0826	4166	1736	*	SHALLOW NISKIN
9	320	6	25 APR 74	GER	33DEG 20.6MIN S	128DEG 24.6MIN W	1113	4160	4107	*	DEEP GERARD, PB-210
9	320	7	25 APR 74	PMP	33DEG 20.0MIN S	128DEG 24.3MIN W	1440	4118	4007	*	LAL PUMP
9	320	8	26 APR 74	GER	33DEG 20.6MIN S	128DEG 23.0MIN W	0041		504	*	SHALLOW GERARD, C-14
9	320	9	26 APR 74	ESS	33DEG 20.1MIN S	128DEG 23.2MIN W	0455	4044	3946	*	ESSO ROSETTE
9	320	10	26 APR 74	NIS	33DEG 19.2MIN S	128DEG 23.6MIN W	0726	4114	353	*	SURFACE RADON
9	320	11	26 APR 74	GER	33DEG 19.5MIN S	128DEG 23.8MIN W	0906	4110	1002	*	SHALLOW GERARD, PB-210
9	320	12	26 APR 74	ESS	33DEG 19.5MIN S	128DEG 23.8MIN W	1020		0	*	ESSO BUCKET, POLONIUM-210
9	321	1	27 APR 74	ROS	38DEG 48.0MIN S	129DEG 22.0MIN W	2156	4854	4842	*	DEEP ROSETTE, BOTTOM RADON
9	321	2	28 APR 74	NIS	38DEG 49.3MIN S	129DEG 23.0MIN W	0120	4960	2625	*	SHALLOW NISKIN
9	321	3	28 APR 74	PMP	38DEG 49.5MIN S	129DEG 25.2MIN W	0255		50	*	SURFACE PUMP, RA-228
9	321	4	28 APR 74	ROS	38DEG 48.7MIN S	129DEG 25.5MIN W	0509			*	ROSETTE (ABORTED)
9	321	5	28 APR 74	ESS	38DEG 45.2MIN S	129DEG 26.0MIN W	0805		0	*	ESSO BUCKET, POLONIUM-210
9	322	1	29 APR 74	GER	43DEG 0.5MIN S	129DEG 56.9MIN W	2024	4387	4367	*	DEEP GERARD, RA-228
9	322	2	29 APR 74	GER	43DEG 0.2MIN S	129DEG 56.8MIN W	2340	4397	1800	*	INTERMEDIATE GERARD, C-14
9	322	3	30 APR 74	ROS	43DEG 0.8MIN S	129DEG 56.5MIN W	0227	4407	4397	*	DEEP ROSETTE, BOTTOM RADON
9	322	4	30 APR 74	GER	43DEG 1.6MIN S	129DEG 55.4MIN W	0629	4568	2799	*	DEEP GERARD,C-14(MALFUNCTION)
9	322	5	30 APR 74	GER	43DEG 2.3MIN S	129DEG 55.8MIN W	0842	4863	4307	*	DEEP GERARD, C-14 (REPEAT)
9	322	6	30 APR 74	ROS	43DEG 0.7MIN S	129DEG 55.6MIN W	1218	4279	2187	*	SHALLOW ROSETTE
9	322	7	30 APR 74	GER	43DEG 0.5MIN S	129DEG 55.0MIN W	1612	4231		*	DEEP GERARD (ABORTED)
9	322	8	30 APR 74	GER	43DEG 1.7MIN S	129DEG 54.6MIN W	1957	4403	3695	*	DEEP GERARD, RA-228 (REPEAT)
9	322	9	30 APR 74	NIS	43DEG 1.9MIN S	129DEG 54.3MIN W	2154	4845	148	*	SURFACE RADON
9	322	10	30 APR 74	GER	43DEG 1.9MIN S	129DEG 54.3MIN W	2245	4828	503	*	SHALLOW GERARD, C-14
9	322	11	30 APR 74	PMP	43DEG 1.7MIN S	129DEG 54.6MIN W	1910		5	*	BOW PUMP, RA-228
9	322	12	30 APR 74	ESS	43DEG 2.1MIN S	129DEG 53.6MIN W	2325		0	*	ESSO BUCKET, POLONIUM-210
9	323	1	4 MAY 74	ROS	33DEG 43.4MIN S	138DEG 8.0MIN W	0244	4742	4721	*	DEEP ROSETTE
9	323	2	4 MAY 74	NIS	33DEG 43.2MIN S	138DEG 8.2MIN W	0528	4740	150	*	SURFACE RADON
9	323	3	4 MAY 74	PMP	33DEG 43.2MIN S	138DEG 8.2MIN W	0540		5	*	SURFACE PUMP, RA-228
9	324	1	7 MAY 74	GER	23DEG 0.6MIN S	146DEG 4.5MIN W	1420	5033	4982	*	DEEP GERARD, C-14
9	324	2	7 MAY 74	PMP	23DEG 0.6MIN S	146DEG 4.5MIN W	1300		150	*	SURFACE PUMP, RA-228
9	324	3	7 MAY 74	ROS	22DEG 58.9MIN S	146DEG 4.3MIN W	1824	5064	5033	*	DEEP ROSETTE
9	324	4	7 MAY 74	GER	22DEG 58.3MIN S	146DEG 3.9MIN W	2148	5074	826	*	SHALLOW GERARD, C-14
9	324	5	7 MAY 74	NIS	22DEG 58.3MIN S	146DEG 3.9MIN W	2321	5058	1114	*	SHALLOW NISKIN
9	324	6	8 MAY 74	ESS	22DEG 58.3MIN S	146DEG 3.9MIN W	0005		0	*	ESSO BUCKET, POLONIUM-210
10	325	1	18 MAY 74	ROS	14DEG 40.0MIN S	130DEG 55.4MIN W	1537	4050	4031	*	SHALLOW & DEEP ROSETTE
10	326	1	20 MAY 74	ROS	14DEG 3.3MIN S	126DEG 15.7MIN W	0036	3737	3718	*	DEEP ROSETTE, BOTTOM RADON
10	326	2	20 MAY 74	GER	14DEG 3.0MIN S	126DEG 16.0MIN W	0423	3792	1546	*	SHALLOW GERARD, C-14
10	326	3	20 MAY 74	ROS	14DEG 3.0MIN S	126DEG 16.0MIN W	0815	3823	1917	*	SHALLOW & INTER. ROSETTE
10	326	4	20 MAY 74	NIS	14DEG 3.0MIN S	126DEG 16.0MIN W	1132	3792	93	*	SURFACE RADON
10	326	5	20 MAY 74	PMP	14DEG 3.0MIN S	126DEG 16.0MIN W	0755		300	*	SURF PMP,BE-7,C-14,RA-228,RN
10	326	6	20 MAY 74	ESS	14DEG 3.0MIN S	126DEG 16.0MIN W	1210		0	*	ESSO BUCKET, POLONIUM-210
10	327	1	21 MAY 74	ROS	11DEG 40.6MIN S	125DEG 54.9MIN W	0401	3913	3882	*	SHALLOW & DEEP ROSETTE
10	328	1	21 MAY 74	ROS	9DEG 16.9MIN S	125DEG 32.5MIN W	2240	3896	3850	*	DEEP ROSETTE, INTER. RADON
10	328	2	22 MAY 74	GER	9DEG 15.6MIN S	125DEG 34.4MIN W	0307	3879	3829	*	DEEP GERARD, C-14
10	328	3	22 MAY 74	ROS	9DEG 14.7MIN S	125DEG 34.5MIN W	0633	4089	1089	*	SHALLOW ROSETTE
10	328	4	22 MAY 74	ESS	9DEG 14.0MIN S	125DEG 34.0MIN W	0800		0	*	ESSO BUCKET, POLONIUM-210
10	328	5	22 MAY 74	PMP	9DEG 14.0MIN S	125DEG 34.0MIN W	0600		5	*	BOW PUMP, RA-228
10	329	1	22 MAY 74	ROS	7DEG 41.2MIN S	125DEG 27.9MIN W	1826	4504	4462	*	SHALLOW & DEEP ROSETTE
10	329	2	22 MAY 74	ESS	7DEG 41.0MIN S	125DEG 27.0MIN W	2140		0	*	ESSO BUCKET

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
10	330	1	23 MAY 74	ROS	6DEG 4.3MIN S	125DEG 17.2MIN W	0859	4592	4556	*	SHALLOW & DEEP ROSETTE
10	330	2	23 MAY 74	ESS	6DEG 4.0MIN S	125DEG 17.0MIN W	1130		0	*	ESSO BUCKET
10	331	1	23 MAY 74	GER	4DEG 38.0MIN S	125DEG 8.0MIN W	2103	4511	4467	*	DEEP GERARD, C-14, PB-210
10	331	2	24 MAY 74	PMP	4DEG 37.5MIN S	125DEG 8.0MIN W	0040		240	*	SURFACE PUMP,BE-7,C-14,RA-228
10	331	3	24 MAY 74	ROS	4DEG 36.6MIN S	125DEG 8.5MIN W	0205	4332	4311	*	DEEP ROSETTE, BOTTOM RADON
10	331	4	24 MAY 74	GER	4DEG 37.5MIN S	125DEG 7.0MIN W	0555	4391	899	*	INTER. GERARD, C-14, PB-210
10	331	5	24 MAY 74	ROS	4DEG 34.5MIN S	125DEG 10.0MIN W	0842	4137	1376	*	SHALLOW ROSETTE
10	331	6	24 MAY 74	GER	4DEG 33.7MIN S	125DEG 11.3MIN W	1251	4436	4388	*	DEEP GERARD, RA-228
10	331	7	24 MAY 74	GER	4DEG 33.6MIN S	125DEG 12.7MIN W	1712	4470	3787	*	INTERMEDIATE GERARD, RA-228
10	331	8	24 MAY 74	GER	4DEG 33.8MIN S	125DEG 13.1MIN W	2045	4490	3000	*	SHALLOW GERARD, C-14
10	331	9	25 MAY 74	SPE	4DEG 36.8MIN S	125DEG 15.4MIN W	0640		4109	*	MOORE FIBER, RA-228
10	331	10	25 MAY 74	ESS	4DEG 36.8MIN S	125DEG 15.4MIN W	0740		0	*	ESSO BUCKET, POLONIUM-210
10	332	1	25 MAY 74	NIS	3DEG 1.0MIN S	124DEG 48.0MIN W	1845		301	*	SHALLOW NISKIN, SURFACE RADON
10	332	2	25 MAY 74	ROS	3DEG 1.0MIN S	124DEG 48.0MIN W	2210	4720	4678	*	DEEP ROSETTE
10	333	1	26 MAY 74	ROS	1DEG 30.0MIN S	124DEG 40.0MIN W	1200	4554	4521	*	SHALLOW & DEEP ROSETTE
10	333	2	26 MAY 74	ESS	1DEG 30.0MIN S	124DEG 40.0MIN W	1415		0	*	ESSO BUCKET
10	334	1	27 MAY 74	ROS	0DEG 3.9MIN N	124DEG 34.0MIN W	0141	4848	4815	*	DEEP ROSETTE, BOTTOM RADON
10	334	2	27 MAY 74	PMP	0DEG 8.1MIN N	124DEG 20.4MIN W	1000		195	*	SURFACE PUMP, C-14, RA-228
10	334	3	27 MAY 74	ROS	0DEG 8.1MIN N	124DEG 20.4MIN W	1013	4569	2117	*	SHALLOW ROSETTE
10	334	4	27 MAY 74	ESS	0DEG 8.3MIN N	124DEG 20.5MIN W	1140		0	*	ESSO BUCKET, POLONIUM-210
10	335	1	27 MAY 74	ROS	1DEG 32.5MIN N	124DEG 32.2MIN W	2102	4639	4604	*	DEEP ROSETTE
10	335	2	27 MAY 74	ESS	1DEG 32.8MIN N	124DEG 32.8MIN W	2305		0	*	ESSO BUCKET
10	336	1	28 MAY 74	ROS	3DEG 1.5MIN N	124DEG 22.1MIN W	0921	4619	4586	*	DEEP ROSETTE
10	336	2	28 MAY 74	NIS	3DEG 2.5MIN N	124DEG 22.3MIN W	1209		397	*	SHALLOW NISKIN, SURFACE RADON
10	336	3	28 MAY 74	ESS	3DEG 2.5MIN N	124DEG 22.3MIN W	1240		0	*	ESSO BUCKET
10	337	1	29 MAY 74	ROS	4DEG 50.9MIN N	124DEG 5.0MIN W	0140	4277	4260	*	DEEP ROSETTE, BOTTOM RADON
10	337	2	29 MAY 74	GER	4DEG 50.9MIN N	124DEG 4.7MIN W	0430	4336	4178	*	DEEP GERARD, C-14
10	337	3	29 MAY 74	ROS	4DEG 52.9MIN N	124DEG 1.7MIN W	0903	4156	2057	*	INTERMEDIATE ROSETTE
10	337	4	29 MAY 74	NIS	4DEG 53.8MIN N	124DEG 1.0MIN W	1055		300	*	SHALLOW NISKIN
10	337	5	29 MAY 74	GER	4DEG 54.8MIN N	123DEG 59.6MIN W	1229	4224	1047	*	INTERMEDIATE GERARD, C-14
10	337	6	29 MAY 74	BAG	4DEG 54.7MIN N	123DEG 55.8MIN W	1655		4450	*	SI-32 BAG & LAL PUMP
10	337	7	30 MAY 74	PMP	4DEG 47.7MIN N	123DEG 52.9MIN W	0500		5	*	BOW PUMP, BE-7, C-14, RA-228
10	337	8	30 MAY 74	ESS	4DEG 47.7MIN N	123DEG 52.8MIN W	0615		0	*	ESSO BUCKET, POLONIUM-210
10	338	1	31 MAY 74	ROS	6DEG 39.0MIN N	123DEG 42.0MIN W	0249	4239	4164	*	SHALLOW & DEEP ROSETTE
10	338	2	30 MAY 74	PMP	6DEG 37.5MIN N	123DEG 44.0MIN W	2155		300	*	SURFACE PUMP, RA-228
10	338	3	31 MAY 74	ESS	6DEG 39.0MIN N	123DEG 42.0MIN W	0510		0	*	ESSO BUCKET
10	339	1	31 MAY 74	ROS	8DEG 33.5MIN N	123DEG 37.8MIN W	1739	4595	4576	*	DEEP ROSETTE
10	339	2	31 MAY 74	NIS	8DEG 33.5MIN N	123DEG 37.8MIN W	1959	4606	298	*	SHALLOW NISKIN, SURFACE RADON
10	339	3	31 MAY 74	ESS	8DEG 33.5MIN N	123DEG 37.8MIN W	2035		0	*	ESSO BUCKET
10	340	1	1 JUN 74	ROS	10DEG 28.7MIN N	123DEG 38.5MIN W	0943	4536	4525	*	DEEP ROSETTE, BOTTOM RADON
10	340	2	1 JUN 74	NIS	10DEG 28.0MIN N	123DEG 39.2MIN W	1304		2285	*	SHALLOW NISKIN
10	340	3	1 JUN 74	ESS	10DEG 28.0MIN N	123DEG 39.0MIN W	1415		0	*	ESSO BUCKET, POLONIUM-210
10	341	1	2 JUN 74	ROS	12DEG 32.0MIN N	123DEG 29.0MIN W	0630	4599	4570	*	SHALLOW & DEEP ROSETTE
10	341	2	2 JUN 74	ESS	12DEG 32.0MIN N	123DEG 29.0MIN W	0830		0	*	ESSO BUCKET
10	342	1	2 JUN 74	ROS	14DEG 29.6MIN N	123DEG 8.9MIN W	2313	4428	4380	*	SHAL & DP ROSETTE,INTER. RN
10	342	2	3 JUN 74	ESS	14DEG 30.2MIN N	123DEG 7.8MIN W	0120		0	*	ESSO BUCKET
10	343	1	3 JUN 74	GER	16DEG 31.3MIN N	122DEG 59.5MIN W	1603	4196	4153	*	DEEP GERARD, C-14, PB-210
10	343	2	3 JUN 74	ROS	16DEG 31.6MIN N	123DEG 1.4MIN W	2126	4226	4198	*	DEEP ROSETTE, BOTTOM RADON
10	343	3	3 JUN 74	PMP	16DEG 31.3MIN N	122DEG 59.5MIN W	1610		300	*	SURFACE PUMP,BE-7,C-14,RA-228
10	343	4	4 JUN 74	GER	16DEG 31.8MIN N	123DEG 3.8MIN W	0118	4168	1195	*	SHALLOW GERARD, C-14, PB-210
10	343	5	4 JUN 74	ROS	16DEG 32.0MIN N	123DEG 7.0MIN W	0458	4262	1672	*	SHALLOW ROSETTE
10	343	6	4 JUN 74	GER	16DEG 32.0MIN N	123DEG 8.0MIN W	0737	4227	3241	*	INTERMEDIATE GERARD, C-14
10	343	7	4 JUN 74	ESS	16DEG 32.0MIN N	123DEG 9.0MIN W	0835		0	*	ESSO BUCKET, POLONIUM-210
10	344	1	5 JUN 74	ROS	19DEG 30.3MIN N	122DEG 43.2MIN W	0734	4272	4253	*	DEEP ROSETTE, BOTTOM RADON
10	344	2	5 JUN 74	ESS	19DEG 30.0MIN N	122DEG 43.0MIN W	0940		0	*	ESSO BUCKET
10	345	1	6 JUN 74	ROS	22DEG 31.5MIN N	122DEG 12.8MIN W	0844	4225	4215	*	DEEP ROSETTE, BOTTOM RADON
10	345	2	6 JUN 74	PMP	22DEG 30.6MIN N	122DEG 14.0MIN W	1420		300	*	SURFACE PUMP, RA-228
10	345	3	6 JUN 74	ROS	22DEG 30.0MIN N	122DEG 14.0MIN W	1514	4125	1888	*	SHALLOW ROSETTE
10	345	4	6 JUN 74	ROS	22DEG 30.0MIN N	122DEG 14.0MIN W	1635		0	*	ESSO BUCKET, POLONIUM-210
10	346	1	7 JUN 74	ROS	25DEG 28.9MIN N	121DEG 50.8MIN W	1515	4229	4210	*	DEEP ROSETTE, BOTTOM RADON
10	346	2	7 JUN 74	ESS	25DEG 29.0MIN N	121DEG 51.0MIN W	1805		0	*	ESSO BUCKET
10	347	1	8 JUN 74	ROS	28DEG 30.8MIN N	121DEG 29.2MIN W	1704	4287	4257	*	DEEP ROSETTE, BOTTOM RADON
10	347	2	8 JUN 74	GER	28DEG 31.3MIN N	121DEG 28.9MIN W	2043	4265	4001	*	DEEP GERARD, C-14
10	347	3	8 JUN 74	ROS	28DEG 31.4MIN N	121DEG 28.7MIN W	2335		990	*	SHALLOW ROSETTE
10	347	4	8 JUN 74	PMP	28DEG 31.0MIN N	121DEG 28.0MIN W	1625		5	*	BOW PUMP, C-14, RA-228
10	347	5	9 JUN 74	ESS	28DEG 31.4MIN N	121DEG 28.6MIN W	0040		0	*	ESSO BUCKET, POLONIUM-210

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, dissolved 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 in the Atlantic Ocean and 144 stations in the Pacific Ocean. Prior to the expeditions, targets had been set for the precisions that should be attained, generally less than 1.5% coefficient of variation (c.v.) for the nutrients, less than 0.5% c.v. for dissolved oxygen, less than 0.2% c.v. for alkalinity, less than 0.5% c.v. for total carbon dioxide, less than 0.003°/$_{oo}$ 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 Atlantic expedition 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 duplicates 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 procedures. On several occasions and mostly by accident, multiple samples were taken and these may be used to determine precision estimates.
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 column "well mixed" for potential temperature may not be so for other properties.

Method 3 overcomes the short analysis period problems, but it was evident in two station reoccupations in the Atlantic that the assumption of a stationary water column was invalid.

During the GEOSECS Pacific expedition the design of the track excluded station reoccupation. Further, the shortage of time, the depth of the water column and perhaps the inclinations of the chief scientists led to a decreased number of deliberate duplicate samplings. However, sufficient accidental replications and instances of adiabatic water columns were encountered so that some reasonable precision estimates may be attempted.

Methods of Operation, Sampling and Analyses

Throughout the GEOSECS program samples for salinity, dissolved oxygen, and nutrient analyses 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 CTD's used on the GEOSECS Pacific 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 with good calibration checks. Higher range thermometers or CTD temperatures with insufficient calibration were listed to 0.01°C.

The thermometers were calibrated at SIO both before and after the Atlantic expedition against standard thermometers calibrated by the National Bureau of Standards. The normal practice of post-expedition recalibration was not considered practical after the Pacific expedition in view of the large number of low range thermometers lost at sea.

Salinities were analyzed on a University of Washington conductive salinometer calibrated against Copenhagen standard seawater. Each sample was run twice.

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 potassium 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; 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; the older CTD's had a temperature offset of approximately 2°C in order to record temperatures less than 0°C. The CTD's put into service during the Pacific expedition incorporated sign bits for both pressure and temperature into the data stream so that large temperature offsets were no longer necessary for sub-zero measurements. Small offsets varying from instrument to instrument remained as a result of the technique of calibration. The CTD's were typically given an approximate calibration before being sent to sea, with the understanding that the final calibration of the temperature and conductivity would depend upon bottle data.

Although the CTD temperature probe has a sensitivity on the order of 0.001°C, its accuracy is limited by the precision and accuracy of the DSRT's used for calibration. 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°C thermometers was somewhat worse than expected 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°C DSRT calibration check gave a mean difference of zero and a standard deviation of 0.005°C. At warmer temperatures, two problems common to both Atlantic and Pacific expeditions were encountered: 1) higher range DSRT's with poorer precision were used for calibration checks; and 2) 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. As a consequence it is difficult to demonstrate that the target precision of 0.005°C was met in the warmer upper water column but all of the deep water temperatures were within the desired precision.

Sampling in duplicate, with the deliberate intent of determining precision estimates of temperature, salinity, dissolved oxygen, and nutrients, was performed only on Legs 2, 3, 4, 9 and 10 of the Pacific expedition. However, several duplicates of salinity and temperature are available for other legs, and the total set is given in Table 2. For each duplicate the mean difference was not significantly different from zero so they are not recorded in Table 2. For temperature and salinity the standard deviations of the mean differences for each leg are shown in columns two and three with the number of paired sample depths in column four. Following our procedures in the Atlantic (7)

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

Table 2—Statistics for Duplicates

Leg	Standard deviation of mean difference			Standard deviation as percent of median range				
	Temp. °C	Salinity °/₀₀	(No.)	O_2	SiO_3	PO_4	NO_3	(No.)
1.....	0.0006	0.0009	(4)	—	—	—	—	(0)
2.....	0	0.0016	(12)	0.55	0.72	0.88	0.41	(5)
3.....	0	0.0006	(5)	0.34	0.28	1.02	0.31	(5)
4.....	0.0007	0.0008	(8)	0.25	0.38	0.51	0.37	(8)
5.....	0.0005	0.0013	(8)	0.35	0.27	0.63	0.43	(6)
6.....	0.001	0.0005	(10)	—	—	—	—	(0)
8.....	0	0.0015	(3)	—	—	—	—	(0)
9.....	0.0005	0.0008	(6)	0.37	0.14	0	0.16	(4)
10.....	0.0006	0.0011	(12)	0.41	0.27	0.19	0.27	(6)
Averages								
	0.0003	0.0010		0.38	0.34	0.54	0.33	

Table 3—Statistics for Multiple Sampling Means and Standard Deviations

Station	Depth m.	(No.)	Temp. °C	Salinity °/₀₀	O_2 µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg
279	2504	(4)		34.736 (0.0005)				
302	960	(3)	5.693 (0)	34.400 (0.0012)	204 (0)	23.7 (0.61)	1.86 (0.01)	27.77 (0.06)
315	3963-6	(5)	1.206 (0.0006)	34.690 (0.0008)	169.6 (0.55)			
347	989-90	(5)	4.010 (0)	34.487 (0.0006)	23.4 (0.55)	118.6 (0.51)	3.10 (0.009)	43.58 (0.18)
Coefficients of variation (%)								
302					0	2.56	0.54	0.21
315					0.32			
347					2.34	0.43	0.29	0.41

and as the statistic "coefficient of variation" has no meaning for these data, we quote a somewhat equivalent statistic "(standard deviation/median range) × 100" as precision estimates for dissolved oxygen and nutrients in columns five to eight with the number of paired depths in column 9.

On four occasions, at Stations 279, 302, 315, and 347, more than two samples were tripped at the same depth or within a very small depth range. Means and standard deviations for the analyses performed on these samples are given in Table 3, together with coefficients of variation for the dissolved oxygen and nutrient data.

At 42 of the 144 stations of the Pacific expedition the bottom water appeared to be sufficiently well mixed so that precision estimates could be attempted. Standard deviations of the potential temperatures and salinities of the bottom waters of these stations are given in Table 4 which also shows the coefficients of variation for nutrients and dissolved oxygen.

The data in Tables 2 to 4 indicate that the target precisions for these properties have been met or exceeded during the Pacific expedition.

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November 1981

Table 4—Statistics For Adiabatic Bottom Waters

Station	Below depth m.	Standard Deviation		Coefficient of variation (%)			
		Pot. temp. °C	Salinity °/₀₀	O_2	SiO_3	PO_4	NO_3
201	4569	0.0019	0.0007	0.76	0.44	0.0	0.0
202	4811	0.0022	0.0005	0.46	0.60	0.0	0.77
204	4944	0.008	0.0003	0.51	0.47	0.42	0.36
212	5530	0.0094	0.0007	0.0	0.34	0.86	0.20
213	5603	0.0005	0.0010	0.43	0.28	0.0	0.60
214	5205	0.0014	0.0014	0.88	0.23	0.59	0.39
215	5069	0.0009	0.0014	0.37	0.20	0.24	0.42
216	4976	0.0014	0.0005	0.47	0.25	0.29	0.20
217	4896	0.0025	0.0010	0.0	0.83	0.24	0.26
218	5602	0.0030	0.0008	0.39	0.76	1.40	0.42
220	5894	0.0006	0.0006	0.87	0.28	0.42	0.64
221	5852	0.0006	0.0012	1.12	0.45	0.59	0.49
222	5409	0.0005	0.0022	0.50	0.24	1.02	0.36
223	6050	0.0009	0.0005	0.0	0.27	0.0	0.36

Table 4—Statistics For Adiabatic Bottom Waters—Continued

Station	Below depth m.	Standard Deviation		Coefficient of variation (%)			
		Pot. temp. °C	Salinity °/₀₀	O_2	SiO_3	PO_4	NO_3
225	5645	0.0035	0.0	0.55	0.72	0.0	0.20
226	5437	0.0019	0.0019	0.0	0.07	0.0	0.14
227	5847	0.0006	0.0006	0.0	0.08	0.0	0.35
228	5264	0.0005	0.0005	0.0	0.45	0.36	0.24
229	5479	0.0013	0.0	0.23	1.16	0.50	0.41
231	5560	0.0055	0.0009	0.47	0.19	0.38	0.21
237	5011	0.0006	0.0	0.31	0.23	0.27	0.29
238	5178	0.0	0.0010	0.30	0.04	0.0	0.17
239	5172	0.0022	0.0006	0.27	0.58	0.33	0.22
241	5564	0.0004	0.0005	0.0	0.11	0.0	0.21
244	5487	0.0011	0.0	0.0	0.57	0.27	0.34
246	5270	0.0008	0.0004	0.0	0.56	0.0	0.42
253	4604	0.0006	0.0	0.0	0.05	0.0	0.18
254	4627	0.0008	0.0010	0.24	0.56	0.0	0.15
256	4717	0.0014	0.0005	0.28	0.05	0.0	0.0
257	4997	0.0023	0.0003	0.0	0.29	0.0	0.0
259	4568	0.0014	0.0005	0.27	0.20	0.27	0.18
260	4858	0.0012	0.0004	0.28	0.21	0.46	0.15
261	4940	0.0015	0.0	0.34	0.11	0.0	0.0
263	5467	0.0008	0.0	0.0	0.55	0.47	0.0
265	5271	0.0007	0.0005	0.26	0.13	0.16	0.0
267	5415	0.0005	0.0004	0.0	0.21	0.37	0.34
273	5640	0.0007	0.0003	—	0.06	0.32	0.0
290	4682	0.0083	0.0004	0.16	0.43	0.65	0.25
306	5434	0.0007	0.0008	0.10	0.06	0.0	0.0
329	4179	0.0010	0.0	0.41	0.10	0.30	0.40
334	4595	0.0005	0.0007	0.36	0.40	0.24	0.15
337	4064	0.0005	0.0007	0.33	0.19	0.21	0.15
Averages			0.0006	0.30	0.33	0.28	0.25

GEOSECS CARBONATE CHEMISTRY

During the GEOSECS Expedition in the Pacific Ocean in 1973-1974, discrete seawater samples were collected using 30-liter Niskin samplers made of PVC, and analysed for alkalinity, total inorganic CO_2 dissolved in seawater, pH and pCO_2 exerted by the seawater. In this section, the methods for these determinations and the calibrations are briefly presented, and the accuracy, precision and internal consistency of the alkalinity, total CO_2 concentration, pH and pCO_2 data are discussed. The information presented here is the result of collective efforts by the late A. E. Bainbridge, David Bos, Ann-Marie Horowitz, Don Lingle, Michael Morrione, Ed Slater, Robert T. Williams and R. F. Weiss of the Scripps Institution of Oceanography; W. S. Broecker, Peter Kaiteris, Linda Prince, and Taro Takahashi of the Lamont-Doherty Geological Observatory; Alvin Bradshaw and Peter G. Brewer of Woods Hole Oceanographic Institution; and C. H. Culberson of the Oregon State University.

Status of the Data Presented in Chapter 3

The alkalinity, the total CO_2 concentration determined by the titrimetric method and the total CO_2 concentration determined by the gas chromatographic method are presented in this volume. The alkalinity and the titrimetric total CO_2 values were computed from the potentiometric acid titration data using the data reduction scheme originally formulated by the late A. E. Bainbridge. However, it has been recently discovered by Bradshaw and Brewer (8) that Bainbridge's original program is incomplete and leads to an overestimation of the computed total CO_2 concentrations by 15 μM/kg. Therefore, THE TITRIMETRIC TOTAL CO_2 DATA LISTED IN CHAPTER 3 SHOULD BE CORRECTED BY -15 μM/kg. It should be carefully noted that those parameters presented in Chapter 3 which are calculated from total CO_2 and other observed parameters, have been calculated from the tabulated titrimetric total CO_2 AFTER APPLICATION OF THE -15 μM/kg. CORRECTION, but the total CO_2 data listed is the original uncorrected observed data. On the other hand, the Bradshaw-Brewer data reduction program yields alkalinity values virtually identical as to those obtained using the Bainbridge program. Therefore, NO CORRECTION IS NECESSARY FOR THE ALKALINITY DATA PRESENTED HERE. Also, THE TOTAL CO_2 CONCENTRATION VALUES OBTAINED BY THE GAS CHROMATOGRAPHIC METHOD are considered final, and thus REQUIRE NO CORRECTION. As presented in Table 5, the alkalinity, the titrimetric total CO_2 (when corrected by -15 μM/kg) and the gas chromatrographic total CO_2 values obtained during the Pacific GEOSECS Expedition are mutually consistent with those obtained during the Atlantic Expedition.

Methods of Analyses and Calibrations

The alkalinity and the total CO_2 concentration were determined using the automated potentiometric acid titrator designed by A. E. Bainbridge on the basis of the method described by Edmond (9). The water samples were collected in 500 ml Pyrex bottles equipped with a ground glass stopper, and

Table 5—Comparison of nine measured parameters in the Pacific and Atlantic sectors of the Circumpolar water below 3500 meters deep. The numbers in parentheses indicate the number of measurements used to compute the mean, and the ± values indicate one standard deviation.

	PACIFIC	ATLANTIC
Station Nos.	280, 282, 285, 290, 291, 293	76, 78
θ (°C)	0.52 ± 0.13 (89)	0.45 ± 0.03 (28)
S (‰)	34.703 ± 0.005 (89)	34.701 ± 0.002 (28)
O_2 (μM/kg)	212 ± 2 (84)	211 ± 1 (28)
SiO_3 (μM/kg)	123.6 ± 3.4 (84)	127.8 ± 1.4 (28)
PO_4 (μM/kg)	2.15 ± 0.02 (84)	2.22 ± 0.01 (27)
NO_3 (μM/kg)	32.4 ± 0.2 (84)	32.0 ± 0.2 (27)
TALK (μEq/kg)	2377 ± 4 (43)	2373 ± 3 (14)
TCO_2 (Titration) (μM/kg)	2266 ± 7 (45)*	2263 ± 4 (14)*
TCO_2(GC) (μM/kg)	2280 ± 4 (14)	2276 ± 10 (11)

*A correction of -15 μM/kg has been applied.

were allowed to warm up to room temperature. The titrations were conducted on shipboard, generally within 24 hours after collection of the samples, and were performed at 25°C in a closed vessel in order to prevent loss of CO_2 from the sample water. 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. The total CO_2 concentration was also determined within 24 hours after sample collection using the gas chromatographic method developed by Weiss and Craig (10). In addition, a limited number of measurements for pH and partial pressure of CO_2 (pCO_2) in seawater were conducted during Leg 6 and Legs 3 and 10 respectively in order to test the internal consistency of the alkalinity and total CO_2 data. The pH was measured by C. H. Culberson using a pair of glass-Calomel electrodes calibrated with Tris-buffer solutions at 25°C in a closed thermostated vessel. The pCO_2 measurement was made by first equilibrating a water sample (about 9 liters) with a carrier gas (about 1 liter) in a closed system, and then collecting a sample of the equilibrated gas in a Pyrex sampling flask (200 ml). The gas flask was sealed and sent back to the land-based laboratory at Lamont-Doherty Geological Observatory for analysis using an infrared CO_2 analyzer. The precisions of the pH and pCO_2 measurements have been estimated to be about ± 0.001 pH unit and ± 1%, respectively.

The titrators for the alkalinity and total CO_2 measurements were calibrated using gravimetrically prepared $Na_2B_4O_7$ standard solutions, the ionic strength of which was adjusted to that of seawater, 0.7, using NaCl. The gas chromatograph used for the total CO_2 measurement and the shore-based infrared CO_2 analyzer used for the pCO_2 measurement were both calibrated using Na_2CO_3 crystals (Fisher Scientific C. P. grade) prepared by heating to 270°C in air until no weight loss was detected (11).

Computation Methods for Alkalinity and Total CO_2

The alkalinity and total CO_2 concentrations were computed from the potentiometric acid titration data using a computer program formulated originally by the late A. E. Bainbridge on the basis of the data reduction scheme developed by Gran (12). Since the original alkalinity and total CO_2 data have been subjected to various corrections, a historical review of the evolution of the GEOSECS data set is appropriate in order to characterize the nature and reliability of the data set presented in this volume.

When the internal consistency of the shipboard alkalinity and total CO_2 concentration was tested using the pCO_2 data obtained during Legs 3 and 10, it was discovered that the measured pCO_2 values were about 20% smaller than those computed from the alkalinity and total CO_2 data. Since the alkalinity data obtained in the Atlantic sector of the Circumpolar water are consistent with those in the Pacific sector of the Circumpolar water, Broecker and Takahashi (13) concluded that the total CO_2 data obtained during the Pacific GEOSECS are most likely in error. Based upon their pCO_2 data and the alkalinity data, they proposed that the total CO_2 data for the Pacific GEOSECS should be corrected by -15 μM/kg.

In 1979, Bradshaw and Brewer (8) discovered that the effect of $CO_3^=$ ions on the Gran F_1' function was omitted in the original Bainbridge program for the reduction of the titration data. They have demonstrated that such an omission, together with an apparent change in the method by which individual titration points were rejected, can cause an overestimation of the total CO_2 value by about 12 μM/kg, whereas little effect on the alkalinity value is observed. Thus, their discovery and subsequent reformulation of the titration data processing program appears to have eliminated most of the inconsistency among the alkalinity, total CO_2, and pCO_2 data. Therefore, in this report, a correction of -15 μM/kg is recommended for the total CO_2 concentration data obtained by the titration method.

The calibration of the titrator is complicated by a blank problem in the standard solutions. As mentioned earlier, the ionic strength of the sodium borate standard solutions has been adjusted to that of seawater using NaCl. However, a small amount of alkalinity appears to be associated with the salt used to adjust the ionic strength. Based upon 104 titrations of NaCl solutions conducted during the Pacific GEOSECS Expedition, the alkalinity blank in the salt has been estimated to be 21 μEq/kg on the average. This mean value has been used to correct the alkalinity blank in the standard solutions. The blank correction was treated in terms of the "effective" volume of the titrator

cell, and therefore affects both the alkalinity and total CO_2 concentration values equally. However, the nature of this blank is not understood, and thus the reported alkalinity and total CO_2 values are both subject to a systematic overestimation of up to 21 μEq/kg and 21 μM/kg, respectively. The following analyses of the Pacific GEOSECS data are based upon the titrimetric total CO_2 values corrected by -15 μM/kg.

Evaluation of the Carbonate Chemistry Data

The coherence of the entire carbonate chemistry data set for the Pacific GEOSECS depends not only on the precision of the respective measurements made at a single station, but also on the reproducible calibration of the instruments from one station to another, and from one leg to another for the entire duration of the 10-month long expedition. The overall precision, which includes these sources of errors inherent to a long expedition, will be evaluated in this section. In addition, the compatibility of the Pacific data set with the Atlantic GEOSECS data will also be examined. Furthermore, since the total CO_2 concentration was determined by means of the titrimetric and gas chromatographic methods, the compatibility between these two sets of independent measurements will be examined. In order to evaluate the overall coherence of the Pacific GEOSECS data set, the alkalinity and total CO_2 data have been compared against other independent measurements such as salinity and oxygen concentration. This procedure tends to linearize the variation in alkalinity and total CO_2 concentration, and thus, permits a simple statistical analysis of the data.

(a) Precision at a single station:

In the deep Pacific Ocean below 4000 meters, the alkalinity and total CO_2 values are nearly constant. Therefore, the precision of measurements achieved at a single station can be represented in terms of the standard deviation for an arithmetic mean of the data below 4000 meters. Based upon about 500 measurements each for the alkalinity and total CO_2 concentration, the standard deviation for alkalinity has been calculated at each of 47 stations, and an arithmetic mean of the standard deviations has been computed. On the basis of this analysis, the precision of the alkalinity measurement achieved at a single station is estimated to be ± 4 μEq/kg. Similarly, the precision for the titrimetric and gas chromatographic measurements of the total CO_2 concentration is estimated to be both ± 7 μM/kg. These values represent one standard deviation for a single measurement.

(b) Alkalinity in the Pacific surface water:

The relationship between the alkalinity and salinity in the surface water (above 50 meters deep) is shown in Figure 2. Since the alkalinity represents

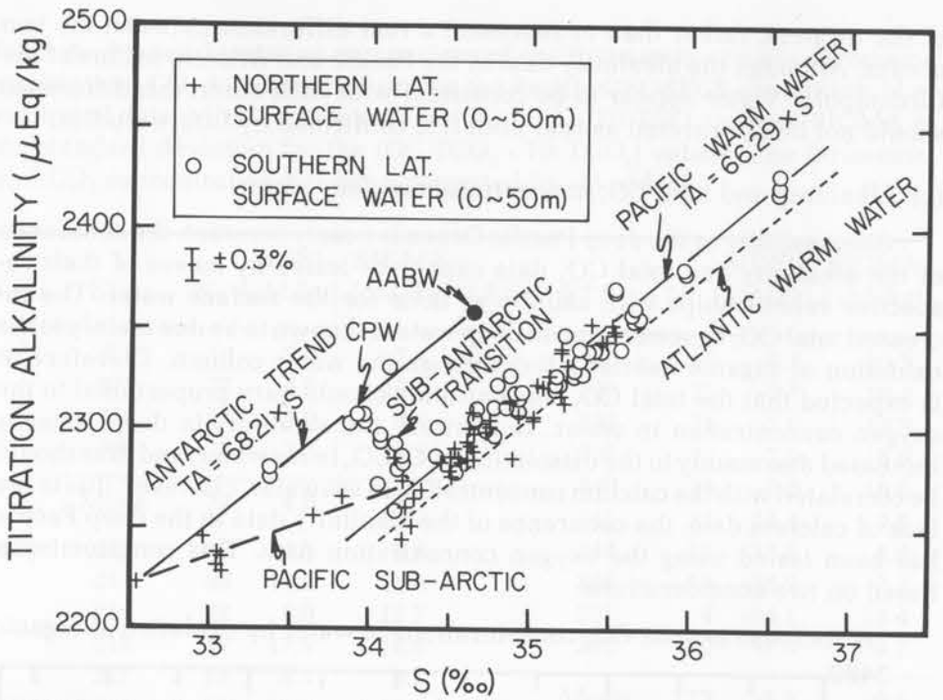

FIGURE 2. The alkalinity-salinity relationships observed for the surface water of the Pacific Ocean. The data represent the values for water depths less than 50 meters. Four linear trends are seen. The two major trends—the Pacific Warm Water and the Antarctic Water—represent a dilution line, since they pass through the origin. The other trends—the Subantarctic and Pacific Subarctic—appear to represent a mixing line between the two major trends. The Atlantic Warm Water trend is also shown by a dashed line.

the ionic balance of salt species dissolved in seawater, it is expected to vary linearly with salinity. The observed four segments of linear relationship have been interpreted by Takahashi *et al.*, (14) to represent the Pacific Warm Water (above 6°C), the Antarctic Water (below 2°C), Subantarctic Water (2 to 6°C), and the North Pacific Subarctic Water. The Pacific Warm Water trend has been fitted to a straight line passing through the origin by a least-squares method to yield:

$$\text{TALK } (\mu\text{Eq/kg}) = 66.29 \times \text{S } (^{\circ}/_{\circ\circ})$$

with a root mean square deviation of ± 8 μEq/kg. This value is considered to represent the overall precision of the alkalinity measurement in the Pacific surface water. Also indicated in Figure 2 is the Atlantic Warm Water trend similarly computed for the Atlantic GEOSECS data. It is noted that the Atlantic trend is displaced by -15 μEq/kg below the Pacific trend. This difference may be attributed most likely to the difference in the calibrations

of the titrators, rather than to represent a real difference between the two oceans. Although the alkalinity data in the Pacific and Atlantic sectors of the Circumpolar Water appear to be consistent with each other, this difference should not be interpreted as real until it is confirmed by future studies.

(c) Alkalinity and total CO_2 concentration in deep water:

Since salinity in the deep Pacific Ocean is nearly constant, the coherence of the alkalinity and total CO_2 data cannot be tested by means of their respective relationships with salinity as done for the surface water. The increased total CO_2 concentration in deep water is known to be due mainly to the oxidation of organic debris falling through the water column. Therefore, it is expected that the total CO_2 concentration should vary proportional to the oxygen concentration in water. In contrast, the alkalinity in deep water is increased due mainly to the dissolution of $CaCO_3$ in seawater, and thus should be correlated with the calcium concentration in seawater. However, due to the lack of calcium data, the coherence of the alkalinity data in the deep Pacific has been tested using the oxygen concentration data. This compromise is based on two considerations:

(1) increase in total CO_2 concentrations in water by oxidation of organic debris would also increase the rate of dissolution of $CaCO_3$, and thus cause an increase in alkalinity, and

(2) the use of the oxygen concentrations as a correlation parameter for both the alkalinity and total CO_2 eliminates introduction of another correlation parameter.

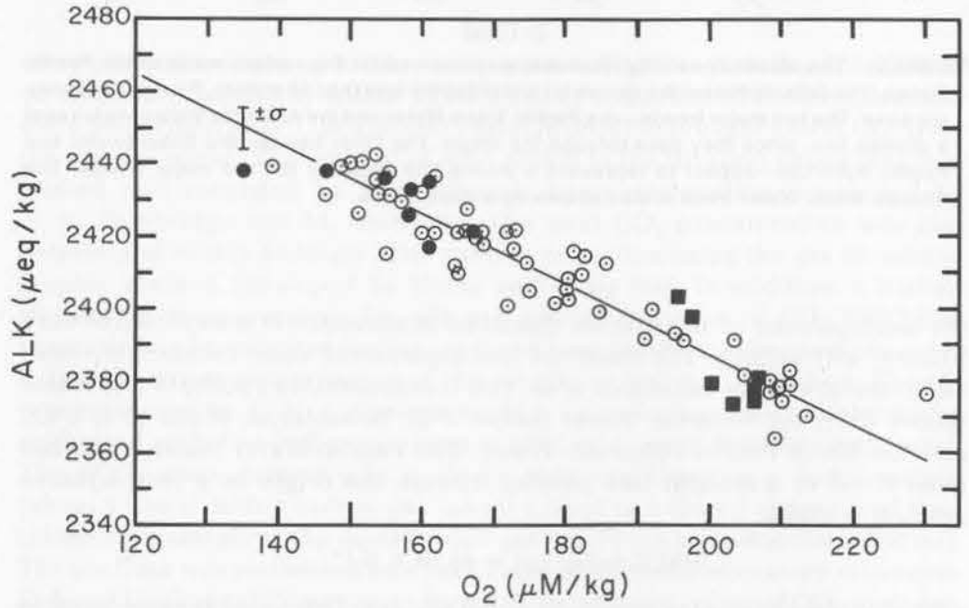

FIGURE 3. A plot of the alkalinity versus the oxygen concentration in the deep Pacific water below 4000 meters. Each point indicates an average value for waters below 4000 meters at a station. The solid line indicates the best fit straight line for the data, and the error bar represents the root mean square deviation. The stations, where pCO_2 was also measured, are indicated by filled circles, and those, where pH was measured, are indicated by filled squares. These data have been used to calculate the total CO_2 values indicated in Figure 4.

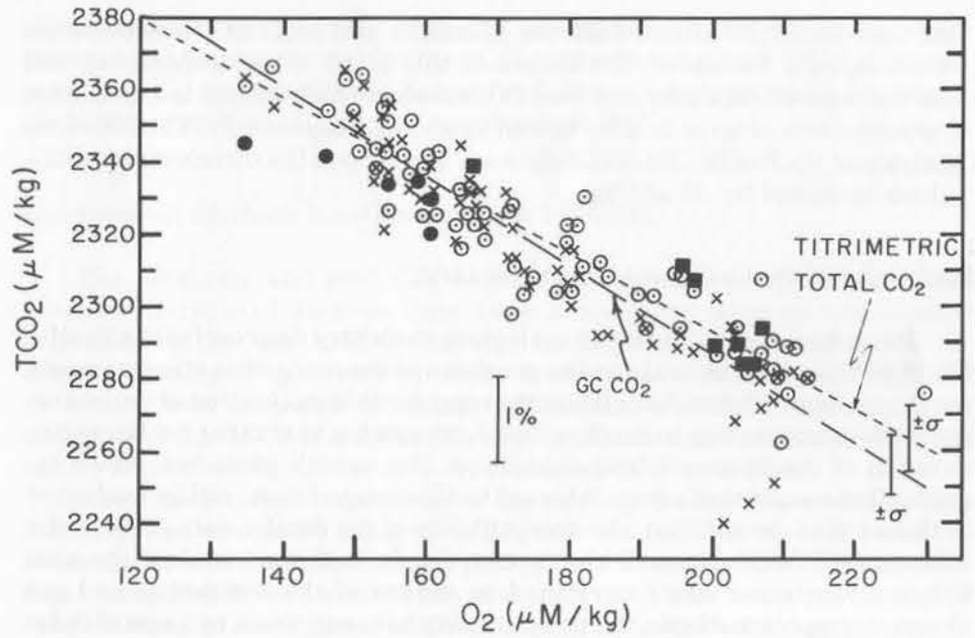

FIGURE 4. A plot of the total CO_2 concentration versus the oxygen concentration in the deep Pacific water below 4000 meters. The titrimetric total CO_2 values (corrected by -15 μM/kg) are indicated by open circles, and the gas chromatographic total CO_2 values by x's. Each point represents an average value for the samples below 4000 meters. The best fit straight line for the titrimetric values is indicated by a dashed line, and that for the gas chromatographic values by a solid line. The filled circles indicate the total CO_2 values computed from the alkalinity and pCO_2 data, and the filled squares indicate those computed from the alkalinity and pH data.

Figure 3 shows the relationship between the mean alkalinity in deep water observed below 4000 meters at each station and the corresponding oxygen concentration. Similarly, Figure 4 shows the relationship between the mean total CO_2 concentration in deep water observed below 4000 meters at each station and the corresponding mean oxygen concentration. The titrimetric and gas chromatographic values for the total CO_2 concentration are indicated in Figure 4 using open circles and x's respectively. At Stations 316, 319, 320, 325, 326 and 328, where the water depths do not exceed 4000 meters, the mean values for water depths below 3000 meters are used.

Alkalinity:

A linear trend is apparent in Figure 3. A least-squares fit of a linear equation to 72 pairs of the mean alkalinity and mean oxygen values yields:

$$\text{TALK } (\mu\text{Eq/kg}) = 2580 - 0.961 \times O_2 \ (\mu\text{M/kg})$$

with a root mean square deviation of ± 7 μEq/kg (or ± 0.3%). This mean deviation is consistent with that observed for the Pacific Warm Surface Water, and represents the overall precision of the alkalinity measurement in the Pacific deep water.

Total CO_2 concentration:

A linear trend is also apparent in Figure 4. A linear least-squares fit to 70 pairs of the mean titrimetric total CO_2 and oxygen concentration data yields:

$$TCO_2 \text{ (titration) } (\mu\text{M/kg}) = 2511 - 1.09 \times O_2 \ (\mu\text{M/kg})$$

with a root mean square deviation of ± 10 μM/kg (or ± 0.4%). The data for Stations 231, 248, 292, 287, and 305 appear to deviate from the best fit line more than one root mean square deviation. Similarly, a least-squares fit to 57 pairs of the gas chromatographic total CO_2 data yields:

$$TCO_2 \text{ (GC) } (\mu\text{M/kg}) = 2535 - 1.24 \times O_2 \ (\mu\text{M/kg})$$

with a root mean square deviation of ± 9 μM/kg (or ± 0.4%). The data for Stations 303, 306, 308 and 310 appear to deviate from the best fit line more than one root mean square deviation. No statistically significant difference between the titrimetric and chromatographic measurements is observed, and thus, these two sets of data are considered to be mutually consistent. The overall precision for the measurements is estimated to be approximately ± 9 μM/kg for both methods.

It is noted that the stations at which large deviations in the titrimetric data are observed, differ from those at which large deviations in the gas chromatographic data are observed. This observation suggests that a close examination of these two sets of data may be needed.

(d) Comparison between the titrimetric and chromatographic total CO_2 data:

The mean difference between the corrected titrimetric and chromatographic data observed at each station is listed in Table 6. The mean difference for each leg as well as that for the entire data set are also shown. First, the mean difference for the entire data set (1228 pairs in total) is -2.3 ± 13.2 μM/kg. This indicates that the titrimetric data are consistent with the chromatographic data as a whole, as already demonstrated in Figure 4 using correlation with the oxygen data. Secondly, however, the mean difference for each leg

Table 6—Station-by-station comparison of the titrimetric and gas chromatographic total CO_2 data obtained during the Pacific GEOSECS expedition. N = number of data, MDEL = mean of the (GC TCO_2 - Tit TCO_2) values, SIGMA = one standard deviation for the (GC TCO_2 - Tit TCO_2) values. The titrimetric total CO_2 concentration has been corrected by -15 μM/kg.

LEG	STA	N	MDEL (μM/kg)	SIGMA (μM/kg)
1 (A)	201	19	7.0	7.4
	202	27	6.5	10.4
	204	14	-4.0	9.4
	206	19	3.5	13.9
	Mean	79	4.0	10.7
2 (B)	212	19	11.1	9.6
	213	30	14.6	11.0
	214	22	6.0	12.7
	215	17	17.9	16.5
	217	13	9.4	9.7
	218	18	17.6	16.5
	Mean	119	12.8	13.1
3 (C)	219	21	-19.5	17.9
	221	15	-26.2	8.1
	222	20	-10.2	12.1
	223	19	-13.5	7.4
	224	16	2.1	12.8
	Mean	91	-13.7	12.4
4 (D)	225	22	9.6	11.3
	226	20	16.1	10.3
	227	23	12.9	14.9
	228	19	4.3	8.3
	229	24	-1.2	12.2
	231	9	22.0	20.4
	233	18	10.3	11.5
	Mean	135	9.4	12.8
5 (E)	235	20	9.3	10.3
	237	21	-2.7	10.4
	238	21	7.6	13.3
	239	22	-7.9	8.9
	240	14	-2.0	16.5
	241	21	-14.4	9.2
	244	11	-17.0	8.0
	246	18	-16.9	7.2
	251	4	-14.1	19.4
	252	20	-7.8	10.7
	Mean	172	-5.3	10.5
6 (F)	257	22	8.1	10.8
	260	24	5.9	9.3
	263	19	-19.8	10.5
	265	20	-11.9	10.3
	267	15	-7.5	16.3
	268	20	-8.9	10.7
	269	22	-4.7	11.7
	273	13	-11.1	11.2
	278	10	-5.5	13.3
	Mean	165	-5.4	11.6
7 (G)	280	19	-13.6	28.8
	282	20	-1.7	10.7
	Mean	39	-7.5	21.2

Table 6—Continued

LEG	STA	N	MDEL (μM/kg)	SIGMA (μM/kg)	LEG	STA	N	MDEL (μM/kg)	SIGMA (μM/kg)
8 (I)	296	11	6.8	10.9	10 (K)	326	22	-3.7	7.5
	301	20	-24.6	19.7		328	21	5.9	9.2
	303	15	-19.7	14.7		331	24	6.1	10.8
	305	15	-19.7	15.9		334	23	9.6	6.2
	306	12	-20.3	33.3		337	21	8.9	7.8
	308	21	-28.4	15.6		340	17	11.2	13.2
	310	19	-29.8	25.7		343	18	-5.8	13.6
	314	9	11.9	26.7		345	18	-2.5	17.4
	Mean	122	-14.1	21.0		347	12	1.4	4.8
9 (J)	316	19	-10.3	15.7		Mean	176	3.7	10.6
	317	17	-11.0	10.7					
	319	22	-2.5	10.3					
	320	22	-10.8	9.4					
	321	20	-17.6	11.6					
	322	18	-16.5	12.7					
	324	12	-13.3	10.4					
	Mean	130	-11.4	11.4					
ALL	.....	...	.....	.....	....	.....	1228	-2.3	13.2

appears to show a systematic pattern: the chromatographic values are consistently greater than the titrimetric values in Legs 2 and 4, whereas the reverse is observed in Legs 3, 8 and 9. Since the instruments were serviced and new standard solutions were prepared most commonly at the beginning of each leg, these systematic differences may be attributed to a shift in calibrations and/or a change in instrument responses in one or both instruments. Therefore, the titrimetric and gas chromatographic data should not be used interchangeably at all the stations, and their respective reliabilities should be evaluated at each station using the oxygen or other data as demonstrated in Figure 4. For example, on the basis of the correlation with the oxygen data (Figure 4), questionable station data can be readily identified. The titrimetric total CO_2 values obtained at Stations 248, 287 and 305 appear to be too large by 15 to 20 μM/kg, and those obtained at Stations 231 and 292 appear to be too small by the similar amount. On the other hand, the gas chromatographic values obtained at stations 303, 306, 308 and 310 appear to be too small by 15 to 35 μM/kg.

(e) Consistency with the pH and pCO_2 data:

The pCO_2 and pH in discrete water samples were obtained during Legs 3 and 10 and Leg 6, respectively. Using the alkalinity values obtained at these stations, the total CO_2 concentrations in the samples were computed using the first and second apparent dissociation constants of carbonic acid in seawater determined by Mehrbach *et al.* (15), the first apparent dissociation constant of boric acid in seawater determined by Lyman (16), and the solubility of CO_2 in seawater formulated by Weiss (17). The alkalinity values used for these calculations are indicated in Figure 3, and the computed total CO_2 values are indicated in Figure 4 using the filled circles for pCO_2 and the filled squares for pH. The computed values are consistent with the measured total CO_2 values.

Interocean Consistency of the GEOSECS Data

The consistency between the Atlantic and Pacific GEOSECS data sets may be examined through a comparison of the data for the Atlantic and Pacific sectors of the Circumpolar water. Pacific GEOSECS Stations 280, 282, 285, 290, 291 and 293 located in a meridional range of 170°W - 175°E and a latitudinal range of 55° - 60°S, and Atlantic GEOSECS Stations 76 and 78 located in the Drake Passage have been selected for this purpose. Table 2 shows the mean values (below 3500 meters water depths) for the 9 measured parameters at these groups of stations. The titrimetric total CO_2 values for the Pacific stations include a correction of -15 μM/kg. It is seen that the two sets of values are mutually consistent within the standard deviations indicated.

Taro Takahashi, LDGO
June 1981

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 (18) except that the counting system was independent of 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 (18). The procedures and equipment used during GEOSECS are described in detail by Mathieu *et al.* (19).

Data Reduction

The radon activities and standard deviations calculated for the ^{222}Rn measurements are reported in the data tables (Chapter 4). These were calculated by the method of Sarmiento *et al.* (20).

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.* (20).

Complete details of the calculations and laboratory intercalibrations[1] are given in Mathieu *et al.* (19) 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 measurements.

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.* (19). Estimates of the ^{226}Ra concentrations based on shipboard ^{222}Rn measurements have been made and are reported in Bainbridge *et al.* (21, 22) and Mathieu *et al.* (23).

[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.

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May 1980

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Chapter 2

HYDROGRAPHIC DATA

STATION: 201 LEG: I POSITION: 34° 10' N 127° 53' W DATE: 25 AUG 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
1001	1H	1	17.60 H	17.60	33.085	23.933	32.500	40.676	23.938	249	1.8	0.39	0.0	1
1002	16H	16	17.61 H	17.61	33.085	23.931	32.498	40.674	24.001	249	1.8	0.50	0.0	16
1003	47H	47	15.77 H	15.76	33.074	24.354	32.984	41.220	24.561	268	1.9	0.38	0.0	47
1301	76	76	14.35	14.34	33.083D	24.672	33.355	41.639	25.010					76
1004	99H	99	12.93 H	12.92	33.088	24.968	33.705	42.040	25.410	275	1.9	0.42	0.0	99
122	108	108	12.172	12.158	33.041	25.079	33.847	42.211	25.563	274				108
1005	150H	149	9.78 H	9.76	33.291	25.700	34.565	43.019	26.380	229	9.9	1.05	10.5	149
1006	201H	200	8.77 H	8.75	33.786	26.249	35.153	43.641	27.164	172	27.0	1.64	20.8	200
1007	263H	262	7.87 H	7.84	33.968	26.529	35.470	43.995	27.730	145	34.4	1.93	25.7	262
1008	324H	322	7.34 H	7.31	34.050	26.670	35.635	44.181	28.152	87	46.3	2.42	32.0	322
1009	386H	384	6.53 H	6.49	34.051	26.781	35.785	44.367	28.553	74	55.5	2.61	35.0	384
1010	447H	444	6.00 H	5.96	34.108	26.894	35.923	44.529	28.951	46	65.4	2.82	37.7	444
1011	508H	505	5.20 H	5.16	34.093	26.978	36.048	44.691	29.325	46	76.3	2.91	39.5	505
1012	559H	555	5.08 H	5.03	34.152	27.039	36.114	44.762	29.621	29	84.2	3.04	41.1	555
1013	620H	616	4.88 H	4.83	34.223	27.118	36.203	44.859	29.983	17	91.7	3.13	41.7	616
1014	681H	676	4.80 H	4.74	34.291	27.181	36.270	44.929	30.326	12	91.5	3.19	41.9	676
1015	733H	728	4.665H	4.606	34.323	27.222	36.317	44.982	30.607	11	96.9	3.23	41.6	728
1016	764H	758	4.52 H	4.46	34.335	27.247	36.349	45.022	30.778	10	105.6	3.22	42.4	758
1017	794H	788	4.403H	4.340	34.350	27.272	36.380	45.058	30.942	10	110.5	3.20	42.7	788
401	849	843	4.306	4.239	34.397D	27.320	36.432	45.114	31.243					843
1018	867H	860	4.20 H	4.13	34.395	27.329	36.447	45.135	31.337	13	110.5	3.20	42.3	860
402	900	893	4.178	4.108	34.407	27.341	36.460	45.149	31.501	12	111.4	3.28U	41.6	893
1019	919H	912	4.06 H	3.99	34.420	27.364	36.489	45.183	31.613	17	113.4	3.21	42.2	912
403	950	943	4.028	3.955	34.424	27.370	36.497	45.193	31.762	16	113.4	3.27U	42.0	943
1020	972H	964	3.89 H	3.82	34.437	27.395	36.529	45.231	31.890	18	117.3	3.20	43.0	964
404	1000	992	3.859	3.783	34.442	27.402	36.538	45.241	32.026	24U	120.2	3.26U	43.1	992
405	1077	1068	3.660	3.579	34.465	27.440	36.586	45.299	32.421	22	127.1	3.37U	43.4	1068
406	1151	1141	3.449	3.364	34.486	27.477	36.635	45.358	32.803	26	134.9	3.24	43.7	1141
407	1228	1217	3.296	3.206	34.503	27.506	36.671	45.402	33.187	30	136.9	3.28U	43.3	1217
408	1304	1292	3.120	3.025	34.518	27.534	36.709	45.449	33.567	35	136.9	3.31U	42.8	1292
409	1404	1391	2.920	2.819	34.535	27.566	36.751	45.502	34.061	40	144.7	3.36U	42.8	1391
410	1506	1492	2.730	2.623	34.551	27.595	36.791	45.551	34.562	46	150.5	3.13	42.9	1492
411	1608	1592	2.535	2.422	34.563	27.622	36.829	45.599	35.060	50	152.5	3.12	42.3	1592
412	1659	1643	2.436	2.320	34.570	27.636	36.848	45.623	35.309	53	150.5	3.25U	41.6	1643
415	1770	1752	2.292	2.169	34.581	27.656	36.877	45.660	35.840	58	153.5U	3.16U	40.9	1752
416	1820	1801	2.222	2.095	34.587	27.667	36.892	45.678	36.080	62	155.4U	3.07	40.7	1801
417	1922	1902	2.117	1.983	34.601	27.687	36.917	45.709	36.566	69	159.3U	3.13U	40.7	1902
418	1972	1951	2.082	1.945	34.609	27.696	36.929	45.723	36.803	74	161.3U	3.02	41.2	1951
419	2023	2001	2.053	1.912	34.615	27.704	36.938	45.733	37.042	77	160.3U	2.96	40.6	2001
420	2124	2101	1.969	1.820	34.623	27.717	36.956	45.756	37.514	82	161.3U	2.95	40.0	2101
421	2276	2250	1.860	1.700	34.630	27.731	36.977	45.784	38.218	88	167.1U	2.92	39.7	2250
422	2428	2399	1.786	1.614	34.638	27.744	36.995	45.805	38.916	93	175.9U	2.90	40.1	2399
423	2580	2549	1.720	1.535	34.645	27.755	37.010	45.825	39.610	100	178.9U	2.86	40.1	2549
424	2730	2696	1.657	1.460	34.652	27.766	37.025	45.844	40.293	108	172.0	2.82	38.8	2696
601	2893	2856	1.609	1.397	34.658	27.775	37.038	45.860	41.029	110	162.2U	2.78	38.6	2856
602	3064	3023	1.573	1.346	34.661	27.781	37.047	45.871	41.794	117	163.2	2.77	38.3	3023
603	3215	3171	1.537	1.296	34.665	27.788	37.056	45.883	42.469	122	163.2	2.73	37.9	3171
604	3367	3320	1.510	1.254	34.670	27.795	37.065	45.894	43.145	128	162.2	2.71	37.3	3320
605	3523	3472	1.492	1.220	34.674	27.800	37.072	45.903	43.835	133	161.3	2.66	37.2	3472
606	3677	3623	1.480	1.193	34.676	27.804	37.077	45.910	44.512	138	162.2	2.65	36.9	3623
607	3830	3772	1.476	1.172	34.680	27.808	37.083	45.917	45.182	142	160.3	2.62	37.1	3772
608	3983	3922	1.481	1.160	34.681	27.810	37.085	45.919	45.846	144	160.3	2.60	36.6	3922
609	4138	4073	1.490	1.152	34.682	27.811	37.087	45.922	46.516	147	160.3	2.59	36.5	4073
610	4189	4122	1.493	1.149	34.682	27.811	37.088	45.922	46.735	147	161.3	2.59	36.6	4122
611	4343	4272	1.504	1.142	34.683	27.812	37.089	45.924	47.398	148	161.3	2.59	36.6	4272
612	4486	4412	1.517	1.138	34.683	27.813	37.090	45.925	48.009	151	160.3	2.58	36.5	4412
615	4496	4421	1.517	1.137	34.683	27.813	37.090	45.925	48.052					4421
616	4598	4521	1.527	1.134	34.684	27.814	37.091	45.926	48.488					4521
617	4649	4570	1.532	1.133	34.684	27.814	37.091	45.926	48.705					4570
618	4649	4570	1.532	1.133	34.684	27.814	37.091	45.926	48.705	151	159.3	2.55	36.2	4570
619	4697	4617	1.535	1.130	34.684	27.814	37.091	45.927	48.909					4617
620	4730	4649	1.539	1.130	34.684	27.814	37.091	45.927	49.049					4649
621	4751	4670	1.541	1.130	34.685	27.815	37.092	45.928	49.139					4670
622	4765	4683	1.542	1.129	34.684	27.814	37.092	45.927	49.198					4683
624	4777	4695	1.543	1.128	34.684	27.814	37.092	45.927	49.249					4695
623	4777	4695	1.543	1.128	34.684	27.814	37.092	45.927	49.249	153	160.3	2.55	36.2	4695
124	4888	4803	1.561	1.132	34.684	27.814	37.091	45.927	49.717	151				4803
123	4889	4804	1.562	1.133	34.686	27.815	37.093	45.928	49.723	153				4804

BOTTOM DEPTH FOR CAST 6 IS 4717 — CAST 1 IS 4825

STATION: 202 LEG: I POSITION: 33° 6' N 139° 34' W DATE: 30 AUG 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
7201	0	0	21.77	21.77	34.646D	24.036	32.453	40.487	24.036					0
701	7	7	21.751	21.750	34.646	24.042	32.459	40.494	24.072	230	2.4	0.06	0.1	7
7202	10	10	21.73	21.73	34.646D	24.048	32.465	40.501	24.091					10
7203	20	20	21.57	21.57	34.635D	24.084	32.507	40.547	24.171					20
702	47	47	18.724	18.715	34.580	24.797	33.308	41.432	25.002	257	2.4	0.06	0.0	47
703	77	77	17.129	17.116	34.564	25.180	33.744	41.918	25.518	254	2.6	0.09	0.0	77
704	102	102	16.339	16.322	34.572	25.374	33.965	42.164	25.822	249	2.8	0.10	0.0	102
705	128	127	15.664	15.644	34.542	25.507	34.122	42.344	26.071	241	3.4	0.17	0.6	127
706	152	151	14.656	14.633	34.414	25.633	34.287	42.544	26.306	236	4.1	0.28	2.1	151
707	177	176	13.107	13.082	34.217	25.807	34.522	42.836	26.595	227	6.1	0.50	5.2	176
708	203	202	11.628	11.602	34.149	26.042	34.818	43.188	26.953	231	9.3	0.73	8.8	202
709	228	227	10.972	10.943	34.160	26.172	34.974	43.369	27.197	223	11.9	0.86	11.1	227
710	278	277	9.911	9.878	34.118	26.325	35.173	43.611	27.581	217	17.5	1.07	14.2	277
711	313	311	9.412	9.376	34.103	26.397	35.267	43.725	27.814	214	20.1	1.15	15.4	311
712	353	351	8.731	8.693	34.046	26.461	35.363	43.850	28.065	208	25.0	1.34	17.9	351
715	403	401	7.857	7.816	34.006	26.562	35.505	44.030	28.400	180	34.8	1.60	22.2	401
716	505	502	5.615	5.572	33.968	26.831	35.882	44.507	29.158	122	57.1	2.25	31.6	502
717	580	576	5.365	5.316	34.027	26.908	35.971	44.607	29.582	70	73.5	2.70	37.3	576
718	632	628	4.727	4.677	34.054	27.001	36.096	44.762	29.924	60	85.6	2.79	38.8	628
719	658	654	4.890	4.836	34.132	27.045	36.131	44.789	30.084	35	88.8	2.93	40.3	654
720	702	697	4.701	4.645	34.188	27.111	36.206	44.871	30.354	23	96.0	3.03	41.4	697
721	750	745	4.496	4.437	34.231	27.167	36.272	44.947	30.634	16	102.8	3.09	42.2	745
722	826	820	4.198	4.134	34.286	27.243	36.362	45.051	31.064	11	111.7	3.13	43.0	820
723	903	896	3.962	3.893	34.341	27.311	36.442	45.142	31.490	10	118.0	3.15	43.3	896
401	945	938	3.696	3.626	34.347	27.342	36.487	45.200	31.720	10	125.9	3.18	43.7	938
724	954	947	3.891	3.818	34.380	27.349	36.484	45.187	31.763	13	121.2	3.16	43.4	947
402	1038	1030	3.485	3.409	34.407	27.410	36.566	45.289	32.219	13	133.2	3.18	43.9	1030
403	1136	1127	3.311	3.228	34.455	27.465	36.630	45.361	32.726	21	137.1	3.17	44.0	1127
404	1227	1217	3.129	3.040	34.482	27.504	36.679	45.418	33.186	24	141.3	3.15	43.8	1217
405	1326	1314	2.968	2.873	34.505	27.537	36.720	45.468	33.676	30	145.2	3.12	43.6	1314
406	1436	1423	2.781	2.679	34.527	27.571	36.765	45.522	34.218	38	149.1	3.10	43.3	1423
407	1535	1521	2.603	2.495	34.548	27.604	36.807	45.573	34.708	44	154.1	3.07	42.9	1521
408	1632	1616	2.449	2.335	34.561	27.627	36.839	45.613	35.178	49	158.0	3.04	42.6	1616
1001	1717H	1700	2.27 H	2.15	34.575	27.653	36.875	45.658	35.597	54	164.7	2.95U	41.4	1700
409	1736	1719	2.281	2.161	34.578	27.655	36.876	45.659	35.685	51	161.8	3.02	42.2	1719
1002	1737H	1720	2.28 H	2.16	34.581	27.657	36.878	45.661	35.692	56	166.0	2.97	41.6	1720
1003	1756H	1739	2.24 H	2.12	34.582	27.661	36.885	45.670	35.784	57	165.7	2.97	41.7	1739
1004	1777H	1759	2.21 H	2.09	34.585	27.666	36.891	45.678	35.885	59	166.5	2.96	41.1	1759
1005	1796H	1778	2.18 H	2.06	34.587	27.670	36.897	45.685	35.976	60	167.9	2.96	41.4	1778
1006	1815H	1797	2.16 H	2.03	34.591	27.675	36.903	45.692	36.068	61	168.7	2.96	41.6	1797
1007	1836H	1817	2.14 H	2.01	34.592	27.677	36.906	45.697	36.167	63	168.6	2.95	41.6	1817
410	1841	1822	2.146	2.019	34.592	27.677	36.906	45.696	36.189	64	163.8U	2.97	41.7	1822
1008	1857H	1838	2.11 H	1.98	34.595	27.682	36.913	45.705	36.268	64	169.8	2.95	41.5	1838
1009	1876H	1857	2.11 H	1.98	34.597	27.684	36.915	45.707	36.356	65	170.0	2.95	41.2	1857
1010	1896H	1876	2.04 H	1.91	34.600	27.692	36.926	45.722	36.457	66	170.9	2.94	40.8	1876
411	1941	1921	2.029	1.895	34.602	27.694	36.930	45.726	36.664	69	174.2	2.94	41.2	1921
412	2045	2023	1.950	1.809	34.612	27.709	36.949	45.750	37.152	74	175.5	2.90	41.1	2023
415	2159	2135	1.876	1.726	34.621	27.722	36.967	45.772	37.682	80	177.8	2.89	40.6	2135
416	2261	2236	1.822	1.664	34.627	27.731	36.979	45.788	38.153	85	177.9	2.86	40.4	2236
417	2362	2335	1.774	1.608	34.634	27.741	36.992	45.803	38.619	90	178.2	2.83	40.1	2335
418	2468	2439	1.729	1.554	34.640	27.750	37.004	45.818	39.104	94	177.1	2.82	39.7	2439
419	2572	2541	1.661	1.478	34.643	27.758	37.016	45.833	39.581	99	176.7	2.78	39.4	2541
420	2678	2645	1.650	1.458	34.650	27.765	37.024	45.843	40.061	104	176.2	2.77	39.1	2645
421	2780	2745	1.619	1.418	34.653	27.770	37.031	45.852	40.522	107	175.5	2.74	38.9	2745
422	2886	2849	1.590	1.380	34.655	27.774	37.038	45.860	40.998	111	175.5	2.72	39.0	2849
423	2977	2938	1.565	1.346	34.660	27.780	37.046	45.870	41.409	115	175.2	2.69	39.1	2938
1011	3047H	3007	1.54 H	1.32	34.663	27.785	37.052	45.878	41.725	119	173.3	2.66	37.7	3007
1012	3067H	3026	1.53 H	1.30	34.664	27.786	37.054	45.881	41.816	120	172.8	2.66	37.6	3026
424	3087	3046	1.542	1.313	34.663	27.785	37.052	45.878	41.902	119	174.8	2.67	38.6	3046
1013	3088H	3047	1.54 H	1.31	34.665	27.787	37.054	45.880	41.908	121	172.7	2.66	37.3	3047
101	3093H	3052	1.535A	1.306	34.663	27.785	37.053	45.880	41.929	119	173.7	2.65	37.7	3052
1014	3108H	3067	1.53 H	1.30	34.665	27.788	37.056	45.882	41.998	121	172.8	2.66	37.5	3067
1015	3128H	3086	1.51 H	1.28	34.667	27.791	37.060	45.888	42.091	122	171.8	2.63	36.9	3086
1016	3149H	3107	1.53 H	1.30	34.667	27.789	37.058	45.885	42.180	123	171.5	2.65	37.0	3107
1017	3169H	3126	1.51 H	1.27	34.667	27.791	37.060	45.888	42.272	124	171.6	2.64	37.8	3126
1018	3190H	3147	1.51 H	1.27	34.668	27.792	37.061	45.890	42.365	125	171.7	2.64	37.5	3147
1019	3210H	3167	1.52 H	1.28	34.668	27.791	37.060	45.888	42.452	125	171.2	2.63	37.5	3167
1020	3231H	3187	1.50 H	1.26	34.669	27.794	37.064	45.893	42.548	127	170.6	2.63	37.3	3187
102	3245H	3201	1.506A	1.262	34.668	27.792	37.063	45.891	42.608	125	169.7	2.61	37.4	3201

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

STATION: 202 LEG: I POSITION: 33° 6′ N 139° 34′ W DATE: 30 AUG 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
103	3397H	3349	1.485A	1.227	34.671	27.797	37.069	45.900	43.282	134	169.7	2.61	37.3	3349
104	3549H	3498	1.48 A	1.20	34.675	27.802	37.076	45.908	43.952	138	166.9	2.60	36.8	3498
105	3701H	3647	1.468A	1.178	34.678	27.806	37.081	45.914	44.620	142	167.3	2.56	36.7	3647
106	3853H	3795	1.47 A	1.16	34.676	27.806	37.082	45.916	45.281	143	166.7	2.58	36.9	3795
107	4005H	3943	1.469A	1.146	34.680	27.810	37.086	45.921	45.943	147	163.6	2.55	36.4	3943
108	4156H	4091	1.48 A	1.14	34.681	27.811	37.088	45.924	46.595	149	161.4	2.55	36.4	4091
109	4312H	4243	1.485A	1.127	34.682	27.813	37.090	45.926	47.267	151	160.5	2.55	36.2	4243
110	4466H	4393	1.497A	1.121	34.683	27.814	37.092	45.928	47.927	153	158.0	2.56	36.1	4393
111	4620H	4543	1.511A	1.116	34.684	27.815	37.093	45.930	48.585	154	156.1	2.53	35.9	4543
112	4769H	4688	1.523A	1.110	34.683	27.815	37.093	45.930	49.217	155	154.7	2.53	36.2	4688
115	4779H	4697	1.527A	1.113	34.684	27.815	37.094	45.930	49.260					4697
116	4897H	4812	1.535A	1.106	34.685	27.816	37.095	45.932	49.761					4812
117	4933H	4847	1.541A	1.107	34.684	27.816	37.094	45.931	49.912	155	155.2	2.53	36.6	4847
118	4959H	4872	1.55 A	1.11	34.684	27.815	37.094	45.931	50.022					4872
119	4995H	4907	1.546A	1.104	34.685	27.817	37.095	45.932	50.175					4907
120	5021H	4932	1.55 A	1.11	34.684	27.816	37.094	45.931	50.284					4932
121	5041H	4952	1.554A	1.106	34.685	27.816	37.095	45.932	50.369					4952
122	5057H	4967	1.557A	1.107	34.685	27.816	37.095	45.932	50.436					4967
123	5074H	4984			34.685					156	153.9	2.53	36.2	4984
124	5074H	4984			34.685									4984

BOTTOM DEPTH FOR CAST 1 IS 4999

STATION: 204 LEG: I POSITION: 31° 22′ N 150° 2′ W DATE: 5 SEP 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	2	2	23.56	23.56	34.881	23.706	32.069	40.051	23.715	240	6.1	0.25	2.1	2
502	33	33	23.441	23.434	35.234	24.009	32.371	40.353	24.151	220	4.9	0.08	0.1	33
503	57	57	19.115	19.105	34.739	24.819	33.316	41.426	25.067	254	2.8	0.03	0.1	57
5201	76	76	17.09	17.08	34.70 D	25.293	33.857	42.030	25.627					76
504	99	99	15.814	15.798	34.675	25.574	34.182	42.397	26.010	248	4.9	0.13	0.1	99
505	149	148	13.980	13.958	34.449	25.805	34.483	42.764	26.466	228	6.9	0.42	4.4	148
506	174	173	13.214	13.189	34.419	25.941	34.649	42.957	26.716	216	8.9	0.62	7.4	173
507	190	189	12.770	12.744	34.365	25.989	34.715	43.040	26.836	219	9.4	0.67	8.2	189
508	265	264	11.259	11.225	34.274	26.209	34.998	43.381	27.398	229	13.8	0.89	11.5	264
509	341	339	10.013	9.973	34.190	26.365	35.208	43.641	27.904	218	18.6	1.09	14.2	339
510	417	415	8.623	8.578	34.080	26.506	35.412	43.904	28.399	198	27.6	1.40	18.8	415
511	516	513	6.694	6.645	33.990	26.713	35.711	44.287	29.077	150	47.5	1.99	27.1	513
512	577	573	5.625	5.575	33.982	26.841	35.892	44.517	29.499	116	64.3	2.38	32.3	573
514	628	624	5.129	5.077	34.015	26.926	36.001	44.649	29.824	86	76.1	2.65	36.2	624
515	703	698	4.573	4.517	34.069	27.030	36.133	44.807	30.281	59	90.4	2.84	39.2	698
516	783	778	4.225	4.165	34.173	27.150	36.270	44.959	30.774	27	90.4U	2.86U	39.1U	778
517	871	865	3.968	3.902	34.264	27.249	36.381	45.081	31.281	14	119.0	3.16	43.2	865
518	946	939	3.766	3.695	34.330	27.322	36.464	45.173	31.702	12	125.9	3.16	43.3	939
519	996	988	3.635	3.561	34.367	27.364	36.513	45.228	31.977	11	130.1	3.20	43.2	988
520	1048	1040	3.539	3.462	34.399	27.399	36.552	45.272	32.252	13	132.1	3.20	43.4	1040
521	1094	1085	3.438	3.358	34.429	27.433	36.591	45.316	32.498	16	136.8	3.20	43.9	1085
522	1173	1163	3.275	3.190	34.464	27.476	36.643	45.375	32.907	23	139.8	3.16	42.9	1163
523	1252	1242	3.141	3.050	34.489	27.509	36.683	45.422	33.304	29	141.5	3.13	42.3	1242
301	1313	1302	2.983	2.889	34.511	27.540	36.723	45.470	33.620	34	146.7	3.11	43.1	1302
524	1326	1315	3.001	2.906	34.511	27.539	36.720	45.467	33.677	34	146.2	3.11	42.6	1315
302	1365	1353	2.883	2.786	34.524	27.560	36.748	45.499	33.880	39	146.8	3.08	43.0	1353
303	1415	1403	2.793	2.693	34.532	27.574	36.767	45.523	34.125	43	150.1	3.07	42.5	1403
304	1464	1451	2.706	2.603	34.543	27.591	36.788	45.549	34.368	46	152.4	3.04	42.4	1451
305	1534	1520	2.593	2.485	34.555	27.610	36.814	45.580	34.710	51	154.1	3.03	42.2	1520
306	1616	1601	2.465	2.352	34.567	27.631	36.841	45.615	35.108	56	156.7	3.00	42.1	1601
307	1696	1680	2.340	2.222	34.578	27.650	36.868	45.647	35.496	62	158.3	2.97	41.8	1680
308	1778	1761	2.220	2.097	34.591	27.670	36.894	45.681	35.893	63	165.0	2.96	41.5	1761
309	1860	1841	2.120	1.992	34.599	27.685	36.915	45.706	36.283	67	174.5	2.95	41.5	1841
310	1943	1923	2.038	1.904	34.606	27.697	36.932	45.728	36.675	72	176.5	2.94	41.2	1923
311	2021	2000	1.963	1.823	34.614	27.709	36.949	45.749	37.043	73	176.5	2.91	41.1	2000
312	2103	2081	1.901	1.755	34.622	27.721	36.964	45.767	37.428	79	175.2	2.89	40.3	2081
314	2182	2158	1.848	1.697	34.627	27.729	36.975	45.782	37.794	83	176.8	2.87	40.5	2158
315	2265	2240	1.798	1.640	34.632	27.737	36.987	45.796	38.178	85	171.6	2.87	40.0	2240
316	2348	2321	1.757	1.593	34.635	27.743	36.995	45.807	38.559	88	172.1	2.84	40.0	2321
317	2458	2430	1.706	1.533	34.642	27.753	37.008	45.823	39.064	94	169.9	2.80	39.5	2430

STATION: 204 LEG: I POSITION: 31° 22′ N 150° 2′ W DATE: 5 SEP 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
318	2580	2549	1.655	1.472	34.650	27.764	37.022	45.840	39.623	101	176.6	2.77	39.4	2549
319	2734	2701	1.598	1.402	34.655	27.773	37.035	45.857	40.322	105	176.4	2.74	38.8	2701
320	2886	2850	1.559	1.349	34.664	27.783	37.049	45.873	41.010	115	173.1	2.70	38.1	2850
321	3038	2999	1.521	1.297	34.667	27.789	37.057	45.884	41.691	123	171.0	2.66	37.8	2999
322	3190	3147	1.497	1.259	34.671	27.795	37.065	45.894	42.369	129	170.7	2.63	37.6	3147
323	3342	3296	1.480	1.227	34.674	27.800	37.072	45.902	43.043	134	168.2	2.61	37.1	3296
101	3494H	3445			34.678					139	165.0	2.55	36.7	3445
324	3496	3447	1.466	1.198	34.679	27.806	37.079	45.911	43.725					3447
102	3647H	3595	1.46 H	1.17	34.678	27.807	37.082	45.915	44.386		163.1	2.49	36.7	3595
103	3800H	3744			34.682					146	161.0	2.47	36.1	3744
104	3954H	3894	1.455	1.138	34.682	27.812	37.089	45.924	45.725	149	159.7	2.46	35.9	3894
105	4107H	4044	1.461	1.127	34.684	27.814	37.092	45.928	46.389	151	157.5	2.45	36.0	4044
106	4261H	4194	1.470	1.119	34.683	27.814	37.092	45.928	47.051	153	155.8	2.45	35.9	4194
107	4415H	4344	1.478	1.109	34.685	27.816	37.095	45.932	47.713	155	154.7	2.45	35.9	4344
108	4569H	4494	1.488	1.100	34.687	27.818	37.098	45.935	48.373	156	151.9	2.42	35.6	4494
109	4724H	4645	1.499	1.092	34.687	27.819	37.098	45.936	49.033	158	149.1	2.42	35.0	4645
110	4878H	4794	1.514	1.088	34.688	27.820	37.100	45.937	49.687	159	147.9	2.43	35.5	4794
111	5033H	4945	1.531	1.085	34.689	27.821	37.101	45.939	50.342	159	146.8	2.40	35.5	4945
112	5188H	5096	1.548	1.082	34.690	27.822	37.102	45.940	50.995	160	145.8	2.42	35.6	5096
115	5198H	5105	1.548	1.081	34.689	27.821	37.102	45.940	51.037					5105
116	5328H	5231	1.563	1.079	34.689	27.821	37.102	45.940	51.582	160	145.6	2.40	35.5	5231
117	5328H	5231	1.563	1.079	34.689	27.821	37.102	45.940	51.582					5231
118	5374H	5276	1.568	1.078	34.689	27.822	37.102	45.940	51.775					5276
119	5406H	5307	1.573	1.078	34.689	27.821	37.102	45.940	51.908					5307
120	5431H	5331	1.577	1.079	34.689	27.821	37.102	45.940	52.012					5331
121	5452H	5352	1.579	1.078	34.689	27.821	37.102	45.940	52.100					5352
122	5468H	5367	1.581	1.078	34.689	27.822	37.102	45.940	52.167					5367
123	5483H	5382			34.689					161	145.2	2.40	35.3	5382
124	5483H	5382			34.689									5382

BOTTOM DEPTH FOR CAST 1 IS 5410

STATION: 205 LEG: I POSITION: 22° 22′ N 152° 57′ W DATE: 8 SEP 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	25.446	25.446	35.180D	23.372	31.681	39.610	23.372					0
1202	10	10	25.456	25.454	35.179D	23.369	31.677	39.606	23.412					10
1203	20	20	25.455	25.450	35.182D	23.373	31.681	39.610	23.458					20
1204	30	30	25.454	25.447	35.184D	23.375	31.683	39.612	23.503					30
1205	50	50	23.725	23.714	34.978D	23.735	32.092	40.069	23.949					50
1206	76	76	22.004	21.988	35.100D	24.320	32.724	40.747	24.646					76
1207	101	101	21.261	21.241	35.216D	24.614	33.039	41.082	25.050					101
1208	126	126	20.429	20.404	35.270D	24.882	33.332	41.398	25.427					126
1209	151	151	19.715	19.686	35.270D	25.073	33.544	41.631	25.727					151
1210	176	175	19.185	19.152	35.213D	25.168	33.657	41.760	25.932					175
1211	202	201	18.422	18.386	35.094D	25.273	33.788	41.916	26.152					201
1212	227	226	16.991	16.953	34.848D	25.436	34.002	42.178	26.430					226
1215	252	251	15.117	15.078	34.570D	25.655	34.291	42.531	26.767					251
1216	302	301	11.867	11.827	34.195D	26.035	34.801	43.162	27.387					301
1217	353	352	10.324	10.281	34.118D	26.256	35.087	43.509	27.846					352
1218	403	401	9.033	8.988	34.087D	26.447	35.335	43.809	28.273					401
1219	454	452	7.626	7.580	34.036D	26.620	35.573	44.108	28.691					452
1220	504	502	6.542	6.495	34.017D	26.754	35.759	44.341	29.065					502
1221	555	552	5.809	5.760	34.057D	26.878	35.919	44.534	29.432					552
1222	605	602	5.374	5.323	34.127D	26.986	36.047	44.682	29.774					602
1223	656	652	4.906	4.852	34.194D	27.093	36.177	44.832	30.122					652
1224	706	702	4.695	4.638	34.276D	27.181	36.275	44.940	30.443					702
1301	757	753	4.690	4.629	34.358D	27.247	36.340	45.004	30.742					753
1302	807	802	4.462	4.398	34.391D	27.298	36.403	45.077	31.026					802
1303	858	853	4.337	4.269	34.422D	27.336	36.447	45.127	31.300					853
1304	909	903	4.214	4.143	34.456D	27.377	36.493	45.179	31.576					903
1305	959	953	4.093	4.018	34.478D	27.407	36.530	45.221	31.837					953
1306	1010	1003	3.932	3.854	34.494D	27.436	36.567	45.266	32.104					1003
1307	1111	1103	3.690	3.606	34.514D	27.477	36.620	45.331	32.612					1103
1308	1212	1203	3.445	3.355	34.532D	27.515	36.672	45.395	33.118					1203

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

STATION: 205 LEG: I POSITION: 22° 22' N 152° 57' W DATE: 8 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1309	1313	1303	3.200	3.104	34.548D	27.551	36.721	45.456	33.622					1303
1310	1415	1404	2.987	2.884	34.560D	27.580	36.762	45.508	34.123					1404
1311	1516	1503	2.774	2.665	34.568D	27.605	36.799	45.556	34.615					1503
1312	1618	1604	2.588	2.473	34.578D	27.629	36.833	45.600	35.110					1604
1315	1719	1704	2.430	2.309	34.586D	27.649	36.862	45.637	35.595					1704
1316	1821	1804	2.300	2.172	34.600D	27.671	36.892	45.674	36.085					1804
1317	1922	1904	2.172	2.037	34.608D	27.688	36.916	45.705	36.564					1904
1318	2024	2004	2.069	1.927	34.616D	27.703	36.937	45.731	37.045					2004
1319	2227	2204	1.885	1.729	34.629D	27.728	36.973	45.778	37.994					2204
1320	2431	2405	1.743	1.571	34.644D	27.752	37.005	45.818	38.940					2405
1321	2634	2604	1.665	1.477	34.650D	27.763	37.022	45.839	39.863					2604
1322	2838	2805	1.578	1.372	34.659D	27.778	37.042	45.865	40.790					2805
1323	3042	3005	1.528	1.304	34.666D	27.788	37.056	45.882	41.707					3005
1324	3246	3205	1.492	1.249	34.672D	27.797	37.067	45.897	42.618					3205
1401	3450	3404	1.466	1.203	34.676D	27.803	37.076	45.908	43.521					3404
1402	3655	3605	1.448	1.164	34.680D	27.809	37.084	45.918	44.424					3605
1403	3860	3805	1.447	1.141	34.682D	27.812	37.089	45.924	45.319					3805
1404	4065	4005	1.444	1.115	34.684D	27.815	37.093	45.930	46.210					4005
1405	4270	4205	1.445	1.093	34.687D	27.819	37.098	45.936	47.097					4205
1406	4476	4406	1.454	1.078	34.689D	27.821	37.102	45.940	47.982					4406
1407	4681	4606	1.466	1.066	34.688D	27.821	37.103	45.941	48.857					4606
1408	4887	4806	1.464	1.039	34.691D	27.826	37.108	45.948	49.737					4806
1409	5093	5007	1.468	1.017	34.692D	27.828	37.112	45.953	50.611					5007
114	5112	5025	1.47 H	1.02	34.694	27.829	37.113	45.955	50.692					5025
1410	5159	5071	1.474	1.015	34.694D	27.830	37.113	45.955	50.891					5071

BOTTOM DEPTH FOR CAST 1 IS 5109

STATION: 206 LEG: I POSITION: 22° 9' N 153° 50' W DATE: 8 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	3	3	25.50	25.50	35.173D	23.351	31.658	39.586	23.364					3
103	10	10	25.500	25.498	35.173	23.351	31.658	39.586	23.394	211	2.5	0.15	0.0	10
1202	50	50	25.50	25.49	35.17 D	23.352	31.659	39.587	23.565					50
1203	70	70	23.13	23.11	35.03 D	23.947	32.320	40.313	24.247					70
1204	101	101	21.21	21.19	35.01 D	24.472	32.901	40.947	24.908					101
1205	126	126	20.50	20.48	34.95 D	24.620	33.071	41.139	25.164					126
1206	151	151	19.71	19.68	34.88 D	24.777	33.254	41.345	25.431					151
1207	202	201	17.20	17.17	34.83 D	25.372	33.931	42.099	26.255					201
104	244	243	14.843	14.805	34.548	25.699	34.344	42.594	26.776	200	6.7	0.55	5.5	243
1208	302	301	11.42	11.38	34.20 D	26.123	34.907	43.284	27.477					301
1209	403	401	8.88	8.84	34.10 D	26.481	35.376	43.856	28.309					401
105	494	492	6.457	6.411	34.018	26.765	35.775	44.361	29.032	115	54.8	2.30	31.0	492
106	645	642	4.972	4.919	34.187	27.080	36.160	44.813	30.057	44	89.7	2.94	39.8	642
107	776	771	4.471	4.409	34.320	27.241	36.346	45.021	30.827	34	105.0	3.07	41.6	771
108	968	962	3.993	3.918	34.468	27.409	36.537	45.234	31.883	47	114.8	3.06	41.6	962
109	1199	1190	3.304	3.216	34.519	27.517	36.682	45.412	33.066	57	131.0	3.02	41.2	1190
110	1569	1556	2.682	2.570	34.580	27.623	36.822	45.584	34.877	73	146.1	2.98	40.9	1556
111	1850	1833	2.256	2.126	34.606	27.680	36.902	45.687	36.226	84	157.9	2.92	40.3	1833
112	2134	2113	1.963	1.814	34.625	27.719	36.959	45.759	37.562	93	166.2	2.86	39.8	2113
115	2641	2611	1.626	1.438	34.655	27.770	37.030	45.850	39.903	116	172.6	2.75	38.2	2611
116	2893	2859	1.537	1.327	34.665	27.786	37.052	45.878	41.045	126	169.6	2.70	37.5	2859
117	3145	3106	1.485	1.252	34.673	27.797	37.068	45.897	42.174	135	168.6	2.63	37.3	3106
118	3400	3355	1.460	1.202	34.677	27.804	37.077	45.909	43.304	140	167.2	2.61	36.9	3355
119	3629	3579	1.447	1.166	34.681	27.809	37.085	45.918	44.311	146	165.1	2.58	36.3	3579
120	3873	3818	1.433	1.126	34.684	27.814	37.092	45.928	45.379	151	162.1	2.55	35.7	3818
121	4076	4016	1.437	1.107	34.685	27.816	37.095	45.932	46.259	154	160.5	2.54	35.7	4016
122	4279	4214	1.445	1.092	34.686	27.818	37.098	45.935	47.135	156	158.3	2.53	35.1	4214
123	4484	4414	1.443	1.067	34.690	27.823	37.104	45.943	48.020	161	155.2	2.50	35.0	4414
124	4690	4615	1.413	1.013	34.693	27.829	37.113	45.954	48.909	169	149.2	2.46	34.6	4615

BOTTOM DEPTH FOR CAST 1 IS 4634

STATION: 207 LEG: I POSITION: 22° 1' N 154° 31' W DATE: 9 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	25.467	25.467	34.995D	23.227	31.536	39.467	23.227					0
1202	10	10	25.474	25.472	34.997D	23.227	31.536	39.467	23.269					10
1203	20	20	25.470	25.465	35.001D	23.232	31.541	39.472	23.317					20
1204	30	30	25.462	25.455	35.003D	23.236	31.546	39.477	23.364					30
1205	51	51	24.130	24.119	35.011D	23.641	31.987	39.953	23.859					51
1206	76	76	22.736	22.720	35.003D	24.040	32.424	40.428	24.366					76
1207	101	101	21.726	21.705	35.136D	24.426	32.838	40.868	24.860					101
1208	126	126	20.612	20.587	35.088D	24.695	33.141	41.204	25.239					126
1209	150	150	19.647	19.619	35.061D	24.931	33.407	41.499	25.581					150
1210	176	176	18.558	18.526	34.991D	25.159	33.671	41.795	25.924					176
1211	202	201	17.377	17.342	34.823D	25.324	33.877	42.040	26.206					201
1212	227	226	15.493	15.457	34.609D	25.601	34.222	42.449	26.600					226
1215	252	251	14.355	14.317	34.492D	25.761	34.426	42.693	26.877					251
1216	302	301	11.540	11.501	34.231D	26.125	34.903	43.276	27.478					301
1217	353	352	9.585	9.544	34.143D	26.400	35.263	43.714	27.996					352
1218	403	401	8.435	8.392	34.183D	26.615	35.529	44.026	28.447					401
1219	453	451	7.764	7.718	34.200D	26.729	35.673	44.199	28.794					451
1220	505	503	6.839	6.791	34.193D	26.853	35.841	44.408	29.165					503
1221	555	552	6.391	6.340	34.252D	26.959	35.968	44.554	29.504					552
1222	605	602	6.155	6.100	34.319D	27.043	36.062	44.658	29.818					602
1223	656	652	5.785	5.727	34.363D	27.124	36.161	44.774	30.138					652
1224	706	702	5.483	5.422	34.401D	27.191	36.243	44.869	30.437					702
1301	757	753	5.250	5.185	34.420D	27.234	36.297	44.934	30.717					753
1302	807	802	5.059	4.991	34.452D	27.281	36.354	44.999	30.996					802
1303	858	853	4.796	4.725	34.457D	27.315	36.402	45.059	31.268					853
1304	907	901	4.646	4.572	34.477D	27.348	36.442	45.107	31.528					901
1305	959	953	4.448	4.371	34.491D	27.380	36.485	45.159	31.802					953
1306	1009	1002	4.262	4.182	34.502D	27.409	36.523	45.206	32.063					1002
1307	1111	1103	3.966	3.879	34.513D	27.449	36.578	45.276	32.576					1103
1308	1212	1203	3.668	3.575	34.525D	27.488	36.634	45.346	33.084					1203
1309	1310	1300	3.465	3.366	34.543D	27.523	36.679	45.401	33.571					1300
1310	1415	1404	3.205	3.100	34.557D	27.558	36.729	45.464	34.093					1404
1311	1516	1503	2.961	2.850	34.567D	27.589	36.772	45.520	34.591					1503
1312	1618	1604	2.744	2.627	34.572D	27.612	36.807	45.566	35.086					1604
1315	1719	1704	2.573	2.450	34.581D	27.634	36.839	45.607	35.573					1704
1316	1821	1804	2.448	2.318	34.589D	27.651	36.863	45.638	36.057					1804
1317	1922	1904	2.272	2.136	34.602D	27.676	36.898	45.682	36.547					1904
1318	2024	2004	2.164	2.021	34.610D	27.691	36.920	45.709	37.028					2004
1319	2227	2204	1.958	1.801	34.623D	27.718	36.959	45.760	37.979					2204
1320	2431	2405	1.818	1.645	34.641D	27.744	36.993	45.802	38.927					2405
1321	2634	2604	1.712	1.523	34.652D	27.762	37.017	45.833	39.858					2604
1322	2838	2805	1.643	1.436	34.660D	27.774	37.034	45.854	40.781					2805
1323	3042	3005	1.572	1.347	34.666D	27.785	37.050	45.875	41.701					3005
1324	3246	3205	1.547	1.302	34.670D	27.791	37.059	45.886	42.607					3205
1401	3451	3405	1.493	1.229	34.676D	27.801	37.073	45.903	43.521					3405
1402	3655	3605	1.478	1.193	34.680D	27.807	37.080	45.913	44.419					3605
1403	3860	3805	1.469	1.162	34.682D	27.810	37.086	45.920	45.315					3805
1404	4065	4005	1.462	1.133	34.686D	27.815	37.093	45.928	46.208					4005
1405	4270	4206	1.460	1.108	34.688D	27.819	37.097	45.934	47.095					4206
1406	4476	4406	1.461	1.085	34.691D	27.823	37.102	45.940	47.983					4406
114	4639	4565	1.464H	1.069	34.688	27.821	37.102	45.941	48.678					4565
1407	4668	4593	1.465	1.066	34.692D	27.825	37.106	45.944	48.804					4593

BOTTOM DEPTH FOR CAST 1 IS 4631

STATION: 208 LEG: I POSITION: 21° 51' N 155° 2' W DATE: 9 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	25.527	25.527	35.133D	23.312	31.619	39.546	23.312					0
1202	10	10	25.527	25.525	35.135D	23.315	31.621	39.549	23.357					10
1203	20	20	25.531	25.526	35.146D	23.322	31.629	39.556	23.408					20
1204	30	30	25.536	25.529	35.148D	23.323	31.629	39.557	23.451					30
1205	50	50	25.495	25.483	35.285D	23.440	31.746	39.673	23.653					50

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

STATION: 208 LEG: I POSITION: 21° 51' N 155° 2' W DATE: 9 SEP 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1206	76	76	22.779	22.763	35.226D	24.196	32.577	40.577	24.522					76
1207	101	101	21.420	21.400	35.233D	24.584	33.004	41.042	25.019					101
1208	126	126	20.299	20.275	35.195D	24.860	33.314	41.385	25.405					126
1209	151	151	19.643	19.615	35.192D	25.032	33.507	41.597	25.686					151
1210	176	176	18.128	18.097	34.946D	25.232	33.759	41.897	25.999					176
1211	202	201	16.691	16.657	34.771D	25.448	34.025	42.211	26.333					201
1212	227	226	14.940	14.905	34.510D	25.648	34.290	42.537	26.650					226
1215	252	251	13.488	13.452	34.361D	25.842	34.542	42.841	26.962					251
1216	303	302	11.342	11.303	34.209D	26.144	34.931	43.312	27.503					302
1217	353	352	9.662	9.621	34.169D	26.408	35.267	43.714	28.003					352
1218	405	403	8.655	8.611	34.159D	26.563	35.466	43.955	28.401					403
1219	454	452	7.914	7.867	34.195D	26.703	35.641	44.160	28.771					452
1220	504	502	7.151	7.102	34.205D	26.820	35.793	44.346	29.123					502
1221	555	552	6.478	6.426	34.253D	26.949	35.954	44.536	29.492					552
1222	605	602	6.230	6.174	34.313D	27.028	36.045	44.637	29.803					602
1223	656	652	5.793	5.735	34.330D	27.097	36.134	44.747	30.111					652
1224	706	702	5.643	5.581	34.368D	27.146	36.190	44.809	30.389					702
1301	757	753	5.351	5.286	34.400D	27.206	36.265	44.897	30.688					753
1302	807	802	5.105	5.037	34.423D	27.253	36.324	44.968	30.967					802
1303	858	853	4.866	4.795	34.445D	27.298	36.381	45.036	31.249					853
1304	909	903	4.589	4.515	34.453D	27.335	36.432	45.100	31.525					903
1305	959	953	4.481	4.403	34.472D	27.362	36.465	45.138	31.783					953
1306	1010	1003	4.295	4.214	34.489D	27.395	36.508	45.189	32.053					1003
1307	1111	1103	4.016	3.929	34.505D	27.437	36.564	45.260	32.563					1103
1308	1212	1203	3.737	3.644	34.527D	27.483	36.625	45.334	33.077					1203
1309	1313	1303	3.444	3.345	34.543D	27.525	36.682	45.405	33.587					1303
1310	1415	1404	3.243	3.137	34.555D	27.553	36.721	45.455	34.086					1404
1311	1516	1503	3.035	2.923	34.564D	27.580	36.759	45.504	34.579					1503
1312	1617	1603	2.834	2.716	34.576D	27.607	36.798	45.553	35.073					1603
1315	1719	1704	2.664	2.540	34.585D	27.630	36.830	45.593	35.564					1704
1316	1820	1803	2.518	2.387	34.595D	27.650	36.858	45.630	36.048					1803
1317	1922	1904	2.371	2.233	34.604D	27.670	36.886	45.665	36.535					1904
1318	2024	2004	2.219	2.075	34.613D	27.689	36.915	45.702	37.023					2004
1319	2227	2204	2.028	1.869	34.626D	27.716	36.952	45.750	37.972					2204
1320	2434	2408	1.895	1.720	34.639D	27.737	36.982	45.787	38.929					2408
1321	2636	2606	1.737	1.547	34.648D	27.757	37.011	45.825	39.860					2606
1322	2838	2805	1.650	1.443	34.657D	27.771	37.031	45.851	40.778					2805
1323	3042	3005	1.583	1.358	34.662D	27.781	37.046	45.870	41.696					3005
1324	3247	3206	1.537	1.292	34.668D	27.790	37.059	45.886	42.612					3206
1401	3451	3406	1.502	1.238	34.675D	27.800	37.071	45.901	43.519					3406
1402	3655	3605	1.484	1.199	34.676D	27.803	37.077	45.909	44.415					3605
1403	3860	3806	1.469	1.162	34.679D	27.808	37.084	45.918	45.313					3806
1404	4065	4006	1.459	1.130	34.684D	27.814	37.091	45.927	46.207					4006
1405	4270	4206	1.452	1.100	34.686D	27.818	37.097	45.934	47.095					4206
1406	4475	4406	1.453	1.077	34.688D	27.821	37.101	45.939	47.977					4406
1407	4681	4606	1.446	1.046	34.689D	27.824	37.106	45.946	48.861					4606
1408	4784	4707	1.450	1.038	34.691D	27.826	37.108	45.949	49.301					4707
114	4814	4736	1.452H	1.036	34.691	27.826	37.109	45.949	49.429					4736
1409	4853	4774	1.453	1.032	34.692D	27.827	37.110	45.950	49.595					4774

BOTTOM DEPTH FOR CAST 1 IS 4802

STATION: 209 LEG: I POSITION: 21° 41' N 155° 30' W DATE: 9 SEP 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	25.641	25.641	35.105D	23.257	31.561	39.485	23.257					0
1202	10	10	25.523	25.521	35.115D	23.301	31.608	39.535	23.343					10
1203	20	20	25.505	25.500	35.121D	23.311	31.619	39.547	23.397					20
1204	30	30	25.523	25.516	35.136D	23.318	31.625	39.552	23.446					30
1205	50	50	25.447	25.435	35.199D	23.390	31.698	39.627	23.603					50
1206	76	76	23.054	23.038	35.064D	23.995	32.370	40.365	24.321					76
1207	101	101	21.608	21.587	35.158D	24.475	32.890	40.924	24.910					101
1208	126	126	20.846	20.821	35.214D	24.727	33.165	41.220	25.271					126
1209	151	151	20.107	20.078	35.223D	24.933	33.394	41.469	25.587					151
1210	176	176	18.803	18.771	35.049D	25.141	33.644	41.761	25.906					176

STATION: 209 LEG: I POSITION: 21° 41' N 155° 30' W DATE: 9 SEP 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1211	202	201	17.802	17.767	34.928D	25.300	33.838	41.987	26.181					201
1212	227	226	15.991	15.954	34.654D	25.522	34.125	42.335	26.520					226
1215	252	251	13.834	13.797	34.390D	25.793	34.479	42.765	26.911					251
1216	303	302	11.689	11.649	34.208D	26.079	34.852	43.219	27.436					302
1217	353	352	9.856	9.815	34.142D	26.355	35.205	43.645	27.948					352
1218	403	401	8.883	8.838	34.181D	26.544	35.437	43.916	28.371					401
1219	454	452	7.757	7.711	34.141D	26.684	35.629	44.156	28.753					452
1220	504	502	6.881	6.833	34.181D	26.838	35.824	44.389	29.145					502
1221	555	552	6.367	6.316	34.240D	26.953	35.963	44.550	29.498					552
1222	605	602	6.182	6.127	34.317D	27.038	36.056	44.651	29.813					602
1223	656	652	5.715	5.657	34.332D	27.108	36.149	44.765	30.123					652
1224	706	702	5.508	5.447	34.379D	27.170	36.222	44.847	30.417					702
1301	757	753	5.442	5.376	34.421D	27.212	36.266	44.894	30.692					753
1302	807	802	5.189	5.120	34.437D	27.255	36.321	44.961	30.967					802
1303	858	853	4.963	4.891	34.453D	27.293	36.371	45.021	31.243					853
1304	909	903	4.726	4.651	34.467D	27.331	36.421	45.082	31.518					903
1305	959	953	4.558	4.480	34.478D	27.358	36.457	45.126	31.777					953
1306	1010	1003	4.394	4.313	34.487D	27.383	36.491	45.168	32.039					1003
1307	1111	1103	4.076	3.988	34.503D	27.430	36.554	45.246	32.554					1103
1308	1212	1203	3.782	3.688	34.512D	27.467	36.606	45.313	33.059					1203
1309	1314	1304	3.549	3.449	34.537D	27.510	36.662	45.380	33.573					1304
1310	1415	1404	3.328	3.221	34.549D	27.541	36.705	45.434	34.071					1404
1311	1516	1503	3.110	2.997	34.558D	27.568	36.744	45.485	34.565					1503
1312	1618	1604	2.901	2.782	34.571D	27.598	36.785	45.536	35.065					1604
1315	1719	1704	2.692	2.567	34.582D	27.625	36.823	45.585	35.558					1704
1316	1820	1803	2.564	2.432	34.591D	27.643	36.849	45.618	36.039					1803
1317	1922	1904	2.435	2.296	34.598D	27.660	36.873	45.649	36.522					1904
1318	2024	2004	2.302	2.157	34.606D	27.677	36.898	45.681	37.006					2004
1319	2227	2204	2.012	1.854	34.618D	27.710	36.948	45.746	37.968					2204
1320	2431	2405	1.825	1.652	34.633D	27.737	36.986	45.795	38.920					2405
1321	2634	2605	1.711	1.522	34.645D	27.756	37.012	45.827	39.852					2605
1322	2838	2805	1.629	1.422	34.654D	27.770	37.032	45.852	40.779					2805
1323	3042	3005	1.569	1.344	34.660D	27.780	37.046	45.871	41.696					3005
1324	3247	3206	1.523	1.279	34.666D	27.790	37.059	45.887	42.613					3206
1401	3450	3405	1.492	1.228	34.672D	27.798	37.070	45.900	43.514					3405
1402	3655	3605	1.468	1.183	34.674D	27.803	37.077	45.910	44.416					3605
1403	3860	3806	1.461	1.154	34.678D	27.808	37.084	45.918	45.313					3806
1404	4065	4006	1.453	1.124	34.682D	27.813	37.091	45.927	46.207					4006
1405	4270	4206	1.451	1.099	34.684D	27.816	37.095	45.933	47.094					4206
1406	4475	4406	1.451	1.075	34.687D	27.820	37.100	45.939	47.977					4406
1407	4681	4606	1.450	1.050	34.687D	27.822	37.104	45.943	48.859					4606
1408	4886	4806	1.459	1.034	34.689D	27.824	37.107	45.948	49.732					4806
1409	5092	5006	1.478	1.027	34.690D	27.826	37.109	45.950	50.603					5006
114	5284	5193	1.49 H	1.01	34.692	27.828	37.112	45.954	51.414					5193
1410	5298	5206	1.495	1.017	34.689D	27.825	37.109	45.951	51.469					5206
1411	5309	5217	1.495	1.016	34.690D	27.826	37.110	45.952	51.516					5217

BOTTOM DEPTH FOR CAST 1 IS 5256

STATION: 210 LEG: I POSITION: 21° 30' N 156° 4' W DATE: 10 SEP 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	25.565	25.565	35.072D	23.255	31.561	39.488	23.255					0
1202	10	10	25.556	25.554	35.081D	23.265	31.572	39.499	23.308					10
1203	20	20	25.491	25.486	35.089D	23.292	31.600	39.529	23.377					20
1204	30	30	25.471	25.464	35.088D	23.298	31.606	39.536	23.425					30
1205	50	50	24.284	24.273	35.016D	23.599	31.941	39.903	23.813					50
1206	76	76	23.134	23.118	35.190D	24.067	32.439	40.429	24.393					76
1207	101	101	21.978	21.957	35.258D	24.448	32.851	40.873	24.882					101
1208	126	126	21.028	21.003	35.192D	24.661	33.094	41.143	25.205					126
1209	151	151	19.879	19.850	35.073D	24.880	33.348	41.433	25.533					151
1210	176	176	18.758	18.726	34.989D	25.107	33.612	41.731	25.872					176
1211	201	200	17.681	17.646	34.871D	25.286	33.828	41.982	26.163					200
1212	227	226	16.236	16.199	34.708D	25.507	34.101	42.302	26.503					226

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

STATION: 210 LEG: I POSITION: 21° 30' N 156° 4' W DATE: 10 SEP 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
1215	252	251	14.499	14.461	34.471D	25.714	34.374	42.636	26.829					251
1216	302	301	11.894	11.854	34.218D	26.048	34.812	43.172	27.399					301
1217	353	352	10.071	10.029	34.148D	26.323	35.164	43.595	27.915					352
1218	403	401	8.859	8.814	34.158D	26.530	35.425	43.905	28.358					401
1219	453	451	8.056	8.009	34.190D	26.678	35.609	44.123	28.740					451
1220	507	505	7.051	7.002	34.189D	26.821	35.800	44.357	29.139					505
1221	555	552	6.457	6.405	34.237D	26.939	35.945	44.528	29.483					552
1222	605	602	5.885	5.831	34.290D	27.053	36.087	44.695	29.833					602
1223	656	652	5.675	5.617	34.341D	27.120	36.163	44.781	30.135					652
1224	706	702	5.550	5.488	34.365D	27.154	36.204	44.827	30.400					702
1301	757	753	5.306	5.241	34.389D	27.203	36.264	44.898	30.685					753
1302	807	802	5.006	4.938	34.413D	27.256	36.333	44.981	30.973					802
1303	858	853	4.770	4.699	34.442D	27.306	36.394	45.053	31.260					853
1304	908	902	4.562	4.488	34.458D	27.342	36.440	45.109	31.528					902
1305	959	953	4.391	4.314	34.471D	27.371	36.478	45.155	31.794					953
1306	1010	1003	4.334	4.253	34.477D	27.382	36.492	45.172	32.039					1003
1307	1111	1103	3.978	3.891	34.502D	27.439	36.568	45.265	32.566					1103
1308	1212	1203	3.767	3.673	34.516D	27.472	36.612	45.320	33.064					1203
1309	1313	1303	3.415	3.316	34.537D	27.522	36.681	45.406	33.586					1303
1310	1415	1404	3.131	3.027	34.541D	27.552	36.726	45.466	34.090					1404
1311	1516	1503	2.914	2.804	34.549D	27.578	36.765	45.515	34.583					1503
1312	1617	1603	2.723	2.607	34.567D	27.610	36.806	45.567	35.080					1603
1315	1719	1704	2.531	2.408	34.576D	27.633	36.841	45.611	35.574					1704
1316	1821	1804	2.371	2.242	34.582D	27.651	36.868	45.647	36.062					1804
1317	1922	1904	2.226	2.091	34.590D	27.670	36.895	45.681	36.543					1904
1318	2024	2004	2.112	1.970	34.608D	27.694	36.925	45.717	37.033					2004
1319	2227	2204	1.952	1.795	34.621D	27.717	36.958	45.759	37.978					2204
1320	2431	2405	1.820	1.647	34.629D	27.734	36.983	45.792	38.918					2405
1321	2634	2605	1.694	1.505	34.642D	27.755	37.012	45.828	39.852					2605
1322	2838	2805	1.641	1.434	34.650D	27.766	37.027	45.847	40.774					2805
1323	3042	3005	1.562	1.337	34.659D	27.780	37.046	45.871	41.697					3005
1324	3246	3205	1.524	1.280	34.666D	27.790	37.059	45.887	42.608					3205
1401	3451	3406	1.490	1.226	34.669D	27.796	37.068	45.899	43.516					3406
1402	3656	3606	1.468	1.183	34.674D	27.803	37.077	45.910	44.421					3606
1403	3860	3806	1.459	1.153	34.679D	27.809	37.085	45.919	45.314					3806
1404	4066	4007	1.456	1.127	34.681D	27.812	37.089	45.925	46.210					4007
1405	4270	4206	1.460	1.108	34.683D	27.815	37.093	45.930	47.091					4206
1406	4476	4407	1.464	1.088	34.684D	27.817	37.097	45.934	47.977					4407
1407	4681	4606	1.470	1.069	34.687D	27.820	37.101	45.940	48.855					4606
1408	4887	4807	1.481	1.055	34.687D	27.821	37.103	45.943	49.731					4807
1409	5093	5007	1.497	1.045	34.687D	27.822	37.104	45.944	50.602					5007
1410	5299	5207	1.508	1.030	34.689D	27.825	37.108	45.949	51.471					5207
1411	5505	5407	1.523	1.017	34.690D	27.826	37.110	45.951	52.335					5407
114	5704	5600	1.540H	1.007	34.692	27.828	37.113	45.955	53.166					5600
1412	5712	5608	1.542	1.008	34.689D	27.826	37.110	45.952	53.197					5608
1415	5766	5660	1.546	1.005	34.691D	27.828	37.112	45.954	53.423					5660

BOTTOM DEPTH FOR CAST 1 IS 5751

STATION: 211 LEG: II POSITION: 24° 16' N 158° 19' W DATE: 17 SEP 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	3H	3			35.305									3
209	3H	3			35.311									3
102	12H	12			35.290									12
210	12H	12			35.291									12
103	21H	21			35.291									21
211	21H	21			35.292									21
104	30H	30			35.326									30
212	30H	30			35.332									30
105	40H	40			35.349									40
213	40H	40			35.348									40
106	48H	48			35.487									48
214	48H	48			35.384									48
107	62H	62			35.448									62
217	62H	62			35.500									62
108	83H	83	22.72 H	22.70	35.281	24.255	32.637	40.638	24.611					83
216	83H	83	22.89 H	22.87	35.281	24.207	32.584	40.580	24.562					83

BOTTOM DEPTH FOR CAST 1 IS 4574 — CAST 2 IS 4574

STATION: 212 LEG: II POSITION: 30° 0' N 159° 50' W DATE: 18 SEP 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	3	3	25.241	25.240	35.471D	23.654	31.964	39.895	23.667	212				3
601	7	7	25.241	25.239	35.471	23.654	31.964	39.896	23.684	212	1.8	0.02	0.0	7
602	27	27	25.191	25.185	35.467	23.668	31.979	39.912	23.783	213	1.8	0.02	0.0	27
603	42	42	24.649	24.639	35.456	23.823	32.149	40.096	24.002	213	1.7	0.02	0.0	42
604	47	47	23.076	23.066	35.41	24.250	32.620	40.610	24.452	218	1.7	0.02	0.0	47
605	57	57	22.391	22.379	35.214	24.296	32.688	40.699	24.541	239	2.4	0.03	0.0	57
606	66	66	21.637	21.624	35.189	24.488	32.903	40.935	24.773	241	2.4	0.03	0.0	66
607	86	86	19.428	19.412	35.167	25.066	33.547	41.643	25.439	222	2.4	0.08	0.0	86
608	102	102	18.930	18.911	35.149	25.181	33.679	41.790	25.625	220	2.8	0.10	0.0	102
609	122	122	17.715	17.694	34.974	25.353	33.893	42.043	25.886	213	3.7	0.22	2.1	122
610	141	140	16.992	16.968	34.864	25.445	34.010	42.185	26.063	224	4.5	0.20	1.6	140
611	162	161	16.091	16.065	34.768	25.584	34.182	42.387	26.296	222	5.2	0.29	2.9	161
612	194	193	14.921	14.891	34.628	25.741	34.383	42.629	26.598	218	6.9	0.43	4.9	193
615	223	222	14.508	14.474	34.569	25.787	34.444	42.705	26.773	217	7.6	0.48	5.6	222
616	252	251	13.266	13.230	34.429	25.940	34.647	42.953	27.061	211	10.3	0.68	8.5	251
617	278	277	12.617	12.579	34.349	26.009	34.743	43.074	27.249	208	11.9	0.79	10.2	277
618	319	317	11.656	11.614	34.303	26.159	34.932	43.300	27.587	210	14.6	0.90	11.9	317
619	364	362	10.857	10.811	34.236	26.255	35.061	43.461	27.890	204	17.9	1.05	14.1	362
620	395	393	10.217	10.169	34.187	26.329	35.164	43.589	28.109	197	21.1	1.20	16.1	393
621	435	433	9.270	9.221	34.133	26.446	35.323	43.786	28.414	186	26.9	1.39	19.0	433
622	481	478	8.323	8.272	34.076	26.550	35.470	43.974	28.735	177	33.8	1.58	22.0	478
623	532	529	7.185	7.133	34.028	26.677	35.651	44.205	29.107	160	44.4	1.85	25.8	529
301	573	570	6.60 H	6.55	34.010	26.742	35.744	44.325	29.366	137	53.1	2.08	28.7	570
624	609	605	5.893	5.839	34.004	26.827	35.864	44.477	29.626	118	63.3	2.30	32.1	605
302	626	622	5.603	5.549	34.010	26.867	35.918	44.544	29.748	104	68.7	2.42	33.6	622
303	691	687	4.802	4.746	34.048	26.989	36.080	44.743	30.181	75	83.6	2.68	37.2	687
304	774	769	4.345	4.285	34.155	27.123	36.237	44.920	30.704	37	102.2	2.94	41.0	769
305	874	868	3.975	3.909	34.239	27.228	36.360	45.061	31.275	20	115.0	3.07	42.7	868
306	973	966	3.666	3.594	34.325	27.327	36.475	45.190	31.834	17	124.7	3.12	43.5	966
307	973	966	3.666	3.594	34.330	27.331	36.479	45.193	31.838	16	125.5	3.12	43.6	966
308	1108	1099	3.380	3.299	34.420	27.431	36.593	45.320	32.562	23	133.6	3.11	43.8	1099
309	1255	1245	3.059	2.969	34.489	27.516	36.694	45.437	33.328	37	140.7	3.05	42.9	1245
310	1406	1394	2.784	2.684	34.529	27.573	36.766	45.523	34.083	49	147.2	3.01	42.3	1394
311	1557	1543	2.527	2.418	34.558	27.618	36.825	45.595	34.825	62	151.9	2.94	41.4	1543
312	1707	1691	2.345	2.226	34.576	27.648	36.866	45.645	35.543	68	156.8	2.89	41.1	1691
315	1859	1841	2.165	2.036	34.595	27.678	36.906	45.695	36.270	77	160.1	2.86	40.7	1841
316	2006	1985	2.032	1.893	34.608	27.699	36.935	45.731	36.962	83	162.9	2.85	40.5	1985
317	2006	1985	2.032	1.893	34.607	27.699	36.934	45.731	36.961	83	162.6	2.85	40.5	1985
318	2149	2126	1.923	1.773	34.619	27.717	36.959	45.762	37.630	86	167.1	2.82	40.0	2126
319	2304	2279	1.804	1.643	34.629	27.735	36.984	45.793	38.350	94	168.2	2.78	39.8	2279
320	2456	2428	1.728	1.555	34.639	27.749	37.003	45.817	39.050	100	170.1	2.75	39.1	2428
321	2609	2578	1.675	1.489	34.647	27.760	37.018	45.835	39.747	106	170.4	2.74	38.6	2578
322	2765	2731	1.611	1.412	34.652	27.769	37.031	45.852	40.455	113	168.5	2.69	38.2	2731
323	2929	2892	1.581	1.367	34.659	27.778	37.043	45.866	41.193	117	168.2	2.67	37.7	2892
324	3032	2993	1.561	1.337	34.661	27.782	37.048	45.873	41.654	122	166.7	2.65	37.6	2993
101	3043H	3004	1.559H	1.334	34.660	27.781	37.047	45.872	41.702	120	166.0	2.69	37.3	3004
102	3043H	3004	1.550A	1.325	34.659	27.781	37.048	45.873	41.703	119	166.8	2.68	37.6	3004
103	3282H	3238	1.52 H	1.27	34.668	27.792	37.061	45.890	42.769	129	163.3	2.64	37.5	3238
104	3520H	3471	1.495A	1.224	34.672	27.798	37.071	45.901	43.820	136	159.8	2.60	36.7	3471
105	3757H	3702	1.482A	1.186	34.675	27.803	37.077	45.910	44.859	142	157.9	2.57	36.5	3702
106	3994H	3934	1.472H	1.151	34.676	27.806	37.083	45.917	45.891	145	159.2	2.55	35.8	3934

A DATA TAKEN FROM CTD DOWN TRACE
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 212 LEG: II POSITION: 30° 0' N 159° 50' W DATE: 18 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
107	4231H	4165	1.479A	1.131	34.681	27.812	37.089	45.925	46.918	150	155.1	2.52	35.7	4165
108	4468H	4396	1.49 H	1.11	34.682	27.814	37.092	45.928	47.936	154	155.0	2.50	35.7	4396
109	4703H	4625	1.498A	1.094	34.684	27.816	37.096	45.933	48.942	155	153.6	2.49	36.4	4625
110	4939H	4854	1.515A	1.081	34.685	27.818	37.098	45.936	49.944	158	150.2	2.49	35.7	4854
111	5174H	5083	1.54 H	1.08	34.686	27.819	37.100	45.938	50.935	159	148.7	2.47	35.3	5083
112	5408H	5310	1.557A	1.063	34.687	27.821	37.102	45.941	51.918	160	148.4	2.46	35.9	5310
115	5637H	5532	1.58 H	1.05	34.688	27.822	37.104	45.943	52.875	162	147.5	2.45	35.4	5532
116	5637H	5532			34.687									5532
117	5678H	5571	1.60 H	1.07	34.688	27.821	37.102	45.941	53.042					5571
118	5708H	5600			34.687									5600
119	5749H	5640			34.687									5640
120	5779H	5669	1.602H	1.057	34.688	27.822	37.104	45.943	53.463					5669
121	5804H	5693			34.688									5693
122	5804H	5693	1.60 H	1.05	34.687	27.822	37.103	45.943	53.567					5693
123	5825H	5714			34.689									5714
124	5825H	5714			34.688					162	146.8	2.42	35.3	5714

BOTTOM DEPTH FOR CAST 1 IS 5733

STATION: 213 LEG: II POSITION: 31° 0' N 168° 27' W DATE: 22 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
6201	3	3	26.793	26.792	35.515D	23.211	31.481	39.372	23.224	207				3
601	21	21	26.793	26.788	35.515	23.213	31.482	39.373	23.302	207	2.2	0.00	0.1	21
602	37	37	26.760	26.751	35.532	23.237	31.507	39.399	23.394	208	1.9	0.00	0.0	37
603	47	47	26.177	26.166	35.520	23.409	31.694	39.601	23.608	208	1.7	0.00	0.0	47
604	57	57	21.418	21.407	34.939	24.359	32.782	40.823	24.604	249	3.9	0.03	0.0	57
605	68	68	19.474	19.461	34.860	24.819	33.303	41.401	25.115	253	4.3	0.04	0.0	68
606	78	78	18.511	18.497	34.808	25.027	33.542	41.669	25.366	255	4.4	0.05	0.0	78
607	88	88	17.987	17.972	34.787	25.142	33.674	41.819	25.526	254	4.6	0.07	0.0	88
608	99	99	16.689	16.673	34.738	25.419	33.996	42.182	25.853	254	5.0	0.09	0.0	99
609	118	118	15.884	15.865	34.720	25.593	34.198	42.411	26.113	236	5.3	0.20	1.3	118
610	184	183	14.286	14.259	34.570	25.834	34.500	42.768	26.649	222	7.9	0.46	5.9	183
611	209	208	13.802	13.771	34.523	25.901	34.586	42.872	26.828	222	8.6	0.52	6.7	208
612	260	259	13.002	12.965	34.456	26.015	34.731	43.047	27.172	219	11.2	0.66	8.9	259
615	319	317	12.105	12.062	34.388	26.140	34.894	43.243	27.565	217	14.2	0.77	10.3	317
616	386	384	10.558	10.510	34.269	26.334	35.153	43.563	28.069	211	18.8	1.03	14.2	384
617	432	430	9.894	9.843	34.193	26.390	35.238	43.676	28.338	204	23.2	1.18	16.4	430
618	482	479	8.899	8.845	34.131	26.504	35.398	43.877	28.687	193	28.3	1.38	19.3	479
619	521	518	8.296	8.240	34.094	26.568	35.490	43.995	28.935	181	34.3	1.55	21.8	518
620	583	580	7.163	7.105	34.047	26.695	35.671	44.226	29.358	148	46.9	1.91	26.8	580
401	643	639	6.111	6.053	34.035	26.825	35.851	44.453	29.775	125	58.3	2.16	30.3	639
622	644	640	6.117	6.058	34.027	26.818	35.844	44.446	29.773	122	59.9	2.20	31.2	640
621	645	641	6.105	6.046	34.026	26.818	35.845	44.448	29.778	123	60.0	2.20	31.1	641
623	715	710	5.159	5.099	34.048	26.949	36.023	44.669	30.245		76.4	2.55	36.1	710
402	724	719	5.152	5.091	34.048	26.950	36.024	44.671	30.287	88	78.5	2.56	36.0	719
624	765D	760	4.733	4.671	34.082	27.024	36.119	44.785	30.556	69	86.1	2.71	38.5	760
403	805	800	4.604	4.539	34.113	27.063	36.164	44.836	30.780	58	91.4	2.80	39.6	800
404	886	880	4.163	4.094	34.178	27.161	36.285	44.977	31.258	38	104.0	2.93	41.6	880
405	966	959	3.834	3.761	34.253	27.254	36.394	45.101	31.725	23	116.2	3.06	43.2	959
406	1048	1040	3.625	3.547	34.328	27.334	36.484	45.201	32.185	22	122.6	3.07	43.2	1040
407	1134	1125	3.414	3.331	34.387	27.402	36.562	45.289	32.651	21	129.9	3.11	43.7	1125
408	1221	1211	3.224	3.135	34.430	27.454	36.624	45.360	33.106	26	133.7	3.08	43.7	1211
409	1341	1330	2.958	2.862	34.481	27.519	36.703	45.452	33.727	34	144.2	3.04	43.4	1330
411	1473	1460	2.734	2.630	34.519	27.569	36.766	45.525	34.386	45	149.7	3.00	42.6	1460
410	1474	1461	2.732	2.628	34.519	27.569	36.766	45.526	34.391	45	149.2	3.01	42.7	1461
412	1613	1598	2.492	2.379	34.547	27.612	36.822	45.594	35.075	53	152.8	2.95	42.2	1598
415	1768	1751	2.297	2.174	34.572	27.649	36.869	45.652	35.823	62	159.7	2.91	41.7	1751
416	1918	1899	2.109	1.976	34.591	27.679	36.911	45.703	36.541	70	164.7	2.89	41.6	1899
417	2072	2050	1.988	1.844	34.607	27.702	36.941	45.740	37.265	78	165.4	2.85	41.1	2050
418	2224	2200	1.878	1.722	34.619	27.721	36.966	45.771	37.973	86	168.5	2.80	40.5	2200
419	2376	2349	1.783	1.616	34.632	27.739	36.990	45.800	38.679	96	167.8	2.74	40.0	2349
420	2531	2502	1.714	1.534	34.635	27.747	37.002	45.817	39.384	102	166.9	2.70	39.8	2502
421	2684	2652	1.666	1.473	34.647	27.761	37.020	45.838	40.083	107	167.5	2.70	39.7	2652

STATION: 213 LEG: II POSITION: 31° 0' N 168° 27' W DATE: 22 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
422	2684	2652	1.666	1.473	34.646	27.760	37.019	45.837	40.082	107	166.6	2.69	39.6	2652
423	2835	2800	1.625	1.419	34.653	27.770	37.031	45.852	40.765	113	165.4	2.66	39.3	2800
201	2947	2910	1.590	1.374	34.656	27.775	37.039	45.862	41.270	116	168.6U	2.66	38.5	2910
424	3044	3005	1.582	1.356	34.657	27.777	37.042	45.866	41.701	120	164.6	2.63	38.7	3005
202	3150	3109	1.552	1.317	34.660	27.782	37.049	45.875	42.176	122	165.8	2.63	38.0	3109
203	3354	3309	1.523	1.268	34.668	27.792	37.062	45.890	43.085	129	164.2	2.59	37.7	3309
204	3579	3529	1.496	1.218	34.672	27.799	37.071	45.902	44.078	133	163.7	2.56	37.3	3529
205	3813	3757	1.485	1.183	34.677	27.805	37.079	45.912	45.104	142	162.9	2.53	36.9	3757
206	4070	4008	1.479	1.149	34.679D	27.809	37.085	45.920	46.221	142	159.9	2.52	36.8	4008
207	4329	4261	1.488	1.128	34.681	27.812	37.089	45.925	47.339	149	160.0	2.50	36.5	4261
208	4585	4510	1.500	1.110	34.683D	27.815	37.093	45.930	48.436	152	160.5	2.47	36.3	4510
209	4841	4759	1.518	1.096	34.684D	27.816	37.096	45.933	49.526	153	160.2	2.46	36.1	4759
210	5098	5009	1.540	1.086	34.685	27.818	37.098	45.936	50.613	156	159.6	2.45	35.8	5009
211	5356	5259	1.561	1.073	34.687	27.820	37.101	45.939	51.699	159	155.9	2.43	35.6	5259
212	5511	5410	1.569	1.061	34.688	27.822	37.103	45.942	52.349	161	153.1	2.43	35.5	5410
215	5610	5506	1.575	1.053	34.689	27.823	37.105	45.944	52.763					5506
216	5635	5530	1.574	1.049	34.688	27.823	37.104	45.944	52.868					5530
217	5661	5555	1.574	1.046	34.688	27.823	37.105	45.945	52.977					5555
218	5686	5579	1.572	1.041	34.689	27.824	37.106	45.947	53.082					5579
219	5712	5604	1.572	1.037	34.690	27.825	37.108	45.948	53.191	165	147.7	2.40	35.1	5604
220	5712	5604	1.572	1.037	34.692	27.827	37.109	45.950	53.193					5604
221	5737	5629	1.575	1.037	34.690	27.825	37.108	45.948	53.295					5629
222	5762	5653	1.579	1.037	34.689	27.824	37.107	45.947	53.398					5653
223	5785	5675	1.581	1.036	34.691	27.826	37.109	45.949	53.495					5675
224	5785	5675	1.581	1.036	34.690	27.825	37.108	45.948	53.494	166	147.1	2.40	35.4	5675

BOTTOM DEPTH FOR CAST 2 IS 5683

STATION: 214 LEG: II POSITION: 32° 1' N 176° 59' W DATE: 25 SEP 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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
6201	3	3	25.759	25.758	34.746D	22.951	31.256	39.181	22.963	210				3
601	8	8	25.76	25.76	34.746	22.951	31.256	39.182	22.985	210	3.8	0.04	0.1	8
602	16	16	25.77	25.76	34.752	22.954	31.258	39.184	23.022	210	3.6	0.04	0.0	16
603	28	28	25.48	25.47	34.749	23.041	31.353	39.286	23.160	212	3.5	0.04	0.0	28
604	32	32	24.24	24.23	34.756	23.415	31.760	39.726	23.552	213	3.5	0.04	0.0	32
605	38	38	22.00	21.99	34.734	24.041	32.449	40.476	24.204	224	3.5	0.04	0.0	38
606	42	42	21.27	21.26	34.736	24.245	32.675	40.722	24.426	243	3.5	0.04	0.0	42
607	47	47	20.24	20.23	34.654	24.461	32.923	41.002	24.665	256	3.5	0.04	0.0	47
608	53	53	19.403	19.393	34.711	24.723	33.211	41.313	24.954	258	3.5	0.05	0.0	53
609	58	58	18.535	18.525	34.722	24.954	33.469	41.597	25.207	259	3.6	0.07	0.0	58
610	89	89	16.229	16.214	34.684	25.485	34.078	42.280	25.876	219	6.0	0.38	4.6	89
611	116	116	15.456	15.438	34.651	25.637	34.259	42.486	26.149	216	7.7	0.46	5.8	116
612	160	159	14.446	14.422	34.572	25.800	34.460	42.723	26.509	225	8.8	0.51	6.2	159
615	203	202	13.688	13.659	34.507	25.912	34.601	42.892	26.814	226	10.7	0.57	6.9	202
616	258	257	12.738	12.702	34.435	26.051	34.779	43.104	27.201	229	12.9	0.69	8.7	257
617	314	312	11.907	11.865	34.378	26.170	34.931	43.288	27.574	223	16.3	0.83	10.6	312
618	360	358	11.056	11.010	34.322	26.285	35.083	43.473	27.901	215	19.5	0.97	12.8	358
619	401	399	9.933	9.885	34.244	26.422	35.268	43.704	28.231	206	25.5	1.17	15.5	399
620	437	435	9.111	9.062	34.172	26.502	35.385	43.855	28.480	202	29.8	1.32	17.4	435
621	475	472	8.541	8.489	34.134	26.562	35.471	43.966	28.718	198	33.6	1.42	18.9	472
622	512	509	7.694	7.642	34.078	26.644	35.594	44.125	28.977	186	38.9	1.60	21.4	509
401	543	540	8.039	7.982	34.099	26.611	35.544	44.061	29.080	173	38.9	1.62	22.6	540
623	553	550	7.023	6.969	34.037	26.706	35.688	44.249	29.234	178	46.4	1.79	23.6	550
402	594	590	7.134	7.075	34.059	26.709	35.686	44.242	29.421	151	49.0	1.88	26.2	590
624	614	610	6.240	6.184	34.036	26.809	35.829	44.425	29.625	128	61.3	2.16	29.2	610
403	655	651	6.160	6.100	34.039	26.822	35.846	44.446	29.826	125	62.8	2.20	30.5	651
404	767	762	4.786	4.724	34.101	27.033	36.125	44.789	30.573	73	90.0	2.63	37.1	762
405	891	885	4.076	4.008	34.202	27.189	36.317	45.013	31.311	43	111.0	2.92	41.2	885
406	899	892	4.052	3.983	34.202	27.191	36.320	45.018	31.351	43	112.4	2.92	41.3	892
407	988	981	3.584	3.511	34.275	27.296	36.448	45.168	31.874	30	127.2	3.04	43.0	981
408	1090	1081	3.368	3.289	34.346	27.373	36.536	45.266	32.423	20	135.3	3.09	43.9	1081
409	1192	1182	3.186	3.100	34.395	27.429	36.602	45.340	32.951	22	142.8	3.10	44.2	1182
410	1192	1182	3.186	3.100	34.396	27.430	36.603	45.341	32.952	22	142.7	3.09	44.2	1182

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

STATION: 214 LEG: II POSITION: 32° 1' N 176° 59' W DATE: 25 SEP 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
411	1295	1284	2.991	2.898	34.440	27.483	36.666	45.414	33.481	25	148.9	3.08	44.2	1284
412	1396	1384	2.798	2.699	34.474	27.527	36.721	45.478	33.992	30	155.0	3.05	43.9	1384
415	1495	1481	2.627	2.522	34.499	27.562	36.765	45.531	34.484	33	161.5	2.97	43.9	1481
416	1595	1580	2.449	2.338	34.528	27.601	36.813	45.587	34.984	40	165.1	3.01	43.4	1580
417	1719	1702	2.288	2.169	34.552	27.633	36.854	45.637	35.586	47	166.8	2.98	42.3	1702
418	1873	1854	2.113	1.984	34.575	27.666	36.897	45.689	36.324	58	171.5	2.93	42.0	1854
419	2026	2005	1.958	1.818	34.595	27.695	36.934	45.735	37.052	72	172.3	2.86	41.2	2005
420	2229	2204	1.830	1.675	34.616	27.722	36.970	45.777	38.000	83	172.8	2.81	40.2	2204
421	2433	2405	1.718	1.547	34.631	27.743	36.998	45.812	38.942	95	173.7	2.77	40.0	2405
422	2638	2606	1.638	1.450	34.644	27.760	37.020	45.839	39.880	106	172.0	2.70	39.2	2606
423	2840	2804	1.583	1.377	34.653	27.773	37.036	45.859	40.794	116	170.0	2.66	38.5	2804
101	2928	2891	1.553	1.339	34.657	27.778	37.044	45.869	41.192	119	166.4	2.54	37.7	2891
424	3045	3005	1.528	1.304	34.660	27.783	37.051	45.878	41.716	125	163.2	2.62	37.9	3005
102	3136	3095	1.508	1.275	34.664	27.788	37.058	45.886	42.124	127	163.7	2.50	37.3	3095
103	3138	3096	1.508	1.275	34.665	27.789	37.059	45.887	42.134	128	164.4	2.54	37.6	3096
104	3341	3295	1.483	1.230	34.6710	27.797	37.069	45.899	43.036	132	161.1	2.48	36.7	3295
105	3544	3494	1.468	1.195	34.674	27.802	37.076	45.908	43.931	140	161.2	2.49	36.8	3494
106	3802	3746	1.461	1.161	34.676	27.806	37.082	45.915	45.060	143	161.1	2.47	36.8	3746
107	4055	3993	1.463	1.135	34.678	27.809	37.086	45.922	46.159	147	160.5	2.47	36.5	3993
108	4055	3993	1.463	1.135	34.681	27.811	37.089	45.924	46.161	148	160.5	2.46	36.4	3993
109	4311	4242	1.475	1.118	34.682	27.813	37.091	45.928	47.264	151	159.6	2.46	36.3	4242
110	4568	4493	1.486	1.098	34.685	27.817	37.096	45.933	48.368	153	158.2	2.42	36.1	4493
111	4874	4790	1.495	1.070	34.687	27.820	37.101	45.940	49.673	159	154.5	2.39	35.7	4790
112	5186	5093	1.514	1.050	34.688	27.823	37.104	45.944	50.992	162	151.8	2.38	35.6	5093
115	5196	5103	1.515	1.049	34.690	27.824	37.106	45.946	51.036					5103
116	5243	5149	1.521	1.049	34.689	27.823	37.105	45.945	51.232					5149
117	5269	5174	1.522	1.047	34.689	27.824	37.106	45.945	51.342					5174
118	5303	5207	1.521	1.042	34.687	27.822	37.105	45.945	51.484	161	150.6	2.38	35.6	5207
119	5303	5207	1.521	1.042	34.690	27.825	37.107	45.947	51.486					5207
120	5329	5232	1.524	1.041	34.690	27.825	37.107	45.947	51.595					5232
121	5348	5251	1.526	1.041	34.689	27.824	37.106	45.947	51.674					5251
122	5371	5273	1.527	1.039	34.691	27.826	37.108	45.948	51.772					5273
123	5397	5298	1.531	1.039	34.691	27.826	37.108	45.948	51.880					5298
124	5397	5298	1.531	1.039	34.689	27.824	37.107	45.947	51.879	163	150.1	2.36	35.4	5298

BOTTOM DEPTH FOR CAST 1 IS 5306

STATION: 215 LEG: II POSITION: 37° 28' N 177° 19' W DATE: 28 SEP 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
523	1420	1407	2.644	2.545	34.446	27.518	36.720	45.486	34.098	23	154.7	3.08		1407
316	1530	1515	2.551	2.444	34.473	27.548	36.755	45.525	34.632	23	160.1	3.00	41.4U	1515
524	1620	1604	2.445	2.332	34.491	27.571	36.785	45.560	35.069	27	163.5	3.06		1604
317	1676	1659	2.343	2.227	34.511	27.596	36.815	45.595	35.352	30	165.5	3.00	40.9U	1659
318	1814	1795	2.187	2.062	34.538	27.630	36.858	45.647	36.019	39	169.0	2.96	40.6U	1795
319	1941	1920	2.089	1.954	34.562	27.658	36.891	45.685	36.625	47	171.4	2.92	40.2U	1920
320	1941	1920	2.089	1.954	34.563	27.659	36.892	45.686	36.626	48	171.3	2.91	40.3U	1920
321	2073	2050	1.986	1.842	34.579	27.680	36.919	45.718	37.248	56	172.4	2.88	40.1U	2050
322	2209	2184	1.895	1.740	34.597	27.702	36.946	45.751	37.886	66	172.9	2.85		2184
323	2335	2308	1.830	1.665	34.610	27.718	36.966	45.775	38.471	76	173.0	2.80		2308
101	2412	2383	1.790	1.619	34.614	27.724	36.975	45.786	38.825	80	172.7		40.3	2383
324	2588	2556	1.707	1.522	34.629	27.743	36.999	45.815	39.635	93	171.3	2.73		2556
102	2670	2636	1.668	1.476	34.637	27.753	37.011	45.829	40.013	99	172.1		39.7	2636
103	2926	2887	1.590	1.376	34.649	27.769	37.034	45.857	41.171	113	170.2		38.4	2887
104	3183	3139	1.522	1.284	34.661	27.785	37.054	45.882	42.327	126	165.6		37.2	3139
105	3439	3390	1.488	1.225	34.668	27.795	37.067	45.898	43.463	136	162.5		36.7	3390
106	3690	3635	1.465	1.177	34.670	27.800	37.075	45.908	44.566	142	158.9		36.1	3635
107	3949	3888	1.457	1.141	34.676	27.807	37.084	45.919	45.699	148	156.9		36.0	3888
108	3949	3888	1.457	1.141	34.678	27.809	37.085	45.921	45.700	147	156.2		36.0	3888
109	4245	4176	1.463	1.114	34.680	27.812	37.090	45.927	46.981	152	158.0		35.6	4176
110	4557	4480	1.484	1.098	34.682	27.815	37.094	45.931	48.319	152	159.2		35.5	4480
111	4862	4776	1.514	1.090	34.685	27.817	37.097	45.935	49.617	155	158.9		35.6	4776
112	5165	5071	1.550	1.087	34.683	27.816	37.096	45.934	50.893	154	158.6		35.4	5071
115	5437	5335	1.585	1.086	34.683	27.816	37.096	45.934	52.031					5335
116	5471	5367	1.589	1.085	34.684	27.817	37.097	45.935	52.174					5367
117	5512	5407	1.595	1.086	34.684	27.817	37.097	45.935	52.345	155	158.0		35.3	5407
118	5512	5407	1.595	1.086	34.681	27.815	37.095	45.933	52.343					5407
119	5540	5434	1.598	1.085	34.685	27.818	37.098	45.936	52.463					5434
120	5575	5468	1.603	1.085	34.681	27.815	37.095	45.933	52.605					5468
121	5595	5488	1.606	1.085	34.684	27.817	37.097	45.935	52.691					5488
122	5616	5508	1.609	1.085	34.685	27.818	37.098	45.936	52.779					5508
123	5634	5525	1.610	1.084	34.684	27.817	37.097	45.935	52.853					5525
124	5634	5525	1.610	1.084	34.685	27.818	37.098	45.936	52.854	155	158.2		35.6	5525

BOTTOM DEPTH FOR CAST 1 IS 5539

STATION: 215 LEG: II POSITION: 37° 28' N 177° 19' W DATE: 28 SEP 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	20.417	20.416	34.33 D	24.163	32.624	40.700	24.176					3
501	18	18	20.417	20.414	34.328	24.164	32.625	40.701	24.242	231	5.2	0.09	0.3	18
5202	27	27	20.417	20.412	34.33 D	24.164	32.625	40.702	24.281					27
502	33	33	20.057	20.051	34.329	24.261	32.733	40.820	24.404	234	5.1	0.08	0.0	33
503	48	48	16.951	16.943	34.618	25.263	33.832	42.010	25.473	263	4.9	0.12	0.0	48
504	60	60	16.153	16.143	34.675	25.494	34.091	42.294	25.759	220	6.3	0.36	3.3	60
505	72	72	16.099	16.087	34.671	25.504	34.103	42.308	25.821	217	6.6	0.40	4.4	72
506	90	90	15.355	15.341	34.637	25.648	34.273	42.504	26.046	214	7.8	0.47	5.5	90
507	111	110	14.524	14.507	34.613	25.814	34.469	42.729	26.305	208	9.9	0.59	6.7	110
508	131	130	14.048	14.029	34.526	25.849	34.524	42.801	26.430	222	10.4	0.62	6.9	130
509	181	180	13.156	13.130	34.464	25.988	34.698	43.007	26.794	229	12.4	0.66	7.5	180
510	233	232	12.382	12.350	34.413	26.104	34.845	43.184	27.144	225	14.9	0.77	8.7	232
511	282	280	11.422	11.386	34.336	26.228	35.009	43.385	27.492	232	16.9	0.84	9.7	280
513	405	403	9.630	9.583	34.198	26.437	35.297	43.745	28.266	217	25.5	1.16	13.7	403
512	463P	460	8.25	8.20	34.122	26.596	35.519	44.026	28.701	201	33.5	1.43	17.3	460
514	474	471	7.712	7.664	34.103	26.661	35.609	44.139	28.821	198	35.6	1.52	18.0	471
515	548	544	6.451	6.400	34.026	26.773	35.783	44.369	29.286	176	47.5	1.73	21.3	544
516	623	619	5.891	5.836	33.994	26.819	35.857	44.470	29.682	152	60.3	2.12	24.7	619
517	725	720	4.789	4.730	34.036	26.981	36.074	44.738	30.329	104	80.1	2.51	30.2	720
518	826	820	4.298	4.234	34.118	27.099	36.216	44.903	30.919	72	96.0	2.71	33.1	820
519	946	938	3.771	3.700	34.214	27.229	36.372	45.084	31.610	39	114.8	2.96	36.9U	938
520	1071	1062	3.396	3.318	34.302	27.335	36.498	45.226	32.298	28	129.6	3.01	36.9U	1062
521	1194	1184	3.076	2.991	34.360	27.411	36.590	45.334	32.946	26	140.4	3.05		1184
522	1316	1304	2.826	2.734	34.412	27.475	36.667	45.424	33.575	20	149.5	3.08		1304

STATION: 216 LEG: II POSITION: 40° 46' N 176° 58' W DATE: 30 SEP 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	16.67	16.67	33.595D	24.544	33.136	41.336	24.558					3
101	16	16	16.470	16.467	33.602	24.597	33.196	41.402	24.667	252	8.3	0.17	0.1	16
102	34	34	16.040	16.035	33.610	24.703	33.317	41.537	24.853	254	7.9	0.17	0.0	34
103	49	49	13.286	13.279	34.232	25.778	34.486	42.793	25.997	258	9.2	0.54	4.7	49
104	76	76	11.958	11.948	34.310	26.102	34.861	43.215	26.442	240	14.3	0.61	7.3	76
105	139	138	10.441	10.424	34.250	26.334	35.157	43.571	26.961	235	19.8	0.93	12.2	138
106	202	201	9.299	9.276	34.134	26.437	35.312	43.773	27.354	241	23.0	1.01	13.8	201
107	244	242	8.282	8.256	33.986	26.481	35.404	43.910	27.594	252	24.9	1.14	15.0	242
108	291	289	8.222	8.192	34.088	26.571	35.495	44.002	27.897	211	31.9	1.35	18.9	289
109	363	361	6.980	6.945	34.016	26.693	35.677	44.239	28.357	188	43.7	1.67	23.5	361
110	434	431	5.427	5.391	33.941	26.831	35.892	44.526	28.835	162	57.9	1.99	27.9	431
111	574	570	4.465	4.421	34.035	27.014	36.122	44.801	29.674	92	87.6	2.48	35.9	570
112	680	675	4.088	4.037	34.126	27.125	36.253	44.949	30.280	63	102.5	2.75	39.0	675
115	844	837	3.560	3.499	34.242	27.270	36.424	45.145	31.189	41	122.0	2.64U	39.5	837
116	1068	1059	3.086	3.011	34.353	27.404	36.582	45.325	32.361	24	145.1	2.97	43.1	1059
117	1344	1331	2.635	2.542	34.445	27.518	36.720	45.485	33.751	23	158.9	3.01	43.8	1331
1301	1567	1551	2.355	2.248	34.503D	27.588	36.806	45.585	34.848					1551
118	1787	1768	2.136	2.014	34.550	27.644	36.873	45.665	35.912	37	171.9	3.00	43.2	1768
1302	1981	1959	1.983	1.847	34.586D	27.685	36.924	45.723	36.838					1959
119	2183	2157	1.867	1.715	34.605	27.710	36.956	45.761	37.779	67	175.9	2.89	41.3	2157
1303	2357	2328	1.781	1.615	34.621D	27.730	36.981	45.792	38.585					2328
120	2536	2504	1.707	1.527	34.631	27.745	37.000	45.816	39.404	89	174.1	2.77	39.5	2504
1304	2773	2736	1.621	1.421	34.647D	27.765	37.026	45.847	40.486					2736
1305	3013	2972	1.560	1.338	34.656D	27.778	37.044	45.869	41.566					2972

D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
P PRETRIP OR POSTTRIP
U UNCERTAIN DATA

STATION: 216 LEG: II POSITION: 40° 46' N 176° 58' W DATE: 30 SEP 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	3251	3204	1.517	1.273	34.664	27.789	37.058	45.886	42.629	126	165.8	2.60	36.8	3204
1306	3518	3465	1.481	1.210	34.671D	27.798	37.071	45.903	43.813					3465
1307	3791	3732	1.462	1.163	34.677D	27.806	37.082	45.916	45.012					3732
122	4064	3998	1.460	1.131	34.681	27.812	37.089	45.924	46.200	148	163.8	2.48	35.7	3998
1308	4306	4234	1.471	1.114	34.684D	27.815	37.093	45.930	47.245					4234
1309	4558	4479	1.493	1.106	34.685D	27.816	37.095	45.932	48.323					4479
1310	4808	4722	1.520	1.102	34.685D	27.817	37.096	45.933	49.386					4722
123	5071	4978	1.551	1.100	34.685	27.817	37.096	45.933	50.496	151	166.0	2.48	35.3	4978
1311	5285	5185	1.578	1.099	34.685D	27.817	37.096	45.933	51.395					5185
1312	5511	5404	1.607	1.097	34.684D	27.816	37.095	45.933	52.338					5404
1313	5732	5618	1.637	1.097	34.685D	27.817	37.096	45.934	53.258					5618
124	5967	5846	1.670	1.097	34.685	27.817	37.096	45.934	54.229	152	166.6	2.47	35.4	5846

BOTTOM DEPTH FOR CAST 1 IS 5899

STATION: 217 LEG: II POSITION: 44° 40' N 177° 3' W DATE: 2 OCT 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
9201	3	3	11.054	11.054	33.06 D	25.294	34.108	42.514	25.308	284				3
901	6	6	11.054	11.053	33.056	25.294	34.108	42.514	25.322	284	23.0	0.83	8.3	6
902	11	11	11.046	11.045	33.055	25.295	34.109	42.515	25.345	284	23.0	0.83	8.0	11
903	15	15	11.036	11.034	33.055	25.297	34.111	42.518	25.365	284	22.9	0.86	8.1	15
904	20	20	10.923	10.921	33.051	25.314	34.133	42.544	25.405	284	22.9	0.85	8.0	20
905	25	25	10.897	10.894	33.055	25.322	34.142	42.554	25.435	284	22.7	0.87	8.3	25
906	31	31	10.853	10.849	33.058	25.332	34.154	42.568	25.472	284	22.7	0.88	8.5	31
907	37	37	10.803	10.799	33.055	25.339	34.163	42.579	25.506	283	22.7	0.89	8.6	37
908	46	46	10.401	10.396	33.069	25.420	34.261	42.693	25.628	282	22.9	0.91	8.9	46
909	54	54	8.986	8.980	33.250	25.794	34.695	43.181	26.040	288	24.8	1.08	11.9	54
910	63	63	6.653	6.647	33.311	26.178	35.187	43.773	26.469	295	26.9	1.22	14.7	63
911	70	70	6.201	6.195	33.510	26.393	35.420	44.024	26.716	294	26.3	1.23	15.6	70
912	81	81	6.412	6.405	33.560	26.406	35.422	44.015	26.780	291	26.4	1.22	15.6	81
915	91	90	6.464	6.456	33.601	26.431	35.445	44.035	26.851	289	26.2	1.18	15.3	90
916	102	101	6.407	6.398	33.614	26.449	35.465	44.058	26.920	289	26.2	1.17	15.6	101
917	117	116	6.472	6.462	33.645	26.465	35.478	44.067	27.005	288	25.8	1.17	15.5	116
918	132	131	6.673	6.661	33.703	26.485	35.487	44.066	27.093	284	25.6	1.16	15.3	131
919	148	147	6.799	6.785	33.749	26.504	35.500	44.073	27.186	279	26.4	1.17	15.6	147
920	162	161	6.818	6.803	33.781	26.527	35.521	44.093	27.273	272	27.1	1.21	16.1	161
921	179	178	6.506	6.490	33.786	26.573	35.581	44.168	27.397	260	30.2	1.29	17.7	178
922	192	191	6.446	6.429	33.842	26.625	35.636	44.224	27.509	234	36.2	1.46	20.5	191
923	223	222	6.012	5.993	33.893	26.720	35.752	44.359	27.750	212	44.5	1.70	24.4	222
701	245	243	5.604	5.583	33.890	26.768	35.820	44.446	27.901	179	52.4	1.86	27.3	243
924	277	275	5.378	5.355	33.887	26.792	35.856	44.492	28.075	176	55.5	1.97	28.7	275
702	297	295	4.685	4.662	33.844	26.836	35.936	44.606	28.216	161	64.0	2.12	31.2	295
703	346	344	4.198	4.173	33.857	26.898	36.023	44.716	28.509	131	75.9	2.37	35.2	344
704	398	395	4.190	4.161	33.929	26.956	36.080	44.773	28.808	106	83.0	2.48	37.1	395
705	448	445	4.102	4.069	33.983	27.009	36.137	44.833	29.093	88	92.3	2.61	39.2	445
706	500	496	3.998	3.962	34.037	27.062	36.195	44.896	29.388	71	97.9	2.69	40.2	496
707	549	545	3.929	3.889	34.092	27.113	36.249	44.953	29.666	62	104.3	2.74	41.2	545
708	599	594	3.796	3.753	34.134	27.160	36.302	45.012	29.946	52	112.2	2.80	42.0	594
709	659	654	3.705	3.658	34.188	27.212	36.359	45.072	30.276	46	118.4	2.83	42.5	654
710	722	716	3.535	3.484	34.227	27.260	36.415	45.136	30.617	38	123.8	2.87	43.3	716
711	781	774	3.382	3.327	34.258	27.299	36.462	45.191	30.931	34	129.4	2.90	43.7	774
712	843	836	3.266	3.207	34.289	27.335	36.504	45.238	31.255	29	136.3	2.91	44.4	836
715	912	904	3.136	3.073	34.322	27.374	36.549	45.290	31.614	27	140.6	2.92	44.3	904
501	951	942	3.077	3.011	34.335	27.389	36.568	45.311	31.811	25	141.2	2.94	44.3	942
716	1052	1042	2.855	2.783	34.386	27.450	36.640	45.394	32.341	26	152.7	2.95	45.4	1042
502	1113	1102	2.808	2.732	34.394	27.461	36.654	45.410	32.633	23	148.8	2.95	44.9	1102
717	1216	1204	2.624	2.542	34.436	27.510	36.713	45.479	33.160	23	159.3	2.97	45.8	1204
718	1216	1204	2.623	2.541	34.436	27.510	36.713	45.479	33.160	23	161.0	2.96	45.5	1204
503	1324	1311	2.527	2.437	34.458	27.537	36.745	45.515	33.683	24	159.2	2.99	45.3	1311
719	1416	1401	2.388	2.292	34.487	27.572	36.787	45.565	34.143	27	169.2	2.96	45.5	1401
720	1549	1533	2.258	2.153	34.514	27.604	36.827	45.611	34.787	32	173.8	2.93	45.3	1533
504	1628	1610	2.220	2.109	34.524	27.616	36.840	45.627	35.159	36	165.3	2.92	44.8	1610

STATION: 217 LEG: II POSITION: 44° 40' N 177° 3' W DATE: 2 OCT 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
721	1776	1756	2.092	1.971	34.554	27.650	36.882	45.676	35.871	43	176.6	2.88	44.8	1756
722	1934	1912	1.976	1.844	34.577	27.678	36.917	45.717	36.619	52	177.5	2.84	44.0	1912
505	2016	1992	1.961	1.822	34.580	27.682	36.922	45.723	36.994	55	173.1	2.85	43.7	1992
723	2183	2156	1.862	1.710	34.600	27.707	36.952	45.759	37.776	67	177.0	2.78	42.7	2156
506	2218	2191	1.850	1.695	34.602	27.709	36.956	45.763	37.937	68	172.8	2.80	42.7	2191
724	2335	2306	1.791	1.627	34.615	27.725	36.975	45.785	38.480	73	178.3	2.74	42.5	2306
507	2420	2389	1.756	1.585	34.620	27.732	36.984	45.797	38.870	82	172.8	2.75	41.8	2389
508	2626	2591	1.681	1.493	34.634	27.749	37.007	45.824	39.812	93	173.4	2.70	41.2	2591
509	2829	2790	1.627	1.421	34.645	27.763	37.025	45.845	40.732	104	172.5	2.64	40.4	2790
510	3033	2990	1.578	1.354	34.655	27.776	37.041	45.865	41.651	114	167.1	2.59	39.7	2990
511	3033	2990	1.578	1.354	34.653	27.774	37.039	45.864	41.650	114	169.3	2.58	39.6	2990
512	3332	3282	1.527	1.274	34.664	27.788	37.058	45.886	42.984	126	164.4	2.52	38.7	3282
515	3349	3299	1.525	1.270	34.664	27.789	37.058	45.887	43.059	128	165.5	2.49	38.4	3299
516	3656	3599	1.491	1.205	34.674D	27.801	37.074	45.906	44.417	138	162.0	2.44	37.9	3599
517	3964	3899	1.474	1.156	34.678	27.808	37.084	45.918	45.763	146	161.7	2.42	37.2	3899
518	4066	3999	1.473	1.143	34.678	27.808	37.085	45.920	46.205	147	160.6	2.40	37.1	3999
519	4374	4299	1.477	1.112	34.682	27.814	37.092	45.929	47.535	151	164.1	2.39	36.9	4299
520	4682	4598	1.502	1.100	34.685	27.817	37.096	45.933	48.852	152	162.9	2.38	36.9	4598
521	4988	4895	1.536	1.096	34.685	27.817	37.096	45.934	50.148	153	162.9	2.38	36.9	4895
522	5091	4995	1.548	1.094	34.685	27.817	37.097	45.934	50.582	153	163.5	2.37	36.8	4995
523	5298	5196	1.574	1.093	34.685	27.817	37.097	45.934	51.450	153	165.7	2.38	36.7	5196
524	5608	5496	1.613	1.090	34.687	27.819	37.099	45.936	52.746	155	165.3	2.37	36.9	5496

BOTTOM DEPTH FOR CAST 5 IS 5762

STATION: 218 LEG: II POSITION: 50° 26' N 176° 35' W DATE: 4 OCT 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	8.197	8.197	32.64 D	25.432	34.378	42.906	25.446	296				3
907	7H	7	8.246H	8.245	32.649	25.436	34.379	42.905	25.468	297	16.5	1.10	10.7	7
908	27H	27	8.250H	8.247	32.649	25.436	34.379	42.904	25.560	298	16.3	1.11	10.6	27
401	39	39	8.201	8.197	32.635	25.432	34.378	42.906	25.611	296	16.0	0.91	9.4	39
909	42H	42	8.254H	8.250	32.653	25.439	34.381	42.907	25.631	297	16.7	1.09	10.4	42
402	51	51	6.960	6.955	32.681	25.642	34.645	43.227	25.877	295	18.8	0.95	10.3	51
910	58H	58	7.560H	7.554	32.793	25.648	34.621	43.175	25.915	298	25.7	1.27	13.8	58
403	65	65	3.825	3.821	33.037	26.282	35.438	44.161	26.587	302	40.2	1.67	22.2	65
911	74H	74	4.940H	4.934	32.986	26.127	35.226	43.896	26.472	307	36.1	1.65	19.9	74
404	81	80	3.465	3.460	33.062	26.335	35.510	44.251	26.716	311	40.6	1.57	21.7	80
915	89H	88	3.764H	3.758	33.076	26.319	35.478	44.203	26.736	293	42.6	1.86	23.9	88
405	100	99	3.068	3.062	33.097	26.399	35.594	44.355	26.869	309	43.1	1.73	23.7	99
406	121	120	3.096	3.089	33.169	26.454	35.647	44.405	27.023	292	47.7	1.93	25.9	120
407	161	160	3.793	3.782	33.584	26.720	35.870	44.586	27.474	163	70.2	2.43	35.3	160
408	202	201	3.341	3.328	33.689	26.846	36.018	44.756	27.794	136	77.3	2.57	37.5	201
409	281	279	3.483	3.464	33.879	26.985	36.147	44.874	28.300	68	95.3	2.80	42.2	279
410	361	358	3.518	3.494	33.983	27.065	36.223	44.948	28.752	46	105.7	2.94	43.6	358
411	433	429	3.540	3.510	34.060	27.125	36.281	45.004	29.146	39	112.1	2.92	43.5	429
412	512	508	3.439	3.404	34.132	27.192	36.353	45.080	29.581	33	120.6	2.96	43.9	508
413	602	597	3.298	3.257	34.204	27.263	36.430	45.163	30.070	29	129.6	2.96	44.3	597
414	689	683	3.189	3.142	34.262	27.319	36.492	45.230	30.531	24	136.5	3.00	44.6	683
415	766	759	3.107	3.055	34.294	27.353	36.530	45.272	30.921	24	140.5	2.92	43.3	759
416	845	837	2.987	2.930	34.327	27.390	36.573	45.321	31.326	24	145.7	3.02	44.8	837
417	925	916	2.861	2.799	34.358	27.426	36.616	45.370	31.733	25	149.7	3.05	44.9	916
418	925	916	2.864	2.802	34.359	27.427	36.616	45.370	31.734	26	149.2	3.06	44.9	916
419	925	916	2.866	2.804	34.358	27.426	36.615	45.369	31.733	24	148.6	3.06	44.9	916
420	925	916	2.867	2.805	34.358	27.426	36.615	45.369	31.732	24	148.5	3.07	44.9	916
421	1010	1000	2.776	2.708	34.379	27.451	36.645	45.403	32.151	25	149.9	3.07	44.8	1000
422	1089	1078	2.674	2.601	34.406	27.481	36.681	45.444	32.547	27	156.1	3.06	44.9	1078
101	1156H	1144	2.561H	2.484	34.436	27.515	36.721	45.489	32.892	27	162.0	2.95	44.8	1144
423	1237	1224	2.503	2.420	34.445	27.528	36.737	45.508	33.277	29	161.4	3.04	44.9	1224
102	1313H	1299	2.382A	2.294	34.479	27.565	36.780	45.558	33.666	32	168.2	2.96	44.8	1299
103	1410H	1395	2.31 H	2.21	34.495	27.584	36.804	45.586	34.132	35	169.6	2.96	44.7	1395
104	1521H	1504	2.192A	2.090	34.515	27.610	36.836	45.624	34.667	39	171.7	2.94	44.3	1504
105	1664H	1645	2.102A	1.990	34.539	27.637	36.868	45.661	35.349	46	173.7	2.92	44.3	1645

A DATA TAKEN FROM CTD DOWN TRACE
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 218 LEG: II POSITION: 50° 26' N 176° 35' W DATE: 4 OCT 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
106	1791H	1770	2.02 H	1.90	34.556	27.657	36.894	45.691	35.950	51	175.0	2.90	43.9	1770
107	1969H	1945	1.932A	1.797	34.581	27.685	36.926	45.728	36.786	63	176.0	2.86	43.1	1945
108	2157H	2129	1.826H	1.677	34.602	27.711	36.958	45.766	37.665	75	176.5	2.80	42.3	2129
109	2277	2247	1.766	1.608	34.612	27.724	36.975	45.786	38.221	82	176.8	2.78	41.9	2247
424	2383	2351	1.742	1.575	34.619	27.731	36.985	45.798	38.705	86	174.8	2.71	41.3	2351
110	2480	2446	1.683	1.508	34.629	27.744	37.001	45.817	39.156	95	174.7	2.71	41.1	2446
111	2577	2542	1.651	1.468	34.636	27.753	37.012	45.830	39.599	100	174.3	2.69	40.5	2542
112	2735	2696	1.611	1.414	34.643	27.762	37.024	45.845	40.315	107	173.3	2.65	40.3	2696
115	2989	2945	1.562	1.342	34.655	27.777	37.042	45.867	41.459	117	171.0	2.57	39.5	2945
116	3166	3118	1.537	1.301	34.659	27.783	37.051	45.878	42.248	124	169.7	2.57	39.3	3118
117	3447	3393	1.498	1.234	34.668	27.794	37.066	45.896	43.497	133	167.1	2.53	38.7	3393
118	3866	3801	1.468	1.161	34.676	27.806	37.082	45.915	45.337	144	163.0	2.46	37.9	3801
119	4276	4201	1.465	1.112	34.682	27.814	37.092	45.929	47.115	152	160.3	2.45	37.3	4201
120	4509	4427	1.474	1.094	34.683	27.816	37.095	45.933	48.116	154	159.3	2.42	37.1	4427
121	4900	4807	1.498	1.070	34.686	27.820	37.100	45.939	49.782	158	157.2	2.41	36.7	4807
122	5315	5209	1.534	1.052	34.687	27.822	37.103	45.943	51.532	160	154.8	2.39	36.7	5209
123	5722	5603	1.586	1.049	34.687	27.822	37.104	45.944	53.228	161	153.8	2.38	36.7	5603
124	6132	6000	1.640	1.045	34.689	27.824	37.106	45.946	54.923	162	153.5	2.38	36.5	6000
801	6280H	6142	1.660H	1.044	34.689	27.824	37.106	45.946	55.531	162	154.5	2.19U	35.7	6142
802	6488H	6343	1.693H	1.046	34.688	27.823	37.105	45.945	56.379	163	154.3	2.45	36.3	6343
803	6696H	6543	1.72 H	1.04	34.688	27.823	37.106	45.946	57.227	162	153.8	2.47	36.3	6543
804	6903H	6743	1.757H	1.046	34.689	27.824	37.106	45.946	58.064	163	153.3	2.43	36.5	6743
805	7118H	6950	1.792H	1.047	34.689	27.823	37.105	45.945	58.930	162	151.3	2.43	36.4	6950
806	7322H	7146	1.818H	1.041	34.689	27.824	37.106	45.947	59.750	162	151.7	2.41	36.5	7146

BOTTOM DEPTH FOR CAST 8 IS 7302

STATION: 219 LEG: III POSITION: 53° 6' N 177° 17' W DATE: 8 OCT 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
401	5	5	7.107	7.107	33.069	25.927	34.917	43.486	25.950	298	32.2	1.60	18.2	5
402	5	5	7.107	7.107	33.067	25.925	34.915	43.484	25.948	298	32.1	1.59	18.1	5
403	12	12	7.263	7.262	33.067	25.904	34.887	43.449	25.959	298	31.8	1.61	18.4	12
404	23	23	7.265	7.263	33.067	25.904	34.887	43.449	26.010	298	31.6	1.59	18.2	23
405	33	33	7.261	7.258	33.067	25.904	34.887	43.450	26.056	298	31.8	1.61	18.4	33
406	43	43	7.257	7.253	33.067	25.905	34.888	43.451	26.103	298	31.8	1.62	18.4	43
407	43	43	7.257	7.253	33.067	25.905	34.888	43.451	26.103	297	31.7	1.62	18.4	43
408	51	51	7.225	7.220	33.067	25.910	34.894	43.458	26.144	298	31.7	1.61	18.3	51
409	63	63	5.594	5.589	33.231	26.247	35.308	43.944	26.539	271	46.6	1.94	24.5	63
410	80	79	4.225	4.219	33.324	26.470	35.601	44.300	26.845	253	58.0	2.14	28.8	79
411	90	89	4.139	4.133	33.354	26.503	35.638	44.341	26.924	245	60.8	2.20	29.9	89
412	100	99	3.896	3.889	33.374	26.543	35.690	44.405	27.011	243	63.5	2.24	30.7	99
413	130	129	3.761	3.752	33.487	26.646	35.799	44.518	27.255	208	71.0	2.37	33.0	129
414	161	160	3.544	3.533	33.524	26.696	35.860	44.590	27.451	196	74.2	2.42	34.3	160
415	191	190	3.612	3.599	33.592	26.744	35.903	44.629	27.639	171	78.9	2.49	35.7	190
416	221	219	3.615	3.600	33.651	26.791	35.949	44.673	27.825	149	82.3	2.59	37.3	219
417	260	258	3.566	3.549	33.737	26.864	36.023	44.749	28.081	114	89.3	2.75	39.8	258
418	301	299	3.591	3.571	33.813	26.922	36.079	44.803	28.330	82	96.3	2.85	42.2	299
419	351	348	3.572	3.548	33.886	26.983	36.140	44.863	28.623	70	100.8	2.90	42.6	348
420	403	400	3.514	3.487	33.959	27.046	36.206	44.931	28.929	57	108.2	2.94	43.1	400
421	463	459	3.448	3.417	34.027	27.107	36.269	44.997	29.269	48	113.7	2.97	43.8	459
422	534	529	3.398	3.362	34.103	27.173	36.336	45.066	29.664	37	120.7	3.00	44.2	529
423	604	599	3.335	3.294	34.159	27.224	36.390	45.122	30.040	25	128.0	3.03	45.2	599
201	647	641	3.270	3.226	34.177	27.244	36.414	45.149	30.260	27	131.0	2.89U	44.0	641
424	732	725	3.187	3.137	34.237	27.300	36.473	45.212	30.710	20	134.4	3.06	45.2	725
202	798	790	3.101	3.047	34.266	27.331	36.509	45.252	31.048	20	141.9	2.89U	44.4	790
203	951	942	2.898	2.834	34.337	27.407	36.595	45.347	31.832	17	150.9	3.04	45.1	942
204	1201	1188	2.612	2.531	34.413	27.493	36.696	45.463	33.074	22	163.3	2.95	44.0	1188
205	1455	1439	2.347	2.249	34.480	27.569	36.787	45.567	34.320	26	176.5	3.05	44.6	1439
206	1696	1676	2.097	1.983	34.536	27.635	36.867	45.660	35.493	39	190.1	3.01	43.6	1676
207	2012	1987	1.878	1.741	34.585	27.692	36.937	45.742	36.991	54	202.7	2.99	42.2	1987
208	2316	2285	1.755	1.594	34.613	27.725	36.978	45.790	38.398	66	209.5	2.91	41.0	2285
209	2619	2582	1.669	1.482	34.635	27.751	37.009	45.827	39.783	78	214.6	2.89	40.2	2582

STATION: 219 LEG: III POSITION: 53° 6' N 177° 17' W DATE: 8 OCT 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
210	2926	2883	1.609	1.394	34.650	27.769	37.032	45.854	41.169	88	220.9	2.86	39.2	2883
211	3232	3182	1.586	1.342	34.658	27.779	37.045	45.870	42.531	96	222.5	2.81	38.8	3182
212	3537	3480	1.586	1.310	34.665	27.787	37.054	45.881	43.874	100	226.9	2.80	38.7	3480
215	3586	3527	1.586	1.305	34.666	27.788	37.056	45.882	44.089	103	227.2	2.74	38.3	3527
217	3662	3602	1.587	1.298	34.667	27.789	37.057	45.884	44.422	104	227.5	2.82	38.5	3602
218	3662	3602	1.587	1.298	34.667	27.789	37.057	45.884	44.422	103	228.4	2.78	38.6	3602
219	3692	3631	1.584	1.292	34.669	27.791	37.060	45.887	44.555	107	225.2	2.76	38.6	3631
220	3717	3655	1.580	1.285	34.668	27.791	37.060	45.887	44.663	109	223.0	2.76	38.6	3655
221	3739	3677	1.579	1.282	34.669	27.792	37.061	45.889	44.760	110	223.0	2.76	38.6	3677
222	3753	3690	1.580	1.282	34.669	27.792	37.061	45.889	44.821	109	221.7	2.74	38.5	3690
223	3774	3711	1.582	1.281	34.669	27.792	37.061	45.889	44.912	110	221.2	2.75	38.6	3711
224	3774	3711	1.582	1.281	34.669	27.792	37.061	45.889	44.912	109	221.7	2.73	38.6	3711

BOTTOM DEPTH FOR CAST 2 IS 3727

STATION: 220 LEG: III POSITION: 46° 22' N 170° 27' E DATE: 13 OCT 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
101	3535	3479	1.470A	1.198	34.675	27.802	37.076	45.908	43.892	142	159.0	2.43	37.3	3479
102	3741	3680	1.462A	1.168	34.676	27.805	37.080	45.914	44.794	146	157.1	2.43	37.0	3680
103	3946	3880	1.459A	1.143	34.679	27.809	37.086	45.921	45.688	149	156.4	2.41	36.9	3880
104	4151	4079	1.456A	1.117	34.681	27.812	37.091	45.927	46.577	152	155.9	2.41	36.7	4079
105	4355	4278	1.474A	1.112	34.681	27.813	37.091	45.928	47.453	153	155.2	2.40	36.7	4278
106	4560	4477	1.487A	1.100	34.682	27.814	37.094	45.931	48.331	155	154.2	2.39	36.5	4477
107	4770	4681	1.506A	1.093	34.684	27.816	37.096	45.933	49.226	155	154.9	2.38	36.4	4681
108	4975	4880	1.525A	1.087	34.683	27.816	37.096	45.934	50.093	156	154.9	2.38	36.4	4880
109	5183	5082	1.549A	1.084	34.684	27.817	37.097	45.935	50.969	157	155.1	2.38	36.2	5082
110	5390	5283	1.572A	1.079	34.686	27.819	37.099	45.937	51.839	157	155.8	2.38	36.3	5283
111	5598	5484	1.598A	1.077	34.685	27.818	37.099	45.937	52.706	158	155.8	2.38	36.3	5484
112	5805	5684	1.626A	1.076	34.684	27.818	37.098	45.936	53.564	158	155.3	2.36	36.4	5684
115	6024	5896	1.654A	1.073	34.686	27.819	37.100	45.939	54.470	154	155.0	2.37	36.4	5896
116	6224	6089	1.681A	1.071	34.685	27.819	37.099	45.938	55.292	158	154.5	2.37	36.4	6089
117	6243	6108	1.684A	1.072	34.685	27.819	37.099	45.938	55.369	157	154.3	2.37	36.6	6108
118	6276	6140	1.689A	1.072	34.685	27.819	37.099	45.938	55.505	157	155.7	2.35	36.5	6140
119	6307	6170	1.694A	1.072	34.685	27.819	37.099	45.938	55.631	159	154.7	2.37	36.5	6170
120	6339	6200	1.698A	1.072	34.684	27.818	37.099	45.937	55.762	158	154.7	2.36	36.5	6200
121	6371	6231	1.704A	1.073	34.686	27.819	37.100	45.939	55.894	157	154.6	2.37	36.7	6231
122	6404	6263	1.708A	1.072	34.685	27.819	37.099	45.938	56.028	156	154.2	2.36	36.4	6263
123	6424	6282	1.711A	1.072	34.685	27.819	37.099	45.938	56.110	158	154.4	2.34	36.3	6282
124	6424	6282	1.711A	1.072	34.685	27.819	37.099	45.938	56.110	157	154.3	2.36	36.4	6282

BOTTOM DEPTH FOR CAST 1 IS 6298

STATION: 221 LEG: III POSITION: 45° 13' N 169° 25' E DATE: 14 OCT 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
401	5H	5	10.72 H	10.72	32.966	25.283	34.112	42.532	25.306	280	22.5	0.92	8.8	5
501	6H	6	10.66 H	10.65	32.940	25.275	34.107	42.530	25.302	283	24.4	0.97	9.7	6
502	13H	13	10.66 H	10.66	32.941	25.275	34.107	42.530	25.334		24.5	0.98	9.7	13
503	24H	24	10.65 H	10.65	32.940	25.276	34.108	42.531	25.385	283	24.1	0.99	9.7	24
504	34H	34	10.65 H	10.64	32.941	25.277	34.110	42.533	25.431	281	24.2	0.99	9.7	34
505	43H	43	10.40 H	10.39	32.959	25.335	34.177	42.610	25.530	283	24.7	1.02	10.2	43
402	52H	52	7.09 H	7.08	33.431	26.214	35.200	43.765	26.454	288	31.6	1.31	16.3	52
506	54H	54	6.99 H	6.99	33.400	26.203	35.194	43.763	26.452	289	31.0	1.35	16.6	54
507	64H	64	5.76 H	5.75	33.590	26.511	35.559	44.182	26.807	288	32.8	1.41	18.5	64
508	74H	74	5.84 H	5.84	33.667	26.561	35.604	44.221	26.904	285	33.3	1.40	18.5	74

A DATA TAKEN FROM CTD DOWN TRACE
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 221 LEG: III POSITION: 45° 13' N 169° 25' E DATE: 14 OCT 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	102H	101	5.67 H	5.67	33.712	26.617	35.668	44.293	27.090	278	34.0	1.40	18.8	101
404	152H	151	4.96 H	4.95	33.732	26.716	35.802	44.460	27.422	235	46.1	1.68	23.6	151
405	201H	200	4.48 H	4.46	33.782	26.809	35.919	44.600	27.745	174	63.1	2.12	30.3	200
406	301H	299	3.67 H	3.65	33.835	26.932	36.085	44.804	28.339	130	82.2	2.48	36.0	299
407	400H	397	3.63 H	3.61	33.950	27.028	36.181	44.901	28.895	93	95.6	2.66	39.3	397
408	499H	495	3.60 H	3.57	34.079	27.134	36.287	45.007	29.461	64	108.8	2.79	41.6	495
409	599H	594	3.46 H	3.42	34.170	27.221	36.380	45.106	30.012	50	119.6	2.86	42.6	594
410	698H	692	3.31 H	3.26	34.241	27.292	36.459	45.191	30.543	42	127.9	2.89	43.1	692
411	797H	790	3.16 H	3.10	34.302	27.355	36.529	45.269	31.066	34	135.7	2.93	44.0	790
412	897H	889	3.00 H	2.94	34.344	27.403	36.585	45.332	31.578	33	140.8	2.94	44.4	889
413	997H	988	2.82 H	2.76	34.387	27.453	36.645	45.400	32.092	32	147.9	2.96	44.7	988
414	1097H	1086	2.68 H	2.60	34.420	27.492	36.692	45.455	32.595	32	153.7	2.97	44.9	1086
415	1296H	1283	2.43 H	2.34	34.471	27.555	36.768	45.544	33.577	36	161.0	2.91	44.2	1283
416	1496H	1480	2.27 H	2.17	34.505	27.595	36.817	45.601	34.536	44	165.2	2.86	44.1	1480
417	1997H	1973	1.97 H	1.83	34.586	27.687	36.926	45.726	36.913	67	169.4	2.79	43.3	1973
418	2500H	2467	1.73 H	1.55	34.627	27.739	36.994	45.808	39.237	94	169.2	2.69	40.8	2467
419	3004H	2961	1.59 H	1.37	34.654	27.774	37.038	45.861	41.520	118	164.2	2.57	39.2	2961
101	3547H	3492	1.504	1.230	34.671	27.797	37.069	45.899	43.936	139	158.0	2.42	37.1	3492
420	3611H	3554	1.50 H	1.22	34.673	27.799	37.072	45.903	44.218	141	157.5	2.47	37.9	3554
102	3752H	3692	1.485	1.189	34.674	27.802	37.076	45.909	44.836	143	154.3	2.41	36.9	3692
103	3956H	3891	1.478	1.160	34.678	27.807	37.083	45.917	45.727	149	152.9	2.40	36.8	3891
104	4163H	4093	1.479	1.138	34.680	27.810	37.087	45.923	46.624	150	152.8	2.38	36.5	4093
105	4369H	4293	1.483	1.119	34.681	27.812	37.090	45.927	47.511	153	152.2	2.38	36.5	4293
106	4575H	4493	1.493	1.104	34.682	27.814	37.093	45.930	48.394	152	151.8	2.37	36.5	4493
107	4781H	4694	1.507	1.093	34.682	27.815	37.094	45.932	49.271	153	152.0	2.38	36.4	4694
108	4984H	4891	1.523	1.084	34.685	27.818	37.098	45.936	50.133	157	150.0	2.38	36.3	4891
109	5191H	5092	1.543	1.077	34.687	27.820	37.100	45.939	51.007	158	150.4	2.37	36.3	5092
110	5395H	5289	1.565	1.072	34.686	27.819	37.100	45.939	51.861	157	150.0	2.33	36.1	5289
111	5600H	5488	1.589	1.068	34.687	27.821	37.101	45.940	52.717	157	151.3	2.35	36.2	5488
112	5804H	5685	1.614	1.065	34.687	27.821	37.102	45.941	53.564	160	152.1	2.36	36.2	5685
115	5978H	5854	1.635	1.061	34.687	27.821	37.102	45.941	54.284	156	152.0	2.37	35.6	5854
116	6008H	5882	1.639	1.061	34.687	27.821	37.102	45.941	54.408	160	151.2	2.39	36.2	5882
117	6021H	5895	1.640	1.060	34.688	27.822	37.103	45.942	54.462	159	152.0	2.37	36.2	5895
118	6037H	5911	1.643	1.061	34.685	27.819	37.101	45.940	54.526	158	152.8	2.36	36.2	5911
119	6067H	5940	1.646	1.060	34.688	27.822	37.103	45.942	54.652	159	152.7	2.36	36.1	5940
120	6096H	5968	1.650	1.060	34.687	27.821	37.102	45.942	54.770	159	153.1	2.35	36.1	5968
121	6124H	5995	1.654	1.060	34.689	27.823	37.104	45.943	54.887	163	151.6	2.35	36.1	5995
122	6154H	6024	1.658	1.059	34.689	27.823	37.104	45.943	55.010	160	151.3	2.35	36.1	6024
123	6178H	6047	1.662	1.060	34.687	27.821	37.102	45.942	55.107	160	152.5	2.34	36.1	6047
124	6178H	6047	1.662	1.060	34.688	27.822	37.103	45.942	55.108	160	152.9	2.35	36.1	6047

BOTTOM DEPTH FOR CAST 1 IS 6060

STATION: 222 LEG: III POSITION: 40° 10' N 160° 30' E DATE: 16 OCT 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
801	2H	2	15.87 H	15.86	33.827	24.908	33.525	41.749	24.917	251	7.3	0.21	0.3	2
913	5	5	15.716	15.715	33.827	24.942	33.564	41.793	24.964	252	8.4	0.22	0.2	5
901	14	14	15.715	15.713	33.826	24.942	33.564	41.793	25.004	250	8.4	0.21	0.2	14
902	23	23	15.719	15.715	33.824	24.940	33.562	41.790	25.041	251	8.3	0.21	0.3	23
903	37	37	15.708	15.702	33.827	24.945	33.568	41.797	25.108	252	8.0	0.21	0.3	37
904	49	49	15.703	15.695	33.825	24.945	33.568	41.797	25.161	251	7.9	0.22	0.3	49
802	51H	51	13.14 H	13.14	33.920	25.566	34.284	42.600	25.794	258	14.2	0.66	6.1	51
905	82	82	9.511	9.502	33.998	26.294	35.161	43.615	26.667	259	22.3	1.04	14.1	82
803	102H	101	8.72 H	8.71	34.066	26.474	35.375	43.861	26.939	238	25.2	1.13	16.1	101
907	123	122	8.473	8.460	34.045	26.497	35.409	43.906	27.058	239	26.5	1.17	16.4	122
908	164	163	7.373	7.357	33.944	26.579	35.544	44.090	27.331	252	28.8	1.25	17.4	163
804	201H	200	6.37 H	6.35	33.840	26.634	35.649	44.240	27.560	258	32.2	1.35	18.9	200
909	254	252	5.852	5.830	33.860	26.714	35.754	44.369	27.887	216	43.0	1.66	23.5	252
805	302H	300	5.21 H	5.18	33.867	26.797	35.869	44.514	28.196	175	57.5	1.99	28.8	300
910	354	352	4.419	4.392	33.871	26.886	35.999	44.682	28.533	147	69.8	2.26	32.8	352
806	401H	398	4.44 H	4.41	33.942	26.941	36.051	44.732	28.804	102	77.7	2.35	35.0	398
911	427	424	4.197	4.165	33.958	26.979	36.102	44.795	28.965	109	82.1	2.47	36.3	424
813	501H	497	4.05 H	4.01	34.035	27.056	36.186	44.885	29.386	87	94.1	2.59	38.9	497
314	519	515	4.060	4.022	34.069	27.082	36.211	44.908	29.494	80	97.7	2.49	38.8	515
814	601H	596	3.75 H	3.70	34.130	27.162	36.307	45.019	29.958	63	108.4	2.67	41.4	596

STATION: 222 LEG: III POSITION: 40° 10' N 160° 30' E DATE: 16 OCT 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
912	661	656	3.683	3.636	34.198	27.222	36.370	45.084	30.296	53	112.7	2.77	41.5	656
816	701H	695	3.53 H	3.48	34.211	27.248	36.403	45.125	30.508	50	119.3	2.77	42.2	695
817	801H	794	3.34 H	3.28	34.272	27.315	36.480	45.211	31.040	42	128.8	2.82	43.0	794
818	901H	893	3.117H	3.055	34.335	27.385	36.562	45.303	31.576	40	136.5	2.83	43.5	893
819	1001H	992	2.89 H	2.82	34.372	27.436	36.624	45.376	32.091	43	142.4	2.88	43.9	992
820	1101H	1091	2.7 B	2.6	34.410	27.483	36.682	45.445	32.604	35	149.5	2.80	44.3	1091
821	1199H	1188	2.58 H	2.50	34.439	27.516	36.721	45.489	33.089	39	154.6	2.78	44.2	1188
822	1299H	1287	2.46 H	2.37	34.471	27.553	36.764	45.538	33.587	42	158.0	2.93	44.3	1287
823	1399H	1385	2.36 H	2.27	34.491	27.577	36.793	45.572	34.071	43	159.2	2.94	43.9	1385
825	1499H	1484	2.29 H	2.19	34.515	27.602	36.822	45.605	34.555	47	161.4	2.77	43.7	1484
826	1600H	1583	2.21 H	2.10	34.533	27.623	36.848	45.635	35.039	50	164.9	2.74	43.8	1583
827	1701H	1683	2.13 H	2.02	34.548	27.642	36.872	45.663	35.521	56	166.1	2.72	43.5	1683
828	1801H	1781	2.07 H	1.95	34.561	27.658	36.891	45.685	35.992	67U	166.3	2.84	43.0	1781
601	1832H	1812	2.05 H	1.92	34.567	27.664	36.899	45.694	36.140	60	166.1	2.80	42.8	1812
829	1903H	1882	2.01 H	1.88	34.574	27.673	36.910	45.708	36.473	68	166.2	2.79	42.6	1882
602	2012H	1989	1.95 H	1.81	34.589	27.691	36.931	45.733	36.985	72	166.4	2.75	42.2	1989
603	2194H	2168	1.82 H	1.67	34.608	27.716	36.964	45.772	37.837	83	166.3	2.72	41.7	2168
604	2376H	2347	1.75 H	1.59	34.625	27.735	36.988	45.800	38.677	94	165.4	2.64	40.8	2347
605	2557H	2524	1.69 H	1.50	34.636	27.750	37.007	45.824	39.505	105	161.2	2.62	40.3	2524
606	2738H	2702	1.61 H	1.41	34.647	27.765	37.027	45.848	40.332	114	159.2	2.57	39.6	2702
614	2922H	2882	1.58 H	1.37	34.657	27.776	37.041	45.864	41.161	122	158.2	2.55	39.3	2882
616	3104H	3060	1.53 H	1.30	34.661	27.784	37.052	45.879	41.976	129	156.5	2.54	38.8	3060
617	3245H	3198	1.51 H	1.27	34.664	27.789	37.059	45.887	42.604	133	155.4	2.50	38.6	3198
618	3428H	3377	1.49 H	1.23	34.672	27.798	37.070	45.900	43.417	139	153.6	2.49	38.1	3377
316	3558	3504	1.489	1.214	34.672	27.799	37.072	45.903	43.987	142	156.4	2.36	37.4	3504
619	3754H	3696	1.48 H	1.18	34.675	27.803	37.078	45.911	44.847	146	151.1	2.50	37.7	3696
620	3937H	3874	1.46 H	1.15	34.679	27.809	37.085	45.920	45.648	150	150.7	2.37	37.6	3874
317	4069	4003	1.473	1.143	34.680	27.810	37.087	45.922	46.219	152	153.1	2.42	37.0	4003
621	4264H	4193	1.469H	1.117	34.678	27.810	37.088	45.925	47.060	154	149.6	2.35	37.0	4193
622	4448H	4372	1.47 H	1.10	34.684	27.816	37.096	45.933	47.856	156	149.9	2.34	36.8	4372
318	4584	4504	1.484	1.095	34.687	27.819	37.098	45.936	48.438	158	151.5	2.30	36.4	4504
623	4632H	4551	1.49 H	1.09	34.684	27.817	37.096	45.934	48.640	158	149.7	2.36	36.7	4551
625	4816H	4730	1.49 H	1.07	34.688	27.821	37.102	45.940	49.427	158	150.2	2.31	36.6	4730
626	5001H	4910	1.51 H	1.07	34.687	27.820	37.101	45.940	50.209	158	150.3	2.35	36.7	4910
627	5186H	5089	1.528H	1.063	34.686	27.820	37.101	45.940	50.988	161	150.8	2.29	36.4	5089
628	5372H	5270	1.544H	1.055	34.688	27.822	37.104	45.943	51.770	163	149.1	2.28	36.3	5270
319	5518	5411	1.560	1.051	34.686	27.821	37.103	45.942	52.379	163	149.2	2.38	36.1	5411
320	5546	5438	1.564	1.051	34.687	27.822	37.103	45.943	52.496	163	149.1	2.36	35.9	5438
629	5557H	5449	1.56 H	1.05	34.688	27.823	37.105	45.945	52.544	163	149.1	2.31	36.2	5449
321	5575	5466	1.567	1.050	34.691	27.825	37.107	45.947	52.620	164	149.1	2.36	36.1	5466
322	5609	5499	1.572	1.051	34.687	27.822	37.104	45.943	52.758	164	149.5	2.35	35.9	5499
323	5639	5528	1.576	1.051	34.691	27.825	37.107	45.947	52.886	165	150.0	2.37	35.9	5528

BOTTOM DEPTH FOR CAST 6 IS 5570 — CAST 3 IS 5579

STATION: 223 LEG: III POSITION: 34° 58' N 151° 50' E DATE: 20 OCT 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
801	1	1	22.472	22.472	34.523	23.747	32.144	40.160	23.751	219	2.4	0.00	0.0	1
802	1	1	22.472	22.472	34.524	23.748	32.145	40.161	23.752	219	2.3	0.00	0.0	1
803	10	10	22.475	22.473	34.524	23.747	32.145	40.160	23.790	219	2.2	0.00	0.0	10
804	19	19	22.473	22.469	34.524	23.748	32.146	40.162	23.830	219	2.2	0.00	0.0	19
805	19	19	22.473	22.469	34.525	23.749	32.147	40.163	23.831	219	2.2	0.00	0.0	19
806	34	34	22.476	22.469	34.525	23.749	32.147	40.163	23.895	219	2.2	0.00	0.0	34
807	50	50	21.796	21.786	34.533	23.946	32.364	40.398	24.162	219	2.2	0.00	0.0	50
808	50	50	21.796	21.786	34.543	23.954	32.371	40.406	24.169	219	2.2	0.00	0.0	50
809	65	65	20.801	20.788	34.774	24.402	32.846	40.907	24.683	205	3.5	0.15	1.4	65
810	65	65	20.801	20.788	34.774	24.402	32.846	40.907	24.683	205	3.5	0.15	1.4	65
811	85	85	19.941	19.925	34.787	24.642	33.113	41.198	25.011	197	3.9	0.24	2.7	85
812	85	85	19.939	19.923	34.787	24.643	33.113	41.199	25.011	197	4.2	0.25	2.7	85
815	99	99	19.416	19.398	34.783	24.777	33.264	41.365	25.207	204	3.6	0.21	2.2	99
816	125	125	18.575	18.552	34.785	24.995	33.509	41.635	25.539	203	4.0	0.26	3.0	125
817	125	125	18.579	18.556	34.783	24.992	33.506	41.632	25.537	203	4.2	0.26	3.1	125

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

STATION: 223 LEG: III POSITION: 34° 58' N 151° 50' E DATE: 20 OCT 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
818	166	165	17.734	17.705	34.772	25.196	33.738	41.890	25.921	202	5.1	0.33	4.2	165
819	208	207	17.214	17.178	34.761	25.316	33.875	42.044	26.225	213	4.3	0.30	3.8	207
820	246	245	17.013	16.971	34.755	25.361	33.927	42.103	26.437	216	4.3	0.30	3.8	245
821	296	295	16.702	16.652	34.743	25.427	34.005	42.191	26.723	209	5.4	0.37	5.0	295
822	336	334	16.354	16.298	34.728	25.499	34.089	42.287	26.971	205	6.4	0.44	5.9	334
823	368	366	15.884	15.824	34.696	25.584	34.191	42.405	27.199	195	8.8	0.56	7.7	366
501	390	388	15.791	15.728	34.702	25.611	34.221	42.438	27.322	197	8.8	0.54	7.7	388
824	442	440	14.602	14.534	34.604	25.801	34.456	42.714	27.750	188	13.3	0.76	10.7	440
502	471	469	14.239	14.168	34.590	25.869	34.538	42.809	27.948	185	14.4	0.77	11.2	469
503	554	551	11.871	11.797	34.423	26.218	34.982	43.341	28.688	178	24.0	1.10	15.8	551
504	634	630	9.693	9.618	34.242	26.465	35.323	43.770	29.321	179	33.6	1.36	19.2	630
505	696	692	8.273	8.198	34.223	26.676	35.598	44.103	29.830	142	49.7	1.77	25.3	692
506	755	750	6.611	6.539	34.102	26.815	35.817	44.396	30.265	146	61.1	2.03	28.6	750
507	815	810	5.502	5.431	34.066	26.925	35.982	44.612	30.670	128	72.8	2.24	31.9	810
508	875	869	4.549	4.479	34.060	27.027	36.133	44.808	31.066	102	88.0	2.52	36.1	869
509	936	929	4.593	4.517	34.169	27.109	36.211	44.883	31.425	83	97.1	2.62	37.6	929
510	997	990	4.212	4.134	34.202	27.176	36.297	44.987	31.779	70	106.1	2.70	39.2	990
511	1096	1088	3.736	3.653	34.255	27.266	36.412	45.124	32.334	53	120.3	2.84	41.3	1088
512	1197	1187	3.443	3.354	34.317	27.344	36.504	45.231	32.880	49	129.7	2.89	42.0	1187
514	1306	1295	3.189	3.094	34.375	27.414	36.587	45.326	33.455	47	137.6	2.91	42.6	1295
515	1406	1394	2.941	2.840	34.411	27.465	36.652	45.403	33.970	43	143.2	2.93	43.0	1394
516	1505	1492	2.760	2.653	34.444	27.507	36.704	45.464	34.470	43	147.6	2.95	43.4	1492
517	1647	1632	2.534	2.418	34.484	27.559	36.767	45.539	35.175	43	157.1	2.96	43.5	1632
518	1787	1770	2.350	2.224	34.521	27.604	36.823	45.603	35.862	47	162.0	2.94	43.9	1770
519	2011	1990	2.147	2.005	34.560	27.652	36.882	45.674	36.932	61	162.9	2.89	42.7	1990
520	2216	2192	1.986	1.829	34.589	27.689	36.928	45.728	37.899	73	164.6	2.82	41.9	2192
521	2419	2391	1.847	1.675	34.614	27.720	36.968	45.776	38.848	86	166.7	2.76	41.1	2391
522	2623	2592	1.760	1.571	34.630	27.741	36.994	45.807	39.784	106	161.3	2.70	40.3	2592
523	2825	2790	1.680	1.473	34.643	27.758	37.017	45.834	40.705	110	160.1	2.66	39.2	2790
201	2974	2936	1.635	1.415	34.652	27.769	37.031	45.852	41.379	118	159.7	2.61	39.0	2936
524	3040	3001	1.626	1.400	34.655	27.773	37.035	45.857	41.675	121	158.9	2.59	38.6	3001
202	3178	3136	1.590	1.351	34.658	27.778	37.044	45.868	42.292	119	159.2	2.59	39.1	3136
203	3383	3336	1.551	1.292	34.664	27.787	37.056	45.883	43.205	132	157.7	2.55	38.2	3336
204	3587	3536	1.525	1.246	34.670	27.795	37.066	45.896	44.107	138	155.3	2.52	37.7	3536
205	3790	3734	1.507	1.207	34.673	27.800	37.073	45.905	44.997	143	153.9	2.49	37.3	3734
206	3992	3931	1.495	1.173	34.677	27.806	37.081	45.914	45.879	148	152.8	2.47	37.0	3931
207	4198	4132	1.493	1.148	34.681	27.810	37.087	45.922	46.774	151	152.4	2.46	36.8	4132
208	4453	4380	1.496	1.122	34.683	27.814	37.092	45.928	47.871	155	150.0	2.43	36.5	4380
209	4711	4632	1.506	1.101	34.684	27.816	37.095	45.932	48.974	157	149.5	2.42	36.5	4632
210	4968	4881	1.521	1.084	34.687	27.820	37.099	45.937	50.067	160	148.7	2.41	36.3	4881
211	5226	5132	1.534	1.064	34.687	27.821	37.102	45.941	51.156	163	146.6	2.39	36.0	5132
212	5485	5383	1.550	1.046	34.689	27.824	37.106	45.946	52.245	166	144.4	2.37	35.9	5383
214	5753	5643	1.573	1.033	34.691	27.826	37.109	45.950	53.363	168	142.1	2.35	35.6	5643
215	6011	5892	1.596	1.020	34.691	27.827	37.110	45.952	54.432	170	141.6	2.34	35.5	5892
216	6071	5951	1.603	1.018	34.691	27.827	37.111	45.952	54.680	172	139.1	2.35	35.5	5951
217	6092	5971	1.606	1.018	34.693	27.829	37.112	45.954	54.768	170	138.7	2.33	35.4	5971
218	6113	5991	1.608	1.017	34.693	27.829	37.112	45.954	54.854	172	139.3	2.33	35.4	5991
219	6133	6010	1.610	1.016	34.692	27.828	37.112	45.953	54.936	170	139.7	2.34	35.4	6010
220	6156	6033	1.613	1.016	34.693	27.829	37.113	45.954	55.031	171	140.2	2.34	35.4	6033
221	6176	6052	1.615	1.015	34.692	27.828	37.112	45.953	55.113	171	139.9	2.33	35.4	6052
222	6197	6072	1.617	1.014	34.692	27.828	37.112	45.954	55.199	171	140.7	2.33	35.3	6072
224	6219	6094	1.619	1.013	34.691	27.827	37.111	45.953	55.289	171	140.7	2.33	35.3	6094
223	6219	6094	1.619	1.013	34.692	27.828	37.112	45.954	55.290	171	140.5	2.33	35.1	6094

BOTTOM DEPTH FOR CAST 2 IS 6131

STATION: 224 LEG: III POSITION: 34° 15' N 141° 58' E DATE: 24 OCT 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
302	1C	1			34.500					214				1
501	1	1	23.846	23.846	34.505	23.339	31.698	39.677	23.343	213	2.2	0.00	0.0	1
502	14	14	23.847	23.844	34.502	23.337	31.696	39.675	23.397	213	2.1	0.00	0.0	14
503	46	46	23.842	23.832	34.508	23.345	31.705	39.684	23.542	213	2.1	0.00	0.0	46
504	94	94	20.580	20.562	34.781	24.468	32.919	40.986	24.875	207	3.0	0.14	1.4	94

STATION: 224 LEG: III POSITION: 34° 15' N 141° 58' E DATE: 24 OCT 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
505	146	145	18.814	18.787	34.774	24.927	33.433	41.553	25.562	205	3.6	0.25	3.0	145
506	196	195	17.700	17.666	34.771	25.205	33.748	41.902	26.060	207	4.5	0.31	4.0	195
507	246	245	17.140	17.098	34.762	25.336	33.898	42.070	26.411	217	4.2	0.28	3.6	245
303	252C	251			34.763					215				251
508	297	296	16.908	16.858	34.756	25.389	33.959	42.139	26.688	215	4.9	0.32	4.1	296
509	347	345	16.442	16.384	34.729	25.480	34.067	42.262	26.999	215	5.7	0.37	4.9	345
510	397	395	15.817	15.753	34.697	25.601	34.211	42.427	27.343	196	8.8	0.57	8.0	395
511	448	446	15.058	14.988	34.635	25.725	34.363	42.606	27.697	188	11.9	0.70	10.0	446
512	498	495	13.879	13.805	34.556	25.919	34.602	42.887	28.121	184	15.6	0.85	12.2	495
514	576	573	12.050	11.972	34.427	26.188	34.944	43.296	28.753	178	23.6	1.12	15.8	573
515	654	650	10.107	10.028	34.303	26.444	35.283	43.712	29.382	160	36.3	1.47	20.9	650
516	725	721	8.356	8.277	34.201	26.647	35.565	44.067	29.930	148	47.9	1.77	25.1	721
304	758C	753			34.194					127				753
517	766	761	7.713	7.633	34.223	26.759	35.707	44.237	30.238	129	58.6	1.98	28.1	761
518	807	802	6.808	6.729	34.193	26.861	35.852	44.422	30.543	119	66.3	2.14	30.5	802
519	858	852	5.965	5.886	34.173	26.954	35.987	44.595	30.884	107	76.7	2.33	33.3	852
520	910	904	5.282	5.203	34.183	27.044	36.110	44.750	31.225	93	86.7	2.48	35.5	904
101	948	941	4.854	4.775	34.197	27.104	36.192	44.851	31.467	87	93.1	2.57	36.7	941
521	960	953	4.743	4.664	34.183	27.105	36.199	44.863	31.526	85	91.8	2.57	36.9	953
522	1011	1004	4.331	4.250	34.211	27.171	36.286	44.970	31.835	69	104.3	2.72	39.0	1004
102	1048	1040	4.092	4.010	34.239	27.218	36.345	45.040	32.057	63	110.3	2.77	39.8	1040
103	1149	1140	3.727	3.640	34.305	27.307	36.453	45.165	32.616	52	121.1	2.86	41.2	1140
523	1209	1199	3.491	3.401	34.346	27.362	36.520	45.244	32.952	49	125.3	2.89	41.7	1199
104	1250	1240	3.390	3.297	34.356	27.380	36.543	45.272	33.160	46	129.7	2.91	42.1	1240
524	1314	1303	3.252	3.155	34.388	27.419	36.589	45.324	33.494	48	132.8	2.90	42.2	1303
105	1351	1340	3.190	3.091	34.411	27.443	36.616	45.354	33.689	54	133.7	2.88	41.7	1340
106	1452	1439	2.962	2.857	34.442	27.488	36.674	45.423	34.202	53	139.3	2.90	42.1	1439
107	1553	1539	2.669	2.559	34.467	27.534	36.735	45.499	34.718	45	150.3	2.95	43.1	1539
108	1657	1642	2.486	2.370	34.497	27.573	36.784	45.558	35.237	45	155.2	2.97	43.4	1642
109	1754	1737	2.367	2.244	34.517	27.599	36.817	45.597	35.707	49	159.8	2.95	43.2	1737
110	1858	1840	2.248	2.118	34.541	27.628	36.853	45.638	36.213	55	161.7	2.93	42.9	1840
111	1956	1936	2.153	2.016	34.561	27.652	36.882	45.673	36.684	60	162.5	2.90	42.5	1936
112	2056	2035	2.078	1.934	34.574	27.669	36.903	45.698	37.155	67	163.1	2.87	42.1	2035
114	2276	2251	1.929	1.768	34.601	27.703	36.946	45.749	38.186	81	164.4	2.81	41.2	2251
115	2529	2499	1.792	1.611	34.627	27.735	36.986	45.797	39.358	97	163.6	2.72	40.4	2499
116	2774	2740	1.685	1.483	34.645	27.759	37.017	45.834	40.479	115	159.1	2.64	39.3	2740
117	3029	2990	1.619	1.394	34.654	27.772	37.035	45.857	41.627	123	157.9	2.60	38.7	2990
118	3333	3287	1.559	1.305	34.667	27.789	37.056	45.883	42.986	133	156.3	2.55	38.0	3287
119	3691	3637	1.515	1.225	34.673	27.799	37.071	45.902	44.565	142	152.9	2.50	37.5	3637
120	4047	3985	1.497	1.169	34.680	27.808	37.084	45.917	46.120	149	150.8	2.47	37.2	3985
121	4457	4384	1.493	1.118	34.685D	27.816	37.094	45.930	47.891	155	149.6	2.45	36.4	4384
122	5127	5036	1.527	1.070	34.688	27.821	37.102	45.941	50.740	161	145.1	2.40	36.0	5036
123	5594	5489	1.574	1.055	34.689	27.823	37.105	45.944	52.697	163	145.2	2.39	35.8	5489
124	6122	6000	1.636	1.043	34.694	27.828	37.110	45.950	54.886	165	144.9	2.38	35.7	6000

BOTTOM DEPTH FOR CAST 1 IS 9739

STATION: 225 LEG: IV POSITION: 32° 37' N 161° 55' E DATE: 6 NOV 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
801	3H	3	23.50 H	23.50	34.520	23.451	31.819	39.807	23.464	221	3.4	0.02	0.0	3
802	42H	42	23.24 H	23.23	34.570	23.566	31.941	39.936	23.746	216	3.2	0.03	0.0	42
803	62H	62	20.99 H	20.98	34.674	24.275	32.714	40.770	24.543	225	3.3	0.08	0.1	62
804	81H	81	18.75 H	18.74	34.744	24.917	33.426	41.547	25.270	217	4.3	0.19	1.2	81
805	121H	121	17.27 H	17.25	34.742	25.284	33.841	42.009	25.814	205	6.1	0.37	4.4	121
806	161H	160	16.50 H	16.47	34.698	25.435	34.019	42.212	26.142	220	5.5	0.33	4.0	160
807	201H	200	16.24 H	16.21	34.694	25.494	34.088	42.289	26.377	222	5.6	0.35	4.3	200
808	251H	250	15.69 H	15.65	34.672	25.605	34.219	42.439	26.709	214	6.9	0.45	5.7	250
809	301H	300	14.97 H	14.92	34.618	25.727	34.367	42.612	27.054	209	9.4	0.57	7.6	300
814	349H	347	13.97 H	13.92	34.544	25.886	34.565	42.846	27.431	198	13.8	0.77	10.6	347
825	399H	397	13.13 H	13.07	34.486	26.016	34.728	43.039	27.788	205	15.2	0.82	11.0	397
826	474H	471	11.515H	11.453	34.354	26.229	35.008	43.380	28.348	210	20.3	0.97	13.3	471
827	549H	546	9.84 H	9.77	34.233	26.432	35.283	43.723	28.905	200	28.0	1.24	17.1	546

C DEPTH CALCULATED FROM WIRE OUT
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 225 LEG: IV POSITION: 32° 37' N 161° 55' E DATE: 6 NOV 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
502	599H	595	7.95 H	7.89	34.098	26.624	35.562	44.082	29.347	185	39.4	1.59	22.1	595
828	648H	644	7.37 H	7.30	34.057	26.676	35.641	44.187	29.629	179	43.3	1.71	23.7	644
503	700H	696	5.66 H	5.60	34.005	26.857	35.906	44.530	30.075	138	64.0	2.19	30.8	696
504	799H	794	4.71 H	4.65	34.083	27.027	36.124	44.791	30.716	85	86.5	2.62	37.3	794
505	900H	894	4.12 H	4.05	34.168	27.157	36.283	44.978	31.320	60	102.8	2.80	40.2	894
506	999H	992	3.73 H	3.66	34.248	27.260	36.406	45.118	31.885	45	114.2	2.91	41.9	992
601	1089H	1081	3.46 H	3.38	34.305	27.332	36.491	45.216	32.375	37	125.9	2.93	42.8	1081
507	1198H	1188	3.15 H	3.06	34.370	27.413	36.588	45.328	32.963	41	131.9	2.96	42.9	1188
508	1345H	1334	2.78 H	2.69	34.431	27.494	36.689	45.447	33.728	30	145.2	3.03	44.2	1334
509	1490H	1477	2.538H	2.435	34.476	27.551	36.759	45.529	34.454	33	152.0	3.02	44.2	1477
514	1635H	1620	2.34 H	2.23	34.512	27.597	36.815	45.596	35.167	40	157.0	2.99	43.9	1620
525	1789H	1772	2.19 H	2.07	34.546	27.636	36.863	45.652	35.911	50	165.7	2.95	43.4	1772
526	1940H	1920	2.06 H	1.93	34.572	27.668	36.902	45.698	36.632	60	168.8	2.91	42.6	1920
527	2091H	2069	1.921H	1.776	34.595	27.698	36.940	45.743	37.350	73	167.1	2.84	41.7	2069
528	2242H	2218	1.83 H	1.67	34.613	27.720	36.967	45.775	38.056	85	164.6	2.79	41.1	2218
629	2394H	2367	1.754H	1.586	34.625	27.736	36.988	45.800	38.758	95	163.9	2.73	40.6	2367
630	2545H	2515	1.68 H	1.50	34.634	27.749	37.006	45.823	39.451	105	160.9	2.66	39.6	2515
631	2701H	2668	1.62 H	1.43	34.646	27.764	37.025	45.845	40.165	113	161.2	2.65	39.4	2668
632	2851H	2815	1.613H	1.405	34.651	27.769	37.031	45.853	40.837	119	160.6	2.63	39.0	2815
633	3005H	2966	1.56 H	1.34	34.657	27.778	37.044	45.869	41.532	124	159.7	2.60	38.6	2966
201	3200H	3157	1.54 H	1.30	34.662	27.785	37.053	45.880	42.400	131	157.6	2.57	38.0	3157
634	3262H	3218	1.513H	1.268	34.666	27.790	37.060	45.889	42.680	134	156.8	2.55	37.9	3218
202	3402H	3355	1.51 H	1.25	34.668	27.793	37.064	45.893	43.297	133	156.7	2.56	37.8	3355
203	3603H	3552	1.50 H	1.22	34.671	27.798	37.070	45.901	44.182	139	155.6	2.54	37.5	3552
204	3805H	3749	1.49 H	1.19	34.676	27.804	37.078	45.911	45.068	145	153.9	2.52	37.2	3749
205	4007H	3946	1.476H	1.153	34.678	27.808	37.084	45.918	45.948	156	152.4	2.49	37.0	3946
206	4211H	4145	1.48 H	1.13	34.681	27.811	37.089	45.924	46.832	1630	150.7	2.48	36.7	4145
207	4410H	4339	1.48 H	1.11	34.683	27.815	37.093	45.930	47.690	154	151.4	2.47	36.5	4339
208	4614H	4538	1.50 H	1.11	34.685	27.816	37.095	45.932	48.562	157	150.3	2.45	36.5	4538
209	4817H	4735	1.49 H	1.07	34.687	27.820	37.101	45.939	49.431	159	149.2	2.44	36.3	4735
214	5020H	4932	1.49 H	1.05	34.688	27.823	37.105	45.945	50.294	163	145.1	2.42	36.0	4932
225	5223H	5130	1.49 H	1.02	34.689	27.825	37.109	45.950	51.154	167	141.8	2.40	35.7	5130
226	5530H	5427	1.50 H	0.99	34.692	27.829	37.115	45.957	52.446	171	138.5	2.36	35.5	5427
227	5756H	5646			34.693					172	137.4	2.36	35.3	5646
228	5859H	5746			34.693					173				5746
229	5930H	5815	1.548H	0.985	34.693	27.831	37.116	45.959	54.108	174				5815
230	5982H	5865			34.693									5865
231	6013H	5895			34.693									5895
232	6033H	5914			34.693									5914
233	6043H	5924			34.693									5924
234	6054H	5935	1.56 H	0.98	34.693	27.831	37.117	45.960	54.620	174	136.0	2.36	35.2	5935

BOTTOM DEPTH FOR CAST 2 IS 5948

STATION: 226 LEG: IV POSITION: 30° 34' N 170° 36' E DATE: 9 NOV 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
701	8H	8	24.73 H	24.73	35.055	23.494	31.822	39.772	23.528	219	3.3	0.02	0.1	8
702	20H	20	24.74 H	24.74	35.056	23.492	31.821	39.770	23.578	213	3.0	0.02	0.1	20
703	36H	36	24.76 H	24.75	35.053	23.485	31.813	39.762	23.639	213	2.7	0.01	0.1	36
704	56H	56	24.48 H	24.47	35.016	23.542	31.878	39.835	23.781	237	3.0	0.03	0.1	56
705	82H	82	23.60 H	23.58	35.005	23.793	32.154	40.134	24.144	229	3.2	0.02	0.2	82
714	106H	106	18.00 H	17.98	34.759	25.118	33.650	41.795	25.581	244	3.3	0.09	0.2	106
725	158H	157	16.05 H	16.02	34.697	25.539	34.139	42.346	26.233	217	5.7	0.38	3.8	157
726	208H	207	15.22 H	15.19	34.627	25.675	34.306	42.542	26.592	216	7.2	0.49	5.2	207
727	258H	257	14.39 H	14.35	34.565	25.810	34.473	42.738	26.952	208	11.0	0.65	7.7	257
728	310H	309	13.35 H	13.31	34.5400	26.011	34.713	43.015	27.387	218	12.8	0.73	9.0	309
729	384H	382	12.06 H	12.01	34.396	26.157	34.912	43.263	27.871	208	16.0	0.88	11.3	382
730	459H	457	10.39 H	10.33	34.277	26.371	35.197	43.615	28.435	200	23.8	1.16	15.5	457
731	558H	555	7.98 H	7.92	34.103	26.623	35.559	44.078	29.161	178	38.5	1.61	22.4	555
401	594H	591	7.34 H	7.28	34.066	26.686	35.653	44.200	29.395	170	45.6	1.75	24.6	591
732	657H	653	6.178H	6.118	34.028	26.811	35.834	44.434	29.824	128	59.3	2.10	30.2	653
402	692H	688	5.68 H	5.62	34.031	26.875	35.923	44.545	30.056	119	68.5	2.27	32.8	688

STATION: 226 LEG: IV POSITION: 30° 34' N 170° 36' E DATE: 9 NOV 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
403	840H	834	4.35 H	4.28	34.131	27.104	36.218	44.902	30.987	67	98.8	2.72	39.5	834
404	990H	983	3.69 H	3.62	34.265	27.278	36.425	45.139	31.862	33	121.6	2.95	43.3	983
405	1135H	1126	3.28 H	3.20	34.371	27.401	36.569	45.303	32.660	26	135.3	3.00	44.3	1126
414	1285H	1275	2.94 H	2.85	34.440	27.487	36.673	45.423	33.441	29	145.0	3.01	44.4	1275
425	1434H	1422	2.63 H	2.53	34.488	27.553	36.755	45.521	34.197	36	153.7	2.98	44.2	1422
426	1632H	1617	2.41 H	2.30	34.531	27.606	36.821	45.597	35.159	46	159.6	2.91	43.4	1617
427	1729H	1713	2.18 H	2.06	34.560	27.648	36.875	45.663	35.651	55	165.1	2.88	42.9	1713
428	1877H	1859	2.02 H	1.89	34.581	27.678	36.914	45.711	36.359	66	167.0	2.83	42.3	1859
429	2025H	2004	1.880H	1.741	34.600	27.704	36.948	45.753	37.061	76	169.0	2.78	41.6	2004
430	2172H	2149	1.77 H	1.62	34.615	27.725	36.976	45.786	37.750	83	168.1	2.74	40.8	2149
431	2318H	2293	1.71 H	1.55	34.626	27.739	36.993	45.808	38.423	96	166.4	2.70	40.4	2293
432	2471H	2443	1.65 H	1.48	34.639	27.754	37.013	45.831	39.128	106	163.5	2.66	39.9	2443
202	2686	2654	1.597	1.405	34.648	27.767	37.029	45.850	40.103	115	162.3	2.63	39.3	2654
203	2868	2833	1.554	1.346	34.656	27.777	37.043	45.867	40.924	123	160.8	2.61	38.9	2833
204	3070	3031	1.512	1.286	34.663	27.787	37.056	45.883	41.831	130	154.7	2.56	38.4	3031
205	3272	3228	1.480	1.234	34.667	27.794	37.065	45.896	42.730	137	153.7	2.53	37.9	3228
206	3471	3423	1.462	1.197	34.673	27.801	37.075	45.907	43.612	143	152.5	2.50	37.5	3423
207	3678	3625	1.452	1.165	34.677	27.806	37.082	45.915	44.521	146	150.7	2.48	37.5	3625
208	3870	3813	1.446	1.139	34.679	27.809	37.087	45.922	45.360	151	149.7	2.46	37.1	3813
209	4072	4010	1.444	1.115	34.682	27.813	37.092	45.928	46.238	153	148.5	2.45	36.7	4010
210	4271	4204	1.444	1.092	34.685	27.817	37.097	45.934	47.100	157	147.9	2.42	36.6	4204
211	4462	4390	1.447	1.073	34.684	27.818	37.098	45.937	47.920	160	145.7	2.42	36.3	4390
433	4666H	4589	1.44 H	1.04	34.689	27.824	37.106	45.946	48.798	164	143.3	2.37	35.9	4589
434	4867H	4784	1.45 H	1.03	34.689	27.825	37.108	45.949	49.653	168	139.9	2.34	35.3	4784
212	4884	4801	1.447	1.023	34.689	27.825	37.109	45.950	49.726	168	139.1	2.36	35.8	4801
215	5086	4997	1.455	1.005	34.692	27.829	37.113	45.955	50.584	172	136.3	2.35	35.6	4997
216	5279	5185	1.466	0.992	34.691	27.829	37.114	45.957	51.397	174	136.0	2.32	35.2	5185
217	5385	5287	1.473	0.985	34.692	27.830	37.115	45.959	51.842	175	135.4	2.32	35.3	5287
218	5431	5332	1.476	0.982	34.693	27.831	37.117	45.960	52.036	175	135.6	2.32	35.2	5332
219	5479	5379	1.479	0.978	34.692	27.830	37.116	45.960	52.236	176	136.2	2.32	35.3	5379
220	5511	5410	1.498	0.993	34.693	27.830	37.115	45.958	52.367	176	135.7	2.31	35.3	5410
221	5541	5439	1.482	0.973	34.695	27.833	37.119	45.963	52.498	177	135.9	2.31	35.3	5439
222	5562	5459	1.482	0.971	34.691	27.830	37.116	45.960	52.583	177	136.0	2.31	35.4	5459
223	5571	5468	1.482	0.969	34.694	27.832	37.119	45.963	52.623	177	136.0	2.31	35.3	5468
224	5582	5478	1.483	0.969	34.695	27.833	37.120	45.964	52.670	177	135.8	2.31	35.3	5478

BOTTOM DEPTH FOR CAST 2 IS 5491

STATION: 227 LEG: IV POSITION: 25° 0' N 170° 5' E DATE: 12 NOV 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
701	6H	6	26.60 H	26.60	35.212	23.043	31.321	39.220	23.069	205				6
702	11H	11			35.212					205				11
703	16H	16	26.61 H	26.61	35.212	23.041	31.319	39.218	23.109	205				16
704	22H	22			35.211					206				22
705	32H	32	26.61 H	26.60	35.212	23.042	31.320	39.219	23.178	206				32
706	51H	51	26.61 H	26.60	35.210	23.042	31.320	39.219	23.258	206				51
714	77H	77	24.34 H	24.32	35.157	23.691	32.029	39.988	24.020	221	1.7	0.03	0.0	77
725	91H	91	22.71 H	22.69	35.114	24.132	32.516	40.520	24.522	232	2.1	0.03	0.0	91
726	101H	101	21.76 H	21.74	35.107	24.394	32.806	40.836	24.829	228	2.2	0.07	0.0	101
727	121H	121	20.53 H	20.51	35.075	24.707	33.155	41.221	25.229	210	2.4	0.10	0.2	121
728	151H	151	18.76 H	18.73	34.923	25.055	33.561	41.680	25.711	208	3.3	0.20	1.4	151
729	201H	200	16.66 H	16.63	34.732	25.425	34.004	42.191	26.306	212	4.7	0.35	4.3	200
730	251H	250	15.74 H	15.70	34.691	25.609	34.220	42.438	26.712	207	6.4	0.46	6.2	250
731	301H	300	14.45 H	14.40	34.581	25.811	34.471	42.734	27.142	205	9.3	0.61	8.3	300
732	350H	349	13.10 H	13.05	34.467	26.006	34.719	43.032	27.562	205	13.2	0.77	10.7	349
733	451H	449	10.701H	10.645	34.275	26.315	35.128	43.533	28.340	193	21.6	1.12	16.0	449
401	498	496	9.792	9.733	34.213	26.424	35.277	43.719	28.669	188	25.3	1.23	18.1	496
402	548	545	8.335	8.276	34.122	26.585	35.505	44.008	29.073	169	36.3	1.54	22.8	545
734	551H	548	8.50 H	8.44	34.124	26.562	35.474	43.970	29.061	165	36.0	1.59	22.8	548
403	598	595	7.073	7.014	34.069	26.725	35.705	44.263	29.457	140	49.8	1.89	28.0	595
404	645	642	6.238	6.179	34.073	26.839	35.858	44.454	29.796	110	62.4	2.17	32.4	642

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

STATION: 227 LEG: IV POSITION: 25° 0′ N 170° 5′ E DATE: 12 NOV 73

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	721	717	5.256	5.195	34.089	26.971	36.039	44.680	30.291	88	78.9	2.45	36.4	717
406	798	793	4.615	4.551	34.155	27.095	36.195	44.866	30.780	60	93.2	2.67	39.9	793
407	901	895	4.022	3.953	34.270	27.248	36.378	45.076	31.417	38	111.3	2.85	42.5	895
408	997	990	3.725	3.650	34.352	27.343	36.488	45.199	31.958	36	120.7	2.88	43.2	990
409	1102	1094	3.372	3.292	34.413	27.426	36.588	45.316	32.530	37	129.9	2.89	43.6	1094
410	1202	1193	3.155	3.068	34.476	27.497	36.670	45.408	33.064	50	134.4	2.85	42.9	1193
411	1276	1266	2.975	2.884	34.500	27.532	36.715	45.462	33.443	55	138.0	2.81	42.7	1266
412	1376	1365	2.784	2.687	34.515	27.561	36.754	45.511	33.935	59	141.9	2.81	42.7	1365
415	1496	1484	2.595	2.490	34.547	27.603	36.807	45.573	34.530	69	145.2	2.77	42.0	1484
416	1713	1698	2.296	2.177	34.579	27.654	36.874	45.657	35.579	80	151.4	2.72	41.5	1698
417	1913	1895	2.094	1.961	34.601	27.689	36.920	45.713	36.528	91	152.7	2.62	40.9	1895
418	2113	2092	1.918	1.771	34.623	27.720	36.963	45.765	37.471	102	153.3	2.60	40.4	2092
419	2315	2291	1.802	1.640	34.637	27.741	36.990	45.800	38.406	110	153.8	2.58	39.9	2291
420	2510	2482	1.722	1.544	34.645	27.755	37.009	45.823	39.297	116	154.8	2.54	39.2	2482
421	2716	2685	1.652	1.456	34.654	27.768	37.027	45.846	40.233	123	154.6	2.51	38.9	2685
422	2894	2859	1.613	1.401	34.661	27.777	37.040	45.861	41.035	128	153.8	2.49	38.5	2859
423	3115	3076	1.571	1.339	34.664	27.784	37.050	45.875	42.022	133	154.2	2.46	38.1	3076
201	3212	3171	1.549	1.308	34.667	27.789	37.056	45.882	42.455	134	155.2	2.49	37.8	3171
424	3317	3274	1.549	1.297	34.669	27.791	37.059	45.886	42.919	136	152.8	2.44	38.1	3274
202	3422	3377	1.529	1.267	34.669	27.793	37.063	45.891	43.383	139	153.3	2.49	37.6	3377
203	3629	3579	1.512	1.229	34.675	27.800	37.072	45.903	44.296	144	152.6	2.49	37.4	3579
204	3630	3580	1.511	1.228	34.674	27.800	37.072	45.902	44.300	144	152.2	2.48	37.3	3580
205	3833	3779	1.488	1.184	34.679	27.807	37.081	45.914	45.192	150	149.1	2.45	36.9	3779
206	4040	3981	1.480	1.153	34.682	27.811	37.087	45.921	46.094	155	147.9	2.43	36.7	3981
207	4245	4181	1.469	1.119	34.684	27.815	37.093	45.929	46.983	158	146.1	2.41	36.4	4181
208	4451	4382	1.458	1.085	34.688	27.820	37.100	45.938	47.874	162	144.0	2.38	36.0	4382
209	4657	4582	1.452	1.055	34.690	27.824	37.105	45.945	48.758	166	142.2	2.36	35.5	4582
210	4861	4781	1.447	1.026	34.691	27.826	37.110	45.951	49.630	170	140.1	2.34	35.3	4781
211	5066	4980	1.447	1.000	34.693	27.830	37.114	45.957	50.502	174	136.9	2.31	35.1	4980
212	5271	5179	1.453	0.980	34.694	27.832	37.118	45.961	51.368	176	136.8	2.30	34.8	5179
215	5488	5390	1.463	0.962	34.696	27.835	37.121	45.966	52.280	179	135.7	2.29	34.7	5390
216	5694	5590	1.476	0.947	34.697	27.836	37.124	45.969	53.142	180	134.6	2.28	34.5	5590
217	5826	5718	1.488	0.941	34.698	27.837	37.125	45.971	53.691	181	134.4	2.24	34.6	5718
218	5890	5780	1.494	0.938	34.696	27.836	37.124	45.970	53.955	181	134.1	2.24	34.7	5780
219	5932	5820	1.498	0.937	34.697	27.837	37.125	45.971	54.130	182	133.7	2.26	34.6	5820
220	5962	5849	1.501	0.935	34.698	27.838	37.126	45.972	54.254	182	134.2	2.26	34.6	5849
221	5983	5870	1.503	0.934	34.697	27.837	37.125	45.971	54.341	182	134.3	2.26	34.6	5870
222	5990	5876	1.504	0.934	34.698	27.838	37.126	45.972	54.370	182	134.3	2.26	34.5	5876
224	5999	5885	1.505	0.934	34.697	27.837	37.126	45.971	54.407	182	134.5	2.26	34.3	5885
223	6000	5886	1.506	0.935	34.698	27.838	37.126	45.972	54.411	182	134.4	2.26	34.5	5886

BOTTOM DEPTH FOR CAST 2 IS 5900

STATION: 228 LEG: IV POSITION: 19° 1′ N 169° 21′ E DATE: 15 NOV 73

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	1H	1	27.73 H	27.73	34.938	22.483	30.736	38.609	22.488	200	2.1	0.09	0.0	1
502	80H	80	27.73 H	27.71	34.955	22.502	30.755	38.629	22.840	200	1.9	0.09	0.0	80
503	111H	111	25.05 H	25.02	35.146	23.474	31.793	39.734	23.946	216	2.0	0.06	0.0	111
504	145H	145	22.38 H	22.35	35.145	24.252	32.646	40.658	24.874	201	2.6	0.10	0.2	145
505	170H	170	20.77 H	20.74	35.076	24.645	33.087	41.146	25.379	193	3.1	0.19	1.5	170
506	225H	225	17.28 H	17.24	34.814	25.341	33.898	42.064	26.324	200	5.4	0.34	4.1	225
507	279H	278	15.45 H	15.41	34.623	25.623	34.246	42.475	26.851	192	8.6	0.59	7.9	278
508	340H	339	12.65 H	12.60	34.385	26.032	34.764	43.094	27.547	182	15.4	0.95	13.0	339
509	399H	398	10.51 H	10.46	34.250	26.328	35.149	43.562	28.122	181	23.9	1.22	17.3	398
510	444H	442	9.11 H	9.06	34.171	26.501	35.385	43.855	28.511	152	33.9	1.59	22.7	442
511	489H	487	7.99 H	7.94	34.156	26.662	35.597	44.114	28.887	112	45.8	1.98	28.3	487
514	549H	547	6.96 H	6.91	34.193	26.837	35.820	44.382	29.347	77	60.3	2.34	33.5	547
525	623H	620	6.15 H	6.09	34.268	27.003	36.024	44.621	29.861	54	74.1	2.59	37.4	620
526	697H	693	5.400H	5.340	34.320	27.136	36.194	44.825	30.344	52	87.2	2.61	38.9	693
527	797H	793	4.88 H	4.81	34.414	27.271	36.354	45.008	30.944	58	96.7	2.69	39.6	793
528	897H	892	4.496H	4.424	34.472	27.360	36.462	45.133	31.498	64	103.0	2.70	39.7	892

STATION: 228 LEG: IV POSITION: 19° 1′ N 169° 21′ E DATE: 15 NOV 73

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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
529	997H	991	4.09 H	4.01	34.506	27.430	36.552	45.244	32.034	70	110.9	2.70	39.8	991
530	1097H	1090	3.74 H	3.66	34.525	27.480	36.621	45.330	32.550	73	116.9	2.71	40.2	1090
531	1220H	1211	3.39 H	3.30	34.543	27.529	36.689	45.414	33.170	76	124.2	2.71	40.3	1211
532	1346H	1336	3.07 H	2.97	34.559	27.571	36.748	45.490	33.797	80	128.6	2.70	40.3	1336
533	1470H	1458	2.820H	2.715	34.571	27.603	36.794	45.549	34.403	84	136.1	2.70	40.3	1458
315	1580	1567	2.67 A	2.56	34.578	27.622	36.822	45.584	34.927	85	141.4	2.66	40.0	1567
316	1584	1571	2.66 A	2.55	34.578	27.623	36.823	45.586	34.947	87	140.6	2.68	40.1	1571
534	1624H	1610	2.61 H	2.49	34.582	27.631	36.834	45.599	35.138	87	141.8	2.69	40.3	1610
317	1735	1720	2.42	2.30	34.594	27.657	36.870	45.646	35.675	95	145.1	2.66	39.8	1720
318	1888	1871	2.245	2.112	34.608	27.682	36.906	45.691	36.401	97	148.0	2.64	39.7	1871
319	2087	2067	2.014	1.868	34.625	27.715	36.952	45.749	37.343	106	154.0	2.60	39.2	2067
320	2289	2266	1.870	1.709	34.638	27.737	36.982	45.788	38.281	113	157.0	2.57	38.8	2266
322	2494	2467	1.769	1.591	34.649	27.754	37.006	45.818	39.222	119	156.3	2.54	38.3	2467
321	2495	2468	1.767	1.589	34.647	27.753	37.005	45.817	39.225	119	156.3	2.54	38.4	2468
323	2695	2665	1.680	1.486	34.657	27.768	37.026	45.843	40.138	125	156.6	2.51	37.7	2665
201	2869	2836	1.642	1.432	34.660	27.774	37.035	45.855	40.919	126	157.5	2.53	37.7	2836
202	2869	2836	1.642	1.432	34.659	27.774	37.034	45.854	40.918	127	158.0	2.54	37.8	2836
324	2921	2887	1.618	1.404	34.660	27.776	37.039	45.860	41.153	128	156.8	2.49	37.7	2887
203	3073	3036	1.586	1.357	34.666	27.784	37.049	45.873	41.836	133	155.6	2.53	37.4	3036
204	3276	3235	1.551	1.303	34.669	27.790	37.058	45.885	42.738	138	154.6	2.50	37.1	3235
205	3481	3436	1.511	1.243	34.673	27.798	37.069	45.899	43.648	143	154.0	2.47	36.8	3436
206	3683	3633	1.485	1.197	34.677	27.804	37.078	45.910	44.538	148	154.1	2.44	36.4	3633
207	3889	3835	1.457	1.147	34.680	27.810	37.086	45.921	45.441	154	151.8	2.40	36.0	3835
208	4092	4033	1.441	1.110	34.683	27.815	37.093	45.930	46.326	159	148.2	2.38	35.7	4033
209	4295	4231	1.419	1.065	34.687	27.821	37.102	45.941	47.209	164	144.4	2.36	35.3	4231
210	4501	4432	1.414	1.037	34.688	27.823	37.106	45.947	48.096	168	141.5	2.34	35.0	4432
211	4705	4630	1.403	1.002	34.691	27.828	37.113	45.955	48.973	172	139.0	2.30	34.8	4630
212	4911	4831	1.402	0.976	34.693	27.831	37.117	45.961	49.852	176	138.9	2.29	34.5	4831
215	4967	4885	1.403	0.970	34.693	27.832	37.118	45.962	50.090	176	136.9	2.27	34.5	4885
216	5121	5035	1.412	0.960	34.694	27.833	37.120	45.964	50.742	179	136.1	2.26	34.5	5035
217	5121	5035	1.412	0.960	34.693	27.832	37.119	45.964	50.741		136.1	2.26	34.5	5035
218	5194	5106	1.417	0.955	34.694	27.833	37.121	45.965	51.050	179	136.0	2.25	34.5	5106
219	5254	5164	1.423	0.954	34.695	27.834	37.122	45.966	51.303		136.0	2.25	34.4	5164
220	5315	5224	1.430	0.953	34.694	27.834	37.121	45.966	51.558	180	133.5	2.25	34.5	5224
221	5358	5265	1.383	0.902	34.697	27.839	37.129	45.977	51.750		133.0	2.23	33.9	5265
222	5378	5285	1.385	0.901	34.698	27.840	37.130	45.978	51.835	186	131.8	2.22	34.0	5285
223	5388	5294	1.386	0.901	34.697	27.839	37.130	45.977	51.876		132.1	2.21	33.9	5294
224	5388	5294	1.386	0.901	34.697	27.839	37.130	45.977	51.876	186	131.7	2.22	33.8	5294

BOTTOM DEPTH FOR CAST 2 IS 5307

STATION: 229 LEG: IV POSITION: 12° 53′ N 173° 28′ E DATE: 18 NOV 73

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	5H	5	27.99 H	27.99	34.432	22.021	30.273	38.145	22.043	199	1.8	0.12	0.0	5
702	23H	23	27.97 H	27.96	34.433	22.030	30.282	38.154	22.127	200	1.8	0.12	0.0	23
703	33H	33	27.98 H	27.97	34.433	22.028	30.280	38.152	22.167	200	1.7	0.12	0.0	33
704	38H	38	27.96 H	27.95	34.434	22.035	30.288	38.160	22.196	200	1.7	0.12	0.0	38
705	42H	42	27.96 H	27.95	34.436	22.037	30.289	38.162	22.214	200	1.7	0.12	0.0	42
706	60H	60	27.95 H	27.93	34.438	22.043	30.296	38.169	22.297	200	1.7	0.12	0.0	60
707	73H	73	27.97 H	27.95	34.556	22.126	30.377	38.249	22.435	201	1.7	0.11	0.0	73
708	92H	92	27.22 H	27.20	34.838	22.576	30.843	38.730	22.965	208	1.7	0.08	0.0	92
709	122H	122	25.46 H	25.43	34.919	23.180	31.491	39.424	23.699	214	1.7	0.08	0.0	122
714	143H	143	23.98 H	23.95	35.035	23.709	32.059	40.029	24.320	206	1.6	0.08	0.0	143
725	193H	193	18.50 H	18.47	34.837	25.057	33.572	41.701	25.897	173	4.6	0.43	5.0	193
726	242H	242	13.96 H	13.92	34.454	25.816	34.495	42.777	26.889	145	13.4	1.03	14.1	242
727	302H	301	10.37 H	10.33	34.292	26.383	35.209	43.626	27.743	115	28.8	1.66	23.4	301
728	351H	350	9.06 H	9.02	34.338	26.638	35.521	43.990	28.229	70	40.2	2.13	29.9	350
729	401H	400	7.926H	7.884	34.306	26.788	35.723	44.240	28.615	59	50.4	2.29	32.8	400
730	460H	458	7.01 H	6.97	34.353	26.955	35.933	44.489	29.060	43	61.6	2.52	36.4	458
731	520H	518	6.53 H	6.48	34.427	27.079	36.078	44.655	29.461	40	68.0	2.62	38.2	518
503	592	589	6.034	5.980	34.467	27.175	36.198	44.797	29.892	46	73.8	2.63	39.2	589

A DATA TAKEN FROM CTD DOWN TRACE
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 229 LEG: IV POSITION: 12° 53' N 173° 28' E DATE: 18 NOV 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
732	600H	597	6.03 H	5.98	34.469	27.177	36.200	44.800	29.931	62U	73.8	2.62	38.9	597
504	691	688	5.506	5.446	34.489	27.257	36.307	44.930	30.435	53	81.5	2.68	39.7	688
505	793	789	5.022	4.955	34.513	27.334	36.408	45.053	30.985	60	88.2	2.71	40.1	789
506	892	887	4.681	4.608	34.531	27.387	36.478	45.140	31.497	57	94.8	2.77	41.1	887
507	992	986	4.315	4.236	34.542	27.435	36.546	45.225	32.010	55	102.1	2.82	41.6	986
508	1091	1084	3.940	3.855	34.558	27.487	36.617	45.315	32.523	61	110.0	2.82	41.6	1084
509	1191	1183	3.651	3.560	34.565	27.522	36.667	45.380	33.022	67	116.0	2.78	41.2	1183
510	1192	1184	3.649	3.558	34.565	27.522	36.667	45.380	33.027	67	116.4	2.80	41.2	1184
511	1289	1280	3.409	3.312	34.577	27.555	36.713	45.438	33.509	72	120.9	2.78	41.1	1280
512	1414	1403	3.123	3.019	34.585	27.588	36.762	45.501	34.121	77	127.0	2.75	40.9	1403
733	1546H	1534	2.717H	2.607	34.600	27.636	36.832	45.592	34.784	86	137.2	2.65	40.4	1534
734	1697H	1683	2.50 H	2.38	34.612	27.664	36.873	45.644	35.507	91	140.8	2.66	40.1	1683
515	1851	1835	2.362	2.231	34.620	27.683	36.899	45.678	36.228	96	143.6	2.60	39.9	1835
517	2002	1984	2.195	2.053	34.632	27.706	36.933	45.720	36.941	102	148.3	2.61	39.3	1984
516	2003	1985	2.194	2.052	34.633	27.707	36.933	45.721	36.947	102	147.2	2.60	39.5	1985
518	2152	2132	2.063	1.910	34.639	27.723	36.957	45.752	37.640	106	151.7	2.60	38.9	2132
519	2297	2274	1.949	1.785	34.647	27.739	36.980	45.781	38.313	111	155.2	2.57	38.8	2274
520	2453	2428	1.856	1.680	34.652	27.750	36.997	45.804	39.029	116	155.4	2.55	38.2	2428
521	2607	2579	1.798	1.609	34.656	27.759	37.009	45.820	39.728	119	156.0	2.53	38.2	2579
522	2762	2732	1.727	1.525	34.660	27.768	37.023	45.838	40.432	123	156.8	2.50	37.8	2732
523	2917	2884	1.681	1.465	34.664	27.775	37.034	45.852	41.129	127	156.1	2.49	37.5	2884
301	3081	3045	1.639	1.408	34.667	27.782	37.044	45.864	41.864	129	154.6	2.42U	37.8U	3045
524	3172	3134	1.598	1.359	34.671	27.788	37.053	45.876	42.275	134	156.0	2.44	37.1	3134
302	3336	3295	1.569	1.315	34.674	27.794	37.061	45.887	43.003	136	154.3	2.42	37.5	3295
303	3590	3543	1.511	1.232	34.677	27.802	37.073	45.904	44.128	143	152.8	2.41	37.0	3543
304	3847	3795	1.463	1.158	34.680	27.809	37.085	45.919	45.258	151	149.4	2.38	36.5	3795
305	4102	4044	1.425	1.093	34.685	27.817	37.097	45.934	46.374	158	146.6	2.35	35.9	4044
306	4307	4244	1.395	1.041	34.689	27.824	37.106	45.947	47.267	165	143.1	2.31	35.4	4244
307	4512	4444	1.369	0.992	34.691	27.829	37.114	45.957	48.154	172	138.6	2.27	34.9	4444
308	4614	4543	1.363	0.974	34.693	27.831	37.118	45.961	48.593	175	137.6	2.26	34.8	4543
309	4717	4644	1.350	0.949	34.692	27.832	37.120	45.965	49.035	176	135.0	2.27	34.6	4644
310	4872	4794	1.333	0.914	34.697	27.838	37.128	45.975	49.703	183	133.0	2.23	34.1	4794
311	5078	4995	1.329	0.885	34.699	27.842	37.133	45.981	50.580	187	130.5	2.21	33.8	4995
312	5284	5195	1.341	0.871	34.700	27.843	37.135	45.985	51.449	188	130.4	2.21	33.8	5195
315	5476	5382	1.357	0.862	34.700	27.844	37.137	45.986	52.255	189	130.4	2.16	33.7	5382
316	5578	5481	1.369	0.860	34.700	27.844	37.137	45.987	52.680	189	130.3	2.18	33.6	5481
317	5578	5481	1.369	0.860	34.700	27.844	37.137	45.987	52.680	189	130.2	2.20	33.7	5481
318	5650	5550	1.377	0.858	34.700	27.844	37.137	45.987	52.980	189	129.9	2.20	33.5	5550
319	5725	5623	1.386	0.857	34.700	27.844	37.137	45.987	53.292	189	130.4	2.20	33.5	5623
320	5755	5652	1.390	0.857	34.700	27.844	37.137	45.987	53.417	189	130.1	2.21	33.6	5652
321	5795	5691	1.396	0.857	34.700	27.844	37.137	45.987	53.582	189	130.2	2.21	33.4	5691
322	5816	5711	1.399	0.857	34.700	27.844	37.137	45.987	53.670	189	129.0	2.22	33.8	5711
323	5826	5721	1.400	0.857	34.700	27.844	37.137	45.987	53.711	190	126.9	2.21	33.8	5721
324	5826	5721	1.400	0.857	34.700	27.844	37.137	45.987	53.711	190	126.6	2.21	33.7	5721

BOTTOM DEPTH FOR CAST 3 IS 5730

STATION: 230 LEG: IV POSITION: 12° 29' N 177° 26' E DATE: 20 NOV 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	27.64	27.64	34.49 D	22.175	30.435	38.315	22.175					0
101	22	22	27.637	27.632	34.488	22.176	30.436	38.317	22.270	201	2.1	0.18	0.0	22
1202	50	50	27.69	27.68	34.66 D	22.291	30.548	38.425	22.503					50
102	78	78	25.948	25.930	34.908	23.020	31.319	39.238	23.352	213	2.1	0.12	0.0	78
1203	96	96	24.69	24.67	34.88 D	23.380	31.712	39.665	23.789					96
103	119	119	22.883	22.858	35.051	24.037	32.417	40.416	24.547	202	2.2	0.15	0.1	119
1204	145	145	21.24	21.21	35.02 D	24.474	32.902	40.948	25.099					145
1205	173	173	17.11	17.08	34.85 D	25.407	33.969	42.140	26.164					173
104	197	197	15.016	14.986	34.545	25.657	34.296	42.540	26.526	150	10.9	0.92	11.2	197
1206	224	224	13.09	13.06	34.42 D	25.968	34.682	42.994	26.966					224

STATION: 230 LEG: IV POSITION: 12° 29' N 177° 26' E DATE: 20 NOV 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
105	247	246	11.269	11.237	34.310	26.235	35.023	43.405	27.344	123	23.9	1.55	20.1	246
1207	269	268	10.58	10.55	34.33 D	26.375	35.191	43.599	27.586					268
106	298	297	9.875	9.840	34.401	26.552	35.398	43.833	27.898	69	35.4	2.10	28.2	297
1208	331	330	9.41	9.37	34.49 D	26.700	35.565	44.017	28.197					330
107	372	371	8.919	8.878	34.531	26.812	35.698	44.171	28.498	31	43.1	2.47	33.7	371
1209	432	430	7.877	7.832	34.524D	26.966	35.900	44.417	28.934					430
108	502	500	7.181	7.131	34.498	27.046	36.014	44.561	29.339	42	59.1	2.61	36.6	500
1210	601	598	6.325	6.269	34.506D	27.168	36.177	44.762	29.922					598
1211	707	703	5.698	5.635	34.510D	27.251	36.291	44.905	30.498					703
109	802	798	5.231	5.162	34.520	27.315	36.379	45.015	31.004	50	86.9	2.83	40.2	798
1212	961	955	4.511	4.433	34.538D	27.411	36.511	45.182	31.840					955
110	1103	1096	3.972	3.886	34.553	27.480	36.608	45.305	32.570	61	112.3	2.87	40.8	1096
1213	1235	1226	3.493	3.400	34.571D	27.542	36.695	45.416	33.248					1226
1214	1312	1302	3.283	3.186	34.576D	27.566	36.731	45.462	33.629					1302
111	1504	1492	2.779	2.671	34.600	27.630	36.823	45.580	34.585	83	138.3	2.78	39.8	1492
1215	1708	1694	2.408	2.288	34.614D	27.673	36.887	45.663	35.570					1694
1216	1910	1893	2.162	2.029	34.631D	27.707	36.935	45.724	36.529					1893
112	2110	2090	2.011	1.863	34.642	27.729	36.965	45.763	37.460	109	153.7	2.66	38.3	2090
1217	2276	2253	1.891	1.730	34.650D	27.745	36.989	45.793	38.229					2253
115	2459	2434	1.811	1.636	34.655	27.756	37.005	45.814	39.064	118	158.4	2.60	37.9	2434
1218	2619	2591	1.747	1.558	34.659D	27.765	37.018	45.831	39.791					2591
116	2784	2753	1.695	1.492	34.666	27.775	37.032	45.849	40.539	126	159.0	2.57	37.3	2753
117	2989	2954	1.622	1.401	34.668	27.783	37.045	45.867	41.460	131	160.0	2.54	37.0	2954
118	3192	3153	1.566	1.326	34.672	27.791	37.058	45.883	42.368	136	160.6	2.51	36.5	3153
119	3396	3353	1.515	1.256	34.678	27.801	37.071	45.900	43.278	142	159.8	2.48	36.3	3353
120	3599	3552	1.469	1.190	34.681	27.808	37.082	45.914	44.177	148	157.8	2.44	36.0	3552
1219	3749	3699	1.436	1.142	34.683D	27.812	37.089	45.924	44.838					3699
121	3906	3852	1.411	1.101	34.685	27.817	37.096	45.933	45.527	159	152.0	2.39	35.0	3852
1220	4106	4048	1.363	1.032	34.690D	27.825	37.108	45.949	46.406					4048
122	4316	4252	1.334	0.981	34.693	27.831	37.117	45.960	47.319	174	143.0	2.32	33.9	4252
123	4333	4269	1.327	0.972	34.693	27.832	37.118	45.962	47.394	175	141.2	2.31	34.0	4269
1221	4554	4485	1.302	0.922	34.696D	27.837	37.126	45.973	48.350					4485
124	4787	4711	1.291	0.884	34.700	27.843	37.134	45.982	49.351	189	131.7	2.24	32.9	4711
1222	4989	4908	1.295	0.863	34.701D	27.845	37.137	45.987	50.210					4908
1223	5199	5112	1.314	0.856	34.702D	27.846	37.139	45.989	51.097					5112
1224	5405	5312	1.337	0.852	34.702D	27.846	37.139	45.990	51.961					5312
1225	5612	5513	1.361	0.848	34.703D	27.847	37.141	45.991	52.827					5513
1226	5848	5742	1.389	0.843	34.701D	27.846	37.140	45.990	53.806					5742

BOTTOM DEPTH FOR CAST 1 IS 5751

STATION: 231 LEG: IV POSITION: 14° 7' N 178° 34' W DATE: 22 NOV 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
711	4H	4	27.22 H	27.22	34.632	22.414	30.683	38.572	22.431	202	2.2	0.16	0.0	4
712	49H	49	27.21 H	27.20	34.646	22.431	30.700	38.590	22.639	201	2.1	0.16	0.0	49
715	89H	89	27.13 H	27.11	34.936	22.677	30.945	38.834	23.054	204	2.0	0.11	0.1	89
716	129H	129	24.01 H	23.98	35.072	23.727	32.076	40.045	24.278	209	2.2	0.11	0.1	129
717	199H	199	18.37 H	18.33	34.871	25.115	33.635	41.767	25.982	181	4.6	0.42	4.6	199
718	278H	277	11.64 H	11.60	34.347	26.195	34.968	43.335	27.441	117	23.4	1.54	20.5	277
719	398H	397	9.02 H	8.98	34.459	26.740	35.623	44.092	28.542	42	46.6	2.41	33.4	397
920	554H	552	6.91 H	6.86	34.482	27.072	36.052	44.612	29.604	46	62.3	2.54	37.7	552
721	697H	693	5.96 H	5.90	34.506	27.216	36.243	44.845	30.412	42	75.9	2.76	39.3	693
722	896H	891	4.90 H	4.82	34.524	27.357	36.437	45.089	31.481	52	93.0	2.86	40.9	891
723	1144H	1136	3.89 H	3.80	34.551	27.487	36.620	45.321	32.766	64	113.8	2.81	40.4	1136
724	1395H	1385	3.126H	3.023	34.575	27.580	36.754	45.493	34.026	76	128.9	2.77	40.2	1385
725	1643H	1630	2.62 H	2.50	34.602	27.646	36.848	45.613	35.239	87	140.5	2.73	39.6	1630
726	1893H	1876			34.624					99	150.5	2.68	39.0	1876
727	2144H	2124	2.02 H	1.87	34.638	27.725	36.962	45.759	37.609	106	156.0	2.64	38.5	2124
728	2393H	2369	1.86 H	1.69	34.647	27.746	36.992	45.798	38.756	114	158.0	2.57	37.9	2369
729	2646H	2617	1.75 H	1.56	34.656	27.762	37.016	45.829	39.909	120	159.3	2.54	37.5	2617
730	2897H	2864	1.64 H	1.43	34.665	27.779	37.040	45.860	41.048	127	160.1	2.52	37.1	2864
731	3149H	3111	1.57 H	1.33	34.670	27.789	37.055	45.880	42.177	134	159.7	2.48	36.7	3111
732	3405H	3362	1.50 H	1.24	34.675	27.800	37.071	45.901	43.318	141	158.5	2.46	36.4	3362

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

STATION: 231 LEG: IV POSITION: 14° 7' N 178° 34' W DATE: 22 NOV 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
733	3661H	3612	1.47 H	1.18	34.678	27.806	37.080	45.913	44.445	146	157.9	2.43	35.8	3612
734	3925H	3871	1.439H	1.126	34.681	27.812	37.090	45.925	45.602	154	154.7	2.39	35.5	3871
519	4118H	4059	1.425H	1.091	34.685	27.817	37.097	45.935	46.443	158	152.5	2.37	35.4	4059
520	4270H	4207	1.40 H	1.05	34.688	27.823	37.104	45.944	47.106	164	148.0	2.36	35.0	4207
521	4422H	4356	1.35 H	0.98	34.692	27.830	37.115	45.959	47.772	171	142.0	2.33	34.5	4356
522	4574H	4504	1.31 H	0.93	34.694	27.835	37.124	45.970	48.432	178	138.4	2.30	33.9	4504
523	4727H	4653	1.304H	0.904	34.698	27.840	37.130	45.977	49.091	184	134.1	2.28	33.7	4653
524	4905H	4826	1.30 H	0.88	34.698	27.841	37.133	45.982	49.850	187	134.8	2.25	33.3	4826
525	5109H	5025	1.32 H	0.87	34.699	27.843	37.134	45.984	50.713	188	133.6	2.25	33.3	5025
526	5316H	5226	1.32 H	0.85	34.700	27.845	37.138	45.989	51.588	189	133.3	2.24	33.2	5226
527	5516H	5420	1.36 H	0.86	34.699	27.843	37.136	45.986	52.421	189	132.1	2.24	33.3	5420
528	5523H	5427	1.36 H	0.86	34.700	27.844	37.137	45.987	52.451	189	132.3	2.24	33.4	5427
529	5610H	5511	1.38 H	0.87	34.700	27.844	37.136	45.985	52.812	189	131.2	2.24	33.3	5511
530	5662H	5562	1.37 H	0.85	34.700	27.845	37.138	45.988	53.032	189	133.1	2.25	33.3	5562
531	5713H	5611	1.38 H	0.85	34.700	27.845	37.138	45.988	53.243	190	133.0	2.24	33.4	5611
532	5745H	5642	1.37 H	0.84	34.700	27.845	37.139	45.990	53.379	190	133.4	2.24	33.4	5642
533	5750H	5647	1.37 H	0.84	34.699	27.845	37.139	45.990	53.399	190	133.2	2.23	33.5	5647
534	5754H	5651	1.38 H	0.85	34.698	27.843	37.137	45.987	53.413	188	132.7	2.23	33.4	5651

BOTTOM DEPTH FOR CAST 5 IS 5663

STATION: 232 LEG: IV POSITION: 15° 24' N 176° 13' W DATE: 24 NOV 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	1	1	27.35	27.35	34.89 D	22.563	30.826	38.709	22.568					1
101	21	21	27.122	27.117	34.884	22.635	30.904	38.793	22.724	204	1.7	0.12	0.0	21
1202	52	52	27.12	27.11	34.88 D	22.638	30.907	38.797	22.859					52
102	77	77	27.118	27.099	34.885	22.642	30.911	38.800	22.968	203	1.7	0.12	0.0	77
1203	99	99	26.79	26.77	34.92 D	22.772	31.049	38.947	23.191					99
103	148	148	23.408	23.376	35.019	23.864	32.230	40.215	24.497	210	1.7	0.15	0.0	148
1205	203	203	19.66	19.62	35.01 D	24.895	33.371	41.463	25.774					203
104	248	247	15.432	15.393	34.595	25.604	34.228	42.458	26.697	172	8.5	0.69	8.4	247
1206	289	288	12.10	12.06	34.34 D	26.103	34.857	43.207	27.395					288
1207	330	329	10.22	10.18	34.28 D	26.398	35.231	43.655	27.886					329
105	375	374	9.331	9.288	34.270	26.542	35.414	43.873	28.238	97	36.6	1.97	26.8	374
1208	425	423	7.955	7.911	34.30 D	26.781	35.715	44.231	28.717					423
1209	474	472	7.560	7.512	34.42 D	26.929	35.879	44.411	29.090					472
106	526	524	7.109	7.057	34.438	27.009	35.981	44.532	29.412	40	61.5	2.62	37.2	524
1210	613	610	6.445	6.387	34.465D	27.121	36.124	44.705	29.928					610
107	701	697	5.860	5.797	34.476	27.204	36.237	44.844	30.421	41	78.8	2.80	40.2	697
1211	805	801	5.307	5.237	34.492D	27.284	36.344	44.977	30.985					801
108	902	897	4.931	4.855	34.506	27.339	36.418	45.069	31.490	45	94.9	2.88	41.7	897
1212	1035	1028	4.365	4.281	34.524D	27.416	36.524	45.202	32.186					1028
1213	1174	1166	3.812	3.721	34.538D	27.484	36.622	45.327	32.903					1166
109	1302	1293	3.366	3.269	34.565	27.549	36.710	45.437	33.564	69	127.5	2.83	41.2	1293
1214	1472	1461	2.967	2.860	34.578D	27.596	36.779	45.527	34.399					1461
1215	1627	1614	2.649	2.533	34.595D	27.638	36.838	45.602	35.157					1614
110	1805	1789	2.381	2.253	34.611	27.674	36.889	45.667	36.010	92	148.7	2.73	40.2	1789
1216	1990	1972	2.152	2.012	34.622D	27.701	36.930	45.720	36.885					1972
111	2185	2164	2.004	1.849	34.633	27.723	36.960	45.759	37.792	106	157.6	2.66	39.4	2164
115	2528	2501	1.795	1.614	34.648	27.752	37.003	45.813	39.370	116	161.4	2.61	38.8	2501
116	2731	2701	1.707	1.509	34.656	27.766	37.022	45.838	40.294	122	161.2	2.57	38.3	2701
117	2935	2901	1.613	1.397	34.663	27.779	37.042	45.863	41.218	129	162.4	2.55	37.9	2901
118	3138	3100	1.562	1.328	34.669	27.789	37.055	45.881	42.128	134	160.7	2.51	37.6	3100
119	3342	3300	1.521	1.267	34.673	27.796	37.066	45.894	43.036	139	160.0	2.49	37.3	3300
120	3547	3501	1.487	1.213	34.677	27.803	37.076	45.907	43.943	144	159.5	2.46	36.8	3501
121	3750	3699	1.470	1.175	34.680	27.808	37.083	45.916	44.835	142U	156.9	2.43	36.4	3699
122	3954	3899	1.456	1.139	34.681	27.811	37.088	45.923	45.724	153	156.0	2.42	36.3	3899
1217	4080	4022	1.441	1.111	34.684D	27.815	37.094	45.930	46.275					4022
123	4221	4159	1.432	1.086	34.685	27.818	37.098	45.935	46.886	159	149.2	2.38	35.9	4159
124	4229	4167	1.431	1.084	34.685	27.818	37.098	45.936	46.921	161	150.5	2.36	35.7	4167
1218	4375	4310	1.411	1.048	34.689D	27.823	37.105	45.945	47.556					4310
1219	4579	4509	1.390	1.004	34.692D	27.829	37.113	45.955	48.438					4509

STATION: 232 LEG: IV POSITION: 15° 24' N 176° 13' W DATE: 24 NOV 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
1220	4783	4707	1.364	0.955	34.695D	27.834	37.122	45.966	49.316					4707
1221	4989	4908	1.358	0.924	34.697D	27.838	37.127	45.973	50.195					4908
1222	5197	5110	1.361	0.901	34.699D	27.841	37.131	45.979	51.077					5110
1223	5402	5309	1.371	0.885	34.700D	27.843	37.134	45.982	51.941					5309
1224	5608	5509	1.391	0.877	34.700D	27.843	37.135	45.984	52.801					5509
1225	5749	5646	1.403	0.870	34.698D	27.842	37.134	45.983	53.387					5646

BOTTOM DEPTH FOR CAST 1 IS 5661

STATION: 233 LEG: IV POSITION: 18° 14' N 169° 8' W DATE: 26 NOV 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
418	4H	4	26.54 H	26.54	34.656	22.643	30.929	38.835	22.660	203	1.9	0.18	0.0	4
419	20H	20	26.53 H	26.53	34.658	22.649	30.935	38.842	22.734	203	1.8	0.17	0.1	20
420	49H	49	26.54 H	26.53	34.663	22.652	30.938	38.844	22.860	204	1.8	0.17	0.1	49
421	75H	75	26.62 H	26.60	34.857	22.775	31.057	38.960	23.093	206	1.8	0.15	0.1	75
422	99H	99	25.23 H	25.21	34.811	23.166	31.485	39.424	23.588	209	1.6	0.17	0.1	99
423	149H	149	21.35 H	21.32	35.007	24.434	32.859	40.902	25.076	205	1.8	0.21	0.3	149
424	199H	199	17.10 H	17.07	34.716	25.308	33.872	42.045	26.179	176	5.5	0.55	6.5	199
425	249H	248	14.01 H	13.97	34.403	25.766	34.445	42.725	26.870	169	10.3	0.84	10.9	248
426	348H	347	9.87 H	9.83	34.184	26.385	35.234	43.673	27.956	152	26.9	1.47	20.8	347
427	398H	397	8.48 H	8.44	34.139	26.574	35.486	43.982	28.382	131	38.6	1.79	25.7	397
428	547H	545	6.15 H	6.10	34.235	26.976	35.997	44.595	29.488	53	71.7	2.55	37.2	545
429	646H	643	5.618H	5.561	34.354	27.137	36.183	44.803	30.108	43	80.1	2.71	39.8	643
430	746H	742	5.33 H	5.27	34.429	27.231	36.291	44.923	30.663	44	86.8	2.76	40.5	742
431	845H	840	4.92 H	4.85	34.475	27.315	36.395	45.047	31.206	47	93.6	2.80	41.0	840
432	994H	988	4.26 H	4.18	34.513	27.418	36.532	45.215	32.004	50	107.8	2.81	41.6	988
433	1194H	1186	3.656H	3.565	34.542	27.503	36.648	45.361	33.017	58	121.6	2.83	41.8	1186
301	1349	1339	3.334	3.233	34.559	27.548	36.711	45.440	33.778	61	126.2	2.83	41.8	1339
302	1350	1340	3.333	3.232	34.561	27.549	36.712	45.441	33.784	62	127.5	2.87	41.6	1340
434	1393H	1382	3.12 H	3.02	34.567	27.574	36.748	45.488	34.011	66	133.2	2.80	41.5	1382
303	1550	1537	2.828	2.716	34.583	27.613	36.803	45.558	34.775	73	139.2	2.84	41.3	1537
304	1749	1734	2.484	2.360	34.598	27.655	36.865	45.637	35.733	85	146.0	2.78	40.7	1734
305	1951	1933	2.162	2.025	34.619	27.698	36.926	45.715	36.705	95	153.6	2.75	40.1	1933
306	2153	2132	2.002	1.850	34.628D	27.719	36.956	45.755	37.644	102	156.4	2.71	39.6	2132
307	2360	2336	1.810	1.643	34.640	27.743	36.992	45.801	38.609	110	160.1	2.67	39.2	2336
308	2565	2537	1.705	1.522	34.652D	27.762	37.017	45.833	39.551	117	162.2	2.63	38.6	2537
309	2769	2738	1.617	1.417	34.659	27.775	37.036	45.857	40.478	124	160.2	2.61	38.4	2738
310	2973	2938	1.593	1.374	34.663	27.781	37.045	45.867	41.390	127	165.2	2.59	38.0	2938
311	3178	3139	1.527	1.290	34.671	27.793	37.062	45.889	42.312	135	164.4	2.56	37.5	3139
312	3381	3338	1.497	1.240	34.674	27.799	37.070	45.900	43.212	139	163.2	2.52	37.3	3338
314	3393	3349	1.496	1.238	34.674	27.799	37.070	45.900	43.265	139	162.9	2.52	37.3	3349
315	3595	3547	1.478	1.199	34.678	27.805	37.078	45.910	44.156	143	163.1	2.49	36.9	3547
316	3799	3747	1.457	1.157	34.680	27.809	37.085	45.919	45.050	148	162.5	2.39	36.7	3747
317	4004	3947	1.450	1.128	34.681	27.812	37.089	45.925	45.942	152	159.3	2.42	36.5	3947
318	4156	4095	1.452	1.113	34.685	27.816	37.094	45.931	46.603	154	158.5	2.42	36.3	4095
319	4308	4244	1.454	1.098	34.685	27.817	37.096	45.934	47.258	156	156.7	2.40	36.2	4244
320	4467	4399	1.439	1.065	34.687	27.821	37.102	45.941	47.945	157	152.8	2.39	35.7	4399
321	4630	4558	1.385	0.994	34.691	27.829	37.114	45.956	48.656	171	143.8	2.37	35.1	4558
322	4791	4714	1.353	0.943	34.695	27.835	37.123	45.968	49.352	178	140.7	2.30	34.5	4714
323	4954	4873	1.338	0.909	34.696	27.838	37.128	45.975	50.050	182	136.7	2.28	34.1	4873
324	5053	4969	1.349	0.908	34.698	27.840	37.130	45.977	50.469	182	136.9	2.28	34.1	4969

BOTTOM DEPTH FOR CAST 3 IS 4977

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

STATION: 234 LEG: IV POSITION: 19° 52' N 163° 14' W DATE: 28 NOV 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	26.04	26.04	35.05 D	23.095	31.389	39.304	23.095					0
101	22	22	26.046	26.041	35.040	23.086	31.380	39.295	23.179	205	2.0	0.08	0.0	22
1202	66	66	25.52	25.50	35.13 D	23.318	31.625	39.553	23.598					66
102	89	89	24.088	24.068	35.137	23.751	32.097	40.062	24.131	223	2.0	0.08	0.0	89
1203	115	115	21.88	21.86	35.18 D	24.418	32.826	40.851	24.913					115
1204	146	146	20.39	20.36	35.12 D	24.781	33.234	41.303	25.412					146
103	170	170	19.484	19.452	35.071	24.982	33.464	41.560	25.719	192	3.4	0.27	2.5	170
1205	205	204	18.21	18.17	35.00 D	25.253	33.776	41.911	26.145					204
104	245	244	15.258	15.220	34.602	25.649	34.278	42.514	26.728	186	7.8	0.58	7.2	244
105	348	347	11.190	11.146	34.237	26.195	34.988	43.374	27.756	181	17.3	1.08	14.8	347
1206	399	397	9.635	9.589	34.18 D	26.419	35.279	43.727	28.221					397
106	446	444	8.174	8.127	34.111	26.599	35.525	44.035	28.628	139	38.7	1.78	25.1	444
1207	495	493	7.300	7.251	34.10 D	26.718	35.686	44.234	28.979					493
1208	550	547	6.764	6.711	34.185D	26.857	35.850	44.420	29.375					547
107	599	596	6.054	6.000	34.215	26.973	35.999	44.602	29.723	52	71.8	2.60	37.1	596
1209	651	648	5.552	5.495	34.281D	27.087	36.137	44.762	30.082					648
108	696	692	5.302	5.243	34.353	27.174	36.236	44.871	30.378	37	87.1	2.80	40.3	692
1210	795	790	4.936	4.870	34.435D	27.282	36.361	45.012	30.944					790
109	897	891	4.552	4.479	34.478	27.359	36.457	45.126	31.495	47	100.8	2.84	41.3	891
1211	996	990	4.207	4.128	34.498D	27.411	36.528	45.214	32.008					990
110	1099	1091	3.952	3.866	34.516	27.452	36.582	45.281	32.525	53	113.1	2.85	41.7	1091
1212	1250	1241	3.555	3.460	34.535D	27.507	36.658	45.376	33.280					1241
111	1399	1388	3.228	3.124	34.554	27.554	36.723	45.457	34.015	63	130.1	2.82	41.6	1388
1213	1450	1439	3.097	2.990	34.562D	27.572	36.748	45.489	34.270					1439
112	1698	1683	2.620	2.498	34.590	27.637	36.839	45.605	35.479	78	146.9	2.76	40.9	1683
1214	1851	1834	2.408	2.276	34.606D	27.668	36.882	45.659	36.211					1834
114	2009	1990	2.201	2.059	34.616	27.693	36.919	45.707	36.960	93	155.6	2.69	39.8	1990
1215	2161	2140	2.034	1.881	34.626D	27.715	36.950	45.747	37.674					2140
115	2317	2293	1.938	1.773	34.635	27.730	36.972	45.774	38.395	104	159.9	2.63	39.3	2293
1216	2464	2438	1.823	1.647	34.643D	27.746	36.994	45.803	39.076					2438
116	2624	2595	1.739	1.550	34.650	27.758	37.012	45.826	39.808	114	162.9	2.55	38.5	2595
1217	2771	2739	1.682	1.480	34.654D	27.766	37.024	45.842	40.473					2739
117	3028	2992	1.603	1.378	34.663	27.781	37.044	45.867	41.632	126	163.9	2.50	37.9	2992
1218	3230	3190	1.547	1.304	34.669D	27.790	37.058	45.885	42.536					3190
118	3435	3390	1.516	1.253	34.673	27.797	37.068	45.897	43.445	136	159.9	2.46	37.3	3390
1219	3637	3588	1.492	1.208	34.676D	27.802	37.075	45.907	44.335					3588
119	3841	3788	1.479	1.174	34.679	27.807	37.082	45.915	45.229	145	159.2	2.42	36.8	3788
1220	3987	3930	1.468	1.147	34.680D	27.810	37.086	45.921	45.865					3930
120	4145	4084	1.466	1.128	34.682	27.813	37.090	45.926	46.550	151	158.8	2.39	36.4	4084
1221	4296	4232	1.462	1.107	34.684D	27.816	37.094	45.931	47.204					4232
121	4452	4384	1.462	1.089	34.686	27.818	37.098	45.936	47.876	156	154.3	2.37	35.8	4384
1222	4549	4478	1.455	1.071	34.687D	27.820	37.101	45.940	48.293					4478
122	4658	4585	1.456	1.059	34.688	27.822	37.103	45.943	48.760	161	149.3	2.33	35.6	4585
1223	4757	4681	1.450	1.041	34.690D	27.825	37.107	45.947	49.185					4681
123	4860	4781	1.448	1.027	34.689	27.825	37.108	45.949	49.624	166	146.4	2.32	35.3	4781
1224	4982	4900	1.436	1.000	34.692D	27.829	37.114	45.956	50.147					4900
124	5115	5029	1.421	0.969	34.693	27.832	37.118	45.962	50.714	174	139.6	2.27	34.6	5029

BOTTOM DEPTH FOR CAST 1 IS 5051

STATION: 235 LEG: V POSITION: 16° 45' N 161° 23' W DATE: 6 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
601	3	3	25.850	25.849	34.262	22.558	30.866	38.795	22.571	207	2.1	0.19	0.0	3
602	17	17	25.825	25.821	34.262	22.567	30.876	38.805	22.639	207	2.2	0.19	0.0	17
603	33	33	25.845	25.837	34.273	22.570	30.879	38.807	22.711	207	2.2	0.19	0.0	33
604	63	63	25.919	25.904	34.771	22.925	31.226	39.147	23.193	208	2.1	0.19	0.0	63
605	93	93	24.713	24.692	34.792	23.306	31.639	39.592	23.703	211	2.2	0.19	0.0	93
606	128	128	22.052	22.026	34.902	24.159	32.565	40.589	24.709	213	2.7	0.22	0.0	128
607	160	160	19.276	19.246	34.929	24.927	33.417	41.521	25.622	189	3.9	0.35	2.8	160
608	200	200	16.544	16.511	34.708	25.434	34.017	42.208	26.311	182	6.6	0.53	6.1	200
609	243	242	13.191	13.157	34.343	25.889	34.600	42.910	26.970	174	11.1	0.85	10.7	242
610	285	284	10.924	10.888	34.215	26.224	35.028	43.425	27.505	151	21.4	1.37	18.7	284

STATION: 235 LEG: V POSITION: 16° 45' N 161° 23' W DATE: 6 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
611	325	324	9.831	9.793	34.213	26.414	35.264	43.704	27.882	124	29.6	1.73	23.5	324
612	364	363	8.622	8.583	34.187	26.589	35.494	43.983	28.242	107	38.9	1.96	27.1	363
615	430	428	7.805	7.761	34.297	26.799	35.740	44.262	28.758	48	51.9	2.47	33.9	428
616	465	463	7.559	7.512	34.358	26.883	35.834	44.367	29.003	35	56.4	2.59	36.1	463
617	505	503	7.010	6.961	34.387	26.983	35.960	44.516	29.291	26	63.6	2.68	38.0	503
618	555	552	6.672	6.619	34.436	27.067	36.060	44.631	29.607	28	67.8	2.73	39.3	552
619	601	598	6.319	6.263	34.457	27.131	36.140	44.727	29.885	28	71.2	2.78	40.2	598
620	676	673	5.916	5.855	34.459	27.184	36.213	44.819	30.286	31	78.2	2.82	40.9	673
621	754	750	5.423	5.357	34.476	27.258	36.312	44.939	30.724	34	85.5	2.86	41.9	750
622	839	834	5.096	5.025	34.505	27.319	36.390	45.033	31.179	33	90.6	2.91	42.9	834
623	926	920	4.716	4.639	34.518	27.373	36.463	45.124	31.637	39	97.8	2.92	43.2	920
801	961	955	4.577	4.498	34.521	27.391	36.488	45.155	31.818	40	100.7	2.92	43.0	955
624	1013	1006	4.404	4.322	34.525	27.413	36.519	45.195	32.081	41	105.4	2.93	43.3	1006
802	1112	1104	4.029	3.942	34.527	27.454	36.580	45.274	32.583	48	111.2	2.95	42.8	1104
803	1262	1253	3.540	3.444	34.553	27.523	36.675	45.393	33.350	55	122.2	2.94	42.7	1253
804	1411	1400	3.175	3.070	34.571	27.572	36.744	45.480	34.089	63	130.3	2.90	42.2	1400
805	1562	1549	2.812	2.699	34.591	27.621	36.812	45.567	34.838	73	137.2	2.86	41.7	1549
806	1711	1696	2.594	2.471	34.601	27.648	36.852	45.618	35.550	78	143.8	2.81	41.2	1696
807	1862	1845	2.335	2.203	34.613	27.679	36.898	45.678	36.276	86	149.9	2.79	40.8	1845
808	2016	1997	2.168	2.025	34.626	27.704	36.932	45.721	37.003	94	155.1	2.75	40.3	1997
809	2166	2145	2.000	1.847	34.634	27.724	36.961	45.760	37.708	101	159.3	2.71	39.8	2145
810	2320	2296	1.889	1.725	34.646	27.742	36.987	45.791	38.424	108	159.8	2.66	39.5	2296
811	2482	2456	1.799	1.622	34.652	27.755	37.005	45.815	39.167	113	160.1	2.63	39.2	2456
812	2625	2596	1.735	1.546	34.657	27.764	37.018	45.832	39.818		161.4	2.61	38.7	2596
815	2779	2748	1.687	1.484	34.661	27.772	37.029	45.846	40.514	121	162.1	2.59	38.7	2748
816	2930	2896	1.645	1.429	34.665	27.779	37.039	45.859	41.193	125	163.5	2.57	38.3	2896
817	3096	3059	1.603	1.372	34.667	27.784	37.048	45.871	41.935	127	163.1	2.54	38.2	3059
818	3237	3197	1.565	1.321	34.671	27.791	37.058	45.883	42.566	132	162.9	2.51	37.8	3197
819	3399	3356	1.532	1.272	34.675	27.797	37.067	45.895	43.286	136	161.6	2.49	37.6	3356
820	3541	3495	1.507	1.233	34.677	27.802	37.073	45.903	43.914	140	161.1	2.48	37.2	3495
821	3694	3644	1.492	1.202	34.678	27.804	37.078	45.910	44.585	144	160.2	2.45	37.1	3644
822	3848	3795	1.463	1.158	34.681	27.810	37.086	45.920	45.263	148	157.8	2.43	36.7	3795
401	3944H	3889	1.46 H	1.14	34.683	27.812	37.089	45.924	45.682	149	156.0	2.38	36.8	3889
823	4002	3945	1.460	1.138	34.683	27.813	37.090	45.925	45.933	155U	154.8	2.39	36.6	3945
402	4100H	4041	1.44 H	1.11	34.685	27.816	37.095	45.932	46.363	154	154.0	2.40	36.5	4041
824	4156	4096	1.452	1.113	34.683	27.814	37.093	45.929	46.601	155	152.3	2.38	36.3	4096
403	4256H	4193	1.430H	1.080	34.687	27.820	37.100	45.938	47.039	157	150.3	2.38	36.3	4193
404	4409H	4343	1.43 H	1.06	34.687	27.821	37.102	45.941	47.698	161	147.2	2.37	36.0	4343
405	4561H	4491	1.42 H	1.04	34.691	27.826	37.109	45.949	48.354	165	145.5	2.34	35.7	4491
406	4714H	4640	1.41 H	1.01	34.692	27.828	37.113	45.955	49.011	169	143.2	2.32	35.2	4640
407	4866H	4788	1.39 H	0.97	34.694	27.832	37.119	45.963	49.664	173	140.0	2.29	35.0	4788
408	5018H	4936	1.401H	0.962	34.695	27.834	37.121	45.965	50.308	175	138.9	2.28	34.9	4936
409	5171H	5084	1.406H	0.948	34.695	27.835	37.122	45.967	50.955	176	138.1	2.27	34.6	5084
414	5324H	5233	1.42 H	0.94	34.696	27.836	37.124	45.969	51.599	178	137.3	2.26	34.6	5233
425	5340H	5249	1.418H	0.938	34.696	27.836	37.124	45.970	51.667					5249
426	5410H	5317	1.423H	0.934	34.696	27.836	37.125	45.971	51.961					5317
427	5472H	5377	1.426H	0.928	34.696	27.837	37.125	45.972	52.221					5377
428	5477H	5382	1.42 H	0.92	34.697	27.838	37.127	45.973	52.244	179	136.8	2.25	34.5	5382
429	5522H	5425	1.42 H	0.92	34.696	27.837	37.127	45.974	52.432					5425
430	5564H	5466	1.43 H	0.92	34.697	27.838	37.127	45.974	52.607					5466
431	5595H	5496	1.44 H	0.93	34.697	27.838	37.127	45.973	52.735					5496
432	5616H	5516	1.441H	0.924	34.696	27.837	37.126	45.972	52.822					5516
433	5625H	5525	1.445H	0.927	34.698	27.838	37.127	45.973	52.860	179	136.4	2.24	34.5	5525
434	5630H	5530	1.448H	0.929	34.697	27.837	37.126	45.972	52.880					5530

BOTTOM DEPTH FOR CAST 4 IS 5539

STATION: 236 LEG: V POSITION: 13° 16' N 163° 58' W DATE: 8 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	26.215	26.215	33.938D	22.203	30.505	38.428	22.203					0
101	18	18	26.217	26.213	33.936	22.202	30.504	38.427	22.279	208	2.0	0.20	0.0	18
1202	47	47	26.019	26.008	34.115D	22.399	30.705	38.631	22.599					47

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

STATION: 236 LEG: V POSITION: 13° 16' N 163° 58' W DATE: 8 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1203	78	78	22.147	22.131	34.848D	24.089	32.492	40.514	24.424					78
102	109	109	19.031	19.011	34.899	24.965	33.463	41.574	25.439	198	2.8	0.31	1.3	109
1204	138	138	14.910	14.889	34.678D	25.780	34.421	42.667	26.390					138
1205	166	166	10.986	10.965	34.307D	26.282	35.081	43.474	27.029					166
103	191	191	10.362	10.339	34.356	26.431	35.257	43.673	27.293	81	30.1	1.97	26.8	191
1206	242	241	9.532	9.504	34.498D	26.684	35.543	43.991	27.779					241
1207	293	292	9.242	9.209	34.570D	26.789	35.660	44.118	28.116					292
104	342	341	8.644	8.607	34.547	26.867	35.765	44.249	28.420	20	45.0	2.56	36.3	341
1208	384	382	8.363	8.322	34.557D	26.919	35.830	44.325	28.664					382
105	426	424	7.893	7.849	34.556	26.989	35.922	44.437	28.929	27	50.0	2.64	38.0	424
1209	513	511	7.055	7.005	34.534D	27.092	36.065	44.617	29.436					511
106	602	599	6.375	6.319	34.509	27.164	36.170	44.754	29.922	29	68.6	2.84	40.8	599
1210	701	697	5.723	5.661	34.515D	27.252	36.290	44.904	30.471					697
107	803	798	5.190	5.121	34.523	27.322	36.388	45.026	31.016	33	86.3	2.96	43.2	798
1211	903	897	4.677	4.603	34.533D	27.389	36.480	45.143	31.549					897
108	1005	998	4.384	4.303	34.544	27.430	36.537	45.213	32.062	44	101.1	2.97	43.3	998
1212	1104	1096	4.044	3.957	34.552D	27.472	36.597	45.290	32.564					1096
109	1205	1196	3.762	3.669	34.568	27.513	36.653	45.360	33.074	60	112.0	2.92	42.5	1196
1213	1302	1292	3.491	3.392	34.573D	27.544	36.698	45.419	33.555					1292
110	1405	1394	3.262	3.157	34.586	27.576	36.743	45.475	34.063	72	122.7	2.86	41.9	1394
1214	1561	1548	2.929	2.815	34.599D	27.617	36.802	45.551	34.825					1548
111	1706	1691	2.649	2.526	34.609	27.650	36.850	45.614	35.526	81	136.1	2.81	41.6	1691
1215	1850	1833	2.397	2.265	34.622D	27.682	36.896	45.673	36.221					1833
112	2006	1987	2.237	2.094	34.629	27.701	36.925	45.710	36.952	95	147.0	2.73	40.5	1987
1216	2165	2144	2.071	1.917	34.641D	27.724	36.958	45.752	37.699					2144
114	2323	2299	1.963	1.797	34.647	27.738	36.978	45.779	38.428	108	153.6	2.68	39.7	2299
1217	2474	2448	1.880	1.702	34.654D	27.750	36.996	45.802	39.121					2448
115	2630	2601	1.820	1.629	34.658	27.759	37.008	45.818	39.829	116	156.1	2.62	39.2	2601
1218	2781	2750	1.761	1.557	34.663D	27.768	37.022	45.835	40.513					2750
116	2936	2902	1.714	1.496	34.667	27.776	37.032	45.849	41.211	123	157.7	2.59	38.7	2902
1219	3084	3047	1.680	1.448	34.670D	27.781	37.041	45.860	41.873					3047
117	3243	3203	1.639	1.392	34.671	27.786	37.049	45.870	42.581	130	158.0	2.54	38.2	3203
1220	3393	3350	1.596	1.335	34.675D	27.793	37.059	45.884	43.250					3350
118	3547	3501	1.564	1.288	34.678	27.799	37.067	45.894	43.932	139	157.8	2.51	37.6	3501
1221	3697	3647	1.530	1.239	34.679D	27.803	37.074	45.904	44.593					3647
119	3855	3802	1.488	1.181	34.683	27.810	37.084	45.917	45.291	149	152.6	2.45	36.8	3802
1222	4003	3947	1.456	1.134	34.685D	27.815	37.092	45.927	45.940					3947
120	4159	4099	1.423	1.085	34.687	27.819	37.099	45.937	46.622	160	146.9	2.39	36.0	4099
1223	4306	4242	1.400	1.046	34.691D	27.825	37.107	45.947	47.263					4242
121	4466	4398	1.382	1.010	34.692	27.828	37.112	45.954	47.955	170	140.5	2.33	35.4	4398
1224	4608	4537	1.370	0.982	34.695D	27.833	37.118	45.962	48.568					4537
122	4772	4697	1.376	0.968	34.695	27.833	37.120	45.964	49.267	176	138.1	2.31	34.9	4697
1225	4916	4837	1.390	0.964	34.695D	27.834	37.120	45.965	49.878					4837
123	5080	4996	1.387	0.941	34.695	27.835	37.123	45.969	50.574	179	137.4	2.29	34.7	4996
1226	5244	5156	1.395	0.928	34.698D	27.838	37.127	45.973	51.268					5156
124	5425	5331	1.404	0.913	34.698	27.839	37.129	45.976	52.029	182	134.2	2.26	34.4	5331

BOTTOM DEPTH FOR CAST 1 IS 5348

STATION: 237 LEG: V POSITION: 12° 30' N 165° 25' W DATE: 8 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
201	3H	3	26.41 H	26.41	34.203	22.343	30.637	38.551	22.356	204	1.9	0.19	0.0	3
202	33H	33	26.40 H	26.39	34.204	22.349	30.643	38.558	22.489	205	1.7	0.18	0.0	33
203	52H	52	24.47 H	24.46	34.640	23.261	31.602	39.562	23.483	225	1.7	0.20	0.0	52
204	92H	92	20.43 H	20.41	34.868	24.575	33.029	41.099	24.973	210	2.5	0.23	0.1	92
205	126H	126	15.53 H	15.51	34.537	25.533	34.154	42.380	26.089	162	8.2	0.78	9.9	126
206	152H	152	12.72 H	12.70	34.357	25.992	34.720	43.046	26.670	119	17.6	1.39	19.0	152
207	201H	200	10.89 H	10.86	34.494	26.445	35.246	43.640	27.350	44	30.6	2.14	29.9	200
208	251H	250	9.87 H	9.84	34.556	26.673	35.517	43.950	27.807	24	36.0	2.35	33.4	250
209	301H	300	9.44 H	9.41	34.616	26.792	35.654	44.104	28.154	17	38.1	2.44	35.7	300
210	375H	373	8.55 H	8.51	34.582	26.909	35.812	44.299	28.612	24	43.6	2.51	37.1	373

STATION: 237 LEG: V POSITION: 12° 30' N 165° 25' W DATE: 8 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
211	450H	448	7.95 H	7.90	34.561	26.985	35.915	44.428	29.033	28	49.3	2.59	37.9	448
212	549H	546	6.90 H	6.85	34.527	27.108	36.089	44.648	29.618	29	60.6	2.73	40.1	546
225	648H	645	6.23 H	6.17	34.521	27.193	36.206	44.796	30.162	25	70.8	2.85	41.8	645
226	797H	792	5.303H	5.234	34.527	27.313	36.372	45.005	30.976	31	82.8	2.90	43.4	792
227	997H	991	4.52 H	4.44	34.546	27.417	36.517	45.187	32.009	47	96.2	2.89	43.4	991
228	1197H	1188	3.76 H	3.67	34.568	27.513	36.653	45.360	33.038	61	111.3	2.81	42.5	1188
229	1397H	1386	3.21 H	3.11	34.586	27.581	36.750	45.485	34.033	72	123.9	2.78	41.9	1386
230	1597H	1584	2.782H	2.666	34.601	27.632	36.825	45.581	35.008	82	131.0	2.73	41.5	1584
231	1797H	1781	2.41 H	2.28	34.621	27.679	36.893	45.669	35.979	90	141.3	2.69	40.7	1781
232	1997H	1978	2.145H	2.004	34.634	27.712	36.941	45.731	36.927	97	147.8	2.65	40.3	1978
233	2198H	2176	2.002H	1.846	34.642	27.730	36.968	45.766	37.858	104	150.2	2.61	39.6	2176
101	2304	2281	1.904	1.741	34.650	27.744	36.988	45.791	38.353	108	153.6	2.55	39.9	2281
234	2397H	2372	1.84 H	1.67	34.656	27.754	37.002	45.809	38.784	113	154.1	2.57	39.3	2372
102	2514	2487	1.788	1.608	34.659	27.761	37.012	45.822	39.317	116	154.7	2.55	39.4	2487
103	2717	2687	1.726	1.528	34.665	27.772	37.027	45.841	40.236	120	155.3	2.53	39.0	2687
104	2924	2890	1.655	1.439	34.670	27.782	37.042	45.861	41.169	125	158.1	2.51	38.7	2890
105	3128	3090	1.589	1.355	34.672	27.789	37.054	45.878	42.083	133	155.7	2.47	38.2	3090
106	3333	3291	1.541	1.288	34.676	27.797	37.066	45.893	42.996	138	153.3	2.45	38.0	3291
107	3538	3492	1.512	1.238	34.678	27.802	37.073	45.903	43.901	143	151.1	2.42	37.6	3492
108	3742	3692	1.476	1.182	34.679	27.807	37.081	45.914	44.798	148	151.5	2.39	37.0	3692
109	3946	3891	1.433	1.118	34.684	27.815	37.093	45.929	45.696	156	148.5	2.36	36.5	3891
110	4154	4094	1.397	1.060	34.687	27.821	37.102	45.942	46.605	163	143.7	2.32	36.0	4094
111	4357	4292	1.373	1.014	34.690	27.826	37.110	45.952	47.486	169	141.6	2.28	35.8	4292
112	4563	4493	1.337	0.955	34.694	27.833	37.121	45.965	48.380	177	135.6	2.25	35.0	4493
114	4767	4692	1.306	0.901	34.697	27.839	37.130	45.977	49.260	183	130.6	2.21	34.5	4692
115	4881	4803	1.314	0.895	34.696	27.839	37.129	45.977	49.744	184	131.5	2.21	34.4	4803
116	4953	4873	1.313	0.885	34.698	27.841	37.132	45.981	50.052	186	132.7	2.17	34.3	4873
117	5023	4941	1.318	0.881	34.698	27.841	37.133	45.981	50.348	187	130.6	2.19	34.3	4941
118	5024	4942	1.317	0.880	34.698	27.841	37.133	45.982	50.352	186	129.3	2.19	34.1	4942
119	5045	4962	1.316	0.877	34.698	27.842	37.133	45.982	50.442	186	129.3	2.19	34.3	4962
120	5065	4982	1.311	0.870	34.699	27.843	37.135	45.984	50.528	188	128.4	2.19	34.3	4982
121	5080	4996	1.313	0.870	34.699	27.843	37.135	45.984	50.591	188	128.8	2.18	34.1	4996
122	5096	5012	1.309	0.864	34.699	27.843	37.136	45.985	50.660	188	128.8	2.18	33.9	5012
123	5096	5012	1.309	0.864	34.699	27.843	37.136	45.985	50.660	188	128.8	2.17	34.1	5012
124	5105	5021	1.309	0.863	34.699	27.843	37.136	45.985	50.698	189	128.4	2.17	34.0	5021

BOTTOM DEPTH FOR CAST 1 IS 5036

STATION: 238 LEG: V POSITION: 8° 11' N 167° 4' W DATE: 10 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
501	2H	2	27.12 H	27.12	34.894	22.642	30.910	38.799	22.651	201	1.5	0.35	1.2	2
502	9H	9	27.11 H	27.11	34.894	22.646	30.914	38.804	22.684	201	1.5	0.34	1.2	9
503	24H	24	27.11 H	27.10	34.893	22.646	30.915	38.804	22.748	201	1.5	0.33	1.2	24
504	36H	36	27.11 H	27.10	34.894	22.648	30.917	38.806	22.800	201	1.5	0.33	1.2	36
505	47H	47	27.11 H	27.10	34.900	22.653	30.922	38.811	22.852	200	1.5	0.33	1.2	47
506	73H	73	26.76 H	26.74	34.971	22.818	31.095	38.992	23.127	198	2.1	0.41	2.2	73
507	76H	76	26.65 H	26.63	34.985	22.862	31.142	39.043	23.185	197	2.1	0.42	2.4	76
508	91H	91	25.61 H	25.59	34.985	23.182	31.489	39.416	23.569	196	2.3	0.43	2.8	91
509	107H	107	22.42 H	22.40	34.934	24.079	32.474	40.487	24.538	203	1.9	0.24	0.3	107
510	110H	110	21.69 H	21.67	34.954	24.298	32.714	40.747	24.772	200	1.9	0.26	0.3	110
511	142H	142	17.60 H	17.58	34.763	25.221	33.767	41.924	25.841	174	5.3	0.55	6.1	142
512	145H	145	17.19 H	17.17	34.723	25.290	33.850	42.020	25.924	172	5.7	0.61	6.8	145
514	176H	176	13.83 H	13.80	34.527	25.897	34.581	42.865	26.678	77	18.4	1.66	22.6	176
525	209H	209	11.545H	11.518	34.639	26.438	35.210	43.577	27.375	35	28.7	2.15	31.6	209
526	243H	242			34.722					9	31.2	2.38	35.0	242
301	263H	262	10.569	10.537	34.713	26.674	35.486	43.889	27.858	11	32.8	2.33	35.0	262
302	304H	303	10.040	10.004	34.698	26.756	35.590	44.015	28.127	20	34.3	2.35	35.3	303
303	344H	343	9.741	9.701	34.685	26.797	35.645	44.082	28.350	24	35.0	2.37	35.5	343
304	405H	403	9.208	9.162	34.661	26.868	35.739	44.198	28.699	23	38.4	2.47	36.6	403
305	481H	479	8.537	8.484	34.626	26.948	35.850	44.338	29.129	13	45.1	2.66	38.0	479

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

STATION: 238 LEG: V POSITION: 8° 11' N 167° 4' W DATE: 10 DEC 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	556H	553	7.653	7.596	34.583	27.047	35.991	44.517	29.578	14	53.5	2.80	39.5	553
307	632H	629	6.792	6.731	34.554	27.145	36.131	44.695	30.033	17	62.6	2.88	41.3	629
308	708H	704	6.156	6.091	34.545	27.222	36.239	44.832	30.465	20	70.6	2.94	42.8	704
309	784H	780	5.666	5.596	34.542	27.281	36.322	44.938	30.879	33	76.3	2.91	43.0	780
310	849H	844	5.337	5.263	34.544	27.323	36.380	45.011	31.222	37	80.6	2.92	43.2	844
311	849H	844	5.337	5.263	34.544	27.323	36.380	45.011	31.222	37	80.5	2.91	43.3	844
427	975H	969	4.72 H	4.64	34.553	27.401	36.490	45.150	31.888	50	90.7	2.85	42.9	969
201	1152	1144	4.173	4.081	34.565	27.470	36.588	45.275	32.776	59	100.6	2.87	42.7	1144
202	1300	1291	3.612	3.512	34.580	27.538	36.686	45.400	33.535	68	114.8	2.85	42.2	1291
203	1442	1431	3.325	3.216	34.590	27.574	36.737	45.467	34.226	73	120.9	2.83	41.9	1431
204	1603	1590	2.873	2.756	34.602	27.625	36.813	45.565	35.025	86	129.8	2.76	41.0	1590
205	1751	1736	2.542	2.416	34.618	27.666	36.872	45.642	35.751	92	138.1	2.73	40.6	1736
206	1904	1887	2.327	2.192	34.631	27.695	36.913	45.694	36.481	97	143.2	2.71	40.1	1887
207	2055	2036	2.150	2.004	34.639	27.716	36.944	45.735	37.192	104	148.5	2.68	39.9	2036
208	2210	2189	2.044	1.886	34.648	27.732	36.967	45.763	37.911	107	149.9	2.65	39.5	2189
209	2364	2340	1.963	1.793	34.655	27.744	36.985	45.786	38.618	111	152.0	2.64	39.4	2340
210	2517	2491	1.889	1.707	34.658	27.753	36.998	45.804	39.315	114	152.8	2.62	39.3	2491
211	2517	2491	1.889	1.707	34.659	27.754	36.999	45.805	39.316	114	152.8	2.59	39.2	2491
428	2585H	2558	1.84 H	1.65	34.662	27.760	37.009	45.817	39.629	115	154.1	2.59	39.0	2558
312	2615H	2587	1.854	1.663	34.661	27.759	37.006	45.814	39.760	116	155.9	2.59	39.0	2587
429	2736H	2706			34.665					119	154.3	2.57	38.8	2706
430	2887H	2854	1.73 H	1.52	34.669	27.776	37.031	45.847	40.993	124	155.2	2.56	38.3	2854
431	3041H	3006	1.693H	1.465	34.671	27.781	37.039	45.857	41.682	128	154.8	2.54	38.1	3006
432	3142H	3105	1.652H	1.415	34.674	27.787	37.048	45.869	42.136	132	153.6	2.52	38.0	3105
433	3245H	3206	1.62 H	1.37	34.675	27.790	37.054	45.877	42.596	135	153.3	2.52	37.6	3206
434	3344H	3303	1.577H	1.322	34.677	27.796	37.062	45.888	43.039	139	152.4	2.50	37.5	3303
314	3385H	3343	1.586	1.326	34.677	27.795	37.062	45.887	43.218	139	155.0	2.48	37.5	3343
315	3537H	3492	1.535	1.261	34.680	27.802	37.072	45.901	43.894	146	151.6	2.43	37.0	3492
316	3690H	3641	1.479	1.190	34.684	27.810	37.084	45.916	44.575	153	147.9	2.40	36.6	3641
317	3843H	3791	1.426	1.122	34.686	27.816	37.094	45.930	45.251	159	146.6	2.35	36.2	3791
318	3996H	3941	1.374	1.055	34.690	27.824	37.105	45.945	45.928	166	142.3	2.32	35.6	3941
319	4149H	4090	1.321	0.987	34.693	27.831	37.116	45.959	46.601	174	137.9	2.29	35.0	4090
320	4302H	4239	1.292	0.942	34.696	27.836	37.124	45.969	47.269	179	136.1	2.26	34.6	4239
321	4456H	4390	1.278	0.911	34.698	27.839	37.129	45.976	47.935	183	133.1	2.25	34.4	4390
322	4610H	4540	1.275	0.890	34.699	27.842	37.132	45.981	48.597	185	132.5	2.23	34.2	4540
323	4764H	4690	1.279	0.875	34.699	27.842	37.134	45.983	49.254	191U	131.3	2.22	34.1	4690
212	4868	4791	1.281	0.865	34.701	27.845	37.137	45.987	49.699	188	130.0	2.23	34.0	4791
324	4919H	4841	1.287	0.864	34.700	27.844	37.136	45.986	49.914	189	129.6	2.21	33.7	4841
215	5017	4936	1.289	0.854	34.703	27.847	37.140	45.990	50.332	188	131.0	2.21	33.9	4936
214	5021	4940	1.288	0.853	34.700	27.845	37.138	45.988	50.347	189	131.0	2.22	33.9	4940
216	5084	5001	1.293	0.850	34.701	27.846	37.139	45.989	50.614	189	130.3	2.19	33.8	5001
217	5140	5056	1.297	0.847	34.700	27.845	37.138	45.989	50.849	189	131.3	2.20	33.7	5056
218	5140	5056	1.297	0.847	34.701	27.846	37.139	45.990	50.850	189	131.0	2.20	33.8	5056
219	5184	5098	1.301	0.845	34.701	27.846	37.139	45.990	51.035	189	131.2	2.20	33.8	5098
220	5224	5137	1.304	0.843	34.700	27.845	37.139	45.990	51.203	190	129.0	2.19	33.8	5137
221	5248	5161	1.305	0.841	34.701	27.846	37.140	45.991	51.305	190	128.9	2.19	33.5	5161
222	5268	5180	1.305	0.838	34.701	27.846	37.140	45.991	51.390	190	129.3	2.18	33.8	5180
223	5268	5180	1.305	0.838	34.700	27.846	37.139	45.990	51.389	190	129.2	2.18	33.7	5180
224	5276	5188	1.306	0.838	34.702	27.847	37.141	45.992	51.424	191	129.2	2.18	33.7	5188

BOTTOM DEPTH FOR CAST 3 IS 5193 — CAST 2 IS 5205

STATION: 239 LEG: V POSITION: 5° 53' N 172° 0' W DATE: 12 DEC 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	11H	11	25.95 H	25.95	35.021	23.100	31.397	39.315	23.147	206	3.3	0.45	3.5	11
502	50H	50	25.57 H	25.56	35.039	23.232	31.539	39.467	23.445	201	3.5	0.54	4.3	50
503	85H	85	25.27 H	25.25	35.119	23.385	31.699	39.634	23.747	198	3.5	0.59	4.9	85
504	131H	131	25.48 H	25.45	35.319	23.476	31.782	39.710	24.033	195	3.3	0.59	4.8	131
505	181H	181	23.93 H	23.89	35.119	23.790	32.140	40.111	24.562	178	4.5	0.70	7.0	181
506	210H	210	21.21 H	21.17	34.897	24.392	32.823	40.872	25.297	146	7.6	0.89	11.0	210
525	245H	245	14.08 H	14.04	34.600	25.903	34.576	42.852	26.988	87	19.8	1.58	22.0	245
526	300H	299	10.09 H	10.05	34.666	26.722	35.555	43.978	28.075	34	33.0	2.31	34.0	299
527	374H	373	9.18 H	9.14	34.655	26.867	35.740	44.200	28.559	47	35.8	2.34	35.1	373
528	448H	446	8.46 H	8.41	34.621	26.955	35.861	44.352	28.988	46	40.5	2.46	36.7	446

STATION: 239 LEG: V POSITION: 5° 53' N 172° 0' W DATE: 12 DEC 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
529	546H	544	7.68 H	7.62	34.589	27.048	35.991	44.515	29.533	41	47.3	2.61	38.5	544
530	645H	642	6.93 H	6.87	34.568	27.138	36.117	44.675	30.082	33	57.1	2.79	41.0	642
531	744H	740	6.04 H	5.97	34.547	27.239	36.261	44.860	30.647	39	68.7	2.86	42.5	740
532	864H	859	5.13 H	5.06	34.549	27.351	36.419	45.059	31.323	53	81.2	2.86	42.5	859
301	913	908	5.194	5.115	34.543	27.339	36.404	45.042	31.533	50	80.8	2.87	42.4	908
534	1044H	1038	4.31 H	4.23	34.562	27.452	36.563	45.243	32.264	68	96.8	2.83	41.9	1038
302	1163	1155	4.098	4.005	34.563	27.476	36.598	45.288	32.835	69	101.7	2.86	41.8	1155
303	1212	1204	3.923	3.828	34.570	27.499	36.631	45.330	33.086	72	105.8	2.85	41.6	1204
304	1364	1354	3.484	3.380	34.586	27.555	36.710	45.431	33.848	75	116.5	2.84	41.4	1354
305	1511	1500	3.110	2.998	34.599	27.601	36.776	45.516	34.574	83	124.8	2.82	41.3	1500
306	1662	1649	2.811	2.689	34.608	27.635	36.827	45.582	35.305	89	132.7	2.79	40.9	1649
307	1811	1796	2.557	2.426	34.621	27.668	36.873	45.642	36.023	96	138.4	2.75	40.5	1796
308	1963	1946	2.383	2.242	34.631	27.691	36.907	45.685	36.740	100	142.0	2.72	40.2	1946
309	2114	2095	2.218	2.066	34.639	27.711	36.936	45.723	37.448	106	145.8	2.70	40.0	2095
310	2270	2248	2.064	1.901	34.647	27.730	36.964	45.760	38.177	108	150.7	2.68	39.8	2248
311	2424	2400	1.942	1.767	34.655	27.746	36.988	45.791	38.890	112	154.8	2.65	39.5	2400
312	2567	2540	1.888	1.701	34.658	27.754	36.999	45.805	39.539	115	156.4	2.64	39.3	2540
314	2731	2702	1.819	1.618	34.663	27.764	37.014	45.824	40.283	120	155.6	2.60	38.8	2702
315	2884	2852	1.769	1.555	34.665	27.770	37.023	45.837	40.971	124	155.9	2.59	38.8	2852
316	3036	3001	1.706	1.478	34.668	27.778	37.035	45.853	41.655	130	155.5	2.54	38.3	3001
317	3190	3152	1.644	1.402	34.672	27.786	37.048	45.870	42.348	136	153.6	2.52	37.8	3152
318	3342	3301	1.595	1.339	34.674	27.792	37.058	45.882	43.025	140	151.5	2.48	37.5	3301
319	3445	3402	1.567	1.301	34.677	27.797	37.065	45.891	43.484	144	149.4	2.47	37.3	3402
320	3548	3503	1.549	1.273	34.678	27.800	37.069	45.897	43.939	146	149.4	2.45	37.0	3503
321	3649	3602	1.526	1.240	34.680	27.804	37.075	45.905	44.385	149	148.9	2.44	36.7	3602
101	3720H	3671	1.456	1.165	34.684	27.812	37.087	45.921	44.709	156	146.5	2.39	36.6	3671
322	3749	3700	1.501	1.205	34.681	27.807	37.080	45.911	44.826	153	147.2	2.42	36.5	3700
323	3853	3801	1.471	1.165	34.684	27.812	37.087	45.921	45.286	156	147.3	2.40	36.4	3801
102	3872H	3820	1.409	1.103	34.686	27.817	37.096	45.933	45.380	162	145.0	2.37	36.1	3820
103	4025H	3969	1.361	1.039	34.687	27.822	37.105	45.945	46.053	169	141.4	2.34	35.7	3969
104	4178H	4119	1.318	0.981	34.692	27.830	37.116	45.959	46.726	175	138.9	2.31	35.1	4119
105	4332H	4269	1.284	0.931	34.694	27.835	37.124	45.970	47.398	180	136.0	2.29	34.7	4269
106	4486H	4419	1.259	0.889	34.697	27.840	37.131	45.979	48.067	184	134.3	2.27	34.3	4419
107	4640H	4569	1.245	0.857	34.699	27.844	37.136	45.986	48.731	189	130.5	2.25	33.9	4569
108	4795H	4720	1.249	0.843	34.699	27.844	37.138	45.989	49.392	190	131.3	2.24	33.9	4720
109	4950H	4871	1.259	0.834	34.700	27.846	37.140	45.991	50.051	190	129.4	2.23	33.9	4871
110	5105H	5022	1.277	0.832	34.700	27.846	37.140	45.991	50.705	191	129.8	2.23	33.9	5022
111	5261H	5174	1.293	0.828	34.700	27.846	37.141	45.992	51.362	191	130.1	2.22	33.8	5174
112	5417H	5325	1.311	0.825	34.700	27.846	37.141	45.993	52.016	192	130.0	2.22	33.8	5325
115	5453H	5360	1.318	0.827	34.700	27.846	37.141	45.992	52.166					5360
116	5521H	5426	1.326	0.826	34.701	27.847	37.142	45.993	52.451					5426
117	5579H	5483	1.335	0.827	34.701	27.847	37.142	45.993	52.692	191	130.8	2.21	33.6	5483
118	5579H	5483	1.335	0.827	34.701	27.847	37.142	45.993	52.692					5483
119	5626H	5528	1.341	0.827	34.701	27.847	37.142	45.993	52.888	192	129.2	2.22	33.7	5528
120	5663H	5564	1.346	0.827	34.701	27.847	37.142	45.993	53.042	192	128.9	2.21	33.8	5564
121	5684H	5584	1.348	0.826	34.701	27.847	37.142	45.993	53.129					5584
122	5694H	5594	1.350	0.827	34.701	27.847	37.142	45.993	53.171	192	130.8	2.21	33.8	5594
123	5694H	5594	1.349	0.826	34.701	27.847	37.142	45.993	53.171					5594
124	5705H	5605	1.351	0.826	34.701	27.847	37.142	45.993	53.216	192	129.1	2.21	33.8	5605
324	5860	5755	1.365	0.819	34.702	27.848	37.143	45.995	53.862	191	129.4	2.23	33.8	5755

BOTTOM DEPTH FOR CAST 1 IS 5613 — CAST 3 IS 5774

STATION: 240 LEG: V POSITION: 3° 22' N 177° 13' W DATE: 15 DEC 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
325	3H	3	27.42 H	27.42	35.076	22.685	30.944	38.823	22.698	203	2.6	0.37	1.8	3
326	22H	22	27.35 H	27.34	35.073	22.706	30.967	38.848	22.799	203	2.3	0.36	1.7	22
327	40H	40	27.33 H	27.32	35.071	22.712	30.974	38.856	22.882	200	2.3	0.36	1.7	40
328	60H	60	27.33 H	27.32	35.070	22.713	30.974	38.857	22.967	200	2.2	0.36	1.7	60
329	78H	78	27.33 H	27.31	35.071	22.715	30.977	38.859	23.045	200	2.2	0.36	1.7	78
330	98H	98	27.28 H	27.26	35.073	22.734	30.997	38.881	23.148	197	2.4	0.39	1.9	98
331	111H	111	27.08 H	27.05	35.080	22.803	31.071	38.959	23.272	195	2.3	0.44	2.5	111

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

STATION: 240 LEG: V POSITION: 3° 22' N 177° 13' W DATE: 15 DEC 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
332	130H	130	26.64 H	26.61	35.099	22.955	31.234	39.134	23.506	177	2.7	0.49	3.8	130
333	160H	160	24.40 H	24.36	35.031	23.584	31.922	39.882	24.266	159	4.0	0.61	6.8	160
401	225H	225	13.93 H	13.90	34.619	25.949	34.627	42.908	26.946	121	19.3	1.33	18.6	225
334	230H	230	13.21 H	13.18	34.570	26.060	34.767	43.073	27.083	97	21.5	1.58	22.3	230
402	296H	295	9.95 H	9.91	34.639	26.725	35.564	43.993	28.061	64	33.8	2.13	31.6	295
403	345H	344	9.27 H	9.23	34.637	26.838	35.707	44.163	28.399	83	34.2	2.10	31.3	344
404	445H	443	8.45 H	8.40	34.634	26.967	35.873	44.364	28.986	70	37.7	2.29	34.8	443
405	544H	542	7.52 H	7.46	34.587	27.069	36.019	44.551	29.547	66	44.7	2.46	36.9	542
406	619H	616	6.92 H	6.86	34.572	27.142	36.121	44.679	29.968	53	52.3	2.65	39.8	616
407	694H	691	6.17 H	6.11	34.551	27.225	36.241	44.833	30.404	63	60.4	2.69	40.3	691
408	768H	764	5.60 H	5.53	34.546	27.292	36.336	44.955	30.818	73	68.1	2.68	40.0	764
409	842H	837	5.23 H	5.16	34.545	27.336	36.399	45.035	31.206	80	73.6	2.68	39.9	837
410	942H	937	4.74 H	4.66	34.550	27.396	36.484	45.143	31.732	80	83.3	2.71	40.4	937
411	1040H	1034	4.36 H	4.28	34.558	27.444	36.552	45.229	32.236	85	91.5	2.69	40.2	1034
412	1139H	1132	4.034H	3.944	34.567	27.485	36.610	45.304	32.737	84	100.2	2.73	40.4	1132
425	1239H	1231	3.76 H	3.66	34.574	27.519	36.658	45.366	33.234	90	105.8	2.72	40.2	1231
426	1363H	1353	3.35 H	3.25	34.590	27.571	36.733	45.460	33.864	87	115.9	2.75	40.9	1353
427	1486H	1475	2.97 H	2.86	34.604	27.617	36.799	45.546	34.483	92	125.5	2.72	40.5	1475
428	1610H	1597	2.678H	2.563	34.614	27.651	36.849	45.611	35.091	100	129.8	2.68	40.0	1597
429	1734H	1720	2.51 H	2.39	34.623	27.673	36.881	45.651	35.682	104	133.9	2.66	39.8	1720
430	1857H	1841	2.353H	2.221	34.631	27.692	36.909	45.688	36.265	109	137.6	2.64	39.4	1841
431	1982H	1964	2.20 H	2.06	34.640	27.712	36.938	45.725	36.857	109	143.1	2.64	39.6	1964
432	2133H	2113	2.018H	1.868	34.650	27.735	36.971	45.768	37.569	105U	148.4	2.61	39.1	2113
433	2284H	2262	1.926H	1.764	34.657	27.748	36.990	45.793	38.266	118	149.8	2.60	39.1	2262
201	2415	2391	1.844	1.672	34.660	27.757	37.004	45.812	38.867	121	150.8	2.58	38.7	2391
434	2436H	2412	1.846H	1.672	34.659	27.757	37.004	45.811	38.960	122	152.4	2.58	38.9	2412
202	2568	2541	1.788	1.603	34.662	27.764	37.015	45.826	39.560	125	150.7	2.56	38.2	2541
203	2715	2686	1.732	1.534	34.666	27.772	37.027	45.841	40.226	129	150.2	2.55	38.2	2686
204	2868	2836	1.687	1.476	34.667	27.777	37.035	45.852	40.914	134	149.3	2.53	37.9	2836
205	2971	2937	1.639	1.419	34.671	27.784	37.045	45.866	41.380	137	148.4	2.52	37.8	2937
206	3066	3030	1.622	1.393	34.671	27.786	37.049	45.870	41.803	139	147.9	2.51	37.7	3030
207	3170	3133	1.552	1.315	34.676	27.795	37.062	45.888	42.277	145	147.2	2.48	37.2	3133
208	3271	3232	1.542	1.295	34.676	27.797	37.065	45.892	42.723	146	146.7	2.48	37.1	3232
209	3371	3330	1.523	1.266	34.679	27.801	37.071	45.899	43.168	148	146.4	2.47	36.8	3330
210	3526	3481	1.485	1.213	34.680	27.805	37.078	45.909	43.854	153	145.3	2.43	36.6	3481
211	3681	3633	1.462	1.175	34.684	27.811	37.086	45.919	44.538	157	144.1	2.41	36.4	3633
212	3782	3732	1.445	1.147	34.685	27.814	37.090	45.925	44.982	159	143.4	2.41	36.1	3732
214	3884	3832	1.427	1.119	34.686	27.816	37.094	45.931	45.429	162	142.2	2.39	36.0	3832
215	3982	3927	1.400	1.082	34.689	27.821	37.101	45.939	45.862	165	141.1	2.37	35.8	3927
216	4081	4024	1.371	1.043	34.691	27.825	37.108	45.948	46.297	169	138.8	2.34	35.4	4024
217	4233	4172	1.298	0.955	34.696	27.835	37.122	45.967	46.970	178	135.4	2.31	34.9	4172
218	4383	4319	1.250	0.892	34.699	27.841	37.132	45.980	47.627	185	132.6	2.27	34.5	4319
219	4532	4464	1.231	0.856	34.700	27.844	37.137	45.987	48.271	188	130.8	2.26	34.1	4464
220	4683	4611	1.240	0.847	34.700	27.845	37.138	45.989	48.916	189	130.1	2.26	34.1	4611
221	4839	4763	1.250	0.838	34.702	27.847	37.141	45.992	49.582	190	129.4	2.24	33.9	4763
222	4992	4912	1.261	0.830	34.703	27.848	37.143	45.994	50.231	191	129.6	2.24	33.9	4912
223	5146	5062	1.277	0.827	34.702	27.848	37.142	45.994	50.880	191	129.6	2.24	33.9	5062
224	5257	5170	1.286	0.821	34.703	27.849	37.144	45.996	51.348	192	129.1	2.24	33.8	5170

BOTTOM DEPTH FOR CAST 2 IS 5178

STATION: 241 LEG: V POSITION: 4° 33' N 179° 0' E DATE: 17 DEC 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	4H	4	27.18 H	27.18	35.123	22.796	31.060	38.945	22.813	200	3.1	0.41	2.2	4
402	25H	25	27.17 H	27.16	35.125	22.802	31.067	38.952	22.908	200	2.6	0.41	2.2	25
403	49H	49	27.17 H	27.16	35.130	22.808	31.072	38.958	23.015	200	2.6	0.42	2.2	49
404	99H	99	26.79 H	26.77	35.181	22.968	31.242	39.137	23.387	187	3.0	0.53	3.7	99
405	149H	149	26.12 H	26.08	35.220	23.208	31.499	39.411	23.840	187	3.2	0.60	4.7	149
406	188H	188	25.40 H	25.36	35.187	23.405	31.715	39.647	24.203	177	3.8	0.65	6.9	188
407	227H	227	16.93 H	16.89	34.725	25.357	33.926	42.105	26.351	127	13.0	1.09	14.3	227
408	258H	258	11.72 H	11.69	34.582	26.362	35.128	43.489	27.517	70	28.0	1.96	27.4	258

STATION: 241 LEG: V POSITION: 4° 33' N 179° 0' E DATE: 17 DEC 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
409	292H	291	10.08 H	10.05	34.640	26.703	35.537	43.961	28.020	53	33.7	2.25	32.4	291
414	356H	355	8.99 H	8.95	34.640	26.885	35.767	44.235	28.498	65	36.8	2.31	33.8	355
425	421H	420	8.40 H	8.35	34.611	26.956	35.865	44.358	28.868	80	38.6	2.30	33.6	420
426	495H	493	7.94 H	7.89	34.599	27.017	35.947	44.460	29.268	83	40.1	2.34	34.3	493
427	555H	553	7.48 H	7.42	34.586	27.074	36.026	44.560	29.603	63	46.2	2.56	37.3	553
428	609H	606	7.08 H	7.02	34.574	27.122	36.093	44.644	29.900	55	51.8	2.68	39.0	606
429	668H	665	6.63 H	6.57	34.564	27.175	36.169	44.740	30.228	52	56.9	2.77	40.4	665
430	766H	762	6.02 H	5.95	34.550	27.244	36.267	44.867	30.753	63	63.2	2.77	40.6	762
431	864H	859	5.48 H	5.40	34.543	27.305	36.356	44.980	31.270	77	69.4	2.72	39.8	859
432	938H	933	5.08 H	5.00	34.543	27.352	36.423	45.067	31.662	81	77.8	2.73	39.8	933
433	1011H	1005	4.77 H	4.69	34.547	27.391	36.478	45.136	32.040	80	84.7	2.77	40.3	1005
701	1059	1053	4.654	4.566	34.551	27.407	36.500	45.164	32.278	81	87.6	2.78	40.1	1053
434	1083H	1076	4.480H	4.391	34.554	27.428	36.530	45.202	32.413	71	93.7	2.84	41.2	1076
702	1159	1152	4.225	4.132	34.560	27.460	36.576	45.261	32.798	73	99.0	2.88	41.2	1152
703	1262	1253	3.824	3.725	34.572	27.511	36.648	45.352	33.329	79	107.8	2.88	41.1	1253
704	1411	1401	3.331	3.225	34.589	27.572	36.735	45.464	34.084	81	119.3	2.89	41.2	1401
705	1561	1549	2.936	2.821	34.604	27.621	36.805	45.554	34.828	87	128.6	2.85	40.9	1549
706	1712	1698	2.625	2.502	34.617	27.658	36.860	45.625	35.563	96	135.5	2.81	40.5	1698
707	1862	1846	2.403	2.270	34.627	27.685	36.900	45.676	36.278	104	140.5	2.77	39.8	1846
708	2015	1997	2.227	2.083	34.637	27.708	36.932	45.718	37.000	105	145.2	2.76	39.7	1997
709	2167	2147	2.052	1.898	34.648	27.731	36.965	45.761	37.716	111	149.6	2.72	39.5	2147
710	2320	2297	1.927	1.762	34.653	27.745	36.987	45.790	38.424	116	152.2	2.69	39.2	2297
711	2421	2397	1.871	1.698	34.657	27.753	36.999	45.805	38.888	119	152.3	2.68	39.0	2397
712	2525	2499	1.829	1.647	34.660	27.759	37.008	45.816	39.361	124	152.4	2.66	38.8	2499
713	2678	2650	1.782	1.587	34.662	27.765	37.017	45.829	40.051	126	152.2	2.64	38.5	2650
714	2830	2799	1.736	1.527	34.665	27.772	37.027	45.842	40.736	129	153.2	2.62	38.4	2799
715	2982	2948	1.677	1.455	34.668	27.779	37.038	45.857	41.421	133	150.3	2.57	38.0	2948
716	3135	3098	1.621	1.385	34.671	27.786	37.049	45.872	42.108	139	149.7	2.55	37.5	3098
717	3286	3246	1.573	1.324	34.673	27.792	37.059	45.884	42.782	143	150.7	2.53	37.2	3246
718	3440	3397	1.542	1.278	34.676	27.798	37.067	45.895	43.465	147	148.2	2.51	36.8	3397
719	3592	3546	1.503	1.224	34.678	27.803	37.075	45.906	44.138	152	147.8	2.48	36.5	3546
720	3745	3696	1.465	1.171	34.682	27.810	37.085	45.918	44.815	158	147.0	2.46	36.3	3696
721	3848	3796	1.438	1.133	34.684	27.814	37.091	45.926	45.270	161	145.3	2.44	36.2	3796
101	3900	3847	1.417	1.107	34.685	27.816	37.095	45.932	45.500	161	145.7	2.41	36.0	3847
722	3949	3895	1.408	1.093	34.685	27.817	37.097	45.934	45.714	164	143.2	2.41	35.9	3895
102	4002	3947	1.373	1.054	34.688	27.822	37.104	45.944	45.952	166	143.6	2.40	35.8	3947
723	4050	3994	1.368	1.043	34.689	27.824	37.106	45.946	46.162	169	141.0	2.39	35.6	3994
103	4104	4047	1.340	1.010	34.690	27.827	37.111	45.953	46.401	171	141.5	2.37	35.3	4047
724	4151	4092	1.344	1.009	34.692	27.828	37.113	45.954	46.605	172	139.0	2.37	35.2	4092
104	4207	4147	1.295	0.955	34.691	27.831	37.118	45.963	46.855	177	138.2	2.35	34.9	4147
105	4298	4236	1.267	0.918	34.695	27.837	37.126	45.973	47.255	181	136.3	2.33	34.7	4236
106	4461	4395	1.241	0.874	34.698	27.842	37.134	45.983	47.963	187	133.3	2.30	34.2	4395
107	4615	4545	1.238	0.853	34.698	27.843	37.136	45.986	48.624	190	131.9	2.29	34.0	4545
108	4768	4694	1.242	0.839	34.699	27.845	37.138	45.989	49.278	191	131.0	2.28	33.9	4694
109	4921	4843	1.253	0.831	34.700	27.846	37.140	45.992	49.929	191	131.0	2.27	33.9	4843
110	5076	4994	1.267	0.826	34.700	27.846	37.141	45.993	50.584	192	130.7	2.28	33.9	4994
111	5231	5145	1.281	0.820	34.700	27.847	37.142	45.994	51.237	193	130.4	2.26	33.8	5145
112	5384	5293	1.299	0.818	34.700	27.847	37.142	45.994	51.879	193	130.6	2.25	33.8	5293
114	5537	5442	1.317	0.815	34.701	27.848	37.143	45.995	52.520	193	129.4	2.25	33.8	5442
115	5585	5488	1.323	0.815	34.701	27.848	37.143	45.995	52.720					5488
116	5665	5566	1.332	0.813	34.700	27.847	37.142	45.995	53.052					5566
117	5690	5590	1.335	0.813	34.700	27.847	37.142	45.995	53.156	194	129.3	2.25	33.8	5590
118	5729	5628	1.340	0.812	34.700	27.847	37.143	45.995	53.318					5628
119	5769	5667	1.346	0.813	34.701	27.848	37.143	45.996	53.485					5667
120	5798	5695	1.350	0.813	34.700	27.847	37.142	45.995	53.605					5695
121	5820	5716	1.353	0.813	34.701	27.848	37.143	45.996	53.697					5716
122	5828	5724	1.354	0.813	34.701	27.848	37.143	45.996	53.730					5724
123	5830	5726	1.354	0.812	34.701	27.848	37.143	45.996	53.738	194	129.5	2.25	33.7	5726
124	5832	5728	1.355	0.813	34.701	27.848	37.143	45.996	53.746					5728

BOTTOM DEPTH FOR CAST 1 IS 5738

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

STATION: 242 LEG: V POSITION: 3° 4' N 178° 55' E DATE: 19 DEC 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
1301	2	2	26.591	26.591	35.088D	22.953	31.232	39.133	22.961					2
104	12	12	26.598	26.595	35.086	22.950	31.229	39.129	23.001	205	2.8	0.47	3.2	12
1302	50	50	26.552	26.540	35.085D	22.966	31.247	39.149	23.178					50
101	90	90	26.102	26.081	35.177	23.177	31.468	39.381	23.559	192	3.5	0.59	4.2	90
102	122	122	25.140	25.112	35.082	23.399	31.717	39.656	23.918	198	3.9	0.67	5.5	122
1303	148	148	24.790	24.756	35.107D	23.525	31.852	39.800	24.155					148
103	182	182	24.558	24.517	35.084	23.579	31.912	39.867	24.354	192	4.2	0.72	6.3	182
105	221	221	17.599	17.561	34.758	25.221	33.767	41.924	26.185	125	12.9	1.11	14.6	221
106	266	265	10.719	10.686	34.533	26.508	35.316	43.716	27.704	112	31.6	1.78	24.8	265
1204	305	304	9.796	9.760	34.552D	26.683	35.531	43.967	28.061					304
107	350	349	9.365	9.325	34.622	26.810	35.676	44.129	28.394	101	35.3	2.02	29.3	349
108	411	410	8.686	8.641	34.624	26.922	35.817	44.298	28.786	78	36.9	2.25	32.9	410
1205	456	454	8.432	8.383	34.613D	26.953	35.861	44.353	29.023					454
109	511	509	7.851	7.798	34.598	27.029	35.964	44.481	29.354	80	41.1	2.38	34.8	509
1206	576	574	7.390	7.332	34.576D	27.079	36.036	44.573	29.704					574
110	638	635	6.833	6.771	34.566	27.149	36.133	44.695	30.063	57	53.6	2.70	39.4	635
1207	699	696	6.274	6.209	34.553D	27.213	36.224	44.812	30.413					696
111	759	755	5.781	5.713	34.546	27.270	36.306	44.916	30.752	67	66.3	2.77	40.7	755
1208	818	814	5.486	5.414	34.541D	27.302	36.353	44.977	31.058					814
112	884	879	5.168	5.092	34.543	27.342	36.408	45.047	31.404	82	76.0	2.74	40.1	879
1209	969	963	4.849	4.768	34.545D	27.380	36.463	45.117	31.837					963
115	1059	1052	4.480	4.393	34.553	27.427	36.529	45.201	32.303	86	90.3	2.78	40.3	1052
1210	1133	1126	4.208	4.117	34.561D	27.463	36.579	45.264	32.682					1126
116	1204	1196	3.932	3.837	34.568	27.497	36.627	45.326	33.047	83	104.3	2.82	41.0	1196
1211	1303	1294	3.574	3.474	34.579D	27.541	36.691	45.407	33.553					1294
117	1405	1395	3.272	3.167	34.589	27.578	36.744	45.476	34.064	93	118.7	2.79	40.6	1395
1212	1570	1558	2.928	2.813	34.604D	27.621	36.806	45.556	34.870					1558
1213	1741	1727	2.635	2.509	34.614D	27.655	36.857	45.621	35.690					1727
118	1909	1892	2.384	2.247	34.627	27.687	36.903	45.680	36.493	107	139.2	2.71	39.9	1892
1214	2073	2054	2.161	2.014	34.641D	27.717	36.945	45.734	37.273					2054
1215	2244	2223	1.973	1.814	34.653D	27.741	36.981	45.781	38.077					2223
119	2416	2392	1.889	1.716	34.656	27.751	36.996	45.801	38.862	122	151.0	2.65	39.1	2392
1216	2569	2542	1.823	1.637	34.662D	27.761	37.010	45.819	39.560					2542
120	2724	2695	1.768	1.569	34.662	27.766	37.019	45.832	40.258	129	150.6	2.62	38.4	2695
1217	2908	2875	1.683	1.468	34.665D	27.776	37.034	45.852	41.090					2875
1218	3087	3051	1.608	1.378	34.672D	27.788	37.051	45.874	41.899					3051
1219	3265	3226	1.552	1.305	34.675D	27.795	37.063	45.889	42.694					3226
121	3438	3395	1.519	1.255	34.677	27.800	37.070	45.900	43.461	150	148.3	2.52	36.9	3395
1220	3641	3594	1.458	1.175	34.682D	27.810	37.084	45.918	44.363					3594
1221	3846	3794	1.415	1.111	34.686D	27.817	37.095	45.932	45.266					3794
1222	4052	3996	1.367	1.042	34.691D	27.825	37.108	45.948	46.172					3996
122	4147	4089	1.343	1.008	34.691	27.828	37.112	45.954	46.587	173	139.5	2.39	35.2	4089
1223	4252	4191	1.289	0.944	34.695D	27.835	37.123	45.968	47.053					4191
1224	4347	4284	1.258	0.904	34.696D	27.838	37.128	45.976	47.469					4284
123	4553	4485	1.235	0.858	34.699	27.844	37.136	45.986	48.360	188	132.2	2.31	34.2	4485
1225	4751	4678	1.238	0.837	34.700D	27.846	37.140	45.991	49.207					4678
1226	4950	4871	1.252	0.827	34.700D	27.846	37.141	45.992	50.052					4871
1227	5152	5068	1.270	0.819	34.702D	27.848	37.143	45.995	50.907					5068
1228	5352	5262	1.293	0.816	34.700D	27.847	37.142	45.994	51.745					5262
124	5532	5437	1.317	0.816	34.702	27.848	37.144	45.996	52.499	193	129.3	2.28	33.8	5437

BOTTOM DEPTH FOR CAST 1 IS 5447

STATION: 243 LEG: V POSITION: 2° 0' N 178° 56' E DATE: 19 DEC 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
1301	3	3	26.303	26.302	35.095D	23.047	31.334	39.241	23.060					3
101	10	10	26.309	26.307	35.097	23.047	31.334	39.241	23.090	201	3.3	0.50	3.6	10
1302	50	50	26.267	26.255	35.095D	23.061	31.349	39.259	23.274					50
102	91	91	25.460	25.439	35.083	23.301	31.611	39.541	23.688	198	3.6	0.61	4.8	91
1303	110	110	24.911	24.886	35.109D	23.487	31.811	39.756	23.956					110
1304	137	137	24.647	24.616	35.103D	23.563	31.894	39.846	24.147					137
103	160	160	24.249	24.213	35.084	23.668	32.011	39.973	24.351	187	4.5	0.74	6.6	160
1305	190	190	22.558	22.518	35.109D	24.177	32.566	40.575	24.992					190

STATION: 243 LEG: V POSITION: 2° 0' N 178° 56' E DATE: 19 DEC 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
104	228	228	13.403	13.370	34.656	26.087	34.785	43.084	27.100	134	20.5	1.33	18.0	228
105	248	248	12.774	12.740	34.709	26.256	34.978	43.298	27.361	131	22.5	1.44	19.6	248
106	280	279	11.545	11.508	34.811	26.573	35.343	43.708	27.827	111	22.5	1.72	24.2	279
1306	319	318	10.811	10.771	34.780D	26.685	35.486	43.879	28.117					318
107	360	359	10.449	10.405	34.756	26.731	35.548	43.956	28.350	83	27.0	2.01	29.3	359
1307	402	401	9.784	9.737	34.701D	26.804	35.650	44.085	28.617					401
108	441	439	9.615	9.563	34.705	26.836	35.689	44.131	28.825	70	31.0	2.20	32.3	439
1308	488	486	8.998	8.943	34.670D	26.910	35.791	44.259	29.117					486
109	536	534	8.308	8.250	34.624	26.982	35.895	44.393	29.414	71	38.1	2.36	34.6	534
1309	584	581	7.584	7.524	34.590D	27.063	36.010	44.539	29.721					581
110	637	634	6.705	6.644	34.566	27.166	36.156	44.724	30.078	53	54.9	2.75	39.9	634
1310	692	689	6.049	5.986	34.538D	27.230	36.252	44.850	30.402					689
111	761	757	5.496	5.429	34.538	27.298	36.348	44.971	30.794	93	66.1	2.63	38.1	757
1311	834	830	5.232	5.160	34.537D	27.329	36.392	45.028	31.163					830
112	910	905	5.018	4.941	34.540	27.357	36.431	45.077	31.541	97	73.9	2.64	38.6	905
1312	985	979	4.729	4.647	34.546D	27.394	36.483	45.143	31.927					979
115	1058	1051	4.407	4.321	34.553	27.435	36.541	45.216	32.308	90	90.6	2.77	40.1	1051
1313	1136	1129	4.086	3.996	34.563D	27.477	36.599	45.290	32.713					1129
116	1210	1202	3.848	3.754	34.570	27.507	36.642	45.345	33.087	93	104.3	2.82	40.7	1202
1314	1312	1303	3.452	3.353	34.581D	27.554	36.710	45.433	33.611					1303
117	1413	1403	3.195	3.090	34.593	27.588	36.758	45.494	34.113	94	119.7	2.80	40.3	1403
1315	1578	1566	2.849	2.734	34.606D	27.630	36.819	45.572	34.918					1566
1316	1741	1727	2.649	2.523	34.617D	27.656	36.857	45.621	35.691					1727
118	1902	1886	2.421	2.284	34.624	27.682	36.895	45.671	36.454	109	138.0	2.72	39.6	1886
1317	2072	2053	2.217	2.069	34.637D	27.709	36.934	45.721	37.258					2053
1318	2233	2212	2.079	1.919	34.646D	27.728	36.961	45.756	38.008					2212
119	2418	2394	1.891	1.718	34.655	27.750	36.995	45.799	38.870	121	148.7	2.67	38.8	2394
1319	2624	2596	1.784	1.594	34.663D	27.765	37.017	45.828	39.811					2596
120	2824	2793	1.723	1.515	34.664	27.772	37.028	45.843	40.711	130	151.1	2.61	38.1	2793
1320	3024	2989	1.668	1.442	34.667D	27.779	37.039	45.858	41.607					2989
1321	3227	3188	1.597	1.353	34.672D	27.789	37.054	45.878	42.518					3188
121	3432	3389	1.547	1.283	34.675	27.797	37.065	45.893	43.429	147	148.0	2.53	37.0	3389
1322	3633	3586	1.480	1.197	34.680D	27.806	37.080	45.912	44.323					3586
1323	3836	3785	1.441	1.138	34.683D	27.813	37.090	45.925	45.216					3785
122	4040	3984	1.407	1.082	34.687	27.820	37.100	45.938	46.110	166	141.5	2.42	35.8	3984
1324	4288	4226	1.297	0.948	34.693D	27.833	37.121	45.966	47.205					4226
123	4553	4485	1.229	0.852	34.697	27.842	37.135	45.986	48.360	189	132.0	2.30	33.8	4485
1325	4798	4723	1.230	0.824	34.699D	27.846	37.140	45.992	49.408					4723
1326	5051	4970	1.250	0.813	34.700D	27.847	37.143	45.995	50.481					4970
1327	5304	5216	1.274	0.804	34.701D	27.848	37.144	45.997	51.548					5216
1328	5473	5380	1.294	0.802	34.699D	27.847	37.143	45.996	52.254					5380
124	5614	5517	1.312	0.801	34.700	27.848	37.144	45.997	52.843	196	127.3	2.26	33.4	5517

BOTTOM DEPTH FOR CAST 1 IS 5529

STATION: 244 LEG: V POSITION: 1° 1' N 178° 55' E DATE: 20 DEC 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
225	4H	4	26.026H	26.025	35.117	23.149	31.442	39.357	23.166					4
301	5	5	25.946	25.945	35.112	23.169	31.465	39.382	23.191	203	3.7	0.54	4.0	5
226	30H	30	26.026H	26.019	35.117	23.150	31.444	39.359	23.278					30
227	49H	49	25.936H	25.924	35.120	23.182	31.478	39.395	23.390					49
302	63	63	25.809	25.794	35.117	23.219	31.519	39.440	23.487	201	3.7	0.57	4.3	63
228	78H	78	25.729H	25.711	35.123	23.249	31.551	39.474	23.580					78
303	104	104	24.456	24.433	35.100	23.616	31.952	39.908	24.059	192	4.4	0.72	6.2	104
229	109H	109	24.456H	24.431	35.114	23.626	31.962	39.919	24.091					109
230	157H	157	23.799H	23.764	35.304	23.966	32.318	40.290	24.637					157
304	167	167	22.997	22.961	35.283	24.183	32.557	40.551	24.898	150	4.3	0.75	8.3	167
231	196H	196	17.688H	17.654	35.157	25.503	34.041	42.191	26.358					196
305	196	196	18.673	18.637	34.975	25.118	33.627	41.748	25.971	145	9.2	0.86	10.7	196
306	201	201	17.568	17.533	34.859	25.305	33.851	42.008	26.182	145	11.1	0.93	11.9	201
307	243	242	14.332	14.295	34.929	26.103	34.762	43.025	27.177	139	15.4	1.22	16.2	242
232	271H	270	11.963H	11.927	34.855	26.528	35.280	43.629	27.739					270

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

STATION: 244 LEG: V POSITION: 1° 1' N 178° 55' E DATE: 20 DEC 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
308	276	275	12.578	12.540	34.830	26.389	35.117	43.443	27.619	128	20.7	1.50	20.8	275
309	376	375	10.186	10.141	34.737	26.763	35.591	44.009	28.456	62	29.1	2.16	32.0	375
233	419H	418	9.735H	9.686	34.709	26.818	35.667	44.104	28.708					418
310	487	485	8.815	8.761	34.652	26.925	35.815	44.290	29.130	65	36.2	2.33	34.5	485
311	599	596	6.764	6.706	34.562	27.155	36.142	44.707	29.893	77	50.5	2.55	37.1	596
312	692	689	5.694	5.633	34.541	27.276	36.315	44.929	30.454	95	61.4	2.58	37.8	689
234	694H	691	5.640H	5.579	34.541	27.283	36.325	44.941	30.471					691
313	808	804	5.279	5.209	34.542	27.327	36.388	45.021	31.042	93	68.8	2.64	38.2	804
314	959	953	4.576	4.498	34.552	27.415	36.512	45.179	31.833	93	84.6	2.70	39.2	953
315	1135	1128	3.844	3.756	34.571	27.507	36.642	45.345	32.746	88	101.3	2.79	40.5	1128
316	1308	1299	3.519	3.419	34.582	27.549	36.701	45.420	33.585	93	109.8	2.75	40.1	1299
317	1484	1473	3.070	2.960	34.601	27.606	36.783	45.525	34.458	95	120.1	2.78	40.3	1473
318	1661	1648	2.739	2.618	34.612	27.644	36.840	45.599	35.313	104	128.4	2.72	39.6	1648
319	1836	1820	2.503	2.371	34.623	27.674	36.883	45.654	36.144	110	133.2	2.69	39.2	1820
320	2013	1995	2.207	2.064	34.639	27.711	36.937	45.724	36.995	116	141.6	2.68	38.9	1995
321	2191	2170	2.066	1.910	34.647	27.729	36.963	45.758	37.821	118	143.8	2.67	39.0	2170
322	2317	2294	1.980	1.814	34.653	27.741	36.980	45.780	38.404	121	146.8	2.64	38.5	2294
323	2497	2472	1.882	1.702	34.658	27.754	36.999	45.805	39.227	124	147.8	2.62	38.5	2472
101	2569	2542	1.828	1.642	34.659	27.759	37.008	45.816	39.557	128	148.1	2.62	38.5	2542
324	2622	2594	1.819	1.628	34.663	27.763	37.012	45.822	39.798	127	149.5	2.60	38.3	2594
102	2773	2743	1.737	1.534	34.664	27.770	37.025	45.840	40.482	131	149.2	2.60	38.0	2743
103	2979	2945	1.671	1.450	34.667	27.779	37.038	45.857	41.408	136	148.9	2.57	37.9	2945
104	3181	3143	1.598	1.358	34.673	27.790	37.054	45.878	42.316	144	147.5	2.54	37.4	3143
105	3384	3342	1.545	1.286	34.677	27.798	37.067	45.894	43.220	149	147.0	2.51	36.9	3342
106	3537	3492	1.517	1.243	34.680	27.803	37.074	45.904	43.897	151	147.4	2.49	36.7	3492
107	3690	3642	1.479	1.190	34.682	27.809	37.083	45.915	44.573	159	145.7	2.48	36.3	3642
108	3842	3790	1.444	1.140	34.686	27.815	37.092	45.927	45.244	161	142.4	2.44	36.0	3790
109	3995	3940	1.402	1.082	34.689	27.821	37.101	45.939	45.918	166	140.1	2.42	35.7	3940
110	4149	4090	1.359	1.024	34.691	27.827	37.110	45.951	46.593	172	139.6	2.39	35.3	4090
111	4303	4241	1.322	0.971	34.694	27.832	37.119	45.963	47.266	179	136.8	2.35	34.9	4241
112	4456	4390	1.283	0.915	34.698	27.839	37.129	45.975	47.934	184	133.0	2.32	34.5	4390
115	4610	4540	1.256	0.871	34.700	27.843	37.135	45.985	48.601	189	130.5	2.29	34.1	4540
116	4761	4687	1.247	0.845	34.701	27.846	37.139	45.990	49.249	192	128.5	2.28	33.9	4687
117	4917	4839	1.262	0.840	34.702	27.847	37.141	45.992	49.911	192	129.1	2.26	33.7	4839
118	5072	4990	1.267	0.826	34.702	27.848	37.142	45.994	50.569	194	127.7	2.25	33.5	4990
119	5226	5140	1.272	0.812	34.704	27.850	37.146	45.998	51.221	195	128.5	2.25	33.5	5140
120	5379	5288	1.288	0.808	34.704	27.851	37.146	45.999	51.863	195	128.3	2.25	33.5	5288
121	5431	5339	1.294	0.807	34.703	27.850	37.145	45.998	52.080	196	127.2	2.25	33.5	5339
122	5585	5488	1.313	0.805	34.703	27.850	37.146	45.998	52.723	196	127.4	2.25	33.3	5488
123	5635	5537	1.319	0.805	34.703	27.850	37.146	45.999	52.932	196	127.5	2.25	33.5	5537
124	5788	5685	1.338	0.803	34.703	27.850	37.146	45.999	53.568	196	126.2	2.24	33.5	5685

BOTTOM DEPTH FOR CAST 1 IS 5708

STATION: 245 LEG: V POSITION: 0° 31' N 178° 59' E DATE: 21 DEC 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	26.044	26.044	35.145D	23.164	31.457	39.371	23.164					0
101	4	4	26.043	26.042	35.143	23.163	31.456	39.370	23.180	200	3.3	0.51	4.0	4
1202	35	35	25.945	25.937	35.1400	23.193	31.489	39.405	23.342					35
102	69	69	25.578	25.562	35.137	23.305	31.610	39.537	23.598	198	3.3	0.54	4.5	69
1203	101	101	24.828	24.805	35.261D	23.626	31.951	39.895	24.056					101
1204	130	130	24.549	24.520	35.308D	23.747	32.078	40.030	24.301					130
103	160	160	23.461	23.426	35.314	24.072	32.433	40.414	24.756	147	3.9	0.70	8.3	160
104	190	190	19.023	18.988	35.202	25.202	33.696	41.805	26.027	140	8.3	0.86	11.2	190
105	232	232	15.739	15.702	35.167	25.974	34.579	42.791	26.993	139	10.5	1.10	14.9	232
106	242	241	14.460	14.423	35.015	26.141	34.795	43.052	27.211	128	14.0	1.16	16.2	241
107	278	277	12.792	12.753	34.840	26.354	35.074	43.392	27.592	90	19.6	1.41	20.3	277
1205	320	319	11.515	11.473	34.818D	26.585	35.356	43.722	28.018					319
108	365	364	10.975	10.929	34.782	26.658	35.452	43.839	28.295	70	24.6	1.82	27.7	364
1206	410	409	9.741	9.693	34.7400	26.841	35.689	44.125	28.691					409
109	455	453	9.295	9.243	34.688	26.875	35.743	44.199	28.931	56	31.9	2.16	33.3	453

STATION: 245 LEG: V POSITION: 0° 31' N 178° 59' E DATE: 21 DEC 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
1207	499	497	8.187	8.134	34.617D	26.994	35.913	44.415	29.261					497
110	545	543	7.536	7.480	34.596	27.074	36.023	44.554	29.556		46.0	2.49	37.8	543
1208	591	588	6.772	6.715	34.565D	27.156	36.142	44.707	29.858					588
111	637	634	6.265	6.206	34.550	27.211	36.222	44.810	30.130	86	54.1	2.47	37.6	634
1209	698	695	5.726	5.664	34.545D	27.275	36.313	44.926	30.480					695
112	763	759	5.527	5.460	34.538	27.294	36.343	44.964	30.799	96	63.6	2.50	38.0	759
1210	862	857	5.077	5.004	34.542D	27.351	36.422	45.065	31.316					857
115	964	958	4.693	4.613	34.548	27.399	36.490	45.152	31.837	92	82.2	2.61	39.3	958
1211	1074	1067	4.210	4.124	34.562D	27.463	36.579	45.264	32.414					1067
116	1188	1180	3.884	3.791	34.569	27.502	36.635	45.336	32.981	88	101.9	2.69	40.5	1180
1212	1302	1293	3.541	3.442	34.578D	27.543	36.695	45.413	33.552					1293
117	1413	1403	3.311	3.205	34.587	27.573	36.737	45.467	34.094	96	114.0	2.67	40.3	1403
1213	1581	1569	2.924	2.808	34.605D	27.623	36.808	45.557	34.921					1569
1214	1750	1736	2.649	2.522	34.619D	27.658	36.859	45.623	35.733					1736
118	1917	1900	2.404	2.266	34.627	27.685	36.900	45.677	36.527	113	134.7	2.57	39.2	1900
1215	2084	2065	2.145	1.997	34.644D	27.720	36.949	45.740	37.327					2065
1216	2256	2234	2.037	1.875	34.650D	27.734	36.970	45.767	38.120					2234
119	2426	2402	1.931	1.756	34.653	27.746	36.988	45.791	38.899	123	146.1	2.54	38.7	2402
1217	2582	2555	1.831	1.644	34.662D	27.761	37.010	45.818	39.617					2555
120	2733	2704	1.758	1.558	34.663	27.768	37.021	45.834	40.300	131	148.3	2.50	38.2	2704
1218	2887	2855	1.710	1.497	34.666D	27.775	37.032	45.848	40.994					2855
1219	3038	3003	1.636	1.410	34.671D	27.785	37.046	45.867	41.677					3003
1220	3238	3199	1.577	1.332	34.676D	27.794	37.060	45.885	42.572					3199
121	3446	3403	1.517	1.253	34.680	27.803	37.073	45.902	43.499	151	145.4	2.39	36.7	3403
1221	3642	3595	1.481	1.197	34.682D	27.808	37.082	45.914	44.364					3595
1222	3852	3800	1.433	1.128	34.688D	27.817	37.095	45.930	45.291					3800
122	4054	3998	1.393	1.067	34.689	27.822	37.103	45.942	46.175	168	140.3	2.30	35.7	3998
1223	4225	4165	1.332	0.989	34.696D	27.833	37.118	45.961	46.930					4165
1224	4397	4333	1.287	0.926	34.699D	27.839	37.128	45.974	47.681					4333
123	4564	4495	1.260	0.881	34.700	27.843	37.134	45.983	48.403	188	131.1	2.21	34.1	4495
1225	4793	4718	1.253	0.847	34.702D	27.847	37.140	45.990	49.385					4718
1226	5030	4949	1.245	0.810	34.704D	27.850	37.146	45.998	50.396					4949
1227	5244	5157	1.268	0.806	34.706D	27.852	37.148	46.001	51.299					5157
124	5498	5404	1.298	0.802	34.705	27.852	37.148	46.000	52.363	196	126.6	2.17	33.5	5404

BOTTOM DEPTH FOR CAST 1 IS 5419

STATION: 246 LEG: V POSITION: 0° 0' S 178° 59' E DATE: 21 DEC 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	10	10	25.862	25.860	35.196	23.259	31.556	39.474	23.301	199	3.5	0.56	4.6	10
501	11	11	25.860	25.857	35.196	23.259	31.556	39.475	23.306					11
503	35	35	25.802	25.794	35.198	23.280	31.579	39.499	23.429					35
504	35	35	25.802	25.794	35.200	23.282	31.581	39.500	23.431	200	3.5	0.55	4.5	35
506	54	54	25.768	25.755	35.209	23.300	31.600	39.521	23.530	196	3.0	0.57	4.7	54
505	55	55	25.767	25.754	35.208	23.300	31.600	39.520	23.534					55
508	84	84	25.735	25.715	35.233	23.331	31.631	39.553	23.687	192	3.0	0.59	5.1	84
507	85	85	25.734	25.714	35.235	23.332	31.633	39.554	23.693					85
509	129	129	25.249	25.219	35.376	23.589	31.900	39.833	24.137					129
510	130	130	25.191	25.161	35.406	23.629	31.942	39.876	24.182	165	3.0	0.69	7.0	130
511	150	150	24.337	24.303	35.482	23.942	32.277	40.233	24.581	152	3.2	0.74	8.1	150
513	175	175	21.632	21.596	35.626	24.827	33.237	41.265	25.580	129	4.3	0.94	11.2	175
512	175	175	21.627	21.591	35.626	24.829	33.239	41.267	25.581	129	4.0	0.94	11.2	175
514	205	205	18.347	18.310	35.317	25.462	33.977	42.104	26.354	140	6.9	0.95	12.0	205
515	221	221	17.167	17.129	35.282	25.726	34.281	42.445	26.692	139	8.0	1.04	13.4	221
516	243	242	15.139	15.101	35.113	26.068	34.695	42.928	27.138	141	11.5	1.13	15.3	242
517	281	280	12.639	12.600	34.893	26.426	35.151	43.474	27.678	128	18.6	1.45	20.7	280
518	284	283	12.581	12.542	34.891	26.436	35.163	43.488	27.701	128	18.6	1.46	20.8	283
519	345	344	10.642	10.599	34.769	26.707	35.515	43.915	28.257	75	26.9	1.98	29.6	344
520	404	403	9.444	9.397	34.700	26.859	35.720	44.169	28.685	70	31.3	2.16	32.7	403
521	464	462	8.193	8.144	34.629	27.002	35.920	44.422	29.111	77	37.3	2.29	34.5	462
522	525	523	7.293	7.241	34.579	27.095	36.056	44.597	29.490	88	43.6	2.35	35.2	523

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

STATION: 246 LEG: V POSITION: 0° 0′ S 178° 59′ E DATE: 21 DEC 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
523	585	582	6.848	6.791	34.578	27.156	36.138	44.699	29.829	90	46.2	2.42	36.0	582
301	585H	582	6.82 H	6.76	34.565	27.150	36.133	44.696	29.823	89	46.9	2.41	36.2	582
524	654	651	5.916	5.857	34.545	27.252	36.280	44.883	30.253	92	58.2	2.52	37.4	651
302	659H	656	5.91 H	5.85	34.542	27.250	36.278	44.882	30.274	92	58.5	2.52	37.6	656
303	733H	729	5.60 H	5.54	34.542	27.289	36.333	44.951	30.655	90	64.2	2.59	38.3	729
304	831H	826	5.22 H	5.15	34.544	27.336	36.399	45.036	31.156	88	71.7	2.66	39.1	826
305	955H	949	4.674H	4.595	34.546	27.400	36.492	45.154	31.797	93	80.4	2.65	39.0	949
306	1080H	1073	4.28 H	4.19	34.558	27.452	36.565	45.246	32.429	89	90.8	2.72	39.9	1073
307	1203H	1195	3.71 H	3.62	34.575	27.524	36.666	45.376	33.077	90	104.7	2.75	40.3	1195
308	1351H	1341	3.296H	3.195	34.586	27.573	36.737	45.468	33.813	98	113.8	2.70	39.9	1341
309	1500H	1489	2.94 H	2.83	34.604	27.620	36.804	45.552	34.550	98	123.1	2.74	40.1	1489
310	1649H	1636	2.71 H	2.59	34.616	27.650	36.847	45.607	35.265	99	131.8	2.73	40.1	1636
311	1800H	1785	2.517H	2.388	34.623	27.672	36.880	45.651	35.980	106	132.4	2.68	39.7	1785
312	1950H	1933	2.30 H	2.16	34.633	27.699	36.919	45.701	36.694	115	135.9	2.64	39.0	1933
325	2099H	2080	2.109H	1.960	34.646	27.725	36.956	45.748	37.401	116	143.2	2.63	39.1	2080
326	2249H	2227	2.03 H	1.87	34.649	27.734	36.970	45.767	38.088	119	143.9	2.61	38.9	2227
327	2400H	2376	1.910H	1.738	34.656	27.749	36.993	45.797	38.787	123	147.1	2.56	38.5	2376
328	2551H	2525	1.84 H	1.66	34.660	27.759	37.007	45.815	39.476	126	148.9	2.55	38.3	2525
329	2700H	2671	1.75 H	1.55	34.662	27.767	37.021	45.835	40.154	131	149.1	2.54	38.1	2671
330	2852H	2820	1.693H	1.483	34.668	27.777	37.035	45.852	40.843	135	149.3	2.52	37.5	2820
331	3003H	2969	1.65 H	1.43	34.669	27.782	37.043	45.863	41.519	138	147.8	2.49	37.5	2969
332	3154H	3117	1.62 H	1.38	34.671	27.787	37.050	45.872	42.192	142	147.1	2.48	37.4	3117
333	3305H	3265	1.588H	1.336	34.675	27.793	37.059	45.884	42.865	144	148.3	2.46	37.2	3265
201	3489	3445	1.516	1.247	34.677	27.801	37.072	45.901	43.685	152	144.9	2.45	36.8	3445
334	3524H	3479	1.525H	1.252	34.680	27.803	37.073	45.902	43.839	151	145.1	2.43	36.6	3479
202	3636	3589	1.492	1.209	34.681	27.806	37.079	45.911	44.335	156	144.2	2.42	36.3	3589
203	3790	3740	1.455	1.156	34.684	27.812	37.088	45.922	45.014	162	142.8	2.40	36.2	3740
204	3941	3887	1.430	1.116	34.685	27.816	37.094	45.930	45.676	164	142.2	2.38	35.8	3887
205	4097	4040	1.402	1.071	34.689	27.822	37.103	45.941	46.359	168	140.2	2.36	35.6	4040
206	4252	4191	1.326	0.980	34.695	27.833	37.118	45.962	47.047	177	135.9	2.31	34.9	4191
207	4406	4341	1.269	0.908	34.698	27.840	37.130	45.977	47.722	185	131.6	2.27	34.3	4341
208	4557	4489	1.272	0.893	34.697	27.840	37.130	45.978	48.369	187	130.7	2.26	34.2	4489
209	4708	4636	1.250	0.854	34.702	27.846	37.139	45.989	49.023		127.9	2.24	33.7	4636
210	4856	4780	1.245	0.831	34.702	27.848	37.142	45.993	49.655	192	127.8	2.23	33.7	4780
211	5007	4927	1.242	0.810	34.704	27.850	37.146	45.998	50.299	195	126.5	2.20	33.5	4927
212	5161	5077	1.256	0.805	34.703	27.850	37.146	45.998	50.948	195	126.4	2.21	33.6	5077
215	5231	5145	1.265	0.805	34.703	27.850	37.146	45.999	51.243					5145
216	5302	5214	1.273	0.803	34.705	27.852	37.148	46.000	51.543					5214
217	5362	5272	1.280	0.802	34.705	27.852	37.148	46.000	51.794	196	126.4	2.21	33.4	5272
218	5363	5273	1.280	0.802	34.704	27.851	37.147	46.000	51.798					5273
219	5412	5320	1.285	0.801	34.704	27.851	37.147	46.000	52.003					5320
220	5451	5358	1.290	0.801	34.704	27.851	37.147	46.000	52.166					5358
221	5481	5387	1.294	0.801	34.704	27.851	37.147	46.000	52.291					5387
224	5496	5402	1.296	0.801	34.704	27.851	37.147	46.000	52.354					5402
223	5497	5403	1.296	0.800	34.704	27.851	37.147	46.000	52.358	196	126.3	2.21	33.6	5403
222	5497	5403	1.296	0.800	34.704	27.851	37.147	46.000	52.358					5403

BOTTOM DEPTH FOR CAST 2 IS 5412

STATION: 247 LEG: V POSITION: 0° 28′ S 178° 59′ E DATE: 22 DEC 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	25.840	25.840	35.265D	23.317	31.613	39.531	23.317					0
101	7	7	25.844	25.842	35.263	23.314	31.611	39.529	23.344	198	3.1	0.56	5.1	7
102	67	67	25.852	25.836	35.266	23.319	31.615	39.533	23.603	197	2.9	0.56	5.1	67
103	99	99	25.836	25.813	35.282	23.338	31.635	39.554	23.758	193	2.9	0.58	5.3	99
1202	121	121	25.896	25.867	35.365D	23.384	31.679	39.595	23.897					121
104	146	146	25.326	25.292	35.501	23.661	31.969	39.899	24.281	168	2.9	0.68	7.0	146
105	170	170	22.589	22.553	35.746	24.650	33.030	41.030	25.378	129	3.5	0.92	10.9	170
106	216	216	16.235	16.199	35.225	25.903	34.490	42.685	26.851	141	9.1	1.08	14.3	216
107	258	257	13.487	13.450	35.224	26.509	35.196	43.485	27.654	137	14.9	1.31	18.5	257
108	308	307	11.263	11.223	34.819	26.633	35.414	43.789	28.013	107	22.0	1.74	25.9	307

STATION: 247 LEG: V POSITION: 0° 28′ S 178° 59′ E DATE: 22 DEC 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	358	357	10.703	10.658	34.793D	26.715	35.520	43.918	28.323					357
109	413	412	9.704	9.655	34.710	26.824	35.674	44.112	28.687	66	30.9	2.18	33.5	412
110	526	524	7.728	7.674	34.607	27.055	35.995	44.517	29.449	84	38.2	2.31	35.2	524
111	636	633	6.537	6.477	34.555	27.180	36.178	44.753	30.090	87	50.7	2.49	37.6	633
112	722	718	5.718	5.654	34.540	27.273	36.311	44.924	30.587	96	59.6	2.54	38.3	718
1204	842	837	5.225	5.152	34.543D	27.335	36.398	45.034	31.205					837
115	963	957	4.394	4.317	34.554	27.436	36.542	45.218	31.877	91	87.8	2.70	40.3	957
1205	1082	1075	4.111	4.025	34.568D	27.478	36.598	45.288	32.468					1075
116	1214	1206	3.672	3.579	34.576	27.528	36.673	45.384	33.133	91	105.3	2.75	41.1	1206
1206	1362	1352	3.286	3.184	34.588D	27.575	36.740	45.471	33.866					1352
117	1514	1502	3.006	2.895	34.602	27.613	36.793	45.538	34.604	98	120.1	2.74	40.7	1502
1207	1746	1732	2.539	2.414	34.624D	27.671	36.878	45.647	35.733					1732
1208	1977	1959	2.237	2.097	34.637D	27.707	36.931	45.716	36.827					1959
118	2221	2200	2.047	1.888	34.649	27.732	36.968	45.764	37.961	118	142.9	2.61	39.4	2200
1209	2421	2397	1.900	1.726	34.656D	27.750	36.994	45.799	38.883					2397
119	2628	2600	1.791	1.600	34.663	27.765	37.016	45.827	39.828	129	147.2	2.56	38.8	2600
1210	2823	2792	1.699	1.492	34.667D	27.776	37.033	45.849	40.712					2792
1211	3030	2995	1.627	1.402	34.669D	27.784	37.046	45.867	41.642					2995
120	3241	3202	1.593	1.348	34.675	27.792	37.057	45.882	42.582	144	146.7	2.48	37.5	3202
1212	3422	3379	1.548	1.285	34.677D	27.798	37.067	45.894	43.386					3379
1213	3608	3562	1.478	1.198	34.682D	27.808	37.082	45.914	44.215					3562
121	3801	3750	1.456	1.156	34.684D	27.812	37.088	45.923	45.062	160	141.6	2.39	36.2	3750
1214	4050	3994	1.405	1.079	34.690D	27.822	37.102	45.941	46.156					3994
122	4312	4250	1.308	0.956	34.696	27.835	37.122	45.967	47.309	180	135.2	2.30	35.0	4250
1215	4538	4470	1.268	0.891	34.700D	27.842	37.133	45.981	48.290					4470
123	4772	4698	1.246	0.843	34.702	27.847	37.140	45.991	49.297	192	128.6	2.23	33.9	4698
1216	5014	4934	1.245	0.812	34.704D	27.850	37.146	45.998	50.328					4934
1217	5269	5181	1.257	0.792	34.705D	27.852	37.149	46.002	51.406					5181
124	5515	5420	1.284	0.787	34.705	27.853	37.149	46.003	52.437	196	126.7	2.21	33.7	5420

BOTTOM DEPTH FOR CAST 1 IS 5445

STATION: 248 LEG: V POSITION: 1° 2′ S 179° 2′ E DATE: 22 DEC 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
227	4H	4	26.08 H	26.08	35.391	23.338	31.628	39.538	23.355					4
301	25	25	26.086	26.080	35.391	23.338	31.627	39.538	23.444	197	2.9	0.57	4.5	25
228	38H	38	26.08 H	26.07	35.391	23.341	31.630	39.541	23.502					38
229	58H	58	26.09 H	26.08	35.391	23.339	31.628	39.539	23.585					58
230	88H	88	26.09 H	26.07	35.397	23.346	31.635	39.546	23.719					88
302	100	100	26.080	26.056	35.408	23.358	31.648	39.559	23.782	195	2.9	0.59	4.7	100
231	131H	131	25.78 H	25.75	35.508	23.527	31.824	39.741	24.083					131
303	146	146	25.512	25.478	35.550	23.642	31.945	39.869	24.261	177	2.5	0.68	6.4	146
232	171H	171	24.44 H	24.40	35.841	24.184	32.513	40.462	24.912					171
304	172	172	23.468	23.430	35.818	24.452	32.807	40.782	25.186	156	2.3	0.76	7.8	172
305	196	196	18.108	18.073	35.392	25.579	34.100	42.234	26.432	135	6.8	1.02	13.0	196
233	215H	215	17.06 H	17.02	35.376	25.824	34.380	42.547	26.763					215
306	253	252	14.032	13.994	35.105	26.303	34.971	43.242	27.423	138	11.7	1.21	16.8	252
234	275H	274	12.35 H	12.31	34.919	26.503	35.239	43.572	27.729					274
307	293	292	11.665	11.626	34.861	26.590	35.354	43.714	27.901	121	19.7	1.59	23.3	292
308	381	380	9.746	9.701	34.716	26.821	35.669	44.105	28.540	67	30.6	2.17	32.7	380
309	403	402	9.674	9.627	34.691	26.814	35.665	44.105	28.633	75	32.6	2.18	32.9	402
310	507	505	7.785	7.732	34.609	27.048	35.985	44.505	29.355	83	38.6	2.32	35.1	505
311	607	604	6.580	6.522	34.561	27.179	36.174	44.747	29.956	85	48.9	2.48	37.5	604
312	732	728	5.514	5.450	34.539	27.296	36.345	44.967	30.660	95	64.4	2.56	38.3	728
313	857	852	5.022	4.949	34.547	27.361	36.435	45.080	31.304	90	75.4	2.65	39.5	852
314	981	975	4.441	4.362	34.555	27.432	36.536	45.210	31.954	92	87.7	2.70	39.8	975
315	1132	1125	4.071	3.981	34.564	27.479	36.602	45.294	32.698	87	97.5	2.76	40.7	1125
316	1279	1270	3.695	3.596	34.572	27.524	36.667	45.378	33.423	97	102.4	2.70	39.9	1270
317	1449	1438	3.113	3.006	34.595	27.597	36.772	45.511	34.289	100	116.6	2.73	40.0	1438
318	1624	1611	2.804	2.686	34.608	27.635	36.827	45.583	35.134	108	122.2	2.68	39.6	1611
319	1799	1784	2.583	2.453	34.620	27.665	36.869	45.636	35.964	105	129.0	2.71	40.0	1784
320	1984	1966	2.312	2.170	34.633	27.698	36.918	45.699	36.846	115	134.0	2.65	39.3	1966

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

STATION: 248 LEG: V POSITION: 1° 2' S 179° 2' E DATE: 22 DEC 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
321	2114	2094	2.090	1.940	34.645	27.725	36.958	45.751	37.470	119	139.9	2.63	39.0	2094
322	2212	2191	2.032	1.874	34.648	27.733	36.969	45.766	37.921	119	142.8	2.63	39.1	2191
323	2367	2344	1.943	1.773	34.653	27.744	36.986	45.788	38.633	123	143.0	2.60	38.8	2344
101	2476	2451	1.884	1.705	34.659	27.754	36.999	45.805	39.133	120	147.4	2.57	38.7	2451
324	2545	2519	1.850	1.666	34.660	27.758	37.005	45.813	39.447	126	147.4	2.59	38.5	2519
102	2630	2602	1.830	1.638	34.660	27.760	37.009	45.818	39.829	125	148.6	2.57	38.7	2602
103	2782	2752	1.734	1.530	34.664	27.771	37.026	45.840	40.523	131	150.0	2.56	38.4	2752
104	2935	2902	1.689	1.471	34.666	27.776	37.035	45.852	41.210	136	149.8	2.53	38.2	2902
105	3038	3003	1.631	1.405	34.669	27.784	37.045	45.867	41.676	140	149.8	2.51	38.0	3003
106	3139	3102	1.614	1.378	34.671	27.787	37.050	45.873	42.127	143	150.1	2.50	37.8	3102
107	3291	3251	1.590	1.340	34.673	27.791	37.057	45.881	42.801	145	149.9	2.49	37.8	3251
108	3444	3401	1.570	1.304	34.675	27.795	37.063	45.889	43.478	148	147.9	2.47	36.9	3401
109	3596	3550	1.527	1.247	34.680	27.803	37.074	45.903	44.153	152	145.1	2.44	36.9	3550
110	3750	3701	1.494	1.198	34.681	27.807	37.081	45.913	44.831	157	145.1	2.43	36.8	3701
111	3904	3851	1.464	1.153	34.685	27.813	37.089	45.924	45.509	161	143.8	2.39	36.6	3851
112	4056	4000	1.401	1.075	34.689	27.822	37.102	45.941	46.182	168	139.7	2.36	36.1	4000
115	4209	4149	1.373	1.031	34.691	27.826	37.109	45.950	46.850	172	139.3	2.34	35.8	4149
116	4363	4299	1.316	0.958	34.695	27.834	37.121	45.966	47.526	180	136.3	2.30	35.3	4299
117	4490	4423	1.275	0.904	34.698	27.840	37.130	45.978	48.082	186	134.0	2.24	34.4	4423
118	4618	4548	1.264	0.878	34.700	27.843	37.135	45.984	48.634	189	130.6	2.23	34.0	4548
119	4771	4697	1.247	0.844	34.700	27.845	37.139	45.989	49.291		129.3	2.22	33.9	4697
120	4925	4847	1.247	0.825	34.702	27.848	37.143	45.994	49.948	193	128.3	2.22	33.7	4847
121	5080	4998	1.254	0.813	34.702	27.849	37.144	45.996	50.605	195	128.4	2.21	33.7	4998
122	5233	5147	1.269	0.808	34.702	27.849	37.144	45.997	51.250	195	127.3	2.20	33.6	5147
123	5390	5299	1.283	0.802	34.703	27.850	37.146	45.999	51.910	196	127.7	2.20	33.6	5299
124	5530	5435	1.299	0.799	34.703	27.850	37.146	45.999	52.495	197	127.4	2.20	33.2	5435

BOTTOM DEPTH FOR CAST 1 IS 5447

STATION: 249 LEG: V POSITION: 2° 1' S 179° 1' E DATE: 23 DEC 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	1	1	26.69	26.69	35.449D	23.193	31.466	39.360	23.198					1
101	9	9	26.692	26.690	35.449	23.193	31.466	39.360	23.232	199	2.7	0.52	3.7	9
1202	34	34	26.670	26.662	35.449D	23.202	31.476	39.371	23.346					34
102	62	62	26.704	26.689	35.460	23.202	31.475	39.369	23.465	198	2.5	0.53	3.7	62
1203	99	99	26.651	26.627	35.495D	23.248	31.521	39.417	23.667					99
103	144	144	26.105	26.071	35.462	23.394	31.683	39.593	24.005	190	2.5	0.61	4.6	144
1204	165	165	25.644	25.605	35.525D	23.584	31.884	39.805	24.284					165
104	186	186	21.837	21.799	35.798	24.902	33.303	41.324	25.700	151	2.6	0.83	8.8	186
105	226	226	14.980	14.945	35.203	26.172	34.804	43.040	27.168	102	11.0	1.47	19.3	226
1205	256	255	12.725	12.689	35.007D	26.496	35.216	43.535	27.636					255
106	290	289	11.256	11.219	34.861	26.666	35.447	43.822	27.966	109	18.4	1.73	24.9	289
107	335	334	9.914	9.874	34.746	26.815	35.655	44.084	28.326	114	22.5	1.83	27.1	334
108	411	410	8.749	8.704	34.660	26.940	35.832	44.310	28.803	103	28.1	2.04	30.8	410
1206	460	458	8.230	8.181	34.626D	26.994	35.911	44.411	29.084					458
109	511	509	7.757	7.704	34.609	27.052	35.991	44.511	29.378	88	36.3	2.28	34.7	509
1207	564	562	7.087	7.031	34.570D	27.117	36.088	44.638	29.692					562
110	623	620	6.425	6.366	34.553	27.193	36.196	44.776	30.045	91	48.7	2.46	37.1	620
111	732	728	5.417	5.353	34.532	27.302	36.356	44.983	30.668	104	61.5	2.50	37.6	728
1208	842	837	5.019	4.948	34.538D	27.354	36.428	45.074	31.229					837
112	950	944	4.696	4.617	34.538	27.391	36.482	45.143	31.765	105	76.0	2.57	38.2	944
1209	1030	1024	4.342	4.259	34.553D	27.441	36.550	45.229	32.189					1024
115	1213	1205	3.864	3.769	34.564	27.500	36.635	45.337	33.094	100	98.1	2.66	39.6	1205
1210	1409	1399	3.076	2.973	34.594D	27.599	36.776	45.517	34.111					1399
116	1616	1603	2.789	2.672	34.607	27.636	36.828	45.585	35.099	108	124.4	2.65	39.4	1603
1211	1810	1795	2.478	2.348	34.624D	27.676	36.886	45.659	36.031					1795
117	2016	1998	2.179	2.036	34.639	27.713	36.940	45.729	37.012	117	140.2	2.61	38.7	1998
1212	2265	2243	1.989	1.828	34.6500	27.738	36.976	45.776	38.167					2243
118	2528	2502	1.835	1.653	34.657	27.756	37.005	45.813	39.371	127	148.7	2.58	38.4	2502
1213	2770	2740	1.723	1.520	34.665D	27.772	37.028	45.843	40.472					2740
119	3036	3001	1.616	1.390	34.669	27.785	37.047	45.869	41.670	142	148.6	2.49	37.1	3001

STATION: 249 LEG: V POSITION: 2° 1' S 179° 1' E DATE: 23 DEC 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
1214	3288	3248	1.561	1.312	34.674D	27.794	37.061	45.887	42.793					3248
120	3545	3500	1.513	1.239	34.680	27.804	37.075	45.905	43.933	154	144.8	2.43	36.5	3500
1215	3799	3748	1.463	1.163	34.685D	27.813	37.088	45.922	45.053					3748
121	4057	4001	1.397	1.071	34.690	27.823	37.104	45.942	46.188	168	140.7	2.35	35.5	4001
1216	4252	4191	1.348	1.002	34.694D	27.830	37.115	45.957	47.042					4191
122	4465	4399	1.285	0.916	34.696	27.837	37.127	45.974	47.971	186	131.5	2.27	34.2	4399
1217	4640	4569	1.249	0.861	34.699D	27.843	37.136	45.986	48.730					4569
123	5028	4947	1.242	0.808	34.703	27.850	37.145	45.998	50.388	197	125.5	2.20	33.2	4947
1218	5290	5202	1.265	0.797	34.702D	27.850	37.146	45.999	51.491					5202
124	5554	5458	1.295	0.792	34.702	27.850	37.147	46.000	52.596	199	125.1	2.20	33.2	5458

BOTTOM DEPTH FOR CAST 1 IS 5469

STATION: 250 LEG: V POSITION: 2° 59' S 178° 59' E DATE: 23 DEC 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	3	3	27.802	27.801	35.587	22.948	31.192	39.056	22.961	195	1.1	0.36	1.2	3
102	79	79	27.818	27.798	35.589	22.951	31.194	39.059	23.284	192	0.7	0.35	1.2	79
1201	113	113	27.418	27.390	35.749D	23.200	31.452	39.325	23.677					113
103	156	156	25.860	25.823	35.798	23.723	32.014	39.927	24.385	167	1.3	0.66	4.7	156
104	191	191	23.401	23.359	35.997	24.608	32.963	40.938	25.423	156	1.6	0.72	7.0	191
105	227	227	17.537	17.497	35.554	25.845	34.383	42.533	26.835	130	4.8	1.05	12.1	227
1202	256	256	14.594	14.555	35.118D	26.192	34.839	43.091	27.323					256
106	281	280	12.292	12.254	34.951	26.539	35.277	43.612	27.793	87	16.9	1.75	24.9	280
107	332	331	9.568	9.529	34.717	26.851	35.706	44.149	28.351	90	25.6	2.02	30.4	331
1203	384	383	9.024	8.981	34.678D	26.910	35.790	44.256	28.649					383
108	432	430	8.684	8.636	34.658	26.949	35.844	44.325	28.908	97	29.2	2.09	31.7	430
1204	480	478	8.096	8.045	34.630D	27.018	35.941	44.446	29.199					478
1205	588	585	6.883	6.826	34.558D	27.136	36.117	44.676	29.822					585
110	654	651	6.226	6.165	34.548	27.215	36.228	44.817	30.211	80	51.2	2.53	38.1	651
111	773	769	5.436	5.369	34.536	27.304	36.356	44.983	30.856	96	61.8	2.57	38.5	769
112	956	950	4.608	4.530	34.545	27.406	36.501	45.167	31.810	93	79.1	2.63	39.2	950
1206	1084	1077	4.181	4.095	34.553D	27.459	36.576	45.263	32.456					1077
114	1213	1205	3.753	3.659	34.567	27.513	36.654	45.361	33.111	99	99.3	2.68	39.5	1205
1207	1362	1352	3.315	3.213	34.580D	27.566	36.730	45.459	33.856					1352
115	1514	1503	2.937	2.826	34.594	27.612	36.797	45.545	34.606	118	114.9	2.59	38.4	1503
1208	1664	1651	2.704	2.584	34.608D	27.644	36.842	45.602	35.328					1651
116	1813	1798	2.437	2.308	34.625	27.681	36.893	45.668	36.051	116	132.1	2.63	39.0	1798
1209	2141	2121	2.140	1.987	34.641D	27.719	36.948	45.739	37.582					2121
117	2171	2151	2.117	1.962	34.643	27.722	36.953	45.746	37.722	120	140.7	2.59	38.7	2151
118	2528	2502	1.874	1.691	34.655	27.752	36.998	45.804	39.364	131	143.3	2.53	37.9	2502
1210	2713	2684	1.750	1.552	34.661D	27.767	37.021	45.834	40.211					2684
1211	2899	2867	1.670	1.456	34.666D	27.778	37.037	45.855	41.053					2867
119	3038	3003	1.614	1.388	34.672	27.787	37.050	45.872	41.681	145	144.9	2.47	37.0	3003
1212	3289	3249	1.534	1.285	34.676D	27.797	37.066	45.893	42.803					3249
120	3545	3500	1.478	1.204	34.680	27.806	37.079	45.911	43.938	158	143.6	2.39	36.3	3500
1213	3804	3753	1.424	1.125	34.687D	27.817	37.094	45.930	45.083					3753
121	4057	4001	1.352	1.027	34.692	27.827	37.110	45.951	46.197	172	139.0	2.33	35.2	4001
1214	4313	4251	1.308	0.956	34.695D	27.834	37.121	45.966	47.312					4251
122	4568	4499	1.268	0.888	34.700	27.842	37.133	45.982	48.419	189	129.6	2.25	33.8	4499
1215	4798	4723	1.228	0.822	34.702D	27.848	37.143	45.995	49.411					4723
123	5029	4948	1.235	0.801	34.703	27.850	37.146	45.999	50.393	197	123.9	2.20	33.2	4948
1216	5283	5195	1.260	0.793	34.704D	27.852	37.148	46.001	51.464					5195
124	5531	5436	1.292	0.792	34.703	27.851	37.147	46.001	52.501	198	123.2	2.19	33.2	5436

BOTTOM DEPTH FOR CAST 1 IS 5453

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

STATION: 251 LEG: V POSITION: 4° 34' S 178° 57' E DATE: 24 DEC 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	4	4	27.717	27.716	35.646	23.020	31.265	39.131	23.037	197	1.7	0.43	2.2	4
602	54	54	27.636	27.622	35.653	23.055	31.302	39.170	23.283	198	1.7	0.43	2.1	54
603	103	103	27.635	27.609	35.661	23.065	31.312	39.181	23.500	198	1.7	0.44	2.1	103
604	147	147	27.260	27.224	35.590	23.133	31.391	39.270	23.754	195	1.9	0.54	3.2	147
605	162	162	26.312	26.273	35.600	23.436	31.718	39.621	24.122	181	1.9	0.65	4.3	162
606	194	194	24.048	24.005	35.955	24.388	32.725	40.684	25.214	158	1.9	0.74	7.1	194
607	223	223	20.612	20.568	35.801	25.242	33.680	41.735	26.203	149	2.5	0.84	8.4	223
608	243	243	16.494	16.454	35.318	25.915	34.492	42.678	26.979	117	6.9	1.27	15.0	243
609	275	274	13.135	13.096	35.026	26.429	35.133	43.436	27.651	95	14.2	1.66	22.1	274
610	310	309	10.640	10.602	34.810	26.738	35.546	43.945	28.132	96	21.2	1.89	27.3	309
611	362	361	9.559	9.517	34.719	26.854	35.710	44.154	28.490	96	25.7	2.01	29.8	361
612	428	427	8.553	8.506	34.653	26.965	35.867	44.353	28.907	90	31.2	2.18	32.6	427
613	508	506	7.823	7.770	34.608	27.041	35.977	44.495	29.353	97	34.8	2.26	33.6	506
614	608	605	7.091	7.031	34.569	27.116	36.087	44.638	29.890	99	40.3	2.38	35.2	605
615	708	705	6.306	6.240	34.541	27.200	36.209	44.796	30.440	103	48.4	2.46	36.3	705
616	809	805	5.592	5.520	34.533	27.283	36.328	44.948	30.996	100	59.3	2.54	37.8	805
617	909	904	4.976	4.899	34.525	27.349	36.426	45.074	31.530	116	67.3	2.50	37.1	904
618	1059	1052	4.317	4.232	34.545	27.438	36.549	45.229	32.318	103	83.0	2.66	39.1	1052
619	1209	1201	3.714	3.621	34.561	27.512	36.655	45.364	33.093	111	95.3	2.64	38.6	1201
620	1359	1349	3.224	3.123	34.579	27.574	36.742	45.476	33.853	120	106.0	2.62	38.2	1349
621	1509	1498	2.841	2.732	34.599	27.624	36.814	45.567	34.600	121	115.9	2.62	38.3	1498
622	1658	1645	2.543	2.425	34.616	27.664	36.870	45.639	35.327	119	127.1	2.64	38.7	1645
623	1810	1795	2.374	2.246	34.630	27.690	36.905	45.683	36.049	117	132.5	2.64	38.8	1795
401	1962	1945	2.195	2.057	34.6390	27.712	36.938	45.725	36.766	120	131.5	2.58	38.5	1945
624	2036	2018	2.140	1.996	34.642	27.719	36.948	45.739	37.110	123	137.6	2.62	38.4	2018
402	2108	2089	2.079	1.930	34.645	27.726	36.959	45.753	37.445	124	138.9	2.60	38.6	2089
403	2355	2332	1.912	1.744	34.653	27.746	36.990	45.793	38.583	130	142.5	2.59	38.4	2332
404	2406	2382	1.891	1.719	34.656	27.751	36.995	45.800	38.817	131	142.5	2.58	38.4	2382
405	2559	2533	1.798	1.614	34.662	27.763	37.014	45.824	39.519	136	142.8	2.54	37.9	2533
406	2712	2683	1.729	1.532	34.669	27.775	37.029	45.844	40.216	141	142.8	2.51	37.4	2683
407	2867	2835	1.655	1.445	34.672	27.783	37.043	45.862	40.918	147	143.7	2.50	37.3	2835
408	3022	2987	1.627	1.402	34.673	27.787	37.049	45.870	41.609	147	143.8	2.49	37.2	2987
409	3175	3137	1.560	1.322	34.679	27.797	37.064	45.889	42.300	152	142.7	2.46	36.8	3137
410	3330	3289	1.517	1.265	34.678	27.800	37.070	45.899	42.988	155	143.0	2.45	36.6	3289
411	3483	3439	1.488	1.221	34.682	27.806	37.079	45.909	43.667	159	143.0	2.43	36.6	3439
412	3638	3591	1.451	1.168	34.684	27.812	37.087	45.920	44.352	161	143.9	2.41	36.3	3591
415	3789	3739	1.428	1.130	34.686	27.816	37.093	45.929	45.016	164	141.8	2.40	36.1	3739
416	3937	3883	1.404	1.091	34.690	27.821	37.101	45.939	45.666	167	141.8	2.39	35.9	3883
417	4090	4033	1.371	1.042	34.691	27.825	37.108	45.948	46.336	172	139.3	2.36	35.5	4033
418	4243	4182	1.337	0.992	34.693	27.830	37.115	45.958	47.004	178	135.6	2.31	35.0	4182
419	4396	4332	1.294	0.933	34.700	27.840	37.128	45.974	47.676	186	130.4	2.26	34.2	4332
420	4547	4479	1.235	0.858	34.700	27.844	37.137	45.987	48.335	192	128.8	2.24	33.8	4479
421	4701	4629	1.233	0.838	34.703	27.848	37.142	45.993	48.997	196	124.3	2.21	33.3	4629
422	4955	4876	1.224	0.799	34.705	27.852	37.148	46.001	50.082	199	123.9	2.20	33.2	4876
423	5216	5130	1.255	0.797	34.703	27.850	37.147	46.000	51.181	198	123.9	2.20	33.1	5130
424	5450	5357	1.285	0.796	34.705	27.852	37.148	46.002	52.164	199	124.0	2.19	33.1	5357

BOTTOM DEPTH FOR CAST 4 IS 5376

STATION: 252 LEG: V POSITION: 8° 29' S 178° 5' W DATE: 26 DEC 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	1H	1	28.57 H	28.57	34.486	21.877	30.114	37.970	21.881	194	1.7	0.21	0.1	1
202	27H	27	28.63 H	28.62	34.518	21.884	30.119	37.974	21.998	196	1.0	0.20	0.0	27
203	51H	51	28.66 H	28.65	34.549	21.899	30.134	37.988	22.114	197	0.9	0.20	0.0	51
204	61H	61	28.75 H	28.73	34.901	22.136	30.364	38.212	22.392	199	0.7	0.23	0.0	61
205	80H	80	28.60 H	28.58	35.303	22.487	30.714	38.562	22.824	193	1.1	0.31	0.4	80
206	106H	106	27.23 H	27.20	35.641	23.177	31.435	39.314	23.625	158	1.7	0.62	4.4	106
207	170H	170	24.68 H	24.64	36.096	24.305	32.624	40.564	25.028	151	1.2	0.58	5.1	170
208	244H	244	17.87 H	17.83	35.471	25.700	34.229	42.369	26.763	134	3.9	1.03	11.6	244
209	318H	317	13.42 H	13.37	34.992	26.346	35.039	43.333	27.756	101	12.1	1.59	20.5	317
210	418H	417	9.37 H	9.32	34.694	26.867	35.732	44.183	28.756	103	24.3	2.01	29.2	417
211	518H	516	7.77 H	7.72	34.600	27.043	35.981	44.502	29.400	113	31.6	2.15	31.9	516
214	616H	613	6.88 H	6.82	34.557	27.136	36.117	44.677	29.949	116	38.5	2.25	33.6	613
225	691H	688	6.33 H	6.27	34.538	27.194	36.202	44.788	30.357	117	44.0	2.32	34.6	688
226	765H	761	5.85 H	5.78	34.527	27.247	36.279	44.886	30.754	117	50.1	2.39	35.6	761
227	840H	836	5.37 H	5.30	34.523	27.302	36.358	44.988	31.160	114	57.8	2.47	36.7	836
228	915H	910	5.07 H	4.99	34.522	27.337	36.408	45.052	31.543	115	62.7	2.48	36.9	910
229	986H	980	4.75 H	4.67	34.520	27.371	36.460	45.119	31.908	126	66.0	2.44	36.2	980
230	1090H	1083	4.23 H	4.14	34.526	27.432	36.548	45.232	32.456	132	74.1	2.46	36.2	1083
231	1239H	1231	3.668H	3.573	34.549	27.508	36.653	45.365	33.226	128	88.0	2.52	37.1	1231
232	1389H	1379	3.264H	3.160	34.571	27.564	36.731	45.463	33.978	126	99.3	2.56	37.6	1379
233	1539H	1527	2.88 H	2.77	34.591	27.615	36.802	45.554	34.725	130	108.8	2.55	37.3	1527
101	1640	1627	2.698	2.580	34.602	27.640	36.837	45.599	35.215	130	113.8	2.55	37.5	1627
234	1687H	1673	2.58 H	2.46	34.607	27.654	36.858	45.625	35.447	134	115.4	2.52	37.3	1673
102	1815	1800	2.381	2.252	34.620	27.681	36.896	45.674	36.063	136	120.2	2.53	37.0	1800
103	1992	1974	2.195	2.054	34.633	27.707	36.933	45.721	36.897	137	126.7	2.55	37.2	1974
104	2172	2152	2.053	1.899	34.644	27.728	36.962	45.758	37.735	138	130.4	2.54	37.0	2152
105	2350	2327	1.939	1.771	34.653	27.744	36.986	45.788	38.557		134.5	2.53	37.0	2327
106	2527	2501	1.824	1.642	34.661	27.760	37.009	45.818	39.371	143	138.0	2.52	37.0	2501
107	2706	2677	1.748	1.551	34.665	27.770	37.024	45.837	40.183	144	140.1	2.51	36.8	2677
108	2885	2853	1.679	1.467	34.670	27.780	37.038	45.856	40.993	146	142.0	2.50	36.7	2853
109	3063	3027	1.627	1.398	34.673	27.787	37.050	45.871	41.791	149	141.8	2.48	36.6	3027
110	3241	3202	1.575	1.330	34.676	27.794	37.060	45.885	42.586	153	142.3	2.48	36.5	3202
111	3420	3377	1.542	1.280	34.678	27.799	37.068	45.896	43.379	157	141.9	2.44	36.1	3377
112	3598	3552	1.500	1.220	34.683	27.807	37.079	45.910	44.169	161	140.0	2.43	35.8	3552
115	3776	3726	1.452	1.155	34.687	27.815	37.091	45.925	44.956	167	137.3	2.39	35.4	3726
116	3955	3901	1.386	1.071	34.694	27.826	37.107	45.945	45.751	179	131.1	2.32	34.5	3901
117	4158	4099	1.325	0.990	34.700	27.836	37.121	45.964	46.645	187	127.0	2.26	33.6	4099
118	4343	4280	1.264	0.910	34.700	27.841	37.131	45.978	47.453	191	127.5	2.26	33.5	4280
119	4533	4465	1.247	0.872	34.704	27.847	37.139	45.988	48.276	195	123.5	2.23	33.1	4465
120	4721	4648	1.247	0.850	34.706	27.850	37.143	45.993	49.082	197	124.0	2.22	32.9	4648
121	4977	4897	1.245	0.817	34.704	27.850	37.145	45.997	50.171	198	124.5	2.21	33.0	4897
122	5156	5071	1.254	0.803	34.706	27.852	37.148	46.001	50.930	198	124.7	2.21	32.9	5071
123	5336	5246	1.268	0.794	34.706	27.853	37.149	46.003	51.688	198	124.8	2.21	32.9	5246
124	5450	5357	1.272	0.783	34.704	27.852	37.149	46.003	52.165	199	124.6	2.21	32.9	5357

BOTTOM DEPTH FOR CAST 1 IS 5369

STATION: 253 LEG: V POSITION: 12° 40' S 175° 3' W DATE: 28 DEC 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	28.643	28.643	34.350D	21.751	29.988	37.844	21.751					0
101	14	14	28.637	28.633	34.349	21.754	29.990	37.847	21.813	198	1.9	0.22	0.0	14
1202	50	50	28.619	28.606	35.036D	22.278	30.508	38.358	22.489					50
1203	81	81	26.930	26.910	36.095D	23.611	31.871	39.753	23.953					81
102	102	102	26.187	26.163	36.122	23.863	32.142	40.043	24.295	178	1.9	0.42	0.9	102
1204	135	135	24.263	24.233	36.176D	24.487	32.816	40.766	25.062					135
103	146	146	24.011	23.979	36.182	24.567	32.903	40.859	25.189	148	1.9	0.67	5.9	146
1205	292	291	16.233	16.185	35.272D	25.943	34.530	42.724	27.222					291
1206	341	340	13.323	13.274	34.937D	26.324	35.022	43.320	27.837					340
104	372	371	11.903	11.853	34.826	26.520	35.275	43.627	28.181	116	14.4	1.64	21.1	371
1207	452	450	9.104	9.053	34.658D	26.883	35.760	44.223	28.927					450
1208	520	518	7.900	7.846	34.589D	27.015	35.948	44.463	29.380					518
1209	602	599	6.683	6.625	34.505D	27.121	36.112	44.682	29.874					599
1210	682	679	5.889	5.828	34.490D	27.212	36.242	44.848	30.341					679
105	752	748	5.415	5.350	34.478	27.260	36.315	44.943	30.717	147	46.8	2.25	33.1	748
1211	840	835	5.060	4.989	34.485D	27.308	36.380	45.025	31.173					835
1212	931	926	4.639	4.563	34.494D	27.362	36.456	45.121	31.652					926
106	1043	1036	4.228	4.145	34.505	27.415	36.531	45.216	32.225	140	69.9	2.44	35.6	1036
1213	1163	1155	3.851	3.761	34.521D	27.467	36.602	45.306	32.834					1155
107	1264	1255	3.482	3.387	34.545	27.522	36.677	45.399	33.361	137	88.6	2.51	36.7	1255
1214	1402	1392	3.072	2.969	34.569D	27.580	36.757	45.498	34.060					1392
108	1514	1502	2.866	2.756	34.581	27.608	36.796	45.549	34.605	140	103.4	2.52	36.7	1502

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

STATION: 253 LEG: V POSITION: 12° 40' S 175° 3' W DATE: 28 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1215	1698	1684	2.520	2.399	34.608D	27.659	36.867	45.637	35.506					1684
109	1864	1848	2.309	2.177	34.624	27.690	36.910	45.691	36.297	144	118.5	2.51	36.6	1848
1216	2027	2008	2.162	2.019	34.635D	27.711	36.939	45.729	37.061					2008
110	2222	2201	2.045	1.886	34.643	27.728	36.963	45.759	37.961	143	129.0	2.54	36.8	2201
1217	2402	2378	1.958	1.785	34.651D	27.742	36.983	45.784	38.786					2378
111	2577	2550	1.865	1.678	34.658	27.755	37.002	45.809	39.586	144	136.6	2.54	36.9	2550
1218	2753	2723	1.793	1.591	34.662D	27.765	37.017	45.828	40.384					2723
112	2917	2884	1.756	1.539	34.665	27.771	37.025	45.840	41.119	146	140.1	2.52	36.8	2884
1219	3078	3042	1.696	1.464	34.670D	27.780	37.039	45.857	41.844					3042
115	3232	3193	1.641	1.395	34.673	27.787	37.050	45.872	42.534	152	140.6	2.49	36.5	3193
1220	3381	3339	1.589	1.329	34.678D	27.796	37.062	45.887	43.201					3339
116	3533	3488	1.521	1.248	34.682	27.805	37.075	45.905	43.881	161	138.8	2.44	35.7	3488
1221	3681	3632	1.442	1.155	34.690D	27.817	37.093	45.927	44.546					3632
117	3841	3789	1.337	1.036	34.698	27.831	37.114	45.954	45.267	184	128.1	2.32	33.9	3789
1222	4018	3962	1.245	0.928	34.707D	27.846	37.134	45.980	46.058					3962
118	4100	4042	1.203	0.878	34.709	27.850	37.142	45.990	46.422	200	120.2	2.21	32.5	4042
1223	4251	4189	1.163	0.823	34.710D	27.855	37.149	46.001	47.082					4189
119	4405	4339	1.118	0.762	34.710	27.858	37.156	46.011	47.754	206	120.4	2.20	32.4	4339
120	4557	4488	1.091	0.718	34.710	27.861	37.162	46.019	48.412	207	120.8	2.20	32.4	4488
121	4638	4567	1.065	0.684	34.708	27.861	37.164	46.023	48.762	208	121.2	2.19	32.4	4567
122	4678	4606	1.067	0.681	34.709	27.862	37.165	46.024	48.933	208	121.1	2.20	32.4	4606
123	4710	4637	1.070	0.680	34.709	27.862	37.165	46.025	49.070	208	121.1	2.20	32.3	4637
124	4725	4651	1.073	0.681	34.709	27.862	37.165	46.024	49.133	208	121.0	2.20	32.3	4651

BOTTOM DEPTH FOR CAST 1 IS 4664

STATION: 254 LEG: V POSITION: 13° 14' S 173° 48' W DATE: 28 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	28.632	28.632	34.315D	21.729	29.966	37.822	21.729					0
101	16	16	28.597	28.593	34.367	21.780	30.018	37.875	21.848	198	1.3	0.23	0.0	16
1202	60	60	28.313	28.298	35.845D	22.984	31.212	39.062	23.237					60
1203	89	89	26.282	26.261	36.160D	23.862	32.137	40.035	24.238					89
102	128	128	24.594	24.565	36.181	24.392	32.712	40.654	24.937	172	1.2	0.46	2.0	128
1204	173	173	22.429	22.393	36.106D	24.968	33.349	41.349	25.709					173
103	206	206	21.055	21.014	35.922	25.213	33.636	41.677	26.099	156	1.7	0.71	6.3	206
1205	255	254	18.796	18.749	35.604D	25.570	34.067	42.178	26.676					254
1206	297	296	16.381	16.332	35.254D	25.894	34.476	42.667	27.195					296
104	369	368	13.462	13.409	34.938	26.297	34.990	43.283	27.933	122	10.1	1.45	18.0	368
1207	439	437	9.807	9.755	34.700D	26.800	35.645	44.079	28.779					437
1208	511	509	8.250	8.195	34.590D	26.964	35.880	44.380	29.284					509
1209	607	604	6.694	6.636	34.513D	27.126	36.116	44.685	29.901					604
105	713	709	5.515	5.453	34.482	27.251	36.300	44.924	30.528	144	44.9	2.25	33.2	709
1210	873	868	4.772	4.700	34.497D	27.350	36.437	45.095	31.371					868
106	1013	1007	4.146	4.066	34.513	27.430	36.549	45.238	32.105	138	71.8	2.45	36.0	1007
1211	1198	1190	3.687	3.595	34.533D	27.493	36.637	45.348	33.024					1190
107	1360	1350	3.140	3.040	34.564	27.569	36.743	45.481	33.856	138	95.5	2.51	36.8	1350
1212	1542	1530	2.771	2.660	34.589D	27.623	36.816	45.573	34.751					1530
108	1709	1695	2.511	2.390	34.607	27.659	36.868	45.638	35.556	143	111.1	2.51	36.8	1695
1213	1913	1896	2.285	2.149	34.624D	27.692	36.913	45.696	36.522					1896
109	2089	2069	2.118	1.970	34.638	27.718	36.948	45.740	37.349	146	122.7	2.50	36.5	2069
1214	2272	2250	2.025	1.862	34.647D	27.733	36.969	45.767	38.191					2250
110	2448	2423	1.939	1.762	34.652	27.744	36.987	45.789	38.995	145	131.7	2.51	36.8	2423
1215	2647	2618	1.832	1.639	34.661D	27.761	37.010	45.818	39.906					2618
111	2825	2793	1.774	1.565	34.664	27.768	37.021	45.834	40.708	146	139.3	2.52	36.8	2793
1216	3006	2971	1.708	1.483	34.669D	27.778	37.036	45.853	41.523					2971
112	3179	3141	1.669	1.428	34.673	27.785	37.046	45.866	42.296	151	140.1	2.49	36.6	3141
1217	3368	3326	1.608	1.349	34.677D	27.794	37.059	45.883	43.140					3326
115	3538	3492	1.531	1.257	34.682	27.804	37.074	45.903	43.901	163	136.5	2.42	35.9	3492
1218	3690	3641	1.457	1.169	34.690D	27.816	37.091	45.925	44.583					3641
116	3847	3795	1.363	1.061	34.703	27.834	37.115	45.954	45.292	187	123.7	2.28	33.5	3795
117	4049	3992	1.206	0.887	34.712	27.852	37.143	45.991	46.203	202	118.1	2.20	32.4	3992
118	4255	4193	1.120	0.781	34.712	27.859	37.156	46.010	47.108	206	117.8	2.18	32.2	4193

STATION: 254 LEG: V POSITION: 13° 14' S 173° 48' W DATE: 28 DEC 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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
119	4464	4397	1.075	0.714	34.710	27.861	37.162	46.020	48.015	208	120.0	2.18	32.3	4397
120	4619	4548	1.056	0.677	34.709	27.863	37.166	46.025	48.683	208	120.8	2.18	32.4	4548
121	4702	4629	1.053	0.665	34.708	27.862	37.166	46.026	49.038	209	119.9	2.18	32.4	4629
122	4744	4670	1.057	0.664	34.708	27.863	37.166	46.027	49.217	209	120.9	2.18	32.4	4670
123	4776	4701	1.060	0.663	34.710	27.864	37.168	46.028	49.354	208	119.7	2.18	32.3	4701
124	4793	4717	1.063	0.664	34.709	27.863	37.167	46.027	49.426	209	121.0	2.18	32.4	4717

BOTTOM DEPTH FOR CAST 1 IS 4736

STATION: 255 LEG: VI POSITION: 12° 11' S 169° 54' W DATE: 3 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	28.386	28.386	34.487D	21.936	30.178	38.039	21.936					0
101	5	5	28.369	28.368	34.485	21.941	30.182	38.044	21.962	199	1.7	0.20	0.1	5
1202	14	14	28.350	28.346	34.490D	21.951	30.193	38.055	22.010					14
102	36	36	28.449	28.440	34.717	22.092	30.329	38.186	22.244	200	1.5	0.20	0.0	36
1203	50	50	28.296	28.283	34.777D	22.187	30.427	38.288	22.398					50
103	67	67	28.287	28.270	34.859	22.253	30.493	38.353	22.535	201	1.4	0.20	0.0	67
1204	84	84	27.803	27.782	35.995D	23.261	31.501	39.361	23.616					84
104	119	119	25.362	25.334	36.236	24.202	32.501	40.422	24.707	187	1.4	0.32	0.4	119
1205	154	154	23.062	23.029	36.189D	24.849	33.211	41.193	25.507					154
105	221	221	20.061	20.018	35.782	25.374	33.830	41.901	26.329	163	1.6	0.62	6.2	221
1206	262	261	17.504	17.458	35.422D	25.753	34.295	42.447	26.896					261
106	308	307	14.514	14.467	35.077	26.180	34.831	43.085	27.539	136	6.3	1.16	14.3	307
1207	354	353	12.850	12.800	34.885D	26.380	35.097	43.413	27.954					353
107	420	419	9.998	9.948	34.689	26.758	35.595	44.022	28.650	116	18.9	1.77	25.4	419
1208	527	525	7.478	7.425	34.559D	27.053	36.005	44.539	29.455					525
1209	606	603	6.646	6.588	34.531D	27.146	36.139	44.710	29.918					603
1210	710	706	5.720	5.657	34.512D	27.250	36.289	44.902	30.510					706
1211	980	974	4.540	4.460	34.505D	27.382	36.481	45.151	31.897					974
109	1111	1104	4.022	3.935	34.521	27.450	36.576	45.271	32.575	136	74.2	2.37	36.5	1104
1212	1236	1227	3.604	3.510	34.535D	27.503	36.651	45.367	33.210					1227
110	1361	1351	3.249	3.148	34.558	27.555	36.722	45.455	33.842	136	92.3	2.44	37.0	1351
1213	1565	1553	2.802	2.689	34.588D	27.619	36.811	45.567	34.850					1553
111	1762	1747	2.443	2.318	34.610	27.668	36.880	45.654	35.807	144	110.4	2.42	36.8	1747
1214	1923	1906	2.230	2.094	34.627D	27.699	36.923	45.709	36.576					1906
112	2064	2045	2.111	1.965	34.638	27.718	36.949	45.741	37.237	147	121.1	2.43	36.8	2045
1215	2225	2203	1.985	1.827	34.651D	27.739	36.977	45.776	37.988					2203
115	2370	2346	1.909	1.740	34.656	27.749	36.993	45.796	38.653	149	127.8	2.43	36.8	2346
1216	2532	2506	1.842	1.659	34.664D	27.761	37.009	45.817	39.393					2506
116	2677	2648	1.785	1.590	34.667	27.769	37.020	45.832	40.051	149	133.1	2.43	36.8	2648
1217	2839	2807	1.731	1.522	34.669D	27.775	37.031	45.846	40.780					2807
117	2983	2948	1.691	1.469	34.672	27.781	37.040	45.858	41.426	152	136.3	2.43	36.7	2948
1218	3142	3104	1.634	1.397	34.674D	27.788	37.050	45.872	42.139					3104
118	3288	3248	1.610	1.359	34.678	27.794	37.058	45.882	42.789	155	137.6	2.38	36.4	3248
1219	3445	3401	1.576	1.310	34.681D	27.800	37.067	45.893	43.486					3401
119	3591	3544	1.538	1.258	34.684	27.806	37.076	45.904	44.133	163	136.2	2.35	35.9	3544
1220	3757	3707	1.474	1.178	34.690D	27.816	37.090	45.923	44.872					3707
120	3898	3845	1.411	1.102	34.699	27.828	37.107	45.944	45.503	183	124.2	2.23	33.9	3845
1221	4029	3972	1.321	1.000	34.706D	27.840	37.125	45.967	46.092					3972
121	4152	4093	1.273	0.940	34.711	27.848	37.136	45.981	46.636	199	116.5	2.15	32.7	4093
1222	4314	4251	1.122	0.776	34.711D	27.858	37.156	46.010	47.362					4251
122	4459	4392	1.061	0.701	34.710	27.862	37.164	46.022	47.996	207	120.1	2.13	32.4	4392
1223	4625	4554	1.035	0.656	34.708D	27.863	37.167	46.028	48.712					4554
123	4765	4690	1.042	0.647	34.706	27.862	37.167	46.028	49.308	208	121.0	2.14	32.6	4690
1224	4933	4854	1.054	0.638	34.708D	27.864	37.169	46.031	50.023					4854
124	5116	5032	1.077	0.638	34.707	27.863	37.169	46.030	50.796	208	120.9	2.14	32.6	5032

BOTTOM DEPTH FOR CAST 1 IS 5057

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

STATION: 256 LEG: VI POSITION: 9° 11' S 169° 0' W DATE: 5 JAN 74

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	5H	5	27.87 H	27.87	35.587	22.927	31.169	39.032	22.948	200	2.0	0.31	0.5	5
202	26H	26	27.75 H	27.74	35.587	22.967	31.212	39.078	23.077	202	1.8	0.32	0.5	26
203	85H	85	27.56 H	27.54	35.665	23.090	31.339	39.209	23.449	199	1.7	0.37	1.4	85
204	136H	136	27.09 H	27.06	35.650	23.230	31.492	39.374	23.805	199	1.9	0.48	2.5	136
205	166H	166	25.93 H	25.89	36.007	23.860	32.147	40.056	24.563	173	1.9	0.61	3.7	166
206	216H	216	21.58 H	21.54	35.930	25.075	33.483	41.509	26.002	159	1.9	0.71	6.6	216
207	264H	263	18.55 H	18.50	35.541	25.584	34.090	42.209	26.731	150	2.7	0.84	8.9	263
208	316H	315	15.40 H	15.35	35.173	26.058	34.676	42.899	27.448	121	7.0	1.26	15.3	315
209	366H	365	12.03 H	11.98	34.855	26.518	35.268	43.614	28.151	108	14.7	1.62	22.4	365
211	416H	415	10.30 H	10.25	34.747	26.751	35.575	43.989	28.622	111	19.9	1.79	26.4	415
214	495H	493	8.447H	8.393	34.619	26.956	35.863	44.355	29.202	125	25.8	1.91	29.2	493
225	595H	592	6.79 H	6.73	34.540	27.134	36.120	44.684	29.854	134	35.2	2.07	31.9	592
226	696H	693	5.80 H	5.74	34.513	27.241	36.276	44.885	30.436	131	47.4	2.22	34.3	693
227	794H	790	5.19 H	5.12	34.510	27.312	36.377	45.016	30.965	127	57.0	2.32	35.9	790
228	945H	940	4.510H	4.433	34.522	27.398	36.499	45.170	31.754	119	70.7	2.44	37.4	940
229	1193H	1185	3.73 H	3.64	34.550	27.502	36.644	45.353	33.009	118	89.0	2.48	38.2	1185
230	1493H	1482	2.970H	2.861	34.586	27.603	36.785	45.533	34.500	123	107.1	2.49	37.8	1482
231	1793H	1778	2.50 H	2.37	34.616	27.668	36.877	45.649	35.945	128	119.1	2.48	37.7	1778
232	2094H	2075	2.146H	1.997	34.636	27.714	36.943	45.734	37.366	134	128.0	2.45	37.2	2075
233	2397H	2373	1.931H	1.759	34.651	27.744	36.986	45.789	38.767	141	132.4	2.42	36.8	2373
101	2623	2595	1.822	1.631	34.662	27.762	37.011	45.821	39.801	144	134.9	2.42	36.9	2595
234	2651H	2623	1.817H	1.624	34.660	27.761	37.011	45.820	39.925	144	135.2	2.40	36.7	2623
102	2827	2796	1.728	1.520	34.667	27.774	37.029	45.845	40.726	149	135.9	2.42	36.6	2796
103	3030	2995	1.659	1.433	34.672	27.784	37.044	45.864	41.639	153	136.6	2.41	36.5	2995
104	3234	3195	1.601	1.356	34.675	27.792	37.056	45.880	42.550	158	135.8	2.40	36.2	3195
105	3439	3396	1.562	1.297	34.678	27.798	37.066	45.893	43.459	160	135.2	2.39	35.9	3396
106	3642	3595	1.512	1.227	34.683	27.807	37.079	45.909	44.359	165	135.0	2.36	35.7	3595
107	3845	3793	1.466	1.161	34.685	27.813	37.088	45.922	45.253	169	134.9	2.35	35.4	3793
108	3948	3894	1.425	1.110	34.687	27.818	37.096	45.933	45.708	172	134.3	2.33	35.2	3894
109	4050	3993	1.356	1.032	34.693	27.828	37.110	45.951	46.167	179	130.1	2.29	34.3	3993
110	4151	4092	1.305	0.971	34.698	27.836	37.122	45.966	46.616	189	124.9	2.24	33.7	4092
111	4253	4192	1.198	0.856	34.706	27.849	37.142	45.992	47.082	201	119.6	2.18	32.8	4192
112	4355	4291	1.130	0.779	34.707	27.855	37.152	46.006	47.534	205	118.4	2.17	32.6	4291
115	4538	4470	1.060	0.691	34.706	27.859	37.162	46.020	48.332	207	120.0	2.22U	32.4	4470
116	4671	4599	1.058	0.673	34.706	27.860	37.164	46.023	48.903	208	120.3	2.18	32.1	4599
117	4793	4718	1.059	0.660	34.706	27.861	37.165	46.026	49.424	208	119.9	2.18	32.4	4718
118	4908	4830	1.069	0.656	34.705	27.861	37.165	46.026	49.912					4830
119	4977	4897	1.078	0.656	34.706	27.861	37.166	46.026	50.204	209	119.8	2.18	32.4	4897
120	5039	4957	1.086	0.656	34.706	27.861	37.166	46.026	50.466					4957
121	5077	4994	1.091	0.656	34.705	27.861	37.165	46.026	50.626					4994
122	5108	5025	1.095	0.656	34.706	27.861	37.166	46.026	50.757					5025
123	5128	5044	1.098	0.657	34.706	27.861	37.166	46.026	50.842					5044
124	5138	5054	1.100	0.658	34.706	27.861	37.166	46.026	50.884	209	119.9	2.18	32.4	5054

BOTTOM DEPTH FOR CAST 1 IS 5073

STATION: 257 LEG: VI POSITION: 10° 10' S 169° 58' W DATE: 5 JAN 74

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
627	6H	6	28.33 H	28.33	34.771	22.168	30.407	38.267	22.193	199	1.7	0.23	0.0	6
628	11H	11	28.30 H	28.30	34.768	22.176	30.416	38.276	22.222	200	1.7	0.23	0.0	11
629	51H	51	28.01 H	28.00	35.410	22.753	30.994	38.855	22.969	200	1.6	0.27	0.0	51
630	101H	101	27.46 H	27.43	35.729	23.171	31.422	39.294	23.597	190	2.0	0.47	2.1	101
631	152H	152	25.38 H	25.34	36.164	24.145	32.444	40.366	24.790	165	1.8	0.59	3.6	152
632	180H	180	23.84 H	23.80	36.191	24.626	32.967	40.928	25.393	154	1.7	0.63	5.7	180
401	181H	181	24.36 A	24.32	36.204	24.483	32.809	40.757	25.253	155	1.8	0.61	4.9	181
633	201H	201	22.81 H	22.77	36.122	24.873	33.243	41.233	25.733	153	1.7	0.65	6.1	201
634	251H	251	20.75 H	20.70	35.857	25.248	33.682	41.732	26.329	156	1.6	0.72	6.9	251
402	252H	252	20.15 A	20.10	35.853	25.406	33.857	41.925	26.493	155	1.9	0.73	6.8	252
403	302H	301	16.32 A	16.27	35.352	25.985	34.567	42.759	27.307	133	5.4	1.09	12.3	301
404	378H	377	12.09 A	12.03	34.879	26.526	35.273	43.617	28.212	105	14.7	1.65	21.9	377
405	453H	451	9.12 A	9.07	34.654	26.878	35.754	44.217	28.926	117	23.8	1.94	28.0	451

STATION: 257 LEG: VI POSITION: 10° 10' S 169° 58' W DATE: 5 JAN 74

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	604H	601	6.36 A	6.31	34.530	27.182	36.189	44.772	29.949	123	39.4	2.23	33.5	601
407	755H	751	5.31 A	5.24	34.513	27.300	36.360	44.992	30.773	120	55.7	2.41	36.0	751
408	906H	901	4.63 A	4.55	34.517	27.382	36.476	45.141	31.557	126	66.2	2.44	36.5	901
409	1046H	1040	4.07 A	3.99	34.535	27.455	36.578	45.270	32.283	124	79.1	2.50	37.0	1040
410	1172H	1164	3.67 A	3.58	34.551	27.509	36.653	45.365	32.922	123	90.2	2.55	37.7	1164
411	1272H	1263	3.38 A	3.28	34.565	27.548	36.708	45.435	33.426	122	97.3	2.56	37.9	1263
412	1423H	1412	3.07 A	2.96	34.581	27.590	36.767	45.509	34.166	123	105.1	2.56	37.9	1412
414	1609H	1596	2.74 A	2.63	34.599	27.633	36.828	45.587	35.066	128	113.6	2.54	37.7	1596
415	1785H	1770	2.50 A	2.37	34.615	27.668	36.877	45.649	35.909	132	119.8	2.53	37.6	1770
416	1961H	1944	2.31 A	2.17	34.628	27.694	36.914	45.696	36.739	135	124.0	2.50	37.4	1944
417	2138H	2118	2.11 A	1.95	34.639	27.720	36.951	45.744	37.572	139	128.2	2.48	37.0	2118
418	2315H	2292	1.99 A	1.82	34.651	27.739	36.978	45.778	38.392	140	133.4	2.48	37.0	2292
419	2491H	2465	1.86 A	1.68	34.659	27.756	37.003	45.810	39.204	143	136.9	2.47	36.9	2465
420	2669H	2640	1.79 A	1.59	34.664	27.766	37.018	45.829	40.012	145	138.7	2.45	36.9	2640
421	2846H	2814	1.73 A	1.52	34.669	27.776	37.031	45.846	40.812	148	139.1	2.44	36.5	2814
422	3024H	2989	1.67 A	1.45	34.674	27.785	37.044	45.863	41.612	152	139.2	2.42	36.4	2989
423	3203H	3165	1.61 A	1.37	34.677	27.792	37.056	45.879	42.413	156	139.3	2.40	36.2	3165
101	3353	3312	1.573	1.317	34.682	27.800	37.067	45.892	43.083	159	138.6	2.41	36.2	3312
424	3382H	3340	1.58 A	1.32	34.681	27.799	37.065	45.891	43.209	159	139.2	2.38	35.9	3340
102	3529	3484	1.537	1.263	34.682	27.804	37.073	45.902	43.861	161	138.0	2.41	36.0	3484
103	3684	3636	1.511	1.222	34.684	27.808	37.080	45.911	44.543	166	136.5	2.40	35.8	3636
104	3786	3735	1.486	1.187	34.685	27.811	37.085	45.918	44.993	168	136.2	2.39	35.6	3735
105	3889	3836	1.443	1.134	34.689	27.818	37.095	45.930	45.451	172	135.3	2.37	35.4	3836
106	3991	3936	1.382	1.064	34.695	27.827	37.108	45.947	45.908	179	131.7	2.34	34.9	3936
107	4144	4085	1.335	1.001	34.705	27.839	37.124	45.966	46.586	192	122.8	2.25	33.6	4085
108	4296	4233	1.225	0.878	34.710	27.851	37.143	45.991	47.265	202	119.5	2.20	32.7	4233
109	4399	4334	1.158	0.801	34.711	27.857	37.152	46.005	47.721	205	119.1	2.19	32.6	4334
110	4549	4480	1.087	0.715	34.709	27.860	37.161	46.018	48.377	207	121.9	2.20	32.6	4480
111	4729	4656	1.067	0.675	34.707	27.861	37.164	46.024	49.150	208	122.7	2.19	32.8	4656
112	4908	4830	1.073	0.660	34.707	27.862	37.166	46.027	49.913	209	122.6	2.21	32.6	4830
115	5001	4920	1.078	0.653	34.707	27.862	37.167	46.028	50.307					4920
116	5081	4998	1.087	0.652	34.707	27.862	37.167	46.028	50.645	209	122.8	2.20	32.6	4998
117	5082	4999	1.087	0.652	34.707	27.862	37.167	46.028	50.649					4999
118	5140	5055	1.093	0.651	34.707	27.863	37.167	46.028	50.894					5055
119	5181	5095	1.096	0.648	34.707	27.863	37.167	46.028	51.067	209	123.1	2.20	32.6	5095
120	5212	5125	1.098	0.646	34.707	27.863	37.168	46.029	51.198					5125
121	5232	5145	1.101	0.647	34.707	27.863	37.168	46.029	51.282					5145
122	5246	5159	1.104	0.648	34.707	27.863	37.167	46.029	51.341	209	122.4	2.20	32.6	5159
123	5246	5159	1.103	0.647	34.707	27.863	37.168	46.029	51.341					5159
124	5254	5166	1.104	0.647	34.708	27.864	37.168	46.030	51.375					5166

BOTTOM DEPTH FOR CAST 1 IS 5180

STATION: 258 LEG: VI POSITION: 13° 38' S 170° 21' W DATE: 7 JAN 74

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	2	2	28.786	28.785	34.715	21.979	30.208	38.057	21.988					2
1201	34	34	28.726	28.717	34.78 D	22.052	30.281	38.131	22.195					34
1202	65	65	28.178	28.161	35.03 D	22.413	30.653	38.515	22.687					65
1203	90	90	27.753	27.730	35.72 D	23.069	31.313	39.178	23.449					90
116	125	125	25.583	25.554	36.243	24.141	32.434	40.349	24.671					125
1204	181	181	23.189	23.150	36.16 D	24.794	33.153	41.132	25.567					181
1205	252	251	19.880	19.832	35.74 D	25.390	33.852	41.929	26.479					251
1206	343	342	14.747	14.694	35.08 D	26.132	34.775	43.022	27.644					342
1207	444	442	10.398	10.343	34.71 D	26.704	35.524	43.935	28.699					442
1208	545	543	7.559	7.503	34.530D	27.019	35.968	44.499	29.501					543
117	661	658	5.871	5.812	34.466	27.195	36.226	44.833	30.229					658
1209	748	744	5.220	5.156	34.480D	27.284	36.349	44.986	30.727					744
1210	898	893	4.422	4.350	34.501D	27.391	36.496	45.171	31.535					893
1211	1108	1101	3.879	3.793	34.522D	27.465	36.598	45.300	32.580					1101
1212	1308	1299	3.272	3.175	34.554D	27.549	36.715	45.447	33.595					1299
1213	1517	1505	2.814	2.705	34.584D	27.615	36.806	45.561	34.628					1505

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

STATION: 258 LEG: VI POSITION: 13° 38' S 170° 21' W DATE: 7 JAN 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1214	1722	1708	2.459	2.337	34.609D	27.665	36.876	45.650	35.623					1708
1215	1922	1905	2.237	2.101	34.626D	27.698	36.921	45.707	36.570					1905
1216	2126	2106	2.068	1.917	34.641D	27.724	36.958	45.752	37.524					2106
1217	2326	2303	1.951	1.785	34.651D	27.742	36.983	45.784	38.446					2303
1218	2531	2504	1.871	1.688	34.658D	27.755	37.001	45.807	39.380					2504
1219	2735	2705	1.788	1.587	34.664D	27.767	37.018	45.830	40.306					2705
118	2908	2875	1.735	1.519	34.668	27.775	37.030	45.845	41.085					2875
119	3062	3026	1.698	1.468	34.669	27.779	37.038	45.855	41.772					3026
1220	3240	3200	1.631	1.385	34.674D	27.789	37.052	45.874	42.571					3200
1221	3444	3400	1.534	1.269	34.681D	27.802	37.072	45.900	43.488					3400
1222	3644	3596	1.467	1.183	34.688D	27.814	37.088	45.921	44.379					3596
120	3804	3753	1.433	1.133	34.694	27.822	37.099	45.934	45.087					3753
121	3957	3902	1.349	1.035	34.705	27.837	37.120	45.960	45.774					3902
122	4119	4060	1.235	0.907	34.710	27.849	37.139	45.986	46.499					4060
1223	4253	4191	1.122	0.783	34.711D	27.858	37.155	46.008	47.099					4191
123	4426	4360	1.072	0.715	34.709	27.860	37.161	46.019	47.851					4360
1224	4553	4484	1.061	0.690	34.709D	27.862	37.164	46.023	48.399					4484
124	4702	4629	1.049	0.661	34.708	27.863	37.167	46.027	49.039					4629

BOTTOM DEPTH FOR CAST 1 IS 4656

STATION: 259 LEG: VI POSITION: 15° 3' S 170° 22' W DATE: 8 JAN 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
209	0H	0	28.74 H	28.74	34.701	21.984	30.214	38.064	21.984	203	2.1	0.21	0.0	0
210	45H	45	28.14 H	28.13	34.798	22.252	30.496	38.360	22.442	206	1.8	0.21	0.0	45
211	71H	71	28.00 H	27.98	35.584	22.889	31.128	38.988	23.188	210	1.8	0.24	0.0	71
212	96H	96	27.24 H	27.22	36.129	23.541	31.792	39.666	23.946	213	1.3	0.24	0.0	96
214	156H	156	24.26 H	24.22	36.162	24.479	32.808	40.759	25.143	183	1.1	0.34	0.8	156
225	222H	222	22.28 H	22.23	36.044	24.966	33.352	41.358	25.917	170	1.1	0.49	3.9	222
226	297H	296	18.65 H	18.60	35.532	25.554	34.057	42.173	26.842	166	2.1	0.69	6.8	296
227	372H	371	13.85 H	13.80	34.954	26.228	34.906	43.186	27.875	147	6.6	1.18	14.6	371
228	472H	470	9.793H	9.737	34.613	26.735	35.582	44.019	28.862	135	15.6	1.71	23.8	470
229	683H	680	5.65 H	5.59	34.383	27.156	36.200	44.819	30.295	180	27.2	2.00	30.4	680
230	807H	803	4.659H	4.593	34.425	27.304	36.398	45.062	31.028	164	46.9	2.20	33.6	803
231	893H	888	4.362H	4.291	34.482	27.382	36.490	45.168	31.504	150	61.4	2.32	35.0	888
232	1092H	1085	3.59 H	3.51	34.529	27.498	36.647	45.362	32.549	141	82.4	2.43	36.3	1085
233	1206H	1198	3.188H	3.101	34.536	27.542	36.712	45.448	33.125	148	86.0	2.41	36.2	1198
101	1407	1396	2.812	2.712	34.571	27.604	36.795	45.550	34.117	147	99.0	2.42	36.6	1396
234	1493H	1481	2.682H	2.576	34.583	27.625	36.823	45.585	34.534	146	102.7	2.43	36.5	1481
102	1709	1695	2.450	2.329	34.605	27.663	36.874	45.648	35.562	145	113.6	2.45	36.8	1695
103	2011	1993	2.137	1.995	34.632	27.711	36.940	45.731	36.990	146	124.1	2.46	36.9	1993
104	2317	2294	1.970	1.804	34.647	27.737	36.977	45.778	38.400	146	132.8	2.47	37.0	2294
105	2624	2596	1.824	1.633	34.659	27.759	37.009	45.818	39.803	149	136.5	2.45	36.7	2596
106	2927	2893	1.721	1.503	34.668	27.776	37.032	45.848	41.171	149	141.7	2.45	36.8	2893
107	3234	3194	1.626	1.380	34.676	27.791	37.054	45.876	42.547	156	140.6	2.42	36.4	3194
108	3457	3413	1.562	1.295	34.681	27.801	37.069	45.896	43.541	163	138.8	2.38	35.7	3413
109	3660	3611	1.446	1.161	34.698	27.823	37.099	45.932	44.460		128.6	2.27	34.0	3611
110	3876	3823	1.305	1.001	34.709	27.843	37.127	45.969	45.433	205	121.6	2.17	32.9	3823
111	3997	3941	1.236	0.921	34.713	27.851	37.140	45.986	45.973	209	120.5	2.13	32.4	3941
112	4098	4039	1.167	0.843	34.712	27.855	37.148	45.999	46.422	212	121.3	2.13	32.4	4039
115	4334	4270	1.046	0.700	34.708	27.860	37.162	46.020	47.459	214	124.8	2.14	32.4	4270
117	4456	4389	1.022	0.663	34.707	27.862	37.166	46.026	47.988					4389
116	4457	4390	1.022	0.663	34.707	27.862	37.166	46.026	47.992	216	126.1	2.14	32.5	4390
118	4569	4499	1.020	0.648	34.705	27.861	37.166	46.027	48.472					4499
119	4641	4569	1.025	0.645	34.706	27.862	37.167	46.028	48.780	214	126.5	2.13	32.4	4569
120	4693	4620	1.028	0.642	34.706	27.862	37.167	46.029	49.003					4620
121	4735	4661	1.033	0.642	34.705	27.861*	37.167	46.028	49.180					4661
122	4764	4689	1.037	0.642	34.706	27.862	37.167	46.029	49.304	215	126.3	2.14	32.5	4689
123	4764	4689	1.037	0.642	34.705	27.861	37.167	46.028	49.304					4689
124	4776	4700	1.038	0.642	34.706	27.862	37.167	46.029	49.356	214	126.0	2.13	32.4	4700

BOTTOM DEPTH FOR CAST 1 IS 4715

STATION: 268 LEG: VI POSITION: 15° 16' S 169° 54' W DATE: 8 JAN 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
405	3H	3	28.80 H	28.80	34.950	22.151	30.377	38.223	22.164					3
406	6H	6	28.80 H	28.80	34.949	22.151	30.377	38.223	22.176	196	1.8	0.22	0.0	6
407	9H	9	28.81 H	28.81	34.949	22.148	30.374	38.219	22.186					9
408	12H	12	28.81 H	28.81	34.952	22.150	30.376	38.222	22.201					12
409	16H	16	28.80 H	28.80	34.949	22.152	30.378	38.224	22.219	200	1.4	0.20	0.0	16
410	21H	21	28.80 H	28.79	34.949	22.152	30.378	38.224	22.241					21
411	36H	36	28.78 H	28.77	34.948	22.159	30.386	38.232	22.311					36
412	55H	55	28.16 H	28.15	35.213	22.558	30.797	38.657	22.790	203	1.2	0.20	0.0	55
425	85H	85	27.56 H	27.54	35.838	23.220	31.467	39.336	23.579					85
426	101H	101	26.65 H	26.63	36.108	23.709	31.976	39.865	24.137	209	1.0	0.21	0.0	101
427	176H	176	23.19 H	23.15	36.073	24.726	33.085	41.066	25.478	173	1.0	0.39	2.7	176
428	251H	250	20.69 H	20.64	35.830	25.244	33.680	41.732	26.325	168	1.0	0.51	4.8	250
429	315H	314	17.90 H	17.84	35.433	25.667	34.195	42.336	27.037	166	2.3	0.66	7.1	314
430	401H	400	12.73 H	12.67	34.843	26.373	35.095	43.416	28.156	142	8.7	1.25	16.6	400
431	475H	473	9.63 H	9.57	34.613	26.762	35.617	44.060	28.905	136	16.4	1.67	24.1	473
432	550H	548	7.39 H	7.33	34.470	26.996	35.954	44.493	29.503	160	20.6	1.82	27.7	548
433	600H	597	6.358H	6.302	34.398	27.079	36.088	44.673	29.828	182	21.0	1.85	28.5	597
301	602U	599	6.096	6.041	34.40 D	27.114	36.135	44.733	29.876	176U	25.7	1.96U	29.6U	599
434	619H	616	6.08 H	6.02	34.403	27.119	36.141	44.739	29.959	178	24.3	1.93	29.4	616
302	652	649	5.548	5.491	34.409	27.189	36.237	44.860	30.188	170	32.3	2.07	31.1	649
303	691	688	5.214	5.155	34.407	27.227	36.292	44.930	30.410	168	37.1	2.14	32.1	688
304	711	707	5.076	5.016	34.407	27.243	36.315	44.960	30.519	170	39.2	2.15	32.6	707
305	802	798	4.680	4.615	34.458	27.328	36.420	45.083	31.028	154	52.6	2.26	33.9	798
306	902	897	4.281	4.210	34.487	27.394	36.507	45.189	31.560	147	63.6	2.34	35.0	897
307	1000	994	3.751	3.676	34.492	27.452	36.593	45.301	32.079	151	70.7	2.36	35.4	994
308	1102	1095	3.502	3.420	34.518	27.498	36.651	45.371	32.597	146	80.0	2.40	36.0	1095
309	1201	1193	3.281	3.193	34.537	27.534	36.699	45.431	33.092	144	85.9	2.43	36.2	1193
310	1300	1291	3.141	3.046	34.559	27.565	36.738	45.476	33.579	141	92.8	2.46	36.6	1291
311	1449	1438	2.780	2.677	34.580	27.614	36.807	45.563	34.319	143	101.7	2.45	36.7	1438
312	1597	1584	2.592	2.479	34.597	27.644	36.847	45.614	35.029	144	107.6	2.46	36.7	1584
314	1747	1732	2.406	2.283	34.612	27.672	36.886	45.662	35.745	146	112.7	2.45	36.6	1732
315	1900	1883	2.255	2.121	34.624	27.695	36.917	45.702	36.467	146	118.3	2.45	36.6	1883
316	2053	2034	2.102	1.957	34.637	27.718	36.949	45.742	37.188	148	122.5	2.42	36.5	2034
317	2208	2187	2.006	1.849	34.644	27.731	36.969	45.767	37.904	148	125.6	2.44	36.4	2187
318	2358	2334	1.933	1.764	34.651	27.743	36.985	45.788	38.592	148	127.7	2.45	36.5	2334
319	2512	2486	1.869	1.687	34.657	27.754	37.000	45.806	39.295	149	129.7	2.44	36.4	2486
320	2662	2633	1.819	1.625	34.662	27.762	37.012	45.822	39.975	151	130.8	2.43	36.3	2633
321	2814	2782	1.772	1.564	34.666	27.770	37.023	45.836	40.661	152	132.7	2.43	36.3	2782
201	2927	2893	1.740	1.522	34.668	27.775	37.030	45.845	41.168	152	135.7	2.43	36.6	2893
322	3016	2981	1.721	1.495	34.669	27.777	37.034	45.851	41.566	153	135.2	2.42	36.3	2981
202	3129	3091	1.676	1.440	34.671	27.783	37.043	45.862	42.073	153E	136.4	2.43	36.3	3091
323	3218	3179	1.669	1.424	34.673	27.785	37.046	45.866	42.468	156	135.8	2.40	36.0	3179
203	3332	3290	1.612	1.357	34.677	27.793	37.058	45.881	42.981	157E	136.7	2.41	35.9	3290
324	3417	3374	1.611	1.347	34.677	27.794	37.059	45.883	43.354	160	135.0	2.39	35.5	3374
204	3526	3480	1.534	1.261	34.682	27.804	37.074	45.902	43.848	176U	133.5	2.37	35.3	3480
205	3670	3621	1.473	1.186	34.689	27.814	37.088	45.921	44.492	173	130.6	2.33	34.8	3621
206	3737	3687	1.445	1.152	34.696	27.822	37.098	45.932	44.795	179	126.7	2.29	34.2	3687
207	3898	3844	1.345	1.038	34.703	27.835	37.118	45.958	45.517	192	122.0	2.23	33.4	3844
208	4062	4004	1.256	0.934	34.708	27.846	37.134	45.980	46.247	198	120.0	2.20	32.9	4004
209	4221	4160	1.147	0.810	34.710	27.855	37.151	46.003	46.955	204	119.0	2.17	32.4	4160
210	4379	4314	1.064	0.713	34.707	27.859	37.160	46.017	47.649	206	121.4	2.16	32.6	4314
211	4559	4489	1.037	0.666	34.707	27.862	37.165	46.025	48.427	208	122.9	2.17	32.6	4489
212	4743	4668	1.037	0.645	34.707	27.863	37.168	46.029	49.215	211	123.0	2.17	32.6	4668
215	4867	4789	1.044	0.637	34.707	27.863	37.169	46.031	49.743	209	123.1	2.17	32.6	4789
216	4939	4859	1.050	0.634	34.707	27.864	37.169	46.031	50.049	209	123.1	2.17	32.6	4859
217	4939	4859	1.050	0.634	34.707	27.864	37.169	46.031	50.049					4859
218	4990	4909	1.056	0.633	34.707	27.864	37.169	46.031	50.265					4909
219	5032	4950	1.061	0.633	34.707	27.864	37.169	46.031	50.442	208	122.6	2.15	32.5	4950
220	5062	4979	1.065	0.633	34.707	27.864	37.169	46.031	50.569					4979
221	5082	4998	1.067	0.633	34.707	27.864	37.169	46.031	50.653					4998
222	5097	5013	1.066	0.630	34.706	27.863	37.169	46.031	50.716	208	122.7	2.15	32.6	5013
223	5098	5014	1.069	0.633	34.707	27.864	37.169	46.031	50.721					5014
224	5107	5022	1.070	0.633	34.706	27.863	37.168	46.030	50.758	209	122.5	2.15	32.6	5022

BOTTOM DEPTH FOR CAST 2 IS 5036

D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
E VALUES ORIGINALLY REPORTED IN REVERSE ORDER
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 261 LEG: VI POSITION: 15° 46' S 169° 11' W DATE: 9 JAN 74

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
212	5H	5	28.61 H	28.61	35.022	22.267	30.496	38.346	22.288	204	1.6	0.20	0.0	5
214	20H	20	28.63 H	28.62	35.030	22.267	30.497	38.346	22.352	196	1.4	0.20	0.0	20
225	45H	45	28.49 H	28.48	35.172	22.421	30.652	38.504	22.611	199	1.2	0.20	0.0	45
226	95H	95	27.46 H	27.44	35.528	23.019	31.273	39.147	23.421	207	1.1	0.20	0.0	95
227	135H	135	25.71 H	25.68	36.133	24.020	32.311	40.224	24.592	204	0.6	0.22	0.0	135
228	169H	169	23.90 H	23.86	36.182	24.601	32.940	40.900	25.321	173	0.9	0.40	2.2	169
229	219H	219	21.74 H	21.70	35.994	25.079	33.481	41.502	26.019	166	0.9	0.51	4.6	219
230	293H	292	17.33 H	17.28	35.358	25.748	34.296	42.455	27.026	170	2.2	0.67	7.3	292
1201	349	348	14.589	14.536	35.051D	26.145	34.794	43.046	27.684					348
231	441H	439	11.000H	10.944	34.695	26.587	35.382	43.770	28.564	134	12.1	1.49	20.8	439
232	490H	488	9.310H	9.254	34.584	26.792	35.661	44.118	29.006	130	18.0	1.75	25.5	488
233	591H	588	6.906H	6.848	34.470	27.063	36.045	44.605	29.763	157	25.5	1.91	29.3	588
101	606	603	6.680	6.622	34.459	27.085	36.077	44.648	29.857	158	26.4	1.93	29.6	603
102	657	654	5.909	5.850	34.417	27.151	36.182	44.788	30.167	166	29.3	2.00	30.9	654
103	688	685	5.688	5.627	34.423	27.183	36.225	44.841	30.344	163	33.5	2.06	31.8	685
234	692H	689	5.630H	5.569	34.426	27.193	36.237	44.856	30.373	162	34.3	2.04	31.8	689
104	809	805	4.870	4.803	34.453	27.303	36.386	45.040	31.031	153	49.3	2.19	34.0	805
105	907	902	4.341	4.269	34.480	27.383	36.492	45.171	31.570	148	61.3	2.29	35.1	902
1202	994	988	4.034	3.957	34.488D	27.421	36.547	45.241	32.013					988
106	1092	1085	3.737	3.654	34.523	27.479	36.620	45.329	32.526	140	78.2	2.37	36.4	1085
107	1206	1198	3.503	3.412	34.533	27.510	36.664	45.384	33.084	140	83.4	2.39	36.6	1198
1203	1304	1295	3.284	3.187	34.549D	27.544	36.710	45.441	33.571					1295
108	1406	1395	3.046	2.943	34.562	27.576	36.755	45.498	34.076	140	94.2	2.40	36.7	1395
1204	1549	1537	2.773	2.662	34.581D	27.616	36.810	45.567	34.776					1537
109	1707	1693	2.516	2.395	34.603	27.656	36.864	45.634	35.543	144	108.7	2.40	36.8	1693
1205	1854	1838	2.362	2.230	34.617D	27.680	36.897	45.676	36.239					1838
110	2011	1993	2.213	2.070	34.627	27.701	36.926	45.713	36.976	146	118.5	2.40	36.8	1993
1206	2154	2133	2.077	1.924	34.641D	27.723	36.957	45.751	37.649					2133
111	2315	2292	1.992	1.826	34.647	27.736	36.974	45.774	38.388	149	125.8	2.39	36.7	2292
112	2723	2693	1.817	1.617	34.662	27.763	37.013	45.823	40.247	153	130.5	2.37	36.6	2693
1207	3024	2988	1.697	1.471	34.670D	27.780	37.038	45.856	41.605					2988
1208	3224	3185	1.643	1.398	34.677D	27.790	37.053	45.874	42.501					3185
1209	3374	3332	1.596	1.337	34.679D	27.796	37.062	45.887	43.170					3332
115	3541	3495	1.553	1.278	34.682	27.803	37.072	45.899	43.910	164	134.4	2.32	35.8	3495
1210	3634	3586	1.519	1.235	34.685D	27.808	37.079	45.909	44.325					3586
116	3745	3695	1.495	1.200	34.688	27.813	37.086	45.918	44.815	174	132.4	2.28	35.4	3695
1211	3844	3791	1.457	1.152	34.691D	27.818	37.094	45.928	45.254					3791
117	3898	3844	1.448	1.138	34.694	27.822	37.098	45.933	45.493	178	127.8	2.22	34.6	3844
118	3998	3942	1.414	1.094	34.701	27.830	37.109	45.947	45.938	184	123.3	2.19	34.0	3942
119	4149	4089	1.329	0.995	34.710	27.844	37.128	45.971	46.613	196	117.4	2.12	32.8	4089
120	4348	4283	1.206	0.853	34.711	27.853	37.146	45.996	47.494	202	118.2	2.10	32.7	4283
1212	4494	4426	1.107	0.741	34.712D	27.861	37.160	46.017	48.140					4426
121	4663	4590	1.065	0.681	34.708	27.862	37.164	46.024	48.869	207	121.1	2.10	32.6	4590
122	4869	4791	1.058	0.650	34.708	27.863	37.168	46.029	49.750	207	121.5	2.10	32.7	4791
1213	5024	4942	1.062	0.635	34.708D	27.864	37.170	46.032	50.409					4942
123	5208	5121	1.083	0.633	34.708	27.864	37.170	46.032	51.185	206	122.4	2.10	32.7	5121
124	5309	5219	1.096	0.632	34.708	27.864	37.170	46.032	51.609	207	122.6	2.10	32.7	5219

BOTTOM DEPTH FOR CAST 1 IS 5237

STATION: 262 LEG: VI POSITION: 16° 1' S 168° 28' W DATE: 9 JAN 74

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	28.441	28.440	34.871D	22.207	30.443	38.299	22.220					3
101	6	6	28.441	28.439	34.873	22.209	30.445	38.300	22.234	200	0.9	0.20	0.0	6
1202	25	25	28.032	28.026	34.827D	22.306	30.553	38.419	22.412					25
1203	45	45	27.986	27.975	34.873D	22.357	30.604	38.472	22.547					45
1204	80	80	27.329	27.309	35.871D	23.317	31.570	39.444	23.655					80
102	102	102	26.427	26.402	36.134	23.798	32.071	39.965	24.230	207	0.5	0.23	0.0	102
103	145	145	24.376	24.343	36.137	24.425	32.751	40.699	25.042	190	0.2	0.27	0.0	145
1205	190	190	22.610	22.570	36.104D	24.916	33.292	41.288	25.729					190
1206	230	229	20.712	20.667	35.822D	25.231	33.666	41.718	26.222					229
1207	270	269	18.687	18.638	35.571D	25.573	34.074	42.188	26.745					269

STATION: 262 LEG: VI POSITION: 16° 1' S 168° 28' W DATE: 9 JAN 74

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	310	309	17.112	17.059	35.345	25.791	34.347	42.513	27.145	169	2.1	0.70	7.4	309
1208	400	399	11.883	11.830	34.822D	26.521	35.278	43.630	28.307					399
1209	450	448	10.261	10.206	34.658D	26.690	35.516	43.933	28.713					448
105	491	489	9.206	9.150	34.582	26.808	35.681	44.142	29.027	134	16.4	1.74	24.8	489
1210	560	558	7.381	7.325	34.457D	26.987	35.946	44.485	29.540					558
106	614	611	6.478	6.420	34.427	27.087	36.089	44.669	29.898	167	23.3	1.92	29.2	611
107	704	700	5.558	5.496	34.408	27.187	36.236	44.858	30.423	169	31.4	2.04	31.2	700
1211	810	806	4.722	4.656	34.456D	27.322	36.412	45.073	31.058					806
1212	910	905	4.282	4.210	34.488D	27.395	36.508	45.189	31.597					905
108	1014	1008	3.929	3.851	34.511	27.450	36.581	45.280	32.136	142	72.7	2.33	35.6	1008
1213	1170	1162	3.426	3.339	34.539D	27.522	36.680	45.403	32.934					1162
109	1316	1306	3.181	3.084	34.560	27.562	36.733	45.469	33.647	138	92.2	2.41	36.6	1306
1214	1470	1459	2.819	2.714	34.581D	27.612	36.802	45.557	34.411					1459
110	1612	1599	2.624	2.509	34.594	27.639	36.841	45.606	35.091	144	105.1	2.39	36.4	1599
1215	1770	1755	2.428	2.303	34.611D	27.670	36.882	45.658	35.846					1755
111	1917	1900	2.276	2.140	34.623	27.692	36.914	45.697	36.540	147	116.2	2.39	36.4	1900
1216	2080	2060	2.145	1.997	34.635D	27.713	36.942	45.733	37.302					2060
112	2224	2202	2.043	1.884	34.643	27.728	36.963	45.760	37.970	149	123.8	2.38	36.4	2202
1217	2380	2356	1.963	1.792	34.653D	27.743	36.983	45.784	38.688					2356
115	2526	2499	1.885	1.702	34.656	27.752	36.997	45.803	39.354	150	129.0	2.38	36.2	2499
1218	2680	2651	1.823	1.627	34.662D	27.762	37.012	45.821	40.055					2651
116	2832	2800	1.768	1.559	34.667	27.771	37.024	45.837	40.742	152	132.4	2.37	36.1	2800
1219	2980	2945	1.717	1.494	34.670D	27.778	37.035	45.851	41.408					2945
117	3139	3101	1.669	1.432	34.674	27.786	37.046	45.866	42.120	157	134.4	2.34	36.0	3101
1220	3350	3308	1.607	1.350	34.678D	27.794	37.059	45.883	43.062					3308
118	3496	3451	1.570	1.299	34.680	27.800	37.067	45.894	43.709	163	133.1	2.29	35.2	3451
1221	3700	3650	1.520	1.229	34.685D	27.808	37.080	45.910	44.612					3650
119	3855	3802	1.473	1.167	34.690	27.816	37.092	45.925	45.299	174	129.0	2.24	34.4	3802
120	4108	4049	1.346	1.016	34.706	27.839	37.123	45.964	46.430	192	120.9	2.13	33.1	4049
121	4262	4199	1.247	0.903	34.707	27.847	37.137	45.985	47.113	198	119.4	2.11	32.6	4199
122	4362	4297	1.188	0.834	34.711	27.855	37.148	45.999	47.557	203	119.0	2.09	32.3	4297
1222	4500	4431	1.120	0.753	34.709D	27.858	37.157	46.012	48.161					4431
1223	4650	4578	1.076	0.693	34.709D	27.862	37.164	46.022	48.812					4578
123	4824	4747	1.064	0.661	34.707	27.862	37.166	46.026	49.556	208	121.0	2.08	32.3	4747
1224	5025	4942	1.072	0.644	34.706D	27.862	37.167	46.028	50.410					4942
124	5275	5185	1.093	0.634	34.707	27.864	37.169	46.031	51.465	211	120.9	2.06	32.2	5185

BOTTOM DEPTH FOR CAST 1 IS 5208

STATION: 263 LEG: VI POSITION: 16° 39' S 167° 4' W DATE: 10 JAN 74

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
712	2H	2	28.60 H	28.60	34.640	21.983	30.217	38.071	21.991	199	2.1	0.18	0.0	2
711	37H	37	28.35 H	28.34	34.793	22.181	30.419	38.278	22.337	200	1.6	0.18	0.0	37
725	77H	77	26.45 H	26.43	35.680	23.447	31.724	39.623	23.774	209	1.6	0.21	0.0	77
726	117H	117	24.54 H	24.51	35.754	24.085	32.412	40.359	24.583	212	1.1	0.17	0.0	117
727	177H	177	22.34 H	22.30	35.884	24.825	33.211	41.217	25.584	179	0.9	0.36	2.1	177
728	246H	245	20.24 H	20.19	35.744	25.299	33.749	41.816	26.361	171	1.1	0.51	4.4	245
729	304H	303	17.73 H	17.68	35.405	25.687	34.221	42.367	27.011	173	2.1	0.62	6.3	303
730	433H	431	11.33 H	11.27	34.724	26.549	35.330	43.705	28.487	149	10.5	1.40	18.6	431
731	512H	510	8.279H	8.224	34.511	26.897	35.814	44.314	29.222	158	16.3	1.75	25.1	510
732	591H	588	6.428H	6.373	34.371	27.049	36.054	44.637	29.756	207	13.6	1.73	25.8	588
501	593	590	6.600	6.543										590
502	672	669	5.808	5.748	34.383	27.137	36.173	44.784	30.223	180	26.3	1.99	29.6	669
733	690H	687	5.57 H	5.51	34.405	27.183	36.231	44.853	30.355	169	32.0	2.09	30.9	687
505	751	747	5.188	5.124										747
504	752	748	5.182	5.118	34.413	27.236	36.303	44.943	30.698	164	38.4	2.16	32.3	748
503	753	749	5.178	5.114	34.415	27.238	36.305	44.945	30.704	164	38.5	2.16	32.2	749
734	791H	787	4.92 H	4.85	34.427	27.277	36.357	45.009	30.922	160	44.5	2.20	32.8	787
506	902	897	4.321	4.250	34.458	27.367	36.478	45.159	31.532	155	53.5		34.1	897
507	1051	1044	3.689	3.610	34.505	27.469	36.613	45.324	32.330	148	74.6	2.40	35.5	1044
508	1201	1193	3.319	3.231	34.532	27.526	36.690	45.419	33.083	146	84.9	2.44	35.9	1193

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

STATION: 263 LEG: VI POSITION: 16° 39' S 167° 4' W DATE: 10 JAN 74

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	1352	1342	3.008	2.910	34.557	27.575	36.756	45.501	33.831	145	93.3	2.43	36.0	1342
510	1500	1488	2.739	2.632	34.580	27.618	36.813	45.572	34.556	146	101.3	2.44	36.1	1488
511	1651	1637	2.560	2.443	34.596	27.646	36.852	45.620	35.278	146	107.4	2.44	36.3	1637
512	1800	1784	2.396	2.268	34.612	27.673	36.888	45.665	35.987	146	112.5	2.46	36.2	1784
514	1946	1928	2.240	2.102	34.625	27.697	36.921	45.706	36.677	147	117.5	2.44	36.3	1928
515	2114	2094	2.105	1.955	34.637	27.718	36.949	45.742	37.462	149	121.0	2.45	36.1	2094
516	2277	2254	1.998	1.835	34.646	27.734	36.972	45.771	38.216	151	124.1	2.43	36.0	2254
517	2441	2416	1.915	1.739	34.653	27.747	36.990	45.794	38.968	152	127.3	2.43	35.5	2416
518	2602	2574	1.838	1.649	34.658	27.757	37.006	45.814	39.702	153	129.7	2.42	36.0	2574
519	2767	2736	1.776	1.573	34.666	27.769	37.022	45.834	40.451	156	131.0	2.42	35.6	2736
520	2930	2896	1.721	1.503	34.669	27.777	37.033	45.849	41.185	157	132.2	2.41	35.3	2896
521	3093	3056	1.667	1.434	34.673	27.785	37.045	45.864	41.917	159	132.8	2.39	35.5	3056
522	3253	3213	1.619	1.372	34.678	27.793	37.057	45.879	42.633	162	133.2	2.38	35.4	3213
523	3414	3370	1.578	1.315	34.679	27.798	37.065	45.890	43.348	164	133.8	2.36	35.3	3370
301	3542	3496	1.543	1.268	34.687	27.807	37.077	45.905	43.920	170	130.7	2.31	35.1	3496
524	3576	3529	1.526	1.248	34.684	27.806	37.077	45.906	44.069	167	133.5		34.9	3529
302	3644	3596	1.507	1.222	34.688	27.811	37.083	45.914	44.373	169	132.0	2.32	35.0	3596
303	3747	3696	1.472	1.177	34.689	27.815	37.090	45.923	44.828	173	130.8	2.30	34.7	3696
304	3849	3796	1.432	1.127	34.691	27.820	37.097	45.933	45.280	177	129.2	2.28	34.3	3796
305	3951	3896	1.393	1.079	34.696	27.827	37.107	45.945	45.734	182	127.0	2.26	34.0	3896
306	4103	4044	1.329	1.000	34.701	27.836	37.121	45.963	46.407	186	123.8	2.22	33.5	4044
307	4258	4195	1.274	0.929	34.705	27.844	37.132	45.978	47.089	195	122.3	2.19	33.0	4195
308	4411	4345	1.219	0.859	34.710	27.852	37.145	45.994	47.762	200	120.1	2.16	32.7	4345
309	4607	4536	1.136	0.756	34.712	27.860	37.159	46.014	48.619	204	122.0	2.14	32.4	4536
310	4796	4720	1.098	0.697	34.709	27.861	37.163	46.022	49.432	206	121.8	2.13	32.4	4720
311	4975	4894	1.092	0.670	34.708	27.862	37.166	46.026	50.195	206	121.8	2.14	32.4	4894
312	5182	5095	1.097	0.649	34.708	27.863	37.168	46.029	51.072	208	121.9	2.13	32.4	5095
315	5465	5370	1.120	0.636	34.707	27.863	37.169	46.031	52.261	208	122.1	2.14	32.4	5370
316	5567	5469	1.130	0.632	34.708	27.864	37.170	46.032	52.689	208	122.4	2.13	32.4	5469
317	5638	5538	1.139	0.632	34.708	27.864	37.170	46.032	52.985					5538
318	5701	5599	1.147	0.631	34.708	27.864	37.170	46.032	53.247					5599
319	5701	5599	1.147	0.631	34.708	27.864	37.170	46.032	53.247	208	121.1	2.11	32.4	5599
320	5740	5637	1.152	0.631	34.708	27.864	37.170	46.032	53.409					5637
321	5772	5668	1.156	0.630	34.708	27.865	37.170	46.032	53.542					5668
323	5792	5687	1.158	0.630	34.708	27.865	37.170	46.033	53.626					5687
322	5793	5688	1.158	0.630	34.708	27.865	37.170	46.033	53.630	208	122.0	2.12	32.4	5688
324	5803	5698	1.160	0.630	34.708	27.865	37.170	46.032	53.671					5698

BOTTOM DEPTH FOR CAST 3 IS 5713

STATION: 264 LEG: VI POSITION: 17° 16' S 166° 0' W DATE: 13 JAN 74

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	6	6	28.516	28.514	34.769	22.107	30.342	38.197	22.132	199	2.2	0.17	0.0	6
1201	29	29	28.509	28.502	34.7800	22.119	30.354	38.209	22.242					29
1202	69	69	25.455	25.439	35.871D	23.895	32.196	40.118	24.189					69
102	92	92	25.085	25.064	35.936	24.058	32.367	40.298	24.449	211	1.6	0.19	0.0	92
1203	133	133	23.409	23.380	35.945D	24.563	32.918	40.893	25.131					133
1204	173	173	22.293	22.257	35.926D	24.870	33.257	41.263	25.612					173
103	215	214	21.328	21.285	35.885	25.110	33.526	41.560	26.034	173	1.5	0.44	3.4	214
1205	269	268	19.389	19.338	35.631D	25.438	33.916	42.009	26.602					268
1206	329	328	16.197	16.143	35.227D	25.918	34.507	42.704	27.359					328
104	382	381	13.319	13.264	34.995	26.371	35.068	43.366	28.065	187	4.1	0.82	10.2	381
1207	454	452	9.649	9.596	34.641D	26.780	35.634	44.075	28.828					452
105	524	522	7.707	7.653	34.458	26.941	35.884	44.409	29.327	174	15.4	1.74	25.5	522
1208	588	585	6.537	6.482	34.394D	27.052	36.052	44.630	29.745					585
106	651	648	5.919	5.860	34.389	27.128	36.158	44.764	30.116	180	24.8	1.96	29.7	648
1209	708	704	5.516	5.454	34.398D	27.185	36.235	44.859	30.440					704
107	771	767	5.071	5.006	34.418	27.253	36.325	44.970	30.803	163	41.3	2.18	32.8	767
1210	852	847	4.438	4.370	34.438D	27.339	36.444	45.118	31.272					847
1211	921	915	4.138	4.066	34.471D	27.396	36.517	45.206	31.652					915
108	1008	1002	3.815	3.738	34.491	27.445	36.582	45.288	32.107	151	71.1	2.36	35.4	1002
1212	1158	1150	3.338	3.253	34.524D	27.518	36.680	45.409	32.878					1150

STATION: 264 LEG: VI POSITION: 17° 16' S 166° 0' W DATE: 13 JAN 74

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
109	1309	1299	3.016	2.922	34.555	27.573	36.752	45.497	33.632	146	94.1	2.44	36.4	1299
1213	1463	1452	2.801	2.696	34.572D	27.606	36.798	45.553	34.374					1452
110	1609	1596	2.580	2.466	34.589	27.639	36.843	45.610	35.079	148	107.5	2.43	36.4	1596
1214	1763	1748	2.416	2.291	34.611D	27.671	36.884	45.660	35.816					1748
111	1914	1897	2.299	2.163	34.621	27.689	36.909	45.691	36.522	147	119.2	2.47	36.5	1897
1215	2069	2049	2.163	2.016	34.633D	27.710	36.938	45.728	37.249					2049
112	2220	2198	2.059	1.900	34.642	27.726	36.961	45.756	37.949	150	126.0	2.45	36.5	2198
1216	2396	2371	1.965	1.792	34.649D	27.740	36.980	45.781	38.757					2371
115	2574	2546	1.876	1.689	34.655	27.752	36.998	45.805	39.569	152	132.0	2.44	36.4	2546
1217	2732	2701	1.810	1.609	34.663D	27.764	37.015	45.825	40.289					2701
116	2881	2848	1.753	1.539	34.668	27.773	37.028	45.842	40.962	157	133.6	2.42	36.2	2848
1218	3033	2997	1.698	1.471	34.673D	27.782	37.040	45.858	41.647					2997
117	3185	3146	1.656	1.415	34.675	27.788	37.049	45.870	42.326	162	135.2	2.40	36.0	3146
1219	3338	3296	1.604	1.348	34.678D	27.795	37.060	45.884	43.009					3296
118	3492	3447	1.561	1.291	34.682	27.802	37.070	45.897	43.695	167	134.7	2.35	35.3	3447
1220	3626	3578	1.519	1.236	34.686D	27.809	37.080	45.910	44.291					3578
119	3755	3704	1.485	1.189	34.691	27.816	37.090	45.922	44.863	175	130.9	2.32	34.6	3704
1221	3891	3837	1.406	1.098	34.698D	27.827	37.106	45.944	45.473					3837
120	4030	3973	1.328	1.007	34.701	27.836	37.120	45.962	46.091	190	125.3	2.24	33.3	3973
1222	4169	4108	1.258	0.924	34.705D	27.844	37.133	45.979	46.708					4108
121	4304	4240	1.193	0.846	34.705	27.849	37.142	45.993	47.302	199	124.0	2.20	32.8	4240
1223	4487	4418	1.126	0.760	34.708D	27.857	37.155	46.010	48.103					4418
122	4660	4587	1.094	0.709	34.708	27.860	37.161	46.019	48.851	206	123.5	2.17	32.6	4587
1224	4835	4757	1.083	0.678	34.708D	27.862	37.165	46.024	49.600					4757
123	5006	4924	1.084	0.658	34.708	27.863	37.167	46.028	50.328	208	122.4	2.16	32.4	4924
1225	5183	5096	1.093	0.645	34.708D	27.864	37.168	46.030	51.077					5096
1226	5365	5273	1.111	0.640	34.708D	27.864	37.169	46.031	51.843					5273
124	5541	5443	1.132	0.637	34.709	27.865	37.170	46.032	52.580	209	122.8	2.15	32.4	5443

BOTTOM DEPTH FOR CAST 1 IS 5474

STATION: 265 LEG: VI POSITION: 17° 48' S 164° 58' W DATE: 14 JAN 74

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	5	5	28.433	28.432	35.219	22.471	30.703	38.556	22.492	194	1.9	0.22	0.0	5
302	61	61	27.563	27.548	35.541	22.994	31.244	39.116	23.252	206	1.8	0.22	0.0	61
303	92	92	26.242	26.220	35.989	23.745	32.024	39.925	24.135	210	1.5	0.22	0.0	92
304	191	191	21.986	21.946	35.903	24.940	33.336	41.351	25.759	179	1.6	0.36	2.4	191
305	286	285	18.196	18.145	35.490	25.636	34.154	42.284	26.879	181	1.9	0.48	4.6	285
306	357	356	15.164	15.108	35.105	26.060	34.687	42.920	27.631	180	3.7	0.73	8.6	356
307	435	433	11.237	11.181	34.734	26.574	35.359	43.737	28.522	180	6.3	1.14	15.7	433
308	499	497	9.250	9.193	34.566	26.788	35.660	44.119	29.043	185	8.3	1.39	20.1	497
309	628	625	6.412	6.353	34.383	27.061	36.067	44.650	29.937	191	17.1	1.81	27.6	625
310	822	817	4.883	4.815	34.398	27.258	36.341	44.995	31.046	167	39.2	2.16	33.0	817
311	1008	1002	3.947	3.869	34.480	27.424	36.554	45.253	32.082	152	66.3	2.33	35.4	1002
312	1183	1175	3.340	3.253	34.526	27.520	36.682	45.411	32.994	147	82.2	2.39	36.2	1175
314	1334	1324	2.984	2.888	34.555	27.576	36.757	45.504	33.750	146	92.7	2.42	36.6	1324
315	1508	1496	2.682	2.575	34.584	27.626	36.824	45.586	34.603	148U	102.0	2.43	36.5	1496
316	1680	1666	2.510	2.391	34.601	27.655	36.863	45.633	35.420	146	108.8	2.45	36.7	1666
317	1856	1839	2.332	2.201	34.616	27.682	36.900	45.681	36.251	146	114.3	2.45	36.6	1839
318	2033	2014	2.185	2.041	34.630	27.706	36.933	45.721	37.081	147	119.7	2.44	36.6	2014
319	2213	2191	2.036	1.878	34.642	27.728	36.964	45.760	37.921	149	123.8	2.41	36.6	2191
320	2392	2367	1.932	1.760	34.650	27.743	36.985	45.788	38.744	151	125.3	2.40	36.4	2367
321	2596	2568	1.831	1.643	34.659	27.759	37.008	45.816	39.677	153	128.6	2.38	36.3	2568
322	2799	2767	1.762	1.556	34.665	27.770	37.023	45.836	40.595	156	129.8	2.38	36.2	2767
323	3002	2967	1.701	1.477	34.669	27.779	37.037	45.854	41.507	159	130.4	2.38	35.8	2967
201	3192	3153	1.654	1.412	34.676	27.789	37.050	45.871	42.358	161	131.8	2.37	36.0	3153
202	3368	3325	1.601	1.342	34.678	27.795	37.060	45.885	43.142	164	133.0	2.37	35.6	3325
324	3476	3431	1.557	1.288	34.682	27.802	37.070	45.897	43.625	167	131.5	2.36	35.3	3431
203	3532	3486	1.564	1.289	34.682	27.802	37.070	45.897	43.869	164U	133.9	2.37	35.6	3486
204	3693	3643	1.515	1.225	34.687	27.810	37.082	45.913	44.584	172	131.1	2.33	35.1	3643
205	3884	3830	1.436	1.128	34.693	27.821	37.099	45.934	45.433	176	128.3	2.30	34.3	3830
206	4077	4019	1.338	1.011	34.701	27.835	37.119	45.961	46.293	189	125.3	2.25	33.8	4019
207	4262	4199	1.260	0.915	34.703	27.843	37.133	45.979	47.107	195	123.6	2.22	33.3	4199

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

STATION: 265 LEG: VI POSITION: 17° 48' S 164° 58' W DATE: 14 JAN 74

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	4443	4376	1.185	0.822	34.706	27.851	37.146	45.998	47.902	200	123.3	2.20	33.1	4376
209	4632	4560	1.127	0.744	34.707	27.857	37.156	46.012	48.724	204	123.1	2.18	32.9	4560
210	4800	4723	1.103	0.701	34.706	27.859	37.160	46.019	49.446	206	123.4	2.18	32.7	4723
211	4989	4907	1.092	0.668	34.707	27.861	37.165	46.025	50.254	207	123.6	2.18	32.7	4907
212	5169	5082	1.101	0.655	34.707	27.862	37.167	46.027	51.015	207	123.7	2.17	32.7	5082
215	5177	5090	1.101	0.654	34.707	27.862	37.167	46.028	51.049	206	123.7	2.17	32.7	5090
216	5304	5213	1.113	0.649	34.709	27.864	37.169	46.030	51.586	207	123.6	2.17	32.7	5213
218	5365	5273	1.120	0.648	34.707	27.863	37.167	46.028	51.840	207	123.1	2.16	32.7	5273
217	5366	5274	1.120	0.648	34.707	27.863	37.167	46.029	51.844	208	123.1	2.16	32.7	5274
219	5417	5323	1.126	0.648	34.708	27.864	37.168	46.029	52.059	207	123.4	2.16	32.7	5323
220	5449	5354	1.130	0.647	34.707	27.863	37.168	46.029	52.192	208	123.1	2.17	32.7	5354
221	5470	5375	1.132	0.647	34.707	27.863	37.168	46.029	52.280	208	123.1	2.16	32.7	5375
222	5486	5390	1.135	0.647	34.707	27.863	37.168	46.029	52.347	207	123.0	2.16	32.7	5390
223	5488	5392	1.135	0.647	34.708	27.864	37.168	46.029	52.356	208	122.9	2.16	32.7	5392
224	5500	5404	1.135	0.646	34.708	27.864	37.168	46.030	52.406	207	122.9	2.16	32.7	5404

BOTTOM DEPTH FOR CAST 2 IS 5420

STATION: 266 LEG: VI POSITION: 18° 29' S 168° 3' W DATE: 15 JAN 74

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	5	5	28.386	28.385	34.578	22.005	30.245	38.106	22.026	199	2.2	0.19	0.0	5
1201	28	28	28.232	28.225	34.707D	22.153	30.396	38.258	22.271					28
1202	68	68	25.250	25.234	35.772D	23.883	32.190	40.118	24.172					68
102	132	132	23.661	23.632	35.895	24.452	32.800	40.769	25.015	194	1.9	0.23	0.0	132
1203	172	172	22.550	22.514	35.933D	24.802	33.182	41.181	25.539					172
1204	248	247	20.040	19.992	35.731D	25.343	33.799	41.872	26.413					247
103	328	327	17.057	17.001	35.373	25.827	34.384	42.552	27.259	187	2.1	0.48	4.9	327
104	446	444	11.748	11.689	34.785	26.519	35.282	43.640	28.511	167	7.9	1.19	15.7	444
105	561	558	7.452	7.395	34.442	26.965	35.921	44.457	29.522	183	13.8	1.70	25.1	558
1205	640	637	6.177	6.118	34.364D	27.076	36.094	44.688	30.010					637
106	713	709	5.579	5.516	34.369	27.154	36.202	44.824	30.431	185	25.9	1.97	30.1	709
1206	859	854	4.626	4.556	34.431D	27.313	36.409	45.075	31.275					854
107	1013	1007	3.839	3.762	34.464	27.422	36.558	45.262	32.106	158	63.9	2.30	34.9	1007
1207	1167	1159	3.243	3.158	34.511D	27.516	36.684	45.417	32.921					1159
108	1313	1303	2.882	2.789	34.555	27.584	36.771	45.523	33.667	150	92.8	2.40	35.9	1303
1208	1566	1553	2.529	2.419	34.599D	27.651	36.857	45.627	34.898					1553
109	1812	1796	2.315	2.188	34.620	27.686	36.905	45.686	36.058	146	115.8	2.43	36.4	1796
1209	2076	2056	2.099	1.952	34.638D	27.719	36.951	45.743	37.293					2056
110	2320	2296	1.944	1.778	34.649	27.741	36.982	45.784	38.419	148	130.0	2.44	36.7	2296
1210	2581	2553	1.841	1.654	34.660D	27.759	37.007	45.815	39.609					2553
111	2829	2797	1.756	1.547	34.666	27.771	37.025	45.839	40.730	153	136.1	2.43	36.4	2797
1211	2990	2955	1.708	1.485	34.670D	27.779	37.036	45.853	41.453					2955
112	3137	3099	1.669	1.432	34.674	27.786	37.046	45.866	42.112	159	132.9U	2.41	35.9	3099
1212	3243	3203	1.635	1.388	34.676D	27.790	37.053	45.875	42.585					3203
115	3389	3346	1.609	1.348	34.678	27.795	37.060	45.884	43.233	162	136.2	2.39	35.7	3346
1215	3471	3426	1.576	1.307	34.681D	27.800	37.067	45.893	43.600					3426
116	3544	3497	1.567	1.291	34.684	27.803	37.072	45.899	43.923	167	134.1	2.37	35.2	3497
1216	3627	3579	1.537	1.253	34.686D	27.807	37.078	45.907	44.292					3579
117	3697	3647	1.531	1.240	34.689	27.811	37.082	45.911	44.601	172	131.5	2.33	34.8	3647
1217	3780	3728	1.496	1.197	34.695D	27.818	37.092	45.924	44.973					3728
118	3849	3796	1.473	1.167	34.698	27.823	37.098	45.931	45.279	182	126.6	2.25	33.8	3796
1218	3957	3901	1.425	1.109	34.709D	27.836	37.114	45.950	45.764					3901
119	4053	3995	1.380	1.055	34.714	27.843	37.124	45.963	46.192	196	117.9	2.17	32.5	3995
1219	4159	4098	1.296	0.962	34.716D	27.851	37.137	45.981	46.666					4098
120	4257	4194	1.225	0.882	34.713	27.853	37.144	45.993	47.100	202	119.9	2.16	32.4	4194
1220	4377	4311	1.154	0.800	34.711D	27.857	37.153	46.006	47.628					4311
121	4459	4391	1.127	0.764	34.710	27.858	37.156	46.011	47.984	206	122.0	2.15	32.3	4391
1221	4615	4543	1.076	0.697	34.708D	27.861	37.163	46.021	48.661					4543
122	4767	4691	1.059	0.663	34.708	27.863	37.166	46.027	49.315	207	125.3	2.16	32.4	4691
1222	4928	4848	1.056	0.641	34.707D	27.863	37.168	46.030	50.001					4848
123	5076	4992	1.066	0.632	34.708	27.864	37.170	46.032	50.629	208	125.7	2.15	32.4	4992
1223	5273	5183	1.082	0.623	34.706D	27.863	37.169	46.032	51.458					5183
124	5434	5339	1.100	0.620	34.708	27.865	37.171	46.034	52.136	208	125.2	2.12	32.2	5339

BOTTOM DEPTH FOR CAST 1 IS 5372

STATION: 267 LEG: VI POSITION: 19° 15' S 171° 25' W DATE: 16 JAN 74

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	3H	3	28.35 H	28.35	34.933	22.283	30.520	38.377	22.296	201				3
316	5H	5	28.34 H	28.34	34.931	22.285	30.522	38.380	22.306	201	0.4	0.15	0.1	5
317	7H	7	28.35 H	28.35	34.932	22.282	30.520	38.377	22.312	201				7
318	12H	12	28.35 H	28.35	34.931	22.282	30.519	38.377	22.333					12
319	17H	17	28.35 H	28.35	34.931	22.283	30.520	38.377	22.354	210				17
320	20H	20	28.34 H	28.33	34.936	22.290	30.527	38.385	22.374					20
321	30H	30	28.25 H	28.24	34.966	22.342	30.581	38.441	22.468					30
322	51H	51	26.84 H	26.83	35.499	23.188	31.457	39.347	23.404	210				51
323	62H	62	25.74 H	25.73	35.725	23.698	31.993	39.909	23.961	212	0.6	0.18	0.1	62
324	81H	81	24.74 H	24.72	35.765	24.031	32.352	40.294	24.376					81
325	103H	103	23.91 H	23.89	35.777	24.288	32.631	40.594	24.727	207	0.5	0.17	0.1	103
326	159H	159	22.49 H	22.46	35.938	24.823	33.204	41.204	25.504	174	0.7	0.39	2.2	159
327	204H	203	20.58 H	20.54	35.716	25.185	33.625	41.682	26.064	179	0.6	0.38	2.7	203
328	254H	253	18.78 H	18.73	35.534	25.520	34.019	42.131	26.622	185	1.0	0.44	3.8	253
329	303H	302	17.25 H	17.20	35.366	25.774	34.325	42.486	27.096	184	1.4	0.53	5.2	302
330	354H	353	15.02 H	14.96	35.132	26.113	34.745	42.982	27.671	183	2.6	0.72	8.2	353
331	403H	401	13.07 H	13.01	34.971	26.403	35.111	43.418	28.192	188	3.5	0.87	11.0	401
332	501H	499	9.254H	9.197	34.593	26.809	35.680	44.139	29.072	188	7.6	1.37	19.9	499
333	597H	594	6.695H	6.638	34.387	27.026	36.019	44.590	29.757	198	13.7	1.75	26.7	594
415	677H	673	5.94 H	5.88	34.365	27.107	36.137	44.742	30.213	191	20.8	1.90	29.4	673
334	693H	689	5.839H	5.777	34.374	27.126	36.161	44.771	30.308	185	22.7	1.95	30.0	689
416	737H	733	5.51 H	5.45	34.380	27.171	36.222	44.847	30.559	178	28.9	2.05	31.3	733
417	852H	847	4.81 H	4.74	34.396	27.265	36.352	45.010	31.191	167	40.3	2.20	33.6	847
418	979H	973	4.19 H	4.11	34.441	27.368	36.486	45.174	31.888	161	55.7	2.29	35.1	973
419	1130H	1122	3.46 H	3.38	34.480	27.471	36.628	45.351	32.700	159	69.9	2.35	35.9	1122
420	1280H	1271	2.96 H	2.87	34.538	27.564	36.747	45.494	33.493	155	87.0	2.40	36.5	1271
421	1432H	1421	2.67 H	2.57	34.578	27.621	36.820	45.582	34.254	148	100.8	2.44	36.9	1421
422	1583H	1570	2.51 H	2.40	34.600	27.653	36.861	45.631	34.978	146	108.6	2.45	37.2	1570
423	1749H	1734	2.38 H	2.26	34.616	27.677	36.893	45.670	35.761	146	114.0	2.44	37.0	1734
424	1911H	1893	2.252H	2.117	34.624	27.695	36.918	45.702	36.517	146	118.7	2.46	37.3	1893
425	2062H	2042	2.13 H	1.98	34.635	27.714	36.944	45.735	37.223	146	121.5	2.45	37.3	2042
426	2214H	2192	2.046H	1.888	34.643	27.728	36.963	45.759	37.924	147	125.5	2.47	37.3	2192
427	2366H	2341	1.97 H	1.80	34.648	27.738	36.978	45.779	38.621	147	127.8	2.47	37.4	2341
428	2518H	2491	1.90 H	1.72	34.655	27.750	36.995	45.800	39.316	148	131.4	2.46	37.4	2491
5201	2532	2505	1.911	1.727	34.657D	27.751	36.995	45.799	39.378					2505
5202	2642	2613	1.876	1.682	34.659D	27.756	37.002	45.809	39.875					2613
429	2670H	2640			34.660					149	132.0	2.45	37.1	2640
5203	2732	2701	1.843	1.641	34.663D	27.762	37.011	45.819	40.284					2701
430	2822H	2790	1.788H	1.579	34.664	27.767	37.019	45.832	40.692	149	134.5	2.46	37.3	2790
5204	2832	2799	1.812	1.602	34.665D	27.766	37.017	45.828	40.734					2799
5205	2932	2897	1.778	1.559	34.668D	27.772	37.025	45.838	41.185					2897
431	2974H	2939	1.74 H	1.52	34.669	27.776	37.031	45.846	41.377	150	136.2	2.44	37.2	2939
5206	3042	3005	1.740	1.511	34.670D	27.777	37.033	45.848	41.678					3005
432	3128H	3090	1.69 H	1.45	34.673	27.783	37.043	45.861	42.068	153	136.1	2.43	36.9	3090
5207	3142	3103	1.705	1.467	34.673D	27.782	37.041	45.859	42.127					3103
5208	3243	3202	1.682	1.434	34.676D	27.787	37.047	45.867	42.578					3202
433	3279H	3238	1.635H	1.385	34.677	27.791	37.054	45.876	42.745	156	136.0	2.42	36.6	3238
5209	3302	3260	1.658	1.405	34.677D	27.790	37.052	45.873	42.842					3260
5210	3396	3352	1.618	1.356	34.681D	27.796	37.061	45.885	43.264					3352
434	3433H	3388	1.578H	1.313	34.683	27.801	37.068	45.894	43.434	164	135.9	2.37	36.0	3388
5211	3472	3427	1.571	1.302	34.687D	27.805	37.073	45.899	43.609					3427
5212	3550	3503	1.539	1.263	34.693D	27.812	37.082	45.910	43.961					3503
5213	3617	3569	1.505	1.223	34.700D	27.821	37.093	45.923	44.264					3569
5214	3704	3654	1.462	1.172	34.708D	27.831	37.105	45.938	44.657					3654
5215	3856	3802	1.371	1.067	34.717D	27.845	37.125	45.964	45.341					3802
5216	4011	3954	1.271	0.954	34.717D	27.852	37.139	45.983	46.031					3954
5217	4165	4104	1.179	0.848	34.715D	27.857	37.150	46.000	46.712					4104
5218	4282	4218	1.131	0.788	34.714D	27.860	37.156	46.010	47.224					4218
5219	4422	4355	1.089	0.732	34.713D	27.862	37.162	46.019	47.834					4355
5220	4575	4504	1.061	0.687	34.711D	27.864	37.166	46.025	48.495					4504
5221	4679	4605	1.050	0.665	34.709D	27.863	37.167	46.027	48.941					4605
5223	4892	4812	1.043	0.633	34.708D	27.864	37.170	46.032	49.851					4812
5224	5028	4945	1.049	0.622	34.707D	27.864	37.171	46.033	50.427					4945
501	5165	5078	1.060	0.616	34.707	27.865	37.171	46.034	51.007	206	123.9	2.14	32.8	5078
502	5165	5078	1.060	0.616	34.706	27.864	37.170	46.033	51.006	208	124.8	2.15	32.9	5078
503	5165	5078	1.060	0.616	34.705	27.863	37.170	46.033	51.005	209	125.5	2.16	32.9	5078
515	5175	5087	1.060	0.615	34.706	27.864	37.171	46.034	51.048	209	125.6	2.16	33.2	5087
504	5384	5290	1.080	0.608	34.705	27.863	37.171	46.034	51.927	208	125.3	2.16	32.9	5290
505	5384	5290	1.080	0.608	34.705	27.863	37.171	46.034	51.927	209	124.5	2.16	33.0	5290
516	5394	5300	1.081	0.607	34.706	27.864	37.171	46.035	51.969	209	125.6	2.16	33.2	5300

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

STATION: 267 LEG: VI POSITION: 19° 15' S 171° 25' W DATE: 16 JAN 74

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	5394	5300	1.081	0.607	34.706	27.864	37.171	46.035	51.969					5300
506	5486	5389	1.092	0.606	34.706	27.864	37.172	46.035	52.354	208	125.0	2.16	33.1	5389
518	5496	5399	1.092	0.605	34.706	27.864	37.172	46.035	52.397					5399
507	5514	5417	1.093	0.604	34.706	27.864	37.172	46.035	52.472	209	125.5	2.16	33.1	5417
519	5524	5426	1.094	0.603	34.706	27.865	37.172	46.035	52.514	209	125.3	2.16	33.3	5426
508	5534	5436	1.096	0.604	34.707	27.865	37.173	46.036	52.556	209	125.4	2.16	33.1	5436
520	5544	5446	1.097	0.604	34.706	27.864	37.172	46.035	52.597					5446
509	5550	5452	1.097	0.603	34.706	27.865	37.172	46.036	52.622	209	125.0	2.15	33.1	5452
521	5560	5461	1.099	0.603	34.706	27.865	37.172	46.035	52.664					5461
510	5563	5464	1.100	0.604	34.706	27.864	37.172	46.035	52.677	209	125.4	2.16	33.0	5464
511	5563	5464	1.100	0.604	34.706	27.864	37.172	46.035	52.677	209	125.6	2.16	33.2	5464
512	5571	5472	1.101	0.604	34.707	27.865	37.173	46.036	52.711					5472
522	5573	5474	1.101	0.604	34.706	27.864	37.172	46.035	52.718	209	124.9	2.14	33.3	5474
523	5573	5474	1.101	0.604	34.706	27.864	37.172	46.035	52.718					5474
524	5581	5482	1.102	0.604	34.706	27.864	37.172	46.035	52.752					5482

BOTTOM DEPTH FOR CAST 5 IS 5499

STATION: 268 LEG: VI POSITION: 20° 30' S 172° 48' W DATE: 17 JAN 74

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	5H	5	27.91 H	27.91	35.409	22.781	31.023	38.887	22.802	199	1.4	0.16	0.1	5
202	71H	71	24.12 H	24.10	35.752	24.205	32.542	40.501	24.508	217	0.7	0.14	0.0	71
203	146H	146	22.25 H	22.22	35.704	24.712	33.103	41.113	25.339	209	0.7	0.14	0.0	146
204	221H	220	20.03 H	19.99	35.624	25.262	33.720	41.794	26.217	190	0.7	0.29	2.1	220
205	296H	295	17.81 H	17.76	35.534	25.765	34.295	42.437	27.054	194	0.8	0.38	3.9	295
206	371H	370	15.49 H	15.43	35.293	26.132	34.745	42.965	27.761	197	1.7	0.55	6.4	370
207	448H	446	11.89 H	11.83	34.810	26.512	35.268	43.621	28.510	183	4.3	1.04	14.1	446
208	523H	521	9.00 H	8.94	34.544	26.812	35.695	44.165	29.177	180	8.7	1.48	21.4	521
209	597H	594	7.42 H	7.36	34.420	26.953	35.911	44.449	29.673	178	13.0	1.76	26.2	594
210	748H	744	5.743H	5.676	34.353	27.122	36.162	44.777	30.555	191	20.6	1.93	29.8	744
211	898H	892	4.832H	4.757	34.378	27.249	36.335	44.992	31.384	176	35.5	2.13	32.9	892
212	1050H	1043	3.953H	3.872	34.444	27.395	36.526	45.225	32.245	162	57.6	2.29	35.1	1043
214	1200H	1191	3.144H	3.058	34.505	27.521	36.694	45.433	33.079	160	76.5	2.34	35.6	1191
225	1351H	1341	2.87 H	2.77	34.558	27.588	36.776	45.528	33.844	150	92.3	2.40	36.5	1341
226	1501H	1489	2.687H	2.581	34.582	27.624	36.822	45.583	34.569	148	101.1	2.43	36.7	1489
227	1652H	1638	2.53 H	2.41	34.600	27.652	36.859	45.629	35.289	146	106.5	2.43	36.7	1638
228	1804H	1788	2.397H	2.269	34.612	27.673	36.888	45.665	36.005	148	111.9	2.44	36.8	1788
229	1956H	1938	2.27 H	2.13	34.624	27.694	36.916	45.700	36.718	146	117.4	2.44	36.9	1938
230	2107H	2086	2.159H	2.009	34.633	27.711	36.939	45.729	37.420	146	120.1	2.44	36.8	2086
231	2259H	2236	2.06 H	1.90	34.642	27.726	36.961	45.757	38.124	146	124.9	2.45	36.8	2236
232	2411H	2386	1.99 H	1.82	34.649	27.738	36.977	45.777	38.820	146	127.7	2.44	36.8	2386
233	2615H	2586	1.889H	1.698	34.656	27.752	36.998	45.804	39.751	146	131.9	2.46	36.9	2586
101	2720	2689	1.855	1.654	34.660	27.759	37.007	45.815	40.226	148	135.4	2.44	37.1	2689
234	2819H	2786	1.798H	1.589	34.663	27.766	37.017	45.829	40.677	148	135.1	2.45	36.9	2786
102	2864	2831	1.792	1.579	34.664	27.767	37.019	45.832	40.878	148	137.0	2.44	36.9	2831
103	3011	2975	1.739	1.513	34.669	27.776	37.032	45.847	41.541	149	138.7	2.45	36.7	2975
104	3111	3073	1.690	1.455	34.670	27.781	37.040	45.858	41.991	152	138.9	2.44	36.7	3073
105	3213	3173	1.637	1.393	34.677	27.791	37.053	45.875	42.454	156	137.5	2.42	36.4	3173
106	3314	3272	1.594	1.341	34.682	27.798	37.064	45.888	42.909	161	136.1	2.39	35.9	3272
107	3416	3372	1.549	1.287	34.691	27.809	37.078	45.905	43.371	170	130.0	2.33	35.1	3372
108	3569	3521	1.465	1.189	34.706	27.828	37.102	45.934	44.066	186	121.7	2.24	33.8	3521
109	3727	3676	1.375	1.085	34.715	27.842	37.121	45.959	44.777	196	116.6	2.18	32.8	3676
110	3834	3780	1.315	1.015	34.716	27.847	37.131	45.972	45.254	200	115.4	2.17	32.5	3780
111	3937	3881	1.242	0.934	34.716	27.852	37.140	45.986	45.714	203	116.9	2.16	32.4	3881
112	4031	3973	1.191	0.874	34.716	27.856	37.148	45.997	46.130	205	117.6	2.17	32.4	3973
115	4142	4081	1.151	0.823	34.713	27.857	37.151	46.003	46.616	206	118.8	2.16	32.4	4081
116	4245	4182	1.121	0.783	34.712	27.859	37.456	46.009	47.065	206	120.1	2.16	32.4	4182
117	4345	4279	1.102	0.753	34.712	27.860	37.159	46.014	47.500	207	119.4	2.15	32.4	4279
118	4550	4479	1.078	0.707	34.711	27.862	37.164	46.022	48.385	209	121.8	2.15	32.5	4479
119	4806	4728	1.066	0.665	34.709	27.863	37.167	46.027	49.481	208	122.9	2.16	32.4	4728
120	5063	4978	1.069	0.637	34.708	27.864	37.169	46.031	50.573	209	123.1	2.15	32.4	4978
121	5320	5228	1.086	0.621	34.707	27.864	37.171	46.033	51.657	209	123.1	2.15	32.5	5228

STATION: 268 LEG: VI POSITION: 20° 30' S 172° 48' W DATE: 17 JAN 74

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	5562	5463	1.104	0.608	34.707	27.865	37.172	46.035	52.672	209	121.8	2.15	32.5	5463
123	5830	5723	1.131	0.599	34.707	27.866	37.173	46.037	53.789	209	121.6	2.16	32.5	5723
124	6086	5971	1.161	0.593	34.707	27.866	37.174	46.038	54.849	209	123.6	2.15	32.5	5971

BOTTOM DEPTH FOR CAST 1 IS 6286

STATION: 269 LEG: VI POSITION: 23° 59' S 174° 26' W DATE: 18 JAN 74

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
507	6H	6	27.26 H	27.26	35.418	22.993	31.251	39.131	23.018	202	1.2	0.05	0.1	6
508	41H	41	25.88 H	25.87	35.511	23.493	31.786	39.700	23.667	211	0.7	0.05	0.0	41
509	72H	72	23.39 H	23.37	35.636	24.331	32.690	40.668	24.639	221	0.7	0.08	0.0	72
510	113H	113	22.27 H	22.25	35.617	24.639	33.030	41.040	25.124	212	0.8	0.12	0.0	113
511	153H	153	21.09 H	21.06	35.640	24.986	33.411	41.454	25.645	195	0.8	0.22	1.4	153
512	203H	202	19.72 H	19.68	35.634	25.351	33.818	41.901	26.229	194	0.8	0.28	2.5	202
514	255H	254	18.49 H	18.44	35.606	25.649	34.156	42.276	26.756	194	1.0	0.36	3.7	254
525	305H	304	17.57 H	17.52	35.577	25.858	34.395	42.544	27.186	199	1.3	0.40	4.4	304
526	356H	355	16.32 H	16.26	35.471	26.077	34.659	42.849	27.635	197	2.1	0.49	6.0	355
527	456H	454	13.380H	13.314	35.137	26.470	35.164	43.458	28.489	195	2.8	0.75	10.2	454
528	557H	554	10.479H	10.410	34.769	26.740	35.557	43.964	29.239	194	5.4	1.11	16.3	554
529	657H	653	7.78 H	7.71	34.474	26.945	35.885	44.408	29.930	206	8.7	1.45	22.4	653
530	757H	753	6.63 H	6.56	34.380	27.031	36.028	44.602	30.489	216	10.9	1.61	25.0	753
531	866H	861	5.714H	5.636	34.339	27.116	36.158	44.775	31.086	208	18.2	1.80	28.1	861
532	1005H	998	4.869H	4.784	34.362	27.233	36.318	44.974	31.854	184	33.0	2.04	32.0	998
533	1154H	1146	3.92 H	3.83	34.425	27.384	36.517	45.219	32.709	167	54.3	2.21	34.3	1146
701	1256	1247	3.396	3.302	34.473	27.473	36.633	45.360	33.278	155	69.6	2.29	35.3	1247
534	1302H	1292	3.233H	3.137	34.485	27.498	36.667	45.402	33.518	163	72.5	2.29	35.5	1292
702	1407	1396	2.995	2.893	34.521	27.548	36.730	45.477	34.055	155	83.3	2.33	35.7	1396
703	1558	1545	2.795	2.683	34.560	27.597	36.790	45.547	34.797	147	95.4	2.39	36.2	1545
704	1707	1692	2.631	2.508	34.584	27.631	36.833	45.598	35.513	151	103.9	2.41	36.5	1692
705	1860	1843	2.472	2.338	34.603	27.660	36.871	45.645	36.241	146	111.2	2.43	36.7	1843
706	2011	1992	2.362	2.217	34.616	27.681	36.898	45.678	36.947	146	115.4	2.43	36.8	1992
707	2165	2143	2.268	2.111	34.624	27.695	36.919	45.703	37.659	145	118.7	2.43	36.8	2143
708	2317	2293	2.160	1.991	34.633	27.712	36.942	45.733	38.363	146	123.1	2.43	36.8	2293
709	2472	2445	2.050	1.869	34.643	27.729	36.965	45.763	39.080	146	127.3	2.43	36.8	2445
710	2622	2593	1.983	1.789	34.648	27.739	36.980	45.781	39.762	146	129.8	2.43	36.8	2593
711	2776	2744	1.910	1.703	34.654	27.750	36.996	45.801	40.462	147	132.3	2.43	36.8	2744
712	2928	2893	1.842	1.622	34.660	27.761	37.011	45.821	41.151	148	134.5	2.43	36.8	2893
714	3079	3041	1.804	1.570	34.663	27.767	37.020	45.833	41.827	149	135.9	2.43	36.8	3041
715	3182	3142	1.749	1.506	34.667	27.775	37.031	45.847	42.292	151	135.7	2.38	36.7	3142
716	3281	3239	1.709	1.457	34.673	27.783	37.042	45.860	42.739	155	134.4	2.37	36.1	3239
717	3383	3339	1.665	1.403	34.676	27.789	37.051	45.872	43.196	161	134.2	2.37	36.0	3339
718	3481	3435	1.610	1.339	34.688	27.803	37.069	45.893	43.643	169	128.0	2.29	35.0	3435
719	3580	3532	1.555	1.276	34.703	27.820	37.088	45.916	44.097	181	119.0	2.22	33.7	3532
720	3680	3629	1.528	1.239	34.713	27.830	37.101	45.930	44.546	191	112.0	2.15	32.9	3629
721	3780	3727	1.458	1.160	34.717	27.839	37.114	45.947	44.996	196	110.1	2.12	32.4	3727
722	3872	3817	1.380	1.074	34.717	27.844	37.124	45.962	45.409	200	111.9	2.10	32.4	3817
723	4018	3960	1.265	0.947	34.714	27.850	37.137	45.982	46.060	203	113.8	2.11	32.4	3960
301	4170	4108	1.139	0.808	34.712	27.857	37.152	46.005	46.738	205	115.9	2.08	32.7	4108
724	4218	4155	1.159	0.822	34.711	27.855	37.150	46.002	46.941	206	116.6	2.12	32.4	4155
302	4350	4283	1.090	0.741	34.709	27.859	37.158	46.014	47.521	206	117.4	2.08	32.7	4283
303	4531	4460	1.076	0.707	34.707	27.859	37.161	46.018	48.300	207	118.2	2.10	32.8	4460
304	4713	4637	1.057	0.667	34.707	27.862	37.165	46.025	49.083	208	119.2	2.10	32.9	4637
305	4898	4817	1.045	0.634	34.706	27.863	37.168	46.030	49.874	209	119.8	2.10	32.9	4817
306	5079	4993	1.052	0.619	34.706	27.864	37.170	46.033	50.643	209	119.9	2.11	32.9	4993
307	5261	5170	1.061	0.605	34.705	27.864	37.171	46.034	51.411	209	121.1	2.11	32.9	5170
308	5444	5347	1.080	0.600	34.705	27.864	37.171	46.035	52.179	209	120.7	2.11	32.9	5347
309	5622	5520	1.097	0.594	34.705	27.864	37.172	46.036	52.924	209	121.1	2.10	32.9	5520
310	5717	5612	1.107	0.591	34.703	27.863	37.171	46.035	53.319	209				5612
312	5799	5692	1.118	0.591	34.704	27.864	37.172	46.036	53.660					5692
311	5800	5693	1.118	0.590	34.704	27.864	37.172	46.036	53.664	209	121.2	2.11	32.9	5693
315	5881	5771	1.127	0.588	34.704	27.864	37.172	46.036	54.001					5771
317	5949	5837	1.136	0.588	34.704	27.864	37.172	46.037	54.282	209	121.0	2.11	32.9	5837

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 269 LEG: VI POSITION: 23° 59' S 174° 26' W DATE: 18 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
316	5950	5838	1.136	0.588	34.704	27.864	37.172	46.037	54.286					5838
318	5996	5883	1.142	0.587	34.704	27.864	37.172	46.037	54.477					5883
319	6037	5922	1.146	0.586	34.704	27.864	37.172	46.037	54.646					5922
320	6068	5952	1.150	0.585	34.704	27.864	37.172	46.037	54.775					5952
321	6087	5971	1.153	0.586	34.704	27.864	37.172	46.037	54.853					5971
322	6098	5981	1.154	0.585	34.704	27.864	37.172	46.037	54.898					5981
323	6098	5981	1.154	0.585	34.704	27.864	37.172	46.037	54.898	209	120.6	2.11	32.9	5981
324	6103	5986	1.154	0.584	34.704	27.864	37.172	46.037	54.919					5986

BOTTOM DEPTH FOR CAST 3 IS 5999

STATION: 270 LEG: VI POSITION: 23° 58' S 175° 15' W DATE: 20 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
101	0	0	27.695	27.695	35.385	22.830	31.079	38.948	22.830	206	1.9	0.13	0.0	0
1301	29	29	26.635	26.628	35.536D	23.278	31.552	39.446	23.401					29
1302	51	51	25.063	25.051	35.683D	23.871	32.184	40.117	24.088					51
1303	93	93	23.931	23.910	35.693D	24.217	32.561	40.525	24.614					93
1304	155	155	22.574	22.541	35.672D	24.597	32.979	40.980	25.261					155
1305	240	239	19.728	19.682	35.583D	25.312	33.780	41.863	26.350					239
102	291	290	18.140	18.088	35.497	25.655	34.175	42.307	26.920	189	1.9	0.41	3.8	290
1306	351	350	16.534	16.475	35.474D	26.029	34.604	42.787	27.564					350
1307	427	425	13.750	13.687	35.125D	26.383	35.063	43.344	28.272					425
1308	503	501	11.163	11.098	34.850D	26.680	35.466	43.846	28.930					501
103	581	578	9.283	9.216	34.647	26.848	35.717	44.174	29.469	200	6.5	1.26	18.4	578
1309	685	681	7.550	7.480	34.458D	26.966	35.917	44.450	30.081					681
1310	788	783	6.373	6.299	34.372D	27.059	36.068	44.654	30.662					783
104	871	866	5.796	5.717	34.343	27.109	36.148	44.761	31.100	207	18.2	1.83	28.1	866
1311	1011	1004	4.705	4.621	34.371D	27.258	36.351	45.016	31.911					1004
105	1116	1108	4.136	4.047	34.410	27.350	36.472	45.163	32.496	170	49.9	2.23	34.0	1108
1312	1261	1252	3.505	3.410	34.460D	27.452	36.607	45.329	33.277					1252
106	1355	1345	3.160	3.061	34.502	27.518	36.691	45.430	33.782	160	76.7	2.35	35.6	1345
1313	1520	1507	2.829	2.719	34.553D	27.589	36.780	45.534	34.615					1507
107	1655	1641	2.680	2.561	34.584	27.627	36.826	45.588	35.271	147	102.0	2.44	36.5	1641
1314	1818	1801	2.543	2.412	34.609D	27.659	36.866	45.636	36.047					1801
108	1959	1940	2.429	2.287	34.611	27.671	36.885	45.661	36.700	147	112.6	2.46	36.7	1940
1315	2126	2105	2.307	2.152	34.621D	27.690	36.911	45.693	37.476					2105
109	2262	2239	2.220	2.055	34.632	27.706	36.932	45.720	38.108	146	119.8	2.47	36.8	2239
1316	2431	2405	2.126	1.947	34.638D	27.719	36.951	45.745	38.882					2405
110	2565	2537	2.052	1.862	34.645	27.731	36.968	45.766	39.496	148	127.4	2.46	36.8	2537
1317	2737	2706	1.975	1.770	34.651D	27.743	36.985	45.787	40.277					2706
111	2867	2833	1.924	1.708	34.656	27.752	36.997	45.802	40.866	147	131.8	2.48	36.8	2833
112	3017	2980	1.871	1.641	34.660	27.760	37.008	45.817	41.540	148	133.5	2.47	36.8	2980
114	3118	3079	1.780	1.542	34.666	27.771	37.026	45.840	42.005	151	133.4	2.46	36.7	3079
115	3219	3178	1.690	1.444	34.678	27.788	37.048	45.867	42.473	159	133.1	2.41	36.1	3178
116	3318	3275	1.587	1.334	34.693	27.808	37.073	45.898	42.936	171	127.0	2.33	35.0	3275
117	3418	3373	1.553	1.290	34.700	27.816	37.084	45.911	43.386	179	121.4	2.25	34.0	3373
118	3514	3467	1.549	1.277	34.717	27.831	37.099	45.927	43.820	192	111.6	2.16	32.7	3467
119	3619	3570	1.471	1.190	34.721	27.840	37.113	45.945	44.295	197	111.1	2.12	32.5	3570
120	3712	3661	1.432	1.142	34.721	27.843	37.119	45.953	44.707	199	110.6	2.14	32.4	3661
121	3862	3807	1.288	0.986	34.717	27.850	37.135	45.978	45.381	202	113.6	2.14	32.4	3807
122	4007	3949	1.227	0.911	34.717	27.855	37.144	45.991	46.021	205	113.8	2.14	32.2	3949
1318	4163	4101	1.132	0.802	34.713D	27.858	37.154	46.006	46.710					4101
1319	4286	4221	1.081	0.739	34.711D	27.860	37.160	46.016	47.248					4221
1320	4409	4341	1.059	0.704	34.710D	27.862	37.163	46.021	47.781					4341
123	4511	4440	1.041	0.675	34.707	27.861	37.164	46.024	48.221	209	121.2	2.15	32.4	4440
1321	4672	4597	1.032	0.648	34.707D	27.863	37.167	46.029	48.913					4597
124	4857	4777	1.032	0.626	34.707	27.864	37.170	46.032	49.703	209	123.2	2.15	32.6	4777

BOTTOM DEPTH FOR CAST 1 IS 7674

STATION: 271 LEG: VI POSITION: 24° 1' S 175° 29' W DATE: 20 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
122	1	1	27.967	27.967	35.376	22.737	30.979	38.842	22.742					1
1301	28	28	26.839	26.832	35.435D	23.139	31.408	39.299	23.257					28
1302	55	55	25.271	25.258	35.667D	23.796	32.104	40.033	24.030					55
1303	85	85	24.420	24.401	35.685D	24.067	32.397	40.348	24.429					85
1304	150	150	22.798	22.766	35.648D	24.515	32.890	40.886	25.157					150
1305	190	189	21.355	21.317	35.650D	24.923	33.341	41.376	25.740					189
1306	240	239	19.970	19.924	35.621D	25.277	33.737	41.813	26.314					239
1307	290	289	18.375	18.323	35.542D	25.631	34.142	42.267	26.890					289
1308	325	324	17.284	17.228	35.456D	25.835	34.384	42.544	27.253					324
1309	360	359	16.493	16.433	35.407D	25.988	34.565	42.750	27.562					359
1310	432	430	14.311	14.245	35.187D	26.312	34.970	43.231	28.218					430
1311	460	458	13.597	13.530	35.162D	26.445	35.130	43.416	28.480					458
1312	530	527	11.135	11.067	34.853D	26.688	35.475	43.856	29.058					527
1313	600	597	8.962	8.894	34.622D	26.880	35.765	44.235	29.591					597
1314	700	696	7.433	7.362	34.458D	26.983	35.940	44.477	30.168					696
1315	760	756	6.726	6.652	34.390D	27.027	36.019	44.589	30.496					756
1201	890	884	5.709	5.629	34.345D	27.122	36.164	44.781	31.201					884
1316	960	954	5.212	5.129	34.347D	27.182	36.250	44.890	31.591					954
1317	1020	1013	4.804	4.718	34.374D	27.250	36.338	44.997	31.941					1013
1202	1090	1082	4.302	4.214	34.387D	27.314	36.428	45.112	32.337					1082
1318	1200	1191	3.873	3.780	34.431D	27.394	36.530	45.233	32.929					1191
1203	1290	1280	3.461	3.364	34.462D	27.458	36.616	45.340	33.417					1280
1319	1415	1404	3.070	2.966	34.506D	27.530	36.708	45.451	34.070					1404
1204	1490	1478	2.917	2.809	34.532D	27.564	36.751	45.501	34.451					1478
1320	1580	1567	2.785	2.671	34.538D	27.581	36.775	45.532	34.881					1567
1205	1690	1675	2.681	2.559	34.578D	27.622	36.822	45.584	35.425					1675
1321	1850	1833	2.522	2.388	34.600D	27.654	36.862	45.633	36.187					1833
1206	1990	1971	2.433	2.288	34.610D	27.670	36.884	45.660	36.839					1971
1322	2150	2128	2.332	2.175	34.618D	27.686	36.905	45.687	37.579					2128
1207	2290	2266	2.228	2.060	34.628D	27.703	36.928	45.716	38.229					2266
1323	2400	2374	2.168	1.991	34.634D	27.713	36.942	45.733	38.734					2374
1208	2490	2463	2.087	1.903	34.641D	27.725	36.959	45.755	39.153					2463
1324	2600	2571	1.976	1.784	34.650D	27.741	36.982	45.784	39.667					2571
1209	2690	2659	1.865	1.667	34.658D	27.756	37.004	45.811	40.090					2659
1210	2790	2757	1.835	1.628	34.661D	27.761	37.011	45.820	40.541					2757
1211	2890	2856	1.785	1.570	34.664D	27.768	37.021	45.833	40.994					2856
1212	2990	2954	1.733	1.509	34.679D	27.784	37.040	45.856	41.457					2954
1213	3100	3062	1.675	1.442	34.688D	27.796	37.056	45.875	41.958					3062
1214	3200	3160	1.640	1.397	34.698D	27.807	37.069	45.890	42.412					3160
1215	3300	3257	1.602	1.350	34.708D	27.819	37.083	45.906	42.866					3257
1216	3400	3355	1.508	1.248	34.715D	27.831	37.101	45.930	43.325					3355
1217	3500	3453	1.449	1.181	34.717D	27.837	37.111	45.944	43.775					3453
1218	3600	3551	1.393	1.116	34.718D	27.842	37.120	45.956	44.222					3551
1401	3704	3653	1.309	1.023	34.716D	27.847	37.130	45.970	44.688					3653
1219	3800	3747	1.262	0.968	34.717D	27.851	37.137	45.981	45.115					3747
1402	3891	3835	1.199	0.897	34.716D	27.855	37.145	45.993	45.521					3835
1220	4000	3942	1.149	0.837	34.714D	27.857	37.151	46.001	46.001					3942
1403	4107	4046	1.085	0.763	34.713D	27.861	37.159	46.013	46.475					4046
1404	4211	4148	1.080	0.747	34.711D	27.860	37.159	46.015	46.925					4148
1221	4330	4264	1.048	0.703	34.710D	27.862	37.163	46.021	47.443					4264
1405	4467	4397	1.028	0.668	34.711D	27.865	37.168	46.028	48.037					4397
1406	4592	4519	1.037	0.662	34.708D	27.863	37.167	46.027	48.570					4519
1222	4700	4624	1.047	0.659	34.707D	27.862	37.166	46.027	49.030					4624
124	4852	4772	1.059	0.653	34.707	27.862	37.167	46.028	49.677					4772
1407	4962	4879	1.069	0.649	34.707D	27.863	37.167	46.028	50.143					4879
1408	5091	5004	1.083	0.647	34.706D	27.862	37.167	46.028	50.688					5004
1223	5300	5207	1.100	0.637	34.706D	27.863	37.168	46.030	51.569					5207
1409	5459	5362	1.115	0.632	34.705D	27.862	37.168	46.030	52.235					5362
1410	5542	5442	1.106	0.612	34.704D	27.862	37.169	46.032	52.586					5442
1411	5634	5531	1.105	0.600	34.704D	27.863	37.171	46.035	52.972					5531
1412	5739	5633	1.114	0.595	34.703D	27.863	37.171	46.035	53.409					5633
1413	5891	5781	1.130	0.590	34.703D	27.863	37.171	46.035	54.041					5781
1224	6045	5930	1.148	0.586	34.703D	27.863	37.172	46.036	54.679					5930

BOTTOM DEPTH FOR CAST 1 IS 5986

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

STATION: 272 LEG: VI POSITION: 24° 2' S 175° 43' W DATE: 21 JAN 74

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	SiO3 μM/KG	PO4 μM/KG	NO3 μM/KG	DEPTH M
101	0	0	27.925	27.925	35.299	22.693	30.936	38.801	22.693	200	1.2	0.08	0.0	0
102	76	76	24.342	24.325	35.679	24.085	32.417	40.370	24.409	213	1.0	0.12	0.0	76
103	255	254	19.059	19.012	35.564	25.472	33.961	42.064	26.577	182	1.0	0.39	3.3	254
104	458	456	12.748	12.684	34.972	26.470	35.191	43.510	28.505	189	3.5	0.86	11.1	456
105	659	655	7.839	7.770	34.489	26.948	35.885	44.405	29.942	210	7.2	1.45	21.8	655
106	860	855	5.825	5.747	34.347	27.109	36.145	44.757	31.049	210	16.3	1.81	27.6	855
107	1010	1003	4.809	4.724	34.366	27.243	36.331	44.990	31.888	181	33.8	2.10	32.3	1003
108	1299	1289	3.375	3.278	34.480	27.481	36.642	45.370	33.483	161	70.2	2.34	35.3	1289
109	1597	1583	2.701	2.587	34.568	27.612	36.810	45.571	34.993	153	95.3	2.39	36.1	1583
110	1895	1877	2.467	2.330	34.604	27.662	36.873	45.647	36.401	147	109.5	2.44	36.7	1877
111	2196	2174	2.284	2.123	34.625	27.695	36.918	45.702	37.797	146	117.0	2.46	36.7	2174
112	2500	2473	1.981	1.798	34.649	27.739	36.979	45.780	39.219	146	128.2	2.46	36.8	2473
114	2710	2679	1.780	1.582	34.666	27.769	37.021	45.833	40.197	150	132.9	2.45	36.6	2679
115	2900	2865	1.670	1.456	34.687	27.794	37.053	45.871	41.074	166	125.1	2.35	35.2	2865
116	3067	3029	1.641	1.412	34.700	27.808	37.069	45.889	41.827	176	117.6	2.28	34.2	3029
117	3221	3180	1.562	1.319	34.712	27.824	37.090	45.915	42.528	187	111.0	2.19	32.8	3180
118	3371	3327	1.465	1.210	34.718	27.836	37.108	45.939	43.207	195	109.9	2.16	32.5	3327
119	3523	3476	1.391	1.122	34.721	27.844	37.122	45.957	43.888	199	109.9	2.14	32.4	3476
120	3633	3583	1.297	1.019	34.717	27.848	37.131	45.972	44.381	202	112.0	2.14	32.3	3583
121	3694	3643	1.266	0.983	34.717	27.850	37.135	45.978	44.652	202				3643
122	3721	3669	1.260	0.974	34.717	27.851	37.136	45.980	44.771					3669
123	3735	3683	1.260	0.973	34.717	27.851	37.137	45.980	44.832					3683
124	3744	3692	1.258	0.970	34.717	27.851	37.137	45.981	44.872	202	111.7	2.13	32.3	3692

BOTTOM DEPTH FOR CAST 1 IS 3707

STATION: 273 LEG: VI POSITION: 29° 57' S 175° 42' W DATE: 22 JAN 74

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	SiO3 μM/KG	PO4 μM/KG	NO3 μM/KG	DEPTH M
301	6H	6	23.74 H	23.74	35.527	24.142	32.492	40.463	24.168	215	0.0	0.08	0.1	6
302	32H	32	23.21 H	23.20	35.566	24.327	32.692	40.676	24.464	218	0.2	0.08	0.1	32
303	51H	51	20.97 H	20.96	35.707	25.064	33.491	41.536	25.284	233	0.2	0.11	0.1	51
2201	65	65	18.74	18.73	35.661D	25.619	34.116	42.226	25.901					65
304	101H	101	17.74 H	17.72	35.593	25.819	34.350	42.492	26.260	209	0.5	0.32	2.9	101
2202	143	142	16.39	16.37	35.504D	26.078	34.656	42.842	26.705					142
2203	195	194	15.27	15.24	35.372D	26.236	34.855	43.080	27.095					194
305	250H	249	14.24 H	14.20	35.300	26.409	35.066	43.328	27.514	207	2.2	0.61	7.8	249
2204	317	315	12.62	12.58	35.104D	26.594	35.317	43.638	28.005					315
2205	396	394	11.06	11.01	34.914D	26.746	35.535	43.917	28.520					394
306	499H	496	9.61 H	9.55	34.718	26.848	35.702	44.144	29.098	201	5.5	1.22	18.3	496
2206	591	587	8.05	7.99	34.523D	26.943	35.869	44.379	29.626					587
307	698H	693	7.30 H	7.23	34.469	27.010	35.973	44.516	30.188	214	9.4	1.52	23.2	693
308	899H	892	5.67 H	5.59	34.353	27.133	36.177	44.796	31.253	213	17.8	1.80	27.7	892
309	1050H	1042	4.85 H	4.76	34.370	27.242	36.328	44.985	32.068	195	31.5	2.01	30.8	1042
310	1401H	1389	3.26 H	3.16	34.473	27.486	36.655	45.389	33.956	170	66.8	2.27	34.5	1389
311	1705H	1689	2.632H	2.509	34.575	27.624	36.826	45.591	35.497	156	95.9	2.37	35.8	1689
312	2008H	1987	2.36 H	2.21	34.613	27.678	36.896	45.676	36.932	150	110.4	2.42	36.3	1987
314	2261H	2236	2.226H	2.061	34.629	27.703	36.929	45.717	38.100	149	116.8	2.43	36.3	2236
325	2464H	2436	2.09 H	1.91	34.644	27.727	36.961	45.756	39.039	148	123.0	2.45	36.6	2436
326	2617H	2586	2.004H	1.810	34.648	27.738	36.977	45.777	39.737	149	125.2	2.44	36.4	2586
327	2769H	2735	1.902H	1.696	34.659	27.755	37.001	45.807	40.436	151	128.1	2.42	36.2	2735
328	2923H	2886	1.801H	1.582	34.671	27.773	37.025	45.836	41.144	156	128.0	2.40	35.8	2886
329	3065H	3026	1.73 H	1.50	34.685	27.790	37.046	45.862	41.793	166	123.2	2.33	34.9	3026
330	3208H	3166	1.667H	1.423	34.700	27.807	37.068	45.887	42.445	177	115.8	2.25	33.7	3166
331	3331H	3286	1.598H	1.343	34.711	27.821	37.086	45.910	43.005	184	112.9	2.20	33.0	3286
332	3433H	3386	1.540H	1.276	34.715	27.829	37.098	45.925	43.465	192	110.3	2.16	32.5	3386
333	3536H	3487	1.473H	1.200	34.716	27.835	37.108	45.939	43.928	195	110.9	2.15	32.4	3487
201	3622	3571	1.418	1.138	34.718	27.841	37.117	45.952	44.314	196	112.3	2.15	32.5	3571
334	3639H	3587	1.41 H	1.13	34.718	27.841	37.118	45.954	44.390	198	111.3	2.15	32.4	3587
202	3725	3671	1.339	1.050	34.717	27.846	37.127	45.966	44.776	200	113.3	2.15	32.7	3671
203	3828	3772	1.254	0.957	34.716	27.851	37.138	45.982	45.238	203	114.9	2.16	32.4	3772
204	3931	3873	1.197	0.891	34.714	27.854	37.144	45.992	45.694	204	117.1	2.16	32.4	3873
205	4086	4024	1.128	0.807	34.713	27.858	37.153	46.006	46.377	205	118.8	2.16	32.4	4024

STATION: 273 LEG: VI POSITION: 29° 57' S 175° 42' W DATE: 22 JAN 74

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	SiO3 μM/KG	PO4 μM/KG	NO3 μM/KG	DEPTH M
206	4243	4177	1.086	0.749	34.711	27.860	37.159	46.014	47.062	207	120.4	2.16	32.5	4177
207	4398	4328	1.066	0.712	34.709	27.860	37.161	46.019	47.732	207	121.8	2.17	32.6	4328
208	4502	4429	1.045	0.680	34.708	27.862	37.164	46.024	48.182	209	122.6	2.17	32.6	4429
209	4603	4528	1.034	0.658	34.709	27.864	37.168	46.028	48.618	208	123.0	2.17	32.5	4528
210	4705	4627	1.020	0.633	34.705	27.862	37.168	46.030	49.055	209	124.1	2.17	32.6	4627
211	4960	4875	1.040	0.622	34.706	27.863	37.170	46.032	50.139	209	125.1	2.17	32.7	4875
212	5217	5124	1.058	0.607	34.705	27.863	37.171	46.034	51.225	209	124.6	2.18	32.7	5124
214	5474	5374	1.079	0.595	34.705	27.864	37.172	46.036	52.306	209	125.0	2.17	32.6	5374
215	5680	5573	1.102	0.591	34.705	27.864	37.173	46.037	53.166					5573
216	5751	5642	1.111	0.590	34.705	27.864	37.173	46.037	53.462	209	125.3	2.17	32.7	5642
217	5751	5642	1.111	0.590	34.705	27.864	37.173	46.037	53.462					5642
218	5798	5688	1.117	0.590	34.705	27.865	37.173	46.037	53.657					5688
219	5839	5728	1.122	0.589	34.705	27.865	37.173	46.037	53.827					5728
220	5869	5757	1.126	0.589	34.705	27.865	37.173	46.037	53.952					5757
221	5884	5771	1.128	0.589	34.706	27.865	37.174	46.038	54.014					5771
223	5900	5787	1.130	0.589	34.705	27.865	37.173	46.037	54.080		125.2	2.16	32.7	5787
222	5901	5788	1.130	0.589	34.705	27.865	37.173	46.037	54.084					5788
224	5911	5797	1.131	0.588	34.705	27.865	37.173	46.037	54.126					5797

BOTTOM DEPTH FOR CAST 2 IS 5812

STATION: 274 LEG: VI POSITION: 29° 59' S 176° 18' W DATE: 23 JAN 74

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	SiO3 μM/KG	PO4 μM/KG	NO3 μM/KG	DEPTH M
122	1	1	23.710	23.710	35.540	24.160	32.511	40.482	24.165					1
1301	24	24	23.596	23.591	35.545D	24.199	32.553	40.527	24.302					24
1302	40	40	21.198	21.190	35.695D	24.992	33.413	41.451	25.164					40
1303	74	74	18.495	18.482	35.625D	25.654	34.159	42.278	25.976					74
1304	120	120	17.176	17.155	35.546D	25.922	34.472	42.632	26.447					120
1305	170	169	16.070	16.042	35.441D	26.105	34.695	42.892	26.852					169
1306	220	219	14.943	14.909	35.396D	26.328	34.959	43.194	27.298					219
1307	290	289	13.354	13.312	35.075D	26.422	35.117	43.412	27.710					289
1308	370	368	12.280	12.229	35.063D	26.631	35.368	43.702	28.279					368
1309	470	467	10.289	10.231	34.791D	26.789	35.612	44.027	28.901					467
1310	590	586	8.399	8.335	34.565D	26.923	35.833	44.328	29.597					586
1311	750	745	6.853	6.780	34.403D	27.020	36.005	44.570	30.441					745
1312	880	874	6.011	5.930	34.394D	27.123	36.150	44.753	31.150					874
1313	990	983	5.384	5.297	34.363D	27.175	36.234	44.867	31.715					983
1314	1120	1111	4.556	4.463	34.385D	27.286	36.388	45.059	32.438					1111
1315	1270	1259	3.695	3.597	34.420D	27.403	36.549	45.261	33.262					1259
1201	1440	1427	3.133	3.027	34.490D	27.512	36.687	45.427	34.163					1427
1202	1640	1625	2.729	2.611	34.557D	27.601	36.798	45.558	35.176					1625
1203	1840	1822	2.503	2.370	34.597D	27.653	36.862	45.634	36.142					1822
1204	2040	2019	2.348	2.200	34.617D	27.683	36.901	45.682	37.081					2019
1205	2240	2216	2.216	2.053	34.631D	27.706	36.932	45.720	38.009					2216
1206	2440	2412	2.094	1.915	34.642D	27.725	36.959	45.754	38.930					2412
1207	2640	2609	1.973	1.777	34.653D	27.744	36.985	45.787	39.848					2609
1208	2790	2756	1.885	1.677	34.663D	27.759	37.006	45.813	40.535					2756
1209	2940	2903	1.775	1.555	34.672D	27.775	37.029	45.842	41.224					2903
1210	2990	2952	1.766	1.541	34.676D	27.780	37.034	45.848	41.449					2952
1211	3090	3050	1.722	1.488	34.687D	27.792	37.049	45.866	41.906					3050
1212	3240	3197	1.656	1.409	34.703D	27.810	37.072	45.892	42.590					3197
1213	3400	3354	1.565	1.304	34.715D	27.827	37.094	45.920	43.316					3354
1214	3500	3451	1.507	1.237	34.717D	27.833	37.104	45.933	43.766					3451
1215	3600	3549	1.430	1.152	34.721D	27.842	37.118	45.952	44.218					3549
1216	3700	3647	1.360	1.073	34.719D	27.846	37.126	45.964	44.665					3647
1217	3900	3842	1.214	0.910	34.716D	27.854	37.143	45.990	45.558					3842
1218	4100	4037	1.111	0.789	34.714D	27.860	37.156	46.010	46.441					4037
1219	4300	4232	1.074	0.731	34.712D	27.862	37.162	46.018	47.311					4232
1220	4600	4525	1.032	0.656	34.708D	27.863	37.167	46.028	48.605					4525
124	4883	4800	1.036	0.627	34.707	27.864	37.170	46.032	49.813					4800
1221	5150	5059	1.055	0.613	34.705D	27.863	37.170	46.033	50.942					5059
1222	5500	5399	1.091	0.603	34.704D	27.863	37.170	46.034	52.412					5399
1223	5800	5690	1.125	0.597	34.704D	27.863	37.171	46.035	53.663					5690
1224	6118	5998	1.157	0.585	34.704D	27.864	37.172	46.037	54.981					5998

BOTTOM DEPTH FOR CAST 1 IS 8320

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

STATION: 275 LEG: VI POSITION: 30° 1' S 176° 54' W DATE: 23 JAN 74

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	5	5	23.380	23.379	35.504	24.229	32.590	40.570	24.251	216	1.6	0.09	0.0	5
1301	29	29	22.712	22.706	35.599D	24.495	32.873	40.870	24.619					29
102	57	57	19.167	19.156	35.635	25.489	33.972	42.070	25.736	241	1.4	0.11	0.0	57
1302	89	89	17.432	17.417	35.600D	25.900	34.440	42.592	26.289					89
1303	139	138	16.122	16.099	35.452D	26.101	34.688	42.884	26.711					138
1304	189	188	14.858	14.829	35.307D	26.277	34.912	43.152	27.112					188
103	270	269	12.902	12.864	35.095	26.529	35.241	43.552	27.730	198	4.1	0.81	11.1	269
1305	339	337	12.137	12.091	35.059D	26.654	35.397	43.737	28.167					337
1306	414	412	10.757	10.705	34.874D	26.770	35.572	43.967	28.627					412
104	482	479	9.424	9.368	34.709	26.871	35.733	44.183	29.047	202	6.5	1.24	18.6	479
1307	589	585	7.969	7.907	34.525D	26.956	35.887	44.400	29.632					585
105	722	717	6.816	6.746	34.420	27.038	36.025	44.590	30.333	219	10.6	1.57	24.2	717
1308	838	832	6.115	6.037	34.392D	27.108	36.130	44.728	30.942					832
106	975	968	5.085	5.001	34.352	27.201	36.275	44.921	31.680	203	26.3	1.93	29.8	968
1201	1068	1060	4.501	4.414	34.379D	27.287	36.391	45.065	32.204					1060
1202	1188	1178	3.967	3.874	34.409D	27.367	36.498	45.198	32.845					1178
107	1304	1293	3.450	3.352	34.449	27.449	36.607	45.332	33.472	175	60.1	2.24	34.2*	1293
1203	1387	1375	3.178	3.076	34.481D	27.500	36.673	45.411	33.909					1375
1204	1487	1474	2.901	2.793	34.528D	27.562	36.750	45.501	34.436					1474
1205	1587	1572	2.710	2.596	34.559D	27.604	36.801	45.563	34.939					1572
1206	1687	1671	2.602	2.481	34.580D	27.630	36.834	45.600	35.423					1671
108	1803	1785	2.489	2.360	34.599	27.656	36.865	45.638	35.978	153	103.9	2.38	35.9	1785
1207	1987	1966	2.356	2.213	34.615D	27.680	36.898	45.678	36.839					1966
1208	2136	2113	2.242	2.088	34.626D	27.699	36.923	45.709	37.534					2113
1209	2236	2212	2.187	2.025	34.631D	27.708	36.936	45.725	37.995					2212
109	2361	2334	2.112	1.940	34.641	27.722	36.955	45.748	38.573	147	122.4	2.43	36.6	2334
1210	2436	2408	2.074	1.895	34.642D	27.726	36.961	45.757	38.915					2408
110	2562	2532	2.017	1.828	34.646	27.735	36.973	45.772	39.489	148	129.0	2.44	36.7	2532
1211	2636	2605	1.968	1.773	34.651D	27.743	36.984	45.786	39.829					2605
111	2764	2730	1.898	1.692	34.659	27.755	37.001	45.807	40.415	150	131.0	2.43	36.7	2730
112	2918	2881	1.816	1.597	34.669	27.770	37.021	45.832	41.118	155	130.7	2.40	36.2	2881
114	3081	3041	1.728	1.495	34.689	27.793	37.050	45.866	41.867	168	123.6	2.32	35.0	3041
115	3233	3190	1.686	1.439	34.707	27.812	37.071	45.890	42.558	183	113.1	2.20	33.4	3190
116	3385	3339	1.552	1.293	34.720	27.832	37.100	45.926	43.257	194	109.2	2.13	32.4	3339
117	3536	3486	1.401	1.130	34.721	27.844	37.120	45.956	43.943	200	109.7	2.12	32.3	3486
118	3686	3633	1.267	0.985	34.718	27.851	37.136	45.979	44.618	203	112.5	2.12	32.3	3633
1212	3784	3729	1.183	0.893	34.715D	27.854	37.145	45.992	45.057					3729
119	3939	3880	1.105	0.801	34.713	27.858	37.154	46.007	45.743	206	119.0	2.13	32.5	3880
1213	4093	4030	1.032	0.713	34.710D	27.861	37.162	46.020	46.421					4030
120	4244	4177	1.032	0.697	34.707	27.860	37.162	46.020	47.072	208	121.2	2.14	32.5	4177
121	4447	4375	1.001	0.644	34.706	27.862	37.167	46.028	47.952	209	123.1	2.14	32.5	4375
1214	4593	4517	0.993	0.620	34.707D	27.864	37.171	46.033	48.581					4517
122	4752	4672	1.005	0.613	34.706	27.864	37.171	46.034	49.259	209	124.2	2.15	32.8	4672
1215	4942	4857	1.014	0.599	34.706D	27.865	37.172	46.036	50.068					4857
1216	5092	5003	1.026	0.592	34.706D	27.865	37.173	46.037	50.703					5003
123	5269	5174	1.043	0.587	34.705	27.865	37.173	46.038	51.448	209	125.2	2.15	32.8	5174
1217	5491	5390	1.067	0.582	34.705D	27.865	37.174	46.038	52.380					5390
124	5657	5551	1.088	0.580	34.705	27.865	37.174	46.039	53.072	209	125.0	2.15	32.8	5551

BOTTOM DEPTH FOR CAST 1 IS 5564

STATION: 276 LEG: VI POSITION: 29° 58' S 177° 11' W DATE: 23 JAN 74

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	3	3	23.045	23.044	35.448	24.284	32.654	40.644	24.297					3
1301	26	26	23.036	23.030	35.458D	24.295	32.666	40.656	24.407					26
1302	50	50	19.304	19.295	35.625D	25.445	33.925	42.019	25.662					50
1303	100	100	16.610	16.593	35.545D	26.056	34.625	42.803	26.494					100
1304	150	149	15.306	15.282	35.402D	26.249	34.866	43.089	26.910					149
1305	200	199	14.224	14.194	35.277D	26.393	35.051	43.313	27.278					199
1306	250	249	13.274	13.238	35.190D	26.527	35.223	43.519	27.637					249
1307	300	298	12.495	12.454	35.117D	26.628	35.356	43.681	27.965					298
1308	350	348	11.726	11.680	35.022D	26.705	35.465	43.820	28.269					348
1309	400	398	10.735	10.685	34.873D	26.773	35.576	43.971	28.568					398

STATION: 276 LEG: VI POSITION: 29° 58' S 177° 11' W DATE: 23 JAN 74

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
1310	500	497	9.084	9.027	34.678D	26.903	35.780	44.244	29.163					497
1311	600	596	7.797	7.734	34.530D	26.985	35.924	44.445	29.713					596
1312	750	745	6.535	6.463	34.406D	27.064	36.065	44.643	30.492					745
1313	900	893	5.725	5.644	34.391D	27.156	36.197	44.813	31.280					893
1314	1000	992	4.999	4.914	34.373D	27.227	36.306	44.956	31.822					992
1315	1150	1141	4.104	4.013	34.393D	27.340	36.464	45.157	32.641					1141
1316	1300	1289	3.434	3.336	34.447D	27.449	36.608	45.334	33.454					1289
1201	1390	1378	3.150	3.048	34.487D	27.507	36.681	45.421	33.931					1378
1202	1590	1575	2.754	2.639	34.558D	27.600	36.795	45.554	34.946					1575
1203	1790	1773	2.533	2.404	34.596D	27.649	36.857	45.627	35.911					1773
1204	1990	1970	2.375	2.231	34.616D	27.679	36.896	45.675	36.851					1970
1205	2190	2166	2.243	2.084	34.629D	27.702	36.926	45.712	37.779					2166
1206	2390	2363	2.114	1.939	34.641D	27.722	36.955	45.748	38.703					2363
1207	2590	2560	1.980	1.789	34.652D	27.742	36.983	45.784	39.623					2560
1208	2690	2658	1.908	1.709	34.659D	27.754	36.999	45.804	40.084					2658
1209	2790	2756	1.855	1.648	34.665D	27.763	37.012	45.820	40.541					2756
1210	2915	2878	1.780	1.562	34.675D	27.777	37.030	45.843	41.114					2878
1211	2990	2952	1.758	1.533	34.681D	27.784	37.039	45.853	41.454					2952
1212	3065	3026	1.741	1.509	34.698D	27.799	37.055	45.870	41.802					3026
1213	3150	3109	1.683	1.444	34.711D	27.814	37.074	45.892	42.196					3109
1214	3250	3207	1.592	1.345	34.717D	27.826	37.091	45.914	42.655					3207
1215	3350	3305	1.518	1.263	34.722D	27.836	37.105	45.933	43.110					3305
1216	3450	3402	1.424	1.162	34.723D	27.843	37.118	45.951	43.564					3402
1217	3550	3500	1.320	1.050	34.721D	27.849	37.130	45.970	44.017					3500
1218	3650	3598	1.227	0.949	34.718D	27.853	37.140	45.985	44.467					3598
1219	3750	3696	1.148	0.862	34.715D	27.856	37.148	45.998	44.914					3696
1220	3900	3842	1.065	0.766	34.712D	27.860	37.158	46.012	45.579					3842
1221	4100	4037	1.026	0.707	34.710D	27.862	37.163	46.021	46.453					4037
1222	4300	4232	1.012	0.671	34.710D	27.864	37.167	46.027	47.320					4232
1223	4500	4427	1.010	0.647	34.708D	27.864	37.168	46.030	48.180					4427
124	4668	4591	1.014	0.631	34.707	27.864	37.169	46.031	48.899					4591
1224	4740	4661	1.017	0.626	34.707D	27.864	37.170	46.032	49.206					4661

BOTTOM DEPTH FOR CAST 1 IS 4678

STATION: 277 LEG: VI POSITION: 30° 7' S 177° 34' W DATE: 24 JAN 74

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	4	4	23.353	23.352	35.258	24.051	32.415	40.399	24.069	214	1.8	0.10	0.1	4
1201	22	22	23.156	23.151	35.267D	24.116	32.485	40.474	24.210					22
102	51	51	19.678	19.668	35.543	25.285	33.754	41.838	25.506	240	1.0	0.11	0.0	51
1202	119	118	15.931	15.912	35.476D	26.162	34.756	42.958	26.686					118
1203	169	168	14.977	14.951	35.379D	26.306	34.935	43.170	27.051					168
1204	219	218	13.881	13.849	35.264D	26.456	35.128	43.402	27.427					218
1205	269	268	12.594	12.557	35.114D	26.606	35.329	43.651	27.804					268
103	333	331	11.747	11.703	35.024	26.702	35.461	43.815	28.190	206	4.1	0.88	12.3	331
1206	399	397	10.310	10.261	34.831D	26.815	35.636	44.049	28.609					397
1207	499	496	8.611	8.556	34.595D	26.912	35.812	44.297	29.174					496
104	607	603	7.499	7.437	34.477	26.987	35.940	44.474	29.751	214	8.5	1.48	22.6	603
1208	698	693	6.751	6.683	34.413D	27.041	36.031	44.599	30.229					693
1209	798	792	6.089	6.015	34.368D	27.092	36.115	44.714	30.746					792
105	908	901	5.458	5.378	34.360	27.164	36.218	44.847	31.330	206	22.1	1.86	28.5	901
1210	1018	1010	4.842	4.756	34.360D	27.235	36.321	44.979	31.916					1010
106	1156	1147	4.051	3.960	34.401	27.352	36.479	45.174	32.682	183	45.4	2.13	32.7	1147
1211	1298	1287	3.400	3.303	34.454D	27.458	36.619	45.345	33.455					1287
107	1449	1436	2.987	2.882	34.509	27.540	36.722	45.470	34.237	166	76.3	2.31	35.0	1436
1212	1587	1572	2.745	2.631	34.559D	27.601	36.797	45.556	34.935					1572
108	1747	1730	2.525	2.400	34.593	27.647	36.855	45.626	35.715	154	101.7	2.38	35.8	1730
1213	1872	1853	2.435	2.301	34.608D	27.668	36.881	45.656	36.304					1853
109	2051	2029	2.306	2.158	34.624	27.692	36.912	45.695	37.141	148	115.1	2.42	36.3	2029
1214	2171	2148	2.221	2.064	34.629D	27.703	36.929	45.716	37.697					2148
110	2354	2328	2.116	1.944	34.639	27.720	36.952	45.746	38.540	147	123.1	2.42	36.5	2328
1215	2496	2467	2.035	1.852	34.646D	27.733	36.970	45.768	39.191					2467
111	2610	2579	1.966	1.773	34.653	27.744	36.986	45.788	39.715	148	127.6	2.43	36.5	2579

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

STATION: 277 LEG: VI POSITION: 30° 7' S 177° 34' W DATE: 24 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1216	2695	2662	1.912	1.712	34.657D	27.752	36.997	45.802	40.105					2662
112	2811	2776	1.837	1.628	34.667	27.766	37.016	45.825	40.639	153	129.3	2.41	35.9	2776
1217	2870	2834	1.798	1.584	34.674D	27.775	37.027	45.838	40.912					2834
114	2964	2926	1.763	1.541	34.680	27.783	37.037	45.851	41.338	162	123.6	2.34	35.1	2926
1218	3035	2996	1.741	1.512	34.696D	27.798	37.053	45.868	41.668					2996
115	3115	3074	1.680	1.445	34.709	27.813	37.072	45.890	42.040	182	111.6	2.19	33.1	3074
1219	3195	3153	1.633	1.391	34.717D	27.823	37.085	45.906	42.406					3153
116	3268	3224	1.565	1.317	34.723	27.833	37.099	45.924	42.743	193	107.9	2.13	32.2	3224
117	3418	3371	1.429	1.170	34.723	27.843	37.117	45.950	43.423	199	109.0	2.09	32.1	3371
1220	3494	3445	1.353	1.088	34.723D	27.848	37.127	45.964	43.768					3445
118	3561	3511	1.310	1.039	34.720	27.849	37.131	45.971	44.066	202	110.1	2.10	32.1	3511
119	3613	3562	1.270	0.995	34.720	27.852	37.136	45.978	44.300					3562
120	3644	3592	1.247	0.970	34.718	27.852	37.138	45.981	44.438					3592
121	3668	3615	1.226	0.947	34.718	27.853	37.140	45.985	44.546					3615
122	3709	3655	1.214	0.931	34.718	27.854	37.142	45.988	44.727					3655
123	3710	3656	1.214	0.931	34.717	27.853	37.142	45.987	44.731	204	112.8	2.10	32.1	3656
124	3719	3665	1.215	0.931	34.717	27.853	37.142	45.987	44.770					3665

BOTTOM DEPTH FOR CAST 1 IS 3680

STATION: 278 LEG: VI POSITION: 36° 31' S 179° 36' W DATE: 26 JAN 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
101	7	7	19.812	19.811	35.666	25.341	33.804	41.883	25.372	230	1.6	0.13	0.0	7
1201	40	40	19.787	19.779	35.668D	25.351	33.815	41.894	25.524					40
1202	65	65	17.597	17.586	35.621D	25.874	34.409	42.555	26.158					65
1203	140	139	16.943	16.919	35.604D	26.023	34.581	42.748	26.636					139
102	189	188	16.005	15.974	35.497	26.164	34.755	42.954	26.994	216	2.3	0.42	4.7	188
1204	220	219	15.610	15.575	35.447D	26.218	34.824	43.036	27.185					219
1206	315	313	13.973	13.926	35.277D	26.450	35.119	43.389	27.843					313
103	370	368	13.039	12.986	35.166	26.559	35.265	43.571	28.202	199	5.1	0.83	11.5	368
1207	440	437	12.031	11.971	35.054D	26.674	35.421	43.765	28.635					437
104	552	548	10.152	10.085	34.810	26.829	35.658	44.078	29.309	197	7.2	1.19	17.5	548
1208	630	626	9.139	9.067	34.685D	26.902	35.777	44.240	29.745					626
105	733	728	8.127	8.048	34.571	26.971	35.895	44.401	30.292	205	9.5	1.46	21.9	728
1209	810	804	7.511	7.427	34.512D	27.016	35.969	44.503	30.695					804
106	916	909	6.698	6.608	34.444	27.075	36.068	44.639	31.249	207	15.3	1.68	25.4	909
107	1065	1056	5.790	5.692	34.435	27.185	36.223	44.836	32.053	196	26.9	1.88	28.3	1056
108	1256	1245	4.426	4.322	34.400	27.313	36.422	45.099	33.086	186	40.6	2.11	32.0	1245
1211	1370	1358	4.020	3.910	34.451D	27.396	36.525	45.222	33.698					1358
109	1514	1500	3.406	3.290	34.492	27.489	36.650	45.377	34.465	170	68.0	2.26	34.2	1500
1212	1625	1609	3.164	3.041	34.531D	27.543	36.717	45.456	35.031					1609
110	1759	1741	2.847	2.717	34.566	27.599	36.790	45.545	35.706	159	90.6	2.35	35.1	1741
1213	1890	1870	2.643	2.504	34.593D	27.639	36.841	45.606	36.346					1870
111	2011	1989	2.481	2.334	34.608	27.665	36.876	45.650	36.925	153	105.8	2.41	35.8	1989
112	2166	2142	2.339	2.180	34.625	27.691	36.910	45.691	37.655	152	110.8	2.42	36.0	2142
1214	2270	2244	2.269	2.102	34.631D	27.702	36.925	45.710	38.136					2244
114	2368	2340	2.194	2.019	34.639	27.715	36.943	45.732	38.592	151	115.7	2.43	36.0	2340
121	2461P	2432	2.12	1.94	34.646	27.726	36.959	45.752	39.023	152	117.8	2.42	35.7	2432
115	2515	2485	2.090	1.904	34.648	27.731	36.965	45.760	39.270	150	120.2	2.46	36.0	2485
116	2668	2635	1.976	1.778	34.662	27.751	36.992	45.794	39.979	155	122.1	2.42	35.7	2635
117	2819	2783	1.871	1.660	34.685	27.778	37.025	45.833	40.683	168	114.2	2.31	34.4	2783
118	2976	2937	1.776	1.552	34.703	27.800	37.054	45.866	41.407	179	108.0	2.24	33.3	2937
119	3131	3089	1.642	1.406	34.718	27.823	37.084	45.904	42.123	190	103.2	2.17	32.4	3089
120	3286	3240	1.477	1.230	34.724	27.840	37.111	45.940	42.836	197	105.3	2.14	31.9	3240
122	3585	3533	1.264	0.992	34.720	27.852	37.137	45.979	44.179	202	111.8	2.16	32.0	3533
1215	3710	3655	1.239	0.955	34.718D	27.853	37.139	45.984	44.727					3655
123	3849	3790	1.179	0.882	34.716	27.856	37.147	45.995	45.342	204	114.7	2.16	32.3	3790
1216	3975	3913	1.157	0.847	34.717D	27.859	37.152	46.002	45.894					3913
124	4103	4038	1.139	0.816	34.716	27.860	37.155	46.007	46.451	205	116.9	2.16	32.3	4038

BOTTOM DEPTH FOR CAST 1 IS 4061

STATION: 279 LEG: VII POSITION: 55° 6' S 170° 6' E DATE: 8 FEB 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	1	1	7.39	7.38	34.04 D	26.653	35.615	44.158	26.657					1
1202	19	19	7.39	7.39	34.04 D	26.651	35.613	44.156	26.739					19
1203	50	50	7.40	7.40	34.04 D	26.653	35.614	44.157	26.882					50
1204	102	101	7.27	7.26	34.08 D	26.700	35.667	44.215	27.168					101
1205	122	121	6.72	6.71	34.14 D	26.818	35.811	44.382	27.379					121
1206	151	150	6.67	6.66	34.22 D	26.890	35.884	44.456	27.584					150
1207	215	213	6.74	6.72	34.29 D	26.942	35.932	44.501	27.930					213
1208	257	255	5.91	5.89	34.19 D	26.970	36.002	44.610	28.156					255
1209	329	326	5.73	5.70	34.21 D	27.007	36.048	44.664	28.525					326
1210	406	402	5.39	5.36	34.22 D	27.057	36.115	44.747	28.933					402
1211	513	508	4.91	4.87	34.25 D	27.133	36.216	44.870	29.506					508
1212	590	585	4.24	4.19	34.22 D	27.180	36.298	44.985	29.917					585
1213	710	703	3.811	3.759	34.274D	27.271	36.410	45.118	30.567					703
1214	817	809	3.364	3.306	34.283D	27.321	36.485	45.214	31.119					809
1215	958	948	3.028	2.962	34.363D	27.416	36.597	45.342	31.870					948
1216	1115	1103	2.738	2.662	34.419D	27.487	36.683	45.443	32.670					1103
1217	1272	1258	2.578	2.492	34.506D	27.570	36.775	45.542	33.477					1258
1218	1430	1414	2.488	2.390	34.575D	27.634	36.842	45.614	34.264					1414
1219	1567	1549	2.454	2.345	34.615D	27.670	36.880	45.653	34.924					1549
1220	1718	1697	2.364	2.244	34.656D	27.710	36.926	45.703	35.654					1697
1221	1874	1850	2.269	2.137	34.689D	27.745	36.966	45.748	36.398					1850
1222	2024	1998	2.196	2.052	34.710D	27.769	36.994	45.780	37.102					1998
1301	2152	2124	2.127	1.973	34.723D	27.785	37.015	45.805	37.697					2124
1302	2296	2265	2.010	1.845	34.732D	27.802	37.038	45.835	38.367					2265
1303	2399	2366	1.917	1.745	34.736D	27.813	37.055	45.857	38.845					2366
120	2542	2506	1.814	1.631	34.736	27.821	37.069	45.878	39.498					2506
121	2542	2506	1.814	1.631	34.737	27.822	37.070	45.878	39.499					2506
122	2542	2506	1.814	1.631	34.736	27.821	37.069	45.878	39.498					2506
123	2542	2506	1.814	1.631	34.736	27.821	37.069	45.878	39.498					2506
1304	2600	2563	1.761	1.573	34.737D	27.826	37.078	45.889	39.765					2563
1305	2755	2715	1.633	1.434	34.734D	27.834	37.093	45.912	40.472					2715
1306	2898	2855	1.525	1.315	34.730D	27.839	37.105	45.930	41.119					2855
1307	3045	2998	1.436	1.214	34.727D	27.843	37.115	45.945	41.782					2998
1308	3202	3152	1.351	1.115	34.725D	27.848	37.125	45.961	42.486					3152
1309	3350	3296	1.297	1.048	34.722D	27.850	37.131	45.971	43.144					3296
1310	3498	3441	1.208	0.947	34.718D	27.853	37.140	45.985	43.805					3441
124	3609	3549	1.152	0.881	34.714	27.854	37.145	45.994	44.297					3549
1311	3662	3601	1.128	0.852	34.714D	27.856	37.149	45.999	44.533					3601
1312	3769	3705	1.088	0.802	34.713D	27.858	37.154	46.007	45.006					3705

BOTTOM DEPTH FOR CAST 1 IS 3718

STATION: 280 LEG: VII POSITION: 56° 1' S 170° 3' E DATE: 8 FEB 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	0	0	6.45	6.45	34.06 D	26.794	35.800	44.384	26.794					0
416	3H	3			34.061					301	2.9	1.30	19.2	3
1202	22	22	6.447	6.445	34.06 D	26.794	35.801	44.385	26.896					22
419	32H	32			34.060					301	2.8	1.32	19.2	32
1203	69	68	6.33	6.33	34.11 D	26.849	35.861	44.449	27.167					68
422	82H	81			34.110					301	3.0	1.32	18.9	81
1204	94	93	6.33	6.32	34.11 D	26.851	35.863	44.452	27.285					93
423	101H	100			34.114					301	3.1	1.32	19.0	100
424	155H	154	5.86 H	5.85	34.153	26.943	35.978	44.588	27.660	297	4.9	1.42	20.2	154
302	201H	199	5.32 H	5.30	34.172	27.024	36.085	44.720	27.955	290	8.4	1.45	22.2	199
303	251H	249	5.20 H	5.18	34.191	27.053	36.121	44.761	28.216	289	8.9	1.50	22.2	249
304	302H	299	5.27 H	5.25	34.242	27.086	36.149	44.786	28.483	294	8.1	1.46	21.3	299
305	452H	448	4.66 H	4.62	34.210	27.130	36.226	44.892	29.226	260	16.7	1.71	25.9	448
306	602H	596	4.16 H	4.11	34.270	27.232	36.353	45.043	30.025	230	27.5	1.94	29.3	596
307	752H	745	3.36 H	3.31	34.307	27.340	36.503	45.232	30.839	216	39.8	2.09	31.8	745
308	903H	894	2.90 H	2.84	34.361	27.425	36.613	45.364	31.630	203	50.2	2.19	33.2	894
309	1054H	1043	2.63 H	2.56	34.443	27.514	36.716	45.480	32.420	189	61.6	2.25	34.1	1043
310	1207H	1194	2.58 H	2.50	34.522	27.583	36.786	45.553	33.191	179	69.6	2.25	33.9	1194
311	1404H	1388	2.41 H	2.31	34.597	27.658	36.870	45.645	34.172	177	75.4	2.22	33.6	1388
312	1606H	1587	2.305H	2.195	34.659	27.717	36.935	45.715	35.155	179	79.9	2.16	32.7	1587

D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
P PRETRIP OR POSTTRIP

STATION: 280 LEG: VII POSITION: 56° 1' S 170° 3' E DATE: 8 FEB 74

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
314	1807H	1784	2.20 H	2.07	34.697	27.757	36.981	45.766	36.110	183	82.6	2.11	32.1	1784
325	2009H	1983	2.08 H	1.94	34.722	27.787	37.018	45.810	37.059	188	87.1	2.07	31.4	1983
326	2211H	2181	1.940H	1.784	34.734	27.808	37.048	45.848	37.996	193	91.1	2.06	31.1	2181
327	2414H	2380	1.79 H	1.62	34.737	27.823	37.072	45.880	38.930	196	95.6	2.06	31.0	2380
328	2619H	2581	1.634H	1.447	34.735	27.833	37.092	45.910	39.866	199	99.6	2.04	30.9	2581
329	2823H	2781	1.47 H	1.27	34.730	27.842	37.110	45.938	40.794	201	105.3	2.08	31.2	2781
330	3027H	2980	1.31 H	1.09	34.724	27.849	37.127	45.964	41.718	203	109.7	2.08	31.5	2980
331	3233H	3182	1.201H	0.966	34.720	27.854	37.140	45.983	42.642	205	113.5	2.09	31.5	3182
332	3439H	3383	1.10 H	0.85	34.716D	27.858	37.151	46.001	43.561	209	112.1	2.09	31.5	3383
333	3646H	3585	1.03 H	0.76	34.711	27.859	37.158	46.013	44.476	210	118.0	2.11	31.9	3585
115	3759	3695	0.986	0.704	34.709	27.861	37.162	46.020	44.975	210	118.4	2.13	31.8	3695
334	3855H	3788	0.948H	0.657	34.707	27.862	37.166	46.027	45.399	210				3788
116	3961	3892	0.919	0.618	34.706	27.864	37.170	46.033	45.864	209	119.7	2.14	31.8	3892
117	4169	4094	0.870	0.548	34.705	27.867	37.177	46.044	46.774	211	122.5	2.14	31.9	4094
118	4372	4291	0.847	0.504	34.700	27.865	37.179	46.048	47.651	212	123.5	2.16	31.9	4291
119	4577	4491	0.832	0.466	34.699	27.867	37.182	46.053	48.535	212	125.0	2.16	31.9	4491
120	4784	4691	0.830	0.440	34.702	27.871	37.188	46.060	49.425	213	125.4	2.16	32.2	4691
121	4989	4890	0.835	0.421	34.696	27.867	37.185	46.059	50.294	213	127.7	2.17	32.2	4890
122	5193	5088	0.833	0.394	34.698	27.870	37.190	46.065	51.162	214	128.1	2.17	32.2	5088
123	5296	5188	0.832	0.381	34.699	27.872	37.192	46.068	51.599	213	127.5	2.17	32.2	5188
124	5331	5222	0.831	0.375	34.697	27.870	37.191	46.067	51.746	214	127.6	2.16	32.1	5222

BOTTOM DEPTH FOR CAST 1 IS 5235

STATION: 281 LEG: VII POSITION: 56° 45' S 170° 5' E DATE: 9 FEB 74

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	6.439	6.439	33.963D	26.719	35.727	44.313	26.723					1
101	13	13	6.443	6.442	33.966	26.721	35.729	44.315	26.781	301	2.6	1.36	19.7	13
1202	72	71	6.451	6.445	33.967D	26.721	35.729	44.315	27.053					71
1203	96	95	6.11	6.10	33.97 D	26.767	35.792	44.393	27.211					95
1204	145	144	5.55	5.54	34.10 D	26.939	35.990	44.615	27.611					144
102	200	198	5.25	5.23	34.114	26.986	36.052	44.691	27.913	288	7.5	1.50	22.1	198
1205	247	245	5.14	5.12	34.15 D	27.027	36.099	44.742	28.172					245
1206	325	322	5.05	5.02	34.21 D	27.086	36.161	44.808	28.591					322
103	397	393	4.70	4.67	34.217	27.131	36.224	44.888	28.972	257	17.2	1.74	25.8	393
1207	503	498	4.32	4.28	34.259D	27.206	36.318	45.000	29.540					498
104	601	595	3.91	3.87	34.283	27.267	36.401	45.103	30.060	225	31.1	1.99	29.8	595
1208	701	694	3.303	3.255	34.293D	27.334	36.500	45.232	30.598					694
105	803	795	3.130	3.075	34.354	27.399	36.574	45.314	31.137	204	47.3	2.16	32.4	795
1209	903	894	2.841	2.780	34.399D	27.461	36.651	45.405	31.666					894
106	996	986	2.741	2.674	34.442	27.504	36.699	45.458	32.140	188	60.6	2.25	33.5	986
1210	1106	1094	2.593	2.519	34.478D	27.546	36.749	45.515	32.691					1094
107	1198	1185	2.497	2.417	34.530	27.596	36.804	45.574	33.166	179	70.5	2.25	33.5	1185
1211	1358	1342	2.398	2.307	34.595D	27.657	36.869	45.645	33.962					1342
108	1501	1483	2.342	2.240	34.644	27.701	36.917	45.695	34.660	179	79.4	2.19	32.6	1483
1212	1655	1635	2.272	2.158	34.678D	27.735	36.955	45.736	35.396					1635
109	1797	1775	2.206	2.081	34.701	27.759	36.983	45.768	36.067	183	83.0	2.13	31.7	1775
1213	1945	1920	2.106	1.970	34.719D	27.782	37.012	45.802	36.764					1920
110	2096	2068	2.003	1.856	34.730	27.800	37.035	45.832	37.467	192	88.5	2.07	30.8	2068
1214	2198	2168	1.937	1.782	34.734D	27.808	37.048	45.848	37.938					2168
111	2302	2270	1.859	1.696	34.739	27.819	37.063	45.868	38.420	195	91.7	2.06	30.7	2270
1215	2402	2368	1.795	1.625	34.738D	27.823	37.072	45.880	38.876					2368
112	2506	2470	1.703	1.525	34.739	27.831	37.085	45.899	39.355	198	96.3	2.06	30.7	2470
1216	2644	2606	1.602	1.414	34.736D	27.837	37.097	45.917	39.983					2606
115	2803	2761	1.465	1.265	34.733	27.844	37.113	45.941	40.709	201	104.0	2.07	30.9	2761
1217	2962	2917	1.372	1.159	34.730D	27.849	37.124	45.957	41.426					2917
116	3122	3073	1.276	1.050	34.725	27.852	37.134	45.973	42.144	204	110.7	2.09	31.2	3073
1218	3267	3215	1.200	0.962	34.720D	27.854	37.140	45.984	42.792					3215
117	3431	3375	1.122	0.870	34.717	27.857	37.149	45.998	43.523	206	115.9	2.11	31.5	3375
1219	3577	3517	1.050	0.785	34.714D	27.860	37.157	46.010	44.173					3517
118	3741	3677	0.992	0.712	34.710	27.861	37.162	46.020	44.897	209	119.1	2.11	31.5	3677

STATION: 281 LEG: VII POSITION: 56° 45' S 170° 5' E DATE: 9 FEB 74

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
1220	3878	3811	0.948	0.655	34.708D	27.863	37.167	46.028	45.500					3811
119	4050	3978	0.914	0.604	34.707	27.865	37.173	46.036	46.252	211	122.7	2.13	31.7	3978
1221	4194	4118	0.887	0.562	34.705D	27.866	37.176	46.042	46.879					4118
120	4355	4275	0.867	0.525	34.703	27.867	37.179	46.047	47.577	211	124.1	2.14	31.9	4275
1222	4501	4417	0.856	0.498	34.702D	27.867	37.181	46.050	48.207					4417
121	4662	4573	0.847	0.471	34.700	27.867	37.182	46.053	48.898	213	125.7	2.14	32.0	4573
1223	4803	4710	0.845	0.453	34.701D	27.869	37.185	46.057	49.502					4710
122	4970	4872	0.832	0.420	34.700	27.870	37.188	46.062	50.216	214	126.2	2.15	32.0	4872
1224	5062	4961	0.830	0.407	34.699D	27.870	37.189	46.063	50.607					4961
123	5174	5070	0.838	0.401	34.700	27.871	37.191	46.065	51.082	214	127.2	2.15	32.0	5070
124	5305	5196	0.839	0.386	34.699	27.871	37.191	46.067	51.636	214	127.0	2.15	32.0	5196

BOTTOM DEPTH FOR CAST 1 IS 5211

STATION: 282 LEG: VII POSITION: 57° 35' S 169° 36' E DATE: 10 FEB 74

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
314	3H	3	5.58 H	5.58	33.880	26.760	35.813	44.439	26.774	308	3.4	1.49	21.5	3
317	44H	44	5.59 H	5.59	33.883	26.762	35.814	44.440	26.966	307	2.7	1.51	21.6	44
318	84H	83	5.60 H	5.59	33.883	26.761	35.813	44.438	27.150	306	2.5	1.51	21.6	83
319	125H	124	5.42 H	5.41	34.027	26.897	35.955	44.587	27.476	301	4.9	1.50	21.3	124
320	157H	156	4.98 H	4.97	34.043	26.960	36.041	44.693	27.689	298	6.3	1.55	22.6	156
325	208H	206	4.78 H	4.76	34.077	27.010	36.100	44.762	27.976	290	8.5	1.60	23.7	206
326	261H	259	4.58 H	4.56	34.121	27.067	36.167	44.838	28.280	277	11.5	1.67	24.9	259
321	315H	312	4.47 H	4.45	34.177	27.123	36.229	44.904	28.588	261	16.1	1.76	26.4	312
328	368H	365	4.28 H	4.25	34.214	27.173	36.288	44.972	28.884	248	20.6	1.85	27.9	365
329	419H	415	4.02 H	3.99	34.226	27.210	36.338	45.035	29.160	242	23.6	1.91	28.9	415
330	470H	466	3.794H	3.761	34.243	27.246	36.386	45.094	29.435	236	27.3	1.98	29.7	466
331	521H	516	3.559H	3.523	34.262	27.284	36.436	45.155	29.712	229	31.7	2.03	30.8	516
332	571H	566	3.25 H	3.21	34.279	27.327	36.495	45.230	29.991	223	36.9	2.09	31.7	566
614	616H	610	3.04 H	3.00	34.284	27.350	36.530	45.275	30.226	222	41.2	2.12	32.4	610
333	621H	615	3.11 H	3.07	34.298	27.355	36.531	45.272	30.253	217	40.4	2.14	32.3	615
334	672H	665	3.028H	2.983	34.321	27.381	36.561	45.306	30.516	211	44.5	2.17	32.7	665
616	720H	713	2.791H	2.744	34.341	27.417	36.611	45.367	30.780	207	50.3	2.24	33.5	713
617	925H	915	2.60 H	2.54	34.462	27.531	36.734	45.499	31.844	185	65.4	2.29	34.6	915
618	1131H	1119	2.43 H	2.36	34.551	27.618	36.828	45.602	32.882	178	73.1	2.28	34.3	1119
619	1336H	1321	2.33 H	2.24	34.635	27.694	36.910	45.688	33.900	177	79.6	2.23	33.4	1321
620	1543H	1524	2.23 H	2.13	34.684	27.742	36.964	45.747	34.896	181	83.5	2.17	32.4	1524
621	1748H	1726	2.13 H	2.01	34.711	27.773	37.000	45.789	35.862	186	90.0	2.11	31.5	1726
622	1952H	1927	2.00 H	1.87	34.730	27.799	37.034	45.830	36.818	190	89.4	2.10	31.6	1927
723	2057H	2030	1.94 H	1.80	34.734	27.807	37.046	45.846	37.303	192	91.1	2.09	31.3	2030
724	2160H	2131	1.855H	1.705	34.738	27.817	37.061	45.866	37.781	194	92.9	2.07	31.2	2131
725	2264H	2233	1.80 H	1.64	34.739	27.823	37.070	45.878	38.257	196	95.0	2.08	31.2	2233
726	2368H	2335	1.72 H	1.55	34.739	27.829	37.082	45.894	38.735	198	97.5	2.08	31.2	2335
727	2471H	2436	1.641H	1.468	34.738	27.834	37.092	45.908	39.206	198	99.6	2.09	31.3	2436
728	2574H	2537	1.552H	1.371	34.735	27.839	37.102	45.924	39.677	199	102.8	2.09	31.4	2537
729	2680H	2640	1.50 H	1.31	34.733	27.841	37.108	45.933	40.156	200	105.3	2.11	31.5	2640
730	2784H	2742	1.424H	1.227	34.730	27.845	37.116	45.945	40.627	201	107.5	2.07	31.5	2742
731	2889H	2845	1.363H	1.157	34.728	27.848	37.123	45.956	41.102	202	109.0	2.09	31.7	2845
1301	3083H	3035	1.23 H	1.01	34.723	27.853	37.137	45.978	41.977	204	110.9	2.05U	31.7	3035
732	3100H	3051	1.245H	1.022	34.722	27.852	37.134	45.975	42.049	205	111.4	2.11	31.6	3051
733	3313H	3259	1.148H	0.907	34.718	27.856	37.145	45.992	43.001	205	114.6	2.12	31.8	3259
1302	3389H	3334	1.05 H	0.80	34.714	27.859	37.154	46.007	43.347	207	117.1	2.10	32.1	3334
734	3518H	3459	1.068H	0.809	34.711	27.856	37.152	46.004	43.909	207	117.3	2.13	31.9	3459
1303	3594H	3534	0.98 H	0.72	34.710	27.861	37.162	46.019	44.255	209	119.2	2.13	32.2	3534
1314	3798H	3732	0.91 H	0.63	34.707	27.864	37.170	46.032	45.156	210	121.8	2.14	32.3	3732
1325	4006H	3935	0.87 H	0.57	34.705	27.866	37.176	46.041	46.067	212	123.4	2.15	32.3	3935
1326	4213H	4136	0.84 H	0.51	34.701	27.866	37.178	46.047	46.967	212	124.5	2.16	32.4	4136
1327	4418H	4336	0.810H	0.463	34.700	27.868	37.183	46.055	47.856	214	125.9	2.17	32.4	4336
1328	4627H	4539	0.81 H	0.44	34.699	27.868	37.185	46.058	48.754	215	127.0	2.17	32.4	4539
1329	4834H	4739	0.806H	0.411	34.699	27.870	37.189	46.063	49.640	215	127.6	2.17	32.4	4739
1330	4936H	4838	0.81 H	0.40	34.698	27.870	37.189	46.063	50.074	213	127.7	2.15	32.4	4838

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

STATION: 282 LEG: VII POSITION: 57° 35' S 169° 36' E DATE: 10 FEB 74

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
1331	5040H	4939	0.81 H	0.39	34.699	27.871	37.191	46.066	50.518	214	127.6	2.18	32.4	4939
1332	5144H	5040	0.80 H	0.37	34.699	27.872	37.193	46.070	50.961	214	128.2	2.17	32.4	5040
1333	5248H	5141	0.794H	0.350	34.697	27.872	37.194	46.072	51.402	214	128.5	2.17	32.4	5141
1334	5300H	5191	0.785H	0.335	34.697	27.873	37.196	46.074	51.623	215	128.3	2.18	32.5	5191

BOTTOM DEPTH FOR CAST 13 IS 5213

STATION: 283 LEG: VII POSITION: 58° 45' S 170° 6' E DATE: 13 FEB 74

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
1301	1	1	6.009	6.009	33.970D	26.779	35.808	44.414	26.784					1
1302	23	23	6.010	6.008	33.971D	26.780	35.809	44.415	26.886					23
122	56	56	6.013	6.008	33.973	26.781	35.811	44.416	27.040					56
1303	76	75	6.015	6.008	33.971D	26.780	35.809	44.415	27.131					75
1304	102	101	5.96	5.95	33.98 D	26.794	35.826	44.434	27.266					101
1305	145	144	5.17	5.16	34.04 D	26.936	36.007	44.651	27.609					144
1306	182	180	5.02	5.01	34.06 D	26.969	36.048	44.698	27.814					180
1307	231	229	4.81	4.79	34.07 D	27.001	36.090	44.751	28.074					229
1308	285	283	5.00	4.98	34.17 D	27.060	36.138	44.788	28.381					283
1309	342	339	4.90	4.87	34.25 D	27.135	36.217	44.871	28.720					339
1310	390	386	4.71	4.68	34.24 D	27.148	36.240	44.904	28.957					386
1311	452	448	4.41	4.38	34.25 D	27.189	36.297	44.974	29.287					448
1312	501	496	4.15	4.11	34.28 D	27.240	36.361	45.051	29.567					496
1313	599	593	3.50	3.46	34.26 D	27.289	36.444	45.167	30.079					593
1314	705	698	3.21	3.16	34.31 D	27.356	36.527	45.263	30.641					698
1201	803	795	2.94	2.89	34.348D	27.411	36.596	45.345	31.153					795
1202	905	896	2.63	2.57	34.401D	27.480	36.682	45.446	31.700					896
1203	1059	1048	2.51	2.44	34.486D	27.559	36.766	45.536	32.491					1048
1204	1208	1194	2.441	2.361	34.566D	27.629	36.839	45.612	33.247					1194
1205	1357	1341	2.351	2.260	34.620D	27.680	36.895	45.673	33.982					1341
1206	1507	1489	2.273	2.171	34.666D	27.724	36.943	45.724	34.713					1489
1207	1650	1630	2.208	2.095	34.696D	27.754	36.977	45.762	35.396					1630
1208	1743	1721	2.152	2.033	34.710D	27.770	36.996	45.784	35.836					1721
1209	1844	1820	2.097	1.970	34.721D	27.784	37.013	45.804	36.310					1820
1210	1916	1891	2.054	1.921	34.727D	27.792	37.024	45.818	36.646					1891
1211	2020	1993	1.989	1.849	34.733D	27.803	37.039	45.836	37.129					1993
1212	2119	2090	1.919	1.771	34.737D	27.812	37.052	45.853	37.587					2090
1213	2218	2188	1.858	1.703	34.739D	27.818	37.062	45.867	38.043					2188
1214	2326	2293	1.761	1.598	34.739D	27.826	37.076	45.886	38.541					2293
1215	2425	2391	1.683	1.513	34.738D	27.831	37.086	45.900	38.995					2391
1216	2526	2490	1.616	1.438	34.736D	27.835	37.094	45.912	39.454					2490
1217	2673	2633	1.489	1.300	34.734D	27.843	37.110	45.935	40.127					2633
1218	2832	2789	1.391	1.190	34.729D	27.846	37.119	45.951	40.845					2789
1219	2982	2936	1.296	1.083	34.726D	27.851	37.130	45.968	41.522					2936
1220	3038	2991	1.260	1.043	34.724D	27.852	37.134	45.973	41.774					2991
1221	3183	3132	1.185	0.956	34.719D	27.853	37.140	45.985	42.423					3132
1222	3344	3289	1.116	0.873	34.716D	27.856	37.148	45.997	43.141					3289
1223	3500	3442	1.044	0.787	34.712D	27.858	37.155	46.008	43.835					3442
1224	3656	3594	0.994	0.723	34.710D	27.861	37.161	46.018	44.525					3594
1225	3807	3741	0.944	0.659	34.708D	27.863	37.167	46.028	45.191					3741
1226	3961	3891	0.914	0.613	34.706D	27.864	37.171	46.034	45.865					3891
1227	4112	4038	0.876	0.560	34.705D	27.866	37.176	46.042	46.526					4038
1228	4265	4187	0.857	0.525	34.704D	27.867	37.179	46.047	47.191					4187
1229	4419	4336	0.838	0.490	34.703D	27.869	37.183	46.053	47.858					4336
1230	4576	4489	0.833	0.467	34.701D	27.868	37.184	46.055	48.532					4489
1231	4723	4631	0.825	0.443	34.700D	27.869	37.186	46.058	49.163					4631
1232	4880	4784	0.826	0.425	34.700D	27.870	37.188	46.061	49.834					4784
1233	5036	4935	0.825	0.406	34.700D	27.871	37.190	46.065	50.499					4935
1234	5190	5084	0.824	0.386	34.699D	27.871	37.192	46.067	51.152					5084
124	5333	5223	0.823	0.367	34.698	27.872	37.193	46.069	51.756					5223

BOTTOM DEPTH FOR CAST 1 IS 5236

STATION: 284 LEG: VII POSITION: 59° 31' S 170° 0' E DATE: 14 FEB 74

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	5.85	5.85	33.957D	26.788	35.826	44.439	26.802					3
101	46	46	5.85	5.85	33.957	26.789	35.827	44.439	27.002	304	3.2	1.41	20.6	46
102	87	86	5.964	5.957	33.983	26.796	35.828	44.435	27.198	302	3.1	1.42	20.4	86
1202	127	126	4.72	4.71	34.04 D	26.986	36.080	44.745	27.577					126
1203	181	179	4.49	4.48	34.07 D	27.035	36.141	44.816	27.878					179
103	247	245	4.489	4.470	34.160	27.107	36.212	44.886	28.256	267	15.4	1.74	26.0	245
1204	322	319	4.02	4.00	34.20 D	27.188	36.317	45.013	28.689					319
104	397	393	3.819	3.791	34.237	27.238	36.377	45.083	29.089	238	27.0	1.97	29.5	393
1205	469	465	3.47	3.44	34.261D	27.291	36.448	45.171	29.480					465
105	552	547	2.997	2.961	34.278	27.348	36.531	45.278	29.928	223	39.4	2.13	31.9	547
1206	663	656	2.78	2.74	34.34 D	27.417	36.611	45.368	30.516					656
106	749	741	2.743	2.694	34.403	27.471	36.666	45.424	30.968	193	55.5	2.26	33.8	741
1207	874	865	2.46	2.40	34.47 D	27.549	36.758	45.531	31.630					865
107	1002	991	2.432	2.367	34.533	27.602	36.813	45.586	32.274	179	70.0	2.29	34.0	991
1208	1117	1105	2.39	2.32	34.59 D	27.652	36.864	45.639	32.853					1105
108	1256	1242	2.33	2.25	34.627	27.687	36.903	45.680	33.528	176	76.8	2.23	33.3	1242
1209	1384	1368	2.265	2.173	34.669D	27.726	36.946	45.726	34.154					1368
109	1502	1484	2.194	2.093	34.691	27.750	36.973	45.758	34.719	182	81.3	2.17	32.2	1484
1210	1623	1603	2.117	2.008	34.710D	27.772	37.000	45.789	35.295					1603
110	1753	1731	2.050	1.931	34.724	27.789	37.021	45.813	35.905	190	85.3	2.10	31.4	1731
1211	1871	1847	1.972	1.845	34.731D	27.801	37.038	45.835	36.456					1847
111	2011	1984	1.878	1.740	34.736	27.813	37.055	45.858	37.105	195	89.5	2.09	31.0	1984
1212	2132	2103	1.787	1.641	34.739D	27.823	37.070	45.878	37.665					2103
112	2263	2231	1.684	1.528	34.738	27.830	37.084	45.898	38.267	199	94.9	2.09	31.0	2231
1213	2394	2360	1.592	1.426	34.736D	27.836	37.095	45.914	38.866					2360
114	2528	2491	1.484	1.309	34.733	27.841	37.108	45.933	39.479	199	100.3	2.10	31.0	2491
1214	2701	2661	1.345	1.157	34.728D	27.848	37.123	45.956	40.267					2661
115	2878	2834	1.257	1.055	34.725	27.852	37.133	45.972	41.066	203	107.9	2.14	31.5	2834
1215	3041	2993	1.167	0.952	34.720D	27.854	37.142	45.986	41.798					2993
116	3236	3184	1.075	0.843	34.715	27.857	37.151	46.001	42.670	206	112.6	2.15	31.7	3184
1216	3405	3349	1.004	0.758	34.712D	27.860	37.158	46.014	43.423					3349
117	3589	3528	0.933	0.670	34.707	27.861	37.165	46.025	44.238	209	117.0	2.14	31.8	3528
118	3946	3876	0.850	0.553	34.703	27.865	37.175	46.042	45.808	210	119.1	2.17	32.0	3876
119	4302	4222	0.809	0.475	34.699	27.866	37.181	46.052	47.355	213	121.9	2.18	32.2	4222
120	4601	4512	0.786	0.419	34.699	27.869	37.188	46.061	48.647	213	122.9	2.18	32.1	4512
121	4852	4756	0.783	0.387	34.698	27.870	37.191	46.066	49.721	215	123.3	2.18	32.1	4756
122	5108	5004	0.783	0.357	34.697	27.871	37.193	46.071	50.810	214	126.1	2.19	32.2	5004
123	5108	5004	0.783	0.357	34.697D	27.871	37.193	46.071	50.810	215	125.7	2.19	32.2	5004
124	5190	5084	0.765	0.329	34.698	27.874	37.197	46.076	51.162	216	128.0	2.19	32.3	5084

BOTTOM DEPTH FOR CAST 1 IS 5096

STATION: 285 LEG: VII POSITION: 61° 29' S 169° 58' E DATE: 14 FEB 74

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
314	9H	9	2.24 H	2.24	33.963	27.157	36.384	45.173	27.200	330	15.9	1.65	25.9	9
325	20H	20	2.25 H	2.25	33.964	27.157	36.383	45.172	27.252	330	15.7	1.69	25.9	20
332	20P	20	2.270	2.269	33.964	27.155	36.381	45.168	27.250	333	16.1		25.8	20
326	33H	33	2.25 H	2.25	33.963	27.156	36.383	45.171	27.312	330	15.8	1.69	25.9	33
333	39P	39	2.260	2.258	33.963	27.156	36.381	45.169	27.340	331	16.1		25.8	39
327	45H	45	2.24 H	2.24	33.963	27.157	36.384	45.173	27.370	331	15.8	1.69	25.9	45
328	52H	52	2.26 H	2.26	33.964	27.156	36.382	45.170	27.402	333	15.9	1.69	25.9	52
334	59P	58			33.965					333	16.1		25.8	58
329	67H	66	2.256H	2.252	33.963	27.156	36.382	45.170	27.473	330	16.2	1.69	25.9	66
330	86H	85	2.24 H	2.24	33.963	27.157	36.385	45.173	27.564	331	16.3	1.70	25.9	85
214	151H	150	1.19 H	1.18	34.131	27.367	36.651	45.492	28.084	282	39.3	2.02	30.9	150
215	201H	199	1.41 H	1.40	34.292	27.482	36.750	45.578	28.434	237	55.9	2.22	33.9	199
216	252H	250	1.792H	1.779	34.405	27.545	36.791	45.596	28.736	202	64.7	2.28	34.9	250
217	302H	299	1.68 H	1.66	34.449	27.589	36.840	45.651	29.016	201	69.5	2.29	35.0	299
218	352H	349	1.97 H	1.95	34.528	27.631	36.865	45.659	29.290	182	74.2	2.30	35.1	349
225	403H	399	2.02 H	2.00	34.572	27.663	36.893	45.685	29.560	177	77.0	2.28	34.7	399
226	503H	498	2.11 H	2.08	34.631	27.703	36.928	45.714	30.067	177	80.3	2.21	33.8	498
227	603H	597	2.10 H	2.06	34.671	27.737	36.962	45.748	30.566	179	82.5	2.16	32.9	597

D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
P PRETRIP OR POSTTRIP

STATION: 285 LEG: VII POSITION: 61° 29' S 169° 58' E DATE: 14 FEB 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
228	705H	698	2.04 H	2.00	34.688	27.755	36.984	45.773	31.061	181	84.8	2.13	32.5	698
229	795H	786	1.962H	1.915	34.705	27.775	37.008	45.802	31.500	170U	86.3	2.08	32.2	786
230	956H	945	1.94 H	1.88	34.728	27.796	37.030	45.825	32.267	189	88.2	2.05	31.4	945
231	1107H	1094	1.84 H	1.77	34.736	27.811	37.051	45.852	32.982	192	91.3	2.01	31.1	1094
232	1259H	1244	1.746H	1.669	34.739	27.821	37.067	45.873	33.695	194	93.7	2.01	31.1	1244
114	1301H	1285	1.672H	1.593	34.739	27.826	37.077	45.887	33.896	197	95.1	1.91U	30.9	1285
233	1410H	1393	1.62 H	1.53	34.739	27.831	37.084	45.897	34.402	198	97.3	2.00	31.1	1393
115	1505H	1486	1.51 H	1.42	34.738	27.838	37.098	45.918	34.849	198	99.6	1.96U	31.2	1486
234	1612H	1591	1.464H	1.364	34.736	27.840	37.103	45.925	35.342	199	102.9	2.01	31.3	1591
116	1708H	1686	1.34 H	1.23	34.732	27.846	37.116	45.945	35.791	201	104.6	2.00	31.3	1686
117	1912H	1886	1.211H	1.092	34.727	27.851	37.130	45.967	36.731	203	108.6	2.03	31.6	1886
118	2116H	2086	1.06 H	0.93	34.721	27.857	37.145	45.991	37.670	207	113.3	2.04	31.9	2086
125	2321H	2287	0.99 H	0.84	34.716	27.858	37.152	46.002	38.601	206	115.5	2.06	31.9	2287
126	2524H	2486	0.88 H	0.72	34.710	27.861	37.162	46.019	39.524	208	118.5	2.08	32.0	2486
127	2728H	2686	0.806H	0.628	34.708	27.865	37.171	46.033	40.446	209	121.5	2.09	32.2	2686
128	2931H	2885	0.74 H	0.55	34.705	27.867	37.178	46.045	41.358	211	123.6	2.11	32.3	2885
129	3133H	3082	0.714H	0.501	34.702	27.867	37.181	46.050	42.257	212	124.9	2.11	32.3	3082
130	3336H	3280	0.698H	0.467	34.702	27.869	37.185	46.056	43.157	212	126.5	2.14	32.4	3280
131	3538H	3477	0.67 H	0.42	34.700	27.870	37.188	46.062	44.050	213	127.3	2.14	32.4	3477
132	3737H	3671	0.63 H	0.36	34.699	27.873	37.194	46.071	44.928	214	127.4	2.14	32.4	3671
133	3838H	3769	0.64 H	0.36	34.699	27.873	37.194	46.071	45.368	217	128.0	2.16	32.4	3769
134	3938H	3867	0.63 H	0.34	34.698	27.873	37.196	46.074	45.805	214	128.1	2.16	32.4	3867

BOTTOM DEPTH FOR CAST 1 IS 3885

STATION: 286 LEG: VII POSITION: 66° 5' S 173° 40' E DATE: 17 FEB 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
201	2H	2	0.30 H	0.30	33.907	27.239	36.577	45.471	27.248	346	52.7	1.48	24.5	2
202	51H	51	0.29 H	0.29	33.914	27.245	36.584	45.478	27.489	347	53.4	1.51	24.8	51
203	61H	60	-1.50 H	-1.50	34.268	27.603	37.044	46.034	27.898	316	69.1	1.91	29.0	60
204	65H	64	-1.47 H	-1.47	34.282	27.614	37.053	46.040	27.928	309	70.3	1.94	29.4	64
205	70H	69	-1.42 H	-1.42	34.306	27.632	37.067	46.051	27.970	304	72.0	1.96	29.7	69
206	80H	79	-1.07 H	-1.07	34.371	27.673	37.086	46.049	28.059	284	75.6	2.01	30.6	79
207	90H	89	-0.40 H	-0.40	34.447	27.708	37.079	46.002	28.140	260	79.5	2.05	31.3	89
208	100H	99	0.18 H	0.18	34.520	27.739	37.074	45.964	28.217	237	83.3	2.08	31.8	99
209	124H	123	0.90 H	0.89	34.618	27.776	37.068	45.917	28.366	213	87.9	2.11	32.3	123
210	149H	148	1.23 H	1.22	34.664	27.792	37.064	45.895	28.499	197	90.8	2.11	32.3	148
225	198H	196	1.372H	1.362	34.695	27.807	37.071	45.894	28.745	194	92.8	2.10	32.1	196
226	273H	270	1.419H	1.405	34.713	27.819	37.080	45.900	29.110	194	95.9	2.08	31.9	270
227	347H	343	1.345H	1.328	34.716	27.827	37.092	45.917	29.467	196	98.0	2.07	31.7	343
228	471H	466	1.25 H	1.23	34.719	27.836	37.107	45.937	30.061	197	103.2	2.08	31.9	466
229	595H	589	1.15 H	1.12	34.717	27.841	37.119	45.954	30.650	194	109.6	2.10	32.1	589
230	793H	784	1.03 H	0.99	34.716	27.849	37.134	45.976	31.586	202	112.5	2.05	32.2	784
331	1010H	998	0.891H	0.839	34.713	27.856	37.150	46.000	32.607	202	117.9	2.05	31.9	998
332	1213H	1198	0.75 H	0.69	34.708	27.861	37.164	46.023	33.558	206	120.5	2.09	31.9	1198
333	1440H	1421	0.63 H	0.55	34.705	27.867	37.177	46.043	34.616	208	123.9	2.11	31.9	1421
334	1664H	1642	0.545H	0.455	34.701	27.869	37.185	46.057	35.652	210	123.4	2.13	32.0	1642
114	1732H	1708	0.57 H	0.47	34.702	27.869	37.184	46.054	35.962	209	125.5	2.11	32.4	1708
115	1985H	1957	0.48 H	0.37	34.700	27.873	37.194	46.071	37.126	211	127.1	2.14	32.4	1957
116	2137H	2106	0.42 H	0.30	34.699	27.876	37.202	46.082	37.824	212	128.6	2.16	32.5	2106
117	2288H	2254	0.39 H	0.26	34.699	27.878	37.206	46.089	38.512	213	129.1	2.17	32.5	2254
118	2441H	2404	0.33 H	0.19	34.700	27.883	37.215	46.101	39.211	214	129.9	2.18	32.5	2404
125	2593H	2553	0.27 H	0.12	34.699	27.886	37.222	46.113	39.903	216	129.2	2.17	32.4	2553
126	2745H	2701	0.213H	0.047	34.699	27.889	37.229	46.124	40.593	219	126.9	2.17	32.4	2701
127	2897H	2850	0.12 H	-0.06	34.698	27.894	37.240	46.140	41.285	222	122.6	2.17	32.2	2850
128	3049H	2998	0.05 H	-0.14	34.701	27.900	37.251	46.156	41.975	225	116.8	2.16	32.1	2998
129	3150H	3097	0.02 H	-0.18	34.702	27.903	37.256	46.163	42.430	227	114.3	2.15	32.0	3097
130	3251H	3196	-0.021H	-0.225	34.707	27.909	37.265	46.175	42.888	230	112.2	2.16	32.0	3196
131	3303H	3246	-0.03 H	-0.24	34.708	27.911	37.268	46.178	43.121	230	112.7	2.15	32.0	3246
132	3353H	3295	-0.05 H	-0.26	34.709	27.913	37.271	46.182	43.346	231	111.6	2.15	31.9	3295
133	3404H	3345	-0.03 H	-0.25	34.710	27.913	37.270	46.181	43.570	231	111.2	2.15	31.9	3345

BOTTOM DEPTH FOR CAST 1 IS 3408

STATION: 287 LEG: VII POSITION: 69° 5' S 173° 30' W DATE: 20 FEB 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
501	2H	2	-1.07 H	-1.07	33.377	26.869	36.299	45.278	26.878	348	54.9	1.68	25.2	2
502	11H	11	-1.38 H	-1.38	33.379	26.879	36.329	45.326	26.933	351	54.8	1.70	25.2	11
503	21H	21	-1.49 H	-1.49	33.384	26.886	36.342	45.346	26.988	348	54.7	1.71	25.2	21
504	32H	32	-1.20 H	-1.20	33.761	27.183	36.615	45.595	27.338	341	54.8	1.79	25.9	32
505	41H	41	-1.40 H	-1.40	34.114	27.475	36.913	45.899	27.674	325	56.1	1.85	27.0	41
506	51H	51	-1.52 H	-1.52	34.211	27.557	37.001	45.992	27.804	316	58.4	1.89	27.6	51
507	62H	61	-1.58 H	-1.58	34.264	27.602	37.048	46.042	27.902	302	59.9	1.92	28.2	61
508	72H	71	-1.63 H	-1.63	34.286	27.621	37.070	46.067	27.970	302	60.0	1.94	28.4	71
509	82H	81	-1.65 H	-1.65	34.305	27.637	37.087	46.084	28.034	296	60.6	1.96	28.6	81
510	93H	92	-1.62 H	-1.62	34.304	27.636	37.084	46.079	28.086	293	61.7	1.96	28.9	92
525	102H	101	-1.54 H	-1.54	34.320	27.646	37.089	46.080	28.139	286	62.3	1.99	29.4	101
526	128H	127	-1.14 H	-1.14	34.364	27.670	37.087	46.054	28.287	272	66.2	2.02	29.9	127
527	153H	151	-0.31 H	-0.32	34.458	27.713	37.078	45.997	28.446	246	73.2	2.09	30.8	151
528	178H	176	0.42 H	0.41	34.551	27.751	37.072	45.948	28.599	222	80.0	2.12	31.6	176
529	203H	201	0.87 H	0.86	34.611	27.773	37.067	45.918	28.737	227	83.6	2.14	32.0	201
530	227H	225	1.25 H	1.24	34.659	27.787	37.058	45.889	28.863	196	87.7	2.12	32.1	225
531	252H	249	1.366H	1.354	34.678	27.794	37.059	45.883	28.987	193	89.6	2.13	32.2	249
532	275H	272	1.43 H	1.42	34.691	27.800	37.061	45.882	29.101	191	90.3	2.13	32.1	272
533	309H	306	1.43 H	1.41	34.705	27.812	37.073	45.893	29.273	191	92.9	2.13	32.0	306
701	353H	349	1.43 H	1.41	34.712	27.817	37.078	45.899	29.486	191	94.3	2.08	32.2	349
534	356H	352	1.430H	1.412	34.717	27.822	37.082	45.902	29.504	191	95.6	2.13	31.9	352
702	403H	399	1.42 H	1.40	34.720	27.825	37.086	45.907	29.728	190	96.8	2.10	32.2	399
703	454H	449	1.37 H	1.35	34.723	27.831	37.095	45.919	29.975	191	98.9	2.11	32.3	449
704	504H	499	1.34 H	1.31	34.725	27.835	37.101	45.926	30.213	191	100.8	2.12	32.2	499
705	605H	598	1.27 H	1.24	34.726	27.841	37.111	45.940	30.694	189	104.3	2.14	32.4	598
706	706H	698	1.20 H	1.16	34.724	27.844	37.119	45.952	31.171	192	106.7	2.14	32.4	698
707	806H	797	1.12 H	1.08	34.724	27.850	37.129	45.967	31.645	194	109.1	2.13	32.4	797
708	908H	897	1.02 H	0.97	34.721	27.854	37.140	45.983	32.127	197	111.0	2.13	32.4	897
709	1008H	996	0.97 H	0.92	34.718	27.855	37.144	45.991	32.594	199	113.6	2.14	32.4	996
710	1109H	1095	0.92 H	0.86	34.715	27.856	37.148	45.998	33.066	201	116.0	2.14	32.4	1095
725	1311H	1294	0.814H	0.744	34.711	27.860	37.159	46.015	34.008	204U	119.7	2.15	32.4	1294
726	1514H	1494	0.69 H	0.61	34.706	27.864	37.171	46.035	34.952	207	122.1	2.15	32.4	1494
727	1716H	1692	0.60 H	0.51	34.704	27.869	37.182	46.051	35.887	209	124.0	2.16	32.4	1692
728	1918H	1891	0.528H	0.420	34.702	27.872	37.190	46.063	36.817	210	126.4	2.16	32.5	1891
729	2121H	2090	0.448H	0.326	34.700	27.875	37.199	46.078	37.748	211	128.0	2.16	32.6	2090
730	2323H	2288	0.370H	0.234	34.698	27.879	37.208	46.092	38.672	214	128.6	2.13	32.6	2288
731	2527H	2488	0.30 H	0.15	34.700	27.885	37.219	46.107	39.603	216	129.5	2.15	32.7	2488
732	2730H	2686	0.251H	0.085	34.700	27.888	37.226	46.118	40.521	218	128.5	2.16	32.5	2686
302	2789H	2744			34.699					217	128.8	2.16	32.3	2744
301	2798H	2753	0.25 H	0.08	34.698	27.887	37.225	46.118	40.825	221	127.4	2.13	32.4	2753
733	2932H	2884	0.18 H	0.00	34.698	27.891	37.234	46.131	41.433	222	123.2	2.15	32.5	2884
303	2988H	2938	0.21 H	0.02	34.699	27.891	37.232	46.128	41.680	219	126.1	2.16	31.9	2938
304	2990H	2940			34.698					219	125.8	2.16	32.2	2940
734	3136H	3083	0.138H	-0.060	34.701	27.896	37.243	46.143	42.351	225	121.4	2.15	32.4	3083
305	3195H	3140	0.14 H	-0.06	34.701	27.897	37.243	46.144	42.612	223	120.8	2.17	32.0	3140
306	3198H	3143			34.700					223	120.2	2.17	32.0	3143
307	3406H	3346	0.10 H	-0.12	34.699	27.898	37.248	46.151	43.552	225	116.5	2.16	32.0	3346
308	3409H	3349			34.701					225	116.2	2.16	32.0	3349
309	3619H	3554	0.07 H	-0.17	34.702	27.903	37.256	46.162	44.498	227	113.5	2.16	31.9	3554
310	3622H	3557			34.701					228	114.5	2.14	31.9	3557
312	3817H	3747			34.705					228	113.0	2.15	31.8	3747
311	3821H	3750			34.704					228	113.0	2.16	31.8	3750
314	3909H	3836			34.703					232	112.4	2.16	31.8	3836
315	3910H	3837			34.705					230	112.2	2.16	31.8	3837
316	3980H	3905			34.705					229	112.9	2.16	32.0	3905
318	4032H	3956			34.702					229	113.9	2.14	31.9	3956
317	4036H	3960	0.07 H	-0.21	34.703	27.905	37.261	46.169	46.326	230	114.1	2.13	32.1	3960
319	4080H	4002			34.705					230	113.6	2.15	32.2	4002
320	4123H	4044	0.065H	-0.225	34.702	27.905	37.261	46.171	46.705	230	113.8	2.15	32.1	4044
321	4124H	4045			34.706					230	114.0	2.15	32.2	4045
322	4157H	4077			34.705					230	114.5	2.15	32.1	4077
323	4180H	4100			34.705					230	114.6	2.16	32.2	4100
324	4180H	4100			34.705					231	114.2	2.15	32.2	4100

BOTTOM DEPTH FOR CAST 3 IS 4116

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

STATION: 288 LEG: VII POSITION: 67° 42′ S 173° 59′ W DATE: 22 FEB 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	3H	3	0.23 H	0.23	33.630	27.019	36.367	45.268	27.034	345	50.5	1.67	25.4	3
102	33H	33	0.13 H	0.13	33.662	27.050	36.403	45.310	27.208	344	50.7	1.71	25.3	33
103	52H	52	-1.35 H	-1.35	34.175	27.523	36.957	45.939	27.775	324	62.5	1.97	28.2	52
104	63H	62	-1.52 H	-1.52	34.235	27.577	37.020	46.011	27.882	310	61.6	1.99	28.5	62
105	83H	82	-1.51 H	-1.51	34.277	27.611	37.052	46.042	28.012	294	57.5	1.99	28.5	82
106	104H	103	-1.01 H	-1.01	34.350	27.654	37.063	46.023	28.155	270	63.2	2.06	29.8	103
107	205H	203	1.31 H	1.30	34.640	27.767	37.036	45.863	28.739	194	86.7	2.20	32.3	203
108	306H	303	1.48 H	1.46	34.709	27.811	37.069	45.887	29.258	188	93.6	2.17	32.0	303
109	407H	403	1.42 H	1.40	34.723	27.827	37.089	45.909	29.750	189	98.7	2.17	31.9	403
110	609H	602	1.28 H	1.25	34.725	27.839	37.109	45.938	30.711	190	105.1	2.17	32.2	602
125	812H	803	1.12 H	1.08	34.724	27.850	37.129	45.967	31.673	193	110.6	2.18	32.1	803
126	1012H	1000	1.00 H	0.95	34.719	27.854	37.141	45.986	32.611	197	114.5	2.16	32.1	1000
127	1416H	1398	0.71 H	0.63	34.708	27.864	37.170	46.032	34.500	206	123.4	2.18	32.2	1398
128	1818H	1793	0.59 H	0.49	34.709	27.874	37.188	46.057	36.359	207	127.6	2.18	32.4	1793
129	2220H	2187	0.407H	0.279	34.702	27.880	37.206	46.087	38.204	211	130.3	2.19	32.4	2187
130	2626H	2585	0.28 H	0.12	34.701	27.887	37.223	46.113	40.052	215	132.8	2.16	32.4	2585
131	3032H	2982	0.17 H	-0.02	34.700	27.894	37.238	46.135	41.882	220	127.0	2.16	32.3	2982
132	3441H	3381	0.075H	-0.149	34.702	27.902	37.253	46.158	43.712	225	118.0	2.15	32.0	3381
133	3698H	3631	0.04 H	-0.21	34.703	27.905	37.260	46.169	44.851	228	115.4	2.14	32.0	3631
134	3832H	3762	0.054H	-0.207	34.705	27.907	37.262	46.170	45.438	228	115.0	2.15	32.0	3762

BOTTOM DEPTH FOR CAST 1 IS 3820

STATION: 289 LEG: VII POSITION: 61° 59′ S 174° 0′ W DATE: 24 FEB 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	2H	2	2.42 H	2.42	33.848	27.051	36.270	45.051	27.061	331	4.9	1.60	23.9	2
201	2H	2	2.47 H	2.47	33.853	27.051	36.267	45.045	27.060	337	4.9	1.58	23.9	2
202	14H	14	2.31 H	2.31	33.850	27.061	36.286	45.073	27.128	331	5.1	1.61	24.0	14
203	27H	27	2.29 H	2.29	33.851	27.064	36.290	45.078	27.191	331	4.8	1.63	23.9	27
204	39H	39	2.30 H	2.30	33.853	27.064	36.290	45.077	27.249	332	5.0	1.63	24.0	39
205	51H	51	2.31 H	2.31	33.852	27.063	36.288	45.075	27.304	332	4.8	1.63	24.0	51
206	63H	62	2.31 H	2.31	33.856	27.066	36.291	45.078	27.364	331	5.0	1.64	24.0	62
207	83H	82	2.15 H	2.15	33.852	27.076	36.309	45.105	27.468	332	5.7	1.66	24.0	82
103	105H	104	1.54 H	1.53	33.972	27.216	36.482	45.308	27.714	316	18.1	1.89	27.4	104
208	114H	113	1.54 H	1.53	33.967	27.212	36.478	45.304	27.753	317	18.9	1.90	27.4	113
209	144H	143	1.60 H	1.59	34.029	27.258	36.520	45.341	27.940	300	25.3	1.97	29.0	143
210	187H	185	1.76 H	1.75	34.107	27.309	36.561	45.373	28.194	275	32.1	2.03	30.7	185
104	206H	204	1.52 H	1.51	34.121	27.337	36.602	45.427	28.313	273	35.6	2.09	31.0	204
105	309H	306	2.12 H	2.10	34.319	27.452	36.681	45.471	28.908	214	52.6	2.26	33.8	306
106	462H	457	2.30 H	2.27	34.476	27.564	36.781	45.560	29.734	179	66.7	2.32	34.4	457
107	615H	609	2.27 H	2.23	34.563	27.637	36.854	45.634	30.520	176	73.6	2.28	34.1	609
108	769H	761	2.26 H	2.21	34.621	27.685	36.902	45.682	31.283	175	77.0	2.25	33.4	761
109	924H	914	2.20 H	2.14	34.673	27.732	36.953	45.735	32.049	178	80.3	2.19	32.5	914
110	1127H	1114	2.09 H	2.02	34.706	27.768	36.995	45.783	33.024	184	83.8	2.12	31.8	1114
125	1383H	1366	1.936H	1.848	34.729	27.800	37.036	45.833	34.235	190	87.9	2.09	31.0	1366
126	1641H	1620	1.74 H	1.63	34.738	27.823	37.070	45.878	35.444	195	92.8	2.07	30.7	1620
127	1948H	1922	1.50 H	1.37	34.734	27.838	37.100	45.922	36.865	200	100.5	2.07	30.9	1922
128	2257H	2225	1.29 H	1.14	34.728	27.849	37.125	45.959	38.284	202	107.5	2.10	31.2	2225
129	2566H	2528	1.11 H	0.94	34.718	27.854	37.142	45.987	39.688	205	113.7	2.11	31.6	2528
130	2979H	2932	0.91 H	0.71	34.708	27.860	37.161	46.019	41.550	210	119.3	2.11	31.8	2932
131	3392H	3335	0.81 H	0.57	34.704	27.865	37.174	46.040	43.389	210	128.7	2.14	32.2	3335
132	3809H	3741	0.825H	0.543	34.703	27.866	37.177	46.043	45.215	210	132.0	2.15	32.3	3741

BOTTOM DEPTH FOR CAST 1 IS 4079

STATION: 290 LEG: VII POSITION: 58° 0′ S 174° 0′ W DATE: 25 FEB 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	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	4.53 H	4.53	33.958	26.941	36.045	44.720	26.955	314	1.4	1.52	21.4	3
402	34H	34	4.54 H	4.54	33.958	26.940	36.044	44.718	27.099	316	1.1	1.55	21.4	34
403	64H	63	4.50 H	4.50	33.962	26.948	36.054	44.730	27.246	315	1.1	1.56	21.5	63
404	94H	93	4.50 H	4.49	33.964	26.950	36.056	44.732	27.388	315	1.1	1.56	21.5	93
405	125H	124	3.75 H	3.74	34.036	27.083	36.228	44.939	27.668	308	4.9	1.68	23.0	124
406	155H	154	3.46 H	3.45	34.040	27.114	36.274	45.000	27.841	303	8.0	1.74	24.7	154
407	185H	183	3.32 H	3.31	34.058	27.142	36.309	45.042	28.009	297	12.1	1.79	26.2	183
408	216H	214	3.20 H	3.19	34.070	27.163	36.336	45.075	28.175	295	13.5	1.82	26.5	214
409	246H	244	3.11 H	3.09	34.079	27.178	36.356	45.099	28.332	286	15.2	1.85	27.2	244
410	287H	284	3.32 H	3.30	34.157	27.221	36.387	45.119	28.565	259	22.0	1.94	28.9	284
425	327H	324	3.30 H	3.28	34.186	27.246	36.413	45.145	28.777	250	25.0	2.00	29.8	324
426	368H	365	3.270H	3.246	34.228	27.283	36.451	45.184	29.004	236	29.7	2.06	30.8	365
427	408H	404	3.08 H	3.05	34.244	27.313	36.491	45.233	29.223	231	33.4	2.10	31.3	404
428	459H	455	2.96 H	2.93	34.276	27.349	36.533	45.282	29.498	223	38.3	2.16	32.2	455
429	510H	505	2.877H	2.844	34.312	27.386	36.574	45.326	29.772	213	43.2	2.18	32.9	505
430	561H	556	2.757H	2.721	34.338	27.417	36.611	45.369	30.042	208	47.9	2.20	33.4	556
431	663H	656	2.60 H	2.56	34.392	27.474	36.676	45.442	30.575	199	55.6	2.24	34.0	656
432	765H	757	2.48 H	2.43	34.448	27.529	36.737	45.508	31.105	187	62.2	2.28	34.5	757
433	867H	858	2.470H	2.415	34.507	27.578	36.786	45.557	31.625	181	68.0	2.28	34.5	858
601	916H	906	2.40 H	2.34	34.532	27.603	36.815	45.590	31.879	178	70.5	2.23	34.3	906
602	1018H	1007	2.36 H	2.29	34.573	27.640	36.854	45.630	32.387	176	73.8	2.24	33.9	1007
434	1021H	1010	2.375H	2.309	34.576	27.641	36.854	45.630	32.402	176	73.0	2.25	34.0	1010
603	1120H	1108	2.32 H	2.25	34.620	27.681	36.897	45.675	32.898	175	77.0	2.22	33.6	1108
604	1273H	1258	2.26 H	2.18	34.659	27.718	36.937	45.718	33.639	178	79.2	2.18	32.8	1258
605	1427H	1410	2.19 H	2.10	34.690	27.749	36.972	45.757	34.376	180	81.7	2.14	32.3	1410
606	1580H	1561	2.11 H	2.00	34.712	27.774	37.002	45.791	35.102	185	84.7	2.13	31.7	1561
607	1745H	1723	2.03 H	1.91	34.724	27.791	37.023	45.817	35.871	188	85.7	2.10	31.3	1723
608	1887H	1862	1.90 H	1.77	34.735	27.810	37.050	45.851	36.540	192	89.8	2.09	31.1	1862
609	2041H	2014	1.81 H	1.67	34.738	27.820	37.066	45.872	37.251	194	92.6	2.08	31.1	2014
625	2350H	2317	1.57 H	1.41	34.736	27.837	37.098	45.917	38.672	198	99.8	2.09	31.3	2317
626	2504H	2468	1.45 H	1.28	34.733	27.844	37.112	45.939	39.376	201	103.1	2.09	31.4	2468
627	2659H	2620	1.343H	1.159	34.728	27.847	37.123	45.956	40.080	202	106.5	2.11	31.6	2620
628	2866H	2822	1.23 H	1.03	34.724	27.853	37.135	45.975	41.015	220U	111.1	2.13	31.8	2822
629	3072H	3024	1.12 H	0.90	34.719	27.857	37.147	45.994	41.941	206	113.7	2.13	32.0	3024
630	3280H	3227	1.041H	0.806	34.714	27.859	37.154	46.007	42.869	207	116.5	2.11	32.0	3227
631	3487H	3429	0.955H	0.702	34.711	27.863	37.164	46.022	43.791	208	118.9	2.13	32.2	3429
632	3696H	3632	0.89 H	0.62	34.711	27.868	37.174	46.037	44.717	211	121.4	2.14	32.3	3632
633	3904H	3835	0.86 H	0.57	34.705	27.866	37.175	46.041	45.625	210	123.8	2.15	32.4	3835
634	4112H	4038	0.840H	0.526	34.703	27.867	37.178	46.046	46.531	210	124.9	2.16U	32.4	4038
201	4202H	4125	0.83 H	0.51	34.703	27.868	37.181	46.050	46.922	211	123.8	2.11U	31.8	4125
202	4359H	4278	0.841H	0.499	34.703	27.868	37.182	46.051	47.599	211	123.6	2.15	31.8	4278
203	4516H	4430	0.851H	0.491	34.705	27.870	37.184	46.054	48.274	211	123.8	2.16	31.8	4430
204	4673H	4583	0.870H	0.492	34.703	27.869	37.182	46.052	48.943	212	124.3	2.16	31.9	4583
205	4777H	4684	0.86 H	0.47	34.703	27.870	37.185	46.056	49.390	212	124.1	2.17	32.0	4684
206	4882H	4785	0.88 H	0.48	34.701	27.868	37.183	46.053	49.833	212	123.9	2.17	32.0	4785
207	4988H	4888	0.888H	0.472	34.702	27.869	37.184	46.055	50.284	212	124.4	2.17	32.0	4888
208	5040H	4939	0.89 H	0.47	34.702	27.869	37.184	46.056	50.505	212	125.1	2.17	32.0	4939
209	5092H	4989	0.89 H	0.46	34.702	27.869	37.185	46.057	50.726	213	124.9	2.17	31.9	4989
210	5187H	5081	0.90 H	0.46	34.702	27.870	37.185	46.057	51.127	212	124.9	2.16	32.0	5081
225	5197H	5091	0.91 H	0.47	34.702	27.869	37.184	46.056	51.167	212	124.7	2.16	32.0	5091
226	5268H	5159	0.90 H	0.45	34.702	27.870	37.187	46.059	51.470	212	125.0	2.16	32.0	5159
227	5299H	5189	0.92 H	0.46	34.702	27.869	37.185	46.056	51.597	212	124.5	2.16	32.0	5189
228	5319H	5209	0.92 H	0.46	34.702	27.869	37.185	46.056	51.681	212	124.3	2.16	32.1	5209
229	5349H	5238	0.91 H	0.45	34.702	27.870	37.187	46.059	51.810	213	125.5	2.16	32.1	5238
230	5359H	5247	0.92 H	0.46	34.702	27.870	37.186	46.057	51.850	212	125.3	2.12	32.1	5247
231	5370H	5258	0.92 H	0.46	34.702	27.870	37.186	46.058	51.897	212	125.5	2.14	32.1	5258
232	5385H	5273	0.922H	0.456	34.702	27.870	37.186	46.058	51.960	212	125.5	2.15	32.2	5273
233	5393H	5280	0.93 H	0.46	34.702	27.869	37.185	46.056	51.992	212	125.5	2.15	32.2	5280
234	5400H	5287	0.940H	0.471	34.701	27.868	37.183	46.054	52.019	212	125.3	2.14	32.0	5287

BOTTOM DEPTH FOR CAST 2 IS 5316

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

STATION: 291 LEG: VII POSITION: 56° 0' S 175° 35' W DATE: 27 FEB 74

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	2H	2	6.94 H	6.94	34.158	26.805	35.787	44.348	26.815	297	2.8	1.29	18.9	2
202	32H	32	6.94 H	6.94	34.158	26.806	35.788	44.348	26.953	299	0.4	1.32	18.9	32
203	63H	62	6.93 H	6.92	34.158	26.808	35.790	44.351	27.097	298	2.3	1.32	18.9	62
204	93H	92	6.85 H	6.84	34.164	26.823	35.810	44.374	27.251	298	2.2	1.33	18.9	92
205	124H	123	6.18 H	6.17	34.163	26.911	35.930	44.525	27.483	298	2.9	1.40	20.1	123
206	154H	153	5.65 H	5.64	34.204	27.009	36.054	44.672	27.722	289	5.5	1.47	21.8	153
207	195H	193	4.96 H	4.94	34.170	27.063	36.143	44.795	27.969	300	5.5	1.53	22.4	193
208	236H	234	4.84 H	4.82	34.187	27.090	36.176	44.833	28.186	297	7.4	1.54	22.9	234
209	276H	274	4.68 H	4.66	34.176	27.100	36.194	44.859	28.382	299	7.7	1.55	23.1	274
210	358H	355	4.38 H	4.35	34.159	27.119	36.229	44.909	28.783	300	7.8	1.56	23.4	355
225	460H	456	3.91 H	3.88	34.131	27.145	36.281	44.985	29.287	287	12.0	1.72	25.9	456
226	562H	557	3.928H	3.887	34.213	27.210	36.343	45.045	29.822	247	21.8	1.91	29.1	557
227	714H	707	3.33 H	3.28	34.288	27.328	36.492	45.223	30.652	220	36.6	2.10	32.3	707
228	919H	910	2.73 H	2.67	34.376	27.452	36.648	45.408	31.734	200	52.3	2.24	34.2	910
229	1225H	1211	2.456H	2.374	34.539	27.606	36.816	45.589	33.301	178	69.8	2.26	34.7	1211
230	1533H	1515	2.321H	2.216	34.646	27.705	36.922	45.701	34.810	177	78.0	2.16	33.5	1515
231	1841H	1818	2.16 H	2.03	34.703	27.765	36.991	45.779	36.274	184	82.5	2.11	32.4	1818
232	2150H	2121	1.96 H	1.81	34.732	27.805	37.043	45.842	37.718	191	88.5	2.06	31.8	2121
233	2459H	2424	1.753H	1.578	34.735	27.824	37.075	45.886	39.135	196	93.6	2.06	31.7	2424
101	2714H	2674	1.52 H	1.33	34.734	27.841	37.106	45.931	40.305	199	102.7	2.03U	32.0	2674
234	2872H	2829	1.449H	1.243	34.731	27.844	37.114	45.943	41.016	201	103.3	2.08	31.9	2829
102	3024H	2977	1.33 H	1.11	34.727	27.850	37.127	45.963	41.704	202	108.4	2.07	32.2	2977
103	3334H	3280	1.16 H	0.92	34.718	27.855	37.144	45.991	43.092	206	113.0	2.10	32.4	3280
104	3645H	3584	1.023H	0.752	34.712	27.860	37.159	46.015	44.473	208	117.6	2.12	32.7	3584
105	3956H	3887	0.92 H	0.62	34.707	27.864	37.171	46.033	45.843	209	120.9	2.13	32.9	3887
106	4215H	4139	0.88 H	0.55	34.704	27.866	37.176	46.042	46.971	211	122.3	2.13	32.9	4139
107	4475H	4391	0.863H	0.508	34.703	27.868	37.181	46.050	48.094	211	123.1	2.15	32.9	4391
108	4657H	4568	0.85 H	0.47	34.701	27.868	37.183	46.054	48.877	212	123.8	2.15	33.0	4568
109	4682H	4592	0.85 H	0.47	34.701	27.868	37.183	46.054	48.984	212	124.9	2.15	33.0	4592
110	4812H	4719	0.87 H	0.48	34.701	27.868	37.183	46.053	49.536	212	124.7	2.13	33.1	4719
125	4838H	4744	0.86 H	0.46	34.700	27.868	37.183	46.055	49.648	212	124.5	2.14	33.0	4744
126	4942H	4845	0.86 H	0.45	34.700	27.868	37.185	46.057	50.092	213	125.1	2.13	33.0	4845
127	4993H	4894	0.87 H	0.45	34.700	27.868	37.185	46.057	50.308	213	124.6	2.14	33.0	4894
128	5045H	4945	0.87 H	0.45	34.700	27.869	37.185	46.057	50.528	212	125.1	2.14	33.0	4945
129	5087H	4985	0.87 H	0.44	34.699	27.868	37.185	46.057	50.706	212	125.6	2.14	33.1	4985
130	5097H	4995	0.86 H	0.43	34.700	27.870	37.187	46.060	50.751	212	125.4	2.11	33.0	4995
131	5140H	5037	0.87 H	0.44	34.699	27.869	37.186	46.059	50.931	213	125.6	2.13	33.1	5037
132	5171H	5067	0.87 H	0.43	34.700	27.870	37.187	46.060	51.063	209U	125.7	2.13	33.1	5067
133	5192H	5087	0.86 H	0.42	34.696U	27.867	37.185	46.059	51.151	212	123.5	2.11	32.8	5087
134	5202H	5097	0.872H	0.431	34.699	27.869	37.186	46.059	51.193	212	124.0	2.12	33.2	5097

BOTTOM DEPTH FOR CAST 1 IS 5114

STATION: 292 LEG: VII POSITION: 54° 5' S 176° 58' W DATE: 28 FEB 74

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	2H	2	10.25 H	10.25	34.358	26.448	35.277	43.697	26.458	279	1.4	0.88	11.5	2
102	94H	93	8.84 H	8.83	34.244	26.595	35.488	43.966	27.023	285	1.5	1.10	15.1	93
103	134H	133	6.72 H	6.71	34.193	26.864	35.856	44.427	27.481	291	4.0	1.41	18.8	133
104	175H	174	5.78 H	5.77	34.177	26.972	36.011	44.624	27.781	292	6.0	1.47	21.9	174
105	226H	224	5.36 H	5.34	34.174	27.021	36.080	44.713	28.067	292	7.0	1.51	22.5	224
106	287H	285	4.67 H	4.65	34.112	27.050	36.146	44.813	28.383	297	7.4	1.58	23.4	285
107	358H	355	4.47 H	4.44	34.134	27.090	36.196	44.872	28.753	289	9.7	1.63	24.4	355
108	460H	456	4.11 H	4.08	34.192	27.174	36.298	44.991	29.313	253	19.0	1.86	28.3	456
109	613H	607	3.64 H	3.60	34.270	27.283	36.432	45.147	30.136	226	31.2	2.03	31.4	607
110	919H	910	2.831H	2.769	34.391	27.455	36.646	45.401	31.735	196	54.0	2.24	34.2	910
125	1225H	1212	2.588H	2.505	34.530	27.588	36.791	45.557	33.279	176	72.2	2.28	34.6	1212
126	1635H	1616	2.34 H	2.23	34.643	27.701	36.918	45.696	35.270	176	78.3	2.19	33.8	1616
127	2045H	2019	2.127H	1.982	34.714	27.777	37.006	45.796	37.209	186	83.8	2.11	32.2	2019
128	2562H	2526	1.818H	1.633	34.736	27.821	37.069	45.877	39.587	195	93.7	2.08	31.7	2526
129	3077H	3030	1.45 H	1.22	34.730	27.845	37.116	45.946	41.923	201	105.0	2.08	32.0	3030
130	3598H	3538	1.19 H	0.92	34.718	27.855	37.144	45.990	44.246	205	113.5	2.11	32.4	3538
131	4117H	4044	0.984H	0.664	34.708	27.863	37.166	46.027	46.532	209	119.4	2.13	32.8	4044
132	4639H	4552	0.87 H	0.50	34.702	27.868	37.181	46.051	48.797	212	123.0	2.14	32.8	4552
133	5163H	5060	0.88 H	0.44	34.698	27.867	37.184	46.057	51.026	213	125.5	2.16	32.9	5060

BOTTOM DEPTH FOR CAST 1 IS 5428

STATION: 293 LEG: VII POSITION: 52° 40' S 178° 5' W DATE: 1 MAR 74

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	2H	2	11.47 H	11.47	34.426	26.282	35.059	43.430	26.291		1.8	0.73	9.0	2
401	3H	3	11.328H	11.328	34.419	26.303	35.085	43.462	26.316	274	2.7	0.73	9.3	3
715	11H	11	11.41 H	11.41	34.420	26.288	35.068	43.442	26.338		1.2	0.74	9.1	11
716	21H	21	10.73 H	10.73	34.452	26.437	35.245	43.644	26.532		1.3	0.79	9.9	21
717	31H	31	10.09 H	10.09	34.429	26.532	35.367	43.792	26.672		1.5	0.88	11.3	31
718	41H	41	10.17 H	10.17	34.476	26.555	35.386	43.807	26.741		1.5	0.84	10.7	41
719	51H	51	10.18 H	10.17	34.484	26.560	35.390	43.811	26.790		1.7	0.84	10.6	51
402	54H	54	9.96 H	9.95	34.472	26.588	35.428	43.858	26.833	276	2.8	0.88	11.3	54
720	61H	61	10.00 H	9.99	34.456	26.569	35.408	43.836	26.845		1.8	0.89	11.2	61
403	95H	94	8.39 H	8.38	34.420	26.802	35.713	44.208	27.236	271	3.6	1.16	16.3	94
721	102H	101			34.642						3.7	1.02	14.1	101
404	125H	124	9.02 H	9.01	34.626	26.865	35.745	44.210	27.433	256	4.1	1.05	14.9	124
405	156H	155	8.29 H	8.27	34.518	26.895	35.809	44.307	27.607	258	4.5	1.17	16.9	155
406	186H	185	8.10 H	8.08	34.509	26.918	35.840	44.347	27.766	251	5.1	1.24	18.1	185
407	217H	215	7.67 H	7.65	34.419	26.911	35.855	44.381	27.903	257	5.2	1.28	19.0	215
408	248H	246	7.38 H	7.36	34.459U	26.984	35.941	44.480	28.119	266	5.2	1.29	19.1	246
409	288H	286	7.23 H	7.20	34.408	26.966	35.931	44.477	28.284	270	5.3	1.28	19.2	286
410	339H	336	7.222H	7.189	34.417	26.975	35.941	44.486	28.526	274	5.1	1.28	18.8	336
425	390H	387	6.98 H	6.94	34.387	26.985	35.963	44.520	28.771	274	5.4	1.32	19.6	387
426	461H	457	6.50 H	6.46	34.342	27.015	36.017	44.596	29.129	273	6.6	1.40	20.8	457
427	538H	533	6.26 H	6.21	34.332	27.039	36.053	44.644	29.507	267	7.7	1.46	21.8	533
428	624H	618	5.97 H	5.91	34.321	27.068	36.097	44.701	29.933		11.2	1.58	23.9	618
429	690H	684	5.33 H	5.27	34.268	27.103	36.165	44.800	30.280	259	13.1	1.63	24.9	684
430	769H	762	5.09 H	5.03	34.283	27.144	36.217	44.864	30.686	239	17.6	1.76	27.2	762
431	869H	861	4.82 H	4.75	34.318	27.202	36.290	44.949	31.206	222	24.5	1.89	29.0	861
432	971H	961	4.15 H	4.07	34.312	27.269	36.392	45.083	31.755	217	30.8	2.00	30.7	961
433	1124H	1112	3.524H	3.440	34.342	27.356	36.511	45.233	32.557	207	41.1	2.13	32.5	1112
601	1154H	1142	3.38 H	3.30	34.347	27.373	36.536	45.265	32.715	205	44.8	2.13	32.7	1142
434	1276H	1262	2.99 H	2.90	34.381	27.436	36.620	45.368	33.348	198	50.7	2.21	34.0	1262
602	1304H	1290	2.92 H	2.83	34.395	27.453	36.641	45.393	33.495	195	53.8	2.24	33.9	1290
603	1454H	1438	2.72 H	2.62	34.459	27.522	36.720	45.482	34.254	185	62.1	2.29	34.5	1438
604	1605H	1587	2.56 H	2.45	34.525	27.589	36.796	45.565	35.013	178	68.9	2.28	34.6	1587
605	1754H	1733	2.49 H	2.37	34.577	27.638	36.847	45.620	35.739	176	73.4	2.28	34.2	1733
606	1904H	1881	2.39 H	2.25	34.626	27.686	36.901	45.678	36.469	175	77.8	2.24	33.8	1881
607	2056H	2030	2.34 H	2.19	34.659	27.717	36.935	45.715	37.187	176	80.3	2.20	33.4	2030
608	2205H	2176	2.27 H	2.11	34.687	27.746	36.968	45.752	37.888	180	81.9	2.17	32.7	2176
609	2358H	2327	2.192H	2.018	34.708	27.770	36.997	45.785	38.601	184	83.7	2.12	32.3	2327
625	2660H	2623	1.98 H	1.78	34.732	27.807	37.047	45.847	39.997	191	88.5	2.08	31.6	2623
626	2813H	2772	1.86 H	1.65	34.736	27.820	37.067	45.874	40.698	194	91.9	2.09	31.5	2772
627	2962H	2918	1.74 H	1.52	34.736	27.829	37.084	45.898	41.376	196	95.8	2.10	31.7	2918
628	3114H	3067	1.657H	1.422	34.735	27.835	37.095	45.914	42.059	198	98.3	2.11	31.5	3067
629	3267H	3216	1.55 H	1.30	34.732	27.841	37.108	45.933	42.748	199	101.6	2.08	31.7	3216
630	3418H	3364	1.40 H	1.14	34.727	27.848	37.124	45.958	43.431	201	106.1	2.12	32.0	3364
631	3569H	3511	1.32 H	1.05	34.723	27.851	37.132	45.972	44.102	202	108.7	2.13	32.2	3511
632	3713H	3652	1.260H	0.975	34.720	27.853	37.139	45.982	44.739	203	110.1	2.14	32.3	3652
633	3829H	3765	1.19 H	0.89	34.718	27.856	37.147	45.994	45.254	204	112.0	2.15	32.3	3765
201	3926H	3859	1.14 H	0.84	34.714	27.857	37.151	46.002	45.682	206	115.3	2.10	31.9	3859
634	3935H	3868	1.12 H	0.82	34.716	27.860	37.155	46.007	45.725	205	114.2	2.15	32.4	3868
202	4080H	4009	1.09 H	0.77	34.711	27.859	37.156	46.010	46.356	208	116.6	2.13	32.2	4009
203	4233H	4158	1.03 H	0.70	34.710	27.862	37.164	46.023	47.027	208	118.1	2.14	32.2	4158
204	4393H	4314	0.97 H	0.62	34.706	27.864	37.170	46.033	47.725	209	120.0	2.14	32.4	4314
205	4547H	4463	0.953H	0.586	34.705	27.865	37.173	46.038	48.389	211	120.5	2.15	32.4	4463
206	4703H	4615	0.92 H	0.54	34.702	27.865	37.177	46.044	49.062	211	122.0	2.17	32.3	4615
207	4858H	4765	0.92 H	0.52	34.702	27.866	37.179	46.047	49.724	212	123.2	2.17	32.4	4765
208	4960H	4864	0.91 H	0.50	34.701	27.867	37.180	46.050	50.160	212	123.7	2.17	32.4	4864
209	5012H	4915	0.90 H	0.48	34.700	27.867	37.181	46.052	50.382	212	124.5	2.16	32.4	4915
210	5117H	5017	0.891H	0.459	34.700	27.868	37.184	46.055	50.830	212	125.3	2.18	32.5	5017
225	5169H	5067	0.88 H	0.44	34.700	27.869	37.186	46.058	51.053	212	125.4	2.18	32.6	5067
226	5221H	5117	0.90 H	0.46	34.699	27.867	37.183	46.055	51.268	213	125.2	2.18	32.4	5117
227	5283H	5177	0.90 H	0.45	34.699	27.868	37.184	46.057	51.531	212	125.8	2.18	32.6	5177
228	5304H	5198	0.898H	0.443	34.700	27.869	37.186	46.058	51.621	212	125.6	2.18	32.4	5198
229	5347H	5239	0.89 H	0.43	34.699	27.869	37.186	46.060	51.803	212	125.7	2.15	32.7	5239
230	5367H	5259	0.909H	0.446	34.699	27.868	37.185	46.057	51.884	212	125.3	2.17	32.6	5259
231	5378H	5269	0.90 H	0.44	34.700	27.869	37.187	46.059	51.933	213	126.3	2.17	32.6	5269
232	5408H	5298	0.90 H	0.43	34.698	27.868	37.186	46.059	52.058	212	125.9	2.17	32.7	5298
233	5419H	5309	0.90 H	0.43	34.699	27.869	37.186	46.059	52.105	212	125.5	2.17	32.6	5309
234	5428H	5318	0.915H	0.444	34.699	27.868	37.185	46.057	52.140	212	125.6	2.18	32.7	5318

BOTTOM DEPTH FOR CAST 2 IS 5335

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

STATION: 294 LEG: VII POSITION: 50° 38′ S 179° 59′ W DATE: 4 MAR 74

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	1H	1	10.16 H	10.16	34.230	26.364	35.199	43.624	26.369	281	3.0	0.99	14.2	1
102	154H	153	6.34 H	6.33	34.287	26.988	35.998	44.584	27.698	277	8.0	1.40	20.9	153
103	305H	303	5.23 H	5.21	34.233	27.083	36.149	44.787	28.495	273	11.6	1.59	24.0	303
104	455H	451	4.49 H	4.45								2.04		451
105	606H	601	3.59 H	3.55	34.295	27.308	36.459	45.176	30.129	219	35.6	2.08	31.5	601
106	758H	751	3.01 H	2.96	34.353	27.408	36.589	45.335	30.942	204	47.9	2.20	33.4	751
107	909H	900	2.76 H	2.70	34.422	27.486	36.680	45.438	31.721	191	58.2	2.27	34.4	900
108	1060H	1049	2.57 H	2.50	34.500	27.565	36.769	45.536	32.500	181	67.3	2.29	34.8	1049
109	1211H	1198	2.44 H	2.36	34.560	27.624	36.835	45.608	33.256	176	72.0	2.27	34.5	1198
110	1362H	1347	2.39 H	2.30	34.608	27.668	36.881	45.656	33.991	176	75.8	2.25	33.8	1347
125	1512H	1495	2.31 H	2.21	34.648	27.707	36.924	45.704	34.717	178	78.0	2.21	33.5	1495
126	1665H	1646	2.26 H	2.15	34.676	27.734	36.955	45.737	35.442	180	80.3	2.17	33.0	1646
127	1816H	1794	2.18 H	2.05	34.700	27.761	36.986	45.772	36.156	185	82.9	2.14	32.5	1794
128	1968H	1944	2.09 H	1.95	34.716	27.781	37.012	45.803	36.868	187	85.3	2.12	31.9	1944
129	2119H	2092	2.00 H	1.85							86.9	2.05	31.7	2092
130	2221H	2192	1.94 H	1.78	34.731	27.806	37.046	45.846	38.039	191	89.4	2.07	31.6	2192
131	2322H	2291	1.871H	1.706	34.735	27.815	37.059	45.863	38.505	193	91.5	2.07	31.6	2291
132	2423H	2390	1.789H	1.617	34.736	27.822	37.071	45.880	38.970	195	93.8	2.07	31.6	2390
133	2524H	2489	1.72 H	1.54	34.735	27.827	37.080	45.893	39.430	196	95.8	2.08	31.6	2489
134	2625H	2588	1.647H	1.459	34.736	27.833	37.091	45.908	39.892	197	98.2	2.08	31.7	2588

BOTTOM DEPTH FOR CAST 1 IS 4505

STATION: 295 LEG: VIII POSITION: 44° 11′ S 171° 29′ W DATE: 15 MAR 74

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	15.206	15.206	35.033D	25.983	34.608	42.838	25.996					3
114	10	10	15.207	15.205	35.034	25.984	34.608	42.839	26.028	256	3.7	0.22	0.1	10
1202	29	29	15.598	15.593	35.171D	26.001	34.610	42.826	26.129					29
1203	54	54	13.829	13.821	35.185D	26.401	35.075	43.351	26.641					54
1204	78	78	13.217	13.206	35.172D	26.519	35.217	43.514	26.867					78
1205	104	103	12.767	12.753	35.133D	26.581	35.297	43.611	27.045					103
1206	130	129	12.401	12.383	35.086D	26.618	35.349	43.677	27.199					129
1207	154	153	12.014	11.993	35.032D	26.652	35.400	43.743	27.341					153
1208	206	205	11.466	11.439	34.971D	26.710	35.481	43.846	27.634					205
1209	252	250	10.924	10.892	34.900D	26.756	35.550	43.937	27.888					250
115	295	293	10.586	10.550	34.858	26.785	35.594	43.995	28.112	227	6.4	0.98	13.3	293
1210	372	369	9.705	9.661	34.738D	26.845	35.694	44.132	28.524					369
1211	445	442	9.070	9.020	34.659D	26.889	35.767	44.232	28.902					442
1212	530	526	8.363	8.306	34.572D	26.933	35.844	44.340	29.337					526
116	598	593	8.137	8.073	34.565	26.963	35.885	44.391	29.676	216	10.7	1.46	21.0	593
1213	689	683	7.376	7.306	34.481D	27.008	35.968	44.508	30.145					683
1214	787	780	7.108	7.029	34.485D	27.050	36.023	44.575	30.634					780
1215	901	893	6.543	6.456	34.468D	27.114	36.114	44.692	31.224					893
117	1052	1042	5.711	5.615	34.448	27.205	36.246	44.863	32.016	193	30.8	1.94	28.6	1042
1216	1228	1216	4.763	4.658	34.457D	27.322	36.412	45.073	32.957					1216
118	1408	1394	3.871	3.759	34.475	27.431	36.567	45.271	33.909	176	59.7	2.23	33.0	1394
1217	1510	1494	3.521	3.404	34.504D	27.488	36.643	45.364	34.441					1494
119	1613	1596	3.285	3.162	34.536	27.536	36.703	45.436	34.964	166	77.7	2.32	34.2	1596
120	1813	1793	2.735	2.601	34.564	27.608	36.805	45.565	35.964	166	83.3	2.35	34.7	1793
121	2016	1992	2.463	2.316	34.611	27.669	36.881	45.655	36.953	169	85.5	2.33	34.5	1992
1218	2211	2184	2.278	2.116	34.647D	27.713	36.936	45.720	37.883					2184
122	2426	2395	2.113	1.934	34.677	27.751	36.984	45.777	38.892	169	100.2U	2.32	34.2	2395
1219	2612	2578	2.023	1.829	34.710D	27.786	37.023	45.821	39.760					2578
123	2828	2789	1.894	1.682	34.722	27.806	37.052	45.857	40.749	189	94.6	2.16	32.2	2789
1220	2998	2956	1.819	1.592	34.728D	27.818	37.068	45.878	41.517					2956
1221	3165	3119	1.503	1.267	34.731D	27.843	37.112	45.939	42.305					3119
124	3335	3285	1.212	0.967	34.718	27.852	37.138	45.982	43.088	204	109.5	2.17	32.2	3285

BOTTOM DEPTH FOR CAST 1 IS 3508

STATION: 296 LEG: VIII POSITION: 44° 59′ S 166° 42′ W DATE: 16 MAR 74

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
621	3H	3	13.32 H	13.32	34.706	26.136	34.835	43.135	26.150	264	3.2	0.44	3.4	3
601	27H	27	13.09 H	13.09	34.713	26.189	34.897	43.205	26.310	266	2.4	0.45	3.6	27
602	38H	38	12.47 H	12.46	34.696	26.300	35.033	43.364	26.470	269	2.1	0.50	4.4	38
603	53H	53	12.44 H	12.43	34.697	26.307	35.042	43.373	26.544	267	1.7	0.53	4.6	53
604	83H	82	11.47 H	11.46	34.941	26.683	35.453	43.818	27.056	244	3.9	0.76	9.6	82
605	108H	107	10.73 H	10.72	34.856	26.754	35.556	43.950	27.240	239	4.1	0.87	11.4	107
606	153H	152	10.21 H	10.19	34.799	26.802	35.627	44.043	27.493	244	4.1	0.92	12.3	152
607	193H	192	9.90 H	9.88	34.767	26.831	35.670	44.099	27.703	251	4.2	0.93	12.3	192
608	244H	242	9.56 H	9.53	34.721	26.853	35.708	44.151	27.957	251	4.2	0.99	13.1	242
609	304H	302	9.11 H	9.08	34.663	26.883	35.759	44.221	28.260	240	5.8	1.10	15.3	302
610	378H	375	8.60 H	8.56	34.598	26.914	35.814	44.299	28.630	232	6.6	1.25	17.8	375
611	453H	449	8.05 H	8.00	34.525	26.942	35.868	44.377	29.002	237	7.2	1.34	19.2	449
612	552H	548	7.62 H	7.56	34.492	26.980	35.927	44.456	29.494	230	8.6	1.46	21.0	548
613	652H	647	7.40 H	7.33	34.491	27.012	35.970	44.509	29.981	216	11.5	1.57	23.0	647
614	751H	745	6.79 H	6.72	34.428	27.048	36.036	44.603	30.475	223	13.3	1.64	24.0	745
615	850H	843	6.34 H	6.26	34.416	27.099	36.109	44.697	30.982	211	18.0	1.74	26.1	843
616	950H	941	5.747H	5.661	34.395	27.157	36.197	44.812	31.507	207	23.7	1.85	27.9	941
617	1050H	1040	5.28 H	5.19	34.400	27.217	36.281	44.918	32.032	197	30.3	1.96	29.5	1040
618	1149H	1138	4.62 H	4.52	34.381	27.277	36.375	45.043	32.558	198	35.8	2.05	30.7	1138
401	1198	1186	4.610	4.510	34.410	27.301	36.400	45.068	32.805	191	42.9	2.04	31.2	1186
719	1260H	1248	4.309H	4.206	34.416	27.338	36.452	45.136	33.132	187	45.4	2.14	31.8	1248
402	1302	1289	3.984	3.880	34.411	27.368	36.499	45.198	33.363	189	48.9	2.16	32.3	1289
720	1360H	1346	3.729H	3.623	34.412	27.394	36.538	45.250	33.661	185	51.1	2.22	32.9	1346
403	1400	1386	3.579	3.471	34.432	27.424	36.577	45.296	33.878	185	56.6	2.23	33.2	1386
404	1501	1485	3.295	3.182	34.463	27.476	36.643	45.376	34.398	180	63.9	2.27	33.8	1485
405	1603	1586	3.053	2.934	34.497	27.525	36.705	45.450	34.919	174	71.5	2.31	34.4	1586
406	1706	1687	2.955	2.828	34.542	27.571	36.756	45.505	35.434	166	81.8	2.34	34.5	1687
407	1804	1784	2.804	2.670	34.567	27.604	36.797	45.554	35.916	162	88.7	2.36	34.7	1784
408	1906	1884	2.640	2.500	34.585	27.633	36.835	45.601	36.413	160	92.9	2.38	35.0	1884
409	2009	1986	2.504	2.357	34.605	27.661	36.871	45.643	36.911	158	98.4	2.39	35.1	1986
410	2110	2085	2.422	2.267	34.618	27.678	36.893	45.670	37.387	160	102.6	2.38	35.2	2085
411	2210	2183	2.330	2.167	34.632	27.697	36.917	45.699	37.859	158	105.8	2.39	35.2	2183
412	2310	2281	2.283	2.112	34.649	27.715	36.938	45.722	38.327	165	98.8	2.33	34.3	2281
415	2423	2392	2.205	2.025	34.668	27.737	36.964	45.753	38.859	168	98.6	2.30	33.9	2392
416	2505	2473	2.179	1.992	34.682	27.751	36.980	45.770	39.239	173	96.8	2.26	33.4	2473
417	2603	2569	2.129	1.933	34.696	27.767	36.999	45.791	39.694	177	95.0	2.23	32.8	2569
418	2726	2689	2.041	1.836	34.700	27.777	37.015	45.813	40.257	176	100.8	2.22	32.9	2689
419	2822	2783	1.976	1.763	34.709	27.790	37.031	45.833	40.700	180	99.2	2.21	32.7	2783
420	2923	2882	1.895	1.674	34.715	27.801	37.047	45.854	41.164	184	100.7	2.20	32.5	2882
421	3025	2982	1.880	1.649	34.732	27.817	37.064	45.871	41.630	193	94.4	2.13	31.7	2982
422	3124	3079	1.805	1.566	34.732	27.823	37.074	45.886	42.078	194	96.3	2.13	31.4	3079
423	3280	3232	1.679	1.427	34.731	27.832	37.091	45.911	42.784	199	99.9	2.14	31.6	3232
201	3351	3301	1.600	1.343	34.731	27.837	37.102	45.925	43.108	200	103.3	2.08	31.7	3301
424	3435	3383	1.545	1.281	34.728	27.839	37.107	45.934	43.483	199	102.4	2.15	31.7	3383
202	3501	3448	1.485	1.216	34.728	27.844	37.115	45.946	43.782	200	106.0	2.13	31.8	3448
203	3656	3599	1.362	1.080	34.724	27.849	37.129	45.967	44.476	202	109.4	2.14	32.0	3599
204	3809	3748	1.271	0.975	34.720	27.853	37.139	45.982	45.155	204	112.0	2.14	32.0	3748
205	3959	3895	1.178	0.869	34.716	27.856	37.148	45.997	45.820	206	115.1	2.16	32.1	3895
206	4111	4043	1.088	0.765						207	117.5	2.17	32.2	4043
207	4367	4292	0.988	0.641	34.707	27.863	37.168	46.030	47.611	210	120.7	2.18	32.3	4292
208	4520	4441	0.962	0.598	34.706	27.865	37.173	46.036	48.273	210	121.7	2.18	32.4	4441
209	4673	4589	0.945	0.564	34.704	27.865	37.175	46.041	48.930	210	123.1	2.18	32.5	4589
210	4824	4736	0.942	0.543	34.703	27.866	37.177	46.043	49.576	210	123.5	2.16	32.4	4736
211	4976	4884	0.941	0.524	34.703	27.867	37.179	46.047	50.224	212	124.3	2.18	32.4	4884
212	5128	5031	0.949	0.514	34.703	27.867	37.180	46.048	50.868	211	124.1	2.18	32.6	5031
215	5138	5041	0.950	0.513	34.702	27.867	37.179	46.048	50.909					5041
216	5234	5134	0.957	0.508	34.701	27.866	37.179	46.048	51.314					5134
218	5293	5191	0.963	0.507	34.702	27.867	37.180	46.049	51.563					5191
217	5295	5193	0.963	0.507	34.702	27.867	37.180	46.049	51.572	212	124.9	2.19	32.6	5193
219	5344	5241	0.968	0.505	34.702	27.867	37.180	46.049	51.778					5241
220	5375	5271	0.973	0.506	34.702	27.867	37.180	46.049	51.907					5271
221	5395	5290	0.974	0.505	34.701	27.866	37.179	46.048	51.991					5290
222	5415	5309	0.977	0.504										5309
223	5416	5310	0.977	0.505	34.702	27.867	37.180	46.049	52.080					5310
224	5431	5325	0.978	0.504	34.701	27.866	37.179	46.049	52.142					5325

BOTTOM DEPTH FOR CAST 2 IS 5342

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

STATION: 297 LEG: VIII POSITION: 46° 0' S 166° 45' W DATE: 18 MAR 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY °/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	13.533	13.533	34.831D	26.188	34.878	43.168	26.188					0
1202	28	28	13.536	13.532	34.832D	26.189	34.879	43.169	26.314					28
1203	52	52	13.534	13.527	34.833D	26.191	34.881	43.172	26.423					52
1204	78	77	13.415	13.404	34.849D	26.229	34.923	43.218	26.576					77
1205	107	106	11.238	11.224	34.863D	26.667	35.447	43.822	27.147					106
1206	129	128	10.610	10.594	34.853D	26.773	35.580	43.979	27.354					128
1207	158	157	10.170	10.151	34.801D	26.811	35.637	44.055	27.524					157
1208	205	204	9.868	9.844	34.766D	26.836	35.677	44.106	27.762					204
1209	254	252	9.538	9.509	34.720D	26.857	35.712	44.156	28.005					252
1210	306	304	9.256	9.221	34.685D	26.877	35.745	44.202	28.262					304
1211	410	407	8.709	8.664	34.611D	26.908	35.803	44.283	28.767					407
1212	511	507	8.182	8.128	34.539D	26.934	35.854	44.358	29.255					507
1213	611	606	7.677	7.614	34.485D	26.968	35.912	44.439	29.747					606
1214	714	708	7.205	7.133	34.433D	26.995	35.963	44.511	30.247					708
1215	816	809	6.845	6.765	34.410D	27.027	36.014	44.578	30.747					809
1216	1020	1010	5.976	5.881	34.389D	27.125	36.155	44.760	31.786					1010
1217	1224	1212	4.721	4.617	34.370D	27.258	36.351	45.016	32.876					1212
1218	1425	1410	3.744	3.632	34.412D	27.393	36.537	45.248	33.954					1410
114	1621	1603	3.231	3.108	34.471	27.489	36.660	45.397	34.957	175	68.3	2.27	34.1	1603
115	1709	1690	3.056	2.927	34.502	27.530	36.710	45.455	35.403	172	74.0	2.33	34.5	1690
116	1956	1933	2.701	2.555	34.577	27.622	36.821	45.584	36.624	162	91.8	2.38	35.0	1933
117	2155	2129	2.488	2.328	34.609	27.666	36.878	45.651	37.573	159	99.4	2.39	35.1	2129
118	2352	2322	2.340	2.164	34.625	27.692	36.912	45.694	38.488	163	96.2	2.36	34.6	2322
119	2453	2421	2.285	2.101	34.654	27.720	36.943	45.728	38.970	166	97.6	2.34	34.3	2421
120	2550	2516	2.244	2.051	34.677	27.742	36.968	45.755	39.427	174	92.3	2.26	33.3	2516
121	2801	2762	2.126	1.911	34.716	27.784	37.017	45.811	40.590	186	90.1	2.17	32.0	2762
122	3064	3020	1.919	1.683	34.730	27.813	37.058	45.863	41.795	192	92.8	2.14	31.6	3020
123	3270	3221	1.762	1.509	34.734	27.828	37.083	45.898	42.729	195	96.9	2.13	31.5	3221
1219	3463	3410	1.609	1.340	34.731D	27.838	37.102	45.926	43.598					3410
1220	3669	3611	1.447	1.161	34.729D	27.848	37.123	45.956	44.523					3611
1221	3878	3815	1.310	1.006	34.723D	27.853	37.137	45.979	45.452					3815
1222	4083	4015	1.164	0.842	34.716D	27.858	37.152	46.002	46.360					4015
124	4194	4123	1.108	0.776	34.711	27.858	37.156	46.010	46.846	207	116.0	2.18	32.2	4123

BOTTOM DEPTH FOR CAST 1 IS 5428

STATION: 298 LEG: VIII POSITION: 46° 41' S 166° 50' W DATE: 18 MAR 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY °/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	2H	2	13.44 H	13.44	34.805	26.188	34.881	43.175	26.197	261	3.8	0.38	2.2	2
302	42H	42	13.42 H	13.41	34.811	26.198	34.892	43.187	26.385	261	3.8	0.37	2.2	42
303	78H	77	12.62 H	12.61	34.819	26.367	35.092	43.416	26.715	259	2.8	0.52	4.8	77
304	103H	102	12.18 H	12.17	34.961	26.564	35.305	43.643	27.025	241	3.8	0.68	8.3	102
305	153H	152	10.91 H	10.89	34.876	26.738	35.532	43.920	27.426	241	3.8	0.83	10.7	152
306	229H	227	10.06 H	10.03	34.782	26.816	35.648	44.071	27.850	247	4.2	0.91	12.3	227
307	305H	303	9.32 H	9.29	34.688	26.868	35.735	44.188	28.249	248	4.2	0.99	13.6	303
308	406H	403	8.92 H	8.87	34.627	26.887	35.772	44.244	28.726	261	3.8	1.03	14.0	403
309	608H	603	7.76 H	7.70	34.499	26.967	35.907	44.430	29.731	232	7.8	1.40	20.5	603
310	809H	802	6.79 H	6.71	34.405	27.031	36.019	44.587	30.720	235	10.2	1.55	23.0	802
311	1009H	1000	5.86 H	5.77	34.378	27.131	36.166	44.776	31.745	213	19.8	1.83	27.1	1000
312	1260H	1247	4.60 H	4.49	34.377	27.277	36.376	45.046	33.062	198	36.1	2.07	30.9	1247
313	1509H	1493	3.50 H	3.38	34.428	27.429	36.586	45.310	34.380	182	55.3	2.24	33.5	1493
314	1760H	1740	3.00 H	2.87	34.530	27.558	36.741	45.488	35.662	168	77.3	2.34	34.7	1740
315	2010H	1986	2.61 H	2.46	34.583	27.634	36.839	45.606	36.884	167	84.1	2.34	34.7	1986
316	2159H	2133	2.42 H	2.26	34.622	27.682	36.897	45.674	37.610	168	87.0	2.27	34.3	2133
317	2310H	2281	2.33 H	2.16	34.657	27.718	36.938	45.720	38.327	173	86.3	2.24	33.8	2281
318	2459H	2427	2.258H	2.074	34.680	27.743	36.967	45.753	39.021	177	86.5	2.23	33.2	2427
319	2611H	2576	2.18 H	1.98	34.705	27.770	36.999	45.789	39.729	185	86.5	2.17	32.4	2576
320	2761H	2723	2.05 H	1.84	34.719	27.792	37.029	45.826	40.426	186	87.7	2.15	32.3	2723
214	2766	2728	2.086	1.876	34.720	27.790	37.025	45.821	40.443	186	90.4	2.10	32.0	2728
215	3019	2976	1.894	1.663	34.733	27.816	37.063	45.869	41.602	192	94.4	2.10	31.7	2976
216	3276	3227	1.671	1.420	34.734	27.835	37.095	45.914	42.770	197	100.4	2.12	31.6	3227
217	3534	3479	1.467	1.195	34.727	27.844	37.117	45.949	43.928	200	106.0	2.13	31.8	3479

STATION: 298 LEG: VIII POSITION: 46° 41' S 166° 50' W DATE: 18 MAR 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY °/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
218	3782	3721	1.293	1.000	34.720	27.851	37.136	45.978	45.034	203	111.2	2.15	32.2	3721
219	4042	3975	1.154	0.837	34.715	27.858	37.151	46.002	46.184	206	114.7	2.17	32.3	3975
220	4297	4223	1.019	0.678	34.709	27.862	37.165	46.025	47.305	208	118.8	2.17	32.3	4223
221	4555	4474	0.953	0.585	34.705	27.865	37.173	46.038	48.424	210	121.8	2.19	32.4	4474
222	4808	4720	0.940	0.543	34.703	27.866	37.177	46.043	49.508	210	122.6	2.19	32.4	4720
223	5071	4975	0.949	0.521	34.702D	27.866	37.178	46.047	50.625					4975
2201	5246	5145	0.963	0.513	34.699D	27.864	37.177	46.045	51.362					5145
224	5433	5326	0.978	0.504	34.701	27.866	37.179	46.049	52.150	211	124.0	2.19	32.5	5326

BOTTOM DEPTH FOR CAST 2 IS 5434

STATION: 299 LEG: VIII POSITION: 44° 13' S 166° 46' W DATE: 19 MAR 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY °/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	14.672	14.672	34.658D	25.812	34.462	42.715	25.812					0
1202	29	29	14.533	14.529	34.669D	25.852	34.506	42.764	25.981					29
1203	54	54	11.725	11.718	34.761D	26.495	35.257	43.615	26.737					54
1204	81	80	10.521	10.511	34.755D	26.712	35.524	43.928	27.077					80
1205	105	104	10.122	10.110	34.730D	26.762	35.592	44.012	27.237					104
1206	128	127	9.840	9.825	34.690D	26.780	35.622	44.054	27.359					127
1207	154	153	9.535	9.517	34.683D	26.826	35.682	44.126	27.524					153
1208	205	204	9.173	9.150	34.644D	26.856	35.729	44.188	27.786					204
1209	254	252	8.778	8.750	34.609D	26.893	35.784	44.260	28.046					252
1210	305	303	8.532	8.499	34.576D	26.906	35.809	44.297	28.292					303
1211	403	400	7.914	7.872	34.511D	26.950	35.883	44.398	28.786					400
1212	507	503	7.434	7.383	34.452D	26.975	35.931	44.468	29.287					503
1213	610	605	7.112	7.052	34.429D	27.003	35.975	44.527	29.787					605
1214	712	706	6.675	6.606	34.403D	27.043	36.037	44.609	30.296					706
1215	814	807	6.122	6.047	34.374D	27.093	36.114	44.712	30.818					807
1216	1018	1009	5.112	5.024	34.366D	27.209	36.282	44.927	31.883					1009
1217	1221	1209	4.099	4.002	34.401D	27.347	36.472	45.166	32.972					1209
1218	1424	1409	3.283	3.176	34.459D	27.473	36.641	45.374	34.047					1409
1219	1627	1610	2.922	2.802	34.531D	27.564	36.751	45.502	35.072					1610
1220	1834	1813	2.628	2.494	34.576D	27.626	36.829	45.595	36.082					1813
114	2014	1990	2.437	2.290	34.615	27.674	36.887	45.663	36.950	157	104.3	2.37	35.3	1990
115	2315	2286	2.200	2.030	34.652	27.724	36.951	45.740	38.364	160	107.8	2.37	35.1	2286
116	2521	2488	2.106	1.919	34.677	27.753	36.986	45.780	39.317	167	105.1	2.33	34.2	2488
117	2716	2680	2.050	1.845	34.711	27.785	37.022	45.819	40.220	183	95.4	2.20	32.5	2680
118	2785	2747	1.993	1.783	34.714	27.792	37.032	45.833	40.537	183	97.2	2.20	32.5	2747
119	2932	2891	1.897	1.675	34.721	27.806	37.052	45.858	41.208	186	98.9	2.20	32.5	2891
120	3130	3085	1.769	1.530	34.734	27.827	37.081	45.894	42.112	195	98.3	2.14	31.8	3085
1221	3266	3218	1.632	1.383	34.726D	27.831	37.093	45.915	42.726					3218
121	3534	3480	1.432	1.161	34.726	27.846	37.121	45.954	43.933	201	107.6	2.16	32.1	3480
1222	3793	3733	1.233	0.940	34.720D	27.855	37.143	45.988	45.092					3733
122	4045	3978	1.087	0.772	34.712	27.859	37.157	46.011	46.206	207	117.4	2.19	32.4	3978
1223	4302	4229	0.984	0.644	34.710D	27.865	37.170	46.032	47.333					4229
123	4551	4471	0.939	0.572	34.704	27.865	37.174	46.039	48.408	209	121.2	2.19	32.7	4471
1224	4828	4740	0.930	0.531	34.697D	27.861	37.173	46.041	49.591					4740
1225	5092	4996	0.938	0.508	34.700D	27.865	37.178	46.047	50.715					4996
124	5392	5287	0.968	0.499	34.701	27.867	37.180	46.049	51.979	210	124.5	2.21	32.8	5287

BOTTOM DEPTH FOR CAST 1 IS 5332

STATION: 300 LEG: VIII POSITION: 43° 15' S 166° 46' W DATE: 20 MAR 74

SAMPLE NO.	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY °/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	3H	3	15.64 H	15.64	34.804	25.709	34.321	42.540	25.722	250	7.7	0.21	0.1	3
102	74H	74	12.37 H	12.36	34.995	26.552	35.285	43.616	26.883	240	6.5	0.64	7.3	74
103	125H	124	11.56 H	11.54	34.990	26.706	35.471	43.832	27.266	237	6.7	0.76	9.7	124

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

STATION: 300 LEG: VIII POSITION: 43° 15' S 166° 46' W DATE: 20 MAR 74

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	165H	164	11.14 H	11.12	34.926	26.735	35.519	43.897	27.476	234	6.4	0.84	11.0	164
105	216H	215	10.31 H	10.28	34.819	26.801	35.622	44.034	27.775	241	6.1	0.93	12.4	215
106	287H	285	9.39 H	9.36	34.681	26.851	35.714	44.165	28.150	243	6.3	1.04	14.1	285
107	357H	354	9.00 H	8.96	34.643	26.886	35.767	44.235	28.503	247	6.3	1.10	15.1	354
108	433H	430	8.51 H	8.46	34.582	26.917	35.821	44.310	28.882	252	6.5	1.20	16.6	430
109	558H	554	7.65 H	7.59	34.478	26.965	35.911	44.438	29.505	244	7.8	1.37	19.5	554
110	634H	629	7.30 H	7.24	34.446	26.991	35.954	44.497	29.880	246	8.0	1.44	20.5	629
111	807H	800	6.48 H	6.40	34.397	27.065	36.069	44.650	30.752	223	13.9	1.69	24.9	800
112	882H	874	6.23 H	6.15	34.393	27.095	36.111	44.704	31.126	215	17.5	1.79	26.3	874
113	1056H	1046	5.28 H	5.19	34.387	27.207	36.271	44.908	32.049	200	28.5	2.00	29.5	1046
114	1205H	1194	4.60 H	4.50	34.437	27.324	36.422	45.091	32.859	185	44.1	2.15	31.7	1194
115	1354H	1341	4.018H	3.909	34.461	27.404	36.533	45.230	33.634	177	56.2	2.24	32.9	1341
116	1504H	1489	3.33 H	3.22	34.487	27.492	36.657	45.388	34.426	172	67.8	2.30	34.0	1489
117	1755H	1736	2.77 H	2.64	34.555	27.597	36.792	45.551	35.690	163	83.8	2.40	35.2	1736
118	2011H	1988	2.473H	2.326	34.608	27.665	36.877	45.651	36.926	156	99.4	2.44	35.6	1988
119	2260H	2232	2.28 H	2.11	34.646	27.713	36.935	45.720	38.101	164	97.3	2.38	34.6	2232
201	2491H	2459	2.16 H	1.97	34.690	27.759	36.988	45.779	39.186	176	95.6	2.19U	32.9	2459
120	2518H	2486	2.15 H	1.96	34.696	27.765	36.995	45.786	39.312	179	88.9	2.25	32.9	2486
202	2592H	2558	2.09 H	1.90	34.702	27.774	37.008	45.803	39.656	179	95.4	2.19	32.8	2558
203	2692H	2656	2.04 H	1.84	34.705	27.781	37.018	45.816	40.110	187	85.3	2.08	30.7	2656
204	2792H	2754	1.97 H	1.76	34.722	27.801	37.042	45.843	40.577	188	94.4	2.15	31.9	2754
205	2891H	2851	1.89 H	1.67	34.727	27.811	37.057	45.863	41.032	191	93.8	2.13	31.8	2851
206	2993H	2951	1.83 H	1.60	34.728	27.817	37.067	45.876	41.493	192	94.4	2.14	31.6	2951
207	3093H	3049	1.74 H	1.51	34.729	27.825	37.080	45.895	41.949	195	96.9	2.14	31.6	3049
208	3193H	3147	1.70 H	1.46	34.731	27.830	37.088	45.905	42.398	198	99.6	2.14	31.8	3147
209	3294H	3246	1.58 H	1.33	34.729	27.837	37.102	45.926	42.859	196	101.4	2.14	31.8	3246
210	3394H	3343	1.50 H	1.24	34.727	27.841	37.112	45.941	43.310	199	103.3	2.15	31.9	3343
211	3494H	3441	1.44 H	1.17	34.726	27.845	37.119	45.952	43.757	200	105.9	2.15	32.0	3441
212	3646H	3590	1.29 H	1.01	34.720	27.851	37.134	45.976	44.441	202	109.3	2.16	32.0	3590
213	3797H	3737	1.19 H	0.90	34.717	27.855	37.146	45.993	45.114	205	112.8	2.19	32.0	3737
214	4000H	3935	1.08 H	0.77	34.712	27.859	37.157	46.011	46.011	207	116.7	2.19	32.2	3935
215	4205H	4135	0.99 H	0.66	34.708	27.863	37.167	46.027	46.912	208	119.2	2.21	32.5	4135
216	4408H	4332	0.93 H	0.58	34.704	27.864	37.173	46.038	47.795	210	121.6	2.19	32.5	4332
217	4612H	4531	0.92 H	0.55	34.704	27.866	37.177	46.044	48.674	210	121.4	2.20	32.6	4531
218	4818H	4731	0.921H	0.524	34.702	27.866	37.178	46.046	49.553	211	122.5	2.23	32.6	4731
219	5024H	4931	0.94 H	0.52	34.701	27.865	37.178	46.046	50.426	210	122.9	2.23	32.7	4931
220	5283H	5182	0.961H	0.506	34.702	27.867	37.180	46.049	51.521	210	122.7	2.24	32.8	5182

BOTTOM DEPTH FOR CAST 2 IS 5247

STATION: 301 LEG: VIII POSITION: 41° 33' S 166° 50' W DATE: 21 MAR 74

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	1H	1	15.32 H	15.32	34.865	25.828	34.451	42.680	25.833	252	3.8	0.23	0.3	1
102	52H	52	14.45 H	14.44	34.816	25.984	34.640	42.898	26.215	256	2.5	0.30	1.1	52
103	113H	112	11.50 H	11.49	34.937	26.675	35.445	43.808	27.182	241	4.0	0.74	9.4	112
104	183H	182	10.34 H	10.32	34.804	26.784	35.603	44.014	27.609	244	4.2	0.87	11.8	182
105	254H	252	9.72 H	9.69	34.738	26.840	35.688	44.124	27.988	254	4.2	0.90	12.2	252
106	335H	333	9.25 H	9.21	34.677	26.872	35.741	44.198	28.388	247	4.8	1.03	14.3	333
107	406H	403	8.69 H	8.65	34.616	26.915	35.810	44.291	28.756	217	7.7	1.31	19.0	403
108	479H	475	8.08 H	8.03	34.539	26.949	35.873	44.381	29.126	226	7.7	1.37	19.9	475
109	555H	551	7.53 H	7.47	34.476	26.981	35.932	44.465	29.509	233	8.1	1.44	21.0	551
110	657H	652	7.23 H	7.16	34.469	27.019	35.985	44.531	30.013	220	11.7	1.54	22.9	652
111	755H	749	6.72 H	6.65	34.426	27.056	36.047	44.617	30.502	220	13.9	1.63	24.2	749
112	855H	848	6.35 H	6.27	34.444	27.120	36.129	44.716	31.025	202	20.2	1.78	26.7	848
113	980H	971	5.55 H	5.46	34.403	27.188	36.237	44.862	31.678	198	26.1	1.91	28.5	971
114	1105H	1095	5.04 H	4.94	34.438	27.275	36.351	44.999	32.345	187	38.0	2.03	30.2	1095
115	1255H	1243	4.17 H	4.07	34.440	27.372	36.492	45.182	33.147	181	49.9	2.16	32.3	1243
116	1404H	1390	3.45 H	3.34	34.469	27.466	36.624	45.349	33.942	174	62.7	2.23	33.6	1390
117	1555H	1539	3.11 H	2.99	34.514	27.534	36.710	45.452	34.707	167	73.1	2.30	34.5	1539
118	1704H	1686	2.810H	2.685	34.559	27.596	36.789	45.546	35.457	161	85.1	2.34	35.0	1686
301	1826H	1806	2.67 H	2.54	34.593	27.636	36.836	45.600	36.054	156	97.7	2.33	34.9	1806
119	1855H	1835	2.57 H	2.44	34.594	27.645	36.851	45.620	36.199	156	96.8	2.36	35.3	1835
120	2005H	1982	2.41 H	2.26	34.614	27.675	36.890	45.667	36.912	155	102.7	2.39	35.3	1982
302	2027H	2004	2.42 H	2.27	34.616	27.676	36.891	45.667	37.012	155	104.6	2.37	35.4	2004
303	2228H	2201	2.25 H	2.09	34.637	27.708	36.932	45.718	37.955	153	109.9	2.39	35.5	2201
304	2429H	2399	2.13 H	1.95	34.658	27.735	36.967	45.759	38.888	158	111.6	2.37	35.0	2399
305	2530H	2498	2.06 H	1.87	34.673	27.753	36.988	45.785	39.361	164	107.8	2.31	34.4	2498
306	2630H	2596	2.00 H	1.80	34.686	27.768	37.008	45.807	39.825	169	105.9	2.29	33.8	2596
307	2730H	2694	1.95 H	1.75	34.700	27.784	37.026	45.829	40.288	176	102.8	2.24	33.2	2694
308	2831H	2793	1.91 H	1.70	34.712	27.797	37.042	45.847	40.752	181	101.1	2.19	32.6	2793
309	2932H	2892	1.83 H	1.61	34.720	27.810	37.060	45.869	41.217	186	100.6	2.15	32.2	2892
310	3032H	2990	1.77 H	1.54	34.727	27.820	37.074	45.887	41.674	191	100.0	2.12	31.8	2990
311	3134H	3090	1.714H	1.476	34.731	27.828	37.085	45.902	42.136	194	100.2	2.11	31.7	3090
312	3335H	3286	1.55 H	1.30	34.731	27.841	37.108	45.934	43.046	198	103.8	2.11	31.6	3286
313	3437H	3386	1.459H	1.197	34.727	27.844	37.117	45.948	43.505	200	106.1	2.13	31.7	3386
314	3588H	3534	1.333H	1.059	34.723	27.850	37.131	45.970	44.183	202	109.6	2.14	31.9	3534
315	3741H	3683	1.23 H	0.94	34.719	27.854	37.142	45.987	44.865	203	112.9	2.16	32.2	3683
316	3943H	3880			34.714					206	116.1	2.14	32.4	3880
317	4147H	4079	1.01 H	0.69	34.710	27.863	37.165	46.024	46.659	207	118.8	2.15	32.4	4079
318	4351H	4277			34.707					210	121.6	2.18	32.4	4277
319	4553H	4474	0.92 H	0.55	34.704	27.866	37.176	46.042	48.420	210	122.5	2.18	32.4	4474
320	4759H	4674	0.920H	0.530	34.704	27.867	37.179	46.046	49.303	210	123.2	2.18	32.4	4674

BOTTOM DEPTH FOR CAST 3 IS 4723

STATION: 302 LEG: VIII POSITION: 40° 30' S 166° 42' W DATE: 22 MAR 74

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	3H	3	17.17 H	17.17	34.999	25.500	34.057	42.223	25.513	243	4.8	0.16	0.0	3
203	13H	13	17.13 H	17.13	35.001	25.511	34.070	42.238	25.569	243	3.9	0.17	0.0	13
204	29H	29	16.94 H	16.94	35.008	25.563	34.128	42.302	25.690	245	3.7	0.18	0.0	29
205	44H	44	15.39 H	15.38	34.988	25.908	34.527	42.752	26.103	261	3.5	0.20	0.0	44
206	63H	63	13.42 H	13.41	35.121	26.438	35.128	43.419	26.718	240	3.9	0.46	4.4	63
207	93H	92	12.55 H	12.54	35.112	26.608	35.332	43.655	27.023	236	4.0	0.61	7.4	92
208	128H	127	12.27 H	12.25	35.100	26.655	35.390	43.724	27.227	237	4.2	0.67	8.4	127
209	153H	152	12.04 H	12.02	35.067	26.674	35.420	43.762	27.359	235	4.2	0.70	9.0	152
210	213H	212	11.23 H	11.20	34.946	26.735	35.516	43.890	27.691	232	4.4	0.83	10.8	212
211	303H	301	9.99 H	9.95	34.774	26.824	35.659	44.085	28.190	227	6.0	1.05	14.6	301
107	440	437	8.779	8.730	34.619	26.904	35.795	44.273	28.898	242	9.0	1.14	16.1	437
212	464H	461	8.76 H	8.71	34.612	26.902	35.795	44.273	29.004	242	6.1	1.17	16.3	461
108	592	587	7.813	7.751	34.513	26.970	35.908	44.428	29.661	228	9.9	1.40	20.4	587
213	603H	598	7.67 H	7.61	34.491	26.973	35.918	44.445	29.717	230	8.6	1.45	21.0	598
109	794	788	6.797	6.719	34.425	27.045	36.033	44.600	30.667	220	13.6	1.63	24.1	788
214	802H	795	6.73 H	6.65	34.419	27.050	36.041	44.611	30.708	220	13.4	1.64	24.5	795
110	968	960	5.781	5.693	34.399	27.156	36.195	44.808	31.587	204	24.1	1.86	27.7	960
111	968	960	5.781	5.693	34.401	27.158	36.197	44.810	31.588	204	24.0	1.87	27.8	960
112	968	960	5.781	5.693	34.399	27.156	36.195	44.808	31.587	204	23.0	1.88	27.8	960
215	974H	966	5.65 H	5.56	34.392	27.167	36.212	44.831	31.627	203	25.1	1.90	28.3	966
1201	1042	1033	5.254	5.163	34.394D	27.216	36.281	44.919	31.994					1033
1202	1190	1179	4.442	4.344	34.440D	27.343	36.449	45.125	32.815					1179
1203	1401	1387	3.646	3.537	34.471D	27.449	36.597	45.312	33.904					1387
1204	1599	1583	3.066	2.947	34.535D	27.555	36.733	45.477	34.929					1583
1205	1794	1775	2.721	2.589	34.583D	27.624	36.821	45.582	35.895					1775
1206	1998	1975	2.445	2.299	34.615D	27.673	36.886	45.661	36.877					1975
1207	2199	2173	2.283	2.122	34.637D	27.705	36.927	45.711	37.820					2173
1208	2404	2374	2.156	1.979	34.657D	27.732	36.962	45.753	38.772					2374
114	2716	2681	2.013	1.809	34.687	27.769	37.008	45.807	40.207	170	105.6	2.31	34.0	2681
115	2716	2681	2.013	1.809	34.687	27.769	37.008	45.807	40.207	170	105.8	2.32	34.0	2681
116	2918	2879	1.916	1.695	34.713	27.798	37.043	45.848	41.137	182	100.0	2.23	32.6	2879
117	3119	3075	1.792	1.554	34.727	27.820	37.072	45.885	42.055	191	98.0	2.17	31.9	3075
118	3220	3174	1.717	1.470	34.729	27.827	37.084	45.901	42.513	194	99.1	2.16	31.9	3174
119	3322	3274	1.635	1.380	34.730	27.834	37.097	45.918	42.975	196	100.5	2.15	31.8	3274
120	3522	3469	1.476	1.205	34.727	27.844	37.116	45.947	43.875	199	104.3	2.16	31.9	3469
121	3824	3764	1.225	0.929	34.719	27.855	37.143	45.989	45.228	204	111.6	2.17	31.9	3764
1209	4052	3987	1.089	0.773	34.711D	27.858	37.156	46.010	46.235					3987
122	4224	4154	1.011	0.679	34.709	27.862	37.165	46.025	46.991	208	118.0	2.20	32.4	4154
1210	4472	4396	0.941	0.583	34.705D	27.865	37.173	46.038	48.069					4396
123	4637	4556	0.935	0.559	34.703	27.865	37.175	46.041	48.777	211	121.3	2.17	32.4	4556
1211	4850	4763	0.936	0.535	34.702D	27.865	37.177	46.044	49.687					4763
124	5096	5002	0.952	0.520	34.703	27.867	37.179	46.047	50.732	210	123.1	2.20	32.5	5002

BOTTOM DEPTH FOR CAST 1 IS 5030

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

STATION: 303 LEG: VIII POSITION: 38° 22' S 170° 4' W DATE: 23 MAR 74

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	18.21 H	18.21	34.930	25.192	33.715	41.850	25.201	236	8.2	0.22	0.0	2
502	22H	22	18.25 H	18.25	34.930	25.183	33.704	41.838	25.279	236	6.5	0.21	0.0	22
503	43H	43	18.23 H	18.22	34.930	25.189	33.711	41.846	25.376	237	6.0	0.20	0.0	43
504	62H	62	14.83 H	14.82	35.033	26.068	34.707	42.950	26.343	267	5.3	0.23	0.1	62
505	82H	82	13.44 H	13.43	35.055	26.383	35.074	43.365	26.748	259	4.9	0.35	1.7	82
506	103H	102	12.87 H	12.86	35.059	26.503	35.216	43.527	26.962	248	4.7	0.47	4.2	102
507	152H	151	11.97 H	11.95	35.038	26.665	35.414	43.759	27.346	241	5.0	0.66	8.0	151
508	202H	201	11.50 H	11.47	34.977	26.709	35.477	43.841	27.614	238	5.2	0.74	9.5	201
509	252H	250	10.99 H	10.96	34.902	26.746	35.537	43.921	27.877	234	5.4	0.83	10.9	250
510	302H	300	10.54 H	10.50	34.845	26.783	35.594	43.997	28.142	230	5.9	0.89	12.4	300
511	402H	399	9.42 H	9.37	34.694	26.859	35.721	44.171	28.675	231	6.6	1.08	15.1	399
512	501H	497	8.57 H	8.52	34.591	26.915	35.817	44.304	29.187	225	7.3	1.28	18.6	497
513	601H	597	7.76 H	7.70	34.497	26.965	35.906	44.428	29.698	229	8.3	1.40	20.6	597
514	701H	696	7.312H	7.241	34.451	26.994	35.957	44.500	30.186	231	9.1	1.48	21.9	696
515	800H	794	6.94 H	6.86	34.426	27.027	36.008	44.568	30.673	224	11.2	1.57	23.4	794
516	899H	892	6.49 H	6.40	34.400	27.067	36.071	44.652	31.169	219	14.9	1.63	24.9	892
517	999H	991	6.081H	5.987	34.390	27.113	36.137	44.737	31.676	212	18.8	1.75	26.6	991
301	1054	1045	5.695	5.599	34.389	27.160	36.203	44.821	31.981	205	27.0	1.90	28.2	1045
518	1098B	1088	5.40	5.30	34.387	27.194	36.252	44.884	32.222	200	27.9	1.92	29.0	1088
302	1154	1144	5.141	5.040	34.389	27.226	36.297	44.941	32.514	194	33.2	2.04	30.0	1144
303	1254	1243	4.435	4.331	34.393	27.307	36.415	45.092	33.070	189	41.9	2.18	31.8	1243
304	1354	1341	3.966	3.858	34.416	27.374	36.506	45.206	33.605	184	50.2	2.26	32.8	1341
305	1456	1442	3.578	3.465	34.453	27.442	36.594	45.313	34.149	176	60.7	2.34	33.8	1442
306	1555	1540	3.245	3.127	34.492	27.504	36.674	45.409	34.672	170	70.2	2.38	34.2	1540
307	1654	1637	3.074	2.950	34.528	27.549	36.728	45.471	35.172	165	78.6	2.42	34.8	1637
308	1751	1733	2.872	2.742	34.555	27.588	36.778	45.532	35.658	161	87.3	2.43	35.0	1733
309	1854	1834	2.691	2.554	34.581	27.625	36.825	45.587	36.168	157	95.0	2.46	35.4	1834
310	1953	1932	2.567	2.424	34.597	27.649	36.855	45.624	36.644	156	100.6	2.43	35.6	1932
311	2064	2041	2.467	2.315	34.607	27.666	36.878	45.652	37.165	154	104.7	2.47	35.6	2041
312	2156	2131	2.403	2.244	34.617D	27.679	36.895	45.673	37.595					2131
314	2265	2238	2.334	2.166	34.626	27.693	36.913	45.695	38.101	154	110.1	2.48	36.0	2238
315	2370	2342	2.267	2.091	34.634	27.705	36.929	45.715	38.586	153	111.8	2.48	35.8	2342
316	2467	2437	2.204	2.020	34.641	27.716	36.944	45.733	39 034	153	114.0	2.40	35.8	2437
317	2571	2539	2.130	1.938	34.648	27.728	36.960	45.754	39.514	154	116.8	2.45	36.2	2539
318	2673	2639	2.068	1.867	34.655	27.739	36.975	45.772	39.983	154	118.0	2.44	36.1	2639
319	2776	2740	2.039	1.829	34.674	27.757	36.995	45.794	40.459	164	110.0	2.35	35.0	2740
320	2877	2839	1.975	1.756	34.691	27.776	37.018	45.820	40.930	170	107.0	2.29	34.4	2839
321	2976	2936	1.914	1.687	34.702	27.790	37.035	45.841	41.385	176	104.9	2.23	33.4	2936
322	3074	3032	1.867	1.631	34.709	27.800	37.048	45.857	41.831	182	102.8	2.23	32.9	3032
101	3137	3094	1.810	1.569	34.718	27.811	37.063	45.875	42.124	186	103.5	2.21	32.4	3094
323	3175	3131	1.799	1.555	34.718	27.812	37.065	45.878	42.293	186	102.3	2.21	32.8	3131
102	3243	3197	1.761	1.511	34.728	27.823	37.078	45.893	42.606	193	100.8	2.19	32.0	3197
324	3275	3229	1.751	1.498	34.729	27.825	37.081	45.896	42.749	194	98.7U	2.14U	32.2	3229
103	3344	3296	1.650	1.392	34.727	27.831	37.093	45.914	43.067	196	102.9	2.19	31.9	3296
104	3447	3397	1.577	1.311	34.729	27.838	37.104	45.930	43.531	198	103.2	2.18	31.9	3397
105	3546	3494	1.489	1.215	34.727	27.843	37.115	45.945	43.978	200	105.4	2.20	31.3	3494
106	3646	3591	1.413	1.130	34.726	27.848	37.124	45.959	44.426	202	107.4	2.20	32.0	3591
107	3741	3684	1.347	1.056	34.723	27.850	37.131	45.970	44.849	203	108.7	2.20	32.0	3684
108	3843	3784	1.268	0.969	34.720	27.853	37.139	45.983	45.304	205	112.0	2.20	32.1	3784
109	3941	3879	1.210	0.902	34.717	27.855	37.145	45.992	45.737	205	113.8	2.20	32.2	3879
110	4093	4027	1.112	0.791	34.713	27.859	37.155	46.009	46.410	207	115.8	2.19	32.3	4027
111	4236	4167	1.051	0.716	34.710	27.861	37.162	46.019	47.037	208	117.8	2.19	32.3	4167
112	4390	4317	0.984	0.634	34.707	27.864	37.169	46.031	47.710	209	120.8	2.22	32.5	4317
114	4553	4475	0.971	0.603	34.705	27.864	37.171	46.035	48.412	209	121.8	2.21	32.6	4475
115	4717	4635	0.939	0.553	34.705	27.867	37.177	46.043	49.121	211	122.3	2.21	32.5	4635
116	4717	4635	0.939	0.553	34.704	27.866	37.176	46.042	49.120					4635
117	4744	4661	0.932	0.543	34.703	27.866	37.177	46.043	49.236					4661
118	4773	4689	0.921	0.529	34.703	27.866	37.178	46.046	49.362					4689
119	4798	4714	0.918	0.523	34.703	27.867	37.179	46.047	49.469					4714
120	4825	4740	0.918	0.520	34.702	27.866	37.178	46.047	49.584					4740
121	4845	4759	0.920	0.520	34.702	27.866	37.178	46.047	49.669					4759
122	4866	4780	0.923	0.520	34.703	27.867	37.179	46.047	49.759	211	123.1	2.20	32.6	4780
123	4866	4780	0.923	0.520	34.702	27.866	37.178	46.047	49.758					4780
124	4907	4820	0.928	0.520	34.703	27.867	37.179	46.047	49.932					4820

BOTTOM DEPTH FOR CAST 1 IS 4841

STATION: 304 LEG: VIII POSITION: 37° 3' S 168° 36' W DATE: 25 MAR 74

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	18.12	18.12	35.00 D	25.268	33.793	41.930	25.281					3
1202	25	25	18.11	18.11	35.01 D	25.279	33.804	41.941	25.388					25
1203	51	51	18.06	18.05	35.03 D	25.308	33.835	41.973	25.530					51
1204	76	76	14.26	14.25	35.02 D	26.183	34.843	43.106	26.520					76
1205	99	98	12.91	12.90	35.04 D	26.480	35.192	43.502	26.922					98
1206	127	126	12.51	12.49	35.08 D	26.592	35.318	43.643	27.159					126
1207	151	150	12.34	12.32	35.05 D	26.603	35.337	43.668	27.277					150
1208	202	201	11.73	11.70	34.98 D	26.668	35.427	43.782	27.572					201
1209	250	248	10.97	10.94	34.86 D	26.717	35.509	43.895	27.839					248
1210	303	301	10.29	10.25	34.77 D	26.769	35.592	44.005	28.133					301
1211	402	399	9.11	9.06	34.62 D	26.851	35.728	44.191	28.671					399
1212	502	498	8.08	8.03	34.53 D	26.942	35.867	44.375	29.224					498
1213	607	603	7.39	7.33	34.45 D	26.981	35.940	44.479	29.747					603
1214	706	701	6.91	6.84	34.42 D	27.025	36.007	44.568	30.246					701
1215	809	803	6.43	6.35	34.40 D	27.074	36.080	44.663	30.770					803
101	1004	996	5.251	5.163	34.374	27.200	36.265	44.903	31.806	203	30.2	1.96	29.2	996
102	1255	1244	3.969	3.870	34.420	27.376	36.507	45.207	33.158	180	51.7	2.22	32.8	1244
103	1506	1491	3.139	3.027	34.510	27.527	36.702	45.442	34.478	168	75.1	2.36	34.6	1491
104	1752	1734	2.699	2.571	34.579	27.622	36.821	45.583	35.705	159	94.5	2.42	35.5	1734
105	2002	1980	2.436	2.290	34.612	27.672	36.885	45.661	36.894	154	107.0	2.46	36.1	1980
106	2156	2131	2.317	2.160	34.626	27.693	36.914	45.696	37.614	152	111.8	2.48	36.2	2131
107	2309	2282	2.219	2.049	34.636	27.710	36.936	45.724	38.322	151	115.5	2.48	36.2	2282
108	2412	2383	2.165	1.987	34.642	27.719	36.949	45.740	38.795	153	117.6	2.47	36.3	2383
109	2515	2484	2.094	1.908	34.649	27.731	36.965	45.760	39.270	152	119.1	2.47	36.3	2484
215	2576	2544	2.062	1.871	34.652	27.736	36.972	45.769	39.549	151	122.3	2.41	36.4	2544
110	2617	2584	2.042	1.847	34.655	27.740	36.978	45.776	39.737	153	120.5	2.44	36.3	2584
111	2719	2684	1.937	1.735	34.665	27.757	37.000	45.804	40.214	156	120.2	2.43	35.9	2684
112	2820	2783	1.918	1.706	34.676	27.768	37.013	45.818	40.674	162	117.9	2.39	35.4	2783
114	2931	2892	1.844	1.623	34.686	27.782	37.031	45.840	41.184	167	115.9	2.35	34.8	2892
115	3035	2994	1.803	1.573	34.701	27.797	37.049	45.861	41.662	177	110.2	2.28	34.0	2994
116	3134	3091	1.741	1.502	34.709	27.809	37.065	45.880	42.115	182	108.0	2.22	33.3	3091
117	3237	3192	1.667	1.420	34.714	27.819	37.079	45.899	42.584	188	105.9	2.17	32.9	3192
118	3388	3339	1.557	1.297	34.720	27.832	37.099	45.925	43.269	194	106.5	2.16	32.6	3339
216	3389	3340	1.551	1.291	34.720	27.832	37.100	45.926	43.274	194	108.8	2.16	32.4	3340
119	3541	3489	1.424	1.152	34.721	27.842	37.118	45.952	43.961	199	107.3	2.15	32.5	3489
217	3544	3492	1.433	1.161	34.721	27.842	37.117	45.950	43.973	199	109.6	2.15	32.3	3492
120	3643	3589	1.355	1.075	34.720	27.847	37.127	45.965	44.418	200	109.1	2.14	32.5	3589
218	3644	3590	1.350	1.070	34.719	27.846	37.126	45.965	44.422	202	110.4	2.14	32.3	3590
219	3694	3638	1.321	1.036	34.720	27.849	37.131	45.971	44.646	202	110.6	2.14	32.3	3638
121	3846	3787	1.207	0.909	34.717	27.855	37.144	45.991	45.325	204	112.6	2.15	32.6	3787
224	3904	3843	1.198	0.895	34.715	27.854	37.144	45.992	45.577	205	114.1	2.11	32.4	3843
220	3909	3848	1.186	0.882	34.716	27.856	37.147	45.995	45.601	205	114.4	2.14	32.4	3848
122	4048	3984	1.077	0.762	34.712	27.860	37.158	46.013	46.220	207	116.3	2.15	32.6	3984
223	4176	4109	1.058	0.729	34.711	27.861	37.161	46.018	46.777	208	117.9	2.12	32.5	4109
221	4180	4113	1.053	0.724	34.710	27.861	37.161	46.018	46.794	208	118.2	2.14	32.5	4113
1216	4305	4234	0.988	0.647	34.708D	27.864	37.168	46.029	47.344					4234
222	4553	4476	0.984	0.616	34.707	27.865	37.171	46.034	48.411	210	121.2	2.14	32.7	4476
123	4561	4483	0.975	0.606	34.706	27.864	37.172	46.035	48.447	209	119.7	2.17	32.8	4483
1217	4751	4668	0.985	0.593	34.704D	27.863	37.171	46.036	49.257					4668
124	4941	4853	1.002	0.587	34.706	27.865	37.174	46.038	50.066	210	120.3	2.17	33.0	4853

BOTTOM DEPTH FOR CAST 2 IS 4893 — CAST 1 IS 4897

STATION: 305 LEG: VIII POSITION: 35° 40' S 166° 47' W DATE: 26 MAR 74

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	1H	1	20.34 H	20.34	35.314	24.933	33.384	41.451	24.937	228	5.1	0.12	0.0	1
102	32H	32	20.38 H	20.37	35.314	24.924	33.374	41.440	25.062	228	4.4	0.11	0.0	32
103	77H	77	14.88 H	14.87	35.320	26.279	34.912	43.150	26.619	256	4.3	0.23	0.0	77
104	122H	121	13.32 H	13.30	35.223	26.539	35.232	43.525	27.081	224	4.5	0.56	6.8	121
105	173H	172	12.65 H	12.63	35.151	26.620	35.341	43.659	27.392	224	4.6	0.66	8.2	172
106	233H	232	11.94 H	11.91	35.054	26.686	35.436	43.782	27.727	218	5.1	0.79	10.7	232
107	303H	301	10.98 H	10.94	34.909	26.754	35.546	43.931	28.114	221	5.2	0.90	12.4	301
108	378H	376	9.75 B	9.71	34.739	26.838	35.685	44.121	28.544	222	5.9	1.08	15.3	376

B TEMPERATURE CALCULATED FROM UNPROTECTED THERMOMETER
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 305 LEG: VIII POSITION: 35° 40' S 166° 47' W DATE: 26 MAR 74

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
109	453H	450	8.91 H	8.86	34.634	26.895	35.781	44.253	28.946	222	7.0	1.22	17.8	450
110	552H	548	7.97 H	7.91	34.535	26.963	35.893	44.406	29.472	216	8.9	1.40	21.1	548
111	651H	646	7.37 H	7.30	34.474	27.003	35.963	44.503	29.968	219	10.0	1.52	22.7	646
112	751H	745	6.86 H	6.79	34.434	27.043	36.028	44.591	30.469	217	12.6	1.64	24.3	745
113	874H	867	6.165H	6.083	34.397	27.106	36.126	44.721	31.102	210	17.8	1.76	26.6	867
114	999B	991	5.42 H	5.33	34.374	27.180	36.237	44.868	31.760	202	25.9	1.91	29.1	991
301	1004H	996	5.32 H	5.23	34.375	27.193	36.255	44.890	31.797	201	29.2	1.90	29.3	996
302	1154H	1144	4.41 H	4.32	34.397	27.312	36.420	45.099	32.622	189	42.7	2.09	31.9	1144
115	1200H	1190	4.26 H	4.16	34.398	27.329	36.445	45.131	32.852	188	43.2	2.13	32.1	1190
303	1306H	1294	3.63 H	3.53	34.426	27.414	36.563	45.279	33.439	180	54.6	2.21	33.6	1294
304	1456H	1442	3.10 H	2.99	34.480	27.507	36.684	45.426	34.232	172	67.8	2.29	34.7	1442
305	1608H	1592	2.78 H	2.66	34.536	27.580	36.774	45.532	35.008	164	80.9	2.33	35.1	1592
306	1759H	1741	2.60 H	2.47	34.582	27.633	36.836	45.603	35.751	157	94.5	2.37	35.5	1741
307	1909H	1889	2.46 H	2.32	34.605	27.663	36.875	45.649	36.466	153	102.6	2.38	35.8	1889
308	2059H	2036	2.31 H	2.16	34.622	27.690	36.910	45.693	37.175	152	108.5	2.39	36.0	2036
309	2210H	2185	2.21 H	2.05	34.631	27.706	36.932	45.720	37.875	151	113.3	2.41	36.1	2185
310	2360H	2332	2.118H	1.946	34.641	27.722	36.954	45.747	38.568	149	117.9	2.41	36.3	2332
311	2510H	2480	2.03 H	1.85	34.651	27.737	36.975	45.773	39.259	152	121.5	2.41	36.3	2480
201	2515	2485	2.016	1.831	34.647	27.735	36.974	45.773	39.280	151	121.8	2.39	35.9	2485
312	2609H	2577	1.97 H	1.78	34.653	27.744	36.985	45.787	39.710	149	123.2	2.41	36.4	2577
202	2614	2582	1.969	1.776	34.653	27.744	36.985	45.787	39.733	150	125.4	2.44	36.4	2582
203	2714	2680	1.920	1.719	34.656	27.751	36.995	45.800	40.187	150	126.7	2.46	36.4	2680
204	2816	2780	1.883	1.673	34.659	27.757	37.004	45.811	40.648	151	127.7	2.46	36.4	2780
205	2918	2880	1.845	1.625	34.663	27.763	37.013	45.822	41.109	152	128.8	2.46	36.3	2880
206	3018	2978	1.814	1.585	34.667	27.769	37.021	45.833	41.559	154	128.7	2.45	36.3	2978
207	3123	3081	1.777	1.539	34.672	27.777	37.031	45.845	42.032	156	128.2	2.42	35.9	3081
208	3226	3182	1.749	1.501	34.679	27.785	37.041	45.857	42.495	160	126.6	2.39	35.6	3182
209	3324	3277	1.718	1.461	34.685	27.792	37.051	45.869	42.936	165	124.1	2.37	34.5	3277
210	3418	3369	1.681	1.415	34.688	27.798	37.059	45.879	43.356	169	123.4	2.32	34.6	3369
211	3511	3460	1.650	1.374										3460
212	3616	3563	1.614	1.329	34.703	27.816	37.082	45.906	44.244	182	116.1	2.25	33.5	3563
214	3675	3621	1.601	1.310	34.710	27.823	37.090	45.915	44.509	187	112.5	2.20	33.0	3621
215	3728	3672	1.591	1.295	34.717	27.830	37.097	45.923	44.747	192	108.8	2.18	32.4	3672
216	3829	3771	1.501	1.196	34.719	27.838	37.111	45.942	45.203	197	109.9	2.11	32.3	3771
217	3928	3868	1.421	1.108	34.720	27.844	37.122	45.958	45.648	200	110.1	2.13	32.3	3868
218	4030	3967	1.322	1.001	34.718	27.850	37.134	45.976	46.105	203	112.0	2.10	32.1	3967
219	4236	4168	1.174	0.835	34.714	27.857	37.151	46.002	47.019	206	116.1	2.14	32.4	4168
220	4438	4365	1.077	0.718	34.710	27.861	37.162	46.019	47.903	207	119.3	2.14	32.4	4365
221	4646	4567	1.020	0.639	34.707	27.863	37.168	46.030	48.803	209	121.4	2.12	32.4	4567
222	4848	4763	0.995	0.592	34.705	27.864	37.172	46.037	49.670	209	122.1	2.14	32.5	4763
223	5055	4965	1.019	0.590	34.705	27.864	37.173	46.037	50.546	210	123.1	2.14	32.5	4965
224	5343	5244	1.026	0.561	34.704	27.865	37.175	46.041	51.764	211	123.1	2.14	32.5	5244

BOTTOM DEPTH FOR CAST 2 IS 5277

STATION: 306 LEG: VIII POSITION: 32° 50' S 163° 38' W DATE: 27 MAR 74

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	12	12	22.194	22.192	35.298	24.413	32.809	40.824	24.464	220	6.4	0.06	0.0	12
602	41	41	22.174	22.166	35.331	24.445	32.841	40.857	24.621	221	5.1	0.06	0.0	41
603	57	57	21.834	21.822	35.352	24.557	32.963	40.988	24.802	222	3.9	0.06	0.0	57
604	87	87	16.365	16.351	35.394	25.997	34.577	42.765	26.379	261	3.9	0.14	0.1	87
605	112	112	15.243	15.225	35.392	26.254	34.874	43.099	26.748	234	3.9	0.31	1.5	112
606	160	159	13.548	13.525	35.209	26.482	35.167	43.452	27.192	224	3.9	0.52	5.5	159
607	189	188	12.804	12.778	35.135	26.578	35.292	43.606	27.420	219	4.3	0.67	8.3	188
608	240	239	11.987	11.955	35.041	26.667	35.415	43.760	27.739	220	4.3	0.80	10.4	239
609	289	287	11.232	11.195	34.934	26.727	35.508	43.883	28.023	217	5.3	0.92	12.2	287
610	335	333	10.531	10.490	34.826	26.771	35.583	43.986	28.277	214	5.7	1.01	14.2	333
611	419	416	8.960	8.913	34.645	26.895	35.778	44.248	28.792	213	6.5	1.27	18.2	416
612	499	496	8.042	7.989	34.531	26.948	35.875	44.385	29.217	224	6.8	1.37	20.0	496
614	569	565	7.469	7.411	34.465	26.981	35.936	44.471	29.574	230	7.5	1.44	21.0	565
615	649	645	7.021	6.957	34.428	27.015	35.992	44.548	29.977	229	8.7	1.54	22.6	645
616	719	714	6.695	6.626	34.401D	27.039	36.032	44.603	30.323	228	9.5	1.47U	21.4U	714

STATION: 306 LEG: VIII POSITION: 32° 50' S 163° 38' W DATE: 27 MAR 74

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
617	793	787	6.262	6.188	34.368	27.070	36.085	44.676	30.698	227	13.5	1.68	25.1	787
618	844	838	5.963	5.886	34.360	27.102	36.132	44.737	30.967	218	16.0	1.77	26.5	838
619	893	886	5.752	5.671	34.368	27.135	36.175	44.790	31.226	213	19.8	1.85	27.6	886
620	944	937	5.394	5.311	34.364	27.175	36.233	44.864	31.506	208	23.4	1.92	28.7	937
621	1020	1012	4.950	4.863	34.357	27.220	36.301	44.954	31.908	203	28.6	2.01	29.9	1012
622	1094	1085	4.592	4.502	34.358	27.261	36.361	45.030	32.294	198	33.0	2.09	31.1	1085
623	1193	1183	4.005	3.911	34.379	27.339	36.469	45.167	32.839	193	43.2	2.20	32.7	1183
401	1288	1277	3.454	3.357	34.422	27.427	36.586	45.310	33.377	181	57.1	2.28	34.0	1277
624	1352	1340	3.304	3.203	34.437	27.453	36.620	45.352	33.699	180	58.4	2.29	34.2	1340
402	1434	1421	2.983	2.879	34.489	27.524	36.707	45.455	34.154	171	72.2	2.37	35.1	1421
403	1597	1582	2.737	2.622	34.539	27.586	36.782	45.542	34.965	164	83.9	2.39	35.4	1582
404	1734	1717	2.533	2.409	34.579	27.636	36.843	45.613	35.644	159	95.1	2.40	35.8	1717
405	1881	1862	2.358	2.224	34.609	27.674	36.892	45.671	36.356	155	105.3	2.42	36.0	1862
406	2037	2015	2.223	2.078	34.625	27.699	36.924	45.710	37.090	152	112.6	2.42	36.3	2015
407	2186	2162	2.122	1.965	34.635	27.715	36.947	45.739	37.782	150	117.9	2.43	36.5	2162
408	2339	2312	2.046	1.877	34.643	27.729	36.964	45.761	38.485	148	122.6	2.46	36.8	2312
409	2488	2459	1.982	1.800	34.648	27.738	36.978	45.779	39.165	148	125.3	2.44	36.9	2459
410	2639	2607	1.913	1.719	34.655	27.750	36.994	45.799	39.854	149	127.8	2.42	36.8	2607
411	2779	2744	1.870	1.663	34.659	27.757	37.005	45.812	40.486	150	129.4	2.43	36.8	2744
412	2937	2899	1.820	1.599	34.663	27.765	37.016	45.827	41.197	151	129.6	2.42	36.7	2899
414	3091	3050	1.777	1.542	34.668	27.773	37.027	45.841	41.888	155	129.6	2.39	36.5	3050
415	3196	3153	1.742	1.497	34.675	27.782	37.039	45.855	42.361	157	128.9	2.38	36.2	3153
416	3295	3250	1.704	1.450	34.678	27.788	37.047	45.866	42.805	162	127.4	2.35	36.0	3250
417	3395	3348	1.684	1.420	34.684	27.794	37.055	45.875	43.252	166	125.4	2.35	35.5	3348
418	3494	3445	1.655	1.382	34.691	27.803	37.066	45.888	43.695	171	122.7	2.35	35.0	3445
419	3555	3504	1.637	1.358	34.693	27.806	37.070	45.894	43.967	174	120.6	2.34	34.9	3504
420	3617	3565	1.621	1.336	34.698	27.812	37.077	45.901	44.244	178	118.5	2.31	34.4	3565
421	3662	3609	1.602	1.313	34.700	27.815	37.081	45.907	44.445	180	117.1	2.29	34.0	3609
422	3749	3694	1.564	1.266	34.705	27.822	37.091	45.919	44.834	185	115.6	2.27	33.7	3694
101	3834	3777	1.517	1.211	34.710	27.830	37.102	45.933	45.216	189	114.9	2.20	32.9	3777
423	3841	3784	1.518	1.212	34.710	27.830	37.102	45.933	45.246	191	112.1	2.22	33.2	3784
424	3881	3823	1.494	1.184	34.712	27.833	37.107	45.939	45.425	192	112.0	2.20	33.2	3823
102	3940	3880	1.452	1.137	34.713	27.837	37.113	45.948	45.689	195	113.0	2.21	32.6	3880
103	4042	3980	1.404	1.079	34.713	27.841	37.121	45.958	46.139	197	112.7	2.21	32.4	3980
104	4145	4080	1.331	0.997	34.714	27.847	37.131	45.973	46.598	200	113.7	2.21	32.4	4080
105	4245	4178	1.252	0.909	34.714	27.852	37.142	45.989	47.044	203	116.0	2.21	32.4	4178
106	4349	4279	1.176	0.824	34.712	27.856	37.151	46.002	47.504	205	118.6	2.21	32.3	4279
107	4500	4426	1.108	0.741	34.709	27.859	37.158	46.014	48.163	206	121.7	2.20	32.4	4426
108	4651	4573	1.074	0.691	34.709	27.862	37.164	46.023	48.817	208	122.8	2.20	32.5	4573
109	4802	4720	1.054	0.654	34.707	27.862	37.167	46.028	49.464	208	122.8	2.19	32.5	4720
110	4955	4869	1.050	0.632	34.706	27.863	37.169	46.031	50.116	208	122.1	2.16	32.5	4869
111	5112	5021	1.055	0.617	34.706	27.864	37.170	46.033	50.782	208	122.1	2.19	32.6	5021
112	5264	5169	1.065	0.608	34.705	27.863	37.171	46.034	51.423	210	122.3	2.18	32.6	5169
114	5421	5321	1.078	0.601	34.705	27.864	37.171	46.035	52.083	209	122.0	2.18	32.6	5321
115	5539	5435	1.088	0.596	34.706	27.865	37.173	46.037	52.578					5435
116	5557	5453	1.090	0.595	34.706	27.865	37.173	46.037	52.653					5453
117	5581	5476	1.093	0.595	34.704	27.863	37.171	46.035	52.752					5476
118	5581	5476	1.093	0.595	34.706	27.865	37.173	46.037	52.753	209	122.5	2.17	32.7	5476
119	5604	5498	1.096	0.595	34.705	27.864	37.172	46.036	52.849					5498
120	5632	5526	1.100	0.595	34.704	27.863	37.171	46.035	52.965					5526
121	5661	5554	1.103	0.594	34.705	27.864	37.172	46.036	53.086					5554
122	5687	5579	1.106	0.594	34.705	27.864	37.172	46.036	53.195					5579
123	5714	5605	1.110	0.594	34.705	27.864	37.172	46.036	53.307	212	122.4	2.17	32.7	5605
124	5714	5605	1.110	0.594	34.706	27.865	37.173	46.037	53.308					5605

BOTTOM DEPTH FOR CAST 1 IS 5624

STATION: 308 LEG: VIII POSITION: 29° 59' S 160° 20' W DATE: 31 MAR 74

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	11H	11	23.35 H	23.35	35.358	24.128	32.491	40.474	24.175	218	2.4	0.05	0.1	11
102	76H	76	19.06 H	19.05	35.564	25.463	33.951	42.053	25.793	251	2.2	0.08	0.0	76
103	151H	150	15.91 H	15.89	35.425	26.129	34.725	42.928	26.793	221	2.1	0.28	1.9	150

B TEMPERATURE CALCULATED FROM UNPROTECTED THERMOMETER
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
U UNCERTAIN DATA

STATION: 308 LEG: VIII POSITION: 29° 59' S 160° 20' W DATE: 31 MAR 74

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	235H	234	14.22 H	14.18	35.228	26.357	35.016	43.279	27.396	209	2.3	0.52	6.0	234
105	302H	300	12.40 H	12.36	35.017	26.570	35.302	43.633	27.916	204	3.5	0.76	10.2	300
106	401H	399	10.09 H	10.04	34.734	26.777	35.610	44.032	28.583	206	4.8	1.08	15.7	399
107	502H	499	8.15 H	8.10	34.524	26.927	35.849	44.354	29.208	220	5.8	1.33	19.8	499
108	602H	598	7.30 H	7.24	34.438	26.984	35.947	44.490	29.728	232	6.6	1.43	21.8	598
109	701H	696	6.61 H	6.54	34.383	27.036	36.033	44.608	30.240	233	9.1	1.56	24.0	696
110	826H	820	5.85 H	5.78	34.339	27.099	36.134	44.745	30.885	225	13.8	1.70	26.6	820
111	901H	894	5.35 H	5.27	34.329	27.152	36.212	44.846	31.289	217	19.0	1.83	28.4	894
112	950H	943	5.12 H	5.04	34.328	27.178	36.250	44.895	31.543	211	22.7	1.89	29.4	943
113	1023H	1015	4.72 H	4.63	34.334	27.228	36.321	44.984	31.935	207	28.2	1.99	30.9	1015
114	1097H	1088	4.25 H	4.16	34.363	27.301	36.418	45.104	32.357	196	37.8	2.09	32.6	1088
115	1195H	1185	3.71 H	3.62	34.399	27.384	36.529	45.241	32.902	188	48.6	2.18	33.8	1185
116	1291H	1280	3.21 H	3.12	34.447	27.469	36.640	45.377	33.441	177	60.5	2.19	34.6	1280
117	1388H	1376	3.00 H	2.90	34.486	27.520	36.702	45.449	33.940	171	68.4	2.25	35.3	1376
118	1529H	1515	2.70 H	2.59	34.544	27.592	36.790	45.552	34.665	164	83.6	2.31	35.8	1515
119	1672H	1656	2.49 H	2.37	34.583	27.642	36.851	45.623	35.372	157	95.9	2.33	36.2	1656
301	1797H	1779	2.34 H	2.21	34.609	27.675	36.893	45.673	35.978	153	105.8	2.31	36.0	1779
120	1811H	1793	2.36 H	2.23	34.603	27.669	36.886	45.665	36.034	153	102.6	2.35	36.5	1793
302	1996H	1976	2.19 H	2.05	34.628	27.703	36.930	45.718	36.912	149	115.0	2.38	36.6	1976
303	2197H	2173	2.09 H	1.93	34.640	27.722	36.955	45.749	37.840	148	119.8	2.38	36.7	2173
304	2397H	2370	1.99 H	1.82	34.648	27.737	36.976	45.776	38.757	147	124.8	2.40	36.7	2370
305	2598H	2567	1.88 H	1.69	34.655	27.752	36.998	45.804	39.676	148	127.0	2.42	36.8	2567
306	2800H	2766	1.81 H	1.60	34.663	27.765	37.016	45.827	40.591	149	129.5	2.40	36.7	2766
307	3001H	2963	1.78 H	1.55	34.668	27.772	37.026	45.839	41.490	153	130.8	2.39	36.6	2963
308	3152H	3111	1.71 H	1.47	34.675	27.784	37.042	45.860	42.172	157	129.1	2.35	36.0	3111
309	3253H	3210	1.67 H	1.42	34.679	27.790	37.051	45.872	42.626	161	128.1	2.34	35.7	3210
310	3353H	3308	1.64 H	1.38	34.684	27.797	37.060	45.882	43.074	166	126.8	2.28	35.1	3308
311	3456H	3408	1.62 H	1.35	34.692	27.806	37.070	45.894	43.535	173	122.6	2.25	34.6	3408
312	3556H	3506	1.57 H	1.29	34.699	27.815	37.083	45.910	43.987	179	119.4	2.21	34.0	3506
313	3657H	3605	1.544H	1.257	34.703	27.821	37.091	45.919	44.435	183	117.4	2.20	33.8	3605
314	3759H	3705	1.49 H	1.19	34.706	27.828	37.101	45.933	44.891	187	117.0	2.17	33.5	3705
315	3860H	3803	1.46 H	1.15	34.712	27.835	37.111	45.945	45.340	192	114.6	2.15	33.1	3803
316	3981H	3921	1.38 H	1.06	34.713	27.842	37.122	45.961	45.879	198	113.3	2.09	32.4	3921
317	4287H	4220	1.22 H	0.87	34.714	27.855	37.146	45.995	47.231	204	115.4	2.10	32.5	4220
318	4593H	4518	1.102H	0.725	34.711	27.861	37.162	46.018	48.565	206	118.3	2.11	32.5	4518
319	4902H	4818	1.07 H	0.66	34.707	27.862	37.166	46.027	49.888	208	120.4	2.10	32.7	4818
320	5213H	5121	1.094H	0.642	34.708	27.864	37.169	46.030	51.204	209	121.0	2.10	32.6	5121

BOTTOM DEPTH FOR CAST 3 IS 5280

STATION: 309 LEG: VIII POSITION: 28° 29' S 158° 48' W DATE: 2 APR 74

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	1H	1	24.61 H	24.61	35.428	23.810	32.138	40.086	23.815	212	4.0	0.08	0.1	1
202	52H	52	21.95 H	21.94	35.587	24.702	33.102	41.121	24.926	234	2.7	0.05	0.1	52
203	102H	102	20.47 H	20.45	35.597	25.118	33.563	41.623	25.559	228	2.1	0.07	0.0	102
204	201H	200	17.67 H	17.63	35.516	25.782	34.316	42.462	26.658	208	2.1	0.27	2.5	200
205	401H	399	12.56 H	12.50	35.006	26.532	35.259	43.585	28.316	199	4.0	0.78	10.7	399
206	600H	596	8.12 H	8.06	34.520	26.930	35.854	44.361	29.653	220	6.4	1.29	19.8	596
207	799H	794	6.50 H	6.42	34.371	27.042	36.045	44.626	30.692	232	9.8	1.54	24.0	794
208	1000H	993	5.28 H	5.19	34.331	27.162	36.227	44.865	31.750	213	21.3	1.83	28.6	993
209	1250H	1240	3.86 H	3.76	34.394	27.366	36.503	45.209	33.130	183	47.9	2.16	33.5	1240
210	1499H	1486	2.90 H	2.79	34.509	27.547	36.735	45.487	34.476	167	75.8	2.20	34.6	1486
211	1750H	1734	2.48 H	2.36	34.582	27.642	36.853	45.626	35.726	158	96.0	2.29	35.6	1734
212	2002H	1982	2.206H	2.064	34.625	27.700	36.926	45.713	36.935	151	111.9	2.34	36.2	1982
213	2306H	2281	2.01 H	1.84	34.647	27.734	36.972	45.770	38.346	149	123.0	2.40	36.8	2281
214	2613H	2583	1.88 H	1.69	34.657	27.754	37.000	45.806	39.744	148	127.9	2.40	36.8	2583
114	2623	2592	1.891	1.699	34.655	27.751	36.997	45.803	39.786	148	127.4	2.37	36.7	2592
115	2826	2792	1.823	1.613	34.661	27.762	37.013	45.823	40.703	149	129.2	2.39	36.6	2792
116	3028	2990	1.763	1.535	34.668	27.774	37.028	45.843	41.612	153	129.2	2.36	35.8	2990
117	3285	3242	1.662	1.410	34.678	27.790	37.052	45.873	42.768	161	127.5	2.32	35.5	3242
118	3540	3491	1.580	1.304	34.691	27.808	37.075	45.902	43.909	173	122.4	2.25	34.5	3491
119	3744	3690	1.480	1.185	34.702	27.825	37.099	45.931	44.824	185	118.5	2.18	33.6	3690

STATION: 309 LEG: VIII POSITION: 28° 29' S 158° 48' W DATE: 2 APR 74

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
120	3948	3890	1.383	1.069	34.709	27.838	37.119	45.957	45.733	193	116.1	2.12	32.9	3890
121	4052	3991	1.337	1.013	34.707	27.840	37.124	45.965	46.190	196	116.1	2.11	32.5	3991
122	4151	4088	1.270	0.937	34.710	27.847	37.135	45.981	46.632	199	116.3	2.14	32.5	4088
123	4409	4339	1.169	0.811	34.710	27.855	37.151	46.003	47.762	204	118.9	2.08	32.4	4339
1201	4610	4535	1.119	0.739	34.707D	27.857	37.157	46.013	48.631					4535
1202	4811	4731	1.100	0.697	34.707D	27.860	37.162	46.020	49.494					4731
1203	5010	4924	1.108	0.681	34.707D	27.861	37.164	46.023	50.340					4924
1204	5212	5120	1.120	0.668	34.705D	27.860	37.164	46.024	51.192					5120
124	5410	5312	1.141	0.663	34.707	27.862	37.166	46.026	52.026	208	121.7	2.10	32.1	5312

BOTTOM DEPTH FOR CAST 1 IS 5370

STATION: 310 LEG: VIII POSITION: 26° 57' S 157° 9' W DATE: 3 APR 74

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	12	12	24.840	24.837	35.511	23.805	32.126	40.067	23.856	210	2.1	0.10	0.0	12
502	13	13	24.840	24.837	35.511	23.805	32.126	40.067	23.861	211				13
503	21	21	24.840	24.835	35.511	23.806	32.126	40.068	23.895	211				21
504	32	32	24.842	24.835	35.511	23.806	32.126	40.068	23.942	212	1.7	0.10	0.0	32
505	33	33	24.839	24.831	35.511	23.807	32.128	40.069	23.948	211				33
506	43	43	24.841	24.831	35.512	23.808	32.128	40.070	23.991	212	1.4	0.08	0.0	43
507	44	44	24.839	24.829	35.511	23.808	32.128	40.070	23.995	211				44
508	75	75	21.880	21.865	35.657	24.776	33.178	41.198	25.099	228	1.0	0.08	0.0	75
509	76	76	21.836	21.820	35.655	24.787	33.190	41.211	25.114					76
510	102	102	20.746	20.726	35.632	25.071	33.506	41.559	25.511	222	1.0	0.08	0.0	102
511	126	126	19.987	19.963	35.601	25.252	33.710	41.785	25.797					126
512	149	148	19.363	19.335	35.596	25.413	33.891	41.984	26.058	212	1.1	0.13	0.1	148
514	181	180	18.626	18.593	35.553	25.571	34.073	42.189	26.357					180
515	199	198	18.038	18.003	35.515	25.690	34.212	42.347	26.557	203	1.2	0.25	2.1	198
516	252	251	16.764	16.722	35.438	25.943	34.510	42.685	27.046	203	1.3	0.32	3.2	251
517	301	300	15.394	15.346	35.278	26.140	34.756	42.978	27.463	204	1.8	0.47	5.4	300
518	403	401	12.365	12.310	35.005	26.570	35.305	43.637	28.364	201	3.4	0.81	10.9	401
519	504	501	9.489	9.430	34.628	26.798	35.658	44.107	29.072	206	5.4	1.20	17.5	501
520	602	599	7.572	7.510	34.461	26.964	35.914	44.445	29.704	227	6.5	1.40	21.0	599
521	701	697	6.670	6.603	34.384	27.029	36.023	44.595	30.232	230	9.1	1.55	23.4	697
522	803	798	5.939	5.866	34.341	27.089	36.120	44.727	30.769	226	13.4	1.70	25.8	798
523	904	898	5.274	5.196	34.327	27.159	36.223	44.861	31.311	217	20.5	1.85	28.4	898
301	945	938	5.368	5.285	34.327	27.148	36.208	44.842	31.485	217	20.5	1.81U	28.2U	938
524	1006	999	4.732	4.648	34.343	27.233	36.325	44.988	31.863	197	31.2	2.00	30.7	999
302	1017	1010	4.877	4.791	34.335	27.211	36.296	44.953	31.887	202	27.9	1.98	30.3	1010
303	1121	1113	4.240	4.150	34.365	27.304	36.421	45.108	32.469	189	39.2	2.12	32.4	1113
304	1245	1235	3.561	3.467	34.422	27.417	36.569	45.289	33.167	178	55.3	2.22	34.0	1235
305	1374	1363	3.130	3.029	34.482	27.505	36.680	45.420	33.857	168	70.6	2.29	35.1	1363
306	1500	1487	2.838	2.730	34.523	27.564	36.755	45.509	34.499	163	80.9	2.33	35.3	1487
307	1624	1610	2.615	2.499	34.560	27.613	36.816	45.582	35.120	160	90.0	2.33	35.7	1610
308	1752	1736	2.444	2.320	34.587	27.649	36.861	45.636	35.744	156	97.3	2.36	35.7	1736
309	1878	1860	2.300	2.167	34.612	27.681	36.902	45.684	36.352	153	106.1	2.37	36.0	1860
310	2006	1986	2.194	2.052	34.624	27.700	36.927	45.714	36.953	151	111.7	2.36	36.2	1986
311	2130	2108	2.107	1.955	34.636	27.717	36.949	45.741	37.533	149	116.9	2.39	36.4	2108
312	2260	2236	2.039	1.877	34.642	27.728	36.964	45.760	38.131	149	120.5	2.39	36.5	2236
314	2371	2345	1.978	1.807	34.647	27.737	36.977	45.777	38.641	148	123.6	2.39	36.7	2345
315	2472	2444	1.939	1.760	34.651	27.744	36.986	45.789	39.102	148	125.4	2.39	36.5	2444
316	2570	2541	1.904	1.716	34.655	27.750	36.995	45.800	39.547	149	127.1	2.38	36.3	2541
317	2674	2643	1.868	1.671	34.658	27.756	37.003	45.810	40.018	149	127.9	2.34	36.3	2643
318	2774	2741	1.840	1.635	34.660	27.760	37.009	45.818	40.469	150	128.5	2.35	36.3	2741
319	2875	2840	1.804	1.590	34.663	27.766	37.017	45.829	40.924	151	129.9	2.36	36.3	2840
320	2975	2938	1.772	1.549	34.666	27.771	37.025	45.839	41.374	152	130.3	2.37	36.3	2938
101	3009	2972	1.770	1.543	34.667	27.772	37.026	45.840	41.526	152	130.7	2.39	36.6	2972
321	3075	3036	1.743	1.510	34.669	27.776	37.032	45.848	41.823	153	130.4	2.36	36.0	3036
322	3075	3036	1.743	1.510	34.670	27.777	37.033	45.849	41.824		130.2	2.36	36.0	3036
323	3075	3036	1.743	1.510	34.668	27.775	37.031	45.847	41.822		129.6	2.36	35.9	3036
324	3075	3036	1.743	1.510	34.669	27.776	37.032	45.848	41.823		130.3	2.35	36.0	3036
102	3101	3062	1.744	1.509	34.671	27.778	37.034	45.850	41.939	153	130.0	2.41	36.5	3062

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

STATION: 310 LEG: VIII POSITION: 26° 57' S 157° 9' W DATE: 3 APR 74

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
103	3190	3149	1.715	1.472	34.672	27.781	37.039	45.857	42.337	155	129.0	2.41	36.4	3149
104	3283	3240	1.698	1.446	34.674	27.785	37.044	45.863	42.750	156	129.1	2.41	36.1	3240
105	3331	3287	1.687	1.430	34.676	27.787	37.048	45.868	42.964	158	128.2	2.40	36.2	3287
106	3368	3323	1.677	1.416	34.678	27.790	37.051	45.872	43.130	159	127.6	2.40	35.9	3323
107	3422	3376	1.668	1.402	34.678	27.791	37.053	45.874	43.368	161	127.6	2.39	35.9	3376
108	3468	3421	1.647	1.377	34.680	27.794	37.058	45.880	43.574	163	126.4	2.35	35.5	3421
109	3556	3507	1.594	1.316	34.688	27.805	37.072	45.897	43.974	169	124.1	2.34	35.2	3507
110	3651	3600	1.533	1.247	34.692	27.813	37.083	45.913	44.402	174	121.6	2.25	34.3	3600
111	3728	3675	1.509	1.215	34.695	27.817	37.090	45.921	44.744	178	120.8	2.25	34.3	3675
112	3817	3762	1.476	1.174	34.698	27.822	37.097	45.930	45.139	182	118.9	2.25	34.0	3762
115	3935	3878	1.424	1.110	34.702	27.830	37.108	45.944	45.664	187	117.2	2.20	33.6	3878
116	4070	4009	1.373	1.046	34.706	27.837	37.119	45.959	46.260	192	116.5	2.16	32.9	4009
117	4191	4127	1.315	0.976	34.709	27.844	37.130	45.973	46.796	197	115.7	2.15	32.9	4127
118	4304	4238	1.269	0.919	34.710	27.849	37.138	45.984	47.292	200	115.1	2.09	32.7	4238
119	4413	4344	1.220	0.859	34.710	27.852	37.145	45.994	47.770	202	115.3	2.10	32.6	4344
120	4578	4504	1.157	0.779	34.711	27.858	37.155	46.009	48.490	205	116.7	2.10	32.5	4504
121	4730	4652	1.121	0.727	34.709	27.860	37.160	46.017	49.146	206	117.5	2.07	32.4	4652
122	4886	4804	1.105	0.693	34.709	27.862	37.164	46.022	49.814	207	117.9	2.10	32.5	4804
123	5042	4956	1.114	0.683	34.710	27.863	37.166	46.025	50.477	220U	117.9	2.11	32.4	4956
124	5200	5109	1.127	0.676	34.710	27.863	37.167	46.026	51.144	207	118.1	2.09	32.4	5109

BOTTOM DEPTH FOR CAST 1 IS 5393

STATION: 311 LEG: VIII POSITION: 26° 17' S 156° 24' W DATE: 4 APR 74

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	25.706	25.705	35.34 D	23.414	31.714	39.635	23.436					5
1202	26	26	25.711	25.705	35.34 D	23.414	31.714	39.635	23.525					26
1203	51	51	23.865	23.854	35.58 D	24.149	32.495	40.462	24.367					51
1204	76	76	21.801	21.785	35.74 D	24.861	33.264	41.285	25.188					76
1205	102	102	20.495	20.475	35.68 D	25.175	33.617	41.676	25.615					102
1206	127	127	19.713	19.689	35.64 D	25.354	33.821	41.903	25.904					127
1207	149	148	19.283	19.255	35.63 D	25.459	33.940	42.035	26.105					148
1208	175	174	18.652	18.620	35.57 D	25.577	34.078	42.193	26.337					174
1209	202	201	17.848	17.812	35.51 D	25.734	34.262	42.403	26.614					201
101	285	284	15.857	15.811	35.341	26.082	34.681	42.888	27.333	203	2.0	0.38	4.3	284
1210	303	302	15.229	15.181	35.29 D	26.186	34.808	43.036	27.519					302
1211	404	402	12.186	12.131	35.01 D	26.609	35.351	43.689	28.409					402
1212	508	505	8.993	8.936	34.58 D	26.841	35.724	44.193	29.138					505
1213	604	601	7.308	7.247	34.41 D	26.961	35.924	44.468	29.714					601
1214	706	702	6.405	6.339	34.35 D	27.036	36.044	44.629	30.267					702
1215	810	805	5.718	5.646	34.33 D	27.108	36.150	44.766	30.824					805
102	949	942	4.961	4.881	34.331	27.198	36.278	44.931	31.562	203	25.7	1.88	29.5	942
1216	1013	1006	4.507	4.425	34.360D	27.271	36.374	45.048	31.938					1006
1217	1162	1153	3.716	3.627	34.410D	27.392	36.536	45.248	32.760					1153
103	1387	1376	2.977	2.877	34.498	27.531	36.714	45.462	33.948	166	74.4	2.29	35.1	1376
1218	1514	1501	2.687	2.580	34.540D	27.590	36.789	45.551	34.595					1501
104	1741	1725	2.365	2.243	34.598	27.664	36.880	45.659	35.712	153	104.4	2.31	35.0	1725
105	2093	2072	2.098	1.950	34.634	27.716	36.948	45.741	37.366	149	118.7	2.41	36.5	2072
106	2398	2372	1.933	1.761	34.649	27.742	36.984	45.787	38.770	148	126.0	2.42	36.6	2372
107	2697	2665	1.833	1.635	34.659	27.759	37.008	45.818	40.126	150	129.1	2.42	36.6	2665
108	2906	2871	1.781	1.564	34.664	27.768	37.021	45.834	41.066	152	130.8	2.41	36.1	2871
109	3059	3021	1.730	1.499	34.668	27.776	37.033	45.849	41.753	154	131.2	2.38	36.0	3021
110	3210	3168	1.677	1.433	34.672	27.784	37.044	45.864	42.431	157	130.5	2.32	35.2	3168
111	3316	3272	1.658	1.403	34.674	27.788	37.050	45.871	42.901	160	130.4	2.34	35.4	3272
112	3435	3389	1.618	1.352	34.679	27.795	37.060	45.884	43.434	165	128.4	2.33	35.4	3389
114	3524	3476	1.578	1.304	34.681	27.800	37.068	45.894	43.831	169	126.5	2.31	35.0	3476
115	3621	3571	1.531	1.248	34.685	27.807	37.078	45.907	44.266	173	124.6	2.28	34.7	3571
116	3779	3725	1.470	1.172	34.691	27.817	37.092	45.925	44.969	179	122.9	2.21	33.5	3725
117	3932	3875	1.390	1.078	34.693	27.825	37.105	45.943	45.649	185	122.0	2.23	34.0	3875
118	4107	4045	1.331	1.001	34.697	27.833	37.117	45.960	46.421	189	120.8	2.20	33.7	4045
119	4240	4175	1.291	0.948	34.699	27.838	37.125	45.970	47.004	193	120.3	2.16	33.2	4175
120	4415	4346	1.220	0.859	34.703	27.847	37.139	45.989	47.773	199	118.6	2.15	33.0	4346

STATION: 311 LEG: VIII POSITION: 26° 17' S 156° 24' W DATE: 4 APR 74

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	4519	4447	1.205	0.833	34.706	27.851	37.145	45.996	48.225	202	117.8	2.12	32.7	4447
122	4655	4579	1.161	0.774	34.707	27.855	37.152	46.007	48.816	204	118.0	2.12	32.7	4579
123	4866	4785	1.148	0.737	34.706	27.857	37.156	46.013	49.719	205	118.4	2.12	32.5	4785
1219	5093	5005	1.141	0.702	34.707D	27.859	37.161	46.019	50.686					5005
124	5212	5121	1.150	0.696	34.707	27.860	37.162	46.020	51.188	207	118.5	2.12	32.4	5121

BOTTOM DEPTH FOR CAST 1 IS 5188

STATION: 312 LEG: VIII POSITION: 25° 28' S 155° 38' W DATE: 4 APR 74

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	19	19	25.769	25.765	35.38 D	23.426	31.724	39.642	23.507					19
1102	31	31	25.771	25.764	35.38 D	23.427	31.724	39.643	23.558					31
1103	55	55	25.778	25.765	35.38 D	23.426	31.724	39.642	23.660					55
1104	80	80	23.392	23.375	35.58 D	24.288	32.648	40.627	24.630					80
1205	107	107	20.820	20.799	35.61 D	25.034	33.467	41.518	25.496					107
1206	132	132	20.101	20.076	35.63 D	25.244	33.699	41.770	25.814					132
1207	155	155	19.353	19.324	35.61 D	25.426	33.905	41.998	26.098					155
1208	180	179	18.758	18.725	35.56 D	25.542	34.041	42.153	26.324					179
1209	207	206	18.026	17.989	35.53 D	25.705	34.228	42.362	26.606					206
1210	259	258	16.940	16.896	35.46 D	25.919	34.479	42.648	27.051					258
101	301	300	15.947	15.898	35.339	26.061	34.657	42.860	27.381	203	2.2	0.39	4.4	300
1211	408	406	12.446	12.390	34.97 D	26.527	35.259	43.589	28.343					406
1212	506	503	9.605	9.546	34.65 D	26.796	35.651	44.094	29.077					503
1213	610	607	7.742	7.679	34.44 D	26.923	35.865	44.390	29.697					607
1214	708	704	6.492	6.425	34.37 D	27.041	36.044	44.625	30.279					704
102	856	850	5.485	5.410	34.320	27.128	36.182	44.810	31.058	218	17.8	1.75	27.5	850
1215	911	905	5.187	5.109	34.32 D	27.163	36.232	44.874	31.350					905
103	1006	999	4.610	4.527	34.343	27.246	36.345	45.014	31.879	196	32.3	2.02	31.3	999
104	1259	1249	3.445	3.351	34.448	27.448	36.607	45.332	33.266	170	62.5	2.24	34.2	1249
105	1514	1501	2.751	2.643	34.538	27.583	36.779	45.538	34.586	161	85.4	2.32	35.3	1501
106	1818	1801	2.291	2.163	34.611	27.681	36.901	45.684	36.081	153	107.7	2.38	36.0	1801
107	2018	1998	2.123	1.981	34.630	27.710	36.941	45.732	37.022	149	117.4	2.39	36.2	1998
108	2120	2098	2.041	1.891	34.639	27.724	36.959	45.755	37.499	149	121.5	2.39	36.4	2098
109	2322	2297	1.949	1.783	34.649	27.740	36.981	45.783	38.427	149	124.7	2.39	36.3	2297
110	2527	2499	1.868	1.685	34.655	27.752	36.999	45.805	39.360	150	127.4	2.37	36.0	2499
111	2730	2698	1.809	1.608	34.659	27.761	37.012	45.822	40.277	152	128.8	2.38	36.1	2698
112	2932	2896	1.748	1.529	34.666	27.772	37.027	45.842	41.187	155	130.5	2.37	35.9	2896
114	3044	3006	1.716	1.487	34.669	27.778	37.035	45.852	41.690	156	130.2	2.34	35.7	3006
115	3146	3106	1.699	1.460	34.670	27.780	37.039	45.858	42.144	159	129.7	2.34	35.6	3106
116	3248	3206	1.663	1.415	34.674	27.787	37.048	45.869	42.602	161	128.6	2.30	35.0	3206
117	3452	3406	1.576	1.309	34.680	27.799	37.066	45.892	43.515	169	125.9	2.28	34.6	3406
118	3656	3605	1.498	1.212	34.686	27.810	37.083	45.914	44.425	177	124.0	2.24	34.2	3605
119	3859	3804	1.408	1.103	34.692	27.822	37.101	45.938	45.329	185	122.1	2.18	33.5	3804
120	4055	3995	1.329	1.005	34.696	27.832	37.116	45.958	46.195	189	120.4	2.17	33.2	3995
121	4269	4204	1.283	0.937	34.700	27.839	37.128	45.973	47.131	194	119.9	2.13	32.8	4204
122	4470	4400	1.234	0.866	34.704	27.847	37.139	45.989	48.008	198	118.8	2.13	32.5	4400
123	4673	4597	1.179	0.790	34.704	27.852	37.148	46.002	48.888	202	118.9	2.13	32.4	4597
124	4867	4786	1.143	0.732	34.707	27.858	37.158	46.014	49.725	206	118.1	2.10	32.2	4786

BOTTOM DEPTH FOR CAST 1 IS 4796

STATION: 313 LEG: VIII POSITION: 24° 24' S 154° 25' W DATE: 5 APR 74

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	25.699	25.698	35.40 D	23.462	31.761	39.681	23.483					5
1202	24	24	25.460	25.454	35.39 D	23.528	31.834	39.760	23.630					24

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

STATION: 313 LEG: VIII POSITION: 24° 24' S 154° 25' W DATE: 5 APR 74

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	50	50	23.584	23.573	35.72 D	24.336	32.689	40.661	24.550					50
1204	75	75	22.059	22.043	35.73 D	24.782	33.177	41.191	25.104					75
1205	103	103	20.629	20.609	35.68 D	25.139	33.577	41.632	25.583					103
1206	127	127	20.469	20.444	35.77 D	25.252	33.694	41.753	25.800					127
1207	149	149	19.868	19.840	35.65 D	25.321	33.784	41.862	25.966					149
1208	178	177	18.977	18.944	35.58 D	25.501	33.993	42.098	26.274					177
1209	203	202	18.344	18.307	35.55 D	25.640	34.152	42.277	26.523					202
101	285	284	16.322	16.275	35.385	26.008	34.590	42.781	27.257	200	1.4	0.38	4.4	284
1210	306	305	15.643	15.594	35.30 D	26.100	34.708	42.922	27.444					305
1211	404	402	12.640	12.584	34.99 D	26.504	35.229	43.551	28.301					402
1212	502	499	9.023	8.966	34.59 D	26.844	35.725	44.193	29.114					499
1213	603	600	7.202	7.142	34.42 D	26.984	35.952	44.499	29.734					600
1214	708	704	6.158	6.093	34.34 D	27.060	36.080	44.676	30.304					704
102	823	818	5.331	5.260	34.326	27.151	36.212	44.846	30.934	209	20.5	1.77	28.4	818
1215	911	905	4.893	4.817	34.36 D	27.228	36.311	44.966	31.421					905
103	1042	1035	4.352	4.268	34.407	27.325	36.435	45.116	32.128	164	46.6	2.15	34.1	1035
104	1243	1233	3.371	3.279	34.482	27.482	36.644	45.372	33.229	158	70.5	2.27	35.0	1233
105	1547	1534	2.622	2.513	34.565	27.616	36.818	45.583	34.773	155	94.1	2.34	35.8	1534
106	1802	1785	2.340	2.213	34.605	27.672	36.890	45.670	35.998	151	106.3	2.37	36.2	1785
107	2004	1984	2.139	1.998	34.629	27.708	36.938	45.728	36.955	149	115.4	2.37	36.3	1984
108	2206	2183	2.023	1.866	34.642	27.729	36.965	45.762	37.891	148	120.8	2.38	36.3	2183
109	2358	2333	1.940	1.771	34.651	27.743	36.985	45.787	38.591	149	124.2	2.39	36.3	2333
110	2584	2555	1.852	1.664	34.656	27.755	37.002	45.810	39.618	151	127.7	2.36	36.2	2555
111	2715	2683	1.818	1.619	34.661	27.762	37.012	45.822	40.210	152	128.3	2.37	36.1	2683
112	2865	2831	1.769	1.556	34.665	27.770	37.023	45.836	40.887	153	129.7	2.36	36.1	2831
114	3030	2993	1.717	1.489	34.669	27.778	37.035	45.852	41.628	157	129.5	2.36	35.9	2993
115	3132	3092	1.674	1.437	34.673	27.784	37.045	45.864	42.088	160	128.5	2.33	35.6	3092
116	3237	3195	1.622	1.376	34.678	27.793	37.056	45.879	42.563	163	127.9	2.29	35.2	3195
117	3438	3392	1.563	1.298	34.683	27.802	37.070	45.897	43.459	169	126.4	2.29	35.1	3392
118	3641	3591	1.489	1.205	34.690	27.814	37.087	45.918	44.364	175	124.5	2.25	34.5	3591
119	3845	3790	1.408	1.105	34.694	27.824	37.103	45.939	45.269	182	122.8	2.23	33.9	3790
120	4050	3990	1.347	1.023	34.696	27.831	37.114	45.955	46.171	187	122.1	2.20	33.8	3990
121	4305	4239	1.289	0.938	34.700	27.839	37.127	45.973	47.285	192	120.8	2.16	33.1	4239
122	4560	4488	1.280	0.900	34.702	27.843	37.134	45.981	48.384	195	120.6	2.16	33.1	4488
123	4817	4738	1.287	0.877	34.702	27.845	37.136	45.985	49.481	196	119.9	2.16	32.9	4738
124	5109	5022	1.310	0.863	34.704	27.847	37.140	45.989	50.719	197	120.1	2.13	32.9	5022

BOTTOM DEPTH FOR CAST 1 IS 5064

STATION: 314 LEG: VIII POSITION: 23° 44' S 153° 37' W DATE: 5 APR 74

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	2H	2	26.00 H	26.00	35.608	23.526	31.815	39.725	23.535	205	0.5	0.11	0.0	2
402	42H	42	26.03 H	26.02	35.722	23.606	31.893	39.801	23.784	205	0.5	0.11	0.0	42
403	78H	78	23.42 H	23.40	35.730	24.393	32.750	40.727	24.727	224	0.6	0.10	0.0	78
404	128H	128	21.24 H	21.21	35.672	24.968	33.388	41.426	25.519	208	0.7	0.12	0.0	128
405	180H	179	19.88 H	19.85	35.649	25.319	33.781	41.859	26.098	210	0.7	0.15	0.5	179
406	258H	257	18.07 H	18.02	35.526	25.693	34.215	42.348	26.816	197	0.6	0.29	2.8	257
407	310H	309	16.54 H	16.49	35.397	25.967	34.542	42.726	27.324	205	0.8	0.32	2.8	309
508	351H	350	15.19 H	15.13	35.240	26.158	34.782	43.012	27.702	204	1.1		5.3	350
408	362H	360	14.83 H	14.77	35.200	26.207	34.845	43.088	27.802	204	1.7	0.49	5.4	360
509	400H	398	14.11 H	14.05	35.177	26.346	35.012	43.280	28.113	204	2.5	0.58	7.1	398
510	550H	547	8.35 H	8.29	34.599	26.956	35.868	44.364	29.451	190	8.4	1.52	22.2	547
511	699H	695	6.18 H	6.12	34.352	27.067	36.085	44.680	30.269	201	15.1	1.82	27.6	695
512	861H	856	5.25 H	5.18	34.353	27.182	36.247	44.885	31.139	187	26.0	2.03	31.0	856
513	949H	943	4.79 H	4.71	34.382	27.257	36.346	45.005	31.626	171	37.0	2.19	33.3	943
514	1049H	1042	4.14 H	4.06	34.409	27.348	36.470	45.160	32.189	167	48.2	2.26	34.3	1042
515	1199H	1190	3.73 H	3.64	34.468	27.437	36.580	45.290	32.972	159	64.6	2.34	35.5	1190
516	1401H	1390	2.93 H	2.83	34.533	27.563	36.749	45.498	34.045	155	83.9	2.37	36.1	1390
517	1601H	1587	2.50 H	2.39	34.587	27.644	36.852	45.623	35.051	153	99.7	2.38	36.3	1587
518	1802H	1785	2.31 H	2.18	34.613	27.681	36.900	45.682	36.008	150	108.3	2.40	36.5	1785
519	2003H	1984	2.13 H	1.99	34.631	27.710	36.940	45.731	36.954	149	116.1	2.41	36.7	1984

STATION: 314 LEG: VIII POSITION: 23° 44' S 153° 37' W DATE: 5 APR 74

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	2008	1988	2.142	2.001	34.631	27.710	36.939	45.729	36.975	148	117.6	2.41	36.2	1988
202	2115	2094	2.083	1.933	34.637	27.720	36.952	45.746	37.470	148	120.3	2.43	36.5	2094
520	2153H	2131	2.04 H	1.89	34.641	27.726	36.962	45.758	37.649	149	120.1	2.41	36.5	2131
203	2227	2204	2.014	1.856	34.642	27.729	36.967	45.764	37.986	148	123.1	2.42	36.4	2204
204	2334	2309	1.970	1.803	34.647	27.737	36.977	45.778	38.476	148	125.2	2.42	36.7	2309
205	2439	2413	1.941	1.765	34.650	27.743	36.985	45.787	38.953	149	126.4	2.37	36.3	2413
206	2541	2513	1.902	1.717	34.654	27.749	36.994	45.799	39.417	149	128.0	2.44	36.6	2513
207	2653	2623	1.860	1.666	34.657	27.755	37.003	45.810	39.925	150	129.4	2.40	36.5	2623
208	2771	2739	1.809	1.604	34.662	27.764	37.015	45.825	40.461	151	130.8	2.35	36.4	2739
209	2889	2855	1.765	1.550	34.667	27.772	37.025	45.839	40.995	153	130.9	2.39	36.0	2855
210	3004	2967	1.731	1.506	34.670	27.777	37.033	45.849	41.512	155	129.8	2.32	35.9	2967
211	3103	3064	1.697	1.463	34.671	27.781	37.040	45.858	41.955	158	129.9	2.38	35.8	3064
212	3223	3182	1.661	1.416	34.675	27.788	37.049	45.869	42.493	161	129.2	2.36	35.6	3182
214	3362	3318	1.612	1.354	34.680	27.796	37.061	45.884	43.115	163	129.7	2.32	35.5	3318
215	3471	3425	1.573	1.305	34.683	27.802	37.069	45.895	43.602	167	128.6	2.27	35.0	3425
216	3599	3550	1.533	1.252	34.687	27.808	37.079	45.908	44.171	172	126.9	2.28	34.7	3550
217	3717	3665	1.478	1.186	34.689	27.814	37.088	45.921	44.697	176	125.5	2.24	34.5	3665
218	3825	3771	1.435	1.133	34.692	27.820	37.097	45.933	45.176	180	124.6	2.22	34.3	3771
219	3950	3893	1.393	1.079	34.696	27.827	37.107	45.945	45.730	183	123.7	2.22	33.8	3893
220	4079	4019	1.345	1.018	34.698	27.833	37.116	45.958	46.298	188	122.8	2.19	33.7	4019
221	4221	4158	1.310	0.968	34.700	27.837	37.124	45.968	46.919	190	121.6	2.13	33.1	4158
222	4334	4268	1.300	0.946	34.700	27.839	37.127	45.972	47.408	192	121.2	2.17	33.3	4268
223	4459	4390	1.299	0.930	34.700	27.840	37.128	45.974	47.946	196	121.1	2.14	32.6	4390
224	4644	4570	1.269	0.880	34.704	27.846	37.138	45.986	48.747	195	120.7	2.12	32.7	4570

BOTTOM DEPTH FOR CAST 2 IS 4608

STATION: 315 LEG: IX POSITION: 17° 0' S 134° 52' W DATE: 16 APR 74

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
1312	4	4	26.799	26.798	36.34 D	23.829	32.089	39.971	23.846					4
102	6	6	26.800	26.799	36.34	23.828	32.088	39.970	23.853	202				6
1313	33	33	26.655	26.647	36.43 D	23.941	32.204	40.089	24.081					33
1314	83	83	26.360	26.340	36.58 D	24.152	32.421	40.312	24.503					83
1315	111	111	25.194	25.168	36.42 D	24.394	32.695	40.619	24.866					111
1316	148	148	23.592	23.560	36.23 D	24.726	33.073	41.040	25.357					148
1317	173	173	22.648	22.611	36.28 D	25.034	33.406	41.399	25.774					173
1318	213	212	21.398	21.355	35.99 D	25.173	33.586	41.616	26.089					212
1319	273	272	18.296	18.247	35.47 D	25.592	34.107	42.234	26.778					272
1320	323	322	15.104	15.053	34.95 D	25.949	34.581	42.817	27.372					322
1321	413	411	10.330	10.280	34.54 D	26.581	35.406	43.822	28.439					411
1322	483	481	7.998	7.947	34.45 D	26.894	35.824	44.337	29.091					481
1323	563	560	6.579	6.526	34.39 D	27.045	36.043	44.618	29.623					560
1324	628	625	5.774	5.718	34.37 D	27.130	36.167	44.780	30.016					625
1201	728	724	5.342	5.279	34.43 D	27.230	36.288	44.921	30.579					724
1202	828	823	4.955	4.886	34.48 D	27.314	36.392	45.042	31.127					823
1203	928	922	4.605	4.529	34.51 D	27.375	36.471	45.137	31.652					922
1204	1053	1046	4.136	4.053	34.526D	27.441	36.562	45.251	32.299					1046
1205	1178	1170	3.691	3.601	34.541D	27.499	36.642	45.353	32.939					1170
1206	1328	1318	3.318	3.219	34.565D	27.554	36.717	45.447	33.689					1318
1207	1503	1491	2.919	2.810	34.580D	27.602	36.788	45.538	34.548					1491
1208	1678	1664	2.535	2.416	34.600D	27.652	36.858	45.628	35.407					1664
1209	1853	1836	2.247	2.117	34.621D	27.693	36.915	45.700	36.253					1836
1210	2028	2009	2.043	1.901	34.643D	27.727	36.961	45.757	37.087					2009
1212	2378	2353	1.865	1.696	34.661D	27.756	37.002	45.808	38.699					2353
1213	2563	2535	1.799	1.614	34.668D	27.768	37.018	45.828	39.541					2535
1214	2738	2707	1.759	1.559	34.673D	27.776	37.029	45.842	40.330					2707
1215	2913	2879	1.713	1.497	34.677D	27.783	37.040	45.856	41.117					2879
104	3000	2964	1.696	1.472	34.678	27.786	37.044	45.862	41.506	158				2964
106	3003	2967	1.695	1.471	34.677	27.785	37.043	45.861	41.518	159				2967
108	3003	2967	1.695	1.471	34.677	27.785	37.043	45.861	41.518	158				2967
1216	3088	3051	1.681	1.449	34.680D	27.789	37.049	45.867	41.898					3051

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

STATION: 315 LEG: IX POSITION: 17° 0' S 134° 52' W DATE: 16 APR 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1217	3263	3222	1.647	1.398	34.683D	27.795	37.057	45.879	42.677					3222
1218	3438	3394	1.608	1.342	34.685D	27.801	37.066	45.890	43.453					3394
1219	3613	3565	1.584	1.300	34.687D	27.805	37.073	45.899	44.224					3565
1220	3788	3736	1.563	1.261	34.689D	27.809	37.079	45.908	44.992					3736
1221	3963	3907	1.532	1.212	34.691D	27.814	37.087	45.918	45.758					3907
110	4011	3954	1.533	1.208	34.692	27.815	37.088	45.920	45.967	169				3954
112	4013	3956	1.533	1.207	34.690	27.814	37.087	45.918	45.974	169				3956
115	4021	3964	1.532	1.206	34.689	27.813	37.086	45.918	46.008	169				3964
121	4021	3964	1.532	1.206	34.690	27.814	37.087	45.918	46.009	169				3964
117	4022	3965	1.532	1.205	34.690	27.814	37.087	45.918	46.013	170				3965
124	4023	3966	1.533	1.206	34.691	27.815	37.088	45.919	46.018	170				3966
119	4024	3967	1.532	1.205	34.691	27.815	37.088	45.919	46.023	170				3967
1222	4138	4078	1.520	1.181	34.691D	27.816	37.091	45.923	46.518					4078
1223	4313	4249	1.525	1.166	34.692D	27.818	37.093	45.927	47.272					4249
1224	4511	4442	1.539	1.156	34.693D	27.820	37.095	45.929	48.120					4442

BOTTOM DEPTH FOR CAST 1 IS 4482

STATION: 316 LEG: IX POSITION: 18° 51' S 126° 36' W DATE: 19 APR 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
201	2H	2	25.45 H	25.45	36.545	24.400	32.693	40.607	24.409	208	1.9	0.30	0.0K	2
202	5H	5	25.44 H	25.44	36.546	24.404	32.697	40.612	24.426	208				5
203	12H	12	25.44 H	25.44	36.545	24.404	32.697	40.612	24.455	208				12
204	17H	17	25.39 H	25.39	36.540	24.416	32.710	40.626	24.488	209	1.5	0.29	0.0K	17
205	26H	26	25.35 H	25.34	36.539	24.428	32.723	40.640	24.539	208				26
206	41H	41	25.36 H	25.35	36.548	24.433	32.728	40.645	24.607					41
207	52H	52	25.42 H	25.41	36.625	24.473	32.766	40.681	24.694	208	1.5	0.24	0.0K	52
208	77H	77	25.38 H	25.36	36.659	24.513	32.806	40.722	24.840	208				77
209	82H	82	25.35 H	25.33	36.658	24.522	32.816	40.732	24.870					82
210	102H	102	25.24 H	25.22	36.659	24.557	32.854	40.774	24.990	208	1.5	0.23	0.0K	102
211	121H	121	24.39 H	24.37	36.47	24.667	32.989	40.932	25.182					121
212	127H	127	24.34 H	24.31	36.516	24.721	33.044	40.988	25.261	212	0.8	0.23	0.0K	127
213	151H	151	23.97 H	23.94	36.469	24.796	33.130	41.085	25.440	212	0.8	0.23	0.0K	151
214	162H	162	23.67 H	23.63	36.416	24.845	33.187	41.151	25.536					162
215	303H	302	16.24 H	16.19	35.086	25.799	34.388	42.585	27.127	200	0.8	0.48	2.4K	302
216	402H	400	11.163H	11.112	34.540	26.436	35.226	43.610	28.238	154	7.4	1.38	16.9K	400
217	502H	500	7.84 H	7.79	34.423	26.894	35.831	44.351	29.178	128	16.1	2.04	31.1K	500
218	602H	599	6.139H	6.084	34.355	27.073	36.093	44.689	29.835	179	16.6	1.97	31.6K	599
219	702H	698	5.214H	5.155	34.342	27.175	36.242	44.881	30.409	171	26.0	2.12	34.7K	698
220	802H	797	4.852H	4.786	34.420	27.279	36.363	45.018	30.976	138	44.6	2.36	38.6K	797
221	952H	946	4.42 H	4.34	34.504	27.394	36.499	45.174	31.784	117	66.4	2.50	40.6K	946
101	958	952	4.416	4.339	34.500	27.391	36.497	45.172	31.809	119	66.7	2.55	39.5K	952
102	1108	1100	3.901	3.815	34.527	27.466	36.599	45.300	32.581	118	78.1	2.60	40.1K	1100
103	1257	1248	3.515	3.420	34.546	27.520	36.673	45.393	33.325	124	87.2	2.60	40.0K	1248
104	1412	1401	3.110	3.006	34.564	27.572	36.747	45.488	34.097	128	94.8	2.58	39.5K	1401
105	1563	1550	2.753	2.641	34.591	27.626	36.820	45.579	34.850	129	106.2	2.58	39.4K	1550
106	1712	1697	2.468	2.347	34.607	27.663	36.873	45.646	35.575	140	112.2	2.51	38.2K	1697
107	1865	1848	2.257	2.126	34.626	27.696	36.918	45.702	36.310	144	115.4	2.48	38.1K	1848
108	2015	1996	2.095	1.954	34.644	27.724	36.955	45.748	37.023	148	119.4	2.45	37.8K	1996
109	2168	2147	1.984	1.831	34.655	27.742	36.980	45.779	37.735	151	123.3	2.43	37.7K	2147
110	2320	2296	1.919	1.754	34.659	27.751	36.993	45.796	38.430	152	125.5	2.44	37.6K	2296
111	2470	2444	1.873	1.695	34.665	27.760	37.005	45.811	39.113	154	127.3	2.40	37.4K	2444
112	2624	2595	1.821	1.630	34.671	27.769	37.018	45.828	39.812	155	129.1	2.40	37.3K	2595
115	2786	2754	1.769	1.564	34.673	27.776	37.028	45.841	40.542	156	131.2	2.41	37.4K	2754
116	2937	2902	1.736	1.517	34.677	27.782	37.038	45.853	41.220	159	132.7	2.39	37.1K	2902
117	3089	3051	1.702	1.469	34.680	27.788	37.046	45.864	41.900	160	131.9	2.38	37.2K	3051
118	3242	3201	1.679	1.431	34.680	27.790	37.051	45.870	42.577	162	132.6	2.37	37.1K	3201
119	3392	3348	1.651	1.389	34.684	27.797	37.059	45.881	43.244	165	131.6	2.36	36.6K	3348
120	3544	3497	1.621	1.344	34.687	27.802	37.067	45.891	43.916	165	130.4	2.35	36.7K	3497
121	3699	3649	1.602	1.309	34.687	27.805	37.072	45.898	44.596	166	131.7	2.35	36.6K	3649
122	3850	3796	1.588	1.279	34.689	27.808	37.077	45.905	45.257	167	131.9	2.34	36.4K	3796
123	4002	3945	1.585	1.259	34.689	27.810	37.079	45.908	45.917	168	132.7	2.34	36.4K	3945
124	4153	4092	1.596	1.253	34.693	27.813	37.083	45.912	46.571	169	132.5	2.34	36.4K	4092

BOTTOM DEPTH FOR CAST 1 IS 4121

STATION: 317 LEG: IX POSITION: 23° 37' S 127° 11' W DATE: 20 APR 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
401	3H	3	25.94 H	25.94	36.557	24.260	32.539	40.441	24.273	205	3.6	0.24	0.0K	3
402	53H	53	25.93 H	25.92	36.555	24.265	32.545	40.447	24.490	206	2.9	0.23	0.0K	53
403	103H	103	25.92 H	25.90	36.550	24.268	32.549	40.452	24.704	206	2.2	0.23	0.0K	103
404	122H	122	24.27 H	24.24	36.192	24.496	32.825	40.775	25.016	218	2.1	0.20	0.0K	122
405	153H	153	22.56 H	22.53	36.009	24.856	33.234	41.232	25.511	213	1.7	0.20	0.0K	153
406	202H	201	20.21 H	20.17	35.695	25.268	33.719	41.787	26.140	209	1.5	0.21	0.4K	201
407	272H	271	18.08 H	18.03	35.406	25.600	34.122	42.257	26.783	205	1.5	0.30	1.7K	271
408	351H	350	15.67 H	15.61	35.153	25.983	34.591	42.807	27.524	206	1.9	0.43	4.0K	350
409	402H	400	13.75 H	13.69	34.917	26.222	34.904	43.188	28.001	203	2.2	0.65	7.5K	400
410	451H	449	11.26 H	11.20	34.644	26.501	35.286	43.664	28.519	197	3.9	1.03	13.8K	449
411	491H	489	9.70 H	9.64	34.503	26.665	35.518	43.960	28.879	193	5.7	1.29	18.2K	489
412	540H	537	8.42 H	8.36	34.418	26.804	35.715	44.211	29.253	194	7.5	1.51	22.0K	537
413	600H	597	7.00 H	6.94	34.358	26.962	35.941	44.499	29.703	206	9.3	1.68	25.4K	597
414	670H	666	6.243H	6.181	34.330	27.041	36.057	44.649	30.111	212	11.4	1.79	27.2K	666
415	750H	746	5.60 H	5.53	34.306	27.102	36.150	44.772	30.548	214	14.7	1.87	28.7K	746
416	849H	844	4.917H	4.846	34.312	27.187	36.269	44.923	31.097	196	24.4	2.05	32.0K	844
417	998H	991	4.126H	4.048	34.378	27.324	36.447	45.139	31.933	165	45.0	2.31	35.8K	991
418	1147H	1139	3.48 H	3.39	34.468	27.460	36.616	45.338	32.766	151	66.9	2.42	37.4K	1139
419	1299H	1289	3.009H	2.916	34.530	27.553	36.734	45.479	33.567	149	83.7	2.42	37.5K	1289
420	1449H	1437	2.688H	2.586	34.563	27.608	36.806	45.568	34.317	151	92.5	2.42	37.3K	1437
421	1601H	1587	2.41 H	2.30	34.595	27.657	36.871	45.646	35.069	152	102.5	2.42	37.3K	1587
201	1640	1626	2.355	2.241	34.602	27.667	36.884	45.662	35.258	152	104.8	2.43	37.3K	1626
422	1752H	1736	2.245H	2.124	34.614	27.686	36.909	45.693	35.790	153	107.7	2.42	37.2K	1736
202	1773	1757	2.207	2.084	34.620	27.694	36.919	45.705	35.895	153	109.7	2.43	37.2K	1757
203	1922	1904	2.083	1.950	34.634	27.716	36.948	45.741	36.596	154	113.9	2.43	37.0K	1904
204	2076	2055	1.997	1.852	34.646	27.733	36.970	45.768	37.312	155	117.5	2.42	37.1K	2055
205	2225	2202	1.936	1.779	34.653	27.744	36.985	45.787	37.996	156	119.4	2.42	37.1K	2202
206	2381	2356	1.884	1.714	34.660	27.754	36.999	45.804	38.709	157	121.4	2.41	37.1K	2356
207	2531	2503	1.839	1.656	34.664	27.762	37.010	45.818	39.389	159	122.8	2.41	36.9K	2503
208	2683	2652	1.795	1.599	34.672	27.772	37.023	45.834	40.080	160	123.0	2.39	36.8K	2652
209	2839	2805	1.738	1.529	34.674	27.779	37.034	45.848	40.783	163	123.7	2.37	36.7K	2805
210	2997	2960	1.716	1.492	34.673	27.781	37.038	45.854	41.485	165	124.3	2.38	36.6K	2960
211	3151	3111	1.707	1.468	34.676	27.785	37.043	45.861	42.169	166	124.2	2.37	36.6K	3111
212	3305	3262	1.708	1.453	34.676	27.786	37.045	45.863	42.847	167	123.6	2.36	36.5K	3262
215	3417	3372	1.712	1.445	34.676	27.786	37.046	45.865	43.337	167	124.1	2.36	36.4K	3372
216	3460	3414	1.714	1.443	34.678	27.788	37.048	45.867	43.527	167	124.4	2.36	36.5K	3414
217	3468	3422	1.714	1.442	34.680	27.790	37.049	45.868	43.564	167	124.2	2.36	36.5K	3422
218	3522	3475	1.714	1.436	34.678	27.789	37.049	45.868	43.798	167	124.3	2.36	36.6K	3475
219	3543	3495	1.712	1.432	34.679	27.790	37.050	45.869	43.891	167	124.7	2.37	36.6K	3495
220	3570	3522	1.711	1.428	34.680	27.791	37.051	45.871	44.010	166	124.8	2.37	36.6K	3522
221	3594	3545	1.706	1.421	34.680	27.791	37.052	45.872	44.116	166	124.7	2.37	36.7K	3545
222	3613	3564	1.706	1.419	34.680	27.791	37.052	45.873	44.199	166	124.7	2.37	36.6K	3564
223	3613	3564	1.706	1.419	34.680	27.791	37.052	45.873	44.199	166	124.6	2.36	36.6K	3564
224	3622	3572	1.707	1.419	34.680	27.791	37.052	45.873	44.238	166	124.4	2.36	36.6K	3572

BOTTOM DEPTH FOR CAST 2 IS 3589

STATION: 318 LEG: IX POSITION: 25° 33' S 127° 49' W DATE: 22 APR 74

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	SIO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
115	4	4	25.309	25.308	36.405	24.338	32.635	40.555	24.355	207				4
1301	20	20	25.314	25.309	36.41 D	24.337	32.635	40.555	24.422					20
1302	41	41	25.320	25.310	36.41 D	24.337	32.635	40.554	24.511					41
1201	66	66	25.287	25.272	36.41 D	24.356	32.654	40.575	24.636					66
1303	82	82	23.616	23.598	36.11 D	24.624	32.971	40.939	24.974					82
1202	98	98	23.065	23.044	36.00 D	24.699	33.063	41.047	25.119					98
1304	123	123	22.052	22.027	35.91 D	24.923	33.317	41.330	25.451					123
1305	154	153	20.879	20.848	35.77 D	25.141	33.572	41.619	25.805					153
1203	195	194	19.745	19.708	35.65 D	25.354	33.820	41.902	26.197					194
1306	236	235	18.122	18.080	35.42 D	25.596	34.117	42.250	26.623					235
1204	272	271	17.102	17.055	35.28 D	25.739	34.295	42.462	26.927					271
1307	307	306	16.072	16.022	35.15 D	25.888	34.482	42.684	27.234					306

D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
K KNOWN ERROR

STATION: 318 LEG: IX POSITION: 25° 33' S 127° 49' W DATE: 22 APR 74

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	352	350	14.366	14.313	34.977	26.136	34.794	43.056	27.691	203				350
1308	400	398	12.337	12.282	34.74 D	26.372	35.112	43.449	28.155					398
118	450	448	10.288	10.233	34.561	26.609	35.436	43.853	28.633	199				448
1309	503	500	8.450	8.395	34.44 D	26.817	35.726	44.220	29.099					500
1205	563	560	7.181	7.125	34.38 D	26.954	35.923	44.472	29.523					560
1310	618	615	6.579	6.520	34.34 D	27.007	36.006	44.583	29.835					615
1206	678	674	6.024	5.962	34.32 D	27.062	36.088	44.690	30.171					674
120	800	795	5.373	5.304	34.30	27.125	36.184	44.817	30.802	219				795
1311	863	857	4.998	4.925	34.31 D	27.175	36.253	44.904	31.147					857
1207	928	922	4.610	4.534	34.32 D	27.227	36.326	44.995	31.505					922
1208	1053	1045	4.052	3.970	34.395D	27.346	36.472	45.168	32.207					1045
1312	1123	1115	3.795	3.709	34.427D	27.397	36.537	45.244	32.585					1115
122	1206	1197	3.515	3.424	34.462	27.453	36.607	45.328	33.027	148				1197
1209	1353	1342	3.026	2.928	34.521D	27.545	36.725	45.470	33.805					1342
1210	1503	1490	2.705	2.598	34.563D	27.607	36.804	45.565	34.561					1490
1211	1653	1638	2.499	2.382	34.587D	27.644	36.853	45.624	35.288					1638
1212	1828	1811	2.262	2.134	34.616D	27.687	36.909	45.693	36.134					1811
1213	2013	1993	2.094	1.953	34.632D	27.714	36.946	45.739	37.004					1993
1214	2188	2165	1.982	1.828	34.645D	27.734	36.972	45.772	37.818					2165
1215	2363	2338	1.880	1.712	34.656D	27.751	36.996	45.801	38.626					2338
1216	2538	2509	1.794	1.612	34.665D	27.766	37.016	45.827	39.428					2509
1217	2713	2681	1.749	1.551	34.668D	27.772	37.026	45.840	40.217					2681
1219	2888	2853	1.705	1.492	34.673D	27.781	37.038	45.854	41.004					2853
1220	3063	3025	1.679	1.449	34.676D	27.786	37.045	45.864	41.785					3025
1221	3213	3172	1.657	1.413	34.680D	27.792	37.053	45.874	42.453					3172
1222	3363	3319	1.648	1.389	34.682D	27.795	37.058	45.880	43.115					3319
124	3529	3481	1.630	1.354	34.684	27.799	37.064	45.887	43.847	172				3481
1223	3648	3597	1.630	1.341	34.685D	27.801	37.066	45.890	44.367					3597
1313	3773	3720	1.633	1.331	34.686D	27.802	37.068	45.893	44.912					3720
1224	3783	3729	1.634	1.331	34.686D	27.802	37.068	45.893	44.956					3729

BOTTOM DEPTH FOR CAST 1 IS 3744

STATION: 319 LEG: IX POSITION: 28° 30' S 127° 47' W DATE: 23 APR 74

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	4H	4	23.14 H	23.14	35.670	24.424	32.789	40.774	24.442	216				4
202	10H	10	23.14 H	23.14	35.671	24.425	32.791	40.775	24.468	216	5.5	0.16	0.1	10
203	18H	18	23.14 H	23.14	35.672	24.427	32.792	40.777	24.504					18
204	27H	27	23.11 H	23.10	35.672	24.436	32.802	40.788	24.552	216	4.1	0.15	0.0	27
205	37H	37	23.12 H	23.11	35.672	24.434	32.799	40.785	24.592					37
206	54H	54	23.11 H	23.10	35.668	24.435	32.801	40.787	24.666	216	3.9	0.14	0.0	54
207	58H	58	23.03 H	23.02	35.665	24.456	32.824	40.812	24.704					58
208	70H	70	19.56 H	19.55	35.400	25.208	33.682	41.772	25.512	248	3.1	0.13	0.0	70
209	81H	81	18.80 H	18.79	35.379	25.389	33.888	42.000	25.741	249	2.7	0.14	0.0	81
210	91H	91	17.91 H	17.89	35.290	25.545	34.074	42.215	25.942	249	2.4	0.16	0.0	91
211	121H	121	16.97 H	16.95	35.310	25.791	34.351	42.521	26.321	242	2.1	0.18	0.0	121
212	182H	181	15.32 H	15.29	35.141	26.047	34.667	42.893	26.849	225	2.1	0.32	2.1	181
213	263H	262	13.62 H	13.58	35.014	26.319	35.005	43.291	27.486	209	2.7	0.60	6.9	262
214	322H	320	11.46 H	11.42	34.778	26.565	35.339	43.707	28.006	204	3.5	0.93	12.3	320
215	393H	391	8.58 H	8.54	34.462	26.811	35.714	44.201	28.595	206	6.3	1.40	20.2	391
216	464H	461	7.41 H	7.36	34.409	26.944	35.901	44.440	29.062	226	6.6	1.47	21.8	461
217	575H	571	6.52 H	6.47	34.357	27.025	36.027	44.606	29.659	236	8.5	1.59	24.0	571
218	655H	651	6.07 H	6.01	34.328	27.061	36.085	44.685	30.066	236	10.4	1.67	25.0	651
219	754H	749	5.44 H	5.37	34.302	27.118	36.174	44.803	30.585	230	14.5	1.80	27.2	749
220	852H	846	4.93 H	4.86	34.303	27.178	36.260	44.914	31.102	210	22.4	1.99	30.2	846
221	952H	945	4.37 H	4.29	34.329	27.260	36.371	45.051	31.653	197	32.5	2.13	32.1	945
101	997	990	4.211	4.132	34.341	27.286	36.405	45.093	31.889	190	37.6	2.17	32.2	990
222	1051H	1043	3.90 H	3.82	34.375	27.345	36.480	45.183	32.202	178	44.9	2.28	34.2	1043
102	1098	1089	3.744	3.661	34.396	27.377	36.520	45.230	32.453	171	50.8	2.30	34.1	1089
103	1196	1186	3.343	3.255	34.453	27.461	36.625	45.354	32.995	163	64.1	2.38	35.0	1186
104	1299	1288	3.038	2.945	34.494	27.522	36.702	45.446	33.536	161	73.8	2.38	35.1	1288
105	1401	1389	2.784	2.685	34.531	27.574	36.767	45.524	34.061	159	82.8	2.39	35.1	1389
106	1550	1536	2.516	2.408	34.573	27.631	36.838	45.609	34.806	157	94.8	2.39	35.1	1536
107	1702	1686	2.351	2.232	34.596	27.663	36.880	45.659	35.536	156	102.2	2.41	35.1	1686
108	1854	1836	2.176	2.047	34.622	27.699	36.926	45.714	36.267	155	109.8	2.42	35.4	1836
109	2005	1984	2.069	1.929	34.634	27.717	36.950	45.745	36.973	154	115.6	2.42	35.5	1984
110	2105	2083	2.020	1.872	34.639	27.726	36.962	45.759	37.434	154	117.4	2.42	35.5	2083
111	2158	2135	1.991	1.839	34.642	27.731	36.969	45.767	37.679	154	117.9	2.42	35.5	2135
112	2257	2232	1.935	1.775	34.649	27.741	36.982	45.784	38.137	155	120.5	2.42	35.5	2232
115	2469	2441	1.839	1.662	34.657	27.756	37.003	45.811	39.107	157	123.4	2.43	35.4	2441
116	2618	2587	1.779	1.590	34.664	27.766	37.018	45.830	39.786	159	123.7	2.41	35.1	2587
117	2768	2734	1.723	1.521	34.668	27.775	37.030	45.845	40.465	162	124.3	2.37	35.0	2734
118	2918	2882	1.675	1.459	34.672	27.782	37.041	45.859	41.141	165	124.2	2.36	34.7	2882
119	3071	3032	1.631	1.402	34.678	27.791	37.053	45.874	41.829	168	123.6	2.35	34.7	3032
120	3275	3231	1.593	1.344	34.682	27.798	37.063	45.888	42.737	171	123.5	2.34	34.2	3231
121	3428	3381	1.570	1.306	34.684	27.802	37.070	45.896	43.414	173	123.2	2.32	34.1	3381
122	3581	3531	1.562	1.282	34.687	27.806	37.075	45.902	44.088	174	123.0	2.31	34.0	3531
123	3735	3681	1.564	1.268	34.688	27.808	37.078	45.906	44.760	175	123.2	2.31	34.0	3681
124	4058	3997	1.580	1.248	34.689	27.810	37.081	45.910	46.160	176	123.2	2.31	33.8	3997

BOTTOM DEPTH FOR CAST 1 IS 4043

STATION: 320 LEG: IX POSITION: 33° 20' S 128° 24' W DATE: 25 APR 74

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	19.65 H	19.65	34.648	24.609	33.089	41.184	24.618	232	3.9	0.20	0.0	2
502	37H	37	20.09 H	20.08	34.841	24.642	33.106	41.186	24.802	231	2.7	0.19	0.0	37
503	52H	52	20.04 H	20.03	34.855	24.666	33.132	41.214	24.892	236	2.2	0.19	0.0	52
504	73H	73	16.74 H	16.73	34.676	25.358	33.934	42.119	25.679	263	2.1	0.20	0.0	73
505	98H	98	14.93 H	14.91	34.757	25.835	34.474	42.718	26.269	265	2.2	0.21	0.0	98
506	123H	122	14.24 H	14.22	34.734	25.968	34.633	42.901	26.514	260	1.7	0.24	0.1	122
507	174H	173	12.62 H	12.60	34.629	26.222	34.951	43.278	26.999	238	1.8	0.50	4.3	173
508	224H	223	11.47 H	11.44	34.632	26.447	35.222	43.592	27.451	223	2.2	0.77	9.6	223
509	324H	322	9.01 H	8.97	34.514	26.783	35.665	44.134	28.252	217	4.2	1.19	17.2	322
510	405H	403	7.67 H	7.63	34.430	26.922	35.867	44.394	28.769	228	5.7	1.38	20.6	403
511	504H	501	6.87 H	6.82	34.383	26.998	35.982	44.545	29.304	239	6.9	1.48	22.2	501
512	605H	601	6.42 H	6.36	34.353	27.036	36.042	44.625	29.807	243	8.3	1.54	23.2	601
513	704H	699	5.92 H	5.86	34.324	27.077	36.109	44.716	30.307	240	11.0	1.64	25.0	699
514	803H	797	5.43 H	5.36	34.305	27.122	36.179	44.809	30.812	230	15.2	1.78	27.1	797
515	903H	896	4.87 H	4.79	34.308	27.189	36.275	44.931	31.347	216	22.8	1.93	29.3	896
516	1004H	996	4.39 H	4.31	34.327	27.257	36.367	45.046	31.886	203	31.2	2.02	31.0	996
517	1153H	1143	3.68 H	3.59	34.376	27.368	36.515	45.229	32.696	187	45.7	2.19	33.5	1143
518	1302H	1291	3.147H	3.052	34.444	27.473	36.647	45.387	33.497	176	59.8	2.27	34.5	1291
519	1453H	1440	2.74 H	2.64	34.516	27.566	36.762	45.522	34.292	169	74.0	2.32	35.4	1440
520	1602H	1587	2.50 H	2.39	34.573	27.632	36.841	45.613	35.045	163	88.3	2.34	35.3	1587
521	1754H	1736	2.303H	2.181	34.611	27.680	36.899	45.681	35.789	158	100.0	2.36	35.5	1736
201	1881	1862	2.189	2.058	34.628	27.703	36.929	45.716	36.392	156	109.2	2.34	35.8	1862
202	2060	2038	2.060	1.915	34.640	27.723	36.957	45.752	37.227	157	114.2	2.35	35.8	2038
203	2235	2210	1.919	1.761	34.655	27.747	36.989	45.791	38.045	158	119.6	2.34	35.8	2210
204	2414	2386	1.827	1.655	34.662	27.760	37.008	45.816	38.866	160	123.0	2.34	35.8	2386
205	2589	2558	1.755	1.569	34.668	27.771	37.024	45.836	39.663	162	123.9	2.33	35.6	2558
206	2768	2733	1.699	1.497	34.673	27.780	37.037	45.853	40.472	166	124.6	2.32	35.4	2733
207	2944	2906	1.651	1.433	34.678	27.789	37.049	45.869	41.264	167	125.1	2.31	35.2	2906
208	3123	3081	1.625	1.391	34.679	27.793	37.055	45.877	42.060	170	125.0	2.29	35.2	3081
209	3301	3255	1.601	1.349	34.683	27.799	37.063	45.887	42.851	172	125.3	2.28	34.9	3255
210	3477	3428	1.591	1.321	34.685	27.802	37.069	45.894	43.627	173	125.4	2.27	34.8	3428
211	3655	3602	1.576	1.288	34.687	27.806	37.074	45.901	44.409	175	124.7	2.27	34.8	3602
212	3835	3777	1.579	1.272	34.689	27.809	37.078	45.906	45.193	176	124.4	2.26	34.6	3777
215	3893	3834	1.570	1.257	34.689	27.810	37.080	45.908	45.447	176	124.7	2.26	34.6	3834
216	3993	3932	1.537	1.214	34.691	27.814	37.087	45.918	45.888	179	124.2	2.22	34.5	3932
217	4012	3950	1.531	1.206	34.693	27.816	37.089	45.921	45.972	179	124.5	2.23	34.4	3950
218	4045	3982	1.520	1.191	34.693	27.817	37.091	45.923	46.117	179	124.0	2.23	34.4	3982
219	4096	4032	1.507	1.173	34.693	27.818	37.093	45.926	46.340	180	123.9	2.23	34.1	4032
220	4147	4082	1.505	1.165	34.695	27.821	37.096	45.929	46.562	181	123.6	2.22	34.3	4082
221	4172	4106	1.504	1.161	34.695	27.821	37.096	45.930	46.670	181	123.4	2.22	34.2	4106
223	4189	4123	1.504	1.160	34.695	27.821	37.097	45.930	46.744	181	123.1	2.22	34.3	4123
222	4190	4124	1.504	1.159	34.695	27.821	37.097	45.930	46.748	182	122.4	2.22	34.3	4124
224	4197	4131	1.503	1.158	34.696	27.822	37.098	45.931	46.779	181	123.6	2.22	34.3	4131

BOTTOM DEPTH FOR CAST 2 IS 4142

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

STATION: 321 LEG: IX POSITION: 38° 48' S 129° 22' W DATE: 27 APR 74

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	2H	2	16.80 H	16.80	34.049	24.861	33.443	41.633	24.870	244	3.1	0.29	0.9	2
202	33H	33	16.11 H	16.10	34.174	25.119	33.723	41.934	25.265	250	2.3	0.36	1.9	33
203	82H	82	13.10 H	13.09	34.398	25.945	34.658	42.970	26.311	270	1.5	0.40	2.0	82
204	122H	121	11.73 H	11.71	34.386	26.205	34.972	43.335	26.752	261	0.9	0.51	4.0	121
205	181H	180	10.70 H	10.68	34.455	26.449	35.258	43.659	27.264	239	1.0	0.80	10.0	180
206	251H	249	9.05 H	9.02	34.431	26.710	35.592	44.060	27.849	231	2.4	1.12	16.1	249
207	321H	319	8.05 H	8.02	34.443	26.875	35.802	44.312	28.338	226	3.7	1.29	19.5	319
208	451H	448	6.96 H	6.92	34.394	26.994	35.973	44.531	29.058	245	5.7	1.41	21.3	448
209	600H	596	6.42 H	6.36	34.354	27.036	36.043	44.626	29.785	250	6.9	1.48	22.5	596
210	751H	745	5.85 H	5.78	34.316	27.080	36.115	44.726	30.525	244	10.5	1.61	24.8	745
211	901H	894	5.15 H	5.07	34.292	27.145	36.217	44.860	31.287	230	16.6	1.78	27.6	894
212	1052H	1043	4.37 H	4.29	34.323	27.256	36.367	45.048	32.105	206	29.8	2.00	31.0	1043
213	1202H	1191	3.65 H	3.56	34.365	27.363	36.511	45.227	32.915	193	42.2	2.14	32.9	1191
214	1353H	1340	3.14 H	3.04	34.422	27.456	36.632	45.372	33.713	183	55.1	2.22	34.3	1340
215	1503H	1488	2.80 H	2.69	34.493	27.543	36.736	45.494	34.494	173	66.2	2.27	35.0	1488
216	1654H	1637	2.60 H	2.48	34.551	27.607	36.811	45.578	35.251	168	75.8	2.27	35.0	1637
217	1805H	1786	2.435H	2.306	34.597	27.658	36.871	45.646	35.993	164	85.1	2.28	35.0	1786
218	1956H	1935	2.28 H	2.14	34.628	27.696	36.918	45.701	36.720	161	96.0	2.30	35.1	1935
219	2132H	2108	2.14 H	1.99	34.647	27.723	36.953	45.744	37.546	156	106.6	2.32	35.5	2108
220	2308H	2281	2.00 H	1.83	34.657	27.743	36.981	45.780	38.364	155	114.4	2.36	35.8	2281
221	2483H	2452	1.91 H	1.73	34.665	27.757	37.001	45.805	39.166	156	119.3	2.35	35.7	2452
101	2561	2529	1.877	1.691	34.668	27.762	37.008	45.814	39.521	155	122.9U	2.39U	36.2U	2529
222	2659H	2625	1.820H	1.626	34.669	27.768	37.017	45.827	39.967	158	121.4	2.34	35.7	2625
102	2785	2749	1.770	1.565	34.676	27.778	37.031	45.843	40.540	159	124.8U	2.38U	36.0U	2749
103	2961	2921	1.697	1.477	34.682	27.789	37.047	45.864	41.336	163	124.9U	2.37U	35.6U	2921
104	3138	3095	1.631	1.395	34.687	27.799	37.061	45.882	42.132	167	125.5U	2.36U	35.4U	3095
105	3313	3266	1.568	1.316	34.691	27.807	37.074	45.900	42.915	172	124.3U	2.32U	34.9U	3266
106	3492	3441	1.500	1.231	34.696	27.817	37.088	45.918	43.715	177	123.6U	2.29U	34.5U	3441
107	3670	3615	1.433	1.148	34.698	27.824	37.100	45.935	44.506	182	122.3U	2.27U	34.4U	3615
108	3848	3788	1.382	1.079	34.703	27.833	37.113	45.951	45.294	186	121.8U	2.25U	34.0U	3788
109	4024	3960	1.355	1.034	34.701	27.834	37.117	45.957	46.060	188	120.4U	2.24U	33.9U	3960
110	4202	4134	1.321	0.981	34.702	27.838	37.124	45.967	46.837	191	120.3U	2.23U	33.9U	4134
111	4383	4310	1.307	0.947	34.706	27.844	37.131	45.976	47.622	193	120.0U	2.21U	33.6U	4310
112	4562	4484	1.300	0.919	34.710	27.849	37.138	45.984	48.395	195	120.1U	2.21U	33.5U	4484
115	4621	4541	1.299	0.911	34.710	27.849	37.138	45.985	48.648	195	120.2U	2.20U	33.5U	4541
116	4725	4643	1.301	0.901	34.711	27.850	37.140	45.988	49.093	196	120.1U	2.20U	33.4U	4643
117	4748	4665	1.302	0.899	34.710	27.850	37.140	45.987	49.190	196	119.5U	2.18U	33.5U	4665
118	4801	4716	1.304	0.895	34.711	27.851	37.141	45.989	49.417	196	119.2U	2.19U	33.5U	4716
119	4853	4767	1.310	0.894	34.711	27.851	37.141	45.989	49.637	196	119.1U	2.18U	33.5U	4767
120	4879	4792	1.313	0.894	34.711	27.851	37.141	45.989	49.747	196	118.7U	2.19U	33.5U	4792
121	4905	4817	1.316	0.894	34.710	27.850	37.140	45.989	49.856	196	119.3U	2.18U	33.4U	4817
122	4920	4832	1.317	0.893	34.710	27.850	37.141	45.989	49.920	196	119.8U	2.18U	33.4U	4832
123	4920	4832	1.317	0.893	34.710	27.850	37.141	45.989	49.920	196	120.4U	2.18U	33.4U	4832
124	4930	4842	1.318	0.893	34.713	27.853	37.143	45.991	49.964	196	120.7U	2.18U	33.4U	4842

BOTTOM DEPTH FOR CAST 1 IS 4854

STATION: 322 LEG: IX POSITION: 43° 0' S 129° 56' W DATE: 30 APR 74

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	2	2	12.800	12.800	34.202	25.852	34.578	42.903	25.861	260	1.9	0.67	7.3	2
602	25	25	12.790	12.787	34.203	25.855	34.582	42.908	25.967	261	1.0	0.67	7.3	25
603	49	49	11.874	11.868	34.204	26.035	34.798	43.158	26.255	269	0.6	0.83	9.7	49
604	80	80	10.915	10.905	34.258	26.255	35.057	43.453	26.615	273	0.4	0.95	11.4	80
605	124	123	9.215	9.201	34.335	26.606	35.481	43.943	27.170	260	1.7	1.02	12.2	123
606	156	155	8.436	8.419	34.334	26.729	35.639	44.133	27.440	258	2.1	1.11	15.1	155
607	225	223	7.722	7.699	34.424	26.907	35.849	44.373	27.936	242	4.0	1.32	19.0	223
608	273	271	7.342	7.315	34.425	26.963	35.923	44.463	28.212	245	4.7	1.39	20.0	271
609	355	352	7.020	6.986	34.407	26.995	35.971	44.525	28.621	252	5.3	1.42	20.7	352
610	471	467	6.667	6.623	34.377	27.020	36.014	44.585	29.179	260	6.3	1.44	21.1	467
611	553	549	6.492	6.440	34.363	27.033	36.036	44.616	29.567	262	6.5	1.48	21.6	549
612	667	662	6.167	6.106	34.340	27.058	36.078	44.673	30.116	262	8.1	1.52	22.5	662
613	833	826	5.474	5.401	34.303	27.116	36.170	44.799	30.941	231	14.4	1.77	26.4	826

STATION: 322 LEG: IX POSITION: 43° 0' S 129° 56' W DATE: 30 APR 74

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	980	971	4.750	4.669	34.313	27.207	36.299	44.961	31.718	216	24.0	1.99	29.7	971
616	1064	1054	4.319	4.234	34.328	27.266	36.380	45.063	32.170	206	30.6	2.10	31.4	1054
617	1179	1168	3.774	3.683	34.353	27.341	36.483	45.193	32.785	197	39.8	2.19	32.8	1168
618	1306	1293	3.328	3.231	34.394	27.416	36.582	45.314	33.453	189	49.0	2.27	33.9	1293
619	1456	1441	2.966	2.860	34.451	27.495	36.680	45.429	34.226	180	59.1	2.32	34.9	1441
620	1609	1592	2.704	2.589	34.518	27.572	36.770	45.533	35.008	172	69.7	2.36	35.3	1592
621	1758	1739	2.548	2.422	34.572	27.629	36.836	45.605	35.746	167	79.2	2.36	35.2	1739
622	1911	1889	2.407	2.270	34.611	27.672	36.887	45.664	36.486	163	88.4	2.37	35.3	1889
623	2061	2037	2.267	2.119	34.636	27.704	36.927	45.711	37.201	159	99.8	2.40	35.4	2037
624	2214	2187	2.130	1.971	34.651	27.728	36.958	45.750	37.919	156	109.1	2.42	36.0	2187
301	2358	2329	2.047	1.876	34.658	27.741	36.976	45.773	38.582	156	114.2	2.46	35.6	2329
302	2506	2474	1.967	1.784	34.665	27.753	36.994	45.795	39.261	156	116.3	2.46	35.5	2474
303	2682	2646	1.880	1.682	34.671	27.765	37.012	45.818	40.062	156	120.1	2.47	35.8	2646
304	2857	2818	1.806	1.593	34.676	27.776	37.027	45.838	40.854	159	121.8	2.45	35.7	2818
305	3036	2993	1.744	1.515	34.683	27.787	37.043	45.858	41.661	163	121.3	2.45	35.3	2993
306	3213	3166	1.677	1.432	34.688	27.797	37.057	45.876	42.456	168	120.8	2.41	35.0	3166
307	3395	3344	1.617	1.355	34.693	27.806	37.071	45.894	43.269	172	120.3	2.40	34.6	3344
308	3572	3517	1.533	1.255	34.698	27.817	37.087	45.916	44.062	179	119.8	2.36	34.3	3517
309	3749	3690	1.455	1.160	34.702	27.827	37.102	45.936	44.850	183	119.7	2.33	34.1	3690
310	3923	3860	1.410	1.098	34.703	27.831	37.110	45.947	45.615	187	119.2	2.33	33.9	3860
311	4098	4030	1.316	0.988	34.708	27.843	37.128	45.970	46.393	193	118.2	2.30	33.4	4030
312	4098	4030	1.316	0.988	34.708	27.843	37.128	45.970	46.393	193	118.1	2.31	33.3	4030
315	4168	4098	1.293	0.958	34.708	27.844	37.131	45.976	46.700	194	118.0	2.30	33.3	4098
316	4274	4202	1.280	0.933	34.710	27.848	37.136	45.982	47.161	196	117.9	2.30	33.4	4202
317	4289	4216	1.280	0.931	34.709	27.847	37.135	45.981	47.225	196	117.8	2.27	33.4	4216
318	4325	4251	1.270	0.918	34.709	27.848	37.137	45.983	47.382	196	118.4	2.27	33.4	4251
319	4376	4301	1.265	0.907	34.710	27.849	37.139	45.986	47.603	196	118.3	2.27	33.4	4301
320	4426	4350	1.250	0.887	34.710	27.851	37.141	45.990	47.821	197	118.2	2.26	33.2	4350
321	4453	4376	1.240	0.874	34.710	27.851	37.143	45.992	47.938	198	118.2	2.26	33.3	4376
323	4468	4390	1.234	0.867	34.710	27.852	37.144	45.993	48.004	198	118.2	2.26	33.4	4390
322	4469	4391	1.235	0.867	34.710	27.852	37.144	45.993	48.008	198	118.1	2.26	33.3	4391
324	4475	4397	1.235	0.867	34.711	27.853	37.145	45.994	48.035	198	118.9	2.26	33.4	4397

BOTTOM DEPTH FOR CAST 3 IS 4407

STATION: 323 LEG: IX POSITION: 33° 43' S 138° 8' W DATE: 4 MAY 74

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	6	6	20.111	20.110	35.020	24.771	33.232	41.309	24.797	227	3.7	0.17	0.0	6
1201	42	42	20.208	20.200	35.13 D	24.833	33.291	41.364	25.015					42
102	65	65	18.706	18.694	35.098	25.198	33.703	41.821	25.481	244	2.9	0.18	0.0	65
1202	78	78	15.619	15.607	34.95 D	25.829	34.440	42.658	26.172					78
103	106	106	14.118	14.102	34.860	26.091	34.759	43.029	26.561	265	2.3	0.24	0.0	106
1203	148	147	12.900	12.879	34.77 D	26.276	34.991	43.306	26.935					147
104	186	185	12.219	12.194	34.765	26.407	35.149	43.489	27.238	234	2.3	0.59	5.6	185
105	243	242	10.506	10.476	34.682	26.661	35.476	43.882	27.755	217	3.6	0.96	12.3	242
1204	293	291	9.115	9.082	34.58 D	26.819	35.696	44.159	28.147					291
106	345	343	8.325	8.288	34.512	26.889	35.802	44.299	28.458	223	5.7	1.33	18.4	343
1205	393	391	7.812	7.772	34.47 D	26.935	35.873	44.393	28.726					391
107	444	441	7.381	7.337	34.436	26.969	35.927	44.467	28.996	237	6.2	1.44	20.2	441
1206	513	510	7.009	6.959	34.41 D	27.003	35.980	44.536	29.348					510
108	598	594	6.671	6.614	34.382	27.026	36.019	44.591	29.761	242	7.9	1.55	22.0	594
1207	663	658	6.385	6.323	34.36 D	27.049	36.057	44.642	30.084					658
109	746	741	6.023	5.955	34.336	27.074	36.101	44.703	30.493	237	11.7	1.70	24.4	741
1208	818	812	5.544	5.472	34.32 D	27.121	36.172	44.796	30.877					812
110	896	889	5.196	5.119	34.317	27.160	36.228	44.870	31.278	219	19.6	1.92	27.8	889
1209	1043	1035	4.298	4.215	34.336D	27.274	36.389	45.073	32.083					1035
111	1201	1191	3.578	3.487	34.389	27.388	36.541	45.259	32.938	187	47.4	2.27	33.1	1191
1210	1333	1321	3.086	2.989	34.458D	27.489	36.667	45.410	33.656					1321
1211	1473	1459	2.769	2.664	34.520D	27.567	36.762	45.520	34.383					1459
112	1604	1589	2.570	2.457	34.560	27.616	36.822	45.590	35.035	164	85.0	2.39	34.5	1589
1212	1743	1726	2.403	2.280	34.592D	27.656	36.871	45.647	35.712					1726

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

STATION: 323 LEG: IX POSITION: 33° 43' S 138° 8' W DATE: 4 MAY 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1213	1883	1863	2.257	2.124	34.614D	27.686	36.909	45.693	36.382					1863
115	2017	1995	2.163	2.020	34.634	27.710	36.938	45.728	37.015	155	108.8	2.44	35.4	1995
1214	2143	2119	2.069	1.917	34.643D	27.726	36.959	45.754	37.602					2119
1215	2283	2257	1.982	1.819	34.651D	27.739	36.978	45.778	38.249					2257
116	2422	2394	1.896	1.722	34.656	27.750	36.995	45.800	38.888	156	120.3	2.46	35.4	2394
1216	2543	2512	1.844	1.660	34.662D	27.760	37.008	45.815	39.441					2512
1217	2683	2650	1.785	1.589	34.667D	27.769	37.020	45.832	40.077					2650
117	2826	2790	1.731	1.523	34.671	27.777	37.032	45.847	40.724	162	123.7	2.43	35.1	2790
1218	2973	2934	1.691	1.470	34.676D	27.785	37.043	45.860	41.385					2934
118	3134	3092	1.651	1.415	34.680	27.792	37.053	45.873	42.106	166	124.0	2.38	34.7	3092
1219	3283	3238	1.608	1.358	34.683D	27.798	37.062	45.886	42.771					3238
119	3436	3388	1.572	1.307	34.685	27.803	37.070	45.896	43.450	171	124.0	2.37	34.5	3388
1220	3583	3531	1.527	1.248	34.690D	27.811	37.082	45.911	44.105					3531
120	3743	3688	1.470	1.176	34.694	27.819	37.094	45.927	44.815	179	122.9	2.32	33.7	3688
1221	3883	3824	1.419	1.111	34.696D	27.825	37.103	45.940	45.434					3824
121	4049	3986	1.373	1.048	34.701	27.833	37.115	45.954	46.166	187	120.8	2.28	33.2	3986
1222	4198	4131	1.327	0.987	34.703D	27.839	37.124	45.967	46.819					4131
122	4356	4285	1.306	0.949	34.705	27.843	37.130	45.975	47.506	193	119.2	2.26	32.8	4285
123	4508	4433	1.306	0.931	34.707	27.845	37.134	45.980	48.160	194	118.6	2.24	32.6	4433
1223	4663	4584	1.316	0.923	34.707D	27.846	37.135	45.981	48.822					4584
124	4804	4721	1.327	0.917	34.708	27.847	37.136	45.983	49.423	195	118.9	2.23	32.8	4721

BOTTOM DEPTH FOR CAST 1 IS 4742

STATION: 324 LEG: IX POSITION: 22° 58' S 146° 4' W DATE: 7 MAY 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
301	6	6	26.556	26.555	35.948	23.611	31.882	39.774	23.637	208	2.9	0.19	0.0	6
506	11H	11	26.58 H	26.58	35.941	23.599	31.869	39.761	23.645	203	5.5	0.16	0.0	11
507	52H	52	26.55 H	26.54	35.932	23.604	31.875	39.769	23.825	203	3.5	0.16	0.0	52
508	103H	103	23.04 H	23.02	35.945	24.667	33.032	41.018	25.108	221	2.6	0.16	0.0	103
302	116	116	21.694	21.670	35.715	24.874	33.281	41.306	25.373	219	2.3	0.14	0.0	116
509	154H	154	20.79 H	20.76	35.679	25.097	33.531	41.582	25.761	215	2.3	0.15	0.0	154
510	204H	203	19.22 H	19.18	35.586	25.445	33.928	42.026	26.329	200	2.1	0.28	1.8	203
511	254H	253	18.01 H	17.96	35.474	25.668	34.192	42.329	26.774	201	2.1	0.33	2.4	253
512	305H	304	16.68 H	16.63	35.317	25.873	34.444	42.624	27.207	200	2.2	0.42	3.8	304
303	337	336	14.659	14.607	35.144	26.201	34.846	43.095	27.687	199	3.1	0.58	6.4	336
513	408H	406	13.110H	13.052	34.950	26.379	35.086	43.392	28.190	197	3.3	0.81	9.9	406
514	459H	457	11.462H	11.402	34.791	26.578	35.352	43.721	28.629	197	4.6	1.03	13.6	457
515	509H	507	9.283H	9.225	34.569	26.785	35.656	44.113	29.084	198	6.3	1.36	18.7	507
304	540	537	8.141	8.084	34.478	26.893	35.816	44.322	29.346	207	7.9	1.46	20.8	537
516	611H	608	7.057H	6.997	34.394	26.983	35.958	44.513	29.772	222	8.5	1.61	23.3	608
305	691	687	6.118	6.055	34.342	27.067	36.088	44.686	30.234	227	11.6	1.70	25.1	687
517	715H	711	6.163H	6.097	34.341	27.060	36.080	44.676	30.336	227	11.4	1.73	25.2	711
306	830	825	5.263	5.192	34.318	27.152	36.217	44.855	30.968	210	20.1	1.94	28.8	825
518	842H	837	5.240H	5.168	34.322	27.158	36.224	44.863	31.030	207	21.4	2.01	29.4	837
307	894	888	4.840	4.766	34.336	27.215	36.301	44.959	31.332	196	28.5	2.09	31.2	888
519	970H	964	4.368H	4.290	34.365	27.289	36.399	45.079	31.764	180	39.5	2.27	33.3	964
520	1122H	1114	3.696H	3.611	34.442	27.419	36.564	45.276	32.605	162	59.4	2.41	35.3	1114
308	1198	1189	3.345	3.257	34.484	27.486	36.649	45.378	33.029	162	69.4	2.40	35.5	1189
309	1502	1489	2.556	2.451	34.577	27.630	36.836	45.604	34.586	154	97.5	2.43	36.0	1489
310	1898	1880	2.204	2.071	34.625	27.699	36.925	45.712	36.465	151	113.3	2.47	36.2	1880
311	2102	2081	2.077	1.928	34.638	27.721	36.954	45.748	37.413	153	117.6	2.47	36.1	2081
312	2403	2377	1.924	1.751	34.653	27.746	36.989	45.792	38.797	155	121.0	2.45	36.1	2377
315	2610	2581	1.854	1.664	34.659	27.757	37.005	45.812	39.736	157	122.3	2.44	35.9	2581
316	2911	2876	1.727	1.511	34.670	27.777	37.033	45.848	41.101	162	124.7	2.43	35.5	2876
317	3210	3169	1.618	1.375	34.679	27.794	37.057	45.880	42.445	169	124.2	2.39	35.2	3169
318	3414	3369	1.554	1.292	34.684	27.803	37.072	45.898	43.356	172	123.9	2.37	34.9	3369
319	3717	3665	1.486	1.194	34.691	27.815	37.089	45.921	44.697	178	123.2	2.35	34.4	3665
320	4026	3967	1.443	1.119	34.695	27.824	37.102	45.937	46.050	182	122.9	2.32	34.1	3967
321	4285	4220	1.421	1.068	34.696	27.828	37.108	45.947	47.173	185	122.0	2.32	33.8	4220
322	4545	4473	1.429	1.046	34.698	27.831	37.113	45.953	48.289	186	121.0	2.31	33.5	4473
323	4852	4772	1.457	1.036	34.697	27.831	37.113	45.954	49.594	187	121.5	2.32	33.7	4772
324	5120	5033	1.488	1.033	34.700	27.833	37.116	45.956	50.727	187	121.5	2.31	33.7	5033

BOTTOM DEPTH FOR CAST 3 IS 5064

STATION: 325 LEG: X POSITION: 14° 40' S 130° 55' W DATE: 18 MAY 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
1201	5	5	25.887	25.886	36.14 D	23.962	32.247	40.155	23.983					5
101	29	29	25.886	25.879	36.14	23.964	32.250	40.157	24.087	207	4.2	0.48	2.9	29
1202	52	52	25.982	25.970	36.37 D	24.109	32.390	40.293	24.330					52
1203	77	77	25.724	25.706	36.59 D	24.356	32.641	40.549	24.683					77
102	118	118	24.813	24.786	36.504	24.570	32.880	40.812	25.071	205	2.2	0.31	0.0	118
1204	152	152	23.377	23.344	36.36 D	24.887	33.238	41.210	25.536					152
103	207	206	20.853	20.812	35.931	25.274	33.704	41.750	26.166	193	1.7	0.40	2.1	206
104	255	254	17.901	17.856	35.346	25.597	34.127	42.268	26.708	191	1.8	0.55	4.3	254
105	304	303	13.679	13.635	34.772	26.122	34.808	43.096	27.469	176	3.6	0.91	10.0	303
106	323	322	12.156	12.112	34.629	26.317	35.065	43.410	27.759	148	6.5	1.26	15.1	322
107	354	353	10.787	10.743	34.582	26.536	35.341	43.738	28.126	91	13.9	1.87	23.3	353
108	385	384	9.576	9.531	34.547	26.718	35.575	44.021	28.457	75	17.7	2.11	27.7	384
109	412	410	8.901	8.855	34.559	26.837	35.724	44.197	28.704	54	23.2	2.34	32.6	410
1205	492	490	7.302	7.253	34.530D	27.054	36.015	44.557	29.300					490
110	594	591	6.276	6.221	34.496	27.167	36.178	44.766	29.890	93	37.0	2.38	37.2	591
1206	682	678	5.702	5.642	34.495D	27.239	36.278	44.892	30.371					678
111	794	789	5.076	5.009	34.501	27.318	36.389	45.033	30.973	98	56.4	2.52	39.0	789
1207	882	877	4.698	4.626	34.513D	27.370	36.461	45.123	31.435					877
112	997	991	4.308	4.228	34.521	27.419	36.530	45.211	32.017	102	71.9	2.56	39.3	991
1208	1137	1129	3.782	3.695	34.541D	27.489	36.628	45.334	32.740					1129
115	1296	1286	3.334	3.237	34.563	27.550	36.713	45.442	33.539	115	93.8	2.54	38.8	1286
1209	1432	1421	2.970	2.866	34.586D	27.602	36.785	45.532	34.223					1421
116	1595	1582	2.646	2.532	34.603	27.644	36.845	45.608	35.018	130	109.0	2.47	37.8	1582
1210	1732	1717	2.409	2.287	34.621D	27.679	36.892	45.668	35.684					1717
117	1892	1875	2.199	2.067	34.636	27.708	36.934	45.721	36.447	141	117.5	2.40	36.8	1875
1211	2042	2023	2.049	1.906	34.649D	27.731	36.965	45.760	37.154					2023
118	2217	2195	1.939	1.783	34.660	27.749	36.990	45.791	37.966	147	125.2	2.36	36.5	2195
1212	2367	2343	1.871	1.703	34.667D	27.761	37.006	45.811	38.654					2343
119	2521	2494	1.817	1.636	34.671	27.769	37.018	45.827	39.353	151	129.6	2.35	36.2	2494
1213	2672	2643	1.792	1.597	34.675D	27.775	37.026	45.837	40.034					2643
120	2822	2790	1.741	1.533	34.677	27.781	37.036	45.850	40.709	156	131.0	2.34	35.9	2790
1214	2972	2937	1.699	1.478	34.679D	27.786	37.044	45.861	41.382					2937
121	3127	3089	1.653	1.417	34.680	27.791	37.053	45.873	42.075	161	131.3	2.32	35.5	3089
1215	3377	3334	1.591	1.332	34.684D	27.801	37.066	45.891	43.187					3334
122	3430	3386	1.582	1.318	34.684	27.802	37.068	45.894	43.421	165	132.3	2.29	35.4	3386
1216	3582	3535	1.566	1.286	34.687D	27.806	37.074	45.902	44.092					3535
123	3736	3686	1.562	1.266	34.688	27.808	37.078	45.906	44.765	167	132.3	2.27	35.2	3686
1217	3912	3858	1.576	1.260	34.688D	27.809	37.079	45.907	45.527					3858
124	4089	4031	1.589	1.253	34.688	27.809	37.079	45.908	46.291	168	132.3	2.28	35.2	4031

BOTTOM DEPTH FOR CAST 1 IS 4050

STATION: 326 LEG: X POSITION: 14° 3' S 126° 15' W DATE: 20 MAY 74

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	SiO3 µM/KG	PO4 µM/KG	NO3 µM/KG	DEPTH M
301	2	2	25.737	25.737	35.628	23.622	31.917	39.834	23.630	208	3.9	0.65	6.3	2
302	36	36	25.760	25.752	35.956	23.864	32.155	40.068	24.017	209	2.6	0.54	4.2	36
303	55	55	25.590	25.577	36.185	24.090	32.383	40.298	24.324	210	1.5	0.45	2.4	55
304	84	84	25.121	25.102	36.384	24.384	32.688	40.613	24.741	212	1.1	0.34	0.5	84
305	120	120	23.979	23.952	36.438	24.768	33.102	41.056	25.279	209	1.0	0.31	0.0	120
306	147	147	22.573	22.542	36.238	25.025	33.401	41.395	25.655	199	0.9	0.39	0.1	147
307	198	197	19.793	19.755	35.665	25.355	33.820	41.900	26.211	187	0.9	0.52	3.6	197
308	257	256	16.077	16.035	35.063	25.817	34.412	42.614	26.945	178	1.9	0.80	7.9	256
309	317	316	11.448	11.407	34.600	26.429	35.206	43.577	27.849	99	11.7	1.80	21.1	316
310	365	364	9.339	9.297	34.584	26.785	35.652	44.107	28.436	43	23.5	2.45	32.5	364
311	466	464	7.537	7.490	34.555	27.040	35.990	44.521	29.165	77	30.3	2.40	35.5	464
312	586	583	6.442	6.387	34.519	27.163	36.166	44.746	29.847	98	38.4	2.42	36.6	583
316	719	715	5.504	5.441	34.506	27.271	36.321	44.944	30.576	101	50.0	2.54	38.2	715
317	828	823	4.991	4.921	34.507	27.333	36.408	45.056	31.145	100	58.8	2.63	39.1	823
318	941	935	4.489	4.413	34.519	27.398	36.500	45.171	31.737	99	69.0	2.67	39.8	935
319	1100	1093	3.913	3.828	34.537	27.473	36.605	45.305	32.551	108	80.0	2.65	39.3	1093
320	1251	1242	3.447	3.353	34.557	27.535	36.692	45.414	33.315	116	89.6	2.62	38.9	1242
321	1405	1394	3.126	3.023	34.578	27.582	36.756	45.495	34.074	117	98.9	2.63	38.9	1394

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

STATION: 326 LEG: X POSITION: 14° 3' S 126° 15' W DATE: 20 MAY 74

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	1556	1543	2.787	2.675	34.594	27.625	36.818	45.574	34.816	127	104.6	2.57	38.1	1543
323	1708	1693	2.503	2.382	34.612	27.664	36.873	45.644	35.556	132	110.5	2.55	37.7	1693
101	1864	1847	2.274	2.143	34.629	27.697	36.918	45.701	36.305	135	118.8	2.52	37.3	1847
324	1935	1917	2.184	2.048	34.639	27.712	36.939	45.727	36.646	139	118.5	2.51	37.2	1917
102	2014	1995	2.090	1.949	34.644	27.724	36.956	45.749	37.019	142	120.8	2.48	36.8	1995
103	2168	2147	1.975	1.822	34.656	27.743	36.982	45.781	37.737	145	124.7	2.46	36.6	2147
104	2318	2295	1.906	1.741	34.662	27.754	36.997	45.801	38.425	146	128.0	2.45	36.6	2295
105	2469	2443	1.863	1.686	34.667	27.762	37.008	45.815	39.111	148	130.2	2.45	36.5	2443
106	2624	2595	1.816	1.625	34.672	27.770	37.020	45.829	39.814	149	131.7	2.44	36.3	2595
107	2777	2746	1.784	1.579	34.675	27.776	37.028	45.840	40.502	152	131.9	2.44	36.2	2746
108	2928	2894	1.747	1.529	34.677	27.781	37.036	45.851	41.179	155	131.6	2.43	35.9	2894
109	3080	3043	1.702	1.470	34.679	27.787	37.045	45.863	41.859	157	131.3	2.41	35.8	3043
110	3237	3197	1.637	1.391	34.681	27.794	37.057	45.878	42.563	162	131.0	2.40	35.6	3197
111	3395	3352	1.599	1.338	34.683	27.799	37.065	45.889	43.264	165	131.2	2.39	35.5	3352
112	3554	3507	1.585	1.308	34.685	27.803	37.070	45.896	43.964	166	132.4	2.39	35.3	3507
116	3565	3518	1.587	1.308	34.685D	27.803	37.070	45.896	44.012					3518
117	3615	3567	1.591	1.307	34.685	27.803	37.070	45.896	44.230					3567
118	3667	3618	1.592	1.302	34.686	27.804	37.072	45.898	44.458					3618
119	3697	3647	1.595	1.302	34.686	27.804	37.072	45.898	44.588					3647
120	3728	3678	1.595	1.299	34.687	27.805	37.073	45.900	44.724					3678
121	3750	3699	1.594	1.295	34.688	27.806	37.074	45.901	44.820					3699
122	3759	3708	1.595	1.295	34.686	27.805	37.073	45.899	44.858	166	132.3	2.39	35.2	3708
123	3759	3708	1.595	1.295	34.686	27.805	37.073	45.899	44.858					3708
124	3769	3718	1.593	1.292	34.686	27.805	37.073	45.900	44.902					3718

BOTTOM DEPTH FOR CAST 1 IS 3737

STATION: 327 LEG: X POSITION: 11° 40' S 125° 54' W DATE: 21 MAY 74

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	19	19	26.166	26.161	35.047	23.054	31.345	39.257	23.135	206	5.4	0.70	7.3	19
1301	40	40	26.176	26.166	35.051D	23.056	31.346	39.258	23.225					40
102	80	80	25.578	25.559	35.626	23.674	31.974	39.895	24.014	207	3.8	0.67	5.8	80
1302	90	90	24.070	24.050	36.051D	24.447	32.782	40.739	24.831					90
103	130	130	22.253	22.226	36.096	25.008	33.393	41.399	25.565	194	2.1	0.49	0.7	130
1303	145	145	20.944	20.915	35.867D	25.198	33.625	41.669	25.822					145
104	190	190	17.016	16.984	35.249	25.736	34.296	42.465	26.567	175	2.6	0.82	7.8	190
105	248	247	12.503	12.469	34.752D	26.343	35.075	43.405	27.449	61	14.2	2.01	22.7	247
106	318	317	10.431	10.392	34.706	26.695	35.512	43.922	28.126	33	23.5	2.39	30.7	317
1304	383	382	8.867	8.824	34.669D	26.928	35.815	44.288	28.664					382
107	469	467	7.725	7.677	34.611	27.057	35.997	44.519	29.193	62	35.8	2.47	37.2	467
108	568	565	6.956	6.901	34.578	27.141	36.118	44.674	29.736	44	43.6	2.73	41.2	565
109	667	664	6.284	6.222	34.551	27.210	36.220	44.807	30.264	45	48.6	2.81	42.6	664
110	789	785	5.493	5.424	34.527	27.290	36.340	44.964	30.914	63	57.1	2.82	42.6	785
111	942	936	4.589	4.512	34.527	27.394	36.490	45.157	31.734	84	70.6	2.76	41.4	936
1305	1050	1043	4.170	4.087	34.536D	27.446	36.564	45.251	32.289					1043
112	1196	1188	3.705	3.613	34.559	27.512	36.654	45.364	33.033	97	90.5	2.73	40.7	1188
1306	1334	1324	3.319	3.219	34.578D	27.564	36.728	45.457	33.726					1324
116	1507	1495	2.939	2.829	34.593	27.611	36.795	45.544	34.573	113	108.4	2.66	39.3	1495
1307	1650	1636	2.664	2.545	34.610D	27.649	36.848	45.611	35.271					1636
117	1809	1793	2.376	2.248	34.626	27.686	36.902	45.679	36.041	129	117.6	2.56	38.1	1793
1308	1950	1932	2.166	2.029	34.637D	27.712	36.940	45.729	36.714					1932
118	2114	2094	1.982	1.834	34.656	27.742	36.980	45.779	37.493	142	125.3	2.47	37.2	2094
1309	2355	2331	1.868	1.701	34.668D	27.762	37.007	45.813	38.601					2331
119	2415	2390	1.844	1.672	34.670	27.765	37.012	45.819	38.875	146	130.9	2.44	36.8	2390
1310	2555	2528	1.812	1.628	34.673D	27.771	37.020	45.830	39.507					2528
120	2721	2691	1.759	1.560	34.677	27.779	37.032	45.845	40.258	152	132.1	2.41	36.3	2691
1312	2860	2828	1.721	1.510	34.678D	27.783	37.039	45.855	40.882					2828
121	3026	2990	1.668	1.442	34.682	27.791	37.051	45.870	41.628	159	131.0	2.39	36.0	2990
1313	3180	3141	1.629	1.389	34.684D	27.797	37.059	45.881	42.315					3141
122	3331	3289	1.589	1.334	34.688	27.804	37.069	45.894	42.989	162	131.8	2.38	36.0	3289

STATION: 327 LEG: X POSITION: 11° 40' S 125° 54' W DATE: 21 MAY 74

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
1314	3480	3435	1.571	1.302	34.687D	27.805	37.073	45.899	43.645					3435
123	3636	3588	1.564	1.278	34.687	27.807	37.075	45.903	44.328	166	132.4	2.38	35.8	3588
1315	3780	3729	1.561	1.260	34.688D	27.809	37.079	45.907	44.956					3729
124	3937	3882	1.555	1.237	34.689	27.811	37.082	45.912	45.640	166	134.5	2.37	35.7	3882

BOTTOM DEPTH FOR CAST 1 IS 3913

STATION: 328 LEG: X POSITION: 9° 16' S 125° 32' W DATE: 21 MAY 74

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	5	5	26.340	26.339	35.288	23.181	31.465	39.369	23.202	209	6.7	0.73	7.8	5
3201	31	31	26.34	26.33	35.30 D	23.192	31.476	39.380	23.323					31
3202	76	76	26.32	26.30	35.30 D	23.201	31.486	39.391	23.524					76
3203	97	97	25.25	25.23	35.61 D	23.763	32.072	40.002	24.175					97
3204	116	116	23.17	23.14	36.20 D	24.824	33.182	41.161	25.320					116
301	135	135	22.119	22.091	36.072	25.027	33.417	41.426	25.607	197	3.9	0.49	0.5	135
302	165	165	18.669	18.639	35.494	25.514	34.016	42.131	26.231	178	3.6	0.75	6.4	165
303	215	214	13.202	13.171	34.790	26.231	34.935	43.239	27.187	58	14.7	1.99	22.4	214
304	266	265	10.684	10.651	34.756	26.688	35.494	43.892	27.884	32	25.2	2.32	31.6	265
305	306	305	9.931	9.895	34.741	26.808	35.646	44.075	28.189	40	28.2	2.33	33.4	305
306	346	345	9.567	9.527	34.720	26.854	35.708	44.152	28.417	38	30.4	2.38	34.7	345
307	395	393	9.037	8.993	34.695	26.921	35.800	44.266	28.710	37	32.7	2.45	36.1	393
308	456	454	8.473	8.423	34.666	26.988	35.893	44.383	29.057	40	35.5	2.50	37.4	454
309	456	454	8.473	8.423	34.660	26.984	35.889	44.378	29.053	38	35.5	2.51	37.6	454
310	456	454	8.473	8.423	34.660	26.984	35.889	44.378	29.053	38	35.5	2.50	37.6	454
311	456	454	8.473	8.423	34.662	26.985	35.890	44.380	29.054	38	35.3	2.51	37.5	454
312	456	454	8.480	8.430	34.662	26.984	35.889	44.378	29.053	38	35.3	2.51	37.5	454
316	466	464	8.366	8.316	34.656	26.997	35.907	44.401	29.112	39	35.6	2.52	37.7	464
317	466	464	8.362	8.312	34.656	26.998	35.908	44.402	29.113	39	35.6	2.51	37.6	464
318	534	532	7.686	7.631	34.614	27.066	36.008	44.532	29.497	40	39.6	2.61	39.6	532
319	614	611	6.813	6.754	34.574	27.158	36.142	44.705	29.963	44	45.9	2.73	41.4	611
320	703	699	6.075	6.010	34.546	27.233	36.254	44.850	30.455	40	53.7	2.86	43.6	699
321	794	790	5.347	5.278	34.535	27.314	36.371	45.001	30.963	51	63.3	2.88	43.8	790
322	894	889	4.800	4.726	34.537	27.378	36.464	45.120	31.495	73	70.7	2.79	41.9	889
101	989	983	4.349	4.270	34.543	27.432	36.541	45.219	31.993	85	81.1	2.75	41.9	983
323	1095	1088	4.064	3.978	34.553	27.471	36.594	45.286	32.521	90	86.6	2.72	40.7	1088
324	1096	1089	4.061	3.975	34.554	27.472	36.596	45.288	32.527	90	86.6	2.73	40.7	1089
102	1191	1183	3.721	3.630	34.562	27.512	36.654	45.363	33.011	101	93.4	2.68	40.7	1183
103	1344	1334	3.324	3.223	34.577	27.563	36.726	45.455	33.770	110	100.5	2.64	40.1	1334
104	1493	1481	3.055	2.945	34.589	27.598	36.776	45.519	34.492	114	107.1	2.63	39.7	1481
105	1646	1632	2.761	2.641	34.608	27.639	36.833	45.591	35.239	119	113.7	2.61	39.6	1632
106	1798	1783	2.505	2.376	34.623	27.673	36.882	45.653	35.972	124	119.1	2.58	39.1	1783
107	1950	1932	2.324	2.185	34.632	27.696	36.915	45.696	36.690	128	122.6	2.55	38.7	1932
108	2103	2083	2.141	1.991	34.644	27.721	36.950	45.741	37.413	133	126.7	2.52	38.3	2083
109	2255	2233	2.012	1.851	34.655	27.740	36.977	45.775	38.123	135	129.9	2.50	38.2	2233
110	2402	2378	1.917	1.745	34.662	27.754	36.997	45.800	38.800	138	133.3	2.49	38.1	2378
111	2553	2526	1.860	1.675	34.667	27.763	37.010	45.816	39.487	138	137.4	2.48	38.1	2526
112	2704	2675	1.819	1.621	34.672	27.771	37.020	45.830	40.170	142	137.3	2.46	37.7	2675
116	2811	2780	1.786	1.578	34.673	27.775	37.027	45.839	40.651	145	136.6	2.45	37.4	2780
117	2907	2874	1.761	1.544	34.677	27.780	37.034	45.848	41.083	149	134.9	2.43	37.0	2874
118	3010	2975	1.711	1.486	34.678	27.785	37.042	45.859	41.548	154	134.6	2.41	36.8	2975
119	3166	3128	1.640	1.401	34.682	27.794	37.056	45.877	42.250	158	135.2	2.39	36.6	3128
120	3318	3277	1.585	1.332	34.687	27.803	37.069	45.894	42.932	159	136.9	2.39	36.6	3277
121	3470	3426	1.537	1.270	34.687	27.807	37.077	45.905	43.606	163	136.2	2.37	36.0	3426
122	3624	3577	1.512	1.229	34.687	27.810	37.082	45.912	44.284	163	137.4	2.36	35.9	3577
123	3774	3723	1.493	1.195	34.690	27.815	37.088	45.920	44.943	165	137.3	2.36	35.8	3723
124	3904	3850	1.485	1.173	34.691	27.817	37.092	45.925	45.510	166	137.8	2.35	35.8	3850

BOTTOM DEPTH FOR CAST 1 IS 3896

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

STATION: 329 LEG: X POSITION: 7° 41' S 125° 27' W DATE: 22 MAY 74

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
1301	3	3	26.57	26.57	35.38 D	23.179	31.456	39.354	23.192					3
1201	50	50	26.57	26.56	35.38 D	23.182	31.459	39.358	23.394					50
1202	80	80	26.517	26.498	35.39 D	23.209	31.487	39.387	23.548					80
1203	120	120	19.714	19.691	35.596D	25.319	33.787	41.870	25.839					120
1204	162	162	15.740	15.714	35.057D	25.886	34.493	42.706	26.599					162
1205	191	191	12.700	12.674	34.843D	26.373	35.095	43.416	27.224					191
1206	231	230	11.574	11.544	34.841D	26.590	35.358	43.721	27.625					230
101	340	339	10.021	9.980	34.758	26.807	35.641	44.066	28.339	14	34.5	2.50	36.2	339
1207	378	377	9.387	9.344	34.713D	26.878	35.741	44.192	28.587					377
102	439	437	8.652	8.604	34.673	26.966	35.862	44.344	28.956	29	37.3	2.56	38.0	437
1208	502	500	7.983	7.930	34.629D	27.034	35.962	44.473	29.316					500
103	589	586	6.990	6.932	34.582	27.140	36.115	44.670	29.829	56	44.9	2.64	39.8	586
1209	728	724	5.967	5.901	34.552D	27.252	36.277	44.879	30.589					724
104	890	885	5.040	4.964	34.534	27.349	36.422	45.067	31.442	82	67.0	2.72	40.8	885
1210	1031	1024	4.426	4.342	34.544D	27.426	36.530	45.205	32.175					1024
105	1194	1186	3.775	3.683	34.562	27.507	36.646	45.353	33.017	100	93.0	2.70	39.9	1186
1211	1334	1324	3.373	3.273	34.576D	27.558	36.718	45.445	33.718					1324
106	1496	1484	3.000	2.890	34.596	27.608	36.789	45.535	34.518	104	114.0	2.71	39.8	1484
1212	1638	1625	2.698	2.580	34.612D	27.648	36.845	45.606	35.214					1625
107	1799	1784	2.455	2.327	34.625	27.679	36.890	45.664	35.985	117	124.9	2.62	38.9	1784
1213	1951	1933	2.285	2.146	34.636D	27.702	36.923	45.706	36.703					1933
108	2100	2080	2.156	2.006	34.644	27.720	36.948	45.738	37.398	128	131.1	2.56	38.2	2080
109	2100	2080	2.156	2.006	34.644	27.720	36.948	45.738	37.398	127	130.8	2.55	38.2	2080
116	2110	2090	2.139	1.989	34.644	27.721	36.950	45.741	37.445	128	131.0	2.56	38.2	2090
1214	2260	2238	1.972	1.811	34.657D	27.745	36.984	45.784	38.152					2238
110	2406	2382	1.900	1.728	34.662	27.755	36.999	45.803	38.820	134	138.6	2.52	37.8	2382
117	2416	2391	1.891	1.718	34.664	27.757	37.002	45.806	38.868	133	138.3	2.52	37.8	2391
1216	2570	2543	1.831	1.645	34.669D	27.767	37.015	45.823	39.569					2543
118	2718	2688	1.795	1.596	34.672	27.772	37.024	45.835	40.236	137	142.4	2.49	37.5	2688
1217	2867	2835	1.757	1.544	34.674D	27.778	37.032	45.846	40.904					2835
111	3012	2977	1.697	1.472	34.678	27.786	37.044	45.862	41.559	143	144.9	2.48	37.2	2977
119	3022	2987	1.690	1.464	34.677	27.786	37.044	45.862	41.603	144	144.3	2.47	37.2	2987
1219	3170	3132	1.640	1.400	34.679D	27.792	37.054	45.875	42.265					3132
112	3315	3274	1.581	1.328	34.682	27.799	37.065	45.890	42.915	152	144.9	2.43	36.8	3274
120	3325	3284	1.577	1.323	34.683	27.800	37.067	45.892	42.960	152	143.6	2.43	36.7	3284
1221	3478	3434	1.527	1.259	34.685D	27.806	37.076	45.905	43.641					3434
1222	3780	3729	1.456	1.158	34.689D	27.816	37.092	45.926	44.975					3729
122	3933	3879	1.417	1.104	34.692	27.822	37.101	45.938	45.649	169	138.7	2.35	35.7	3879
1223	4080	4023	1.412	1.083	34.693D	27.824	37.104	45.942	46.287					4023
123	4241	4180	1.424	1.076	34.694	27.826	37.106	45.944	46.981	172	137.5	2.34	35.3	4180
1224	4372	4308	1.438	1.075	34.694D	27.826	37.106	45.944	47.542					4308
124	4530	4462	1.456	1.074	34.694	27.826	37.106	45.945	48.217	171	137.7	2.33	35.5	4462

BOTTOM DEPTH FOR CAST 1 IS 4504

STATION: 330 LEG: X POSITION: 6° 4' S 125° 17' W DATE: 23 MAY 74

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	26.55	26.55	35.084D	22.962	31.243	39.145	22.975					3
101	17	17	26.551	26.547	35.084	22.963	31.244	39.145	23.035	205	5.8	0.72	7.0	17
1218	60	60	26.55	26.54	35.09 D	22.971	31.252	39.154	23.225					60
1219	80	80	22.97	22.95	35.81 D	24.584	32.952	40.941	24.926					80
102	124	124	17.237	17.216	35.250	25.681	34.233	42.395	26.223	133	6.1	1.24	12.7	124
103	189	189	12.068	12.043	34.873	26.520	35.267	43.611	27.365	7	25.0	2.39	31.2	189
104	289	288	10.630	10.594	34.797	26.730	35.538	43.938	28.029	13	31.5	2.42	34.9	288
105	390	388	9.189	9.145	34.708	26.907	35.779	44.238	28.671	20	35.7	2.54	37.2	388
1202	438	436	8.471	8.423	34.665D	26.988	35.893	44.382	28.975					436
106	461	459	8.110	8.061	34.642	27.025	35.947	44.452	29.120	43	37.4	2.53	37.9	459
1203	510	508	7.544	7.492	34.609D	27.083	36.031	44.561	29.406					508
107	536	533	7.246	7.193	34.595	27.114	36.077	44.620	29.560	48	43.4	2.64	39.8	533
1204	593	590	6.758	6.701	34.571D	27.163	36.149	44.715	29.874					590

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	628	625	6.503	6.444	34.576	27.201	36.200	44.777	30.074	32	53.9	2.87	43.5	625
1205	693	689	5.957	5.894	34.552D	27.252	36.279	44.880	30.431					689
109	729	725	5.732	5.667	34.552	27.280	36.318	44.930	30.626	54	62.4	2.82	42.5	725
1206	797	792	5.393	5.324	34.553D	27.323	36.377	45.005	30.984					792
110	838	833	5.197	5.125	34.544	27.339	36.403	45.041	31.191	67	69.6	2.79	41.7	833
1207	977	971	4.649	4.568	34.551D	27.407	36.500	45.164	31.905					971
111	1087	1080	4.282	4.195	34.554	27.449	36.561	45.243	32.457	80	87.2	2.79	41.3	1080
1208	1277	1268	3.629	3.531	34.570D	27.528	36.675	45.389	33.421					1268
112	1439	1428	3.205	3.098	34.584	27.580	36.750	45.485	34.223	111	105.7	2.63	38.9	1428
1209	1633	1620	2.701	2.583	34.610D	27.646	36.843	45.604	35.189					1620
116	1801	1785	2.474	2.345	34.624	27.677	36.887	45.660	35.991	113	126.5	2.64	39.2	1785
1210	1981	1963	2.230	2.089	34.640D	27.710	36.934	45.720	36.848					1963
117	2154	2133	2.082	1.929	34.649	27.729	36.962	45.756	37.655	123	136.2	2.58	38.4	2133
1211	2341	2318	1.945	1.778	34.656D	27.746	36.988	45.789	38.518					2318
118	2507	2481	1.849	1.668	34.666	27.762	37.010	45.817	39.282	129	143.7	2.54	38.0	2481
1212	2699	2670	1.786	1.589	34.670D	27.771	37.023	45.834	40.151					2670
119	2862	2830	1.733	1.521	34.673	27.779	37.034	45.849	40.885	139	143.8	2.48	37.4	2830
1213	3062	3026	1.658	1.429	34.678D	27.789	37.050	45.869	41.785					3026
120	3216	3177	1.614	1.371	34.679	27.794	37.058	45.881	42.472	148	143.7	2.44	36.9	3177
1214	3409	3366	1.588	1.326	34.683D	27.800	37.067	45.892	43.328					3366
121	3570	3524	1.508	1.231	34.686	27.809	37.081	45.911	44.048	157	143.6	2.40	36.4	3524
1215	3788	3737	1.433	1.135	34.689D	27.818	37.095	45.930	45.013					3737
122	3927	3873	1.415	1.103	34.690	27.821	37.099	45.937	45.621	166	141.4	2.35	35.7	3873
1216	4129	4070	1.428	1.093	34.691D	27.822	37.102	45.939	46.495					4070
123	4288	4226	1.443	1.089	34.692	27.823	37.103	45.940	47.179	169	139.5	2.34	35.5	4226
1217	4497	4430	1.460	1.082	34.692D	27.824	37.104	45.942	48.074					4430
124	4627	4556	1.473	1.079	34.693	27.825	37.105	45.943	48.628	170	138.5	2.33	35.5	4556

BOTTOM DEPTH FOR CAST 1 IS 4592

STATION: 331 LEG: X POSITION: 4° 36' S 125° 8' W DATE: 24 MAY 74

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	10	10	26.428	26.426	35.137	23.040	31.324	39.228	23.083	203	6.7	0.70	6.6	10
502	39	39	26.271	26.262	35.146	23.098	31.385	39.293	23.263	206	6.2	0.70	6.6	39
503	59	59	26.264	26.250	35.466	23.342	31.626	39.531	23.593	207	5.8	0.70	6.6	59
504	79	79	20.769	20.753	35.465	24.936	33.373	41.426	25.277	173	5.9	0.92	7.3	79
505	100	100	16.603	16.586	35.284	25.857	34.430	42.612	26.296	123	7.5	1.27	13.1	100
506	116	116	14.526	14.508	35.027	26.132	34.782	43.036	26.645	54	16.6	1.88	25.1	116
507	138	138	13.186	13.166	34.954	26.359	35.061	43.363	26.973	34	21.3	2.05	29.7	138
508	178	178	12.567	12.543	34.916	26.455	35.182	43.507	27.249	32	23.8	2.11	30.7	178
509	227	226	12.162	12.131	34.884	26.511	35.255	43.595	27.525	6	27.4	2.31	33.5	226
510	274	273	11.590	11.554	34.850	26.595	35.362	43.725	27.822	19	28.4	2.30	33.0	273
511	306	305	11.016	10.977	34.817	26.676	35.468	43.853	28.049	4	32.1	2.46	35.0	305
512	376	374	9.806	9.762	34.757D	26.843	35.687	44.121	28.539	29	32.9	2.43	35.3	374
516	425	423	9.199	9.151	34.701	26.901	35.772	44.231	28.822	32	35.7	2.50	36.6	423
517	496	494	8.147	8.094	34.636	27.015	35.935	44.439	29.268	74	34.9	2.34	34.9	494
518	607	604	7.120	7.060	34.586	27.125	36.095	44.644	29.895	70	42.0	2.51	37.6	604
519	698	694	5.984	5.920	34.552	27.249	36.274	44.875	30.449	68	54.5	2.68	40.2	694
520	798	793	5.284	5.215	34.540	27.325	36.385	45.019	30.994	87	65.0	2.64	39.2	793
521	947	941	4.732	4.653	34.551	27.397	36.486	45.146	31.757	81	80.4	2.74	40.4	941
522	1096	1089	4.233	4.145	34.560	27.459	36.574	45.258	32.510	83	91.6	2.77	40.5	1089
523	1247	1238	3.723	3.627	34.572	27.521	36.663	45.372	33.273	91	100.5	2.75	40.0	1238
524	1386	1376	3.377	3.272	34.585	27.565	36.725	45.452	33.961	94	109.7	2.73	39.9	1376
301	1555	1543	2.951	2.837	34.604	27.619	36.803	45.551	34.798	97	121.7	2.69	39.6	1543
302	1777	1762	2.547	2.419	34.622	27.669	36.875	45.644	35.871	110	128.6	2.63	38.9	1762
303	2004	1986	2.271	2.128	34.638	27.705	36.927	45.711	36.945	116	135.9	2.60	38.6	1986
304	2229	2207	2.058	1.899	34.651	27.733	36.968	45.763	37.996	123	139.5	2.56	38.1	2207
305	2458	2433	1.896	1.719	34.661	27.755	36.999	45.804	39.053	131	141.7	2.53	37.4	2433
306	2683	2654	1.788	1.592	34.669	27.770	37.022	45.833	40.078	135	144.3	2.50	37.3	2654
307	2911	2878	1.696	1.481	34.673	27.781	37.039	45.856	41.108	141	145.2	2.47	36.9	2878
308	3135	3098	1.585	1.350	34.680	27.796	37.061	45.885	42.120	147	145.7	2.43	36.7	3098
309	3366	3324	1.508	1.252	34.684	27.806	37.076	45.905	43.152	154	146.6	2.41	36.2	3324

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

STATION: 331 LEG: X POSITION: 4° 36' S 125° 8' W DATE: 24 MAY 74

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
310	3593	3546	1.431	1.154	34.688	27.816	37.092	45.926	44.162	162	144.3	2.37	35.7	3546
311	3826	3774	1.405	1.104	34.691	27.821	37.100	45.937	45.185	166	143.6	2.35	35.4	3774
312	4056	3999	1.426	1.099	34.692	27.823	37.102	45.939	46.180	166	143.5	2.35	35.4	3999
316	4066	4009	1.428	1.100	34.691	27.822	37.101	45.938	46.222					4009
317	4168	4109	1.439	1.099	34.690	27.821	37.100	45.937	46.660					4109
318	4219	4158	1.444	1.098	34.692	27.823	37.102	45.939	46.881					4158
319	4261	4199	1.448	1.097	34.692	27.823	37.102	45.939	47.062					4199
320	4310	4247	1.453	1.096	34.692	27.823	37.102	45.939	47.272					4247
321	4344	4280	1.456	1.095	34.692	27.823	37.102	45.939	47.417					4280
323	4365	4301	1.457	1.094	34.691	27.822	37.101	45.939	47.507					4301
322	4366	4302	1.457	1.094	34.691	27.822	37.101	45.939	47.511	167	143.0	2.37	35.2	4302
324	4375	4311	1.457	1.093	34.693	27.824	37.103	45.941	47.551					4311

BOTTOM DEPTH FOR CAST 3 IS 4332

STATION: 332 LEG: X POSITION: 3° 1' S 124° 48' W DATE: 25 MAY 74

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	12H	12	26.15 H	26.15	35.276	23.231	31.520	39.429	23.282	206	6.4	0.62	5.7	12
109	23H	23	26.13 H	26.12	35.276	23.238	31.527	39.438	23.336	206	5.9	0.63	5.6	23
111	34H	34	26.13 H	26.12	35.276	23.239	31.528	39.439	23.383	206	5.3	0.63	5.6	34
112	45H	45	26.13 H	26.12	35.276	23.239	31.529	39.439	23.430	206	4.9	0.62	5.6	45
113	61H	61	25.31 H	25.30	35.260	23.478	31.789	39.721	23.738	204	5.1	0.70	6.4	61
114	76H	76	20.32 H	20.31	35.189	24.847	33.301	41.370	25.176	164	7.9	1.13	11.5	76
115	96H	96	15.93 H	15.91	35.081	25.859	34.458	42.664	26.281	71	14.0	1.76	21.2	96
116	121H	121	13.42 H	13.40	34.962	26.317	35.009	43.303	26.855	44	20.3	1.94	28.5	121
117	152H	152	12.69 H	12.67	34.917	26.431	35.153	43.473	27.109	30	23.3	2.11	30.8	152
118	202H	201	11.95 H	11.92	34.872	26.542	35.294	43.642	27.445	36	25.4	2.11	31.1	201
119	252H	251	11.44 H	11.41	34.839	26.614	35.387	43.756	27.743	53	25.8	2.08	30.3	251
120	302H	301	11.06 H	11.02	34.813	26.665	35.455	43.838	28.020	67	25.4	2.01	29.5	301
2201	363	362	10.637	10.592	34.781D	26.718	35.526	43.926	28.348	59D				362
201	441	439	10.247	10.193	34.758	26.770	35.595	44.012	28.753	64	29.7	2.10	31.6	439
2202	541	538	8.111	8.053	34.629D	27.016	35.938	44.444	29.473	39D				538
202	641	638	6.906	6.843	34.588	27.157	36.136	44.695	30.083	41	52.9	2.72	41.2	638
2203	741	737	6.182	6.113	34.556D	27.228	36.243	44.835	30.620	56D				737
203	842	837	5.469	5.395	34.546	27.309	36.360	44.985	31.174	80	65.8	2.65	39.6	837
2204	964	958	4.920	4.838	34.552D	27.378	36.457	45.108	31.810	75D				958
204	1094	1087	4.402	4.313	34.562	27.443	36.549	45.225	32.480	74	90.1	2.79	41.3	1087
2205	1245	1236	3.899	3.801	34.574D	27.505	36.638	45.338	33.243	83D				1236
205	1392	1382	3.370	3.265	34.588	27.568	36.729	45.456	33.991	90	111.3	2.74	40.7	1382
2206	1598	1585	2.875	2.758	34.609D	27.630	36.818	45.570	35.007	98D				1585
206	1799	1784	2.572	2.442	34.627	27.671	36.876	45.644	35.971	99	134.0	2.71	40.2	1784
2207	2051	2032	2.180	2.034	34.643D	27.717	36.944	45.732	37.173	118D				2032
207	2304	2281	1.999	1.834	34.654	27.741	36.979	45.778	38.344	120	143.0	2.59	38.6	2281
2208	2556	2529	1.863	1.678	34.661D	27.758	37.004	45.811	39.495	128D				2529
208	2812	2781	1.748	1.541	34.667	27.772	37.027	45.841	40.656	134	145.0	2.51	37.7	2781
2209	3062	3026	1.662	1.433	34.672D	27.784	37.044	45.864	41.780	142D				3026
209	3318	3277	1.558	1.306	34.681	27.800	37.067	45.894	42.931	152	144.1	2.42	36.7	3277
2210	3572	3526	1.458	1.182	34.684D	27.811	37.085	45.918	44.063	159D				3526
210	3828	3776	1.414	1.112	34.689	27.819	37.098	45.934	45.190	163	144.8	2.36	35.7	3776
2211	4061	4004	1.424	1.096	34.690D	27.821	37.100	45.937	46.200	164D				4004
211	4289	4227	1.446	1.092	34.691	27.822	37.102	45.939	47.182	165	144.4	2.36	35.5	4227
2212	4517	4449	1.471	1.090	34.691D	27.822	37.102	45.939	48.157	166D				4449
212	4752	4678	1.499	1.089	34.693	27.824	37.104	45.941	49.157	166	143.9	2.35	35.6	4678

BOTTOM DEPTH FOR CAST 2 IS 4720

STATION: 333 LEG: X POSITION: 1° 30' S 124° 40' W DATE: 26 MAY 74

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	25.74	25.74	35.29 D	23.366	31.665	39.586	23.379					3
101	28	28	25.735	25.728	35.298	23.376	31.675	39.595	23.495	205	7.6	0.65	5.9	28
1202	58	58	25.422	25.409	35.32 D	23.489	31.797	39.725	23.736					58
102	92	92	21.647	21.628	35.631	24.822	33.231	41.258	25.218	160	6.8	0.88	7.4	92
1203	119	119	17.256	17.236	35.38 D	25.775	34.325	42.485	26.296					119
103	164	164	13.183	13.160	34.994	26.391	35.093	43.394	27.121	67	19.4	1.83	26.1	164
104	184	184	11.928	11.904	34.862	26.538	35.291	43.640	27.361	91	22.5	1.78	25.7	184
105	219	218	11.884	11.855	34.857	26.543	35.298	43.649	27.523	82	23.2	1.85	26.8	218
106	264	263	11.667	11.632	34.846	26.577	35.341	43.701	27.759	67	24.7	1.96	28.7	263
107	314	313	11.369	11.328	34.822	26.615	35.393	43.764	28.022	43	26.9	2.12	31.7	313
108	368	367	10.829	10.783	34.788	26.689	35.489	43.882	28.341	51	28.0	2.14	31.8	367
109	440	438	9.917	9.864	34.741	26.813	35.653	44.083	28.795	60	29.1	2.20	32.6	438
110	499	497	8.526	8.471	34.661	26.977	35.880	44.367	29.240	33	39.7	2.55	38.2	497
111	580	577	7.653	7.593	34.613	27.071	36.015	44.540	29.710	37	46.6	2.69	40.1	577
112	641	638	7.223	7.159	34.590	27.115	36.079	44.624	30.036	64	45.6	2.56	38.0	638
1204	717	713	6.557	6.488	34.575D	27.194	36.191	44.766	30.471	69D				713
116	803	798	5.807	5.734	34.550	27.271	36.305	44.914	30.952	78	61.0	2.67	39.2	798
1205	910	905	5.151	5.073	34.543D	27.344	36.411	45.051	31.525	87D				905
117	1001	995	4.824	4.740	34.547	27.385	36.469	45.125	31.987	89	76.5	2.69	39.3	995
1206	1110	1103	4.261	4.172	34.560D	27.456	36.570	45.252	32.570	85D				1103
118	1202	1194	3.917	3.823	34.569	27.499	36.630	45.330	33.041	89	96.7	2.75	39.9	1194
1207	1369	1359	3.427	3.323	34.586D	27.561	36.719	45.442	33.878	92D				1359
119	1504	1492	3.068	2.957	34.600	27.605	36.783	45.525	34.549	95	117.8	2.74	40.1	1492
1208	1770	1755	2.583	2.455	34.619D	27.664	36.868	45.635	35.832	99D				1755
120	2000	1982	2.217	2.075	34.647	27.717	36.941	45.728	36.941	106	142.5	2.65	39.4	1982
1209	2231	2209	2.016	1.857	34.655D	27.740	36.976	45.774	38.014	117D				2209
1210	2433	2408	1.853	1.679	34.660D	27.757	37.004	45.810	38.946	126D				2408
121	2608	2580	1.786	1.597	34.668	27.769	37.020	45.831	39.744	128	147.9	2.55	38.1	2580
1211	2846	2814	1.703	1.494	34.671D	27.779	37.036	45.852	40.817	135D				2814
1212	3057	3021	1.645	1.417	34.673D	27.786	37.047	45.868	41.761	140D				3021
122	3214	3175	1.611	1.368	34.677	27.792	37.056	45.879	42.462	142	146.9	2.49	37.1	3175
1213	3483	3439	1.547	1.278	34.682D	27.803	37.072	45.899	43.658	148D				3439
1214	3713	3664	1.455	1.164	34.688D	27.815	37.090	45.924	44.682	158D				3664
123	3874	3822	1.447	1.139	34.691	27.819	37.096	45.931	45.387	159	146.2	2.39	36.0	3822
1215	4180	4120	1.437	1.096	34.691D	27.822	37.101	45.938	46.713	165D				4120
1216	4431	4365	1.460	1.089	34.693D	27.824	37.104	45.941	47.791	165D				4365
124	4591	4521	1.479	1.089	34.694	27.825	37.104	45.942	48.474	165	143.6	2.35	35.7	4521

BOTTOM DEPTH FOR CAST 1 IS 4554

STATION: 334 LEG: X POSITION: 0° 3' N 124° 34' W DATE: 27 MAY 74

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	4	4	24.885	24.884	35.182	23.543	31.866	39.810	23.560	195	7.1	0.66	6.6	4
302	43	43	24.786	24.776	35.164	23.562	31.888	39.835	23.745	193	6.9	0.66	6.8	43
303	74	74	22.252	22.237	34.852	24.062	32.462	40.481	24.380	164	8.4	0.90	9.7	74
304	91	91	20.723	20.705	34.936	24.548	32.992	41.053	24.941	145	9.4	0.93	11.5	91
305	111	111	18.951	18.931	34.838	24.939	33.440	41.554	25.422	130	11.9	1.07	14.1	111
306	137	137	14.650	14.629	34.745	25.889	34.538	42.792	26.495	125	19.1	1.29	17.7	137
307	180	180	13.514	13.488	34.746	26.132	34.824	43.118	26.932	130	17.7	1.36	18.7	180
308	205	204	12.758	12.730	34.916	26.418	35.137	43.455	27.331	121	18.9	1.49	20.9	204
309	283	282	12.032	11.994	34.864	26.522	35.271	43.617	27.786	100	21.8	1.72	24.7	282
310	367	366	11.122	11.075	34.802	26.647	35.434	43.816	28.292	33	28.8	2.18	32.6	366
311	396	394	10.694	10.645	34.784	26.710	35.517	43.915	28.488	40	29.0	2.18	32.6	394
312	481	479	8.804	8.750	34.671	26.941	35.831	44.307	29.119	24	40.4	2.55	38.1	479
316	590	587	7.193	7.134	34.603	27.128	36.094	44.640	29.819	40	48.5	2.67	39.6	587
317	675	672	6.791	6.725	34.577	27.164	36.149	44.714	30.246	55	52.5	2.68	39.5	672
318	778	774	6.198	6.125	34.560	27.229	36.244	44.835	30.789	66	57.1	2.67	39.4	774
319	875	870	5.308	5.232	34.547	27.329	36.388	45.020	31.347	80	70.1	2.66	39.2	870
320	1070	1063	4.329	4.243	34.560	27.449	36.558	45.238	32.378	83	89.7	2.73	39.9	1063
321	1267	1258	3.603	3.506	34.583	27.541	36.689	45.404	33.389	84	110.0	2.77	40.3	1258
322	1517	1505	3.060	2.948	34.601	27.607	36.785	45.527	34.610	90	122.0	2.74	40.0	1505
323	1764	1749	2.538	2.411	34.629	27.675	36.882	45.651	35.819	99	134.5	2.69	39.5	1749

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

STATION: 334 LEG: X POSITION: 0° 3' N 124° 34' W DATE: 27 MAY 74

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	2018	2000	2.265	2.121	34.640	27.707	36.930	45.714	37.011	107	141.4	2.67	39.0	2000
324	2137	2117	2.157	2.004	34.648	27.723	36.952	45.742	37.567	109	142.8	2.64	38.8	2117
102	2250	2228	2.016	1.855	34.654	27.739	36.976	45.774	38.099	114	146.8	2.63	38.6	2228
103	2494	2468	1.904	1.723	34.661	27.754	36.999	45.803	39.213	120	147.4	2.60	38.1	2468
104	2740	2710	1.768	1.567	34.668	27.771	37.024	45.837	40 334	129	150.3	2.55	37.6	2710
105	2985	2951	1.704	1.481	34.673	27.781	37.039	45.856	41.434	134	149.8	2.52	37.2	2951
106	3226	3187	1.628	1.383	34.676	27.791	37.054	45.876	42.512	137	149.0	2.50	36.9	3187
107	3474	3430	1.542	1.274	34.682	27.803	37.072	45.900	43.619	147	149.9	2.46	36.6	3430
108	3721	3672	1.408	1.118	34.690	27.820	37.098	45.934	44.726	158	149.4	2.39	35.9	3672
109	3981	3926	1.425	1.106	34.691	27.821	37.100	45.937	45.855	159	149.0	2.40	35.9	3926
110	4200	4140	1.444	1.100	34.691	27.822	37.101	45.938	46.798	161	146.9	2.38	35.6	4140
111	4447	4381	1.472	1.099	34.691	27.822	37.101	45.938	47.856	161	146.8	2.38	35.6	4381
112	4668	4596	1.497	1.097	34.692	27.823	37.102	45.939	48.798	162	146.7	2.38	35.7	4596
117	4706	4634	1.502	1.097	34.692	27.823	37.102	45.939	48.960		146.0	2.37	35.6	4634
116	4715	4642	1.503	1.097	34.692	27.823	37.102	45.939	48.998	162	146.6	2.37	35.6	4642
118	4764	4690	1.508	1.096	34.692	27.823	37.102	45.939	49.206		145.9	2.38	35.6	4690
119	4800	4725	1.513	1.097	34.691	27.822	37.101	45.938	49.358		145.8	2.37	35.6	4725
120	4825	4749	1.516	1.096	34.693	27.824	37.103	45.940	49.465		145.7	2.37	35.6	4749
122	4849	4773	1.519	1.096	34.692	27.823	37.102	45.939	49.566		145.6	2.37	35.7	4773
121	4850	4774	1.519	1.096	34.693	27.824	37.103	45.940	49.571	163	145.5	2.36	35.7	4774
123	4875	4798	1.522	1.096	34.691	27.822	37.101	45.938	49.675		145.3	2.37	35.7	4798
124	4892	4815	1.524	1.096	34.692	27.823	37.102	45.939	49.748		144.7	2.37	35.6	4815

BOTTOM DEPTH FOR CAST 1 IS 4848

STATION: 335 LEG: X POSITION: 1° 32' N 124° 32' W DATE: 27 MAY 74

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	25.478	25.477	35.11 D	23.310	31.618	39.547	23.323					3
101	20	20	25.245	25.240	35.100	23.374	31.689	39.624	23.459	204	7.5	0.64	6.1	20
1202	51	51	25.231	25.219	35.10 D	23.381	31.696	39.631	23.598					51
102	92	92	20.921	20.903	34.757	24.358	32.799	40.856	24.755	166	9.9	1.02	10.4	92
1203	107	107	16.488	16.470	34.82 D	25.529	34.112	42.303	25.999					107
103	141	141	13.030	13.010	34.850	26.310	35.020	43.329	26.939	69	22.9	1.79	26.1	141
1204	155	155	12.606	12.585	34.854D	26.399	35.125	43.449	27.090					155
104	190	189	12.077	12.052	34.856	26.505	35.252	43.596	27.354	50	25.1	2.00	29.4	189
1205	232	231	11.741	11.710	34.845D	26.562	35.323	43.679	27.600					231
105	293	292	11.555	11.517	34.832	26.588	35.357	43.721	27.900	73	25.0	1.91	28.0	292
1206	382	380	10.773	10.725	34.778D	26.691	35.494	43.889	28.406					380
106	490	488	8.402	8.349	34.647	26.985	35.894	44.386	29.208	32	41.9	2.56	38.0	488
1207	555	552	7.797	7.739	34.630D	27.063	36.000	44.519	29.587					552
107	641	638	7.142	7.078	34.593	27.128	36.097	44.645	30.051	45	50.3	2.68	39.7	638
1208	707	703	6.577	6.509	34.566D	27.184	36.180	44.754	30.415					703
108	793	789	5.910	5.838	34.552	27.259	36.288	44.893	30.893	72	61.0	2.66	39.1	789
1225	833	828	5.660	5.585	34.546D	27.286	36.327	44.943	31.106					828
1209	935	929	5.139	5.058	34.555D	27.355	36.423	45.064	31.650					929
109	1097	1090	4.432	4.342	34.567	27.444	36.548	45.223	32.493	67	92.1	2.83	41.2	1090
1210	1237	1228	3.912	3.815	34.575D	27.505	36.636	45.336	33.206					1228
110	1396	1386	3.427	3.321	34.593	27.567	36.724	45.448	34.006	81	114.2	2.80	40.9	1386
1211	1543	1531	3.025	2.911	34.606D	27.614	36.794	45.538	34.736					1531
111	1709	1695	2.718	2.594	34.620	27.653	36.850	45.610	35.539	93	129.8	2.74	39.8	1695
1212	1846	1830	2.519	2.386	34.628D	27.677	36.884	45.655	36.191					1830
112	2003	1985	2.252	2.109	34.642	27.710	36.933	45.718	36.946	107	140.2	2.66	39.0	1985
1216	2159	2139	2.120	1.966	34.646D	27.724	36.955	45.747	37.670					2139
116	2315	2292	2.009	1.843	34.655	27.741	36.978	45.777	38.392	115	145.4	2.61	38.5	2292
1217	2466	2441	1.892	1.714	34.661D	27.755	37.000	45.805	39.089					2441
117	2617	2589	1.826	1.636	34.666	27.765	37.014	45.823	39.777	124	148.7	2.57	38.0	2589
1218	2769	2739	1.785	1.581	34.669D	27.771	37.023	45.835	40.461					2739
118	2921	2888	1.767	1.549	34.671	27.775	37.029	45.842	41.140	130	149.1	2.53	37.6	2888
1219	3124	3087	1.707	1.470	34.673D	27.782	37.040	45.858	42.048					3087
119	3226	3187	1.680	1.434	34.674	27.786	37.046	45.865	42.502	136	147.8	2.49	37.1	3187
1220	3426	3383	1.610	1.345	34.679D	27.796	37.061	45.885	43.395					3383
120	3526	3481	1.554	1.280	34.683	27.803	37.072	45.900	43.845	146	149.3	2.45	36.5	3481

STATION: 335 LEG: X POSITION: 1° 32' N 124° 32' W DATE: 27 MAY 74

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	3678	3630	1.460	1.173	34.689D	27.815	37.090	45.923	44.530					3630
121	3829	3778	1.442	1.139	34.691	27.819	37.096	45.931	45.192	156	148.8	2.39	36.2	3778
1222	3982	3927	1.434	1.115	34.691D	27.821	37.099	45.935	45.857					3927
122	4136	4078	1.448	1.111	34.691	27.821	37.099	45.936	46.521	159	147.7	2.38	35.9	4078
1223	4289	4227	1.457	1.103	34.692D	27.822	37.101	45.938	47.181					4227
123	4442	4376	1.469	1.097	34.693	27.823	37.103	45.940	47.837	160	147.4	2.37	35.8	4376
1224	4559	4490	1.482	1.095	34.694D	27.824	37.104	45.941	48.337					4490
124	4676	4604	1.495	1.094	34.693	27.824	37.103	45.940	48.834	160	146.6	2.37	35.6	4604

BOTTOM DEPTH FOR CAST 1 IS 4639

STATION: 336 LEG: X POSITION: 3° 1' N 124° 22' W DATE: 28 MAY 74

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	6H	6	25.82 H	25.82	35.060	23.169	31.468	39.389	23.194	207	8.8	0.62	5.8	6
208	20H	20	25.82 H	25.82	35.060	23.170	31.470	39.390	23.255	206	7.4	0.63	5.9	20
209	36H	36	25.82 H	25.81	35.060	23.171	31.471	39.392	23.324	207	6.8	0.63	5.9	36
210	51H	51	25.81 H	25.80	35.060	23.175	31.475	39.396	23.392	207	6.4	0.63	5.9	51
211	67H	67	25.74 H	25.72	35.042	23.184	31.486	39.410	23.469	206	6.1	0.64	6.0	67
212	81H	81	22.77 H	22.75	34.717	23.814	32.201	40.207	24.162	191	7.3	0.87	8.6	81
213	106H	106	20.13 H	20.11	34.806	24.608	33.072	41.152	25.067	146	10.8	1.20	13.7	106
214	132H	132	14.71 H	14.69	34.940	26.026	34.670	42.919	26.609	62	18.5	1.79	26.0	132
215	151H	151	13.71 H	13.69	34.939	26.239	34.922	43.205	26.910	48	20.5	1.90	28.0	151
216	177H	177	13.09 H	13.07	34.913	26.348	35.054	43.360	27.136	45	22.4	1.97	29.0	177
217	251H	250	11.93 H	11.90	34.841	26.523	35.277	43.626	27.645	31	26.7	2.14	32.0	250
218	311H	310	11.33 H	11.29	34.799	26.605	35.384	43.757	27.998	31	28.7	2.19	32.7	310
219	360H	359	10.57 H	10.53	34.746	26.702	35.514	43.917	28.320	48	30.4	2.17	32.3	359
220	399H	397	9.93 H	9.88	34.707	26.783	35.623	44.052	28.582	55	32.3	2.21	32.6	397
101	493	491	8.708	8.653	34.651	26.941	35.835	44.316	29.174	23	43.4	2.59	37.7	491
102	592	589	7.327	7.267	34.594	27.103	36.062	44.602	29.801	30	52.6	2.78	40.4	589
103	742	738	6.029	5.961	34.555	27.246	36.269	44.868	30.646	59	62.9	2.75	40.4	738
104	894	889	5.227	5.150	34.545	27.337	36.400	45.036	31.443	79	73.5	2.70	39.6	889
105	1046	1039	4.524	4.438	34.557	27.426	36.525	45.195	32.241	75	89.1	2.79	40.8	1039
106	1243	1234	3.859	3.762	34.577	27.511	36.646	45.348	33.241	75	105.8	2.83	41.2	1234
107	1441	1430	3.441	3.331	34.591	27.564	36.721	45.445	34.207	80	115.7	2.82	41.1	1430
108	1668	1654	2.870	2.747	34.613	27.634	36.823	45.575	35.328	86	129.9	2.79	40.9	1654
109	1895	1878	2.510	2.372	34.632	27.681	36.889	45.661	36.417	95	139.4	2.75	40.2	1878
110	2120	2100	2.244	2.091	34.644	27.713	36.937	45.722	37.476	103	145.0	2.69	39.7	2100
111	2344	2321	1.981	1.813	34.657	27.745	36.984	45.784	38.528	114	150.6	2.63	39.1	2321
112	2570	2543	1.839	1.653	34.665	27.763	37.011	45.819	39.564	120	153.7	2.60	38.6	2543
116	2809	2778	1.795	1.587	34.669	27.771	37.022	45.834	40.637	123	153.8	2.58	38.5	2778
117	3036	3001	1.726	1.498	34.671	27.779	37.035	45.852	41.655	128	154.6	2.55	38.2	3001
118	3266	3226	1.626	1.377	34.678	27.793	37.056	45.879	42.690	134	155.3	2.51	37.9	3226
119	3494	3450	1.491	1.222	34.685	27.809	37.081	45.912	43.717	146	155.2	2.43	37.0	3450
120	3721	3672	1.455	1.164	34.687	27.814	37.090	45.923	44.716	152	153.4	2.45	36.8	3672
121	3950	3896	1.454	1.138	34.689	27.818	37.094	45.929	45.714	154	152.4	2.43	36.7	3896
122	4180	4121	1.457	1.115	34.689	27.819	37.097	45.933	46.708	156	150.9	2.41	36.5	4121
123	4416	4351	1.475	1.105	34.690	27.821	37.099	45.936	47.722	157	150.6	2.41	36.5	4351
124	4657	4586	1.497	1.098	34.691	27.822	37.101	45.938	48.751	158	149.0	2.40	36.3	4586

BOTTOM DEPTH FOR CAST 1 IS 4619

STATION: 337 LEG: X POSITION: 4° 50' N 124° 5' W DATE: 29 MAY 74

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
409	1H	1	27.01 H	27.01	34.604	22.458	30.733	38.627	22.463	206	7.3	0.47	2.7	1
410	51H	51	27.05 H	27.04	34.646	22.481	30.754	38.648	22.697	206	6.4	0.47	2.9	51
411	67H	67	26.54 H	26.52	34.742	22.713	30.998	38.904	22.997	206	6.0	0.55	3.9	67

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

STATION: 339 LEG: X POSITION: 8° 33' N 123° 37' W DATE: 31 MAY 74

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
107	1165	1157	3.923	3.832	34.578	27.505	36.636	45.335	32.879	49	111.6	2.99	43.2	1157
108	1390	1379	3.340	3.235	34.595	27.576	36.739	45.467	33.992	62	123.0	2.92	42.5	1379
109	1640	1626	2.854	2.734	34.613	27.635	36.825	45.578	35.204	76	133.0	2.83	41.2	1626
110	1889	1872	2.459	2.323	34.628	27.682	36.893	45.667	36.394	90	141.1	2.75	40.5	1872
111	2140	2119	2.147	1.994	34.644	27.720	36.950	45.740	37.579	97	149.9	2.70	40.0	2119
112	2393	2368	1.943	1.771	34.659	27.749	36.991	45.793	38.754	106	155.3	2.65	39.4	2368
116	2654	2625	1.849	1.655	34.666	27.763	37.011	45.819	39.938	111	158.0	2.62	38.9	2625
117	2903	2870	1.775	1.559	34.670	27.774	37.027	45.840	41.058	117	158.3	2.59	38.4	2870
118	3154	3116	1.660	1.422	34.678	27.790	37.050	45.871	42.191	128	158.0	2.53	37.8	3116
119	3405	3362	1.572	1.310	34.680	27.799	37.066	45.892	43.310	137	156.2	2.48	37.3	3362
120	3645	3597	1.517	1.232	34.684	27.807	37.079	45.909	44.372	145	154.4	2.44	36.7	3597
121	3993	3937	1.464	1.143	34.688	27.816	37.093	45.928	45.898	153	151.5	2.40	36.4	3937
122	4148	4089	1.442	1.104	34.690	27.821	37.099	45.936	46.574	158	149.4	2.37	36.0	4089
123	4407	4341	1.452	1.084	34.691	27.823	37.103	45.941	47.688	159	149.0	2.37	35.9	4341
124	4648	4576	1.473	1.076	34.692	27.824	37.104	45.943	48.717	161	148.7	2.36	35.7	4576

BOTTOM DEPTH FOR CAST 1 IS 4595

STATION: 340 LEG: X POSITION: 10° 28' N 123° 38' W DATE: 1 JUN 74

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	0H	0	26.81 H	26.81	34.226	22.236	30.520	38.424	22.236	204	5.0	0.24	0.0	0
203	41H	41	16.89 H	16.88	34.654	25.305	33.875	42.055	25.485	71	16.8	1.68	21.5	41
204	77H	77	13.40 H	13.39	34.720	26.132	34.829	43.126	26.475	6	25.0	2.28	32.1	77
205	102H	102	12.47 H	12.46	34.787	26.372	35.104	43.434	26.828	3	27.2	2.31	33.3	102
206	141H	141	11.61 H	11.59	34.765	26.522	35.289	43.651	27.154	9	29.4	2.33	33.6	141
207	195H	194	11.02 H	11.00	34.739	26.612	35.404	43.789	27.488	15	31.0	2.33	33.8	194
208	257H	256	10.47 H	10.44	34.723	26.700	35.515	43.922	27.857	7	33.8	2.45	33.9	256
209	412H	410	9.10 H	9.05	34.653	26.879	35.756	44.219	28.743	2	44.1	2.70	35.0	410
210	516H	513	7.95 H	7.90	34.591	27.009	35.940	44.453	29.356	1	54.3	2.87	36.9	513
211	619H	616	6.91 H	6.85	34.565	27.138	36.117	44.676	29.965	1	66.6	3.02	39.7	616
212	722H	718	6.048H	5.982	34.540	27.232	36.254	44.852	30.540	7	75.8	3.05	43.0	718
213	825H	820	5.44 H	5.37	34.542	27.309	36.361	44.987	31.097	12	83.6	3.08	44.4	820
214	929H	923	4.92 H	4.84	34.547	27.373	36.452	45.103	31.646	23	90.9	3.05	44.4	923
215	1032H	1025	4.46 H	4.38	34.561	27.435	36.538	45.211	32.189	28	100.1	3.08	44.6	1025
216	1185H	1176	4.001H	3.907	34.572	27.493	36.620	45.315	32.955	38	110.1	3.04	44.1	1176
217	1442H	1431	3.292H	3.183	34.593	27.579	36.745	45.475	34.233	58	125.4	2.91	42.7	1431
218	1696H	1682	2.74 H	2.62	34.616	27.648	36.843	45.602	35.475	71	138.3	2.82	41.7	1682
219	1947H	1929	2.328H	2.189	34.638	27.700	36.919	45.700	36.681	86	147.8	2.74	40.3	1929
101	2102	2082	2.142	1.992	34.647	27.723	36.952	45.743	37.411	94	153.9	2.71	40.2	2082
220	2308H	2285	1.944H	1.780	34.658	27.748	36.989	45.791	38.372	103	156.5	2.63	39.2	2285
102	2355	2331	1.941	1.772	34.659	27.749	36.991	45.793	38.584	105	158.0	2.66	39.4	2331
103	2559	2532	1.869	1.683	34.664	27.760	37.006	45.813	39.510	110	157.7	2.63	38.9	2532
104	2763	2732	1.795	1.592	34.667	27.769	37.020	45.832	40.432	115	159.0	2.61	38.5	2732
105	2966	2931	1.715	1.494	34.672	27.780	37.037	45.853	41.348	121	160.2	2.58	38.3	2931
106	3167	3129	1.633	1.394	34.678	27.791	37.054	45.876	42.253	129	159.6	2.52	37.8	3129
107	3372	3329	1.562	1.304	34.679	27.798	37.066	45.892	43.166	136	160.4	2.51	37.4	3329
108	3577	3530	1.517	1.239	34.683	27.806	37.077	45.907	44.074	143	156.4	2.47	36.8	3530
109	3779	3728	1.473	1.175	34.686	27.813	37.088	45.921	44.965	150	153.8	2.43	36.4	3728
110	3977	3921	1.431	1.113	34.688	27.818	37.097	45.933	45.834	156	151.4	2.40	36.1	3921
111	4182	4122	1.425	1.084	34.691	27.823	37.103	45.941	46.724	159	150.8	2.39	35.8	4122
112	4182	4122	1.425	1.084	34.691	27.823	37.103	45.941	46.724	156	149.6	2.38	35.7	4122
116	4396	4330	1.442	1.076	34.691	27.823	37.104	45.942	47.643	160	149.0	2.38	35.7	4330
117	4396	4330	1.442	1.076	34.691	27.823	37.104	45.942	47.643					4330
118	4441	4374	1.446	1.075	34.691	27.823	37.104	45.942	47.835					4374
119	4498	4430	1.452	1.074	34.690	27.823	37.103	45.942	48.078					4430
120	4538	4469	1.456	1.073	34.690	27.823	37.103	45.942	48.249					4469
121	4568	4498	1.459	1.072	34.691	27.823	37.104	45.943	48.377					4498
122	4588	4518	1.460	1.071	34.691	27.824	37.104	45.943	48.463	160	148.8	2.38	35.7	4518
123	4588	4518	1.460	1.071	34.691	27.824	37.104	45.943	48.463					4518
124	4596	4525	1.461	1.071	34.691	27.824	37.104	45.943	48.497					4525

BOTTOM DEPTH FOR CAST 1 IS 4536

STATION: 341 LEG: X POSITION: 12° 32' N 123° 29' W DATE: 2 JUN 74

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	26.36	26.36	34.26 D	22.401	30.695	38.611	22.401					0
101	12	12	26.363	26.360	34.259	22.400	30.695	38.610	22.451	205	4.1	0.22	0.0	12
1202	66	66	18.738	18.726	34.486D	24.723	33.235	41.360	25.011					66
102	138	138	12.285	12.266	34.788	26.410	35.150	43.487	27.027	0	28.4	2.33	31.6	138
1203	179	178	11.729	11.706	34.751D	26.490	35.252	43.610	27.291					178
103	213	212	11.220	11.193	34.748	26.583	35.367	43.744	27.539	4	30.9	2.35	34.2	212
1204	268	267	10.672	10.639	34.732D	26.671	35.478	43.877	27.876					267
104	338	337	10.041	10.001	34.695	26.754	35.589	44.013	28.278	1	36.5	2.49	34.8	337
1205	412	410	9.328	9.281	34.650D	26.840	35.706	44.161	28.702					410
105	488	486	8.494	8.441	34.604	26.937	35.842	44.332	29.151	1	49.6	2.75	35.6	486
1206	551	548	7.912	7.854	34.582D	27.009	35.941	44.456	29.513					548
106	634	631	6.955	6.893	34.537	27.110	36.088	44.645	30.004	3	65.6	2.95	39.5	631
1207	698	694	6.356	6.290	34.529D	27.184	36.191	44.775	30.378					694
107	785	780	5.692	5.622	34.521	27.261	36.302	44.917	30.863	7	81.9	3.05	43.3	780
1208	827	822	5.401	5.329	34.531D	27.305	36.359	44.988	31.103					822
108	986	980	4.580	4.499	34.542	27.407	36.504	45.171	31.948	20	100.2	3.11	44.9	980
1209	1077	1070	4.268	4.182	34.552D	27.449	36.562	45.244	32.412					1070
109	1186	1178	3.918	3.825	34.567	27.497	36.629	45.328	32.966	33	113.2	3.06	44.4	1178
1210	1276	1267	3.635	3.537	34.579D	27.535	36.681	45.395	33.422					1267
110	1383	1372	3.398	3.293	34.586	27.564	36.723	45.448	33.945	50	124.4	2.98	43.4	1372
1211	1478	1466	3.177	3.067	34.592D	27.589	36.761	45.497	34.410					1466
111	1584	1571	2.964	2.847	34.603	27.618	36.801	45.548	34.928	60	135.0	2.93	42.7	1571
1212	1726	1711	2.693	2.568	34.615D	27.651	36.849	45.611	35.616					1711
112	1886	1869	2.400	2.265	34.627	27.686	36.900	45.677	36.387	80	148.0	2.81	41.1	1869
1216	2036	2017	2.167	2.023	34.638D	27.713	36.941	45.731	37.103					2017
116	2203	2181	2.040	1.883	34.648	27.732	36.968	45.764	37.880	97	155.0	2.72	40.1	2181
1217	2358	2334	1.912	1.744	34.655D	27.748	36.991	45.795	38.598					2334
117	2505	2479	1.845	1.665	34.660	27.758	37.005	45.813	39.269	108	158.7	2.66	39.2	2479
1218	2657	2628	1.780	1.587	34.666D	27.768	37.020	45.832	39.961					2628
118	2805	2773	1.733	1.527	34.670	27.776	37.031	45.846	40.630	117	161.2	2.60	38.7	2773
1219	2966	2931	1.689	1.468	34.671D	27.781	37.039	45.857	41.351					2931
119	3111	3074	1.651	1.417	34.673	27.786	37.047	45.868	41.999	124	161.8	2.56	38.1	3074
1220	3271	3230	1.601	1.352	34.674D	27.791	37.056	45.880	42.712					3230
120	3418	3374	1.564	1.301	34.677	27.797	37.065	45.891	43.366	132	164.5	2.54	37.6	3374
1221	3573	3526	1.528	1.250	34.680D	27.803	37.074	45.903	44.053					3526
121	3723	3673	1.488	1.195	34.682	27.808	37.082	45.914	44.716	143	159.4	2.48	36.9	3673
1222	3880	3826	1.452	1.144	34.685D	27.814	37.091	45.925	45.407					3826
122	4028	3971	1.430	1.106	34.687	27.818	37.097	45.934	46.054	156	151.8	2.41	36.0	3971
1223	4188	4127	1.422	1.080	34.689D	27.821	37.102	45.940	46.749					4127
123	4335	4271	1.427	1.068	34.690	27.823	37.104	45.942	47.382	160	148.2	2.40	35.6	4271
1224	4492	4424	1.438	1.061	34.691D	27.824	37.105	45.945	48.055					4424
124	4642	4570	1.453	1.058	34.693	27.826	37.107	45.947	48.696	162	147.3	2.36	35.7	4570

BOTTOM DEPTH FOR CAST 1 IS 4599

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

STATION: 342 LEG: X POSITION: 14° 29' N 123° 8' W DATE: 2 JUN 74

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	25.680	25.680	34.325D	22.657	30.969	38.901	22.662					1
101	18	18	25.680	25.676	34.325	22.659	30.971	38.903	22.735	207	3.8	0.25	0.0	18
1202	50	50	25.145	25.134	34.330D	22.826	31.152	39.098	23.039					50
1203	78	78	20.039	20.024	34.29 D	24.238	32.711	40.800	24.577					78
102	110	110	14.580	14.563	34.214	25.494	34.153	42.416	25.982	111	14.1	1.43	16.6	110
1204	137	137	13.078	13.059	34.559D	26.076	34.787	43.098	26.686					137
103	159	159	12.147	12.126	34.663	26.341	35.088	43.431	27.052	2	30.8	2.46	28.1	159
1205	198	197	11.505	11.479	34.706D	26.497	35.270	43.637	27.385					197
104	237	236	10.839	10.809	34.669	26.591	35.392	43.786	27.657	1	35.4	2.50	29.9	236
1206	324	323	9.641	9.603	34.623D	26.765	35.618	44.060	28.229					323
105	409	407	8.649	8.604	34.576	26.890	35.788	44.271	28.745	3	47.7	2.70	35.6	407
1207	472	470	7.860	7.811	34.531D	26.975	35.910	44.427	29.123					470
106	536	533	7.064	7.011	34.514	27.076	36.048	44.601	29.524	5	63.9	2.90	38.7	533
1208	613	610	6.432	6.374	34.494D	27.145	36.149	44.730	29.952					610
107	687	683	5.792	5.731	34.499	27.231	36.266	44.876	30.385	8	81.8	3.03	42.0	683
1209	739	735	5.456A	5.392	34.512D	27.282	36.334	44.960	30.679					735
108	787	782	5.199	5.132	34.515	27.315	36.380	45.018	30.935	10	90.0	3.09	43.6	782
1210	836	831	4.933A	4.863	34.529D	27.357	36.435	45.085	31.206					831
109	986	980	4.321H	4.242	34.543	27.435	36.545	45.225	31.983	20	108.2	3.14	44.8	980
1211	1082	1075	3.981A	3.897	34.561D	27.485	36.613	45.309	32.479					1075
110	1186	1177	3.659	3.569	34.566	27.522	36.667	45.379	32.999	35	120.7	3.06	44.2	1177
1212	1284	1274	3.412	3.316	34.573D	27.551	36.710	45.434	33.483					1274
111	1388	1377	3.140	3.038	34.591	27.591	36.764	45.502	34.005	53	131.1	2.96	43.0	1377
1213	1536	1523	2.823	2.712	34.606D	27.632	36.822	45.576	34.730					1523
112	1691	1676	2.522	2.402	34.617	27.666	36.874	45.644	35.481	73	145.7	2.85	41.7	1676
1214	1847	1830	2.305	2.175	34.631D	27.696	36.916	45.697	36.226					1830
116	2005	1986	2.126	1.985	34.642	27.720	36.949	45.741	36.972	90	153.7	2.75	40.5	1986
1215	2157	2136	1.968	1.816	34.650D	27.739	36.978	45.778	37.684					2136
117	2310	2287	1.879	1.716	34.657	27.752	36.996	45.801	38.389	104	158.3	2.66	39.4	2287
1216	2464	2438	1.803	1.627	34.663D	27.763	37.013	45.822	39.094					2438
118	2614	2585	1.750	1.562	34.667	27.771	37.024	45.837	39.775	114	160.7	2.61	38.8	2585
1217	2767	2736	1.701	1.499	34.669D	27.777	37.034	45.850	40.465					2736
119	2918	2884	1.667	1.452	34.671	27.782	37.041	45.860	41.141	122	162.0	2.58	38.4	2884
1218	3070	3033	1.616	1.387	34.672D	27.787	37.050	45.872	41.822					3033
120	3222	3182	1.583	1.340	34.675	27.793	37.058	45.883	42.500	129	164.6	2.55	37.7	3182
1219	3372	3329	1.554	1.296	34.676D	27.797	37.065	45.891	43.165					3329
121	3528	3482	1.538	1.265	34.678	27.800	37.070	45.899	43.853	134	165.1	2.51	37.4	3482
1220	3685	3636	1.518	1.229	34.679D	27.804	37.075	45.906	44.543					3636
122	3835	3782	1.489	1.184	34.683	27.810	37.084	45.917	45.204	144	159.7	2.46	36.7	3782
1221	3989	3933	1.470	1.149	34.685D	27.814	37.090	45.924	45.877					3933
123	4141	4081	1.449	1.112	34.688	27.818	37.097	45.933	46.541	155	152.2	2.42	36.1	4081
1222	4293	4229	1.445	1.091	34.690D	27.821	37.101	45.939	47.198					4229
124	4447	4380	1.455	1.083	34.691	27.823	37.103	45.941	47.859	159	150.2	2.39	35.8	4380

BOTTOM DEPTH FOR CAST 1 IS 4428

STATION: 343 LEG: X POSITION: 16° 31' N 123° 1' W DATE: 3 JUN 74

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	13	13	22.460	22.457	34.612	23.818	32.215	40.230	23.874	220	4.3	0.22	0.0	13
502	43	43	22.263	22.254	34.620	23.881	32.284	40.305	24.067	230	3.8	0.22	0.0	43
503	73	73	20.419	20.405	34.634	24.399	32.856	40.929	24.715	231	3.7	0.23	0.0	73
504	103	103	17.431	17.413	34.270	24.883	33.441	41.609	25.334	197	5.7	0.57	3.0	103
505	143	143	12.549	12.530	33.970	25.726	34.466	42.804	26.365	151	13.6	1.19	13.5	143
506	168	168	12.123	12.101	34.381	26.127	34.879	43.227	26.879	54	26.2	2.09	24.4	168
507	197	196	12.170	12.144	34.698	26.365	35.110	43.453	27.245	3	32.5	2.51	27.0	196
508	227	226	11.719	11.689	34.717	26.466	35.230	43.589	27.483	0	34.7	2.55	26.6	226
509	277	276	10.714	10.680	34.683	26.626	35.432	43.830	27.871	0	38.8	2.62	24.8	276
510	325	324	9.933	9.894	34.640	26.729	35.569	43.999	28.195	0	43.1	2.69	25.3	324
511	375	373	8.975	8.933	34.568	26.832	35.715	44.185	28.531	1	48.1	2.74	31.0	373
512	431	429	8.313	8.267	34.534	26.909	35.823	44.321	28 867	2	53.8	2.82	33.3	429
516	498	496	7.428	7.378	34.511	27.022	35.977	44.514	29.293	2	63.0	2.92	35.9	496
517	593	590	6.556	6.500	34.508	27.140	36.137	44.712	29.854	2	74.3	3.04	38.9	590
518	694	690	5.801	5.739	34.506	27.235	36.270	44.880	30.421	5	83.5	3.07	41.8	690
519	796	791	5.187	5.119	34.514	27.316	36.381	45.019	30.977	11	90.6	3.10	43.7	791
520	890	884	4.757	4.683	34.524	27.373	36.460	45.119	31.472	13	98.7	3.13	44.4	884
521	1040	1033	4.148	4.066	34.544	27.454	36.574	45.262	32.253	28	109.2	3.07	44.4	1033
522	1189	1180	3.682	3.591	34.560	27.515	36.658	45.369	33.005	37	119.1	3.03	43.9	1180
523	1387	1376	3.165	3.063	34.583	27.582	36.754	45.491	33.991	47	131.0	2.98	43.3	1376
201	1590	1577	2.847	2.731	34.598	27.624	36.813	45.567	34.966	58	140.7	2.93	42.8	1577
524	1687	1672	2.538	2.418	34.616	27.664	36.871	45.640	35.460	69	145.5	2.86	41.8	1672
202	1790	1774	2.441	2.314	34.621	27.677	36.889	45.663	35.943	73	149.3	2.86	41.8	1774
203	1994	1975	2.157	2.016	34.638	27.714	36.942	45.732	36.915	88	154.4	2.79	40.8	1975
204	2197	2175	1.953	1.798	34.648	27.738	36.979	45.779	37.864	99	156.0	2.72	39.9	2175
205	2400	2375	1.836	1.665	34.654	27.753	37.000	45.808	38.796	107	158.8	2.68	39.3	2375
206	2600	2571	1.743	1.556	34.661	27.766	37.020	45.833	39.709	113	161.0	2.64	38.9	2571
207	2803	2771	1.663	1.459	34.667	27.778	37.037	45.856	40.629	119	162.4	2.61	38.5	2771
208	3005	2969	1.605	1.383	34.671	27.787	37.050	45.872	41.536	125	163.0	2.58	38.1	2969
209	3261	3220	1.554	1.308	34.676	27.796	37.063	45.890	42.677	130	164.1	2.56	37.7	3220
210	3561	3514	1.528	1.251	34.678	27.801	37.072	45.901	43.999	135	164.3	2.54	37.5	3514
211	3772	3720	1.529	1.230	34.680	27.804	37.076	45.906	44.921	138	163.1	2.52	37.2	3720
212	3999	3942	1.508	1.185	34.684	27.810	37.085	45.917	45.913	144	159.9	2.48	36.8	3942
216	4010	3953	1.510	1.186	34.682	27.809	37.083	45.916	45.959					3953
217	4061	4003	1.507	1.177	34.683	27.810	37.085	45.918	46.181					4003
218	4112	4052	1.506	1.170	34.686	27.813	37.088	45.922	46.404					4052
219	4162	4101	1.506	1.165	34.685	27.813	37.088	45.922	46.619					4101
220	4202	4140	1.506	1.160	34.684	27.812	37.088	45.922	46.791					4140
221	4233	4170	1.507	1.158	34.686	27.814	37.090	45.924	46.926					4170
222	4254	4191	1.508	1.156	34.684	27.812	37.088	45.923	47.015	149	157.0	2.46	36.5	4191
223	4254	4191	1.508	1.156	34.685	27.813	37.089	45.923	47.015					4191
224	4261	4198	1.508	1.155	34.686	27.814	37.090	45.924	47.046					4198

BOTTOM DEPTH FOR CAST 2 IS 4226

A DATA TAKEN FROM CTD DOWN TRACE
D DATA EXTRACED FROM CTD RECORDS (NORMALLY TAKEN BY DISCRETE MEASUREMENTS)
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

STATION: 344 LEG: X POSITION: 19° 30' N 122° 43' W DATE: 5 JUN 74

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	10	10	22.022	22.020	34.633	23.957	32.366	40.393	24.000	220	4.5	0.23	0.0	10
1201	40	40	21.170	21.162	34.63 D	24.191	32.626	40.677	24.364					40
1202	65	65	19.808	19.796	34.622D	24.551	33.027	41.118	24.833					65
102	85	85	19.365	19.349	34.605	24.654	33.145	41.249	25.024	233	4.5	0.23	0.0	85
1203	115	115	16.453	16.434	34.192D	25.057	33.649	41.849	25.562					115
1204	140	140	13.685	13.665	33.868D	25.418	34.116	42.414	26.041					140
103	166	165	11.847	11.825	33.87 D	25.784	34.554	42.919	26.528	168	14.3	1.11	13.0	165
1205	225	224	9.722	9.696	34.130D	26.365	35.221	43.666	27.383					224
1206	285	284	8.861	8.830	34.242D	26.593	35.486	43.965	27.887					284
104	340	339	7.917	7.882	34.221	26.721	35.658	44.176	28.272	65	48.2	2.37	31.2	339
1207	425	423	7.102	7.061	34.332D	26.926	35.899	44.452	28.870					423
105	490	488	6.947	6.900	34.445	27.037	36.016	44.574	29.278	7	66.4	2.90	37.9	488
1208	600	597	6.156	6.101	34.485D	27.173	36.191	44.784	29.925					597
106	691	687	5.516	5.456	34.481	27.250	36.299	44.922	30.427	8	87.5	3.07	42.5	687
1209	826	821	4.868	4.799	34.499D	27.340	36.422	45.076	31.145					821
107	941	935	4.457	4.381	34.518	27.401	36.504	45.177	31.740	15	106.2	3.15	44.2	935
1210	1078	1070	3.982	3.898	34.536D	27.465	36.593	45.290	32.441					1070
108	1194	1185	3.638	3.547	34.557	27.516	36.663	45.376	33.031	30	123.9	3.10	44.0	1185
1211	1407	1396	3.071	2.968	34.582D	27.590	36.767	45.509	34.093					1396
109	1600	1586	2.673	2.559	34.604	27.643	36.842	45.604	35.038	62	143.6	2.93	42.4	1586
1212	1812	1795	2.354	2.226	34.620D	27.683	36.900	45.679	36.053					1795
110	2004	1985	2.146	2.005	34.633	27.711	36.940	45.730	36.958	87	153.7	2.78	40.5	1985
1213	2217	2194	1.950	1.794	34.644D	27.736	36.976	45.777	37.952					2194
1214	2420	2394	1.818	1.646	34.653D	27.754	37.002	45.811	38.887					2394
111	2613	2584	1.714	1.526	34.660	27.768	37.023	45.838	39.770	113	162.1	2.64	39.1	2584
1215	2826	2793	1.624	1.418	34.667D	27.781	37.042	45.863	40.736					2793
1216	3029	2992	1.556	1.332	34.672D	27.791	37.057	45.882	41.650					2992
112	3221	3180	1.518	1.276	34.676	27.798	37.067	45.895	42.507	132	165.9	2.55	37.8	3180
1217	3435	3390	1.495	1.232	34.677D	27.802	37.073	45.904	43.452					3390
1218	3638	3589	1.495	1.211	34.680D	27.805	37.078	45.910	44.342					3589
116	3842	3788	1.502	1.196	34.681	27.807	37.081	45.913	45.230	140	164.2	2.51	37.2	3788
1219	4008	3950	1.507	1.183	34.683D	27.810	37.084	45.917	45.951					3950
117	4174	4112	1.505	1.162	34.685	27.813	37.088	45.922	46.671	146	159.2	2.48	36.8	4112
118	4195	4133	1.506	1.161	34.684	27.812	37.088	45.922	46.761	147	158.7	2.48	36.7	4133
119	4215	4152	1.508	1.161	34.685	27.813	37.089	45.923	46.847	147	158.2	2.46	36.7	4152
120	4236	4173	1.510	1.160	34.685	27.813	37.089	45.923	46.937	147	158.3	2.46	36.7	4173
121	4257	4193	1.510	1.158	34.685	27.813	37.089	45.923	47.028	147	158.3	2.46	36.6	4193
122	4276	4212	1.512	1.157	34.684	27.812	37.088	45.922	47.109	148	158.2	2.45	36.7	4212
123	4298	4233	1.512	1.155	34.685	27.813	37.089	45.923	47.204	148	157.8	2.45	36.7	4233
124	4318	4253	1.513	1.154	34.685	27.813	37.089	45.924	47.290	148	156.5	2.46	36.6	4253

BOTTOM DEPTH FOR CAST 1 IS 4272

STATION: 345 LEG: X POSITION: 22° 31' N 122° 12' W DATE: 6 JUN 74

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	11	11	18.420	18.418	34.157	24.550	33.076	41.214	24.598	239	5.2	0.25	0.0	11
302	67	67	16.921	16.910	33.958	24.766	33.344	41.532	25.060	247	5.8	0.26	0.0	67
303	117	117	14.334	14.317	33.856	25.272	33.945	42.220	25.791	225	7.7	0.44	1.4	117
304	137	137	12.530	12.511	33.775	25.578	34.322	42.663	26.191	213	10.4	0.69	6.2	137
305	187	186	10.725	10.702	33.885	26.001	34.818	43.226	26.844	136	23.4	1.57	18.4	186
306	275	274	9.622	9.590	34.296	26.512	35.371	43.817	27.756	57	38.8	2.30	27.8	274
307	345	343	8.312	8.275	34.286	26.713	35.631	44.132	28.283	45	50.8	2.49	31.0	343
308	426	424	7.467	7.424	34.364	26.900	35.855	44.392	28.845	16	62.8	2.79	34.9	424
309	508	505	6.411	6.364	34.328	27.016	36.023	44.606	29.346	13	75.7	2.89	38.1	505
310	587	584	6.156	6.102	34.417	27.120	36.138	44.732	29.813	8	81.3	2.99	39.8	584
311	687	683	5.578	5.518	34.452	27.220	36.266	44.887	30.378	7	91.7	3.07	41.6	683
312	791	786	5.064	4.997	34.469	27.294	36.366	45.011	30.936	10	100.3	3.10	42.9	786
316	900	894	4.509	4.436	34.500	27.381	36.481	45.152	31.532	13	111.1	3.14	43.8	894
317	1002	995	4.193	4.114	34.511	27.423	36.540	45.227	32.047	19	117.8	3.12	43.8	995
318	1100	1092	3.854	3.769	34.529	27.472	36.607	45.310	32.552	25	124.1	3.07	43.6	1092
319	1203	1194	3.566	3.475	34.550	27.518	36.668	45.385	33.076	29	130.4	3.08	43.6	1194
320	1301	1291	3.348	3.251	34.561	27.548	36.710	45.438	33.559	36	135.2	3.04	43.1	1291
321	1400	1388	3.122	3.019	34.578	27.582	36.757	45.496	34.052	42	140.2	3.03	42.7	1388
322	1502	1489	2.911	2.802	34.589	27.610	36.796	45.546	34.551	49	144.0	3.00	42.2	1489
323	1604	1590	2.754	2.638	34.596	27.630	36.825	45.583	35.040	55	146.0	2.96	41.6	1590
101	1801	1784	2.334	2.207	34.619	27.684	36.902	45.682	36.005	74	154.1	2.85	41.3	1784
324	1906	1888	2.275	2.140	34.622	27.691	36.913	45.696	36.490	76	156.1	2.80	40.3	1888
102	2004	1984	2.127	1.986	34.633	27.712	36.942	45.733	36.960	84	158.3	2.80	40.7	1984
103	2207	2184	1.942	1.787	34.646	27.738	36.979	45.780	37.909	95	161.4	2.75	40.0	2184
104	2410	2384	1.815	1.644	34.655	27.755	37.004	45.813	38.844	105	163.2	2.70	39.5	2384
105	2612	2582	1.724	1.536	34.661	27.768	37.023	45.837	39.765	111	164.9	2.66	38.9	2582
106	2815	2782	1.639	1.434	34.667	27.780	37.040	45.860	40.685	117	165.6	2.62	38.4	2782
107	3017	2980	1.567	1.344	34.671	27.789	37.055	45.879	41.595	123	167.9	2.60	38.0	2980
108	3220	3179	1.527	1.285	34.674	27.796	37.064	45.892	42.499	129	168.0	2.57	37.8	3179
109	3424	3379	1.506	1.244	34.677	27.801	37.072	45.901	43.402	133	167.5	2.55	37.4	3379
110	3630	3580	1.503	1.220	34.678	27.803	37.076	45.907	44.304	135	166.9	2.54	37.3	3580
111	3833	3779	1.510	1.205	34.681	27.807	37.080	45.912	45.190	138	165.6	2.52	37.1	3779
112	4037	3978	1.525	1.197	34.681	27.807	37.081	45.913	46.072	139	165.3	2.51	36.9	3978
116	4150	4088	1.535	1.194	34.682	27.808	37.082	45.914	46.560					4088
117	4170	4108	1.537	1.194	34.682	27.808	37.082	45.914	46.646					4108
118	4191	4128	1.539	1.193	34.682	27.808	37.082	45.914	46.736					4128
119	4212	4149	1.541	1.193	34.681	27.808	37.081	45.914	46.825					4149
120	4232	4168	1.543	1.192	34.681	27.808	37.081	45.914	46.911					4168
121	4252	4188	1.545	1.192	34.681	27.808	37.081	45.914	46.997					4188
122	4272	4207	1.548	1.193	34.681	27.808	37.081	45.914	47.083	139	164.7	2.51	37.1	4207
123	4273	4208	1.548	1.193	34.682	27.808	37.082	45.914	47.088					4208
124	4280	4215	1.548	1.192	34.681	27.808	37.082	45.914	47.117					4215

BOTTOM DEPTH FOR CAST 1 IS 4225

STATION: 346 LEG: X POSITION: 25° 28' N 121° 50' W DATE: 7 JUN 74

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	4	4	17.259	17.258	33.697	24.483	33.053	41.233	24.500	245	5.1	0.28	0.1	4
1201	30	30	17.056	17.051	33.700D	24.535	33.112	41.298	24.667					30
1202	59	59	16.457	16.447	33.744D	24.710	33.308	41.513	24.970	243D				59
102	86	86	16.615	16.601	33.917	24.807	33.397	41.595	25.185	247	4.6	0.25	0.0	86
1203	117	117	15.614	15.596	33.803D	24.951	33.578	41.810	25.467	238D				117
1204	151	150	12.688	12.667	33.793D	25.562	34.299	42.634	26.237	210D				150
103	186	185	10.478	10.456	33.760	25.947	34.776	43.195	26.787	199	15.4	1.03	12.6	185
1205	237	236	9.036	9.010	33.970D	26.352	35.241	43.716	27.428	164D				236
1206	292	291	7.917	7.887	34.060D	26.594	35.533	44.054	27.927	106D				291
104	339	337	7.382	7.349	34.103	26.706	35.668	44.212	28.256	86	50.7	2.25	31.3	337
1207	426	424	6.270	6.231	34.174D	26.912	35.927	44.519	28.869	34D				424
1208	511	508	5.935	5.890	34.304D	27.057	36.088	44.693	29.407	16D				508
105	591	587	5.570	5.519	34.360	27.147	36.195	44.817	29.867	11	86.7	2.98	41.2	587
1209	693	689	5.061	5.003	34.408D	27.245	36.318	44.963	30.440	13D				689
106	791	786	4.612	4.548	34.453	27.331	36.427	45.093	30.982	17	104.1	3.04	43.3	786
1210	903	897	4.320	4.248	34.488D	27.391	36.502	45.182	31.560	21D				897
1211	1001	994	3.936	3.859	34.514D	27.452	36.582	45.281	32.078	24D				994
107	1093	1085	3.704	3.621	34.532	27.489	36.632	45.342	32.542	28	124.7	3.07	43.8	1085
1212	1248	1238	3.329	3.237	34.553D	27.543	36.705	45.434	33.313	37D				1238
1213	1381	1369	3.000	2.900	34.571D	27.587	36.768	45.513	33.975	46D				1369
108	1500	1487	2.818	2.710	34.583	27.613	36.804	45.559	34.549	51	146.0	2.95	42.7	1487
1214	1772	1755	2.407	2.282	34.612D	27.672	36.886	45.663	35.859	69D				1755
109	2007	1987	2.094	1.953	34.636	27.717	36.949	45.742	36.980	84	160.2	2.78	40.9	1987
1215	2284	2259	1.897	1.736	34.650D	27.745	36.988	45.792	38.264	96D				2259
110	2509	2481	1.774	1.595	34.660	27.763	37.014	45.826	39.297	106	163.8	2.66	39.4	2481
1216	2798	2764	1.659	1.455	34.668D	27.779	37.038	45.857	40.608	115D				2764
111	3019	2981	1.605	1.381	34.673	27.788	37.052	45.874	41.599	120	165.8	2.59	38.4	2981
1217	3325	3281	1.545	1.292	34.678D	27.798	37.067	45.894	42.961	126D				3281
112	3527	3479	1.525	1.252	34.681	27.804	37.074	45.903	43.853	132	166.0	2.54	37.8	3479
1218	3795	3741	1.519	1.218	34.682D	27.807	37.079	45.910	45.024	133D				3741
116	3947	3889	1.524	1.206	34.683	27.808	37.081	45.913	45.684	137	165.9	2.51	37.3	3889
117	4076	4015	1.534	1.201	34.685	27.810	37.084	45.915	46.242	138	165.7	2.51	37.4	4015

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

STATION: 346 LEG: X POSITION: 25° 28' N 121° 50' W DATE: 7 JUN 74

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	4157	4094	1.541	1.199	34.687	27.812	37.085	45.917	46.593	138	165.1	2.49	37.2	4094
119	4199	4135	1.545	1.198	34.685	27.810	37.084	45.916	46.772					4135
120	4219	4155	1.546	1.197	34.685	27.810	37.084	45.916	46.858					4155
121	4238	4173	1.548	1.197	34.685	27.810	37.084	45.916	46.939					4173
122	4259	4194	1.551	1.197	34.684	27.810	37.083	45.915	47.029					4194
123	4259	4194	1.551	1.197	34.687	27.812	37.086	45.917	47.031					4194
124	4276	4210	1.553	1.197	34.687	27.812	37.086	45.917	47.104	138	165.2	2.49	37.3	4210

BOTTOM DEPTH FOR CAST 1 IS 4229

STATION: 347 LEG: X POSITION: 28° 30' N 121° 29' W DATE: 8 JUN 74

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	1H	1	17.15	17.15	33.649	24.472	33.047	41.230	24.477	246	5.3	0.29	0.1	1
302	20H	20	17.00	17.00	33.651	24.510	33.090	41.278	24.598	246	4.9	0.30	0.1	20
303	50H	50	16.62	16.61	33.653	24.602	33.195	41.396	24.822	249	4.8	0.30	0.2	50
304	81H	81	14.41	14.40	33.521	24.997	33.671	41.948	25.356	251	5.0	0.37	0.3	81
305	105H	105	12.95	12.94	33.560	25.329	34.059	42.387	25.798	218	8.7	0.71	5.2	105
306	131H	130	11.48	11.46	33.679	25.703	34.491	42.873	26.292	203	12.8	0.93	10.3	130
307	150H	149	10.62	10.60	33.773	25.932	34.754	43.168	26.609	184	17.9	1.19	14.5	149
308	170H	169	9.95	9.93	33.855	26.111	34.961	43.400	26.881	178	21.4	1.30	16.7	169
309	190H	189	9.55	9.53	33.925	26.233	35.099	43.554	27.094	162	26.1	1.50	19.8	189
310	210H	209	9.13	9.11	33.993	26.355	35.239	43.709	27.308	145	31.5	1.69	22.7	209
311	230H	229	8.79	8.77	34.030	26.438	35.337	43.821	27.483	135	35.6	1.81	24.4	229
312	250H	249	8.59	8.56	34.085	26.512	35.419	43.911	27.650	112	40.7	2.00	26.9	249
316	282H	281	8.14	8.11	34.103	26.595	35.522	44.033	27.881	100	45.3	2.14	28.9	281
317	312H	310	7.62	7.59	34.123	26.687	35.638	44.171	28.113	82	52.7	2.33	31.6	310
101	338	336	7.727	7.693	34.219	26.747	35.693	44.219	28.290	55	55.8	2.49	32.1	336
102	593	589	6.012	5.958	34.391	27.117	36.143	44.744	29.840	7	84.4	3.02	39.8	589
318	594H	590	6.09	6.04	34.400	27.115	36.136	44.734	29.841	8	84.0	3.02	40.1	590
319	595H	591	6.08	6.03	34.402	27.117	36.139	44.738	29.848	8	84.5	3.02	40.2	591
103	744	739	5.046	4.984	34.423	27.259	36.333	44.979	30.687	10	100.5	3.08	42.2	739
104	896	890	4.428	4.356	34.458	27.356	36.461	45.137	31.491	17	112.1	3.10	43.4	890
320	997H	989	4.09	4.01	34.487	27.415	36.538	45.229	32.019	23	119.2	3.09	43.7	989
321	997H	989	4.09	4.01	34.487	27.415	36.538	45.229	32.019	23	119.0	3.09	43.7	989
323	997H	989	4.09	4.01	34.488	27.415	36.538	45.230	32.020	24	118.4	3.11	43.5	989
324	997H	989	4.09	4.01	34.487	27.415	36.538	45.229	32.019	24	117.9	3.10	43.3	989
322	998H	990	4.09	4.01	34.488	27.415	36.538	45.230	32.024	23	118.7	3.09	43.7	990
105	1096	1087	3.786	3.702	34.511	27.465	36.604	45.310	32.529	28	125.3	3.09	43.4	1087
106	1299	1288	3.328	3.231	34.544	27.536	36.699	45.428	33.539	36	136.0	3.07	43.2	1288
107	1501	1488	2.942	2.833	34.571	27.593	36.778	45.526	34.529	46	145.7	3.02	42.8	1488
108	1704	1688	2.549	2.427	34.601	27.652	36.858	45.627	35.524	60	154.0	2.95	41.8	1688
109	1905	1886	2.266	2.131	34.622	27.692	36.914	45.698	36.486	73	159.4	2.88	41.2	1886
110	2107	2085	2.047	1.898	34.638	27.723	36.958	45.754	37.439	86	162.7	2.82	40.5	2085
112	2311	2285	1.914	1.750	34.651	27.744	36.987	45.791	38.384	95	164.4	2.76	39.9	2285
111	2313	2287	1.912	1.748	34.651	27.745	36.988	45.791	38.393	96	164.8	2.76	39.9	2287
116	2523	2494	1.800	1.619	34.659	27.760	37.010	45.821	39.355	103	166.2	2.70	39.4	2494
117	2524	2495	1.800	1.619	34.660	27.761	37.011	45.821	39.361	103	166.1	2.69	39.2	2495
118	2727	2694	1.710	1.512	34.667	27.774	37.030	45.846	40.284	111	167.0	2.66	38.9	2694
119	2727	2694	1.710	1.512	34.666	27.774	37.030	45.845	40.283	111	167.2	2.66	38.8	2694
120	2929	2892	1.662	1.446	34.670	27.781	37.041	45.860	41.190	115	168.0	2.64	38.6	2892
121	2930	2893	1.662	1.446	34.671	27.782	37.042	45.861	41.195	115	167.2	2.63	38.6	2893
122	3237	3194	1.595	1.350	34.676	27.793	37.058	45.882	42.565	122	167.7	2.59	38.1	3194
123	3745	3691	1.547	1.250	34.682	27.804	37.075	45.904	44.802	131	168.5	2.56	37.5	3691
124	4325	4257	1.564	1.202	34.686	27.811	37.084	45.916	47.312	137	167.4	2.52	37.3	4257

BOTTOM DEPTH FOR CAST 1 IS 4287

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

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 titration total CO_2 values presented in this table are the original observed data, but they have been corrected by -15 μM/kg for use in the calculation of the parameters noted above. The explanations in the text below and in the section "Accuracy, Precision and Internal Consistency of the Pacific GEOSECS Carbonate Chemistry Data" of Chapter 1, should be carefully noted. 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. 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 concentrations. 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. Although Takahashi *et al.* (13) observed that the alkalinity and titrimetric total CO_2 values obtained during the Atlantic GEOSECS expedition are consistent with the observed pCO_2 values, Broecker and Takahashi (3) found, in contrast, that these values obtained during the Pacific GEOSECS expedition are not consistent with the observed pCO_2 values. They observed that the alkalinity values obtained during the Atlantic GEOSECS in the Atlantic sector of the Antarctic Circumpolar waters are in agreement with those obtained during the Pacific GEOSECS in the Pacific sector of the Circumpolar water, whereas the titrimetric total CO_2 values are not in agreement. Thus, they concluded that the titrimetric total CO_2 data obtained during the Pacific GEOSECS are in error, and proposed a correction of -15 μM/kg on the basis of the pCO_2 data. Recently, Bradshaw *et al.* (14) have found that the effect of $CO_3^{=}$ ion on the Gran F_1' function was omitted in the Bainbridge program used in the Pacific GEOSECS. Additionally, the method by which individual titration points were rejected appears to have changed from the earlier program. They have shown that such differences would cause an overestimation of the total CO_2 values by about 12 μM/kg, whereas they would not affect the alkalinity value more than 1 μEq/kg. Therefore, the source of the error in the original Pacific GEOSECS titrimetric total CO_2 data appears to have been identified. As stated above, it is recommended that the titrimetric total CO_2 values listed in tables of this chapter be corrected by -15 μM/kg.

Takahashi *et al.* (13) 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 quantities measured during the Atlantic GEOSECS expedition. They found that these quantities are internally consistent with the solubility of CO_2 in seawater determined by Murray and Riley (15) and Weiss (16), the first and second apparent dissociation constants of carbonic

acid in seawater determined by Mehrbach *et al.* (17), and the first apparent dissociation constant of boric acid in seawater determined by Lyman (18). 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 at *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 (16):
   $\ln \alpha_S$ (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* (17):
   $\log K_1' = A_1 + A_2T + A_3/T + B_1ST + B_2\sqrt{S}$,
   where log = the base 10 logarithm, $A_1 = 13.7201$, $A_2 = -0.031334$, $A_3 = -3235.76$, $B_1 = -1.3\times10^{-5}$, 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 $A_1 = -5371.9645$, $A_2 = -1.671221$, $A_3 = 128375.28$, $A_4 = 2194.3055$, $B_1 = -0.22913$, $B_2 = -18.3802$, $C_1 = 8.0944\times10^{-4}$, $C_2 = 5617.11$, and $C_3 = -2.136$.

3. The first apparent dissociation constant of boric acid in seawater, determined by Lyman (18):
   $\log K_B' = -9.26 + 0.00886\,S + 0.01\,t$,
   where t = temperature (°C).

4. The total borate concentration (TB) in seawater, assumed to be proportional to salinity based upon the summary of Culkin (19):
   TB(M/kg) $= 4.106\times10^{-4}$ (S/35).

5. The effect of pressure on the dissociation constants of carbonic and boric acid in seawater, determined by Culberson and Pytkowicz (20):
   $K_1'(P) = K_1'(1)\cdot\exp((24.2 - 0.085\,t)CP)$,
   $K_2'(P) = K_2'(1)\cdot\exp((26.4 - 0.040\,t)CP)$,
   $K_B'(P) = K_B'(1)\cdot\exp((27.5 - 0.095\,t)CP)$, 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.* (21):
   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 (22):
   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 (20):
   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 (19):
   (Ca^{++}) (M/kg) $= 1.026\times10^{-2}$(S/35).

The computational scheme presented above is based on the assumption that the total (or titration) alkalinity is a sum of the three ionic species:

$$(HCO_3^-) + 2(CO_3^=) + (H_2BO_3^-).$$

Although these three species represent the major proton acceptors in seawater, many other proton acceptors are present as graphically presented by Sillen (23). Therefore, for a more complete expression of the alkalinity, other weak acids such as silicic, phosphoric and hydrofluoric acids as well as ammonia should be included. If the apparent dissociation constants for these ionic species are known, their equilibrium concentrations in seawater can be readily computed using the alkalinity and total CO_2 data. However, with the exception of carbonic acid and boric acids, the apparent dissociation constants have not been determined as a function of salinity, temperature and pressure. The apparent dissociation constants for silicic acid and hydrofluoric acid have been determined only at 25°C and 34.4°/₀₀ at atmospheric pressure, and those for phosphoric acid and water have been measured as a function of temperature and salinity, but only at 1 atmosphere total pressure. The effect of pressure on the activity coefficient for hydrogen ion has not been determined as a function of temperature and salinity. Because of these reasons, the ionic species other than bicarbonate, carbonate and borate have been neglected in the present computational scheme. Nevertheless, it is instructive to carry out computations using all the available dissociation constants in order to show the magnitude of the difference between the abbreviated formulation used presently and more complete formulations of the alkalinity.

The apparent dissociation constants of phosphoric acid in seawater have been determined as a function of salinity and temperature by Kester and

Pytkowicz (24) using the NBS pH scale, and more recently by Dickson and Riley (25) using a seawater pH scale. Since the apparent dissociation constants for carbonic acid (17) and for boric acid (18) used in the present study are both based on the NBS pH scale, the results of Kester and Pytkowicz (24) are used in this study. Their results for the salinity range of 33 to 36°/₀₀ can be approximated by:

$$\ln K_{p_2}' = -9.039 - 1450/T(°K),$$
$$\ln K_{p_3}' = 4.466 - 7276/T(°K),$$

where $K_{p_2}' = a_H(HPO_4^=) / (H_2PO_4^-)$ and $K_{p_3}' = a_H(PO_4^{3-}) / (HPO_4^=)$. Since each of these dissociation constants is a weak function of salinity, they are assumed to be independent of salinity between 33 and 36°/₀₀.

The effect of salinity and temperature on the apparent dissociation constant for water at 1 atmosphere total pressure has been recently reviewed by Millero (26). Based upon the measurements made by Harned and Owen (27) for pure water and those made by Culberson and Pytkowicz (28) for seawater, Millero (26) gives:

$$\ln Kw' = (A + B/T + C/\ln T) + ((a_0 + a_1/T + a_2 \ln T)\, S^{1/2} + b_0 S),$$

where $Kw' = (H^+)(OH^-)$, A = 148.9802, B = -13847.26, C = -23.6521, a_0 = -79.2447, a_1 = 3298.720, a_2 = 12.0408, $b_0 = -1.9813 \times 10^{-2}$, T = °K, and S = °/₀₀.

The first term represents the dissociation of pure water as a function of temperature. According to Culberson and Pytkowicz (28), (H^+) represents the total hydrogen ion concentration in seawater:

$$(H^+) = (H^+)_{free} + (HF)_T + (HSO_4^-)_T = a_H/f_H$$

where $(\ )_T$ indicates the total concentration of the specified species including their complexed species, and f_H is the total activity coefficient, which includes the contributions from HF and HSO_4^-. Culberson and Pytkowicz (28) determined f_H as a function of temperature and salinity, and their results can be approximated by:

$$f_H = 1.2948 - 0.002036\,T + 4.607 \times 10^{-4} S^2 - 1.475 \times 10^{-6} S^2 T,$$

where T is in °K and S in °/₀₀. Using these formulations for Kw′ and f_H, the $(OH^-) - (H^+)$ term, which is designated Aw in Table 1, can be computed in terms of a_H by:

$$Aw = (OH^-) - (H^+) = f_H Kw'/a_H - a_H/f_H.$$

The apparent dissociation constant for silicic acid in seawater has been determined by Sillen and Martell (29) at 25°C and 34.3°/₀₀ salinity under 1 atmosphere total pressure. Their value of 4.0×10^{-10} for $a_H(H_3SiO_4^-) / (H_4SiO_4)$ will be used throughout the following discussion. Since the concentration of ammonia is nearly zero in open ocean water, it is neglected.

In Table 1, the results of calculations for the following three definitions of the alkalinity have been compared:

$$TALK = (HCO_3^-) + 2(CO_3^=) + (H_2BO_3^-) \quad \ldots\ldots (1)$$

$$TALK = (HCO_3^-) + 2(CO_3^=) + (H_2BO_3^-) + (OH^-) - (H^+) \quad \ldots\ldots (2)$$

$$TALK = (HCO_3^-) + 2(CO_3^=) + (H_2BO_3^-) + (H_3SiO_4^-) + (H_2PO_4^-) + 2(HPO_4^=) + 3(PO_4^{3-}) + (OH^-) - (H^+) \quad \ldots\ldots (3)$$

The equation numbers correspond to the numbers of the computational methods indicated in Table 1. As mentioned earlier, the $(OH^-) - (H^+)$ term includes the effect of HF and HSO_4^-. The concentrations of H_2CO_3, HCO_3^-, and $CO_3^=$, the activity of hydrogen ion, a_H, the partial pressure of CO_2 and the alkalinities due to carbonate, boric, silicic and phosphoric acids and water have been calculated at 25° and 1.5°C for the three cases representing the Pacific surface, deep North Pacific and deep Antarctic waters.

The results listed in Column 1 are for the abbreviated definition of the alkalinity, Eq. 1, used for the present report. Those listed in Columns 2 and 3 represent the values obtained using Eqs. 2 and 3, respectively for more complete definitions of alkalinity. At 25°C, the pCO_2 values in Columns 2 and 3 are respectively greater than the Column 1 values by 3.0% and 3.2% in the surface, and by 1.5% and 6.6% in the deep North Pacific water, in which the greatest silica and phosphate concentrations are observed. On the other hand, the combined uncertainty for the alkalinity (± 4 μEq/kg) and the total CO_2 (± 7 μM/kg) measurements results in an uncertainty in the calculated pCO_2 values of ± 3.3% in the surface water and ± 6.0% in the deep water. Therefore, the error in the calculated pCO_2 values resulting from the omission of the Aw term is comparable to (for surface water), or smaller (for deep water) by a factor of two than the estimated uncertainty resulting from the experimental errors in the alkalinity and total CO_2 measurements. However, in the deep waters, in which silica and phosphate concentrations are large, the errors due to neglecting the contributions from these species become large, but comparable to the uncertainty due to the errors in the alkalinity and total CO_2 measurements. At 1.5°C, the effects on the calculated pCO_2 values of neglecting the Aw term is decreased, whereas that of neglecting silica and phosphate is increased. In the deep North Pacific water, the pCO_2 value listed in Column 3 is about 7.5% greater than that in Column 1 mostly due to the effect of silica and phosphate. Thus, the effect of omitting the silica and phosphate contributions to the alkalinity exceeds the estimated uncertainty in the calculated pCO_2 due to the experimental errors in the alkalinity and total CO_2 measurements. It should be noted that the former would affect the results systematically, whereas the latter is of random nature.

The effect of omitting the Aw term on the computed $CO_3^=$ in concentration is less than 1% as seen in Table 1. However, in deep waters, the omission of the silica and phosphate contributions to the alkalinity causes a 6 to 7%

Table 1—Comparison of the three methods of calculation for carbonate chemistry in seawater at 25°C and 1.5°C. The following definitions for alkalinity have been used; 1) TALK = Ac + Ab, 2) TALK = Ac + Ab + Aw, and 3) TALK = Ac + Ab + Asi + Ap + Aw, where Ac is the carbonate alkalinity, $(HCO_3^-) + 2(CO_3^=)$, Ab is the borate alkalinity, $(H_2BO_3^-)$, Asi is the silicate alkalinity, $(H_3SiO_4^-)$, Ap is the phosphate alkalinity, $(H_2PO_4^-) + 2(HPO_4^=) + 3(PO_4^{3-})$, and Aw is $(OH^-) - (H^+)$. The alkalinities due to HF and HSO_4^- are both included in Aw according to the definition of (H^+) by Culberson and Pytkowicz (28). The total pressure is assumed to be 1 atmosphere.

	Pacific Surface Water			Deep North Pacific Water			Deep Antarctic Water		
t (°C)		25.00			25.00			25.00	
S (°/₀₀)		34.262			34.687			34.702	
TALK (μEq/kg)		2252			2434			2385	
TCO_2 (μM/kg)		1917			2335			2271	
TSi (μM/kg)		2.1			152.1			124.9	
TP (μM/kg)		0.19			2.36			2.16	
Methods	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
pCO_2 (μatm)	316.4	325.9	326.6	1356.5	1376.5	1445.4	1194.5	1213.5	1267.9
H_2CO_3 (μM/kg)	9.0	9.3	9.3	38.6	39.1	41.1	34.0	34.6	36.1
HCO_3^- (μM/kg)	1672.0	1677.2	1677.6	2200.3	2201.1	2203.5	2134.3	2135.3	2137.9
$CO_3^=$ (μM/kg)	236.0	230.5	230.1	96.1	94.8	90.4	102.7	101.2	97.1
$a_H(10^{-9})$	5.349	5.429	5.503	17.470	17.720	18.587	15.860	16.105	16.806
Ac (μEq/kg)	2144.0	2138.2	2137.8	2392.5	2390.6	2384.3	2339.7	2337.7	2332.0
Ab (μEq/kg)	108.0	105.9	105.8	41.5	41.0	39.2	45.3	44.6	43.0
Asi (μEq/kg)	—	—	0.1	—	—	3.2	—	—	2.9
Ap (μEq/kg)	—	—	0.5	—	—	5.0	—	—	4.5
Aw (μEq/kg)	—	17.8	17.8	—	2.4	2.3	—	2.7	2.6
t (°C)		1.50			1.50			1.50	
S (°/₀₀)		34.262			34.687			34.702	
TALK (μEq/kg)		2252			2434			2385	
TCO_2 (μM/kg)		1917			2335			2271	
TSi (μM/kg)		2.1			152.1			124.9	
TP (μM/kg)		0.19			2.36			2.16	
Methods	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
pCO_2 (μatm)	118.0	118.8	119.1	532.9	534.8	573.5	465.6	467.4	497.4
H_2CO_3 (μM/kg)	7.0	7.1	7.1	31.7	31.8	34.1	27.7	27.8	29.6
HCO_3^- (μM/kg)	1687.0	1688.1	1688.6	2217.3	2217.4	2220.7	2150.6	2150.9	2154.4
$CO_3^=$ (μM/kg)	223.0	221.8	221.3	86.1	85.8	80.2	92.7	92.4	87.1
$a_H(10^{-9})$	2.720	2.737	2.744	9.371	9.402	10.069	8.442	8.472	9.002
Ac (μEq/kg)	2133.0	2131.7	2131.2	2389.5	2389.0	2381.1	2336.0	2335.6	2328.5
Ab (μEq/kg)	119.0	118.5	118.3	44.5	44.5	41.9	49.0	48.8	46.3
Asi (μEq/kg)	—	—	0.3	—	—	5.8	—	—	5.3
Ap (μEq/kg)	—	—	0.4	—	—	4.7	—	—	4.4
Aw (μEq/kg)	—	1.8	1.8	—	0.5	0.5	—	0.6	0.5

overestimation of the $CO_3^=$ ion concentration computed at 25° and 1.5°C under 1 atmosphere total pressure. The magnitude of this effect is again comparable to the uncertainty in the computed $CO_3^=$ value due to the experimental errors in the alkalinity and total CO_2 measurements. Measurements on the effect of pressure on the apparent dissociation constants of silicic and phosphoric acids, and those on the effect of temperature and salinity on the dissociation constant of silicic acid are needed to reduce the systematic error and further improve the reliability of the results of computations presented in this report.

Taro Takahashi, LDGO
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June 1981

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 independent 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 (30)
1.6%	Quinn *et. al.* (31)
1.3%	Kirby (32)

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: 201 LEG: I POSITION: 34° 11' N 127° 54' W DATE: 25 AUG 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
1001	1	17.60	33.085	2228	2000	2006	348.3	12.2	1799.7	173.1	8.219	12.2	1799.7	173.1	6.037	8.219	1.679	127.7	107.3
1004	99	12.93	33.088	2225	1997		284.2	11.5	1800.2	170.3	8.280	11.5	1800.4	170.1	5.294	8.276	1.650	123.8	103.1
1005	149	9.78	33.291	2228	2065		366.3	16.3	1905.3	128.4	8.175	16.3	1905.6	128.1	6.763	8.170	1.250	81.3	60.3
1006	200	8.77	33.786	2256	2141		498.0	22.9	2002.6	100.5	8.056	22.9	2003.0	100.2	8.936	8.049	0.992	52.8	31.7
1007	262	7.87	33.968	2275	2186	2184	587.8	27.9	2056.7	86.4	7.990	27.8	2057.2	86.0	10.462	7.980	0.856	38.2	16.9
1009	384	6.53	34.051	2293	2281		1036.6	51.5	2163.3	51.2	7.758	51.3	2164.0	50.8	18.083	7.743	0.507	2.0	-19.6
1010	444	6.00	34.108	2308	2299	2316	1049.1	53.1	2180.7	50.3	7.753	52.8	2181.4	49.8	18.394	7.735	0.498	0.5	-21.3
1012	555	5.08	34.152	2318	2336		1268.0	66.2	2213.6	41.2	7.672	66.0	2214.4	40.6	22.426	7.649	0.407	-9.6	-31.6
1013	616	4.88	34.223	2337	2360		1320.9	69.5	2235.4	40.1	7.657	69.2	2236.3	39.5	23.346	7.632	0.397	-11.1	-33.4
1014	676	4.80	34.291	2352	2361	2367	1184.9	62.5	2238.7	44.8	7.705	62.1	2239.8	44.1	21.048	7.677	0.443	-7.1	-29.5
1015	728	4.66	34.323	2356	2368	2380	1209.4	64.1	2245.1	43.8	7.696	63.7	2246.2	43.1	21.574	7.666	0.434	-8.5	-31.0
1016	758	4.52	34.335	2357	2379	2379	1303.5	69.4	2253.8	40.8	7.664	69.0	2254.9	40.0	23.287	7.633	0.403	-11.8	-34.4
1017	788	4.40	34.350	2363	2384	2381	1290.0	69.0	2258.8	41.2	7.669	68.6	2260.0	40.4	23.098	7.636	0.407	-11.7	-34.4
1018	860	4.20	34.395	2372	2393	2395	1284.7	69.2	2267.5	41.3	7.671	68.7	2268.8	40.5	23.142	7.636	0.408	-12.2	-35.1
402	893	4.18	34.407	2377	2395	2404	1256.2	67.7	2270.0	42.3	7.681	67.2	2271.3	41.4	22.680	7.644	0.418	-11.5	-34.5
403	943	4.03	34.424	2377	2381		1117.2	60.5	2258.7	46.8	7.729	60.0	2260.2	45.8	20.394	7.691	0.462	-7.6	-30.7
405	1068	3.66	34.465	2393	2388	2408	1032.4	56.7	2266.1	50.2	7.763	56.1	2267.8	49.0	19.096	7.719	0.495	-5.4	-28.9
407	1217	3.30	34.503	2400	2385	2412	943.8	52.5	2263.4	54.1	7.799	51.9	2265.5	52.7	17.805	7.749	0.533	-3.1	-27.0
409	1391	2.92	34.535	2414	2408	2422	1005.9	56.7	2285.2	51.0	7.774	56.0	2287.6	49.4	19.220	7.716	0.500	-7.9	-32.3
410	1492	2.73	34.551	2419	2408		962.4	54.7	2285.4	53.0	7.792	53.9	2287.9	51.2	18.608	7.730	0.519	-7.1	-31.8
411	1592	2.73	34.563			2419													
412	1643	2.44	34.570	2416	2398		900.1	51.7	2275.7	55.6	7.817	50.8	2278.6	53.6	17.791	7.750	0.543	-6.1	-31.3
416	1801	2.22	34.587	2430	2404	2405	843.7	48.8	2281.1	59.1	7.845	47.9	2284.3	56.8	16.923	7.772	0.576	-4.5	-30.1
417	1902	2.22	34.601			2421													
418	1951	2.08	34.609	2439	2400		762.0	44.3	2275.9	64.7	7.888	43.4	2279.5	62.1	15.547	7.808	0.631	-0.6	-26.7
419	2001	2.08	34.615			2419													
420	2101	1.97	34.623	2440	2398		741.9	43.3	2273.6	66.1	7.898	42.3	2277.5	63.2	15.387	7.813	0.642	-1.1	-27.6
421	2250	1.86	34.630	2443	2401	2411	740.4	43.4	2276.4	66.2	7.899	42.3	2280.5	63.1	15.578	7.807	0.641	-2.7	-29.8
422	2399	1.79	34.638	2445	2401		727.7	42.8	2276.1	67.1	7.906	41.6	2280.6	63.8	15.541	7.809	0.648	-3.6	-31.2
423	2549	1.72	34.645	2447	2404	2410	732.5	43.2	2279.1	66.7	7.903	41.9	2283.8	63.2	15.863	7.800	0.642	-5.8	-33.8
424	2696	1.66	34.652	2445	2403		736.2	43.5	2278.3	66.2	7.901	42.2	2283.2	62.6	16.188	7.791	0.636	-8.1	-36.6
601	2856	1.66	34.658			2387													
603	3171	1.54	34.665	2448	2369	2390	557.1	33.1	2237.1	83.8	8.013	31.7	2243.4	78.9	12.997	7.886	0.802	2.7	-27.5
604	3320	1.51	34.670	2445	2372		580.4	34.5	2241.8	80.7	7.996	33.1	2248.3	75.7	13.716	7.863	0.769	-2.3	-33.0
605	3472	1.49	34.674	2446	2380	2383	611.0	36.3	2251.3	77.3	7.975	34.8	2258.0	72.2	14.603	7.836	0.734	-7.7	-38.9
607	3772	1.49	34.680			2360													
608	3922	1.48	34.681	2448	2395		673.5	40.1	2268.7	71.2	7.936	38.3	2276.1	65.7	16.707	7.777	0.668	-20.1	-53.0
609	4073	1.49	34.682	2444	2371		579.9	34.5	2240.8	80.7	7.996	32.7	2248.7	74.5	14.712	7.832	0.758	-13.3	-46.8
610	4122	1.49	34.682			2357	2366												
612	4412	1.52	34.683	2432	2360	2367	581.0	34.5	2230.5	80.0	7.993	32.7	2239.1	73.3	15.283	7.816	0.745	-19.4	-54.1
618	4570	1.52	34.684			2368													
623	4695	1.54	34.684	2442	2364	2358	559.2	33.2	2232.7	83.1	8.011	31.3	2241.9	75.8	15.065	7.822	0.771	-21.0	-56.9

STATION: 202 LEG: I POSITION: 33° 6' N 139° 34' W DATE: 30 AUG 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
1006	1797	2.16	34.591	2444	2420		860.0	49.9	2296.6	58.5	7.840	49.0	2299.7	56.3	17.146	7.766	0.571	-5.0	-30.6
1007	1817	2.14	34.592	2437	2416		877.4	50.9	2292.8	57.2	7.830	50.0	2296.0	55.0	17.565	7.755	0.557	-6.5	-32.2
410	1822	2.15	34.592	2431	2413	2423	896.1	52.0	2290.1	55.9	7.820	51.1	2293.3	53.7	17.974	7.745	0.544	-7.8	-33.6
1008	1838	2.11	34.595	2437	2422		918.1	53.4	2298.8	54.8	7.811	52.4	2302.0	52.6	18.391	7.735	0.533	-9.0	-34.8
1009	1857	2.11	34.597	2440	2422		898.3	52.2	2298.7	56.1	7.821	51.2	2301.9	53.8	18.021	7.744	0.546	-8.0	-33.9
1010	1876	2.04	34.600	2436	2426		952.7	55.5	2302.5	53.0	7.795	54.5	2305.7	50.7	19.151	7.718	0.515	-11.3	-37.2
415	2135	1.88	34.621	2434	2401	2411	790.0	46.3	2277.7	62.0	7.871	45.2	2281.5	59.2	16.447	7.784	0.601	-5.4	-32.1
418	2439	1.73	34.640	2440	2396	2401	724.8	42.7	2271.3	67.0	7.906	41.5	2275.8	63.7	15.584	7.807	0.647	-4.2	-31.9
421	2745	1.73	34.653		2405	2399													
1011	3007	1.54	34.663	2451	2386		617.8	36.7	2257.4	76.9	7.972	35.3	2263.2	72.5	14.094	7.851	0.737	-1.8	-31.4
1012	3026	1.53	34.664	2447	2395		679.7	40.4	2268.9	70.8	7.933	38.9	2274.5	66.5	15.488	7.810	0.676	-8.0	-37.6
424	3046	1.54	34.663	2446	2394	2380	679.6	40.3	2267.9	70.7	7.933	38.9	2273.6	66.4	15.517	7.809	0.675	-8.3	-38.0
1013	3047	1.54	34.665	2450	2395		665.2	39.5	2268.4	72.2	7.942	38.1	2274.1	67.8	15.180	7.819	0.689	-6.9	-36.6
101	3052	1.53	34.663	2444	2386		648.3	38.5	2259.1	73.4	7.952	37.1	2264.9	69.0	14.856	7.828	0.701	-5.8	-35.5
1014	3067	1.53	34.665	2450	2390		640.9	38.1	2262.4	74.6	7.957	36.7	2268.3	70.1	14.682	7.833	0.712	-4.9	-34.7
1015	3086	1.51	34.667	2449	2397		679.2	40.4	2270.9	70.7	7.933	38.9	2276.7	66.4	15.553	7.808	0.675	-8.8	-38.7
1016	3107	1.53	34.667	2448	2394	2390	669.6	39.8	2267.6	71.7	7.939	38.3	2273.4	67.3	15.376	7.813	0.684	-8.2	-38.1
1017	3126	1.51	34.667	2457	2412		719.0	42.7	2286.5	67.7	7.912	41.2	2292.3	63.4	16.433	7.784	0.645	-12.2	-42.2
1018	3147	1.51	34.668	2457	2385		588.5	35.0	2254.5	80.5	7.992	33.6	2260.7	75.7	13.610	7.866	0.770	-0.2	-30.2
1019	3167	1.52	34.668	2444	2394		688.8	40.9	2268.3	69.8	7.927	39.4	2274.2	65.4	15.914	7.798	0.664	-10.8	-40.9
1020	3187	1.50	34.669	2450	2392		649.7	38.6	2264.8	73.6	7.951	37.2	2270.8	69.0	15.048	7.823	0.701	-7.4	-37.6
102	3201	1.51	34.668	2445	2383	2388	629.4	37.4	2255.2	75.4	7.963	36.0	2261.3	70.7	14.649	7.834	0.719	-5.8	-36.1
103	3349	1.49	34.671	2443	2379		618.7	36.8	2250.9	76.3	7.970	35.3	2257.3	71.3	14.629	7.835	0.725	-7.0	-37.8
104	3498	1.47	34.675	2442	2385	2375	651.4	38.8	2258.3	73.0	7.949	37.2	2264.9	67.9	15.590	7.807	0.691	-12.3	-43.6
105	3647	1.47	34.678	2445	2374		588.3	35.0	2244.2	79.8	7.990	33.4	2251.3	74.3	14.333	7.844	0.755	-7.9	-39.7
106	3795	1.46	34.676	2442	2363		554.0	33.0	2231.3	83.7	8.014	31.4	2238.8	77.8	13.746	7.862	0.791	-6.3	-38.7
107	3943	1.47	34.680	2445	2367	2366	558.5	33.2	2235.6	83.2	8.011	31.6	2243.4	77.1	14.025	7.853	0.783	-9.0	-42.0
108	4091	1.47	34.681	2439	2356		537.9	32.0	2223.3	85.7	8.025	30.3	2231.4	79.2	13.758	7.861	0.805	-8.9	-42.4
109	4243	1.49	34.682	2445	2375		592.6	35.2	2245.5	79.2	7.988	33.4	2253.7	72.8	15.252	7.817	0.740	-17.4	-51.5
110	4393	1.50	34.683	2443	2368	2360	571.2	34.0	2237.4	81.7	8.002	32.1	2246.0	74.9	14.947	7.825	0.762	-17.4	-52.1
111	4543	1.51	34.684	2443	2357		528.2	31.4	2223.3	87.3	8.033	29.6	2232.4	80.0	14.074	7.852	0.813	-14.6	-49.8
112	4688	1.52	34.683	2442	2361		547.5	32.5	2228.8	84.7	8.019	30.6	2238.0	77.4	14.760	7.831	0.787	-19.4	-55.2
117	4847	1.54	34.684	2438	2362	2367	566.2	33.6	2231.4	82.0	8.005	31.6	2240.8	74.6	15.486	7.810	0.758	-24.6	-61.1

STATION: 204 LEG: I POSITION: 31° 23' N 150° 2' W DATE: 5 SEP 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
501	2	23.56	34.881	2313	2018	2028	362.1	10.7	1772.1	220.2	8.228	10.7	1772.1	220.2	5.920	8.228	2.252	174.9	154.5
502	33	23.44	35.234	2332	1999		309.9	9.1	1729.6	245.2	8.283	9.1	1729.7	245.1	5.223	8.282	2.532	199.7	179.2
503	57	19.11	34.739	2303	2015	2012	306.0	10.2	1776.9	212.9	8.275	10.2	1777.1	212.8	5.335	8.273	2.167	166.9	146.3
504	99	15.81	34.675	2296	2011		266.9	9.8	1777.6	208.6	8.314	9.8	1777.9	208.4	4.886	8.311	2.118	162.1	141.3
505	148	13.98	34.449	2263	2047		340.9	13.2	1855.9	162.8	8.217	13.2	1856.3	162.5	6.147	8.211	1.641	115.8	94.9
506	173	13.21	34.419	2300	2056		292.5	11.6	1848.2	181.2	8.277	11.6	1848.6	180.8	5.363	8.271	1.825	133.9	113.0
507	189	12.77	34.365	2277	2064	2070	332.2	13.4	1874.8	160.8	8.225	13.3	1875.2	160.4	6.046	8.219	1.616	113.4	92.4
511	513	6.69	33.990	2294	2211	2205	593.8	29.3	2083.3	83.4	7.985	29.1	2084.2	82.6	10.837	7.965	0.823	32.9	11.0
512	573	5.63	33.982	2303	2254	2253	743.6	38.1	2134.1	66.7	7.892	37.9	2135.1	66.0	13.521	7.869	0.657	15.7	-6.4
514	624	5.13	34.015	2317	2287		856.2	44.7	2168.7	58.6	7.834	44.4	2169.8	57.8	15.507	7.809	0.577	7.1	-15.1
518	939	3.77	34.330	2374	2286	2396	540.3	29.6	2154.3	87.1	8.023	29.2	2156.2	85.6	10.318	7.986	0.862	32.3	9.1
519	988	3.63	34.367	2391	2405		1197.3	65.8	2280.4	43.8	7.701	65.3	2281.9	42.8	21.862	7.660	0.431	-11.0	-34.3
520	1040	3.63	34.399			2407													
521	1085	3.63	34.429			2415													
301	1302	2.98	34.511	2408	2418		1140.7	64.2	2293.4	45.4	7.721	63.5	2295.5	44.0	21.544	7.667	0.445	-12.6	-36.8
524	1315	2.98	34.511			2410													
303	1403	2.79	34.532	2416	2411	2395	1010.2	57.3	2288.0	50.7	7.772	56.5	2290.4	49.1	19.337	7.714	0.497	-8.4	-32.8
306	1601	2.46	34.567	2429	2401	2392	837.6	48.0	2278.1	59.9	7.849	47.2	2280.9	57.9	16.449	7.784	0.586	-1.5	-26.5
309	1841	2.46	34.599			2396													
310	1923	2.04	34.606	2438	2415		861.2	50.2	2291.8	58.0	7.837	49.2	2295.2	55.6	17.446	7.758	0.564	-6.9	-32.9
312	2081	1.90	34.622	2443	2423		878.9	51.5	2299.6	56.9	7.829	50.4	2303.3	54.4	18.055	7.743	0.552	-9.7	-36.3
314	2158	1.90	34.627			2395													
317	2430	1.71	34.642	2445	2390	2388	667.8	39.4	2263.5	72.1	7.940	38.3	2268.1	68.6	14.379	7.842	0.697	0.9	-26.8
320	2850	1.56	34.664	2446	2389	2380	654.5	38.8	2262.2	73.0	7.948	37.5	2267.6	68.9	14.694	7.833	0.700	-3.5	-32.6
321	2999	1.52	34.667	2445	2388	2363	653.0	38.8	2261.2	73.0	7.949	37.4	2266.9	68.7	14.882	7.827	0.698	-5.5	-35.1
322	3147	1.50	34.671	2444	2378		610.1	36.3	2249.5	77.3	7.976	34.9	2255.5	72.6	14.158	7.849	0.738	-3.3	-33.4
323	3296	1.50	34.674			2356													
102	3595	1.45	34.678	2444	2371	2377	578.7	34.5	2240.8	80.7	7.997	32.9	2247.9	75.2	14.050	7.852	0.764	-6.3	-38.0
104	3894	1.46	34.682	2453	2374	2370	557.3	33.2	2241.9	84.0	8.013	31.6	2249.6	77.9	13.891	7.857	0.792	-7.6	-40.3
106	4194	1.46	34.683			2365													
107	4344	1.46	34.685	2439															
108	4494	1.46	34.687		2363	2354													
109	4645	1.50	34.687	2442	2357		531.9	31.6	2223.6	86.8	8.030	29.8	2232.9	79.4	14.308	7.844	0.807	-16.7	-52.4
110	4794	1.50	34.688			2365													
111	4945	1.50	34.689			2347													
112	5096	1.55	34.690	2430	2347	2353	536.5	31.8	2214.7	85.4	8.025	29.8	2224.8	77.4	15.109	7.821	0.787	-25.7	-63.3
116	5231	1.56	34.689	2439	2358		547.7	32.5	2225.8	84.7	8.018	30.4	2236.1	76.5	15.543	7.808	0.778	-28.9	-66.9

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2) TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 206 LEG: I POSITION: 22° 10' N 153° 51' W DATE: 8 SEP 73

MEASURED PARAMETERS								CALCULATED PARAMETERS P = 1 ATM. T = INSITU						CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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
103	10	25.50	35.173	2366	2001	2003	*	301.4	8.4	1708.5	269.1	8.303	*	8.4	1708.5	269.1	4.981	8.303	2.774	223.8	203.4
104	243	14.84	34.548	2292	2059	2053	*	331.5	12.5	1856.6	174.8	8.234	*	12.5	1857.2	174.3	5.954	8.225	1.765	127.0	106.0
105	492	6.46	34.018	2298	2245	2253	*	742.5	37.0	2124.4	68.6	7.895	*	36.8	2125.3	68.0	13.318	7.876	0.678	18.4	-3.5
106	642	4.97	34.187	2342	2318	2345	*	906.8	47.5	2198.8	56.6	7.814	*	47.2	2199.9	55.8	16.280	7.788	0.560	5.0	-17.3
107	771	4.47	34.320	2381	2350	2353	*	859.0	45.8	2228.9	60.3	7.840	*	45.4	2230.2	59.3	15.505	7.810	0.597	7.4	-15.3
108	962	3.99	34.468	2386	2365	2378	*	918.6	49.8	2243.9	56.3	7.811	*	49.3	2245.5	55.1	16.896	7.772	0.557	1.6	-21.6
109	1190	3.30	34.519	2403	2367	2393	*	801.4	44.6	2244.7	62.7	7.867	*	44.0	2246.8	61.2	15.182	7.819	0.619	5.7	-18.2
110	1556	2.68	34.580	2419	2382	2380	*	784.0	44.6	2258.9	63.5	7.875	*	43.8	2261.7	61.5	15.405	7.812	0.623	2.6	-22.3
111	1833	2.26	34.606	2428	2397	2414	*	812.1	46.9	2274.0	61.1	7.861	*	46.0	2277.2	58.8	16.375	7.786	0.596	-2.8	-28.6
112	2113	2.26	34.625		2391	2401	*						*								
115	2611	1.63	34.655	2440	2387	2373	*	674.3	39.9	2261.0	71.1	7.935	*	38.7	2266.0	67.4	14.806	7.830	0.684	-2.4	-30.6
116	2859	1.54	34.665	2444	2364	2368	*	551.9	32.8	2232.0	84.2	8.016	*	31.6	2237.7	79.8	12.536	7.902	0.810	7.2	-21.9
117	3106	1.49	34.673	2442	2380	2375	*	627.6	37.3	2252.4	75.3	7.964	*	35.9	2258.3	70.7	14.502	7.839	0.719	-4.7	-34.6
118	3355	1.46	34.677	2443	2364	2363	*	554.6	33.0	2232.2	83.8	8.014	*	31.6	2238.9	78.5	13.205	7.879	0.798	0.1	-30.7
119	3579	1.45	34.681	2442	2363	2348	*	554.2	33.0	2231.2	83.8	8.014	*	31.5	2238.3	78.2	13.481	7.870	0.795	-3.1	-34.7
120	3818	1.43	34.684	2441	2355	2360	*	526.2	31.4	2221.4	87.3	8.034	*	29.8	2229.1	81.1	13.135	7.882	0.825	-3.3	-35.8
121	4016	1.44	34.685	2440	2348	2325	*	504.6	30.1	2212.5	90.4	8.051	*	28.5	2220.7	83.8	12.866	7.891	0.852	-3.3	-36.5
122	4214	1.45	34.686	2440	2346	2339	*	497.5	29.6	2209.9	91.4	8.056	*	28.0	2218.5	84.5	12.931	7.888	0.859	-5.4	-39.4
123	4414	1.44	34.690	2430	2331	2356	*	477.7	28.5	2193.7	93.8	8.071	*	26.8	2202.8	86.4	12.734	7.895	0.879	-6.3	-41.1
124	4615	1.44	34.693			2308	*						*								

STATION: 212 LEG: II POSITION: 30° 0' N 159° 51' W DATE: 18 SEP 73

MEASURED PARAMETERS								CALCULATED PARAMETERS P = 1 ATM. T = INSITU						CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	7	25.24	35.471	2344	1988	2013	*	306.7	8.6	1702.9	261.5	8.292	*	8.6	1702.9	261.4	5.111	8.291	2.718	216.2	195.9
603	42	24.65	35.456	2344	1990		*	301.4	8.6	1706.6	259.8	8.296	*	8.6	1706.7	259.7	5.069	8.295	2.699	214.2	193.8
605	57	22.39	35.214	2330	1984	1997	*	279.0	8.5	1707.2	253.3	8.317	*	8.5	1707.4	253.1	4.845	8.315	2.613	207.5	187.0
606	66	21.64	35.189	2324	2002		*	299.3	9.3	1741.1	236.7	8.290	*	9.3	1741.2	236.5	5.155	8.288	2.440	190.7	170.2
607	86	19.43	35.167	2325	2031		*	311.4	10.2	1788.6	217.2	8.271	*	10.2	1788.8	217.0	5.396	8.268	2.237	171.0	150.4
608	102	18.93	35.149	2322	2022		*	294.9	9.8	1776.6	220.6	8.289	*	9.8	1776.8	220.4	5.186	8.285	2.270	174.2	153.6
609	122	17.72	34.974	2307	2025	2038	*	299.5	10.4	1791.8	207.8	8.279	*	10.3	1792.1	207.5	5.316	8.274	2.128	161.2	140.5
611	161	16.09	34.768	2295	2021		*	285.9	10.4	1794.1	201.5	8.290	*	10.4	1794.5	201.2	5.194	8.285	2.050	154.5	133.6
615	222	16.09	34.569			2055	*						*								
616	251	13.27	34.429	2283	2053		*	311.4	12.3	1853.8	171.9	8.251	*	12.3	1854.4	171.3	5.724	8.242	1.729	123.9	102.8
617	277	12.62	34.349	2280	2056		*	310.8	12.6	1860.8	167.6	8.250	*	12.5	1861.5	167.0	5.752	8.240	1.681	119.4	98.2
619	362	10.86	34.236	2276	2102		*	381.2	16.3	1934.8	135.9	8.168	*	16.2	1935.5	135.2	6.996	8.155	1.357	86.9	65.4
621	433	9.27	34.133	2280	2135		*	427.1	19.3	1982.6	118.2	8.121	*	19.2	1983.4	117.4	7.858	8.105	1.174	68.4	46.8
622	478	8.32	34.076	2283	2152		*	450.5	21.0	2006.1	109.8	8.097	*	20.9	2007.1	109.0	8.327	8.080	1.089	59.7	37.9
623	529	7.18	34.028	2289	2199		*	573.4	27.8	2069.2	87.0	8.000	*	27.6	2070.2	86.2	10.484	7.979	0.860	36.4	14.5
301	570	6.60	34.010	2298	2207	2209	*	559.5	27.7	2076.7	87.6	8.009	*	27.5	2077.7	86.8	10.308	7.987	0.865	36.6	14.5
302	622	5.60	34.010	2306	2258	2269	*	750.5	38.5	2138.2	66.3	7.888	*	38.2	2139.2	65.5	13.689	7.864	0.653	14.9	-7.3
303	687	4.80	34.048	2318	2304		*	964.8	50.9	2185.9	52.1	7.784	*	50.6	2187.0	51.4	17.527	7.756	0.513	0.1	-22.3
304	769	4.34	34.155	2339	2346	2347	*	1137.0	61.0	2225.0	45.0	7.718	*	60.6	2226.2	44.2	20.608	7.686	0.443	-7.7	-30.4
305	868	3.97	34.239	2355	2374		*	1244.1	67.6	2249.8	41.6	7.681	*	67.2	2251.1	40.7	22.649	7.645	0.408	-12.1	-35.0
306	966	3.67	34.325	2370	2380	2389	*	1151.8	63.3	2257.1	44.6	7.714	*	62.8	2258.6	43.6	21.184	7.674	0.439	-10.0	-33.2
307	966	3.67	34.330	2371	2389	2389	*	1227.5	67.4	2264.5	42.1	7.688	*	66.9	2265.9	41.1	22.516	7.648	0.414	-12.5	-35.7
308	1099	3.38	34.420	2387	2383		*	1026.6	57.0	2261.3	49.7	7.763	*	56.4	2263.1	48.5	19.153	7.718	0.489	-6.2	-29.8
309	1245	3.06	34.489	2402	2384	2395	*	914.1	51.3	2262.4	55.3	7.812	*	50.7	2264.5	53.8	17.346	7.761	0.544	-2.2	-26.3
310	1394	2.78	34.529	2409	2394		*	930.3	52.7	2272.0	54.3	7.804	*	52.0	2274.3	52.6	17.903	7.747	0.533	-4.8	-29.2
311	1543	2.53	34.558	2421	2378	2392	*	744.0	42.6	2254.3	66.1	7.896	*	41.8	2257.1	64.1	14.653	7.834	0.649	5.3	-19.6
312	1691	2.35	34.576	2423	2391		*	805.8	46.4	2268.2	61.4	7.863	*	45.6	2271.2	59.2	16.049	7.795	0.600	-1.0	-26.3
315	1841	2.16	34.595	2429	2369		*	648.2	37.6	2242.3	74.1	7.952	*	36.8	2245.8	71.5	13.243	7.878	0.725	9.8	-16.0
316	1985	2.03	34.608	2431	2373	2395	*	655.1	38.2	2246.7	73.2	7.947	*	37.3	2250.4	70.3	13.566	7.868	0.713	7.2	-19.0
317	1985	2.03	34.607	2428	2387	2401	*	744.5	43.4	2263.3	65.3	7.895	*	42.4	2266.9	62.7	15.332	7.814	0.636	-0.4	-26.7
318	2126	1.92	34.619	2422	2413		*	950.1	55.6	2290.2	52.2	7.794	*	54.5	2293.8	49.7	19.706	7.705	0.504	-14.8	-41.5
319	2279	1.80	34.629	2434	2392	2392	*	735.3	43.2	2267.9	65.9	7.900	*	42.1	2272.0	62.8	15.584	7.807	0.638	-3.3	-30.5
320	2428	1.73	34.639	2435	2377		*	650.0	38.3	2250.4	73.3	7.950	*	37.2	2255.0	69.8	14.065	7.852	0.709	2.1	-25.6
321	2578	1.67	34.647	2437	2390	2382	*	706.1	41.7	2265.0	68.3	7.916	*	40.5	2269.8	64.7	15.430	7.812	0.657	-4.6	-32.8
322	2731	1.61	34.652	2442	2370		*	585.6	34.7	2240.1	80.2	7.992	*	33.5	2245.5	76.0	13.094	7.883	0.772	5.0	-23.7
323	2892	1.58	34.659	2437	2369	2378	*	600.6	35.6	2240.3	78.1	7.981	*	34.3	2245.9	73.8	13.646	7.865	0.749	0.8	-28.3
324	2993	1.56	34.661	2436	2375		*	631.8	37.5	2247.9	74.7	7.961	*	36.1	2253.6	70.3	14.459	7.840	0.714	-3.8	-33.3
101	3004	1.56	34.660	2441	2364		*	563.4	33.4	2232.9	82.7	8.008	*	32.1	2238.9	78.0	12.964	7.887	0.792	3.8	-25.8
102	3004	1.55	34.659	2439	2362	2388	*	562.8	33.4	2231.0	82.6	8.008	*	32.1	2236.9	78.0	12.964	7.887	0.792	3.8	-25.8
103	3238	1.52	34.668	2437	2368		*	595.5	35.4	2239.0	78.6	7.984	*	34.0	2245.3	73.8	13.992	7.854	0.750	-3.2	-33.6
104	3471	1.50	34.672	2440	2356	2383	*	534.7	31.8	2223.0	86.2	8.028	*	30.4	2229.9	80.7	12.905	7.889	0.820	0.8	-30.4
105	3702	1.48	34.675	2441	2352		*	516.3	30.7	2217.4	88.9	8.042	*	29.2	2224.9	82.8	12.756	7.894	0.842	0.0	-32.1
106	3934	1.47	34.676	2437	2336	2344	*	473.3	28.2	2197.8	95.1	8.076	*	26.7	2205.9	88.4	12.036	7.920	0.899	2.4	-30.5
107	4165	1.48	34.681	2437	2354		*	537.2	32.0	2221.4	85.6	8.025	*	30.3	2229.7	79.0	13.846	7.859	0.803	-10.1	-43.9
108	4396	1.49	34.682	2435	2350		*	529.2	31.5	2216.9	86.6	8.031	*	29.7	2225.7	79.6	13.955	7.855	0.809	-12.8	-47.5
109	4625	1.50	34.684	2437	2345	2328	*	504.2	30.0	2209.8	90.2	8.051	*	28.2	2219.1	82.7	13.608	7.866	0.841	-13.1	-48.7
110	4854	1.51	34.685	2434	2338		*	490.2	29.1	2201.5	92.4	8.061	*	27.3	2211.4	84.3	13.551	7.868	0.857	-15.0	-51.5
112	5310	1.56	34.687	2436	2335	2349	*	474.5	28.1	2196.8	95.0	8.075	*	26.2	2207.8	86.0	13.691	7.864	0.875	-20.6	-59.1
115	5532	1.58	34.688	2432	2341		*	508.0	30.1	2206.3	89.6	8.047	*	28.0	2217.4	80.6	14.924	7.826	0.820	-29.8	-69.2

STATION: 213 LEG: II POSITION: 30° 58' N 168° 29' W DATE: 22 SEP 73

MEASURED PARAMETERS								CALCULATED PARAMETERS P = 1 ATM. T = INSITU						CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	21	26.79	35.515	2351	1991	1993	*	322.9	8.7	1702.4	264.8	8.279	*	8.7	1702.5	264.8	5.269	8.278	2.756	219.5	199.2
602	37	26.76	35.532	2349	1986	2000	*	318.3	8.6	1695.5	266.8	8.283	*	8.6	1695.6	266.7	5.224	8.282	2.778	221.4	201.1
603	47	26.18	35.520	2347	1977	2002	*	300.5	8.3	1682.6	271.1	8.301	*	8.3	1682.7	271.0	5.015	8.300	2.822	225.6	205.2
605	68	19.47	34.860	2308	1983		*	262.9	8.7	1721.9	237.4	8.329	*	8.6	1722.1	237.2	4.715	8.327	2.424	191.3	170.7
606	78	18.51	34.808	2303	1995	2000	*	271.2	9.2	1745.4	225.4	8.316	*	9.2	1745.6	225.2	4.865	8.313	2.298	179.2	158.6
608	99	16.69	34.738	2298	2004		*	266.6	9.5	1764.4	215.1	8.317	*	9.5	1764.6	214.9	4.860	8.313	2.188	168.6	147.9
609	118	15.88	34.720	2301	2011	2038	*	262.8	9.6	1774.4	212.0	8.321	*	9.6	1774.7	211.7	4.825	8.317	2.155	165.3	144.6
611	208	13.80	34.523	2286	2038	2045	*	291.5	11.4	1828.0	183.6	8.277	*	11.3	1828.5	183.1	5.378	8.269	1.853	136.0	115.0
612	259	13.00	34.456	2288	2062		*	315.9	12.6	1865.1	169.2	8.246	*	12.6	1865.7	168.7	5.797	8.237	1.704	121.2	100.0
615	317	12.10	34.388	2283	2079	2113	*	341.3	14.0	1895.0	155.0	8.214	*	14.0	1895.7	154.3	6.268	8.203	1.556	106.4	85.1
617	430	9.89	34.193	2282	2103	2125	*	356.7	15.8	1933.5	138.7	8.191	*	15.7	1934.5	137.8	6.673	8.176	1.382	89.0	67.3
618	479	8.90	34.131	2285	2122		*	376.9	17.2	1961.1	128.7	8.168	*	17.1	1962.1	127.8	7.071	8.150	1.279	78.5	56.7
619	518	8.30	34.094	2285	2145	2162	*	424.8	19.8	1995.1	115.0	8.120	*	19.7	1996.2	114.1	7.926	8.101	1.140	64.5	42.6
401	639	6.11	34.035	2303	2221		*	588.1	29.6	2093.5	82.9	7.988	*	29.4	2094.7	81.9	10.890	7.963	0.817	31.2	8.9
622	640	6.12	34.027	2304	2244	2249	*	695.9	35.1	2122.0	72.0	7.920	*	34.8	2123.1	71.1	12.719	7.896	0.709	20.4	-1.9
621	641	6.11	34.026	2306	2231	2256	*	620.8	31.3	2105.3	79.4	7.967	*	31.0	2106.5	78.5	11.435	7.942	0.783	27.7	5.5
402	719	5.15	34.048	2317	2268		*	736.3	38.4	2147.7	66.9	7.896	*	38.1	2149.0	66.0	13.572	7.867	0.658	14.5	-8.0
624	760	4.73	34.082	2329	2288		*	777.5	41.1	2168.3	63.5	7.874	*	40.8	2169.7	62.5	14.336	7.844	0.625	10.7	-11.9
404	880	4.16	34.178	2357	2342	2357	*	952.6	51.4	2222.2	53.3	7.793	*	51.0	2223.7	52.3	17.493	7.757	0.524	-0.5	-23.5
406	1040	3.63	34.328	2374	2385	2409	*	1160.1	63.8	2261.8	44.3	7.712	*	63.3	2263.5	43.3	21.457	7.668	0.435	-11.0	-34.4
408	1211	3.22	34.430	2392	2403	2399	*	1153.0	64.3	2278.9	44.8	7.715	*	63.7	2280.8	43.5	21.644	7.665	0.439	-12.2	-36.1
411	1460	2.73	34.519	2409	2398		*	957.6	54.4	2275.9	52.7	7.792	*	53.6	2278.4	51.0	18.531	7.732	0.516	-7.0	-31.6
410	1461	2.73	34.519	2407	2384	2412	*	870.5	49.5	2262.2	57.4	7.831	*	48.7	2264.7	55.6	16.931	7.771	0.563	-2.4	-27.1
412	1598	2.49	34.547	2418	2402	2400	*	916.5	52.5	2279.6	54.8	7.811	*	51.7	2282.4	52.9	17.993	7.745	0.536	-6.4	-31.4
415	1751	2.30	34.572	2425	2387	2405	*	768.2	44.3	2263.7	64.0	7.883	*	43.5	2266.8	61.7	15.419	7.812	0.625	0.9	-24.6
416	1899	2.11	34.591	2429	2407		*	866.2	50.3	2284.3	57.4	7.834	*	49.4	2287.6	55.0	17.547	7.756	0.558	-7.2	-33.2
417	2050	1.99	34.607	2434	2374	2398	*	645.6	37.7	2247.1	74.2	7.954	*	36.7	2251.0	71.2	13.452	7.871	0.723	7.5	-19.0
419	2349	1.78	34.632	2438	2393	2390	*	719.8	42.4	2268.3	67.4	7.909	*	41.2	2272.6	64.2	15.353	7.814	0.652	-2.7	-30.1
420	2502	1.71	34.635	2439	2382		*	655.8	38.7	2255.4	72.9	7.947	*	37.5	2260.2	69.3	14.262	7.846	0.704	0.8	-27.1
421	2652	1.67	34.647	2440	2366	2383	*	578.1	34.2	2235.6	81.2	7.997	*	33.0	2240.9	77.1	12.844	7.891	0.783	7.0	-21.4
422	2652	1.67	34.646	2438	2363	2391	*	572.9	33.9	2232.5	81.6	8.001	*	32.7	2237.8	77.5	12.746	7.895	0.788	7.4	-21.0
201	2910	1.59	34.656	2438	2387		*	682.7	40.5	2261.5	70.0	7.930	*	39.1	2266.9	66.0	15.426	7.812	0.670	-7.1	-36.4
424	3005	1.58	34.657	2439	2379	2379	*	638.3	37.8	2251.9	74.3	7.957	*	36.5	2257.6	69.9	14.596	7.836	0.711	-4.3	-33.8
202	3109	1.55	34.660	2436	2371	2383	*	613.7	36.4	2242.9	76.7	7.972	*	35.0	2248.9	72.1	14.222	7.847	0.732	-3.4	-33.3
204	3529	1.50	34.672	2436	2348	2374	*	518.1	30.8	2214.0	88.1	8.040	*	29.4	2221.2	82.4	12.618	7.899	0.838	1.8	-29.6
205	3757	1.49	34.677	2436	2357		*	552.6	32.9	2225.6	83.6	8.014	*	31.3	2233.0	77.7	13.695	7.863	0.790	-5.9	-38.1
206	4008	1.48	34.679	2433	2361	2371	*	580.4	34.5	2231.5	80.0	7.994	*	32.8	2239.3	73.9	14.703	7.833	0.751	-13.1	-46.2
208	4510	1.50	34.683	2435	2340	2358	*	493.4	29.3	2203.9	91.8	8.059	*	27.6	2213.1	84.3	13.203	7.879	0.858	-9.7	-44.9
209	4759	1.52	34.684	2436	2361		*	569.3	33.8	2230.7	81.5	8.002	*	31.8	2239.9	74.2	15.459	7.811	0.755	-23.6	-59.8
210	5009	1.54	34.685	2435	2332	2354	*	467.6	27.8	2193.2	96.1	8.080	*	25.9	2203.5	87.5	13.141	7.881	0.890	-14.2	-51.3
212	5410	1.57	34.688	2432	2347	2352	*	530.2	31.4	2214.0	86.6	8.030	*	29.3	2224.7	78.0	15.367	7.813	0.793	-30.4	-69.2
219	5604	1.57	34.690	2426	2344	2342	*	539.7	32.0	2212.2	84.8	8.022	*	29.8	2223.2	76.0	15.953	7.797	0.773	-35.7	-75.3
224	5675	1.58	34.690	2430	2318	2336	*	439.2	26.0	2176.1	100.8	8.105	*	24.1	2188.1	90.9	13.200	7.879	0.924	-22.1	-62.1

STATION: 214 LEG: II POSITION: 32° 2' N 176° 60' W DATE: 25 SEP 73

MEASURED PARAMETERS								CALCULATED PARAMETERS P = 1 ATM. T = INSITU						CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	8	25.75	34.746	2296	1972		*	338.2	9.4	1707.9	239.7	8.256	*	9.4	1707.9	239.7	5.556	8.255	2.441	194.4	174.1
602	16	25.76	34.752	2302	1957	1978	*	309.0	8.6	1679.5	253.9	8.288	*	8.6	1679.6	253.8	5.164	8.287	2.586	208.5	188.1
604	32	24.24	34.756	2304	1969	1962	*	305.0	8.8	1698.4	246.7	8.288	*	8.8	1698.5	246.7	5.159	8.287	2.513	201.2	180.8
606	42	21.27	34.736	2298	1965	1973	*	270.0	8.5	1697.9	243.6	8.323	*	8.5	1698.0	243.5	4.772	8.321	2.480	197.8	177.3
607	47	20.23	34.654	2285	1971		*	278.2	9.0	1716.9	230.1	8.308	*	9.0	1717.0	230.0	4.934	8.307	2.336	184.2	163.7
608	53	19.40	34.711	2310	1973	1970	*	247.5	8.2	1704.1	245.7	8.351	*	8.2	1704.3	245.6	4.479	8.349	2.499	199.8	179.2
610	89	16.23	34.684	2297	2015		*	276.4	10.0	1782.9	207.1	8.303	*	10.0	1783.2	206.9	5.013	8.300	2.103	160.7	139.9
611	116	15.46	34.651	2291	2035	2028	*	302.7	11.2	1819.1	189.7	8.268	*	11.2	1819.4	189.4	5.449	8.264	1.924	143.0	122.2
615	202	13.69	34.507	2299	2038	2050	*	273.8	10.7	1820.2	192.1	8.301	*	10.7	1820.7	191.7	5.077	8.294	1.939	144.6	123.6
616	257	12.74	34.435	2291	2047		*	284.5	11.5	1839.9	180.6	8.284	*	11.4	1840.5	180.0	5.311	8.275	1.817	132.5	111.4
617	312	12.74	34.378			2079	*						*								
619	399	9.93	34.244	2294	2107	2112	*	344.6	15.2	1932.9	143.9	8.206	*	15.1	1933.8	143.1	6.429	8.192	1.436	94.4	72.8
620	435	9.11	34.172	2297	2122		*	357.5	16.2	1954.4	136.3	8.191	*	16.1	1955.4	135.5	6.688	8.175	1.357	86.5	64.9
621	472	8.54	34.134	2299	2121		*	343.0	15.9	1952.1	138.0	8.205	*	15.8	1953.2	137.0	6.492	8.188	1.371	87.7	66.0
622	509	8.54	34.078			2156	*						*								
401	540	8.04	34.099	2290	2165	2178	*	465.9	22.0	2021.6	106.5	8.084	*	21.8	2022.7	105.6	8.627	8.064	1.055	55.7	33.8
623	550	7.02	34.037	2307	2169	2175	*	414.5	20.2	2019.8	114.0	8.129	*	20.1	2020.9	113.0	7.789	8.109	1.128	63.0	41.0
402	590	7.02	34.059		2248		*						*								
624	610	6.24	34.036	2302	2240		*	688.1	34.5	2117.5	72.9	7.925	*	34.3	2118.6	72.1	12.548	7.901	0.719	21.6	-0.6
403	651	6.16	34.039	2311	2214	2238	*	531.3	26.7	2081.3	91.0	8.030	*	26.5	2082.5	90.0	9.895	8.005	0.898	39.2	16.9
404	762	4.79	34.101	2328	2291		*	804.3	42.5	2171.8	61.7	7.860	*	42.1	2173.1	60.8	14.802	7.830	0.608	9.0	-13.7
405	885	4.08	34.202	2358	2344		*	957.5	51.9	2224.2	52.9	7.791	*	51.4	2225.7	51.9	17.599	7.755	0.520	-1.0	-24.0
406	892	4.05	34.202	2353	2357	2368	*	1103.8	59.8	2235.9	46.3	7.731	*	59.4	2237.3	45.3	20.224	7.694	0.454	-7.6	-30.6
407	981	3.58	34.275	2373	2359		*	946.7	52.2	2238.7	53.1	7.795	*	51.7	2240.3	52.0	17.567	7.755	0.522	-1.7	-25.0
408	1081	3.37	34.346	2382	2385	2398	*	1081.9	60.1	2262.7	47.2	7.741	*	59.5	2264.5	46.0	20.141	7.696	0.463	-8.6	-32.1
409	1182	3.19	34.395	2387	2391		*	1086.9	60.8	2268.2	47.0	7.739	*	60.1	2270.1	45.7	20.439	7.690	0.461	-9.8	-33.6
410	1182	3.19	34.396	2391	2409		*	1216.2	68.0	2283.4	42.6	7.693	*	67.4	2285.3	41.4	22.741	7.643	0.417	-14.1	-37.9

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2) TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 214 LEG: II POSITION: 32° 2' N 176° 60' W DATE: 25 SEP 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
411	1284	2.99	34.440	2407	2392	2413	934.9	52.6	2270.1	54.2	7.803	52.0	2272.3	52.7	17.761	7.751	0.532	-3.7	-27.8
415	1481	2.63	34.499	2414	2415	2424	1051.1	60.0	2291.5	48.5	7.754	59.2	2293.9	46.9	20.292	7.693	0.474	-11.3	-36.0
417	1702	2.29	34.552	2433	2378	2420	676.7	39.1	2252.1	71.8	7.936	38.3	2255.3	69.4	13.567	7.868	0.703	9.1	-16.2
419	2005	1.96	34.595	2435	2387	2392	706.1	41.3	2262.1	68.6	7.917	40.3	2265.8	65.9	14.577	7.836	0.668	2.5	-23.8
421	2405	1.72	34.631	2439	2372	2398	608.6	35.9	2243.4	77.7	7.977	34.8	2248.1	74.1	13.171	7.880	0.752	6.6	-21.0
423	2804	1.58	34.653	2436	2378	2368	646.9	38.3	2251.4	73.3	7.951	37.1	2256.7	69.3	14.524	7.838	0.703	-2.7	-31.5
101	2891	1.58	34.657			2370													
102	3095	1.51	34.664	2437	2363	2378	573.7	34.1	2232.8	81.1	7.999	32.8	2238.9	76.3	13.330	7.875	0.776	1.0	-28.8
105	3494	1.47	34.674	2437	2377		635.4	37.8	2249.9	74.3	7.958	36.2	2256.6	69.2	15.250	7.817	0.703	-11.0	-42.3
106	3746	1.46	34.676	2436	2376	2360	634.7	37.8	2249.0	74.2	7.958	36.1	2256.1	68.8	15.605	7.807	0.699	-14.7	-46.9
107	3993	1.46	34.678			2363													
109	4242	1.48	34.682	2436	2354		540.3	32.2	2221.8	85.0	8.023	30.4	2230.2	78.3	14.027	7.853	0.796	-11.9	-46.0
110	4493	1.49	34.685	2432	2345	2355	520.6	31.0	2211.5	87.5	8.037	29.2	2220.5	80.3	13.885	7.857	0.817	-13.5	-48.6
111	4790	1.50	34.687	2432	2351		544.0	32.3	2219.2	84.5	8.020	30.4	2228.6	77.0	14.877	7.827	0.783	-21.4	-57.6
118	5207	1.52	34.687	2423	2349	2344	569.5	33.8	2219.5	80.7	8.000	31.7	2229.5	72.8	16.212	7.790	0.740	-32.2	-70.2
124	5298	1.53	34.689	2429	2355	2336	571.9	34.0	2225.2	80.9	7.999	31.8	2235.4	72.8	16.375	7.786	0.740	-33.7	-72.1

STATION: 215 LEG: II POSITION: 37° 29' N 177° 19' W DATE: 28 SEP 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
501	18	1.53	34.328			1974													
502	33	20.06	34.329	2270	1960	1986	275.0	8.9	1708.6	227.4	8.311	8.9	1708.7	227.4	4.900	8.310	2.288	181.7	161.2
504	60	16.15	34.675	2291	2007	2039	271.2	9.8	1774.1	208.1	8.309	9.8	1774.2	207.9	4.935	8.307	2.114	161.9	141.3
506	90	15.35	34.637	2280	2017	2056	287.6	10.7	1797.7	193.6	8.284	10.7	1797.9	193.4	5.234	8.281	1.964	147.2	126.5
507	110	14.52	34.613	2283	2029		291.3	11.1	1815.3	187.6	8.278	11.1	1815.6	187.3	5.320	8.274	1.901	140.9	120.1
508	130	14.05	34.526	2284	2042		303.3	11.7	1835.4	179.8	8.263	11.7	1835.8	179.5	5.520	8.258	1.817	133.0	112.1
509	180	13.16	34.464	2278	2054		318.8	12.7	1858.6	167.7	8.241	12.6	1859.0	167.3	5.821	8.235	1.691	120.4	99.4
510	232	13.16	34.413			2032													
511	280	11.42	34.336	2281	2079	2079	334.1	14.1	1896.6	153.4	8.220	14.0	1897.2	152.8	6.168	8.210	1.538	105.1	83.8
513	403	9.63	34.198	2278	2115		387.0	17.3	1954.0	128.7	8.159	17.2	1954.9	128.0	7.173	8.144	1.283	79.3	57.7
514	471	7.71	34.103	2293	2163	2163	446.2	21.3	2017.4	109.4	8.100	21.1	2018.3	108.5	8.266	8.083	1.085	59.2	37.4
515	544	6.45	34.026	2300	2157		390.2	19.4	2006.0	116.5	8.149	19.3	2007.2	115.6	7.434	8.129	1.153	65.6	43.6
516	619	5.89	33.994	2300	2197		499.0	25.4	2062.8	93.8	8.051	25.1	2064.0	92.8	9.381	8.028	0.925	42.3	20.0
517	720	4.79	34.036	2315	2275		778.9	41.1	2156.1	62.7	7.871	40.8	2157.4	61.8	14.375	7.842	0.617	10.3	-12.2
518	820	4.30	34.118	2329	2322	2307	1008.0	54.2	2203.2	49.7	7.766	53.8	2204.5	48.8	18.534	7.732	0.488	-3.6	-26.4
519	938	3.77	34.214	2335	2362		1306.2	71.5	2236.7	38.8	7.656	71.1	2238.1	37.9	24.155	7.617	0.380	-15.5	-38.6
520	1062	3.40	34.302	2370	2375	2399	1094.6	60.7	2253.0	46.2	7.734	60.2	2254.7	45.1	20.419	7.690	0.454	-9.3	-32.8
521	1184	3.08	34.360	2384	2375		972.8	54.6	2253.9	51.5	7.783	54.0	2255.9	50.1	18.418	7.735	0.505	-5.4	-29.3
522	1304	2.83	34.412	2391	2363	2456	831.6	47.1	2241.8	59.1	7.848	46.5	2244.1	57.4	16.046	7.795	0.579	0.8	-23.4
523	1407	2.64	34.446	2395	2375	2411	882.3	50.3	2253.8	55.9	7.823	49.6	2256.2	54.2	17.155	7.766	0.547	-3.4	-27.8
316	1515	2.55	34.473	2399	2424	2431	1258.2	72.0	2296.5	40.6	7.677	71.2	2298.8	39.1	24.394	7.613	0.395	-19.5	-44.3
524	1604	2.44	34.491	2403	2417		1152.0	66.2	2291.8	44.0	7.713	65.3	2294.4	42.3	22.587	7.646	0.428	-17.1	-42.1
317	1659	2.34	34.511	2412	2378		788.1	45.4	2255.6	62.0	7.871	44.6	2258.5	59.9	15.729	7.803	0.605	-0.1	-25.3
318	1795	2.19	34.538	2417	2394	2429	856.7	49.7	2271.8	57.6	7.837	48.7	2274.9	55.3	17.254	7.763	0.560	-5.9	-31.5
319	1920	2.09	34.562	2433	2413		880.5	51.2	2290.1	56.7	7.828	50.2	2293.4	54.4	17.833	7.749	0.551	-8.1	-34.1
320	1920	2.09	34.563	2428	2407		872.1	50.7	2284.2	57.0	7.831	49.7	2287.6	54.7	17.706	7.752	0.554	-7.8	-33.8
321	2050	2.09	34.579			2421													
322	2184	1.89	34.597	2435	2384		688.6	40.4	2258.6	70.0	7.927	39.3	2262.7	67.0	14.487	7.839	0.679	1.8	-25.0
323	2308	1.83	34.610	2446	2385	2410	640.8	37.6	2257.5	74.9	7.958	36.6	2261.9	71.6	13.642	7.865	0.726	5.1	-22.1
324	2556	1.71	34.629	2435	2398		761.9	45.0	2274.3	63.8	7.885	43.7	2278.9	60.4	16.560	7.781	0.613	-8.7	-36.8
103	2887	1.59	34.649	2427	2389	2377	750.1	44.5	2265.5	64.0	7.890	43.0	2270.8	60.2	16.916	7.772	0.611	-12.7	-41.8
104	3139	1.52	34.661	2425	2358		599.7	35.6	2230.1	77.3	7.980	34.3	2236.1	72.6	14.020	7.853	0.738	-3.2	-33.2
105	3390	1.49	34.668	2419	2339	2358	542.9	32.3	2208.1	83.6	8.018	30.9	2214.8	78.3	13.106	7.883	0.796	-0.6	-31.5
107	3888	1.46	34.676	2425	2335	2353	507.0	30.2	2200.9	88.9	8.046	28.7	2208.7	82.6	12.845	7.891	0.840	-2.7	-35.5
108	3888	1.46	34.678	2424	2359		607.4	36.2	2231.5	76.3	7.974	34.5	2238.9	70.6	15.241	7.817	0.718	-14.8	-47.5
109	4176	1.46	34.680	2425	2381		712.7	42.4	2257.0	66.6	7.910	40.5	2264.6	60.9	18.244	7.739	0.620	-28.3	-62.2
110	4480	1.48	34.682	2428	2326	2346	467.6	27.8	2187.9	95.3	8.079	26.2	2197.1	87.7	12.558	7.901	0.892	-5.9	-40.9
111	4776	1.51	34.685	2428	2356		579.5	34.4	2226.7	79.9	7.994	32.4	2235.9	72.6	15.800	7.801	0.738	-25.5	-61.7
112	5071	1.55	34.683	2426	2336	2352	509.5	30.2	2201.8	89.0	8.045	28.3	2211.9	80.8	14.379	7.842	0.821	-21.9	-59.3
117	5407	1.60	34.684	2428	2340		517.7	30.7	2206.4	87.9	8.039	28.6	2217.2	79.2	15.038	7.823	0.806	-29.0	-67.8
124	5525	1.61	34.685	2424	2314	2348	444.3	26.3	2173.0	99.7	8.099	24.4	2184.6	90.0	13.187	7.880	0.915	-20.3	-59.6

STATION: 217 LEG: II POSITION: 44° 37' N 176° 50' W DATE: 1 OCT 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
903	15	11.04	33.055	2238	2024	2027	286.2	12.3	1835.8	160.9	8.274	12.3	1835.9	160.9	5.326	8.274	1.559	115.1	94.5
904	20	10.92	33.051	2236	2021		282.7	12.2	1832.4	161.4	8.278	12.2	1832.5	161.3	5.279	8.277	1.563	115.5	94.9
905	25	10.90	33.055	2232	2054		348.6	15.0	1885.7	138.2	8.199	15.0	1885.8	138.2	6.331	8.199	1.339	92.3	71.7
908	46	10.40	33.069	2236	2019		273.1	12.0	1829.8	162.2	8.290	11.9	1829.9	162.1	5.154	8.288	1.571	116.1	95.4
910	63	6.65	33.311	2248	2078	2080	313.0	15.5	1915.7	131.7	8.228	15.5	1915.9	131.6	5.947	8.226	1.285	85.2	64.4
912	81	6.41	33.560	2258	2081		301.4	15.1	1915.0	135.9	8.242	15.1	1915.2	135.7	5.764	8.239	1.335	89.2	68.3
916	101	6.41	33.614	2257	2096	2096	332.5	16.6	1938.2	126.2	8.205	16.6	1938.4	126.0	6.298	8.201	1.242	79.3	58.4
917	116	6.47	33.645	2261	2093		320.8	16.0	1931.5	130.5	8.219	16.0	1931.7	130.3	6.099	8.215	1.285	83.5	62.5
919	147	6.80	33.749	2266	2091	2099	313.4	15.4	1925.7	134.8	8.229	15.4	1926.0	134.5	5.971	8.224	1.331	87.5	66.5
921	178	6.51	33.786	2271	2100		318.6	15.9	1936.7	132.4	8.223	15.8	1937.1	132.0	6.078	8.216	1.308	84.8	63.6
923	222	6.01	33.893	2280	2167	2179	459.8	23.3	2029.9	98.9	8.081	23.2	2030.3	98.5	8.462	8.073	0.979	50.9	29.6
701	243	6.01	33.890			2216													
703	344	4.20	33.857	2303	2264	2259	759.7	41.0	2146.0	61.9	7.877	40.9	2146.6	61.5	13.699	7.863	0.610	12.8	-8.7
705	445	4.10	33.983	2321	2295	2312	851.3	46.1	2177.1	56.8	7.833	45.9	2177.8	56.3	15.310	7.815	0.561	6.9	-15.0
706	496	4.00	34.037	2331	2326		1011.8	55.0	2207.1	48.9	7.763	54.8	2207.9	48.4	18.078	7.743	0.483	-1.5	-23.4
707	545	4.00	34.092			2340													
709	654	4.00	34.188			2368													
711	774	4.00	34.258			2393													
712	836	3.27	34.289	2372	2332		760.2	42.4	2210.8	63.8	7.883	42.0	2212.3	62.7	14.133	7.850	0.630	10.1	-12.8
715	904	3.27	34.322			2395													
717	1204	2.62	34.436	2405	2405	2415	1038.0	59.2	2282.1	48.7	7.758	58.6	2284.1	47.3	19.587	7.708	0.478	-8.4	-32.3
719	1401	2.39	34.487	2410	2408	2419	1015.8	58.5	2285.0	49.5	7.767	57.7	2287.4	47.9	19.572	7.708	0.485	-9.6	-34.1
720	1533	2.26	34.514	2422	2420		1015.7	58.7	2296.5	49.7	7.768	57.9	2299.1	48.0	19.757	7.704	0.486	-10.8	-35.6
721	1756	2.09	34.554	2424	2386	2416	761.9	44.3	2262.7	64.0	7.885	43.5	2265.9	61.7	15.346	7.814	0.625	0.8	-24.8
723	2156	1.86	34.600	2429	2391	2434	757.4	44.4	2267.5	64.0	7.888	43.4	2271.5	61.2	15.862	7.800	0.621	-3.7	-30.5
507	2389	1.86	34.620			2408													
508	2591	1.68	34.634	2432	2386		709.9	41.9	2261.3	67.7	7.913	40.7	2266.1	64.2	15.557	7.808	0.652	-5.3	-33.5
509	2790	1.63	34.645	2433	2368	2393	614.5	36.4	2240.0	76.6	7.972	35.1	2245.4	72.5	13.826	7.859	0.736	-0.8	-28.1
511	2990	1.58	34.653	2435	2371		617.8	36.6	2243.3	76.1	7.970	35.3	2249.0	71.7	14.154	7.849	0.728	-2.4	-31.9
512	3282	1.56	34.664			2376													
515	3299	1.52	34.664	2438	2355		538.5	32.0	2222.3	85.7	8.025	30.6	2228.9	80.5	12.792	7.893	0.818	2.7	-27.9
516	3599	1.49	34.674	2435	2358	2367	560.1	33.3	2227.2	82.5	8.009	31.8	2234.3	76.9	13.672	7.864	0.782	-4.6	-36.3
517	3899	1.47	34.678	2432	2341		505.8	30.1	2206.3	89.6	8.049	28.6	2214.2	83.2	12.789	7.893	0.846	-2.2	-35.0
519	4299	1.47	34.682			2352													
520	4598	1.50	34.685	2450	2356		501.2	29.8	2219.6	91.6	8.055	28.0	2229.0	84.0	13.426	7.872	0.854	-11.4	-46.9
521	4895	1.54	34.685	2437	2352	2353	530.9	31.5	2218.8	86.7	8.030	29.6	2228.6	78.9	14.644	7.834	0.802	-21.1	-57.7
523	5196	1.57	34.685	2438	2365		579.8	34.4	2235.0	80.6	7.995	32.2	2245.1	72.7	16.361	7.786	0.739	-32.1	-70.0
524	5496	1.61	34.687	2438	2344		500.0	29.6	2208.0	91.4	8.055	27.5	2219.2	82.3	14.609	7.835	0.837	-27.5	-66.7

STATION: 218 LEG: II POSITION: 50° 27' N 176° 35' W DATE: 4 OCT 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
908	27	1.61	32.649			1773													
401	39	8.20	32.635	2215	2013	2028	263.2	12.4	1833.9	151.7	8.295	12.4	1834.0	151.6	5.086	8.294	1.450	105.6	85.0
402	51	6.96	32.681	2215	2027		271.7	13.4	1856.2	142.4	8.279	13.4	1856.3	142.3	5.280	8.277	1.364	96.2	75.5
910	58	6.96	32.793			1853													
403	65	3.82	33.037	2237	2108	2087	358.1	19.7	1966.6	106.7	8.166	19.7	1966.7	106.6	6.864	8.163	1.032	60.1	39.2
915	88	3.83	33.076			2450													
405	99	3.07	33.097	2227	2117	2114	395.1	22.4	1984.0	95.6	8.123	22.3	1984.2	95.5	7.605	8.119	0.926	48.7	27.7
406	120	3.10	33.169	2243	2115		353.5	20.0	1974.0	106.1	8.169	19.9	1974.2	105.9	6.852	8.164	1.029	58.9	37.9
407	160	3.79	33.584	2257	2189	2234	574.5	31.6	2068.2	74.3	7.981	31.5	2068.5	74.1	10.603	7.975	0.729	26.8	5.6
408	201	3.34	33.689	2283	2250		761.2	42.5	2133.8	58.7	7.869	42.4	2134.1	58.5	13.761	7.861	0.578	10.9	-10.4
409	279	3.34	33.879			2326													
410	358	3.52	33.983	2316	2310		978.7	54.2	2191.9	48.9	7.772	54.0	2192.5	48.5	17.481	7.757	0.483	-0.3	-21.9
411	429	3.54	34.060	2328	2340	2359	1141.6	63.1	2218.9	43.0	7.711	62.9	2219.5	42.6	20.292	7.693	0.425	-6.8	-28.6
412	508	3.44	34.132	2340	2346		1089.8	60.4	2225.3	45.3	7.731	60.2	2226.1	44.7	19.492	7.710	0.448	-5.2	-27.3
413	597	3.30	34.204	2351	2346	2380	996.1	55.5	2226.2	49.2	7.769	55.2	2227.2	48.6	17.994	7.745	0.487	-2.1	-24.4
415	759	3.11	34.294	2366	2348	2395	898.1	50.4	2228.1	54.5	7.813	50.0	2229.4	53.6	16.502	7.782	0.539	1.6	-21.1
417	916	2.86	34.358	2376	2362	2448	924.0	52.3	2241.6	53.2	7.802	51.8	2243.1	52.1	17.193	7.765	0.525	-1.2	-24.3
419	916	2.86	34.358			2406													
420	916	2.87	34.358	2378	2396		1194.3	67.6	2271.3	42.2	7.697	67.1	2272.7	41.2	21.973	7.658	0.415	-12.0	-35.2
422	1078	2.87	34.406			2402													
103	1395	2.30	34.495	2406	2398	2420	963.9	55.7	2275.8	51.6	7.787	54.9	2278.1	50.0	18.651	7.729	0.505	-7.5	-32.0
105	1645	2.10	34.539	2409	2381	2417	817.9	47.6	2259.0	59.4	7.854	46.7	2261.9	57.3	16.345	7.787	0.580	-2.5	-27.7
107	1945	1.93	34.581	2423	2404	2413	879.1	51.4	2281.4	56.1	7.826	50.4	2284.8	53.7	17.958	7.746	0.545	-9.0	-35.1
109	2247	1.77	34.612	2423	2396		820.5	48.3	2273.4	59.3	7.853	47.2	2277.4	56.4	17.338	7.761	0.573	-9.4	-36.4
110	2446	1.68	34.629	2421	2370	2382	679.2	40.1	2245.2	69.7	7.930	39.0	2249.7	66.3	14.778	7.830	0.673	-1.6	-29.4
112	2696	1.61	34.643	2423	2377		704.1	41.7	2252.9	67.4	7.915	40.4	2257.9	63.7	15.658	7.805	0.647	-7.0	-35.5
115	2945	1.61	34.655			2375													
117	3393	1.50	34.668	2422	2350	2358	577.0	34.3	2221.0	79.7	7.994	32.9	2227.6	74.6	13.866	7.858	0.758	-4.3	-35.3
118	3801	1.47	34.676	2422	2329	2353	496.0	29.5	2194.0	90.5	8.055	28.0	2201.7	84.2	12.496	7.903	0.856	0.1	-32.4
119	4201	1.47	34.682	2422	2341		539.6	32.1	2209.7	84.2	8.021	30.4	2218.0	77.6	14.039	7.853	0.789	-12.0	-46.0
121	4807	1.50	34.686	2420	2333	2342	517.4	30.8	2200.0	87.3	8.038	28.9	2209.6	79.6	14.280	7.845	0.809	-19.0	-55.4
122	5209	1.50	34.687			2335													
123	5603	1.59	34.687	2420	2322		480.6	28.5	2185.5	93.1	8.067	26.4	2196.9	83.7	14.328	7.844	0.851	-27.9	-67.6
124	6000	1.64	34.689	2416	2305	2327	439.3	26.0	2164.1	100.0	8.102	23.9	2176.6	89.5	13.674	7.864	0.910	-29.3	-70.8

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 218 LEG: II POSITION: 50° 27' N 176° 35' W DATE: 4 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
801	6142	1.66	34.689	2412	2322	2340	507.4	30.0	2188.4	88.7	8.045	27.7	2200.6	78.8	15.893	7.799	0.801	-42.7	-84.8
802	6343	1.69	34.688	2420	2329		507.0	29.9	2194.7	89.4	8.046	27.6	2207.3	79.1	16.119	7.793	0.805	-46.2	-89.2
803	6543	1.71	34.688	2415	2322	2330	498.9	29.4	2187.2	90.4	8.052	27.0	2200.3	79.7	16.204	7.790	0.810	-49.6	-93.6
804	6743	1.76	34.689	2418	2336		541.0	31.8	2204.5	84.7	8.021	29.3	2217.6	74.1	17.800	7.750	0.754	-59.2	-104.1
805	6950	1.76	34.689			2343													
806	7146	1.82	34.689	2419	2329	2340	512.5	30.1	2195.1	88.8	8.043	27.5	2209.2	77.3	17.526	7.756	0.786	-64.6	-111.5

STATION: 219 LEG: III POSITION: 53° 6' N 177° 18' W DATE: 8 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	5	7.11	33.069	2263	2095	2051	324.0	15.9	1932.9	131.3	8.220	15.9	1932.9	131.3	6.025	8.220	1.272	85.3	64.7
406	43	7.26	33.067	2265	2130	2057	403.3	19.6	1983.5	111.9	8.137	19.6	1983.6	111.8	7.319	8.136	1.084	65.7	44.9
408	51	7.22	33.067	2260	2089	2053	319.1	15.6	1925.3	133.1	8.226	15.5	1925.5	133.0	5.972	8.224	1.289	86.8	66.0
411	89	4.14	33.354	2278	2157	2160	398.3	21.6	2017.2	103.2	8.132	21.6	2017.4	103.0	7.444	8.128	1.007	56.3	35.4
413	129	3.76	33.487	2291	2204		506.4	27.9	2076.3	84.9	8.037	27.8	2076.5	84.7	9.281	8.032	0.831	37.6	16.6
414	160	3.54	33.524	2298	2240	2201	630.4	35.0	2119.6	70.5	7.950	34.9	2119.8	70.3	11.386	7.944	0.691	23.0	1.8
415	190	3.61	33.592	2297	2243		652.6	36.1	2123.4	68.5	7.936	36.0	2123.7	68.3	11.793	7.928	0.672	20.8	-0.5
416	219	3.62	33.651	2296	2261	2224	761.3	42.1	2144.0	59.9	7.873	42.0	2144.4	59.7	13.670	7.864	0.589	12.0	-9.3
418	299	3.59	33.813	2315	2296	2312	878.0	48.5	2178.7	53.8	7.818	48.4	2179.2	53.4	15.655	7.805	0.529	5.1	-16.4
419	348	3.57	33.886	2323	2346	2317	1244.1	68.8	2222.7	39.6	7.675	68.6	2223.2	39.2	21.878	7.660	0.390	-9.5	-31.1
420	400	3.57	33.959			2314													
421	459	3.45	34.027	2340	2370	2360	1319.7	73.2	2243.8	38.0	7.652	73.0	2244.5	37.5	23.298	7.633	0.374	-12.0	-34.0
422	529	3.40	34.103	2352	2378	2344	1282.2	71.2	2252.5	39.3	7.666	71.0	2253.2	38.8	22.725	7.643	0.388	-11.3	-33.4
423	599	3.40	34.159	2362		2366													
201	641	3.27	34.177	2361	2380	2376	1211.8	67.6	2255.9	41.5	7.690	67.3	2256.8	40.9	21.719	7.663	0.410	-10.1	-32.5
424	725	3.19	34.237	2372	2398	2376	1283.1	71.8	2271.5	39.7	7.668	71.4	2272.6	39.0	23.066	7.637	0.392	-12.7	-35.3
202	790	3.19	34.266			2394													
203	942	2.90	34.337	2392	2414	2381	1239.8	70.1	2287.6	41.3	7.684	69.6	2289.1	40.4	22.694	7.644	0.406	-13.1	-36.3
204	1188	2.61	34.413	2408	2417	2411	1114.8	63.7	2292.7	45.7	7.729	63.0	2294.6	44.4	20.922	7.679	0.448	-11.2	-35.1
205	1439	2.61	34.480			2418													
206	1676	2.10	34.536	2425	2408	2403	898.2	52.2	2285.4	55.4	7.818	51.4	2288.3	53.3	17.812	7.749	0.540	-6.8	-32.1
207	1987	2.10	34.585			2415													
208	2285	1.75	34.613	2444	2404	2406	748.9	44.1	2279.6	65.3	7.894	43.0	2283.8	62.2	15.812	7.801	0.631	-4.0	-31.2
209	2582	1.67	34.635	2446	2400	2381	714.0	42.2	2274.8	68.0	7.913	40.9	2279.6	64.4	15.542	7.808	0.654	-5.0	-33.1
210	2883	1.61	34.650	2452	2411	2398	742.1	43.9	2286.2	65.9	7.898	42.5	2291.5	62.0	16.565	7.781	0.630	-10.8	-40.0
211	3182	1.59	34.658	2452	2407	2395	719.7	42.7	2281.7	67.7	7.911	41.1	2287.6	63.3	16.551	7.781	0.643	-13.0	-43.2
212	3480	1.59	34.665	2457	2415	2362	738.1	43.7	2289.8	66.4	7.901	42.1	2296.2	61.7	17.406	7.759	0.627	-18.2	-49.5
224	3711	1.58	34.669	2459	2404	2379	669.9	39.7	2276.9	72.4	7.941	38.0	2283.9	67.1	16.197	7.791	0.682	-15.8	-47.9

STATION: 221 LEG: III POSITION: 45° 14' N 169° 26' E DATE: 14 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	5	10.72	32.966	2246	2032	1997	283.2	12.3	1843.7	161.0	8.279	12.3	1843.7	161.0	5.262	8.279	1.556	115.2	94.7
402	52	7.08	33.431	2265	2097	2077	327.5	16.0	1935.0	131.0	8.215	16.0	1935.1	130.9	6.124	8.213	1.283	84.6	63.8
403	101	5.67	33.712	2275	2126		353.8	18.1	1973.6	119.3	8.181	18.1	1973.8	119.1	6.647	8.177	1.177	72.3	51.3
404	151	4.96	33.732	2287	2172		435.5	22.9	2034.1	100.0	8.100	22.9	2034.4	99.7	8.049	8.094	0.986	52.6	31.5
405	200	4.47	33.782	2299	2236	2207	631.9	33.8	2114.2	73.0	7.952	33.7	2114.6	72.7	11.366	7.944	0.720	25.1	3.9
406	299	3.67	33.835	2314	2286		818.5	45.1	2168.5	57.4	7.846	44.9	2169.0	57.1	14.647	7.834	0.566	8.7	-12.8
407	397	3.63	33.950	2335	2314	2299	875.3	48.3	2195.7	55.0	7.822	48.1	2196.4	54.5	15.633	7.806	0.543	5.4	-16.3
408	495	3.60	34.079	2345	2324		880.6	48.6	2205.2	55.2	7.821	48.3	2206.0	54.7	15.825	7.801	0.546	4.8	-17.2
409	594	3.45	34.170	2358	2364	2341	1098.3	60.9	2242.5	45.7	7.731	60.6	2243.4	45.0	19.657	7.706	0.451	-5.6	-27.9
410	692	3.30	34.241	2374	2373		1039.4	57.9	2251.7	48.4	7.756	57.5	2252.9	47.6	18.739	7.727	0.478	-3.8	-26.3
411	790	3.15	34.302	2385	2396	2372	1145.0	64.1	2272.2	44.6	7.717	63.7	2273.5	43.8	20.708	7.684	0.441	-8.4	-31.2
412	889	2.99	34.344	2390	2403		1158.0	65.2	2278.8	44.0	7.712	64.8	2280.2	43.1	21.136	7.675	0.434	-10.0	-33.0
413	988	2.82	34.387	2398	2402		1075.3	60.9	2278.9	47.1	7.743	60.4	2280.5	46.1	19.850	7.702	0.464	-7.8	-31.2
414	1086	2.82	34.420			2393													
415	1283	2.82	34.471			2393													
416	1480	2.27	34.505	2421	2421	2395	1031.4	59.6	2297.4	49.0	7.762	58.8	2299.9	47.3	19.953	7.700	0.479	-10.9	-35.7
417	1973	1.96	34.586	2431	2415		903.5	52.8	2292.1	55.1	7.816	51.8	2295.5	52.7	18.419	7.735	0.534	-10.3	-36.5
418	2467	1.73	34.627	2435	2403	2373	792.8	46.7	2279.6	61.7	7.869	45.5	2284.0	58.5	17.055	7.768	0.593	-9.7	-37.5
419	2961	1.59	34.654	2438	2388		687.9	40.8	2262.6	69.6	7.927	39.4	2268.2	65.5	15.612	7.807	0.665	-8.2	-37.6
101	3492	1.59	34.671			2353													
420	3554	1.49	34.673	2436	2358		556.8	33.1	2226.8	83.1	8.011	31.6	2233.8	77.5	13.532	7.869	0.788	-3.4	-34.9
102	3692	1.49	34.674	2443	2368		570.8	34.0	2237.4	81.7	8.002	32.4	2244.6	76.0	13.994	7.854	0.773	-6.7	-38.7
103	3891	1.48	34.678	2435	2367	2284	598.3	35.6	2238.3	78.1	7.982	33.9	2245.8	72.3	14.959	7.825	0.735	-13.1	-45.9
104	4093	1.48	34.680	2441	2375		608.9	36.2	2246.6	77.2	7.976	34.4	2254.5	71.1	15.460	7.811	0.723	-17.0	-50.5
105	4293	1.48	34.681	2434	2353	2319	543.9	32.4	2221.2	84.5	8.020	30.6	2229.6	77.8	14.191	7.848	0.790	-13.2	-47.5

STATION: 221 LEG: III POSITION: 45° 14' N 169° 26' E DATE: 14 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
106	4493	1.49	34.682	2437	2350		522.2	31.1	2216.3	87.6	8.037	29.3	2225.3	80.4	13.894	7.857	0.818	-13.4	-48.5
107	4694	1.51	34.682	2433	2355	2337	555.7	33.0	2224.1	82.9	8.011	31.1	2233.3	75.6	15.035	7.823	0.769	-21.2	-57.1
108	4891	1.52	34.685	2440	2356		535.3	31.8	2223.0	86.2	8.028	29.8	2232.7	78.4	14.736	7.832	0.798	-21.4	-58.1
109	5092	1.54	34.687	2439	2353	2264	527.5	31.3	2219.5	87.2	8.033	29.3	2229.7	79.0	14.809	7.829	0.804	-24.1	-61.6
110	5289	1.57	34.686	2434	2352		542.2	32.2	2219.8	85.1	8.022	30.0	2230.2	76.7	15.508	7.809	0.780	-29.6	-67.9
111	5488	1.57	34.687			2307													
112	5685	1.61	34.687	2434	2350	2262	535.2	31.7	2217.3	86.1	8.027	29.5	2228.5	77.1	15.885	7.799	0.783	-36.0	-76.1
117	5895	1.64	34.688	2438	2349	2281	518.2	30.6	2214.6	88.7	8.041	28.4	2226.4	79.2	15.679	7.805	0.805	-37.6	-78.6
124	6047	1.66	34.688	2441	2356	2322	535.0	31.6	2222.6	86.8	8.028	29.2	2234.6	77.2	16.366	7.786	0.785	-42.5	-84.1

STATION: 222 LEG: III POSITION: 40° 10' N 160° 30' E DATE: 16 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
801	2	15.86	33.827	2268	1968	1999	236.5	8.7	1725.4	218.9	8.356	8.7	1725.4	218.9	4.402	8.356	2.171	173.3	152.7
802	51	13.14	33.920	2283	2039		283.1	11.3	1831.4	181.3	8.288	11.3	1831.6	181.2	5.176	8.286	1.801	135.1	114.4
803	101	8.72	34.066	2288	2116	2106	354.5	16.3	1950.5	134.2	8.191	16.3	1950.7	134.0	6.490	8.188	1.338	87.3	66.4
805	300	5.20	33.867	2294	2214	2221	570.1	29.7	2087.9	81.4	7.995	29.6	2088.5	81.0	10.382	7.984	0.804	32.7	11.3
806	398	4.44	33.942	2317	2257		655.7	35.1	2134.9	72.0	7.940	34.9	2135.7	71.4	11.907	7.924	0.711	22.4	0.7
813	497	4.04	34.035	2338	2307	2302	822.9	44.7	2188.1	59.3	7.849	44.4	2188.9	58.6	14.811	7.829	0.585	8.8	-13.2
314	515	4.04	34.069			2313													
814	596	3.74	34.130	2348	2349		1062.0	58.3	2228.5	47.2	7.745	57.9	2229.5	46.6	19.049	7.720	0.466	-4.1	-26.3
816	695	3.52	34.211	2360	2356	2384	1017.8	56.3	2235.5	49.2	7.763	55.9	2236.7	48.4	18.427	7.735	0.486	-3.0	-25.5
817	794	3.33	34.272	2367	2364		1022.3	56.9	2243.2	49.0	7.761	56.5	2244.5	48.1	18.675	7.729	0.483	-4.2	-26.9
818	893	3.12	34.335	2380	2383	2366	1071.0	60.0	2260.8	47.2	7.743	59.6	2262.2	46.2	19.665	7.706	0.465	-6.9	-29.9
819	992	2.86	34.372	2385	2399		1161.0	65.6	2274.8	43.6	7.710	65.1	2276.3	42.6	21.475	7.668	0.429	-11.4	-34.7
820	1091	2.60	34.410	2403	2412	2393	1112.0	63.5	2287.9	45.6	7.729	62.9	2289.7	44.4	20.722	7.684	0.448	-10.4	-34.0
821	1188	2.58	34.439	2402	2402		1034.9	59.2	2279.2	48.6	7.758	58.5	2281.2	47.3	19.535	7.709	0.477	-8.3	-32.2
822	1287	2.45	34.471	2410	2420	2399	1118.2	64.2	2295.4	45.4	7.727	63.5	2297.5	44.0	21.216	7.673	0.444	-12.5	-36.7
823	1385	2.36	34.491	2400	2405		1068.3	61.5	2281.6	46.9	7.744	60.8	2283.8	45.3	20.605	7.686	0.458	-12.1	-36.5
825	1484	2.29	34.515	2426	2412	2396	926.4	53.5	2289.3	54.2	7.807	52.7	2291.8	52.5	17.965	7.746	0.531	-5.8	-30.6
826	1583	2.21	34.533	2416	2404		934.6	54.1	2281.6	53.2	7.801	53.3	2284.3	51.4	18.384	7.736	0.520	-7.9	-32.9
827	1683	2.13	34.548	2421	2399		863.2	50.1	2276.6	57.2	7.834	49.3	2279.6	55.1	17.181	7.765	0.559	-5.0	-30.3
828	1781	2.07	34.561	2418	2404		916.4	53.4	2281.6	54.0	7.809	52.4	2284.7	51.9	18.403	7.735	0.526	-9.2	-34.8
601	1812	2.04	34.567	2427	2415	2402	933.8	54.4	2292.1	53.5	7.802	53.5	2295.2	51.3	18.734	7.727	0.520	-10.1	-35.8
829	1882	2.00	34.574	2421	2392	2387	813.5	47.5	2269.4	60.1	7.858	46.5	2272.8	57.7	16.573	7.781	0.585	-4.4	-30.3
602	1989	1.94	34.589	2429	2398		802.0	46.9	2275.0	61.1	7.865	45.9	2278.6	58.5	16.473	7.783	0.593	-4.7	-30.9
603	2168	1.94	34.608			2394													
604	2347	1.75	34.625	2438	2405		788.8	46.5	2281.3	62.2	7.872	45.3	2285.6	59.1	16.756	7.776	0.600	-7.7	-35.1
605	2524	1.68	34.636	2430	2382	2364	697.8	41.2	2257.3	68.5	7.920	40.0	2262.0	65.0	15.220	7.818	0.660	-3.7	-31.7
606	2702	1.61	34.647	2430	2387		723.7	42.9	2262.8	66.3	7.905	41.6	2267.8	62.7	16.040	7.795	0.636	-8.1	-36.6
614	2882	1.58	34.657	2432	2379	2358	670.1	39.7	2253.5	70.8	7.936	38.4	2258.9	66.8	15.154	7.819	0.678	-6.0	-35.2
617	3198	1.51	34.664	2429	2368	2346	628.6	37.4	2241.1	74.5	7.961	35.9	2247.2	69.9	14.720	7.832	0.710	-6.6	-36.9
316	3504	1.49	34.672	2434	2373	2360	629.8	37.5	2245.9	74.6	7.961	35.9	2252.6	69.5	15.149	7.820	0.707	-10.8	-42.1
619	3696	1.47	34.675	2430	2357	2330	574.9	34.2	2227.4	80.4	7.997	32.6	2234.6	74.8	14.173	7.849	0.760	-8.0	-40.0
317	4003	1.47	34.680	2434	2351	2343	535.9	31.9	2218.6	85.5	8.026	30.3	2226.6	79.2	13.625	7.866	0.805	-7.7	-40.9
621	4193	1.47	34.678	2427	2339	2341	514.6	30.6	2205.5	87.9	8.041	29.0	2213.9	81.1	13.387	7.873	0.825	-8.4	-42.3
622	4372	1.46	34.684	2434	2360		571.8	34.0	2230.0	81.0	8.000	32.2	2238.5	74.3	14.995	7.824	0.755	-17.8	-52.4
318	4504	1.46	34.687			2335													
623	4551	1.48	34.684	2428	2357		582.9	34.7	2228.0	79.3	7.991	32.8	2236.8	72.5	15.565	7.808	0.737	-22.2	-57.5
625	4730	1.49	34.688	2436	2358		557.0	33.1	2226.8	83.1	8.011	31.2	2236.1	75.7	15.106	7.821	0.770	-21.7	-57.7
626	4910	1.51	34.687	2435	2360	2318	569.0	33.8	2229.7	81.5	8.002	31.8	2239.2	74.0	15.679	7.805	0.752	-26.2	-63.0
627	5089	1.53	34.686	2429	2338		505.9	30.0	2203.4	89.5	8.048	28.1	2213.7	81.2	14.294	7.845	0.826	-21.8	-59.3
628	5270	1.54	34.688	2431	2348		537.0	31.9	2215.6	85.5	8.025	29.8	2226.0	77.2	15.364	7.813	0.785	-28.8	-67.1
629	5449	1.55	34.688	2429	2356	2310	576.6	34.2	2226.4	80.4	7.996	32.0	2236.9	72.1	16.733	7.776	0.733	-36.9	-75.9
321	5466	1.57	34.691	2430	2344	2336	525.6	31.2	2210.8	87.0	8.033	29.0	2221.7	78.3	15.333	7.814	0.796	-31.0	-70.1
323	5528	1.58	34.691	2446	2353	2371	505.0	29.9	2217.1	91.0	8.052	27.8	2228.3	81.9	14.749	7.831	0.833	-28.4	-67.8

STATION: 223 LEG: III POSITION: 34° 58' N 151° 51' E DATE: 20 OCT 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
801	1	22.47	34.523	2290	1941		260.2	7.9	1663.1	255.0	8.338	7.9	1663.1	255.0	4.595	8.338	2.581	209.6	189.2
805	19	22.47	34.525	2289	1944	1932	265.0	8.1	1668.6	252.3	8.331	8.0	1668.7	252.3	4.670	8.331	2.553	206.8	186.4
808	50	21.80	34.543	2286	1944	1937	260.2	8.1	1671.2	249.7	8.336	8.0	1671.3	249.6	4.636	8.334	2.528	203.9	183.4
809	65	20.80	34.774	2305	1994	1985	295.6	9.4	1740.6	229.0	8.291	9.4	1740.7	228.9	5.141	8.289	2.333	183.1	162.5
812	85	19.94	34.787	2305	1995	1997	286.3	9.3	1742.9	227.8	8.300	9.3	1743.1	227.6	5.043	8.297	2.321	181.6	161.0
815	99	19.42	34.783	2310	1997		277.4	9.1	1743.1	229.7	8.311	9.1	1743.4	229.5	4.926	8.308	2.340	183.4	162.7
817	125	18.58	34.783	2303	2017	2000	302.9	10.2	1780.4	211.4	8.277	10.2	1780.7	211.1	5.340	8.272	2.152	164.8	144.0
818	165	17.73	34.772	2336	2027		269.0	9.3	1775.8	226.9	8.322	9.3	1776.2	226.5	4.826	8.316	2.309	179.9	159.1
819	207	17.21	34.761	2305	2014	2004	278.6	9.8	1775.5	213.7	8.303	9.8	1776.0	213.2	5.054	8.296	2.173	166.3	145.4
821	295	17.21	34.743			2013													

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 223 LEG: III POSITION: 34° 58' N 151° 51' E DATE: 20 OCT 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	388	15.79	34.702	2301	2058	2029	331.6	12.2	1849.0	181.9	8.237	12.1	1849.9	181.0	5.976	8.224	1.841	132.8	111.5
824	440	15.79	34.604			2064													
502	469	14.24	34.590	2301	2089		364.7	14.0	1898.5	161.5	8.198	13.9	1899.6	160.5	6.581	8.182	1.627	111.7	90.1
503	551	11.87	34.423	2301	2115	2103	380.0	15.7	1940.0	144.3	8.176	15.6	1941.2	143.2	6.975	8.156	1.445	93.6	71.8
505	692	8.27	34.223	2314	2210		554.1	25.9	2073.6	95.5	8.021	25.6	2075.0	94.4	10.114	7.995	0.947	43.4	21.2
506	750	6.61	34.102	2318	2228	2215	571.7	28.3	2097.2	87.5	8.003	28.0	2098.6	86.3	10.602	7.975	0.863	34.8	12.3
508	869	4.55	34.060	2329	2286		759.5	40.5	2166.2	64.4	7.883	40.1	2167.7	63.3	14.191	7.848	0.632	10.6	-12.4
509	929	4.59	34.169	2347	2318	2302	860.2	45.7	2198.6	58.7	7.835	45.3	2200.1	57.6	15.934	7.798	0.577	4.4	-18.7
510	990	4.21	34.202	2356	2337		923.3	49.8	2217.4	54.8	7.806	49.3	2219.1	53.6	17.155	7.766	0.538	-0.1	-23.3
511	1088	3.74	34.255	2372	2362	2341	983.0	53.9	2241.4	51.7	7.780	53.3	2243.2	50.4	18.368	7.736	0.506	-4.2	-27.7
512	1187	3.44	34.317	2381	2381		1058.1	58.6	2259.2	48.2	7.750	58.0	2261.1	46.9	19.903	7.701	0.472	-8.6	-32.4
514	1295	3.19	34.375	2391	2390	2368	1044.8	58.4	2267.9	48.7	7.756	57.7	2270.0	47.3	19.851	7.702	0.477	-9.2	-33.3
516	1492	3.19	34.444			2382													
517	1632	2.53	34.484	2418	2418		1040.2	59.5	2294.5	48.9	7.759	58.7	2297.2	47.1	20.368	7.691	0.476	-12.5	-37.6
518	1770	2.53	34.521			2387													
519	1990	2.15	34.560	2428	2408		880.3	51.1	2285.3	56.6	7.827	50.1	2288.8	54.2	17.972	7.745	0.549	-9.0	-35.2
520	2192	1.99	34.589	2432	2393		756.4	44.2	2269.2	64.6	7.889	43.1	2273.2	61.7	15.852	7.800	0.625	-3.5	-30.4
521	2391	1.85	34.614	2437	2403	2380	784.0	46.0	2279.5	62.5	7.875	44.8	2283.8	59.4	16.713	7.777	0.603	-7.9	-35.4
522	2592	1.85	34.630			2366													
201	2936	1.63	34.652	2441	2383		650.1	38.5	2256.1	73.4	7.950	37.1	2261.7	69.2	14.735	7.832	0.703	-4.2	-33.5
524	3001	1.63	34.655	2438	2369	2357	597.9	35.4	2240.0	78.6	7.983	34.1	2245.8	74.1	13.714	7.863	0.753	0.0	-29.6
203	3336	1.55	34.664	2439	2366	2364	579.3	34.4	2236.0	80.6	7.996	32.9	2242.5	75.5	13.739	7.862	0.767	-2.7	-33.4
204	3536	1.52	34.670	2437	2366	2351	586.9	34.9	2236.5	79.6	7.990	33.3	2243.4	74.3	14.189	7.848	0.755	-6.4	-37.9
205	3734	1.51	34.673	2437	2369		599.1	35.6	2240.3	78.1	7.982	34.0	2247.5	72.5	14.740	7.831	0.737	-10.8	-42.9
206	3931	1.51	34.677			2376													
207	4132	1.49	34.681	2437	2358		553.2	32.9	2226.5	83.6	8.014	31.2	2234.7	77.1	14.189	7.848	0.784	-11.5	-45.2
208	4380	1.49	34.683			2343													
210	4881	1.52	34.687	2434	2347	2328	521.9	31.0	2213.4	87.6	8.037	29.1	2223.2	79.7	14.410	7.841	0.811	-20.0	-56.6
212	5383	1.55	34.689	2437	2340	2332	488.4	29.0	2203.1	93.0	8.064	27.0	2214.1	84.0	14.158	7.849	0.854	-23.9	-62.7
214	5643	1.57	34.691	2428	2336		503.2	29.8	2201.1	90.1	8.050	27.7	2212.5	80.8	14.971	7.825	0.822	-31.5	-71.4
215	5892	1.60	34.691	2428	2317	2326	442.4	26.2	2175.5	100.3	8.101	24.2	2187.8	90.0	13.568	7.867	0.915	-26.8	-67.8
224	6094	1.62	34.691	2427	2331	2321	489.9	29.0	2194.9	92.1	8.061	26.8	2207.2	82.1	15.216	7.818	0.834	-38.5	-80.4

STATION: 224 LEG: III POSITION: 34° 16' N 141° 58' E DATE: 24 OCT 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	1	23.85	34.505	2285	1934	1939	271.5	8.0	1654.2	256.8	8.326	8.0	1654.2	256.8	4.725	8.326	2.598	211.5	191.1
502	14	23.85	34.502	2279	1938		282.6	8.3	1664.8	249.9	8.311	8.3	1664.8	249.9	4.891	8.311	2.527	204.5	184.1
503	46	23.84	34.508	2276	1945	1940	295.2	8.7	1678.1	243.2	8.296	8.6	1678.3	243.1	5.081	8.294	2.459	197.5	177.0
505	146	23.84	34.774			2009													
507	245	23.84	34.762			2011													
509	345	16.44	34.729	2295	2014	2026	280.1	10.1	1782.5	206.4	8.298	10.0	1783.4	205.6	5.171	8.286	2.093	157.7	136.5
511	446	15.06	34.635	2291	2052	2067	324.6	12.2	1846.3	178.6	8.242	12.1	1847.3	177.6	5.943	8.226	1.803	129.0	107.5
514	573	12.05	34.427	2293	2117	2111	403.5	16.6	1947.3	138.0	8.153	16.5	1948.6	136.9	7.375	8.132	1.382	87.2	65.3
516	721	12.05	34.201			2194													
517	761	7.71	34.223	2317	2230		612.5	29.2	2099.6	86.3	7.980	28.9	2101.0	85.1	11.198	7.951	0.854	33.6	11.1
518	802	7.71	34.193			2242													
519	852	5.97	34.173	2325	2277		771.4	39.0	2156.2	66.8	7.881	38.7	2157.6	65.7	14.191	7.848	0.658	13.3	-9.5
520	904	5.28	34.183	2337	2273	2295	667.3	34.6	2149.0	74.4	7.939	34.2	2150.6	73.1	12.482	7.904	0.733	20.2	-2.7
101	941	4.85	34.197	2344	2309	2311	827.9	43.6	2189.1	61.3	7.851	43.1	2190.8	60.1	15.364	7.814	0.602	6.8	-16.2
522	1004	4.33	34.211	2354	2313	2331	777.6	41.7	2192.3	64.0	7.876	41.3	2194.0	62.7	14.591	7.836	0.629	8.9	-14.4
103	1140	3.73	34.305	2371	2373	2363	1082.8	59.4	2251.3	47.4	7.740	58.8	2253.1	46.1	20.271	7.693	0.464	-8.9	-32.6
104	1240	3.39	34.356	2384	2379		1016.2	56.4	2257.6	50.0	7.767	55.7	2259.6	48.6	19.235	7.716	0.490	-7.3	-31.3
524	1303	3.25	34.388	2388	2377	2373	966.2	53.9	2255.8	52.3	7.788	53.2	2258.0	50.8	18.441	7.734	0.512	-5.7	-29.8
105	1340	3.25	34.411			2376													
106	1439	2.96	34.442	2400	2368	2392	813.7	45.9	2246.2	60.9	7.859	45.1	2248.8	59.1	15.837	7.800	0.597	1.3	-23.2
107	1539	2.67	34.467	2409	2408		1033.5	58.9	2285.0	49.1	7.761	58.1	2287.6	47.4	20.100	7.697	0.479	-11.4	-36.2
108	1642	2.49	34.497	2413	2410	2400	1012.5	58.1	2287.0	49.9	7.769	57.2	2289.8	48.0	19.919	7.701	0.486	-11.7	-36.8
110	1840	2.25	34.541	2429	2414	2398	919.2	53.2	2291.2	54.7	7.810	52.2	2294.3	52.5	18.436	7.734	0.531	-9.2	-35.0
111	1936	2.15	34.561	2425	2404		872.4	50.6	2281.5	56.9	7.830	49.6	2284.8	54.5	17.746	7.751	0.552	-8.1	-34.1
112	2035	2.08	34.574	2424	2403	2406	870.2	50.6	2280.4	56.9	7.831	49.6	2284.0	54.4	17.896	7.747	0.552	-9.2	-35.6
115	2500	2.08	34.627			2376													
116	2740	1.68	34.645	2431	2383		698.9	41.3	2258.1	68.6	7.919	40.0	2263.2	64.8	15.550	7.808	0.658	-6.3	-35.0
118	3287	1.56	34.667	2434	2361		577.3	34.2	2231.3	80.4	7.997	32.8	2237.7	75.4	13.658	7.865	0.766	-2.2	-32.7
119	3637	1.56	34.673			2376													
120	3985	1.56	34.680	2432															
121	4384	1.49	34.685	2431	2340	2378	506.1	30.1	2205.3	89.6	8.048	28.4	2214.1	82.5	13.390	7.873	0.839	-9.8	-44.4
122	5036	1.53	34.688	2429	2352		559.5	33.2	2221.4	82.4	8.008	31.2	2231.2	74.6	15.647	7.806	0.759	-27.6	-64.8
123	5489	1.57	34.689	2429	2340	2330	514.2	30.5	2206.0	88.5	8.042	28.4	2217.0	79.7	15.057	7.822	0.810	-30.0	-69.2
124	6000	1.64	34.694	2431	2335	2330	491.8	29.1	2198.6	92.3	8.060	26.9	2210.8	82.4	15.113	7.821	0.838	-36.4	-77.9

STATION: 225 LEG: IV POSITION: 32° 37' N 161° 56' E DATE: 5 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	42	23.24	34.570	2283	1933	1960	266.0	7.9	1654.4	255.7	8.331	7.9	1654.5	255.6	4.686	8.329	2.590	210.0	189.5
803	62	20.99	34.674	2297	1975		279.9	8.8	1714.9	236.2	8.310	8.8	1715.1	236.1	4.923	8.308	2.399	190.3	169.7
804	81	18.75	34.744	2296	1992	2001	277.0	9.3	1744.9	222.8	8.308	9.3	1745.1	222.6	4.954	8.305	2.267	176.6	155.9
805	121	17.27	34.742	2295	2006		279.1	9.8	1769.2	212.1	8.301	9.8	1769.5	211.8	5.042	8.297	2.157	165.4	144.7
806	160	16.50	34.698	2293	2014	2021	283.1	10.2	1783.6	205.2	8.294	10.1	1784.0	204.8	5.142	8.289	2.083	158.2	137.3
807	200	16.24	34.694	2283	2025		308.0	11.1	1807.8	191.1	8.262	11.1	1808.3	190.6	5.557	8.255	1.939	143.7	122.8
808	250	15.69	34.672	2296	2032	2042	294.8	10.8	1811.1	195.0	8.279	10.8	1811.7	194.5	5.371	8.270	1.976	147.2	126.1
809	300	14.97	34.618	2294	2044		306.2	11.5	1831.8	185.7	8.263	11.5	1832.5	185.0	5.592	8.252	1.878	137.4	116.2
814	347	13.97	34.544	2285	2047	2079	309.0	12.0	1842.8	177.2	8.256	11.9	1843.6	176.5	5.707	8.244	1.787	128.4	107.1
825	397	13.13	34.486	2286	2062		321.1	12.8	1866.2	168.0	8.240	12.7	1867.1	167.2	5.947	8.226	1.690	118.8	97.3
826	471	11.52	34.354	2292	2090	2091	338.7	14.2	1907.0	153.8	8.217	14.1	1908.1	152.8	6.311	8.200	1.539	103.7	82.1
827	546	9.84	34.233	2300	2107		332.9	14.7	1929.6	147.6	8.220	14.6	1930.9	146.5	6.306	8.200	1.470	96.8	74.9
502	595	7.95	34.098	2288	2160		454.1	21.5	2015.5	108.1	8.094	21.3	2016.7	107.0	8.484	8.071	1.070	56.8	34.7
828	644	7.37	34.057	2294	2150		400.5	19.3	1998.5	117.2	8.141	19.1	1999.9	116.0	7.633	8.117	1.158	65.4	43.1
503	696	5.66	34.005	2309	2240	2249	639.2	32.7	2115.9	76.4	7.954	32.5	2117.2	75.4	11.844	7.927	0.751	24.2	1.8
504	794	4.71	34.083	2323	2304		925.2	49.0	2185.8	54.2	7.802	48.6	2187.1	53.2	16.998	7.770	0.532	1.2	-21.6
505	894	4.12	34.168	2340	2331	2347	990.6	53.6	2211.8	50.6	7.774	53.1	2213.2	49.6	18.316	7.737	0.497	-3.3	-26.3
506	992	3.73	34.248	2361	2370		1139.9	62.5	2247.7	44.8	7.717	62.0	2249.3	43.7	21.077	7.676	0.439	-10.1	-33.4
601	1081	3.46	34.305	2375	2386	2386	1153.5	63.9	2262.7	44.4	7.713	63.3	2264.4	43.3	21.455	7.668	0.435	-11.3	-34.9
507	1188	3.15	34.370	2384	2380	2394	1016.4	56.9	2258.4	49.7	7.766	56.3	2260.3	48.4	19.201	7.717	0.487	-7.2	-31.0
508	1334	2.78	34.431	2397	2355		745.8	42.3	2232.5	65.1	7.893	41.7	2235.0	63.4	14.485	7.839	0.640	6.5	-17.8
509	1477	2.54	34.476	2410	2401	2416	966.2	55.3	2278.6	52.1	7.788	54.5	2281.1	50.3	18.753	7.727	0.509	-7.9	-32.6
514	1620	2.34	34.512	2419	2401		896.3	51.7	2278.7	55.6	7.819	50.8	2281.5	53.6	17.671	7.753	0.543	-5.9	-31.0
525	1772	2.19	34.546	2414	2400	2420	919.2	53.3	2277.7	54.0	7.807	52.4	2280.8	51.9	18.443	7.734	0.525	-9.1	-34.7
526	1920	2.06	34.572	2422	2405		896.5	52.2	2282.5	55.3	7.818	51.2	2285.8	53.0	18.233	7.739	0.537	-9.5	-35.5
527	2069	1.92	34.595	2429	2375	2423	671.4	39.3	2249.5	71.2	7.937	38.3	2253.4	68.3	14.021	7.853	0.693	4.3	-22.2
528	2218	1.83	34.613	2430	2365		617.0	36.2	2237.3	76.5	7.970	35.2	2241.5	73.2	13.139	7.881	0.743	7.7	-19.3
629	2367	1.75	34.625	2421	2399	2385	852.7	50.2	2276.5	57.2	7.837	49.0	2280.7	54.3	18.216	7.740	0.551	-12.8	-40.2
630	2515	1.68	34.634	2427	2352		569.5	33.6	2222.0	81.3	8.001	32.6	2226.9	77.5	12.567	7.901	0.787	8.8	-19.1
631	2668	1.62	34.646	2434	2377	2380	651.9	38.6	2250.6	72.8	7.948	37.4	2255.7	69.0	14.451	7.840	0.700	-1.4	-29.9
632	2815	1.61	34.651	2434	2391		725.0	42.9	2266.7	66.4	7.905	41.6	2271.9	62.6	16.212	7.790	0.635	-9.5	-38.4
633	2966	1.56	34.657	2430	2360	2371	589.2	35.0	2231.1	78.9	7.988	33.7	2236.9	74.4	13.535	7.869	0.756	0.7	-28.8
201	3157	1.54	34.662	2429	2358	2371	584.4	34.7	2228.9	79.4	7.991	33.3	2235.0	74.6	13.681	7.864	0.758	-1.4	-31.5
634	3218	1.51	34.666	2433	2360	2351	576.7	34.3	2230.2	80.5	7.997	32.9	2236.5	75.6	13.571	7.867	0.768	-1.2	-31.5
203	3552	1.50	34.671	2425	2350	2371	565.4	33.6	2220.1	81.3	8.003	32.1	2227.1	75.8	13.787	7.861	0.771	-5.1	-36.6
205	3946	1.50	34.678			2351													
206	4145	1.48	34.681	2427	2328		477.5	28.4	2190.8	93.8	8.071	26.8	2199.3	86.8	12.423	7.906	0.883	-2.0	-35.7
207	4339	1.48	34.683	2433	2358	2355	568.1	33.8	2227.7	81.5	8.002	32.0	2236.2	74.8	14.859	7.828	0.761	-16.8	-51.2
209	4735	1.49	34.687	2420	2330	2349	506.5	30.1	2196.0	88.8	8.046	28.3	2205.5	81.2	13.906	7.857	0.825	-16.3	-52.4
225	5130	1.49	34.689	2420	2331	2339	510.1	30.3	2197.3	88.3	8.043	28.4	2207.6	80.0	14.522	7.838	0.814	-23.7	-61.4
234	5935	1.56	34.693	2413	2312		468.0	27.8	2174.8	94.4	8.077	25.6	2186.9	84.4	14.458	7.840	0.859	-33.2	-74.4

STATION: 226 LEG: IV POSITION: 30° 34' N 170° 39' E DATE: 9 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	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	8	24.73	35.055	2305	1953	1976	290.9	8.3	1671.9	257.7	8.305	8.3	1672.0	257.7	4.963	8.304	2.648	212.4	192.1
702	20	24.74	35.056	2306	1957		295.3	8.4	1677.7	255.8	8.299	8.4	1677.8	255.8	5.025	8.299	2.628	210.4	190.0
703	36	24.76	35.053	2319	1968	1977	296.3	8.5	1686.9	257.6	8.301	8.5	1687.0	257.5	5.019	8.299	2.646	212.1	191.7
704	56	24.48	35.016	2298	1949		289.3	8.3	1670.3	255.4	8.305	8.3	1670.5	255.2	4.976	8.303	2.620	209.6	189.2
705	82	23.60	35.005	2296	1956	1974	290.1	8.5	1683.5	248.9	8.302	8.5	1683.7	248.7	5.023	8.299	2.552	202.9	182.4
714	106	18.00	34.759	2291	1994		276.2	9.5	1752.0	217.5	8.306	9.5	1752.2	217.3	4.981	8.303	2.214	171.1	150.4
725	157	16.05	34.697	2287	2007	2035	274.4	10.0	1776.8	205.2	8.304	10.0	1777.2	204.8	5.033	8.298	2.083	158.2	137.3
726	207	15.22	34.627	2280	2023		294.8	11.0	1807.2	189.8	8.275	11.0	1807.8	189.3	5.397	8.268	1.921	142.3	121.3
727	257	15.22	34.565			2060													
728	309	13.35	34.540	2272	2045		315.4	12.5	1848.1	169.5	8.244	12.4	1848.8	168.8	5.841	8.234	1.709	121.0	99.7
729	382	12.06	34.396	2272	2069	2089	339.6	14.0	1886.0	154.0	8.214	13.9	1886.9	153.2	6.304	8.200	1.545	104.8	83.4
730	457	10.30	34.277	2281	2105		370.8	16.1	1937.0	136.9	8.178	16.0	1938.0	136.0	6.897	8.161	1.367	87.0	65.3
731	555	7.98	34.103	2288	2146	2166	415.1	19.6	1995.3	116.1	8.128	19.4	1996.4	115.1	7.802	8.108	1.151	65.2	43.2
401	591	7.34	34.066	2282	2179	2178	523.5	25.3	2044.9	93.8	8.035	25.1	2046.1	92.9	9.717	8.012	0.927	42.6	20.5
732	653	6.18	34.028	2292	2212		594.5	29.9	2085.5	81.6	7.982	29.6	2086.7	80.7	11.054	7.956	0.805	29.8	7.5
402	688	5.68	34.031	2293	2243		736.4	37.7	2123.3	67.0	7.894	37.4	2124.5	66.1	13.593	7.867	0.659	14.9	-7.4
403	834	4.35	34.131	2330	2308	2320	894.2	48.0	2189.6	55.4	7.815	47.6	2191.0	54.5	16.543	7.781	0.545	2.0	-20.8
404	983	3.69	34.265	2349	2348		1045.8	57.4	2227.7	47.9	7.751	56.9	2229.2	46.8	19.495	7.710	0.471	-6.9	-30.2
405	1126	3.28	34.371	2369	2379	2390	1135.8	63.3	2256.1	44.6	7.718	62.7	2257.9	43.4	21.337	7.671	0.437	-11.6	-35.2
414	1275	2.94	34.440	2384	2373		954.4	53.8	2251.9	52.2	7.790	53.2	2254.1	50.8	18.282	7.738	0.512	-5.6	-29.7
425	1422	2.63	34.488	2395	2369	2407	841.7	48.0	2247.7	58.3	7.842	47.3	2250.2	56.5	16.432	7.784	0.572	-1.1	-25.7
426	1617	2.41	34.531	2400	2390		951.1	54.7	2268.1	52.2	7.792	53.8	2270.8	50.3	18.832	7.725	0.509	-9.2	-34.3
427	1713	2.18	34.560	2402	2376	2405	831.2	48.2	2254.4	58.4	7.846	47.3	2257.4	56.3	16.740	7.776	0.570	-4.2	-29.6
428	1859	2.02	34.581	2413	2369		721.7	42.1	2245.6	66.3	7.905	41.2	2249.0	63.8	14.800	7.830	0.647	2.0	-23.9
429	2004	1.88	34.600	2414	2383	2390	795.2	46.6	2260.6	60.8	7.865	45.6	2264.2	58.2	16.478	7.783	0.590	-5.1	-31.5
430	2149	1.77	34.615	2414	2379		767.8	45.2	2256.4	62.4	7.879	44.1	2260.2	59.6	16.178	7.791	0.605	-5.2	-31.9
431	2293	1.71	34.626	2417	2361	2423	653.4	38.5	2235.5	72.0	7.945	37.5	2239.8	68.7	14.063	7.852	0.697	2.4	-24.8
432	2443	1.65	34.639	2414	2366		691.7	40.9	2241.9	68.2	7.921	39.7	2246.5	64.8	15.083	7.822	0.658	-3.1	-30.8

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 226 LEG: IV POSITION: 30° 34' N 170° 39' E DATE: 9 NOV 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
202	2654	1.60	34.648	2419	2368		675.8	40.0	2243.4	69.6	7.931	38.8	2248.3	65.9	15.028	7.823	0.669	-4.4	-32.7
203	2833	1.60	34.656			2376													
204	3031	1.51	34.663	2421	2349		576.8	34.3	2220.0	79.7	7.995	33.0	2225.9	75.1	13.404	7.873	0.763	0.5	-29.1
205	3228	1.48	34.667	2424	2336	2363	514.2	30.6	2202.5	87.9	8.041	29.3	2209.0	82.7	12.247	7.912	0.840	5.8	-24.6
206	3423	1.46	34.673	2421	2347		567.6	33.8	2217.5	80.7	8.001	32.3	2224.2	75.5	13.701	7.863	0.767	-3.9	-34.9
207	3625	1.45	34.677	2429	2337	2346	501.3	29.9	2202.0	90.1	8.052	28.4	2209.4	84.2	12.386	7.907	0.856	2.3	-29.5
208	3813	1.45	34.679	2417	2344		570.1	34.0	2215.0	80.1	7.998	32.4	2222.4	74.3	14.296	7.845	0.755	-10.1	-42.5
209	4010	1.44	34.682	2420	2326	2352	491.4	29.3	2190.8	90.9	8.058	27.7	2199.0	84.3	12.644	7.898	0.857	-2.7	-35.9
210	4204	1.44	34.685	2419	2336		531.2	31.6	2204.1	85.2	8.027	30.0	2212.5	78.6	13.858	7.858	0.799	-11.1	-45.1
211	4390	1.45	34.684	2418	2325	2342	494.4	29.5	2190.2	90.4	8.055	27.8	2199.1	83.2	13.183	7.880	0.845	-9.2	-43.9
433	4589	1.45	34.689			2332													
212	4801	1.45	34.689	2412	2323		507.0	30.2	2189.7	88.1	8.044	28.4	2199.2	80.4	14.059	7.852	0.818	-18.1	-54.5
215	4997	1.46	34.692	2408	2316	2317	495.1	29.5	2181.9	89.6	8.053	27.6	2192.0	81.4	14.023	7.853	0.828	-20.2	-57.3
216	5185	1.47	34.691	2412	2300		432.8	25.8	2158.8	100.4	8.107	24.0	2169.7	91.3	12.558	7.901	0.929	-13.3	-51.2
217	5287	1.47	34.692	2407	2313	2330	488.1	29.0	2178.4	90.6	8.059	27.1	2189.0	81.9	14.215	7.847	0.833	-24.5	-62.8
218	5332	1.48	34.693	2405	2302		458.0	27.3	2164.4	95.3	8.083	25.4	2175.4	86.3	13.459	7.871	0.877	-20.8	-59.4
219	5379	1.48	34.692	2399	2308	2316	496.2	29.5	2174.7	88.8	8.051	27.5	2185.4	80.1	14.609	7.835	0.814	-27.8	-66.6
224	5478	1.48	34.695	2408	2312	2316	481.5	28.6	2176.8	91.6	8.064	26.6	2187.8	82.5	14.277	7.845	0.840	-27.0	-66.2

STATION: 227 LEG: IV POSITION: 24° 60' N 170° 5' E DATE: 12 NOV 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
725	91	22.71	35.114	2302	1972	1976	295.2	8.9	1706.2	241.9	8.294	8.9	1706.5	241.6	5.116	8.291	2.487	195.8	175.2
727	121	20.53	35.075	2311	1991	2011	284.1	9.1	1732.4	234.5	8.304	9.1	1732.7	234.2	5.015	8.300	2.408	188.0	167.4
729	200	16.66	34.732	2285	1990	2024	261.8	9.3	1750.4	215.3	8.321	9.3	1750.9	214.8	4.850	8.314	2.187	167.9	147.0
731	300	14.45	34.581	2284	2037	2052	301.2	11.5	1827.3	183.2	8.266	11.4	1828.0	182.5	5.553	8.255	1.850	134.8	113.7
732	349	13.10	34.467	2281	2058		320.6	12.8	1863.0	167.2	8.240	12.7	1863.9	166.4	5.926	8.227	1.682	118.3	97.0
733	449	10.70	34.275	2277	2072	2107	316.6	13.6	1888.7	154.7	8.237	13.5	1889.7	153.7	6.008	8.221	1.544	104.8	83.1
401	496	9.79	34.213	2287	2122	2137	388.0	17.2	1959.5	130.3	8.160	17.1	1960.5	129.4	7.213	8.142	1.298	80.0	58.2
734	548	8.50	34.124	2273	2130	2167	416.9	19.3	1979.2	116.5	8.126	19.2	1980.3	115.5	7.841	8.106	1.155	65.7	43.7
403	595	7.07	34.069	2304	2181		457.9	22.3	2038.3	105.3	8.090	22.1	2039.5	104.3	8.559	8.068	1.042	54.0	31.9
404	642	6.24	34.073	2307	2250	2255	718.2	36.0	2128.3	70.7	7.909	35.7	2129.4	69.8	13.073	7.884	0.697	19.1	-3.2
406	793	4.61	34.155	2347	2326	2314	918.2	48.8	2206.8	55.5	7.808	48.4	2208.1	54.5	16.734	7.776	0.546	2.5	-20.3
408	990	3.72	34.352	2382	2343	2376	784.8	43.0	2221.3	63.6	7.874	42.5	2223.1	62.4	14.647	7.834	0.628	8.6	-14.7
409	1094	3.37	34.413	2389	2369		904.2	50.2	2248.0	55.8	7.816	49.6	2249.8	54.5	16.943	7.771	0.550	-0.2	-23.8
410	1193	3.15	34.476	2392	2360	2376	817.6	45.7	2238.5	60.8	7.856	45.1	2240.6	59.3	15.567	7.808	0.599	3.7	-20.2
411	1266	2.97	34.500	2404	2366		779.6	43.9	2243.5	63.6	7.877	43.3	2245.8	62.0	14.943	7.826	0.627	5.7	-18.3
412	1365	2.78	34.515	2404	2359	2383	733.1	41.6	2235.7	66.7	7.901	40.9	2238.2	64.9	14.263	7.846	0.656	7.7	-16.7
415	1484	2.60	34.547	2414	2377		779.1	44.5	2254.1	63.4	7.877	43.7	2256.8	61.4	15.252	7.817	0.622	3.2	-21.5
416	1698	2.30	34.579	2417	2369	2386	709.2	40.9	2244.8	68.3	7.914	40.1	2247.9	66.0	14.270	7.846	0.669	5.7	-19.6
417	1895	2.09	34.601	2436	2385		694.4	40.4	2259.6	70.1	7.925	39.5	2263.1	67.4	14.175	7.848	0.684	5.2	-20.7
418	2092	1.92	34.623	2433	2378	2366	668.4	39.1	2252.1	71.8	7.939	38.1	2256.0	68.8	13.973	7.855	0.699	4.6	-21.9
419	2291	1.80	34.637	2436	2369		610.0	35.9	2240.5	77.6	7.976	34.8	2244.9	74.2	13.064	7.884	0.754	8.0	-19.2
420	2482	1.72	34.645	2440	2378	2355	632.4	37.3	2250.4	75.3	7.962	36.2	2255.2	71.7	13.748	7.862	0.728	3.4	-24.5
421	2685	1.65	34.654	2436	2372		620.3	36.7	2244.2	76.2	7.968	35.5	2249.3	72.2	13.793	7.860	0.734	1.7	-26.8
422	2859	1.61	34.661	2439	2369	2362	593.5	35.1	2239.7	79.1	7.987	33.9	2245.3	74.8	13.435	7.872	0.760	2.3	-26.8
201	3171	1.61	34.667			2357													
202	3377	1.53	34.669	2423	2347		561.3	33.3	2216.9	81.7	8.006	31.9	2223.5	76.5	13.479	7.870	0.778	-2.2	-33.0
203	3579	1.51	34.675	2439	2344	2355	494.7	29.4	2207.7	91.9	8.059	28.0	2215.0	86.0	12.124	7.916	0.874	4.7	-26.9
204	3580	1.51	34.674	2425	2343	2345	537.9	32.0	2211.2	84.8	8.023	30.5	2218.3	79.2	13.188	7.880	0.805	-2.1	-33.7
205	3779	1.49	34.679	2424	2335		510.8	30.4	2201.2	88.4	8.043	28.9	2208.8	82.3	12.807	7.893	0.836	-1.6	-33.9
206	3981	1.48	34.682	2419	2339		543.2	32.3	2208.0	83.6	8.018	30.7	2215.9	77.4	13.855	7.858	0.787	-9.2	-42.2
207	4181	1.47	34.684	2431	2332	2334	477.6	28.4	2194.8	93.7	8.071	26.9	2203.4	86.7	12.449	7.905	0.892	-2.6	-36.5
208	4382	1.46	34.688	2420	2332		512.9	30.5	2198.7	87.8	8.041	28.8	2207.5	80.7	13.623	7.866	0.821	-11.5	-46.2
209	4582	1.46	34.690			2331													
211	4980	1.45	34.693	2417	2288	2313	387.8	23.1	2139.9	110.0	8.151	21.5	2150.8	100.7	11.113	7.954	1.025	-0.6	-37.7
215	5390	1.46	34.696	2411	2324	2317	514.5	30.6	2191.3	87.1	8.038	28.6	2202.0	78.5	15.063	7.822	0.798	-29.6	-68.4
223	5886	1.51	34.698	2408	2312	2314	482.5	28.7	2176.6	91.7	8.063	26.5	2188.5	82.0	14.857	7.828	0.834	-34.9	-75.8

STATION: 228 LEG: IV POSITION: 19° 1' N 169° 21' E DATE: 15 NOV 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
501	1	27.73	34.938	2307	1927	1942	289.3	7.7	1626.4	277.9	8.314	7.7	1626.4	277.9	4.850	8.314	2.846	232.8	212.5
502	80	27.73	34.955	2306	1939	1938	306.4	8.1	1646.7	269.1	8.295	8.1	1646.9	268.9	5.102	8.292	2.756	223.4	202.9
504	145	22.38	35.145	2323	1997	1994	302.8	9.2	1732.9	239.9	8.288	9.2	1733.3	239.5	5.214	8.283	2.467	193.3	172.6
506	225	17.28	34.814	2300	2021	2033	295.4	10.4	1790.0	205.7	8.282	10.3	1790.5	205.2	5.319	8.274	2.094	158.2	137.2
508	339	12.65	34.385	2281	2089	2092	373.5	15.1	1911.0	147.9	8.182	15.0	1911.8	147.2	6.764	8.170	1.484	99.2	77.8
510	442	9.11	34.171	2286	2166		502.8	22.8	2024.3	103.9	8.058	22.7	2025.1	103.2	9.093	8.041	1.033	54.1	32.5

STATION: 228 LEG: IV POSITION: 19° 1' N 169° 21' E DATE: 15 NOV 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
514	547	6.96	34.193	2304	2241	2260	706.2	34.5	2117.8	73.7	7.918	34.3	2118.8	72.9	12.694	7.896	0.731	23.0	1.0
526	693	5.40	34.320	2344	2309	2312	847.6	43.7	2188.9	61.4	7.844	43.4	2190.1	60.5	15.276	7.816	0.609	9.3	-13.1
528	892	4.50	34.472	2368	2332	2329	824.1	43.9	2211.0	62.1	7.855	43.5	2212.5	61.0	15.170	7.819	0.616	8.1	-14.9
530	1090	3.74	34.525	2395	2334	2337	670.3	36.7	2208.3	74.1	7.940	36.2	2210.3	72.5	12.696	7.896	0.734	17.9	-5.6
532	1336	3.07	34.559	2394	2352	2355	755.2	42.4	2229.5	65.1	7.888	41.7	2231.9	63.3	14.645	7.834	0.642	6.5	-17.8
315	1567	3.07	34.578			3801													
534	1610	2.61	34.582	2416	2370		728.0	41.5	2246.1	67.4	7.905	40.8	2249.1	65.2	14.461	7.840	0.661	5.8	-19.3
317	1720	2.42	34.594	2416	2368		711.5	40.9	2243.9	68.2	7.913	40.1	2247.1	65.9	14.329	7.844	0.668	5.4	-20.0
318	1871	2.24	34.608	2419	2371	2365	708.4	41.0	2246.7	68.3	7.915	40.1	2250.2	65.7	14.486	7.839	0.667	3.8	-22.1
319	2067	2.01	34.625	2432	2369		631.4	36.8	2241.6	75.6	7.962	35.9	2245.6	72.6	13.203	7.879	0.736	8.6	-17.9
320	2266	1.87	34.638	2434	2362	2363	588.4	34.5	2232.5	80.0	7.990	33.5	2236.9	76.6	12.598	7.900	0.777	10.6	-16.5
322	2467	1.77	34.649	2433	2367	2358	613.2	36.1	2238.8	77.1	7.973	35.0	2243.6	73.5	13.367	7.874	0.746	5.3	-22.4
321	2468	1.77	34.647	2429	2360		598.2	35.2	2231.3	78.5	7.982	34.1	2236.1	74.8	13.082	7.883	0.759	6.6	-21.1
323	2665	1.68	34.657	2435	2347	2350	521.3	30.8	2213.1	88.2	8.038	29.7	2218.4	83.9	11.696	7.932	0.852	13.5	-14.9
201	2836	1.64	34.660	2430	2343		522.9	30.9	2209.5	87.5	8.036	29.8	2215.3	83.0	11.945	7.923	0.843	10.7	-18.3
202	2836	1.64	34.659	2428	2359	2361	594.6	35.2	2230.5	78.4	7.984	33.9	2236.0	74.1	13.485	7.870	0.753	1.9	-27.1
203	3036	1.59	34.666	2429	2358		585.7	34.7	2228.9	79.4	7.990	33.4	2234.8	74.8	13.549	7.868	0.761	0.3	-29.4
204	3235	1.59	34.669		2353	2361													
205	3436	1.51	34.673	2426	2354		578.7	34.4	2224.8	79.8	7.994	32.9	2231.5	74.6	13.936	7.856	0.758	-4.8	-35.9
206	3633	1.49	34.677	2424	2347	2353	556.8	33.1	2216.6	82.3	8.009	31.6	2223.7	76.6	13.702	7.863	0.779	-5.3	-37.1
207	3835	1.46	34.680	2431	2327		461.7	27.5	2188.0	96.5	8.085	26.1	2196.0	89.9	11.685	7.932	0.914	5.3	-27.2
208	4033	1.44	34.683	2421	2314	2338	449.6	26.8	2174.3	97.9	8.093	25.3	2182.7	91.0	11.660	7.933	0.925	3.6	-29.7
209	4231	1.42	34.687	2420	2335		523.1	31.2	2202.6	86.2	8.033	29.5	2211.0	79.5	13.692	7.864	0.808	-10.6	-44.7
210	4432	1.41	34.688	2423	2318	2321	455.9	27.2	2178.9	96.9	8.088	25.6	2188.1	89.3	12.250	7.912	0.908	-3.7	-38.6
211	4630	1.40	34.691	2414	2311		459.2	27.4	2173.1	95.5	8.084	25.7	2182.6	87.7	12.608	7.899	0.891	-8.3	-43.9
212	4831	1.40	34.693	2412	2292	2321	409.5	24.4	2147.7	104.9	8.128	22.8	2158.0	96.2	11.557	7.937	0.978	-2.9	-39.3
216	5035	1.41	34.694	2412	2293		412.1	24.6	2149.1	104.3	8.126	22.9	2159.9	95.2	11.844	7.927	0.968	-7.0	-44.4
224	5294	1.41	34.697			2308													

STATION: 229 LEG: IV POSITION: 12° 53' N 173° 28' E DATE: 18 NOV 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
704	38	27.96	34.434	2284	1918	1922	299.3	7.9	1626.4	268.7	8.302	7.9	1626.5	268.6	4.997	8.301	2.711	223.3	202.9
706	60	27.95	34.438	2279	1918	1922	304.3	8.1	1629.9	265.1	8.296	8.1	1630.0	264.9	5.080	8.294	2.674	219.5	199.1
708	92	27.22	34.838	2308	1951	1946	313.3	8.4	1665.0	262.6	8.287	8.4	1665.2	262.3	5.200	8.284	2.679	216.7	196.2
714	143	23.98	35.035	2328	1983	1982	297.5	8.7	1705.6	253.8	8.299	8.7	1705.9	253.4	5.081	8.294	2.603	207.3	186.7
725	193	18.50	34.837	2318	2046		327.2	11.1	1817.5	202.4	8.252	11.0	1818.0	202.0	5.689	8.245	2.062	155.2	134.4
726	242	13.96	34.454	2288	2117	2113	449.6	17.4	1948.6	135.9	8.117	17.4	1949.2	135.5	7.784	8.109	1.368	88.1	67.1
727	301	10.37	34.292	2297	2168		504.1	21.9	2021.3	109.7	8.063	21.8	2021.9	109.2	8.873	8.052	1.098	61.3	40.0
728	350	9.06	34.338	2306	2239	2237	747.7	34.0	2113.7	76.3	7.904	33.8	2114.3	75.8	12.877	7.890	0.763	27.5	6.0
729	400	7.93	34.306	2318	2255		741.6	35.0	2130.7	74.3	7.904	34.9	2131.4	73.8	12.920	7.889	0.742	24.9	3.3
730	458	7.01	34.353	2321	2300	2297	998.8	48.7	2180.9	55.4	7.780	48.5	2181.7	54.9	17.320	7.761	0.553	5.6	-16.2
731	518	6.53	34.427	2340	2282		739.8	36.7	2158.4	71.9	7.903	36.4	2159.4	71.2	13.109	7.882	0.719	21.4	-0.5
503	589	6.03	34.467	2351	2282	2310	672.1	33.9	2155.8	77.4	7.941	33.6	2156.8	76.5	12.079	7.918	0.773	26.2	4.0
732	597	6.03	34.469	2350	2289	2310	713.5	36.0	2164.6	73.4	7.917	35.7	2165.7	72.6	12.783	7.893	0.734	22.2	0.0
504	688	5.51	34.489	2356	2328		908.3	46.6	2207.7	58.7	7.817	46.3	2208.8	57.9	16.222	7.790	0.585	6.7	-15.7
505	789	5.02	34.513	2366	2332	2324	854.1	44.6	2211.1	61.3	7.842	44.2	2212.4	60.3	15.471	7.810	0.610	8.3	-14.4
507	986	4.32	34.542	2382	2343	2351	805.8	43.2	2221.1	63.7	7.865	42.7	2222.9	62.4	14.934	7.826	0.632	8.7	-14.5
508	1084	3.94	34.558	2389	2335		710.1	38.6	2210.8	70.6	7.916	38.1	2212.8	69.1	13.400	7.873	0.700	14.6	-9.0
509	1183	3.65	34.565	2397	2358	2358	791.4	43.4	2235.6	63.9	7.872	42.9	2237.8	62.4	14.975	7.825	0.632	6.9	-16.9
510	1184	3.65	34.565	2397	2359		797.7	43.8	2236.7	63.5	7.869	43.2	2238.8	62.0	15.089	7.821	0.628	6.5	-17.3
511	1280	3.41	34.577	2405	2356	2361	728.4	40.3	2232.2	68.5	7.906	39.7	2234.5	66.7	13.965	7.855	0.676	10.4	-13.6
512	1403	3.12	34.585	2408	2369		780.8	43.7	2246.1	64.2	7.877	43.0	2248.7	62.3	15.117	7.821	0.632	4.9	-19.5
733	1534	2.72	34.600	2418	2372	2363	731.9	41.6	2248.0	67.4	7.903	40.8	2250.8	65.3	14.405	7.841	0.663	6.7	-18.2
734	1683	2.50	34.612	2424	2375	2359	711.8	40.8	2250.3	68.9	7.915	40.0	2253.5	66.6	14.229	7.847	0.676	6.5	-18.8
515	1835	2.36	34.620	2432	2375	2368	669.6	38.5	2248.6	72.8	7.940	37.7	2252.1	70.2	13.602	7.866	0.712	8.6	-17.1
517	1984	2.19	34.632	2425	2328	2365	495.9	28.7	2191.6	92.7	8.058	27.9	2195.6	89.4	10.470	7.980	0.908	26.4	0.2
516	1985	2.19	34.633	2424	2350		584.3	33.8	2220.3	80.9	7.993	33.0	2224.2	77.9	12.201	7.914	0.790	14.8	-11.4
518	2132	2.06	34.639	2429	2340		523.2	30.5	2206.0	88.6	8.037	29.6	2210.3	85.1	11.151	7.953	0.865	20.6	-6.1
519	2274	1.95	34.647	2436	2368		609.1	35.6	2239.2	78.2	7.977	34.6	2243.6	74.8	13.004	7.886	0.759	8.7	-18.4
521	2579	1.80	34.656	2435	2333	2367	475.2	27.9	2194.5	95.6	8.075	26.9	2199.8	91.2	10.634	7.973	0.927	21.9	-6.2
523	2884	1.68	34.664	2442	2375	2357	610.1	36.0	2246.1	77.8	7.976	34.7	2251.7	73.5	13.795	7.860	0.747	0.8	-28.4
301	3045	1.64	34.667	2434	2365		596.7	35.3	2236.2	78.5	7.984	34.0	2242.1	73.9	13.763	7.861	0.751	-0.7	-30.4
302	3295	1.57	34.674	2437	2355	2356	543.0	32.2	2222.7	85.1	8.022	30.8	2229.2	79.9	12.886	7.890	0.813	2.3	-28.3
303	3543	1.51	34.677	2440	2355		531.4	31.6	2221.7	86.8	8.030	30.1	2228.8	81.1	12.916	7.889	0.824	0.3	-31.2
304	3795	1.46	34.680	2430	2349	2339	542.5	32.3	2217.3	84.4	8.020	30.7	2224.8	78.5	13.543	7.868	0.798	-5.6	-38.0
305	4044	1.42	34.685	2428	2341		518.8	30.9	2207.5	87.5	8.038	29.3	2215.7	81.0	13.309	7.876	0.824	-6.5	-39.8
306	4244	1.42	34.689			2331													
307	4444	1.37	34.691	2416	2193		223.0	13.3	1998.4	166.3	8.361	12.4	2010.2	155.4	6.463	8.190	1.580	62.2	27.3
308	4543	1.36	34.693	2422	2326	2319	483.9	28.9	2190.1	92.0	8.064	27.2	2199.3	84.5	13.099	7.883	0.859	-10.2	-45.5
309	4644	1.35	34.692	2423	2324		473.9	28.3	2187.0	93.6	8.072	26.6	2196.6	85.8	12.962	7.887	0.873	-10.4	-46.1
310	4794	1.33	34.697	2415	2310	2307	452.0	27.0	2171.3	96.6	8.090	25.3	2181.3	88.4	12.619	7.899	0.899	-10.1	-46.5
311	4995	1.33	34.699	2402	2319		523.3	31.3	2188.0	84.7	8.029	29.4	2197.8	76.8	14.834	7.829	0.782	-24.9	-62.0

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 229 LEG: IV POSITION: 12° 53' N 173° 28' E DATE: 18 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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	5195	1.34	34.700	2406	2307	2301	469.3	28.1	2170.7	93.3	8.073	26.2	2181.3	84.6	13.615	7.866	0.860	-20.4	-58.4
316	5481	1.37	34.700	2401	2285	2307	416.9	24.9	2142.7	102.3	8.119	23.1	2154.3	92.6	12.538	7.902	0.942	-17.2	-56.4
324	5721	1.40	34.700	2405	2319	2296	515.2	30.7	2186.8	86.4	8.036	28.6	2198.1	77.3	15.611	7.807	0.787	-36.6	-76.9

STATION: 231 LEG: IV POSITION: 14° 7' N 178° 38' W DATE: 21 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
711	4	27.22	34.632	2300	1921	1954	280.1	7.5	1621.1	277.4	8.324	7.5	1621.1	277.4	4.739	8.324	2.816	232.2	211.9
712	49	27.22	34.646			1951													
716	129	24.01	35.072	2319	1967	1994	286.2	8.3	1685.8	257.9	8.311	8.3	1686.1	257.6	4.938	8.306	2.648	211.5	190.9
717	199	18.37	34.871	2316	2045		326.9	11.1	1817.3	201.6	8.251	11.1	1817.8	201.2	5.700	8.244	2.056	154.4	133.5
718	277	18.37	34.347			2178													
719	397	9.02	34.459	2334	2256		700.9	31.9	2126.7	82.4	7.934	31.7	2127.4	81.9	12.060	7.919	0.827	33.2	11.6
920	552	6.91	34.482	2339	2263	2295	655.9	32.1	2135.1	80.8	7.952	31.8	2136.2	80.0	11.725	7.931	0.809	30.0	8.0
721	693	5.96	34.506	2352	2328	2335	953.2	48.2	2207.7	57.1	7.799	47.8	2208.9	56.3	16.932	7.771	0.569	5.1	-17.3
722	891	4.90	34.524	2377	2358		963.1	50.5	2237.1	55.4	7.794	50.1	2238.6	54.4	17.447	7.758	0.550	1.5	-21.4
723	1136	3.89	34.551	2388	2342	2366	753.4	41.0	2219.1	66.9	7.892	40.5	2221.1	65.4	14.247	7.846	0.662	10.4	-13.3
725	1630	3.89	34.602			2377													
727	2124	2.02	34.638	2432	2373		650.9	38.0	2246.4	73.7	7.950	37.0	2250.4	70.6	13.660	7.865	0.717	6.1	-20.5
728	2369	1.86	34.647	2440	2376		626.5	36.7	2248.0	76.3	7.966	35.7	2252.5	72.8	13.464	7.871	0.739	5.7	-21.7
729	2617	1.86	34.656			2373													
731	3111	1.57	34.670	2432	2321	2366	442.4	26.2	2179.4	100.4	8.102	25.1	2186.0	94.9	10.491	7.979	0.965	19.4	-10.5
732	3362	1.50	34.675	2434	2337		486.0	28.9	2200.3	92.8	8.065	27.6	2207.2	87.2	11.714	7.931	0.887	8.7	-22.1
733	3612	1.50	34.678			2329													
734	3871	1.44	34.681	2432	2352		546.8	32.6	2220.4	84.0	8.017	31.0	2228.1	77.9	13.734	7.862	0.792	-7.2	-39.9
520	4207	1.44	34.688			2336													
522	4504	1.44	34.694			2313													
524	4826	1.44	34.698			2308													
525	5025	1.32	34.699	2404	2297		442.7	26.5	2158.1	97.4	8.096	24.7	2168.5	88.8	12.705	7.896	0.903	-13.4	-50.7
526	5226	1.32	34.700	2400	2311	2293	501.0	30.0	2178.2	87.8	8.046	28.0	2188.6	79.4	14.562	7.837	0.808	-26.1	-64.2
528	5427	1.36	34.700	2403	2306	2311	475.1	28.4	2170.5	92.1	8.068	26.4	2181.5	83.1	14.088	7.851	0.845	-25.8	-64.8
533	5647	1.37	34.699	2396	2276	2319	404.1	24.1	2132.5	104.3	8.131	22.3	2144.5	94.1	12.392	7.907	0.958	-18.5	-58.5

STATION: 233 LEG: IV POSITION: 18° 13' N 169° 8' W DATE: 26 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
418	4	26.54	34.656	2297	1944	1542	305.7	8.4	1661.0	259.6	8.293	8.4	1661.0	259.6	5.099	8.292	2.638	214.4	194.1
420	49	26.54	34.663	2291	1941		308.1	8.4	1660.2	257.3	8.289	8.4	1660.4	257.2	5.158	8.288	2.614	211.8	191.3
421	75	26.62	34.857	2316	1958	1958	307.0	8.4	1671.3	263.3	8.293	8.4	1671.5	263.1	5.116	8.291	2.689	217.5	197.1
422	99	25.23	34.811	2309	1968		311.0	8.8	1692.9	251.3	8.285	8.8	1693.2	251.0	5.230	8.282	2.562	205.2	184.7
423	149	25.23	35.007			2018													
424	199	17.10	34.716	2304	2079		386.4	13.6	1879.1	171.2	8.186	13.6	1879.6	170.8	6.627	8.179	1.738	124.0	103.0
425	248	14.01	34.403	2284	2088	2093	387.3	15.0	1906.9	151.1	8.173	15.0	1907.5	150.6	6.849	8.164	1.518	103.2	82.1
426	347	9.87	34.184	2286	2128		406.2	18.0	1968.7	126.3	8.143	17.9	1969.5	125.6	7.413	8.130	1.259	77.3	55.9
427	397	8.48	34.139	2290	2156	2195	447.1	20.7	2008.6	111.7	8.102	20.6	2009.4	111.0	8.182	8.087	1.111	62.3	40.7
428	545	6.15	34.235	2322	2298		941.3	47.3	2179.3	56.4	7.801	47.1	2180.2	55.8	16.642	7.779	0.560	5.8	-16.3
429	643	5.62	34.354	2347	2294	2320	743.8	38.1	2171.4	69.6	7.898	37.8	2172.5	68.7	13.407	7.873	0.692	17.9	-4.4
430	742	5.33	34.429	2355	2303		745.3	38.5	2180.3	69.2	7.897	38.2	2181.6	68.2	13.558	7.868	0.688	16.6	-6.0
431	840	4.92	34.475	2368	2312	2338	716.8	37.6	2188.2	71.2	7.913	37.2	2189.7	70.1	13.182	7.880	0.708	17.6	-5.2
432	988	4.26	34.513	2388	2335		723.3	38.8	2211.0	70.2	7.910	38.4	2212.8	68.8	13.466	7.871	0.696	15.1	-8.1
433	1186	3.66	34.542	2395	2360	2363	816.0	44.8	2238.0	62.2	7.859	44.2	2240.1	60.7	15.430	7.812	0.614	5.2	-18.6
301	1339	3.33	34.559	2401	2376	2387	874.2	48.6	2254.4	58.1	7.831	47.9	2256.7	56.4	16.733	7.776	0.571	-0.4	-24.7
302	1340	3.33	34.561	2401	2323		583.8	32.4	2193.1	82.5	7.994	31.9	2195.7	80.4	11.445	7.941	0.815	23.6	-0.7
303	1537	2.83	34.583	2412	2369	2391	750.1	42.4	2245.6	66.0	7.893	41.7	2248.4	63.9	14.762	7.831	0.648	5.3	-19.6
304	1734	2.48	34.598	2420	2379		754.7	43.3	2255.5	65.2	7.890	42.4	2258.7	62.9	15.138	7.820	0.638	2.3	-23.1
305	1933	2.16	34.619	2429	2384	2389	726.3	42.1	2259.7	67.2	7.906	41.2	2263.3	64.5	14.876	7.828	0.655	2.0	-24.1
306	2132	2.00	34.628	2435	2356		563.0	32.8	2224.5	83.7	8.009	31.9	2228.7	80.3	11.918	7.924	0.815	15.8	-10.9
307	2336	1.81	34.640	2432	2385	2390	707.4	41.6	2260.3	68.1	7.915	40.5	2264.6	64.9	15.113	7.821	0.659	-1.8	-29.2
308	2537	1.71	34.652	2436	2370		612.6	36.1	2241.7	77.2	7.974	35.0	2246.6	73.4	13.436	7.872	0.746	4.5	-23.5
309	2738	1.62	34.659	2437	2372	2380	615.2	36.4	2243.9	76.7	7.972	35.2	2249.2	72.6	13.754	7.862	0.738	1.5	-27.2
310	2938	1.59	34.663	2438	2378		638.2	37.8	2250.9	74.3	7.957	36.5	2256.5	70.0	14.506	7.838	0.711	-3.4	-32.8
311	3139	1.53	34.671	2440	2369	2367	587.8	34.9	2239.4	79.7	7.990	33.5	2245.6	74.9	13.676	7.864	0.761	-0.9	-30.9
312	3338	1.50	34.674	2438	2362		565.2	33.6	2231.3	82.0	8.005	32.2	2237.9	76.9	13.441	7.872	0.782	-1.3	-32.1
314	3349	1.50	34.674	2434	2361	2367	576.4	34.3	2231.3	80.5	7.997	32.8	2237.8	75.4	13.728	7.862	0.766	-3.0	-33.8
315	3547	1.48	34.678	2438	2351		522.5	31.1	2217.2	87.7	8.037	29.7	2224.3	82.0	12.733	7.895	0.834	1.1	-30.3
316	3747	1.46	34.680	2438	2344	2361	496.8	29.6	2208.1	91.3	8.057	28.1	2215.7	85.2	12.375	7.907	0.866	1.7	-30.5
317	3947	1.45	34.681	2433	2345		516.6	30.8	2211.1	88.1	8.040	29.2	2219.1	81.7	13.104	7.883	0.831	-4.4	-37.4
318	4095	1.45	34.685	2434	2359	2354	567.6	33.8	2228.7	81.5	8.003	32.1	2236.7	75.2	14.514	7.838	0.765	-13.0	-46.5

STATION: 233 LEG: IV POSITION: 18° 13' N 169° 8' W DATE: 26 NOV 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
319	4244	1.45	34.685	2433	2344		513.1	30.6	2209.8	88.6	8.043	28.9	2218.4	81.7	13.384	7.873	0.831	-8.5	-42.6
320	4399	1.44	34.687	2427	2327	2340	473.5	28.2	2189.5	94.3	8.074	26.6	2198.5	86.9	12.626	7.899	0.884	-5.6	-40.3
321	4558	1.38	34.691	2421	2310		436.9	26.1	2168.8	100.1	8.104	24.5	2178.4	92.1	11.926	7.923	0.937	-2.7	-38.1
322	4714	1.35	34.695	2414	2317	2324	477.7	28.6	2181.1	92.3	8.068	26.8	2190.7	84.5	13.194	7.880	0.859	-12.8	-48.8
323	4873	1.34	34.696	2410	2319		497.4	29.8	2185.1	89.1	8.051	27.9	2194.9	81.2	13.934	7.856	0.826	-18.5	-55.2
324	4969	1.35	34.698	2415	2288	2288	391.2	23.4	2140.7	108.9	8.146	21.8	2151.5	99.7	11.217	7.950	1.014	-1.6	-38.6

STATION: 235 LEG: V POSITION: 16° 46' N 161° 20' W DATE: 6 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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	25.85	34.262	2252	1932		327.5	9.1	1671.6	236.3	8.262	9.1	1671.6	236.3	5.470	8.262	2.373	191.1	170.7
602	17	25.85	34.262			1915													
603	33	25.84	34.273	2265	1916	1937	290.1	8.1	1636.8	256.1	8.306	8.1	1636.8	256.1	4.959	8.305	2.573	210.7	190.3
604	63	25.92	34.771	2294	1961	1971	326.7	9.1	1691.2	245.7	8.267	9.1	1691.4	245.6	5.428	8.265	2.503	200.0	179.5
606	128	22.05	34.902	2313	1990	2004	297.7	9.1	1728.2	237.7	8.292	9.1	1728.5	237.4	5.150	8.288	2.428	191.2	170.6
607	160	19.28	34.929	2312	2042		341.0	11.3	1814.4	201.3	8.237	11.3	1814.8	201.0	5.863	8.232	2.058	154.5	133.7
608	200	16.54	34.708	2290	2063	2078	369.4	13.2	1862.9	171.8	8.198	13.2	1863.4	171.4	6.441	8.191	1.744	124.5	103.6
609	242	13.19	34.343	2301	2111		392.2	15.6	1932.8	147.6	8.169	15.5	1933.4	147.1	6.913	8.160	1.481	99.7	78.6
610	284	10.92	34.215	2269	2134	2145	485.0	20.7	1985.5	112.7	8.075	20.7	1986.1	112.2	8.610	8.065	1.126	64.5	43.2
611	324	9.83	34.213	2275	2185	2195	635.5	28.2	2054.3	87.6	7.966	28.1	2054.9	87.1	11.108	7.954	0.873	38.9	17.6
612	363	8.62	34.187	2286	2201		631.7	29.2	2072.1	84.8	7.966	29.0	2072.7	84.2	11.163	7.952	0.844	35.7	14.2
616	463	7.56	34.358	2312	2270		858.9	41.1	2149.7	64.2	7.842	40.9	2150.5	63.7	14.999	7.824	0.641	14.4	-7.4
617	503	7.01	34.387	2317	2300	2324	1030.6	50.2	2181.0	53.7	7.766	50.0	2181.9	53.2	17.950	7.746	0.536	3.5	-18.4
618	552	6.67	34.436	2324	2307		1022.3	50.4	2187.7	53.9	7.769	50.1	2188.6	53.2	17.916	7.747	0.537	3.2	-18.8
619	598	6.32	34.457	2332	2314	2335	1004.5	50.1	2194.5	54.4	7.776	49.8	2195.5	53.7	17.709	7.752	0.542	3.3	-18.9
620	673	5.92	34.459	2338	2319		983.5	49.8	2199.4	54.8	7.784	49.4	2200.6	54.0	17.513	7.757	0.545	3.0	-19.4
621	750	5.42	34.476	2346	2333	2349	1016.5	52.4	2213.1	52.5	7.769	52.0	2214.4	51.7	18.244	7.739	0.522	0.0	-22.6
623	920	4.72	34.518	2361	2354		1045.8	55.2	2233.3	50.5	7.757	54.8	2234.8	49.5	19.088	7.719	0.500	-3.6	-26.7
624	1006	4.40	34.525	2376	2347	2376	872.7	46.6	2226.0	59.4	7.832	46.1	2227.7	58.1	16.157	7.792	0.588	4.3	-19.0
802	1104	4.03	34.527	2376	2362	2374	969.0	52.5	2241.2	53.3	7.788	51.9	2243.1	52.0	18.090	7.743	0.526	-2.7	-26.3
803	1253	3.54	34.553	2394	2360		818.3	45.1	2238.2	61.7	7.858	44.5	2240.4	60.1	15.595	7.807	0.609	4.0	-19.9
805	1549	2.81	34.591	2402	2368	2378	799.7	45.3	2245.9	61.8	7.865	44.5	2248.7	59.8	15.772	7.802	0.606	1.0	-23.9
807	1845	2.34	34.613	2420	2377	2384	739.4	42.6	2253.3	66.1	7.898	41.7	2256.7	63.6	15.030	7.823	0.646	2.0	-23.8
808	1997	2.17	34.626	2431	2360		598.5	34.7	2230.8	79.5	7.984	33.8	2234.7	76.5	12.458	7.905	0.776	13.3	-13.0
810	2296	1.89	34.646	2431	2368	2368	628.2	36.8	2240.7	75.5	7.964	35.8	2245.1	72.2	13.450	7.871	0.733	5.9	-21.3
812	2596	1.74	34.657	2436	2365		590.8	34.8	2235.6	79.6	7.988	33.7	2240.7	75.6	13.052	7.884	0.768	6.1	-22.1
815	2748	1.69	34.661	2433	2369	2369	620.4	36.6	2241.3	76.1	7.968	35.4	2246.5	72.1	13.889	7.857	0.732	0.8	-27.9
817	3059	1.60	34.667	2428	2367		630.3	37.3	2240.2	74.5	7.960	36.0	2246.0	70.0	14.556	7.837	0.712	-4.8	-34.5
818	3197	1.57	34.671	2430	2358	2357	581.3	34.5	2228.6	79.9	7.993	33.1	2234.8	75.1	13.655	7.865	0.763	-1.4	-31.6
820	3495	1.51	34.677	2432	2357		567.9	33.8	2226.8	81.4	8.003	32.3	2233.7	76.1	13.733	7.862	0.773	-4.1	-35.4
822	3795	1.46	34.681	2428	2343	2343	526.9	31.4	2210.2	86.5	8.032	29.8	2217.7	80.4	13.187	7.880	0.818	-3.7	-36.1
401	3889	1.46	34.683	2427	2349		553.5	33.0	2218.2	82.9	8.012	31.3	2225.8	76.8	13.942	7.856	0.781	-8.5	-41.3
823	3945	1.46	34.683	2421	2350	2333	580.5	34.6	2221.2	79.2	7.992	32.9	2228.8	73.3	14.697	7.833	0.745	-12.8	-45.8
402	4041	1.46	34.685			2332													
403	4193	1.43	34.687	2427	2339		514.7	30.7	2205.4	88.0	8.041	29.0	2213.8	81.2	13.396	7.873	0.826	-8.3	-42.3
404	4343	1.43	34.687	2420	2331	2323	508.9	30.3	2197.3	88.3	8.044	28.6	2206.1	81.3	13.480	7.870	0.827	-10.4	-44.9
406	4640	1.41	34.692	2416	2320		482.9	28.8	2184.3	91.9	8.064	27.1	2193.8	84.2	13.216	7.879	0.856	-11.9	-47.6
407	4788	1.39	34.694	2415	2325		503.6	30.1	2191.2	88.8	8.047	28.2	2200.8	81.0	13.948	7.855	0.824	-17.4	-53.7
408	4936	1.40	34.695	2408	2326		530.6	31.7	2195.0	84.4	8.025	29.7	2204.7	76.6	14.896	7.827	0.779	-24.1	-61.0
409	5084	1.41	34.695	2410	2323		512.9	30.6	2190.4	87.0	8.039	28.6	2200.5	78.9	14.613	7.835	0.802	-24.2	-61.7
414	5233	1.42	34.696	2407	2316	2318	497.9	29.7	2182.3	89.1	8.050	27.7	2192.7	80.6	14.424	7.841	0.819	-24.9	-63.1
428	5382	1.42	34.697	2403	2309		486.0	29.0	2174.5	90.5	8.059	27.0	2185.4	81.6	14.320	7.844	0.830	-26.4	-65.1
433	5525	1.45	34.698	2403	2308	2299	483.4	28.8	2173.2	91.1	8.062	26.8	2184.3	82.0	14.432	7.841	0.834	-28.5	-67.9

STATION: 237 LEG: V POSITION: 12° 30' N 165° 26' W DATE: 8 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
201	3	26.41	34.203	2244	2021	1932	540.0	14.9	1817.7	173.5	8.085	14.9	1817.7	173.5	8.223	8.085	1.739	128.3	107.9
202	33	26.40	34.204	2274	1930		305.4	8.4	1653.1	253.5	8.291	8.4	1653.2	253.4	5.126	8.290	2.541	208.0	187.6
203	52	24.47	34.640	2308	1985	1973	325.5	9.4	1721.4	239.2	8.268	9.4	1721.5	239.1	5.418	8.266	2.428	193.5	173.1
204	92	20.43	34.868	2329	2031	2030	317.4	10.2	1784.7	221.1	8.269	10.2	1785.0	220.9	5.426	8.266	2.258	174.9	154.2
205	126	15.53	34.537	2299	2102	2099	417.8	15.4	1918.6	152.9	8.152	15.4	1918.9	152.7	7.126	8.147	1.546	106.2	85.4
206	152	12.72	34.357	2295	2151	2153	505.0	20.4	1996.2	119.5	8.070	20.3	1996.5	119.2	8.613	8.065	1.201	72.4	51.5
207	200	10.89	34.494	2312	2246		816.3	34.9	2119.5	76.6	7.877	34.8	2119.8	76.4	13.514	7.869	0.772	29.1	8.1
208	250	9.87	34.556	2326	2257		773.9	34.2	2129.7	78.1	7.896	34.1	2130.2	77.7	12.988	7.886	0.787	30.1	8.9
209	300	9.44	34.616	2325	2286	2288	958.8	43.0	2164.2	63.8	7.807	42.8	2164.7	63.5	16.010	7.796	0.644	15.5	-5.9
210	373	8.55	34.582	2331	2294		942.6	43.5	2172.7	62.8	7.811	43.3	2173.3	62.3	15.966	7.797	0.632	13.8	-7.8

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 237 LEG: V POSITION: 12° 30′ N 165° 26′ W DATE: 8 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
211	448	7.95	34.561	2338	2321	2308	1083.1	51.0	2200.4	54.5	7.753	50.8	2201.2	54.0	18.391	7.735	0.547	4.9	-16.9
212	546	6.90	34.527	2348	2320		956.1	46.7	2199.4	58.9	7.801	46.5	2200.3	58.2	16.609	7.780	0.589	8.3	-13.7
225	645	6.23	34.521	2354	2333	2334	987.6	49.4	2212.6	56.0	7.786	49.1	2213.7	55.2	17.368	7.760	0.559	4.5	-17.8
226	792	5.30	34.527	2369	2354	2344	1006.8	52.1	2233.1	53.8	7.776	51.7	2234.5	52.9	18.011	7.744	0.535	0.9	-21.8
227	991	4.52	34.546	2393	2364		884.0	47.0	2242.2	59.8	7.830	46.5	2243.9	58.6	16.202	7.790	0.593	4.9	-18.4
228	1188	3.76	34.568	2403	2365	2364	803.5	43.9	2242.4	63.6	7.868	43.3	2244.5	62.1	15.143	7.820	0.629	6.7	-17.2
229	1386	3.21	34.586	2414	2371	2363	762.0	42.5	2247.4	66.1	7.888	41.8	2249.9	64.3	14.701	7.833	0.651	7.0	-17.4
230	1584	2.78	34.601	2422	2386		793.9	45.0	2262.9	63.1	7.871	44.2	2265.8	61.0	15.594	7.807	0.619	1.9	-23.1
231	1781	2.41	34.621	2435	2390	2377	736.1	42.3	2265.3	67.4	7.902	41.4	2268.6	65.0	14.775	7.830	0.659	3.9	-21.7
232	1978	2.14	34.634	2444	2391	2377	688.6	40.0	2264.9	71.2	7.930	39.0	2268.6	68.4	14.122	7.850	0.694	5.4	-20.8
233	2176	2.00	34.642	2447	2384		636.9	37.2	2255.9	76.0	7.961	36.2	2260.0	72.8	13.372	7.874	0.739	7.8	-19.1
101	2281	1.90	34.650	2447	2385	2397	639.1	37.4	2257.1	75.5	7.959	36.4	2261.5	72.1	13.561	7.868	0.733	6.0	-21.2
234	2372	1.84	34.656	2447	2381		619.5	36.4	2252.2	77.4	7.972	35.3	2256.8	73.9	13.292	7.876	0.751	6.8	-20.6
102	2487	1.79	34.659	2450	2395	2374	671.4	39.5	2268.3	72.2	7.939	38.3	2273.0	68.6	14.488	7.839	0.697	0.3	-27.5
103	2687	1.73	34.665	2450	2374		574.2	33.8	2242.7	82.4	8.002	32.7	2248.1	78.3	12.746	7.895	0.795	7.7	-20.8
104	2890	1.65	34.670	2457	2378	2391	563.0	33.3	2245.6	84.1	8.011	32.0	2251.4	79.6	12.725	7.895	0.809	6.7	-22.4
105	3090	1.59	34.672	2447	2368	2373	558.1	33.1	2236.1	83.8	8.012	31.8	2242.2	79.0	12.918	7.889	0.803	3.8	-26.1
107	3492	1.51	34.678	2446	2369	2355	564.3	33.5	2237.7	82.8	8.007	32.1	2244.6	77.4	13.568	7.867	0.786	-2.8	-34.1
108	3692	1.48	34.679	2450	2344	2353	461.5	27.5	2203.4	98.1	8.088	26.1	2211.2	91.7	11.438	7.942	0.933	9.0	-23.0
109	3891	1.43	34.684	2443	2344		481.1	28.7	2206.2	94.1	8.070	27.2	2214.2	87.6	12.150	7.915	0.891	2.2	-30.6
110	4094	1.40	34.687	2440	2338	2348	469.8	28.0	2199.3	95.7	8.079	26.5	2207.8	88.7	12.129	7.916	0.902	0.5	-33.0
111	4292	1.37	34.690	2425	2334		502.3	30.0	2199.5	89.5	8.050	28.3	2208.2	82.5	13.235	7.878	0.839	-8.5	-42.8
112	4493	1.34	34.694	2419	2339		540.7	32.3	2208.0	83.7	8.019	30.5	2216.8	76.6	14.496	7.839	0.779	-17.3	-52.4
114	4692	1.31	34.697	2420	2332	2274	510.0	30.5	2198.7	87.7	8.043	28.7	2208.1	80.2	13.975	7.855	0.816	-16.8	-52.7
117	4941	1.32	34.698	2419	2313	2329	450.3	27.0	2173.7	97.3	8.092	25.2	2184.0	88.8	12.730	7.895	0.903	-12.0	-49.0
122	5012	1.31	34.699	2412	2313	2300	470.0	28.1	2176.5	93.3	8.074	26.3	2186.8	84.9	13.376	7.874	0.864	-17.0	-54.3

STATION: 238 LEG: V POSITION: 8° 12′ N 167° 5′ W DATE: 10 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
502	9	27.11	34.894	2286	1951		338.1	9.1	1680.0	246.9	8.257	9.1	1680.0	246.9	5.539	8.257	2.525	201.7	181.3
506	73	26.76	34.971	2297	1981	1982	369.3	10.0	1721.3	234.7	8.227	10.0	1721.5	234.5	5.966	8.224	2.404	188.9	168.5
509	107	22.42	34.934	2308	2002	2004	326.4	9.9	1750.6	226.5	8.260	9.9	1750.9	226.2	5.538	8.257	2.317	180.3	159.6
514	176	13.83	34.527	2279	2171	2179	667.1	26.0	2030.9	99.1	7.963	25.9	2031.2	98.9	11.051	7.957	1.001	52.0	31.0
301	262	10.57	34.713	2301	2276		1109.1	47.8	2155.4	57.8	7.748	47.7	2155.8	57.5	18.267	7.738	0.585	9.8	-11.4
303	343	9.74	34.685	2305	2271	2266	1000.4	44.4	2150.4	61.3	7.788	44.2	2150.9	60.9	16.816	7.774	0.619	12.6	-8.8
304	403	9.21	34.661	2311	2268		914.3	41.3	2146.6	65.1	7.823	41.1	2147.3	64.6	15.585	7.807	0.657	15.9	-5.7
306	553	7.65	34.583	2334	2286		835.4	39.8	2163.8	67.4	7.857	39.5	2164.8	66.7	14.611	7.835	0.676	16.8	-5.2
307	629	6.79	34.554	2328	2318		1091.3	53.5	2198.1	51.3	7.743	53.2	2199.1	50.6	19.158	7.718	0.513	0.0	-22.2
308	704	6.16	34.545	2333	2316	2335	1007.9	50.6	2196.5	53.9	7.773	50.2	2197.7	53.1	17.977	7.745	0.538	1.9	-20.5
310	844	5.34	34.544	2341	2342	2334	1134.1	58.6	2221.1	47.3	7.723	58.1	2222.4	46.4	20.507	7.688	0.470	-6.0	-28.8
427	969	4.72	34.553	2350	2329	2340	930.3	49.1	2209.3	55.5	7.803	48.6	2211.0	54.4	17.232	7.764	0.551	0.9	-22.3
202	1291	3.61	34.580	2398	2340	2376	683.9	37.6	2214.8	72.6	7.931	37.0	2217.2	70.8	13.185	7.880	0.718	14.5	-9.6
203	1431	3.33	34.590	2396	2360		800.4	44.5	2238.0	62.6	7.866	43.8	2240.5	60.7	15.558	7.808	0.616	3.1	-21.4
204	1590	2.87	34.602	2412	2342	2377	612.5	34.6	2213.8	78.6	7.975	33.9	2216.8	76.3	12.255	7.912	0.774	17.1	-7.9
206	1887	2.33	34.631	2415	2360	2383	672.4	38.8	2234.8	71.4	7.935	37.9	2238.4	68.7	13.822	7.859	0.698	6.7	-19.2
207	2036	2.15	34.639	2419	2367		685.4	39.8	2242.1	70.1	7.927	38.8	2245.9	67.3	14.279	7.845	0.683	3.7	-22.7
208	2189	2.04	34.648	2426	2373	2390	679.9	39.6	2247.7	70.7	7.931	38.6	2251.8	67.7	14.352	7.843	0.687	2.5	-24.3
210	2491	2.04	34.658			2379													
211	2491	2.04	34.659			2389													
428	2558	2.04	34.662			2373													
431	3006	1.69	34.671	2434	2358	2349	568.8	33.6	2227.4	82.1	8.003	32.3	2233.3	77.4	13.102	7.883	0.787	3.3	-26.3
432	3105	1.65	34.674	2433	2357		567.3	33.5	2226.5	82.0	8.004	32.2	2232.6	77.2	13.201	7.879	0.785	1.9	-28.1
433	3206	1.62	34.675	2430	2353	2357	561.7	33.2	2222.3	82.4	8.007	31.9	2228.6	77.5	13.222	7.879	0.788	0.9	-29.4
434	3303	1.58	34.677	2431	2353		557.5	33.0	2221.9	83.0	8.010	31.7	2228.5	77.9	13.252	7.878	0.792	0.1	-30.5
314	3343	1.59	34.677	2429	2351	2350	556.8	33.0	2220.1	82.9	8.010	31.6	2226.7	77.7	13.294	7.876	0.790	-0.5	-31.3
316	3641	1.48	34.684	2422	2327	2334	488.9	29.1	2191.5	91.4	8.060	27.7	2198.9	85.4	12.147	7.916	0.869	3.4	-28.5
317	3791	1.43	34.686	2419	2347		575.1	34.3	2218.0	79.7	7.995	32.7	2225.4	73.9	14.378	7.842	0.752	-10.1	-42.5
318	3941	1.37	34.690	2414	2332		532.0	31.8	2200.7	84.6	8.025	30.2	2208.5	78.4	13.583	7.867	0.797	-7.7	-40.7
320	4239	1.29	34.696	2405	2315	2304	498.3	29.9	2181.7	88.4	8.049	28.2	2190.2	81.6	13.194	7.880	0.830	-8.7	-42.8
321	4390	1.28	34.698	2401	2304		472.9	28.3	2168.6	92.0	8.069	26.7	2177.6	84.7	12.762	7.894	0.862	-7.8	-42.5
322	4540	1.27	34.699	2402	2311	2328	493.1	29.6	2177.6	88.8	8.053	27.8	2186.7	81.4	13.454	7.871	0.828	-13.3	-48.6
212	4791	1.28	34.701	2404	2315	2316	501.1	30.0	2182.1	87.9	8.047	28.2	2191.7	80.1	13.970	7.855	0.815	-18.4	-54.7
324	4841	1.29	34.700	2406	2290	2296	416.8	25.0	2147.6	102.4	8.120	23.3	2157.9	93.8	11.804	7.928	0.954	-5.5	-42.0
214	4940	1.29	34.700	2397	2302	2309	479.1	28.7	2167.3	90.9	8.063	26.9	2177.3	82.8	13.619	7.866	0.842	-18.1	-55.0
217	5056	1.30	34.700	2401	2287		421.2	25.2	2145.6	101.2	8.115	23.5	2156.2	92.3	12.183	7.914	0.938	-10.4	-47.9
223	5180	1.30	34.700	2403	2309	2308	484.2	29.0	2174.5	90.5	8.060	27.1	2184.9	82.0	14.026	7.853	0.834	-22.7	-60.7

STATION: 239 LEG: V POSITION: 5° 53′ N 172° 1′ W DATE: 12 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
502	50	25.57	35.039	2322	2017	2005	379.5	10.6	1763.7	227.7	8.218	10.6	1763.8	227.6	6.081	8.216	2.338	182.1	161.6
503	85	25.27	35.119	2322	2024		388.4	10.9	1775.2	222.9	8.208	10.9	1775.4	222.7	6.231	8.205	2.292	177.0	156.5
504	131	25.48	35.319	2335	2040	2022	404.3	11.3	1792.5	221.2	8.196	11.3	1792.8	220.9	6.432	8.192	2.287	174.9	154.4
506	210	21.21	34.897	2307	2073	2067	442.4	13.9	1864.9	179.3	8.148	13.8	1865.3	178.8	7.226	8.141	1.829	132.1	111.3
525	245	14.08	34.600	2302	2186		648.9	25.1	2041.8	104.2	7.979	25.0	2042.2	103.8	10.721	7.970	1.053	56.5	35.4
526	299	10.09	34.666	2324	2252	2252	764.7	33.5	2123.9	79.6	7.901	33.4	2124.4	79.2	12.895	7.890	0.805	31.2	9.9
527	373	9.18	34.655	2316	2263		846.7	38.3	2140.0	69.8	7.855	38.1	2140.6	69.3	14.440	7.840	0.704	20.8	-0.7
528	446	8.46	34.621	2329	2266	2267	767.5	35.5	2140.8	74.6	7.894	35.3	2141.6	74.0	13.291	7.876	0.751	24.9	3.2
530	642	6.93	34.568	2336	2312	2299	983.0	48.0	2192.1	56.9	7.788	47.7	2193.1	56.2	17.286	7.762	0.569	5.5	-16.7
532	859	5.13	34.549	2362	2325	2317	836.9	43.5	2203.9	62.6	7.850	43.1	2205.4	61.5	15.286	7.816	0.623	8.9	-13.9
534	1038	4.31	34.562	2373	2352		925.4	49.6	2231.4	56.0	7.807	49.1	2233.2	54.7	17.177	7.765	0.555	0.6	-22.7
303	1204	3.92	34.570	2385	2346		795.5	43.2	2224.0	63.7	7.869	42.7	2226.2	62.2	15.106	7.821	0.630	6.6	-17.2
304	1354	3.48	34.586	2400	2352	2358	735.8	40.6	2228.3	68.1	7.901	40.0	2230.8	66.2	14.216	7.847	0.671	9.3	-15.0
306	1649	2.81	34.608	2422	2361	2353	657.0	37.2	2234.3	74.5	7.948	36.4	2237.4	72.1	13.116	7.882	0.732	12.4	-12.8
307	1796	2.56	34.621	2421	2372		712.5	40.7	2247.4	68.8	7.914	39.9	2250.8	66.4	14.402	7.842	0.674	5.2	-20.4
308	1946	2.38	34.631	2423	2380	2359	741.6	42.7	2256.2	66.1	7.897	41.7	2259.8	63.5	15.188	7.818	0.645	0.9	-25.2
309	2095	2.22	34.639	2440	2368		598.5	34.6	2238.1	80.2	7.986	33.7	2242.2	77.0	12.522	7.902	0.782	12.9	-13.7
311	2400	1.94	34.655	2440	2382	2371	656.7	38.4	2255.2	73.4	7.947	37.3	2259.8	69.9	14.102	7.851	0.710	2.5	-25.0
312	2540	1.89	34.658	2442	2378		628.0	36.8	2249.9	76.3	7.965	35.6	2254.8	72.6	13.694	7.863	0.737	3.7	-24.3
314	2702	1.82	34.663	2449	2369	2361	559.1	32.8	2236.8	84.4	8.013	31.7	2242.2	80.1	12.439	7.905	0.814	9.4	-19.1
316	3001	1.71	34.668	2437	2362	2351	574.0	33.9	2231.5	81.6	8.000	32.6	2237.4	77.0	13.190	7.880	0.783	2.9	-26.6
317	3152	1.64	34.672	2437	2367		593.4	35.1	2237.9	79.1	7.986	33.7	2244.0	74.3	13.811	7.860	0.755	-1.6	-31.7
318	3301	1.60	34.674	2442	2355		525.7	31.1	2221.1	87.8	8.035	29.8	2227.7	82.5	12.479	7.904	0.838	4.7	-25.9
320	3503	1.55	34.678	2429	2357	2338	580.0	34.4	2227.8	79.8	7.994	32.9	2234.6	74.5	14.028	7.853	0.757	-5.8	-37.1
321	3602	1.53	34.680	2431	2354	2333	559.6	33.2	2223.4	82.4	8.008	31.7	2230.5	76.8	13.679	7.864	0.781	-4.7	-36.4
322	3700	1.50	34.681	2426	2370		652.2	38.8	2244.1	72.2	7.946	37.1	2251.0	66.9	16.006	7.796	0.680	-15.9	-48.0
323	3801	1.47	34.684	2433	2289	2330	356.1	21.2	2133.9	118.9	8.187	20.0	2142.5	111.5	9.168	8.038	1.134	27.3	-5.1
102	3820	1.41	34.686	2429	2334	2337	490.2	29.2	2198.1	91.7	8.060	27.8	2205.9	85.4	12.358	7.908	0.868	0.9	-31.6
103	3969	1.36	34.687	2422	2337		522.8	31.2	2204.5	86.3	8.033	29.7	2212.4	80.0	13.354	7.874	0.813	-6.5	-39.6
104	4119	1.32	34.692	2420	2328	2365	496.2	29.7	2193.4	89.9	8.054	28.1	2201.8	83.1	12.912	7.889	0.845	-5.5	-39.1
105	4269	1.32	34.694			2305													
106	4419	1.26	34.697	2413	2314	2313	469.4	28.2	2177.5	93.4	8.074	26.5	2186.5	85.9	12.649	7.898	0.874	-7.0	-41.8
107	4569	1.25	34.699	2405	2333		566.4	34.0	2204.7	79.3	7.998	32.1	2213.5	72.4	15.366	7.813	0.736	-22.8	-58.2
108	4720	1.25	34.699	2409	2333	2312	551.1	33.1	2203.6	81.3	8.010	31.2	2212.8	74.1	15.158	7.819	0.753	-23.4	-59.4
110	5022	1.28	34.700	2408	2312	2306	478.3	28.7	2176.7	91.7	8.066	26.8	2186.9	83.3	13.639	7.865	0.848	-18.8	-56.1
111	5174	1.29	34.700	2405	2312		488.1	29.2	2177.7	90.0	8.057	27.3	2188.1	81.6	14.115	7.850	0.830	-23.1	-61.0
112	5325	1.31	34.700	2395	2300	2309	478.2	28.6	2165.6	90.8	8.064	26.7	2176.3	82.0	14.096	7.851	0.834	-25.1	-63.7
117	5483	1.34	34.701	2404	2312	2309	491.9	29.4	2178.1	89.5	8.054	27.4	2189.1	80.5	14.632	7.835	0.819	-29.3	-68.5
122	5594	1.35	34.701	2405	2313	2307	492.2	29.4	2179.1	89.5	8.054	27.3	2190.3	80.3	14.783	7.830	0.817	-31.4	-71.1
324	5755	1.37	34.702	2405	2307		472.5	28.2	2171.1	92.7	8.071	26.2	2182.8	83.1	14.434	7.841	0.845	-31.5	-72.0

STATION: 240 LEG: V POSITION: 3° 23′ N 177° 11′ W DATE: 15 DEC 73

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
325	3	27.42	35.076	2317	1971	1978	337.3	9.0	1691.7	255.3	8.262	9.0	1691.7	255.3	5.466	8.262	2.625	210.1	189.8
328	60	27.33	35.070	2308	2003	1973	402.6	10.8	1749.4	227.8	8.200	10.8	1749.6	227.7	6.343	8.198	2.340	182.2	161.8
330	98	27.33	35.073			1979													
332	130	27.33	35.099			1999													
333	160	24.40	35.031	2306	2020		390.2	11.2	1779.6	214.1	8.202	11.2	1780.0	213.8	6.355	8.197	2.195	167.6	146.9
334	230	13.21	34.570	2278	2181	2165	702.0	27.9	2045.4	92.8	7.940	27.8	2045.8	92.4	11.701	7.932	0.937	45.1	24.1
402	295	13.21	34.639			2233													
403	344	9.27	34.637	2311	2225		661.1	29.8	2094.2	86.0	7.953	29.7	2094.9	85.5	11.472	7.940	0.868	37.2	15.7
404	443	8.45	34.634	2324	2233	2253	621.7	28.8	2100.6	88.6	7.977	28.6	2101.4	87.9	10.967	7.960	0.893	38.9	17.2
405	542	7.52	34.587	2319	2264		781.3	37.4	2141.3	70.3	7.881	37.1	2142.3	69.6	13.817	7.860	0.706	19.7	-2.3
406	616	6.92	34.572	2327	2306	2287	1002.9	49.0	2186.5	55.5	7.778	48.7	2187.5	54.8	17.643	7.753	0.556	4.3	-17.8
407	691	6.17	34.551	2331	2289	2294	824.3	41.3	2168.4	64.2	7.855	41.0	2169.6	63.3	14.857	7.828	0.642	12.2	-10.2
410	937	4.74	34.550	2359	2314	2310	772.7	40.8	2192.3	65.9	7.880	40.3	2194.0	64.7	14.359	7.843	0.655	11.4	-11.6
411	1034	4.36	34.558	2366	2326		794.5	42.5	2204.8	63.7	7.868	42.0	2206.6	62.4	14.892	7.827	0.632	8.3	-15.0
425	1231	3.76	34.574	2393	2330	2347	659.8	36.1	2204.1	74.9	7.946	35.5	2206.4	73.1	12.682	7.897	0.741	17.3	-6.6
426	1353	3.35	34.590	2389	2344		744.4	41.3	2221.3	66.4	7.894	40.7	2223.8	64.6	14.455	7.840	0.655	7.6	-16.7
428	1597	2.68	34.614	2410	2361	2351	711.4	40.5	2236.9	68.6	7.913	39.7	2239.9	66.4	14.160	7.849	0.674	7.1	-17.9
429	1720	2.51	34.623	2411	2359		691.6	39.6	2234.4	70.0	7.924	38.8	2237.6	67.6	13.968	7.855	0.686	7.2	-18.2
431	1964	2.20	34.640	2429	2360	2355	607.2	35.2	2231.4	78.4	7.978	34.3	2235.2	75.5	12.596	7.900	0.766	12.6	-13.5
432	2113	2.02	34.650	2426	2367		648.9	37.8	2240.7	73.5	7.950	36.9	2244.7	70.5	13.640	7.865	0.716	6.1	-20.5
201	2391	1.84	34.660	2428	2386	2373	735.2	43.1	2262.0	65.8	7.899	42.0	2266.4	62.6	15.781	7.802	0.636	-4.7	-32.2
202	2541	1.79	34.662	2425	2364		633.8	37.3	2237.3	74.5	7.958	36.1	2242.1	70.8	13.928	7.856	0.719	1.8	-26.2
203	2686	1.73	34.666	2437	2351	2377	530.9	31.3	2217.5	87.2	8.031	30.2	2222.9	82.9	11.904	7.924	0.843	12.4	-16.1
205	2937	1.64	34.671	2426	2366	2352	635.5	37.6	2239.4	74.0	7.957	36.3	2245.0	69.7	14.510	7.838	0.709	-3.7	-33.0
206	3030	1.62	34.671	2430	2356		574.0	34.0	2226.1	80.9	7.998	32.7	2232.0	76.3	13.276	7.877	0.775	1.8	-27.8
207	3133	1.55	34.676	2441	2347		499.5	29.6	2210.9	91.4	8.055	28.4	2217.3	86.3	11.726	7.931	0.877	10.5	-19.5
209	3330	1.55	34.679			2343													
211	3633	1.55	34.684			2335													
214	3832	1.43	34.686	2418	2336		534.8	31.9	2204.4	84.7	8.024	30.3	2212.0	78.7	13.482	7.870	0.800	-5.9	-38.5

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 240 LEG: V POSITION: 3° 23' N 177° 11' W DATE: 15 DEC 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
215	3927	1.40	34.689	2414	2370		707.6	42.2	2246.4	66.4	7.910	40.4	2253.5	61.1	17.795	7.750	0.621	-24.8	-57.7
216	4024	1.37	34.691	2408	2320	2325	508.0	30.3	2187.1	87.5	8.042	28.8	2195.2	81.0	13.139	7.881	0.824	-6.2	-39.5
218	4319	1.37	34.699			2308													
219	4464	1.23	34.700	2403	2296		441.4	26.5	2157.0	97.5	8.097	24.9	2166.3	89.8	12.049	7.919	0.913	-3.8	-38.8
220	4611	1.24	34.700	2402	2299	2300	453.4	27.2	2161.5	95.3	8.086	25.6	2171.0	87.4	12.525	7.902	0.889	-8.4	-44.0
222	4912	1.26	34.703	2417	2311	2285	448.6	26.9	2171.9	97.2	8.093	25.2	2182.1	88.8	12.671	7.897	0.903	-11.7	-48.5
223	5062	1.28	34.702	2398	2301		472.0	28.3	2165.8	91.9	8.069	26.4	2176.0	83.5	13.578	7.867	0.850	-19.3	-56.8
224	5170	1.28	34.703			2280													

STATION: 241 LEG: V POSITION: 4° 34' N 179° 0' E DATE: 17 DEC 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	4	27.18	35.123	2326	1996	1988	362.5	9.7	1726.5	244.8	8.238	9.7	1726.5	244.7	5.779	8.238	2.520	199.6	179.3
403	49	27.18	35.130			1985													
404	99	26.79	35.181	2326	2009		380.2	10.3	1747.6	236.1	8.220	10.3	1747.9	235.8	6.066	8.217	2.432	190.1	169.7
405	149	26.12	35.220	2325	2036	2020	421.9	11.6	1792.1	217.3	8.182	11.6	1792.5	216.9	6.655	8.177	2.240	170.9	150.3
407	227	16.93	34.725	2302	2107	2105	452.3	16.0	1923.5	152.5	8.126	16.0	1924.0	152.0	7.614	8.118	1.547	105.0	84.0
408	258	11.72	34.582	2308	2218		707.7	29.4	2084.5	89.1	7.936	29.3	2084.9	88.7	11.843	7.927	0.899	41.2	20.0
409	291	10.08	34.640	2317	2252	2245	801.2	35.1	2126.0	75.9	7.881	35.0	2126.5	75.5	13.488	7.870	0.767	27.6	6.3
425	420	8.40	34.611	2327	2252	2240	698.7	32.4	2124.1	80.5	7.931	32.2	2124.9	79.9	12.173	7.915	0.811	31.0	9.3
426	493	7.94	34.599	2324	2262		754.3	35.6	2137.6	73.8	7.897	35.3	2138.5	73.1	13.229	7.878	0.742	23.7	1.8
427	553	7.48	34.586	2329	2283	2276	840.8	40.3	2161.4	66.4	7.853	40.0	2162.3	65.6	14.757	7.831	0.666	15.7	-6.3
429	665	6.63	34.564	2341	2306	2284	892.1	44.0	2185.4	61.6	7.827	43.7	2186.6	60.7	15.825	7.801	0.615	9.9	-12.4
430	762	6.02	34.550	2344	2303		831.6	41.9	2182.0	64.1	7.853	41.6	2183.3	63.1	15.022	7.823	0.639	11.4	-11.2
432	933	5.08	34.543	2362	2318	2307	789.7	41.2	2196.3	65.6	7.873	40.7	2197.9	64.3	14.577	7.836	0.652	11.2	-11.9
433	1005	4.77	34.547	2366	2315		741.1	39.1	2192.1	68.8	7.898	38.6	2193.9	67.5	13.848	7.859	0.683	13.7	-9.6
434	1076	4.48	34.554	2376	2334	2325	789.9	42.1	2212.0	64.9	7.873	41.6	2213.9	63.5	14.788	7.830	0.643	9.1	-14.4
703	1253	3.82	34.572	2392	2373	2330	931.4	50.8	2251.6	55.6	7.805	50.2	2253.8	54.1	17.598	7.755	0.548	-1.9	-25.9
704	1401	3.33	34.589	2408	2364		757.1	42.0	2240.6	66.4	7.891	41.4	2243.1	64.5	14.645	7.834	0.654	7.1	-17.3
706	1698	2.63	34.617	2424	2380	2361	743.6	42.4	2255.9	66.7	7.897	41.6	2259.0	64.4	14.830	7.829	0.654	4.2	-21.1
707	1846	2.40	34.627	2425	2396		828.5	47.6	2273.2	60.2	7.852	46.7	2276.5	57.9	16.705	7.777	0.587	-3.8	-29.6
709	2147	2.05	34.648	2439	2375	2359	630.4	36.7	2247.1	76.2	7.964	35.7	2251.2	73.1	13.241	7.878	0.742	8.4	-18.4
710	2297	1.93	34.653	2440	2385		671.6	39.3	2258.7	72.0	7.938	38.2	2263.1	68.7	14.270	7.846	0.698	2.4	-24.8
711	2397	1.93	34.657			2362													
713	2650	1.78	34.662	2441	2380	2363	639.5	37.6	2252.5	74.9	7.957	36.4	2257.6	71.0	14.100	7.851	0.722	0.9	-27.4
714	2799	1.74	34.665	2446	2376		598.7	35.3	2246.4	79.3	7.985	34.0	2251.9	75.1	13.414	7.872	0.763	3.3	-25.5
716	3098	1.62	34.671	2438	2383	2347	663.7	39.3	2256.8	71.9	7.941	37.8	2262.6	67.5	15.280	7.816	0.686	-7.8	-37.6
717	3246	1.57	34.673	2437	2359		558.7	33.1	2227.8	83.1	8.010	31.8	2234.2	78.0	13.175	7.880	0.793	1.0	-29.5
719	3546	1.50	34.678	2434	2364	2338	589.5	35.0	2235.0	79.0	7.988	33.5	2241.8	73.7	14.283	7.845	0.749	-7.2	-38.7
720	3696	1.47	34.682	2432	2346		523.7	31.2	2212.8	87.0	8.035	29.7	2220.2	81.1	12.970	7.887	0.824	-1.7	-33.8
101	3847	1.42	34.685	2429	2352	2332	557.1	33.2	2221.4	82.4	8.009	31.6	2229.0	76.4	13.969	7.855	0.777	-8.4	-41.0
102	3947	1.37	34.688	2427	2342	2335	524.7	31.3	2209.2	86.4	8.033	29.8	2217.1	80.1	13.344	7.875	0.815	-6.1	-39.0
103	4047	1.34	34.690	2425	2337	2333	512.3	30.6	2203.5	87.9	8.042	29.0	2211.6	81.4	13.184	7.880	0.827	-6.2	-39.6
105	4236	1.27	34.695	2418	2330	2312	508.9	30.5	2196.8	87.7	8.043	28.9	2205.2	80.9	13.386	7.873	0.823	-9.4	-43.5
106	4395	1.24	34.698	2417	2331		515.4	30.9	2198.4	86.7	8.038	29.2	2207.2	79.6	13.759	7.861	0.810	-12.9	-47.7
107	4545	1.24	34.698	2401	2335		591.1	35.5	2208.2	76.3	7.980	33.6	2216.8	69.6	15.998	7.796	0.708	-25.2	-60.6
108	4694	1.24	34.699			2307													
109	4843	1.25	34.700	2402	2320		526.2	31.6	2189.2	84.3	8.027	29.7	2198.7	76.7	14.719	7.832	0.780	-22.7	-59.2
110	4994	1.27	34.700	2404	2306	2306	470.6	28.2	2170.1	92.7	8.072	26.4	2180.3	84.3	13.423	7.872	0.858	-17.4	-54.6
112	5293	1.30	34.700	2404	2306		471.0	28.2	2170.1	92.6	8.071	26.3	2180.9	83.8	13.807	7.860	0.853	-22.8	-61.2
114	5442	1.32	34.701	2403	2307	2295	477.2	28.6	2171.9	91.5	8.066	26.6	2182.9	82.5	14.175	7.848	0.839	-26.6	-65.7
117	5590	1.32	34.700			2292													
123	5726	1.35	34.701	2404	2324	2294	536.2	32.0	2193.7	83.3	8.020	29.8	2204.8	74.4	16.237	7.789	0.756	-39.7	-80.1

STATION: 244 LEG: V POSITION: 1° 2' N 178° 56' E DATE: 20 DEC 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
311	596	8.81	34.562			2271													
312	689	5.69	34.541	2356	2295	2277	707.4	36.1	2170.5	73.5	7.919	35.8	2171.7	72.5	12.808	7.893	0.734	21.3	-1.1
313	804	5.69	34.542			2298													
316	1299	3.52	34.582	2400	2352	2332	736.1	40.6	2228.4	68.0	7.901	40.0	2230.8	66.2	14.141	7.850	0.672	9.8	-14.3
319	1820	2.50	34.623	2435	2369	2342	630.2	36.1	2240.7	77.2	7.966	35.3	2244.3	74.5	12.794	7.893	0.756	13.1	-12.6
322	2294	1.98	34.653	2442	2378		629.8	36.8	2249.9	76.3	7.965	35.7	2254.4	72.9	13.406	7.873	0.741	6.7	-20.5
101	2542	1.98	34.659			2378													
103	2945	1.67	34.667	2452	2371		553.1	32.7	2238.4	84.9	8.017	31.4	2244.3	80.3	12.600	7.900	0.816	6.8	-22.5
104	3143	1.60	34.673	2451	2372	2362	559.6	33.1	2239.9	83.9	8.012	31.8	2246.2	79.0	12.993	7.886	0.803	3.2	-26.9
106	3492	1.60	34.680			2348													
107	3642	1.48	34.682	2446	2363	2351	539.7	32.1	2230.1	85.8	8.025	30.6	2237.4	80.0	13.199	7.879	0.813	-2.1	-33.9
109	3940	1.40	34.689	2445	2354		509.2	30.4	2218.6	90.0	8.048	28.8	2226.6	83.6	12.867	7.891	0.850	-2.5	-35.4
110	4090	1.40	34.691			2335													
112	4390	1.28	34.698	2427	2337		504.7	30.2	2202.8	89.0	8.048	28.5	2211.6	81.8	13.420	7.872	0.832	-10.6	-45.4
115	4540	1.26	34.700	2417	2337	2310	538.1	32.3	2206.2	83.6	8.021	30.5	2215.1	76.5	14.522	7.838	0.778	-18.2	-53.6
118	4990	1.27	34.702	2406	2312	2305	484.5	29.1	2177.4	90.6	8.060	27.2	2187.4	82.4	13.779	7.861	0.838	-19.3	-56.4
120	5288	1.29	34.704	2416	2316		468.1	28.1	2178.9	94.1	8.076	26.1	2189.7	85.1	13.654	7.865	0.866	-21.4	-59.8
121	5339	1.29	34.703			2310													
123	5537	1.32	34.703	2413	2309		454.8	27.2	2170.7	96.1	8.087	25.3	2182.1	86.6	13.610	7.866	0.881	-24.2	-63.6
124	5685	1.34	34.703	2415	2317		475.0	28.4	2180.7	92.9	8.070	26.3	2192.2	83.4	14.358	7.843	0.849	-29.9	-70.1

STATION: 246 LEG: V POSITION: 0° 0' S 179° 0' E DATE: 21 DEC 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
502	10	25.86	35.196	2340	2010	2014	349.2	9.7	1740.6	244.7	8.249	9.7	1740.6	244.7	5.634	8.249	2.525	199.5	179.1
504	35	25.80	35.200	2339	2035		392.4	10.9	1781.6	227.5	8.209	10.9	1781.7	227.4	6.203	8.207	2.346	182.0	161.6
506	54	25.77	35.209	2342	2031	2018	380.7	10.6	1773.2	232.2	8.219	10.6	1773.3	232.1	6.058	8.218	2.396	186.6	166.2
508	84	25.74	35.233	2346	2039	2022	389.2	10.8	1783.4	229.7	8.212	10.8	1783.6	229.6	6.176	8.209	2.371	183.9	163.4
510	130	25.19	35.406	2351	2064	2048	422.2	11.9	1820.8	216.3	8.182	11.9	1821.1	216.0	6.644	8.178	2.242	170.1	149.5
511	150	24.34	35.482	2357	2076	2050	422.6	12.2	1836.7	212.1	8.180	12.1	1837.1	211.8	6.689	8.175	2.202	165.7	145.0
513	175	24.34	35.626			2099													
514	205	18.35	35.317	2351	2116	2101	409.0	13.9	1908.0	179.2	8.173	13.8	1908.5	178.7	6.815	8.167	1.850	132.0	111.1
516	242	15.14	35.113	2333	2132	2123	419.3	15.6	1945.8	155.6	8.152	15.6	1946.3	155.1	7.179	8.144	1.596	107.9	86.8
517	280	12.64	34.893	2329	2177	2156	497.4	20.1	2017.3	124.6	8.080	20.0	2017.9	124.1	8.521	8.070	1.270	76.5	55.3
519	344	10.64	34.769	2329	2242	2228	703.3	30.3	2109.3	87.4	7.937	30.1	2110.0	86.9	11.903	7.924	0.886	38.7	17.3
520	403	9.44	34.700	2322	2257		784.7	35.1	2131.1	75.8	7.887	35.0	2131.8	75.3	13.427	7.872	0.765	26.5	5.0
521	462	8.19	34.629	2335	2270	2245	749.8	35.0	2144.4	75.6	7.903	34.8	2145.2	74.9	13.028	7.885	0.761	25.7	4.0
522	523	7.29	34.579	2342	2285		771.8	37.2	2161.1	71.7	7.889	37.0	2162.0	71.0	13.540	7.868	0.720	21.2	-0.7
523	582	7.29	34.578			2254													
524	651	5.92	34.545	2361	2309		766.9	38.8	2185.8	69.4	7.889	38.5	2186.9	68.6	13.705	7.863	0.694	17.7	-4.6
302	656	5.91	34.542	2353	2302	2280	769.1	38.9	2179.3	68.7	7.886	38.6	2180.5	67.9	13.792	7.860	0.687	17.0	-5.3
303	729	5.60	34.542	2362	2314	2288	781.6	40.0	2191.5	67.5	7.880	39.7	2192.8	66.6	14.091	7.851	0.674	15.1	-7.4
305	949	4.67	34.546	2378	2328	2313	749.1	39.6	2204.7	68.6	7.896	39.2	2206.4	67.4	13.864	7.858	0.682	14.0	-9.1
307	1195	3.71	34.575	2401	2356	2341	759.0	41.6	2232.7	66.7	7.890	41.0	2234.9	65.1	14.381	7.842	0.660	9.6	-14.2
308	1341	3.30	34.586	2408	2356		710.6	39.5	2231.5	70.0	7.916	38.9	2234.0	68.1	13.725	7.863	0.691	11.3	-13.0
310	1636	2.71	34.616	2430	2378		703.6	40.0	2252.6	70.4	7.921	39.2	2255.6	68.2	13.947	7.856	0.692	8.6	-16.6
311	1785	2.71	34.623			2366													
325	2080	2.11	34.646	2441	2374		618.5	35.9	2245.3	77.7	7.972	35.0	2249.4	74.6	12.906	7.889	0.758	10.6	-15.9
327	2376	1.91	34.656	2451	2385	2363	621.8	36.4	2256.1	77.5	7.971	35.3	2260.7	73.9	13.311	7.876	0.751	6.8	-20.7
328	2525	1.84	34.660	2450	2380		602.9	35.4	2250.1	79.5	7.983	34.3	2255.1	75.7	13.126	7.882	0.769	7.0	-21.0
331	2969	1.84	34.669			2345													
333	3265	1.59	34.675	2449	2373		570.9	33.8	2241.8	82.4	8.004	32.4	2248.3	77.3	13.404	7.873	0.786	0.0	-30.5
201	3445	1.52	34.677	2442	2370	2352	584.3	34.7	2240.0	80.2	7.993	33.2	2246.8	75.0	13.983	7.854	0.762	-4.6	-35.7
203	3740	1.52	34.684			2343													
204	3887	1.43	34.685	2433	2348		527.6	31.5	2215.0	86.6	8.032	29.9	2222.8	80.4	13.296	7.876	0.817	-5.0	-37.7
205	4040	1.43	34.689			2336													
207	4341	1.27	34.698	2415	2327	2313	508.2	30.5	2193.9	87.7	8.043	28.8	2202.5	80.7	13.516	7.869	0.821	-11.1	-45.6
208	4489	1.27	34.697	2414	2317		476.3	28.6	2181.1	92.3	8.069	26.9	2190.3	84.8	12.899	7.889	0.863	-9.1	-44.2
209	4636	1.25	34.702	2414	2318		479.6	28.8	2182.4	91.8	8.066	27.0	2191.8	84.1	13.166	7.881	0.856	-12.0	-47.7
210	4780	1.25	34.702	2416	2332		522.6	31.4	2200.0	85.6	8.032	29.5	2209.5	78.0	14.457	7.840	0.794	-20.3	-56.6
211	4927	1.25	34.704			2299													
212	5077	1.26	34.703	2402	2311		492.9	29.6	2177.6	88.8	8.053	27.7	2187.7	80.6	14.144	7.849	0.820	-22.5	-60.0
217	5272	1.28	34.705	2406	2311	2294	481.2	28.8	2176.1	91.1	8.063	26.9	2186.7	82.4	14.051	7.852	0.838	-23.9	-62.2
223	5403	1.30	34.704	2399	2254	2303	344.2	20.6	2099.7	118.7	8.193	19.1	2111.9	108.1	10.455	7.981	1.100	-0.4	-39.3

STATION: 248 LEG: V POSITION: 1° 2' S 179° 2' E DATE: 22 DEC 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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
301	25	26.09	35.391	2352	2038		385.9	10.6	1777.9	234.4	8.216	10.6	1778.0	234.4	6.089	8.215	2.432	189.1	168.7
303	146	25.51	35.550	2366	2059		395.8	11.1	1803.1	229.8	8.207	11.0	1803.5	229.5	6.273	8.203	2.391	183.5	162.9

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15 µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 248 LEG: V POSITION: 1° 2' S 179° 2' E DATE: 22 DEC 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
304	172	23.47	35.818	2386	2091		394.7	11.6	1843.1	221.3	8.204	11.6	1843.5	220.9	6.328	8.199	2.319	174.7	154.0
306	252	14.03	35.105	2345	2148		412.4	15.9	1964.3	152.8	8.157	15.8	1964.9	152.3	7.108	8.148	1.567	104.9	83.8
307	292	11.66	34.861	2319	2191		551.5	22.9	2043.1	110.0	8.035	22.8	2043.7	109.5	9.462	8.024	1.119	61.7	40.4
308	380	9.75	34.716	2298	2242		839.3	37.2	2118.8	71.0	7.857	37.0	2119.5	70.5	14.361	7.843	0.717	22.0	0.5
309	402	9.67	34.691	2338	2242		637.0	28.3	2106.6	92.1	7.974	28.2	2107.4	91.4	10.984	7.959	0.930	42.7	21.2
310	505	7.78	34.609	2337	2283		803.3	38.1	2159.6	70.3	7.874	37.8	2160.5	69.6	13.991	7.854	0.706	20.0	-1.8
311	604	6.58	34.561	2345	2294		787.1	38.9	2171.3	68.8	7.878	38.6	2172.4	68.0	13.978	7.855	0.689	17.6	-4.6
312	728	5.51	34.539	2365	2293		649.9	33.4	2165.6	79.0	7.954	33.0	2167.0	78.0	11.859	7.926	0.789	26.5	4.0
313	852	5.02	34.547	2360	2311		757.9	39.6	2188.6	67.8	7.889	39.2	2190.1	66.7	13.943	7.856	0.675	14.2	-8.7
314	975	4.44	34.555	2377	2342		833.6	44.5	2220.7	61.9	7.851	44.0	2222.4	60.6	15.415	7.812	0.614	7.0	-16.1
316	1270	3.69	34.572	2406	2339		643.6	35.3	2211.6	77.1	7.957	34.7	2214.0	75.3	12.381	7.907	0.763	19.1	-4.9
321	2094	2.09	34.645	2440	2361		566.2	32.9	2229.4	83.7	8.008	32.0	2233.5	80.5	11.905	7.924	0.817	16.3	-10.3
323	2344	1.94	34.653	2448	2383		626.7	36.6	2254.4	77.0	7.968	35.6	2258.9	73.5	13.381	7.874	0.747	6.7	-20.6
324	2519	1.85	34.660	2454	2365		527.3	30.9	2229.9	89.2	8.037	29.9	2235.0	85.1	11.553	7.937	0.865	16.5	-11.5
104	2902	1.69	34.666	2451	2365		534.6	31.6	2230.9	87.6	8.031	30.4	2236.7	82.9	12.160	7.915	0.843	9.9	-19.3
106	3102	1.61	34.671	2453	2349		470.8	27.9	2209.0	97.1	8.081	26.7	2215.5	91.8	11.005	7.958	0.933	16.4	-13.5
107	3251	1.59	34.673	2450	2359		513.4	30.4	2223.5	90.1	8.046	29.1	2230.1	84.8	12.112	7.917	0.861	7.6	-22.8
109	3550	1.53	34.680	2447	2380		607.6	36.1	2251.1	77.8	7.978	34.5	2257.9	72.5	14.621	7.835	0.737	-8.3	-39.8
112	4000	1.40	34.689	2444	2313		388.8	23.2	2163.0	111.8	8.154	21.9	2171.8	104.3	10.080	7.997	1.061	17.4	-15.8
117	4423	1.27	34.698	2428	2309		414.0	24.8	2164.5	104.6	8.126	23.3	2174.0	96.6	11.190	7.951	0.983	3.7	-31.2
120	4847	1.25	34.702	2415	2303		429.9	25.8	2161.7	100.5	8.109	24.1	2172.0	91.9	12.117	7.917	0.935	-7.5	-44.1
121	4998	1.25	34.702	2408	2388		846.0	50.8	2266.2	56.1	7.836	48.3	2274.6	50.0	23.566	7.628	0.509	-51.8	-89.0
123	5299	1.28	34.703	2407	2322		516.7	31.0	2190.1	85.9	8.035	28.9	2200.6	77.5	15.061	7.822	0.788	-29.3	-67.7

STATION: 251 LEG: V POSITION: 4° 34' S 179° 0' E DATE: 24 DEC 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
601	4	27.72	35.646	2360	2017		366.1	9.7	1738.3	254.0	8.239	9.7	1738.3	254.0	5.767	8.239	2.654	208.9	188.6
603	103	27.64	35.661	2364	2006		342.8	9.1	1717.8	264.1	8.262	9.1	1718.1	263.8	5.511	8.259	2.758	218.2	197.8
605	162	26.31	35.600	2362	2027		359.0	9.8	1753.8	248.4	8.243	9.8	1754.2	248.0	5.789	8.237	2.588	202.0	181.4
606	194	24.05	35.955	2389	2098		414.6	12.0	1852.1	218.9	8.188	12.0	1852.6	218.4	6.575	8.182	2.302	172.1	151.5
607	223	20.61	35.801	2380	2107		386.2	12.3	1874.6	205.1	8.203	12.2	1875.2	204.6	6.368	8.196	2.147	157.9	137.1
609	274	13.14	35.026	2334	2182		511.7	20.3	2021.7	125.0	8.071	20.2	2022.3	124.5	8.690	8.061	1.278	76.9	55.7
610	309	10.64	34.810	2333	2221		593.0	25.5	2079.5	100.9	8.005	25.4	2080.1	100.5	10.148	7.994	1.025	52.5	31.2
611	361	9.56	34.719	2333	2228		594.3	26.5	2089.7	96.8	8.000	26.4	2090.4	96.2	10.312	7.987	0.979	47.8	26.3
612	427	8.55	34.653	2329	2219		548.7	25.3	2079.7	99.0	8.027	25.2	2080.5	98.3	9.748	8.011	0.999	49.4	27.7
613	506	7.82	34.608	2325	2152		354.5	16.8	1985.3	134.9	8.193	16.6	1986.4	133.9	6.701	8.174	1.359	84.3	62.5
614	605	7.09	34.569	2337	2255		633.0	30.7	2125.4	83.9	7.966	30.5	2126.5	83.0	11.396	7.943	0.841	32.6	10.5
615	705	6.31	34.541	2342	2267		647.2	32.3	2139.5	80.2	7.955	32.0	2140.8	79.2	11.803	7.928	0.802	27.9	5.5
617	904	4.98	34.525	2364	2299		670.1	35.1	2173.5	75.4	7.940	34.7	2175.2	74.1	12.469	7.904	0.750	21.2	-1.8
618	1052	4.32	34.545	2377	2322		709.8	38.0	2198.2	70.8	7.916	37.6	2200.1	69.4	13.362	7.874	0.702	15.1	-8.3
621	1498	2.84	34.599	2406	2347		662.1	37.4	2221.4	73.2	7.942	36.8	2224.2	71.1	13.107	7.882	0.721	12.7	-12.0
623	1795	2.37	34.630	2425	2343		555.7	32.0	2211.0	85.0	8.014	31.2	2214.6	82.2	11.414	7.943	0.834	21.0	-4.6
401	1945	2.19	34.639	2429	2370	2348	654.3	37.9	2243.5	73.6	7.948	37.0	2247.2	70.8	13.490	7.870	0.719	8.2	-17.9
402	2089	2.08	34.645	2435	2371		629.6	36.6	2243.2	76.1	7.964	35.7	2247.3	73.1	13.170	7.880	0.742	8.9	-17.6
403	2332	1.91	34.653	2435	2359		572.9	33.5	2228.5	82.0	8.001	32.5	2233.0	78.4	12.352	7.908	0.797	11.8	-15.6
405	2533	1.80	34.662	2438	2347		514.1	30.2	2211.9	89.9	8.044	29.2	2217.1	85.7	11.378	7.944	0.871	16.9	-11.1
406	2683	1.73	34.669	2439	2361		563.0	33.2	2229.6	83.2	8.008	32.0	2234.9	79.0	12.562	7.901	0.803	8.5	-19.9
407	2835	1.65	34.672	2437	2345	2350	507.5	30.0	2209.7	90.3	8.049	28.9	2215.4	85.7	11.583	7.936	0.871	13.5	-15.5
409	3137	1.65	34.679			2324													
411	3439	1.49	34.682	2438	2343		493.6	29.4	2206.8	91.8	8.059	28.0	2213.9	86.1	11.950	7.923	0.876	6.6	-24.5
415	3739	1.49	34.686			2332													
416	3883	1.40	34.690	2433	2328		458.9	27.4	2188.4	97.2	8.087	25.9	2196.6	90.5	11.670	7.933	0.920	5.2	-27.5
417	4033	1.37	34.691	2437	2334	2296	465.6	27.8	2195.0	96.2	8.082	26.3	2203.4	89.3	11.979	7.922	0.908	1.9	-31.4
420	4479	1.24	34.700	2410	2311		468.0	28.1	2174.6	93.3	8.075	26.4	2183.8	85.8	12.704	7.896	0.872	-8.1	-43.1
421	4629	1.23	34.703	2401	2288	2287	422.9	25.4	2147.0	100.6	8.113	23.8	2156.7	92.5	11.767	7.929	0.941	-3.6	-39.3
424	5357	1.28	34.705	2405	2298		442.7	26.5	2159.0	97.5	8.096	24.7	2170.1	88.2	13.101	7.883	0.898	-19.5	-58.2

STATION: 252 LEG: V POSITION: 8° 29' S 178° 6' W DATE: 26 DEC 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
201	1	28.57	34.486	2286	1912	1900	296.2	7.7	1615.3	274.0	8.308	7.7	1615.3	274.0	4.922	8.308	2.770	228.9	208.6
202	27	28.63	34.518	2279	1899		287.4	7.5	1598.8	277.7	8.317	7.5	1598.9	277.6	4.831	8.316	2.809	232.4	212.0
203	51	28.66	34.549	2286	1918	1905	306.1	8.0	1625.1	269.9	8.296	8.0	1625.2	269.8	5.071	8.295	2.732	224.4	204.1
204	61	28.75	34.901	2314	1942	1927	313.5	8.1	1645.8	273.1	8.291	8.1	1646.0	272.9	5.135	8.289	2.792	227.5	207.1
206	106	27.23	35.641	2370	2049	2029	400.0	10.7	1783.6	239.7	8.209	10.7	1783.9	239.4	6.233	8.205	2.501	193.7	173.3
207	170	24.68	36.096	2389	2078	2062	389.5	11.1	1819.8	232.1	8.212	11.1	1820.3	231.7	6.222	8.206	2.451	185.6	165.0
208	244	17.87	35.471	2358	2134		428.5	14.7	1932.4	171.9	8.155	14.7	1932.9	171.4	7.127	8.147	1.782	124.4	103.4
209	317	13.42	34.992	2327	2167	2167	490.3	19.3	2003.0	129.7	8.087	19.2	2003.7	129.1	8.399	8.076	1.324	81.3	60.0
210	417	9.37	34.694	2322	2224	2203	614.0	27.6	2088.8	92.6	7.985	27.4	2089.6	91.9	10.737	7.969	0.935	43.1	21.5
211	516	7.77	34.600	2323	2242		649.6	30.8	2113.0	83.2	7.956	30.6	2114.0	82.4	11.570	7.937	0.836	32.8	10.9
214	613	6.88	34.557	2341	2234	2224	525.7	25.7	2096.3	97.0	8.040	25.5	2097.5	96.0	9.625	8.017	0.973	45.6	23.4
225	688	6.33	34.538	2329	2247	2227	610.5	30.4	2118.1	83.4	7.976	30.2	2119.4	82.4	11.223	7.950	0.834	31.3	9.0
226	761	5.85	34.527	2339	2258		607.0	30.8	2129.2	83.0	7.979	30.5	2130.6	81.9	11.245	7.949	0.829	30.2	7.6
227	836	5.37	34.523	2348	2258		560.9	28.9	2126.3	87.8	8.010	28.6	2127.9	86.5	10.538	7.977	0.875	34.2	11.4
228	910	5.07	34.522	2353	2286		658.2	34.3	2160.5	76.1	7.945	33.9	2162.2	74.9	12.312	7.910	0.758	21.9	-1.1
229	980	5.07	34.520			2256													
230	1083	4.23	34.526	2365	2295	2268	627.0	33.7	2168.6	77.7	7.963	33.2	2170.6	76.1	12.002	7.921	0.771	21.6	-1.9
231	1231	3.67	34.549	2376	2305		613.5	33.7	2177.9	78.4	7.972	33.1	2180.3	76.6	11.943	7.923	0.776	20.8	-3.2
232	1379	3.26	34.571	2387	2301	2305	544.8	30.3	2169.5	86.2	8.019	29.8	2172.2	84.0	10.841	7.965	0.851	26.8	2.5
233	1527	2.88	34.591	2399	2317		556.6	31.4	2186.3	84.3	8.011	30.8	2189.2	81.9	11.203	7.951	0.831	23.4	-1.4
101	1627	2.70	34.602	2397	2342	2332	675.6	38.4	2217.5	71.1	7.932	37.7	2220.5	68.8	13.590	7.867	0.698	9.3	-15.9
234	1673	2.58	34.607	2403	2327		576.8	32.9	2197.7	81.4	7.996	32.2	2200.9	78.8	11.758	7.930	0.800	18.9	-6.4
102	1800	2.38	34.620	2408	2341		613.5	35.3	2213.7	77.0	7.971	34.5	2217.1	74.4	12.607	7.899	0.755	13.1	-12.5
103	1974	2.19	34.633	2409	2337	2339	587.6	34.0	2208.5	79.5	7.988	33.2	2212.3	76.5	12.325	7.909	0.777	13.5	-12.6
105	2327	1.94	34.653	2431	2354	2345	568.2	33.2	2223.3	82.4	8.004	32.2	2227.9	78.9	12.269	7.911	0.801	12.3	-15.0
107	2677	1.94	34.665			2345													
108	2853	1.68	34.670	2426	2328		484.0	28.6	2191.2	93.3	8.066	27.5	2197.0	88.5	11.148	7.953	0.899	16.1	-13.0
109	3027	1.63	34.673	2431	2341	2350	512.5	30.3	2206.5	89.2	8.044	29.1	2212.6	84.2	11.930	7.923	0.856	9.8	-19.8
110	3202	1.58	34.676	2431	2342		515.2	30.5	2207.8	88.6	8.042	29.3	2214.3	83.5	12.192	7.914	0.848	6.9	-23.3
111	3377	1.58	34.678			2330													
115	3726	1.45	34.687	2417	2446	2330	1256.1	74.8	2316.4	39.8	7.675	72.9	2322.0	36.1	30.535	7.515	0.367	-47.1	-79.2
116	3901	1.39	34.694	2413	2332		536.0	32.0	2201.0	84.0	8.022	30.4	2208.7	77.9	13.632	7.865	0.792	-7.6	-40.4
117	4099	1.33	34.700	2399	2307	2309	489.9	29.3	2173.4	89.3	8.055	27.8	2181.6	82.6	12.845	7.891	0.840	-5.7	-39.2
119	4465	1.25	34.704	2393	2287	2282	441.6	26.5	2148.9	96.6	8.095	24.9	2158.1	89.0	12.102	7.917	0.905	-4.6	-39.7
120	4648	1.25	34.706	2381	2293		497.3	29.8	2161.4	86.8	8.046	28.1	2170.6	79.3	13.826	7.859	0.807	-17.0	-52.8
121	4897	1.25	34.704	2393	2298	2301	476.7	28.6	2163.6	90.8	8.065	26.8	2173.5	82.7	13.531	7.869	0.841	-17.5	-54.3
123	5246	1.27	34.706	2393	2285	2294	435.9	26.1	2146.2	97.7	8.100	24.3	2157.0	88.6	12.848	7.891	0.902	-17.2	-55.5
124	5357	1.27	34.704	2391	2290	2283	456.9	27.4	2153.7	93.9	8.081	25.5	2164.6	84.9	13.578	7.867	0.863	-22.9	-61.6

STATION: 257 LEG: VI POSITION: 10° 11' S 169° 59' W DATE: 5 JAN 74

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
627	6	28.33	34.771	2311	1922	1947	284.2	7.4	1615.0	284.6	8.323	7.4	1615.0	284.5	4.752	8.323	2.900	239.4	219.1
628	11	28.30	34.768	2297	1925	1930	302.0	7.9	1629.5	272.6	8.301	7.9	1629.5	272.6	5.008	8.300	2.778	227.4	207.1
629	51	28.01	35.410	2345	1962	1971	303.9	8.0	1658.4	280.6	8.302	8.0	1658.6	280.5	5.006	8.300	2.911	235.1	214.7
630	101	27.46	35.729	2370	2026	2017	365.0	9.7	1746.4	254.9	8.241	9.7	1746.7	254.6	5.789	8.237	2.667	209.0	188.5
631	152	25.38	36.164	2395	2070	2078	378.7	10.6	1802.7	241.7	8.224	10.6	1803.1	241.3	6.038	8.219	2.558	195.4	174.9
632	180	23.84	36.191	2393	2085	2096	383.2	11.1	1829.3	229.5	8.215	11.1	1829.8	229.1	6.173	8.209	2.431	183.0	162.3
633	201	22.81	36.122	2392	2095	2105	385.2	11.5	1846.6	221.9	8.211	11.5	1847.1	221.4	6.247	8.204	2.344	175.0	154.4
634	251	20.75	35.857	2375	2109	2114	401.1	12.7	1880.9	200.5	8.189	12.6	1881.5	199.9	6.595	8.181	2.101	153.1	132.2
402	252	20.15	35.853	2375	2113	2115	399.3	12.8	1887.5	197.7	8.189	12.8	1888.1	197.1	6.600	8.180	2.072	150.2	129.4
403	301	16.31	35.352	2343	2148		462.2	16.6	1963.8	152.6	8.120	16.5	1964.4	152.0	7.762	8.110	1.575	104.5	83.4
404	377	12.08	34.879	2320	2197	2203	581.5	23.9	2050.6	107.5	8.016	23.7	2051.4	106.9	9.957	8.002	1.093	58.5	37.1
405	451	9.11	34.654	2314	2213		591.3	26.8	2077.3	93.9	7.997	26.6	2078.2	93.2	10.462	7.980	0.947	44.1	22.4
406	601	6.36	34.530	2325	2240		596.2	29.7	2110.4	84.9	7.985	29.5	2111.6	84.0	10.910	7.962	0.850	33.6	11.4
407	751	5.30	34.513	2342	2272	2270	644.6	33.3	2146.3	77.4	7.953	33.0	2147.7	76.3	11.925	7.924	0.772	24.6	2.0
408	901	4.62	34.517	2350	2285		655.6	34.7	2160.2	75.0	7.944	34.4	2161.9	73.7	12.330	7.909	0.746	20.8	-2.2
409	1040	4.07	34.535	2364	2295		627.9	33.9	2168.9	77.2	7.962	33.5	2170.8	75.7	11.998	7.921	0.766	21.5	-1.9
410	1164	3.66	34.551	2372	2300	2337	606.9	33.3	2173.0	78.7	7.975	32.8	2175.2	77.0	11.770	7.929	0.780	21.8	-2.0
411	1263	3.37	34.565	2373	2308		633.2	35.1	2182.6	75.3	7.957	34.6	2185.0	73.5	12.390	7.907	0.745	17.3	-6.7
414	1596	2.74	34.599	2400	2333		619.0	35.1	2206.0	76.9	7.968	34.4	2209.0	74.5	12.463	7.904	0.756	15.3	-9.7
415	1770	2.49	34.615	2413	2346	2339	618.0	35.4	2218.4	77.2	7.970	34.6	2221.8	74.6	12.616	7.899	0.757	13.6	-11.9
416	1944	2.30	34.628	2417	2346		597.4	34.5	2217.3	79.2	7.983	33.6	2221.1	76.3	12.428	7.906	0.775	13.7	-12.4
417	2118	2.10	34.639	2417	2344	2353	584.1	34.0	2214.9	80.2	7.991	33.0	2219.0	77.0	12.394	7.907	0.781	12.5	-14.1
418	2292	1.98	34.651	2422	2341		550.0	32.1	2209.6	84.3	8.016	31.2	2214.2	80.7	11.900	7.924	0.819	14.4	-12.7
419	2465	1.85	34.659	2426	2345		548.8	32.2	2213.4	84.4	8.017	31.2	2218.3	80.5	12.066	7.918	0.818	12.4	-15.3
420	2640	1.78	34.664	2426	2350	2350	568.0	33.4	2219.7	81.9	8.003	32.3	2224.9	77.8	12.676	7.897	0.791	7.8	-20.5
421	2814	1.72	34.669	2426	2346		550.2	32.4	2214.7	83.8	8.015	31.3	2220.3	79.4	12.511	7.903	0.807	7.5	-21.4
422	2989	1.67	34.674	2425	2349	2345	565.3	33.4	2218.8	81.8	8.004	32.1	2224.7	77.2	13.055	7.884	0.785	3.2	-26.3
423	3165	1.61	34.677	2424	2338		524.8	31.1	2205.0	86.9	8.033	29.8	2211.4	81.9	12.391	7.907	0.832	5.8	-24.4
101	3312	1.57	34.682	2424	2357	2363	601.0	35.6	2229.1	77.3	7.979	34.2	2235.5	72.4	14.278	7.845	0.736	-5.5	-36.2
424	3340	1.58	34.681	2423	2338		527.3	31.3	2205.4	86.3	8.031	29.9	2212.1	81.0	12.659	7.898	0.823	2.8	-28.0
102	3484	1.54	34.682	2424	2350		570.1	33.8	2220.4	80.7	8.000	32.4	2227.2	75.4	13.809	7.860	0.767	-4.6	-35.9
104	3735	1.49	34.685	2422	2331	2350	503.1	29.9	2196.7	89.4	8.049	28.5	2204.2	83.3	12.586	7.900	0.847	0.0	-32.2
105	3836	1.44	34.689	2415	2324		500.6	29.8	2189.9	89.2	8.050	28.3	2197.7	83.0	12.689	7.897	0.844	-1.6	-34.2
106	3936	1.38	34.695	2405	2311		486.1	29.0	2176.4	90.6	8.059	27.5	2184.4	84.1	12.520	7.902	0.855	-1.9	-34.9
107	4085	1.34	34.705	2392	2295	2312	471.7	28.2	2159.9	91.8	8.069	26.7	2168.2	85.1	12.417	7.906	0.865	-3.0	-36.6
108	4233	1.23	34.710	2376	2289	2304	498.8	30.0	2157.9	86.1	8.044	28.3	2166.3	79.4	13.371	7.874	0.807	-10.9	-45.0
109	4334	1.16	34.711	2376	2277	2290	457.8	27.6	2141.9	92.5	8.077	26.0	2150.7	85.3	12.468	7.904	0.868	-6.5	-41.0
110	4480	1.09	34.709	2376	2287		489.8	29.6	2155.2	87.2	8.050	27.9	2164.1	80.0	13.476	7.870	0.814	-13.9	-49.0
111	4656	1.07	34.707	2375	2284	2333	481.9	29.1	2151.7	88.2	8.056	27.4	2160.9	80.7	13.500	7.870	0.821	-15.9	-51.8
112	4830	1.07	34.707	2381	2287	2288	473.8	28.6	2153.4	90.0	8.064	26.9	2163.1	82.0	13.470	7.871	0.835	-17.2	-53.8
116	4998	1.09	34.707	2383	2281		448.6	27.1	2144.7	94.2	8.086	25.3	2154.9	85.8	12.984	7.887	0.873	-16.2	-53.4
122	5159	1.09	34.707			2286													

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 260 LEG: VI POSITION: 15° 13' S 170° 2' W DATE: 8 JAN 74

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
409	16	28.80	34.949	2319	1931	1931	295.1	7.6	1624.3	284.1	8.312	7.6	1624.3	284.1	4.880	8.312	2.910	238.9	218.6
426	101	26.65	36.108	2393	2020	2024	321.4	8.7	1722.2	274.1	8.284	8.7	1722.5	273.8	5.242	8.280	2.898	228.2	207.8
427	176	23.19	36.073	2395	2057	2065	325.3	9.6	1783.1	249.3	8.272	9.6	1783.5	248.9	5.421	8.266	2.632	202.7	182.0
428	250	20.69	35.830	2377	2088		358.3	11.3	1846.3	215.4	8.230	11.3	1846.9	214.8	6.005	8.221	2.256	168.0	147.1
429	314	17.90	35.433	2351	2091	2104	354.5	12.2	1869.2	194.7	8.224	12.1	1869.9	194.0	6.124	8.213	2.015	146.5	125.4
430	400	12.73	34.843	2319	2147	2152	439.2	17.7	1977.9	136.4	8.126	17.6	1978.8	135.7	7.737	8.111	1.386	87.2	65.8
431	473	9.63	34.613	2311	2203	2189	573.5	25.5	2064.6	97.9	8.011	25.4	2065.5	97.1	10.153	7.993	0.985	47.9	26.2
432	548	7.39	34.470	2312	2195	2204	491.1	23.6	2054.3	102.1	8.064	23.4	2055.4	101.2	9.054	8.043	1.023	51.3	29.3
433	597	6.36	34.398	2309	2180	2199	432.5	21.6	2035.1	108.4	8.109	21.4	2036.3	107.3	8.190	8.087	1.082	56.9	34.8
301	599	6.10	34.40	2301	2209		550.8	27.7	2078.4	87.9	8.012	27.5	2079.5	87.0	10.260	7.989	0.877	36.6	14.4
434	616	6.08	34.403	2312	2209	2199	512.2	25.8	2074.2	94.0	8.043	25.6	2075.4	93.0	9.573	8.019	0.938	42.5	20.3
302	649	5.55	34.409	2312	2215	2232	523.2	26.8	2082.5	90.6	8.032	26.6	2083.8	89.6	9.840	8.007	0.904	38.7	16.4
303	688	5.21	34.407	2314	2217		517.4	26.9	2084.5	90.7	8.035	26.6	2085.8	89.6	9.799	8.009	0.903	38.4	15.9
305	798	4.68	34.458	2330	2240	2264	538.2	28.5	2109.4	87.1	8.020	28.2	2110.9	85.9	10.250	7.989	0.867	33.8	11.0
306	897	4.28	34.487	2343	2270		606.4	32.5	2143.7	78.7	7.973	32.2	2145.4	77.4	11.533	7.938	0.783	24.5	1.5
307	994	3.75	34.492	2349	2270	2288	569.8	31.2	2142.1	81.7	7.997	30.8	2144.0	80.2	11.018	7.958	0.811	26.4	3.1
308	1095	3.50	34.518	2359	2275		547.8	30.2	2145.2	84.5	8.013	29.8	2147.4	82.8	10.709	7.970	0.838	28.1	4.6
309	1193	3.28	34.537	2369	2299	2298	606.0	33.7	2172.6	77.6	7.974	33.2	2174.9	75.9	11.846	7.926	0.768	20.3	-3.5
310	1291	3.14	34.559	2373	2302		600.4	33.6	2175.2	78.3	7.977	33.0	2177.6	76.4	11.851	7.926	0.774	19.9	-4.2
311	1438	2.78	34.580	2384	2301	2335	545.6	30.9	2170.6	84.5	8.016	30.3	2173.4	82.2	10.985	7.959	0.834	24.4	-0.1
312	1584	2.59	34.597	2392	2323		603.8	34.5	2195.9	77.7	7.976	33.8	2198.9	75.3	12.222	7.913	0.764	16.2	-8.8
314	1732	2.41	34.612	2393	2313	2323	553.4	31.8	2183.0	83.1	8.010	31.1	2186.4	80.5	11.443	7.941	0.816	19.9	-5.5
315	1883	2.26	34.624	2405	2307		487.4	28.2	2171.1	92.7	8.062	27.4	2174.9	89.6	10.283	7.988	0.910	27.6	1.7
316	2034	2.10	34.637	2412	2326	2332	530.0	30.8	2193.6	86.6	8.029	30.0	2197.6	83.4	11.255	7.949	0.847	19.8	-6.6
317	2187	2.01	34.644	2410	2326		535.0	31.2	2194.3	85.5	8.025	30.3	2198.6	82.1	11.537	7.938	0.833	16.9	-9.9
318	2334	1.93	34.651	2417	2336	2343	547.6	32.0	2204.8	84.1	8.016	31.1	2209.4	80.5	11.926	7.923	0.818	13.8	-13.5
319	2486	1.87	34.657	2419	2334		531.6	31.2	2201.6	86.3	8.028	30.2	2206.5	82.3	11.765	7.929	0.836	14.0	-13.8
320	2633	1.82	34.662	2424	2333	2344	509.9	30.0	2198.6	89.5	8.046	28.9	2203.9	85.2	11.456	7.941	0.866	15.3	-13.0
321	2782	1.77	34.666	2425	2331		499.0	29.4	2195.5	91.1	8.054	28.3	2201.2	86.5	11.386	7.944	0.879	15.0	-13.8
201	2893	1.74	34.668	2432	2350	2344	545.0	32.1	2217.8	85.1	8.020	30.9	2223.6	80.5	12.458	7.905	0.818	7.6	-21.5
202	3091	1.68	34.671	2421	2345		563.7	33.3	2215.0	81.7	8.004	32.0	2221.1	76.9	13.166	7.881	0.782	1.7	-28.1
203	3290	1.61	34.677	2421	2336	2348	527.5	31.2	2203.5	86.3	8.031	29.9	2210.0	81.1	12.612	7.899	0.824	3.5	-27.1
205	3621	1.47	34.689	2388	2303		514.5	30.6	2171.9	85.4	8.034	29.2	2179.1	79.7	12.897	7.890	0.810	-2.1	-33.9
206	3687	1.45	34.696	2386	2318	2317	582.0	34.7	2191.4	76.9	7.985	33.1	2198.4	71.5	14.595	7.836	0.727	-11.2	-43.2
208	4004	1.26	34.708	2372	2289	2294	512.7	30.8	2159.3	84.0	8.032	29.2	2167.1	77.7	13.450	7.871	0.790	-9.3	-42.6
210	4314	1.06	34.707	2368	2287	2291	515.7	31.2	2157.9	82.9	8.028	29.5	2166.3	76.2	13.978	7.855	0.775	-15.4	-49.8
212	4668	1.04	34.707	2384	2296	2292	494.8	29.9	2164.1	86.9	8.047	28.2	2173.4	79.4	13.808	7.860	0.808	-17.4	-53.3
216	4859	1.05	34.707	2368	2278		482.8	29.2	2146.3	87.5	8.054	27.4	2155.9	79.7	13.826	7.859	0.810	-20.1	-56.8
222	5013	1.07	34.706	2379	2285	2292	473.0	28.6	2151.5	89.9	8.065	26.8	2161.6	81.7	13.690	7.864	0.831	-20.5	-57.9

STATION: 263 LEG: VI POSITION: 16° 42' S 167° 4' W DATE: 10 JAN 74

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
712	2	28.60	34.640	2310	1931	1917	298.8	7.8	1630.1	278.2	8.308	7.8	1630.1	278.2	4.923	8.308	2.824	233.0	212.7
711	37	28.35	34.793	2322	1947		306.2	8.0	1648.3	275.6	8.300	8.0	1648.4	275.5	5.026	8.299	2.810	230.2	209.9
725	77	26.45	35.680	2377	1996	1977	299.7	8.2	1693.2	279.6	8.306	8.2	1693.4	279.4	4.967	8.304	2.923	233.9	213.5
726	117	24.54	35.754	2388	2020		296.8	8.5	1726.2	270.3	8.307	8.5	1726.5	270.0	4.979	8.303	2.830	224.2	203.6
727	177	22.34	35.884	2391	2100	2059	385.8	11.7	1855.3	218.1	8.210	11.6	1855.7	217.7	6.250	8.204	2.290	171.4	150.7
728	245	20.24	35.744	2387	2098	2082	354.0	11.3	1856.0	215.7	8.235	11.3	1856.6	215.1	5.934	8.227	2.254	168.3	147.4
729	303	17.73	35.405	2359	2104	2095	362.6	12.5	1884.9	191.6	8.217	12.4	1885.7	190.9	6.219	8.206	1.981	143.5	122.4
730	431	11.33	34.724	2331	2179	2161	469.6	19.8	2020.0	124.2	8.098	19.6	2021.0	123.4	8.275	8.082	1.256	74.6	53.1
731	510	8.28	34.511	2322	2204		509.3	23.7	2062.1	103.2	8.055	23.6	2063.1	102.3	9.216	8.035	1.035	52.8	30.9
732	588	6.43	34.371	2302	2190		483.8	24.1	2052.2	98.7	8.065	23.9	2053.4	97.8	9.073	8.042	0.985	47.5	25.3
502	669	5.81	34.383	2326	2232	2199	544.5	27.7	2099.9	89.5	8.020	27.4	2101.2	88.4	10.138	7.994	0.891	37.4	15.1
733	687	5.57	34.405	2325	2238		567.1	29.1	2108.3	85.7	8.002	28.8	2109.6	84.6	10.570	7.976	0.853	33.5	11.1
734	787	4.92	34.427	2346	2260		565.0	29.6	2129.8	85.6	8.005	29.3	2131.3	84.4	10.611	7.974	0.851	32.4	9.7
506	897	4.32	34.458	2359	2265		525.6	28.2	2131.9	89.9	8.033	27.8	2133.7	88.5	10.037	7.998	0.894	35.5	12.5
507	1044	3.69	34.505	2377	2309	2280	627.5	34.4	2182.7	76.9	7.963	34.0	2184.6	75.4	11.977	7.922	0.763	21.2	-2.2
508	1193	3.32	34.532	2395	2323	2297	607.1	33.7	2195.0	79.3	7.978	33.2	2197.2	77.5	11.737	7.930	0.785	22.0	-1.9
510	1488	3.32	34.580			2324													
512	1784	2.40	34.612	2423	2362	2317	647.0	37.2	2235.4	74.5	7.953	36.4	2238.7	71.9	13.148	7.881	0.729	10.8	-14.8
515	2094	2.11	34.637	2431	2352	2310	563.4	32.7	2220.8	83.5	8.008	31.9	2224.9	80.2	11.889	7.925	0.815	16.1	-10.5
516	2254	2.00	34.646	2430	2348		549.1	32.0	2216.0	85.0	8.018	31.1	2220.4	81.5	11.801	7.928	0.827	15.6	-11.4
517	2416	1.91	34.653	2427	2345		546.9	32.0	2213.0	85.0	8.019	31.0	2217.8	81.2	11.959	7.922	0.824	13.6	-14.0
519	2736	1.78	34.666	2441	2350	2329	514.7	30.3	2214.8	89.9	8.044	29.2	2220.3	85.5	11.593	7.936	0.869	14.4	-14.2
522	3213	1.62	34.678	2437	2346	2327	510.1	30.2	2211.1	89.8	8.047	28.9	2217.6	84.5	12.055	7.919	0.859	7.8	-22.4
301	3496	1.54	34.687	2433	2334		479.9	28.5	2196.7	93.9	8.070	27.1	2203.9	88.0	11.720	7.931	0.895	7.8	-23.5
302	3596	1.51	34.688	2433	2353	2346	548.0	32.6	2221.5	84.0	8.017	31.1	2228.6	78.3	13.399	7.873	0.796	-3.2	-34.8
303	3696	1.47	34.689	2433	2350		535.9	31.9	2217.6	85.5	8.026	30.4	2225.0	79.7	13.249	7.878	0.810	-3.1	-35.2
304	3796	1.43	34.691	2428	2346		537.7	32.0	2214.0	84.9	8.023	30.5	2221.6	78.9	13.449	7.871	0.803	-5.2	-37.6
305	3896	1.39	34.696	2421	2334	2329	515.8	30.8	2200.9	87.3	8.039	29.2	2208.7	81.0	13.099	7.883	0.824	-4.4	-37.2
306	4044	1.33	34.701	2411	2318		489.9	29.3	2183.6	90.1	8.057	27.8	2191.8	83.5	12.714	7.896	0.849	-4.1	-37.4
307	4195	1.27	34.705	2411	2312	2295	469.0	28.1	2175.6	93.3	8.074	26.6	2184.2	86.3	12.389	7.907	0.878	-3.4	-37.4
308	4345	1.22	34.710	2402	2311	2296	492.3	29.6	2177.6	88.8	8.053	27.9	2186.3	81.8	13.205	7.879	0.832	-10.1	-44.7
309	4536	1.14	34.712	2400	2303		470.3	28.3	2167.7	92.0	8.071	26.7	2176.9	84.4	12.903	7.889	0.859	-10.3	-45.6
310	4720	1.10	34.709	2407	2318	2293	498.9	30.1	2184.9	88.0	8.048	28.3	2194.4	80.3	13.839	7.859	0.817	-17.2	-53.3
311	4894	1.09	34.708	2397	2310		503.0	30.4	2177.9	86.7	8.043	28.5	2187.7	78.8	14.234	7.847	0.802	-21.4	-58.3
312	5095	1.10	34.708	2402	2304	2290	466.9	28.2	2168.2	92.6	8.074	26.3	2178.6	84.1	13.493	7.870	0.855	-19.5	-57.1
315	5370	1.10	34.707			2288													
319	5599	1.15	34.708	2406	2296	2289	431.9	26.0	2155.8	99.1	8.105	24.1	2167.5	89.4	13.111	7.882	0.909	-22.7	-62.5
322	5688	1.16	34.708	2401	2315		509.4	30.7	2183.0	86.3	8.039	28.5	2194.3	77.2	15.474	7.810	0.786	-36.4	-76.6

STATION: 265 LEG: VI POSITION: 17° 47' S 164° 60' W DATE: 14 JAN 74

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
301	5	28.43	35.219	2347	1966	1956	310.5	8.1	1663.1	279.8	8.297	8.1	1663.1	279.8	5.047	8.297	2.889	234.7	214.4
302	61	27.56	35.541	2363	1984		310.0	8.2	1682.6	278.2	8.297	8.2	1682.8	278.0	5.074	8.295	2.896	232.6	212.2
303	92	26.24	35.989	2391	2011	1993	305.2	8.4	1708.8	278.8	8.300	8.3	1709.1	278.6	5.041	8.297	2.939	233.0	212.6
304	191	21.99	35.903	2387	2086	2076	361.7	11.1	1835.7	224.2	8.231	11.0	1836.2	223.8	5.959	8.225	2.355	177.4	156.7
305	285	18.20	35.490	2358	2114	2093	392.3	13.3	1900.8	184.9	8.189	13.3	1901.5	184.2	6.624	8.179	1.917	137.0	115.9
306	356	15.16	35.105	2336	2104	2112	355.9	13.3	1900.7	175.1	8.214	13.2	1901.5	174.3	6.292	8.201	1.794	126.3	105.1
307	433	11.24	34.734	2325	2142	2153	386.9	16.3	1968.2	142.5	8.170	16.2	1969.1	141.6	7.005	8.155	1.442	92.9	71.3
308	497	9.25	34.566	2310	2170	2158	455.8	20.6	2018.7	115.8	8.099	20.4	2019.7	114.9	8.306	8.081	1.164	65.5	43.7
309	625	6.41	34.383	2310	2203	2202	503.6	25.1	2066.7	96.2	8.050	24.8	2067.9	95.2	9.411	8.026	0.960	44.6	22.4
310	817	4.88	34.398	2331	2241	2241	541.9	28.5	2110.3	87.2	8.019	28.2	2111.9	85.9	10.301	7.987	0.866	33.7	10.9
311	1002	3.95	34.480	2361	2272		537.9	29.2	2140.5	87.3	8.023	28.8	2142.5	85.7	10.383	7.984	0.866	31.8	8.5
312	1175	3.95	34.526			2289													
314	1324	2.98	34.555	2376	2305		597.2	33.6	2178.2	78.2	7.980	33.0	2180.7	76.3	11.832	7.927	0.773	19.5	-4.7
315	1496	2.98	34.584			2324													
316	1666	2.51	34.601	2405	2338		615.5	35.2	2210.8	77.0	7.970	34.5	2214.0	74.5	12.484	7.904	0.756	14.6	-10.7
317	1839	2.33	34.616	2417	2342	2328	580.5	33.5	2212.3	81.2	7.995	32.7	2215.9	78.4	11.977	7.922	0.796	16.8	-9.0
318	2014	2.18	34.630	2416	2365		690.6	40.0	2240.3	69.6	7.924	39.1	2244.1	66.8	14.362	7.843	0.679	3.5	-22.8
319	2191	2.04	34.642	2427	2347	2326	556.8	32.4	2215.7	83.9	8.012	31.5	2220.0	80.5	11.893	7.925	0.817	15.3	-11.6
320	2367	1.93	34.650	2427	2346		550.8	32.2	2214.4	84.4	8.016	31.2	2219.1	80.7	11.980	7.922	0.820	13.7	-13.8
321	2568	1.83	34.659	2429	2317	2335	442.8	26.0	2175.1	100.9	8.102	25.1	2180.6	96.4	9.974	8.001	0.979	27.2	-0.9
322	2767	1.76	34.665	2428	2337		510.4	30.0	2202.3	89.6	8.046	28.9	2208.0	85.1	11.598	7.936	0.865	13.7	-15.1
323	2967	1.70	34.669	2428	2352	2303	566.6	33.4	2221.7	81.9	8.004	32.2	2227.5	77.3	13.035	7.885	0.786	3.6	-25.9
201	3153	1.70	34.676			2337													
202	3325	1.60	34.678	2426	2337		513.8	30.4	2203.1	88.5	8.042	29.1	2209.8	83.1	12.320	7.909	0.845	5.1	-25.6
324	3431	1.56	34.682	2419	2327	2312	499.7	29.6	2192.6	89.8	8.052	28.3	2199.5	84.2	12.163	7.915	0.856	4.8	-26.2
203	3486	1.56	34.682	2429	2337	2323	503.0	29.8	2202.1	90.1	8.051	28.5	2209.2	84.4	12.250	7.912	0.858	4.3	-26.9
204	3643	1.56	34.687			2332													
205	3830	1.44	34.693	2415	2323	2309	496.8	29.6	2188.7	89.7	8.053	28.1	2196.4	83.5	12.592	7.900	0.849	-1.1	-33.6
206	4019	1.34	34.701	2405	2309		478.4	28.6	2173.8	91.6	8.066	27.1	2182.0	84.9	12.437	7.905	0.864	-2.3	-35.5
207	4199	1.26	34.703	2403	2308	2299	479.9	28.8	2173.2	91.0	8.064	27.2	2181.7	84.1	12.707	7.896	0.855	-5.7	-39.6
208	4376	1.18	34.706	2401	2304		471.3	28.4	2168.6	92.0	8.070	26.7	2177.5	84.7	12.723	7.895	0.862	-7.6	-42.3
209	4560	1.13	34.707	2396	2299	2279	469.0	28.3	2163.8	91.9	8.071	26.6	2173.1	84.3	12.919	7.889	0.858	-10.8	-46.2
210	4723	1.10	34.706	2399	2293		441.0	26.6	2154.6	96.8	8.096	24.9	2164.4	88.7	12.372	7.908	0.902	-8.9	-45.0
211	4907	1.09	34.707	2392	2304	2290	497.9	30.1	2171.9	87.1	8.046	28.2	2181.6	79.2	14.146	7.849	0.806	-21.3	-58.2
212	5082	1.10	34.707	2394	2305	2277	495.2	29.9	2172.5	87.7	8.049	28.0	2182.6	79.5	14.291	7.845	0.808	-23.8	-61.4
217	5274	1.12	34.707	2395	2322	2295	556.6	33.6	2193.9	79.5	8.003	31.4	2204.0	71.5	16.246	7.789	0.728	-34.9	-73.3
223	5392	1.13	34.708	2393	2293	2282	458.4	27.6	2157.0	93.4	8.080	25.7	2168.0	84.3	13.677	7.864	0.858	-24.1	-63.0

STATION: 267 LEG: VI POSITION: 19° 15' S 171° 25' W DATE: 16 JAN 74

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
316	5	28.34	34.931	2313	1940	1933	307.1	8.0	1643.4	273.5	8.297	8.0	1643.4	273.5	5.049	8.297	2.801	228.4	208.1
323	62	25.74	35.725	2369	1995		298.2	8.3	1697.5	274.2	8.305	8.3	1697.7	274.0	4.977	8.303	2.870	228.6	208.1
325	103	23.91	35.777	2369	2006	2057	290.2	8.4	1716.8	265.7	8.310	8.4	1717.1	265.5	4.936	8.307	2.784	219.7	199.2
326	159	22.49	35.938	2380	2072		356.3	10.7	1817.3	228.9	8.236	10.7	1817.7	228.5	5.873	8.231	2.408	182.4	161.7
327	203	20.58	35.716	2368	2068	2065	335.3	10.7	1819.9	222.5	8.252	10.6	1820.4	222.0	5.685	8.245	2.324	175.4	154.6
328	253	18.78	35.534	2350	2063		323.2	10.8	1824.7	212.5	8.259	10.8	1825.4	211.8	5.624	8.250	2.207	164.8	143.9
329	302	17.25	35.366	2341	2081		340.8	11.9	1860.2	193.9	8.235	11.9	1860.9	193.2	5.963	8.225	2.003	145.8	124.7
330	353	15.02	35.132	2331	2106		365.7	13.7	1907.0	170.4	8.202	13.6	1907.8	169.6	6.457	8.190	1.747	121.7	100.4
331	401	13.07	34.971	2318	2113	2123	369.7	14.7	1926.7	156.6	8.191	14.6	1927.6	155.7	6.658	8.177	1.597	107.3	85.9
332	499	9.25	34.593	2305	2144		398.1	17.9	1983.2	127.8	8.150	17.8	1984.3	126.9	7.384	8.132	1.287	77.5	55.7
333	594	9.25	34.387			2194													
415	673	5.94	34.365	2306	2201		500.2	25.3	2065.7	95.0	8.050	25.1	2067.0	93.9	9.450	8.025	0.946	42.9	20.5
334	689	5.84	34.374	2308	2210		523.8	26.6	2077.2	91.2	8.032	26.4	2078.6	90.1	9.870	8.006	0.908	38.9	16.5
416	733	5.51	34.380	2319	2228	2245	547.5	28.1	2097.2	87.6	8.015	27.9	2098.6	86.5	10.307	7.987	0.872	35.0	12.5
417	847	4.81	34.396	2326	2233		527.6	27.8	2101.5	88.7	8.028	27.5	2103.2	87.4	10.106	7.995	0.881	34.9	12.0
418	973	4.19	34.441	2338	2253	2263	549.8	29.6	2123.8	84.6	8.011	29.2	2125.7	83.1	10.634	7.973	0.839	29.5	6.3
419	1122	3.46	34.480	2355	2286		609.4	33.7	2160.4	76.9	7.970	33.2	2162.5	75.3	11.871	7.926	0.761	20.3	-3.3
420	1271	2.96	34.538	2370	2304	2301	617.3	34.8	2178.6	75.7	7.965	34.2	2180.9	73.8	12.176	7.915	0.748	17.5	-6.5

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 267 LEG: VI POSITION: 19° 15' S 171° 25' W DATE: 16 JAN 74

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
421	1421	2.67	34.578	2387	2314	2316	585.6	33.3	2186.2	79.5	7.988	32.7	2188.9	77.3	11.712	7.931	0.784	19.7	-4.8
422	1570	2.51	34.600	2396	2318		564.6	32.3	2188.4	82.2	8.003	31.7	2191.5	79.8	11.459	7.941	0.810	20.8	-4.2
423	1734	2.38	34.616	2401	2186		238.5	13.7	1996.2	161.1	8.337	13.3	2000.6	157.0	5.363	8.271	1.593	96.4	71.0
424	1893	2.25	34.624	2402	2360	2333	735.9	42.5	2237.3	65.2	7.896	41.6	2240.7	62.7	15.155	7.819	0.636	0.5	-25.4
425	2042	2.13	34.635	2411	2347		622.6	36.2	2220.3	75.6	7.965	35.2	2224.2	72.6	13.094	7.883	0.737	9.0	-17.4
426	2192	2.05	34.643	2419	2332	2347	527.6	30.7	2198.9	87.3	8.032	29.8	2203.3	83.8	11.348	7.945	0.851	18.7	-8.2
427	2341	1.97	34.648	2424	2325		485.0	28.3	2187.9	93.8	8.066	27.4	2192.7	89.8	10.629	7.973	0.913	23.1	-4.2
428	2491	1.90	34.655	2425	2347	2335	561.3	32.9	2216.3	82.8	8.008	31.8	2221.3	78.9	12.348	7.908	0.802	10.6	-17.2
430	2790	1.90	34.664			2354													
431	2939	1.74	34.669	2430	2360		593.9	35.0	2231.0	79.0	7.985	33.7	2236.7	74.6	13.574	7.867	0.758	1.2	-28.1
432	3090	1.69	34.673	2428	2344	2329	534.6	31.6	2211.5	85.9	8.027	30.3	2217.7	81.0	12.488	7.904	0.823	5.9	-24.0
433	3238	1.63	34.677	2424	2334		510.6	30.2	2199.8	89.0	8.044	28.9	2206.3	83.7	12.156	7.915	0.851	6.8	-23.6
434	3388	1.63	34.683			2322													
503	5078	1.06	34.705	2385	2302	2280	512.9	31.0	2171.7	84.3	8.033	29.1	2181.7	76.3	14.832	7.829	0.776	-27.0	-64.6
504	5290	1.08	34.705	2385	2299		502.6	30.4	2167.8	85.9	8.042	28.4	2178.2	77.4	14.837	7.829	0.788	-29.3	-67.8
505	5290	1.08	34.705	2377	2302	2272	542.0	32.7	2174.2	80.1	8.010	30.7	2184.3	72.0	15.993	7.796	0.733	-34.7	-73.2
506	5389	1.09	34.706	2389	2305		511.5	30.9	2174.2	84.9	8.035	28.8	2184.7	76.4	15.199	7.818	0.778	-32.0	-70.9
507	5417	1.09	34.706	2381	2304	2274	535.7	32.3	2175.5	81.2	8.015	30.2	2185.9	72.9	15.976	7.797	0.741	-36.0	-75.1
508	5436	1.10	34.707	2384	2284	2268	455.4	27.5	2148.3	93.2	8.081	25.6	2159.4	84.1	13.707	7.863	0.855	-25.2	-64.3
511	5464	1.10	34.706			2274													
522	5474	1.10	34.706			2273													

STATION: 268 LEG: VI POSITION: 20° 31' S 172° 48' W DATE: 17 JAN 74

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
201	5	27.91	35.409	2339	1942	1910	283.3	7.5	1629.8	289.8	8.324	7.5	1629.8	289.8	4.741	8.324	3.008	244.6	224.4
202	71	24.12	35.752	2367	1991		276.2	8.0	1693.4	274.6	8.327	8.0	1693.6	274.4	4.735	8.325	2.876	228.8	208.4
203	146	22.25	35.704	2360	2022	2011	299.7	9.1	1749.8	248.1	8.294	9.1	1750.2	247.7	5.137	8.289	2.593	201.6	180.9
205	295	17.81	35.534	2346	2063	2071	314.9	10.8	1828.1	209.1	8.265	10.8	1828.8	208.4	5.564	8.255	2.171	161.1	140.0
206	370	15.49	35.293	2333	2100		359.6	13.3	1896.3	175.5	8.209	13.2	1897.1	174.7	6.359	8.197	1.807	126.7	105.4
207	446	11.89	34.810	2312	2127	2125	389.8	16.1	1952.3	143.6	8.167	16.0	1953.3	142.7	7.062	8.151	1.456	93.8	72.3
208	521	9.00	34.544	2290	2158	2153	467.9	21.3	2011.2	110.5	8.085	21.1	2012.2	109.6	8.606	8.065	1.110	60.0	38.2
210	744	5.74	34.353	2309	2206	2197	503.6	25.7	2071.5	93.8	8.048	25.4	2072.9	92.7	9.572	8.019	0.933	41.1	18.5
212	1043	3.95	34.444	2332	2356		1287.2	69.9	2231.5	39.6	7.662	69.4	2233.0	38.6	24.072	7.618	0.389	-15.6	-39.0
214	1191	3.14	34.505	2387	2302		545.5	30.5	2170.8	85.7	8.018	30.0	2173.2	83.8	10.678	7.971	0.848	28.2	4.4
225	1341	2.87	34.558	2388	2330		660.7	37.3	2205.4	72.3	7.940	36.7	2207.9	70.4	12.979	7.887	0.713	13.5	-10.8
226	1489	2.87	34.582			2298													
227	1638	2.53	34.600	2396	2299	2301	493.3	28.2	2163.7	92.1	8.057	27.6	2167.0	89.4	10.173	7.993	0.907	29.7	4.6
228	1788	2.40	34.612	2408	2327	2318	553.7	31.8	2196.2	84.0	8.013	31.1	2199.7	81.2	11.438	7.942	0.824	20.1	-5.5
229	1938	2.27	34.624	2412	2323		521.8	30.1	2189.7	88.2	8.036	29.4	2193.6	85.1	10.975	7.960	0.864	22.5	-3.6
230	2086	2.16	34.633	2412	2332	2329	554.8	32.2	2201.2	83.6	8.011	31.3	2205.3	80.4	11.794	7.928	0.816	16.3	-10.2
231	2236	2.06	34.642	2418	2334		538.8	31.4	2201.9	85.7	8.024	30.4	2206.3	82.2	11.620	7.935	0.835	16.6	-10.4
232	2386	1.99	34.649	2415	2346	2335	598.2	34.9	2218.0	78.1	7.981	33.9	2222.6	74.5	13.021	7.885	0.757	7.3	-20.1
233	2586	1.89	34.656	2421	2345	2343	568.0	33.3	2215.0	81.7	8.002	32.2	2220.1	77.7	12.619	7.899	0.790	8.3	-19.8
101	2689	1.86	34.660	2430	2342		523.3	30.7	2208.2	88.1	8.036	29.6	2213.7	83.7	11.764	7.929	0.851	13.2	-15.3
234	2786	1.80	34.663	2428	2351		564.5	33.2	2220.4	82.4	8.006	32.0	2225.9	78.1	12.759	7.894	0.793	6.5	-22.3
102	2831	1.79	34.664	2423	2338	2344	531.3	31.2	2205.4	86.3	8.029	30.1	2211.1	81.8	12.131	7.916	0.832	9.7	-19.2
103	2975	1.79	34.669			2347													
105	3173	1.64	34.677	2422	2364	2311	644.1	38.1	2237.9	73.0	7.951	36.7	2243.9	68.4	15.051	7.822	0.696	-7.7	-37.9
106	3272	1.59	34.682	2417	2317		473.4	28.0	2179.9	94.1	8.073	26.8	2186.6	88.6	11.404	7.943	0.901	11.2	-19.3
107	3372	1.55	34.691	2412	2334	2326	550.1	32.6	2203.9	82.4	8.012	31.2	2210.6	77.2	13.276	7.877	0.785	-1.4	-32.3
108	3521	1.47	34.706	2395	2310	2299	516.5	30.7	2178.7	85.6	8.034	29.4	2185.6	80.0	12.792	7.893	0.814	-0.5	-31.9
109	3676	1.38	34.715	2387	2298	2280	498.4	29.8	2165.7	87.5	8.046	28.3	2173.1	81.6	12.606	7.899	0.830	-1.0	-33.0
110	3780	1.32	34.716	2384	2280		446.1	26.7	2143.0	95.3	8.090	25.4	2150.8	88.8	11.502	7.939	0.904	4.9	-27.5
111	3881	1.24	34.716	2379	2294	2281	507.4	30.5	2163.4	85.2	8.037	29.0	2171.0	79.0	13.132	7.882	0.804	-6.3	-39.1
112	3973	1.19	34.716	2380	2286		475.5	28.6	2152.5	89.9	8.063	27.1	2160.5	83.4	12.466	7.904	0.849	-3.2	-36.4
115	4081	1.15	34.713	2375	2298	2285	535.4	32.3	2169.7	81.1	8.015	30.6	2177.6	74.8	14.114	7.850	0.761	-13.3	-46.9
117	4279	1.10	34.712	2380	2304		539.3	32.5	2175.8	80.6	8.013	30.8	2184.1	74.1	14.454	7.840	0.754	-16.9	-51.2
118	4479	1.08	34.711	2382	2300	2264	516.8	31.2	2170.0	83.8	8.030	29.5	2178.8	76.8	14.139	7.850	0.781	-17.2	-52.3
119	4728	1.07	34.709	2383	2291		481.2	29.1	2157.9	89.0	8.058	27.3	2167.4	81.3	13.526	7.869	0.827	-16.4	-52.6
120	4978	1.07	34.708	2384	2299	2290	505.8	30.6	2168.1	85.3	8.039	28.7	2177.9	77.4	14.505	7.838	0.788	-24.2	-61.4
121	5228	1.09	34.707	2381	2304		535.4	32.3	2175.5	81.2	8.016	30.3	2185.6	73.1	15.688	7.804	0.744	-32.6	-70.8
122	5463	1.10	34.707	2380	2277	2275	444.8	26.8	2140.5	94.7	8.089	24.9	2151.7	85.4	13.465	7.871	0.869	-24.3	-63.5
123	5723	1.13	34.707	2382	2280		449.1	27.1	2143.7	94.2	8.086	25.1	2155.4	84.5	13.902	7.857	0.860	-29.7	-70.1
124	5971	1.16	34.707	2383	2280		446.5	26.9	2143.4	94.7	8.088	24.8	2155.6	84.6	14.138	7.850	0.861	-34.2	-75.7

STATION: 269 LEG: VI POSITION: 23° 58' S 174° 31' W DATE: 18 JAN 74

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
507	6	27.26	35.418	2339	1964	1949	303.6	8.1	1666.2	274.7	8.300	8.1	1666.2	274.7	5.019	8.299	2.852	229.5	209.2
510	113	22.27	35.617	2350	2023	2003	311.8	9.5	1757.9	240.7	8.279	9.5	1758.2	240.4	5.304	8.275	2.510	194.4	173.8
511	153	21.09	35.640	2344	2028		310.5	9.7	1770.8	232.4	8.277	9.7	1771.2	232.1	5.349	8.272	2.425	185.8	165.1
512	202	19.72	35.634	2345	2048		320.2	10.4	1803.4	219.2	8.263	10.4	1803.9	218.7	5.543	8.256	2.284	172.0	151.2
514	254	18.49	35.606	2349	2057	2068	312.1	10.5	1816.1	215.4	8.270	10.5	1816.7	214.8	5.481	8.261	2.242	167.7	146.8
525	304	17.57	35.577	2337	2060	2083	318.8	11.0	1829.3	204.7	8.258	11.0	1830.1	204.0	5.654	8.248	2.127	156.6	135.5
526	355	16.32	35.471	2332	2071		324.5	11.7	1850.8	193.6	8.248	11.6	1851.7	192.8	5.809	8.236	2.004	144.9	123.7
527	454	13.38	35.137	2304	2117	2105	411.2	16.2	1940.8	145.0	8.149	16.1	1941.9	144.1	7.361	8.133	1.484	95.3	73.8
528	554	10.48	34.769	2307	2135	2144	394.1	17.0	1968.1	134.8	8.158	16.9	1969.4	133.7	7.285	8.138	1.363	84.0	62.1
531	861	5.71	34.339	2298	2189	2182	479.0	24.4	2052.7	96.9	8.065	24.1	2054.4	95.5	9.286	8.032	0.961	43.0	20.1
532	998	4.87	34.362	2316	2216		499.1	26.2	2082.6	92.2	8.049	25.9	2084.6	90.6	9.768	8.010	0.912	36.8	13.6
533	1146	4.87	34.425			2258													
701	1247	3.40	34.473	2351	2270	2269	554.0	30.7	2141.6	82.7	8.007	30.2	2144.0	80.8	11.012	7.958	0.817	24.8	0.8
703	1545	2.80	34.560	2373	2297	2289	570.7	32.3	2169.0	80.7	7.996	31.7	2172.0	78.3	11.614	7.935	0.794	19.6	-5.3
704	1692	2.63	34.584	2384	2317		610.6	34.8	2190.7	76.5	7.970	34.1	2193.9	74.0	12.506	7.903	0.750	13.8	-11.5
705	1843	2.47	34.603	2388	2320	2320	604.1	34.6	2193.3	77.0	7.975	33.8	2196.8	74.3	12.560	7.901	0.754	12.7	-13.1
706	1992	2.36	34.616	2395	2316		557.4	32.1	2186.2	82.7	8.007	31.3	2190.1	79.6	11.794	7.928	0.808	16.5	-9.7
707	2143	2.27	34.624	2400	2338	2314	631.5	36.5	2212.1	74.4	7.958	35.5	2216.2	71.3	13.432	7.872	0.724	6.7	-20.0
709	2445	2.05	34.643	2408	2345	2337	624.3	36.4	2218.6	75.0	7.963	35.3	2223.3	71.4	13.657	7.865	0.726	3.6	-24.0
710	2593	1.98	34.648	2408	2327		545.8	31.9	2196.2	83.9	8.016	30.8	2201.3	79.9	12.214	7.913	0.812	10.5	-17.7
711	2744	1.91	34.654	2411	2357	2338	665.9	39.0	2232.2	70.8	7.937	37.7	2237.3	67.0	14.936	7.826	0.680	-4.2	-32.8
714	3041	1.80	34.663	2416	2332	2352	533.1	31.3	2200.0	85.6	8.026	30.1	2206.1	80.8	12.439	7.905	0.821	6.3	-23.4
717	3339	1.66	34.676	2420	2345	2328	567.3	33.5	2215.3	81.1	8.002	32.1	2221.8	76.0	13.561	7.868	0.773	-2.1	-32.8
718	3435	1.61	34.688	2398	2316		531.8	31.5	2185.3	84.2	8.023	30.1	2192.1	78.8	13.002	7.886	0.801	-0.6	-31.6
719	3532	1.55	34.703	2389	2309	2306	535.5	31.8	2179.3	82.9	8.019	30.4	2186.2	77.4	13.265	7.877	0.788	-3.2	-34.6
720	3629	1.53	34.713	2380	2301		536.1	31.8	2172.0	82.2	8.017	30.4	2179.1	76.6	13.455	7.871	0.779	-5.3	-37.1
721	3727	1.53	34.717			2276													
723	3960	1.26	34.714	2373	2287	2283	502.8	30.2	2156.3	85.6	8.040	28.6	2164.1	79.3	13.145	7.881	0.807	-7.1	-40.2
302	4283	1.09	34.709	2371	2283	2287	492.0	29.7	2151.7	86.6	8.048	28.1	2160.2	79.8	13.315	7.876	0.811	-11.3	-45.6
303	4460	1.08	34.707	2381	2287		473.4	28.6	2153.5	89.9	8.065	27.0	2162.5	82.6	13.003	7.886	0.840	-11.1	-46.1
304	4637	1.06	34.707	2370	2280	2280	483.7	29.2	2148.2	87.6	8.054	27.5	2157.4	80.1	13.554	7.868	0.815	-16.2	-52.0
305	4817	1.04	34.706	2375	2272		442.4	26.8	2135.7	94.5	8.090	25.1	2145.6	86.4	12.651	7.898	0.879	-12.7	-49.2
306	4993	1.05	34.706	2380	2281	2290	456.6	27.6	2145.8	92.6	8.079	25.8	2156.0	84.2	13.217	7.879	0.857	-17.7	-54.9
307	5170	1.06	34.705	2387	2292		471.9	28.5	2157.8	90.6	8.067	26.6	2168.3	82.1	13.816	7.860	0.835	-22.7	-60.7
308	5347	1.08	34.705	2378	2279	2283	456.4	27.6	2143.9	92.5	8.079	25.7	2154.8	83.5	13.659	7.865	0.850	-24.2	-62.9
309	5520	1.10	34.705	2384	2300		510.1	30.8	2169.4	84.8	8.036	28.7	2180.2	76.1	15.377	7.813	0.774	-34.6	-74.1
311	5693	1.12	34.704	2380	2284	2281	467.5	28.2	2149.8	91.0	8.070	26.2	2161.3	81.6	14.409	7.841	0.830	-32.2	-72.5
317	5837	1.14	34.704	2381	2291		488.5	29.4	2158.7	87.9	8.052	27.3	2170.3	78.4	15.215	7.818	0.798	-37.9	-78.8
323	5981	1.15	34.704	2384	2301	2279	515.1	31.0	2170.6	84.4	8.032	28.8	2182.3	75.0	16.193	7.791	0.763	-44.0	-85.6

STATION: 273 LEG: VI POSITION: 29° 57' S 175° 44' W DATE: 22 JAN 74

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
301	6	23.74	35.527	2368	2016	2020	300.7	8.8	1733.2	259.0	8.298	8.8	1733.2	259.0	5.035	8.298	2.697	213.7	193.3
302	32	23.21	35.566	2340	1999		300.8	8.9	1725.1	250.0	8.293	8.9	1725.2	249.9	5.110	8.292	2.606	204.5	184.1
303	51	20.97	35.707	2346	2019	2018	294.7	9.3	1755.2	239.5	8.295	9.3	1755.3	239.4	5.093	8.293	2.506	193.8	173.3
304	101	17.74	35.593	2336	2056	2049	316.2	10.9	1823.5	206.6	8.261	10.9	1823.7	206.4	5.524	8.258	2.153	160.3	139.6
305	249	14.24	35.300	2323	2086	2087	331.2	12.7	1881.4	176.9	8.234	12.6	1882.0	176.4	5.949	8.226	1.825	129.1	108.0
306	496	9.61	34.718	2298	2141	2122	413.1	18.4	1982.3	125.3	8.135	18.3	1983.3	124.4	7.635	8.117	1.266	75.0	53.2
307	693	7.30	34.469	2294	2158	2154	425.6	20.5	2010.2	112.3	8.116	20.3	2011.6	111.1	8.128	8.090	1.122	60.0	37.7
308	892	5.67	34.353	2305	2193	2170	470.4	24.0	2055.3	98.6	8.073	23.7	2057.1	97.2	9.136	8.039	0.978	44.4	21.5
309	1042	4.85	34.370	2314	2208	2194	478.0	25.1	2072.5	95.4	8.065	24.8	2074.5	93.7	9.437	8.025	0.944	39.6	16.2
310	1389	3.26	34.473	2345	2275	2254	596.3	33.2	2149.7	77.1	7.976	32.6	2152.3	75.0	11.993	7.921	0.758	17.8	-6.6
311	1689	2.63	34.575	2379	2321	2296	651.8	37.2	2196.8	72.0	7.943	36.4	2199.9	69.7	13.319	7.876	0.706	9.5	-15.8
312	1987	2.36	34.613	2396	2304	2310	507.8	29.2	2170.4	89.4	8.045	28.5	2174.3	86.2	10.807	7.966	0.875	23.2	-3.1
314	2236	2.36	34.629			2313													
325	2436	2.09	34.644	2403	2342	2319	633.0	36.8	2216.3	73.9	7.957	35.7	2220.9	70.4	13.847	7.859	0.715	2.7	-24.9
326	2586	2.00	34.648	2411	2322		516.6	30.1	2188.7	88.1	8.039	29.1	2193.9	84.0	11.581	7.936	0.853	14.6	-13.5
327	2735	1.90	34.659	2415	2325	2352	511.9	30.0	2191.3	88.7	8.043	28.9	2196.8	84.3	11.636	7.934	0.856	13.2	-15.4
328	2886	1.80	34.671	2409	2330		550.5	32.4	2199.7	82.9	8.012	31.2	2205.4	78.4	12.674	7.897	0.797	5.7	-23.4
329	3026	1.73	34.685	2405	2322	2304	532.7	31.4	2190.7	84.9	8.024	30.2	2196.7	80.1	12.483	7.904	0.815	5.7	-23.9
330	3166	1.67	34.700	2391	2304		512.1	30.3	2172.2	86.6	8.037	29.0	2178.5	81.5	12.270	7.911	0.829	5.5	-24.6
331	3286	1.60	34.711	2386	2290		477.9	28.3	2155.5	91.2	8.064	27.1	2162.2	85.7	11.666	7.933	0.872	8.2	-22.3
332	3386	1.54	34.715	2379	2287		488.2	29.0	2154.2	88.8	8.054	27.7	2161.0	83.4	12.055	7.919	0.848	4.5	-26.4
201	3571	1.42	34.718	2377	2291		506.8	30.2	2160.1	85.7	8.038	28.8	2167.2	80.0	12.727	7.895	0.814	-1.2	-32.8
334	3587	1.41	34.718	2379	2289		492.8	29.4	2156.8	87.8	8.050	28.0	2164.0	82.0	12.407	7.906	0.834	0.6	-31.1
202	3671	1.34	34.717	2375	2292		516.0	30.9	2162.0	84.1	8.030	29.4	2169.2	78.4	13.088	7.883	0.797	-4.2	-36.1
203	3772	1.25	34.716	2375	2288		499.1	29.9	2157.0	86.1	8.043	28.5	2164.4	80.1	12.818	7.892	0.815	-3.8	-36.2
204	3873	1.20	34.714	2373	2278		469.9	28.3	2144.5	90.2	8.067	26.8	2152.3	83.8	12.248	7.912	0.853	-1.4	-34.2
205	4024	1.12	34.713	2374	2279		469.7	28.3	2145.3	90.4	8.067	26.8	2153.4	83.7	12.424	7.906	0.852	-3.6	-37.0
206	4177	1.09	34.711	2373	2282		481.7	29.1	2149.7	88.2	8.056	27.5	2158.1	81.4	12.915	7.889	0.828	-8.1	-42.1
207	4328	1.07	34.709	2372	2291		517.4	31.3	2161.7	83.0	8.028	29.6	2170.1	76.3	14.017	7.853	0.776	-15.4	-50.0
208	4429	1.04	34.708	2377	2287		485.4	29.4	2154.9	87.7	8.054	27.7	2163.7	80.6	13.299	7.876	0.820	-12.6	-47.6
209	4528	1.03	34.709	2377	2287		485.5	29.4	2154.9	87.8	8.054	27.7	2163.9	80.4	13.429	7.872	0.818	-14.2	-49.6
210	4627	1.02	34.705	2376	2278		458.0	27.7	2143.4	91.9	8.077	26.1	2152.8	84.2	12.837	7.892	0.856	-12.0	-47.7

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15μM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 273 LEG: VI POSITION: 29° 57' S 175° 44' W DATE: 22 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
211	4875	1.04	34.706	2375	2284		481.6	29.1	2151.6	88.2	8.057	27.3	2161.3	80.3	13.774	7.861	0.817	-19.7	-56.4
212	5124	1.06	34.705	2375	2289		499.0	30.2	2158.3	85.6	8.043	28.2	2168.3	77.4	14.575	7.836	0.788	-26.6	-64.4
214	5374	1.08	34.705	2377	2285		479.2	28.9	2152.3	88.8	8.059	27.0	2163.0	80.0	14.344	7.843	0.814	-28.2	-67.0
216	5642	1.11	34.705	2377	2286		483.7	29.2	2153.5	88.3	8.055	27.1	2164.7	79.2	14.831	7.829	0.806	-33.7	-73.7
223	5787	1.13	34.705	2375	2289		500.9	30.2	2158.1	85.7	8.041	28.0	2169.5	76.5	15.547	7.808	0.778	-39.0	-79.7

STATION: 278 LEG: VI POSITION: 36° 31' S 179° 36' W DATE: 26 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
101	7	19.81	35.666	2355	2032		287.4	9.3	1771.2	236.5	8.303	9.3	1771.2	236.5	4.986	8.302	2.473	191.1	170.6
102	188	16.00	35.497	2346	2066	2072	295.3	10.7	1834.2	206.1	8.283	10.7	1834.7	205.6	5.288	8.277	2.139	158.8	137.9
103	368	13.04	35.166	2330	2118	2118	360.6	14.3	1927.6	161.0	8.201	14.3	1928.5	160.3	6.484	8.188	1.652	112.1	90.7
104	548	10.15	34.810	2318	2143	2148	385.7	16.9	1974.4	136.8	8.166	16.7	1975.6	135.7	7.137	8.146	1.385	86.0	64.1
105	728	8.13	34.571	2311	2155	2163	393.3	18.4	1997.0	124.6	8.152	18.2	1998.6	123.2	7.502	8.125	1.249	72.0	49.6
106	909	6.70	34.444	2304	2182	2178	458.4	22.6	2040.0	104.4	8.087	22.3	2041.9	102.9	8.864	8.052	1.039	50.1	27.2
107	1056	5.79	34.435	2319	2189		423.4	21.5	2043.4	109.0	8.117	21.2	2045.6	107.2	8.380	8.077	1.082	53.1	29.8
109	1245	4.43	34.400	2325	2246	2230	575.8	30.8	2118.9	81.4	7.992	30.3	2121.2	79.5	11.405	7.943	0.802	23.7	-0.2
109	1500	3.41	34.492	2358	2264		507.1	28.1	2131.2	89.7	8.044	27.5	2134.2	87.3	10.356	7.985	0.882	29.0	4.3
110	1741	2.85	34.566	2392	2317	2296	582.6	32.9	2188.4	80.6	7.991	32.2	2191.8	78.0	11.956	7.922	0.791	17.4	-8.0
111	1989	2.48	34.608	2406	2299		462.2	26.5	2159.8	97.7	8.084	25.8	2164.0	94.3	9.859	8.006	0.956	31.2	5.0
112	2142	2.34	34.625	2412	2330	2337	550.5	31.7	2198.7	84.6	8.015	30.8	2202.9	81.3	11.743	7.930	0.825	16.7	-10.0
114	2340	2.34	34.639			2309													
121	2432	2.12	34.646	2413	2433		1199.5	69.7	2306.0	42.3	7.696	68.4	2309.8	39.8	25.490	7.594	0.405	-27.8	-55.4
115	2485	2.09	34.648	2412	2337		573.4	33.3	2207.7	81.0	7.998	32.3	2212.5	77.2	12.627	7.899	0.784	9.0	-18.8
116	2635	2.09	34.662			2334													
117	2783	1.87	34.685	2399	2311		514.5	30.2	2178.5	87.3	8.038	29.1	2184.1	82.8	11.827	7.927	0.842	11.3	-17.5
118	2937	1.78	34.703	2397	2326	2295	579.9	34.1	2198.2	78.7	7.989	32.9	2203.9	74.3	13.448	7.871	0.755	0.9	-28.4
119	3089	1.64	34.718	2391	2355		750.8	44.4	2233.4	62.3	7.883	42.9	2238.8	58.2	17.514	7.757	0.593	-16.9	-46.8
120	3240	1.48	34.724	2401	2298	2289	457.0	27.2	2160.6	95.2	8.084	26.0	2167.3	89.7	11.093	7.955	0.913	12.6	-17.8
122	3533	1.48	34.720			2272													
123	3790	1.18	34.716	2388	2266		394.2	23.7	2122.0	105.3	8.138	22.5	2130.2	98.4	10.272	7.988	1.001	14.2	-18.2

STATION: 280 LEG: VII POSITION: 56° 1' S 170° 3' E DATE: 8 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
424	154	5.86	34.153	2298	2135	1953	336.3	17.1	1975.1	127.9	8.203	17.0	1975.4	127.6	6.345	8.198	1.277	80.4	59.3
302	199	5.32	34.172	2296	2134	2144	331.4	17.2	1974.7	127.1	8.207	17.1	1975.1	126.8	6.322	8.199	1.270	79.2	58.0
303	249	5.20	34.191	2299	2240	2132	676.7	35.2	2118.7	71.1	7.926	35.1	2119.2	70.7	12.115	7.917	0.709	22.8	1.5
304	299	5.20	34.242			2139													
305	448	4.66	34.210	2298	2168	2162	396.7	21.0	2023.6	108.3	8.135	20.9	2024.6	107.5	7.617	8.118	1.078	58.1	36.3
307	745	3.36	34.307	2330	2237	2219	498.5	27.7	2105.8	88.5	8.046	27.4	2107.3	87.3	9.620	8.017	0.878	35.5	12.8
309	1043	2.62	34.443	2330	2275	2251	647.5	36.9	2153.6	69.5	7.938	36.5	2155.5	68.1	12.708	7.896	0.687	13.7	-9.8
310	1194	2.58	34.522	2350	2262		511.1	29.2	2131.6	86.2	8.036	28.7	2133.9	84.4	10.271	7.988	0.854	28.7	4.8
311	1388	2.41	34.597	2361	2270	2277	501.6	28.8	2138.1	88.1	8.044	28.3	2140.8	85.9	10.255	7.989	0.871	28.4	4.0
314	1784	2.20	34.697	2366	2282	2267	525.3	30.4	2152.2	84.4	9.025	29.7	2155.7	81.6	11.105	7.954	0.830	20.5	-5.1
326	2181	1.94	34.734	2372	2280	2271	493.6	28.9	2147.5	88.7	8.050	28.0	2151.8	85.2	10.882	7.963	0.867	20.1	-6.8
328	2581	1.63	34.735	2382	2299	2268	523.9	31.0	2168.7	84.3	8.027	29.9	2173.8	80.2	11.925	7.924	0.817	10.8	-17.3
330	2980	1.31	34.724	2372	2307		588.0	35.2	2181.7	75.1	7.977	33.9	2187.3	70.7	13.903	7.857	0.720	-3.3	-32.8
332	3383	1.10	34.716	2377	2298	2259	526.7	31.8	2169.2	82.1	8.022	30.4	2175.8	76.8	13.017	7.886	0.782	-2.2	-33.1
115	3695	0.99	34.709	2370	2270	2287	450.0	27.3	2134.8	92.9	8.082	25.9	2142.3	86.7	11.620	7.935	0.882	3.7	-28.4
116	3891	0.92	34.706	2374	2283	2278	479.1	29.1	2150.7	88.2	8.058	27.7	2158.5	81.9	12.533	7.902	0.833	-3.8	-36.7
117	4094	0.87	34.705	2380	2295		501.0	30.5	2164.2	85.2	8.041	28.9	2172.3	78.7	13.294	7.876	0.801	-9.8	-43.4
118	4291	0.85	34.700	2377	2281	2288	461.6	28.1	2147.0	90.8	8.073	26.6	2155.7	83.7	12.557	7.901	0.852	-7.6	-42.0
119	4490	0.83	34.699	2386	2293		473.9	28.9	2159.6	89.5	8.064	27.2	2168.7	82.1	13.062	7.884	0.835	-12.1	-47.4
120	4691	0.83	34.702	2376	2284	2284	474.4	28.9	2151.3	88.7	8.052	27.2	2160.7	81.1	13.380	7.874	0.825	-16.2	-52.3
121	4890	0.83	34.696	2386	2287		454.7	27.7	2151.5	92.7	8.080	26.0	2161.5	84.5	13.044	7.885	0.860	-15.9	-52.8
122	5088	0.83	34.698			2286													
123	5188	0.83	34.699	2379	2286	2317	471.8	28.8	2152.9	89.3	8.065	26.9	2163.3	80.8	13.926	7.856	0.822	-24.5	-62.6
124	5222	0.83	34.697	2376	2292	2270	502.7	30.7	2161.7	84.6	8.039	28.7	2171.9	76.4	14.851	7.828	0.777	-29.5	-67.8

STATION: 282 LEG: VII POSITION: 57° 31' S 169° 47' E DATE: 10 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
314	3	5.58	33.880	2303	2113		282.2	14.5	1939.0	144.5	8.271	14.5	1939.0	144.5	5.364	8.271	1.435	98.4	77.7
318	83	5.60	33.883	2288	2131	2130	340.2	17.5	1974.4	124.1	8.198	17.4	1974.6	124.0	6.391	8.194	1.232	77.3	56.4
320	156	4.98	34.043	2285	2131	2144	339.2	17.8	1976.2	122.0	8.195	17.8	1976.5	121.7	6.466	8.189	1.215	74.5	53.4
325	206	4.78	34.077	2282	2140		363.0	19.2	1990.9	114.9	8.168	19.1	1991.3	114.5	6.918	8.160	1.144	66.9	45.7
326	259	4.58	34.121	2288	2159		393.9	21.0	2015.6	107.5	8.136	20.9	2016.1	107.0	7.473	8.127	1.070	59.0	37.6
321	312	4.47	34.177	2288	2177	2169	444.4	23.7	2040.9	97.4	8.089	23.6	2041.5	96.9	8.380	8.077	0.971	48.5	27.0
329	415	4.02	34.226	2302	2188	2177	432.4	23.5	2050.2	99.3	8.100	23.3	2051.1	98.6	8.243	8.084	0.989	49.4	27.6
330	466	3.79	34.243	2297	2198		475.1	26.0	2066.0	91.0	8.061	25.8	2066.9	90.3	9.059	8.043	0.906	40.7	18.7
331	516	3.56	34.262	2306	2194	2203	432.2	23.8	2057.0	98.2	8.099	23.7	2058.0	97.3	8.338	8.079	0.978	47.3	25.3
332	566	3.25	34.279	2296	2210		511.3	28.5	2082.4	84.0	8.030	28.3	2083.5	83.2	9.833	8.007	0.836	32.7	10.5
614	610	3.04	34.284	2320	2224	2214	478.6	26.9	2092.3	89.8	8.059	26.7	2093.5	88.8	9.221	8.035	0.893	38.0	15.7
333	615	3.04	34.298			2220													
334	665	3.03	34.321	2317	2257		625.8	35.2	2135.2	71.6	7.951	34.9	2136.4	70.6	11.888	7.925	0.711	19.4	-3.0
616	713	2.79	34.341	2319	2253		593.5	33.7	2129.8	74.5	7.972	33.4	2131.1	73.5	11.389	7.944	0.740	21.9	-0.7
617	915	2.79	34.462			2259													
618	1119	2.43	34.551	2345	2272	2277	566.3	32.5	2146.0	78.5	7.993	32.1	2148.1	76.8	11.258	7.949	0.778	21.8	-1.9
620	1524	2.43	34.684			2273													
621	1726	2.12	34.711	2361	2290		575.7	33.4	2163.8	77.8	7.987	32.7	2167.1	75.2	12.067	7.918	0.766	14.7	-10.8
622	1927	2.13	34.730			2263													
723	2030	1.94	34.734	2361	2284		546.8	32.0	2156.3	80.7	8.007	31.1	2160.2	77.6	11.854	7.926	0.790	14.1	-12.3
724	2131	1.86	34.738	2365	2260	2260	447.1	26.2	2123.4	95.4	8.088	25.4	2127.8	91.8	9.924	8.003	0.934	27.2	0.5
725	2233	1.80	34.739	2361	2272		498.5	29.3	2140.9	86.9	8.043	28.4	2145.3	83.3	11.102	7.955	0.848	17.6	-9.4
726	2335	1.72	34.739	2365	2293	2268	564.2	33.3	2166.4	78.3	7.994	32.3	2170.9	74.8	12.568	7.901	0.762	8.1	-19.3
728	2537	1.55	34.735	2365	2262	2275	448.2	26.6	2126.1	94.3	8.085	25.7	2131.3	90.0	10.358	7.985	0.917	21.1	-7.0
730	2742	1.42	34.730	2366	2280	2262	504.0	30.0	2149.5	85.4	8.038	29.0	2154.9	81.1	11.781	7.929	0.826	9.8	-18.9
731	2845	1.36	34.728	2374	2276		464.0	27.7	2141.4	91.9	8.072	26.7	2147.1	87.2	10.984	7.959	0.888	14.8	-14.3
1301	3035	1.23	34.723	2373	2283	2290	487.6	29.3	2151.1	87.6	8.052	28.1	2157.2	82.7	11.727	7.931	0.842	8.0	-21.7
732	3051	1.23	34.722			2277													
1302	3334	1.05	34.714	2372	2283		487.5	29.5	2151.5	87.1	8.051	28.2	2158.1	81.7	12.084	7.918	0.831	3.3	-27.5
734	3459	1.07	34.711	2371	2273	2265	457.7	27.7	2138.5	91.8	8.076	26.4	2145.5	86.1	11.532	7.938	0.876	6.1	-25.1
1303	3534	0.98	34.710	2374	2281	2277	473.6	28.7	2148.0	89.3	8.063	27.4	2155.1	83.5	11.986	7.921	0.850	2.6	-29.0
1325	3935	0.87	34.705	2373	2288	2276	498.9	30.4	2157.5	85.1	8.042	28.9	2165.3	78.8	13.085	7.883	0.802	-7.5	-40.5
1326	4136	0.84	34.701	2368	2276		472.0	28.8	2143.7	88.5	8.063	27.2	2152.0	81.8	12.685	7.897	0.832	-7.4	-41.2
1327	4336	0.81	34.700	2374	2272	2276	441.8	27.0	2136.0	94.1	8.090	25.4	2144.9	86.7	12.126	7.916	0.882	-5.3	-39.9
1328	4539	0.81	34.699	2367	2277		478.5	29.2	2145.3	87.5	8.057	27.5	2154.3	80.2	13.353	7.874	0.816	-14.8	-50.3
1329	4739	0.81	34.699	2370	2303	2275	567.4	34.6	2177.4	76.0	7.989	32.7	2186.3	69.0	15.968	7.797	0.702	-29.1	-65.3
1330	4838	0.81	34.698	2366	2271		461.7	28.2	2137.7	90.2	8.071	26.4	2147.4	82.2	13.285	7.877	0.836	-17.4	-54.1
1331	4939	0.81	34.699	2367	2277	2281	478.5	29.2	2145.3	87.5	8.057	27.4	2155.1	79.5	13.862	7.858	0.809	-21.7	-58.8
1332	5040	0.80	34.699	2368	2283	2283	495.9	30.3	2152.8	84.9	8.043	28.4	2162.7	76.9	14.468	7.840	0.782	-25.9	-63.5
1333	5141	0.79	34.697	2378	2285	2278	471.0	28.8	2151.9	89.3	8.065	26.9	2162.2	80.9	13.857	7.858	0.823	-23.6	-61.6
1334	5191	0.79	34.697	2377	2272	2284	432.6	26.4	2134.9	95.7	8.098	24.6	2145.6	86.8	12.861	7.891	0.883	-18.6	-56.8

STATION: 285 LEG: VII POSITION: 61° 29' S 169° 58' E DATE: 14 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
314	9	2.24	33.963	2304	2152		312.7	18.2	1997.9	120.9	8.220	18.2	1997.9	120.9	6.024	8.220	1.204	74.6	53.8
326	33	2.25	33.963	2307	2152		307.5	17.8	1996.4	122.7	8.227	17.8	1996.5	122.7	5.940	8.226	1.221	76.2	55.3
330	85	2.24	33.963	2310	2200		414.9	24.1	2063.7	97.2	8.112	24.1	2063.8	97.1	7.792	8.108	0.967	50.2	29.2
214	150	1.19	34.131	2313	2208		415.6	25.1	2073.5	94.4	8.107	25.0	2073.8	94.1	7.926	8.101	0.942	46.8	25.6
215	199	1.19	34.292	2315															
218	349	1.97	34.528	2336	2253		513.8	30.0	2124.7	83.3	8.029	29.9	2125.4	82.7	9.666	8.015	0.837	33.9	12.2
226	498	2.11	34.631	2347	2258		498.5	29.0	2127.5	86.5	8.043	28.8	2128.5	85.7	9.483	8.023	0.870	35.8	13.7
230	945	1.94	34.728	2355	2262		485.0	28.4	2129.8	88.8	8.054	28.0	2131.7	87.3	9.627	8.017	0.888	33.6	10.4
232	1244	1.75	34.739	2358	2258		459.4	27.1	2123.4	92.6	8.075	26.6	2125.9	90.5	9.422	8.026	0.922	34.3	10.2
233	1393	1.62	34.739	2360	2252		433.1	25.6	2114.5	96.9	8.098	25.1	2117.3	94.5	9.053	8.043	0.963	37.0	12.4
115	1486	1.62	34.738	2361															
126	2486	0.88	34.710	2372	2277		464.4	28.3	2143.5	90.2	8.070	27.3	2148.6	86.1	10.700	7.971	0.876	17.5	-10.4
128	2885	0.74	34.705	2373	2276		455.7	27.9	2141.8	91.3	8.077	26.8	2147.7	86.5	10.924	7.962	0.880	13.4	-15.9
129	3082	0.71	34.702	2387	2277		419.6	25.7	2137.7	98.6	8.112	24.6	2144.2	93.2	10.251	7.989	0.948	17.8	-12.2
134	3867	0.63	34.698	2388	2274		407.6	25.1	2133.1	100.9	8.123	23.7	2141.3	94.0	10.736	7.969	0.956	8.5	-24.4

STATION: 286 LEG: VII POSITION: 66° 5' S 173° 40' E DATE: 17 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO₂ µM/KG	GC TCO₂ µM/KG	CALC P=1 ATM T=INSITU PCO₂ µATM	CALC P=1 ATM T=INSITU H₂CO₃ µM/KG	CALC P=1 ATM T=INSITU HCO₃⁻ µM/KG	CALC P=1 ATM T=INSITU CO₃⁼ µM/KG	CALC P=1 ATM T=INSITU PH	CALC P, T=INSITU H₂CO₃ µM/KG	CALC P, T=INSITU HCO₃⁻ µM/KG	CALC P, T=INSITU CO₃⁼ µM/KG	CALC P, T=INSITU AH (10⁻⁴)	CALC P, T=INSITU PH	CALC P, T=INSITU ICP 10⁴ (M/KG)²	DELTA CO₃⁼ (CALC) µM/KG	DELTA CO₃⁼ (ARAG) µM/KG
201	2	0.30	33.907	2307	2175		330.9	20.7	2030.0	109.3	8.192	20.7	2030.0	109.3	6.421	8.192	1.086	63.0	42.1
203	60	-1.50	34.268	2328	2208		344.6	23.1	2066.9	103.0	8.172	23.1	2067.0	102.9	6.766	8.170	1.034	56.1	35.0
205	69	-1.42	34.306	2345	2219		336.2	22.4	2074.8	106.8	8.185	22.4	2074.9	106.7	6.576	8.182	1.073	59.7	38.7
207	89	-0.40	34.447	2345	2252		439.0	28.1	2120.2	88.6	8.083	28.1	2120.4	88.5	8.322	8.080	0.893	41.5	20.4
225	196	-0.40	34.695	2359															

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15 µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 286 LEG: VII POSITION: 66° 5' S 173° 40' E DATE: 17 FEB 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
227	343	1.35	34.716	2365	2272		477.3	28.5	2139.4	89.0	8.060	28.4	2140.1	88.5	8.994	8.046	0.900	39.6	18.0
229	589	1.15	34.717	2369	2283		499.7	30.1	2152.4	85.5	8.041	29.9	2153.6	84.6	9.597	8.018	0.861	33.8	11.5
333	1421	0.63	34.705	2372	2283		480.1	29.5	2151.4	87.1	8.056	28.9	2154.3	84.8	10.028	7.999	0.863	26.8	2.1
334	1642	0.55	34.701	2371	2277		461.3	28.4	2143.9	89.6	8.071	27.8	2147.3	86.9	9.875	8.005	0.884	26.8	1.5

STATION: 287 LEG: VII POSITION: 69° 18' S 173° 30' W DATE: 19 FEB 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
501	2	-1.07	33.377	2280	2137		283.4	18.8	1987.9	115.3	8.245	18.8	1987.9	115.3	5.693	8.245	1.128	69.0	48.2
503	21	-1.49	33.384	2276	2149		309.5	20.8	2007.1	106.1	8.208	20.8	2007.1	106.0	6.201	8.208	1.038	59.6	38.7
505	41	-1.40	34.114	2331	2185		291.3	19.5	2032.6	118.0	8.239	19.4	2032.6	117.9	5.794	8.237	1.179	71.2	50.3
527	151	-0.31	34.458	2360	2244		378.9	24.2	2103.5	101.4	8.144	24.1	2103.8	101.1	7.272	8.138	1.021	53.6	32.4
705	598	1.27	34.726	2372	2276		467.9	28.1	2142.2	90.7	8.068	27.8	2143.4	89.8	9.022	8.045	0.914	38.9	16.6
725	1294	0.81	34.711	2365	2282		503.1	30.7	2152.4	83.9	8.037	30.2	2155.0	81.8	10.358	7.985	0.833	25.0	0.7
727	1692	0.60	34.704	2377	2282		461.2	28.4	2148.2	90.4	8.072	27.7	2151.7	87.6	9.891	8.005	0.891	27.0	1.5
303	2938	0.21	34.699	2375	2285		470.1	29.4	2153.0	87.7	8.063	28.2	2158.9	82.9	11.359	7.945	0.843	8.9	-20.6
734	3083	0.14	34.701	2380	2279		435.0	27.3	2143.2	93.6	8.094	26.1	2149.6	88.3	10.700	7.971	0.898	12.6	-17.5
309	3554	0.07	34.702	2375	2274		433.0	27.2	2138.3	93.5	8.095	25.9	2145.6	87.5	11.163	7.952	0.890	5.8	-26.0

STATION: 290 LEG: VII POSITION: 58° 1' S 174° 0' W DATE: 25 FEB 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
403	63	4.50	33.962	2301	2130		302.4	16.2	1966.4	132.5	8.240	16.1	1966.5	132.3	5.780	8.238	1.317	85.8	64.8
404	93	4.50	33.964	2303	2133		304.7	16.3	1969.8	131.9	8.238	16.3	1970.0	131.7	5.829	8.234	1.311	84.9	63.9
405	124	3.75	34.036	2289	2157		373.5	20.5	2012.4	109.1	8.154	20.5	2012.6	108.9	7.084	8.150	1.087	61.8	40.8
406	154	3.46	34.040	2300	2154		339.8	18.8	2002.8	117.4	8.192	18.8	2003.1	117.1	6.517	8.186	1.169	69.8	48.7
407	183	3.46	34.058	2305															
409	244	3.11	34.079	2305	2167		354.7	19.9	2019.3	112.8	8.175	19.8	2019.8	112.4	6.833	8.165	1.122	64.4	43.0
410	284	3.32	34.157	2312	2181		377.2	21.0	2036.0	109.0	8.153	20.9	2036.6	108.5	7.217	8.142	1.086	60.2	38.8
425	324	3.30	34.186	2308	2183		391.1	21.8	2040.8	105.4	8.138	21.7	2041.5	104.9	7.496	8.125	1.051	56.3	34.7
426	365	3.27	34.228	2320	2206		425.1	23.7	2067.7	99.6	8.107	23.6	2068.4	99.0	8.076	8.093	0.993	50.1	28.4
427	404	3.08	34.244	2318	2212		445.8	25.0	2076.8	95.2	8.087	24.9	2077.6	94.5	8.486	8.071	0.949	45.3	23.5
428	455	2.96	34.276	2321	2219		457.7	25.8	2085.1	93.1	8.077	25.7	2086.0	92.3	8.733	8.059	0.928	42.7	20.8
429	505	2.96	34.312	2325															
430	556	2.76	34.338	2337	2234		456.3	25.9	2099.1	93.9	8.080	25.7	2100.3	93.0	8.753	8.058	0.936	42.6	20.4
432	757	2.48	34.448	2345	2255		499.4	28.7	2124.2	87.2	8.044	28.4	2125.7	86.0	9.685	8.014	0.868	34.0	11.2
433	858	2.47	34.507	2354	2304		678.8	38.9	2182.3	67.7	7.922	38.5	2183.9	66.6	12.958	7.887	0.673	13.7	-9.3
601	906	2.40	34.532	2339	2270		580.7	33.4	2145.2	76.4	7.982	33.0	2146.9	75.0	11.329	7.946	0.760	21.8	-1.3
603	1108	2.32	34.620	2359	2278		537.0	31.0	2149.2	82.8	8.016	30.5	2151.4	81.1	10.665	7.972	0.823	26.2	2.5
604	1258	2.26	34.659	2360	2273		513.2	29.7	2142.5	85.9	8.034	29.2	2145.0	83.9	10.374	7.984	0.852	27.6	3.5
605	1410	2.19	34.690	2371	2259		433.1	25.1	2119.5	99.5	8.102	24.6	2122.4	97.0	8.972	8.047	0.987	39.4	14.9
606	1561	2.11	34.712	2368	2277		498.8	29.0	2145.0	88.1	8.046	28.4	2148.1	85.6	10.375	7.984	0.871	26.5	1.6
608	1862	1.90	34.735	2370	2273		474.8	27.8	2139.0	91.2	8.065	27.1	2142.8	88.1	10.208	7.991	0.898	26.2	0.3
609	2014	1.81	34.738	2371	2275		477.4	28.0	2141.2	90.8	8.062	27.3	2145.3	87.5	10.409	7.983	0.891	24.0	-2.3
625	2317	1.57	34.736	2374	2264		430.0	25.5	2125.2	98.3	8.103	24.7	2130.0	94.3	9.734	8.012	0.960	27.7	0.4
627	2620	1.34	34.728	2372	2284		497.4	29.7	2152.6	86.7	8.044	28.7	2157.8	82.5	11.490	7.940	0.840	12.6	-15.8
628	2822	1.23	34.724	2379	2273		437.4	26.3	2135.5	96.2	8.096	25.3	2141.4	91.4	10.373	7.984	0.930	19.2	-9.9
629	3024	1.12	34.719	2378	2287		483.9	29.2	2154.5	88.3	8.056	28.0	2160.6	83.4	11.624	7.935	0.848	8.8	-21.0
630	3227	1.04	34.714	2378	2274		440.0	26.6	2137.3	95.1	8.093	25.5	2143.9	89.6	10.853	7.964	0.912	12.5	-17.9
631	3429	0.95	34.711	2383	2280		443.6	26.9	2143.3	94.8	8.090	25.7	2150.4	89.0	11.131	7.953	0.905	9.4	-21.8
632	3632	0.95	34.711	2384															
633	3835	0.86	34.705	2382	2283		453.7	27.6	2147.8	92.6	8.081	26.2	2155.6	86.1	11.818	7.927	0.876	1.2	-31.5
201	4125	0.83	34.703	2382	2300		511.6	31.2	2170.1	83.7	8.033	29.6	2178.2	77.2	13.591	7.867	0.786	-11.7	-45.5
202	4278	0.84	34.703	2379	2287		475.4	29.0	2154.2	88.8	8.062	27.4	2162.8	81.8	12.882	7.890	0.832	-9.3	-43.7
203	4430	0.85	34.705	2371	2295		531.8	32.4	2167.1	80.5	8.016	30.6	2175.7	73.7	14.569	7.837	0.749	-19.7	-54.7
205	4684	0.86	34.703	2381	2288		473.0	28.8	2154.8	89.4	8.064	27.1	2164.2	81.7	13.302	7.876	0.831	-15.5	-51.5
206	4785	0.88	34.701	2385	2289		464.6	28.3	2154.7	91.1	8.072	26.5	2164.3	83.1	13.177	7.880	0.846	-15.6	-52.0
207	4888	0.89	34.702	2385	2283		446.0	27.1	2146.5	94.3	8.088	25.4	2156.6	86.0	12.805	7.893	0.875	-14.3	-51.2
209	4989	0.89	34.702	2386	2286		452.5	27.5	2150.2	93.3	8.083	25.7	2160.4	84.9	13.095	7.883	0.863	-17.1	-54.4
210	5081	0.90	34.702	2385	2286		455.8	27.7	2150.5	92.7	8.080	25.9	2160.9	84.2	13.303	7.876	0.857	-19.2	-56.9
227	5189	0.92	34.702	2386	2285		449.8	27.3	2148.9	93.8	8.085	25.5	2159.5	85.0	13.263	7.877	0.865	-20.2	-58.3
233	5280	0.93	34.702	2387	2284		444.1	27.0	2147.1	94.9	8.090	25.1	2158.0	85.9	13.208	7.879	0.874	-20.8	-59.3

STATION: 291 LEG: VII POSITION: 56° 0' S 175° 35' W DATE: 27 FEB 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
201	2	6.94	34.158	2259	2100		349.6	17.1	1943.1	124.8	8.185	17.1	1943.1	124.8	6.525	8.185	1.249	78.7	58.0
202	32	6.94	34.158	2293	2115		319.6	15.6	1947.3	137.1	8.225	15.6	1947.4	137.0	5.968	8.224	1.372	90.7	69.9
203	62	6.93	34.158	2299	2146		373.9	18.3	1990.4	122.3	8.167	18.3	1990.5	122.2	6.849	8.164	1.224	75.8	54.9
204	92	6.85	34.164	2293	2103		296.9	14.6	1929.1	144.3	8.253	14.5	1929.3	144.1	5.631	8.249	1.443	97.4	76.5
205	123	6.18	34.163	2293	2120		319.7	16.1	1955.1	133.8	8.223	16.0	1955.4	133.6	6.052	8.218	1.338	86.7	65.6
206	153	5.65	34.204	2293	2127		326.5	16.7	1965.9	129.4	8.213	16.7	1966.3	129.1	6.207	8.207	1.294	81.9	60.8
208	234	4.84	34.187	2293	2130		321.9	17.0	1970.7	127.4	8.216	16.9	1971.2	126.9	6.212	8.207	1.272	79.1	57.8
209	274	4.68	34.176	2293	2133		326.0	17.3	1975.1	125.6	8.210	17.2	1975.7	125.1	6.311	8.200	1.253	77.0	55.5
210	355	4.38	34.159	2294	2131		316.5	17.0	1971.7	127.4	8.221	16.9	1972.5	126.7	6.204	8.207	1.268	77.9	56.3
225	456	3.91	34.131	2297	2152		348.3	19.0	2001.2	116.8	8.183	18.9	2002.2	115.9	6.831	8.166	1.160	66.4	44.5
226	557	3.93	34.213	2294	2172		405.5	22.1	2031.4	103.5	8.123	21.9	2032.5	102.6	7.909	8.102	1.029	52.3	30.1
227	707	3.33	34.288	2316	2206		437.5	24.3	2069.4	97.3	8.095	24.1	2070.8	96.1	8.561	8.067	0.966	44.6	22.0
228	910	2.73	34.376	2327	2238		501.2	28.5	2108.2	86.3	8.040	28.2	2110.0	84.8	9.895	8.005	0.855	31.6	8.5
230	1515	2.32	34.646	2351	2262		504.3	29.1	2131.2	86.7	8.040	28.5	2134.2	84.3	10.481	7.980	0.856	25.7	0.9
231	1818	2.16	34.703	2356	2259		475.4	27.6	2125.5	91.0	8.063	26.9	2129.1	88.0	10.205	7.991	0.895	26.5	0.8
232	2121	1.96	34.732	2365	2265		464.9	27.2	2130.1	92.7	8.073	26.4	2134.4	89.2	10.265	7.989	0.908	24.7	-1.9
233	2424	1.75	34.735	2367	2265		455.4	26.8	2129.4	93.8	8.080	25.9	2134.3	89.8	10.371	7.984	0.914	22.1	-5.5
101	2674	1.52	34.734	2368	2263		442.7	26.3	2126.2	95.5	8.091	25.3	2131.7	91.0	10.362	7.985	0.926	20.5	-8.0
234	2829	1.45	34.731	2371	2263		433.1	25.8	2125.0	97.2	8.099	24.8	2130.9	92.3	10.295	7.987	0.940	20.1	-8.9
102	2977	1.33	34.727	2368	2266		448.2	26.8	2130.4	93.8	8.085	25.7	2136.5	88.8	10.799	7.967	0.904	14.8	-14.7
103	3280	1.16	34.718	2375	2270		438.4	26.4	2133.0	95.6	8.094	25.2	2139.7	90.0	10.870	7.964	0.916	12.4	-18.2
104	3584	1.02	34.712	2372	2275		460.2	27.9	2140.9	91.3	8.074	26.5	2148.1	85.3	11.725	7.931	0.868	3.8	-28.0
105	3887	0.92	34.707	2375	2283		476.0	28.9	2150.3	88.7	8.061	27.5	2158.1	82.4	12.445	7.905	0.838	-3.2	-36.1
106	4139	0.88	34.704	2373	2282		478.1	29.1	2149.7	88.2	8.059	27.5	2158.0	81.5	12.810	7.892	0.829	-7.7	-41.5
107	4391	0.86	34.703	2373	2273		448.2	27.3	2137.8	92.9	8.084	25.7	2146.8	85.5	12.348	7.908	0.870	-7.3	-42.1
109	4592	0.85	34.701	2378	2269		422.2	25.7	2130.4	97.9	8.108	24.1	2140.0	89.9	11.877	7.925	0.914	-5.9	-41.6
125	4744	0.86	34.700	2374	2276		454.6	27.7	2141.5	91.8	8.079	26.0	2151.1	83.9	12.927	7.889	0.854	-14.2	-50.4
127	4894	0.86	34.700	2375	2274		445.5	27.1	2138.4	93.5	8.087	25.4	2148.4	85.2	12.856	7.891	0.867	-15.2	-52.1
129	4985	0.87	34.699	2373	2274		451.4	27.5	2139.2	92.4	8.081	25.7	2149.3	84.0	13.134	7.882	0.855	-17.9	-55.2
133	5087	0.86	34.696	2375	2276		451.8	27.5	2141.1	92.4	8.081	25.7	2151.4	83.9	13.261	7.877	0.853	-19.7	-57.4

STATION: 293 LEG: VII POSITION: 52° 35' S 178° 2' W DATE: 1 MAR 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
401	3	11.33	34.419	2301	2053		264.3	11.1	1844.2	182.6	8.309	11.1	1844.2	182.6	4.913	8.309	1.843	136.7	116.1
403	94	8.39	34.420	2302	2094		289.6	13.5	1909.6	156.0	8.267	13.4	1909.8	155.7	5.446	8.264	1.571	109.1	88.2
407	215	7.67	34.419	2296	2108		313.9	14.9	1934.7	143.3	8.234	14.9	1935.2	142.9	5.943	8.226	1.441	95.4	74.2
409	286	7.23	34.408	2293	2099		296.9	14.4	1923.0	146.7	8.253	14.3	1923.6	146.1	5.723	8.242	1.473	98.0	76.7
427	533	6.26	34.332	2296	2129		334.6	16.7	1967.1	130.1	8.206	16.6	1968.3	129.1	6.521	8.186	1.299	79.2	57.2
429	684	5.33	34.268	2301	2145		345.8	17.9	1988.5	123.6	8.191	17.7	1990.0	122.2	6.838	8.165	1.228	71.1	48.7
431	861	4.82	34.318	2308	2150		337.1	17.8	1992.4	124.8	8.200	17.5	1994.4	123.1	6.805	8.167	1.239	70.5	47.6
433	1112	3.52	34.342	2312	2196		422.6	23.3	2057.1	100.5	8.108	23.0	2059.4	98.6	8.606	8.065	0.993	43.8	20.2
601	1142	3.38	34.347	2319	2209		439.9	24.4	2072.2	97.3	8.093	24.0	2074.5	95.4	8.936	8.049	0.961	40.3	16.6
434	1262	2.99	34.381	2330	2212		413.6	23.3	2071.8	101.9	8.118	22.9	2074.4	99.7	8.538	8.069	1.005	43.5	19.5
603	1438	2.72	34.459	2338	2225		427.1	24.3	2086.3	99.4	8.105	23.8	2089.3	96.9	8.935	8.049	0.979	39.1	14.5
608	2176	2.27	34.687	2360	2252		443.1	25.6	2114.4	97.0	8.092	24.8	2118.9	93.3	9.855	8.006	0.948	28.3	1.5
609	2327	2.19	34.708	2359	2246		426.9	24.7	2106.6	99.7	8.106	23.9	2111.4	95.6	9.671	8.015	0.973	29.1	1.8
625	2623	1.98	34.732	2361	2250		430.0	25.1	2111.3	98.6	8.103	24.2	2116.8	94.0	10.018	7.999	0.957	24.3	-3.9
627	2918	1.74	34.736	2366	2269		471.6	27.8	2135.0	91.2	8.066	26.7	2140.9	86.4	11.215	7.950	0.880	13.3	-16.0
631	3511	1.32	34.723	2378	2273		441.9	26.4	2135.8	95.7	8.092	25.2	2143.1	89.7	11.151	7.953	0.913	9.2	-22.1
201	3859	1.32	34.714	2370															
203	4158	1.32	34.710	2380															
207	4765	0.92	34.702	2378	2253		380.4	23.1	2108.1	106.7	8.150	21.6	2118.4	98.0	10.951	7.961	0.997	-0.4	-36.8
225	5067	0.88	34.700	2379	2259		392.9	23.9	2116.1	104.0	8.137	22.3	2126.9	94.8	11.602	7.935	0.964	-8.4	-46.1
230	5259	0.91	34.699	2386	2266		394.7	24.0	2122.9	104.1	8.136	22.3	2134.2	94.6	11.821	7.927	0.962	-11.8	-50.3
233	5309	0.90	34.699	2368	2266		441.4	26.8	2130.3	93.9	8.089	25.0	2141.1	84.9	13.279	7.877	0.864	-22.3	-61.0

STATION: 296 LEG: VIII POSITION: 44° 57' S 166° 40' W DATE: 16 MAR 74

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 (10^4)	PH	ICP 10^4 (M/KG)²	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
601	27	13.09	34.713	2297	2053		292.9	11.7	1845.6	180.7	8.274	11.6	1845.7	180.6	5.331	8.273	1.838	134.7	114.0
602	38	12.47	34.696	2303	2071		305.2	12.4	1870.6	173.0	8.258	12.4	1870.7	172.9	5.532	8.257	1.758	126.8	106.1
604	82	11.47	34.941	2305	2098		337.6	14.1	1912.4	156.5	8.218	14.1	1912.5	156.3	6.098	8.215	1.601	110.0	89.2
605	107	10.73	34.856	2282	2112		397.1	17.0	1946.9	133.1	8.151	17.0	1947.1	132.9	7.129	8.147	1.358	86.3	65.4
607	192	9.90	34.767	2284	2113		380.5	16.8	1947.9	133.3	8.165	16.7	1948.3	133.0	6.950	8.158	1.355	85.8	64.7
608	242	9.56	34.721	2298	2099		321.9	14.4	1919.0	150.6	8.229	14.3	1919.6	150.1	6.017	8.221	1.528	102.5	81.3
610	375	8.60	34.598	2292	2120		359.0	16.5	1954.7	133.7	8.185	16.5	1955.5	133.0	6.744	8.171	1.349	84.4	62.9
611	449	8.05	34.525	2288	2143		413.1	19.4	1991.0	117.6	8.129	19.3	1991.9	116.8	7.723	8.112	1.182	67.6	45.9
613	647	7.40	34.491	2294	2151		409.0	19.7	1999.9	116.4	8.132	19.5	2001.3	115.2	7.810	8.107	1.165	64.6	42.3
614	745	6.79	34.428	2279	2161		464.8	22.8	2021.6	101.6	8.077	22.6	2023.0	100.4	8.930	8.049	1.013	48.9	26.4

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 296 LEG: VIII POSITION: 44° 57' S 166° 40' W DATE: 16 MAR 74

	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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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
616	941	5.75	34.395	2297	2197		511.0	26.0	2064.1	91.9	8.040	25.7	2065.9	90.4	9.923	8.003	0.912	37.3	14.2
617	1040	5.28	34.400	2303	2193		469.7	24.3	2056.3	97.4	8.072	24.0	2058.4	95.7	9.292	8.032	0.965	41.7	18.3
401	1186	4.61	34.410	2315	2205	2226	461.2	24.5	2068.0	97.5	8.079	24.1	2070.4	95.5	9.274	8.033	0.964	40.2	16.5
402	1289	3.98	34.411	2300	2232		605.9	32.9	2108.9	75.2	7.965	32.4	2111.3	73.3	12.187	7.914	0.740	17.0	-7.0
403	1386	3.58	34.432	2328	2239	2245	518.7	28.6	2109.1	86.4	8.030	28.0	2111.7	84.2	10.571	7.976	0.850	27.0	2.6
405	1586	3.05	34.497	2351	2287	2262	622.0	34.9	2162.8	74.3	7.959	34.2	2165.7	72.0	12.705	7.896	0.729	13.0	-12.0
406	1687	2.95	34.542	2355	2306		698.2	39.3	2184.3	67.4	7.913	38.6	2187.3	65.1	14.293	7.845	0.659	5.1	-20.2
407	1784	2.95	34.567			2290													
409	1986	2.50	34.605	2374	2268	2297	456.3	26.1	2130.6	96.3	8.084	25.4	2134.6	92.9	9.863	8.006	0.943	29.9	3.8
411	2183	2.33	34.632	2379	2309	2299	589.5	34.0	2182.2	77.8	7.982	33.0	2186.4	74.6	12.736	7.895	0.757	9.5	-17.3
415	2392	2.20	34.668	2374	2291	2293	531.9	30.8	2161.1	84.1	8.022	29.8	2165.7	80.4	11.840	7.927	0.817	13.2	-14.3
416	2473	2.18	34.682	2367	2291		556.7	32.3	2163.4	80.4	8.002	31.3	2168.1	76.6	12.487	7.904	0.779	8.5	-19.2
417	2569	2.13	34.696	2367	2272	2281	485.0	28.2	2138.6	90.2	8.057	27.2	2143.8	86.0	11.089	7.955	0.875	16.9	-11.1
419	2783	1.98	34.709	2372	2289	2293	527.5	30.8	2159.1	84.1	8.024	29.7	2164.6	79.8	12.226	7.913	0.811	8.2	-20.5
420	2882	1.89	34.715	2371	2286		517.7	30.3	2155.7	85.0	8.031	29.2	2161.3	80.5	12.140	7.916	0.819	7.8	-21.3
421	2982	1.88	34.732	2361	2264	2267	472.4	27.7	2130.2	91.1	8.065	26.6	2136.2	86.2	11.303	7.947	0.877	12.3	-17.1
423	3232	1.68	34.731	2366	2268	2272	466.9	27.6	2133.7	91.7	8.070	26.4	2140.3	86.4	11.446	7.941	0.879	9.5	-20.8
202	3448	1.49	34.728	2365	2270	2280	473.1	28.1	2136.8	90.1	8.064	26.9	2143.7	84.4	11.850	7.926	0.859	4.8	-26.3
203	3599	1.36	34.724	2364	2278		502.1	30.0	2147.6	85.4	8.039	28.6	2154.7	79.7	12.727	7.895	0.811	-1.9	-33.6
204	3748	1.36	34.720			2270													
205	3895	1.18	34.716	2365	2264		448.1	27.0	2128.8	93.2	8.084	25.6	2136.8	86.7	11.785	7.929	0.882	1.1	-31.7
208	4441	0.96	34.706	2364	2297	2292	569.0	34.5	2171.6	75.9	7.988	32.7	2180.0	69.3	15.576	7.808	0.705	-24.1	-59.1
209	4589	0.94	34.704	2363	2274		483.2	29.3	2142.8	86.9	8.053	27.6	2151.9	79.5	13.539	7.868	0.809	-16.1	-51.8
210	4736	0.94	34.703			2271													
211	4884	0.94	34.703	2368															
212	5031	0.94	34.703			2278													
217	5193	0.96	34.702	2366	2269		457.5	27.8	2135.1	91.1	8.075	25.9	2145.6	82.5	13.585	7.867	0.840	-22.7	-60.8

STATION: 301 LEG: VIII POSITION: 41° 34' S 166° 50' W DATE: 21 MAR 74

	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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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	1	15.32	34.865	2327	2051	2043	282.4	10.5	1822.2	203.3	8.297	10.5	1822.2	203.3	5.044	8.297	2.078	157.6	137.1
102	52	14.45	34.816	2323	2070		303.7	11.6	1855.5	187.9	8.268	11.6	1855.6	187.8	5.413	8.267	1.917	141.8	121.1
103	112	11.50	34.937	2314	2027	2101	225.1	9.4	1795.1	207.5	8.366	9.4	1795.4	207.2	4.340	8.363	2.122	160.6	139.8
104	182	10.34	34.804	2313	2131		371.7	16.1	1958.9	141.0	8.180	16.1	1959.3	140.6	6.706	8.174	1.435	93.5	72.4
105	252	9.72	34.738	2309	2113		332.8	14.8	1934.0	149.2	8.219	14.7	1934.6	148.7	6.165	8.210	1.514	101.0	79.8
106	333	9.25	34.677	2306	2119		342.3	15.4	1945.1	143.5	8.207	15.4	1945.8	142.8	6.387	8.195	1.452	94.6	73.2
107	403	8.69	34.616	2311	2141	2150	370.3	17.0	1975.8	133.1	8.177	16.9	1976.7	132.4	6.892	8.162	1.343	83.6	62.0
108	475	8.08	34.539	2301	2165		442.4	20.8	2016.5	112.8	8.105	20.6	2017.5	111.9	8.183	8.087	1.133	62.6	40.8
109	551	7.53	34.476	2302	2073	2147	249.8	12.0	1877.4	168.6	8.319	11.8	1878.8	167.4	5.026	8.299	1.691	117.4	95.4
110	652	7.23	34.469	2304	2180		462.5	22.4	2036.9	105.7	8.085	22.2	2038.2	104.6	8.697	8.061	1.057	53.9	31.6
111	749	6.72	34.426	2297	2197	2164	531.9	26.2	2063.6	92.2	8.027	25.9	2065.0	91.0	10.026	7.999	0.919	39.5	17.0
112	848	6.35	34.444	2312	2104		268.7	13.4	1920.2	155.4	8.291	13.2	1922.3	153.5	5.508	8.259	1.550	101.2	78.4
113	971	5.55	34.403	2319	2237	2194	586.0	30.1	2109.0	83.0	7.988	29.7	2110.8	81.5	11.204	7.951	0.822	28.1	5.0
114	1095	5.04	34.438	2320	2244		602.1	31.4	2117.7	79.9	7.975	31.0	2119.7	78.3	11.678	7.933	0.790	23.8	0.3
115	1243	4.17	34.440	2335	2227	2237	466.3	25.1	2090.0	96.8	8.076	24.7	2092.5	94.8	9.383	8.028	0.957	38.9	15.0
116	1390	3.45	34.469	2353	2272		556.2	30.8	2143.4	82.8	8.006	30.2	2146.1	80.7	11.184	7.951	0.816	23.5	-0.9
117	1539	3.11	34.514	2358	2271	2277	527.8	29.6	2140.4	86.0	8.026	29.0	2143.5	83.6	10.821	7.966	0.846	24.9	0.1
118	1686	2.81	34.559	2376	2205		304.6	17.3	2039.1	133.7	8.242	16.8	2043.1	130.1	6.646	8.177	1.318	70.1	44.8
301	1806	2.67	34.593	2389	2314	2290	577.9	32.9	2185.6	80.5	7.993	32.1	2189.1	77.8	11.976	7.922	0.789	16.6	-9.1
119	1835	2.57	34.594	2391	2399	2320	1100.5	62.9	2275.5	45.6	7.731	61.9	2278.4	43.7	22.185	7.654	0.443	-17.9	-43.6
120	1982	2.41	34.614	2390	2333		655.9	37.7	2208.5	71.8	7.941	36.8	2212.2	69.0	13.745	7.862	0.700	6.0	-20.1
302	2004	2.42	34.616	2397	2323	2299	579.6	33.3	2194.5	80.2	7.992	32.4	2198.4	77.2	12.228	7.913	0.783	14.0	-12.3
303	2201	2.25	34.637	2404	2234		306.8	17.7	2067.6	133.7	8.242	17.1	2072.8	129.1	6.967	8.157	1.310	63.8	37.0
304	2399	2.13	34.658	2405	2330	2303	572.2	33.2	2201.0	80.8	7.998	32.2	2205.6	77.2	12.535	7.902	0.784	9.9	-17.6
305	2498	2.06	34.673	2396	2322	2297	572.5	33.3	2193.5	80.1	7.996	32.3	2198.4	76.4	12.714	7.896	0.776	8.0	-19.8
306	2596	2.00	34.686	2392	2218		294.8	17.2	2050.1	135.7	8.254	16.5	2056.3	130.2	7.019	8.154	1.323	60.7	32.6
307	2694	1.95	34.700	2398	2316	2285	538.5	31.5	2185.4	84.2	8.020	30.4	2190.7	80.0	12.234	7.912	0.813	9.4	-19.1
308	2793	1.91	34.712	2386	2303	2275	530.0	31.0	2172.6	84.3	8.024	29.9	2178.1	80.0	12.230	7.913	0.814	8.3	-20.5
309	2892	1.83	34.720	2384	2204		281.0	16.5	2033.6	138.9	8.270	15.8	2040.6	132.6	6.942	8.159	1.350	59.8	30.6
310	2990	1.77	34.727	2383	2292	2272	497.3	29.3	2159.3	88.4	8.048	28.1	2165.3	83.6	11.772	7.929	0.851	9.6	-19.9
311	3090	1.71	34.731	2379	2283	2264	477.8	28.2	2148.9	90.9	8.063	27.0	2155.1	85.9	11.474	7.940	0.874	10.7	-19.1
312	3286	1.55	34.731	2375	2192		271.8	16.1	2020.4	140.5	8.280	15.3	2028.4	133.3	7.031	8.153	1.357	55.7	25.2
313	3386	1.46	34.727	2377	2296	2262	526.5	31.3	2166.5	83.1	8.023	30.0	2173.1	77.9	12.961	7.887	0.793	-1.0	-31.9
314	3534	1.33	34.723	2377	2296	2274	523.7	31.3	2166.6	83.1	8.025	29.9	2173.5	77.6	13.096	7.883	0.790	-3.2	-34.6
315	3683	1.23	34.719	2383	2200		270.0	16.2	2028.1	140.7	8.283	15.3	2037.2	132.5	7.242	8.140	1.349	49.8	17.8
317	4079	1.01	34.710	2371	2302	2272	563.3	34.1	2175.9	77.0	7.993	32.4	2183.7	70.9	14.857	7.828	0.721	-17.3	-50.9
319	4474	0.92	34.704	2382	2300	2274	513.6	31.2	2170.0	83.8	8.032	29.5	2178.8	76.7	14.079	7.851	0.781	-17.2	-52.4
320	4674	0.92	34.704	2385	2307		529.7	32.2	2178.0	81.8	8.020	30.3	2187.1	74.6	14.752	7.831	0.759	-22.4	-58.4

STATION: 303 LEG: VIII POSITION: 38° 23' S 170° 4' W DATE: 23 MAR 74

	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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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	18.21	34.930	2309	2035	2031	318.9	10.9	1805.9	203.2	8.258	10.9	1805.9	203.2	5.524	8.258	2.081	157.7	137.2
503	43	18.23	34.930	2317	2084		395.7	13.5	1878.3	177.2	8.181	13.5	1878.4	177.1	6.610	8.180	1.814	131.3	110.8
504	62	14.83	35.033	2328	2057	2045	284.6	10.7	1831.8	199.4	8.293	10.7	1832.0	199.3	5.122	8.291	2.047	153.2	132.5
506	102	12.87	35.059	2326	2106		340.4	13.6	1911.5	165.9	8.222	13.6	1911.8	165.6	6.050	8.218	1.702	119.2	98.4
507	151	11.97	35.038	2336	2107	2092	314.6	12.9	1907.7	171.3	8.250	12.9	1908.1	171.0	5.693	8.245	1.756	124.2	103.3
509	250	10.99	34.902	2325	2138	2108	375.7	16.0	1962.4	144.6	8.180	15.9	1963.0	144.1	6.748	8.171	1.474	96.6	75.4
511	399	10.99	34.694			2116													
513	597	7.76	34.497	2307	2167	2141	426.6	20.2	2016.7	115.1	8.119	20.1	2017.9	114.0	8.006	8.097	1.153	63.7	41.6
515	794	6.94	34.426	2299	2177	2147	461.1	22.5	2035.1	104.4	8.085	22.3	2036.7	103.0	8.819	8.055	1.040	51.2	28.6
517	991	6.08	34.390	2315	2193	2176	450.3	22.7	2050.8	104.6	8.094	22.4	2052.8	102.9	8.794	8.056	1.037	49.4	26.2
302	1144	5.14	34.389	2320	2221	2144	510.2	26.6	2087.6	91.8	8.042	26.1	2089.8	90.0	10.055	7.998	0.907	35.1	11.5
303	1243	4.43	34.393	2323	2232		526.6	28.1	2101.4	87.5	8.027	27.7	2103.8	85.6	10.507	7.979	0.863	29.7	5.8
305	1442	3.58	34.453	2347	2256	2247	517.9	28.5	2124.6	87.9	8.034	28.0	2127.4	85.6	10.530	7.978	0.865	27.9	3.4
306	1540	3.24	34.492	2354	2282		590.3	32.9	2155.8	78.3	7.982	32.3	2158.7	76.0	12.006	7.921	0.768	17.4	-7.5
308	1733	2.87	34.555	2373	2329	2290	730.2	41.3	2207.3	65.5	7.897	40.4	2210.4	63.2	14.879	7.827	0.640	2.7	-22.7
309	1834	2.69	34.581	2396	2303		510.3	29.0	2169.0	90.0	8.044	28.3	2172.6	87.0	10.666	7.972	0.882	25.6	-0.2
311	2041	2.47	34.607	2402	2308		503.9	28.9	2173.6	90.5	8.049	28.1	2177.7	87.2	10.744	7.969	0.885	23.7	-2.7
314	2238	2.33	34.626	2393	2306		525.0	30.3	2174.0	86.7	8.031	29.4	2178.4	83.2	11.424	7.942	0.844	17.6	-9.4
315	2342	2.27	34.634	2407	2310	2319	491.8	28.4	2174.3	92.3	8.059	27.5	2179.1	88.4	10.803	7.966	0.898	21.7	-5.6
316	2437	2.20	34.641	2414	2349		621.2	36.0	2221.8	76.2	7.967	34.9	2226.5	72.6	13.526	7.869	0.737	4.9	-22.7
317	2539	2.13	34.648	2413	2327	2323	530.7	30.8	2194.6	86.6	8.029	29.8	2199.6	82.6	11.795	7.928	0.839	13.8	-14.2
318	2639	2.07	34.655	2413	2324		518.6	30.2	2190.6	88.2	8.038	29.1	2195.9	83.9	11.661	7.933	0.853	14.0	-14.2
319	2740	2.04	34.674	2404	2329	2293	570.2	33.2	2200.0	80.8	7.998	32.1	2205.3	76.6	12.913	7.889	0.779	5.6	-23.0
321	2936	2.04	34.702			2289													
101	3094	1.81	34.718	2378	2294		521.9	30.7	2163.7	84.7	8.028	29.4	2169.7	79.8	12.452	7.905	0.812	4.6	-25.2
323	3131	1.81	34.718			2279													
102	3197	1.76	34.728	2367	2327	2249	723.4	42.6	2205.9	63.5	7.895	41.1	2211.6	59.3	17.222	7.764	0.604	-17.1	-47.3
103	3296	1.65	34.727	2367	2379		1090.8	64.5	2255.7	43.8	7.725	62.8	2260.8	40.4	25.945	7.586	0.411	-37.3	-67.8
104	3397	1.58	34.729	2362	2272	2258	491.2	29.1	2140.5	87.4	8.049	27.8	2147.2	82.0	12.218	7.913	0.834	3.0	-27.9
106	3591	1.58	34.726			2258													
107	3684	1.35	34.723	2372	2294		534.4	32.0	2165.5	81.5	8.016	30.5	2172.7	75.8	13.561	7.868	0.772	-6.9	-38.9
108	3784	1.35	34.720			2252													
110	4027	1.11	34.713	2379	2292	2254	498.0	30.0	2160.7	86.2	8.044	28.5	2168.7	79.8	13.100	7.883	0.812	-7.6	-41.0
111	4167	1.05	34.710	2382	2282		454.0	27.5	2146.4	93.1	8.081	25.9	2154.9	86.1	12.167	7.915	0.876	-3.3	-37.2
112	4317	0.98	34.707	2380	2283		461.7	28.0	2148.5	91.5	8.074	26.4	2157.3	84.3	12.554	7.901	0.858	-7.3	-41.8
114	4475	0.97	34.705	2384	2314		562.6	34.1	2187.1	77.8	7.996	32.3	2195.6	71.1	15.327	7.815	0.723	-22.8	-58.0
122	4780	0.92	34.703	2381	2279	2247	445.2	27.1	2142.8	94.2	8.088	25.4	2152.6	86.1	12.671	7.897	0.876	-12.5	-48.9

STATION: 305 LEG: VIII POSITION: 35° 40' S 166° 47' W DATE: 26 MAR 74

	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$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ 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	1	20.34	35.314	2334	2016	1995	292.4	9.4	1758.1	233.5	8.296	9.4	1758.2	233.5	5.060	8.296	2.417	188.0	167.6
102	32	20.38	35.314	2340	2022		294.3	9.4	1763.9	233.7	8.295	9.4	1764.0	233.6	5.085	8.294	2.418	188.0	167.5
103	77	14.88	35.320	2340	2051	2040	266.2	10.0	1814.9	211.1	8.317	10.0	1815.1	210.9	4.846	8.315	2.184	164.8	144.1
104	121	13.32	35.223	2325	2099		336.8	13.3	1901.2	169.5	8.226	13.2	1901.5	169.3	5.997	8.222	1.748	122.7	101.9
105	172	12.65	35.151	2323	2140	2116	414.8	16.7	1965.5	142.8	8.147	16.7	1965.9	142.5	7.238	8.140	1.468	95.6	74.6
106	232	11.94	35.054	2316	2102		335.4	13.8	1911.9	161.3	8.223	13.8	1912.4	160.8	6.101	8.215	1.653	113.5	92.4
107	301	11.94	34.909			2093													
108	376	9.75	34.739	2300	2120		362.5	16.1	1949.8	139.1	8.186	16.0	1950.7	138.4	6.728	8.172	1.409	89.9	68.4
109	450	8.91	34.634	2295	2122	2121	362.7	16.5	1955.9	134.5	8.182	16.4	1956.9	133.7	6.827	8.166	1.357	84.6	62.9
111	646	8.91	34.474			2144													
112	745	6.86	34.434	2296	2154		402.4	19.7	2003.6	115.7	8.137	19.5	2005.2	114.3	7.789	8.109	1.154	62.8	40.4
113	867	6.16	34.397	2297	2123	2156	320.7	16.1	1957.6	134.3	8.221	15.9	1959.5	132.6	6.476	8.189	1.337	80.1	57.3
114	991	5.42	34.374	2307	2219		553.7	28.5	2089.7	85.8	8.008	28.2	2091.5	84.3	10.717	7.970	0.849	30.7	7.5
302	1144	4.41	34.397	2324	2239	2216	549.9	29.4	2110.2	84.4	8.010	29.0	2112.4	82.6	10.836	7.965	0.833	27.7	4.0
115	1190	4.26	34.398	2324	2213	2210	454.4	24.4	2075.4	98.2	8.085	24.0	2077.8	96.2	9.151	8.039	0.970	40.8	17.0
303	1294	3.63	34.426	2332	2289		739.4	40.7	2169.2	64.2	7.889	40.1	2171.5	62.5	14.559	7.837	0.631	6.1	-18.0
304	1442	3.63	34.480			2255													
306	1741	3.63	34.582			2286													
308	2036	2.31	34.622	2402	2315	2307	527.0	30.4	2182.7	86.9	8.031	29.6	2186.7	83.7	11.215	7.950	0.849	20.1	-6.2
309	2185	2.21	34.631	2402	2339		625.9	36.2	2212.9	74.9	7.962	35.3	2217.0	71.7	13.369	7.874	0.728	6.6	-20.2
310	2332	2.21	34.641			2320													
201	2485	2.21	34.647			2325													
204	2780	1.88	34.659	2415	2326		515.1	30.2	2192.7	88.1	8.040	29.1	2198.2	83.7	11.755	7.930	0.850	12.1	-16.6
205	2880	1.88	34.663			2323													
207	3081	1.78	34.672	2410	2318	2300	501.6	29.5	2183.8	89.7	8.049	28.3	2190.0	84.7	11.830	7.927	0.860	9.6	-20.2
208	3182	1.75	34.679	2409	2335		570.2	33.6	2206.0	80.4	7.998	32.2	2212.2	75.6	13.474	7.870	0.769	-0.6	-30.8
209	3277	1.72	34.685	2406	2368	2296	746.9	44.0	2245.4	63.5	7.888	42.5	2251.3	59.2	17.607	7.754	0.602	-18.2	-48.6
210	3369	1.68	34.688	2406	2311	2305	488.7	28.9	2176.0	91.2	8.059	27.6	2182.8	85.6	11.892	7.925	0.871	7.1	-23.7
214	3621	1.60	34.710	2381	2305	2271	550.1	32.6	2176.7	80.7	8.007	31.1	2183.7	75.2	13.755	7.862	0.765	-6.6	-38.3
216	3771	1.50	34.719	2374	2282	2257	486.5	28.9	2149.3	88.8	8.054	27.5	2156.8	82.7	12.483	7.904	0.841	-1.1	-33.4
218	3967	1.32	34.718	2380	2324	2264	632.2	37.8	2200.2	71.0	7.950	36.1	2207.5	65.4	16.282	7.788	0.666	-21.1	-54.1
219	4168	1.17	34.714	2379	2344		739.9	44.5	2222.9	61.6	7.885	42.6	2230.2	56.2	19.356	7.713	0.572	-33.1	-67.0

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 305 LEG: VIII POSITION: 35° 40' S 166° 47' W DATE: 26 MAR 74

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^{-7} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
220	4365	1.08	34.710	2383	2297	2257	502.4	30.4	2165.8	85.9	8.041	28.7	2174.4	78.9	13.616	7.866	0.803	-13.3	-48.0
221	4567	1.02	34.707	2379	2274		437.0	26.5	2136.8	95.7	8.096	24.9	2146.3	87.9	12.205	7.913	0.894	-7.4	-42.9
222	4763	1.00	34.705	2382	2301	2292	518.8	31.4	2171.3	83.3	8.028	29.6	2180.6	75.8	14.589	7.836	0.771	-22.5	-58.8
223	4965	1.02	34.705	2370	2346		798.9	48.4	2225.8	56.8	7.851	46.0	2234.2	50.7	22.652	7.645	0.516	-50.7	-87.9
224	5244	1.03	34.704	2395	2277	2265	404.3	24.5	2134.3	103.2	8.129	22.7	2145.5	93.8	12.006	7.921	0.954	-12.2	-50.6

STATION: 306 LEG: VIII POSITION: 32° 50' S 163° 38' W DATE: 27 MAR 74

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^{-7} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
601	12	22.19	35.298	2326	1987	1991	285.2	8.7	1715.1	248.2	8.308	8.7	1715.1	248.2	4.930	8.307	2.568	202.8	182.3
602	41	22.17	35.331	2327	2008		312.6	9.5	1748.6	234.9	8.276	9.5	1748.7	234.8	5.314	8.275	2.431	189.2	168.7
603	57	21.83	35.352	2328	1998		293.5	9.0	1732.0	242.0	8.297	9.0	1732.1	241.8	5.070	8.295	2.506	196.1	175.6
604	87	21.83	35.394			2035													
605	112	15.24	35.392	2337	2066		295.4	11.0	1840.4	199.6	8.280	10.9	1840.7	199.3	5.293	8.276	2.068	153.0	132.2
607	188	12.80	35.135	2318	2092		327.5	13.1	1894.6	169.3	8.234	13.1	1895.0	168.9	5.923	8.227	1.739	121.9	100.9
609	287	12.80	34.934			2122													
611	416	8.96	34.645	2301	2139		390.8	17.8	1977.9	128.3	8.155	17.7	1978.8	127.5	7.249	8.140	1.295	78.6	57.0
612	496	8.96	34.531			2147													
614	565	7.47	34.465	2300	2150		393.0	18.8	1995.6	120.6	8.148	18.7	1996.8	119.5	7.458	8.127	1.207	69.4	47.4
616	714	6.70	34.401	2299	2142	2147	363.5	17.9	1984.7	124.4	8.176	17.7	1986.3	123.0	7.096	8.149	1.240	71.7	49.3
618	838	5.96	34.360	2305	2117		294.1	14.9	1944.2	142.9	8.255	14.7	1946.2	141.1	5.978	8.223	1.421	88.8	66.1
619	886	5.96	34.368			2176													
620	937	5.39	34.364	2306	2181		426.1	22.0	2038.2	105.8	8.111	21.7	2040.2	104.1	8.407	8.075	1.049	51.0	27.9
621	1012	4.95	34.357	2306	2205		494.0	25.9	2071.6	92.5	8.051	25.5	2073.6	90.9	9.720	8.012	0.915	37.0	13.8
622	1085	4.59	34.358	2319	2217	2211	487.8	25.9	2082.8	93.3	8.057	25.5	2085.0	91.5	9.655	8.015	0.922	37.0	13.6
401	1277	3.45	34.422	2335	2271	2235	624.6	34.6	2147.5	74.0	7.957	34.0	2149.8	72.2	12.416	7.906	0.728	15.9	-8.2
624	1340	3.30	34.437	2336	2243		501.1	27.9	2111.5	88.6	8.044	27.4	2114.1	86.5	10.194	7.992	0.873	29.6	5.4
402	1421	2.98	34.489	2364	2322		740.4	41.7	2200.9	64.4	7.891	41.0	2203.4	62.5	14.672	7.834	0.632	4.9	-19.6
403	1582	2.74	34.539	2366	2281	2280	530.6	30.1	2150.8	85.1	8.024	29.5	2153.9	82.6	10.926	7.962	0.836	23.5	-1.5
404	1717	2.53	34.579	2376	2285		508.4	29.1	2152.5	88.5	8.042	28.4	2155.9	85.7	10.618	7.974	0.869	25.3	-0.1
405	1862	2.53	34.609			2303													
406	2015	2.22	34.625	2399	2312		524.4	30.3	2179.8	86.8	8.032	29.5	2183.8	83.6	11.166	7.952	0.849	20.3	-6.0
407	2162	2.12	34.635	2404	2323	2322	547.0	31.8	2192.4	83.8	8.016	30.9	2196.7	80.5	11.762	7.930	0.817	15.6	-11.2
409	2459	1.98	34.648	2423	2434	2333	1115.9	65.2	2308.5	45.3	7.728	63.8	2312.5	42.7	23.763	7.624	0.434	-25.3	-53.0
411	2744	1.87	34.659	2422	2332	2334	513.6	30.1	2198.0	88.9	8.043	29.0	2203.6	84.4	11.652	7.934	0.858	13.3	-15.4
414	3050	1.78	34.668	2414	2346	2331	598.1	35.2	2218.2	77.6	7.980	33.9	2224.1	73.1	13.890	7.857	0.743	-1.6	-31.3
417	3348	1.78	34.684			2317													
421	3609	1.60	34.700	2394	2304	2299	500.9	29.7	2171.1	88.2	8.047	28.3	2178.3	82.4	12.516	7.903	0.838	0.8	-30.9
422	3694	1.60	34.705			2285													
102	3880	1.60	34.713			2212													
104	4080	1.33	34.714	2383	2298	2191	510.4	30.5	2167.2	85.3	8.036	29.0	2175.2	78.8	13.414	7.872	0.802	-9.2	-42.7
106	4279	1.33	34.712			2243													
108	4573	1.07	34.709	2383	2279	2208	442.4	26.7	2141.9	95.3	8.092	25.1	2151.4	87.5	12.322	7.909	0.891	-7.8	-43.3
110	4869	1.07	34.706			2238													
112	5169	1.07	34.705			2255													
118	5476	1.09	34.706	2380	2270	2252	423.8	25.6	2130.9	98.5	8.108	23.7	2142.3	88.9	12.887	7.890	0.905	-21.0	-60.3
123	5605	1.09	34.705			2238													

STATION: 308 LEG: VIII POSITION: 29° 60' S 160° 21' W DATE: 31 MAR 74

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^{-7} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
101	11	23.35	35.358	2339	2004	1940	308.8	9.1	1733.4	246.5	8.285	9.1	1733.4	246.4	5.195	8.284	2.554	201.1	180.7
102	76	23.35	35.564			2002													
103	150	15.91	35.425	2350	2070	2063	294.8	10.7	1837.9	206.3	8.284	10.7	1838.3	206.0	5.258	8.279	2.139	159.4	138.6
104	234	14.22	35.228	2336	2100	2039	335.5	12.9	1895.4	176.8	8.232	12.8	1895.9	176.3	5.973	8.224	1.820	129.1	108.0
105	300	12.40	35.017	2327	2124		365.9	14.9	1939.0	155.1	8.194	14.8	1939.7	154.5	6.557	8.183	1.586	106.7	85.5
106	399	10.09	34.734	2315	2135	2095	372.5	16.3	1963.8	139.9	8.179	16.2	1964.7	139.1	6.847	8.165	1.416	90.4	68.9
107	499	8.15	34.524	2305	2161		422.3	19.8	2008.8	117.5	8.124	19.6	2009.8	116.6	7.848	8.105	1.180	67.1	45.2
108	598	8.15	34.438			2135													
109	696	6.61	34.383	2305	2153		375.4	18.5	1997.8	121.6	8.164	18.4	1999.3	120.3	7.276	8.138	1.213	69.2	46.8
110	820	5.85	34.339	2311	2160	2122	367.9	18.7	2005.3	121.0	8.170	18.5	2007.1	119.5	7.253	8.139	1.203	67.3	44.6
111	894	5.35	34.329	2311	2197		459.9	23.8	2058.4	99.9	8.082	23.5	2060.2	98.4	8.957	8.048	0.990	45.5	22.6
112	943	5.12	34.328	2316	2188	2180	415.7	21.7	2043.6	107.7	8.122	21.4	2045.6	106.0	8.213	8.085	1.067	52.8	29.7
113	1015	4.72	34.334	2315	2205		461.9	24.4	2068.1	97.5	8.079	24.1	2070.1	95.8	9.129	8.040	0.964	41.9	18.7
114	1088	4.25	34.363	2331	2238	2206	517.6	27.8	2106.4	88.7	8.035	27.4	2108.6	87.0	10.181	7.992	0.877	32.5	9.0
115	1185	3.71	34.399	2339	2233		464.8	25.5	2096.8	95.7	8.076	25.1	2099.2	93.7	9.330	8.030	0.945	38.3	14.5

STATION: 308 LEG: VIII POSITION: 29° 60' S 160° 21' W DATE: 31 MAR 74

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^{-7} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
116	1280	3.21	34.447	2352	2302	2220	697.0	38.9	2180.3	67.8	7.914	38.3	2182.6	66.1	13.709	7.863	0.667	9.8	-14.3
117	1376	3.00	34.486	2362	2281		549.5	30.9	2152.2	82.9	8.011	30.4	2154.8	80.8	11.058	7.956	0.817	23.6	-0.8
118	1515	2.70	34.544	2383	2289	2275	502.2	28.5	2155.2	90.2	8.049	28.0	2158.3	87.8	10.258	7.989	0.889	29.2	4.5
119	1656	2.49	34.583	2399	2313		536.7	30.8	2181.4	85.8	8.024	30.1	2184.7	83.2	11.010	7.958	0.844	23.4	-1.8
301	1779	2.34	34.609	2398	2339		646.4	37.2	2213.9	72.9	7.949	36.4	2217.2	70.3	13.270	7.877	0.714	9.3	-16.3
120	1793	2.36	34.603	2400	2321	2295	558.5	32.2	2191.1	82.8	8.008	31.4	2194.6	80.0	11.578	7.936	0.812	18.9	-6.8
302	1976	2.19	34.628	2419	2355	2313	627.2	36.3	2227.8	75.8	7.963	35.5	2231.6	73.0	13.053	7.884	0.741	10.0	-16.2
303	2173	2.09	34.640	2422	2334		525.2	30.5	2200.6	87.9	8.035	29.7	2205.0	84.4	11.259	7.948	0.857	19.4	-7.4
304	2370	1.99	34.648	2425	2355	2324	596.8	34.8	2226.4	78.8	7.984	33.8	2231.0	75.2	12.920	7.889	0.764	8.2	-19.2
305	2567	1.88	34.655	2435	2348		529.2	31.0	2214.3	87.7	8.033	30.0	2219.5	83.6	11.726	7.931	0.849	14.4	-13.7
306	2766	1.81	34.663	2432	2339	2322	504.9	29.7	2203.6	90.7	8.051	28.6	2209.3	86.2	11.456	7.941	0.876	14.8	-14.0
307	2963	1.78	34.668	2436	2316		421.5	24.8	2170.7	105.5	8.122	23.8	2177.1	100.2	9.861	8.006	1.018	26.5	-2.9
308	3111	1.71	34.675	2425	2344	2325	546.4	32.2	2212.4	84.4	8.018	30.9	2218.6	79.5	12.783	7.893	0.808	4.1	-25.8
309	3210	1.67	34.679	2427	2335		505.0	29.8	2200.1	90.1	8.049	28.6	2206.6	84.9	11.982	7.921	0.863	8.3	-22.0
310	3308	1.67	34.684			2308													
311	3408	1.62	34.692	2412	2322	2300	506.6	30.0	2188.4	88.6	8.045	28.6	2195.2	83.1	12.321	7.909	0.845	4.1	-26.9
312	3506	1.57	34.699	2406	2303	2294	459.7	27.3	2165.4	95.3	8.082	26.0	2172.7	89.4	11.393	7.943	0.909	9.1	-22.3
314	3705	1.49	34.706	2401	2313	2277	508.1	30.2	2180.5	87.3	8.042	28.8	2187.9	81.4	12.779	7.893	0.828	-1.5	-33.6
315	3803	1.46	34.712	2395	2283		428.0	25.5	2142.6	100.0	8.108	24.2	2150.5	93.3	11.023	7.958	0.949	9.1	-23.3
316	3921	1.38	34.713	2388	2296	2272	488.2	29.2	2162.8	89.1	8.055	27.7	2170.6	82.7	12.644	7.898	0.842	-3.1	-36.0
317	4220	1.22	34.714	2390	2297	2270	482.1	29.0	2163.4	89.6	8.059	27.4	2171.9	82.7	12.862	7.891	0.842	-7.4	-41.4
318	4518	1.10	34.711	2394	2278	2268	410.8	24.8	2136.1	102.1	8.123	23.3	2145.7	94.1	11.390	7.943	0.957	-0.4	-35.7
319	4818	1.07	34.707	2389	2302	2264	500.0	30.2	2170.3	86.5	8.044	28.4	2179.9	78.8	14.106	7.851	0.801	-20.3	-56.9
320	5121	1.09	34.708	2393	2299	2268	477.7	28.8	2164.9	90.3	8.063	26.9	2175.2	81.8	13.870	7.858	0.833	-22.1	-59.9

STATION: 310 LEG: VIII POSITION: 26° 58' S 157° 10' W DATE: 3 APR 74

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^{-7} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) μM/KG	DELTA $CO_3^=$ (ARAG) μM/KG
501	12	24.84	35.511	2370	2004	1974	296.1	8.4	1711.7	268.9	8.307	8.4	1711.7	268.9	4.942	8.306	2.799	223.6	203.3
510	102	24.84	35.632			2020													
515	198	18.04	35.515	2352	2061		307.1	10.5	1820.9	214.6	8.275	10.5	1821.4	214.1	5.389	8.268	2.229	167.4	146.5
517	300	15.39	35.278	2336	2090	2096	336.1	12.4	1878.7	183.9	8.234	12.4	1879.4	183.2	5.973	8.224	1.895	135.7	114.5
518	401	12.36	35.005	2321	2107		342.3	13.9	1916.3	161.7	8.218	13.8	1917.3	160.9	6.259	8.203	1.651	112.4	90.9
519	501	9.49	34.628	2304	2140	2141	395.0	17.7	1977.6	129.7	8.153	17.5	1978.7	128.8	7.327	8.135	1.307	79.3	57.6
521	697	9.49	34.384			2159													
522	798	5.94	34.341	2307	2162		382.0	19.3	2010.3	117.4	8.156	19.1	2012.0	115.9	7.491	8.125	1.167	63.9	41.3
523	898	5.27	34.327	2307	2191	2183	451.0	23.4	2051.8	100.8	8.089	23.1	2053.6	99.3	8.824	8.054	0.999	46.5	23.5
301	938	5.37	34.327	2312	2184	2200	418.8	21.6	2039.7	107.7	8.119	21.3	2041.6	106.0	8.259	8.083	1.067	52.9	29.8
524	999	4.73	34.343	2319	2207		457.1	24.2	2069.1	98.7	8.083	23.8	2071.1	97.0	9.016	8.049	0.977	43.3	20.0
302	1010	4.88	34.335	2316	2211		481.9	25.3	2075.8	94.9	8.063	25.0	2077.8	93.2	9.468	8.024	0.939	39.4	16.2
303	1113	4.24	34.365	2328	2220	2160	464.4	25.0	2083.3	96.7	8.077	24.6	2085.6	94.8	9.253	8.034	0.955	40.1	16.5
305	1363	3.13	34.482	2361	2267	2236	502.5	28.1	2134.2	89.7	8.047	27.6	2136.9	87.5	10.160	7.993	0.884	30.4	6.1
306	1487	2.84	34.523	2370	2290		554.1	31.4	2160.9	82.7	8.008	30.7	2163.8	80.4	11.246	7.949	0.814	22.2	-2.5
307	1610	2.62	34.560	2381	2294	2300	525.5	30.0	2162.6	86.4	8.030	29.3	2165.8	83.9	10.807	7.966	0.850	24.5	-0.6
309	1860	2.30	34.612	2403	2332	2268	592.2	34.2	2204.0	78.9	7.984	33.4	2207.6	76.1	12.298	7.910	0.772	14.3	-11.6
310	1986	2.19	34.624	2408	2347		637.5	36.9	2220.9	74.1	7.955	36.0	2224.7	71.3	13.324	7.875	0.723	8.2	-18.0
311	2108	2.11	34.636	2412	2324	2298	522.6	30.4	2191.0	87.7	8.035	29.5	2195.2	84.3	11.185	7.951	0.856	20.0	-6.6
314	2345	1.98	34.647	2420	2357	2352	627.1	36.6	2230.1	75.3	7.963	35.6	2234.5	71.9	13.534	7.869	0.730	5.1	-22.2
316	2541	1.98	34.655			2273													
318	2741	1.84	34.660	2429	2337		508.8	29.9	2201.9	90.2	8.047	28.8	2207.5	85.7	11.522	7.938	0.871	14.6	-14.0
319	2840	1.84	34.663			2328													
320	2938	1.77	34.666	2436	2340		495.4	29.2	2203.4	92.4	8.059	28.0	2209.4	87.6	11.422	7.942	0.890	14.2	-15.1
102	3062	1.74	34.671	2430	2325	2291	463.3	27.3	2185.6	97.1	8.084	26.1	2192.0	91.8	10.887	7.963	0.933	17.0	-12.7
103	3149	1.72	34.672	2427	2334		501.8	29.6	2198.8	90.6	8.052	28.4	2205.2	85.4	11.837	7.927	0.868	9.6	-20.5
104	3240	1.72	34.674			2289													
105	3287	1.69	34.676	2423	2324		480.0	28.3	2186.9	93.7	8.069	27.1	2193.7	88.2	11.526	7.938	0.897	10.7	-19.8
107	3376	1.67	34.678	2425	2327	2275	483.3	28.5	2190.3	93.2	8.066	27.3	2197.2	87.5	11.686	7.932	0.890	8.9	-21.9
108	3421	1.65	34.680	2420	2339		543.0	32.1	2207.7	84.2	8.019	30.7	2214.5	78.8	13.115	7.882	0.801	-0.4	-31.4
109	3507	1.59	34.688	2415	2313	2271	466.6	27.6	2175.2	95.1	8.078	26.3	2182.5	89.2	11.507	7.939	0.907	8.9	-22.4
111	3675	1.51	34.695	2406	2295	2266	434.4	25.8	2154.5	99.7	8.105	24.5	2162.2	93.2	10.986	7.959	0.948	10.8	-21.2
112	3762	1.48	34.698	2403	2313		501.3	29.8	2179.7	88.4	8.047	28.4	2187.3	82.3	12.675	7.897	0.838	-1.3	-33.6
115	3878	1.42	34.702	2400	2293		443.7	26.5	2154.2	97.4	8.095	25.1	2162.2	90.7	11.457	7.941	0.923	5.5	-27.2
116	4009	1.37	34.706	2404	2300	2257	453.2	27.1	2162.1	95.9	8.087	25.6	2170.4	89.0	11.814	7.928	0.906	2.0	-31.2
117	4127	1.32	34.709	2390	2300		494.3	29.6	2167.3	88.1	8.050	28.0	2175.6	81.4	13.037	7.885	0.828	-7.3	-41.0
118	4238	1.27	34.710	2388	2288	2236	459.4	27.5	2152.2	93.3	8.078	26.0	2160.8	86.2	12.317	7.909	0.877	-4.1	-38.2
120	4504	1.16	34.711	2389	2290	2224	461.0	27.8	2154.5	92.8	8.077	26.1	2163.6	85.2	12.679	7.897	0.867	-9.0	-44.2
121	4652	1.12	34.709	2390	2298		484.0	29.2	2164.7	89.1	8.058	27.4	2174.0	81.5	13.454	7.871	0.830	-15.0	-50.8
122	4804	1.12	34.709			2252													
124	5109	1.13	34.710	2391	2281	2230	427.4	25.8	2141.5	98.8	8.107	24.0	2152.1	89.8	12.491	7.903	0.914	-13.9	-51.6

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15μM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 314 LEG: VIII POSITION: 23° 44' S 153° 37' W DATE: 5 APR 74

MEASURED PARAMETERS				TITRATOR		GC	CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY $^0/_{00}$	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
402	42	26.03	35.722	2363	2012		331.4	9.1	1729.3	258.6	8.269	9.1	1729.4	258.5	5.398	8.268	2.706	213.1	192.7
403	78	26.03	35.730			2013													
405	179	19.88	35.649	2350	2032	2056	293.5	9.5	1774.4	233.1	8.295	9.5	1774.8	232.7	5.145	8.289	2.432	186.2	165.4
406	257	18.07	35.526	2334	2058	2066	325.8	11.1	1827.6	204.3	8.251	11.1	1828.3	203.7	5.719	8.243	2.121	156.6	135.6
407	309	16.54	35.397	2327	2056		309.8	11.1	1829.9	200.1	8.265	11.0	1830.7	199.3	5.568	8.254	2.068	151.8	130.7
508	350	15.19	35.240	2323	2077		328.5	12.2	1866.5	183.2	8.240	12.2	1867.4	182.4	5.914	8.228	1.885	134.5	113.3
509	398	14.11	35.177	2318	2089		341.3	13.1	1889.0	171.9	8.223	13.0	1889.9	171.0	6.186	8.209	1.764	122.7	101.3
510	547	8.35	34.599	2286	2143	2191	423.5	19.7	1991.9	116.4	8.120	19.5	1993.0	115.4	7.952	8.100	1.171	65.6	43.6
511	695	6.18	34.352	2287	2186		512.5	25.7	2052.9	92.4	8.038	25.5	2054.2	91.3	9.732	8.012	0.919	40.1	17.7
512	856	5.25	34.353	2307	2197		469.7	24.4	2060.2	97.5	8.073	24.1	2061.9	96.1	9.125	8.040	0.967	43.5	20.7
513	943	4.79	34.382	2312	2206		476.4	25.1	2070.6	95.3	8.066	24.8	2072.4	93.8	9.339	8.030	0.945	40.5	17.4
514	1042	4.79	34.409			2251													
515	1190	4.79	34.468			2267													
516	1390	4.79	34.533			2280													
517	1587	4.79	34.587			2340													
518	1785	2.31	34.613	2408	2301		460.0	26.5	2161.8	97.7	8.086	25.9	2165.5	94.7	9.646	8.016	0.961	33.6	8.0
519	1984	2.31	34.631			2321													
201	1988	2.14	34.631	2420	2323		493.3	28.6	2186.8	92.6	8.059	27.9	2190.9	89.3	10.449	7.981	0.906	26.2	-0.1
202	2094	2.08	34.637	2405	2337		601.4	35.0	2209.6	77.4	7.978	34.1	2213.6	74.3	12.773	7.894	0.754	10.1	-16.5
203	2204	2.01	34.642	2407	2316	2365	508.1	29.6	2182.3	89.1	8.045	28.8	2186.8	85.5	11.025	7.958	0.868	20.2	-6.7
205	2413	2.01	34.650			2319													
206	2513	1.90	34.654	2403	2309		494.1	28.9	2174.6	90.5	8.055	28.0	2179.7	86.4	11.085	7.955	0.878	17.8	-10.1
207	2623	1.86	34.657	2405	2342	2310	619.3	36.3	2215.7	74.9	7.965	35.2	2220.7	71.1	13.830	7.859	0.723	1.3	-26.9
208	2739	1.81	34.662	2408	2331		558.2	32.8	2201.3	81.9	8.007	31.7	2206.7	77.7	12.672	7.897	0.789	6.6	-22.1
209	2855	1.76	34.667	2417	2323	2344	496.0	29.2	2188.0	90.8	8.055	28.1	2193.8	86.2	11.435	7.942	0.876	13.7	-15.3
210	2967	1.72	34.670	2409	2341		595.8	35.1	2213.4	77.5	7.980	33.8	2219.1	73.1	13.769	7.861	0.743	-0.6	-30.0
211	3064	1.73	34.671			2295													
214	3318	1.61	34.680	2398	2335	2339	611.4	36.2	2209.1	74.7	7.968	34.8	2215.3	69.9	14.669	7.834	0.711	-8.0	-38.7
215	3425	1.57	34.683	2400	2329		576.1	34.2	2201.1	78.7	7.992	32.7	2207.7	73.6	13.999	7.854	0.748	-5.7	-36.8
216	3550	1.53	34.687	2403	2309	2296	488.0	29.0	2174.5	90.5	8.058	27.6	2181.7	84.7	12.112	7.917	0.861	3.8	-27.7
217	3665	1.48	34.689	2394	2344		670.6	39.9	2220.5	68.6	7.929	38.2	2227.2	63.5	16.608	7.780	0.646	-18.8	-50.8
218	3771	1.48	34.692			2259													
219	3893	1.39	34.696	2401	2295		446.3	26.6	2156.5	96.9	8.093	25.2	2164.6	90.2	11.534	7.938	0.917	4.7	-28.0
220	4019	1.39	34.698			2346													
222	4268	1.39	34.700			2243													
224	4570	1.27	34.704	2381	2303	2300	535.3	32.1	2174.2	81.7	8.016	30.3	2183.0	74.7	14.711	7.832	0.760	-20.5	-55.9

STATION: 316 LEG: IX POSITION: 18° 52' S 126° 36' W DATE: 19 APR 74

MEASURED PARAMETERS				TITRATOR		GC	CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY $^0/_{00}$	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
201	2	25.45	36.545	2421	2053	2041	324.8	9.0	1758.5	270.4	8.279	9.0	1758.5	270.4	5.257	8.279	2.897	225.5	205.2
204	17	25.39	36.540	2418	2051		324.6	9.1	1757.3	269.7	8.279	9.1	1757.3	269.6	5.266	8.278	2.888	224.6	204.3
207	52	25.42	36.625	2429	2058	2042	323.7	9.0	1761.3	272.7	8.281	9.0	1761.4	272.6	5.254	8.280	2.926	227.3	207.0
208	77	25.42	36.659			2046													
210	102	25.24	36.659	2423	2061	2050	332.2	9.3	1770.5	266.2	8.271	9.3	1770.8	265.9	5.399	8.268	2.858	220.4	200.0
212	127	24.34	36.516	2420	2067	2042	330.8	9.5	1782.5	260.0	8.270	9.5	1782.9	259.7	5.416	8.266	2.780	213.9	193.4
213	151	23.97	36.469	2383	2108	2046	449.7	13.0	1872.6	207.4	8.156	13.0	1872.9	207.1	7.059	8.151	2.214	161.2	140.6
215	302	16.24	35.086	2322	2074	2060	338.8	12.2	1861.4	185.4	8.232	12.2	1862.1	184.8	5.998	8.222	1.900	137.2	116.1
216	400	11.16	34.540	2298	2140	2138	436.3	18.5	1979.7	126.9	8.121	18.4	1980.5	126.1	7.834	8.106	1.277	77.5	56.0
217	500	7.84	34.423	2276	2379	2210	2602.8	123.2	2217.9	22.9	7.375	123.0	2218.4	22.6	44.228	7.354	0.228	-27.0	-48.8
218	599	6.14	34.355	2299	2199		519.1	26.1	2065.8	92.1	8.035	25.9	2067.0	91.1	9.718	8.012	0.918	40.7	18.5
219	698	5.21	34.342	2302	2207	2206	519.9	27.0	2075.7	89.3	8.032	26.7	2077.0	88.2	9.893	8.005	0.888	36.9	14.5
221	946	4.42	34.504	2350	2282	2271	636.1	34.0	2156.6	76.5	7.956	33.6	2158.3	75.1	12.061	7.919	0.760	21.8	-1.3
101	952	4.42	34.500	2349	2304		758.1	40.5	2182.9	65.6	7.885	40.0	2184.6	64.3	14.225	7.847	0.651	11.0	-12.2
102	1100	3.90	34.527	2358	2311	2294	736.1	40.0	2189.3	66.7	7.896	39.5	2191.3	65.2	14.058	7.852	0.660	10.5	-13.0
103	1248	3.52	34.546	2368	2301		625.7	34.5	2175.2	76.2	7.962	34.0	2177.6	74.4	12.241	7.912	0.754	18.4	-5.6
104	1401	3.11	34.564	2378	2317	2318	648.4	36.3	2192.2	73.5	7.947	35.7	2194.8	71.5	12.842	7.891	0.725	14.1	-10.3
105	1550	2.75	34.591	2388	2327		643.5	36.5	2201.8	73.7	7.950	35.8	2204.7	71.5	12.928	7.888	0.725	12.7	-12.2
106	1697	2.47	34.607	2399	2310		521.4	29.9	2177.2	87.9	8.035	29.2	2180.6	85.2	10.759	7.968	0.864	24.9	-0.4
107	1848	2.26	34.626	2400	2332		603.3	34.9	2204.9	77.3	7.976	34.1	2208.4	74.5	12.521	7.902	0.756	12.8	-13.0
108	1996	2.10	34.644	2407	2339	2325	602.5	35.0	2211.5	77.4	7.977	34.2	2215.4	74.5	12.669	7.897	0.756	11.3	-15.0
109	2147	1.98	34.655	2411	2333		558.7	32.6	2202.9	82.5	8.008	31.7	2207.1	79.2	11.966	7.922	0.804	14.4	-12.3
110	2296	1.98	34.659			2331													
112	2595	1.82	34.671	2418	2330	2322	519.4	30.5	2196.7	87.8	8.037	29.5	2201.9	83.6	11.644	7.934	0.850	14.1	-14.0
115	2754	1.82	34.673			2334													
116	2902	1.74	34.677	2424	2339	2330	531.1	31.3	2206.3	86.4	8.029	30.1	2212.1	81.8	12.211	7.913	0.831	8.8	-20.4
117	3051	1.70	34.680	2419	2325		496.1	29.3	2189.8	91.0	8.055	28.1	2196.0	85.9	11.647	7.934	0.874	11.2	-18.5
118	3201	1.68	34.680	2423	2319	2318	463.5	27.4	2180.3	96.4	8.082	26.2	2186.9	90.9	11.072	7.956	0.924	14.4	-15.8
119	3348	1.65	34.684	2426	2329		486.7	28.8	2192.6	92.7	8.064	27.5	2199.4	87.1	11.731	7.931	0.885	8.8	-21.9
120	3497	1.62	34.687	2425	2316	2330	447.7	26.5	2175.4	99.1	8.096	25.2	2182.7	93.0	11.016	7.958	0.946	12.9	-18.4
122	3796	1.59	34.689	2421	2323	2328	480.8	28.5	2186.4	93.1	8.067	27.1	2194.2	86.7	12.122	7.916	0.882	2.7	-29.7
123	3945	1.59	34.689	2422	2329	2310	498.0	29.5	2194.1	90.4	8.054	28.0	2202.0	84.0	12.695	7.896	0.854	-2.1	-35.0
124	4092	1.60	34.693	2421	2326	2332	491.5	29.1	2190.4	91.5	8.059	27.6	2198.7	84.8	12.716	7.896	0.862	-3.3	-36.7

STATION: 317 LEG: IX POSITION: 23° 38' S 127° 9' W DATE: 20 APR 74

MEASURED PARAMETERS				TITRATOR		GC	CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY $^0/_{00}$	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
401	3	25.94	36.557	2427	2051	2043	322.2	8.9	1750.9	276.3	8.284	8.9	1750.9	276.3	5.201	8.284	2.960	231.3	211.1
402	53	25.93	36.555	2427	2051		322.3	8.9	1750.8	276.3	8.284	8.9	1750.9	276.2	5.221	8.282	2.960	231.0	210.6
403	103	25.92	36.550	2406	2065	2041	368.2	10.1	1787.6	252.3	8.235	10.1	1787.8	252.0	5.865	8.232	2.700	206.5	186.1
404	122	24.27	36.192	2401	2032		299.5	8.6	1737.9	270.5	8.303	8.6	1738.3	270.1	5.024	8.299	2.866	224.3	203.8
405	153	22.56	36.009	2385	2044	2041	309.0	9.3	1769.1	250.6	8.287	9.3	1769.5	250.2	5.227	8.282	2.641	204.1	183.5
406	201	20.21	35.695	2353	2050	2048	320.7	10.3	1801.1	223.6	8.265	10.3	1801.6	223.1	5.523	8.258	2.335	176.5	155.7
407	271	18.08	35.406	2339	2062		325.0	11.1	1830.5	205.4	8.253	11.0	1831.2	204.8	5.698	8.244	2.125	157.6	136.6
408	350	15.67	35.153	2326	2071	2073	320.5	11.8	1854.7	189.5	8.251	11.7	1855.6	188.7	5.766	8.239	1.945	140.8	119.6
409	400	13.75	34.917	2311	2118		404.1	15.7	1937.9	149.4	8.159	15.6	1938.7	148.6	7.167	8.145	1.521	100.2	78.8
410	449	11.26	34.644	2302	2127	2117	397.5	16.8	1958.2	137.1	8.157	16.7	1959.2	136.2	7.239	8.140	1.383	87.3	65.7
411	489	9.70	34.503	2296	2141	2138	417.0	18.5	1983.1	124.3	8.133	18.4	1984.2	123.4	7.678	8.115	1.248	74.1	52.3
413	597	7.00	34.358	2294	2170	2171	454.0	22.1	2027.4	105.5	8.090	22.0	2028.6	104.5	8.556	8.068	1.052	54.1	32.0
414	666	6.24	34.330	2294	2173	2165	448.7	22.5	2032.0	103.5	8.092	22.3	2033.4	102.4	8.573	8.067	1.030	51.4	29.1
416	844	4.92	34.312	2310	2210	2198	497.9	26.1	2076.8	92.1	8.049	25.8	2078.4	90.7	9.629	8.016	0.913	38.3	15.4
417	991	4.13	34.378	2322	2247		584.5	31.6	2121.3	79.2	7.984	31.2	2123.1	77.7	11.346	7.945	0.783	24.0	0.7
418	1139	4.13	34.468			2269													
419	1289	3.01	34.530	2370	2298		591.1	33.2	2171.1	78.6	7.983	32.7	2173.6	76.7	11.705	7.932	0.776	20.3	-3.9
420	1437	2.69	34.563	2380	2309	2294	592.6	33.7	2181.9	78.4	7.982	33.1	2184.7	76.2	11.890	7.925	0.772	18.4	-6.1
421	1587	2.41	34.595	2389	2323		612.2	35.2	2196.7	76.1	7.969	34.5	2199.7	73.8	12.425	7.906	0.748	14.6	-10.5
201	1626	2.41	34.602			2317													
422	1736	2.24	34.614	2395	2329	2317	610.2	35.3	2202.6	76.2	7.971	34.5	2205.9	73.6	12.552	7.901	0.747	13.0	-12.5
202	1757	2.24	34.620			2329													
203	1904	2.24	34.634			2323													
204	2055	2.00	34.646	2400	2362	2323	751.6	43.9	2239.8	63.4	7.886	42.9	2243.5	60.7	15.762	7.802	0.616	-3.1	-29.6
205	2202	1.94	34.653	2410	2388	2326	855.0	50.0	2266.0	57.0	7.835	48.9	2269.8	54.3	18.022	7.744	0.552	-11.0	-37.9
206	2356	1.88	34.660	2417	2327	2328	513.0	30.1	2193.1	88.8	8.042	29.1	2197.9	85.0	11.254	7.949	0.864	18.1	-9.3
208	2652	1.79	34.672	2422	2352	2330	592.5	34.8	2223.4	78.8	7.985	33.7	2228.5	74.8	13.222	7.879	0.760	4.7	-23.7
209	2805	1.74	34.674	2420	2337		537.4	31.7	2205.1	85.3	8.024	30.5	2210.6	80.8	12.256	7.912	0.822	9.0	-19.9
210	2960	1.74	34.673			2330													
211	3111	1.71	34.676	2410	2342		595.1	35.1	2214.4	77.5	7.981	33.8	2220.4	72.9	13.939	7.856	0.741	-2.6	-32.5
212	3262	1.71	34.676	2417	2329	2319	517.0	30.5	2195.7	87.8	8.038	29.2	2202.3	82.5	12.350	7.908	0.839	5.3	-25.1
216	3414	1.71	34.678	2418	2343	2321	567.8	33.5	2213.4	81.1	8.001	32.1	2220.1	75.9	13.669	7.864	0.771	-3.2	-34.2

STATION: 319 LEG: IX POSITION: 28° 30' S 127° 47' W DATE: 23 APR 74

MEASURED PARAMETERS				TITRATOR		GC	CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P. T = INSITU						DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY $^0/_{00}$	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
202	10	23.14	35.671	2355	2015	2018	306.8	9.1	1741.1	249.8	8.287	9.1	1741.1	249.8	5.163	8.287	2.612	204.5	184.1
206	54	23.11	35.668	2350	2017		314.4	9.3	1747.8	244.9	8.278	9.3	1748.0	244.7	5.290	8.277	2.559	199.2	178.7
209	81	18.80	35.379	2328	2019	2020	284.3	9.5	1768.3	226.2	8.301	9.5	1768.5	226.0	5.031	8.298	2.344	180.0	159.4
211	121	18.80	35.310			2032													
212	181	15.32	35.141	2318	2057		304.3	11.3	1837.8	193.0	8.268	11.2	1838.2	192.5	5.476	8.261	1.983	145.7	124.8
213	262	13.62	35.014	2314	2086	2089	333.0	13.0	1887.0	171.0	8.230	13.0	1887.6	170.4	6.011	8.221	1.749	123.0	101.8
214	320	11.46	34.778	2305	2107	2106	353.1	14.8	1926.1	151.1	8.202	14.7	1926.8	150.4	6.453	8.190	1.534	102.4	81.1
215	391	8.58	34.462	2291	2145		419.3	19.4	1992.2	118.5	8.126	19.2	1993.0	117.8	7.737	8.111	1.190	69.1	47.5
216	461	7.41	34.409	2289	2141	2141	393.4	18.9	1988.0	119.1	8.146	18.8	1988.9	118.3	7.432	8.129	1.193	69.0	47.2
217	571	6.52	34.357	2301	2163	2148	407.8	20.2	2014.4	113.4	8.131	20.1	2015.6	112.4	7.765	8.110	1.132	62.2	40.1
218	651	6.07	34.328	2291	2164	2147	426.7	21.5	2020.8	106.7	8.111	21.3	2022.1	105.6	8.205	8.086	1.062	54.7	32.4
219	749	5.44	34.302	2294	2163		406.6	21.0	2018.0	109.0	8.128	20.7	2019.6	107.7	7.962	8.099	1.083	56.0	33.5
220	846	4.93	34.303	2296	2199	2180	504.3	26.5	2067.4	90.1	8.042	26.2	2069.0	88.8	9.796	8.009	0.893	36.3	13.5
221	945	4.37	34.329	2308	2220		530.8	28.4	2091.0	85.6	8.021	28.1	2092.8	84.1	10.368	7.984	0.846	30.8	7.6
101	990	4.21	34.341	2305	2230	2206	580.1	31.2	2105.0	78.8	7.985	30.8	2106.8	77.3	11.332	7.946	0.779	23.6	0.4
222	1043	3.90	34.375	2321	2230	2229	514.9	28.0	2099.6	87.4	8.033	27.7	2101.6	85.7	10.171	7.993	0.864	31.5	8.1
102	1089	3.74	34.396	2323	2253		599.0	32.8	2128.5	76.7	7.973	32.4	2130.5	75.1	11.757	7.930	0.757	20.5	-3.1
103	1186	3.34	34.453	2339	2259	2277	553.2	30.7	2131.3	82.0	8.006	30.3	2133.6	80.2	10.996	7.959	0.810	24.7	0.9
104	1288	3.04	34.494	2349	2278	2271	588.3	33.0	2152.3	77.6	7.981	32.5	2154.8	75.7	11.745	7.930	0.766	19.3	-4.8
105	1389	2.78	34.531	2359	2284		569.9	32.3	2156.8	79.9	7.994	31.7	2159.5	77.8	11.498	7.939	0.787	20.4	-4.0
106	1536	2.52	34.573	2373	2296	2306	561.1	32.1	2167.7	81.2	8.002	31.5	2170.7	78.9	11.459	7.941	0.799	20.1	-4.7
107	1686	2.35	34.596	2388	2312	2316	567.0	32.7	2183.3	81.0	7.999	32.0	2186.6	78.5	11.685	7.932	0.796	18.3	-7.0
108	1836	2.18	34.622	2391	2317	2300	572.7	33.2	2188.8	80.0	7.995	32.4	2192.3	77.3	11.968	7.922	0.784	15.7	-10.1
109	1984	2.07	34.634	2398	2314		532.4	31.0	2182.8	85.2	8.025	30.2	2186.7	82.1	11.318	7.946	0.834	19.0	-7.2
110	2083	2.07	34.639			2323													
111	2135	1.99	34.642	2406	2322		533.8	31.2	2190.4	85.5	8.025	30.3	2194.6	82.1	11.478	7.940	0.834	17.5	-9.2
112	2232	1.93	34.649	2406	2316	2328	510.0	29.8	2182.7	88.5	8.043	28.9	2187.1	84.9	11.108	7.954	0.862	19.3	-7.7
115	2441	1.84	34.657	2406	2321	2320	526.9	30.9	2189.1	85.9	8.030	29.9	2194.0	82.1	11.685	7.932	0.834	14.2	-13.4
116	2587	1.78	34.664	2407	2331		561.7	33.0	2201.6	81.4	8.004	32.0	2206.6	77.4	12.577	7.900	0.787	8.0	-20.1
117	2734	1.72	34.668	2409	2304	2370	457.0	26.9	2165.5	96.6	8.086	25.9	2171.2	91.9	10.522	7.978	0.934	20.8	-7.8
118	2882	1.67	34.672	2407	2329		551.5	32.6	2199.0	82.4	8.011	31.4	2204.7	77.9	12.723	7.895	0.792	5.2	-24.0
119	3032	1.63	34.678	2407	2325	2329	534.8	31.6	2194.0	84.4	8.023	30.4	2200.0	79.6	12.540	7.902	0.810	5.1	-24.5
120	3231	1.59	34.682	2407	2315	2312	497.1	29.4	2181.0	89.5	8.052	28.2	2187.5	84.3	11.935	7.923	0.857	7.4	-23.0
121	3381	1.57	34.684	2406	2349		641.3	38.0	2223.9	72.0	7.950	36.5	2230.2	67.2	15.396	7.813	0.684	-11.5	-42.4
122	3531	1.56	34.687	2408	2324	2325	525.9	31.2	2192.4	85.4	8.029	29.8	2199.4	79.8	12.935	7.888	0.812	-0.8	-32.2
123	3681	1.56	34.688	2404	2312	2308	495.8	29.4	2178.1	89.5	8.052	28.0	2185.5	83.5	12.432	7.905	0.849	0.9	-31.0
124	3997	1.58	34.689	2405	2308	2304	479.2	28.4	2172.5	92.1	8.066	26.9	2180.6	85.5	12.392	7.907	0.869	-1.3	-34.4

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 320 LEG: IX POSITION: 33° 21' S 128° 24' W DATE: 24 APR 74

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
501	2	19.65	34.648	2307	2040	2019	347.3	11.4	1813.8	199.8	8.232	11.4	1813.8	199.8	5.859	8.232	2.029	154.3	133.8
502	37	20.09	34.841	2311	2026		327.4	10.6	1788.6	211.8	8.254	10.6	1788.7	211.7	5.589	8.253	2.162	166.0	145.5
503	52	20.04	34.855	2313	2017	2019	310.3	10.1	1773.0	218.9	8.273	10.0	1773.2	218.8	5.353	8.271	2.236	173.0	152.5
504	73	16.74	34.676	2293	2053		348.2	12.4	1845.3	180.3	8.221	12.4	1845.5	180.1	6.051	8.218	1.831	134.1	113.4
505	98	14.93	34.757	2310	2030	2031	267.4	10.1	1799.7	205.2	8.313	10.0	1800.0	205.0	4.897	8.310	2.089	158.7	137.9
506	122	14.24	34.734	2305	2037	2033	274.1	10.5	1814.6	196.9	8.302	10.5	1814.9	196.6	5.034	8.298	2.002	150.1	129.3
507	173	12.62	34.629	2296	2091	2071	352.5	14.2	1905.8	155.9	8.205	14.2	1906.2	155.6	6.327	8.199	1.579	108.6	87.7
508	223	11.47	34.632	2301	2105	2093	354.9	14.9	1925.2	150.0	8.200	14.8	1925.7	149.5	6.432	8.192	1.518	102.2	81.1
509	322	9.01	34.514	2296	2133		385.9	17.6	1971.7	128.8	8.160	17.5	1972.4	128.1	7.113	8.148	1.296	80.0	58.6
510	403	7.67	34.430	2297	2180	2138	490.8	23.4	2039.8	101.8	8.063	23.2	2040.6	101.1	8.964	8.047	1.021	52.3	30.7
511	501	6.87	34.383	2301	2166		421.9	20.7	2018.6	111.8	8.119	20.5	2019.6	110.9	7.933	8.101	1.118	61.3	39.4
512	601	6.42	34.353	2298	2150	2146	380.2	18.9	1997.0	119.1	8.158	18.7	1998.2	118.0	7.330	8.135	1.188	67.6	45.4
513	699	5.92	34.324	2296	2155	2156	388.8	19.7	2005.4	114.9	8.147	19.5	2006.9	113.6	7.578	8.120	1.143	62.4	40.0
514	797	5.43	34.305	2299	2178	2159	435.8	22.5	2037.1	103.5	8.101	22.2	2038.7	102.1	8.494	8.071	1.027	50.0	27.4
515	896	4.87	34.308	2308	2187		429.1	22.6	2045.9	103.5	8.107	22.3	2047.7	102.0	8.462	8.073	1.026	49.1	26.1
516	996	4.39	34.327	2314	2211	2199	479.0	25.6	2076.7	93.7	8.063	25.3	2078.6	92.1	9.457	8.024	0.927	38.3	15.1
517	1143	3.68	34.376	2322	2247	2230	575.0	31.6	2121.3	79.2	7.989	31.1	2123.4	77.5	11.386	7.944	0.781	22.4	-1.3
519	1440	2.74	34.516	2363	2302	2269	633.3	36.0	2177.9	73.1	7.953	35.3	2180.6	71.1	12.730	7.895	0.719	13.2	-11.3
520	1587	2.50	34.573	2376	2304		582.7	33.4	2176.9	78.7	7.987	32.7	2179.9	76.4	11.911	7.924	0.774	17.2	-7.9
521	1736	2.30	34.611	2387	2304	2297	537.6	31.0	2173.4	84.5	8.020	30.3	2176.9	81.8	11.182	7.951	0.830	21.2	-4.3
201	1862	2.30	34.628			2309													
202	2038	2.06	34.640	2405	2326	2311	554.4	32.3	2195.9	82.9	8.010	31.4	2199.9	79.7	11.779	7.929	0.810	16.1	-10.3
203	2210	1.92	34.655	2407	2323	2311	532.4	31.2	2191.4	85.4	8.026	30.3	2195.8	81.9	11.534	7.938	0.832	16.5	-10.4
205	2558	1.75	34.668	2408	2326	2321	537.4	31.6	2194.9	84.4	8.022	30.6	2200.0	80.4	12.035	7.920	0.817	11.3	-16.8
206	2733	1.70	34.673	2410	2324	2321	521.7	30.8	2191.7	86.5	8.034	29.7	2197.2	82.2	11.896	7.925	0.835	11.1	-17.5
207	2906	1.65	34.678	2407	2330	2325	554.9	32.8	2200.3	81.9	8.008	31.6	2206.0	77.4	12.829	7.892	0.787	4.4	-24.9
208	3081	1.63	34.679	2414	2328		521.7	30.9	2195.5	86.6	8.034	29.6	2201.7	81.7	12.275	7.911	0.831	6.6	-23.2
209	3255	1.60	34.683	2410	2316		491.5	29.1	2181.2	90.7	8.057	27.9	2187.8	85.4	11.823	7.927	0.868	8.2	-22.2
210	3428	1.59	34.685	2417	2330	2316	518.4	30.7	2197.1	87.2	8.037	29.3	2203.9	81.7	12.591	7.900	0.831	2.4	-28.6
211	3602	1.58	34.687	2405	2326		544.7	32.3	2195.9	82.8	8.015	30.8	2203.0	77.2	13.471	7.871	0.785	-4.3	-36.0
212	3777	1.58	34.689	2411	2315	2310	484.4	28.7	2179.5	91.7	8.063	27.3	2187.2	85.5	12.235	7.912	0.869	1.7	-30.6
217	3950	1.53	34.693	2412	2328	2297	526.9	31.3	2196.2	85.5	8.029	29.7	2204.0	79.3	13.454	7.871	0.806	-6.9	-39.8
222	4124	1.50	34.695	2405	2308	2306	478.1	28.4	2172.4	92.1	8.066	26.9	2180.8	85.3	12.524	7.902	0.868	-3.2	-36.9

STATION: 321 LEG: IX POSITION: 38° 48' S 129° 22' W DATE: 27 APR 74

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
201	2	16.80	34.049	2273	2007	1999	294.6	10.5	1784.3	197.2	8.281	10.5	1784.3	197.2	5.241	8.281	1.968	151.5	131.0
202	33	16.11	34.174	2280	2020		297.9	10.8	1801.2	193.0	8.275	10.8	1801.3	192.9	5.317	8.274	1.932	147.0	126.4
203	82	13.10	34.398	2286	2038	2023	281.4	11.2	1828.6	183.2	8.288	11.2	1828.8	183.0	5.183	8.285	1.846	136.7	116.0
204	121	13.10	34.386			2034													
205	180	10.70	34.455	2291	2105		359.5	15.5	1931.1	143.4	8.191	15.4	1931.5	143.0	6.533	8.185	1.445	96.0	74.9
206	249	9.05	34.431	2291	2125	2116	377.0	17.1	1962.4	130.4	8.168	17.1	1963.0	130.0	6.932	8.159	1.312	82.3	61.1
207	319	8.05	34.443	2293	2134		378.5	17.8	1975.3	125.9	8.164	17.7	1976.0	125.3	7.049	8.152	1.265	77.1	55.7
208	448	6.96	34.394	2295	2142	2123	376.0	18.4	1986.5	122.1	8.163	18.2	1987.5	121.3	7.142	8.146	1.223	72.0	50.3
209	596	6.42	34.354	2300	2147		368.9	18.4	1991.5	122.1	8.169	18.2	1992.8	121.0	7.128	8.147	1.218	70.6	48.4
210	745	5.85	34.316	2296	2155	2134	387.7	19.7	2005.5	114.9	8.148	19.5	2007.0	113.5	7.593	8.120	1.142	61.9	39.4
211	894	5.15	34.292	2304	2161		373.8	19.5	2010.5	116.0	8.161	19.2	2012.5	114.3	7.468	8.127	1.149	61.5	38.6
212	1043	5.15	34.323			2199													
213	1191	3.65	34.365	2327	2237		515.7	28.3	2106.7	87.0	8.033	27.9	2109.0	85.1	10.323	7.986	0.857	29.6	5.8
214	1340	3.14	34.422	2339	2258	2222	544.3	30.5	2130.1	82.5	8.011	29.9	2132.6	80.4	11.007	7.958	0.811	23.5	-0.7
215	1488	2.80	34.493	2351	2259		500.8	28.4	2127.2	88.4	8.045	27.8	2130.2	86.0	10.323	7.986	0.870	27.8	3.1
216	1637	2.60	34.551	2351	2298	2276	666.0	38.0	2176.0	69.0	7.930	37.3	2178.9	66.8	13.684	7.864	0.676	7.1	-18.0
217	1786	2.43	34.597	2372	2290		538.8	30.9	2160.4	83.6	8.017	30.2	2163.9	80.9	11.308	7.947	0.820	19.8	-5.8
218	1935	2.28	34.628	2386	2298	2281	517.9	29.9	2166.0	87.1	8.035	29.1	2169.9	84.0	11.009	7.958	0.853	21.4	-4.6
219	2108	2.14	34.647	2392	2313	2281	552.2	32.0	2183.4	82.6	8.010	31.2	2187.5	79.3	11.864	7.926	0.806	15.0	-11.6
220	2281	2.00	34.657	2409	2318	2297	508.9	29.7	2184.2	89.1	8.045	28.8	2188.8	85.4	11.114	7.954	0.868	19.3	-7.8
221	2452	1.91	34.665	2407	2334	2310	576.4	33.7	2205.4	79.8	7.994	32.7	2210.2	76.1	12.705	7.896	0.773	8.2	-19.5
101	2529	1.91	34.668			2326													
222	2625	1.82	34.669	2414	2321		500.0	29.4	2186.3	90.3	8.052	28.3	2191.7	86.0	11.286	7.947	0.874	16.2	-12.1
102	2749	1.82	34.676			2327													
103	2921	1.70	34.682	2413	2333	2365	545.7	32.2	2202.3	83.5	8.016	31.0	2208.0	79.0	12.610	7.899	0.803	5.8	-23.5
104	3095	1.63	34.687	2408	2333	2323	563.3	33.3	2203.8	80.9	8.002	32.0	2209.8	76.2	13.239	7.878	0.774	0.9	-28.9
105	3266	1.57	34.691	2407	2314	2318	493.3	29.3	2179.7	90.1	8.055	28.0	2186.3	84.7	11.894	7.925	0.862	7.4	-23.1
106	3441	1.50	34.696	2405	2301		455.4	27.1	2163.1	95.9	8.086	25.8	2170.2	90.0	11.239	7.949	0.916	10.5	-20.6
107	3615	1.43	34.698	2405	2311	2280	487.3	29.0	2176.4	90.6	8.059	27.7	2183.7	84.6	12.174	7.915	0.861	2.9	-28.8
108	3788	1.38	34.703	2401	2332	2314	581.3	34.7	2204.5	77.8	7.987	33.1	2211.8	72.1	14.639	7.834	0.734	-11.9	-44.3
109	3960	1.36	34.701	2402	2310	2289	491.4	29.4	2176.2	89.4	8.055	27.9	2184.2	82.9	12.696	7.896	0.844	-3.4	-36.5
110	4134	1.32	34.702	2399	2307	2289	490.1	29.3	2173.3	89.3	8.055	27.8	2181.6	82.6	12.892	7.890	0.840	-6.2	-39.9
111	4310	1.31	34.706	2401	2309		490.6	29.4	2175.2	89.4	8.055	27.7	2183.9	82.4	13.110	7.882	0.838	-8.9	-43.3
112	4484	1.30	34.710	2401	2295	2310	444.8	26.6	2156.5	96.8	8.094	25.0	2165.8	89.1	12.157	7.915	0.907	-4.7	-39.8
117	4665	1.30	34.710	2398	2302	2278	476.0	28.5	2167.1	91.4	8.066	26.8	2176.5	83.7	13.188	7.880	0.852	-12.9	-48.7
123	4832	1.32	34.710	2399	2302	2278	473.0	28.3	2166.7	91.9	8.069	26.5	2176.5	83.9	13.305	7.876	0.854	-15.2	-51.7

STATION: 322 LEG: IX POSITION: 43° 1' S 129° 57' W DATE: 29 APR 74

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
601	2	12.80	34.202	2286	2068	2024	324.4	13.1	1875.5	164.4	8.236	13.1	1875.5	164.4	5.804	8.236	1.648	118.6	98.0
602	25	12.79	34.203	2283	2053		303.0	12.2	1854.0	171.8	8.261	12.2	1854.0	171.8	5.496	8.260	1.722	125.8	105.2
603	49	11.87	34.204	2282	2060	2044	304.2	12.6	1866.1	166.3	8.257	12.6	1866.2	166.2	5.561	8.255	1.666	120.0	99.3
604	80	10.91	34.258	2293	2084		316.7	13.5	1897.6	157.8	8.241	13.5	1897.8	157.7	5.784	8.238	1.583	111.3	90.5
605	123	9.22	34.335	2285	2098	2086	332.7	15.0	1924.8	143.1	8.215	15.0	1925.1	142.9	6.153	8.211	1.438	96.1	75.1
606	155	8.44	34.334	2288	2118		357.3	16.6	1953.8	132.6	8.186	16.5	1954.1	132.3	6.596	8.181	1.332	85.3	64.2
607	223	7.72	34.424	2294	2142	2113	389.8	18.5	1986.8	121.7	8.152	18.5	1987.3	121.2	7.189	8.143	1.223	73.7	52.5
608	271	7.34	34.425	2294	2139		377.0	18.2	1982.5	123.3	8.163	18.1	1983.1	122.8	7.032	8.153	1.239	74.9	53.6
609	352	7.02	34.407	2292	2134	2124	364.3	17.7	1976.3	124.9	8.175	17.7	1977.1	124.2	6.893	8.162	1.253	75.7	54.2
610	467	6.67	34.377	2296	2150		388.2	19.1	1997.9	117.9	8.150	19.0	1998.9	117.0	7.372	8.132	1.180	67.7	45.8
611	549	6.49	34.363	2292	2136	2119	360.7	17.9	1979.5	123.6	8.177	17.8	1980.7	122.5	6.977	8.156	1.234	72.5	50.5
612	662	6.17	34.340	2295	2153		390.0	19.6	2002.9	115.5	8.146	19.4	2004.3	114.3	7.563	8.121	1.150	63.4	41.1
615	971	4.75	34.313	2309	2202	2174	470.1	24.8	2066.4	95.7	8.071	24.5	2068.4	94.1	9.260	8.033	0.947	40.6	17.5
616	1054	4.32	34.328	2313	2215		494.4	26.5	2082.6	90.9	8.050	26.1	2084.6	89.2	9.793	8.009	0.898	35.0	11.6
617	1168	3.77	34.353	2318	2223		496.3	27.2	2091.5	89.3	8.047	26.7	2093.8	87.5	9.967	8.001	0.881	32.2	8.4
618	1293	3.33	34.394	2328	2234	2216	495.2	27.5	2102.5	89.0	8.048	27.1	2105.0	86.9	10.067	7.997	0.876	30.5	6.4
619	1441	2.97	34.451	2341	2270	2236	584.2	32.9	2144.6	77.5	7.982	32.3	2147.3	75.4	11.880	7.925	0.762	17.6	-7.0
620	1592	2.70	34.518	2355	2274		541.6	30.8	2145.5	82.7	8.014	30.2	2148.5	80.3	11.199	7.951	0.812	21.1	-3.9
621	1739	2.70	34.572			2268													
622	1889	2.41	34.611	2374	2321		670.4	38.5	2197.9	69.6	7.930	37.7	2201.4	67.0	14.001	7.854	0.679	4.9	-21.0
623	2037	2.27	34.636	2386	2309		560.5	32.4	2180.2	81.4	8.003	31.5	2184.2	78.3	11.961	7.922	0.795	14.7	-11.6
624	2187	2.13	34.651	2394	2315	2295	552.3	32.1	2185.3	82.6	8.010	31.2	2189.6	79.2	11.944	7.923	0.805	14.1	-12.7
301	2329	2.13	34.658			2313													
302	2474	1.97	34.665	2401	2367	2320	775.2	45.3	2245.0	61.7	7.873	44.1	2249.4	58.5	16.891	7.772	0.594	-9.7	-37.4
303	2646	1.88	34.671	2401	2314	2316	518.9	30.4	2181.8	86.8	8.035	29.4	2187.0	82.6	11.758	7.930	0.840	12.6	-15.7
304	2818	1.81	34.676	2404	2326	2324	553.0	32.5	2196.2	82.3	8.010	31.3	2201.7	77.9	12.674	7.897	0.792	6.0	-22.9
305	2993	1.74	34.683	2400	2318	2319	535.0	31.5	2187.2	84.2	8.022	30.3	2193.1	79.6	12.519	7.902	0.809	5.5	-24.0
306	3166	1.68	34.688	2400	2332		591.4	34.9	2204.8	77.2	7.982	33.6	2210.9	72.5	13.992	7.854	0.738	-3.5	-33.6
307	3344	1.62	34.693	2407	2323	2307	527.0	31.2	2191.4	85.4	8.029	29.8	2198.0	80.1	12.735	7.895	0.815	1.9	-28.9
308	3517	1.53	34.698	2400	2312		508.5	30.2	2179.5	87.3	8.041	28.8	2186.5	81.7	12.565	7.901	0.831	1.2	-30.2
309	3690	1.46	34.702	2398	2312	2298	513.9	30.6	2180.2	86.2	8.036	29.1	2187.5	80.3	12.917	7.889	0.817	-2.4	-34.4
310	3860	1.41	34.703	2393	2292	2294	460.1	27.4	2155.6	94.0	8.079	26.0	2163.5	87.5	11.865	7.926	0.890	2.5	-30.2
311	4030	1.32	34.708	2390	2302		501.7	30.0	2169.9	87.1	8.044	28.5	2177.9	80.6	13.101	7.883	0.820	-6.8	-40.1
312	4030	1.32	34.708	2395	2306	2289	499.6	29.9	2173.4	87.7	8.047	28.4	2181.4	81.2	13.023	7.885	0.826	-6.1	-39.5
317	4216	1.28	34.709	2395	2313		524.7	31.5	2182.4	84.1	8.027	29.8	2190.7	77.5	13.882	7.858	0.788	-12.5	-46.5
323	4390	1.23	34.710	2395	2316	2289	535.0	32.1	2186.3	82.5	8.019	30.4	2194.9	75.7	14.381	7.842	0.771	-16.8	-51.5

STATION: 324 LEG: IX POSITION: 23° 1' S 146° 5' W DATE: 7 MAY 74

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
301	6	26.56	35.948	2380	1998	1998	302.6	8.2	1695.0	279.8	8.303	8.2	1695.0	279.8	4.984	8.302	2.948	234.7	214.4
302	116	21.69	35.715	2366	2015	2016	278.1	8.6	1734.7	256.7	8.319	8.6	1735.0	256.4	4.837	8.315	2.684	210.4	189.8
303	336	14.66	35.144	2321	2082		331.8	12.5	1875.8	178.6	8.235	12.5	1876.7	177.9	5.978	8.223	1.832	130.0	108.7
304	537	8.14	34.478	2304	2158	2145	415.8	19.5	2004.9	118.6	8.130	19.3	2006.0	117.6	7.766	8.110	1.189	67.8	45.9
305	687	6.12	34.342	2301	2168		414.4	20.8	2021.7	110.4	8.124	20.6	2023.1	109.2	7.985	8.098	1.100	58.1	35.7
306	825	5.26	34.318	2301	2201		501.9	26.0	2068.0	92.0	8.046	25.7	2069.6	90.6	9.685	8.014	0.912	38.4	15.6
307	888	4.84	34.336	2309	2220		537.3	28.3	2090.5	86.2	8.018	28.0	2092.2	84.9	10.378	7.984	0.854	32.0	9.1
308	1189	3.35	34.484	2357	2265		512.6	28.5	2133.0	88.6	8.039	28.0	2135.3	86.7	10.179	7.992	0.876	31.1	7.3
309	1489	2.56	34.577	2384	2320	2300	622.7	35.6	2194.4	75.0	7.962	34.9	2197.2	72.8	12.512	7.903	0.738	14.6	-10.2
310	1880	2.20	34.625	2412	2319	2319	506.3	29.3	2184.4	90.3	8.048	28.6	2188.2	87.3	10.624	7.974	0.886	25.2	-0.7
311	2081	2.06	34.638	2408	2338		593.1	34.5	2210.1	78.4	7.984	33.6	2214.1	75.3	12.578	7.900	0.765	11.2	-15.3
312	2377	1.92	34.653	2417	2336	2318	547.3	32.0	2204.8	84.1	8.017	31.0	2209.5	80.4	11.969	7.922	0.817	13.3	-14.2
315	2581	1.85	34.659	2417	2339	2313	558.1	32.7	2208.6	82.6	8.009	31.7	2213.7	78.6	12.432	7.905	0.799	9.3	-18.8
316	2876	1.73	34.670	2418	2335		536.6	31.6	2203.1	85.2	8.024	30.5	2208.8	80.7	12.331	7.909	0.820	8.0	-21.1
317	3169	1.62	34.679	2416	2327	2306	511.3	30.3	2193.5	88.2	8.042	29.0	2199.9	83.1	12.135	7.916	0.845	7.0	-23.1
318	3369	1.55	34.684	2415	2329	2305	520.3	30.9	2196.5	86.6	8.035	29.5	2203.3	81.2	12.580	7.900	0.826	2.6	-28.2
319	3665	1.49	34.691	2412	2325		514.5	30.6	2192.4	87.0	8.039	29.2	2199.7	81.2	12.821	7.892	0.825	-1.2	-33.1
320	3967	1.44	34.695	2405	2308	2294	477.1	28.4	2172.4	92.1	8.067	26.9	2180.5	85.6	12.328	7.909	0.870	-0.9	-33.9
321	4220	1.42	34.696	2401	2301	2299	466.3	27.8	2164.5	93.7	8.075	26.3	2173.1	86.7	12.379	7.907	0.881	-3.3	-37.3
322	4473	1.43	34.698	2399	2326		564.7	33.7	2197.7	79.7	7.999	31.8	2206.3	72.9	15.185	7.819	0.742	-20.7	-55.7
323	4772	1.46	34.697	2399	2307	2286	492.3	29.3	2173.4	89.3	8.054	27.5	2182.9	81.6	13.712	7.863	0.829	-16.5	-52.7
324	5033	1.46	34.700			2291													

STATION: 325 LEG: X POSITION: 14° 40' S 130° 55' W DATE: 18 MAY 74

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
119	2494	1.82	34.671	2416	2332		533.4	31.3	2200.0	85.6	8.026	30.3	2205.0	81.7	11.834	7.927	0.830	13.3	-14.6
120	2790	1.74	34.677	2417	2332		528.7	31.1	2199.7	86.2	8.030	30.0	2205.2	81.8	12.067	7.918	0.831	10.1	-18.7
122	3386	1.58	34.684	2417	2335		536.8	31.8	2203.6	84.6	8.023	30.4	2210.3	79.3	12.958	7.887	0.806	0.5	-30.4
123	3686	1.56	34.688	2420	2325		490.0	29.1	2189.5	91.4	8.060	27.6	2197.0	85.3	12.221	7.913	0.868	2.7	-29.3
124	4031	1.59	34.688	2421	2325		487.5	28.9	2189.1	92.0	8.062	27.4	2197.3	85.3	12.549	7.901	0.868	-1.9	-35.1

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

STATION: 326 LEG: X POSITION: 14° 3' S 126° 16' W DATE: 20 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-7} (M/KG)^2	DELTA CO$_3^=$ (CALC) µM/KG	DELTA CO$_3^=$ (ARAG) µM/KG
301	2	25.74	35.628	2358	2039	2032	375.9	10.4	1776.3	237.3	3.224	10.4	1776.3	237.3	5.966	8.224	2.478	192.1	171.8
302	36	25.76	35.956	2378	2037		350.1	9.7	1760.3	252.0	8.251	9.7	1760.4	251.9	5.629	8.250	2.656	206.7	186.3
303	55	25.59	36.185	2396	2044	2039	339.1	9.4	1759.9	259.6	8.263	9.4	1760.1	259.5	5.483	8.261	2.753	214.1	193.8
304	84	25.12	36.384	2408	2045	82	322.2	9.1	1754.2	266.9	8.280	9.0	1754.4	266.6	5.280	8.277	2.843	221.1	200.7
305	120	23.98	36.438	2407	2051	2059	317.1	9.2	1765.4	261.4	8.282	9.2	1765.7	261.1	5.265	8.279	2.789	215.4	194.9
306	147	22.57	36.238	2398	2068		331.0	9.9	1799.6	243.5	8.264	9.9	1800.0	243.1	5.507	8.259	2.583	197.1	176.5
307	197	19.79	35.665	2357	2085	2081	366.3	11.9	1854.7	203.4	8.217	11.9	1855.2	202.9	6.159	8.210	2.122	156.3	135.6
308	256	16.08	35.063	2318	2091	2087	373.9	13.6	1890.5	171.9	8.195	13.5	1891.1	171.4	6.509	8.186	1.762	124.1	103.1
309	316	11.45	34.600	2293	2190		632.5	26.5	2052.9	95.5	7.977	26.4	2053.5	95.0	10.841	7.965	0.964	47.1	25.8
310	364	9.34	34.584	2302	2252	2251	864.6	38.9	2130.0	68.2	7.845	38.7	2130.6	67.7	14.766	7.831	0.686	19.2	-2.2
311	464	7.54	34.555	2303	2252	2249	798.1	38.2	2130.9	68.0	7.869	37.9	2131.7	67.4	14.079	7.851	0.683	18.1	-3.7
312	583	6.44	34.519	2313	2249	2248	695.2	34.5	2125.3	74.1	7.922	34.3	2126.4	73.3	12.604	7.900	0.742	23.0	0.9
316	715	5.50	34.506	2324	2264	2263	695.3	35.7	2141.0	72.3	7.920	35.4	2142.3	71.3	12.822	7.892	0.721	19.9	-2.6
317	823	4.99	34.507	2332	2284	2268	750.9	39.3	2163.0	66.7	7.888	38.9	2164.5	65.6	13.943	7.856	0.664	13.3	-9.4
318	935	4.49	34.519	2346	2292	2291	708.0	37.7	2169.6	69.7	7.912	37.3	2171.3	68.4	13.329	7.875	0.692	15.1	-7.9
319	1093	3.91	34.537	2361	2302	2295	672.1	36.5	2178.2	72.3	7.933	36.1	2180.2	70.7	12.882	7.890	0.716	16.1	-7.4
320	1242	3.91	34.557			2298													
321	1394	3.13	34.578	2379	2316	2319	639.3	35.8	2190.8	74.4	7.953	35.2	2193.4	72.5	12.657	7.898	0.734	15.1	-9.3
322	1543	2.79	34.594	2390	2319	2315	597.9	33.9	2191.6	78.5	7.981	33.2	2194.5	76.2	12.046	7.919	0.773	17.5	-7.4
323	1693	2.50	34.612	2392	2316	2321	571.2	32.7	2187.2	81.1	7.998	32.0	2190.5	78.5	11.735	7.931	0.796	18.3	-7.0
101	1847	2.27	34.629	2398	2334	2322	621.5	35.9	2207.8	75.3	7.964	35.1	2211.3	72.6	12.883	7.890	0.737	10.9	-14.9
324	1917	2.18	34.639	2402	2326		568.1	32.9	2196.8	81.3	8.000	32.1	2200.5	78.4	11.915	7.924	0.796	16.0	-10.1
102	1995	2.09	34.644	2399	2330		594.9	34.6	2202.7	77.7	7.981	33.7	2206.5	74.7	12.559	7.901	0.759	11.5	-14.7
103	2147	1.98	34.656	2408	2326	2335	541.5	31.6	2195.0	84.4	8.020	30.7	2199.2	81.1	11.638	7.934	0.823	16.3	-10.4
104	2295	1.98	34.662		2337														
105	2443	1.86	34.667	2420	2341	2337	555.2	32.6	2210.3	83.2	8.011	31.5	2215.1	79.4	12.201	7.914	0.807	11.5	-16.1
106	2595	1.82	34.672	2418	2334		534.4	31.4	2201.9	85.7	8.026	30.3	2207.0	81.6	11.956	7.922	0.830	12.1	-16.0
107	2746	1.78	34.675	2420	2342	2334	557.7	32.8	2211.5	82.7	8.009	31.7	2216.9	78.4	12.613	7.899	0.797	7.3	-21.4
108	2894	1.75	34.677	2418	2336		540.9	31.9	2204.4	84.7	8.021	30.7	2210.2	80.2	12.441	7.905	0.815	7.3	-21.9
109	3043	1.70	34.679	2419	2329	2334	510.6	30.1	2195.0	88.9	8.044	28.9	2201.1	84.0	11.954	7.922	0.854	9.4	-20.3
110	3197	1.64	34.681	2412	2335		556.5	32.9	2205.1	82.0	8.008	31.6	2211.3	77.1	13.190	7.880	0.784	0.6	-29.6
111	3352	1.60	34.683	2420	2333	2311	519.3	30.8	2200.0	87.3	8.037	29.4	2206.7	81.9	12.507	7.903	0.833	3.5	-27.2
112	3507	1.59	34.685	2417	2328		510.8	30.3	2194.5	88.2	8.043	28.9	2201.5	82.6	12.508	7.903	0.840	2.3	-29.1
122	3708	1.60	34.686	2422	2337	2328	527.3	31.2	2204.5	86.3	8.031	29.7	2211.9	80.4	13.101	7.883	0.817	-2.5	-34.6

STATION: 328 LEG: X POSITION: 9° 17' S 125° 33' W DATE: 21 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-7} (M/KG)^2	DELTA CO$_3^=$ (CALC) µM/KG	DELTA CO$_3^=$ (ARAG) µM/KG
315	5	26.34	35.288	2329	2027		402.5	11.0	1775.0	225.9	8.199	11.0	1775.1	225.9	6.325	8.199	2.337	180.7	160.4
301	135	22.12	36.072	2382	2071		347.4	10.6	1815.0	230.4	8.244	10.5	1815.4	230.1	5.758	8.240	2.433	184.1	163.5
302	165	18.67	35.494	2350	2094	2101	374.2	12.6	1874.0	192.5	8.206	12.5	1874.4	192.1	6.306	8.200	1.999	145.6	124.9
303	214	13.20	34.790	2298	2213		779.1	30.9	2080.2	86.9	7.902	30.8	2080.6	86.6	12.771	7.894	0.883	39.4	18.4
304	265	10.68	34.756	2304	2245	2260	855.6	36.8	2120.3	73.0	7.855	36.6	2120.7	72.6	14.303	7.845	0.740	24.9	3.7
305	305	9.93	34.741	2310	2262		906.7	39.9	2139.4	67.7	7.829	39.8	2139.9	67.3	15.230	7.817	0.686	19.3	-2.0
306	345	9.57	34.720	2308	2255	2264	857.3	38.2	2132.0	69.7	7.850	38.1	2132.6	69.3	14.569	7.837	0.705	21.0	-0.4
307	393	9.04	34.695	2307	2246	2264	788.3	35.8	2121.9	73.3	7.881	35.6	2122.6	72.8	13.610	7.866	0.740	24.1	2.5
308	454	8.47	34.666	2315	2272		890.5	41.2	2150.8	65.0	7.831	41.0	2151.6	64.4	15.369	7.813	0.655	15.3	-6.4
309	454	8.47	34.660	2308	2267	2277	901.5	41.7	2146.3	64.0	7.825	41.5	2147.1	63.4	15.591	7.807	0.644	14.3	-7.5
310	454	8.47	34.660	2310	2263		860.7	39.8	2141.5	66.7	7.844	39.6	2142.3	66.1	14.918	7.826	0.672	17.0	-4.8
311	454	8.47	34.662	2314	2273	2282	904.2	41.8	2152.0	64.1	7.825	41.6	2152.8	63.5	15.598	7.807	0.646	14.4	-7.3
312	454	8.48	34.662	2308	2272		938.1	43.4	2151.8	61.8	7.809	43.2	2152.6	61.2	16.184	7.791	0.622	12.1	-9.6
316	464	8.37	34.656	2308	2263	2281	869.1	40.4	2142.0	65.7	7.839	40.2	2142.8	65.1	15.096	7.821	0.661	15.8	-5.9
317	464	8.36	34.656	2310	2268	2276	890.7	41.4	2147.3	64.4	7.830	41.2	2148.0	63.8	15.434	7.812	0.648	14.6	-7.2
318	532	7.69	34.614	2311	2277	2288	924.4	44.0	2157.3	60.7	7.812	43.7	2158.2	60.1	16.188	7.791	0.610	10.3	-11.6
319	611	6.81	34.574	2316	2258		740.4	36.3	2135.3	71.4	7.899	36.0	2136.4	70.6	13.336	7.875	0.715	20.1	-2.1
320	699	6.07	34.546	2327	2307	2305	978.4	49.2	2187.8	55.0	7.784	48.9	2189.0	54.1	17.528	7.756	0.548	2.9	-19.5
321	790	5.35	34.535	2333	2309		922.8	47.6	2189.9	56.5	7.806	47.3	2191.2	55.5	16.816	7.774	0.562	3.6	-19.1
322	889	4.80	34.537	2344	2309	2315	832.0	43.8	2189.0	61.2	7.848	43.4	2190.5	60.1	15.411	7.812	0.609	7.3	-15.7
101	983	4.35	34.543	2356	2308	2323	741.9	39.7	2186.2	67.1	7.894	39.3	2188.0	65.8	13.953	7.855	0.666	12.1	-11.1
323	1088	4.06	34.553	2363	2318		754.6	40.8	2196.3	65.9	7.887	40.3	2198.2	64.5	14.322	7.844	0.653	9.9	-13.6
103	1334	3.32	34.577	2376	2313	2327	643.1	35.7	2187.9	74.4	7.951	35.1	2190.4	72.5	12.645	7.898	0.735	15.7	-8.5
104	1481	3.06	34.589	2385	2321		635.1	35.6	2195.3	75.1	7.956	35.0	2198.1	72.9	12.662	7.897	0.740	14.8	-9.9
105	1632	2.76	34.608	2393	2336	2312	665.3	37.7	2211.4	71.9	7.938	37.0	2214.4	69.6	13.415	7.872	0.706	10.0	-15.1
106	1783	2.51	34.623	2401	2331		600.3	34.4	2203.3	78.3	7.979	33.6	2206.8	75.6	12.350	7.908	0.768	14.6	-11.0
107	1932	2.32	34.632	2399	2335	2341	623.4	35.9	2208.7	75.4	7.963	35.1	2212.4	72.5	13.009	7.886	0.736	10.0	-16.0
108	2083	2.14	34.644	2409	2341		603.8	35.0	2213.5	77.5	7.977	34.1	2217.5	74.4	12.780	7.893	0.755	10.3	-16.2
109	2233	2.01	34.655	2414	2338	2335	568.6	33.2	2208.3	81.6	8.001	32.2	2212.7	78.1	12.243	7.912	0.794	12.5	-14.5
110	2378	1.92	34.662	2418	2346		585.2	34.3	2217.0	79.7	7.990	33.2	2221.7	76.1	12.744	7.895	0.773	9.0	-18.5
111	2526	1.86	34.667	2423	2344	2352	556.0	32.6	2213.1	83.2	8.011	31.5	2218.1	79.3	12.296	7.910	0.806	10.6	-17.4
112	2675	1.82	34.672	2427	2342		532.9	31.3	2209.3	86.4	8.028	30.2	2214.7	82.1	11.970	7.922	0.835	11.8	-16.7
116	2780	1.79	34.673	2437	2340	2344	492.3	29.0	2203.1	92.9	8.062	27.9	2208.8	88.3	11.185	7.951	0.898	16.8	-12.0
117	2874	1.76	34.677	2420	2339		545.8	32.1	2207.6	84.3	8.017	30.9	2213.3	79.8	12.511	7.903	0.811	7.1	-22.0
118	2975	1.71	34.678	2423	2337	2325	525.9	31.0	2204.2	86.8	8.033	29.8	2210.1	82.1	12.188	7.914	0.834	8.2	-21.2

STATION: 328 LEG: X POSITION: 9° 17' S 125° 33' W DATE: 21 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-7} (M/KG)^2	DELTA CO$_3^=$ (CALC) µM/KG	DELTA CO$_3^=$ (ARAG) µM/KG
119	3128	1.64	34.682	2427	2332		493.4	29.2	2196.2	91.6	8.058	28.0	2202.6	86.4	11.639	7.934	0.879	10.8	-19.2
120	3277	1.59	34.687	2427	2338	2322	513.8	30.4	2204.1	88.5	8.042	29.1	2210.7	83.2	12.264	7.911	0.846	5.7	-24.8
121	3426	1.54	34.687	2428	2336		502.6	29.8	2201.1	90.1	8.051	28.5	2208.0	84.5	12.183	7.914	0.859	5.2	-25.9
122	3577	1.51	34.687	2427	2337	2339	508.9	30.2	2202.8	89.0	8.045	28.8	2210.0	83.2	12.508	7.903	0.846	2.0	-29.6
123	3723	1.49	34.690	2429	2338		505.5	30.1	2203.4	89.6	8.048	28.6	2210.9	83.5	12.591	7.900	0.849	0.4	-31.8
124	3850	1.49	34.691	2426	2327	2324	477.0	28.4	2189.9	93.7	8.071	26.9	2197.9	87.2	12.082	7.918	0.887	2.4	-30.2

STATION: 331 LEG: X POSITION: 4° 38' S 125° 8' W DATE: 23 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-7} (M/KG)^2	DELTA CO$_3^=$ (CALC) µM/KG	DELTA CO$_3^=$ (ARAG) µM/KG
501	10	26.43	35.137	2326	2018	2011	389.9	10.7	1762.3	230.0	8.211	10.7	1762.3	230.0	6.160	8.210	2.369	184.8	164.4
502	39	26.27	35.146	2323	2018		391.7	10.8	1764.5	227.8	8.208	10.8	1764.6	227.7	6.208	8.207	2.346	182.3	161.9
503	59	26.26	35.466	2324	2022	2026	401.2	11.0	1770.6	225.3	8.198	11.0	1770.8	225.2	6.359	8.197	2.341	179.7	159.3
504	79	20.77	35.465	2349	2094		410.6	13.0	1872.9	193.1	8.178	13.0	1873.1	193.0	6.675	8.176	2.006	147.1	126.5
505	100	16.60	35.284	2331	2138	2156	468.1	16.7	1955.0	151.3	8.115	16.7	1955.2	151.1	7.737	8.111	1.563	104.9	84.2
506	116	14.53	35.027	2311	2207		729.1	27.7	2066.5	97.8	7.935	27.7	2066.7	97.6	11.732	7.931	1.003	51.2	30.4
507	138	13.19	34.954	2309	2225	2242	792.0	31.4	2092.1	86.6	7.896	31.3	2092.3	86.4	12.842	7.891	0.885	39.7	18.8
508	178	12.57	34.916	2306	2221	2243	763.8	30.9	2088.5	86.6	7.908	30.8	2088.8	86.4	12.550	7.901	0.884	39.4	18.4
509	226	12.16	34.884	2307	2248	2278	911.4	37.3	2122.1	73.6	7.836	37.2	2122.5	73.3	14.881	7.827	0.750	26.0	4.9
510	273	11.59	34.850	2310	2254	2263	912.1	38.0	2129.0	72.0	7.834	37.9	2129.4	71.6	15.019	7.823	0.732	24.0	2.8
511	305	11.02	34.817	2309	2273		1040.4	44.2	2151.1	62.7	7.778	44.1	2151.6	62.4	17.139	7.766	0.637	14.5	-6.8
512	374	9.81	34.757	2312	2260	2254	875.4	38.7	2136.8	69.5	7.843	38.5	2137.4	69.0	14.836	7.829	0.703	20.5	-1.0
516	423	9.20	34.701	2312	2272	2276	937.3	42.3	2150.8	63.8	7.813	42.1	2151.6	63.3	15.980	7.796	0.644	14.4	-7.2
517	494	8.15	34.636	2311	2249	2264	756.0	35.4	2125.0	73.6	7.895	35.2	2125.9	72.9	13.303	7.876	0.740	23.4	1.6
518	604	7.12	34.586	2326	2265	2270	737.0	35.7	2141.1	73.2	7.904	35.5	2142.2	72.3	13.174	7.880	0.734	22.0	-0.2
519	694	5.98	34.552	2328	2284	2293	804.3	40.6	2163.4	65.0	7.864	40.3	2164.6	64.1	14.571	7.837	0.649	12.9	-9.5
520	793	5.28	34.540	2341	2285	2294	717.5	37.1	2162.2	70.6	7.909	36.8	2163.7	69.6	13.238	7.878	0.704	17.6	-5.1
521	941	4.73	34.551	2356	2302	2317	718.9	37.9	2179.1	69.9	7.909	37.5	2180.8	68.6	13.441	7.872	0.695	15.4	-7.7
522	1089	4.23	34.560	2368	2318	2288	732.3	39.4	2195.4	68.3	7.901	38.9	2197.3	66.8	13.871	7.858	0.677	12.3	-11.2
523	1238	3.72	34.572	2372	2324	2335	731.2	40.0	2201.6	67.4	7.900	39.5	2203.8	65.7	14.101	7.851	0.666	9.8	-14.1
524	1376	3.38	34.585	2386	2330	2337	683.4	37.9	2205.8	71.3	7.928	37.3	2208.3	69.4	13.379	7.874	0.704	12.3	-12.1
301	1543	2.95	34.604	2402	2353	2355	715.7	40.3	2229.3	68.4	7.911	39.6	2232.1	66.3	14.168	7.849	0.673	7.6	-17.3
302	1762	2.55	34.622	2410	2345		627.4	35.9	2218.0	76.1	7.963	35.1	2221.4	73.5	12.795	7.893	0.746	12.7	-12.8
303	1986	2.27	34.638	2415	2343	2343	591.3	34.1	2214.2	79.6	7.987	33.3	2218.1	76.6	12.370	7.908	0.778	13.6	-12.7
304	2207	2.06	34.651	2430	2351		562.4	32.7	2219.8	83.5	8.008	31.8	2224.2	80.0	12.007	7.921	0.813	14.7	-12.2
305	2433	1.90	34.661	2426	2356	2361	595.8	34.9	2227.2	78.9	7.984	33.8	2231.9	75.2	12.987	7.886	0.764	7.5	-20.1
306	2654	1.79	34.669	2429	2350		556.4	32.7	2218.9	83.4	8.011	31.6	2224.1	79.3	12.432	7.905	0.806	9.1	-19.3
307	2878	1.70	34.673	2430	2350	2338	550.9	32.5	2218.6	83.9	8.015	31.3	2224.3	79.4	12.583	7.900	0.807	6.7	-22.4
308	3098	1.59	34.680	2430	2341		514.4	30.5	2207.0	88.5	8.042	29.2	2213.3	83.5	12.062	7.919	0.849	8.2	-21.7
309	3324	1.51	34.684	2430	2337	2351	498.8	29.6	2201.8	90.6	8.054	28.3	2208.5	85.1	11.977	7.922	0.866	7.1	-23.6
310	3546	1.43	34.688	2433	2336	2328	484.9	28.9	2199.3	92.8	8.065	27.5	2206.6	86.9	11.905	7.924	0.884	6.0	-25.5
311	3774	1.40	34.691	2430	2335	2321	490.3	29.3	2199.1	91.7	8.060	27.8	2206.8	85.4	12.305	7.910	0.869	1.6	-30.7
312	3999	1.43	34.692	2429	2325		461.1	27.5	2186.0	96.5	8.084	26.0	2194.3	89.7	11.865	7.926	0.912	2.8	-30.4
322	4302	1.46	34.691	2428	2333	2334	490.6	29.2	2197.2	91.6	8.060	27.6	2205.9	84.5	12.928	7.888	0.859	-6.6	-40.9

STATION: 334 LEG: X POSITION: 0° 4' N 124° 34' W DATE: 27 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY 0/00	TITRATOR ALK µEQ/KG	TITRATOR TCO$_2$ µM/KG	GC TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-7} (M/KG)^2	DELTA CO$_3^=$ (CALC) µM/KG	DELTA CO$_3^=$ (ARAG) µM/KG
301	4	24.89	35.182	2319	2040	2052	418.1	11.9	1803.1	210.0	8.180	11.9	1803.1	210.0	6.603	8.180	2.166	164.7	144.4
302	43	24.79	35.164	2322	2031		394.3	11.2	1786.7	218.0	8.201	11.2	1786.8	217.9	6.311	8.200	2.246	172.4	152.0
303	74	22.25	34.852	2300	2058	2075	440.3	13.4	1844.8	184.8	8.152	13.4	1845.0	184.6	7.085	8.150	1.886	138.8	118.2
304	91	20.72	34.936	2306	2078	2087	447.5	14.2	1873.7	175.1	8.142	14.2	1873.9	174.9	7.260	8.139	1.791	128.9	108.3
305	111	18.95	34.838	2300	2093	2109	461.0	15.4	1901.8	160.8	8.125	15.4	1902.1	160.5	7.564	8.121	1.640	114.3	93.7
306	137	14.65	34.745	2301	2130	2145	471.3	17.9	1960.7	136.4	8.103	17.8	1961.0	136.2	7.978	8.098	1.387	89.6	68.7
307	180	13.51	34.746	2315	2145	2159	455.8	17.9	1976.6	135.5	8.114	17.9	1977.0	135.1	7.803	8.108	1.376	88.2	67.2
308	204	12.76	34.916	2316	2161		486.5	19.5	2000.4	126.1	8.086	19.5	2000.8	125.7	8.339	8.079	1.287	78.6	57.6
309	282	12.03	34.864	2311	2188	2205	576.2	23.7	2042.1	107.2	8.018	23.6	2042.7	106.7	9.834	8.007	1.091	59.0	37.8
310	366	11.12	34.802	2309	2238	2268	798.1	33.8	2110.1	79.1	7.885	33.6	2110.8	78.6	13.445	7.871	0.801	30.2	8.8
311	394	10.69	34.784	2311	2250		845.7	36.3	2124.7	74.0	7.861	36.2	2125.4	73.5	14.267	7.846	0.749	24.9	3.4
312	479	8.80	34.671	2318	2285	2294	978.2	44.8	2164.4	60.9	7.795	44.5	2165.2	60.3	16.744	7.776	0.613	11.0	-10.8
316	587	7.19	34.603	2322	2272	2303	803.3	38.8	2150.2	67.9	7.868	38.6	2151.2	67.2	14.269	7.846	0.681	16.9	-5.2
317	672	6.79	34.577	2330	2288	2296	844.4	41.4	2167.2	64.4	7.848	41.1	2168.4	63.5	15.079	7.822	0.644	12.6	-9.7
318	774	6.20	34.560	2333	2289	2300	813.2	40.7	2168.1	65.2	7.861	40.4	2169.4	64.2	14.766	7.831	0.650	12.4	-10.2
319	870	5.31	34.547	2344	2286	2308	708.7	36.6	2162.7	71.7	7.915	36.3	2164.2	70.5	13.161	7.881	0.714	17.9	-5.0
320	1063	4.33	34.560	2369	2319	2330	735.5	39.4	2196.3	68.3	7.900	38.9	2198.2	66.9	13.874	7.858	0.678	12.6	-10.9
321	1258	3.60	34.583	2389	2342	2347	740.1	40.7	2219.0	67.3	7.898	40.1	2221.3	65.6	14.212	7.847	0.665	9.6	-14.4
322	1505	3.06	34.601	2407	2354	2357	699.0	39.2	2229.4	70.4	7.922	38.5	2232.2	68.3	13.763	7.861	0.693	10.0	-14.8

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES.

STATION: 334 LEG: X POSITION: 0° 4' N 124° 34' W DATE: 27 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
				TITRATOR		GC												DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
323	1749	2.54	34.629	2415	2362	2365	688.7	39.4	2237.1	70.5	7.927	38.6	2240.3	68.1	13.923	7.856	0.691	7.4	-18.1
101	2000	2.27	34.640	2423	2363	2374	649.1	37.5	2236.5	74.0	7.951	36.6	2240.3	71.1	13.479	7.870	0.722	7.9	-18.4
324	2117	2.16	34.648	2430	2364		621.0	36.0	2235.9	77.0	7.969	35.1	2240.0	73.9	13.050	7.884	0.751	9.5	-17.1
102	2228	2.02	34.654	2431	2362		604.1	35.2	2233.3	78.5	7.980	34.2	2237.6	75.1	12.863	7.891	0.763	9.6	-17.4
103	2468	1.90	34.661	2434	2363	2369	594.1	34.8	2233.7	79.5	7.987	33.7	2238.5	75.8	12.950	7.888	0.770	7.7	-20.0
104	2710	1.77	34.668	2439	2359		555.5	32.7	2227.1	84.2	8.014	31.5	2232.5	79.9	12.431	7.905	0.812	9.2	-19.4
105	2951	1.70	34.673	2435	2348	2365	526.1	31.0	2214.3	87.7	8.034	29.8	2220.2	82.9	12.111	7.917	0.843	9.4	-20.0
106	3187	1.63	34.676	2434	2355		554.9	32.8	2223.7	83.5	8.013	31.5	2230.0	78.5	13.026	7.885	0.798	2.2	-28.0
107	3430	1.54	34.682	2438	2354	2351	535.1	31.8	2221.1	86.2	8.027	30.4	2227.9	80.7	12.871	7.890	0.821	1.4	-29.7
108	3672	1.41	34.690	2440	2341		479.7	28.6	2203.3	94.0	8.071	27.2	2210.9	87.9	11.894	7.925	0.893	5.4	-26.6
109	3926	1.42	34.691	2440	2344	2350	490.6	29.2	2207.2	92.5	8.062	27.7	2215.3	86.0	12.431	7.906	0.874	0.1	-32.8
110	4140	1.44	34.691	2439	2356		537.4	32.0	2223.3	85.7	8.025	30.3	2231.6	79.1	13.814	7.860	0.805	-9.7	-43.4
111	4381	1.47	34.691	2437	2331	2337	457.6	27.2	2191.0	97.7	8.089	25.6	2200.2	90.2	12.157	7.915	0.917	-2.0	-36.6
116	4642	1.50	34.692	2439	2341	2347	484.5	28.8	2203.7	93.5	8.067	27.0	2213.2	85.7	13.119	7.882	0.872	-10.3	-46.0
121	4774	1.52	34.693	2433	2336	2337	486.4	28.9	2199.3	92.8	8.065	27.1	2209.1	84.8	13.357	7.874	0.863	-13.2	-49.4

STATION: 337 LEG: X POSITION: 4° 51' N 124° 5' W DATE: 29 MAY 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
				TITRATOR		GC												DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
409	1	27.01	34.604	2283	1973	1978	374.2	10.1	1717.1	230.8	8.222	10.1	1717.1	230.8	5.992	8.222	2.341	185.6	165.3
411	67	26.54	34.742	2291	1986	1995	380.6	10.4	1733.1	227.4	8.216	10.4	1733.3	227.3	6.115	8.214	2.315	181.7	161.3
412	82	24.75	34.797	2292	2012		399.6	11.4	1775.4	210.2	8.193	11.4	1775.6	210.0	6.445	8.191	2.142	164.3	143.8
413	101	20.07	34.784	2291	2089	2101	492.8	16.0	1899.9	158.1	8.103	15.9	1900.1	157.9	7.958	8.099	1.610	111.8	91.2
415	147	13.06	34.657	2294	2197	2189	706.0	28.1	2060.9	93.0	7.940	28.1	2061.1	92.8	11.628	7.935	0.943	46.1	25.1
416	167	11.70	34.634	2297	2184		598.4	24.9	2042.9	101.2	8.000	24.8	2043.2	100.9	10.143	7.994	1.025	54.0	33.0
417	197	10.94	34.630	2301	2191	2202	593.5	25.3	2051.4	99.3	8.001	25.2	2051.8	99.0	10.147	7.994	1.005	51.8	30.7
419	260	9.95	34.673	2304	2216	2232	667.1	29.4	2084.6	87.1	7.951	29.3	2085.0	86.7	11.441	7.942	0.881	39.0	17.8
420	300	9.69	34.677	2308	2241		774.1	34.4	2115.1	76.5	7.891	34.3	2115.6	76.1	13.180	7.880	0.774	28.2	6.8
301	307	9.65	34.678	2303	2247	2253	837.3	37.2	2123.7	71.1	7.859	37.1	2124.2	70.7	14.219	7.847	0.718	22.6	1.3
302	355	9.25	34.667	2309	2243		765.4	34.5	2117.7	75.8	7.894	34.4	2118.3	75.3	13.157	7.881	0.766	26.9	5.5
303	405	8.99	34.656	2309	2248	2261	787.5	35.8	2123.8	73.4	7.882	35.6	2124.5	72.8	13.603	7.866	0.740	24.1	2.5
306	482	8.32	34.630	2313	2276		926.7	43.1	2155.6	62.3	7.814	42.9	2156.4	61.7	16.030	7.795	0.626	12.3	-9.5
305	486	8.29	34.629	2314	2279	2297	940.1	43.8	2158.8	61.4	7.808	43.6	2159.7	60.8	16.251	7.789	0.617	11.4	-10.4
307	561	7.40	34.595	2324	2311	2328	1088.3	52.3	2191.3	52.5	7.746	52.0	2192.2	51.8	18.895	7.724	0.526	1.8	-20.2
308	644	6.45	34.565	2327	2313		1042.7	51.8	2193.5	52.7	7.760	51.4	2194.6	52.0	18.451	7.734	0.527	1.3	-21.0
309	722	5.87	34.552	2337	2310	2323	921.5	46.7	2190.4	57.9	7.810	46.3	2191.6	57.1	16.565	7.781	0.578	5.7	-16.8
311	889	5.09	34.553	2349	2325	2339	920.5	48.0	2205.3	56.8	7.809	47.5	2206.8	55.7	16.869	7.773	0.564	2.9	-20.0
312	979	4.76	34.553	2353	2333		940.6	49.6	2213.2	55.2	7.799	49.1	2214.8	54.1	17.401	7.759	0.548	0.5	-22.7
316	988	4.73	34.554	2357	2333		911.0	48.1	2213.0	56.9	7.813	47.6	2214.7	55.7	16.872	7.773	0.564	2.0	-21.2
317	1083	4.33	34.568	2370	2340	2357	861.1	46.1	2219.3	59.6	7.836	45.6	2221.2	58.3	16.125	7.793	0.590	3.8	-19.7
319	1327	3.62	34.586	2388	2358	2350	846.0	46.5	2236.6	59.9	7.843	45.8	2238.9	58.3	16.236	7.790	0.591	1.6	-22.6
320	1470	3.19	34.602	2395	2352		754.7	42.1	2229.2	65.7	7.889	41.4	2231.9	63.7	14.798	7.830	0.646	5.7	-18.9
321	1470	3.20	34.602	2398	2356	2373	760.9	42.5	2233.3	65.2	7.886	41.8	2236.0	63.3	14.894	7.827	0.642	5.2	-19.4
322	1619	2.93	34.611	2399	2358		759.7	42.8	2235.4	64.8	7.886	42.0	2238.3	62.6	15.120	7.820	0.635	3.2	-21.9
101	1788	2.66	34.623	2412	2368	2372	739.4	42.1	2244.6	66.3	7.898	41.2	2247.8	63.9	14.941	7.826	0.649	2.9	-22.7
102	1982	2.37	34.637	2422	2364	2367	661.6	38.1	2237.9	73.0	7.943	37.2	2241.6	70.2	13.689	7.864	0.713	7.2	-19.0
324	2057	2.30	34.641	2419	2362		663.8	38.3	2236.2	72.5	7.941	37.4	2240.1	69.6	13.856	7.858	0.706	5.8	-20.6
103	2181	2.15	34.649	2427	2365		638.4	37.0	2237.9	75.0	7.957	36.1	2242.1	71.9	13.492	7.870	0.730	6.8	-20.0
104	2382	2.15	34.657			2387													
105	2580	1.89	34.663	2435	2360		577.1	33.8	2229.7	81.5	7.998	32.7	2234.7	77.6	12.730	7.895	0.788	8.3	-19.8
106	2778	1.84	34.667	2436	2368		606.5	35.6	2239.3	78.1	7.978	34.4	2244.7	74.0	13.591	7.867	0.752	2.4	-26.3
107	2977	1.79	34.670	2436	2377	2377	647.3	38.1	2250.2	73.8	7.952	36.7	2255.8	69.5	14.734	7.832	0.706	-4.3	-33.8
108	3176	1.66	34.677	2436	2350		529.3	31.3	2216.6	87.2	8.032	30.0	2222.9	82.1	12.435	7.905	0.834	5.9	-24.3
109	3375	1.56	34.682	2437	2357	2362	550.4	32.6	2225.3	84.1	8.016	31.2	2232.0	78.8	13.149	7.881	0.801	0.1	-30.7
110	3574	1.52	34.684	2437	2370	2348	604.0	35.9	2241.5	77.6	7.979	34.3	2248.4	72.3	14.633	7.835	0.735	-8.9	-40.5
111	3775	1.47	34.687	2431	2341	2347	509.4	30.3	2206.6	89.1	8.046	28.8	2214.2	83.0	12.737	7.895	0.844	-0.9	-33.2
112	3957	1.46	34.688	2433	2348		528.2	31.4	2215.0	86.6	8.031	29.8	2222.9	80.2	13.391	7.873	0.816	-6.0	-39.0
122	4252	1.49	34.689	2430	2338	2355	501.9	29.8	2203.1	90.1	8.051	28.2	2211.7	83.1	13.129	7.882	0.845	-7.2	-41.4

STATION: 340 LEG: X POSITION: 10° 29' N 123° 39' W DATE: 1 JUN 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
				TITRATOR		GC												DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
202	0	26.81	34.226	2261	1924	1930	316.9	8.6	1652.0	248.4	8.278	8.6	1652.0	248.4	5.278	8.278	2.492	168.2	138.9
203	41	16.89	34.654	2287	2163	2181	685.9	24.3	2013.9	109.8	7.965	24.3	2014.0	109.7	10.870	7.964	1.114	63.8	43.2
204	77	13.40	34.720	2294	2232		926.3	36.5	2105.2	75.3	7.833	36.5	2105.3	75.2	14.786	7.830	0.766	29.0	8.2
205	102	12.47	34.787	2300	2254	2263	1014.1	41.1	2130.3	67.6	7.793	41.1	2130.5	67.5	16.243	7.789	0.688	21.0	0.2
206	141	11.61	34.765	2303	2254		957.6	39.9	2130.5	68.6	7.813	39.9	2130.7	68.4	15.568	7.808	0.697	21.6	0.7

STATION: 340 LEG: X POSITION: 10° 29' N 123° 39' W DATE: 1 JUN 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
				TITRATOR		GC												DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
207	194	11.02	34.739	2300	2242	2277	871.7	37.0	2117.4	72.5	7.848	37.0	2117.7	72.3	14.435	7.841	0.736	25.1	4.1
208	256	10.47	34.723	2306	2265		975.2	42.2	2143.2	64.6	7.801	42.1	2143.6	64.3	16.164	7.791	0.655	16.7	-4.5
209	410	9.10	34.653	2316	2296	2317	1096.2	49.7	2175.8	55.5	7.749	49.5	2176.4	55.1	18.482	7.733	0.560	6.3	-15.3
210	513	7.95	34.591	2323	2303		1050.4	49.5	2183.2	55.3	7.763	49.3	2184.0	54.7	18.086	7.743	0.555	5.1	-16.8
211	616	6.91	34.565	2341	2326	2350	1058.8	51.7	2205.7	53.5	7.758	51.4	2206.8	52.8	18.470	7.734	0.535	2.3	-19.8
212	718	6.05	34.540	2346	2336		1067.7	53.8	2215.7	51.5	7.752	53.4	2216.9	50.7	18.935	7.723	0.513	-0.6	-23.1
213	820	5.44	34.542	2351	2340	2341	1037.6	53.4	2219.7	51.9	7.761	53.0	2221.0	51.0	18.694	7.728	0.516	-1.2	-24.0
214	923	4.92	34.547	2363	2345		966.3	50.7	2224.6	54.7	7.790	50.2	2226.2	53.6	17.655	7.753	0.543	0.5	-22.5
215	1025	4.46	34.561	2368	2353	2380	974.7	51.9	2232.5	53.6	7.786	51.4	2234.2	52.4	18.031	7.744	0.531	-1.6	-24.9
216	1176	4.00	34.572	2378	2365		977.8	53.0	2244.0	53.0	7.784	52.4	2246.0	51.6	18.368	7.736	0.523	-3.7	-27.4
217	1431	3.29	34.593	2397	2376	2387	900.4	50.1	2254.5	56.4	7.818	49.4	2257.0	54.7	17.402	7.759	0.554	-3.0	-27.5
218	1682	2.74	34.616	2415	2383		815.8	46.3	2260.4	61.3	7.859	45.5	2263.4	59.1	16.207	7.790	0.600	-0.9	-26.2
219	1929	2.33	34.638	2420	2387	2392	799.2	46.1	2264.2	61.8	7.866	45.1	2267.6	59.3	16.316	7.787	0.602	-3.2	-29.2
101	2082	2.14	34.647	2431	2370	2391	644.5	37.4	2242.9	74.7	7.954	36.4	2246.9	71.6	13.467	7.871	0.728	7.6	-18.9
220	2285	1.94	34.658	2431	2375		664.1	38.8	2248.9	72.3	7.941	37.8	2253.2	69.0	14.152	7.849	0.701	2.8	-24.3
102	2331	1.94	34.659	2437	2367		600.2	35.1	2237.8	79.1	7.983	34.1	2242.3	75.6	12.889	7.890	0.768	9.0	-18.3
103	2532	1.87	34.664	2439	2369	2372	599.6	35.2	2239.7	79.2	7.983	34.0	2244.6	75.4	13.121	7.882	0.766	6.6	-21.4
104	2732	1.79	34.667	2439	2379		643.7	37.8	2251.8	74.3	7.955	36.6	2257.0	70.4	14.306	7.844	0.715	-0.7	-29.3
105	2931	1.72	34.672	2441	2362	2383	558.9	33.0	2230.4	83.7	8.011	31.7	2236.2	79.1	12.757	7.894	0.804	5.8	-23.5
106	3129	1.63	34.678	2439	2360		556.5	32.9	2228.5	83.6	8.012	31.6	2234.7	78.7	12.966	7.887	0.800	3.1	-26.9
107	3329	1.56	34.679	2438	2364	2351	575.2	34.1	2233.8	81.1	7.999	32.7	2240.3	76.0	13.643	7.865	0.772	-2.1	-32.8
108	3530	1.52	34.683	2436	2353		537.8	32.0	2220.4	85.6	8.025	30.5	2227.5	80.0	13.066	7.884	0.814	-0.6	-32.0
109	3728	1.47	34.686	2435	2348	2358	521.5	31.0	2214.3	87.6	8.037	29.5	2221.8	81.6	12.940	7.888	0.830	-1.6	-33.7
110	3921	1.43	34.688	2430	2332		480.7	28.7	2195.1	93.3	8.068	27.2	2203.1	86.7	12.238	7.912	0.882	0.9	-31.9
111	4122	1.42	34.691	2423	2334	2321	510.0	30.4	2200.2	88.4	8.044	28.8	2208.5	81.8	13.218	7.879	0.831	-6.8	-40.4
116	4330	1.44	34.691	2427	2332		490.3	29.2	2196.1	91.6	8.060	27.6	2205.0	84.5	12.963	7.887	0.859	-7.0	-41.4
122	4518	1.46	34.691	2428	2342	2345	522.9	31.1	2208.9	86.9	8.035	29.3	2217.9	79.7	14.004	7.854	0.811	-14.5	-49.7

STATION: 343 LEG: X POSITION: 16° 31' N 122° 60' W DATE: 3 JUN 74

MEASURED PARAMETERS							CALCULATED PARAMETERS P = 1 ATM. T = INSITU					CALCULATED PARAMETERS P, T = INSITU							
				TITRATOR		GC												DELTA	DELTA
SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	ALK µEQ/KG	TCO$_2$ µM/KG	TCO$_2$ µM/KG	PCO$_2$ µATM	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	PH	H$_2$CO$_3$ µM/KG	HCO$_3^-$ µM/KG	CO$_3^=$ µM/KG	AH (10^{-9})	PH	ICP 10^{-6} (M/KG)^2	CO$_3^=$ (CALC) µM/KG	CO$_3^=$ (ARAG) µM/KG
501	13	22.46	34.612	2293	1972	1969	297.7	9.0	1711.6	236.4	8.292	9.0	1711.6	236.3	5.116	8.291	2.398	190.9	170.5
502	43	22.26	34.620	2307	1981		292.3	8.9	1716.9	240.1	8.299	8.9	1717.1	240.0	5.035	8.298	2.436	194.4	173.9
503	73	20.42	34.634	2306	1996	2002	291.3	9.3	1743.2	228.5	8.296	9.3	1743.4	228.3	5.085	8.294	2.318	182.4	161.8
504	103	17.43	34.270	2283	2050		365.0	12.8	1845.7	176.5	8.206	12.8	1846.0	176.3	6.279	8.202	1.771	130.0	109.3
505	143	12.55	33.970	2260	2124	2115	509.5	20.7	1974.2	114.1	8.062	20.7	1974.5	113.8	8.781	8.056	1.134	67.1	46.2
506	168	12.12	34.381	2284	2215		822.8	33.8	2088.2	78.0	7.874	33.8	2088.5	77.7	13.550	7.868	0.783	30.8	9.8
507	196	12.17	34.698	2304	2254	2274	972.1	39.8	2129.8	69.4	7.810	39.7	2130.1	69.2	15.758	7.803	0.704	22.1	1.0
508	226	11.72	34.717	2315	2273		1021.7	42.5	2149.7	65.8	7.790	42.4	2150.1	65.5	16.555	7.781	0.667	18.2	-2.9
509	276	10.71	34.683	2316	2292	2293	1131.9	48.6	2170.6	57.8	7.744	48.5	2171.1	57.5	18.493	7.733	0.584	9.7	-11.5
510	324	9.93	34.640	2315	2298		1159.3	51.1	2177.3	54.7	7.730	50.9	2177.8	54.3	19.164	7.718	0.551	6.2	-15.2
511	373	8.98	34.568	2321	2301	2306	1091.6	49.7	2180.7	55.6	7.752	49.5	2181.3	55.2	18.323	7.737	0.559	6.7	-14.9
512	429	8.31	34.534	2321	2312		1162.6	54.1	2191.6	51.2	7.723	53.9	2192.3	50.8	19.691	7.706	0.514	1.8	-19.9
516	496	7.43	34.511	2326	2326	2311	1209.7	58.1	2205.1	47.8	7.703	57.8	2205.9	47.3	20.735	7.683	0.478	-2.3	-24.1
517	590	6.56	34.508	2343	2342		1168.6	57.8	2220.9	48.3	7.716	57.5	2221.8	47.7	20.296	7.693	0.482	-2.7	-24.8
518	690	5.80	34.506	2349	2351	2351	1166.3	59.3	2229.5	47.3	7.715	58.9	2230.6	46.5	20.577	7.687	0.471	-4.6	-27.0
519	791	5.19	34.514	2356	2346		1037.1	53.9	2225.6	51.6	7.761	53.5	2226.9	50.7	18.647	7.729	0.513	-1.3	-24.0
520	884	4.78	34.524	2370	2363	2368	1050.8	55.4	2241.9	50.6	7.756	55.0	2243.4	49.7	19.032	7.721	0.503	-3.1	-26.1
521	1033	4.15	34.544	2379	2365		975.6	52.6	2244.0	53.4	7.786	52.1	2245.7	52.2	18.044	7.744	0.529	-1.9	-25.2
522	1180	3.68	34.560	2388	2371	2378	939.2	51.5	2249.8	54.7	7.801	50.9	2251.8	53.3	17.673	7.753	0.540	-2.1	-25.9
523	1376	3.16	34.583	2405	2380	2378	871.4	48.7	2258.1	58.2	7.832	48.0	2260.5	56.5	16.749	7.776	0.573	-0.7	-25.1
201	1577	2.85	34.598	2410	2383	2353	849.6	48.0	2260.9	59.1	7.842	47.2	2263.7	57.1	16.691	7.778	0.579	-1.9	-26.9
524	1672	2.54	34.616	2418	2381	2387	780.1	44.6	2257.9	63.5	7.876	43.8	2260.9	61.3	15.536	7.809	0.622	1.3	-23.9
202	1774	2.44	34.621	2421	2379		748.1	42.9	2255.4	65.6	7.894	42.1	2258.7	63.3	15.072	7.822	0.642	2.3	-23.3
203	1975	2.16	34.638	2427	2381	2374	720.9	41.8	2256.6	67.6	7.908	40.9	2260.2	64.9	14.844	7.828	0.659	2.0	-24.2
204	2175	1.95	34.648	2433	2390		733.9	42.9	2265.7	66.4	7.901	41.8	2269.7	63.4	15.385	7.813	0.644	-1.6	-28.4
205	2375	1.84	34.654	2432	2371	2353	636.9	37.4	2244.0	74.6	7.958	36.3	2248.6	71.1	13.728	7.862	0.723	4.0	-23.5
206	2571	1.74	34.661	2435	2373		631.4	37.2	2245.6	75.2	7.962	36.0	2250.6	71.4	13.868	7.858	0.726	2.1	-26.0
207	2771	1.66	34.667	2437	2376	2353	634.4	37.5	2248.8	74.7	7.960	36.2	2254.1	70.6	14.196	7.848	0.718	-0.9	-29.6
208	2969	1.61	34.671	2440	2370		594.1	35.2	2240.6	79.2	7.986	33.9	2246.4	74.7	13.584	7.867	0.759	0.9	-28.5
209	3220	1.55	34.676	2440	2365		571.4	33.9	2234.5	81.6	8.002	32.5	2240.8	76.7	13.412	7.873	0.779	-0.1	-30.4
210	3514	1.53	34.678	2439	2378	2353	632.1	37.5	2250.8	74.7	7.961	36.0	2257.4	69.6	15.178	7.819	0.707	-10.8	-42.2
211	3720	1.53	34.680	2437	2373	2352	617.8	36.7	2245.2	76.1	7.970	35.0	2252.3	70.7	15.152	7.820	0.718	-12.4	-44.5
212	3942	1.51	34.684	2437	2374		621.9	37.0	2246.4	75.6	7.967	35.2	2253.9	69.9	15.574	7.808	0.710	-16.2	-49.1
222	4191	1.51	34.684	2432	2354		555.6	33.0	2223.1	82.9	8.011	31.3	2231.3	76.4	14.352	7.843	0.777	-13.1	-46.9

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO$_2$ (TCO$_2$). TCO$_2$ VALUES LISTED ARE ORIGINAL VALUES

STATION: 345 LEG: X POSITION: 22° 32' N 122° 13' W DATE: 6 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALCULATED PARAMETERS P = 1 ATM, T = INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALCULATED PARAMETERS P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-5})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
301	11	18.42	34.157	2285	2022	2020	325.8	11.1	1799.3	196.6	8.250	11.1	1799.3	196.6	5.625	8.250	1.968	151.0	130.5
302	67	16.92	33.958	2270	2013	2019	308.6	11.0	1795.5	191.5	8.264	11.0	1795.7	191.4	5.471	8.262	1.905	145.3	124.7
303	117	14.33	33.856	2254	2020		306.0	11.8	1818.5	174.8	8.258	11.8	1818.7	174.5	5.570	8.254	1.732	128.1	107.3
304	137	12.53	33.775	2245	2044	2057	336.8	13.7	1862.4	152.9	8.217	13.7	1862.7	152.6	6.142	8.212	1.511	105.9	85.1
305	186	10.73	33.885	2258	2135		512.7	22.1	1992.2	105.7	8.052	22.1	1992.5	105.4	9.003	8.046	1.047	58.3	37.3
306	274	9.62	34.296	2288	2235	2253	842.3	37.6	2113.0	69.4	7.855	37.5	2113.5	69.0	14.305	7.845	0.694	21.2	-0.1
307	343	8.31	34.286	2294	2257		910.2	42.4	2137.7	61.8	7.819	42.3	2138.3	61.4	15.650	7.805	0.617	13.0	-8.4
308	424	7.47	34.364	2313	2305	2292	1126.6	54.0	2185.6	50.4	7.731	53.8	2186.2	49.9	19.324	7.714	0.503	0.9	-20.8
309	505	6.41	34.328	2322	2319		1130.2	56.3	2199.2	48.5	7.726	56.0	2200.0	48.0	19.683	7.706	0.483	-1.7	-23.7
310	584	6.16	34.417	2336	2335	2346	1146.6	57.6	2214.3	48.1	7.721	57.3	2215.2	47.5	20.059	7.698	0.479	-2.8	-24.9
311	683	5.58	34.452	2352	2356		1175.2	60.2	2234.2	46.6	7.711	59.9	2235.3	45.9	20.733	7.683	0.463	-5.3	-27.7
312	786	5.06	34.469	2362	2356	2377	1067.6	55.7	2235.1	50.2	7.750	55.3	2236.4	49.3	19.134	7.718	0.498	-2.7	-25.3
316	894	4.51	34.500	2371	2367		1066.2	56.7	2245.7	49.5	7.750	56.3	2247.2	48.5	19.361	7.713	0.491	-4.4	-27.3
317	995	4.19	34.511	2375	2369	2385	1038.7	55.9	2247.8	50.3	7.760	55.4	2249.4	49.2	19.105	7.719	0.498	-4.6	-27.8
318	1092	3.85	34.529	2386	2383	2396	1055.6	57.5	2261.0	49.4	7.753	57.0	2262.8	48.2	19.573	7.708	0.488	-6.4	-29.9
319	1194	3.57	34.550	2391	2380		981.6	54.1	2258.5	52.4	7.783	53.4	2260.5	51.0	18.462	7.734	0.517	-4.5	-28.3
320	1291	3.35	34.561	2398	2381		931.2	51.7	2259.5	54.8	7.804	51.0	2261.7	53.3	17.712	7.752	0.540	-3.1	-27.2
321	1388	3.12	34.578	2408	2393	2386	942.6	52.8	2270.9	54.3	7.800	52.0	2273.3	52.6	18.060	7.743	0.534	-4.6	-29.0
322	1489	2.91	34.589	2411	2387		872.2	49.2	2264.9	57.9	7.831	48.4	2267.5	56.0	16.953	7.771	0.568	-2.2	-26.9
323	1590	2.75	34.596	2411	2385	2396	853.4	48.4	2262.9	58.7	7.840	47.6	2265.7	56.7	16.795	7.775	0.575	-2.5	-27.5
101	1784	2.33	34.619	2421	2385	2388	781.3	45.0	2261.9	63.1	7.875	44.1	2265.1	60.8	15.743	7.803	0.617	-0.3	-25.9
324	1888	2.28	34.622	2427	2384		740.2	42.7	2260.0	66.2	7.898	41.8	2263.5	63.7	15.074	7.822	0.647	1.6	-24.3
102	1984	2.13	34.633	2430	2382		709.8	41.2	2257.2	68.6	7.915	40.3	2260.9	65.8	14.627	7.835	0.668	2.8	-23.5
103	2184	1.94	34.646	2435	2385	2361	695.5	40.7	2259.8	69.5	7.923	39.6	2263.9	66.5	14.620	7.835	0.675	1.3	-25.5
104	2384	1.82	34.655	2436	2383		677.3	39.8	2257.3	70.9	7.934	38.7	2261.8	67.6	14.544	7.837	0.686	0.3	-27.2
105	2582	1.72	34.661	2439	2376	2351	627.9	37.0	2248.2	75.8	7.964	35.8	2253.2	72.0	13.790	7.860	0.731	2.6	-25.6
106	2782	1.64	34.667	2440	2369		589.9	34.9	2239.5	79.6	7.989	33.7	2244.9	75.4	13.255	7.878	0.766	3.8	-25.0
107	2980	1.57	34.671	2438	2374	2346	619.2	36.7	2246.1	76.2	7.969	35.4	2251.8	71.8	14.158	7.849	0.730	-2.1	-31.6
108	3179	1.53	34.674	2439	2366		579.0	34.4	2236.0	80.6	7.996	33.0	2242.2	75.8	13.538	7.868	0.770	-0.5	-30.7
109	3379	1.51	34.677	2441	2364	2343	563.0	33.5	2232.8	82.7	8.008	32.0	2239.5	77.5	13.425	7.872	0.787	-1.3	-32.2
110	3580	1.50	34.678	2440	2366		574.5	34.2	2235.7	81.1	7.999	32.6	2242.7	75.6	13.948	7.855	0.769	-5.6	-37.2
111	3779	1.51	34.681	2440	2363	2334	562.4	33.4	2231.9	82.6	8.008	31.8	2239.4	76.8	13.927	7.856	0.781	-7.1	-39.4
112	3978	1.52	34.681	2441	2364		563.4	33.5	2232.8	82.7	8.007	31.8	2240.7	76.5	14.201	7.848	0.778	-10.0	-43.0
122	4207	1.55	34.681	2439	2366	2355	579.7	34.4	2236.0	80.6	7.996	32.6	2244.2	74.2	14.911	7.826	0.755	-15.4	-49.4

STATION: 347 LEG: X POSITION: 28° 31' N 121° 29' W DATE: 8 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	SALINITY ‰	TITRATOR ALK µEQ/KG	TITRATOR TCO_2 µM/KG	GC TCO_2 µM/KG	CALCULATED PARAMETERS P = 1 ATM, T = INSITU PCO_2 µATM	H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	PH	CALCULATED PARAMETERS P, T = INSITU H_2CO_3 µM/KG	HCO_3^- µM/KG	$CO_3^=$ µM/KG	AH (10^{-5})	PH	ICP 10^{-6} $(M/KG)^2$	DELTA $CO_3^=$ (CALC) µM/KG	DELTA $CO_3^=$ (ARAG) µM/KG
302	20	17.00	33.651	2255	2006	2008	315.8	11.2	1793.4	186.4	8.255	11.2	1793.5	186.3	5.567	8.254	1.838	140.6	120.1
309	189	9.55	33.925	2260	2140	2142	499.7	22.4	1999.0	103.6	8.058	22.3	1999.4	103.3	8.887	8.051	1.027	56.1	35.0
101	336	7.73	34.219	2302	2274		959.8	45.7	2155.3	58.1	7.796	45.5	2155.8	57.7	16.482	7.783	0.578	9.3	-12.2
102	589	6.01	34.391	2341	2338	2343	1122.6	56.7	2217.5	48.8	7.730	56.4	2218.5	48.2	19.653	7.707	0.486	-2.2	-24.3
103	739	5.05	34.423	2353	2359	2354	1170.0	61.1	2237.1	45.8	7.711	60.7	2238.2	45.0	20.870	7.680	0.454	-6.6	-29.1
104	890	4.43	34.458	2373	2362		1005.0	53.7	2241.2	52.1	7.774	53.2	2242.7	51.1	18.287	7.738	0.516	-1.8	-24.7
105	1087	3.79	34.511	2387	2376		987.5	54.0	2254.7	52.4	7.781	53.4	2256.5	51.1	18.358	7.736	0.517	-3.5	-27.0
106	1288	3.33	34.544	2397	2389	2390	999.2	55.5	2267.0	51.5	7.775	54.8	2269.2	50.0	18.952	7.722	0.506	-6.4	-30.5
107	1488	2.94	34.571	2410	2393	2389	922.1	52.0	2271.0	55.1	7.809	51.2	2273.5	53.3	17.875	7.748	0.540	-4.9	-29.6
108	1688	2.55	34.601	2420	2392		837.6	47.9	2269.4	59.7	7.848	47.0	2272.4	57.6	16.632	7.779	0.584	-2.6	-27.9
109	1886	2.27	34.622	2428	2390		770.1	44.5	2266.4	64.1	7.882	43.6	2269.8	61.6	15.645	7.806	0.626	-0.4	-26.3
110	2085	2.05	34.638	2428	2382	2384	717.8	41.8	2257.6	67.6	7.910	40.8	2261.4	64.7	14.950	7.825	0.657	0.6	-25.9
112	2285	1.91	34.651	2436	2383		680.0	39.8	2257.2	70.9	7.933	38.7	2261.5	67.7	14.447	7.840	0.688	1.6	-25.6
111	2287	1.91	34.651	2435	2375	2382	644.5	37.7	2248.1	74.2	7.954	36.7	2252.4	70.9	13.742	7.862	0.720	4.7	-22.5
116	2494	1.80	34.659	2435	2387		703.0	41.3	2262.0	68.6	7.918	40.1	2266.7	65.2	15.235	7.817	0.662	-3.2	-31.1
117	2495	1.80	34.660	2434	2377		656.8	38.6	2250.6	72.8	7.946	37.5	2255.3	69.2	14.289	7.845	0.703	0.8	-27.0
118	2694	1.71	34.667	2440	2382	2375	651.9	38.5	2255.1	73.4	7.949	37.2	2260.2	69.5	14.438	7.841	0.707	-1.1	-29.6
119	2694	1.71	34.666	2437	2370		609.1	35.9	2241.4	77.7	7.976	34.7	2246.6	73.7	13.557	7.868	0.749	3.1	-25.4
120	2892	1.66	34.670	2441	2378		627.5	37.1	2250.1	75.8	7.965	35.8	2255.6	71.6	14.186	7.848	0.728	-1.3	-30.5
121	2893	1.66	34.671	2442	2381		637.2	37.7	2253.4	74.9	7.959	36.3	2259.0	70.7	14.390	7.842	0.718	-2.2	-31.4
122	3194	1.60	34.676	2435	2364	2366	587.5	34.8	2234.7	79.5	7.990	33.4	2240.9	74.7	13.755	7.862	0.759	-1.8	-32.0
123	3691	1.55	34.682	2442	2362	2371	551.4	32.7	2230.1	84.1	8.016	31.2	2237.4	78.4	13.539	7.868	0.797	-4.3	-36.3
124	4257	1.56	34.686	2438	2361	2362	563.0	33.4	2230.0	82.6	8.007	31.6	2238.4	76.0	14.576	7.836	0.773	-14.4	-48.5

CALCULATED PARAMETERS HAVE BEEN COMPUTED USING -15µM/kg CORRECTION TO TOTAL CO_2 (TCO_2). TCO_2 VALUES LISTED ARE ORIGINAL VALUES.

Chapter 4

RADON DATA

BOTTOM RADON — STATION: 201 LEG: I POSITION: 34° 10' N 127° 53' W DATE: 25 AUG 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
615	4421	1.517	1.137	34.683	45.925	41.0	1.6	300	
617	4570	1.532	1.133	34.684	45.926	40.7	1.8	150	
620	4649	1.539	1.130	34.684	45.927	42.4	1.0	70	
621	4670	1.541	1.130	34.685	45.928	43.3	1.6	50	
622	4683	1.542	1.129	34.684	45.927	92.9	4.1	35	
624	4695	1.543	1.128	34.684	45.927	125.8	4.2	20	

BOTTOM RADON — STATION: 202 LEG: I POSITION: 33° 6' N 139° 34' W DATE: 30 AUG 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4697	1.527A	1.113	34.684	45.930	45.1	1.3	300	
116	4812	1.535A	1.106	34.685	45.932	54.8	1.2	185	
118	4872	1.55 A	1.109	34.684	45.931	59.5	2.5	125	
119	4907	1.546A	1.104	34.685	45.932	104.9	3.7	90	
120	4932	1.55 A	1.106	34.684	45.931	117.4	2.1	65	
121	4952	1.554A	1.106	34.685	45.932	198.4	6.2	45	
122	4967	1.557A	1.107	34.685	45.932	185.4	7.8	30	
124	4984			34.685		231.3	7.4	15	

BOTTOM RADON — STATION: 204 LEG: I POSITION: 31° 22' N 150° 2' W DATE: 5 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5105	1.548	1.081	34.689	45.940	45.6	1.3	300	
117	5231	1.563	1.079	34.689	45.940	69.8	5.1	175	
118	5276	1.568	1.078	34.689	45.940	115.6	5.2	130	
119	5307	1.573	1.078	34.689	45.940	119.9	4.5	100	
120	5331	1.577	1.079	34.689	45.940	103.2	2.2	75	
121	5352	1.579	1.078	34.689	45.940	118.2	4.2	55	
122	5367	1.581	1.078	34.689	45.940	125.1	5.9	40	
124	5382			34.689		191.7	6.6	27	

SURFACE RADON — STATION: 211 LEG: II POSITION: 24° 16' N 158° 19' W DATE: 17 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
101	3			35.31		4.8	0.2					
102	12			35.29		5.0	0.4					
103	21			35.29		5.1	0.3					
104	30			35.33		5.3	0.3					
105	40			35.35		5.2	0.4					
106	48			35.49		5.6	0.3					
107	61			35.45		6.2	0.3					
108	82	22.72 H	22.70	35.28	24.26	5.8	0.4					

SURFACE RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
209	3			35.31		4.5	0.4					
210	12			35.29		5.4	0.7					
211	21			35.29		5.2	0.3					
212	30			35.33		4.8	0.3					
213	40			35.35		4.4	0.4					
214	48			35.38		4.7	0.5					
217	61			35.50		5.8	0.3					
216	82	22.89 H	22.87	35.28	24.21	5.9	0.3					

SURFACE RADON — STATION: 212 LEG: II POSITION: 30° 0' N 159° 50' W DATE: 18 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1117	7	25.30	25.30	35.48	23.64	5.4	0.3	212(I)	1.8(I)	0.02(I)	0.0(I)	
1118	11	25.30	25.30	35.48	23.64	4.8	0.2	212(I)	1.8(I)	0.02(I)	0.0(I)	
1119	19	25.29	25.29	35.48	23.64	4.7	0.3	212(I)	1.8(I)	0.02(I)	0.0(I)	
1120	28	25.27	25.26	35.48	23.65	4.7	0.3	213(I)	1.8(I)	0.02(I)	0.0(I)	
1121	36	25.25	25.24	35.47	23.65	4.9	0.3	213(I)	1.7(I)	0.02(I)	0.0(I)	
1122	61	21.33	21.31	35.20	24.58	5.4	0.4	239(I)	2.4(I)	0.03(I)	0.0(I)	
1123	82	19.49	19.47	35.15	25.04	5.8	0.3	226(I)	2.4(I)	0.06(I)	0.0(I)	
1124	100	18.94	18.92	35.10	25.14	6.6	0.3	220(I)	2.8(I)	0.10(I)	0.0(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	5532			34.687		40.5	0.8	204	
117	5571	1.60 H	1.068	34.688	45.941	43.4	2.8	164	
118	5600			34.687		56.4	3.1	134	
120	5669	1.602H	1.057	34.688	45.943	122.3	4.2	64	
121	5693			34.688		162.3	18.6	39	
122	5693	1.60 H	1.052	34.687	45.943	136.0	5.8	39	
123	5714			34.689		437.3	21.1	19	

SURFACE RADON — STATION: 213 LEG: II POSITION: 31° 0' N 168° 27' W DATE: 22 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
907	3	26.79(I)	26.79	35.51	23.21	4.5	0.3	207(I)				
908	10	26.79(I)	26.79	35.52	23.21	4.3	0.2	207(I)				
909	20	26.79(I)	26.79	35.52	23.21	4.7	0.3	207(I)				
911	30	26.77(I)	26.77	35.47	23.23	5.6	0.4	207(I)	2.0(I)	0.00(I)	0.0(I)	
910	40	26.59(I)	26.58	35.52	23.29	4.9	0.3	208(I)	1.8(I)	0.00(I)	0.0(I)	
912	60	20.67(I)	20.66	34.88	24.53	5.0	0.4	250(I)	4.0(I)	0.03(I)	0.0(I)	
913	80	18.42(I)	18.41	34.78	25.05	6.8	0.3	254(I)	4.4(I)	0.05(I)	0.0(I)	
914	100	17.13 H	17.11	34.73	26.14	6.6	0.3	252(I)	5.0(I)	0.10(I)	0.1(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	5506	1.575	1.053	34.689	45.944	37.2	4.7	170	
217	5555	1.574	1.046	34.688	45.945	32.0	0.7	120	
218	5579	1.572	1.041	34.689	45.947	33.8	1.3	96	
220	5604	1.572	1.037	34.692	45.950	35.4	2.7	71	
221	5629	1.575	1.037	34.690	45.948	72.0	8.5	47	
222	5653	1.579	1.037	34.689	45.947	68.5	3.1	31	
223	5675	1.581	1.036	34.691	45.949	253.7	12.4	8	

SURFACE RADON — STATION: 214 LEG: II POSITION: 32° 1' N 176° 59' W DATE: 25 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1007	3	25.76(I)	25.76	34.71	22.95	4.1	0.3	210(I)				
1008	10	25.76(I)	25.76	34.70	22.95	4.4	0.2	210(I)	3.8(I)	0.04(I)	0.1(I)	
1009	18	25.72(I)	25.71	34.69	22.97	4.3	0.2	210(I)	3.6(I)	0.04(I)	0.0(I)	
1010	25	25.55(I)	25.54	34.69	23.02	3.8	0.3	211(I)	3.5(I)	0.04(I)	0.0(I)	
1011	40	21.60(I)	21.60	34.41	24.16	6.7	0.3	233(I)	3.5(I)	0.04(I)	0.0(I)	
1012	61	18.11(I)	18.10	34.56	25.01	5.9	0.4	255(I)	3.8(I)	0.10(I)	0.4(I)	
1013	80	16.41(I)	16.40	34.59	25.34	6.1	0.3	231(I)	5.2(I)	0.29(I)	3.2(I)	
1014	101	16.41 H	16.39	34.69	25.44	5.8	0.3	217(I)	6.9(I)	0.43(I)	5.4(I)	

A DATA TAKEN FROM CTD DOWN TRACE
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 214 LEG: II POSITION: 32° 1' N 176° 59' W DATE: 25 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5103	1.515	1.049	34.690	45.946	106.8	13.6	194	
116	5149	1.521	1.049	34.689	45.945	95.1	5.9	148	
117	5174	1.522	1.047	34.689	45.945	50.4	0.9	123	
119	5207	1.521	1.042	34.690	45.947	71.5	2.5	90	
120	5232	1.524	1.041	34.690	45.947	97.4	7.5	66	
121	5251	1.526	1.041	34.689	45.947	110.9	12.7	47	
122	5273	1.527	1.039	34.691	45.948	113.7	9.8	32	
123	5298	1.531	1.039	34.691	45.948	126.3	6.2	8	

SURFACE RADON — STATION: 215 LEG: II POSITION: 37° 28' N 177° 19' W DATE: 28 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
405	5	20.42(I)	20.42	34.30	24.16	4.2	0.3					
406	10	20.42(I)	20.42	34.31	24.16	4.3	0.3					
407	20	20.42(I)	20.41	34.31	24.16	4.2	0.3	231(I)	5.2(I)	0.09(I)	0.2(I)	
408	30	20.29(I)	20.28	34.31	24.20	3.4	0.3	233(I)	5.1(I)	0.08(I)	0.0(I)	
409	50	16.74(I)	16.73	34.65	25.33	7.3	0.3	256(I)	5.1(I)	0.16(I)	0.5(I)	
410	60	16.15(I)	16.14	34.66	25.49	6.5	0.4	220(I)	6.3(I)	0.36(I)	3.3(I)	
411	80	15.84(I)	15.83	34.61	25.56	7.4	0.4	215(I)	7.1(I)	0.43(I)	4.9(I)	
412	100	14.48 H	14.46	34.55	25.77	7.0	0.3	209(I)	9.0(I)	0.54(I)	6.2(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5335	1.585	1.086	34.683	45.934	37.9	5.2	208	
116	5367	1.589	1.085	34.684	45.935	45.2	2.3	171	
118	5407	1.595	1.086	34.681	45.933	54.0	2.4	131	
119	5434	1.598	1.085	34.685	45.936	85.8	3.1	100	
120	5468	1.603	1.085	34.681	45.933	101.0	7.9	70	
121	5488	1.606	1.085	34.684	45.935	98.2	11.4	51	
122	5508	1.609	1.085	34.685	45.936	159.0	13.6	30	
123	5525	1.610	1.084	34.684	45.935	160.6	8.0	14	

SURFACE RADON — STATION: 216 LEG: II POSITION: 40° 46' N 176° 58' W DATE: 30 SEP 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
111	570	4.47	4.42	34.04	27.01	19.3	0.6	92	87.6	2.48	35.9	INTERMEDIATE
112	675	4.09	4.04	34.13	27.13	21.1	0.6	63	102.5	2.75	39.0	
115	837	3.56	3.50	34.24	27.27	20.8	0.5	41	122.0	2.64	39.5	
116	1058	3.09	3.01	34.35	27.40	23.4	0.6	24	145.1	2.97	43.1	
117	1331	2.64	2.54	34.45	27.52	26.2	0.6	23	158.9	3.01	43.8	
118	1767	2.14	2.01	34.55	27.64	27.6	0.7	37	171.9	3.00	43.2	
120	2502	1.71	1.53	34.63	27.74	30.5	0.7	89	174.1	2.77	39.5	
123	4971	1.55	1.10	34.69	27.82	33.5	0.8	151	166.0	2.48	35.3	

SURFACE RADON — STATION: 217 LEG: II POSITION: 44° 40' N 177° 3' W DATE: 2 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
901	6	11.05	11.05	33.06	25.29	7.4	0.5	284	23.0	0.83	8.3	
902	11	11.05	11.04	33.06	25.30	7.7	0.3	284	23.0	0.83	8.0	
904	20	10.92	10.92	33.05	25.31	8.3	0.4	284	22.9	0.85	8.0	
906	31	10.85	10.85	33.06	25.33	9.3	0.6	284	22.7	0.88	8.5	
907	37	10.80	10.80	33.06	25.34	8.6	0.4	283	22.7	0.89	8.6	
909	54	8.99	8.98	33.25	25.79	9.5	0.3	288	24.8	1.08	11.9	
911	70	6.20	6.19	33.51	26.39	9.5	0.3	294	26.3	1.23	15.6	
915	90	6.46	6.46	33.60	26.43	9.4	1.1	289	26.2	1.18	15.3	

SURFACE RADON — STATION: 217 LEG: II POSITION: 44° 40' N 177° 3' W DATE: 2 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
501	943	3.08	3.01	34.34	27.39	21.2	2.9	25	141.2	2.94	44.3	INTERMEDIATE
502	1103	2.81	2.73	34.39	27.46	22.6	1.1	23	148.8	2.95	44.9	
503	1311	2.53	2.44	34.46	27.54	24.6	1.0	24	159.2	2.99	45.3	
504	1610	2.22	2.11	34.52	27.62	26.8	1.0	36	165.3	2.92	44.8	
505	1992	1.96	1.82	34.58	27.68	28.2	1.4	55	173.1	2.85	43.7	
510	2988	1.58	1.35	34.66	27.78	33.6	3.7	114	167.1	2.59	39.7	
518	3995	1.47	1.14	34.68	27.81	33.5	2.9	147	160.6	2.40	37.1	
522	4990	1.55	1.09	34.69	27.82	36.6	1.9	153	163.5	2.37	36.8	

SURFACE RADON — STATION: 218 LEG: II POSITION: 50° 26' N 176° 35' W DATE: 4 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
101	1144	2.66 H	2.48	34.44	27.52	23.5	3.2	27	162.0	2.95	44.8	INTERMEDIATE
102	1300	2.38 A	2.29	34.48	27.56	23.5	1.2	32	168.2	2.96	44.8	
104	1505	2.19 A	2.09	34.52	27.61	25.7	1.1	39	171.7	2.94	44.3	
106	1770	2.02 H	1.90	34.56	27.66	26.9	1.0	51	175.0	2.90	43.9	
108	2129	1.83 H	1.68	34.60	27.71	30.3	1.5	75	176.5	2.80	42.3	
111	2542	1.65	1.47	34.64	27.75	33.0	3.7	100	174.3	2.69	40.5	
116	3118	1.54	1.30	34.66	27.78	30.5	2.6	124	169.7	2.57	39.3	
120	4426	1.47	1.09	34.68	27.82	35.2	1.9	154	159.3	2.42	37.1	

SURFACE RADON — STATION: 219 LEG: III POSITION: 53° 6' N 177° 17' W DATE: 8 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
402	5	7.11	7.11	33.07	25.93	9.8	0.5	298	32.2	1.60	18.2	
403	12	7.26	7.26	33.07	25.90	9.5	0.3	298	31.8	1.61	18.4	
404	23	7.27	7.26	33.07	25.90	9.3	0.4	298	31.6	1.59	18.2	
405	33	7.26	7.26	33.07	25.90	8.9	0.5	298	31.8	1.61	18.4	
407	43	7.26	7.25	33.07	25.91	9.8	0.4	298	31.8	1.62	18.4	
409	63	5.59	5.59	33.23	26.25	11.4	0.3	271	46.6	1.94	24.5	
410	79	4.23	4.22	33.32	26.47	13.5	0.4	253	58.0	2.14	28.8	
412	99	3.90	3.89	33.37	26.54	14.8	1.7	243	63.5	2.24	30.7	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	3527	1.586	1.305	34.666	45.882	33.9	0.7	200	
217	3602	1.587	1.298	34.667	45.884	35.6	1.0	125	
219	3631	1.584	1.292	34.669	45.887	34.5	2.9	96	
220	3655	1.580	1.285	34.668	45.887	36.4	1.9	72	
221	3677	1.579	1.282	34.669	45.889	51.0	5.9	50	
222	3690	1.580	1.282	34.669	45.889	56.5	4.2	36	
223	3711	1.582	1.281	34.669	45.889	56.8	3.0	16	

BOTTOM RADON — STATION: 220 LEG: III POSITION: 46° 22' N 170° 27' E DATE: 13 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	6089	1.681A	1.071	34.685	45.938	33.3	0.8	220	
117	6108	1.684A	1.072	34.685	45.938	33.5	0.9	202	
118	6140	1.689A	1.072	34.685	45.938	33.2	1.4	170	DATA SUSPECT
119	6170	1.694A	1.072	34.685	45.938	36.0	1.4	140	
120	6200	1.698A	1.072	34.684	45.937	42.7	1.1	98	
121	6231	1.704A	1.073	34.686	45.939	50.7	5.9	68	
122	6263	1.708A	1.072	34.685	45.938	50.4	3.8	36	
123	6282	1.711A	1.072	34.685	45.938	75.5	1.7	16	DATA SUSPECT

A DATA EXTRACTED FROM CTD DOWN TRACE
H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

SURFACE RADON — STATION: 221 LEG: III POSITION: 45° 13′ N 169° 25′ E DATE: 14 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
501	6	10.66 H	10.65	32.94	25.27	7.5	0.3	283	24.4	0.97	9.7	
502	13	10.66 H	10.66	32.94	25.28	7.6	0.4	283(I)	24.5	0.98	9.7	
503	24	10.65 H	10.65	32.94	25.28	7.5	0.4	283	24.1	0.99	9.7	
504	34	10.65 H	10.64	32.94	25.28	8.2	0.4	281	24.2	0.99	9.7	
505	43	10.40 H	10.39	32.96	25.33	9.1	0.8	283	24.7	1.02	10.2	
506	53	6.99 H	6.99	33.40	26.20	11.8	1.3	289	31.0	1.35	16.6	DATA SUSPECT
507	63	5.76 H	5.75	33.59	26.51	11.3	0.9	288	32.8	1.41	18.5	
508	73	5.84 H	5.84	33.67	26.56	11.9	1.0	285	33.3	1.40	18.5	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5854	1.635	1.061	34.687	45.941	32.9	2.4	202	
116	5882	1.639	1.061	34.687	45.941	34.7	0.7	173	
118	5911	1.643	1.061	34.685	45.940	33.8	1.0	145	
119	5940	1.646	1.060	34.688	45.942	36.0	3.2	118	
120	5968	1.650	1.060	34.687	45.942	36.1	1.4	91	
121	5995	1.654	1.060	34.689	45.943	47.5	1.1	64	
122	6024	1.658	1.059	34.689	45.943	55.3	1.1	36	
123	6047	1.662	1.060	34.687	45.942	55.3	6.7	13	

SURFACE RADON — STATION: 222 LEG: III POSITION: 40° 10′ N 160° 30′ E DATE: 16 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
913	5	15.72	15.72	33.83	24.94	6.1	0.5	252	8.4	0.22	0.2	
901	14	15.72	15.71	33.83	24.94	6.4	0.2	250	8.4	0.21	0.2	
902	23	15.72	15.72	33.82	24.94	6.3	0.2	251	8.3	0.21	0.3	
903	37	15.71	15.70	33.83	24.94	6.3	0.6	252	8.0	0.21	0.3	
904	49	15.70	15.70	33.83	24.95	6.0	0.3	251	7.9	0.22	0.3	
905	81	9.51	9.50	34.00	26.29	8.8	0.3	259	22.3	1.04	14.1	
907	122	8.47	8.46	34.05	26.50	10.0	0.4	239	26.5	1.17	16.4	
908	163	7.37	7.36	33.94	26.58	11.6	1.3	252	28.8	1.25	17.4	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
319	5411	1.560	1.051	34.686	45.942	35.7	2.3	167	
320	5438	1.564	1.051	34.687	45.943	35.7	1.3	143	
321	5466	1.567	1.050	34.691	45.947	37.6	1.8	109	
322	5499	1.572	1.051	34.687	45.943	40.8	5.1	80	
323	5528	1.576	1.051	34.691	45.947	54.3	4.2	51	DATA SUSPECT

SURFACE RADON — STATION: 223 LEG: III POSITION: 34° 58′ N 151° 50′ E DATE: 20 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
802	1	22.47	22.47	34.52	23.75	4.6	0.4	219	2.4	0.00	0.0	
803	10	22.48	22.47	34.52	23.75	4.8	0.2	219	2.2	0.00	0.0	
804	19	22.47	22.47	34.52	23.75	4.7	0.2	219	2.2	0.00	0.0	
806	34	22.48	22.47	34.53	23.75	4.3	0.5	219	2.2	0.00	0.0	
807	50	21.80	21.79	34.53	23.95	4.4	0.3	219	2.2	0.00	0.0	
810	65	20.80	20.79	34.77	24.40	6.1	0.2	205	3.5	0.15	1.4	
811	84	19.94	19.92	34.79	24.64	6.8	0.3	197	3.9	0.24	2.7	
816	124	18.58	18.55	34.79	24.99	7.9	0.9	203	4.0	0.26	3.0	

BOTTOM RADON — STATION: 223 LEG: III POSITION: 34° 58′ N 151° 50′ E DATE: 20 OCT 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
216	5951	1.603	1.018	34.691	45.952	33.3	0.7	188	
217	5971	1.606	1.018	34.693	45.954	35.0	0.8	168	
218	5991	1.608	1.017	34.693	45.954	32.9	1.0	147	
219	6010	1.610	1.016	34.692	45.953	35.2	3.0	127	
220	6033	1.613	1.016	34.693	45.954	32.3	0.7	107	
221	6052	1.615	1.015	34.692	45.953	31.1	0.7	87	
222	6072	1.617	1.014	34.692	45.954	31.1	0.6	67	
223	6094	1.619	1.013	34.692	45.954	32.4	0.7	47	

BOTTOM RADON — STATION: 225 LEG: IV POSITION: 32° 37′ N 161° 55′ E DATE: 6 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
227	5646			34.693		31.8	2.6	303	
229	5815	1.548H	0.985	34.693	45.959	36.3	1.7	134	
230	5865			34.693		43.5	4.8	84	DATA SUSPECT
231	5895			34.693		82.8	6.8	54	
232	5914			34.693		100.9	3.3	34	
233	5924			34.693		112.6	6.7	23	
234	5935	1.56 H	0.979	34.693	45.960	102.1	5.2	13	

SURFACE RADON — STATION: 226 LEG: IV POSITION: 30° 34′ N 170° 36′ E DATE: 9 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
701	8	24.73 H	24.73	35.06	23.49	4.6	0.2	219	3.3	0.02	0.1	
702	20	24.74 H	24.74	35.06	23.49	4.9	0.3	213	3.0	0.02	0.1	DATA SUSPECT
703	36	24.76 H	24.75	35.05	23.49	3.4	0.5	213	2.7	0.01	0.1	DATA SUSPECT
704	56	24.48 H	24.47	35.02	23.54	4.9	0.6	237	3.0	0.03	0.1	
705	82	23.60 H	23.58	35.01	23.79	7.6	0.4	229	3.2	0.02	0.2	DATA SUSPECT
714	105	18.00 H	17.98	34.76	25.12	11.0	0.4	244	3.3	0.09	0.2	DATA SUSPECT
725	157	16.05 H	16.02	34.70	25.54	8.1	0.6	217	5.7	0.38	3.8	DATA SUSPECT
726	207	15.22 H	15.19	34.63	25.67	10.7	1.2	216	7.2	0.49	5.2	DATA SUSPECT

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
217	5287	1.473	0.985	34.692	45.959	30.0	2.4	199	
218	5332	1.476	0.982	34.693	45.960	30.9	1.0	160	
219	5379	1.479	0.978	34.692	45.960	33.3	1.6	113	
220	5410	1.498	0.993	34.693	45.958	33.8	3.9	83	
221	5439	1.482	0.973	34.695	45.963	39.4	3.8	54	
222	5459	1.482	0.971	34.691	45.960	42.2	3.9	33	
223	5468	1.482	0.969	34.694	45.963	177.7	10.6	24	
224	5478	1.483	0.969	34.695	45.964	180.3	9.1	13	DATA SUSPECT

SURFACE RADON — STATION: 227 LEG: IV POSITION: 25° 0′ N 170° 5′ E DATE: 12 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
701	6	26.60 H	26.60	35.21	23.04	5.4	0.2	205				
703	16	26.61 H	26.60	35.21	23.04	5.2	0.5	205				
705	32	26.61 H	26.60	35.21	23.04	5.3	0.3	206				
706	51	26.61 H	26.60	35.21	23.04	5.3	0.6	206				
714	76	24.34 H	24.32	35.16	23.69	8.4	0.3	221	1.7	0.03	0.0	
726	101	21.76 H	21.74	35.11	24.39	10.0	1.0	228	2.2	0.07	0.0	
728	151	18.76 H	18.73	34.92	25.05	11.1	0.7	208	3.3	0.20	1.4	
730	250	15.74 H	15.70	34.69	25.61	12.4	1.3	207	6.4	0.46	6.2	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 227 LEG: IV POSITION: 25° 0' N 170° 5' E DATE: 12 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
216	5590	1.476	0.947	34.697	45.969	28.6	2.3	309	
217	5718	1.488	0.941	34.698	45.971	36.4	1.1	181	
218	5780	1.494	0.938	34.696	45.970	53.6	2.6	120	
219	5820	1.498	0.937	34.697	45.971	72.7	8.4	79	
220	5849	1.501	0.935	34.698	45.972	204.4	16.4	50	
221	5870	1.503	0.934	34.697	45.971	312.9	9.9	30	
222	5876	1.504	0.934	34.698	45.972	450.6	25.9	23	
224	5885	1.505	0.934	34.697	45.971	468.9	22.8	14	

BOTTOM RADON — STATION: 228 LEG: IV POSITION: 19° 1' N 169° 21' E DATE: 15 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	4885	1.403	0.970	34.693	45.962	30.0	2.4	420	DATA SUSPECT
217	5035	1.412	0.960	34.693	45.964	32.3	0.7	271	DATA SUSPECT
218	5106	1.417	0.955	34.694	45.965	31.8	1.4	200	DATA SUSPECT
219	5164	1.423	0.954	34.695	45.966	34.2	3.8	142	DATA SUSPECT
220	5224	1.430	0.953	34.694	45.966	126.5	10.0	83	
221	5265	1.383	0.902	34.697	45.977	854.8	26.1	42	
222	5285	1.385	0.901	34.698	45.978	857.3	48.5	22	
223	5294	1.386	0.901	34.697	45.977	856.6	41.0	13	

SURFACE RADON — STATION: 229 LEG: IV POSITION: 12° 53' N 173° 28' E DATE: 18 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
701	5	27.99 H	27.99	34.43	22.02	5.2	0.3	199	1.8	0.12	0.0	
702	23	27.97 H	27.96	34.43	22.03	5.5	0.6	200	1.8	0.12	0.0	
703	33	27.98 H	27.97	34.43	22.03	5.3	0.4	200	1.7	0.12	0.0	
705	42	27.96 H	27.95	34.44	22.04	5.6	0.7	200	1.7	0.12	0.0	
706	59	27.95 H	27.93	34.44	22.04	3.6	0.3	200	1.7	0.12	0.0	
707	73	27.97 H	27.95	34.56	22.13	4.3	0.7	201	1.7	0.11	0.0	
708	92	27.22 H	27.20	34.84	22.58	4.8	0.5	208	1.7	0.08	0.0	
709	122	25.46 H	25.43	34.92	23.18	7.9	0.9	214	1.7	0.08	0.0	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
315	5382	1.357	0.862	34.700	45.986	29.4	2.4	347	
317	5481	1.369	0.860	34.700	45.987	30.4	0.7	248	
318	5550	1.377	0.858	34.700	45.987	34.8	1.6	179	
319	5623	1.386	0.857	34.700	45.987	51.0	5.6	106	DATA SUSPECT
320	5652	1.390	0.857	34.700	45.987	80.8	6.6	77	
321	5691	1.396	0.857	34.700	45.987	284.4	8.9	39	
322	5711	1.399	0.857	34.700	45.987	317.5	18.2	18	
323	5721	1.400	0.857	34.700	45.987	518.9	25.0	9	DATA SUSPECT

SURFACE RADON — STATION: 231 LEG: IV POSITION: 14° 7' N 178° 34' W DATE: 22 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
927	4	27.22 H	27.22	34.63(I)	22.41	5.0	0.4	202(I)	2.2(I)	0.16(I)	0.0(I)	
928	9	27.22 H	27.22	34.63(I)	22.41	4.2	0.5	201(I)	2.1(I)	0.16(I)	0.0(I)	
929	30	27.21 H	27.21	34.64(I)	22.43	4.6	0.3	201(I)	2.1(I)	0.16(I)	0.0(I)	
930	49	27.21 H	27.20	34.65(I)	22.52	6.3	0.4	201(I)	2.1(I)	0.16(I)	0.0(I)	DATA SUSPECT
931	75	27.16 H	27.14	34.83(I)	22.70	11.9	0.3	202(I)	2.0(I)	0.13(I)	0.1(I)	
932	120	24.85 H	24.82	35.06(I)	23.72	6.8	0.7	208(I)	2.2(I)	0.11(I)	0.1(I)	
933	151	22.24 H	22.21	35.05(I)	24.32	6.4	0.7	204(I)	3.0(I)	0.16(I)	0.7(I)	
934	228	15.60 H	15.56	34.66(I)	25.48	13.3	0.7	158(I)	10.9(I)	0.82(I)	10.3(I)	DATA SUSPECT

BOTTOM RADON — STATION: 231 LEG: IV POSITION: 14° 7' N 178° 34' W DATE: 22 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
527	5420	1.36 H	0.859	34.699	45.986	27.4	1.1	243	
529	5511	1.38 H	0.866	34.700	45.985	31.7	0.7	153	
530	5562	1.37 H	0.850	34.700	45.988	41.6	2.3	102	
531	5611	1.38 H	0.853	34.700	45.988	58.3	2.3	53	
532	5642	1.37 H	0.839	34.700	45.990	679.0	42.0	22	
534	5651	1.38 H	0.847	34.698	45.987	653.6	20.0	12	

SURFACE RADON — STATION: 233 LEG: IV POSITION: 18° 14' N 169° 8' W DATE: 26 NOV 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
228	5	26.54(I)	26.54	34.66(I)	22.64	5.2	0.3	203(I)	1.8(I)	0.18(I)	0.0(I)	
229	13	26.53(I)	26.53	34.66(I)	22.65	5.2	0.5	203(I)	1.8(I)	0.18(I)	0.1(I)	
230	20	26.53(I)	26.53	34.66(I)	22.65	5.6	0.3	203(I)	1.8(I)	0.17(I)	0.1(I)	
231	27	26.53(I)	26.53	34.66(I)	22.65	5.4	0.3	203(I)	1.8(I)	0.17(I)	0.1(I)	
232	38	26.54(I)	26.53	34.66(I)	22.65	4.3	0.2	203(I)	1.8(I)	0.17(I)	0.1(I)	
233	58	26.57(I)	26.55	34.73(I)	22.67	5.7	0.6	204(I)	1.8(I)	0.16(I)	0.1(I)	
234	88	25.97(I)	25.95	34.84(I)	22.96	6.2	0.7	207(I)	1.7(I)	0.16(I)	0.1(I)	

BOTTOM RADON — STATION: 235 LEG: V POSITION: 16° 45' N 161° 23' W DATE: 6 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
425	5249	1.418H	0.938	34.696	45.970	32.4	1.3	288	
426	5317	1.423H	0.934	34.696	45.971	32.8	1.7	221	
427	5377	1.426H	0.928	34.696	45.972	31.2	1.7	162	
429	5425	1.42 H	0.916	34.696	45.974	34.4	1.4	114	
430	5466	1.43 H	0.920	34.697	45.974	32.2	0.7	74	
432	5516	1.441H	0.924	34.696	45.972	192.3	5.9	25	
434	5530	1.448H	0.929	34.697	45.972	214.8	22.7	11	

BOTTOM RADON — STATION: 237 LEG: V POSITION: 12° 30' N 165° 25' W DATE: 8 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4803	1.314	0.895	34.696	45.977	41.4	1.8	232	
116	4873	1.313	0.885	34.698	45.981	63.1	3.3	163	
118	4942	1.317	0.880	34.698	45.982	99.2	5.5	94	DATA SUSPECT
119	4962	1.316	0.877	34.698	45.982	103.9	4.2	73	
120	4982	1.311	0.870	34.699	45.984	164.1	2.9	54	
121	4996	1.313	0.870	34.699	45.984	171.3	13.9	39	
123	5012	1.309	0.864	34.699	45.985	278.4	8.4	24	
124	5021	1.309	0.863	34.699	45.985	284.4	29.8	15	

SURFACE RADON — STATION: 238 LEG: V POSITION: 8° 11' N 167° 4' W DATE: 10 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
501	2	27.12 H	27.12	34.89	22.64	5.5	0.5	201	1.5	0.35	1.2	
503	23	27.11 H	27.10	34.89	22.65	5.8	0.6	201	1.5	0.33	1.2	
504	36	27.11 H	27.10	34.89	22.65	5.5	0.3	201	1.5	0.33	1.2	
505	47	27.11 H	27.10	34.90	22.65	5.2	0.4	200	1.5	0.33	1.2	
507	75	26.65 H	26.63	34.99	22.86	6.7	0.6	197	2.1	0.42	2.4	
508	90	25.61 H	25.59	34.99	23.18	7.1	0.5	196	2.3	0.43	2.8	
510	110	21.69 H	21.67	34.95	24.30	6.5	0.7	200	1.9	0.26	0.3	
511	141	17.60 H	17.58	34.76	25.22	7.0	0.8	174	5.3	0.55	6.1	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 238 LEG: V POSITION: 8° 11' N 167° 4' W DATE: 10 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	4936	1.289	0.854	34.703	45.990	31.1	1.3	286	
216	5001	1.293	0.850	34.701	45.989	31.8	1.7	205	
218	5056	1.297	0.847	34.701	45.990	32.7	1.9	159	
219	5098	1.301	0.845	34.701	45.990	37.7	1.6	116	
220	5137	1.304	0.843	34.700	45.990	36.2	0.9	77	
221	5161	1.305	0.841	34.701	45.991	60.9	5.1	44	
222	5180	1.305	0.838	34.701	45.991	149.0	4.6	25	
224	5188	1.306	0.838	34.702	45.992	151.0	16.0	17	

BOTTOM RADON — STATION: 239 LEG: V POSITION: 5° 53' N 172° 0' W DATE: 12 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	5426	1.326	0.826	34.701	45.993	54.5	2.9	187	
118	5483	1.335	0.827	34.701	45.993	41.7	1.6	131	
119	5528	1.341	0.827	34.701	45.993	66.0	2.8	86	
120	5564	1.346	0.827	34.701	45.993	118.6	6.6	50	
121	5584	1.348	0.826	34.701	45.993	162.7	13.4	30	
123	5594	1.349	0.826	34.701	45.993	152.9	16.5	20	
124	5605	1.351	0.826	34.701	45.993	108.1	2.0	8	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
324	5755	1.365	0.819	34.702	45.995	153.3	6.0	19	

SURFACE RADON — STATION: 240 LEG: V POSITION: 3° 22' N 177° 13' W DATE: 15 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
325	3	27.42 H	27.42	35.08	22.69	5.8	0.3	203	2.6	0.37	1.8	
326	21	27.35 H	27.34	35.07	22.71	5.3	0.4	203	2.3	0.36	1.7	
328	59	27.33 H	27.32	35.07	22.71	5.9	0.4	200	2.2	0.36	1.7	
329	78	27.33 H	27.31	35.07	22.72	5.1	0.2	200	2.2	0.36	1.7	
330	97	27.28 H	27.26	35.07	22.73	6.1	0.4	197	2.4	0.39	1.9	
331	111	27.08 H	27.05	35.08	22.80	6.2	0.3	195	2.3	0.44	2.5	
332	130	26.64 H	26.61	35.10	22.96	6.4	0.9	177	2.7	0.49	3.8	
333	160	24.40 H	24.36	35.03	23.58	6.2	0.5	159	4.0	0.61	6.8	

BOTTOM RADON — STATION: 241 LEG: V POSITION: 4° 33' N 179° 0' E DATE: 17 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5488	1.323	0.815	34.701	45.995	30.0	1.2	250	
116	5566	1.332	0.813	34.700	45.995	35.2	1.9	172	
118	5628	1.340	0.812	34.700	45.995	61.3	6.3	110	
119	5667	1.346	0.813	34.701	45.996	90.1	3.6	70	
120	5695	1.350	0.813	34.700	45.995	89.1	1.6	42	
121	5716	1.353	0.813	34.701	45.996	103.6	5.3	21	
122	5724	1.354	0.813	34.701	45.996	102.6	3.2	11	
124	5728	1.355	0.813	34.701	45.996	85.7	11.4	9	

SURFACE RADON — STATION: 244 LEG: V POSITION: 1° 1' N 178° 55' E DATE: 20 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
225	4	26.03 H	26.03	35.12	23.15	5.2	0.4					
226	30	26.03 H	26.02	35.12	23.15	5.4	0.5	202(I)	3.7(I)	0.56(I)	4.1(I)	
227	49	25.94 H	25.92	35.12	23.18	6.7	0.3	201(I)	3.7(I)	0.57(I)	4.2(I)	
228	78	25.73 H	25.71	35.12	23.25	6.3	0.5	198(I)	4.0(I)	0.63(I)	4.9(I)	
229	108	24.46 H	24.43	35.11	23.63	7.1	0.3	189(I)	4.4(I)	0.72(I)	6.2(I)	
230	156	23.80 H	23.76	35.30	23.97	6.6	0.5	156(I)	4.3(I)	0.74(I)	7.8(I)	
231	194	17.69 H	17.65	35.16	25.50	8.3	0.5	145(I)	8.9(I)	0.86(I)	10.6(I)	
232	269	11.96 H	11.93	34.86	26.53	9.6	0.9	130(I)	19.7(I)	1.45(I)	20.0(I)	
233	415	9.74 H	9.69	34.71	26.82	10.0	0.4	63(I)	31.4(I)	2.26(I)	32.9(I)	
234	688	5.64 H	5.58	34.54	27.28	16.2	2.1	95(I)	61.4(I)	2.58(I)	37.8(I)	

SURFACE RADON — STATION: 246 LEG: V POSITION: 0° 0' S 178° 59' E DATE: 21 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
501	11	25.86	25.86	35.20	23.26	5.8	0.4	199(I)	3.5(I)	0.56(I)	4.6(I)	
503	35	25.80	25.79	35.20	23.28	6.0	0.6	200(I)	3.5(I)	0.55(I)	4.5(I)	
505	55	25.77	25.75	35.21	23.30	6.6	0.3	195(I)	3.0(I)	0.57(I)	4.7(I)	
507	85	25.73	25.71	35.24	23.33	6.7	0.5	191(I)	3.0(I)	0.59(I)	5.1(I)	
509	129	25.25	25.22	35.38	23.59	6.5	0.3	165(I)	3.0(I)	0.69(I)	7.0(I)	
512	174	21.63	21.60	35.63	24.83	7.4	0.6	129	4.3	0.94	11.2	
515	220	17.17	17.13	35.28	25.73	7.0	0.3	139	8.0	1.04	13.4	
518	283	12.58	12.54	34.89	26.44	9.9	1.3	128	18.6	1.46	20.8	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	5145	1.265	0.805	34.703	45.999	27.1	1.2	267	
216	5214	1.273	0.803	34.705	46.000	27.3	1.4	198	
218	5273	1.280	0.802	34.704	46.000	27.2	2.7	138	
219	5320	1.285	0.801	34.704	46.000	97.2	3.9	91	
220	5358	1.290	0.801	34.704	46.000	76.3	1.5	53	
221	5387	1.294	0.801	34.704	46.000	101.1	5.2	24	
224	5402	1.296	0.801	34.704	46.000	104.6	5.6	9	
222	5403	1.296	0.800	34.704	46.000	96.4	8.8	9	

SURFACE RADON — STATION: 248 LEG: V POSITION: 1° 2' S 179° 2' E DATE: 22 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
227	4	26.08 H	26.08	35.39	23.34	6.0	0.5					
228	38	26.08 H	26.07	35.39	23.34	5.7	0.4	196(I)	2.9(I)	0.57(I)	4.5(I)	
229	57	26.09 H	26.08	35.39	23.34	5.6	0.7	196(I)	2.9(I)	0.57(I)	4.6(I)	
230	87	26.09 H	26.07	35.40	23.35	6.0	0.4	195(I)	2.9(I)	0.58(I)	4.7(I)	
231	130	25.78 H	25.75	35.51	23.53	6.4	0.7	185(I)	2.7(I)	0.64(I)	5.7(I)	
232	169	24.44 H	24.40	35.84	24.18	7.0	0.4	157(I)	2.4(I)	0.75(I)	7.6(I)	
233	213	17.06 H	17.02	35.38	25.82	7.2	0.5	135(I)	8.4(I)	1.09(I)	14.5(I)	
234	272	12.35 H	12.31	34.92	26.50	9.0	0.9	130(I)	15.6(I)	1.39(I)	19.9(I)	

SURFACE RADON — STATION: 252 LEG: V POSITION: 8° 29' S 178° 5' W DATE: 26 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
201	1	28.57 H	28.57	34.49	21.88	5.0	0.3	194	1.7	0.21	0.1	
202	27	28.63 H	28.62	34.52	21.88	5.8	0.3	196	1.0	0.20	0.0	
203	51	28.66 H	28.65	34.55	21.90	6.3	0.3	197	0.9	0.20	0.0	
204	61	28.75 H	28.73	34.90	22.14	7.7	0.3	199	0.7	0.23	0.0	
205	80	28.60 H	28.58	35.30	22.49	6.7	0.4	193	1.1	0.31	0.4	
206	105	27.23 H	27.20	35.64	23.18	7.0	0.3	158	1.7	0.62	4.4	
207	169	24.68 H	24.64	36.10	24.31	7.8	0.3	151	1.2	0.58	5.1	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 253 LEG: V POSITION: 12° 40' S 175° 3' W DATE: 28 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
119	4339	1.118	0.762	34.710	46.011	23.1	1.6	324	
120	4488	1.091	0.718	34.710	46.019	21.2	1.2	176	
121	4567	1.065	0.684	34.708	46.023	51.8	5.1	96	
122	4606	1.067	0.681	34.709	46.024	81.6	3.3	58	
123	4637	1.070	0.680	34.709	46.025	94.0	5.1	27	
124	4651	1.073	0.681	34.709	46.024	94.7	3.1	13	

BOTTOM RADON — STATION: 254 LEG: V POSITION: 13° 14' S 173° 48' W DATE: 28 DEC 73

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
119	4397	1.075	0.714	34.710	46.020	24.4	0.8	339	
120	4548	1.056	0.677	34.709	46.025	24.9	1.7	188	
121	4629	1.053	0.665	34.708	46.026	59.6	5.9	107	
122	4670	1.057	0.664	34.708	46.027	71.1	1.8	67	
123	4701	1.060	0.663	34.710	46.028	92.1	6.7	36	
124	4717	1.063	0.664	34.709	46.027	92.2	5.0	19	

BOTTOM RADON — STATION: 256 LEG: VI POSITION: 9° 11' S 169° 0' W DATE: 5 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
110	4092	1.305	0.971	34.698	45.966	29.8	1.0	907	DATA SUSPECT
112	4291	1.130	0.779	34.707	46.006	29.3	1.7	707	
115	4470	1.060	0.691	34.706	46.020	34.2	1.1	556	
117	4718	1.059	0.660	34.706	46.026	38.9	1.6	334	
118	4830	1.069	0.656	34.705	46.026	38.3	3.8	248	
119	4897	1.078	0.656	34.706	46.026	46.1	3.4	176	
120	4957	1.086	0.656	34.706	46.026	45.8	2.2	117	DATA SUSPECT
121	4994	1.091	0.656	34.705	46.026	45.3	4.3	80	
122	5025	1.095	0.656	34.706	46.026	40.6	1.0	49	
123	5044	1.098	0.657	34.706	46.026	45.3	3.8	29	
124	5054	1.100	0.658	34.706	46.026	42.8	3.2	19	

BOTTOM RADON — STATION: 257 LEG: VI POSITION: 10° 10' S 169° 58' W DATE: 5 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4920	1.078	0.653	34.707	46.028	43.5	4.6	262	
117	4999	1.087	0.652	34.707	46.028	50.5	4.0	183	
118	5055	1.093	0.651	34.707	46.028	38.2	2.1	127	
119	5095	1.096	0.648	34.707	46.028	55.4	2.6	87	
120	5125	1.098	0.646	34.707	46.029	77.5	7.5	57	
121	5145	1.101	0.647	34.707	46.029	74.0	2.3	38	
123	5159	1.103	0.647	34.707	46.029	82.7	4.7	22	
124	5166	1.104	0.647	34.708	46.030	93.7	3.0	14	

BOTTOM RADON — STATION: 259 LEG: VI POSITION: 15° 3' S 170° 22' W DATE: 8 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4270	1.046	0.700	34.708	46.020	23.5	0.6	445	
117	4389	1.022	0.663	34.707	46.026	24.7	2.0	326	
118	4499	1.020	0.648	34.705	46.027	40.4	3.3	216	
119	4569	1.025	0.645	34.706	46.028	33.8	1.7	146	
120	4620	1.028	0.642	34.706	46.029	30.8	2.3	96	
121	4661	1.033	0.642	34.705	46.028	39.0	3.8	55	
123	4689	1.037	0.642	34.705	46.028	42.2	3.2	26	
124	4700	1.038	0.642	34.706	46.029	42.6	4.0	15	

SURFACE RADON — STATION: 260 LEG: VI POSITION: 15° 16' S 169° 54' W DATE: 8 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
405	3	28.80 H	28.80	34.95	22.15	3.5	0.3					
406	6	28.80 H	28.80	34.95	22.15	4.2	0.5	196	1.8	0.22	0.0	
407	9	28.81 H	28.81	34.95	22.15	4.5	0.5	197(I)	1.6(I)	0.22(I)	0.0(I)	
408	12	28.81 H	28.81	34.95	22.15	3.7	0.5	198(I)	1.5(I)	0.21(I)	0.0(I)	
410	21	28.80 H	28.79	34.95	22.15	3.5	0.5	200(I)	1.3(I)	0.20(I)	0.0(I)	
411	36	28.78 H	28.77	34.95	22.16	4.8	0.5	201(I)	1.3(I)	0.20(I)	0.0(I)	
412	55	28.16 H	28.15	35.21	22.56	7.0	0.4	203	1.2	0.20	0.0	
425	85	27.56 H	27.54	35.84	23.22	7.1	0.7	207(I)	1.0(I)	0.21(I)	0.0(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	4789	1.044	0.637	34.707	46.031	24.3	0.8	246	
217	4859	1.050	0.634	34.707	46.031	36.2	2.1	177	
218	4909	1.056	0.633	34.707	46.031	55.5	3.3	127	
219	4950	1.061	0.633	34.707	46.031	42.4	1.8	88	
220	4979	1.065	0.633	34.707	46.031	46.8	1.2	58	
221	4998	1.067	0.633	34.707	46.031	51.9	3.8	38	
223	5014	1.069	0.633	34.707	46.031	52.1	2.2	23	
224	5022	1.070	0.633	34.706	46.030	54.8	2.5	14	

SURFACE RADON — STATION: 263 LEG: VI POSITION: 16° 39' S 167° 4' W DATE: 10 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1314	2	28.77	28.77	34.65	21.94	5.0	0.3	199(I)	2.1(I)	0.18(I)	0.0(I)	
1315	12	28.46	28.46	34.64	22.03	4.5	0.4	199(I)	1.9(I)	0.18(I)	0.0(I)	
1316	19	28.45	28.44	34.65	22.04	5.2	0.4	199(I)	1.8(I)	0.18(I)	0.0(I)	
1317	25	28.44	28.44	34.71	22.09	5.0	0.3	199(I)	1.7(I)	0.18(I)	0.0(I)	
1318	35	28.40	28.39	34.76	22.14	5.5	0.3	199(I)	1.6(I)	0.18(I)	0.0(I)	
1319	42	28.29	28.28	34.79	22.20	6.4	0.5	201(I)	1.6(I)	0.18(I)	0.0(I)	
1320	55	27.16	27.14	35.45	22.30	6.5	0.4	203(I)	1.6(I)	0.19(I)	0.0(I)	
1321	77	25.91	25.89	35.70	22.87	7.2	0.4	209(I)	1.6(I)	0.21(I)	0.0(I)	
1322	107	24.45	24.42	35.79	24.14	6.6	0.3	211(I)	1.2(I)	0.17(I)	0.0(I)	
1323	137	23.31	23.28	35.73	24.43	5.8	0.5	201(I)	1.0(I)	0.22(I)	0.6(I)	
1324	162	22.93	22.89	35.90	24.67	5.1	0.5	187(I)	0.9(I)	0.31(I)	1.5(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
315	5370	1.120	0.636	34.707	46.031	23.2	0.6	343	
316	5469	1.130	0.632	34.708	46.032	28.0	2.4	244	
317	5538	1.139	0.632	34.708	46.032	32.2	2.7	175	
318	5599	1.147	0.631	34.708	46.032	48.2	3.5	114	
320	5637	1.152	0.631	34.708	46.032	65.9	6.5	76	
321	5668	1.156	0.630	34.708	46.032	85.9	6.3	45	
323	5687	1.158	0.630	34.708	46.033	96.1	4.5	26	
324	5698	1.160	0.630	34.708	46.032	116.7	10.8	15	

SURFACE RADON — STATION: 265 LEG: VI POSITION: 17° 48' S 164° 58' W DATE: 14 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
427	3	28.45(I)	28.45	35.22	22.47	5.3	0.6					
428	8	28.43(I)	28.42	35.22	22.47	6.8	0.7	194(I)	1.9(I)	0.22(I)	0.0(I)	
429	12	28.40(I)	28.40	35.22	22.48	5.8	0.5	195(I)	1.8(I)	0.22(I)	0.0(I)	
430	16	28.38(I)	28.37	35.22	22.49	6.4	0.8	196(I)	1.8(I)	0.22(I)	0.0(I)	
431	28	28.25(I)	28.24	35.22	22.56	4.7	0.3	199(I)	1.8(I)	0.22(I)	0.0(I)	
432	41	28.05(I)	28.04	35.23	22.68	4.8	0.6	202(I)	1.8(I)	0.22(I)	0.0(I)	
433	60	27.62(I)	27.60	35.52	22.96	7.3	0.6	205(I)	1.8(I)	0.22(I)	0.0(I)	
434	91	26.43 H	26.41	36.00	23.70	6.8	0.6	209(I)	1.5(I)	0.22(I)	0.0(I)	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 265 LEG: VI POSITION: 17° 48' S 164° 58' W DATE: 14 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	5090	1.101	0.654	34.707	46.028	22.8	0.8	332	DATA SUSPECT
216	5213	1.113	0.649	34.709	46.030	37.1	2.7	209	
218	5273	1.120	0.648	34.707	46.028	39.7	1.7	149	
219	5323	1.126	0.648	34.708	46.029	44.2	1.9	99	
220	5354	1.130	0.647	34.707	46.029	92.1	2.7	69	
221	5375	1.132	0.647	34.707	46.029	164.5	8.9	48	
222	5390	1.135	0.647	34.707	46.029	153.6	8.9	31	
224	5404	1.135	0.646	34.708	46.030	197.5	32.6	16	

SURFACE RADON — STATION: 267 LEG: VI POSITION: 19° 15' S 171° 25' W DATE: 16 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
315	3	28.35 H	28.35	34.93	22.28	4.0	0.2	201				
317	7	28.35 H	28.35	34.93	22.28	4.4	0.4	201	0.4(I)	0.15(I)	0.1(I)	
318	12	28.35 H	28.35	34.93	22.28	4.1	0.4	204(I)	0.4(I)	0.16(I)	0.1(I)	
319	17	28.35 H	28.35	34.93	22.28	4.7	0.3	210	0.5(I)	0.16(I)	0.1(I)	
320	20	28.34 H	28.33	34.94	22.29	4.8	0.3	210(I)	0.5(I)	0.17(I)	0.1(I)	
321	30	28.25 H	28.24	34.97	22.34	5.3	0.5	210(I)	0.5(I)	0.17(I)	0.1(I)	
322	51	26.84 H	26.83	35.50	23.19	7.0	0.6	210	0.6(I)	0.18(I)	0.1(I)	
324	81	24.74 H	24.72	35.77	24.03	6.8	0.5	209(I)	0.5(I)	0.18(I)	0.1(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
517	5300	1.081	0.607	34.706	46.035	23.5	1.3	199	
518	5399	1.092	0.605	34.706	46.035	24.0	1.4	100	
519	5426	1.094	0.603	34.706	46.035	30.1	5.2	72	
520	5446	1.097	0.604	34.706	46.035	58.4	5.0	52	
521	5461	1.099	0.603	34.706	46.035	64.3	4.7	38	
512	5472	1.101	0.604	34.707	46.036	63.1	1.9	27	
523	5474	1.101	0.604	34.706	46.035	68.3	3.3	25	
524	5482	1.102	0.604	34.706	46.035	76.5	7.1	17	

BOTTOM RADON — STATION: 269 LEG: VI POSITION: 23° 59' S 174° 26' W DATE: 18 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
312	5692	1.118	0.591	34.704	46.036	22.1	1.8	318	DATA SUSPECT
315	5771	1.127	0.588	34.704	46.036	23.3	1.9	248	
316	5838	1.136	0.588	34.704	46.037	20.6	1.1	178	
318	5883	1.142	0.587	34.704	46.037	23.5	2.0	128	
319	5922	1.146	0.586	34.704	46.037	27.8	2.2	88	
320	5952	1.150	0.585	34.704	46.037	29.1	0.8	58	
321	5971	1.153	0.586	34.704	46.037	29.3	2.2	38	
322	5981	1.154	0.585	34.704	46.037	32.7	2.2	23	
324	5986	1.154	0.584	34.704	46.037	46.2	2.0	13	

BOTTOM RADON — STATION: 272 LEG: VI POSITION: 24° 2' S 175° 43' W DATE: 21 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
119	3476	1.391	1.122	34.721	45.957	24.3	0.9	214	
120	3583	1.297	1.019	34.717	45.972	32.6	2.2	106	
121	3643	1.266	0.983	34.717	45.978	31.7	2.6	66	
122	3669	1.260	0.974	34.717	45.980	33.2	1.8	40	
123	3683	1.260	0.973	34.717	45.980	30.8	1.8	26	
124	3692	1.258	0.970	34.717	45.981	34.2	1.4	15	

SURFACE RADON — STATION: 273 LEG: VI POSITION: 29° 57' S 175° 42' W DATE: 22 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
415	4	23.80(I)	23.80	35.53	24.12	3.2	0.3					
416	9	23.68(I)	23.68	35.53	24.16	3.3	0.4	215(I)	0.0(I)	0.08(I)	0.1(I)	DATA SUSPECT
417	17	23.52(I)	23.51	35.52	24.22	4.7	0.4	216(I)	0.1(I)	0.08(I)	0.1(I)	
418	25	23.35(I)	23.35	35.54	24.28	4.6	0.4	217(I)	0.2(I)	0.08(I)	0.1(I)	
419	36	22.74(I)	22.73	35.65	24.48	6.4	0.5	221(I)	0.2(I)	0.08(I)	0.1(I)	DATA SUSPECT
420	51	20.60 H	20.59	35.69	25.15	6.6	0.7	233(I)	0.2(I)	0.11(I)	0.1(I)	DATA SUSPECT

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	5573	1.102	0.591	34.705	46.037	28.2	1.6	199	
217	5642	1.111	0.590	34.705	46.037	28.1	2.5	170	
218	5688	1.117	0.590	34.705	46.037	27.2	0.9	124	
219	5728	1.122	0.589	34.705	46.037	28.6	1.6	84	
220	5757	1.126	0.589	34.705	46.037	30.9	1.8	56	
221	5771	1.128	0.589	34.706	46.038	37.3	2.8	40	DATA SUSPECT
222	5788	1.130	0.589	34.705	46.037	35.1	1.8	25	

BOTTOM RADON — STATION: 277 LEG: VI POSITION: 30° 7' S 177° 34' W DATE: 24 JAN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
118	3511	1.310	1.039	34.720	45.971	22.0	1.2	170	
119	3562	1.270	0.995	34.720	45.978	22.1	1.2	118	DATA SUSPECT
120	3592	1.247	0.970	34.718	45.981	21.2	1.2	88	
121	3615	1.226	0.947	34.718	45.985	24.3	2.1	65	
122	3655	1.214	0.931	34.718	45.988	30.6	3.0	25	
124	3665	1.215	0.931	34.717	45.987	30.6	1.1	15	

SURFACE RADON — STATION: 280 LEG: VII POSITION: 56° 1' S 170° 3' E DATE: 8 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
416	3	6.45(I)	6.45	34.06	26.79	10.4	0.9	301	2.9	1.30	19.2	
417	6	6.45(I)	6.45	34.06	26.79	4.1	0.2	301(I)	2.9(I)	1.30(I)	19.2(I)	
418	16	6.45(I)	6.45	34.06	26.79	5.4	0.5	301(I)	2.9(I)	1.31(I)	19.2(I)	
419	31	6.42(I)	6.42	34.06	26.80	3.0	0.3	301	2.8	1.32	19.2	
420	42	6.40(I)	6.39	34.10	26.82	4.0	0.3	301(I)	2.9(I)	1.32(I)	19.1(I)	
421	61	6.35(I)	6.34	34.10	26.84	9.3	0.6	301(I)	2.9(I)	1.32(I)	19.0(I)	
422	81	6.33(I)	6.32	34.11	26.85	11.8	0.9	301	3.0	1.32	18.9	
423	101	6.30(I)	6.29	34.11	26.86	10.6	0.6	301	3.1	1.32	19.0	

SURFACE RADON — STATION: 282 LEG: VII POSITION: 57° 35' S 169° 36' E DATE: 10 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1527	4	5.17 H	5.17	33.83	26.77	11.3	0.5	307(I)	3.4(I)	1.49(I)	21.5(I)	
1529	34	5.49(I)	5.49	33.84	26.76	12.7	1.2	307(I)	2.8(I)	1.51(I)	21.6(I)	
1528	53	5.30(I)	5.29	33.84	26.78	12.7	0.7	306(I)	2.7(I)	1.51(I)	21.6(I)	
1530	69	5.03 H	5.02	33.84	26.79	12.3	0.6	306(I)	2.6(I)	1.51(I)	21.6(I)	
1531	107	5.50(I)	5.49	33.86	26.82	13.8	0.8	303(I)	3.8(I)	1.51(I)	21.4(I)	DATA SUSPECT
1532	119	5.44(I)	5.43	33.88	26.87	16.0	1.2	301(I)	4.5(I)	1.50(I)	21.4(I)	
1533	139	5.21(I)	5.20	33.95	26.93	14.5	0.8	299(I)	5.6(I)	1.52(I)	21.9(I)	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

SURFACE RADON — STATION: 285 LEG: VII POSITION: 61° 29' S 169° 58' E DATE: 14 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
314	9	2.24 H	2.24	33.96	27.16	12.0	0.5	330	15.9	1.65	25.9	
325	20	2.25 H	2.25	33.96	27.16	14.6	1.3	330	15.7	1.69	25.9	
332	20	2.25	2.25	33.96	27.16	12.6	0.7	330	15.7	1.69	25.9	DEPTH APPROX
326	33	2.25 H	2.25	33.96	27.16	13.3	0.7	330	15.8	1.69	25.9	
333	39	2.26	2.26	33.96	27.16	13.7	1.1	331	16.1	1.69(I)	25.8	DEPTH APPROX
327	45	2.24 H	2.24	33.96	27.16	11.8	0.6	331	15.8	1.69	25.9	
328	51	2.26 H	2.26	33.96	27.16	13.2	0.8	333	15.9	1.69	25.9	
329	67	2.26 H	2.25	33.96	27.16	14.1	1.1	330	16.2	1.69	25.9	

SURFACE RADON — STATION: 286 LEG: VII POSITION: 66° 5' S 173° 40' E DATE: 17 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
201	2	0.30 H	0.30	33.91	27.24	11.9	0.6	346	52.7	1.48	24.5	SURFACE-INTERMEDIATE
202	51	0.29 H	0.29	33.91	27.24	13.6	1.2	347	53.4	1.51	24.8	
204	65	-1.47 H	-1.47	34.28	27.61	18.3	0.9	309	70.3	1.94	29.4	
207	90	-0.40 H	-0.40	34.45	27.71	18.1	0.7	260	79.5	2.05	31.3	
227	344	1.35 H	1.33	34.72	27.83	19.7	1.1	196	98.0	2.07	31.7	
230	786	1.03 H	0.99	34.72	27.85	24.5	1.8	202	112.5	2.05	32.2	

SURFACE RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
332	1199	0.75 H	0.69	34.71	27.86	20.7	1.0	206	120.5	2.09	31.9	INTERMEDIATE
334	1643	0.55 H	0.45	34.70	27.87	20.1	1.6	210	123.4	2.13	32.0	

SURFACE RADON — STATION: 287 LEG: VII POSITION: 69° 5' S 173° 30' W DATE: 20 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
914	1	-1.04 H	-1.04	33.37	26.86	11.1	0.6					
915	20	-1.49(I)	-1.49	33.38	26.89	12.2	0.7	348(I)	54.7(I)	1.71(I)	25.2(I)	
916	39	-1.22(I)	-1.22	33.39	26.90	13.4	0.4	328(I)	55.7(I)	1.84(I)	26.8(I)	
918	49	-1.06 H	-1.06	33.42	26.90	12.7	0.5	317(I)	57.9(I)	1.88(I)	27.5(I)	
917	56	-1.55(I)	-1.56	33.65	27.58	16.1	0.7	308(I)	59.3(I)	1.91(I)	27.9(I)	
919	63	-1.60(I)	-1.60	34.15	27.61	16.4	0.9	302(I)	60.0(I)	1.92(I)	28.2(I)	
920	70	-1.63(I)	-1.63	34.28	27.62	16.2	1.0	302(I)	60.0(I)	1.93(I)	28.3(I)	
921	77	-1.57 H	-1.57	34.31	27.64	17.2	1.4	298(I)	60.3(I)	1.95(I)	28.5(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
312	3747			34.705		17.7	0.7	369	
315	3837			34.705		18.9	1.2	278	
316	3905			34.705		19.1	1.3	211	
318	3956			34.702		17.5	2.6	160	
319	4002			34.705		23.2	2.4	113	
321	4045			34.706		41.1	3.1	71	
322	4077			34.705		40.9	2.5	38	
323	4100			34.705		39.9	2.5	16	

SURFACE RADON — STATION: 289 LEG: VII POSITION: 61° 59' S 174° 0' W DATE: 24 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
201	2	2.47 H	2.47	33.85	27.05	10.4	0.5	337	4.9	1.58	23.9	
202	14	2.31 H	2.31	33.85	27.06	11.4	0.7	331	5.1	1.61	24.0	
203	26	2.29 H	2.29	33.85	27.06	12.7	0.9	331	4.8	1.63	23.9	
204	38	2.30 H	2.30	33.85	27.06	8.4	1.4	332	5.0	1.63	24.0	
206	62	2.31 H	2.31	33.86	27.07	12.5	1.2	331	5.0	1.64	24.0	
207	82	2.15 H	2.15	33.85	27.08	11.5	1.0	332	5.7	1.66	24.0	
208	112	1.54 H	1.53	33.97	27.21	15.5	0.8	317	18.9	1.90	27.4	
210	185	1.76 H	1.75	34.11	27.31	14.4	0.8	275	32.1	2.03	30.7	

SURFACE RADON — STATION: 290 LEG: VII POSITION: 58° 0' S 174° 0' W DATE: 25 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
714	2	4.57 H	4.57	33.95	26.93	9.4	0.4					
715	19	4.57 H	4.57	33.95	26.93	11.1	0.7	315(I)	1.2(I)	1.54(I)	21.4(I)	
716	50	4.57 H	4.57	33.95	26.93	10.9	0.8	315(I)	1.1(I)	1.55(I)	21.5(I)	
717	80	4.48 H	4.47	33.95	26.94	10.2	1.6	315(I)	1.1(I)	1.56(I)	21.5(I)	
718	101	4.19 H	4.18	33.97	26.99	14.7	1.3	313(I)	1.8(I)	1.59(I)	21.8(I)	
719	121	3.42 H	3.41	34.01	27.09	13.7	1.0	308(I)	4.4(I)	1.67(I)	22.8(I)	
720	153	3.20 H	3.19	34.00	27.11	14.0	0.8	303(I)	7.9(I)	1.74(I)	24.7(I)	
721	195	3.33 H	3.32	34.07	27.15	15.0	0.8	296(I)	12.8(I)	1.80(I)	26.4(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
208	4939	0.89 H	0.468	34.702	46.056	43.7	1.9	372	
225	5091	0.91 H	0.468	34.702	46.056	105.4	5.4	275	
226	5159	0.90 H	0.449	34.702	46.059	98.6	1.8	156	
228	5209	0.92 H	0.462	34.702	46.056	100.1	2.1	107	
229	5238	0.91 H	0.449	34.702	46.059	120.3	4.3	78	
231	5258	0.92 H	0.456	34.702	46.058	128.9	6.6	58	
232	5273	0.922H	0.456	34.702	46.058	130.5	7.9	44	
234	5287	0.940H	0.471	34.701	46.054	151.4	11.7	29	

BOTTOM RADON — STATION: 291 LEG: VII POSITION: 56° 0' S 175° 35' W DATE: 27 FEB 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
108	4568	0.85 H	0.474	34.701	46.054	20.5	0.9	544	
110	4719	0.87 H	0.476	34.701	46.053	22.7	1.2	396	
126	4845	0.86 H	0.451	34.700	46.057	23.2	0.6	269	
128	4945	0.87 H	0.448	34.700	46.057	20.4	0.6	168	
130	4995	0.86 H	0.432	34.700	46.060	23.6	0.9	118	
131	5037	0.87 H	0.436	34.699	46.059	57.1	3.1	77	
132	5067	0.87 H	0.433	34.700	46.060	47.0	3.0	47	
134	5097	0.872H	0.431	34.699	46.059	114.2	8.9	17	

SURFACE RADON — STATION: 293 LEG: VII POSITION: 52° 40' S 178° 5' W DATE: 1 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
714	2	11.47 H	11.47	34.43	26.28	6.7	0.4		1.8	0.73	9.0	
715	11	11.41 H	11.41	34.42	26.29	7.0	0.4	274(I)	1.2	0.74	9.1	
716	21	10.73 H	10.73	34.45	26.44	8.0	0.3	274(I)	1.3	0.79	9.9	
717	31	10.09 H	10.09	34.43	26.53	9.1	0.3	275(I)	1.5	0.88	11.3	
718	41	10.17 H	10.17	34.48	26.55	9.1	0.4	275(I)	1.5	0.84	10.7	
719	51	10.18 H	10.17	34.48	26.56	9.1	0.5	275(I)	1.7	0.84	10.6	
720	61	10.00 H	9.99	34.46	26.57	9.4	0.6	275(I)	1.8	0.89	11.2	
721	101	8.50(I)	8.49	34.64	26.82	10.0	0.8	267(I)	3.7	1.02	14.1	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 293 LEG: VII POSITION: 52° 40' S 178° 5' W DATE: 1 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
208	4864	0.91 H	0.497	34.701	46.050	21.0	0.8	472	DATA SUSPECT
210	5017	0.891H	0.459	34.700	46.055	25.6	1.4	319	
226	5117	0.90 H	0.455	34.699	46.055	38.2	2.5	219	
228	5198	0.898H	0.443	34.700	46.058	40.5	5.9	138	
229	5239	0.89 H	0.430	34.699	46.060	57.6	4.9	96	
231	5269	0.90 H	0.436	34.700	46.059	55.7	3.9	66	
232	5298	0.90 H	0.432	34.698	46.059	79.5	4.3	36	
234	5318	0.915H	0.444	34.699	46.057	80.0	4.1	17	

BOTTOM RADON — STATION: 296 LEG: VIII POSITION: 44° 59' S 166° 42' W DATE: 16 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	5041	0.950	0.513	34.702	46.048	21.8	0.8	294	
216	5134	0.957	0.508	34.701	46.048	22.5	1.0	207	
218	5191	0.963	0.507	34.702	46.049	23.3	1.3	146	
219	5241	0.968	0.505	34.702	46.049	25.7	1.2	104	
220	5271	0.973	0.506	34.702	46.049	38.4	2.0	71	
221	5290	0.974	0.505	34.701	46.048	39.4	2.3	51	
223	5310	0.977	0.505	34.702	46.049	54.9	2.4	35	
224	5325	0.978	0.504	34.701	46.049	63.6	4.2	17	

SURFACE RADON — STATION: 298 LEG: VIII POSITION: 46° 41' S 166° 50' W DATE: 18 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
301	2	13.44 H	13.44	34.81	26.19	6.0	0.7	261	3.8	0.38	2.2	
302	42	13.42 H	13.41	34.81	26.20	5.8	0.4	261	3.8	0.37	2.2	
303	78	12.62 H	12.61	34.82	26.37	8.5	0.3	259	2.8	0.52	4.8	
304	102	12.18 H	12.17	34.96	26.56	8.9	0.7	241	3.8	0.68	8.3	
305	152	10.91 H	10.89	34.88	26.74	8.5	0.4	241	3.8	0.83	10.7	
306	228	10.06 H	10.03	34.78	26.82	10.2	1.0	247	4.2	0.91	12.3	
307	303	9.32 H	9.29	34.69	26.87	8.7	0.6	248	4.2	0.99	13.6	
308	403	8.92 H	8.87	34.63	26.89	8.2	0.6	261	3.8	1.03	14.0	

SURFACE RADON — STATION: 302 LEG: VIII POSITION: 40° 30' S 166° 42' W DATE: 22 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
202	3	17.17 H	17.17	35.00	25.50	5.1	0.4	243	4.8	0.16	0.0	
203	13	17.13 H	17.13	35.00	25.51	5.5	0.3	243	3.9	0.17	0.0	
204	28	16.94 H	16.94	35.01	25.56	6.0	0.5	245	3.7	0.18	0.0	
205	44	15.39 H	15.38	34.99	25.91	7.7	0.4	261	3.5	0.20	0.0	
206	63	13.42 H	13.41	35.12	26.44	7.4	0.7	240	3.9	0.46	4.4	
207	93	12.55 H	12.54	35.11	26.61	7.6	0.6	236	4.0	0.61	7.4	
208	127	12.27 H	12.25	35.10	26.65	7.0	0.5	237	4.2	0.67	8.4	
209	152	12.04 H	12.02	35.07	26.67	7.6	0.4	235	4.2	0.70	9.0	
210	212	11.23 H	11.20	34.95	26.74	8.0	0.4	232	4.4	0.83	10.8	
211	301	9.99 H	9.95	34.77	26.82	7.8	0.4	227	6.0	1.05	14.6	

BOTTOM RADON — STATION: 303 LEG: VIII POSITION: 38° 22' S 170° 4' W DATE: 23 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	4635	0.939	0.553	34.704	46.042	24.0	2.0	206	
117	4661	0.932	0.543	34.703	46.043	23.6	1.2	183	
118	4689	0.921	0.529	34.703	46.046	42.6	2.1	158	
119	4714	0.918	0.523	34.703	46.047	59.2	4.2	133	
120	4740	0.918	0.520	34.702	46.047	96.9	3.5	106	
121	4759	0.920	0.520	34.702	46.047	110.2	9.9	83	DATA SUSPECT
123	4780	0.923	0.520	34.702	46.047	106.2	6.5	56	
124	4820	0.928	0.520	34.703	46.047	97.5	5.7	21	

SURFACE RADON — STATION: 306 LEG: VIII POSITION: 32° 50' S 163° 38' W DATE: 27 MAR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1001	2			35.29		3.8	0.2					
1002	17	22.19(I)	22.19	35.29	24.42	2.9	0.2	220(I)	6.3(I)	0.06(I)	0.0(I)	
1003	33	22.18(I)	22.17	35.37	24.44	5.1	0.4	220(I)	5.6(I)	0.06(I)	0.0(I)	
1004	48	22.03(I)	22.02	35.37	24.49	5.3	0.3	221(I)	4.5(I)	0.06(I)	0.0(I)	
1005	62	20.98(I)	20.97	35.34	24.78	5.9	0.3	229(I)	3.9(I)	0.07(I)	0.0(I)	
1006	103	15.45(I)	15.43	35.36	26.22	7.5	0.7	245(I)	3.9(I)	0.25(I)	0.9(I)	
1007	153	13.72(I)	13.70	35.24	26.47	7.4	0.3	225(I)	3.9(I)	0.49(I)	4.9(I)	
1008	203	12.53(I)	12.50	35.13	26.61	7.0	0.2	219(I)	4.3(I)	0.72(I)	9.1(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	5435	1.088	0.596	34.706	46.037	25.6	2.2	198	
117	5476	1.093	0.595	34.704	46.035	29.8	1.6	146	
119	5498	1.096	0.595	34.705	46.036	27.4	1.3	123	
120	5526	1.100	0.595	34.704	46.035	30.8	1.4	100	
121	5554	1.103	0.594	34.705	46.036	43.4	2.5	71	
122	5579	1.106	0.594	34.705	46.036	78.6	3.3	48	
124	5605	1.110	0.594	34.706	46.037	97.2	5.7	19	

SURFACE RADON — STATION: 310 LEG: VIII POSITION: 26° 57' S 157° 9' W DATE: 3 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
502	13	24.84	24.84	35.51	23.81	4.2	0.4	211	2.1(I)	0.10(I)	0.0(I)	
503	21	24.84	24.84	35.51	23.81	3.5	0.2	211	1.9(I)	0.10(I)	0.0(I)	
505	33	24.84	24.83	35.51	23.81	4.5	0.3	211	1.6(I)	0.10(I)	0.0(I)	
507	44	24.84	24.83	35.51	23.81	4.5	0.3	211	1.3(I)	0.08(I)	0.0(I)	
509	76	21.84	21.82	35.66	24.79	6.3	0.5	227(I)	1.0(I)	0.08(I)	0.0(I)	
511	125	19.99	19.96	35.60	25.25	6.4	0.4	216(I)	1.0(I)	0.09(I)	0.0(I)	
514	180	18.63	18.59	35.55	25.57	5.7	0.3	205(I)	1.1(I)	0.20(I)	1.3(I)	

BOTTOM RADON — STATION: 314 LEG: VIII POSITION: 23° 44' S 153° 37' W DATE: 5 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
218	3771	1.435	1.133	34.692	45.933	27.9	0.9	829	
219	3893	1.393	1.079	34.696	45.945	25.6	1.3	707	DATA SUSPECT
220	4019	1.345	1.018	34.698	45.958	29.0	1.4	581	
221	4158	1.310	0.968	34.700	45.968	26.5	0.8	443	
222	4268	1.300	0.946	34.700	45.972	36.9	1.4	370	
223	4390	1.299	0.930	34.700	45.974	55.4	5.0	210	
224	4570	1.269	0.880	34.704	45.986	324.4	12.7	37	

SURFACE RADON — STATION: 316 LEG: IX POSITION: 18° 51' S 126° 36' W DATE: 19 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
202	5	25.44 H	25.44	36.55	24.40	5.2	0.3	208	1.8(I)	0.30(I)	0.0(I)	
203	12	25.44 H	25.44	36.55	24.40	5.2	0.3	208	1.6(I)	0.30(I)	0.0(I)	
204	17	25.39 H	25.39	36.54	24.42	5.7	0.4	209	1.5	0.29	0.0	
205	26	25.35 H	25.34	36.54	24.43	5.8	0.3	208	1.5(I)	0.28(I)	0.0(I)	
206	41	25.36 H	25.35	36.55	24.43	5.5	0.3	208(I)	1.5(I)	0.26(I)	0.0(I)	
209	82	25.35 H	25.33	36.66	24.52	6.8	0.4	208(I)	1.5(I)	0.24(I)	0.0(I)	
211	121	24.39 H	24.37	36.47	24.67	7.2	0.3	211(I)	0.9(I)	0.23(I)	0.0(I)	
214	161	23.67 H	23.63	36.42	24.84	7.1	0.4	211(I)	0.8(I)	0.24(I)	0.2(I)	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)
(I) INTERPOLATED DATA

BOTTOM RADON — STATION: 317 LEG: IX POSITION: 23° 37' S 127° 11' W DATE: 20 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	3372	1.712	1.445	34.676	45.865	27.6	0.9	217	
217	3422	1.714	1.442	34.680	45.868	26.7	0.9	167	
218	3475	1.714	1.436	34.678	45.868	32.3	2.0	114	
219	3495	1.712	1.432	34.679	45.869	30.0	1.4	93	
220	3522	1.711	1.428	34.680	45.871	27.4	1.3	68	
221	3545	1.706	1.421	34.680	45.872	72.4	3.0	43	
223	3564	1.706	1.419	34.680	45.873	110.9	3.7	25	
224	3572	1.707	1.419	34.680	45.873	111.8	4.7	17	

SURFACE RADON — STATION: 319 LEG: IX POSITION: 28° 30' S 127° 47' W DATE: 23 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
201	4	23.14 H	23.14	35.67	24.42	6.4	0.3	216				
203	18	23.14 H	23.14	35.67	24.43	5.6	0.3	216(I)	4.7(I)	0.15(I)	0.0(I)	
204	27	23.11 H	23.10	35.67	24.44	5.6	0.4	216	4.1	0.15	0.0	
205	36	23.12 H	23.11	35.67	24.43	5.2	0.3	216(I)	4.0(I)	0.15(I)	0.0(I)	
207	58	23.03 H	23.02	35.67	24.46	5.1	0.3	226(I)	3.7(I)	0.14(I)	0.0(I)	
208	70	19.56 H	19.55	35.40	25.21	7.7	0.4	248	3.1	0.13	0.0	
210	91	17.91 H	17.89	35.29	25.55	7.5	0.3	249	2.4	0.16	0.0	
211	121	16.97 H	16.95	35.31	25.79	7.0	0.4	242	2.1	0.18	0.0	

SURFACE RADON — STATION: 320 LEG: IX POSITION: 33° 20' S 128° 24' W DATE: 25 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
1011	4	19.69 H	19.69	34.66	24.60	5.8	0.4	231(I)	3.8(I)	0.20(I)	0.0(I)	
1012	16	19.70 H	19.70	34.66	24.60	5.3	0.3	231(I)	3.4(I)	0.19(I)	0.0(I)	
1013	25	19.69 H	19.69	34.66	24.61	6.1	0.4	231(I)	3.1(I)	0.19(I)	0.0(I)	
1014	32	19.65 H	19.64	34.66	24.62	5.7	0.3	231(I)	2.9(I)	0.19(I)	0.0(I)	
1015	42	19.66 H	19.65	34.69	24.64	6.0	0.6	231(I)	2.6(I)	0.19(I)	0.0(I)	
1016	67	16.92 H	16.91	34.59	25.25	8.2	0.8	255(I)	2.1(I)	0.19(I)	0.0(I)	
1017	87	15.27 H	15.26	34.63	25.66	8.2	0.3	264(I)	2.1(I)	0.20(I)	0.0(I)	
1018	102	14.98 H	14.96	34.77	25.83	8.0	0.5	264(I)	2.1(I)	0.21(I)	0.0(I)	
1019	154	12.92 H	12.90	34.59	26.13	9.5	0.5	246(I)	1.7(I)	0.38(I)	2.3(I)	
1020	353	8.42(I)	8.38	34.47	26.85	8.6	0.4	220(I)	4.8(I)	1.28(I)	18.8(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
215	3834	1.570	1.257	34.689	45.908	37.5	1.3	307	
216	3932	1.537	1.214	34.691	45.918	66.0	2.0	210	
218	3982	1.520	1.191	34.693	45.923	44.6	2.6	159	DATA SUSPECT
219	4032	1.507	1.173	34.693	45.926	56.1	2.4	110	
220	4082	1.505	1.165	34.695	45.929	138.3	5.1	60	
221	4106	1.504	1.161	34.695	45.930	101.3	4.0	35	
223	4123	1.504	1.160	34.695	45.930	229.6	7.3	19	
224	4131	1.503	1.158	34.696	45.931	141.4	6.0	11	

BOTTOM RADON — STATION: 321 LEG: IX POSITION: 38° 48' S 129° 22' W DATE: 27 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
115	4541	1.299	0.911	34.710	45.985	31.0	1.7	312	
116	4643	1.301	0.901	34.711	45.988	29.0	1.1	211	
118	4716	1.304	0.895	34.711	45.989	116.2	5.7	137	
119	4767	1.310	0.894	34.711	45.989	136.6	3.7	86	
120	4792	1.313	0.894	34.711	45.989	136.5	12.1	61	
121	4817	1.316	0.894	34.710	45.989	245.2	21.7	36	
122	4832	1.317	0.893	34.710	45.989	296.2	7.8	21	
124	4842	1.318	0.893	34.713	45.991	239.8	13.3	12	

SURFACE RADON — STATION: 322 LEG: IX POSITION: 43° 0' S 129° 56' W DATE: 30 APR 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
902	3	12.80(I)	12.80	34.21	25.85	6.9	0.3	260(I)	1.8(I)	0.67(I)	7.3(I)	
903	8	12.80(I)	12.80	34.22	25.85	6.5	0.5	260(I)	1.6(I)	0.67(I)	7.3(I)	
904	13	12.80(I)	12.79	34.22	25.85	6.8	0.4	260(I)	1.4(I)	0.67(I)	7.3(I)	
901	22	12.79(I)	12.79	34.22	25.85	6.8	0.4	260(I)	1.1(I)	0.67(I)	7.3(I)	
905	29	12.66(I)	12.66	34.23	25.88	7.2	0.4	262(I)	0.9(I)	0.70(I)	7.7(I)	
906	46	12.01(I)	12.00	34.23	26.01	10.1	0.5	267(I)	0.6(I)	0.81(I)	9.3(I)	
907	80	10.92(I)	10.91	34.26	26.25	9.4	0.4	273(I)	0.4(I)	0.95(I)	11.4(I)	
908	148	10.22 H	10.20	34.35	26.74	9.7	0.5	258(I)	2.0(I)	1.09(I)	14.4(I)	

BOTTOM RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
315	4098	1.293	0.958	34.708	45.976	30.2	1.7	309	
316	4202	1.280	0.933	34.710	45.982	50.0	1.9	206	
318	4251	1.270	0.918	34.709	45.983	69.4	3.4	156	
319	4301	1.265	0.907	34.710	45.986	77.3	2.2	107	
320	4350	1.250	0.887	34.710	45.990	130.4	11.3	58	
321	4376	1.240	0.874	34.710	45.992	92.8	8.3	31	
322	4391	1.235	0.867	34.710	45.993	131.4	3.6	16	
324	4397	1.235	0.867	34.711	45.994	132.5	7.4	10	

SURFACE RADON — STATION: 323 LEG: IX POSITION: 33° 43' S 138° 8' W DATE: 4 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
211	3			34.96		4.9	0.2					
212	10	20.12(I)	20.12	34.99	24.78	4.9	0.4	227(I)	3.7(I)	0.17(I)	0.0(I)	
213	15	20.14(I)	20.13	35.03	24.79	5.7	0.3	228(I)	3.6(I)	0.17(I)	0.0(I)	
214	20	20.15(I)	20.14	35.03	24.80	5.9	0.3	229(I)	3.5(I)	0.17(I)	0.0(I)	
215	36	20.19(I)	20.18	35.11	24.82	5.8	0.3	233(I)	3.3(I)	0.18(I)	0.0(I)	
216	46	19.95(I)	19.94	35.16	24.85	6.8	0.4	236(I)	3.2(I)	0.18(I)	0.0(I)	
217	100	14.40(I)	14.38	34.87	26.04	7.7	0.3	262(I)	2.4(I)	0.23(I)	0.0(I)	
218	150	13.21 H	13.19	34.81	26.24	8.8	0.4	253(I)	2.3(I)	0.41(I)	2.4(I)	

SURFACE RADON — STATION: 326 LEG: X POSITION: 14° 3' S 126° 15' W DATE: 20 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
535	5	25.74 D	25.74	35.64 D	23.66	5.7	0.3	208(I)	3.8(I)	0.65(I)	6.1(I)	SURFACE PUMP

SURFACE RADON

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
413	7	25.74 H	25.74	35.64	23.63	5.4	0.5	208(I)	3.8(I)	0.64(I)	6.0(I)	
414	13	25.73 H	25.73	35.64	23.63	4.9	0.4	208(I)	3.6(I)	0.63(I)	5.7(I)	
415	21	25.75 H	25.75	35.64	23.63	4.8	0.3	208(I)	3.3(I)	0.60(I)	5.3(I)	
416	29	25.75 H	25.74	35.65	23.63	5.7	0.4	208(I)	3.0(I)	0.57(I)	4.7(I)	
417	37	25.74 H	25.73	35.91	23.84	6.2	0.3	209(I)	2.6(I)	0.54(I)	4.1(I)	
418	52	24.97 H	24.96	36.16	24.26	6.2	0.3	209(I)	1.6(I)	0.47(I)	2.7(I)	
419	73	25.20 H	25.18	36.38	24.35	7.1	0.3	211(I)	1.2(I)	0.38(I)	1.1(I)	
420	93	24.91 H	24.89	36.49	24.53	7.3	0.9	211(I)	1.0(I)	0.33(I)	0.4(I)	

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

BOTTOM RADON — STATION: 326 LEG: X POSITION: 14° 3' S 126° 15' W DATE: 20 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	3567	1.591	1.307	34.685	45.896	35.3	1.5	169	
118	3618	1.592	1.302	34.686	45.898	30.4	1.6	119	
119	3647	1.595	1.302	34.686	45.898	34.8	3.0	90	
120	3678	1.595	1.299	34.687	45.900	36.7	3.4	59	
121	3699	1.594	1.295	34.688	45.901	46.6	1.1	38	
123	3708	1.595	1.295	34.686	45.899	49.9	3.5	29	
124	3718	1.593	1.292	34.686	45.900	55.2	1.2	19	

SURFACE RADON — STATION: 328 LEG: X POSITION: 9° 16' S 125° 32' W DATE: 21 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
101	983	4.35	4.27	34.54	27.43	20.2		85	81.1	2.75	41.9	INTERMEDIATE
103	1334	3.32	3.22	34.58	27.56	23.0		110	100.5	2.64	40.1	
105	1632	2.76	2.64	34.61	27.64	25.0		119	113.7	2.61	39.6	
108	2082	2.14	1.99	34.64	27.72	37.2		133	126.7	2.52	38.3	
111	2525	1.86	1.67	34.67	27.76	31.8		138	137.4	2.48	38.1	
117	2872	1.76	1.54	34.68	27.78	31.6		149	134.9	2.43	37.0	
120	3275	1.59	1.33	34.69	27.80	35.0		159	136.9	2.39	36.6	
123	3720	1.49	1.19	34.69	27.81	37.4		165	137.3	2.36	35.8	

BOTTOM RADON — STATION: 331 LEG: X POSITION: 4° 36' S 125° 8' W DATE: 24 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
316	4009	1.428	1.100	34.691	45.938	41.4	1.5	322	
317	4109	1.439	1.099	34.690	45.937	40.3	1.4	223	
318	4158	1.444	1.098	34.692	45.939	45.6	3.0	173	
319	4199	1.448	1.097	34.692	45.939	47.6	2.0	132	
320	4247	1.453	1.096	34.692	45.939	47.3	1.9	84	
321	4280	1.456	1.095	34.692	45.939	59.9	2.4	52	
323	4301	1.457	1.094	34.691	45.939	59.9	2.0	31	
324	4311	1.457	1.093	34.693	45.941	76.5	9.1	21	

SURFACE RADON — STATION: 332 LEG: X POSITION: 3° 1' S 124° 48' W DATE: 25 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
110	12	26.15 H	26.15	35.28	23.23	4.9	0.3	206	6.4	0.62	5.7	
109	23	26.13 H	26.12	35.28	23.24	5.1	0.5	206	5.9	0.63	5.6	
111	33	26.13 H	26.12	35.28	23.24	4.6	0.4	206	5.3	0.63	5.6	
112	45	26.13 H	26.12	35.28	23.24	5.1	0.5	206	4.9	0.62	5.6	
113	61	25.31 H	25.30	35.26	23.48	6.3	0.4	204	5.1	0.70	6.4	
114	76	20.32 H	20.31	35.19	24.85	7.0	0.4	164	7.9	1.13	11.5	
115	95	15.93 H	15.91	35.08	25.86	7.3	0.6	71	14.0	1.76	21.2	
116	121	13.42 H	13.40	34.96	26.32	8.7	0.3	44	20.3	1.94	28.5	
117	151	12.69 H	12.67	34.92	26.43	7.8	0.4	30	23.3	2.11	30.8	

BOTTOM RADON — STATION: 334 LEG: X POSITION: 0° 3' N 124° 34' W DATE: 27 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
112	4596	1.497	1.097	34.692	45.939	38.8	3.2	236	
117	4634	1.502	1.097	34.692	45.939	41.2	2.2	211	
118	4690	1.508	1.096	34.692	45.939	43.3	2.7	154	
119	4725	1.513	1.097	34.691	45.938	48.8	2.1	119	
120	4749	1.516	1.096	34.693	45.940	45.5	2.1	95	
122	4773	1.519	1.096	34.692	45.939	41.1	2.9	71	
123	4798	1.522	1.096	34.691	45.938	45.8	4.0	45	
124	4815	1.524	1.096	34.692	45.939	51.0	5.0	30	

SURFACE RADON — STATION: 336 LEG: X POSITION: 3° 1' N 124° 22' W DATE: 28 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
207	6	25.82 H	25.82	35.06	23.17	6.1	0.6	207	8.8	0.62	5.8	
208	20	25.82 H	25.82	35.06	23.17	5.4	0.3	206	7.4	0.63	5.9	
209	36	25.82 H	25.81	35.06	23.17	5.5	0.5	207	6.8	0.63	5.9	
210	51	25.81 H	25.80	35.06	23.18	5.3	0.4	207	6.4	0.63	5.9	
211	66	25.74 H	25.72	35.04	23.18	5.9	0.6	206	6.1	0.64	6.0	
212	81	22.77 H	22.75	34.72	23.81	7.6	0.4	191	7.3	0.87	8.6	
213	106	20.13 H	20.11	34.81	24.61	7.5	0.6	146	10.8	1.20	13.7	
214	131	14.71 H	14.69	34.94	26.03	9.3	0.3	62	18.5	1.79	26.0	

BOTTOM RADON — STATION: 337 LEG: X POSITION: 4° 50' N 124° 5' W DATE: 29 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	3965	1.461	1.137	34.689	45.930	42.1	3.5	312	
117	4065	1.467	1.131	34.689	45.931	63.6	3.4	213	
118	4115	1.473	1.131	34.689	45.931	68.4	3.7	163	
119	4165	1.479	1.131	34.687	45.929	68.0	2.7	113	DATA SUSPECT
120	4201	1.483	1.131	34.688	45.930	71.1	3.0	76	
121	4232	1.486	1.130	34.689	45.931	62.4	4.2	46	DATA SUSPECT
123	4251	1.488	1.130	34.689	45.931	71.0	5.9	26	
124	4260	1.489	1.130	34.689	45.931	68.7	6.6	17	

SURFACE RADON — STATION: 339 LEG: X POSITION: 8° 33' N 123° 37' W DATE: 31 MAY 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
207	8	26.93 H	26.93	33.69	21.80	4.8	0.5	208	7.2	0.25	0.0	
208	15	26.90 H	26.90	33.94	21.99	5.4	0.4	208	6.0	0.22	0.0	
209	23	26.93 H	26.92	33.98	22.02	5.6	0.4	209	5.2	0.23	0.0	
210	30	25.99 H	25.98	34.38	22.60	6.6	0.3	196	5.4	0.36	0.7	
211	36	20.20 H	20.19	34.63	24.45	8.0	0.4	166	7.9	0.71	5.6	
212	43	17.63 H	17.62	34.57	25.06	6.5	0.5	141	10.4	0.98	10.0	
213	50	16.02 H	16.01	34.62	25.48	7.1	0.6	85	16.8	1.54	19.4	
214	58	14.58 H	14.57	34.60	25.79	7.4	0.7	56	20.7	1.84	24.7	

BOTTOM RADON — STATION: 340 LEG: X POSITION: 10° 28' N 123° 38' W DATE: 1 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
112	4122	1.425	1.084	34.691	45.941	47.0	4.0	404	
117	4330	1.442	1.076	34.691	45.942	47.3	2.1	205	
118	4374	1.446	1.075	34.691	45.942	48.9	3.1	161	
119	4430	1.452	1.074	34.690	45.942	73.5	3.8	106	
120	4469	1.456	1.073	34.690	45.942	101.8	9.0	68	DATA SUSPECT
121	4498	1.459	1.072	34.691	45.943	143.1	5.6	38	
123	4518	1.460	1.071	34.691	45.943	305.1	20.1	18	
124	4525	1.461	1.071	34.691	45.943	378.5	5.7	11	

SURFACE RADON — STATION: 342 LEG: X POSITION: 14° 29' N 123° 8' W DATE: 2 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY 0/00	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_3 µM/KG	COMMENTS
106	533	7.06	7.01	34.51	27.08	13.1		5	63.9	2.90	38.7	INTERMEDIATE
108	782	5.20	5.13	34.52	27.31	18.0		10	90.0	3.09	43.6	
110	1178	3.66	3.57	34.57	27.52	23.9		35	120.7	3.06	44.2	
112	1676	2.52	2.40	34.62	27.67	28.0		73	145.7	2.85	41.7	
117	2286	1.88	1.72	34.66	27.75	32.0		104	158.3	2.66	39.4	
119	2882	1.67	1.45	34.67	27.78	37.7		122	162.0	2.58	38.4	
121	3479	1.54	1.26	34.68	27.80	37.3		134	165.1	2.51	37.4	
123	4077	1.45	1.11	34.69	27.82	47.4		155	152.2	2.42	36.1	

H THERMOMETRIC DATA (NORMALLY MEASURED BY CTD)

BOTTOM RADON — STATION: 343 LEG: X POSITION: 16° 31' N 123° 1' W DATE: 3 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
216	3953	1.510	1.186	34.682	45.916	47.0	2.1	272	
217	4003	1.507	1.177	34.683	45.918	43.6	2.7	223	
218	4052	1.506	1.170	34.686	45.922	44.5	2.2	174	
219	4101	1.506	1.165	34.685	45.922	62.3	5.6	125	
220	4140	1.506	1.160	34.684	45.922	102.5	4.0	86	
221	4170	1.507	1.158	34.686	45.924	252.1	21.7	56	
223	4191	1.508	1.156	34.685	45.923	371.7	24.5	35	
224	4198	1.508	1.155	34.686	45.924	337.7	5.1	28	

BOTTOM RADON — STATION: 344 LEG: X POSITION: 19° 30' N 122° 43' W DATE: 5 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	4112	1.505	1.162	34.685	45.922	40.5	3.4	160	
118	4133	1.506	1.161	34.684	45.922	50.3	2.8	139	
119	4152	1.508	1.161	34.685	45.923	50.6	2.9	120	
120	4173	1.510	1.160	34.685	45.923	53.2	2.3	100	
121	4193	1.510	1.158	34.685	45.923	89.7	3.7	79	DATA SUSPECT
122	4212	1.512	1.157	34.684	45.922	120.7	7.7	60	
123	4233	1.512	1.155	34.685	45.923	281.0	22.3	39	
124	4253	1.513	1.154	34.685	45.924	807.0	72.4	19	

BOTTOM RADON — STATION: 345 LEG: X POSITION: 22° 31' N 122° 12' W DATE: 6 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
116	4088	1.535	1.194	34.682	45.914	98.7	8.6	135	
117	4108	1.537	1.194	34.682	45.914	119.6	5.2	116	
118	4128	1.539	1.193	34.682	45.914	143.5	8.9	96	
119	4149	1.541	1.193	34.681	45.914	175.9	8.6	75	
120	4168	1.543	1.192	34.681	45.914	198.9	17.2	55	
121	4188	1.545	1.192	34.681	45.914	191.6	7.3	36	
123	4208	1.548	1.193	34.682	45.914	204.3	13.6	16	
124	4215	1.548	1.192	34.681	45.914	258.0	4.0	9	

BOTTOM RADON — STATION: 346 LEG: X POSITION: 25° 28' N 121° 50' W DATE: 7 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA 4	RADON DPM/100KG	1 SIG ERROR	METERS ABOVE BOTTOM	COMMENTS
117	4015	1.534	1.201	34.685	45.915	64.6	5.5	215	
118	4094	1.541	1.199	34.687	45.917	71.0	3.8	135	
119	4135	1.545	1.198	34.685	45.916	57.9	3.2	95	
120	4155	1.546	1.197	34.685	45.916	61.5	2.5	75	
121	4173	1.548	1.197	34.685	45.916	89.8	3.7	57	
122	4194	1.551	1.197	34.684	45.915	157.0	9.9	36	
123	4194	1.551	1.197	34.687	45.917	172.6	13.8	36	
124	4210	1.553	1.197	34.687	45.917	185.2	16.9	19	

SURFACE RADON — STATION: 347 LEG: X POSITION: 28° 30' N 121° 29' W DATE: 8 JUN 74

SAMPLE NO.	DEPTH M	TEMP DEG C	POTENTIAL TEMP	SALINITY ‰	SIGMA THETA	RADON DPM/100KG	1 SIG ERROR	OXYGEN µM/KG	SiO_3 µM/KG	PO_4 µM/KG	NO_2 µM/KG	COMMENTS
111	2287	1.91	1.75	34.65	27.74	36.2		96	164.8	2.76	39.9	MID-WATER
116	2493	1.80	1.62	34.66	27.76	38.2		103	166.2	2.70	39.4	SHIP AND LAB INTER-
118	2693	1.71	1.51	34.67	27.77	38.3		111	167.0	2.66	38.9	CALIBRATION
120	2891	1.66	1.45	34.67	27.78	38.7		115	168.0	2.64	38.6	

Chapter 5

INTERCALIBRATION STATIONS

Introduction

GEOSECS I, the first intercalibration and equipment testing station in the program, was an 8-day operation on R/V WASHINGTON from 23 to 30 September 1969, at 28°29′N, 121°38′W in approximately 4200 meters depth of water. During this station occupation, 43 hydrographic casts were made with a variety of sampling equipment, analytical work and development and techniques were carried out, and samples were collected for laboratory analysis and intercalibration by the participating groups. Measurements made on these first GEOSECS samples included normal hydrographic data, oxygen, ΣCO_2, alkalinity, pCO_2, C^{13}, C^{14}, tritium, dissolved He, Ne, Ar, He^3/He^4 ratios, radium, excess radon, and a large number of trace elements. Many of the results were published in the first collection of GEOSECS papers (Journal of Geophysical Research, (1970), 75, 7639-7696), about a year after the station occupation.

GEOSECS I has now been occupied a total of five times during the GEOSECS program. In November 1971, it was occupied again for 5 days on GOGO I Expedition aboard R/V MELVILLE for more extensive testing of equipment and methods. A data report on the hydrographic work on GOGO I (SIO Reference 72-77) was issued together with results from the GEOSECS shakedown operation on Leg 15 of Antipode Expedition in the Tonga Trench in 1971, when Neil Brown's STD's were first used for deep ocean profiles. The GEOSECS I station was again occupied for final testing prior to the Atlantic expedition, on GOGO II in April, 1972. The fourth occupation of this station occurred in 1974 when the GEOSECS Pacific Expedition occupied it as Station 347, the final station of the Pacific network. Finally, in May 1979, after completion of the Indian Ocean Expedition work, the final occupation of this station was designated GEOSECS Station 500, with a last series of detailed studies emphasizing radioisotopes, and development of new methods such as large-scale gas extraction from profiles of two-ton water samples for Ar^{39} studies.

Because these five station occupations provide a unique time series, both in oceanographic parameters and in the GEOSECS methodology, over a period of 10 years, the shipboard data have been included in this volume as part of the Pacific Expedition data. It is certainly the best studied deep-water station ever occupied, and as such deserves a special place in the GEOSECS hall of fame.

Harmon Craig, SIO
May 1980

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GEOSECS I

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STATION AND CAST DESCRIPTION

GEOSECS I R/V T. WASHINGTON

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
1	1	1	24 SEP 69	NAN	28DEG 29.0MIN N	121DEG 38.0MIN W	0301	3720	955	*	SHALLOW NANSEN
1	1	2	24 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	0733	4213	4340	*	BOTTOM NISKIN, RADON
1	1	3	24 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	1228		4026	*	DEEP NISKIN/NANSEN
1	1	5	24 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	1948	4264	670	*	NISKIN/NANSEN, POST TRIP
1	1	6	24 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	2330		1100	*	INTERMEDIATE NISKIN, C-14
1	1	7	25 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	1003		1000	*	NISKIN
1	1	8	25 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	1210		1500	*	INTERMEDIATE NISKIN
1	1	9	25 SEP 69	NAN	28DEG 29.0MIN N	121DEG 38.0MIN W	1626	4758	4160	*	DEEP NANSEN
1	1	10	25 SEP 69	GER	28DEG 29.0MIN N	121DEG 38.0MIN W	1900		254	*	SHALLOW GERARD
1	1	11	25 SEP 69	GER	28DEG 29.0MIN N	121DEG 38.0MIN W	2130		900	*	SHALLOW GERARD, RADON
1	1	12	25 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	2305		1012	*	INTERMEDIATE NISKIN/LEXAN
1	1	13	26 SEP 69	GER	28DEG 29.0MIN N	121DEG 38.0MIN W	0847		2500	*	INTERMEDIATE GERARD
1	1	14	26 SEP 69	NIS	28DEG 29.0MIN N	121DEG 38.0MIN W	1248		645	*	SHALLOW NISKIN/NANSEN
1	1	15	26 SEP 69	NIS	28DEG 29.0MIN N	121DEG 39.0MIN W	1510		604	*	SH. NISKIN, TRACE ELEMENTS
1	1	16	26 SEP 69	SPE	28DEG 29.0MIN N	121DEG 39.0MIN W	1550		4000	*	2 BOTTLE LEXAN, C-13, C-14
1	1	17	26 SEP 69	NIS	28DEG 29.0MIN N	121DEG 39.0MIN W	1945		3999	*	DEEP NISKIN/NANSEN
1	1	19	27 SEP 69	GER	28DEG 22.0MIN N	121DEG 39.0MIN W	0930		4000	*	DEEP GERARD
1	1	20	27 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W			59	*	SURFACE RADON
1	1	21	27 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W	1251		4110	*	DEEP NISKIN/NANSEN
1	1	22	27 SEP 69	GER	28DEG 22.0MIN N	121DEG 39.0MIN W			150	*	SHALLOW GERARD
1	1	23	27 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W	1637		4111	*	DEEP NISKIN/NANSEN
1	1	24	27 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W				*	NISKIN,TRITIUM
1	1	25	27 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W	1950		1521	*	INTERMEDIATE NISKIN/NANSEN
1	1	27	28 SEP 69	BAG	28DEG 22.0MIN N	121DEG 39.0MIN W	0000		500	*	NISKIN BAG
1	1	28	28 SEP 69	GER	28DEG 22.0MIN N	121DEG 39.0MIN W			3500	*	DEEP GERARD, C-14
1	1	31	28 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W	1437		1100	*	NISKIN/NANSEN/LEXAN
1	1	32	28 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W			600	*	SHALLOW NISKIN
1	1	33	28 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W	1756		4012	*	NISKIN/NANSEN/LEXAN
1	1	34	28 SEP 69	GER	28DEG 22.0MIN N	121DEG 39.0MIN W			2500	*	INTERMEDIATE GERARD
1	1	35	28 SEP 69	NIS	28DEG 22.0MIN N	121DEG 39.0MIN W			2603	*	NISKIN, TRACE ELEMENTS
1	1	36	28 SEP 69	NIS	28DEG 20.0MIN N	121DEG 41.0MIN W			2592	*	NISKIN, TRACE ELEMENTS
1	1	37	29 SEP 69	NIS	28DEG 20.0MIN N	121DEG 41.0MIN W	0705		1208	*	NISKIN/NANSEN, TRITIUM
1	1	38	29 SEP 69	GER	28DEG 13.0MIN N	121DEG 42.0MIN W	0800		3000	*	INTERMEDIATE GERARD, C-14
1	1	39	29 SEP 69	NIS	28DEG 13.0MIN N	121DEG 42.5MIN W	1156		4205	*	DEEP NISKIN/NANSEN
1	1	40	29 SEP 69	GER	28DEG 13.0MIN N	121DEG 42.0MIN W			2000	*	INTERMEDIATE GERARD, C-14
1	1	41	29 SEP 69	NIS	28DEG 13.0MIN N	121DEG 42.0MIN W	1500		150	*	NISKIN,TOTAL CO2,TRITIUM
1	1	43	29 SEP 69	NIS	28DEG 13.0MIN N	121DEG 42.0MIN W				*	SURFACE NISKIN,TRITIUM

STATION: 1 LEG: I POSITION: 28° 29' N 121° 38' W DATE: 24 SEP 69

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO2 µM/kg	PO4 µM/kg	NO3 µM/kg	ALK(T) µEq/kg	CO2(T) µM/kg	CO2(GC) µM/kg
3101	0			33.697					230				2284		
1201	1														
4101	5			33.743											
1401	9														
1450	14	19.53	19.53	33.695	23.915	32.412	40.521	23.977					2254	1991	
4102	40	17.45	17.44	33.742	24.473	33.036	41.209	24.650					2269		
1402	49														
1451	54	18.36	18.35	33.640	24.172	32.707	40.853	24.410					2246	1987	
4103	60	16.42	16.41	33.640	24.639	33.240	41.447	24.906					2272		
3102	98			33.923					249				2293		
1501	100			33.877									2269		1957
1202	101												2169	1964	
3150	109	15.64	15.62	33.886	25.008	33.633	41.864	25.493	240						
1403	149														
4104	150	12.03	12.01	33.668	25.592	34.358	42.719	26.270					2256		
1502	150			33.601											
1452	154	12.37	12.35	33.666	25.526	34.278	42.626	26.220					2240	2044	
3103	200			33.779					176				2283		
1203	202	9.87	9.85												
1404	247														
1453	251	9.11	9.08	34.052	26.405	35.289	43.760	27.553					2265	2180	
3104	300			34.103					117						
1204	303												2187	2168	
1405	343														
1454	348	7.59	7.55	34.143	26.708	35.660	44.194	28.311					2287	2247	
3106	370			34.166U					62						
601	400	6.99	6.95	34.192	26.831	35.811	44.371	28.678					2288	2283	
3105	401			34.165					56						
1205	403			34.200											2210
1406	441														
1455	446	6.38	6.34	34.180U	26.903	35.913	44.500	28.968					2300	2291	
1503	503			34.231											
1206	504														
3151	516	5.95	5.90	34.212	26.983	36.014	44.620	29.376	26						
1407	540														
1456	545	5.75	5.70	34.253	27.040	36.080	44.696	29.570					2324	2324	
1504	604			34.293									2338		2277
1207	605												2273	2284	
3107	606			34.269									1360		
3152	617	5.31	5.26	34.278	27.113	36.175	44.811	29.982	17						

STATION: 1 LEG: I POSITION: 28° 29' N 121° 38' W DATE: 24 SEP 69

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY 0/00	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO2 µM/kg	PO4 µM/kg	NO3 µM/kg	ALK(T) µEq/kg	CO2(T) µM/kg	CO2(GC) µM/kg
1408	640														
1457	645	5.58	5.52	34.385	27.166	36.213	44.835	30.159					2340	2345	
1208	656	5.44	5.38												
1211	906			34.477											2317
3110	908			34.458					27				2382		
3155	919	4.36	4.29	34.469	27.372	36.481	45.160	31.654	19						
2101	927			34.489									2375		
2150	937	4.30	4.22										2315	2300	
3350	989	4.06	3.98	34.496	27.425	36.549	45.242	32.038	26						
3301	1000			34.481					23				2415		
302	1006														
1212	1006														
351	1012	4.05	3.97	34.488	27.420	36.545	45.238	32.139							
1213	1012	4.01	3.93												
602	1100			34.51									2377	2364	2328
3111	1100			34.502					30						
1701	1167														
1750	1178	3.53	3.44										2335	2316	
3302	1228			34.520					40				2415		
3303	1248			34.523					38				2408		
3351	1258	3.37	3.28	34.525	27.517	36.678	45.405	33.392	35						
1702	1430														
3304	1497			34.589					50						
885	1500			34.546U									2400	2385	2327
2301	1501			34.572									2413		
303	1510														
2350	1511	2.84	2.73	34.588	27.616	36.805	45.559	34.677					2396	2394	
352	1516	2.84	2.73	34.568	27.600	36.790	45.544	34.684					2409	2394	
3305	1596			34.575					56				2440		
1703	1704														
3306	1745			34.586					67				2438		
3352	1755	2.42	2.29	34.590	27.654	36.867	45.643	35.856	69						
1704	1954														
2151	1955			34.635									2403	2376	
3307	1995			34.616					84						
3950	1997	2.08	1.94	34.619	27.705	36.938	45.731	37.034							
304	2014														
353	2019	2.09	1.95	34.621	27.706	36.938	45.731	37.135					2437	2393	
1705	2205												2361	2311	
2351	2245	1.92	1.76	34.643	27.737	36.980	45.783	38.210					2438	2381	
1751	2356	1.86	1.69										2367	2309	
1706	2457												2363	2318	
2302	2490			34.656									2440		
3951	2495	1.78	1.60	34.648	27.753	37.004	45.816	39.374							
3308	2496			34.647					115				2436		
2352	2501	1.78	1.60	34.652	27.756	37.008	45.819	39.404					2427	2376	
305	2516														
354	2521	1.79	1.61	34.652	27.756	37.007	45.818	39.494							
1707	2733														
2353	2740	1.69	1.49	34.656	27.767	37.025	45.842	40.506					2459	2358	
1708	2985			34.652									2439		2311
2103	2986														2325
2303	2993			34.658											
2152	2996	1.62	1.39	34.667	27.783	37.045	45.867	41.683							
3952	2996	1.64	1.41												
3309	3000			34.680U					116				2443		
306	3019														
355	3025	1.63	1.40												
1709	3236														
1710	3478			34.643U											
2304	3496			34.669									2445		
3310	3500			34.684											
3953	3500	1.55	1.27	34.676	27.798	37.067	45.896	43.967							
2354	3504	1.56	1.28	34.683	27.803	37.072	45.899	43.988					2430	2349	
307	3520														
356	3525	1.56	1.28	34.680	27.801	37.070	45.897	44.080					2431	2369	
2153	3697	1.54	1.24	34.677	27.801	37.072	45.902	44.849							
1711	3745														
2355	3806	1.52	1.21	34.687	27.811	37.084	45.915	45.346					2461	2357	
2154	3898	1.52	1.20	34.698	27.821	37.094	45.925	45.764					2443	2363	
1712	3994														
1752	3999	1.54	1.21										2405	2300	
3311	4002								141						
3353	4012	1.53	1.20	34.686	27.811	37.085	45.917	46.259	137						
3901	4014			34.669									2444		
308	4020														
357	4026	1.55	1.21	34.677	27.803	37.075	45.907	46.311							
3902	4064														
2104	4100			34.691									2441		
3903	4105			34.665									2442		

U UNCERTAIN DATA

STATION: 1 LEG: I POSITION: 28° 29' N 121° 38' W DATE: 24 SEP 69

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
2155	4110	1.55	1.21	34.679	27.805	37.078	45.910	46.684					2465	2325	
2356	4111	1.55	1.21	34.672	27.799	37.073	45.905	46.683					2474	2355	
3904	4135														
3905	4160			34.674									2443		
3906	4180														
3907	4195			34.673									2441		
3908	4205														

NANSEN DATA

150	0	19.47	19.47	33.704	23.937	32.435	40.546	23.937	238				2228	1992	1947
151	7	19.48	19.48	33.702	23.933	32.431	40.542	23.964	236				2243	1987	1946
152	49	17.00	16.99	33.503	24.398	32.980	41.171	24.615	261						1942
153	99	14.3	14.3	33.75	25.197	33.873	42.151	25.640	246						1943
154	149	12.08	12.06	33.688	25.598	34.362	42.720	26.271	223						2013
155	199	9.91	9.89	33.794	26.071	34.924	43.366	26.979	171						2082
156	249	9.02	8.99	34.06	26.421	35.310	43.784	27.561	135						2144
157	300	8.36	8.33	34.122	26.577	35.494	43.995	27.954	101						2163
158	350	7.61	7.57	34.144	26.706	35.657	44.190	28.318	77						2193
159	400	6.99	6.95	34.178	26.820	35.800	44.360	28.667	50						2251
160	450	6.49	6.45	34.203	26.906	35.911	44.493	28.989	35						2271
161	501	6.16	6.11	34.263	26.997	36.017	44.613	29.318	27						2286
162	551	5.95	5.90	34.342	27.086	36.115	44.720	29.641	15						2287
163	602	5.71	5.66	34.356	27.127	36.168	44.784	29.920	12						2318
164	652	5.46	5.40												
165	702	5.23	5.17	34.395	27.216	36.280	44.918	30.478	10						2317
166	753	5.09	5.03	34.418	27.250	36.322	44.966	30.751	13						2320
950	773	4.94	4.88	34.443	27.287	36.366	45.017	30.883	11						2311
167	804	4.74	4.67	34.415	27.287	36.377	45.038	31.030	20						2319
168	854	4.54	4.47	34.456	27.342	36.442	45.111	31.320	22						2326
951	869	4.55	4.48	34.459	27.344	36.443	45.112	31.390	17						2310
169	904	4.39	4.32						21						
170	955	4.25	4.17	34.485	27.396	36.511	45.195	31.848	22						2325
952	972	4.17	4.09	34.488	27.407	36.526	45.214	31.939	26						2326
953	1171	3.62	3.53	34.539	27.504	36.651	45.366	32.969	33						2339
954	1483	2.92	2.81	34.570	27.594	36.780	45.530	34.523	47						2325
955	1779	2.40	2.27	34.606	27.668	36.883	45.660	35.981	63						2338
956	2074	2.064	1.916	34.632	27.717	36.951	45.746	37.399	87						2325
957	2381	1.840	1.668	34.649	27.749	36.996	45.804	38.846	100						2323
958	2697	1.707	1.508	34.666	27.774	37.030	45.846	40.316	115						
959	2996	1.619	1.393	34.669	27.784	37.047	45.869	41.685	119						2300
960	3297	1.567	1.311	34.674	27.794	37.061	45.887	43.052	124						2299
961	3598	1.534	1.247	34.678	27.801	37.072	45.902	44.409	136						2275
962	3799	1.525	1.216	34.691	27.814	37.086	45.917	45.317	141						2270
963	3899	1.534	1.214	34.679	27.805	37.077	45.908	45.751	131						2269
964	4000	1.543	1.211	34.684	27.809	37.082	45.913	46.202	134						2274
965	4099	1.547	1.204	34.685	27.810	37.083	45.915	46.641	135U						2275
966	4129	1.550	1.203	34.702	27.824	37.097	45.928	46.786	140						2284
967	4160	1.552	1.201	34.683	27.809	37.082	45.914	46.908	139						

U UNCERTAIN DATA

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STATION AND CAST DESCRIPTION

ANTIPODE R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
15	1	1	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0015		211	*	GERARD CS -137, T,S
15	1	2	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0045		163	*	GERARD CS -137, T,S
15	1	3	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0115		134	*	GERARD CS -137, T,S
15	1	4	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0137		106	*	GERARD CS -137, T,S
15	1	5	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0157		53	*	GERARD CS -137, T,S
15	1	6	14 AUG 71	GER	14DEG 4.5MIN S	171DEG 10.0MIN W	0215		0	*	GERARD CS -137, T,S
15	1	7	14 AUG 71	PMP	14DEG 4.5MIN S	171DEG 10.0MIN W	0130		10	*	SURFACE RADON PUMP
15	2	1	16 AUG 71	CTD	15DEG 22.0MIN S	172DEG 5.0MIN W	2214	5811		*	CTD, 4500 M
15	2	2	17 AUG 71	PMP	15DEG 22.0MIN S	172DEG 5.0MIN W	0150		0	*	SURFACE PUMP, RADON
15	2	3	17 AUG 71	NIS	15DEG 22.0MIN S	172DEG 5.0MIN W	0258		1579	*	INTERMEDIATE NISKIN/NANSEN
15	2	4	17 AUG 71	NIS	15DEG 22.0MIN S	172DEG 5.0MIN W	0738		5642	*	DEEP NISKIN/NANSEN
15	3	1	17 AUG 71	SDT	15DEG 20.0MIN S	172DEG 27.0MIN W	1226			*	DEEP SDT
15	3	2	17 AUG 71	SDT	15DEG 20.0MIN S	172DEG 27.0MIN W	2145			*	DEEP SDT
15	3	3	18 AUG 71	SDT	15DEG 20.0MIN S	172DEG 27.0MIN W	0055			*	DEEP SDT
15	3	4	17 AUG 71	PMP	15DEG 20.0MIN S	172DEG 27.0MIN W	1230		0	*	SURFACE RADON PUMP
15	4	1	18 AUG 71	SDT	15DEG 21.5MIN S	172DEG 40.0MIN W	0600			*	SDT - 4500 M
15	5	1	18 AUG 71	SDT	15DEG 19.0MIN S	172DEG 48.0MIN W	0945			*	SDT - 4500 M
15	6	1	18 AUG 71	NIS	16DEG 40.0MIN S	172DEG 10.0MIN W	2225	7493	1624	*	SHALLOW NISKIN/NANSEN
15	6	2	19 AUG 71	NIS	16DEG 40.0MIN S	172DEG 10.0MIN W	0107	7493	6076	*	DEEP NISKIN/NANSEN
15	6	3	18 AUG 71	PMP	16DEG 40.0MIN S	172DEG 8.0MIN W	2230		60	*	SURFACE PUMP, RADON
15	7	1	19 AUG 71	SDT	17DEG 59.5MIN S	172DEG 54.0MIN W	1315			*	SDT - 3800 M
15	8	1	19 AUG 71	SDT	17DEG 59.0MIN S	172DEG 40.0MIN W	1650			*	SDT - 4500 M
15	9	1	19 AUG 71	SDT	17DEG 59.0MIN S	172DEG 19.5MIN W	2120			*	SDT - 4500 M
15	10	1	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0234	5694	1286	*	INTERMEDIATE GERARD, C-14
15	10	2	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0506	5694	4685	*	DEEP GERARD, C-14
15	10	3	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0848	5694	3494	*	INTERMEDIATE GERARD, C-14
15	10	4	20 AUG 71	CTD	17DEG 58.0MIN S	172DEG 1.0MIN W	1105			*	CTD, 4500 M
15	10	5	20 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	1421	5694	1422	*	SHALLOW NISKIN/NANSEN
15	10	6	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1608		760	*	SHALLOW GERARD, C-14
15	10	7	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1652		560	*	SHALLOW GERARD, C-14
15	10	8	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1733		460	*	SHALLOW GERARD, C-14
15	10	9	20 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1804		385	*	SHALLOW GERARD, C-14
15	10	10	20 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	1904		249	*	SHALLOW NISKIN, TRITIUM
15	10	11	20 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	2121	5694	5602	*	DEEP NISKIN/NANSEN
15	10	12	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0027		3834	*	INTERMEDIATE GERARD, C-14
15	10	13	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0300		3005	*	INTERMEDIATE GERARD, C-14
15	10	14	21 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	0145			*	NISKIN, OXY-18
15	10	15	21 AUG 71	BAG	17DEG 58.0MIN S	172DEG 1.0MIN W	0145			*	NISKIN BAG (FAILED)
15	10	16	21 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	1205			*	NISKIN, OXY-18
15	10	17	21 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	1421	6018		*	NISKIN/NANSEN (FAILED)
15	10	18	21 AUG 71	CTD	17DEG 58.0MIN S	172DEG 1.0MIN W	1700			*	CTD, 4500 M
15	10	19	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	2014		2221	*	INTERMEDIATE GERARD, C-14
15	10	20	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	2245		260	*	SHALLOW GERARD, C-14
15	10	21	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	2300		160	*	SHALLOW GERARD, C-14
15	10	22	21 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	2325		50	*	SHALLOW GERARD, C-14
15	10	23	22 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	0005	5817		*	NISKIN, OXY-18
15	10	24	22 AUG 71	NIS	17DEG 58.0MIN S	172DEG 1.0MIN W	0228	5694	5829	*	BOTTOM NISKIN/NANSEN
15	10	25	22 AUG 71	SPE	17DEG 58.0MIN S	172DEG 1.0MIN W	0833			*	SPONGE CAST (FAILED)
15	10	26	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	0948		1070	*	SHALLOW GERARD, CS -137
15	10	27	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1032		260	*	SHALLOW GERARD, CS -137
15	10	28	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1135		250	*	SHALLOW GERARD, CS -137
15	10	29	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1201		190	*	SHALLOW GERARD, CS -137
15	10	30	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1220		133	*	SHALLOW GERARD, CS -137
15	10	31	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1240		54	*	SHALLOW GERARD, CS -137
15	10	32	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1310		110	*	SHALLOW GERARD, RADON
15	10	33	22 AUG 71	GER	17DEG 58.0MIN S	172DEG 1.0MIN W	1325		70	*	SHALLOW GERARD, RADON
15	11	1	23 AUG 71	NIS	20DEG 32.0MIN S	172DEG 47.5MIN W	1126	6282	1425	*	SHALLOW NISKIN/NANSEN
15	11	2	23 AUG 71	CTD	20DEG 32.0MIN S	172DEG 47.5MIN W	1230			*	CTD, 4500 M
15	11	3	23 AUG 71	NIS	20DEG 32.0MIN S	172DEG 47.5MIN W	1230	6282	4890	*	DEEP NISKIN/NANSEN
15	11	4	23 AUG 71	PMP	20DEG 32.0MIN S	172DEG 47.5MIN W	1200		60	*	SURFACE PUMP, RADON
15	12	1	23 AUG 71	SDT	20DEG 30.0MIN S	173DEG 5.0MIN W	1957			*	SDT - 4500 M
15	13	1	23 AUG 71	SDT	20DEG 29.0MIN S	173DEG 22.0MIN W	2333			*	SDT - 4500 M
15	14	1	24 AUG 71	SDT	20DEG 30.0MIN S	173DEG 30.0MIN W	0200			*	SDT - 4500 M
15	15	1	24 AUG 71	SDT	20DEG 29.0MIN S	173DEG 39.5MIN W	0510			*	SDT - 4500 M
15	16	1	24 AUG 71	SDT	20DEG 31.0MIN S	173DEG 43.5MIN W	3733			*	SDT - 4500 M

STATION: 2 LEG: XV POSITION: 15° 22' S 172° 5' W DATE: 17 AUG 71

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
301	30	27.36	27.35	35.430	22.972	31.228	39.106	23.100	203	1.0	0.21		2335	1914	1921
302	99	27.33	27.31	35.827	23.286	31.538	39.413	23.707	197	1.0	0.25		2355	1971	1962
303	298	17.72	17.67	35.406	25.690	34.225	42.371	26.999	183	2.9	0.80		2331	2087	2069
304	498	8.80	8.74	34.562	26.857	35.749	44.227	29.132	173	16.6	1.97				
305	649	6.22	6.16	34.425	27.119	36.134	44.726	30.120	173	26.4	2.21		2296	2181	2199
306	800	4.91	4.84	34.459	27.304	36.384	45.036	31.024	158	49.9	2.48		2324	2251	2216
307	900	4.38	4.31	34.484	27.382	36.489	45.166	31.576	150	61.6	2.57		2331	2267	2246
308	1000	4.04	3.96	34.506	27.435	36.560	45.254	32.099	147	68.4	2.62		2331	2264	2243
309	1099	3.60	3.52	34.529	27.497	36.646	45.361	32.631	150	79.2	2.61				
310	1197	3.40	3.31	34.546	27.530	36.689	45.414	33.123	142	86.0	2.71		2330	2333	2277
311	1391	3.03	2.93	34.570	27.584	36.764	45.507	34.085	143	95.8	2.71		2363	2273	2287
401	1403	2.93	2.83	34.573	27.595	36.780	45.529	34.155	139	97.7	2.73				
312	1579	2.62	2.51	34.605	27.648	36.850	45.615	35.031	147	105.6	2.71				
402	1709	2.45	2.33	34.609	27.666	36.878	45.651	35.655	147	110.5	2.71		2378	2307	2290
403	2015	2.14	2.00	34.635	27.713	36.942	45.733	37.121	157U	119.2U	2.65		2382	2316	2289
404	2321	1.95	1.78	34.645	27.737	36.978	45.780	38.554	151	127.1	2.68		2393	2316	2288
405	2526	1.87	1.68	34.657	27.754	37.000	45.807	39.509	151	131.0	2.68		2401	2315	2304
406	2729	1.81	1.61	34.665	27.766	37.017	45.827	40.445	154	133.9	2.66		2398	2314	2312
407	3035	1.70	1.47	34.667	27.778	37.036	45.854	41.847	157	133.9	2.67		2395	2319	2314
408	3340	1.59	1.33	34.677	27.795	37.061	45.886	43.244	167	136.8	2.63		2395	2313	2306
409	3442	1.54	1.27	34.683	27.804	37.073	45.902	43.714	167	133.9	2.61				
410	3543	1.503	1.223	34.687	27.810	37.082	45.913	44.175	173	131.9	2.52		2390	2301	2297
411	3644			34.691					179	129.0	2.55				
425	3650	1.466	1.175	34.702	27.826	37.100	45.933	44.671	183	130.0	2.48				
412	3847			34.708					201	118.3	2.41		2365	2275	2276
426	3852	1.329	1.020	34.711	27.843	37.126	45.967	45.602	201	120.2	2.43				
413	4047			34.720					206	118.3	2.37		2358	2270	2272
427	4052	1.211	0.884	34.713	27.853	37.144	45.993	46.512	206	118.3	2.32				
414	4247			34.712					210	119.2	2.31		2356	2264	2249
428	4253	1.098	0.751	34.717	27.865	37.163	46.018	47.426	209	119.2	2.36				
415	4446			34.711					213	119.2	2.32		2356	2263	2252
429	4451	1.05	0.68	34.716	27.868	37.171	46.030	48.309	216	120.2	2.36				
416	4842			34.713					212	121.2	2.34		2357	2264	2256
430	4847	1.052	0.636	34.711	27.867	37.172	46.034	50.045	212	120.2	2.31				
417	5233			34.711					213	121.2	2.32		2359	2259	2253
431	5238	1.09	0.62	34.716	27.871	37.177	46.040	51.749	213	123.1	2.37				
418	5642			34.712					214	122.2	2.36				2258

STATION: 6 LEG: XV POSITION: 16° 40' S 172° 10' W DATE: 18 AUG 71

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
101	31	26.94	26.93	35.111	22.864	31.134	39.026	22.996	207	1.7	0.22	1.2	2304	1917	1921
102	103	26.90	26.87	35.353	23.064	31.333	39.224	23.503	206	1.6	0.23	0.5			
103	257	19.94	19.89	35.660	25.316	33.776	41.852	26.435	178	1.4	0.51	4.4	2334	2050	2053
104	408	13.48	13.42	35.032	26.367	35.058	43.350	28.190	185	4.5	1.01	12.1	2301	2093	2094
105	559	7.37	7.31	34.443	26.978	35.937	44.477	29.549	204	12.0	1.81	24.2			
106	658	6.05	5.99	34.388	27.111	36.135	44.735	30.157	190	22.3	2.15	28.9	2292	2189	2185
107	807	4.55	4.48	34.400	27.296	36.396	45.066	31.057	178	42.4	2.39	29.2	2303	2208	2216
108	906	4.24	4.17	34.464	27.380	36.495	45.180	31.606	162	58.3	2.53	34.2	2323	2232	2232
109	1006	3.87	3.79	34.486	27.436	36.570	45.273	32.133	156	67.4	2.59	36.6	2329	2244	2266
110	1108	3.56	3.48	34.506	27.483	36.633	45.351	32.660	156	74.5	2.63	37.1			
111	1208	3.22	3.13	34.531	27.535	36.704	45.438	33.184	159	82.4	2.42U	34.0U	2364	2270	2274
205	1412	2.89	2.79	34.578	27.603	36.790	45.541	34.205	145	97.2	2.73	37.2	2361	2288	2303
112	1415	2.84	2.74												
113	1624	2.58	2.46	34.599	27.647	36.851	45.618	35.239	148	104.4	2.71	37.8			
201	1715	2.45	2.33	34.608	27.665	36.877	45.651	35.682	150	108.9	2.71	37.5	2366	2285	2309
202	2017	2.17	2.03	34.634	27.710	36.938	45.727	37.126	153	117.2	2.72	37.3	2384	2306	2310
207	2321	1.98	1.81	34.650	27.739	36.979	45.779	38.554	152	124.2	2.71	39.1	2388	2315	2312
203	2524	1.88	1.69	34.661	27.757	37.002	45.808	39.502	151	131.7	2.70	38.1	2394	2308	2310
204	2725	1.79	1.59	34.662	27.765	37.017	45.829	40.428	153	130.0	2.71	38.2	2400	2333	2313
209	3029	1.72	1.49	34.669	27.778	37.035	45.852	41.819	158	129.7	2.67	37.2			
206	3332	1.63	1.37	34.677	27.792	37.056	45.879	43.202	164	129.4	2.65	37.2	2394	2316	2314
208	3435	1.57	1.30	34.684	27.803	37.070	45.897	43.679	170	128.1	2.58	36.5			
210	3536	1.512	1.233	34.693	27.815	37.086	45.916	44.147	182	122.0	2.55	35.7			
211	3638	1.460	1.171	34.704	27.827	37.102	45.935	44.620	191	118.1	2.46	34.0	2375	2283	2286
212	3840	1.322	1.015	34.715	27.846	37.130	45.971	45.552	206	109.4	2.37	33.1	2354	2267	2260
213	4043	1.222	0.895	34.716	27.855	37.145	45.993	46.473	209	112.6	2.37	32.7			2264
214	4244			34.714					212	114.0	2.37	32.6	2355	2257	2263
225	4251	1.136	0.788	34.716	27.861	37.158	46.011	47.410	212	115.8	2.37	32.0			
215	4448			34.713					213	115.3	2.36	33.2	2351	2257	2259
226	4455	1.113	0.742	34.716	27.864	37.163	46.019	48.315	212	114.7	2.37	32.4			
220	4855			34.714					215	119.3	2.36	32.4	2354	2257	2249
227	4860	1.088	0.669	34.713	27.866	37.170	46.030	50.097	213	119.1	2.38	32.6			
217	5261			34.712					215	119.9	2.38	33.8	2351	2256	2259
228	5266	1.104	0.632	34.714	27.869	37.175	46.037	51.867	215	116.8	2.39	33.6			
218	5669			34.713					216	116.8	2.36	33.6	2354	2266	2252
229	5674	1.142	0.615	34.712	27.869	37.175	46.038	53.625	214	122.3	2.37	33.2			

U UNCERTAIN DATA

STATION: 6 LEG: XV POSITION: 16° 40' S 172° 10' W DATE: 18 AUG 71

SAMPLE NUMBER	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	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
219	6071			34.713					215	121.6	2.38	33.8	2354	2259	2255
230	6076	1.180	0.595	34.710	27.868	37.176	46.040	55.345	214	122.0	2.38	33.8			

STATION: 10 LEG: XV POSITION: 17° 58' S 172° 1' W DATE: 20 AUG 71

SAMPLE NUMBER	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	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
501	31	26.25	26.24	35.118	23.083	31.371	39.280	23.215	237U	0.9	0.25	0.2	2308	1949	1910
502	60	26.27	26.26	35.120	23.080	31.368	39.277	23.337	213	0.0	0.23	0.2			
503	81	26.29	26.27	35.123	23.078	31.365	39.273	23.424	210	0.4	0.23	0.1			
504	121	25.74	25.71	35.665	23.657	31.953	39.870	24.175	197	7.6	0.31	0.1	2339	1986	1962
505	152	24.01	23.98	35.784	24.267	32.607	40.569	24.920	180	0.5	0.37	1.4			
506	202	22.50	22.46	35.837	24.746	33.128	41.130	25.618	172	0.4	0.50	3.1	2346	2037	2032
1005	249	19.82	19.77	35.644	25.335	33.799	41.879	26.420			0.07				
507	304	18.09	18.04	35.464	25.643	34.165	42.299	26.976		1.1	0.68	6.3	2321	2069	2076
508	354	16.04	15.98	35.337	26.040	34.633	42.834	27.604	196	2.6	0.69	7.0			
509	405	13.87	13.81	35.097	26.336	35.011	43.288	28.142	192	2.7	0.91	10.4	2295	2089	2081
510	456			34.852					191	5.0	1.19	14.9			
511	506	9.60	9.54	34.636	26.786	35.641	44.085	29.087	190	7.6	1.53	19.5	2287	2130	2119
512	608	6.76	6.70	34.407	27.034	36.023	44.591	29.838	197	14.8	1.93	27.0	2276	2152	2164
513	709	5.65	5.59	34.382	27.156	36.200	44.819	30.443	190	23.4	2.15	30.5			
514	811			34.397					176	39.3	2.35	33.3	2302	2207	2203
525	816	4.67	4.60	34.397	27.281	36.375	45.039	31.081	176	40.3	2.36	33.7			
515	913			34.435					172	52.2	2.44	35.0			
526	917	4.18	4.11	34.441	27.368	36.487	45.175	31.646	167	52.8	2.44	34.6			
516	1014			34.490					156	67.4	2.53	36.4	2329	2257	2233
527	1019	3.82	3.74	34.495	27.448	36.585	45.290	32.206	155	68.2	2.52	36.4			
517	1116			34.515					155	76.5	2.57	36.6			
528	1121	3.51	3.43	34.521	27.499	36.653	45.373	32.738	151	76.5	2.56	37.1			
518	1215			34.533					151	83.4	2.59	37.1	2347	2269	2266
529	1221	3.24	3.15	34.538	27.539	36.706	45.440	33.248	151	83.9	2.58	37.1			
1105	1253	3.13	3.04	34.542	27.552	36.726	45.465	33.412	150	86.4	2.60	32.4U			
519	1317			34.557					149	90.8	2.64	37.1			
530	1322	3.01	2.91	34.557	27.575	36.755	45.500	33.758	148	89.6	2.61	38.3			
1101	1354	2.94	2.84	34.559	27.583	36.767	45.516	33.916	149	95.1	2.61	34.6U			
520	1417			34.736U					156U	84.4U	2.33U	34.0U			
531	1422	2.82	2.72	34.574	27.606	36.796	45.551	34.257	149	95.8	2.60	38.2			
1102	1454	2.78	2.68	34.571	27.607	36.800	45.557	34.408	149	98.1	2.60	35.6			
1103	1960	2.24	2.10	34.620	27.693	36.917	45.703	36.844	149	116.8	2.61	38.5	2379	2303	2290
1104	2213	2.03	1.87	34.638	27.725	36.961	45.759	38.045	149	125.2	2.63	38.5	2388	2303	2302
1109	2467	1.92	1.74	34.644	27.740	36.983	45.787	39.223	153	124.3	2.61	38.2	2392	2314	2301
1106	2720	1.81	1.61	34.655	27.758	37.009	45.820	40.397	154	132.0	2.60	37.8	2395	2315	2301
1108	2974	1.72	1.49	34.660	27.770	37.027	45.844	41.563	154	134.6	2.60	37.9	2401	2321	2310
1111	3076	1.71	1.47	34.663	27.774	37.032	45.850	42.027	149	136.0	2.61	38.1			
1110	3177	1.65	1.40	34.666	27.781	37.043	45.864	42.494	156	134.3	2.59	37.9	2398	2312	2301
1112	3379	1.60	1.34	34.672	27.791	37.057	45.882	43.414	161	136.2	2.57	37.8	2394	2307	2283
1113	3481	1.57	1.29	34.703U	27.818	37.086	45.912	43.899	166	122.9	2.43	36.1			
1114	3578			34.688					179				2381	2296	2272
1125	3583	1.510	1.226	34.691	27.813	37.085	45.915	44.356	177	125.4	2.44	36.1			
1115	3780			34.708					199				2354	2253	2264
1126	3785	1.358	1.056	34.708	27.838	37.119	45.959	45.296	198	113.1	2.32	34.0			
1116	3984			34.709					207				2352	2256	2263
1127	3989	1.253	0.931	34.711	27.849	37.137	45.983	46.224	204	114.0	2.30	33.4			
1117	4388			34.703					211				2345	2252	2254
1128	4393	1.093	0.730	34.706	27.857	37.157	46.014	48.037	209	116.6	2.30	34.2			
1118	4793			34.702					213				2355	2267	2256
1129	4798	1.061	0.651	34.703	27.859	37.164	46.025	49.823	209	120.0	2.30	34.6			
1119	5196			34.701					212				2352	2261	2259
1130	5201	1.088	0.626	34.701	27.859	37.165	46.028	51.577	210	119.8	2.30	34.5			
2425	5592	1.116	0.601	34.706	27.865	37.172	46.036	53.272		122.2					
1120	5597			34.699					212				2355	2256	2252
1131	5602	1.117	0.600	34.702	27.861	37.169	46.033	53.312	211	122.2	2.30	31.6			
2414	5603			34.703						122.8					
2401	5613	1.216U	0.694	34.703	27.857	37.159	46.018	53.340		123.1					
2426	5630	1.126	0.605	34.705	27.864	37.171	46.034	53.433		121.9					
2415	5646			34.703						122.8					
2402	5656	1.122	0.598	34.702	27.862	37.169	46.033	53.544		122.7					
2427	5667	1.129	0.603	34.705	27.864	37.171	46.035	53.592		123.1					
2416	5677			34.704						122.4					
2403	5689	1.137	0.608	34.702	27.861	37.168	46.032	53.683		123.1					
2404	5710	1.125	0.593	34.702	27.862	37.170	46.034	53.777		122.7					
2405	5721	1.124	0.591	34.703	27.863	37.171	46.035	53.825		123.2					
2428	5731	1.131	0.596	34.704	27.863	37.171	46.035	53.867		122.8					
2409	5743	1.139	0.602	34.701	27.861	37.168	46.032	53.915		122.9					
2406	5754	1.141	0.603	34.700	27.860	37.167	46.031	53.961		122.4					

STATION: 10 LEG: XV POSITION: 17° 58' S 172° 1' W DATE: 20 AUG 71

SAMPLE NUMBER	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	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
2407	5775			34.701						123.9					
2408	5786	1.137	0.595	34.701	27.861	37.169	46.033	54.101		122.0					
2410	5797	1.140	0.596	34.702	27.862	37.170	46.034	54.149		123.3					
2411	5808	1.152	0.606	34.701	27.860	37.168	46.031	54.193		122.9					
2412	5819	1.126	0.579	34.702	27.863	37.172	46.036	54.246		122.4					
2413	5829	1.135	0.587	34.701	27.861	37.170	46.034	54.287		122.8					

STATION: 11 LEG: XV POSITION: 20° 32' S 172° 47' W DATE: 23 AUG 71

SAMPLE NUMBER	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	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
101	21	24.53	24.53	35.011	23.521	31.856	39.811	23.611	215	0.6	0.16	0.1	2308	1930	1931
102	103	22.86	22.84	35.564	24.431	32.805	40.800	24.875	205	0.6	0.22	0.5			1976
103	205	19.80	19.76	35.631	25.328	33.793	41.873	26.221	183	0.9	0.51	4.3	2341	2064	2028
104	305	16.08	16.03	35.258	25.968	34.560	42.761	27.316		2.9	0.90	9.8			2089
105	404	13.03	12.97	35.026	26.454	35.163	43.471	28.263	195	3.5	0.99	12.1	2311	2107	2113
106	503	9.41	9.35	34.622	26.806	35.670	44.122	29.096	191	7.0	1.52	20.4			2126
107	601	7.32	7.26	34.435	26.979	35.941	44.484	29.743	209	11.5	1.77	25.4	2275	2151	2151
108	700	6.16	6.09	34.372	27.085	36.104	44.700	30.322	201	16.8	2.02	29.2			2172
109	800	5.42	5.35	34.363	27.169	36.225	44.855	30.880	191	28.0	2.19	31.9	2294	2200	2191
110	949	4.37	4.29	34.397	27.314	36.424	45.103	31.735	178	46.0	2.38	35.6			2220
111	1104	3.57	3.49	34.452	27.439	36.590	45.308	32.597	171	65.0	2.47	36.6	2330	2246	2238
112	1262	3.02	2.93	34.514	27.539	36.719	45.464	33.445	163	81.9	2.52	37.5			2268
325	1340	2.91	2.81	34.547	27.576	36.762	45.512	33.846	155		0.00				
113	1425	2.78	2.68	34.558	27.596	36.789	45.546	34.263	156	94.5	2.57	37.3			2287
305	1440	2.72	2.62	34.564	27.606	36.803	45.562	34.345	153	97.7	2.57	37.4			
301	1542	2.60	2.49	34.580	27.630	36.833	45.599	34.843	153	102.9	2.58	37.5	2375	2303	2276
311	1848	2.38	2.25	34.603	27.668	36.884	45.662	36.298	151	112.4	2.59	37.9			2277
302	2155	2.16	2.00	34.625	27.705	36.934	45.724	37.752	151	120.6	2.60	38.1	2389	2312	2288
307	2309	2.08	1.91	34.634	27.719	36.953	45.748	38.473	150	124.7	2.61	38.5			2303
326	2463	1.992	1.810	34.641	27.732	36.972	45.772	39.193	149	127.7	2.60	38.3			
303	2616	1.91	1.71	34.648	27.745	36.989	45.795	39.905	152	129.6	2.60	38.3	2402	2334	2292
327	2773	1.838	1.629	34.656	27.757	37.007	45.816	40.634	153	132.0	2.58	38.3			
304	2927	1.78	1.56	34.656	27.762	37.016	45.829	41.339	153	134.6	2.58	37.8	2407	2325	2307
328	3083	1.727	1.490	34.661	27.771	37.029	45.845	42.055	157		2.58	37.8			
309	3397	1.57	1.30	34.684	27.802	37.070	45.896	43.508	176	125.2	2.46	36.1			2294
306	3499	1.56	1.28	34.700	27.817	37.085	45.912	43.979	189	115.8	2.36		2372	2280	2265
329	3604	1.514	1.227	34.705	27.825	37.096	45.926	44.460	193	112.2	2.33	34.2			
308	3707	1.46	1.16	34.710	27.833	37.108	45.941	44.933	200	112.2	2.30	33.4	2354	2262	2249
310	4239	1.15	0.80	34.711	27.857	37.152	46.005	47.350	213	116.9	2.28	33.6	2356	2260	2248
312	4561	1.06	0.68	34.706	27.860	37.163	46.023	48.784	211	119.7	2.29	33.4	2359	2268	2254
313	4890	1.07	0.65	34.704	27.860	37.165	46.026	50.225	213	121.2	2.29	34.0	2359	2268	2250
330	3920	1.311	0.995	34.714	27.847	37.132	45.974	45.909	205	113.3	2.27				

U UNCERTAIN DATA

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STATION AND CAST DESCRIPTION

GOGO I R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
1	1	1	17 NOV 71	GER	20DEG 29.5MIN N	121DEG 43.0MIN W	0830	4345	3969	*	DEEP GERARD, C-14
1	1	2	17 NOV 71	GER	28DEG 27.5MIN N	121DEG 42.0MIN W	0954	4345	1589	*	INTERMEDIATE GERARD, C-14
1	1	3	17 NOV 71	GER	28DEG 27.5MIN N	121DEG 42.0MIN W	1116	4345	1502	*	INTERMEDIATE GERARD, C-14
1	1	4	17 NOV 71	GER	28DEG 27.5MIN N	121DEG 42.0MIN W	1213	4345	994	*	INTERMEDIATE GERARD, C-14
1	1	5	17 NOV 71	ROS	28DEG 27.5MIN N	121DEG 42.0MIN W	1530	4345		*	SHALLOW ROSETTE (MALFUNCTION)
1	1	6	17 NOV 71	GER	28DEG 28.5MIN N	121DEG 42.0MIN W	1716		300	*	SHALLOW GERARD, C-14
1	1	7	17 NOV 71	GER	28DEG 29.5MIN N	121DEG 42.5MIN W	1754		256	*	SHALLOW GERARD, C-14
1	1	8	17 NOV 71	GER	28DEG 29.0MIN N	121DEG 42.5MIN W	1830		222	*	SHALLOW GERARD, C-14
1	1	9	17 NOV 71	GER	28DEG 29.5MIN N	121DEG 43.0MIN N	1856		190	*	SHALLOW GERARD, C-14
1	1	10	17 NOV 71	GER	28DEG 30.0MIN N	121DEG 43.0MIN W	1929		147	*	SHALLOW GERARD, C-14
1	1	11	17 NOV 71	GER	28DEG 30.0MIN N	121DEG 43.0MIN W	2005		40	*	SHALLOW GERARD, C-14
1	1	12	17 NOV 71	GER	28DEG 30.0MIN N	121DEG 43.0MIN W	2035		495	*	SHALLOW GERARD, C-14
1	1	13	17 NOV 71	ROS	28DEG 30.5MIN N	121DEG 43.0MIN W	2219		510	*	SHALLOW ROSETTE
1	1	14	18 NOV 71	SPE	28DEG 30.0MIN N	121DEG 43.0MIN W	0135			*	NISKIN TUBE CAST
1	1	15	18 NOV 71	ROS	28DEG 31.5MIN N	121DEG 43.0MIN W	0500		2198	*	INTERMEDIATE ROSETTE
1	1	16	18 NOV 71	SPE	28DEG 33.0MIN N	121DEG 46.0MIN W	0830			*	SPONGE CAST, 3500M
1	1	17	18 NOV 71	GER	28DEG 32.0MIN N	121DEG 45.5MIN W	1745		2481	*	INTERMEDIATE GERARD, C-14
1	1	18	18 NOV 71	GER	28DEG 32.0MIN N	121DEG 45.5MIN W	1828		210	*	SHALLOW GERARD, C-14
1	1	19	18 NOV 71	GER	28DEG 32.0MIN N	121DEG 45.5MIN W	1847		180	*	SHALLOW GERARD, C-14
1	1	20	18 NOV 71	ROS	28DEG 31.5MIN N	121DEG 43.0MIN W	2025		4090	*	DEEP ROSETTE
1	1	21	19 NOV 71	NIS	28DEG 30.0MIN N	121DEG 44.0MIN W	0104		4298	*	DEEP NISKIN
1	1	22	18 NOV 71	PMP	28DEG 32.0MIN N	121DEG 45.5MIN W	1800		0	*	SURFACE PUMP,CS-137

STATION: 1 LEG: I POSITION: 28° 27' N 121° 42' W DATE: 17 NOV 71

SAMPLE NUMBER	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	CO_2(GC) µM/kg
1301	21	17.42	17.42	33.442	24.250	32.818	40.996	24.343	244	2.9	0.30	0.1			1960
1302	35	17.42	17.41	33.444	24.252	32.820	40.998	24.407	245	2.9	0.30	0.1			
1303	60	15.08	15.07	33.354	24.723	33.374	41.630	24.990	272	3.9	0.26	0.1			1954
1304	111	13.47	13.45	33.600	25.255	33.964	42.273	25.753	250	3.9	0.33	0.4			
1305	160	10.32	10.30	33.598	25.848	34.686	43.113	26.577	205	14.7	1.15	12.1			2056
1306	189	9.42	9.40	33.810	26.165	35.038	43.500	27.029	178	20.5	1.46	18.4			
1307	220	8.73	8.71	33.955	26.388	35.291	43.779	27.397	158	28.4	1.72	21.9			
1308	258	8.09	8.06	34.025	26.541	35.472	43.986	27.728	130	36.2	2.03	26.7			2146
1309	308	7.65	7.62	34.104	26.668	35.618	44.150	28.087	92	46.9	2.40	30.9			2193
1310	308	7.63	7.60	34.100	26.668	35.619	44.152	28.087	93	46.9	2.40	30.9			
1311	360	7.09	7.05	34.150	26.783	35.760	44.315	28.446	65	54.8	2.67	33.7			
1312	510	6.24	6.19	34.304	27.019	36.034	44.626	29.381	18	77.2	3.11	39.1			2301
1501	602	5.493	5.441	34.358	27.155	36.206	44.832	29.951	10	89.0	3.26	41.3			2324
1502	701	5.087	5.028	34.406	27.241	36.312	44.957	30.501	12	95.8	3.28	42.4			2306
1503	801	4.646	4.580	34.435	27.314	36.408	45.073	31.045	15	103.6	3.30	43.0			2317
1504	850	4.468	4.399	34.454	27.348	36.451	45.125	31.309	17	106.6	3.33	43.3			2324
1505	903	4.301	4.229	34.461	27.372	36.484	45.165	31.582	19	110.5	3.32	43.5			2322
1506	1000	3.987	3.909	34.492	27.429	36.557	45.254	32.095	26	117.3	3.32	43.8			2326
1507	1202	3.451	3.360	34.534	27.516	36.673	45.395	33.130	36	131.0	3.28	43.7			2334
1508	1403	2.998	2.895	34.568	27.585	36.767	45.512	34.143	46	142.7	3.23	43.2			2329
1509	1604	2.634	2.518	34.598	27.642	36.843	45.607	35.139	59	150.5	3.15	42.7			2327
1510	1805	2.349	2.220	34.617	27.681	36.898	45.678	36.116	72	156.4	3.07	42.0			2335
1511	2004	2.120	1.977	34.633	27.713	36.943	45.735	37.072	83	160.3	2.97	41.2			2317
1512	2198	1.980	1.822	34.643	27.733	36.972	45.771	37.987	94	163.2	2.91	40.6			2324
2001	2309			34.649					95	164.2	2.87	40.3			
2112	2336	1.882	1.713	34.653	27.749	36.994	45.799	38.638	100	164.2	2.86	40.2			
2002	2409			34.652					99	164.2	2.84	40.0			2322
2003	2509			34.660					105	165.2	2.81	39.7			
2004	2608			34.663					108	165.2	2.81	39.5			2312
2113	2649	1.733	1.538	34.665	27.771	37.025	45.840	40.094	111	165.2	2.78	39.3			
2005	2804			34.669					114	166.2	2.76	39.1			2327
2114	2907	1.659	1.441	34.672	27.783	37.043	45.863	41.279	119	167.1	2.74	38.8			
2006	3002			34.673					120	167.1	2.73	38.5			2323
2115	3163	1.600	1.357	34.676	27.792	37.057	45.881	42.446	125	168.1	2.71	38.4			
2007	3200	1.585	1.339	34.677	27.794	37.060	45.885	42.616	124	168.1	2.70	38.4			2322
2008	3400	1.560	1.294	34.678	27.798	37.067	45.893	43.519	128	168.1	2.67	38.1			2318
2009	3599	1.541	1.254	34.681	27.803	37.074	45.903	44.415	135	168.1	2.67	37.9			2303
2010	3798	1.541	1.232	34.685	27.808	37.080	45.910	45.305	134	168.1	2.64	37.6			2315
2011	3998	1.545	1.213	34.684	27.809	37.081	45.912	46.193	135	168.1	2.63	37.3			2298
2012	4090	1.549	1.206	34.688	27.812	37.085	45.917	46.603	138	168.1	2.63	37.2			2294
2116	4186	1.561	1.207	34.685	27.810	37.083	45.914	47.023	138	167.1	2.62	37.1			2303
2117	4207	1.547	1.191	34.687	27.812	37.086	45.919	47.120	138	167.1	2.62	37.1			2300
2118	4227	1.564	1.205	34.687	27.812	37.085	45.916	47.205	139	167.1	2.62	37.1			2301
2119	4247	1.559	1.198	34.687	27.812	37.085	45.917	47.295	139	167.1	2.62	37.1			2292
2120	4257	1.567	1.204	34.686	27.811	37.084	45.915	47.337	139	167.1	2.62	37.1			2295
2121	4267	1.569	1.205	34.689	27.813	37.086	45.918	47.383	138	167.1	2.62	37.1			2301
2122	4277	1.567	1.202	34.685	27.810	37.083	45.915	47.424	139	167.1	2.62	37.1			2296
2123	4289	1.569	1.202	34.686	27.811	37.084	45.916	47.478	139	167.1	2.62	37.1			2303
2124	4298			34.686					139	167.1	2.62	37.1			2293

LIST OF PARTICIPANTS

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Moore
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STATION AND CAST DESCRIPTION

GOGO II R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
1	1	1	25 APR 72	NAN	28DEG 31.0MIN N	121DEG 46.0MIN W	2211			*	Q-CAST, 1100M
1	1	2	26 APR 72	NAN	28DEG 31.0MIN N	121DEG 45.0MIN W	0002			*	Q-CAST, 1100M
1	1	3	26 APR 72	BAG	28DEG 31.0MIN N	121DEG 45.0MIN W	1320	4298		*	NISKIN BAG
1	1	4	26 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	1320	4298	4139	*	DEEP ROSETTE
1	1	5	26 APR 72	PMP	28DEG 29.0MIN N	121DEG 45.0MIN W	2130			*	SURFACE PUMP
1	1	6	27 APR 72	NIS	28DEG 34.0MIN N	121DEG 48.0MIN W	0715	4241	4234	*	BOTTOM NISKIN
1	1	7	27 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	1213	4300	2382	*	INTERMEDIATE ROSETTE (MALF.)
1	1	8	27 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	1712	4300	3997	*	DEEP ROSETTE
1	1	9	27 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	2245	4314	2494	*	INTERMEDIATE ROSETTE
1	1	10	28 APR 72	BAG	28DEG 27.0MIN N	121DEG 43.0MIN W	0300			*	NISKIN BAG (TEST)
1	1	11	28 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	1145	4308	800	*	SHALLOW ROSETTE
1	1	12	28 APR 72	PMP	28DEG 28.0MIN N	121DEG 43.0MIN W	1330			*	SURFACE PUMP, RA-228
1	1	13	28 APR 72	ROS	28DEG 30.0MIN N	121DEG 44.0MIN W	2110	4264	4284	*	DEEP ROSETTE
1	1	14	29 APR 72	SPE	28DEG 27.0MIN N	121DEG 44.0MIN W	0130			*	FIBER CAST
1	1	15	29 APR 72	NAN	28DEG 31.0MIN N	121DEG 47.0MIN W	1126			*	Q-CAST, 1195M
1	1	16	29 APR 72	NAN	28DEG 32.0MIN N	121DEG 47.0MIN W	1408			*	Q-CAST, 1195M
1	1	17	29 APR 72	NAN	28DEG 32.0MIN N	121DEG 48.0MIN W	1702			*	Q-CAST, 1195M
1	1	18	29 APR 72	NIS	28DEG 30.0MIN N	121DEG 44.0MIN W	1815	4291	3196	*	INTERMEDIATE ROSETTE (MALF.)

STATION: 1 LEG: I POSITION: 28° 30' N 121° 44' W DATE: 26 APR 72

SAMPLE NUMBER	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	DEPTH M
1112		5	15.29 H	15.29	33.465	24.760	33.402	41.649	24.782	255	2.0	0.35	0.0	2222	2012	5
1812		10	15.09	15.09	33.466	24.805	33.455	41.708	24.849	255	2.0		0.2			10
1817		10	15.09	15.09	33.464	24.803	33.453	41.707	24.848	255	1.8		0.0			10
1802		20	15.09 H	15.09	33.465	24.804	33.454	41.708	24.894	255	1.9		0.0			20
1117		20	15.29	15.29	33.480	24.772	33.414	41.661	24.861	255	1.7	0.34	0.0	2220	2011	20
1110		30	15.29	15.29	33.511	24.796	33.438	41.684	24.930	254	1.8	0.34	0.0			30
1810		33	15.05	15.04	33.465	24.813	33.465	41.720	24.961	255	1.8		0.0			33
1809		33	15.05	15.04	33.465	24.813	33.465	41.720	24.961	255	1.7		0.0			33
1109		40	15.27	15.26	33.493	24.787	33.430	41.677	24.965	255	1.8	0.33	0.0			40
1814		53	14.66	14.65	33.430	24.872	33.538	41.808	25.109	258	1.7		0.0			53
1807		53	14.66	14.65	33.430	24.872	33.538	41.808	25.109	258	1.7		0.0			53
1114		60	15.31	15.30	33.522	24.801	33.442	41.688	25.068	254	1.9	0.32	0.1			60
1806		73	14.05	14.04	33.387	24.969	33.659	41.950	25.297	260	1.7		0.0			73
1805		73	14.05	14.04	33.395	24.975	33.665	41.956	25.303	259	1.8		0.0			73
1107		90	13.60 H	13.59	33.444	25.107	33.813	42.120	25.511	254	2.3	0.38	0.0			90
1804		103	12.51	12.50	33.391	25.284	34.034	42.381	25.749	254	2.9		1.1			103
1803		103	12.51	12.50	33.388	25.282	34.032	42.379	25.747	254	2.9		1.2			103
1106		119	11.92	11.90	33.486	25.471	34.244	42.611	26.010	223	7.1	0.77	6.4			119
1105		149	10.44	10.42	33.688	25.897	34.728	43.150	26.575	186U	15.1	1.26	11.1	2219	2103	149
1819		153	10.57	10.55	33.534	25.755	34.583	43.001	26.451	209	11.0		11.0			153
1801		153	10.57	10.55	33.534	25.755	34.583	43.001	26.451	207	11.0		11.9			153
1104		179	9.71	9.69	33.684	26.018	34.881	43.332	26.836	153	23.2	1.67	20.1			179
1103		209	9.29	9.27	33.958	26.302	35.179	43.644	27.257	144	27.2	1.80	21.9			209
1117		240	8.643H	8.617	34.032	26.462	35.368	43.858	27.563	128	33.9	2.04	24.8			240
1101		270	8.22	8.19	34.084	26.568	35.492	44.000	27.809	103	41.0	2.27	27.7			270
1102		300	7.82	7.79	34.102	26.642	35.584	44.108	28.023	90	45.6	2.38	29.6	2262	2231	300
1118		350	7.45	7.41	34.175	26.753	35.712	44.251	28.366	60	52.9	2.67	32.1	2275	2254	350
922		350	7.39 H	7.36	34.198	26.779	35.740	44.282	28.393	52	54.2		32.9			350
1108		400	7.07	7.03	34.224	26.845	35.821	44.377	28.691	40	59.5	2.87	34.0			400
1122		450	6.70	6.66	34.302	26.957	35.950	44.521	29.037	18	67.8	2.99	36.1	2295	2311	450
1818		499	6.39	6.34	34.297	26.994	36.002	44.588	29.303	17	72.1		36.9			499
1121		500	6.28	6.23	34.317	27.024	36.037	44.627	29.339	14	73.5	2.89	37.6			500
921		500	6.25	6.20	34.307	27.020	36.035	44.626	29.336	15	73.5		37.9			500
1123		550	5.91	5.86	34.339	27.088	36.120	44.726	29.639	10	79.7	3.21	38.9	2309	2316	550
1808		599	5.85	5.80	34.364	27.116	36.150	44.759	29.893	10	82.5		39.1			599
923		600	5.636H	5.583	34.372	27.148	36.193	44.812	29.934	8	84.8		40.3			600
1124		600	5.62	5.57	34.367	27.146	36.192	44.811	29.932	9	84.3	3.26	39.7			600
1120		650	5.35	5.29	34.390	27.197	36.256	44.888	30.218	10	89.1	3.26	40.4	2327	2325	650
1822		698	5.33	5.27	34.405	27.212	36.271	44.904	30.454	10	91.1		40.8			698
1115		700	5.10	5.04	34.410	27.242	36.313	44.957	30.498	11	93.6	3.27	41.4	2332	2335	700
924		700	5.18	5.12	34.400	27.225	36.293	44.932	30.479	10	91.2		41.4			700
712		799	4.81 H	4.74	34.441	27.300	36.386	45.043	31.019	13	98.4	3.35	42.0			799
1116		800	4.66	4.59	34.440	27.316	36.409	45.074	31.042	15	101.8	3.28	42.4			800
412		840	4.61 H	4.54	34.456	27.334	36.430	45.097	31.246	17	102.6	3.30	42.7	2345	2358	840
1312		888	4.41 H	4.34	34.468	27.366	36.472	45.148	31.504	17	107.0	3.31	43.1			888
1317		986	4.12	4.04	34.486	27.411	36.532	45.222	32.009	23	113.1	3.28	43.6			986
417		990	4.08	4.00	34.488	27.417	36.540	45.232	32.034	23	114.5	3.30	43.1	2359	2355	990
717		998	4.07(I)	3.99	34.484	27.414	36.538	45.231	32.069	24	113.0	3.33	42.6			998
410		1140	3.63	3.54	34.520	27.487	36.634	45.349	32.810	32	124.8	3.28	43.0	2374	2372	1140
1310		1183	3.53	3.44	34.529	27.504	36.657	45.376	33.028	33	127.0	3.39	43.2			1183
710		1197	3.53(I)	3.44	34.526	27.502	36.655	45.374	33.091	31	125.8	3.30	42.4			1197
409		1290	3.28	3.18	34.542	27.539	36.705	45.436	33.565	38	133.1	3.26	42.9	2384	2382	1290
1309		1380	3.06	2.96	34.562	27.575	36.753	45.495	34.024	43	138.1	3.33	42.8			1380
709		1395	3.067H	2.964	34.558	27.571	36.749	45.491	34.089	43	137.6	3.26	42.0			1395
414		1440	3.02	2.91	34.561	27.578	36.758	45.503	34.305	44	140.0	3.22	42.4	2394	2385	1440

STATION: 1 LEG: I POSITION: 28° 30' N 121° 44' W DATE: 26 APR 72

SAMPLE NUMBER	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	DEPTH M
714		1495	2.95(I)	2.84	34.571	27.593	36.777	45.525	34.575	48	141.3	3.23	41.8			1495
407		1590	2.73 H	2.61	34.579	27.618	36.815	45.574	35.048	54	148.1	3.16	41.7	2400	2389	1590
707		1593	2.71 H	2.59	34.584	27.624	36.821	45.582	35.068	54	146.0	3.17	41.3			1593
1821		1597	2.66	2.55	34.349U	27.441	36.644	45.411	34.908	58	151.5		41.2			1597
720		1598	2.643H	2.528	34.585	27.631	36.831	45.595	35.100	56	148.8		41.3			1598
406		1740	2.41	2.29	34.602	27.664	36.878	45.654	35.797	66	154.0	3.08	41.2	2407	2387	1740
1313		1774	2.34	2.21						70	154.5	3.12	41.2			1774
706		1791	2.34(I)	2.21	34.608	27.675	36.892	45.672	36.046	69	153.5	3.08	40.7			1791
705		1988	2.14 H	2.00	34.625	27.705	36.934	45.725	36.990	80	159.0	3.01	40.2			1988
405		1890	2.22	2.09	34.614	27.689	36.914	45.700	36.521	76	158.9	3.02	40.9	2412	2380	1890
1823		1896	2.19	2.06	34.619	27.696	36.922	45.710	36.556	79	161.2		39.7			1896
1824		1996	2.097H	1.955	34.626	27.709	36.941	45.734	37.033	83	162.9		39.5			1996
404		2040	2.06	1.91	34.627	27.713	36.947	45.742	37.240	85	161.4	2.96	40.3	2415	2386	2040
704		2087	2.03(I)	1.88	34.632	27.719	36.955	45.752	37.463	87	161.1	2.97	39.7			2087
709		2185	1.97 H	1.81	34.639	27.730	36.970	45.770	37.926	91	162.7	2.95	39.5			2185
403		2190	1.95	1.79	34.637	27.730	36.971	45.772	37.950	92	163.1	2.91	39.5	2418	2376	2190
915		2195	1.94	1.78	34.636	27.730	36.971	45.773	37.973	93	162.3		39.2			2195
1820		2246	1.915H	1.754	34.644	27.739	36.981	45.784	38.216	96	166.0		38.7			2246
719		2284	1.90(I)	1.74	34.644	27.740	36.984	45.788	38.391	96	163.3	2.92	39.2			2284
419		2340	1.856H	1.688	34.644	27.743	36.990	45.796	38.653	100	165.2	2.87	39.3			2340
701		2382	1.842H	1.670	34.650	27.749	36.997	45.804	38.851	100	165.1	2.92	39.0			2382
916		2494	1.781H	1.600	34.652	27.756	37.007	45.818	39.372	104	165.2		38.5			2494
413		2500	1.79	1.61	34.650	27.754	37.005	45.816	39.396	104	165.9	2.85	38.8	2422	2375	2500
817		2500	1.79(I)	1.61	34.656	27.759	37.009	45.820	39.401	105	162.3	2.81	38.4			2500
812		2500	1.78 H	1.60	34.655	27.759	37.010	45.821	39.402	104	162.2	2.81	39.5			2500
1815		2646	1.72 H	1.53	34.658	27.766	37.022	45.836	40.077	111	170.2		38.0			2646
402		2650	1.72	1.53	34.654	27.763	37.018	45.833	40.091	110	170.1	2.78	38.4			2650
810		2746	1.68(I)	1.48	34.663	27.774	37.032	45.849	40.540	113	164.8	2.78	38.2			2746
809		2746	1.68 H	1.48	34.662	27.773	37.031	45.848	40.539	114	164.3	2.79	38.1			2746
814		2795	1.66(I)	1.45	34.663	27.775	37.035	45.854	40.765	120	165.2	2.78	37.9			2795
418		2800	1.662H	1.454	34.659	27.772	37.031	45.850	40.784	115	170.9	2.77	38.1	2423	2368	2800
408		2950	1.63	1.41	34.663	27.778	37.040	45.861	41.471	118	171.5	2.76	37.9			2950
807		2993	1.62 H	1.39	34.667	27.783	37.045	45.867	41.670	119	165.6	2.76	37.8			2993
806		2993	1.62(I)	1.39	34.667	27.783	37.045	45.867	41.670	119	165.8	2.77	37.9			2993
422		3100	1.60	1.36	34.666	27.784	37.048	45.872	42.155	121	171.6	2.74	37.9	2423	2365	3100
805		3191	1.574H	1.329	34.670	27.790	37.056	45.881	42.571	124	167.0	2.74	37.7			3191
804		3391	1.54(I)	1.28	34.673	27.796	37.065	45.893	43.478	128	167.5	2.72	37.7			3391
1816		3196	1.590H	1.344	34.668	27.787	37.052	45.877	42.590	123	172.8		37.0			3196
421		3250	1.56	1.31	34.668	27.789	37.057	45.883	42.837	127	173.0	2.72	37.7			3250
423		3400	1.54 H	1.27	34.670	27.793	37.063	45.891	43.516	128	172.4	2.70	37.3	2426	2359	3400
424		3549	1.54	1.26	34.674	27.798	37.068	45.897	44.186	129	171.5	2.69	37.3	2428	2358	3549
803		3591	1.527H	1.241	34.675	27.799	37.071	45.900	44.377	132	167.7	2.70	37.7			3591
420		3699	1.53	1.23	34.676	27.801	37.073	45.903	44.859	132	171.2	2.65	36.9	2423	2366	3699
1314		3792	1.53	1.22	34.680	27.805	37.077	45.908	45.277	134						3792
1307		3792	1.530H	1.222	34.680	27.805	37.077	45.908	45.277		169.2	2.79	37.3			3792
819		3793	1.52(I)	1.21	34.677	27.803	37.076	45.907	45.281	135	169.7	2.68	37.1			3793
415		3849	1.52	1.21	34.676	27.803	37.076	45.907	45.529	135	170.6	2.63	36.9	2425	2353	3849
1306		3996	1.53	1.20	34.681	27.807	37.081	45.913	46.184	136						3996
1305		3996	1.53	1.20	34.682	27.808	37.081	45.913	46.185		166.2	2.77	37.2			3996
801		3997	1.533H	1.202	34.679	27.805	37.079	45.911	46.187	136	166.9	2.67	37.4			3997
416		3999	1.533H	1.202	34.676	27.803	37.076	45.908	46.193	136	169.8	2.63	36.5	2424	2357	3999
1304		4099	1.54	1.20	34.683	27.809	37.082	45.914	46.641	136				2421	2360	4099
1303		4099	1.54	1.20	34.683	27.809	37.082	45.914	46.641		167.9	2.76	36.9			4099
601		4134			34.683											4134
401		4139	1.54	1.19	34.678	27.805	37.079	45.911	46.814	138	169.2	2.62	36.8	2423	2356	4139
602		4174			34.683											4174
603		4194			34.683											4194
1319		4202	1.539H	1.184	34.682	27.809	37.083	45.916	47.096	137						4202
1301		4202	1.550	1.194	34.682	27.808	37.082	45.914	47.094		166.6	2.75	36.9			4202
604		4214			34.683											4214
1302		4222	1.554	1.196	34.684	27.810	37.083	45.915	47.183		166.5	2.74	37.0			4222
1318		4222	1.550H	1.192	34.683	27.809	37.083	45.915	47.183	137						4222
605		4224			34.683											4224
606		4234			34.683											4234
1308		4243	1.555	1.194	34.681	27.807	37.081	45.913	47.273		166.6	2.75	37.0	2416	2349	4243
1322		4243	1.555	1.194	34.683	27.809	37.083	45.915	47.275	138						4243
1321		4263	1.556	1.193	34.682	27.808	37.082	45.914	47.362		166.9	2.75	36.7			4263
1323		4263	1.553H	1.189						137						4263
1324		4274	1.556	1.192	34.682	27.808	37.082	45.915	47.410		166.2	2.62	36.7			4274
1320		4274	1.556	1.192	34.683	27.809	37.083	45.915	47.411	138				2421	2346	4274
1315		4284	1.558	1.192	34.681	27.808	37.081	45.914	47.454		165.8	2.63	36.6			4284
1316		4284	1.555H	1.190	34.681	27.808	37.082	45.914	47.454	138				2418	2341	4284

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

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STATION AND CAST DESCRIPTION

GEOSECS 347 REVISIT R/V MELVILLE

LEG	STATION	CAST	DATE	CAST TYPE	LATITUDE	LONGITUDE	TIME GMT	BOTTOM DEPTH	MAX DEPTH	*	REMARKS
1	500	1	18 MAY 79	SPE	28DEG 28.5MIN N	122DEG 13.2MIN W	1400	4116		*	WINCH TEST
1	500	2	18 MAY 79	ROS	28DEG 29.0MIN N	122DEG 13.5MIN W	1749			*	DEEP ROSETTE
1	500	3	18 MAY 79	GER	28DEG 29.5MIN N	122DEG 14.9MIN W	2229		158	*	SHALLOW GERARD, AR-39
1	500	4	19 MAY 79	GER	28DEG 29.1MIN N	122DEG 13.7MIN W	0055		156	*	SHALLOW GERARD, AR-39
1	500	5	19 MAY 79	SPE	28DEG 29.1MIN N	122DEG 13.7MIN W	0200			*	LAL PLANKTON NET
1	500	6	19 MAY 79	GER	28DEG 29.1MIN N	122DEG 13.6MIN W	0146		158	*	SHALLOW GERARD, AR-39
1	500	7	18 MAY 79	SPE	28DEG 29.2MIN N	122DEG 13.7MIN W	1900			*	MOORE FIBER, SURFACE BAG
1	500	8	19 MAY 79	ROS	28DEG 29.3MIN N	122DEG 13.8MIN W	0353	4127		*	SHALLOW ROSETTE, PB-210
1	500	9	19 MAY 79	GER	28DEG 29.8MIN N	122DEG 14.8MIN W	0644		157	*	SHALLOW GERARD, AR-39
1	500	10	19 MAY 79	GER	28DEG 31.0MIN N	122DEG 13.6MIN W	1053	4186	3969	*	DEEP GERARD, C-14
1	500	11	19 MAY 79	GER	28DEG 31.0MIN N	122DEG 13.6MIN W	1650	4123	4077	*	DEEP GERARD, RA-228
1	500	12	19 MAY 79	SPE	28DEG 30.2MIN N	122DEG 13.1MIN W	1915			*	LAL PLANKTON TOW LEG 2
1	500	13	19 MAY 79	ROS	28DEG 30.2MIN N	122DEG 13.1MIN W	2017		65	*	SHALLOW ROSETTE, PB-210
1	500	14	19 MAY 79	SPE	28DEG 30.2MIN N	122DEG 13.1MIN W	2015			*	MOORE FIBER, SURFACE BAG
1	500	15	19 MAY 79	NIS	28DEG 30.0MIN N	122DEG 12.0MIN W	2137		124	*	SHALLOW NISKIN, O-18
1	500	16	19 MAY 79	GER	28DEG 29.8MIN N	122DEG 11.0MIN W	2253		253	*	SHALLOW GERARD, AR-39
1	500	17	19 MAY 79	GER	28DEG 30.0MIN N	122DEG 10.7MIN W	2347		252	*	SHALLOW GERARD, AR-39
1	500	18	20 MAY 79	ROS	28DEG 29.8MIN N	122DEG 9.8MIN W	0045			*	ROSETTE TEST
1	500	19	20 MAY 79	ROS	28DEG 29.6MIN N	122DEG 12.2MIN W	0238	4199	4161	*	BOTTOM RADON
1	500	20	20 MAY 79	NIS	28DEG 31.6MIN N	122DEG 10.8MIN W	0443		124	*	SHALLOW NISKIN, O-18
1	500	21	20 MAY 79	GER	28DEG 32.2MIN N	122DEG 11.2MIN W	0541		254	*	SHALLOW GERARD, AR-39
1	500	22	20 MAY 79	GER	28DEG 32.4MIN N	122DEG 9.7MIN W	0735		1638	*	INTERMEDIATE GERARD, C-14
1	500	23	20 MAY 79	GER	28DEG 31.6MIN N	122DEG 7.9MIN W	0948		253	*	SHALLOW GERARD, AR-39
1	500	24	20 MAY 79	NIS	28DEG 31.8MIN N	122DEG 8.2MIN W	1246		124	*	SHALLOW NISKIN, O-18
1	500	25	20 MAY 79	ROS	28DEG 31.4MIN N	122DEG 6.8MIN W	1430	4321	1380	*	SHALLOW ROSETTE, PB-210
1	500	26	20 MAY 79	NIS	28DEG 30.7MIN N	122DEG 5.2MIN W	1632		121	*	SHALLOW NISKIN, O-18
1	500	27	20 MAY 79	GER	28DEG 32.8MIN N	122DEG 6.6MIN W	1848		482	*	INTERMEDIATE GERARD, C-14
1	500	28	20 MAY 79	GER	28DEG 32.5MIN N	122DEG 4.6MIN W	2021		580	*	SHALLOW GERARD, AR-39
1	500	29	20 MAY 79	SPE	28DEG 32.7MIN N	122DEG 6.4MIN W	1935			*	MOORE FIBER SURFACE BAG
1	500	30	20 MAY 79	GER	28DEG 32.9MIN N	122DEG 5.1MIN W	2143		962	*	INT GERARD, RA-228,PB-210
1	500	31	20 MAY 79	GER	28DEG 32.9MIN N	122DEG 4.3MIN W	2303		582	*	SHALLOW GERARD, AR-39
1	500	32	20 MAY 79	NIS	28DEG 33.1MIN N	122DEG 4.0MIN W	2357		124	*	SHALLOW NISKIN, O-18
1	500	33	20 MAY 79	SPE	28DEG 32.8MIN N	122DEG 4.9MIN W	2115			*	LAL PLANKTON TOW LEG 3
1	500	34	21 MAY 79	ROS	28DEG 24.2MIN N	122DEG 14.9MIN W	0313	4193	4063	*	DEEP ROSETTE
1	500	35	21 MAY 79	NIS	28DEG 29.5MIN N	122DEG 14.4MIN W	0718		127	*	SHALLOW NISKIN, O-18
1	500	36	21 MAY 79	GER	28DEG 29.7MIN N	122DEG 10.7MIN W	0824		586	*	SHALLOW GERARD, AR-39
1	500	37	21 MAY 79	GER	28DEG 29.6MIN N	122DEG 10.5MIN W	1010		232	*	SHALLOW GERARD, C-14
1	500	38	21 MAY 79	GER	28DEG 29.4MIN N	122DEG 11.6MIN W	1140		586	*	SHALLOW GERARD, AR-39
1	500	39	21 MAY 79	NIS	28DEG 29.1MIN N	122DEG 12.1MIN W	1300		126	*	SHALLOW NISKIN, O-18
1	500	40	21 MAY 79	ROS	28DEG 28.8MIN N	122DEG 13.6MIN W	1511	4193		*	ROSETTE ABORTED
1	500	41	21 MAY 79	ROS	28DEG 28.3MIN N	122DEG 11.8MIN W	1608	4181	993	*	SHALLOW ROSETTE, PB-210
1	500	42	21 MAY 79	GER	28DEG 28.1MIN N	122DEG 11.3MIN W	1758		117	*	SHALLOW GERARD, C-14
1	500	43	21 MAY 79	ROS	28DEG 28.3MIN N	122DEG 11.4MIN W	2043	4212	1490	*	INTERMEDIATE ROSETTE+2 NISKIN
1	500	44	21 MAY 79	GER	28DEG 28.0MIN N	122DEG 11.4MIN W	2326		145	*	SHALLOW GERARD, RA-228
1	500	45	21 MAY 79	SPE	28DEG 28.0MIN N	122DEG 11.4MIN W	2340			*	MOORE FIBER SURFACE BAG
1	500	46	22 MAY 79	GER	28DEG 28.0MIN N	122DEG 11.5MIN W	0032		579	*	SHALLOW GERARD, AR-39
1	500	47	22 MAY 79	ROS	28DEG 28.6MIN N	122DEG 11.8MIN W	0348		298	*	SURFACE ROSETTE + 2 NISKINS
1	500	48	22 MAY 79	GER	28DEG 29.4MIN N	122DEG 12.3MIN W	0538	4202	584	*	SHALLOW GERARD, AR-39
1	500	49	22 MAY 79	GER	28DEG 27.5MIN N	122DEG 13.2MIN W	0735		582	*	SHALLOW GERARD, AR-39
1	500	50	22 MAY 79	ROS	28DEG 21.7MIN N	122DEG 11.7MIN W	0947	4110	3820	*	DEEP ROSETTE, RA-226
1	500	51	22 MAY 79	ROS	28DEG 26.9MIN N	122DEG 10.8MIN W	1421	4216	3973	*	DEEP ROSETTE, PB-210
1	500	52	22 MAY 79	GER	28DEG 28.5MIN N	122DEG 13.5MIN W	1723	4101	584	*	SHALLOW GERARD, AR-39
1	500	53	22 MAY 79	GER	28DEG 28.4MIN N	122DEG 13.2MIN W	1828		384	*	SHALLOW GERARD, AR-39
1	500	54	22 MAY 79	ROS	28DEG 28.3MIN N	122DEG 12.9MIN W	1956	4130	1689	*	INTERMEDIATE ROSETTE, RA-226
1	500	55	22 MAY 79	ROS	28DEG 27.4MIN N	122DEG 14.5MIN W	2236	4166	3372	*	DEEP ROSETTE, PB-210
1	500	56	23 MAY 79	GER	28DEG 28.0MIN N	122DEG 13.7MIN W	0054		389	*	SHALLOW GERARD, AR-39
1	500	57	23 MAY 79	GER	28DEG 27.5MIN N	122DEG 14.0MIN W	0142		384	*	SHALLOW GERARD, AR-39
1	500	58	23 MAY 79	GER	28DEG 27.3MIN N	122DEG 8.8MIN W	0239		289	*	SHALLOW GERARD LAL
1	500	59	23 MAY 79	ROS	28DEG 26.9MIN N	122DEG 8.2MIN W	0348		492	*	SHALLOW ROSETTE, RA-226
1	500	60	23 MAY 79	SPE	28DEG 26.9MIN N	122DEG 8.3MIN W	0320		0	*	MOORE FIBER SURFACE BAG
1	500	61	23 MAY 79	ROS	28DEG 26.6MIN N	122DEG 14.0MIN W	0557	4214	2771	*	INTERMEDIATE ROSETTE, PB-210
1	500	62	23 MAY 79	GER	28DEG 29.2MIN N	122DEG 10.7MIN W	0845		961	*	SHALLOW GERARD LAL
1	500	63	23 MAY 79	GER	28DEG 29.3MIN N	122DEG 10.6MIN W	1002		388	*	SHALLOW GERARD, AR-39
1	500	64	23 MAY 79	ROS	28DEG 28.5MIN N	122DEG 10.4MIN W	1213	4154	4119	*	BOTTOM RADON
1	500	65	23 MAY 79	ROS	28DEG 27.1MIN N	122DEG 10.4MIN W	1528	4166	1590	*	INTERMEDIATE ROSETTE, PB-210
1	500	66	23 MAY 79	GER	28DEG 27.0MIN N	122DEG 10.4MIN W	1648		386	*	SHALLOW GERARD, AR-39

STATION: 500 LEG: I POSITION: 28° 29' N 122° 13' W DATE: 18 MAY 79

SAMPLE NUMBER	PRESS DB	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY ‰	SIGMA θ	SIGMA 2	SIGMA 4	SIGMA Z	OXYGEN µM/kg	SiO_3 µM/kg	PO_4 µM/kg	NO_3 µM/kg	ALK(T) µEq/kg	CO_2(T) µM/kg	DEPTH M
4759	8	8	17.09 H	17.09	33.5530	24.413	32.991	41.178	24.448	250	3.5	0.31	0.0	2241	2003	8
5913	15	15	17.160	17.157	33.596	24.430	33.005	41.189	24.496		3.2	0.32	0.0			15
5914	15	15	17.161	17.158	33.595	24.429	33.004	41.188	24.495							15
6513	21	21	16.843	16.840	33.477	24.414	33.002	41.197	24.507	251	2.6	0.32	0.0			21
4760	48	48	16.17 H	16.16	33.490	24.582	33.193	41.410	24.793	257	3.4	0.30	0.0	2235	1998	48
6514	76	76	15.854	15.842	33.465	24.636	33.258	41.487	24.971	257	2.4	0.32	0.0			76
4713	83	83	15.234	15.221	33.441	24.756	33.401	41.651	25.123	259	3.8	0.31	0.0	2233	1995	83
6515	93	93	15.198	15.184	33.389	24.725	33.372	41.623	25.136	258	2.6	0.34	0.0			93
5915	97	97	14.919	14.904	33.403	24.797	33.454	41.715	25.226		3.7	0.35	0.0			97
5916	97	97	14.940	14.925	33.404	24.793	33.449	41.710	25.222							97
6516	107	107	14.585	14.569	33.377	24.849	33.519	41.792	25.324	257	2.8	0.36	0.0			107
6517	118	118	14.148	14.131	33.357	24.927	33.614	41.902	25.451	254	3.2	0.41	0.4			118
4714	128	128	12.676	12.659	33.341	25.214	33.958	42.299	25.787	242	6.8	0.63	4.3	2220	2036	128
6518	137	137	13.259	13.240	33.451	25.183	33.903	42.222	25.794	238	5.5	0.59	3.8			137
4715	147	146	12.042	12.023	33.357	25.349	34.118	42.483	26.008	237	8.1	0.71	6.0	2219	2045	146
4716	157	156	11.433	11.413	33.403	25.499	34.292	42.679	26.205	228	9.8	0.82	7.8	2220	2054	156
6519	163	162	11.458	11.437	33.416	25.504	34.297	42.683	26.237	227	9.0	0.84	8.0			162
4717	168	167	10.244	10.224	33.416	25.720	34.563	42.996	26.479	210	15.1	1.15	13.3	2222	2087	167
4718	178	177			33.565					189	19.8	1.39	17.2	2229	2117	177
4719	198	197	9.364	9.342	33.744	26.122	35.000	43.464	27.021	169	23.8	1.55	19.9	2241	2136	197
5917	198	197	9.374	9.352	33.722U	26.103	34.981	43.445	27.002		23.1	1.55	19.7			197
5918	198	197	9.383	9.361	33.740	26.116	34.993	43.456	27.014							197
4720	217	216	9.185	9.161	33.823	26.213	35.097	43.568	27.198	158	26.2	1.65	21.5	2246	2153	216
4721	238	237	8.750	8.724	33.927	26.363	35.266	43.753	27.446	145	30.8	1.80	23.9	2253	2172	237
4722	258	257	8.750	8.722	33.927	26.364	35.266	43.753	27.537	145	33.5	1.86	24.8	2258	2182	257
4723	278	277	8.220	8.191	33.996	26.499	35.425	43.933	27.766	136	35.9	1.91	25.8	2261	2187	277
5920	298	297	7.875	7.845	34.024	26.572	35.513	44.037	27.933							297
4724	299	298	8.220	8.189	33.996	26.499	35.425	43.934	27.862	136	35.9	1.91	25.8	2268	2206	298
5919	299	298	7.880	7.849	34.025	26.572	35.513	44.036	27.937		40.4	2.05	27.9			298
4313	323	321	7.452	7.420	34.046	26.651	35.611	44.152	28.128	102	47.2	2.25	30.2	2274	2229	321
4314	348	346	7.152	7.118	34.075	26.716	35.690	44.244	28.309	81	53.1	2.42	32.5	2280	2247	346
4315	398	396	6.865	6.827	34.144	26.810	35.797	44.363	28.634	54	60.9	2.67	34.9	2293	2277	396
5921	400	398	6.773	6.735	34.127	26.809	35.800	44.371	28.643		61.0	2.64	35.2			398
5922	400	398	6.779	6.741	34.129	26.809	35.801	44.371	28.643							398
5923	494	491	6.046	6.002	34.246	26.997	36.023	44.625	29.268		76.9	2.96	38.8			491
5924	495	492	6.052	6.008	34.245	26.996	36.021	44.623	29.271							492
4316	501	498	6.035	5.990	34.226	26.983	36.010	44.612	29.286	24	77.1	2.95	38.8	2310	2318	498
4317	600	596	5.562	5.510	34.319	27.115	36.164	44.787	29.877	12	87.9	3.10	40.6	2329	2338	596
5413	701	696	5.105	5.046	34.402	27.235	36.306	44.950	30.466		96.9	3.18	42.1			696
4318	702	697	4.983	4.925	34.387	27.237	36.315	44.964	30.475	12	99.3	3.17	42.2	2344	2356	697
5414	702	697	5.103	5.044	34.402	27.236	36.307	44.950	30.471							697
4319	801	796	4.621	4.556	34.427	27.310	36.406	45.072	31.007	15	107.3	3.18	42.8	2357	2368	796
5415	901	895	4.198	4.128	34.464	27.385	36.502	45.188	31.548		114.6	3.17	43.4			895
4320	902	896	4.208	4.137	34.451	27.373	36.490	45.176	31.541	21	114.7	3.16	43.2	2365	2372	896
4321	1001	993	3.951	3.874	34.479	27.422	36.553	45.251	32.048	26	120.4	3.15	43.3	2372	2376	993
4359	1088	1080	3.687H	3.605	34.503	27.468	36.612	45.323	32.498	31	126.3	3.13	43.2	2380	2376	1080
5417	1102	1093	3.639	3.556	34.510	27.478	36.625	45.338	32.574		127.0	3.14	43.4			1093
5418	1102	1093	3.637	3.554	34.509	27.478	36.624	45.338	32.573							1093
4322	1208	1198	3.404	3.314	34.525	27.513	36.672	45.398	33.099	36	133.0	3.11	43.1			1198
4360	1298	1287	3.210H	3.115	34.541	27.544	36.714	45.449	33.547	40	138.3	3.08	42.7			1287
5420	1303	1292	3.193	3.097	34.541	27.546	36.716	45.452	33.572							1292
5419	1304	1293	3.198	3.102	34.541	27.545	36.716	45.451	33.576		138.2	3.11	43.1			1293
4323	1402	1390	2.989	2.887	34.556	27.577	36.758	45.504	34.060	46	144.4	3.06	42.6			1390
4324	1503	1490	2.825	2.717	34.569	27.602	36.792	45.547	34.551	51	148.2	3.04	42.4			1490
5421	1503	1490	2.804	2.696	34.571	27.605	36.797	45.553	34.555		148.2	3.05	42.6			1490
5422	1505	1492	2.801	2.693	34.571	27.605	36.797	45.553	34.564							1492
6520	1604	1589			34.584					57	151.2	2.98	42.3			1589
6521	1604	1589	2.632	2.518	34.584	27.631	36.832	45.597	35.046							1589
6522	1605	1590	2.631	2.517	34.584	27.631	36.832	45.597	35.050							1590
6523	1605	1590	2.630	2.516	34.584	27.631	36.832	45.597	35.051							1590
6524	1605	1590	2.630	2.516	34.586	27.632	36.834	45.598	35.052							1590
3405	1618	1603	2.613	2.498	34.584	27.632	36.835	45.600	35.112	58	154.3	3.01	42.3	2407	2386	1603
5424	1703	1687	2.454	2.334	34.598	27.657	36.868	45.642	35.529							1687
5423	1705	1689	2.455	2.335	34.598	27.657	36.868	45.642	35.538		155.7	2.98	41.7			1689
3406	1767	1750	2.416	2.291	34.599	27.661	36.875	45.651	35.824	66	157.3	2.97	41.8	2413	2393	1750
5013	1909	1890	2.178	2.044	34.621	27.698	36.925	45.713	36.515		161.8	2.88	41.1			1890
3407	1917	1898	2.200	2.065	34.618	27.694	36.920	45.707	36.546	78	161.9	2.90	41.1	2417	2388	1898
3408	2069	2047	2.034	1.889	34.631	27.718	36.953	45.750	37.264	88	164.3	2.85	40.4	2421	2386	2047
5014	2112	2090	2.008	1.860	34.635	27.723	36.960	45.758	37.464		164.4	2.83	40.4			2090
3409	2215	2191	1.922	1.766	34.641	27.735	36.977	45.780	37.944	95	166.3	2.81	40.0	2424	2383	2191
5015	2311	2286	1.869	1.706	34.645	27.743	36.988	45.794	38.385		166.6	2.78	39.7			2286
3410	2313	2287	1.873	1.709	34.646	27.743	36.989	45.794	38.395	99	166.6	2.79	39.7	2426	2383	2287
3411	2416	2389	1.818	1.646	34.648	27.750	36.998	45.807	38.866	103	167.9	2.77	39.3	2428	2379	2389
5016	2463	2435	1.800	1.624	34.652	27.754	37.004	45.814	39.082		167.2	2.75	39.3			2435
3412	2515	2486	1.770	1.590	34.654	27.758	37.010	45.822	39.320	107	168.5	2.74	39.2	2429	2378	2486
3414	2608	2577	1.737	1.549	34.658	27.765	37.019	45.832	39.743	110	168.8	2.73	39.1	2430	2371	2577
5017	2616	2585	1.725	1.537	34.659	27.766	37.021	45.835	39.781		168.6	2.71	39.0			2585
3415	2708	2676	1.703	1.507	34.660	27.769	37.025	45.842	40.195	113	170.0	2.71	38.9	2431	2374	2676
5018	2766	2732	1.675	1.474	34.663	27.774	37.032	45.850	40.459		169.0	2.69	38.7			2732

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

STATION: 500 LEG: I POSITION: 28° 29' N 122° 13' W DATE: 18 MAY 79

SAMPLE NUMBER	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	ALK(T) µEq/kg	CO_2(T) µM/kg	DEPTH M
3416	2809	2775	1.669	1.464	34.662	27.774	37.033	45.851	40.651	116	170.5	2.70	38.6	2430	2374	2775
5019	2818	2783	1.640	1.435	34.666	27.779	37.039	45.859	40.698		169.7	2.67	38.5			2783
3417	3012	2974	1.610	1.387	34.667	27.783	37.046	45.868	41.563	122	171.2	2.67	38.3	2431	2369	2974
5020	3067	3028	1.600	1.372	34.670	27.787	37.050	45.873	41.810		170.1	2.64	38.2			3028
3418	3212	3170	1.610	1.367	34.667	27.785	37.049	45.872	42.446	122	171.2	2.67	38.3	2432	2364	3170
5021	3268	3224	1.571	1.323	34.671	27.791	37.057	45.883	42.701		171.0	2.61	38.0			3224
3419	3420	3373	1.547	1.285	34.674	27.796	37.064	45.892	43.375	129	172.7	2.62	37.8	2431	2367	3373
5022	3473	3425	1.541	1.273	34.674	27.797	37.066	45.894	43.609		170.9	2.58	37.7			3425
3420	3622	3571	1.525	1.242	34.676	27.800	37.071	45.901	44.264	133	172.4	2.62	37.6	2431	2364	3571
5023	3675	3623	1.520	1.232	34.678	27.803	37.074	45.905	44.498		171.5	2.58	37.4			3623
3421	3825	3769	1.517	1.213	34.678	27.804	37.077	45.908	45.152	137	171.6	2.60	37.4	2431	2362	3769
5024	3877	3820	1.519	1.209	34.684	27.809	37.082	45.913	45.382		170.8	2.57	37.1			3820
6414	4067	4005	1.531	1.200	34.681	27.807	37.080	45.912	46.201	139	169.1	2.58	37.3	2429	2361	4005
6415	4096	4034			34.681					139	168.8	2.58	37.3	2430	2355	4034
6416	4115	4052	1.535	1.198	34.681	27.807	37.081	45.913	46.408		168.8	2.57				4052
3424	4126	4063	1.537	1.199	34.680	27.806	37.080	45.912	46.454	139	171.1	2.58	37.1	2432	2356	4063
6417	4127	4064	1.536	1.198	34.682	27.808	37.082	45.914	46.460	139	168.9	2.57		2430	2356	4064
6418	4137	4074	1.537	1.197	34.680	27.806	37.080	45.912	46.502		168.7	2.57				4074
6419	4152	4088	1.539	1.198	34.681	27.807	37.081	45.913	46.567	139	168.7	2.57		2428	2361	4088
6420	4167	4103	1.540	1.197	34.681	27.807	37.081	45.913	46.631	139	168.8	2.57				4103
6421	4181	4117	1.541	1.196	34.681	27.807	37.081	45.913	46.692	139	169.0	2.56		2431	2354	4117
6422	4181	4117	1.541	1.196	34.680	27.806	37.080	45.912	46.691		168.5	2.56				4117
6424	4181	4117	1.541	1.196	34.684	27.810	37.083	45.915	46.694		168.7	2.58				4117
6423	4183	4119	1.541	1.196	34.681	27.807	37.081	45.913	46.700		168.5	2.56				4119

BOTTOM DEPTH FOR CAST 34 IS 4193 — CAST 50 IS 4110 — CAST 64 IS 4154

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