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Hydrographic/CTD Observations Made During Ocean Climate Monitoring Study: 1981-1991 - A Summary of Operational Phase of Study

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**CANADIAN DATA REPORT OF
HYDROGRAPHY AND OCEAN SCIENCES
NO. 136**



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Canadian Data Report of Hydrography and Ocean Sciences No. 136

1994

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MONITORING STUDY: 1981-1991 - A SUMMARY OF OPERATIONAL PHASE OF
STUDY**

by

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Cat. No. FS-97-16/136 ISSN 0711-6721

Correct citation for this publication:

Tabata S. and R.M. Brown. 1994. Hydrographic/CTD observations made during Ocean Climate Monitoring Study: 1981-1991 - A summary of operational phase of Study
Can. Data Rep. Hydrogr. Ocean Sci. 136: 42 pp.

CONTENTS

	Page
Abstract/Résumé	vi
Introduction . . . . .	.1
Strategy of Observations . . . . .	.2
Ships and Personnel . . . . .	.4
Designated Stations . . . . .	.5
Hydrographic and CTD Observations . . . . .	.5
Summary of Cruise Descriptions . . . . .	.5
Observed Data . . . . .	.6
Processed Data . . . . .	.6
References . . . . .	.7
Acknowledgement . . . . .	.8

	Page
Table 1.	List of ships and personnel participating in cruises 9
Table 2.	Location and depths (m) of major designated stations 19
Table 3.	Schedule of hydrographic and CTD observations. 25
	Index of Table 3, by cruises 26
Table 4.	Summary of cruise descriptions including cruise identification numbers, dates of cruises, observing ships, coverage of lines of observations and pertinent remarks regarding observations 28
Table 5.	List of abbreviations used. 32
Figure 1.	Location and designated stations of the "Ocean Climate Monitoring Study", off the Pacific coast of Canada 33
Figure 2.	Place names along coasts of British Columbia and Washington referred to in text. 34
Figure 3.	The CSS Parizeau of the Institute of Ocean Sciences 35
Figure 4.	The CSS John P. Tully of the Institute of Ocean Sciences 36
Figure 5.	The CNAV Endeavour of the Defence Research Establishment Pacific 37
Figure 6.	The CSS W.E. Ricker of the Pacific Biological Station 38
Appendix 1.	Inventory of nutrient samples taken by Ocean Climate Chemistry Division of IOS during OCMS and other associated cruises 39

ABSTRACT

Tabata, S. and R.M. Brown. 1994. Hydrographic/CTD observations made during Ocean Climate Monitoring Study: 1981-1991 - A summary of operational phase of Study. Can. Data Rep. Hydrogr. Ocean Sci. 136: 42 pp.

Forty-six cruises conducted during June 1981 through November 1991 to make oceanographic observations along Line P, Station P and other associated lines are featured. Description of cruises includes dates of observations, ships, personnel and institutions participating on cruises, types and amount of data obtained.

Key words: Hydrographic/CTD data; Northeast Pacific Ocean; Ocean Climate data.

RÉSUMÉ

Tabata, S. and R.M. Brown. 1994.
Hydrographic/CTD observations made during Ocean Climate Monitoring Study: 1981-1991 - A summary of operational phase of Study. Can. Data Rep. Hydrogr. Ocean Sci. 136: 42 pp.

Quarante-six croisières complétées en juin 1981 jusqu'à novembre 1991 pour effectuer des observations océanographiques le long de la ligne P, à la station P et le long d'autres lignes associées sont présentées.

La description des croisières comprend les dates d'observations, les navires, le personnel et les établissements participant aux croisières, les sortes et les quantités des données recueillies.

Mots-clé: Données hydrographiques/CTD; nord-est du Pacifique; données Climat Oceanique.

HYDROGRAPHIC/CTD OBSERVATIONS MADE DURING OCEAN CLIMATE MONITORING STUDY: 1981-1991 - A SUMMARY OF OPERATIONAL PHASE OF STUDY

S. Tabata and R.M. Brown

INTRODUCTION

In June 1981 the two weatherships that had occupied Ocean Station P ("PAPA") at Latitude, 50° 00' North; Longitude, 145° 00' West; in the northeast Pacific Ocean (Fig. 1) were withdrawn from service. This brought to an end among others, the regular time-series oceanographic observations that had continued there since 1956 and along Line P (between Station P and Victoria, British Columbia along the southern Pacific coast of Canada) since 1959.

However, in view of the importance of long ocean time series measurements, especially for the study of ocean climate, the oceanographic observations at Station P and Line P were continued under a project named "Ocean Climate Monitoring Study" (OCMS). Although the sampling frequency was much less than in the past, the completeness and the density of observations along Line P were superior to any that were made in the past two decades.

The Ocean Physics (OP) and the Ocean Climate Chemistry (OCC) Divisions of the Institute of Ocean Sciences (IOS) of the Department of Fisheries and Oceans of Canada (DFO) was the major contributor to the project. Others such as the Pacific Biological Station (PBS) of DFO also contributed to the observations. IOS's own research vessels, the Canadian Survey Ship (CSS) Parizeau (later shown in Fig. 3) and CSS John P. Tully (Fig. 4), made most of the observations. Canadian Naval Auxiliary Vessel (CNAV) Endeavour (Fig. 5) of the Defence Research Establishment Pacific of the Department of Defence of Canada and CSS W. E. Ricker (Fig. 6) of PBS also contributed to the observations. Initially it was possible to make six cruises per year but later, ship schedules permitted only two to four cruises per year.

Since October 1991 the series of observations at Station P and Lines P and R (Fig. 1) have been enhanced and are designated as one of the "Repeated Hydrographic Sections" of the World Ocean Circulation Experiment (WOCE). Observations there are expected to continue to at least the end of this Experiment (10 years).

The present report comprises a summary of the operational phase of the study, the cruise data, ships and personnel participating in the cruises (Table 1), location and depths of stations (Table 2), schedule of hydrographic (hydro) and (Conductivity-Temperature-Depth (CTD) observations (Table 3), and a summary of cruise descriptions (Table 4). The above observed physical data were processed by the OP Division of IOS. Other observations such as sampling for nutrients and geochemical properties were processed by the OCC Division, and interested readers should contact them regarding their data. A short summary of nutrient observations is however appended (Appendix 1).

Manuscript reports pertaining to Station P and Line P oceanographic data that have been published within the past decade include:

Statistics of oceanographic data based on hydrographic/STD casts made at Ocean Station P during August 1956 through June 1981 (Tabata and Peart, 1985a),

Statistics of oceanographic data based on hydrographic/STD casts made at Stations 1 through 6 along Line P during January 1959 through June 1981 (Tabata and Peart, 1985b),

Statistics of oceanographic data based on hydrographic/STD casts made at Stations 7 through 12 along Line P during January 1959 through June 1981 (Tabata and Peart, 1986).

An update of the above statistics based on inclusion of data taken by the University of Washington in May and June 1956 and those taken by research vessels after June 1981 through September 1990 has been made. The associated reports are:

An update of the statistics of hydrographic/CTD data taken at Ocean Station P, May 1956-September 1990 (Tabata and Weichselbaumer, 1992a),

An update of the statistics of oceanographic data based on hydrographic/CTD casts made at Stations 1 through 6 along Line P during January 1959 through September 1990 (Tabata and Weichselbaumer, 1992b),

An update of the statistics of oceanographic data based on hydrographic/CTD casts made at Stations 7 through 12 along Line P during January 1959 through September 1990 (Tabata and Weichselbaumer, 1992c).

In addition to the above, one manuscript that includes the "Ocean Storms" Project has been published:

STP/hydrographic observations along Line P, Station P, Line R and associated lines and in the "Ocean Storms" area: Cruise I - 22 September-16 October, 1987, Cruise III - 24 November-9 December, 1987 (Tabata et al., 1988).

The main purpose of this report is to present sufficient material that may be of some assistance to those planning to use the above data sets.

STRATEGY OF OBSERVATIONS

Originally it was planned to make observations along Line P during both the outbound and inbound journeys. For reason of economy this was to be accomplished within the allotted "2-week" shiptime with one week-end at sea. It was apparent that more important overall information would be gained by taking another route during the inbound

passage, either along a line to the south or north of Line P. Alternately, a zig-zag route, including stations along Line P and lines about 100 km north and south parallel to Line P would have yielded reasonably good spatial coverage in the vicinity of the Line, but this required more travelling time than was permissible. The northern route which is approximately parallel to Line P, named Line R (Fig. 1), was considered for the following reasons. First, previous observations in the general vicinity indicated recurring eddy-like features there. Therefore it appeared worthwhile to see if their occurrences could be substantiated as they might affect our interpretation of the dynamics of ocean circulation off the Pacific coast of Canada. Secondly, this line intercepts the migratory route of the returning adult sockeye salmon to the Fraser River (Fig. 2) so data from there would be of potential use for forecasting their return runs. Thirdly, this route is much shorter (by 1/3) than Line P*.

*The distance between Station P and Swiftsure Bank ($48^{\circ} 32.6'N$, $125^{\circ} 00.0'W$) at the approaches to Juan de Fuca Strait (Fig. 2) is 1459 kilometres (km) or 788 nautical miles whereas that between Station P and Station J01, about 16 km northwest of Cape St. James ($52^{\circ} 00.0'N$, $131^{\circ} 10.3'W$), is 987 km. The closest shore from Station P is Hippa Island, located two thirds up the Pacific coast of Queen Charlotte Islands ($53^{\circ} 32.6'N$, $133^{\circ} 00.7'W$) and about 20 km northwest of the approaches to Rennell Sound (Fig. 2). The associated distance is 913 km and is therefore 74 km shorter than is Station P - J01 line. However, since the distance between Hippa Island and Station J01 is 211 km the overall distance via Hippa Island during the return journey would be 137 km longer than is one between Station P and Station J01 direct. Actually, Line R is not a line extending directly from Station P to Cape St. James but originates at Station P, passes through Station P32 lying 100 km to north of Station P, to Station J05 located 100 km southwest of Cape St. James. This line is 35 km longer than the direct P - J01 line but is still shorter than Station P - Hippa Island - Station J01 route. Therefore it is more economical to travel along Lines R and J rather than through Hippa Island during the return journey.

Since the distance between Station J01 and Swiftsure Bank is 585 km the return journey via Lines R and J (1022 km) to Swiftsure Bank is 1608 km and is therefore 148 km longer than Line P. Given a ship's service speed of 11 knots this would add only about 7 hours to the travelling time on the return journey compared to what it would take to return along Line P. With the observations planned along Line P, Station P, Lines R and J as well as those between Station J01 and Swiftsure (Fig. 1) there is still some time remaining during the "2-week" cruise to make further observations. Two lines perpendicular to the Pacific coast of Vancouver Island off Estevan Point (Line B) and Tofino (Line A) are added. These lines are arranged to intercept Line P (Fig. 1). One of the stations along Line B will be P06 and the other along Line A will be P04, both designated stations of Line P. The addition of these two lines and returning along Line P via Station P04 contributes additional 428 km to the return journey, and thus would add 21 hours to the travelling time. The total mileage from IOS via Lines P, R, J, B and A becomes 3969 km which would require a little over 8 days of travelling time. A total of nine hydrographic casts, including two at Station P to bottom, would take approximately one day and 89 CTD casts including two at Station P, mostly to 1500 m depth, would take 2 1/2 days. The combined hydrographic and CTD casts would take 3 1/2 days, thus requiring 11 1/2 days for travelling and observations. Given a "2-week" cruise it is possible to make all the observations in the allotted shiptime (from midnight of Sunday to Friday afternoon). This is a tight schedule indeed, but all observations could be made under ideal operational condition including favourable weather. Only during 7 cruises (16%) was it possible to occupy all the designated Lines P, R and J and at least 50% of coverage on each of Lines A and B (Table 4).

SHIPS AND PERSONNEL

A total of 46 cruises made observations at least along some part of the designated lines, especially those near the coast. However, only 39 made observations at least along Line P or Station P. The remaining 7 were associated with other projects {e.g. North Coastal Ocean Dynamics Experiment (NCODE), La Perouse Project (LP), etc.} and were unable to occupy the lines adequately. Approximately two thirds of the total of 46 cruises were made by CSS Parizeau (Fig. 3) and one quarter, by CNAV Endeavour (Fig. 5) (Table 1). The remainder were made by CSS John P. Tully (Fig. 4) and CSS W.E. Ricker (Fig. 6). During the 39 dedicated cruises about one quarter of the time the ships were commanded by A. Chamberlain, followed by P. Frost and W. McMunagle (Table 1). The remainder were by B. Newton, J. Anderson, J. Campbell, S. Bowles, A.J. Ranger and S. Gulati.

The great majority of the scientific and technical personnel participating in cruises were of course from IOS. As is evident from Table 1, 33 members from IOS went to sea. Of these three (Minkley, Bellegay and Soutar) were involved in more than half of the total number of cruises. Five were however temporary observers serving under the federal program, Fisheries Research Employment Development (FRED). In addition to the above, observers from other Canadian institutions participated. They were: PBS, Marine Environmental Data Service (MEDS) and Communication Branch of DFO; Canadian Wildlife Service (CWS) and Atmospheric Environment Service (AES) of the Department of the Environment, Government of British Columbia (BCG); University of British Columbia (UBC), University of Victoria (UV) and University of Quebec. There were also participants from outside Canada, mainly from the U. S. A. (Woods Hole Oceanographic Institution (WHOI), Scripps Institution of Oceanography (SIO), National Center for Atmospheric Research (NCAR), University of Washington (UW), Oregon State University (OSU), University of Carolina (UC), University of Miami and National Marine Fisheries Service of National Oceanic and Atmospheric Administration (NOAA)). There were others from Centro de Investigacion Cientifica Y Educacion Superior de Ensenda (CICESE) of Mexico, Third Institute of Oceanography (TIO) of China and Pacific Oceanological Institute (POI) of Russia. A total of 15 observers also participated under contract to IOS. Of this, two originally participated as FRED observers. One (Yelland) made cruises under FRED, under contract and finally as a member of IOS.

DESIGNATED STATIONS

Prior to August 1981, there were 12 stations along Line P excluding Station P, designated 1 through 12. In August 1981, this line of stations was expanded to 24 stations along the line (P01-P24) and additional ones in the vicinity of Station P (now called P26). They were: P25, P35, P26E, P41, P32, P34, P49, P33. The letter, P, was prefixed to Line P stations in order to avoid confusion with stations along other lines.

The location and depths of major designated stations are shown in Table 2 (see Fig. 1 for approximate position of stations). There are more than twice the number of stations

(28 including Station P) along Line P than previously, with the heaviest concentration of stations along the eastern half of the Line. The spacing between stations along this side is less than 37 km whereas along the western half it is twice this distance.

The combination of Lines R and J consists of over 20 stations. Stations are usually spaced about 50 km offshore and less near the shore. Line J, off Cape St. James is oriented perpendicular to the west coast of the Queen Charlotte Islands (Fig. 2).

Lines A and B are both oriented perpendicular to the west coast of Vancouver Island (Fig. 2). Line B (Estevan Line) begins off Estevan Point. It is included to supplement the many lines taken in its vicinity in the past (before 1972) so the more recent sets of data can be compared with those taken in the past. The purpose of Line A, off Tofino, is to relate the oceanographic condition along the Line with the hourly sea level measurements made at Tofino and Bamfield so that eventually it may be possible to depict some aspects of the oceanographic condition over the continental shelf/slope off Tofino from the interpretation of sea level records taken at Tofino or Bamfield. The stations of both Lines A and B are spaced at less than 7 km. Both lines intersect Line P, Line A at Station P04 and Line B at Station P06.

HYDROGRAPHIC AND CTD OBSERVATIONS

All the stations occupied during the 39 major cruises and those (7) taken under other projects are listed in Table 3. Their associated data include Consecutive Number on the archival file, station name, time and date of hydrographic and CTD stations, maximum nominal depths of the casts and helpful remarks related to casts.

SUMMARY OF CRUISE DESCRIPTION

Table 4 indicates that Station P was occupied 37 times during the 39 dedicated cruises. However, Line P was not occupied to the above extent. It was completely sampled about three quarters of the time (29), and part (more than 5 stations) of it was observed another nine times. It is to be noted that during the two decades before 1981, Line P was occupied completely only once in November 1961. However, from 1981 to 1991, it has been sampled four times (1982, 1984, 1985 and 1987). Lines R and J were sampled 20 and 19 times, respectively while Lines A and B were sampled 13 and 14 times, respectively. Line Z which was added recently (May 1990) was observed only three times.

Seasonally the best coverage of Lines P and R was in 1982 when they were occupied six times.

Both Lines A and B were discontinued after May 1991 but the former, in a little modified form, has been continued, as Line E under the La Perouse Project.

OBSERVED DATA

The CTD temperature and salinity profiles were observed with Guildline analogue and digital probes. Hydrographic casts were made by the use of Niskin sampling bottles, each fitted with two protected reversing thermometers. For samples at depths greater than 200m a single unprotected reversing thermometer was also attached to each bottle. Salinities (in duplicate) were determined with Guildline laboratory salinometer at IOS. The dissolved oxygen content was determined aboard the ship using a modified Winkler method (Carpenter, 1965).

An independent seawaterloop system designed to provide continuous flow of water for oceanographic sampling is available on the ships. The intake is located at about three to four metres below the surface (water line). Initially the temperature and salinity readings were recorded continuously using Plessey Thermosalinograph. Subsequent measurements of temperature, salinity, ship's position and speed, and wind velocity were made digitally at 2-minute intervals using the IOS designed SAIL (Serial ASCII Instrumentation Loop) system.

For calibrating CTD values, we used comparable data from hydrographic casts, and special calibration samples (sampling bottles placed a few metres above the CTD sensor, usually at 1500 decibars). In the case of salinity in the upper mixed layer, the "three-metre" samples from the ship's seawater loop system were used.

PROCESSED DATA

All conductivity data have been converted to salinity using the formula derived by Perkin and Lewis (1980) which has been recommended for general use (Fofonoff and Millard, 1983).

For hydrographic data, the thermometric depth was obtained by the usual "depth difference" method (e.g. Collins et al., 1969). Missing hydrographic data were obtained using a weighted parabolic interpretation method (Reiniger and Ross, 1968).

Readers interested in details of procedures and algorithms used to obtain observed and processed data may find them in one of the representative data reports such as for the "Ocean Storm" cruises of 1987 (Tabata et al., 1988).

Amongst the data archived at the Ocean Physics Division of IOS are:

1. The original CTD data containing temperature and salinity at one-metre averages;
2. The hydrographic data at nominal standard depths;
3. SAIL data which comprise "sea-surface" temperature and salinity, ship's position and speed, (and occasionally meteorological data including wind velocity) at 2-minute intervals;
4. Digitized surface temperature and salinity data recorded "continuously" by the thermosalinograph;
5. Additional data such as surface bucket and loop samples for temperature and salinity.

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ACKNOWLEDGEMENT

We would like to thank Dr. R.E. Thompson for making many oceanographic observations along the designated lines of OCMS during the North Coastal Ocean Dynamics Experiment and La Perouse Project and also for permitting us to include in this report the data taken during his cruises.

We gratefully acknowledge the following for assistance in compiling this report:

A.Y.P. Lee and C. de Jong for assisting in the preparation of Table 3
P.M. Kimber for making the illustrations
N. Delacretaz for preparing the manuscript
F. Whitney for supplying the nutrients data (Appendix 1)
and
D.J. Stucchi for reviewing the manuscript.

Table 1. List of ships and personnel participating in cruises (Abbreviations not already mentioned in text: ID = Identification, i/c = in charge, uc = under contract).

Cruise ID/ Ship	Date/ Master	Personnel
MS81-01 CSS Parizeau	17-28 Aug. 1981 B. Newton	S. Tabata, i/c, (initial part of cruise), IOS C. de Jong, i/c (latter part of cruise), IOS B. Minkley, IOS J. Love, IOS T. Mullin, IOS T. Curran, IOS H. Ashton, uc K. Vermeer, CWS J. Candela, CICESE M. Tenorio, CICESE
MS81-02 CSS Parizeau	19-29 Oct. 1981 B. Newton	C. de Jong, i/c, IOS R. Bellegay, IOS B. Canning, IOS G. Smith, IOS M. Pariniuk, uc H. Goldberg, uc L. McIntosh, UV/BCG
MS82-01 CFAV Endeavour	18-29 Jan. 1982 W. McMunagle	S. Tabata, i/c, IOS J. Love, IOS B. Minkley, IOS T. Juhasz, IOS T. Powers, IOS H. Goldberg, uc L. McIntosh, UV/BCG
MS82-02 CFAV Endeavour	15-26 March 1982 S. Bowles	C. de Jong, IOS B. Minkley, IOS T. Juhasz, IOS T. Powers, IOS H. Goldberg, uc H. Ashton, uc D. Spear, MEDS L. McIntosh, UV/BCG

Cruise ID/ Ship	Date/ Master	Personnel
MS82-03 CSS Parizeau	03-14 May 1982 B. Newton	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS T. Powers, IOS P. Lund, student C. Colegrave, student D. Hanks, student L. McIntosh, UV/BCG
MS82-04 CSS Parizeau	12-22 July 1982 A. Chamberlain	R. Bellegay, i/c, IOS T. Juhasz, IOS P. Lund, student C. Colegrave, student L. Hanks, student
MS82-05 CSS Parizeau	16-30 Sept. 1982 A. Chamberlain	R. Bellegay, i/c, IOS T. Soutar, IOS T. Juhasz, IOS V. Forsland, IOS S. Manganini, WHOI H. Batchelder, OSU J. Sirois, CWS C. Campbell, CWS(uc)
MS82-06 CFAV Endeavour	22 Nov.-05 Dec. 1982 S. Bowles	C. de Jong, i/c, IOS J. Love, IOS T. Juhasz, IOS C. Rendell, uc A. Hofland, uc H. Batchelder, OSU
MS83-01 CFAV Endeavour	16-30 March 1983 W. McMunagle	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS S. Manganini, WHOI

Cruise ID/ Ship	Date/ Master	Personnel
MS83-02 CSS Parizeau	16-27 Aug. 1983 A. Chamberlain	C. de Jong, i/c, IOS B. Minkley, IOS H. Ashton, uc I. Szabo, uc C. Glennie, MEDS E. Rome, PBS C. Powell, student M. Damtoft, student A. Breault, student
MS83-03 CSS Parizeau	06-17 Oct. 1983 A. Chamberlain	R. Bellegay, i/c, IOS T. Soutar, IOS K. Iseki, uc S. Manganini, WHOI L. McIntosh, UV/BCG
MS84-01 CSS Parizeau	26 April-04 May 1984 A. Chamberlain	R. Bellegay, i/c, IOS T. Soutar, IOS D. Macdonald, IOS B. Minkley, IOS A. Spencer, WHOI E. Tappa, UC J. Binks, CWS
MS84-02 CFAV Endeavour	20-31 Aug. 1984 W. McMunagle	R. Bellegay, i/c, IOS D. Macdonald, IOS B. Minkley, IOS C. Hill, student D. Yelland, IOS(FRED) A. Moat, IOS(FRED) S. Manganini, WHOI E. Tappa, UC

Cruise ID/ Ship	Date/ Master	Personnel
MS84-03	08-22 Nov. 1984	R. Bellegay, i/c, IOS
CSS Parizeau	A. Chamberlain	T. Soutar, IOS B. Minkley, IOS K. Iseki, IOS A. Westlake, IOS(FRED) A. Moat, IOS(FRED) D. Yelland, IOS(FRED) I. Szabo, uc U. Swartz, uc
MS85-01	11-15 Feb. 1985	C. de Jong, i/c, IOS
CFAV Endeavour	W. McMunagle	B. Minkley, IOS J. Meikle, IOS W. Trentin, IOS(FRED) W. Forgie, IOS(FRED)
MS85-02	29 April-16 May 1985	R. Bellegay, i/c, IOS
CSS Parizeau	A. Chamberlain	T. Soutar, IOS C. de Jong, IOS B. Minkley, IOS J. Meikle, IOS K. Iseki, uc U. Swartz, uc R. Osterman, WHOI R. Olsen, University of Miami E. Tappa, UC J. C. Zheng, TIO
MS85-03	11-24 Aug. 1985	K. Johnson, i/c, IOS
CSS Parizeau	A. Chamberlain	T. Soutar, IOS K. Iseki, uc U. Swartz, uc J. C. Zheng, TIO K. Welch, student

Cruise ID/ Ship	Date/ Master	Personnel
MS85-04	29 Oct.-15 Nov. 1985	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS L. Spearing, IOS
CSS John P. Tully	B. Newton	K. Iseki, uc U. Swartz, uc D. Yelland, uc A. Karowe, WHOI S. Manganini, WHOI J. C. Zheng, TIO
MS86-01	14-28 April 1986	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS L. Spearing, IOS D. Yelland, uc K. Iseki, uc A. Karowe, WHOI E. Tappa, UC J. C. Zheng, TIO M. S. Zheng, TIO
CSS John P. Tully	B. Newton	
MS86-02	08-17 July 1986	R. Bellegay, i/c, IOS T. Soutar, IOS K. Iseki, uc W. Riske, student
CSS Parizeau	P. Frost	
8614	18 Aug.-12 Sept. 1986	F. Bernard, i/c, PBS B. Minkley, IOS A. Anderson, National Marine Fisheries Service, National Oceanographic and Atmospheric Administration W. Waring, uc (photographer)
CSS W. E.	A. J. Ranger	

Cruise ID/ Ship	Date/ Master	Personnel
MS86-03	15-30 Oct. 1986	R. Bellegay, i/c, IOS T. Soutar, IOS
CSS Parizeau	A. Chamberlain	B. Minkley, IOS L. Spearing, IOS D. Yelland, uc E. Tappa, UC
MS8701	30 March-9 April 1987	R. Bellegay, i/c, IOS F. Whitney, IOS T. Soutar, IOS
CFAV Endeavour	W. McMunagle	S. McKinnon, IOS D. Yelland, IOS
8734	27 May-09 June 1987	K. Denman, i/c, IOS D. Mackas, IOS R. Forbes, IOS
CSS Parizeau	P. Frost	R. Brown, IOS D. Moore, IOS D. Yelland, uc K. Burns, uc A. Earne, student M. Demsey, uc
8780	26 May-05 July 1987	R. J. LeBrasseur, i/c, PBS B. Minkley, IOS
CSS W. E. Ricker	A. J. Ranger	
8790	13-24 July 1987	R. Bellegay., i/c, IOS F. Whitney, IOS T. Soutar, IOS
CFAV Endeavour	W. McMunagle	P. Quay, UW M. Knox, UW

Cruise ID/ Ship	Date/ Master	Personnel
MS8702	22 Sept.-16 Oct. 1987	S. Tabata, i/c, IOS R. Bigham, IOS B. Minkley, IOS
CSS Parizeau	J. Anderson	L. Spearing, IOS J. Love, IOS R. Bellegay, IOS F. Whitney, IOS T. Soutar, IOS B. Bradley, National Center for Atmospheric Research
MS8704	24 Nov.-09 Dec. 1987	L. Spearing, i/c, IOS B. Minkley, IOS D. Yelland, IOS
CSS Parizeau	P. Frost	F. Whitney, IOS R. Bellegay, IOS W. Trentin, uc D. Engemoen, AES T. Duffy, AES
MS8801	02-19 May 1988	R. Bellegay, i/c, IOS F. Whitney, IOS
CSS Parizeau	J. Anderson	T. Soutar, IOS B. Minkley, IOS R. Bigham, IOS D. Yelland, IOS V. Forsland, uc
MS8802	28 June-14 July 1988	L. Spearing, i/c, IOS R. Bigham, IOS D. Yelland, IOS
CSS Parizeau	P. Frost	F. Whitney, IOS M. Knox, UW D. Mildenberger, student

Cruise ID/ Ship	Date/ Master	Personnel
MS8803	30 Nov.-12 Dec. 1988	R. Bellegay, i/c, IOS T. Soutar, IOS F. Whitney, IOS
CSS Parizeau	P. Frost	B. Minkley, IOS R. Bigham, IOS D. Yelland, IOS
MS8901	14-26 Feb. 1989	J. Love, i/c, IOS B. Minkley, IOS L. Spearing, IOS D. Yelland, IOS R. Bellegay, IOS F. Whitney, IOS
CSS John P. Tully	J. Anderson	
MS8902	01-12 May 1989	R. Bellegay, i/c, IOS F. Whitney, IOS T. Soutar, IOS B. Minkley, IOS R. Bigham, IOS L. Spearing, IOS Jin Ping Wu, uc G. Hwang, student
CSS Parizeau	P. Frost	
MS8903	03-22 Oct. 1989	L. Spearing, i/c, IOS B. Minkley, IOS R. Bigham, IOS J. Love, IOS R. Bellegay, IOS F. Whitney, IOS T. Soutar, IOS A. Sybrandy, Scripps Institution of Oceanography
CSS Parizeau	Surat Gulatt	

Cruise ID/ Ship	Date/ Master	Personnel
MS9001 CSS Parizeau	09-29 May 1990 P. Frost	R. Bellegay, i/c, IOS F. Whitney, IOS T. Soutar, IOS K. W. Johnson, IOS B. Minkley, IOS R. Bigham, IOS L. Spearing, IOS A. Bychkov, POI O. Ibadulyayev, POI G. Pavlova, POI P. Tishchenko, POI
MS9002 CSS Parizeau	22 Aug.-06 Sept. J. Campbell	L. Spearing, i/c, IOS D. Yelland, IOS D. Tuelle, IOS F. Whitney, IOS K. W. Johnson, IOS J. Ridal, student B. Schneider, student
MS9103 CSS John P. Tully	19 Feb.-11 March 1991 J. Anderson	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS R. Bigham, IOS G. Desmeules, University of Quebec Jin Ping Wu, UBC, uc
MS9108 CSS Parizeau	28 April-10 May 1991 J. Campbell	S. Tabata, i/c, IOS B. Minkley, IOS R. Bigham, IOS L. Spearing, IOS J. Love, IOS G. Quinn, IOS M.-B. Berube, DFO (Ottawa) Jin Ping Wu, UBC, uc

Cruise ID/ Ship	Date/ Master	Personnel
MS9115	17 Oct.-01 Nov. 1991	R. Bellegay, i/c, IOS T. Soutar, IOS B. Minkley, IOS L. Spearing, IOS R. G. Perkin, IOS M. Dempsey, uc Jin Ping Wu, UBC R. Mugo, UBC H. McLean, UBC
CFAV Endeavour	W. McMunagle	

Table 2. Location and depths(m) of major designated stations. Stations occupied in OCMS cruises have letter, M, indicated in the data files. Depths followed by * are approximate, to nearest 100 m.

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
Line P				
P01	48 34.5	125 30.0	120	At approaches to Juan de Fuca Strait; 32 km southwest of nearest shore (Cape Beale); previously called Station 1 (Ex. 1)
P02	48 36.0	126 00.0	114	Ex. 2
P03	48 37.5	126 20.0	730	
P04	48 39.0	126 40.0	1300	Ex. 3; 74 km southwest of nearest shore (Vargas Island near Tofino); intersects Line A
P05	48 41.6	127 10.0	2100	
P06	48 44.6	127 40.0	2500	Ex. 4; 109 km southwest of nearest shore (Estevan Point); intersects Line B
P07	48 46.6	128 10.0	2450	
P08	48 49.0	128 40.0	2440	Ex. 5
P09	48 51.4	129 10.0	2340	
P10	48 53.6	129 40.0	2660	
P11	48 56.0	130 10.0	2700	
P12	48 58.2	130 40.0	3300	Ex. 6
P13	49 02.6	131 40.0	2875	
P14	49 07.4	132 40.0	3275	Ex. 7
P15	49 12.0	133 40.0	3200	Instrumented meteorological buoy (WMO #46036) located approximately 100 km to south

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
P16	49 17.0	134 40.0	3550	Ex. 8
P17	49 21.0	135 40.0	3200	
P18	49 26.0	136 40.0	3775	Ex. 9
P19	49 30.0	137 40.0	3850	
P20	49 34.0	138 40.0	3890	Ex. 10
P21	49 38.0	139 40.0	3840	
P22	49 42.0	140 40.0	3880	Ex. 11
P23	49 46.0	141 40.0	3970	
P24	49 50.2	142 40.0	3910	Ex. 12
P25	50 00.0	143 36.3	3890	100 km east of P26
P35	50 00.0	144 18.2	4170	50 km east of P26
P26E	50 00.0	144 37.6	4200	25 km east of P26
P26	50 00.0	145 00.0	4200	Ex. P
Stations in the vicinity of Station P26				
P41	50 27.0	145 00.0	4300*	50 km north of P26
P32	50 54.0	145 00.0	4300*	100 km north of P26
P34	50 27.0	144 17.2	4100*	50 km north of P35
P49	50 54.0	144 17.2	4200*	100 km north of P35
P33	50 54.0	143 34.5	3800*	Can be considered to be part of Line R

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
Line R				
R20	50 55.7	143 01.0	3100*	Near Pathfinder Seamount
R19	50 58.0	142 20.0	3800*	
R18	51 00.0	141 39.0	3800*	
R17	51 02.0	140 56.0	3800*	
R16	51 04.0	140 14.0	3800*	
R15	51 06.0	139 30.5	2800*	
R14	51 09.0	138 47.5	1800*	Near Schoppe Tablemount
R13	51 11.0	138 06.0	3700*	
R12	51 13.0	137 23.0	3600*	
R11	51 15.0	136 40.3	3600*	
R10	51 17.0	135 57.6	3700*	Instrumented meteorological buoy (WMO #46004) located 30 km to south
R09	51 19.0	135 15.0	3500*	
R08	51 21.2	134 32.7	3300*	
R07	51 23.5	133 49.6	3100*	
R06	51 25.5	133 06.6	3000*	
Line J				
				Perpendicular to west coast of Queen Charlotte Islands
J05	51 27.5	132 24.0	2490	Approximately 100 km southwest of Cape St. James
J04	51 35.6	132 06.5	2560	
J3A	51 39.4	131 58.8	2447	

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
J03	51 43.5	131 50.0	2260	
J2A	51 47.5	131 40.7	2200	
J02	51 51.6	131 32.0	2100	
J1A	51 55.7	131 22.7	2000	
J01	52 00.0	131 14.0	500	16 km west northwest of Cape St. James
J00	52 02.0	131 10.3	100	
Stations en route from Line J to Lines B and A				
088	51 41.7	131 13.7	1985	
I03	51 23.2	131 13.9	2450	
089	51 03.2	131 11.2	2530	
H05	50 43.0	131 08.3	2530	Between Scott and Dellwood Seamount Chains
G05	50 25.0	130 36.5	1900	On western edge of Dellwood Seamount Chain
F05	50 06.0	130 06.7	1810	
E05	49 47.8	129 36.0	2270	
D06	49 16.0	129 09.0	2410	
P08	48 49.0	128 40.0	2440	On Line P
Line B				
				Perpendicular to west coast of Vancouver Island; off Estevan Point
B07	48 21.6	128 09.5	2550	
B06	48 31.6	127 56.2	2510	
B05	48 41.8	127 42.5	2500	4.5 km southwest of P06

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
B04	48 51.7	127 28.8	2090	
B3A	48 56.8	127 22.0	2000	
B03	49 02.0	127 15.2	1700	
B2A	49 06.9	127 08.5	1180	
B02	49 12.0	127 01.7	300	
B1A	49 16.8	126 54.6	148	
B01	49 21.9	126 47.7	105	19 km west of Estevan Point
B0A	49 25.9	126 37.0	40	
B00	49 30.0	126 36.3	35	
Line A				Also perpendicular to west coast of Vancouver Island; off Tofino
A00	49 08.0	126 00.2	36	
A0B	49 03.8	126 05.9	57	
A01	49 00.0	126 11.7	85	28 km southwest of Tofino
A1B	48 55.2	126 18.0	136	
A02	48 50.2	126 25.3	178	
A2B	48 45.2	126 32.0	500	
A03	48 40.2	126 38.8	1260	2.8 km northeast of P04
A3B	48 36.2	126 44.2	1510	
A04	48 30.2	126 52.5	2200	
A05	48 20.2	127 06.0	2430	

Station No.	Latitude (° ' N)	Longitude (° ' W)	Depth (m)	Remarks
Line P				
P03	48 37.5	126 20.0	730	
P02	48 36.0	126 00.0	114	
P01	48 34.5	125 30.0	120	
Line Z				Extends northward along longitude of P26 to latitude, 55°N
P32	50 54.0	145 00.0	4300*	
Z01	51 21.0	145 00.0	3600*	
Z02	51 48.0	145 00.0	3660	
Z03	52 15.0	145 00.0	4170	
Z04	52 42.0	145 00.0	4060	
Z05	53 09.0	145 00.0	4140	
Z06	53 36.0	145 00.0	3940	
Z07	54 03.0	145 00.0	4020	
Z08	54 30.0	145 00.0	4020	
Z09	55 00.0	145 00.0	4100	

The E and G Lines of La Perouse Project corresponds approximately to the A and B Lines, respectively. Their Line G is approximately 10 km southeast of Line B while their Line E is about 1 km southeast of Line A. Their Station E08, in particular, coincides with Station P04 of Line P.

Table 3. Schedule of hydrographic and CTD observations for each cruise (identified by respective Cruise Identification Number). Dedicated OCMS cruises are prefixed by letters, MS.

From 1987 the cruise identification number was changed (hyphen placed between the year and consecutive cruise number was deleted).
(Abbreviations: CONSEC NO = Consecutive Number, UTC = Universal Time Coordinate, db = decibar; others are indicated in the text):

Index of Table 3, by cruises

	Page
1. MS81-01	27-i
2. MS81-02	27-ii
3. MS82-01	27-iii
4. MS82-02	27-iv-v
5. MS82-03	27-vi
6. MS82-04	27-vii
7. MS82-05	27-viii
8. MS82-06	27-ix-x
9. MS83-01	27-xi-xii
8310 Project NCODE: Parts of Line P and Line J	27-xiii
8311 Project NCODE: Parts of Line P and Line J	27-xiii
10. MS83-02	27-xiv-xv
8312 Project NCODE: Part of Line J	27-xv
11. MS83-03	27-xv
8411 Project NCODE: Part of Line J	27-xv
12. MS84-01	27-xvi
8430 Cruise of Ocean Ecology Division of IOS: Part of Line P. Other stations in the general vicinity of Line P near the coast were occupied as well	27-xvi
13. MS84-02	27-xvii
14. MS84-03	27-xviii-xix
15. MS85-01	27-xix
16. MS85-02 Stations along some lines of La Perouse were also occupied	27-xx-xxi
8510 Project NCODE: Part of Line J	27-xxii
17. MS85-03 Some stations in the vicinity of Union Seamount were also occupied	27-xxii
18. MS85-04	27-xxiii
8512 La Perouse Project: Part of Line P and Lines A and B	27-xxiv
19. MS86-01	27-xxiv
20. MS86-02	27-xxv

TABLE 3-1. MS81-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
001	P 1	18/08/81	1330	115		
002	P 1	18/08/81	1400		100	
003	P 2	18/08/81	1612	105		
004	P 3	18/08/81	1754	807		
005	P 4	18/08/81	1930	1319		
006	P 4	18/08/81	2018		1176	
007	P 5	18/08/81	2318	1319		
008	A 1	19/08/81	0830	87		
009	A 2	19/08/81	1100	206		
010	P 4	19/08/81	1224	1320		
011	A 4	19/08/81	1406	1306		
012	A 5	19/08/81	1548	1308		
013	P 6	19/08/81	1936	1503		
014	P 6	19/08/81	2030		2000	
015	P 7	20/08/81	0006	1305		
016	P 7	20/08/81	0224	1305		
017	P 8	20/08/81	0318		2003	
018	P 9	20/08/81	0636	1502		
019	P10	20/08/81	0900	1503		
020	P10	20/08/81	1000		2000	
021	P11	20/08/81	1324	1307		
022	P12	20/08/81	1554	1504		
023	P12	20/08/81	1642		1934	
024	P13	20/08/81	2148	1448		
025	P13	20/08/81	2242		2002	
026	P14	21/08/81	0406	1504		
027	P14	21/08/81	0500		1823	
028	P15	21/08/81	1200	1306		
029	P16	21/08/81	1642	1308		
030	P16	21/08/81	1724		1985	
031	P17	21/08/81	2336	1308		
032	P18	22/08/81	0518	1505		
033	P18	22/08/81	0608		1493	
034	P19	22/08/81	1224	1311		
035	P20	22/08/81	1712	1505		
036	P20	22/08/81	1800		1995	
037	P21	22/08/81	2330	1387		
038	P22	23/08/81	0406	1503		
039	P22	23/08/81	0506		1994	
040	P23	23/08/81	1030	1503		
041	P24	23/08/81	1442	1432		
042	P24	23/08/81	1536		1991	
043	P25	23/08/81	2036	1502		
044	P35	23/08/81	2336	1410		
045	P26 ^E	24/08/81	0118	310		
046	P26	24/08/81	0254	1498		
047	P26	24/08/81	0354		4194	
048	P26	24/08/81	0700		4181	
049	P33	24/08/81	1600	1502		
050	R19	24/08/81	2030	1501		
052	R17	25/08/81	0200	1502		
053	R15	25/08/81	0718	1503		
054	R13	25/08/81	1224	1487		
055	R11	25/08/81	1718	1454		
056	R 9	25/08/81	2242	1501		
059	J 5	26/08/81	0948	1503		
060	J 4	26/08/81	1200	1502		
061	J 3	26/08/81	1336	1503		
062	J 2	26/08/81	1536	1503		
063	J 1	26/08/81	1724	621		
064	88	26/08/81	1936	1434		
065	I 3	26/08/81	2154	1209		
066	89	27/08/81	0006	1502		
067	H 5	27/08/81	0218	1504		
068	H 5	27/08/81	0506	1504		
069	F 5	27/08/81	0836	1323		
070	F 5	27/08/81	1230	1504		
071	E 5	27/08/81	1600	1502		
072	C 5	27/08/81	1936	1407		
073	P 5	27/08/81	2318	1010		
074	P 5	28/08/81	0130	1028		
075	P 4	28/08/81	0342	1010		
076	P 3	28/08/81	0536	815		
077	P 2	28/08/81	0706	116		
078	P 1	28/08/81	0854	136		

TABLE 3-2. MS81-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	20/10/81	0330	100		
002	P 2	20/10/81	0548	95		
004	P 3	20/10/81	0736	690		
005	P 4	20/10/81	1018	1143		
007	P 5	20/10/81	1324	840		
009	P 5	20/10/81	1942	1477		
010	P 6	20/10/81	2206	1479		
011	P 7	21/10/81	0030	1307		
012	P 8	21/10/81	0300	1403		
013	P 9	21/10/81	0548	1354		
014	P10	21/10/81	0812	1497		
015	P11	21/10/81	1036	1447		
016	P12	21/10/81	1306	1400		
017	P12	21/10/81	1422		1943	
018	P13	21/10/81	2000	1497		
019	P14	21/10/81	2354	1207		
020	P15	22/10/81	0354	1285		
021	P16	22/10/81	0824	1499		
022	P16	22/10/81	0912		1989	
023	P17	22/10/81	1418	1401		
024	P18	22/10/81	1824	1310		
025	P19	22/10/81	2212	1499		
026	P20	23/10/81	0224	1405		
027	P20	23/10/81	0318		1945	
028	P21	23/10/81	0836	1497		
029	P22	23/10/81	1242	1390		
030	P23	23/10/81	1700	1307		
031	P24	23/10/81	2106	1500		
032	P24	23/10/81	2154		1997	
033	P25	24/10/81	0254	1301		
034	P26	24/10/81	0842	1499		
035	P26	24/10/81	0942		4125	
036	\$ 1	24/10/81	1948	317		5.5 km S of P26
037	\$ 2	24/10/81	2112	318		18.5 km SW of P26
038	\$ 3	24/10/81	2224	314		18.5 km NE of P26
039	P33	25/10/81	0406	1298		
040	R19	25/10/81	0900	1500		
041	R18	25/10/81	1142	1499		
042	R17	25/10/81	1454	1405		
043	R16	25/10/81	1806	1306		
044	R15	25/10/81	2106	1505		
045	R14	26/10/81	0024	1270		
046	R13	26/10/81	0254	1312		
047	R12	26/10/81	0554	1226		
048	R11	26/10/81	0912	1501		
049	R10	26/10/81	1206	1390		
050	R 9	26/10/81	1500	1401		
051	R 8	26/10/81	1754	1219		
052	R 8	26/10/81	1900		1999	
053	R 7	26/10/81	2248	1501		
054	R 6	27/10/81	0148	1312		
055	J 5	27/10/81	0542	1266		
056	J 4	27/10/81	0718	1300		
057	J 3	27/10/81	0906	1498		
058	J 2	27/10/81	1048	1499		
059	J 1	27/10/81	1242	301		
060	O88	27/10/81	1436	1220		
061	I 3	27/10/81	1654	450		
062	O89	27/10/81	2000	1005		

TABLE 3-3. MS82-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	19/01/82	0030	97	100	
002	P 1	19/01/82	0100			
003	P 2	19/01/82	0324	113		
004	P 3	19/01/82	0448	803		
005	P 4	19/01/82	0654	1216		
006	P 4	19/01/82	0818		1179	
007	P 5	19/01/82	1042	1207		
008	P 6	19/01/82	1324	1381		
009	P 7	19/01/82	1606	1351		
010	P 8	19/01/82	1830	1378		
011	P 8	19/01/82	1954		1948	
012	P 9	19/01/82	2242	1206		
013	P 10	20/01/82	0112	1178		
014	P 11	20/01/82	0400	1275		
015	P 12	20/01/82	0630	1093		
016	P 12	20/01/82	0900		979	
017	P 13	20/01/82	1630	959		
018	P 14	20/01/82	2230	1204		
019	P 15	21/01/82	0336	1195		
020	P 16	21/01/82	0830	1124		
021	P 17	21/01/82	1318	1178		
022	P 18	21/01/82	1736	1333		
023	P 18	20/01/82	0424		1941	
024	P 19	22/01/82	0830	1203		
025	P 20	22/01/82	1300	1202		
026	P 20	22/01/82	1724	1213		
027	P 21	22/01/82	0354	1289		
028	P 22	23/01/82	0618		2016	
029	P 22	23/01/82	1142	1206		
030	P 23	23/01/82	1730	1350		
031	P 24	23/01/82	0112	1166		
032	P 25	24/01/82	0748	1167		
033	P 35	24/01/82	1406	1075		
034	P 26	24/01/82	1612		4238	
035	P 26	24/01/82	1918	1248		
036	P 26	24/01/82	2106		4148	
037	P 33	25/01/82	0930	1197		
038	R 19	25/01/82	1348	1202		
039	R 17	25/01/82	1848	1359		
040	R 15	25/01/82	2342	1218		
041	R 15	25/01/82	0242	1209		
042	R 14	26/01/82	0606	1332		
043	R 13	26/01/82	0848	1207		
044	R 12	26/01/82	1300	1023		
045	R 11	26/01/82	1618	1287		
046	R 10	26/01/82	1906	1215		
047	R 9	26/01/82	2206	1207		
048	R 8	26/01/82	0112	1204		
049	R 7	27/01/82	0454	1285		
050	R 6	27/01/82	0742	1278		
051	J 5	27/01/82	0930	1206		dubious data
052	J 4	27/01/82	1100	1229		
053	J 3	27/01/82	1218		1190	
054	J 3	27/01/82	1400	1200		
055	J 2	27/01/82	1536	501		
056	J 1	27/01/82	0424	1318		
057	E 5	28/01/82	0824	1210		
058	D 6	28/01/82	1200	1203		
059	D 8	28/01/82	1542	1201		
060	P 8	28/01/82	1718	1342		
061	B 7	28/01/82	1918	1361		
062	B 6	28/01/82	2048	1205		
063	B 6	28/01/82	2230		1440	
064	B 4	28/01/82	2348			
065	B 3	28/01/82	0130	306		
066	B 3	29/01/82	0248	100		
067	B 2	29/01/82	0606	80		
068	B 1	29/01/82	0736	172		
069	A 1	29/01/82	0900	1251		
070	A 2	29/01/82				
071	P 4	29/01/82				

TABLE 3-4. MS82-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	15/03/82	2348	104		
002	P 2	16/03/82	0142	102		
003	P 3	16/03/82	0312	756		
004	P 4	16/03/82	0448	1106		
005	P 4	16/03/82	0618		1131	
006	P 4	16/03/82	0812	1212		
007	P 5	16/03/82	1018	1202		
008	P 6	16/03/82	1324	1257		
009	P 6	16/03/82	1448		1937	
010	P 6	16/03/82	1636	1320		
011	P 7	16/03/82	1912	1199		
012	P 8	16/03/82	2142	1155		
013	P 8	16/03/82	2236		1968	
014	P 9	17/03/82	0136	1206		
015	P 10	17/03/82	0418	1174		
016	P 10	17/03/82	0524		1987	
017	P 11	17/03/82	0900	1207		
018	P 12	17/03/82	1130	1204		
019	P 12	17/03/82	1254		1937	
020	P 13	17/03/82	1842	1332		
021	P 14	17/03/82	2324	1216		
022	P 15	18/03/82	0348	1315		
023	P 16	18/03/82	0748	1191		
024	P 16	18/03/82	0842		1924	
025	P 17	18/03/82	1336	1024		
026	P 18	18/03/82	1730	1368		
027	P 18	18/03/82	1824		1936	
028	P 19	18/03/82	2312	1215		
029	P 20	19/03/82	0354	1341		
030	P 20	19/03/82	0454		1975	
031	P 21	19/03/82	0918	1203		
032	P 22	19/03/82	1330	1283		
033	P 23	19/03/82	1754	1358		
034	P 24	19/03/82	2154	1207		
035	P 24	19/03/82	2242		1108	
036	P 25	20/03/82	0354	1273		
037	P 35	20/03/82	0612	1346		
038	P 26 ^E	20/03/82	0748	460		
039	P 26	20/03/82	0918	1325		
040	P 26	20/03/82	1018		3924	
041	P 26	20/03/82	1318		4041	
042	P 26	20/03/82	1654	1274		
043	P 41	20/03/82	2036	1210		
044	P 32	20/03/82	2248	1205		
045	P 49	21/03/82	0130	1374		
046	P 33	21/03/82	0424	1165		
047	R 20	21/03/82	0700	1123		
048	R 19	21/03/82	0942	1267		
049	R 18	21/03/82	1230	911		
050	R 17	21/03/82	1606	1321		
051	R 17	21/03/82	1700	1369		dubious data
052	R 16	21/03/82	1936	1233		
053	R 15	21/03/82	2254	1054		
054	R 15	21/03/82	2330	1221		
055	R 14	22/03/82	0218	1251		
056	R 13	22/03/82	0536	1338		
057	R 13	22/03/82	0636		1959	
058	R 12	22/03/82	0954	1225		
059	R 11	22/03/82	1312	1273		
060	R 10	22/03/82	1630	1289		
061	R 9	22/03/82	1930	1318		
062	R 9	22/03/82	2018		1951	
063	R 8	22/03/82	2342	1327		
064	R 7	23/03/82	0230	1345		
065	R 6	23/03/82	0524	1253		
066	J 5	23/03/82	0824	1238		
067	J 4	23/03/82	1012	1207		
068	J 3	23/03/82	1248	991		
069	J 2	23/03/82	1518	1332		
070	J 1	23/03/82	1718	443		
071	J 0	23/03/82	1754	125		
072	I 88	24/03/82	0306	1331		
073	I 3	24/03/82	0536	1273		
074	H 89	24/03/82	0812	1274		
075	H 5	24/03/82	1036	1300		

TABLE 3-4. MS82-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	G 5	24/03/82	1330	1186		
077	F 5	24/03/82	1700	1330		
078	E 5	24/03/82	2024	1317		
079	E 5	24/03/82	2112		1832	
080	D 5	25/03/82	0136	1271		
081	P 8	25/03/82	0518	1332		
082	B 7	25/03/82	0918	1296		
083	B 6	25/03/82	1100	1195		
084	P 6	25/03/82	1306	1312		
085	B 4	25/03/82	1442	1173		
086	B 3	25/03/82	1642	1302		
087	B 3	25/03/82	1748		1490	
088	B 2	25/03/82	2024	221		
089	B 1	25/03/82	2136	103		
090	A 1	26/03/82	0036	85		
091	A 2	26/03/82	0312	111		
092	P 4	26/03/82	0448	1262		
093	P 3	26/03/82	0642	750		
094	P 2	26/03/82	0824	104		
095	P 1	26/03/82	1024	99		

TABLE 3-5. MS82-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
001	P 1	4/05/82	1418	141		
002	P 2	4/05/82	1654	114		
003	P 3	4/05/82	1906	720		
004	P 4	4/05/82	2136	1275		
005	P 4	4/05/82	2300		1238	
006	P 5	5/05/82	0148	1380		
007	P 6	5/05/82	0424	1332		
008	P 6	5/05/82	0536		997	
009	P 7	5/05/82	0824	1359		
010	P 8	5/05/82	1048	1325		
011	P 8	5/05/82	1206		1438	
012	P 9	5/05/82	1436	1323		
013	P 10	5/05/82	1712	1371		
014	P 11	5/05/82	1942	1341		
015	P 12	5/05/82	2218	1341		
016	P 12	5/05/82	2324		1466	
017	P 13	6/05/82	0424	1290		
018	P 14	6/05/82	1006	1328		
019	P 14	6/05/82	1200		1960	
020	P 15	6/05/82	1718	1358		
021	P 16	7/05/82	0218	1318		
022	P 17	7/05/82	0712	1334		
023	P 18	7/05/82	1142	1334		
024	P 18	7/05/82	1306		1467	
025	P 19	7/05/82	1754	1374		
026	P 20	7/05/82	2248	1369		
027	P 21	8/05/82	0312	1301		
028	P 22	8/05/82	0748	1348		
029	P 22	8/05/82	0906		1451	
030	P 23	8/05/82	1342	1290		
031	P 24	8/05/82	1824	1369		
032	P 25	8/05/82	2218	1331		
033	P 35	9/05/82	0136	1331		
034	P 26 ^E	9/05/82	0312	496		
035	P 26	9/05/82	0500	1379		
036	P 26	9/05/82	0600		4137	
037	P 26	9/05/82	0936		4132	
038	P 26	9/05/82	1430	1328		
039	P 34	9/05/82	1818	1378		
040	P 33	9/05/82	2212	1364		
041	R 20	10/05/82	0042	1209		
042	R 19	10/05/82	0336	1314		
043	R 18	10/05/82	0630	1225		
044	R 17	10/05/82	0936	1379		
045	R 16	10/05/82	1230	1436		
046	R 15	10/05/82	1506	1310		
047	R 14	10/05/82	1754	1299		
048	R 13	10/05/82	2042	1332		
049	R 13	10/05/82	2206		1470	
050	R 12	11/05/82	0054	1339		
051	R 11	11/05/82	0418	1307		
052	R 10	11/05/82	0718	1346		
053	R 9	11/05/82	1024	1344		
054	R 8	11/05/82	1312	1299		
055	R 7	11/05/82	1606	1338		
056	R 6	11/05/82	1900	1327		
057	J 5	11/05/82	2206	1348		
058	J 4	12/05/82	0000	1365		
059	J 3	12/05/82	0142	1269		
060	J 3	12/05/82	0248		1470	
061	J 2	12/05/82	0442	1319		
062	J 1	12/05/82	0648	482		
063	B 7	13/05/82	0718	1344		
064	B 6	13/05/82	0906	1331		
065	B 6	13/05/82	1106	1298		
066	B 4	13/05/82	1230	1228		
067	B 3	13/05/82	1412	1357		
068	B 3	13/05/82	1518		1461	
069	B 2	13/05/82	1718	294		
070	B 1	13/05/82	1848	106		
071	A 1	13/05/82	2130	78		
072	P 1	14/05/82	0054	140		

TABLE 3-6. MS82-04. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	12/07/82	1806	123		
002	P 2	12/07/82	2006	111		
003	P 3	12/07/82	2124	708		
004	P 4	12/07/82	2318	1309		
005	P 4	13/07/82	0006		1194	
006	P 5	13/07/82	0312	1272		
007	P 6	13/07/82	0530	1255		
008	P 6	13/07/82	0636		1485	
009	P 7	13/07/82	0930	1365		
010	P 8	13/07/82	1206	1338		
011	P 8	13/07/82	1318		1481	
012	P 9	13/07/82	1536	1277		
013	P10	13/07/82	1800	1273		
014	P11	13/07/82	2148	1381		
015	P12	14/07/82	0006	1369		
016	P12	14/07/82	0112		1469	
017	P13	14/07/82	0530	1279		
018	P14	14/07/82	1100	1355		
019	P14	14/07/82	1212		1483	
020	P15	14/07/82	1712	1281		
021	P16	14/07/82	2148	1359		
022	P16	14/07/82	2248		1415	
023	P17	15/07/82	0254	1275		
024	P18	15/07/82	0706	1290		
025	P18	15/07/82	0818		1493	
026	P19	15/07/82	1212	1283		
027	P20	15/07/82	1606	1271		
028	P21	15/07/82	1954	1281		
029	P22	15/07/82	2342	1274		
030	P22	16/07/82	0042		1480	
031	P23	16/07/82	0442	1276		
032	P24	16/07/82	0906	1277		
033	P25	16/07/82	1248	1282		
034	P35	16/07/82	1548	1273		
035	P26	16/07/82	1842	1274		
036	P26	16/07/82	1948		4134	
037	P26	17/07/82	0354	1275		
038	P26	17/07/82	0442		4134	
039	P33	17/07/82	1442	1276		
040	R20	17/07/82	1712	1273		
041	R19	17/07/82	1942	1280		
042	R18	17/07/82	2224	1278		
043	R17	18/07/82	0106	1275		
044	R16	18/07/82	0354	1273		
045	R15	18/07/82	0642	1275		
047	R14	18/07/82	0942	1274		
048	R13	18/07/82	1224	1288		
049	R12	18/07/82	1500	1273		
050	R11	18/07/82	1806	1273		
051	R10	18/07/82	2106	1274		
052	R 9	18/07/82	2400	1275		
053	R R 8	19/07/82	0242	1276		
054	R R 7	19/07/82	0530	1273		
055	R R 6	19/07/82	0830	1277		
056	J J 5	19/07/82	1118	1275		
057	J J 4	19/07/82	1300	1275		
058	J J 3	19/07/82	1442	1273		
059	J J 3	19/07/82	1548		1496	
060	J J 2	19/07/82	1824	1273		
061	J J 1	19/07/82	2042	501		
062	B B 7	20/07/82	2200	1277		
063	B B 6	20/07/82	2354	1289		
064	P P 6	21/07/82	0206	1273		
065	P P 4	21/07/82	0336	1280		
066	B B 3	21/07/82	0524	1275		
067	B B 3	21/07/82	0630		1412	
068	B B 2	21/07/82	0830	287		
069	B B 1	21/07/82	1012	103		
070	A A 1	21/07/82	1306	91		
071	A A 2	21/07/82	1430	180		
072	P P 4	21/07/82	1600	1271		
073	A A 4	21/07/82	1742	1272		
074	A A 5	21/07/82	1942	1291		
075	P P 3	21/07/82	2300	707		
076	P P 2	22/07/82	0030	120		
077	P P 1	22/07/82	0248	111		

TABLE 3-7. MS82-05. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	17/09/82	1200	116		
002	P 2	17/09/82	1418	100		
003	P 3	17/09/82	1548	719		
004	P 4	17/09/82	1730	1201		
005	P 4	17/09/82	1842		1174	
006	P 5	17/09/82	2118	1357		
007	P 6	17/09/82	2336	1303		
008	P 6	18/09/82	0048		1946	
010	P 7	18/09/82	0342	1317		
011	P 8	18/09/82	0618	1304		
012	P 8	18/09/82	0736		1977	
013	P 9	18/09/82	1000	1305		
014	P10	18/09/82	1230	1302		
015	P11	18/09/82	1500	1302		
016	P12	18/09/82	1718	1305		
017	P12	18/09/82	1836		2001	
018	P13	18/09/82	2248	1302		
020	P14	19/09/82	0318	1304		
021	P14	19/09/82	0448		1972	
022	P15	19/09/82	0930	1311		
023	P16	19/09/82	1354	1300		
024	P16	19/09/82	1500		1994	
025	P17	19/09/82	1930	1303		
026	P18	19/09/82	2342	1304		
027	P18	20/09/82	0048		1984	
028	P19	20/09/82	0506	1303		
029	P20	20/09/82	0942	1304		
030	P21	20/09/82	1348	1304		
031	P22	20/09/82	1800	1305		
032	P22	20/09/82	1912		1961	
033	P23	20/09/82	2330	1302		
034	P24	21/09/82	0430	1302		
035	P25	21/09/82	0912	1309		
036	P35	21/09/82	1236	1301		
037	P26	21/09/82	1606	1299		
038	P26	22/09/82	1542	1304		
039	P26	22/09/82	1724		4129	
041	P32	25/09/82	1518	1302		
042	P49	26/09/82	0136	1303		
043	P33	26/09/82	0436	1304		
044	R20	26/09/82	0806	1381		
045	R19	26/09/82	1112	1302		
046	R18	26/09/82	1400	1301		
047	R17	26/09/82	1654	1304		
048	R16	26/09/82	1936	1336		
049	R15	26/09/82	2242	1348		
050	R14	27/09/82	0142	1302		
051	R13	27/09/82	0442	1302		
052	R13	27/09/82	0548		1992	
053	R12	27/09/82	1024	1324		
054	R11	27/09/82	1330	1302		
055	R10	27/09/82	1636	1307		
056	R 9	27/09/82	1924	1312		
057	R 8	27/09/82	2224	1269		
058	R 7	28/09/82	0112	1281		
059	R 6	28/09/82	0418	1275		
060	J 5	28/09/82	0730	1306		
061	J 4	28/09/82	0912	1294		
062	J 3	28/09/82	1100	1267		
063	J 2	28/09/82	1306	1301		
064	J 1	28/09/82	1500	506		
065	A 1	29/09/82	1648	60		
068	A 2	29/09/82	2154	193		
069	P 4	29/09/82	2348	1127		
070	P 3	30/09/82	0148	723		
071	P 2	30/09/82	0324	110		
072	P 1	30/09/82	0542	109		

TABLE 3-8. MS82-06. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P1	24/11/82	0648	126		
002	P2	24/11/82	0830	106		
003	P3	24/11/82	0954	751		
005	P4	24/11/82	1300	804		
006	P4	24/11/82	1424		662	
007	P5	24/11/82	1624	1277		
008	P6	24/11/82	1848	1273		
009	P6	24/11/82	2018		584	
010	P7	24/11/82	2224	1205		
011	P8	25/11/82	0042	1247		
012	P8	25/11/82	0200		1921	
013	P9	25/11/82	0606	1012		
014	P10	25/11/82	0900	1158		
015	P11	25/11/82	1136	927		
016	P12	25/11/82	1424	1199		
017	P13	25/11/82	2236	1200		
018	P14	26/11/82	0248	1214		
019	P14	26/11/82	0354		1843	
020	P15	26/11/82	0912	1209		
021	P16	26/11/82	1324	1235		
022	P16	26/11/82	1430		1859	
023	P17	26/11/82	1942	1207		
024	P18	26/11/82	2348	1270		
025	P18	27/11/82	0054		1856	
026	P19	27/11/82	0618	1205		
027	P20	27/11/82	1024	1225		
028	P20	27/11/82	1142		1979	
029	P21	27/11/82	1642	1209		
030	P22	27/11/82	2048	1204		
031	P22	27/11/82	2148		1977	
034	P24	28/11/82	0700	1212		
035	P25	28/11/82	1042	1198		
036	P25	28/11/82	1348	1262		
037	P26	28/11/82	1536	1268		
038	P26	28/11/82	1730	1208		
039	P26	28/11/82	1848		4088	
040	P26	28/11/82	2130		4138	
041	P26	29/11/82	0200	1269		
042	P41	29/11/82	0454	1210		
043	P32	29/11/82	0748	1206		
044	P49	29/11/82	1042	1201		
045	P33	29/11/82	1330	1254		
046	R20	29/11/82	1554	1248		
047	R19	29/11/82	1836	1207		
048	R18	29/11/82	2118	1209		
049	R17	30/11/82	0006	1256		
050	R17	30/11/82	0100		1980	
051	R16	30/11/82	0430	1229		
052	R15	30/11/82	0806	1210		
053	R14	30/11/82	1054	1205		
054	R13	30/11/82	1336	1252		
055	R13	30/11/82	1448		1649	
056	R12	30/11/82	1748	1036		
057	R11	30/11/82	2100	1205		
058	R10	30/11/82	2354	1225		
059	R9	1/12/82	0236	1223		
060	R9	1/12/82	0336		1942	
061	R8	1/12/82	0654	1088		
062	R7	1/12/82	0948	1211		
063	R6	1/12/82	1248	1235		
064	J5	1/12/82	1542	1209		
065	J4	1/12/82	1724	977		
066	J4	1/12/82	1912	1097		
067	J3	1/12/82	2018		1925	
068	J2	1/12/82	2254	1217		
069	J1	2/12/82	0036	504		
070	I8	2/12/82	1942	1208		
071	I8	2/12/82	2206	1078		
072	I3	3/12/82	0030	908		
073	H5	3/12/82	0248	1087		
074	H5	3/12/82	0548	1159		
075	H5	3/12/82	0854	1156		

TABLE 3-8. MS82-06. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	E 5	3/12/82	1148	1138		
077	D 6	3/12/82	1524	1031		
078	P 8	3/12/82	1906	975		
079	B 7	3/12/82	2254	1207		
080	B 6	4/12/82	0036	1022		
081	P 6	4/12/82	0248	1153		
082	B 4	4/12/82	0430	1208		
083	B 3	4/12/82	0642	1207		
084	B 2	4/12/82	0842	406		
085	B 1	4/12/82	1042	124		
086	A 1	4/12/82	1554	82		
087	A 2	4/12/82	1736	203		
088	P 4	4/12/82	1900	1211		
089	A 4	4/12/82	2042	1158		
090	A 5	4/12/82	2230	1117		
091	A 5	4/12/82	2342		1968	
092	P 3	5/12/82	0348	702		
093	P 2	5/12/82	0524	107		

TABLE 3-9. MS83-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	16/03/83	1324	120		
002	P 2	16/03/83	1518	112		
003	P 3	16/03/83	1648	733		
004	P 4	16/03/83	2042	1315		
005	P 4	16/03/83	2230		1081	
006	P 5	17/03/83	0048	1307		
007	P 6	17/03/83	0312	1324		
008	P 6	17/03/83	0424		891	
009	P 7	17/03/83	0706	1308		
010	P 8	17/03/83	0930	1318		
011	P 8	17/03/83	1106		1380	
012	P 9	17/03/83	1318	1327		
013	P10	17/03/83	1524	1313		
014	P11	17/03/83	1730	1306		
015	P12	17/03/83	2230	1311		
016	P12	17/03/83	2348		1477	
017	P13	18/03/83	0424	1306		
018	P14	18/03/83	0800	1321		
019	P14	18/03/83	0912		994	
020	P15	18/03/83	1306	1317		
021	P16	18/03/83	1648	1314		
022	P16	18/03/83	1800		1383	
023	P17	18/03/83	2242	1307		
024	P18	19/03/83	0242	1347		
025	P18	19/03/83	0348		1487	
026	P19	19/03/83	0730	1304		
027	P20	19/03/83	1106	1310		
028	P21	19/03/83	1448	1326		
029	P22	19/03/83	1830	1307		
030	P23	19/03/83	2248	1306		
031	P24	20/03/83	0218	1315		
032	P25	20/03/83	0554	1310		
033	P35	20/03/83	0842	1310		
034	P26 ^E	20/03/83	1024	1306		
035	P26 ^E	20/03/83	2054		3950	
036	P26	20/03/83	2130	1381		
038	P26	21/03/83	0406	1348		
039	P41	22/03/83	0606	1320		
040	P32	22/03/83	0854	1332		
041	P32	22/03/83	1024		1480	
042	P49	22/03/83	1318	1373		
043	P33	22/03/83	1612	1305		
044	P33	22/03/83	1724		1057	
045	R20	22/03/83	1936	1310		
046	R19	22/03/83	2206	1311		
047	R18	23/03/83	0136	1314		
048	R17	23/03/83	0418	1306		
049	R17	23/03/83	0530		1489	
050	R16	23/03/83	0812	1305		
051	R15	23/03/83	1100	1310		
052	R14	23/03/83	1348	1350		
053	R13	23/03/83	1624	1312		
054	R13	23/03/83	1730		1319	
055	R12	23/03/83	1948	1307		
056	R11	23/03/83	2242	1307		
057	R11	23/03/83	2348		1460	
058	R10	24/03/83	0236	1382		
059	R 9	24/03/83	0524	1313		
060	R 9	24/03/83	0630		1433	
061	R R 8	24/03/83	0912	1305		
062	R R 7	24/03/83	1148	1305		
063	R R 6	24/03/83	1454	1330		
064	J J 5	24/03/83	1754	1309		
065	J J 4	24/03/83	1942	1308		
066	J J 3	24/03/83	2124	1306		
067	J J 3	24/03/83	2236		1349	
068	Q Q 1	25/03/83	0036	1321		Q 1 and J2A are same
069	Q Q 2	25/03/83	0142	1309		Q 2 and J1A are same
070	Q Q 2	25/03/83	0248	1313		
071	1	25/03/83	0354	697		
072	1	25/03/83	0536	187		
073	4	25/03/83	0606	845		
074	C 4	25/03/83	0700		604	
075	C 5	25/03/83	0754	1306		

TABLE 3-9. MS83-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	Q 6	25/03/83	0854	1308		
077	QC6	25/03/83	1006		1482	
078	Q 7	25/03/83	1112	1310		
079	Q 8	25/03/83	1224	1329		
080	QC8	25/03/83	1324		1463	
080	Q 9	26/03/83	0248	1311		
082	Q10	26/03/83	0418	1296		
083	H 5	27/03/83	0642	1320		
084	G 5	27/03/83	1018	1330		
085	F 5	27/03/83	1354	1325		
086	E 5	27/03/83	1642	1313		
087	D 6	27/03/83	2042	1304		
088	P 8	28/03/83	0048	1305		
089	B 7	28/03/83	0548	319		
090	B 7	28/03/83	0642		1347	
091	B 6	28/03/83	0830	1305		
092	P 6	28/03/83	1036	1310		
093	B 4	28/03/83	1206	1319		
094	B 3	28/03/83	1348	1326		
095	B 2	28/03/83	1530	298		
096	B 1	28/03/83	1648	112		
098	A 2	29/03/83	0706	236		
099	A 3	29/03/83	0812	610		
100	P 4	29/03/83	0906	1205		
101	A 4	29/03/83	1106	1300		
102	A 5	29/03/83	1300	1321		
103	A 5	29/03/83	1412		1440	
104	P 3	29/03/83	1954	829		
105	P 2	29/03/83	2148	110		
106	P 1	30/03/83	0224	105		

TABLE 3. 8310. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
003	J02	04/05/83	0524	1203		
005	J03	04/05/83	1106	102		
006	Q03	04/05/83	1712	126		
008	Q06	05/05/83	0106	1201		
009	Q05	05/05/83	0424	1203		
011	Q07	05/05/83	0736	1390		
156	J01	17/05/83	0748	617		
157	J1A	17/05/83	0836	1196		
158	J1B	17/05/83	0942	1195		
159	J02	17/05/83	1048	1200		
160	88	17/05/83	1248	1198		
161	I03	17/05/83	1518	1199		
162	89	17/05/83	1754	1201		
163	H05	17/05/83	2106	1198		
164	H05	17/05/83	2154	1200		
165	H05	17/05/83	2315		1447	
165	D01	19/05/83	0748	82		
166	D02	19/05/83	0854	946		
167	P06	19/05/83	1600	1205		
168	P05	19/05/83	1830	1198		
169	P04	19/05/83	2100	1250		
170	P04	19/05/83	2208		1262	
171	P03	20/05/83	0001	700		
172	P02	20/05/83	0148	111		
173	P01	20/05/83	0348	107		
174	JF4	20/05/83	0548	56		

TABLE 3. 8311. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P01	30/06/83	0342	125		
002	P02	30/06/83	0542	105		
004	P03	30/06/83	0742	731		
005	P04	30/06/83	0924	1254		
006	P05	30/06/83	1148	1499		
007	P06	30/06/83	1430	1453		
008	P07	30/06/83	1700	1451		
009	P08	30/06/83	1918	1455		
010	P09	30/06/83	2312	1456		
011	P10	01/07/83	0124	1459		
012	P11	01/07/83	0336	1452		
070	J2A	14/07/83	1948	1200		
071	J02	14/07/83	2112	1200		
072	J1A	14/07/83	2218	1500		
073	J01	14/07/83	2342	500		

TABLE 3-10. MS83-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	17/08/83	0418	102		
002	P 2	17/08/83	0642	104		
003	P 3	17/08/83	0824	816		
004	P 4	17/08/83	1024	804		
005	P 4	17/08/83	1142		1150	
006	P 5	17/08/83	1454	1409		
007	P 6	17/08/83	1712	1403		
008	P 6	17/08/83	1836		1880	
009	P 7	17/08/83	2212	1405		
010	P 8	18/08/83	0036	1403		
011	P 8	18/08/83	0206		1179	
012	P 9	18/08/83	0436	1404		
013	P10	18/08/83	0754	1407		
014	P11	18/08/83	1030	1406		
015	P12	18/08/83	1306	1414		
016	P12	18/08/83	1406		1167	
017	P13	18/08/83	1824	1402		
018	P14	18/08/83	2248	1406		
019	P14	18/08/83	2348		1196	
020	P15	19/08/83	0406	1405		
021	P16	19/08/83	0906	1407		
022	P16	19/08/83	1030		1159	
023	P17	19/08/83	1506	1408		
024	P18	19/08/83	1930	1406		
025	P18	19/08/83	2036		1182	
026	P19	20/08/83	0100	1412		
027	P20	20/08/83	0518	1404		
028	P21	20/08/83	1012	1407		
029	P22	20/08/83	1430	1409		
030	P22	20/08/83	1530		1191	
031	P23	20/08/83	1954	1406		
032	P24	21/08/83	0030	1413		
033	P25	21/08/83	0436	1405		
034	P26	21/08/83	1048	1405		
035	P26	21/08/83	1148		4211	
036	P26	21/08/83	1500	1404		
037	P32	21/08/83	2124	1405		
038	P32	21/08/83	2230		1129	
038	P33	22/08/83	0342	1404		
039	R20	22/08/83	0612	1407		
040	R19	22/08/83	0942	1406		
041	R18	22/08/83	1248	1508		
042	R17	22/08/83	1554	1207		
043	R16	22/08/83	1848	1208		
044	R15	22/08/83	2200	1404		
045	R14	23/08/83	2430	1400		
046	R13	23/08/83	0530	1406		
047	R13	23/08/83	0636		1197	
048	R12	23/08/83	0924	1404		
049	R11	23/08/83	1254	1406		
050	R10	23/08/83	1600	1312		
051	R 9	23/08/83	1848	1404		
052	R 9	23/08/83	1954		1181	
053	R 8	23/08/83	2248	1405		
054	R 7	24/08/83	0148	1403		
055	R 6	24/08/83	0500	1401		
056	J 5	24/08/83	0824	1405		
057	J 4	24/08/83	1024	1405		
058	J 3	24/08/83	1224	1406		
059	J 3	24/08/83	1330		1186	
059	Q 1	24/08/83	1442	1224		Q1 and J2A are same
060	Q 2	24/08/83	1548	1006		Q2 and J1A are same
062	Q 2	24/08/83	1718	1205		
063	J 1	24/08/83	1830	435		
064	J 1	24/08/83	1918		424	
065	88	24/08/83	2142	1204		
066	I 3	24/08/83	2354	1405		
067	I 089	25/08/83	0218	1405		
068	H 5	25/08/83	0442	1203		
069	G 5	25/08/83	0818	1406		
070	F 5	25/08/83	1124	1407		
071	E 5	25/08/83	1418	1404		
072	D 6	25/08/83	1800	1204		
073	P 8	25/08/83	2124	1403		
074	P 7	25/08/83	2348	1404		
075	P 6	26/08/83	0212	1404		

TABLE 3-10. MS83-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS
[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	B 4	26/08/83	0330	1204		
077	B 3	26/08/83	0518	1202		
078	B 3	26/08/83	0618		1172	
079	B 2	26/08/83	08218	270		
080	B 1	26/08/83	1000	103		
081	A 1	26/08/83	1312	94		
082	A 2	26/08/83	1442	232		
083	A 3	26/08/83	1530	507		
084	P 4	26/08/83	1630	1204		
085	P 3	26/08/83	1818	704		
086	P 2	26/08/83	1954	104		
087	P 1	26/08/83	2154	103		

TABLE 3. 8312. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
029	K4	09/09/83	0854	1192		
030	L1	09/09/83	0954	1202		
031	L2	09/09/83	1100	1193		
032	L3	09/09/83	1200	1194		
033	J02	09/09/83	1300	1198		
034	J1A	09/09/83	1406	1395		
035	J01	09/09/83	1518	645		
036	J00	09/09/83	1606	72		
037	A1	09/09/83	1836	201		
038	B2	09/09/83	2212	930		
039	B1	09/09/83	2342	195		
040	Q5	10/09/83	0042	1017		
041	B3	10/09/83	0218	1108		
042	Q7	10/09/83	0330	1019		
043	QC21	15/09/83	1500		1193	

TABLE 3-11. MS83-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P26	13/10/83	2353		3933	

TABLE 3. 8411. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
124	J01	25/04/84	0530	400		
125	J01	25/04/84	0606		350	
126	J1A	25/04/84	0700	1200		
127	J02	25/04/84	0806	1500		
128	J02	25/04/84	0924		1197	
129	J2A	25/04/84	1054	1220		
130	J03	25/04/84	1154	1200		
131	J03	25/04/84	306		583	

TABLE 3-12. MS84-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	J 4	27/04/84	0612	1217		
002	J 5	27/04/84	0748	1217		
003	R 6	27/04/84	1024	1219		
004	R 7	27/04/84	1254	1217		
005	R 8	27/04/84	1518	1223		
006	R 9	27/04/84	1748	1211		
007	R 9	27/04/84	1842		1488	
008	R 10	27/04/84	2124	1207		
009	R 11	28/04/84	0006	1220		
010	R 12	28/04/84	0248	1208		
011	R 13	28/04/84	0500	1212		
012	R 13	28/04/84	0612		1489	
013	R 14	28/04/84	0848	1219		
014	R 15	28/04/84	1136	1206		
015	R 16	28/04/84	1418	1212		
016	R 17	28/04/84	1654	1206		
017	R 18	28/04/84	1936	1210		
018	R 19	28/04/84	2218	1205		
019	R 20	29/04/84	0100	1206		
020	P 33	29/04/84	0312	1217		
021	P 26	29/04/84	2306	1222		
022	P 26	29/04/84	2354		4215	
023	P 16	2/05/84	0742	1216		
024	P 15	2/05/84	1130	1208		
025	P 14	2/05/84	1512	1207		
026	P 13	2/05/84	1854	1217		
027	P 12	2/05/84	2236	1214		
028	P 11	3/05/84	0048	1213		
029	P 10	3/05/84	0300	1205		
030	B 7	3/05/84	0912	1208		
031	B 6	3/05/84	1042	1216		
032	B 6	3/05/84	1248	1212		
033	B 4	3/05/84	1406	1218		
034	B 3	3/05/84	1554	1203		
035	B 2	3/05/84	1736	307		
036	B 1	3/05/84	1900	111		
037	A 1	3/05/84	2148	92		
038	A 2	3/05/84	2306	225		

TABLE 3. 8430. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
010	P10	24/05/84	0248	509		
008	P08	24/05/84	0706	501		
006	P06	24/05/84	1154	502		
005	P05	24/05/84	1526	502		
004	P04	24/05/84	1824	505		
003	P03	24/05/84	2036	502		
002	P02	24/05/84	2300	100		
001	P01	25/05/84	0054	112		

TABLE 3-13. MS84-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	21/08/84	1454	93		
002	P 1	21/08/84	1454		100	
003	P 2	21/08/84	1736	116		
004	P 3	21/08/84	1906	804		
005	P 4	21/08/84	2036	1306		
006	P 4	21/08/84	2142		1099	
007	P 5	22/08/84	0006	1322		
008	P 6	22/08/84	0218	1313		
009	P 6	22/08/84	0342		1960	
010	P 7	22/08/84	0618	1311		
011	P 8	22/08/84	0836	1303		
012	P 9	22/08/84	1136	1314		
013	P 10	22/08/84	1400	1306		
014	P 11	22/08/84	1636	1303		
016	P 12	22/08/84	1912	1011		
017	P 13	22/08/84	2248	1312		
018	P 14	23/08/84	0218	1315		
019	P 15	23/08/84	0600	1304		
020	P 16	23/08/84	1018	1305		
021	P 16	23/08/84	1136		1940	
022	P 17	23/08/84	1548	1312		
023	P 18	23/08/84	2012	1304		
024	P 18	23/08/84	2124		1957	
025	P 19	24/08/84	0148	1306		
026	P 20	24/08/84	0606	1303		
027	P 26	26/08/84	1654	1310		
028	P 26	26/08/84	1830		2440	
029	P 25	28/08/84	2236	638		
030	P 24	29/08/84	0118	1300		
031	P 23	29/08/84	0424	1307		
032	P 22	29/08/84	0754	1305		
033	P 21	29/08/84	1100	1316		
034	P 20	29/08/84	1412	1345		
035	A 5	30/08/84	2024	1287		
036	A 4	30/08/84	2148	1206		
037	P 4	30/08/84	2300	1338		
038	A 2	31/08/84	0030	182		

TABLE 3-14. MS84-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	8/11/84	1530	114		
002	P 2	8/11/84	1730	118		
003	P 3	8/11/84	1848	788		
004	P 4	8/11/84	2030	1338		
005	P 4	8/11/84	2130		1180	
006	P 5	9/11/84	0030	1207		
007	P 6	9/11/84	0312	1210		
008	P 6	9/11/84	0430		1969	
009	P 7	9/11/84	0730	1213		
010	P 8	9/11/84	1018	1209		
011	P 8	9/11/84	1136		1951	
012	P 9	9/11/84	1512	1215		
013	P 10	9/11/84	1748	1204		
014	P 10	9/11/84	1912		1962	
015	P 11	9/11/84	2200	1210		
016	P 12	10/11/84	0036	1206		
017	P 12	10/11/84	0148		1935	
018	P 13	10/11/84	0636	1209		
019	P 14	10/11/84	1054	1210		
020	P 14	10/11/84	1236		1977	
021	P 15	10/11/84	1724	1209		
022	P 16	10/11/84	2124	1205		
023	P 16	10/11/84	2242		1937	
024	P 17	11/11/84	0312	1282		
025	P 18	11/11/84	0724	1209		
026	P 19	11/11/84	1130	1211		
027	P 20	11/11/84	1542	1207		
028	P 21	11/11/84	1948	1203		
029	P 22	11/11/84	2348	1205		
030	P 23	12/11/84	0348	1206		
031	P 24	12/11/84	0754	1207		
032	P 25	12/11/84	1154	1204		
033	P 35	12/11/84	1448	1215		
034	P 26	12/11/84	2230	1204		
035	P 26	12/11/84	2342		2442	
036	P 26	13/11/84	0412		2466	
037	P 26	13/11/84	2200		989	
038	P 19	16/11/84	0000	1202		
039	P 18	16/11/84	0412	1208		
040	J 11	16/11/84	0836	1210		
041	J 10	16/11/84	1142	1208		
042	J 9	16/11/84	1448	1208		
043	J 8	16/11/84	1800	1206		
044	J 7	16/11/84	2048	1208		
045	J 6	16/11/84	2354	1204		
046	J 5	17/11/84	0300	1207		
047	J 4	17/11/84	0454	1209		
048	J 3	17/11/84	0636	1204		
049	J 3	17/11/84	0800		1946	
050	J 2	17/11/84	1018	1212		
051	DC 1	19/11/84	1942	647		
052	C 1	19/11/84	2200	93		
053	1A	19/11/84	2248	307		
054	C 2	19/11/84	2348	721		
055	C 2	20/11/84	0036		681	
056	2A	20/11/84	0142	1327		
057	2A	20/11/84	0300		1400	Temp. and O ₂ only
058	C 3	20/11/84	0436	1206		
059	C 3	20/11/84	0612		1462	
060	3A	20/11/84	0748	1211		
061	C 4	20/11/84	0848	1205		
062	C 5	20/11/84	1030	1215		
063	P 6	20/11/84	1400	1205		
064	B 4	20/11/84	1530	1205		
065	3A	20/11/84	1648	1205		
066	B 3	20/11/84	1754	1205		
067	B 3	20/11/84	1906		1485	Temp. and O ₂ only
068	2A	20/11/84	2024	1135		
069	B 2	20/11/84	2130	296		
070	B 2	20/11/84	2218		249	Temp. and O ₂ only
071	B 1A	20/11/84	2312	150		
072	B 1	21/11/84	0000	110		
073	A 0	21/11/84	0336	43		
074	A B	21/11/84	0412	62		
075	A 1	21/11/84	0454	89		

TABLE 3-14. MS84-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	A 1B	21/11/84	0542	141		
077	A 2	21/11/84	0630	186		
078	A 2	21/11/84	0706		164	Temp. and O ₂ only
079	A 2B	21/11/84	0806	487		
080	P 4	21/11/84	0918	1204		
081	P 4	21/11/84	1030		1254	
082	A 3B	21/11/84	1200	1212		
083	A 4	21/11/84	1306	1205		
084	A 5	21/11/84	1454	1206		
085	A 5	21/11/84	1612		1967	
086	P 3	21/11/84	2012	825		
087	P 2	21/11/84	2200	117		
088	P 1	22/11/84	0000	137		

TABLE 3-15. MS85-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
002	P 6	12/02/85	2124	1250		
003	P 6	12/02/85	2254		1962	
004	P 7	13/02/85	0206	1270		
005	P 8	13/02/85	0500	1255		
006	P 9	13/02/85	0812	1260		
007	P 10	13/02/85	1054	1250		
009	P 11	13/02/85	1506	1110		
010	P 12	13/02/85	1806	1015		
011	P 13	13/02/85	2348	1235		
012	P 4	15/02/85	0524	1210		
013	P 3	15/02/85	0712	810		
014	P 2	15/02/85	0854	120		
015	P 1	15/02/85	1054	105		

TABLE 3-16. MS85-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	30/04/85	0654	113		
002	P 2	30/04/85	0854	109		
003	P 3	30/04/85	1012	808		
004	P 4	30/04/85	1148	1328		
005	P 4	30/04/85	1306		1194	
006	P 5	30/04/85	1548	1308		
007	P 6	30/04/85	1818	1407		
008	P 6	30/04/85	1936		2372	
009	P 7	30/04/85	2342	1309		
010	P 8	1/05/85	0206	1317		
011	P 9	1/05/85	0436	1310		
012	P 10	1/05/85	0706	1306		
013	P 11	1/05/85	0942	1303		
014	P 12	1/05/85	1212	1307		
015	P 13	1/05/85	1624	1307		
016	P 14	1/05/85	2042	1316		
017	P 15	2/05/85	0112	1307		
018	P 16	2/05/85	0512	1307		
019	P 17	2/05/85	0918	1303		
020	P 18	2/05/85	1336	1312		
021	P 18	2/05/85	1442		1994	
022	P 19	2/05/85	1924	1306		
024	P 19E	3/05/85	0224	1008		
025	P 20	3/05/85	0624	1331		
026	P 21	3/05/85	1036	1306		
027	P 22	3/05/85	1500	1305		
028	P 23	3/05/85	1930	1308		
029	P 24	4/05/85	0030	1305		
030	P 25	4/05/85	0500	1311		
031	P 26	4/05/85	2254	1306		
032	P 26	5/05/85	1600	1319		
033	P 26	5/05/85	1654		4241	
034	P 26	5/05/85	2024	1306		
035	P 26	6/05/85	1600	1305		
037	P 26	7/05/85	1548	1312		
038	P 26	7/05/85	2200		845	
039	P 26	7/05/85	2306	1008		
040	P 26	8/05/85	2024	1312		
041	P 33	9/05/85	0354	1307		
042	R 20	9/05/85	0618	1307		
043	R 19	9/05/85	0906	1307		
044	R 18	9/05/85	1200	1304		
045	R 17	9/05/85	1506	1306		
046	R 16	9/05/85	1800	1313		
047	R 15	9/05/85	2112	1312		
048	R 14	10/05/85	0012	1305		
049	R 13	10/05/85	0300	1308		
050	R 12	10/05/85	0542	1321		
051	R 11	10/05/85	0900	1306		
052	R 10	10/05/85	1154	1305		
053	R 9	10/05/85	1500	1311		
054	R 8	10/05/85	1854	1318		
055	R 7	10/05/85	2230	1308		
056	R 6	11/05/85	0242	1306		
057	J 5	11/05/85	0624	1307		
058	J 4	11/05/85	0836	1310		
059	J 3	11/05/85	1048	1305		
060	J 2A	11/05/85	1224	1308		
061	J 2	11/05/85	1336	1304		
062	J 1	11/05/85	1836	359		
063	88	11/05/85	2054	401		
064	89	12/05/85	0442	400		
065	H 5	12/05/85	0730	393		
066	H 5	12/05/85	1054	401		
067	F 5	12/05/85	1424	402		
068	E 5	12/05/85	1736	402		
069	D 5	12/05/85	2118	401		
070	C 5	13/05/85	0106	403		
071	P 5	13/05/85	0442	406		
072	A 5	13/05/85	0836	405		
073	A 4	13/05/85	1006	394		
074	A 3B	13/05/85	1112	401		
075	A 3	13/05/85	1200	405		

TABLE 3-16. MS85-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
076	A 2B	13/05/85	1254	402		
077	A 2	13/05/85	1348	178		
078	A 1B	13/05/85	1436	135		
079	A 1	13/05/85	1524	81		
080	A B	13/05/85	1606	58		
081	LD 1	13/05/85	1748	31		
082	LD 2	13/05/85	1818	38		
083	LD 3	13/05/85	1842	43		
084	LD 4	13/05/85	1918	56		
085	LD 5	13/05/85	2000	85		
086	LD 6	13/05/85	2036	130		
087	LD 7	13/05/85	2118	405		
088	LD 8	13/05/85	2206	404		
089	LD 9	13/05/85	2248	405		
090	LD 10	13/05/85	2348	400		
091	LD 11	14/05/85	0024	401		
092	LC 1	15/05/85	0318	87		
093	LC 2	15/05/85	0348	102		
094	LC 3	15/05/85	0412	126		
095	LC 4	15/05/85	0454	157		
096	LC 5	15/05/85	0536	57		
097	LC 6	15/05/85	0618	81		
098	LC 7	15/05/85	0700	119		
099	LC 8	15/05/85	0736	184		
100	LC 9	15/05/85	0824	400		
101	LC 10	15/05/85	0912	403		
102	LC 11	15/05/85	0954	403		
103	LB 1	15/05/85	1718	32		
104	LB 2	15/05/85	1748	46		
105	LB 3	15/05/85	1812	83		
106	LB 4	15/05/85	1848	103		
107	LB 5	15/05/85	1936	99		
108	LB 6	15/05/85	2006	106		
109	LB 7	15/05/85	2048	149		
110	LB 8	15/05/85	2130	124		
111	LB 9	15/05/85	2206	144		
112	LB 10	15/05/85	2248	143		
113	LB 11	15/05/85	2324	200		
114	LB 12	15/05/85	2400	403		
115	LB 13	16/05/85	0036	401		
116	LA 8	16/05/85	0230	139		
117	LA 7	16/05/85	0312	112		
118	LA 6	16/05/85	0354	117		
119	LA 5	16/05/85	0454	120		
120	LA 4	16/05/85	0554	194		
121	LA 3	16/05/85	0642	113		
122	LA 2	16/05/85	0730	306		
123	LA 1	16/05/85	0824	263		

Stations with
designation
starting with L are
La Perouse stations

TABLE 3. 8510. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
008	J 02	29/06/85	2230	1203		
009	J 1A	30/06/85	0118	1203		
010	J 1B	30/06/85	0248	805		
011	J 01	30/06/85	0342	603		
012	J 00	30/06/85	0430	72		

TABLE 3-17. MS 85-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (UTC)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
002	P10	13/08/85	1854		600	
003	USM	14/08/85	1518		300	
004	"	14/08/85	1654		600	
005	"	14/08/85	1854		600	
006	P35	15/08/85	2036		20	
008	P26	17/08/85	1606		2482	
010	"	18/08/85	1624		2970	

TABLE 3-18. MS85-04. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	30/10/85	1048	116		
002	P 3	30/10/85	1500	754		
003	P 4	30/10/85	1718	1343		
004	P 4	30/10/85	1912		1192	
005	P 5	30/10/85	2324	1730		
006	P 6	31/10/85	1730	2008		
007	P 6	31/10/85	1930		2007	
008	P 6	31/10/85	2042		600	
009	P 7	31/10/85	2324	2007		
010	P 8	1/11/85	0230	2004		
011	P 9	1/11/85	0548	2013		
012	P 10	1/11/85	0930	2016		
013	P 11	1/11/85	1330	1283		
014	P 12	1/11/85	1730	2099		
015	P 13	1/11/85	2300	1910		
016	P 14	2/11/85	0424	2006		
017	USE	2/11/85	0924	312		
018	USE	2/11/85	1030		388	
019	USC	2/11/85	1106		300	
020	USW	2/11/85	1212	600		
021	USW	2/11/85	1318		420	
022	USN	2/11/85	1436	775		
023	USN	2/11/85	1554		456	
024	USS	2/11/85	1654	516		
025	P 15	2/11/85	2230	2006		
026	P 16	3/11/85	0330	2004		
027	P 17	3/11/85	0830	2009		
028	P 18	3/11/85	1348	1845		
029	P 26	6/11/85	0312		761	
030	P 26	7/11/85	0306	1977		
031	P 26	7/11/85	0518		4204	
032	P 26	8/11/85	0502	2004		
033	P 26	8/11/85	0700		982	
034	P 26	9/11/85	0312		4166	
035	P 26	9/11/85	0612		1502	
036	P 26	9/11/85	0854		150	
037	P 26	9/11/85	0930	2008		
038	P 25	9/11/85	1506	2002		
039	P 24	9/11/85	1936	2009		
040	P 23	10/11/85	0236	919		
041	P 22	10/11/85	0800	2007		
042	P 21	10/11/85	1254	2009		
043	P 20	10/11/85	1854	2004		
044	LP C	10/11/85	2330	1504		
045	LP C	11/11/85	0112		1494	
046	P 19	10/11/85	0112	2005		
048	P 17	12/11/85	0500	1512		
049	P 16	12/11/85	0930	1501		
050	P 15	12/11/85	1348	2001		
051	P 14	12/11/85	1824	1515		
052	P 13	12/11/85	2242	1507		
053	P 12	13/11/85	0436	1504		
054	P 12	13/11/85	0630		1494	
055	P 11	13/11/85	0906	1508		
056	P 10	13/11/85	1142	1497		
057	P 09	13/11/85	1418	1497		
058	P 08	13/11/85	1654	1505		
059	P 07	13/11/85	2042	1507		
060	B 06	13/11/85	2236	1508		
061	B 05	14/11/85	0030	1500		
062	B 04	14/11/85	0236	1498		
063	B 3A	14/11/85	0354	1510		
064	B 03	14/11/85	0518	1619		
065	B 2A	14/11/85	0648	1182		
066	B 02	14/11/85	0800	300		
067	B 1A	14/11/85	0930	154		
068	B 01	14/11/85	1024	113		
069	A 0B	14/11/85	1448	62		
070	A 01	14/11/85	1542	92		

TABLE 3. 8512. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
002	P 1	23/11/85	0100	104		
003	P 2	23/11/85	0254	117		
004	P 3	23/11/85	0418	743		
005	A 5	23/11/85	0806	1504		
006	A 4	23/11/85	1006	1501		
007	A 3B	23/11/85	1212	1355		
008	A 3	23/11/85	1318	1313		
009	A 2B	23/11/85	1436	443		
010	A 2	23/11/85	1530	185		
011	A 1B	23/11/85	1630	126		
012	A 1	23/11/85	1718	82		
013	A B	23/11/85	1754	51		
014	A 0	23/11/85	1830	34		
015	B B 0	23/11/85	2142	31		
016	B B A	23/11/85	2224	46		
017	B 1	23/11/85	2300	101		
018	B 1A	23/11/85	2342	154		
019	B 2	24/11/85	0030	299		
020	B 2A	24/11/85	0118	1162		
021	B 3	24/11/85	0236	1502		
022	B 3A	24/11/85	0400	1505		
023	B 4	24/11/85	0548	87		
024	B 4	24/11/85	2300	1503		
025	B B 5	25/11/85	0100	1502		
026	B B 6	25/11/85	0306	1500		
027	B B 7	25/11/85	0512	1505		
028	P P 8	25/11/85	0936	1507		
029	P P 7	25/11/85	1218	1506		
030	P 5	25/11/85	1654	1523		

TABLE 3-19. MS86-01. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	15/04/86	1412	132		
002	P 2	15/04/86	1612	102		
003	P 3	15/04/86	1948	755		
004	P 4	16/04/86	0424	1303		
001	P 4	16/04/86	0548		1301	
005	P 5	16/04/86	0824	1500		
006	P 6	16/04/86	1112	1504		
002	P 6	16/04/86	1312		2514	
007	P 7	16/04/86	1612	1504		
008	P 8	16/04/86	1842	1504		
009	P 9	16/04/86	2118	1508		
010	P 10	16/04/86	2354	1510		
011	P 11	17/04/86	0300	1511		
012	P 12	17/04/86	0606	1512		
013	P 13	17/04/86	1124	1503		
014	P 14	17/04/86	1618	1502		
015	P 15	17/04/86	2106	1508		
016	P 16	18/04/86	0148	1518		
003	P 16	16/04/86	0306		2496	
017	P 17	18/04/86	0800	1507		
018	P 18	18/04/86	1212	1510		
004	P 18	18/04/86	1336		2491	
019	P 19	18/04/86	1842	1503		
020	P 20	20/04/86	0954	1504		
021	P 21	21/04/86	0006	1510		
022	P 22	21/04/86	0518	1504		
023	P 23	21/04/86	1030	1505		
024	P 24	21/04/86	1642	1507		
025	P 25	21/04/86	2306	1504		
026	P 35	22/04/86	0254	1526		
027	P 26	22/04/86	1612	1505		
005	P 26	22/04/86	1718		4205	
028	A 3	26/04/86	2006	1304		
029	A 2B	26/04/86	2112	437		
030	A 2	26/04/86	2154	182		
031	A 1B	26/04/86	2242	138		

TABLE 3-20. MS86-02. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
001	P03	08/07/86	1848		1000	
002	P26	12/07/86	1700		4158	

TABLE 3-21. 8614. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	08/20/86	1206	17		
002	P 2	08/20/86	1512	111		
003	P 3	08/20/86	1706	493		
004	P 4	08/20/86	1918	491		
005	P 5	08/20/86	2142	493		
006	P 6	08/21/86	0006	493		
007	P 8	08/21/86	0448	391		
008	P 9	08/21/86	0830	384		
009	P 11	08/21/86	1330	402		
010	P 13	08/21/86	2030	403		
011	P 14	08/22/86	0042	403		
012	P 15	08/22/86	0500	405		
013	P 16	08/22/86	0906	406		
014	P 17	08/22/86	1318	403		
015	P 18	08/22/86	1724	400		
016	P 19	08/22/86	2312	404		
017	P 20	08/23/86	0412	396		
018	P 21	08/23/86	0818	399		
019	P 22	08/23/86	1230	390		
020	P 23	08/23/86	1624	400		
021	P 24	08/23/86	2106	393		
022	P 25	08/24/86	0054	433		
023	P 35	08/24/86	0342	400		
024	P 26E	08/24/86	0518	399		
025	P 26	08/24/86	0706	398		
026	FR 1	08/24/86	2224	414		
027	FR 2	08/25/86	0330	398		
001	FR 2	08/25/86	0412		348	
028	FR 3	08/27/86	0236	369		
029	FR 4	08/28/86	0230	439		
030	FR 5	08/29/86	0342	420		
031	FR 6	08/30/86	0242	393		
032	FR 7	08/30/86	1600	425		
033	FR 8	08/30/86	2048	416		
034	FR 9	08/31/86	0124	404		
035	FR10	08/31/86	0554	424		
036	FR11	08/31/86	1018	375		
037	FR12	08/31/86	1430	371		
038	FR13	08/31/86	1906	398		
039	FR14	08/31/86	2318	390		
040	FR15	09/01/86	0242	398		
002	FR15	09/01/86	0312		406	
041	FR16	09/01/86	2206	397		
042	FR17	09/02/86	0154	404		
043	FR18	09/02/86	0618	403		
044	FR19	09/02/86	1048	407		
045	FR20	09/02/86	1554	399		
046	FR21	09/02/86	2024	375		
047	FR22	09/03/86	0042	402		
048	FR23	09/03/86	0448	405		
049	FR24	09/03/86	0906	401		
050	FR25	09/03/86	1336	398		
051	FR26	09/03/86	1812	402		
052	FR27	09/03/86	2242	83		
053	FR27	09/04/86	0106	50		
054	FR27	09/04/86	0230	292		
055	FR28	09/04/86	1924	395		
056	FR29	09/04/86	2236	402		
057	FR30	09/05/86	0124	402		
058	FR31	09/05/86	0224	397		
059	FR32	09/05/86	1712	390		
060	FR33	09/05/86	2018	396		
061	FR34	09/05/86	2336	403		
062	FR35	09/06/86	0248	402		
063	FR36	09/06/86	1848	392		
064	FR37	09/06/86	2200	404		
065	FR38	09/07/86	0024	399		
066	FR39	09/07/86	0442	403		
067	FR40	09/07/86	0918	401		
068	FR41	09/07/86	1330	401		
069	FR42	09/07/86	1754	405		
070	FR43	09/07/86	2224	83		
071	FR43	09/08/86	0242	286		
072	FR43	09/08/86	1818	92		
073	FR43	09/08/86	2154	109		
074	FR43	09/09/86	0230	223		

TABLE 3. 8614. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERAVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
075	FR44	09/09/86	1818	388		
076	FR45	09/09/86	2100	222		
077	FR46	09/09/86	2324	394		
078	FR47	09/10/86	0230	328		
079	FR48	09/10/86	0454	371		
080	FR49	09/10/86	0730	330		
081	FR50	09/11/86	1430	196		

TABLE 3-22. MS86-03. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERAVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	P 1	15/10/86	0854	108		
002	P 2	15/10/86	1054	110		
003	P 3	15/10/86	1236	801		
004	P 4	15/10/86	2224	1282		
001	P 4	15/10/86	2336		1168	
005	P 5	16/10/86	0212	2002		
002	P 6	16/10/86	0606		2008	
006	P 6	16/10/86	0654	2002		
007	P 7	16/10/86	0954	1987		
008	P 8	16/10/86	1306	2004		
009	P 9	16/10/86	1606	2003		
010	P 10	16/10/86	1912	2004		
011	P 11	16/10/86	2224	2056		
012	P 12	17/10/86	0130	2004		
013	P 13	17/10/86	0630	2005		
014	P 14	17/10/86	1212	2004		
015	P 15	17/10/86	1724	1228		
016	P 16	17/10/86	2206	2008		
003	P 16	17/10/86	2354		2022	
017	P 17	18/10/86	0524	2004		
018	P 18	18/10/86	1148	1976		
019	P 19	18/10/86	1848	2005		
020	P 20	19/10/86	0006	2004		
021	P 21	19/10/86	0506	2003		
022	P 22	19/10/86	1030	2000		
023	P 23	19/10/86	1542	2004		
024	P 24	19/10/86	2100	2012		
025	P 25	20/10/86	0312	2000		
026	P 35	20/10/86	0654	2001		
027	P 41	20/10/86	1736	2003		
028	P 26	21/10/86	1612	2005		
004	P 26	21/10/86	1742		4114	
029	P 26	22/10/86	1654	2011		
006	P 26	22/10/86	1924		4186	
030	P 26	22/10/86	2124	2022		
031	P 32	24/10/86	0236	2002		
032	P 49	24/10/86	0630	2004		
033	P 33	24/10/86	1024	2005		
034	R 20	24/10/86	1342	2005		
035	R 19	24/10/86	1724	2006		
036	R 18	25/10/86	0130	2003		
037	A 5	28/10/86	2136	2011		
007	A 5	28/10/86	2312		1970	
038	A 4	29/10/86	0118	2007		
039	A 3B	29/10/86	0300	1586		
040	A 3	29/10/86	0424	1348		
008	A 3	29/10/86	0542		1664	
041	A 2B	29/10/86	0706	464		
042	A 2	29/10/86	0800	184		
043	A 1B	29/10/86	0854	136		
044	A 1	29/10/86	0942	80		
045	A B	29/10/86	1024	52		
046	A 0	29/10/86	1106	29		
047	B 0	29/10/86	1424	37		
048	B 1	29/10/86	1536	109		
049	B 1A	29/10/86	1630	150		
050	B 2	29/10/86	1724	283		
051	B 2A	29/10/86	1824	1194		
052	B 3	29/10/86	1948	1648		

TABLE 3-23. MS8701. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERAVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP02	30/03/87	1706	113		
002	MP04	30/03/87	1936	1321		
001	MP04	31/03/87	0200		1188	
003	MP05	01/04/87	0524	1506		
004	MP06	01/04/87	0800	1503		
005	MP07	01/04/87	1036	1503		
006	MP08	01/04/87	1318	1501		
007	MP09	01/04/87	1554	1503		
008	MP10	01/04/87	1848	1503		
002	MP10	01/04/87	2200		2467	
009	MP11	01/04/87	2354	1504		
010	MP12	02/04/87	0224	1506		
011	MP13	02/04/87	0636	1506		
012	MP14	02/04/87	1054	1507		
013	MP15	02/04/87	1542	1510		
014	MP16	02/04/87	1954	1522		
003	MP16	02/04/87	2336		2409	
004	MP26	05/04/87	0242		3420	
015	MP26	05/04/87	1906	1002		

TABLE 3-24. 8734. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERAVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	C2	27/05/87	1652	154		
002	C1	27/05/87	1810	157		
003	MP01	27/05/87	1942	117		
004	B7	27/05/87	2110	84		
005	MP02	27/05/87	2309	121		
006	A1	28/05/87	0135	501		
007	A3	28/05/87	0321	877		
008	MP03	28/05/87	0606	702		
009	MP04	28/05/87	0816	1003		
010	MP06	28/05/87	1352	1001		
011	MP08	28/05/87	1933	1003		
012	MP10	29/05/87	0109	1003		
013	MP12	29/05/87	0616	1003		
014	MP14	29/05/87	1515	1001		
016	MP16	30/05/87	0124	1004		
017	MP18	30/05/87	1100	1005		
018	MP20	30/05/87	2009	1003		
022	PSW	01/06/87	2033	1253		
085	MP26	05/06/87	2212	1001		
087	51N	06/06/87	0715	1002		
104	PNE	07/06/87	1739	1004		
105	RN01	07/06/87	2345	504		
106	RN02	08/06/87	0555	502		
108	RN03	08/06/87	1401	502		
109	RN04	08/06/87	1943	501		
112	RN05	09/06/87	0419	503		
114	RN06	09/06/87	1131	504		
115	RN07	09/06/87	1649	502		

TABLE 3-25. 8780. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
001	R 01	27/05/87	0527	103		fisheries stations
002	RR 02	28/05/87	0513	1004		"
003	RR 03	29/05/87	0511	1007		"
004	RR 04	31/05/87	0502	1000		"
005	RR 05	01/06/87	0539	1022		"
006	RR 06	02/06/87	0534	1002		"
007	RR 07	03/06/87	0602	1007		"
008	RR 08	04/06/87	0637	1004		"
009	RR 09	05/06/87	0636	1008		"
010	RR 10	06/06/87	0637	1004		"
011	RR 11	07/06/87	0731	1001		"
012	RR 12	08/06/87	0617	1005		"
013	RR 13	09/06/87	0447	1005		"
014	RR 14	10/06/87	0749	1004		"
015	RR 15	11/06/87	0608	1007		"
016	RR 16	12/06/87	0528	1007		"
017	RR 17	13/06/87	0605	1006		"
018	RR 18	14/06/87	0603	1006		"
019	RR 19	20/06/87	0600	1005		"
020	RR 20	21/06/87	0630	1007		"
021	RR 21	22/06/87	0639	1007		"
022	RR 22	23/06/87	0625	1013		"
023	RR 23	24/06/87	0648	1012		"
024	RR 24	25/06/87	0434	1008		"
025	RR 24	25/06/87	0624	206		"
026	RR 24	25/06/87	0732	202		"
027	RR 25	26/06/87	0630	1007		"
028	RR 28	27/06/87	0824	1007		"
029	RR 27	28/06/87	0630	1010		"
030	RR 28	29/06/87	0627	1012		"
031	R 29	30/06/87	0632	1010		fisheries stations
032	MP26	01/07/87	1101	1372		
033	MP18	02/07/87	2032	1005		
034	MP16	03/07/87	0426	590		
035	MP16	03/07/87	0441	1006		
036	MP14	03/07/87	1219	1007		
037	MP12	03/07/87	2006	1007		
038	MP10	04/07/87	0020	1004		
039	MP08	04/07/87	0423	1008		
040	MP07	04/07/87	0651	1008		
041	MP06	04/07/87	0912	1007		
042	MP05	04/07/87	1151	1007		
043	MP04	04/07/87	1400	1009		
044	MP03	04/07/87	1533	800		
045	MP02	04/07/87	1712	118		
046	MP01	04/07/87	1908	130		

TABLE 3-26. 8790. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
001	MP26	18/07/87	2218		3974	
002	MP26	19/07/87	2018		4128	
003	MP04	23/07/87	0434		1181	

TABLE 3-27. MS8702. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	23/09/87	0741	127		
002	MP02	23/09/87	0941	105		
003	MP03	23/09/87	1112	806		
004	MP04	23/09/87	2300		1244	
004	MP04	23/09/87	2347	1311		
005	MA05	24/09/87	0302	2003		
006	MA04	24/09/87	0522	2132		
007	MA3B	24/09/87	0712	1445		
008	MA2B	24/09/87	0909	461		
009	MA02	24/09/87	1008	183		
010	MA1B	24/09/87	1103	135		
011	MA01	24/09/87	1152	87		
012	MA0B	24/09/87	1234	54		
013	MA00	24/09/87	1311	28		
014	MP05	24/09/87	2004	2094		
015	MP06	24/09/87	2304	2055		
015	MP06	25/09/87	0048		1979	
016	MP07	25/09/87	0338	2003		
017	MP08	25/09/87	0653	2002		
018	MP09	25/09/87	1004	2010		
019	MP10	25/09/87	1305	2004		
020	MP11	25/09/87	1603	2005		
021	MP12	25/09/87	1908	2009		
022	MP13	26/09/87	0019	2005		
023	MP14	26/09/87	0518	2002		
024	MP15	26/09/87	1045	2012		
025	MP16	26/09/87	1615	2001		
025	MP16	26/09/87	1748		3505	
026	MP17	27/09/87	0020	2017		
027	MP18	27/09/87	0548	2005		
028	MP19	27/09/87	1112	2014		
029	MP20	27/09/87	1605	2006		
030	MP21	27/09/87	2054	2012		
031	MP22	28/09/87	0138	2011		
032	MP23	28/09/87	0607	2005		
033	MP24	28/09/87	1037	2006		
034	MP25	28/09/87	1505	2008		
035	MP35	28/09/87	1849	2005		
036	MP26	29/09/87	0035	2004		
036	MP26	29/09/87	0418		4213	
037	MP26	29/09/87	0811	2003		
037	MP26	29/09/87	0918		4221	
038	MP27	30/09/87	0526	2006		
039	OS01	30/09/87	1432	1512		
040	OS02	30/09/87	1851	2005		
041	OS03	30/09/87	2329	1506		
042	OS04	01/10/87	0425	1505		
043	OS05	01/10/87	0843	1503		
044	OS06	01/10/87	1233	2010		
045	OS12	01/10/87	1709	1505		
046	OS18	01/10/87	2224	1505		
047	OS24	02/10/87	0308	1511		
048	OS30	02/10/87	0739	1779		
049	OS29	02/10/87	1233	1512		
050	OS28	02/10/87	1731	1506		
051	OS27	02/10/87	2230	1503		
052	OS26	03/10/87	0358	2005		
053	OS25	03/10/87	0915	1509		
054	OS19	03/10/87	1313	1506		
055	OS13	03/10/87	1721	1506		
056	OS07	03/10/87	2051	2302		
057	OS08	04/10/87	0052	2005		
057	OS08	04/10/87	0236		4031	
058	OS09	05/10/87	0238	1511		
059	OS10	05/10/87	0644	1504		
060	OS11	05/10/87	2013	1504		
061	OS17	06/10/87	0100	1505		
062	OS23	06/10/87	0502	1504		
063	OS22	06/10/87	0856	1496		
064	OS21	06/10/87	1242	1505		
065	OS20	06/10/87	1653	1505		
066	OS14	06/10/87	2108	1505		
067	OS15	07/10/87	0126	1508		
068	OS31	07/10/87	0346	505		
069	OS34	07/10/87	0559	509		

TABLE 3. MS8702. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
070	OS33	07/10/87	0814	503		
071	OS32	07/10/87	1050	504		
072	OS16	07/10/87	1248	1507		
073	MP26	08/10/87	1558	2004		
074	MP33	09/10/87	0157	2008		
075	MR20	09/10/87	0500	2001		
076	MR19	09/10/87	0833	2004		
077	MR18	09/10/87	1230	2002		
078	MR17	09/10/87	1705	2005		
079	MR16	10/10/87	0544	2001		
080	MR15	10/10/87	1021	2005		
081	MR14	10/10/87	1354	2006		
082	MR13	10/10/87	1739	2006	3477	
082	MR13	10/10/87	1936			
083	MR12	11/10/87	0037	2010		
084	MR11	11/10/87	0516	2002		
085	MR10	11/10/87	0910	2006		
086	MOR2	11/10/87	1446	2002		
087	MR09	12/10/87	0530	2004		
088	MR08	12/10/87	0918	2001		
089	MR07	12/10/87	1253	2014		
090	MR06	12/10/87	1634	2002		
091	MJ05	12/10/87	2044	2003		
092	MJ04	13/10/87	0000	2006		
093	MJ03	13/10/87	0306		2004	
093	MJ03	13/10/87	0347	2004		
094	MJ2A	13/10/87	0533	1953		
095	MJ02	13/10/87	0724	2005		
096	MJ1A	13/10/87	0932	1784		
097	MJ01	13/10/87	1125	540		
098	MJ00	13/10/87	1212	82		
099	M88	14/10/87	0017	1501		
100	MI03	14/10/87	0303	1506		
101	M89	14/10/87	0551	1509		
102	MH05	14/10/87	0845	1501		
103	MG05	14/10/87	1224	1509		
104	MF05	14/10/87	1607	1508		
105	ME05	14/10/87	2020	1506		
106	MD06	15/10/87	0040	2012		
107	MP06	15/10/87	0751	2002		
108	MA05	15/10/87	1224	2007		
109	MA04	15/10/87	1440	2005		
110	MA3B	15/10/87	1628	1476		
111	MA03	15/10/87	1744	1307		
112	MA2B	15/10/87	1912	446		
113	MA02	15/10/87	2009	175		
114	MA1B	15/10/87	2056	136		
115	MA01	15/10/87	2139	86		
116	MA0B	15/10/87	2217	58		
117	MA00	15/10/87	2257	39		

TABLE 3-29. MS8801. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	03/05/88	0421	128		
002	MP02	03/05/88	0634	116		
003	MP03	03/05/88	0849	793		
004	MP04	03/05/88	2118		1220	
005	MP05	04/05/88	2201	1323		
006	MP06	04/05/88	0205	2095		
007	MP07	04/05/88	0517	2003		
008	MP08	04/05/88	0853	2004		
009	MP09	04/05/88	1214	2005		
010	MP10	04/05/88	1552	2001		
011	MP11	04/05/88	1949	2004		
012	MP12	04/05/88	2328	2014		
013	MP13	05/05/88	0240	2000		
014	MP14	05/05/88	0938	2005		
015	MP15	05/05/88	1459	2002		
016	MP16	05/05/88	2013	2003		
017	MP16	06/05/88	0140	2007		
018	MP17	06/05/88	0312		3535	
019	MP18	06/05/88	0917	2002		
020	MP18	06/05/88	1438	2007		
021	MP19	06/05/88	1618		3689	
022	MP20	06/05/88	2234	2004		
023	MP20	07/05/88	0356	2002		
024	MP21	07/05/88	0902	2002		
025	MP22	07/05/88	1420	2003		
026	MP23	07/05/88	1939	2004		
027	MP24	08/05/88	0207	2007		
028	MP25	08/05/88	0703	2002		
029	MP35	08/05/88	1131	1537		
030	MP26	08/05/88	2150		2985	
031	MP26	09/05/88	1528	2003		
032	MP26	09/05/88	1704		4208	
033	MP26	10/05/88	1544	2001		
034	MP26	10/05/88	1715	2005		
035	MP41	11/05/88	0528	2010		
036	MP32	11/05/88	0926	1998		
037	MP49	11/05/88	1342	2007		
038	MP33	11/05/88	1748	2002		
039	MR20	11/05/88	2115	2002		
040	MR19	12/05/88	0042	2011		
041	MR18	12/05/88	0415	2001		
042	MR17	12/05/88	0807	2001		
043	MR16	12/05/88	1253	2006		
044	MR15	13/05/88	0708	2002		
045	MR14	13/05/88	1122	2009		
046	MR13	13/05/88	1526	2002		
047	MR13	13/05/88	1706		3556	
048	MR12	13/05/88	2144	2003		
049	MR11	14/05/88	0123	2005		
050	MR10	14/05/88	0504	2001		
051	MRO9	14/05/88	0836	2005		
052	MRO9	14/05/88	1026		3381	
053	MRO8	14/05/88	1509	2001		
054	MRO7	14/05/88	1858	2001		
055	MRO6	14/05/88	2310	2005		
056	MJ05	15/05/88	0321	2001		
057	MJ05	15/05/88	0537	2001		
058	MJ04	15/05/88	0755	2010		
059	MJ03	15/05/88	0946		1987	
060	MJ03	15/05/88	1121	2025		
061	MJ2A	15/05/88	1312	2007		
062	MJ02	15/05/88	1517	1859		
063	MJ1A	15/05/88	1656	537		
064	MJ01	15/05/88	1876			
065	MG05	16/05/88	0710	1915		
066	MF05	16/05/88	1133	2003		
067	ME05	16/05/88	1527	2002		
068	MD06	16/05/88	2053	2002		
069	MP08	17/05/88	0313	2002		
070	MP08	17/05/88	0749	2004		
071	MB07	17/05/88	1032	2003		
072	MB06	17/05/88	1313	2011		
073	MB05	17/05/88	1604	2001		
074	MB04	17/05/88	1755	2002		
075	MB3A	17/05/88				

* Suspect data

TABLE 3. MS8801. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH(db)	HYDRO DEPTH(M)	REMARKS
067	MB03	17/05/88	1948	1564		
010	MB03	17/05/88	2124		1484	
068	MB2A	17/05/88	2249	138		
069	MB02	18/05/88	0017	239		
070	MB1A	18/05/88	0111	151		
071	MB01	18/05/88	0225	104		
072	M AB	18/05/88	0426	106		
073	MA00	18/05/88	0628	34		
074	MA0B	18/05/88	0711	53		
075	MA01	18/05/88	0804	79		
076	MA1B	18/05/88	0856	122		
077	MA02	18/05/88	0951	169		
078	MA2B	18/05/88	1052	408		
079	MA03	18/05/88	1158	1307		
080	MA3B	18/05/88	1314	1448		
081	MA04	18/05/88	1453	2021		
082	MA05	18/05/88	1728	2001		
083	MP03	18/05/88	2149	734		
084	MP02	18/05/88	2335	104		
085	MP01	19/05/88	0123	99		

TABLE 3-30. MS8802. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	28/06/88	1247	95		
002	MP02	28/06/88	1513	113		
003	MP03	28/06/88	1644	812		
004	MA05	28/06/88	2042	1077		
005	MA04	28/06/88	2243	1503		
006	MA3B	29/06/88	0111	1454		
007	MA03	29/06/88	0246	1283		
008	MA2B	29/06/88	0411	475		
009	MA02	29/06/88	0515	178		
010	MA1B	29/06/88	0616	132		
011	MA01	29/06/88	0709	87		
012	MA0B	29/06/88	0750	57		
013	MP04	29/06/88	1246	1313		
001	MP04	29/06/88	1612		1298	
014	MP05	29/06/88	2246	1503		
015	MP06	30/06/88	0150	1503		
002	MP06	30/06/88	0324		1999	
016	MP07	30/06/88	0618	1504		
017	MP08	30/06/88	0926	1501		
018	MP09	30/06/88	1224	1502		
019	MP10	30/06/88	1526	1505		
020	MP11	30/06/88	1824	1502		
021	MP12	30/06/88	2137	1502		
022	MP13	01/07/88	0255	1502		
023	MP14	01/07/88	0741	1502		
024	MP15	01/07/88	1235	1502		
025	MP16	01/07/88	1750	1502		
003	MP16	01/07/88	1930		3504	
026	MP17	02/07/88	0319	1503		
027	MP18	02/07/88	0814	1503		
004	MP18	02/07/88	0948		2005	
028	MP19	02/07/88	1437	1501		
029	MP20	02/07/88	1934	1500		
030	MP21	03/07/88	0023	1502		
031	MP22	03/07/88	0523	1502		
032	MP23	03/07/88	1021	1502		
033	MP24	03/07/88	1510	1502		
034	MP25	03/07/88	1947	1501		
035	MP35	03/07/88	2328	1501		
036	MP26	04/07/88	0402	1503		
037	MP26	04/07/88	1908	1500		
038	MP26	05/07/88	0445	1501		
005	MP26	05/07/88	1536		4220	
039	MP26	05/07/88	1936	1501		
006	MP26	05/07/88	2148		304	
008	MP26	06/07/88	0136		803	
009	MP26	06/07/88	0354		4179	
040	MP26	06/07/88	0656	1501		
041	MP26	06/07/88	1759	1503		
042	MP26	07/07/88	0622	1502		
043	MP41	07/07/88	1926	1501		
044	MP32	07/07/88	2252	1502		
045	MP49	08/07/88	0220	1502		
046	MP33	08/07/88	0546	1502		
047	MR20	08/07/88	0853	1503		
048	MR19	08/07/88	1159	1503		
049	MR18	08/07/88	1531	1500		
050	MR17	08/07/88	1905	1503		
051	MR16	09/07/88	2052	1502		
052	MR15	10/07/88	0223	1503		
053	MR14	10/07/88	0601	1502		
054	MR13	10/07/88	0945	1502		
010	MR13	10/07/88	1124		2959	
055	MR12	10/07/88	1620	1505		
056	MR11	10/07/88	2000	1501		
057	MR10	10/07/88	2338	1503		
058	MRO9	11/07/88	0316	1501		
011	MRO9	11/07/88	0518		1504	
059	MRO8	11/07/88	0845	1501		
060	MRO7	11/07/88	1219	1502		
061	MRO6	11/07/88	2031	1501		
062	MJO5	12/07/88	0009	1502		
063	MJO4	12/07/88	0216	1503		
064	MJO3	12/07/88	0424	1502		
012	MJO3	12/07/88	0600		1994	

TABLE 3-30. MS8802. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
065	MJ2A	12/07/88	0736	1501		
066	MJ02	12/07/88	0914	1501		
067	MJ1A	12/07/88	1114	1503		
068	MJ01	12/07/88	1249	503		
069	MJ00	12/07/88	1331	76		
070	M 88	12/07/88	2059	1501		
071	MI03	12/07/88	2342	1499		
072	MI03	13/07/88	0044	1503		
073	M 89	13/07/88	0339	1500		
074	MH05	13/07/88	0649	1502		
075	MG05	13/07/88	1022	1501		
076	MF05	13/07/88	1403	1502		
077	ME05	13/07/88	1724	1504		
078	MD06	13/07/88	2141	1502		
079	MP08	14/07/88	0127	1502		
080	MB07	14/07/88	0530	1504		
081	MB06	14/07/88	0751	1501		
082	MB05	14/07/88	0953	1503		
083	MB04	14/07/88	1155	1503		
084	MB3A	14/07/88	1323	1504		
085	MB03	14/07/88	1552	1501		
013	MB03	14/07/88	1736		1498	
086	MB2A	14/07/88	1856	1137		
087	MB02	14/07/88	2019	283		
088	MB1A	14/07/88	2108	139		
089	MB01	14/07/88	2154	102		
090	MB00	14/07/88	2309	37		

TABLE 3-31. MS8803. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	30/11/88	0737	109		
002	MP02	30/11/88	0945	114		
003	MP03	30/11/88	1200	806		
004	MP04	30/11/88	1500	1303		
001	MP04	30/11/88	1930		1278	
005	MP05	30/11/88	2212	2000		
006	MP06	01/12/88	0101	2003		
007	MP07	01/12/88	0347	1999		
008	MP08	01/12/88	0642	1997		
009	MP09	01/12/88	0927	1920		
010	MP10	01/12/88	1211	1998		
011	MP11	01/12/88	1453	1998		
012	MP12	01/12/88	1727	2003		
013	MP13	01/12/88	2207	1996		
014	MP14	02/12/88	0322	2000		
015	MP15	02/12/88	0744	2017		
016	MP16	02/12/88	1229	1999		
002	MP16	02/12/88	1406		3511	
017	MP26	05/12/88	1014	1997		
003	MP26	05/12/88	1148		3486	
004	MP26	07/12/88	0124		4004	
018	MP26	07/12/88	0405	2001		
019	MP35	07/12/88	0804	2004		
020	MP25	07/12/88	1202	2001		
021	MP24	07/12/88	1701	1997		
022	MP23	07/12/88	2149	2000		
023	MP20	08/12/88	1016	2001		
024	MP19	08/12/88	1522	2000		
025	MP18	08/12/88	1956	2002		
026	MP17	09/12/88	0027	1969		
027	MP16	09/12/88	0450	1999		
028	MP15	09/12/88	0918	1963		
029	MP14	09/12/88	1428	1999		
030	MP13	09/12/88	1909	2003		
031	MP12	09/12/88	2318	1988		
032	MP11	10/12/88	0202	1986		
033	MP10	10/12/88	0431	2000		
034	MP09	10/12/88	0653	1999		
035	MP08	10/12/88	0917	1954		
036	MP07	10/12/88	1201	1966		
037	MP06	10/12/88	1433	1985		
038	MP05	10/12/88	1708	2001		
039	MP04	10/12/88	1933	1301		
040	MA03	10/12/88	2208	1297		
041	MA2B	10/12/88	2322	400		
042	MA02	11/12/88	0017	175		
043	MA1B	11/12/88	0106	130		
044	MA01	11/12/88	0153	79		
045	MA0B	11/12/88	0233	51		
046	MA00	11/12/88	0315	32		
047	MA3B	11/12/88	0718	1489		
048	MA04	11/12/88	0850	1947		
049	MA05	11/12/88	1056	1998		
050	MP04	11/12/88	1659	1326		
051	MB07	12/12/88	0257	1982		
052	MB06	12/12/88	0512	1998		
053	MB05	12/12/88	0706	1998		
054	MB04	12/12/88	0900	1954		
055	MB3A	12/12/88	1021	1960		
056	MB03	12/12/88	1140	1593		
005	MB03	12/12/88	1312		1496	
057	MB2A	12/12/88	1431	1156		
058	MB02	12/12/88	1537	282		
059	MB1A	12/12/88	1625	142		
060	MB01	12/12/88	1710	100		
061	MB00	12/12/88	1816	30		

TABLE 3-32. MS8901. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	14/02/89	1048	135		
002	MP02	14/02/89	1233	117		
003	MP03	14/02/89	1734	763		
004	MP04	14/02/89	1924	1297		
001	MP04	14/02/89	2218		1302	
005	MP05	15/02/89	0108	1501		
006	MP06	15/02/89	0353	1500		
002	MP06	15/02/89	0542		2494	
007	MP07	15/02/89	0834	1498		
008	MP08	15/02/89	1110	1499		
009	MP09	15/02/89	1347	1502		
010	MP10	15/02/89	1620	1503		
011	MP11	15/02/89	1852	1501		
012	MP12	15/02/89	2137	1501		
013	MP13	16/02/89	0211	1503		
014	MP14	16/02/89	0639	1499		
015	MP15	16/02/89	1105	1500		
016	MP16	16/02/89	1525	1500		
003	MP16	16/02/89	1642		3490	
017	MP17	16/02/89	2321	1503		
018	MP18	17/02/89	0352	1499		
004	MP18	17/02/89	0518		3733	
019	MP19	17/02/89	1236	1502		
020	MP20	17/02/89	1709	1499		
021	MP21	17/02/89	2132	1497		
022	MP22	18/02/89	0204	1499		
023	MP23	18/02/89	0625	1506		
024	MP24	18/02/89	1045	1498		
025	MP25	18/02/89	1500	1501		
026	MP35	18/02/89	1803	1502		
027	MP26	18/02/89	2239	1500		
005	MP26	19/02/89	0000		4080	
028	MP26	19/02/89	0229	1499		
006	MP26	19/02/89	0448		4132	
029	MP26	19/02/89	0812	1497		
007	MP26	20/02/89	0012	1497	806	
030	MP26	20/02/89	0413	1686		
031	MP26	20/02/89	1806	82		
032	MP35	21/02/89	2246	832		
033	MP32	22/02/89	2357	799		
034	MP49	23/02/89	0318	848		
035	MP33	23/02/89	0636	858		
036	MR20	23/02/89	0912	881		
037	MR19	23/02/89	1220	878		
038	MR18	23/02/89	1523	855		
039	MR17	23/02/89	1836	854		
040	MR16	24/02/89	0055	862		
041	MR15	24/02/89	0419	882		
042	MR14	24/02/89	0733	887		
043	MR13	24/02/89	1037	889		
008	MR13	24/02/89	1200		1999	
044	MR12	24/02/89	1541	825		
045	MR11	24/02/89	1846	877		
046	MR10	24/02/89	2149	888		
047	MR09	25/02/89	0117	891		
048	MR08	25/02/89	0430	867		
049	MR07	25/02/89	0736	881		
050	MR06	25/02/89	1042	890		
051	MJ05	25/02/89	1341	890		
052	MJ3A	25/02/89	1606	890		
053	MJ03	25/02/89	1712	883		
009	MJ03	25/02/89	1848		1992	
054	MJ2A	25/02/89	2021	885		
055	MJ02	25/02/89	2135	825		
056	MJ1A	25/02/89	2240	850		
057	MJ01	25/02/89	2344	661		
058	MJ00	26/02/89	0023	109		
059	MO88	26/02/89	0409	855		
060	MI03	26/02/89	0626	853		

TABLE 3-33. MS8902. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	02/05/89	0625	112		
002	MP02	02/05/89	0857	117		
003	MP03	02/05/89	1029	844		
004	MP04	02/05/89	2334	1333		
001	MP04	03/05/89	0054		1166	
005	MP05	03/05/89	0318	1500		
006	MP06	03/05/89	0553	1505		
002	MP06	03/05/89	0730		2501	
007	MP07	03/05/89	1008	1504		
008	MP08	03/05/89	1248	1500		
009	MP09	03/05/89	1527	1503		
010	MP10	03/05/89	1759	1501		
011	MP11	03/05/89	2026	1501		
012	MP12	03/05/89	2248	1498		
013	MP13	04/05/89	0325	1505		
014	MP14	04/05/89	0747	1498		
015	MP15	04/05/89	1213	1499		
016	MP16	04/05/89	1640	1530		
003	MP16	04/05/89	1742		3489	
017	MP17	04/05/89	2340	1497		
018	MP18	05/05/89	0355	1501		
004	MP18	05/05/89	0500		3641	
019	MP19	05/05/89	1037	1506		
020	MP20	05/05/89	1502	1500		
021	MP21	05/05/89	1918	1503		
022	MP22	05/05/89	2344	1497		
023	MP23	06/05/89	0403	1500		
024	MP24	06/05/89	0821	1502		
025	MP25	06/05/89	1243	1500		
026	MP35	06/05/89	1615	1500		
027	MP26	06/05/89	2258	1501		
005	MP26	07/05/89	0012		4214	
028	MP26	07/05/89	0306	1500		
029	MP26	07/05/89	1816	1502		
006	MP26	07/05/89	1942		4242	
030	MP26	07/05/89	2300	1998		
007	MP26	08/05/89	0848		799	
031	MP26	08/05/89	2031	501		
032	MP20	10/05/89	0139	1503		
033	MP04	11/05/89	2132	1340		
034	MP03	11/05/89	2324	808		
035	MP02	12/05/89	0059	118		

TABLE 3-34. MS8903. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	04/10/89	0554	130		
002	MP02	04/10/89	0756	114		
003	MP03	04/10/89	0953	812		
004	MP04	04/10/89	1651	1328		
005	MP04	04/10/89	1830		1197	
006	MP05	05/10/89	0001	2083		
007	MP06	05/10/89	0328	2003		
008	MP06	05/10/89	0536		2467	
009	MP07	05/10/89	0859	2002		
010	MP08	05/10/89	1213	2302		
011	MP09	05/10/89	1530	2000		
012	MP10	05/10/89	1851	2005		
013	MP11	05/10/89	2148	2031		
014	MP12	06/10/89	0038	1999		
015	MP13	06/10/89	0537	2002		
016	MP14	06/10/89	1108	1999		
017	MP15	07/10/89	0204	1998		
018	MP16	07/10/89	0901	2017		
019	MP16	07/10/89	1042		3476	
019	MP17	07/10/89	1800	2001		
020	MP18	07/10/89	2322	2004		
022	MP18	08/10/89	0118		3686	
023	MP19	08/10/89	0823	2005		
024	MP20	08/10/89	1339	2151		
025	MP20	09/10/89	2346	1999		
026	MP21	10/10/89	0531	2001		
027	MP22	10/10/89	1122	2002		
028	MP26	14/10/89	0117	1998		
029	MP26	14/10/89	0300		4139	
030	MP26	14/10/89	0636	2010		
031	MP26	14/10/89	0900		4223	
032	MP26	14/10/89	1146	2001		
033	MP26	14/10/89	2108	2012		
034	MP41	16/10/89	2144	1562		
035	MP32	17/10/89	0113	1502		
036	MP49	17/10/89	0455	1502		
037	MP33	17/10/89	0821	1501		
038	MR20	17/10/89	1114	1502		
039	MR19	17/10/89	1503	1504		
040	MR18	17/10/89	1947	1511		
041	MR17	17/10/89	2306	1502		
042	MR16	18/10/89	0235	1498		
043	MR15	18/10/89	0635	1502		
044	MR14	18/10/89	1009	1508		
045	MR13	18/10/89	1330	1509		
046	MR12	18/10/89	1703	1504		
047	MR11	18/10/89	2028	1512		
048	MR10	18/10/89	2349	1501		
049	MRO9	19/10/89	0345	1501		
050	MRO9	19/10/89	0500		2994	
051	MRO8	19/10/89	0947	1512		
052	MRO7	19/10/89	1318	1499		
053	MRO6	19/10/89	1641	1505		
054	MJO5	19/10/89	2012	1511		
055	MJO4	19/10/89	2212	1515		
056	MJO3	20/10/89	0018	2002		
057	MJO3	20/10/89	0200		2003	
058	MJ2A	20/10/89	0336	2000		
059	MJO2	20/10/89	0514	2005		
060	MJ1A	20/10/89	0654	1858		
061	MJ01	20/10/89	0834	683		
062	MJ00	20/10/89	0923	82		
063	M 88	20/10/89	1145	1500		
064	MIO3	20/10/89	1441	1501		
065	M 89	20/10/89	1719	1503		
066	MHO5	20/10/89	1958	1518		
067	MGO5	20/10/89	2311	1499		
068	MF05	21/10/89	0251	1502		
069	ME05	21/10/89	0554	1503		
070	MDO6	21/10/89	1020	1506		
071	MPO8	21/10/89	1445	1502		
072	MBO7	21/10/89	1832	1501		
073	MBO6	21/10/89	2023	1526		
074	MBO5	21/10/89	2227	1513		
075	MBO4	22/10/89	0042	1499		
076	MB3A	22/10/89	0158	2066		

TABLE 3-35. MS9001. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	10/05/90	0842	109		
002	MP02	10/05/90	1051	113		
003	MP03	10/05/90	1248	818		
005	MP04	10/05/90	1737	1330		
001	MP04	10/05/90	2114		1316	
007	MP06	11/05/90	0942	1503		
002	MP06	11/05/90	1124		1967	
009	MP07	11/05/90	1524	1498		
010	MP08	11/05/90	1801	1500		
011	MP09	11/05/90	2122	1504		
012	MP10	12/05/90	0015	1502		
013	MP11	12/05/90	0305	1499		
014	MP12	12/05/90	0534	1498		
015	MP13	12/05/90	1003	1509		
016	MP14	12/05/90	1445	1497		
017	MP15	12/05/90	1928	1500		
018	MP16	13/05/90	0021	1499		
003	MP16	13/05/90	0142		3468	
019	MP17	13/05/90	0759	1502		
020	MP18	13/05/90	1232	1496		
004	MP18	13/05/90	1400		3765	
021	MP19	13/05/90	2016	1503		
022	MP20	14/05/90	1404	1503		
005	MP20	14/05/90	1536		3933	
024	MP21	15/05/90	0520	1497		
025	MP22	15/05/90	0936	1504		
027	MP24	15/05/90	1815	1498		
028	MP25	15/05/90	2243	1500		
029	MP35	16/05/90	0153	1503		
030	MP26	16/05/90	1216	1503		
031	MP26	16/05/90	2042	1500		
006	MP26	16/05/90	2230		4162	
032	MP26	17/05/90	0126	1501		
007	MP26	17/05/90	0318		4194	
034	MP26	17/05/90	0954	365		
036	MP26	18/05/90	1547	1491		
037	MP41	18/05/90	1952	1499		
038	MP32	18/05/90	2359	1498		
039	MZ01	19/05/90	0403	1499		
040	MZ02	19/05/90	0737	1500		
041	MZ03	19/05/90	1105	1501		
042	MZ04	19/05/90	1433	1500		
043	MZ05	19/05/90	1806	1499		
044	MZ06	19/05/90	2131	1502		
045	MZ06	19/05/90	2151	1504		
046	MZ07	20/05/90	0105	1500		
049	MZ08	20/05/90	0443	1499		
050	MZ09	20/05/90	1705	1999		
008	MZ09	20/05/90	1842		3982	
051	MZ09	20/05/90	2140	1502		
052	MZ09	20/05/90	2159	1502		
053	MP49	21/05/90	1901	1500		
054	MP33	22/05/90	0308	1498		
055	MR20	22/05/90	0608	1498		
056	MR19	22/05/90	0629	728		
058	MR19	22/05/90	0957	1505		
061	MR18	22/05/90	1343	1500		
062	MR17	22/05/90	1642	1497		
063	MR17	22/05/90	1705	1491		
064	MR16	22/05/90	2002	1503		
065	MR15	23/05/90	0031	1500		
068	MR14	23/05/90	0354	1499		
069	MR13	23/05/90	0720	1507		
009	MR13	23/05/90	0836		3637	
070	MR12	23/05/90	1416	1504		
071	MR11	23/05/90	1756	1498		
072	MR10	23/05/90	2150	1509		
073	MR09	24/05/90	0147	1499		
010	MR09	24/05/90	0306		3445	
074	MR08	24/05/90	0848	1511		
075	MR07	24/05/90	1254	1503		
076	MR06	24/05/90	1653	1497		
077	MJ05	24/05/90	2035	1501		
078	MJ04	24/05/90	2311	1499		
079	MJ03	25/05/90	0118	1500		

TABLE 3-35. MS9001. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
011	MJ03	25/05/90	0303		2266	
080	MJ2A	25/05/90	0542	1497		
081	MJ02	25/05/90	0709	1502		
082	MJ1A	25/05/90	0851	1506		
083	MJ01	25/05/90	1108	631		
084	MJ00	25/05/90	1206	84		
085	MO88	25/05/90	2334	1497		
086	MI03	26/05/90	0203	1500		
087	MO89	26/05/90	0446	1503		
088	MH05	26/05/90	0745	1506		
090	MG05	26/05/90	1211	1501		
091	MA03	27/05/90	1831	1298		
092	MA03	27/05/90	1851	1110		
093	MA2B	27/05/90	1951	445		
094	MA02	27/05/90	2046	173		
095	MA1B	27/05/90	2136	129		
096	MA01	27/05/90	2218	84		
097	MA0B	27/05/90	2253	53		
098	MA00	27/05/90	2329	38		
099	MOAB	28/05/90	0109	107		
100	MB00	28/05/90	0259	33		
101	MB01	28/05/90	0413	104		
102	MB1A	28/05/90	0501	147		
103	MB02	28/05/90	0552	291		
104	MB2A	28/05/90	0647	1174		
105	MB03	28/05/90	0802	1638		
012	MB03	28/05/90	0942		1617	
106	MB3A	28/05/90	1137	1500		
107	MB04	28/05/90	1300	1504		
108	MB05	28/05/90	1454	1498		
109	MB06	28/05/90	1653	1500		
110	MB07	28/05/90	1845	1499		
111	MA05	28/05/90	2307	1500		
112	MA04	29/05/90	0058	1500		
113	MA3B	29/05/90	0355	1488		

TABLE 3-36. MS9002. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
002	MP01	23/08/90	0937	130		
003	MP02	23/08/90	1204	114		
004	MP03	23/08/90	1354	809		
001	MP04	23/08/90	1724		1298	
005	MP04	23/08/90	1741	1325		
006	TM N	24/08/90	0402	981		
007	MP05	24/08/90	1813	1498		
008	MP06	24/08/90	2102	1497		
002	MP06	24/08/90	2236		2475	
009	MP07	25/08/90	0216	1498		
010	MP08	25/08/90	0457	1497		
011	MP09	25/08/90	0739	1499		
012	MP10	25/08/90	1017	1500		
013	MP11	25/08/90	1256	1500		
014	MP12	25/08/90	1540	1497		
016	MP13	25/08/90	2019	1498		
017	MP14	26/08/90	0055	1499		
018	MP15	26/08/90	0529	1497		
019	MP16	26/08/90	1035	1502		
003	MP16	26/08/90	1206		3474	
020	MP17	26/08/90	1909	1541		
021	MP18	26/08/90	2349	1499		
004	MP18	27/08/90	0112		3483	
022	MP19	27/08/90	0816	1499		
005	MP20	28/08/90	1018		3759	
023	MP20	29/08/90	0103	2496		
025	MP26	01/09/90	0336	2498		
008	MP26	01/09/90	0518		4174	
026	MP26	02/09/90	1508	2497		
010	MP26	02/09/90	1654		4169	
028	MP35	03/09/90	2351	1501		
029	MP25	04/09/90	0259	1497		
030	MP24	04/09/90	0718	1501		
031	MP23	04/09/90	1155	1497		
032	MP22	04/09/90	1624	1497		
034	MP21	04/09/90	2106	1499		

TABLE 3-37. MS9103. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
002	MP01	20/02/91	1400	117		
003	MP01	20/02/91	1409	118		
004	MP02	20/02/91	1639	110		
005	MP03	20/02/91	1818	826		
006	MP04	20/02/91	2159	1315		
006	MP04	20/02/91	2330		1197	
007	MP05	21/02/91	0214	1497		
008	MP06	21/02/91	0504	2006		
008	MP06	21/02/91	0656		2498	
009	MP07	21/02/91	0958	1998		
010	MP08	21/02/91	1251	1497		
011	MP09	21/02/91	1537	1507		
012	MP10	21/02/91	1839	1505		
013	MP11	21/02/91	2129	1998		
014	MP12	22/02/91	0014	1498		
015	MP13	22/02/91	0502	1506		
016	MP14	22/02/91	0952	1499		
017	MP15	22/02/91	1455	1506		
018	MP16	22/02/91	2011	1998		
018	MP16	22/02/91	2143		3467	
019	MP17	23/02/91	0423	1509		
020	MP18	23/02/91	0907	1996		
021	MP19	23/02/91	1452	1499		
022	MP20	23/02/91	1943	1505		
023	MP21	24/02/91	0259	1499		
024	MP22	24/02/91	0736	1509		
025	MP23	24/02/91	1210	1501		
026	MP24	24/02/91	1656	1508		
027	MP25	24/02/91	2125	1496		
028	MP35	25/02/91	0058	1502		
029	MP41	25/02/91	0532	1686		
030	MP32	25/02/91	0846	1499		
031	MZ01	25/02/91	1230	1508		
032	MZ02	25/02/91	1609	1432		
033	MZ03	25/02/91	1921	1507		
034	MZ04	25/02/91	2244	1500		
035	MZ05	26/02/91	0211	1498		
036	MZ06	26/02/91	0543	1506		
037	MZ07	26/02/91	0902	1499		
038	MZ08	26/02/91	1231	1497		
039	MZ09	26/02/91	1618	1505		
040	MZ09	26/02/91	2356		3931	
040	MZ09	27/02/91	0249	1500		
041	MZ09	27/02/91	0307	1497		
042	MP26	01/03/91	0347	2001		
043	MP26	02/03/91	1944	1999		
044	MP26	03/03/91	1303		4031	
044	MP26	03/03/91	1645	2001		
045	MP26	03/03/91	1954		4132	
045	MP26	04/03/91	0330	2000		
048	MP49	05/03/91	0144	1498		
049	MP33	05/03/91	0505	1512		
050	MR20	05/03/91	0742	1508		
051	MR19	05/03/91	1057	1498		
053	MR18	05/03/91	1410	1501		
054	MR17	05/03/91	1737	1517		
055	MR16	05/03/91	2057	1497		
056	MR15	06/03/91	0015	1501		
058	MR14	06/03/91	0341	1501		
059	MR13	06/03/91	0701	1508		
059	MR13	06/03/91	0806		3589	
060	MR12	06/03/91	1330	1499		
061	MR11	06/03/91	1645	1501		
062	MR10	06/03/91	1948	1505		
063	MR09	06/03/91	2309	1499		
063	MR09	07/03/91	0018		3464	
064	MR08	07/03/91	0511	1509		
066	MR07	07/03/91	0819	1499		
067	MR06	07/03/91	1139	1498		
068	MJ05	07/03/91	1508	1503		
069	MJ04	07/03/91	1725	1509		
070	MJ03	07/03/91	1943	1501		

TABLE 3-37. MS9103. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
070	MJ03	07/03/91	2118		2128	
071	MJ2A	07/03/91	2306	1500		
072	MJ02	08/03/91	0024	1503		
073	MJ1A	08/03/91	0145	1500		
074	MJ01	08/03/91	0300	471		
075	MJ00	08/03/91	0336	136		
076	M088	08/03/91	0554	1504		
077	MI03	08/03/91	0826	1498		
078	M089	08/03/91	1107	1500		
079	MH05	08/03/91	1346	1499		
080	MG05	08/03/91	1710	1504		
081	MF05	08/03/91	2059	1501		
082	ME05	09/03/91	0023	1501		
083	MD06	09/03/91	0437	1507		
084	MP08	09/03/91	0834	1501		
085	MB07	09/03/91	1233	1499		
086	MB06	09/03/91	1427	1499		
088	MB05	09/03/91	1619	1510		
089	MB04	09/03/91	1833	1506		
090	MB3A	09/03/91	1951	1503		
091	MB03	09/03/91	2114	1508		
091	MB03	09/03/91	2230		1493	
092	MB2A	09/03/91	2352	1159		
093	MB02	10/03/91	0056	284		
094	MB1A	10/03/91	0145	148		
095	MB01	10/03/91	0239	96		
096	MB00	10/03/91	0350	37		
097	MOAB	10/03/91	0608	99		
098	MA00	10/03/91	0824	37		
099	MA0B	10/03/91	0906	54		
100	MA01	10/03/91	0951	81		
101	MA1B	10/03/91	1039	128		
102	MA02	10/03/91	1133	170		
103	MA2B	10/03/91	1226	449		
104	MA03	10/03/91	1321	1250		
105	MA3B	10/03/91	1425	1460		
106	MA04	10/03/91	1549	1505		
107	MA05	10/03/91	1744	1507		
108	MP03	10/03/91	2140	810		
109	MP02	10/03/91	2342	111		
110	MP01	11/03/91	0325	122		

TABLE 3-38. MS9108. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
001	MP01	29/04/91	1738	123		
002	MP02	29/04/91	1938	117		
003	MP03	29/04/91	2058	809		
004	MP04	29/04/91	2242	1326		
004	MP04	30/04/91	0015		1242	
005	MP05	30/04/91	0238	1500		
006	MP06	30/04/91	0521	1498		
007	MP07	30/04/91	1008	1500		
008	MP08	30/04/91	1242	1498		
009	MP09	30/04/91	1515	1500		
010	MP10	30/04/91	1739	1500		
011	MP11	30/04/91	2011	1505		
012	MP12	30/04/91	2241	1501		
013	MP13	01/05/91	0248	1501		
014	MP14	01/05/91	0729	1506		
015	MP15	01/05/91	1155	1500		
016	MP16	01/05/91	1603	1499		
016	MP16	01/05/91	1800		1990	
017	MP17	01/05/91	2210	1501		
018	MP18	02/05/91	0206	1500		
018	MP18	02/05/91	0354		1996	
020	MP19	02/05/91	0802	1504		
022	MP20	02/05/91	1218	1497		
023	MP20	02/05/91	1928	1508		
024	MP21	03/05/91	0643	1504		
025	MP22	03/05/91	1056	1506		
026	MP23	03/05/91	1449	1502		
027	MP24	03/05/91	1845	1503		
028	MP25	03/05/91	2241	1497		
029	MP35	04/05/91	0135	1499		
030	MP26	04/05/91	0433	2510		
030	MP26	04/05/91	0630		4190	
031	MP26	04/05/91	0912	2504		
031	MP26	04/05/91	1136		4128	
032	MP26	04/05/91	1430	2500		
033	MP41	04/05/91	1805	1500		
034	MP32	04/05/91	2131	1504		
035	MP49	05/05/91	0033	1500		
036	MP33	05/05/91	0346	1530		
037	MR20	05/05/91	0619	1498		
038	MR19	05/05/91	0928	1522		
039	MR18	05/05/91	1227	1503		
040	MR17	05/05/91	1526	1504		
041	MR16	05/05/91	1824	1498		
042	MR15	05/05/91	2124	1502		
043	MR14	06/05/91	0016	1497		
044	MR13	06/05/91	0259	2500		
045	MR12	06/05/91	0608	1497		
046	MR11	06/05/91	0925	1502		
047	MR10	06/05/91	1229	1499		
048	MR09	06/05/91	1529	1501		
049	MR08	06/05/91	1829	2006		
049	MR08	06/05/91	2042		1997	
050	MR07	06/05/91	2341	1498		
051	MR06	07/05/91	0233	1501		
052	MJ05	07/05/91	0528	1498		
053	MJ04	07/05/91	0727	1504		
054	MJ3A	07/05/91	0859	1504		
055	MJ03	07/05/91	1034	1516		
055	MJ03	07/05/91	1206		595	
056	MJ2A	07/05/91	1344	1498		
057	MJ02	07/05/91	1459	1501		
058	MJ1A	07/05/91	1618	1500		
059	MJ01	07/05/91	1739	708		
060	MJ00	07/05/91	1826	69		
061	MO88	08/05/91	0225	1498		
062	MI03	08/05/91	0449	1502		
063	MO89	08/05/91	0718	1508		
064	MH05	08/05/91	0957	1498		
065	MG05	08/05/91	1302	1503		
066	MF05	08/05/91	1558	1501		
067	ME05	08/05/91	1910	1508		
068	MD06	08/05/91	2307	1497		
069	MP06	09/05/91	0509	1508		
070	MA05	09/05/91	0832	1502		

TABLE 3-38. MS9108. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

[CONTINUED]

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M) 1481	REMARKS
070	MA05	09/05/91	1006			
071	MA04	09/05/91	1204	1495		
072	MA3B	09/05/91	1330	1481		
073	MA03	09/05/91	1435	1310		
074	MA2B	09/05/91	1551	456		
075	MA02	09/05/91	1644	180		
076	MA1B	09/05/91	1732	130		
077	MA01	09/05/91	1816	84		
078	MA0B	09/05/91	1855	56		
079	MA00	09/05/91	1940	35		
080	MAAB	09/05/91	2035	19		

TABLE 3-39. MS9115. SCHEDULE OF HYDROGRAPHIC AND CTD OBSERVATIONS

CONSEC NO.	STATION ID	DATE (dd/mm/yy)	TIME (UTC)	CTD DEPTH (db)	HYDRO DEPTH (M)	REMARKS
503	Z09	22/10/91	0607	1524		
1	Z09	22/10/91	0757		3988	
504	Z09	22/10/91	1200	1522		
505	Z08	23/10/91	0220	1502		
507	Z07	23/10/91	0555	1501		
508	Z06	23/10/91	0921	1498		
509	Z05	23/10/91	1246	1499		
510	Z04	23/10/91	1606	1501		
511	Z03	23/10/91	1918	1502		
512	Z02	23/10/91	2217	1501		
513	Z01	24/10/91	0125	1501		
514	P26	24/10/91	0933	1713		
2	P26	24/10/91	1136		4131	
515	P26	24/10/91	1719	2016		
516	P26	24/10/91	1853	1540		
517	P35	25/10/91	0937	1499		
519	P25	25/10/91	1423	1503		
520	P24	25/10/91	1855	1504		
523	P23	26/10/91	0027	1504		
524	P22	26/10/91	0500	1503		
525	P21	26/10/91	0923	1507		
526	P20	27/10/91	0248	1502		
3	P20	27/10/91	0525		3790	
527	P20	27/10/91	0820	1508		
529	P20	28/10/91	0222	1501		
530	P19	28/10/91	0925	1502		
531	P18	29/10/91	0354	1510		
4	P18	29/10/91	0531		3785	
532	P17	29/10/91	1125	1452		
534	P16	29/10/91	1620	1515		
5	P16	29/10/91	1754		3493	
535	P15	30/10/91	0059	1505		
536	P14	30/10/91	0534	1506		
537	P13	30/10/91	0951	1502		
538	P12	30/10/91	1415	1501		
539	P11	30/10/91	1653	1501		
540	P10	30/10/91	1923	1505		
541	P09	30/10/91	2158	1504		
542	P08	31/10/91	0043	1501		
543	P07	31/10/91	0329	1508		
544	P06	31/10/91	0609	1502		
6	P06	31/10/91	0752		1991	
545	P05	31/10/91	1154	1500		
546	P04	31/10/91	1507	1315		
7	P04	31/10/91	1636		1305	
547	P03	31/10/91	1933	808		
548	P02	31/10/91	2122	109		
549	P01	31/10/91	2339	116		

Table 4. Summary of cruise descriptions including cruise identification numbers, dates, observing ships, coverage of lines of observations and pertinent remarks regarding observations. Cruise ID's with MS represent dedicated cruises. Dates of cruises denote the beginning and end of cruises and not necessarily those associated with observations. In the columns under Lines, crosses represent at least 80% occupation of number of designated stations in the line; numerals represent numbers of stations taken when the above condition was not met. During some cruises additional stations were taken. (Abbreviations or notations: No = Number, yy = year, mm = month, dy = day, Stn = Station. Ships: P = Parizeau, E = Endeavour, T = John P. Tully and R = W.E. Ricker).

No	Cruise ID	yy mm dd	Ship	Stn						
				P	P	R	J	A	B	Z
					27	19	5	5	7	9
				Number of designated stations along lines						
							7* (*after 1982)	8**	10**	
							(**after 1983)			
01	MS81-01	81 08 17 -08 28	P	x	x	x	x	x	-	-
02	MS81-02	81 10 19 -10 29	P	x	x	x	x	-	-	-
03	MS82-01	82 01 18 -01 29	E	x	x	x	x	3	x	-
04	MS82-02	82 03 15 -03 26	E	x	x	x	x	3	x	-
05	MS82-03	82 05 03 -05 14	P	x	x	x	x	1	x	-
06	MS82-04	82 07 12 -07 22	P	x	x	x	x	x	x	-
07	MS82-05	82 09 16 -09 30	P	x	x	x	x	3	-	-
08	MS82-06	82 11 22 -12 05	E	x	x	x	x	x	x	-

No	Cruise ID	yy mm dd	Ship	Stn P	Lines					
					P	R	J	A	B	Z
09	MS83-01	83 03 16 -03 30	E	x	x	x	x	x	x	-
	8310	83 05 04 -05 20	P	-	6	-	4	-	-	-
	8311	83 06 30 -07 14	E	-	11	-	4	-	-	-
10	MS83-02	83 08 16 -08 27	P	x	x	x	x	3	5	-
	8312	83 09 09 -09 15	P	-	-	-	3	-	-	-
11	MS83-03	83 10 06 -10 17	P	x	-	-	-	-	-	-
	8411	84 04 25	P	-	-	-	5	-	-	-
12	MS84-01	84 04 26 -05 04	P	x	7	x	2	2	7	-
	8430	84 05 26 -05 25	E	-	8	-	-	-	-	-
13	MS84-02	84 08 20 -08 31	E	x	x	-	-	4	-	-
14	MS84-03	84 11 08 -11 22	P	x	x	-	4	7	x	-
<p>A line of 6 stations from P18 along Line J was taken as well</p>										
15	MS85-01	84 02 11 -02 15	E	-	9	-	-	-	-	-
16	MS85-02	85 04 29 -05 16	P	x	x	x	x	x	-	-
	8510	85 06 26 -07 09	P	-	-	-	4	-	-	-

No	Cruise ID	yy mm dd	Ship	Stn P	Lines					
					P	R	J	A	B	Z
17	MS85-03	85 08 11 -08 24	P	x	-	-	-	-	-	-
18	MS85-04	85 10 29 -11 15	T	x	x	-	-	2	x	-
	8512	85 11 23 -11 27	P	-	6	-	-	x	x	-
19	MS86-01	86 04 14 -04 28	T	x	x	-	-	4	-	-
20	MS86-02	86 07 08 -07 17	P	x	1	-	-	-	-	-
21	8614	86 08 20 -09 11	R	x	x	-	-	-	-	-
Cruise of Pacific Biological Station										
22	MS86-03	86 10 15 -10 30	P	x	x	4	-	x	6	-
23	MS8701	87 03 30 -04 09	E	x	14	-	-	-	-	-
24	8734	87 05 27 -06 09	P	x	12	-	-	2	-	-
Cruise of Ocean Ecology Division, IOS										
25	8780	87 05 26 -07 04	R	x	13	-	-	-	-	-
Cruise of Pacific Biological Station										
26	8790	87 07 13 -07 24	E	x	1	-	-	-	-	-
Cruise of Ocean Chemistry Div., IOS										
27	MS8702	87 09 22 -10 16	P	x	x	x	x	x	8	-
28	MS8704	87 11 24 -12 09	P	-	2	-	-	-	8	-

No	Cruise ID	yy mm dd	Ship	Stn P	Lines					
					P	R	J	A	B	Z
29	MS8801	88 05 02 -05 19	P	x	x	x	x	x	x	-
30	MS8802	88 06 28 -07 14	P	x	x	x	x	x	x	-
31	MS8803	88 11 30 -12 12	P	x	x	-	-	5	x	-
32	MS8901	89 02 14 -02 26	T	x	x	x	x	-	-	-
33	MS8902	89 05 01 -05 12	P	x	x	-	-	-	-	-
34	MS8903	89 10 03 -10 22	P	x	x	x	x	-	5	-
35	MS9001	90 05 09 -05 29	P	x	x	x	x	x	x	x
36	MS9002	90 08 22 -09 06	P	x	x	-	-	-	-	-
37	MS9103	91 02 19 -03 11	T	x	x	x	x	x	x	x
38	MS9108	91 04 28 -05 10	P	x	x	x	x	x	-	-
39	MS9115	91 10 17 -11 01	E	x	x	-	-	-	-	x

Table 5 List of abbreviations used.

AES	Atmospheric Environment Service
BCG	British Columbia Government
CFAV	Canadian Forces Auxiliary Vessel
CSS	Canadian Survey Ship
CWS	Canadian Wildlife Service
CICESE	Centro de Investigacion Cientifica Y Educacion Superior de Ensenada (Mexico)
CTD	Conductivity-Temperature-Depth Recorder
Consec	Consecutive
db	decibar
dd	day
DFO	Department of Fisheries and Oceans
FRED	Fisheries Research Employment Program
Hydro	Hydrographic cast
i/c	in charge
ID	identification
IOS	Institute of Ocean Sciences
MEDS	Marine Environmental Data Service
M	metre
mm	month
No	Number
OSU	Oregon State University
PBS	Pacific Biological Station
POI	Pacific Oceanological Institute (Russia)
STD	Salinity-Temperature-Depth Recorder
Stn	Station
TIO	Third Institute of Oceanography (China)
UBC	University of British Columbia
uc	under contract
UC	University of Carolina
UTC	Universal Time Coordinate
UV	University of Victoria
UW	University of Washington
WHOI	Woods Hole Oceanographic Institution
WMO	World Meteorological Organization
yy	year

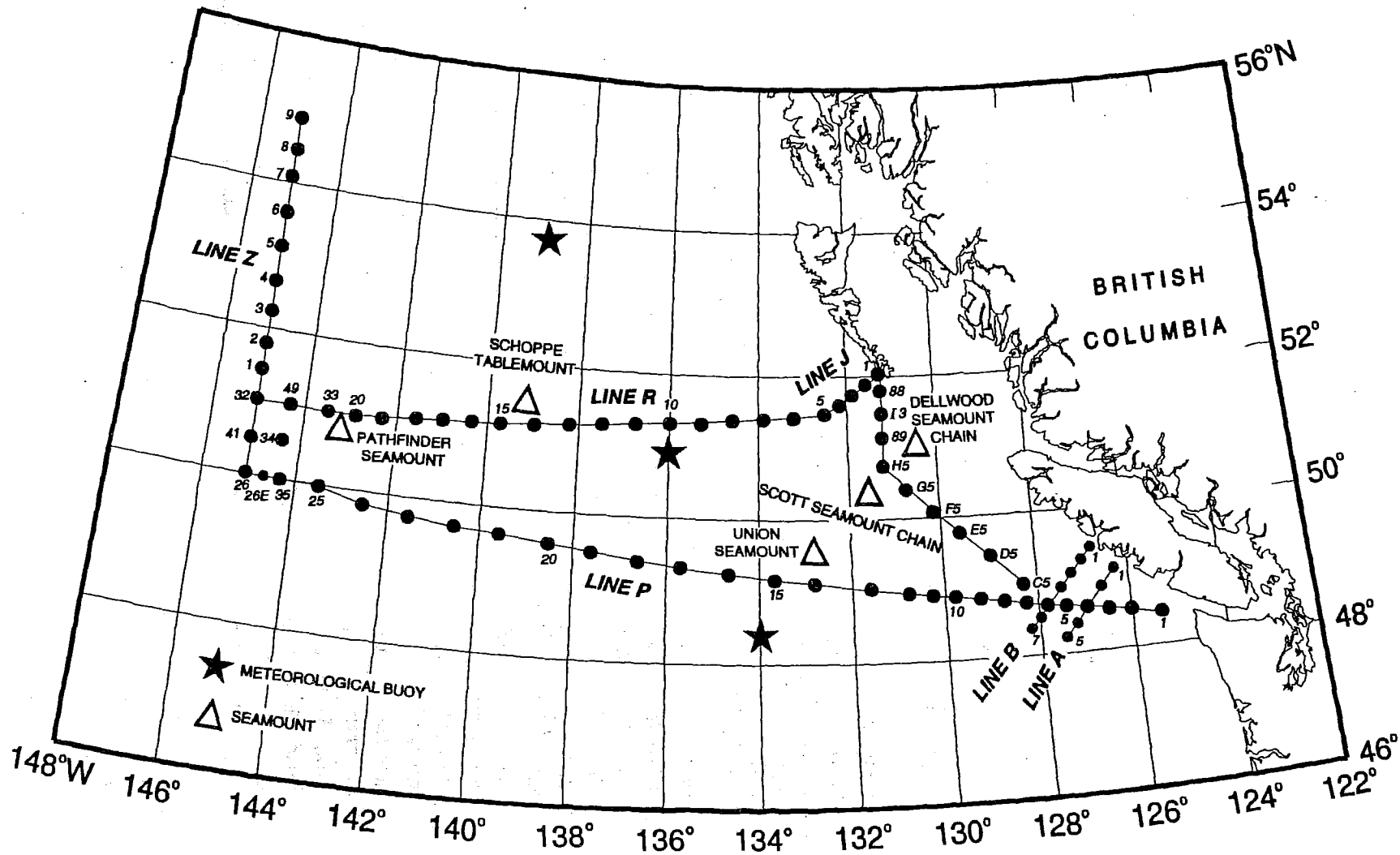


Figure 1. Location and designated stations of the "Ocean Climate Monitoring Study", off the Pacific coast of Canada



Figure 2. Place names along coasts of British Columbia and Washington referred to in text.

FIGURES

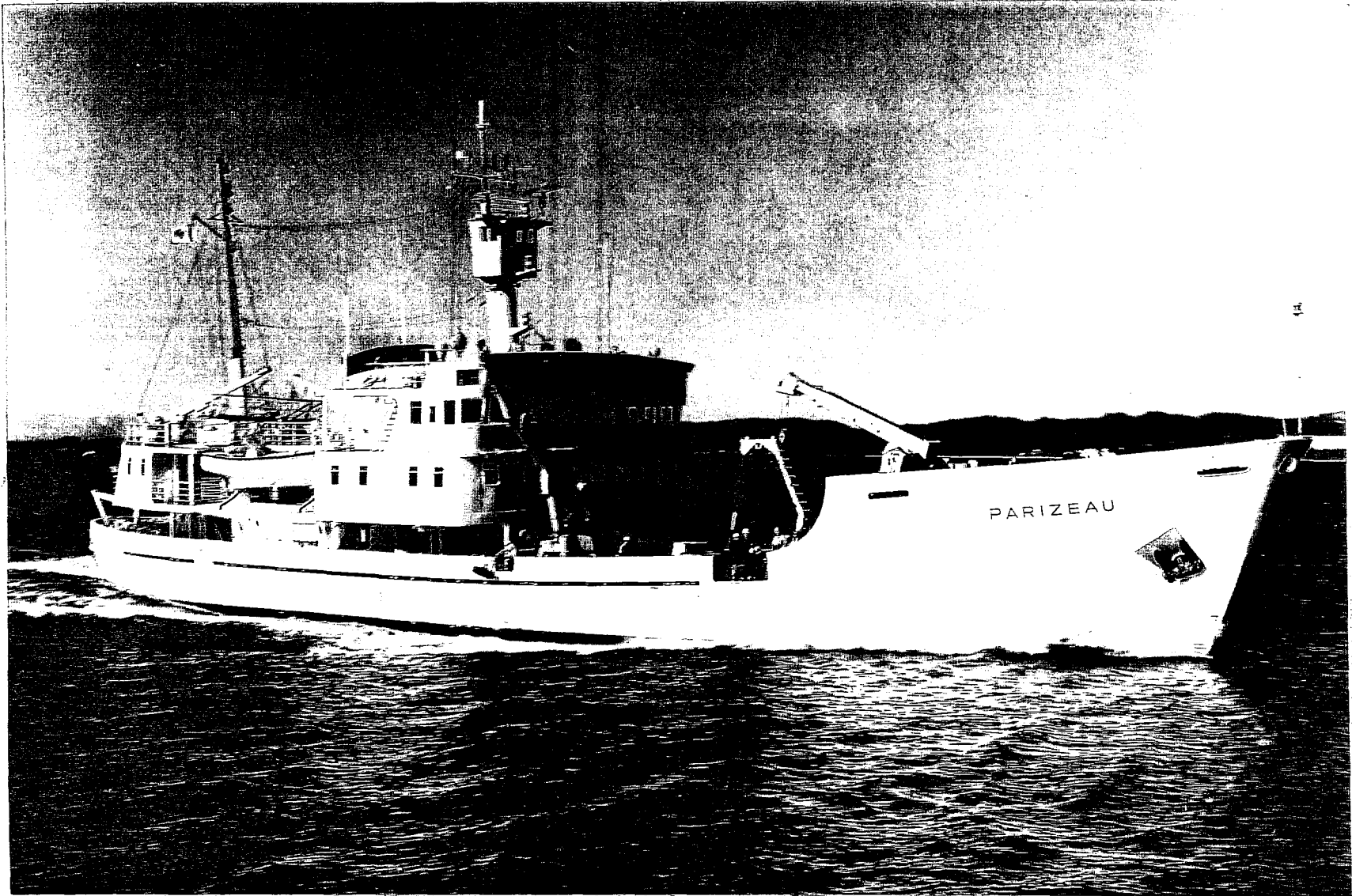


Figure 3. The CSS Parizeau of the Institute of Ocean Sciences

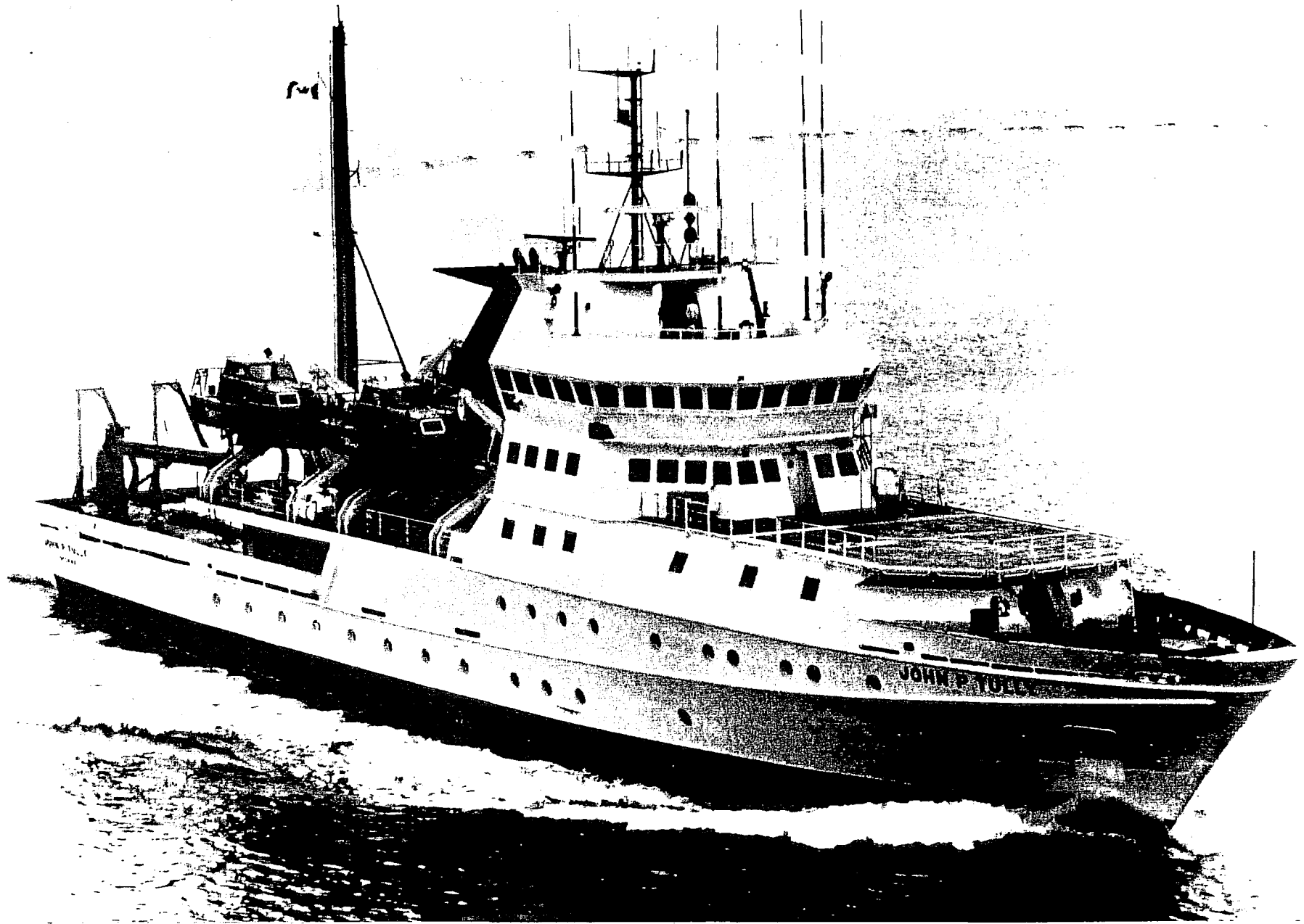


Figure 4. The CSS John P. Tully of the Institute of Ocean Sciences

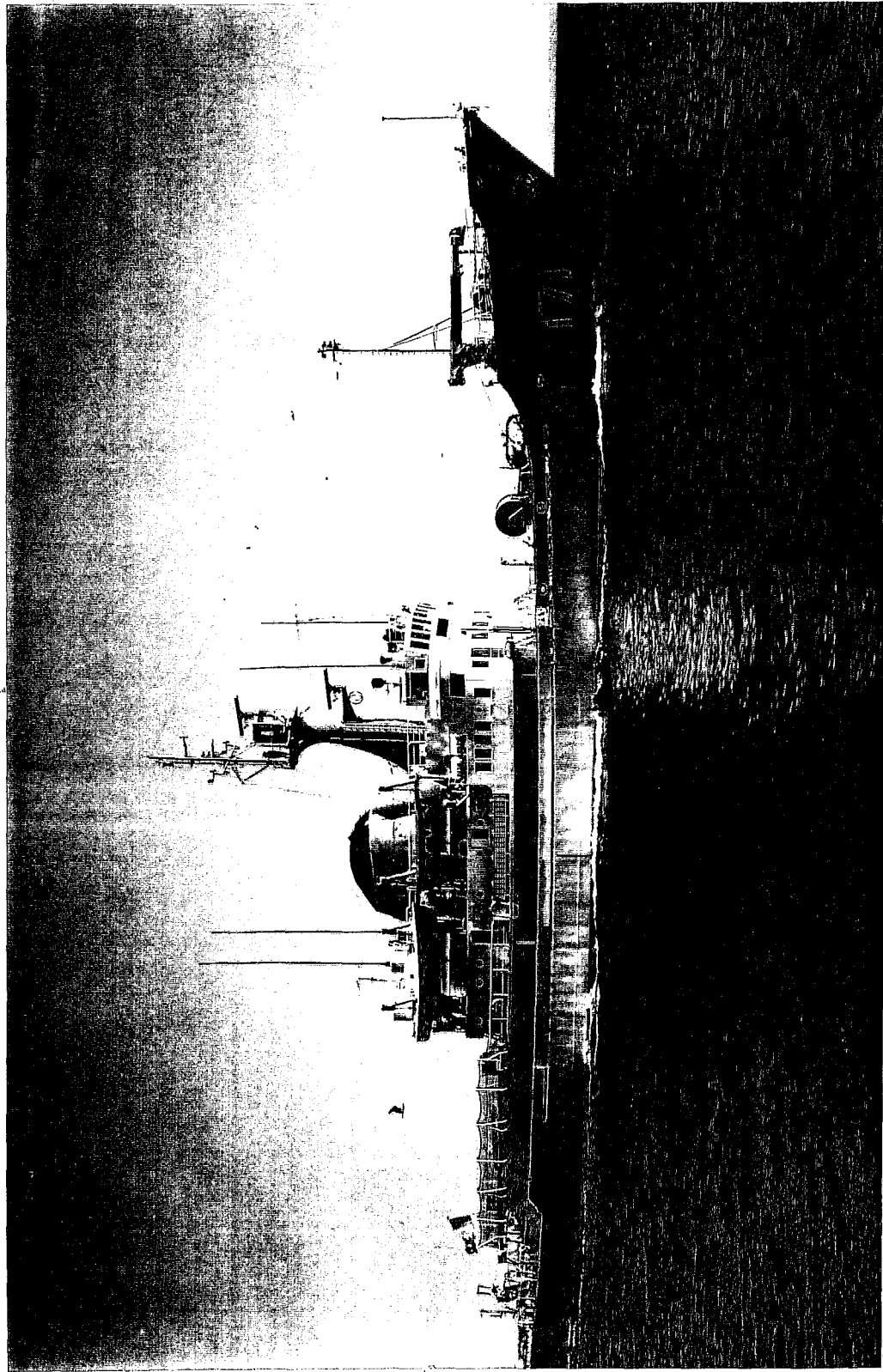


Figure 5. The CNAV Endeavour of the Defence Research Establishment Pacific

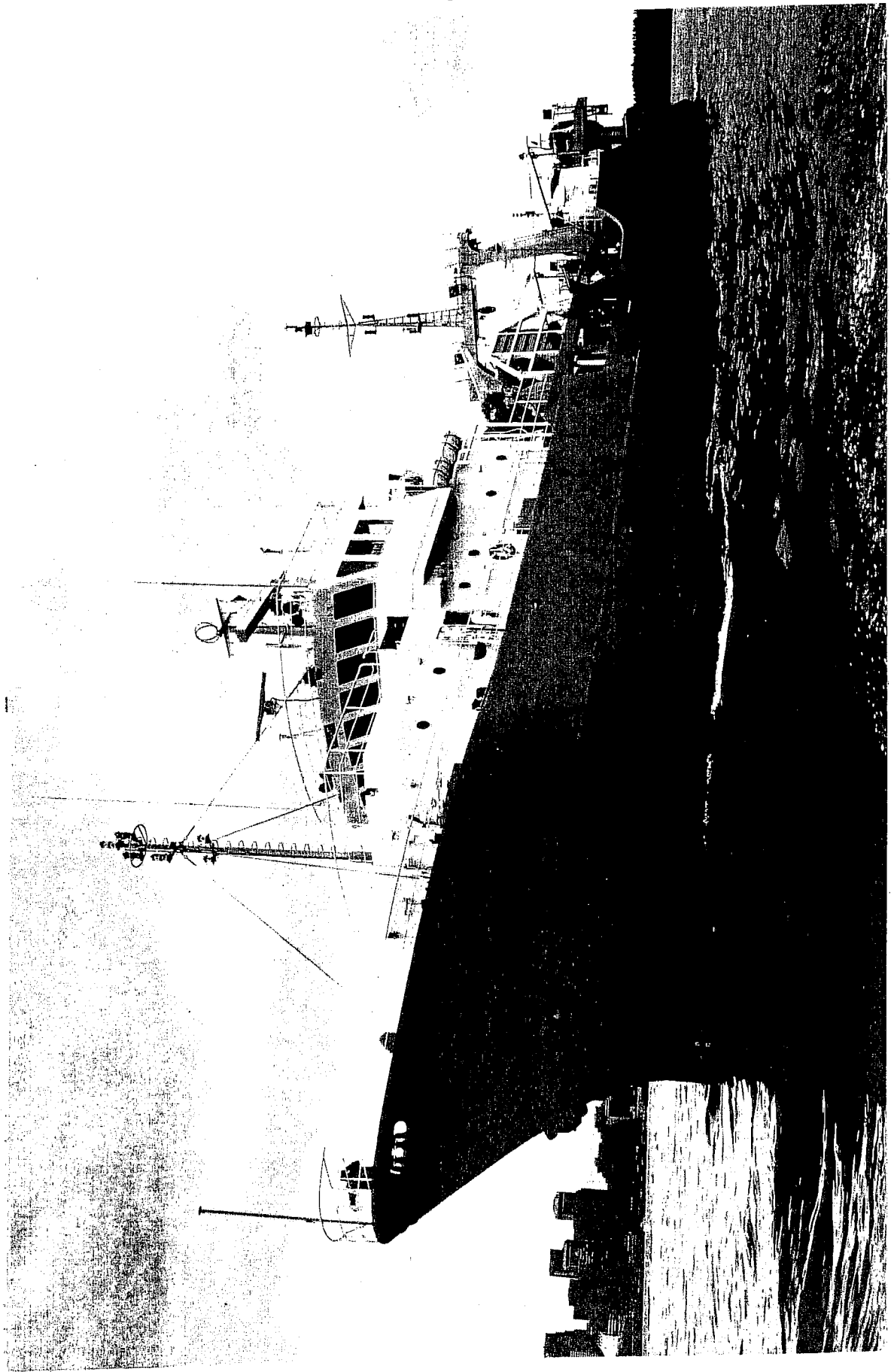


Figure 6. The CSS W.E. Ricker of the Pacific Biological Station

Appendix 1. Nutrient samples taken by Ocean Climate Chemistry Division of IOS (OCC) during OCMS cruises as well as their own. Although there is usually some similarity between the Cruise ID of OCMS cruises and those of OCC, there are differences. They are noted when they occur. Dates represent those of observations. Samples were routinely frozen before 1987 (Cruise 8702) but were subsequently analyzed aboard by the use of Autoanalyzer. In 1991 due to the unavailability of the Autoanalyzer samples were frozen. "?" represent samples almost certain to be frozen but not positively so. Nominal depths denote maximum depths (wire-out) of samples. Abbreviations for ships: P = Parizeau; E = Endeavour; T = John P. Tully. Information supplied by F. Whitney of OCC.

CRUISE ID	YR	MO	DY	SHIP	STN DEPTH (M)	STORAGE	NOMINAL	REMARKS
8101	81	08	24	P	P26	Frozen?	4190	Note that OCC Cruise ID's are not preceded by "MS" and lack the hyphen (until 1987) after the second digit
8102	81	10	24	P	P26	Frozen?	4200	
8201	82	01	24	E	P26	Frozen?	4200	
8202	82	03	20	E	P26	Frozen?	4200	
8203	82	05	09	P	P26	Frozen?	4200	
8204	82	07	13	P	P04	Frozen?	1200	
	"	"	"		P06	"	1500	
	"	"	"		P08	"	1500	
	"	"	14		P12	"	1500	
	"	"	"		P14	"	1500	
	"	"	"		P16	"	1500	
	"	"	15		P18	"	1500	
	"	"	16		P22	"	1500	
	"	"	"		P26	"	4200	
8205	82	09	22	P	P26	Frozen?	4200	
8206	82	11	28	E	P26	Frozen?	4200	
8301	83	03	21	E	P26	Frozen?	4200	
8303	83	10	13	P	P26	Frozen?	4200	

CRUISE ID	YR	MO	DY	SHIP	STN DEPTH (M)	STORAGE	NOMINAL	REMARKS
8401								No data in file
8402								No data in file
8403	84	11	12	P	P26	Frozen?	2500	
8501	85	05	05	E	P26	Frozen?	4200	
8502	85	08	17	P	P26	Frozen	4100	
8503	85	11	08	P	P26	Frozen	600	
8601	86	04	22	T	P26	Frozen	4200	
8602	86	07	08	P	P03	Frozen	100	
	"	"	12		P26	"	1000	
8603	86	10	15	P	P03	Frozen	100	
	"	"	"		P04	"	100	
	"	"	22		P26	"	4000	
8701	87	01	14	E	P03	Frozen	1000	This is not the same cruise as MS8701. Location of station is 17 km west of P03
8702	87	03	31	E	P04	Fresh	1200	Corresponds to Cruise MS8701
	"	04	01		P10	"	2500	
	"	"	02		P16	"	3300	
	"	"	05		P26	"	3500	
8703	87	07	18	E	P26	Fresh	4200	Corresponds to Cruise 8790
	"	"	19		P26	"	4200	
	"	"	23		P04	"	1200	
8704	87	09	23	P	P04	Fresh	1200	Corresponds to Cruise MS8702
	"	"	26		P16	"	3500	
	"	"	29		P26	"	4200	
	"	10	04		OS08	"	4100	
	"	"	10		R13	"	3570	
	"	"	13		J03	"	2000	

CRUISE ID	YR	MO	DY	SHIP	STN DEPTH (M)	STORAGE	NOMINAL	REMARKS
8705	87	11	25	P	P04	Fresh	1300	Corresponds to Cruise MS8704
"	"	29			P26	"	4200	
"	"	30			P26	"	4200	
8801	88	05	03	P	P04	Fresh	1300	
"	"	06			P16	"	3550	
"	"	07			P18	"	3700	
"	"	08			P26	"	3000	
"	"	09			P26	"	4200	
"	"	13			R13	"	3570	
"	"	14			R09	"	3400	
"	"	15			J03	"	2000	
"	"	17			B03	"	1500	
8802	88	06	29	P	P04	Fresh	1300	
"	"	07	01		P16	"	3500	
"	"	05			P26	"	4200	
"	"	06			P26	"	4200	
"	"	10			R13	"	3500	
"	"	12			J03	"	2000	
"	"	14			B03	"	1500	
8803	88	11	30	P	P04	Fresh	1275	
"	"	12	02		P16	"	3500	
"	"	05			P26	"	4200	
"	"	07			P26	"	4200	
8901	89	02	14	T	P04	Fresh	1300	
"	"	16			P16	"	3500	
"	"	19			P26	"	4200	
"	"	19			P26	"	4200	
"	"	24			R13	"	2000	
"	"	25			J03	"	2000	
8902	89	05	03	P	P04	Fresh	1300	
"	"	04			P16	"	3500	
"	"	07			P26	"	4200	
"	"	07			P26	"	4200	
"	"	08			P26	"	4200	

CRUISE ID	YR MO DY	SHIP	STN DEPTH (M)	STORAGE	NOMINAL	REMARKS
8903	89 10 04	P	P04	Fresh	1200	
	" " 07		P16	"	3500	
	" " 14		P26	"	4200	
	" " 14		P26	"	4200	
	" " 20		J03	"	2000	
9001	90 05 10	P	P04	Fresh	1330	
	" " 13		P16	"	3500	
	" " 14		P20	"	3900	
	" " 16		P26	"	4200	
	" " 17		P26	"	4200	
	" " 20		AG	"	4000	Corresponds to Station Z09 of OCMS
9002	90 08 23	P	P04	Fresh	1310	
	" " 26		P16	"	3510	
	" " 28		P20	"	3800	
	" 09 01		P26	"	4210	
	" " 02		P26	"	4210	
9101	91 02 20	T	P04	Frozen	500	Corresponds to Cruise MS9103; Autoanalyzer unavailable
	" " 22		P16	"	500	
	" " 23		P20	"	500	
	" " 26		AG	"	500	Corresponds to Z09 of OCMS
	" 03 02		P26	"	500	
9103	91 04 29	P	P04	Frozen	500	Corresponds to Cruise MS9108; Autoanalyzer unavailable
	" 05 01		P16	"	500	
	" " 04		P26	"	500	
9105	91 10 22	E	AG	Fresh	500	Corresponds to Cruise MS9115; Station Z09 of OCMS
	" " 24		P26	"	500	
	" " 27		P20	"	500	
	" " 29		P16	"	500	
	" " 31		P04	"	500	