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Woods Hole Oceanographic Institution
ATLAS - GAZETTEER COLLECTION

OCEANOGRAPHIC OBSERVATIONS IN BAFFIN BAY
DURING JULY-SEPTEMBER 1968

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REPORT No. 37 CG 373-37

OCEANOGRAPHIC OBSERVATIONS IN BAFFIN BAY DURING JULY-SEPTEMBER 1968

Robin D. Muench

Martin J. Moynihan

Edward J. Tennyson, Jr.

W. Gordon Tidmarsh

Roger B. Theroux

MBL/WHOI

0 0301 0091920 5

WASHINGTON, D.C. FEBRUARY 1971

CGC WESTWIND (WAGB 281)

CGC EASTWIND (WAGB 279)

Abstract

Oceanographic conditions in Smith Sound, northern Baffin Bay, Disko Bay, and southeastern Baffin Bay during the summer of 1968 are described. Vertical sections of temperature and salinity are presented and the relationship of these variables to Baffin Bay - North Water and the general circulation of Baffin Bay is discussed. Zooplankton collections in the Smith Sound region and macrobenthos collections in Disko Bay and several West Greenland Fjords are reported on. Listings of the physical and chemical station data are included.

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Preface

This report is a presentation of the oceanographic data collected by scientists from the University of Washington, McGill University, the Bureau of Commercial Fisheries and the Coast Guard Oceanographic Unit during cruises on the U.S. Coast Guard icebreakers EASTWIND and WESTWIND in Baffin Bay during the summer of 1968. These cruises and this report are part of the U.S. Coast Guard support of the Baffin Bay-North Water project of the Arctic Institute of North America. The area surveyed consisted of Smith Sound, Disko Bay and northern and southeastern Baffin Bay. Data discussed in this report includes physical, chemical and biological observations in these areas.

Oceanographic Conditions in Smith Sound and Northern Baffin Bay, September 1968

ROBIN D. MUENCH¹

An 18 day oceanographic survey of the Northern Baffin Bay-Smith Sound region was conducted aboard the CGC WESTWIND from 6-24 September 1968. This survey was part of the North Water Project, coordinated by the Arctic Institute of North America and cooperative among groups from the University of Washington, the U.S. Coast Guard, McGill University and Dartmouth College. Figure 1 shows the WESTWIND's cruise track for the survey.

SCIENTIFIC BACKGROUND

The primary oceanographic problem in the northern portion of Baffin Bay is the origin of the so-called "North Water". This feature, which occupies approximately the area covered by the cruise track of the WESTWIND, is a region which remains essentially ice-free during the entire year. It also acts as nucleus for ice disintegration in the spring as the melt progresses in the eastern Arctic. (For further details see Dunbar *et al.*, 1967.) Since winter climatic conditions would seem to dictate the formation of a solid ice cover, as is indeed the case to the north and south of this area, some combination of meteorologic and oceanographic processes must act to maintain the open water during the winter months.

Explanations which have been advanced for the presence of the North Water during the winter include: (a) Physical removal of new ice, as it forms, by the prevailing northeasterly winds in combination with an "ice dam" in Smith Sound which prevents ice from flowing southward into the region. (b) A gyre circulation which tends to remove the ice to the outside of the gyre. (c) Upwelling of warm subsurface Atlantic Water to provide a heat source and consequently prevent ice formation. Despite these theories, the phenomenon remains essentially unexplained.

A second problem in Baffin Bay is the mode of formation of the Bottom Water ($- .38$ to $- .40^{\circ}\text{C}$, 34.50‰). This water mass, which is found below about 1800 m, has extremely uniform temperature and salinity from year to year and throughout its extent. It has not been observed to enter from the south, via Davis Strait. Preliminary calculations show it unlikely that it forms within the Bay itself by sinking and mixing of brine formed by freezing. A remaining possible source is suggested by the presence of water with identical properties at a depth of about 250 m in the channel north of Smith Sound and northward to the Arctic Ocean. This water type has, however, never been detected south of the 250 m sill in Kane Basin just north of Smith Sound. It seems possible that unusual conditions might allow the proper type of water to flow southward through Smith Sound into Baffin Bay intermittently and so contribute to the Bottom Water. Such an event has never been observed, however. That the Bottom Water may be replenished either very slowly or else intermittently is in fact, suggested by its low dissolved oxygen concentrations.

In addition to the above specific problems, little is known about the general circulation and distribution of temperature and salinity in northern Baffin Bay. Further knowledge of these is pertinent to the North Water and Bottom Water problems, as well as to a better understanding of the overall hydrography of Baffin Bay.

A major lack in our knowledge of Baffin Bay and the eastern Arctic in general lies in the fact that no winter data have ever been acquired there. All existing data from Baffin Bay have been collected during the months June through October. The circulation and water masses of at least the upper layers of Baffin Bay possibly are different during the winter. Such differences could only be detected by conducting a winter oceanographic cruise in the area.

¹ University of Washington, Seattle, Washington 98105.

NARRATIVE

On 4 September 1968 the scientific personnel boarded the CGC WESTWIND at Thule AFB, Greenland. These personnel included Robin D. Muench, Jerry A. Galt, Richard B. Tripp and Robert W. Williscroft, all from the University of Washington's Department of Oceanography; Gerald O. Siebert and Gordon W. Tidmarch from the Arctic Institute of North America in Montreal; and Dennis T. Brown of Dartmouth College.

The WESTWIND was commanded by Capt. J. S. Thuma, USCG. Coast Guard personnel provided for the oceanographic program were Seamen David Quidley and Howard Clinkscales, who assisted in the laboratory work and operated the hydrographic winch.

A satellite ice reconnaissance report received on 31 August indicated that the pack ice edge at that time extended from Cape Chalon southwestward to Cape Norton Shaw, with ice extending northward from the edge into Smith Sound. This pattern was later verified by direct observation from the WESTWIND.

In order to avoid operations in the pack ice as much as possible, while still obtaining adequate sampling in the Smith Sound-Cape York area, two latitudinal and two longitudinal oceanographic sections, centred approximately on the Carey Islands group (fig. 1), were planned to be occupied at least twice and in as rapid succession as possible. Current meters were to be moored in pairs at two locations; two in the center of the channel west of the Carey Islands and two in the center of the channel north-northeast of the Carey Islands, at depths of 100 and 300 meters (fig. 1).

On 6 September the WESTWIND sailed from Thule to the northwest and moored the first recording current meter array north-northeast of the Carey Islands. On 8 September the second recording current meter array was moored west of the Carey Islands, although the position of the pack ice edge dictated that this mooring be placed somewhat east of the center of the channel here.

From 8-12 September, stations 1-38 were successfully completed once. By 12 September northeasterly winds had cleared Smith Sound of pack ice. Therefore the longitudinal section east of the Carey Islands was extended to the northward (stations 39-47) into Smith Sound as far as ice conditions permitted. Two latitudinal sections

were then occupied in Smith Sound (stations 45-53), and the WESTWIND sailed southward and continued the longitudinal section west of the Carey Islands to a point due west of these islands (stations 54-59).

On 15 September, the WESTWIND returned to Thule for a brief layover, and on 18 September she sailed again and recommenced the oceanographic survey with station 60. Following completion of station 62, it was noted that the large ball float on the first current meter array was floating at the surface rather than below it as intended. This was apparently due to excessive stretch of the nylon mooring line. The entire array was retrieved, a section removed from the mooring line, and then replaced in the water. Stations 63-85 were then completed, thus giving second occupations of the two latitudinal hydrographic sections and the longitudinal section east of the Carey Islands. After a delay due to bad weather, station 86 was occupied on 23 September.

On 24 September, all current meters were successfully retrieved. It was noted that the subsurface float of the first array was again at the surface, and that the corresponding float for the second array also was at the surface. Late on 24 September, the WESTWIND returned to Thule and on 25 September the scientific crew departed the vessel and the cruise was officially terminated.

DATA ANALYSES

All water temperatures were measured with deep-sea reversing thermometers supplied by the University of Washington's Department of Oceanography. The temperature ranges of these instruments were -2 to $+8^{\circ}\text{C}$, -2 to $+10^{\circ}\text{C}$ and -2 to $+20^{\circ}\text{C}$. An attempt was made to place at least one of the expanded scale thermometers at each sampling depth. All thermometers had been calibrated down to 0°C within the past year. Most of the measured temperatures fell in the -1 to $+2^{\circ}\text{C}$ range, and it is felt that no significant error was introduced by the lack of a -2°C calibration. Two protected thermometers were used at each sampling depth. Corrected readings differing by more than 0.04°C were discarded. Readings differing by more than 0.03°C or those involving thermometer malfunctions are marked with an asterisk. Accuracy of the final temperature data is felt to be $\pm 0.02^{\circ}\text{C}$.

Because no unprotected thermometers were available, sampling depths were computed from

the meter wheel readings and surface wire angles. A roughly parabolic curve was assumed for the wire, this being approximated by four segments each having a progressively smaller inclination from the vertical with increasing depth. The uppermost segment was assigned the surface wire angle, while the lowermost was assumed vertical. The two segments in between were assigned intermediate angles. A comparison between this depth calculation method and that using unprotected thermometers in cases where these measurements were available suggests that depths so calculated are accurate to within about ± 25 m for the most extreme wire angles encountered (nearly 60°). For the majority of the calculated depths the error is felt to be considerably smaller.

All salinity samples were analyzed aboard ship using a Bissett-Berman Hytech Model 6220 Portable Laboratory Salinometer supplied by the Coast Guard. A standard was run about every second station, or more frequently when felt necessary, using Copenhagen Water. A mechanical malfunction in the salinometer increased the time required to analyze a sample from 2-3 minutes to as much as 10 minutes, but did not affect its accuracy. The advertised accuracy of this salinometer is $\pm 0.003\text{‰}$, but considering temperature compensation errors, power supply fluctuations and possible operator error it is felt that $\pm 0.02\text{‰}$ would be a more realistic value.

Samples intended for phosphate, nitrate and silicate analyses, taken at all stations and depths on the latitudinal sections, were decanted into 2 oz. polyethylene bottles, tightly capped and immediately frozen. After freezing, the bottle caps were retightened to prevent sublimation of water from the sample or, conversely, fresh condensation of ice within the sample bottle. The nutrient analyses were carried out on a Technicon Auto-Analyzer at the University of Washington's Department of Oceanography. Accuracy of these determinations depends upon the relative concentration of the nutrient in the sample, being about $\pm 1\%$ in general. If concentrations are very small, as in the case of phosphate, the error may be as large as $\pm 2\%$, and for larger concentrations the error will be correspondingly less (Mr. Roy Olund, Department of Oceanography, University of Washington, personnel communication).

Currents were recorded on two different makes of meter: Braincon Corporation Type 316 Histogram Current Meters were used at the 100m depth at each location and Geodyne Model 850-1

meters were used at 300m. The former instruments were set to record over 15 minute intervals. The recording modes of the two instruments were basically different. The Braincon instruments recorded over nine minute intervals, using the tenth minute to cycle to the next frame, producing an analog record on 16 mm film and yielding essentially the averaged current (speed and direction) over each nine minute interval. The Geodyne instruments recorded instantaneously during a pre-set short interval once every 15 minutes on magnetic tape, so that essentially instantaneous rather than average values were obtained.

The effect of the different recording modes on the measurements is uncertain, although spectral analyses applied to these data might yield different results for the higher frequency spectra depending on which recording mode was used. Further research is currently being planned at the University of Washington to determine the effect of the recording mode upon the measurements, and the relations between the measured and true currents in regions of rapid temporal variation.

Accuracy of the speed measurements for the Braincon instruments is estimated at $\pm 3\%$ of the measured values. Experience in the Bering Sea and on ice island T-3 has shown that direction measurements made at high latitudes with the Braincon meters are seldom accurate to more than $\pm 20^\circ$ due to weak horizontal magnetic fields (Mr. Richard B. Tripp, personal communication). The accuracy of the Geodyne instruments is also estimated as $\pm 3\%$ of the measured value. Little experience is available concerning the directional response of the Geodyne meters at high latitudes, but the mode of construction of the direction densing device suggests that they are comparable to the Braincons, or accurate to about $\pm 20^\circ$.

The method of mooring the meters is depicted in figure 2. A 700 lb. railroad wheel was used as the anchor, and the mooring line was $\frac{5}{8}$ " braided nylon, the braided form being used to minimize line twist. The arrays were moored by first streaming the entire system forward from the foredeck while steaming slowly astern. The surface float was therefore placed in the water first and was furthest from the ship, while the anchor was dropped last. The arrays were recovered by hauling in the whole system by means of the anchor windlass.

When retrieval of the current meters was be-

gun, the spherical floats were found at the surface, indicating that the nylon line had stretched considerably more than the 5% allowed for in the manufacturer's specifications. The maximum observed stretch was, in fact, 55m in 620m or nearly 10%. The effect upon the meters of having the float at the surface is uncertain. It is possible that enough motion may have been transmitted down the line due to surface wave action to affect slightly the speed readings of the meters, but no quantitative estimates are available for this effect.

RESULTS

Vertical Sections

The hydrographic results are presented in standard station data form in this report (Appendix A) and are also depicted in a series of vertical sections of temperature and salinity (figs. 3-22). Vertical sections depicting sigma-t and specific volume anomaly were not constructed since, due to the dominant role of salinity in control of density at the observed low water temperatures, these would essentially duplicate the salinity sections.

Latitudinal sections showing distributions of phosphate, nitrate and silicate are not included in this report. The phosphate, nitrate and silicate data are included, however, with the standard station data in Appendix A.

Approximately the upper 50 m of each vertical section was left uncounted, it being impossible to depict the steep vertical gradients in this near surface region using the given vertical scale, without confusion. The station data may be consulted for parameters in the upper 50-m layer.

Smith Sound

Smith Sound (figs. 2 and 4) was characterized by a uniformly cold ($<0^{\circ}\text{C}$) water column. A temperature minimum (below -1°C) occurred in the 50-100 m layer, and temperatures increased below this minimum to bottom values between -0.3 and -0.4°C . No appreciable difference was found in the temperature structure between northern (fig. 3) and southern (fig. 4) Smith Sound.

Salinities in Smith Sound (figs. 5 and 6) varied regularly from less than 32‰ near the surface to more than 34.4‰ near the bottom. Taken as an indication of the distribution of mass, the isohalines indicated a net southward baroclinic flow above 100 m in northern Smith Sound (fig. 5), while northward currents were

suggested at 150 m between stations 52 and 53 and at 250 m between stations 51 and 52. Similarly, southern Smith Sound (fig. 6) contained a net southward baroclinic flow above 100 m, northward flow between 100 and 200 m and a net southward flow below 200 m. The overall slope of the isohalines across the entire width of the sound indicated a net southward flow for both northern and southern Smith Sound.

Smith Bay-Hvalsund

The Smith Bay-Hvalsund section was occupied twice. Temperature distributions (figs. 7 and 8) indicated a warm water mass (0.0 to $\pm 1.0^{\circ}\text{C}$) with a maximum greater than $+1.0^{\circ}\text{C}$ in the topographic deep just west of Hvalsund and extending westward as a tongue between 200-400 m nearly to stations 16 and 66. Westward extension below 400 m appeared to be prevented by a topographic rise, possibly a ridge, at stations 13 and 63. A slightly colder ($+0.52$ to $+0.60^{\circ}\text{C}$) core occurred below station 12 at 200-300 m on 9 Sept. (fig. 7), but by 18 Sept. (fig. 8) this had disappeared leaving a uniform increase from the 0°C isotherm to a maximum near the bottom. Overall temperatures in the warm water mass appeared higher during the later occupation of the section.

The western and near-surface portions of this section were characterized by low ($<0^{\circ}\text{C}$) temperatures. A minimum of less than -1°C at about 100 m occurred in the central portion and the temperature increased gradually downward towards near-bottom values of -0.2 to -0.3°C just west of the topographic rise. A lack of data from the western portion of the section on 9-10 September (fig. 7) precludes conclusions regarding the temperature structure there, but a single station (86) in the western portion on 23 Sept. (fig. 8) indicated minimum near-surface temperatures, a maximum near 125 m and a minimum near 250 m. The upper minimum appeared due to local surface cooling; the temperature being too low to have been advected from Smith Sound or from the south.

Salinities for this section (figs 9 and 10) did not vary significantly between the two occupations. Slopes of the isohalines indicated a northward baroclinic flow east of the topographic rise, and a southward flow west of the rise. These flow patterns imply that the cold water in the central and western portions of this section originated primarily from Smith Sound and was flow-

ing southward. The warm ($>0^{\circ}\text{C}$) water did not appear in Smith Sound and could only have originated in Baffin Bay and flowed northward.

Cape Norton Shaw-Cape Parry

The Cape Norton Shaw-Cape Parry section was occupied twice. The temperature sections (figs. 11 and 12) indicated a temperature structure similar to that in the Smith Bay-Hvalsund section. Maximum temperatures higher than $+1^{\circ}\text{C}$ occurred in the deep east of the Carey Islands and lower temperatures, characterized by a minimum below -1.20°C between 100-200 m, were found in the central and western portions of the section. A mass of warm (0°C) water occurred just west of the Carey Islands between 200-400 m and was more pronounced on 8 Sept. (fig. 11) than on 21 Sept. (fig. 12). A relatively warm (-1.00°C) layer occurred at 50-100 m depth in the westernmost portion of the section of 8 Sept. (fig. 11) and may have been a reflection of local seasonal warming.

The vertical sections of salinity (figs. 13 and 14) indicated a variation in salinity from less than 32‰ near the surface to greater than 34.4‰ near the bottom, with maximum salinity occurring in the regions of maximum temperature. The isohaline slopes indicated a net southward baroclinic flow of the cold water in the central and western portions of the section, while the warm tongue west of the Carey islands appeared to flow northward on 9 Sept. (fig. 13) and to be nearly motionless on 20 Sept. (fig. 14). The warm water east of the Carey Islands exhibited a southward flow in the earlier section which had become northward by the later occupation of the section. Near-surface colder water east of the Carey Islands flowed northward during both occupations of the section and probably originated from the near-surface cold water layer of Baffin Bay.

Cape York-Smith Sound

The longitudinal section (fig. 15) east of the Carey Islands indicated a pronounced thermal front between stations 29 and 30, with warm ($>+1^{\circ}\text{C}$) water occurring below 300 m north of this front as far as station 32 and in the topographic deep at stations 36 and 37. A relatively warm ($>0^{\circ}\text{C}$) tongue extended northward at 300-400 m depth to station 42, north of which only cold water similar to that found in Smith Sound occurred. The water layer between about

50 m and 150 m was characterized by irregular, relatively low ($<0^{\circ}\text{C}$) temperatures. The partial longitudinal temperature section from Cape York to east of the Carey Islands (fig. 16) indicated that the temperature structure was essentially the same at this later date (19-20 Sept.) as during the earlier occupation on 11-17 Sept.

The earlier vertical salinity section (fig. 17) indicated a salinity variation from less than 32‰ near the surface to greater than 34.4‰ near the bottom, similar to the variation found in the latitudinal sections. The later, partial section (fig. 18) indicated a variation from less than 32‰ near the surface to a maximum of 34.39‰ near the bottom, so that maximum salinities were slightly lower at this later date.

The isohaline slopes on 11-13 Sept. (fig. 17) indicated a westward flow between stations 29 and 30 and an eastward flow between stations 30 and 31. A slower westward flow occurred between stations 31 and 36 and an eastward flow was indicated between stations 36 and 38. The pattern of alternating flow directions continued northward with westward flow between stations 38 and 42 and eastward flow between stations 42 and 44. On 19 Sept. (fig. 18) an eastward flow was occurring below about 200 m between stations 67 and 68 while a less intense westward flow was occurring between stations 68 and 72, again below 200 m. An eastward flow occurred below 200 m between stations 72 and 75. Little flow was taking place in the upper 200 m of the section, as compared with the earlier section where flow generally extended upwards to the surface. The flow below 200 m was similar to that for the earlier section if a shift to the south by about 10 nm was supposed for the entire pattern.

Smith Sound-Carey Islands

The two temperature sections (figs. 19 and 20) indicated lower overall temperatures than east of the Carey Islands. The warm tongue at 200-300 m had maximum temperatures of only $+0.5^{\circ}\text{C}$ that extended northward to station 16 on 10 Sept. (fig. 19), but not as far north on 15 Sept. (fig. 20). Near-surface temperatures were irregular and low, grading northward into the uniformly cold water of Smith Sound. "Blobs" of warm and cold water imply the southern section (fig. 19) to fall across a zone of turbulent mixing between the warmer water originating in Baffin Bay and the colder water flowing southward via Smith Sound. The absence of temperatures as

high west of the Carey Islands as were observed east of the islands implied that the core of the warm water layer southeast of the islands turned northward and flowed to the east of them. This was also suggested by the temperature and current (as deduced from the isohalines) structure in the Cape Norton Shaw—Cape Parry section (figs. 11-14).

The southernmost salinity section (fig. 21) indicated a westward flow between stations 25 and 26, and an eastward flow between stations 23 and 24. Little flow appeared to occur between stations 19 and 23. The westward flow occurring between stations 16 and 19 was indicated on the northern section (fig. 22) to extend as far north as station 56. An easterly flow occurred through the northern section between stations 52 and 56. The two sections (figs. 21 and 22) do not overlap enough to allow detection of changes in the current patterns between 11 and 14 Sept.

CURRENT METER DATA

All four of the recording current meters functioned. The locations and depths of these meters are indicated on figures 1 and 2. Although the data are still being processed, preliminary work has indicated that the measured currents at each location consisted primarily of periodic (e.g. tidal and inertial) oscillations of 15-20 cm/sec amplitude superimposed on smaller non-periodic currents on the order of 5 cm/sec.

The non-periodic currents agreed qualitatively in direction and magnitude with the baroclinic currents as deduced from the slopes of the isohalines, although a more quantitative comparison is needed to separate the baroclinic and barotropic modes. A more thorough analysis of the measured currents is in progress at the University of Washington based on filtering of the data which will isolate the periodic and non-periodic components.

The data were too voluminous to be included

in the present report, but may be obtained in their entirety from the Department of Oceanography University of Washington, Seattle.

CONCLUSION

The identifiable water masses in the Smith Sound-northern Baffin Bay region consisted of uniformly cold ($<0^{\circ}\text{C}$) water which appeared to flow southward from Smith Sound throughout the water column and northward from Baffin Bay in the eastern near-surface layers. Warm ($>0^{\circ}\text{C}$) deep water flowed northward—primarily east of the Carey Islands—from Baffin Bay.

The baroclinic currents deduced from the slopes of the isohalines suggested a cyclonic circulation pattern, with northward flow east of Carey Islands and southward flow west of them. The presence of "blobs" of warm and cold water in the vicinity of the Carey Islands suggested a zone of turbulent mixing between the north-flowing warmer water and the south-flowing cold water. Such a mixing zone would result in the effective entrainment of the north-flowing warm water into the colder, south-flowing current, so that a westward transfer of warm water would occur continually along the shear zone between the north and south-flowing currents. Such a westward transfer would be erratic, depending on the space and time scales of the turbulent processes, and therefore would agree qualitatively with the erratic nature of latitudinal flow as deduced from the longitudinal sections.

No large scale time changes were observed during the duration of the cruise. Changes were observed, however, in some of the details and were probably related to the turbulent processes discussed above.

REFERENCES

- Dunbar, M. J., Moira Dunbar and D. C. Nutt. 1967. The Baffin Bay-North Water Project Report Number 1. Arctic Inst. of North America Research Paper No. 45. 71 pp.

Figure 1—Positions of oceanographic stations occupied during the September 1968 WESTWIND cruise and positions of recording current meters operating for the duration of that cruise.

Figure 2—Configuration of the arrays used in mooring the recording current meters. Depth at both moorings was about 620 meters.

Figure 3—Temperature distribution, northern Smith Sound,
13-14 September 1968.

Figure 4—Temperature distribution, southern Smith Sound,
13 September 1968.

Figure 5—Salinity distribution, northern Smith Sound, 13-14 September 1968.

Figure 6—Salinity distribution, southern Smith Sound, 13 September 1968.

Figure 7 — Temperature distribution,
Smith Bay-Hvalsund, 9-10 September
1968.

Figure 8 — Temperature distribution,
Smith Bay-Hvalsund, 18-19 September
1968.

Figure 9—Salinity distribution, Smith Bay-Hvalsund, 9-10 September 1968.

Figure 10—Salinity distribution, Smith Bay-Hvalsund, 18-19 September 1968.

Figure 11—Temperature distribution, Cape Norton Shaw-Cape Parry, 8-9 September 1968.

Figure 12—Temperature distribution, Cape Norton Shaw-Cape Parry, 20-21 September 1968.

Figure 13—Salinity distribution, Cape Norton Shaw-Cape Parry, 8-9 September 1968.

Figure 14—Salinity distribution, Cape Northern Shaw-Cape Parry, 20-21 September 1968.

Figure 15—Temperature distribution, Cape York-Smith Sound, 11-13 September 1968.

Figure 16—Temperature distribution, Cape York-Smith Sound, 11-13 September 1968.

Figure 17—Salinity distribution, Cape York-east of Carey Islands, 19-20 September 1968.

Figure 18—Salinity distribution, Cape York-east of Carey Islands, 19-20 September 1968.

Figure 19—Longitudinal temperature distribution west of Carey Islands, 10-11 September 1968.

Figure 20—Temperature distribution, Smith Sound—west of Carey Islands, 14-15 September 1968.

Figure 21—Longitudinal salinity distribution west of Carey Islands, 10-11 September 1968.

Figure 22—Salinity distribution, Smith Sound—west of Carey Islands, 14-15 September 1968.

A Preliminary Report Of The Zooplankton Collected Aboard USCGC Westwind During September 1968

W. G. TIDMARSH¹

INTRODUCTION

As part of the oceanographic program conducted aboard the USCGC WESTWIND in the North Water region of Baffin Bay during September 1968, a total of 16 biological stations were occupied (fig. 1). The purpose of the biological program was to gain more knowledge of the vertical and horizontal distribution of the various zooplankton populations in the North Water area. In conjunction with the physical data obtained, it is hoped to relate the presence of several species found in the region to specific water masses. The present study concentrates on the copepod and chaetognath populations, but a more comprehensive study of other planktonic forms will be undertaken at a later date. This program is part of a study of the biology of the waters influencing the North Water. Data will be combined with that obtained in future programs to prepare a general survey of the planktonic zoogeography of the North Water region.

PROCEDURES

Thirty-one collections were made at 16 stations between September 8 and September 23, 1968 in the general vicinity of the Carey Islands in northern Baffin Bay. Plankton collections were made from the WESTWIND using one metre stramin nets and one-half metre #6 mesh and one-quarter metre #20 mesh nylon nets shackled to a 5/32 inch stainless steel wire running from the main hydrographic winch. All tows were made with non-closing nets and no flow meters were used. For vertical tows, depending upon the size of the net, weights between fifteen and thirty pounds were attached to the caud end of the net immediately below the collecting bucket. A small depressor was used for the horizontal tows.

Collections varied between 10 metres and 400

metres in depth, with the majority being made at 50 metres, 80 metres, 150 metres and 274 metres. Tows were made after consulting the physical data to determine the depth of the thermocline in order to sample in the different temperature layers present. Discreet sampling in each layer was not possible because the nets were of the non-closing variety. Of the 31 tows attempted, 27 were vertical or oblique and 4 were horizontal. Poor results were obtained in two horizontal tows due to difficulties in streaming the stramin nets. Tows in all cases were conducted from the hydrographic winch platform; however in making horizontal tows the starboard boat crane was swung outboard, with block attached, to carry the net and wire well clear of the propellers. Vertical tows were made at a speed of 1 metre per second. Wire angles encountered were compensated for to allow sampling at specific depths. Horizontal collections were made at a speed of 2 knots for 15 minutes along a straight line.

No analysis or sorting was carried out on board, though relative abundances of plankton were generally noted. Specimens were preserved in a 5% formaldehyde solution in 8 oz. and 16 oz. plastic bottles. The specimens were in excellent condition on arrival at McGill University where the sorting, identification and counting of samples began immediately.

RESULTS

A preliminary plankton analysis concentrating on copepod and chaetognath populations has been completed and shows some interesting trends which will require further field work in the region to substantiate. The Copepod populations were either Atlantic or Arctic forms. No Pacific forms were found in any of the collections taken. Three calanoid copepods *Calanus hyperboreus*, *Calanus glacialis* and *Metridia longa* dominate the collections with *Pseudocalanus minutus*, *Microcalanus pygmaeus* and the cyclopoid copepod,

¹ Marine Science Center, McGill University, Montreal, Canada.

Oithona similis, also appearing frequently. Adult *Pareuchaeta glacialis*, *Scaphocalanus magnus*, *Calanus finmarchicus*, *Gaidius tenuispinus* and *Chiridus obtusifrons* appeared in collections from depths greater than 150 metres though very young forms of these species often appeared in tows made at 100 m. During early September, in conjunction with a heavy phytoplankton bloom, all stages of copepodite development were noted but later in September very few animals younger than stage IV were observed. The numbers of adults in the population also decreased after the phytoplankton bloom had finished. In general, older forms were found at greater depths than were the young of their species.

Atlantic forms were found in tows only at depths greater than 125 metres. These forms appeared below the thermocline and their relative abundances were highly variable. Due to its abundance in tows taken, the Atlantic copepod *C. finmarchicus*, is the best indicator of the penetration of Atlantic water into the North Water region. The extent of its penetration toward Smith Sound is unknown because results from the Station 44 (lat. 77°51' N., long. 74°40' W.) are inconclusive. High winds and ice prevented any collections being made in Smith Sound during the period the ship was in the region. The exact depth at which Atlantic forms occur is not known because closing nets were not used. However, the surface layer to a depth of 75 to 100 metres was inhabited primarily by the Arctic species *Calanus glacialis* and *Calanus hyperboreus*.

Three species of Chaetognath, *Eukronia hamata*, *Sagitta elegans*, and *Sagitta mixima* occurred in the samples. They occur in all three water masses being considered but those forms which breed in Arctic water have spots on their fins which are thought to be sensory in nature. The presence or absence of these spots combined with

the lengths of the individuals suggest the same conclusions drawn from the copepod analysis. Both *Eukronia hamata* and *Sagitta elegans* collected from the upper 100 metres of the water column show longer average body size and a higher percentage of spotted finned individuals which suggests strong Arctic water influence. At depths of 100 to 200 metres, the average size decreases as does the percentage of chaetognaths with spotted fins, indicating the greater influence of Atlantic water at this depth. The horizontal distribution of *Eukronia hamata* was more uniform than that of *Sagitta elegans*, making the former species better indicator in this region. *S. elegans* only appeared in 50% of the samples collected and in much fewer numbers.

SUMMARY

The results obtained from the copepod and chaetognath collections indicate a very strong Arctic influence in the surface waters, these waters being populated by the Arctic copepods *Calanus glacialis* and *C. hyperboreus* and the chaetognaths *Eukronia hamata* with spotted fins. The appearance of the copepod *Calanus finmarchicus* and of the Chaetognath species bearing fewer spots on the fins indicates a high degree of Atlantic influence between 100 and 200 metres. Too few tows were made deeper than 200 metres to draw any conclusions from the specimens obtained from these depths.

In the future, collections using closing nets must be made to determine more exactly the distribution of the populations present in the different water masses. A more extensive sampling program in Kane Basin, Smith Sound, Jones Sound and Lancaster Sound will be necessary for a better understanding of the planktonic distributions, particularly those of the Atlantic species and of any Pacific forms that may penetrate into the North Water region.

Figure 1—Positions of oceanographic stations occupied during the September 1968 WESTWIND Cruise.

Oceanographic Conditions In Disko Bay and Southeastern Baffin Bay In 1968

MARTIN J. MOYNIHAN and EDWARD J. TENNYSON, JR.¹

INTRODUCTION

The primary source of the icebergs which endanger shipping in the Grand Banks region of the North Atlantic Ocean is found in the West Greenland glaciers fronting on Baffin Bay. The U.S. Coast Guard's International Ice Patrol has identified twenty-one major iceberg producing glaciers on the western coast of Greenland (Smith, 1931). An Ice Patrol expedition to study the variation of these glaciers was conducted in 1940 (Smith, 1941). Changes in iceberg distribution during recent years have indicated a possibility of significant alterations in iceberg production patterns of the West Greenland glaciers or in the flow patterns in Baffin Bay.

The investigation of the West Greenland glaciers was renewed during the period of 18 July - 5 August 1968 when the USCGC EASTWIND (WAGB 279) conducted the first phase of a planned multi-year series of combined glaciological surveys and oceanographic investigations along the west coast of Greenland. The principal task of this expedition was to survey the termini of the tidewater glaciers of Northwest Bay and Disko Bay (fig. 1) to determine differences between existing conditions and historical data. Future cruises will include investigations of all the major West Greenland tidewater glaciers from Jakobshavn Fjord to Kane Basin. The survey and glaciological data will be published in a separate Coast Guard publication after all of the major glaciers have been studied. The oceanographic data are being presented in a series of Coast Guard Oceanographic Reports on Baffin Bay.

DISCUSSION

Twenty-five oceanographic stations were occupied in the fjords and coastal waters of southeastern Baffin Bay (fig. 2) from 21 July to 5

August 1968 to survey the oceanic conditions affecting the flow of icebergs. Temperature data and water samples were collected by Nansen casts. Water samples were analyzed for salinity and oxygen concentrations on board the USCGC EASTWIND during the cruise. The resulting data were processed later at the Coast Guard Oceanographic Unit in Washington, D.C., with a PDP-5 computer. Bottom photographs were taken in the fjords and benthic organisms were retrieved with a Van Veen bottom grab as time permitted.

The waters of southeastern Baffin Bay are affected by the Davis Strait ridge which blocks the flow of deep water between Baffin Bay and the Labrador Sea. The West Greenland Current flows northward along the shallower eastern side of the ridge and along the western coast of Greenland. The Canadian Current flows southward along the western side of Baffin Bay and is deflected eastward as the bottom rises towards the ridge.

Temperatures of 1°C to 4.7°C were found in the waters of the upper 50 meters in Disko Bay with a layer of water of less than 1°C at 100 meters (fig. 3). The warm saline deep water in Disko bay (>2°C, >34‰) and the relatively high percentage oxygen saturation all appear to indicate that this bottom water is periodically renewed by an intrusion of West Greenland Current Water (figs. 3-5).

Warm West Greenland Current Water (2.5°C, 34.5‰) was found at 300 meters between stations 17 and 19 along the break in the continental shelf (figs. 3-4). Baffin Bay Deep Water (<1.8°C, <34.5‰) was found below 700 meters between stations 19 and 25 (figs. 6-7). Dunbar (1951) reports this deep water to be deflected eastward as the bottom shallows towards Davis Strait and recirculated into Baffin Bay.

Several of the fjords investigated were expected to be anaerobic near the bottom. However, an abundance of benthic fauna, as evidenced by both

¹ Coast Guard Oceanographic Unit, Washington, D.C. 20390.

the bottom grabs and bottom photos, and relatively high oxygen concentrations were found in all the fjords investigated.

The data presented in the Tables of Oceanographic Data are reproduced from computer listings from the National Oceanographic Data Center (Cruise Number 31-1318).

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Figure 1—Location of Tidewater Glaciers of Northeast Bay and Disko Bay.

Figure 2—Positions of USCGC EASTWIND stations 1-25, 21 July to 5 August 1968.

Figure 3—Vertical Section of Temperature (°C), USCGC EASTWIND stations 8 to 19, 29 July to 3 August 1968.

Figure 4—Vertical Section of Salinity ($^{\circ}/\infty$), USCGC EASTWIND stations 8 to 19, 29 July to 3 August 1968.

Figure 5—Vertical Section of Oxygen (ml/l), USCGC EASTWIND stations 8 to 18, 29 July to 3 August 1968.

Figure 6—Vertical Section of Temperature (°C), USCGC EASTWIND stations 19 to 25, 3-5 August 1968.

Figure 7—Vertical Section of Salinity ($^{\circ}/_{\infty}$), USCGC EASTWIND stations 19 to 25, 3-5 August 1968.

Figure 8—Vertical Section of Oxygen (ml/l), USCGC EASTWIND stations 20 to 24, 3-4 August 1968.

Major Taxonomic Groups Of Macrobenthos In Disko Bay And Several West Greenland Fjords

ROGER B. THEROUX¹

INTRODUCTION

Macrobenthic organisms were sampled during the Glacier and Oceanographic Survey cruise of the USCGC EASTWIND to West Greenland, 18 July to 8 August, 1968. The collections were made to provide information about the fauna of West Greenland, including (1) the difference, if any, in the composition of the fauna of Disko Bay and the inshore sides of sills at the mouth of fjords; (2) the types of organisms inhabiting the sediments within the fjords; and (3) the faunal composition of the deep basins of the fjords, especially those where oxygen levels might be low. This preliminary report lists the major groups of organisms collected and the types of sediments in which they occurred.

SAMPLING PROCEDURE

Macrobenthic organisms were taken at 13 of the 21 stations at which bottom samples were collected (fig. 1); station data and other physical features are given in Table I. Water depths ranged from 72 to 750 meters. A Van Veen grab (0.2m²) was used at 10 stations and a Dietz-Lafond sampler (0.01m²) was used at 11. All of the Van Veen, but only 3 of the Dietz-Lafond samples (stations 3, 14, and 21) were processed for macrobenthos; the remaining 8 Dietz-Lafond collections provided only enough material for sediment samples. (The samplers are illustrated in figs. 2 and 3). Macrobenthic organisms were present in all of the processed samples.

The macrobenthos was washed out of the sediments through a 1-millimeter mesh screen, preserved in a 10 percent buffered formalin solution, and later sorted and identified to major taxonomic groups.

At each station a 1-liter sediment sample was

retained when the total volume of the sample permitted (a smaller amount was removed from small samples), and stored, without further treatment, in plastic containers.

TAXONS AND SIZES OF MACROBENTHOS COLLECTED

The macrobenthic organisms of Disko Bay and the West Greenland fjords are typical of those found in soft muddy ocean bottoms of northern latitudes. Among the organisms in the collections were mud stars (*Ctenodiscus crispatus*), errant and sedentary polychaete annelids (*Nephtys*, *Onuphis*, *Maldanidae*, Chaetopteridae, Serpulidae, Sabellidae), sea urchins (*Strongylocentrotus*), brittle stars (Ophiuroidea), sea cucumbers (Holothuroidea), mud- and sand-dwelling bivalves (*Astarte*, *Cuspidaria*, *Hiatella*, *Macoma*, *Nucula*, *Nuculana*, *Thyasira*), snails (Naticidae), and moss animals (Bryozoa). Some of the organisms are illustrated in figure 4.

In terms of numbers of individuals, polychaete annelids were the most abundant group of organisms in the collections. They occurred at all stations sampled. The bryozoans were the next most abundant group, followed by the molluscs and echinoderms. Crustaceans made up only a small percentage of the total macrobenthic fauna. Table II shows the distribution and occurrence of the major taxonomic groups.

Most of the macrobenthic organisms were 5 to 20 millimeters long; only a few were larger. The exceptions included Bryozoa colonies (some were 3 to 6 centimeters wide); two mud stars, *Ctenodiscus crispatus*, about 6 centimeters in diameter; and one large mud worm, *Nephtys*, longer than 12 centimeters (most of the other annelids were less than 1 centimeter long). Living molluscs were generally less than 5 millimeters long, but

¹ U.S. Department of the Interior, Bureau of Commercial Fisheries Biological Laboratory, Woods Hole, Mass.

shells of a few dead ones—mostly scallops—were 8 to 9 centimeters long.

Except for one sample of gravel, the substrate at all of the stations was predominantly muddy (silt-clay), but generally included varying proportions of coarser materials—usually gravel; coarse, medium, or fine sand; fragmented shell remains; or combinations of these materials.

ACKNOWLEDGMENTS

I thank the U.S. Coast Guard—particularly Captain R. P. Dinsmore, Commanding Officer U.S. Coast Guard Oceanographic Unit—for the opportunity to participate in this expedition, and Captain C. W. Bailey and crew of EASTWIND for their interest and support in the work performed aboard the vessel.

Figure 1—Bottom sampling stations occupied by USCGC EASTWIND July–August 1968. The solid stars indicate stations where sediments and macrobenthic organisms were collected, the open stars where only sediment samples were obtained.

Figure 2—The Van Veen bottom grab weighs about 30 kilograms; the buckets are 40 centimeters wide and open to about 50 centimeters.

Figure 3—The Dietz-Lafond sampler is 75 centimeters long and weighs 22 kilograms; when cocked the jaws open to about 10.2 by 12.7 centimeters.

Figure 4—Some of the macrobenthic organisms collected in West Greenland waters from USCGC EASTWIND; 1—Mollusca (*Macoma*); 2—Mollusca (*Nucula*); 3—Annelida tubes; 4—Echinodermata (*Strongylocentrotus*); 5, 14 and 23—Bryozoa (moss animals); 6—Mollusca (*Nuculana*); 7—Sipunculida; 8—Annelida (*Onuphis*); 9—Mollusca (*Grenella*); 10—Mollusca (*Thyasira*); 11—Crustacea (amphipod tubes); 12 and 17—Echinodermata (Ophiuroidea); 13—Mollusca (Naticidae); 15—Annelida (unidentified); 16—Annelida (*Pectinaria*); 18—Crustacea (Amphipoda); 19—Foraminifera; 20—Crustacea (Paguridae); 21—Annelida (Serpulidae); 22—Brachiopoda. Scale bar is 2 centimeters.

Table I.—Station positions, collecting gear (VV = Van Veen grab; DL = Dietz-Lafond sampler), and physical features of bottom sampling sites occupied by USCGC EASTWIND, July–August 1968.

Station	Date (1968)	Time	Latitude (North)	Longitude (West)	Gear	Depth (Meters)	Bottom type
1	20 July	0130	71°14'	55°12'	VV	96	Silt-clay
3	21 July	1330	71°29'	53°20'	DL	521	Sand-silt-clay
4	21 July	2230	71°24'	53°35'	VV	648	Silt-clay
6	22 July	1930	70°53'	52°38'	VV	536	Silty sand
7	23 July	1330	70°23'	50°52'	VV	750	Gravelly clay
8	24 July	1830	70°41'	52°18'	DL	640	Silt-clay
9	25 July	0300	70°56'	53°40'	DL	747	Silt-clay
10	25 July	1300	70°22'	54°15'	VV	385	Till
11	25 July	2100	69°59'	52°30'	DL	169	Till
12	28 July	0330	69°33'	50°55'	DL	560	Silt-clay
13	28 July	0500	69°29'	51°04'	VV	72	Sand-silt-clay
14	28 July	0930	69°19'	51°39'	DL	126	Gravelly silt-clay
15	28 July	1400	69°24'	51°57'	DL	129	Till
16	28 July	2100	68°54'	52°53'	VV	100	Till
17	29 July	0900	69°13'	51°14'	VV	290	Sand-silt-clay
18	29 July	1030	69°11'	51°18'	DL	299	Silt-clay
19	29 July	1100	69°09'	51°15'	DL	190	Silt-clay
20	1 Aug.	2400	69°09'	52°19'	DL	475	Silt-clay
21	2 Aug.	1800	69°11'	54°21'	DL	85	Gravelly silt-clay
22	2 Aug.	1830	69°11'	54°21'	VV	85	Gravelly silt-clay
23	5 Aug.	0300	66°01'	56°04'	VV	175	Gravel

Table II.—Stations off West Greenland at which various taxonomic groups of macrobenthos were collected, 20 July–5 August 1968.

Taxon	Stations at which each occurred
Foraminifera	1, 3, 4, 6, 10, 13, 14, 16, 17, 22.
Porifera	13, 14, 16, 21, 23.
Coelenterata	10, 22, 23.
Nemertea	10, 16.
Annelida	1, 3, 4, 6, 7, 10, 13, 14, 16, 17, 21, 22, 23.
Sipunculida	1, 4, 16, 22.
Echiurida	7.
Crustacea	1, 7, 10, 13, 14, 16, 22, 23.
Mollusca	1, 4, 6, 10, 13, 14, 16, 17, 22, 23.
Echinodermata	4, 10, 13, 14, 16, 17, 21, 22, 23.
Bryozoa	13, 14, 16, 21, 22, 23.
Brachiopoda	23.
Ascidacea	4, 16, 21.

APPENDIX A.—OCEANOGRAPHIC DATA

1. A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M-2, *Processing Physical and Chemical Data from Oceanographic Stations*. (Rev. August 1964, supplement issued May 1966.)

2. To facilitate use of the oceanographic station data listing, entry headings which are not self-explanatory are described below.

Entry	Description of Field
Depth to bottom -----	Corrected or uncorrected sounding in meters.
Maximum depth of samples -----	Depth of deepest sample to nearest multiple of 100 meters.
Wave observations:	
DIR -----	Rounded to nearest multiple of 10°.
HGT -----	In increments of ½ m. Sum of 5 meters plus increments of ½ m if 50 is added to direction.
PER -----	If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or 2× (numeric entry) +1. For other entries see WMO code 3155.
SEA -----	Sea state according to WMO code 3700.
Weather code -----	If preceded by X, weather according to WMO code 4501. If a two-digit entry, weather according to WMO code 4677.
Cloud code:	
Type -----	Cloud type according to WMO code 0500.
Amount -----	Cloud amount in eighths. Entry of the numeral 9 indicates cloud amount could not be estimated.
Water:	
Color code -----	Color according to Forel-Ule scale.
Transparency -----	Transparency in whole meters as determined by Secchi disc.
Wind:	
Direction -----	Rounded to nearest multiple of 10°.
Speed or force -----	If preceded by letter S, wind speed in knots; if preceded by letter F, wind force according to Beaufort scale.
Barometer -----	Barometric pressure given in tens, units, and tenths of millibars.
Air temperature °C -----	Air temperature to tenths of a degree centigrade.
Visibility code -----	Visibility according to WMO code 4300.
Number observed depths ---	Number of observed levels associated with the station.
Messenger time -----	Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of release of messenger applicable to the observational level. For STD casts, indicates the starting time of lowering the sensor.
Card type -----	OBS designates observed levels. STD indicates the values at this standard level were interpolated by a modified 3-point LaGrange formula.
Depth (m) -----	Depth to nearest meter. A postscript T indicates depth was obtained thermometrically; Z indicates uncorrected "wire out" depth. Postscript Q indicates value was marked doubtful by originator; P indicates value was considered doubtful by NODC. Postscripts P and Q retain this meaning throughout the following entries.
T °C -----	Temperature to hundredths of a degree centigrade.
S ‰ -----	Salinity in parts-per-thousand.
SIGMA-T -----	Entered to hundredths.
Specific-volume -----	Multiply entry by 10 ⁻⁷ to obtain specific-volume anomaly in cubic centimeters per gram.
Anomaly × 10 ⁷ -----	
ΣΔD Dyn. M × 10 ³ -----	Multiply entry by 10 ⁻³ to obtain anomaly of dynamic height in dynamic meters referenced to the sea surface.
Sound velocity -----	Sound velocity according to Wilson's formula entered to tenths of a meter per second.
O ₂ ml/l -----	Dissolved oxygen in milliliters per liter entered to hundreds.
PO ₄ -P μg-at/l -----	Inorganic phosphate in microgram-atoms per liter entered to hundreds.
Total-P μg-at/l -----	Total phosphorus in microgram-atoms per liter entered to hundredths.
NO ₂ -N μg-at/l -----	Nitrite-nitrogen in microgram-atoms per liter entered to hundredths.
NO ₃ -N μg-at/l -----	Nitrate-nitrogen in microgram-atoms per liter entered to tenths.
SiO ₄ Si μg-at/l -----	Silicate-silicon in microgram-atoms per liter entered to whole units.
pH -----	Entered to hundredths.

Table I.—Observed and interpolated oceanographic data from stations taken by USCGC WESTWIND, 8–23 September 1968, prepared from NODC Listing No. 31–1378.

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INDICATOR	SDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																									
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT																								
311378	WE	76310N	077070W	260	67	09	08	175	1968	WE1	001	0180	08	2	5		X7	X	8		0001																										
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO- METER (mb)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS. CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OF FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td>08</td><td>506</td><td>053</td><td>012</td><td>006</td><td>2</td><td>09</td><td></td></tr></table>																						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB			08	506	053	012	006	2	09	
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																						
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MESSAGE TIME OF HR 1/10	CA-T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CODE																														
175	OBS	0010	-0101	31306	2519				14396	027				002	003																																
175	OBS	0020	-0102	31339	2521				14398	039				004	003																																
175	OBS	0030	-0098	31422	2528				14403	047				011	004																																
175	OBS	0050	-0085	31710	2551				14416	057				026	008																																
175	OBS	0075	-0112	32332	2602				14416	088				063	014																																
175	OBS	0100	-0134	32602	2624				14414	101				080	016																																
175	OBS	0125	-0132	32775	2638				14421	097				083	016																																
175	OBS	0150	-0120	32871	2646				14432	082				078	014																																
175	OBS	0175	-0116	33010	2657				14440	087				089	014																																

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INDICATOR	SDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																									
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT																										
311378	WE	76330N	076301W	260	66	09	08	189	1968	WE1	002		0073		08	2	5		X7	X	8		0002																									
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO- METER (mb)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS. CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OF FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td>08</td><td>506</td><td>053</td><td>012</td><td>006</td><td>2</td><td>05</td><td></td></tr></table>																							WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB			08	506	053	012	006	2	05	
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																							
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB																																										
		08	506	053	012	006	2	05																																								
MESSAGE TIME OF HR 1/10	CA-T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CODE																															
189	OBS	0010	-0114	31210	2511				14389	053				004	002																																	
189	OBS	0019	-0108	31321	2520				14395	046				003	003																																	
189	OBS	0029	-0098	31480	2533				14403	058				006	003																																	
189	OBS	0048	-0086	32281	2597				14423	090				048	011																																	
189	OBS	0065	-0112	32688	2631				14420	107				068	014																																	

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	SDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																											
CTRY CODE	ID. NO.					0"	1"	MO		DAY	HR./1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT																								
311378	WE	76350N	076000W	260	66	09	08	204	1968	WE1	003	0311	09	2	4		X4	X	8		0003																										
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO- METER (mb)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS. CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OF FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td>09</td><td>502</td><td>060</td><td>011</td><td>007</td><td>5</td><td>12</td><td></td></tr></table>																						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB			09	502	060	011	007	5	12	
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																						
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB																																									
		09	502	060	011	007	5	12																																							
MESSAGE TIME HR 1/10	CA-T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CODE																														
204	OBS	0010	-0118	31257	2515				14388	042				000	002																																
204	OBS	0020	-0114	31186	2509				14390	049				002	003																																
204	OBS	0030	-0106	31417	2528				14399	065				038	006																																
204	OBS	0050	-0066	32258	2594				14433	077				044	011																																
204	OBS	0075	-0074	32666	2628				14439	074				053	010																																
204	OBS	0100	-0113	32950	2652				14429	092				073	013																																
204	OBS	0125	-0126	33228	2675				14430	096				081	013																																
204	OBS	0150	-0114	3267P	2629P					074				092	012																																
204	OBS	0175	-0128	33235	2675				14438	083				091	013																																
204	OBS	0200	-0089	33374	2685				14462	075				107	014																																
204	OBS	0250	-0068	3321P	2671P					080				115	014																																
204	OBS	0300	-0043	33579	2700				14503	089				128	017																																

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER																									
STATION NO.	ID. NO.						CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA																												
311378	WE	76370N	075302W	260	65 09 08 224 1968	WE1 004		0393		09	2	4		X4	X 18	0004																										
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO-METER (mba)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS. CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OR FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td>09</td><td>502</td><td>060</td><td>011</td><td>006</td><td>2</td><td>13</td><td></td></tr></table>																	WATER		WIND		BARO-METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB			09	502	060	011	006	2	13	
WATER		WIND		BARO-METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																	
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																																				
		09	502	060	011	006	2	13																																		
MESSAGE TIME OF HR 1/10	CAJ. NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	STATION NUMBER																									
224		OBS	0010	-0108	31268	2516			14392		060			004	004																											
224		OBS	0020	-0104	31266	2516			14396		054			003	004																											
224		OBS	0030	-0094	3093P	2488P					050			010	005																											
224		OBS	0050	-0126	32348	2604			14406		083			055	015																											
224		OBS	0075	-0117	32691	2631			14419		098			073	014																											
224		OBS	0100	-0112	33010	2657			14430		102			084	015																											
224		OBS	0125	-0104	33177	2670			14440		081			090	011																											
224		OBS	0150	-0093	33398	2687			14452		072			092	009																											
224		OBS	0175	-0078	33467	2692			14465		082			111	013																											
224		OBS	0200	-0031	33675	2707			14493		087			124	014																											
224		OBS	0250	-0048	33783	2717			14495		085			124	015																											
224		OBS	0300	-0033	34021	2735			14514		094			129	015																											
224		OBS	0350	-0026	3375P	2713P					086			131	018																											

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
					MO	DAY	HR,1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	TYPE
311378	WE	76380N	075000W	260	65	09	08	238	1968	WE1 005	0466		09	2	4		X4	X 18	0005	
					WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS			
					COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	(mba)	DRY BULB	WET BULB									
							09	502	060	011	006	2	14							
MESSAGE TIME OF HR 1/10	CAJ. NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D DYN. M. 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	STATION NUMBER		
238		OBS	0010		31897							063			001	001				
238		OBS	0020		32053							010			006	003				
238		OBS	0030	-0062	32107	2582				14429		154			000	001				
238		OBS	0050	-0066	32822	2640				14440		052			041	005				
238		OBS	0075	-0100	33110	2664				14433		081			089	011				
238		OBS	0100	-0097	33406	2688				14442		078			097	011				
238		OBS	0125	-0092	33384	2686				14449		074			106	010				
238		OBS	0150	-0068	33534	2697				14466		092			115	013				
238		OBS	0175	-0020	33606	2701				14493		089			129	015				
238		OBS	0200	0030	33758	2711				14522		092			137	016				
238		OBS	0250	0013	3365P	2703P						092			143	017				
238		OBS	0300	-0036	33997	2734				14512		085			126	016				
238		OBS	0400	-0028	34094	2741				14534		081			127	016				
238		OBS	0450	-0030	3405P	2738P						085			128	017				

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER																										
						CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT																									
311378	WE	76380N	074300W	260 64 09 09 018 1968	WE1 006		0567		09	2	4		X4	X	8	0006																										
<table><tr><td colspan="2">WATER</td><td colspan="2">WIND</td><td rowspan="2">BARO-METER (mbs)</td><td colspan="2">AIR TEMP. °C</td><td rowspan="2">VIS. CODE</td><td rowspan="2">NO. OBS. DEPTHS</td><td rowspan="2">SPECIAL OBSERVATIONS</td></tr><tr><td>COLOR CODE</td><td>TRANS. (m)</td><td>DIR.</td><td>SPEED OR FORCE</td><td>DRY BULB</td><td>WET BULB</td></tr><tr><td></td><td></td><td>09</td><td>502</td><td>060</td><td>011</td><td>006</td><td>2</td><td>16</td><td></td></tr></table>																	WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB			09	502	060	011	006	2	16	
WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																	
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																																				
		09	502	060	011	006	2	16																																		
MESSAGE TIME OF HR 1/10	CAJ. NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	STATION NUMBER																									
018		OBS	0010	-0024	32309	2597			14446		029			002	003																											
018		OBS	0020	0018	32304	2595			14467		021			001	002																											
018		OBS	0030	0028	32414	2603			14475		017			004	003																											
018		OBS	0050	-0104	33670	2710			14435		079			082	011																											
018		OBS	0075	-0094	33857	2725			14446		080			101	012																											
018		OBS	0100	-0083	33889	2727			14456		082			107	012																											
018		OBS	0125	-0048	34064	2739			14479		085			118	013																											
018		OBS	0150	0010	3397P	2729P					091			133	015																											
018		OBS	0175	0032	34201	2747			14525		093			136	016																											
018		OBS	0200	-0013	34206	2749			14509		087			128	015																											
018		OBS	0225	-0035	3435P	2762P					083			118	014																											
018		OBS	0250	-0040	34168	2748			14504		081			119	014																											
018		OBS	0300	-0030	34243	2753			14518		085			132	014																											
018		OBS	0400	-0032	34427	2768			14537		083			125	014																											
018		OBS	0500	-0030	34449	2770			14555		089			127	015																											
018		OBS	0550	-0032							080			124	015																											

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDIC	1/2 SDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	IO. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76410N	073460W	260	63	09 09 044	1968	WE1	007		0492		00	0	X			7	8		0007	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB										
								27	502	069		003	000	5	15							
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH					
044	OBS	0010			32592							023			005	002						
044	OBS	0020			32605							028			007	002						
044	OBS	0040	-0104	33262	2677					14427		050			058	005						
044	OBS	0065	-0098	33707	2713					14440		060			074	007						
044	OBS	0090	-0064	33826	2721					14462		081			102	012						
044	OBS	0115	-0025	33850	2721					14484		079			112	011						
044	OBS	0140	0016	33976	2729					14509		087			128	014						
044	OBS	0165	0055	34161	2742					14534		092			140	015						
044	OBS	0190	0016	34175	2745					14520		089			127	014						
044	OBS	0215	0009	34252	2752					14522		072			112	011						
044	OBS	0240	0000	34260	2753					14522		089			130	016						
044	OBS	0265	0000	34324	2758					14527		081			082	010						
044	OBS	0290	-0002	34349	2760					14531		078			110	014						
044	OBS	0390	0006	34359	2761					14551		090			129	016						
044	OBS	0470	0021	34407	2764					14572		060			077	012						

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	1/2 SDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	IO. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76480N	072280W	260	62	09 09 070	1968	WE1	008		0265		00	0	X			7	8		0008	
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB										
								19	511		116	003					000	5	12			
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH					
070	OBS		0010	0019	32348	2598				14466		023			011	003						
070	OBS		0020	0020	3202P	2572P						025			014	003						
070	OBS		0030	0019	32280	2593				14469		022			013	004						
070	OBS		0050	0008	32685	2626				14473		036			018	003						
070	OBS		0075	-0042	33333	2680				14463		064			066	009						
070	OBS		0100	-0067	33664	2708				14460		065			076	009						
070	OBS		0125	-0067	3380P	2719P						079			099	011						
070	OBS		0150	-0074	33725	2713				14466		079			100	012						
070	OBS		0175	-0021	3350P	2693P						083			119	013						
070	OBS		0200	0037	33740	2709				14525		075			127	014						
070	OBS		0225	0052	33757	2710				14537		090			121	013						
070	OBS		0250	0010								093			133	017						

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	% TSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	IO. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
311378	WE	76520N	072000W	260	62	09	09	087	1968	WE1	009		0914		00	0	X		X1	7	5	0009
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB										
								17		510	152	005	004	7	17							
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH				
087	OBS		0010	0034	31550	2533					14462		015			009	002					
087	OBS		0019	0028	31779	2552					14464		022			003	002					
087	OBS		0029	0016	32244	2590					14467		027			014	003					
087	OBS		0048	0011	32541	2614					14472		014			006	003					
087	OBS		0072	-0086	33037	2658					14438		066			063	010					
087	OBS		0097	-0093	33312	2680					14442		069			077	009					
087	OBS		0121	-0084	33454	2692					14453		078			094	012					
087	OBS		0145	-0082	3321P	2672P							090			110	013					
087	OBS		0170	-0032	33677	2708					14488		088			120	013					
087	OBS		0195	0012	33747	2711					14513		095			130	014					
087	OBS		0220	0024	33906	2723					14525		096			131	015					
087	OBS		0245	0034	33911	2723					14534		090			137	015					
087	OBS		0270	0044	33879	2720					14542		091			142	017					
087	OBS		0295	0068	34008	2729					14559		095			143	017					
087	OBS		0395	0089	34317	2753					14589		100			158	023					
087	OBS		0790	0103	34486	2765					14664		107			163	026					
087	OBS		0890	0106	34470	2764					14682		113			164	027					

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DATE MO DAY HR 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.							CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
311378	WE		77555N	071270W	260	71 09 09 106	1968	WE1 010		0997		13	1	3		X0	0	0010
		WATER		WIND		BARO- METER (mbx)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB													
			13	S12	185	005	-005	8	20									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta \sigma_t$ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P µg - dl/l	TOTAL-P µg - dl/l	NO ₂ -N µg - dl/l	NO ₃ -N µg - dl/l	SiO ₄ -Si µg - dl/l	pH	S C C	
106	OBS		0008	0016							027			001	002			
106	OBS		0018	0027	31513	2531			14460		015			001	001			
106	OBS		0027	0030	31731	2548			14466		011			004	001			
106	OBS		0046	-0010	32435	2606			14460		026			026	003			
106	OBS		0070	-0060	32579	2620			14443		044			055	010			
106	OBS		0094	-0078	33354	2683			14450		053			079	006			
106	OBS		0118	-0062	3328P	2677P					062			088	011			
106	OBS		0142	-0052	33647	2706			14474		065			093	009			
106	OBS		0167	-0038	33713	2711			14485		077			100	010			
106	OBS		0192	-0067	33785	2718			14477		080			103	011			
106	OBS		0217	0001	33832	2718			14513		078			113	011			
106	OBS		0242	0056	34003	2729			14545		085			133	014			
106	OBS		0293	0083	34097	2735			14567		090			136	013			
106	OBS		0393	0037	34151	2742			14563		093			135	016			
106	OBS		0493	0075	34449	2764			14601		103			153	022			
106	OBS		0580	0098					127					170	025			
106	OBS		0593	0094	34436	2762			14626		107			159	024			
106	OBS		0680	0104							133			171	027			
106	OBS		0780	0110							129			166	029			
106	OBS		0880	0111							114			167	029			

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DATE MO DAY HR 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.							CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA	TYPE		AMT			
311378	WE		77081N	072005W	260	72 09 09 141	1968	WE1 011		0914		13	1	3		X0		0		0011
		WATER		WIND		BARO- METER (mbx)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
				13	S12		185	005 +005				8	20							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta \sigma_t$ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P µg - dl/l	TOTAL-P µg - dl/l	NO ₂ -N µg - dl/l	NO ₃ -N µg - dl/l	SiO ₄ -Si µg - dl/l	pH	S C C			
141	OBS		0008	0016							009			002	001					
141	OBS		0017	0019	31341	2517			14454		013			001	002					
141	OBS		0025	0024	31567	2535			14460		011			003	002					
141	OBS		0042	-0002	32218	2589			14460		029			017	002					
141	OBS		0060	-0034	32669	2626			14455											
141	OBS		0082	-0072	33487	2694			14452		059			090	007					
141	OBS		0105	-0057	33544	2698			14464		079			106	009					
141	OBS		0130	-0084	33476	2693			14454		084			110	010					
141	OBS		0152	-0066	33589	2702			14468		108			112	008					
141	OBS		0177	-0068	33721	2713			14473		075			113	010					
141	OBS		0203	-0043	3365P	2706P					095			109	011					
141	OBS		0227	-0020	3348P	2691P					059			117	012					
141	OBS		0253	-0010	33803	2717			14514		077			104	010					
141	OBS		0277	0016	33982	2730			14532		085			133	013					
141	OBS		0377	0074	34125	2738			14577		103			151	021					
153	OBS		0454	0056	33690	27040					091			146	017					
141	OBS		0554	0082	34272	2749			14612		100			163	021					
141	OBS		0654	0088	34365	2756			14633		103			148	023					
141	OBS		0754	0094	34409	2760			14653		106			173	024					
141	OBS		0854	0100	34449	2762			14673		112			174	026					

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	AREA SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10			CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

311378	WE	77070N	072280W	260	72	09	09	171	1968	WE1	012		0558		15	3	2				X2	6	8		0012
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WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB			

		15	S12	190	004	000	7	17		
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MESSNGR TIME HR 1/10	CA-T NO.	C-RD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANDALTY-10 ³	Σ Δ O DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₃ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	STATION NUMBER
171		OBS	0009	0030	32205	2586			14469								
171		OBS	0019	-0008	32850	2640			14463		039			028	007		
171		OBS	0028		33181						063			047	008		
171		OBS	0047	-0088	33411	2688			14438		075			079	012		
171		OBS	0071	-0080	33451	2691			14446		063			087	010		
171		OBS	0095	-0070	33626	2705			14457		067			101	009		
171		OBS	0118	-0078	33778	2718			14459		085			114	012		
171		OBS	0142	-0046	33851	2722			14479		095			123	012		
171		OBS	0167	0010	3379P	2715P					098			138	013		
171		OBS	0192	0069	34046	2732			14543		113			150	014		
171		OBS	0217	0052	34215	2747			14542		109			157	016		
171		OBS	0242	0054	34201	2745			14547		114			165	019		
171		OBS	0260	0053	34222	2747			14549		116			163	020		
171		OBS	0285	0062	34401	2761			14560		121			158	021		
171		OBS	0385	0088	34411	2760			14588		129			163	024		
171		OBS	0485	0103	34459	2763			14612		132			182	027		
171		OBS	0525	0104													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	AREA SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10			CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

311378	WE	77070N	073000W	260	73	09	09	192	1968	WE1	013		0375		06	1	3				X1	0	1		0013
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WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB			

		07	S03	192	004	000	9	14		
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MESSNGR TIME HR 1/10	CA-T NO.	C-RD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANDALTY-10 ³	Σ Δ O DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₃ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	STATION NUMBER
192		OBS	0010	0002							032			005	004		
192		OBS	0020	0001	32408	2604			14461		024			015	004		
192		OBS	0030	-0010	32592	2619			14460		022			007	003		
192		OBS	0050	-0087	33108	2664			14435		063			062	010		
192		OBS	0075	-0108	33530	2699			14435		078			099	013		
192		OBS	0100	-0097	33671	2710			14446		099			111	013		
192		OBS	0125	-0051	33846	2722			14474		086			122	016		
192		OBS	0150	-0036	33500	26930					086			127	016		
192		OBS	0175	0012	34013	2733			14514		101			136	016		
192		OBS	0200	0043	34096	2738			14533		095			142	018		
192		OBS	0225	0044	34131	2740			14538		101			140	017		
192		OBS	0250	0047	34079	2736			14543		099			148	017		
192		OBS	0275	0055	34094	2737			14551		105			162	019		
192		OBS	0300	0071	34284	2751			14565		100			140	020		

REFERENCE SHIP NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10'	1"		MO	DAY			HR	1/10	CRUISE NO.		STATION NUMBER	DIR.	
311378	WE	77070N	073280W		260	73 09 09	214	1968	WE1 014	0440		06	1	3		X1	0 1	0014
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbal)	DRY BULB	WET BULB							
							07	503	192	004	000	9		15				
MESSAGE TIME HR 1/10	CA. T NO.	C RD TYPE	DEPTH (m)	T °C	S %	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{at/l}$	TOTAL-P $\mu g - \text{at/l}$	NO ₂ -N $\mu g - \text{at/l}$	NO ₃ -N $\mu g - \text{at/l}$	SiO ₄ -Si $\mu g - \text{at/l}$	pH
214		OBS	0010	0016	32627	2621					14469		027			009	003	
214		OBS	0020	0014	32598	2619					14469		029			007	003	
214		OBS	0030	-0020	32962	2649					14460		071			034	006	
214		OBS	0050	-0086	33350	2683					14438		077			068	010	
214		OBS	0075	-0108	33377	2686					14433							
214		OBS	0100	-0097	33613	2705					14445	083			106	013		
214		OBS	0125	-0066	33799	2719					14466	075			116	012		
214		OBS	0150	-0030	33935	2728					14489	090			137	013		
214		OBS	0175	0012	34043	2735					14514	112			143	014		
214		OBS	0200	0030	34083	2737					14527	105			138	016		
214		OBS	0225	0044	34223	2748					14539	098			152	017		
214		OBS	0250	0052	34238	2748					14547	108			162	018		
214		OBS	0273	0056	34264	2750					14553	101			148	018		
214		OBS	0373	0022	34377	2761					14556	099			153	019		
214		OBS	0433	-0030	34382	2764					14542	095			140	015		

REFERENCE SHIP NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DRIFT INDICATOR	STATION SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10°	1'	MO	DAY		HR./1/10	CRUISE NO.		STATION NUMBER	DIR.	HGT		PER	SEA	
311378	WE	77070N	074010W		260	74	09	10	003	1968	WE1 015	0613	12	1	2		X0	0	0015
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS				
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbal)	DRY BULB	WET BULB								
							12	S11	192	007	004	9	17						
MESSAGE TIME HR 1/10	CA. T NO.	C RD TYPE	DEPTH (m)	T °C	S %	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{at/l}$	TOTAL-P $\mu g - \text{at/l}$	NO ₂ -N $\mu g - \text{at/l}$	NO ₃ -N $\mu g - \text{at/l}$	SiO ₄ -Si $\mu g - \text{at/l}$	pH	
003		OBS	0010	0016	32627	2621					14469		023			009	003		
003		OBS	0020	0017	32628	2621					14471		022			009	004		
003		OBS	0030	0016	3198P	2569P							026			004	000		
003		OBS	0050	-0079	33144	2666					14439		076			063	008		
003		OBS	0075	-0102	33356	2684					14435		094			095	011		
003		OBS	0100	-0091	33615	2705					14448		099			100	011		
003		OBS	0125	-0062	33735	2713					14467		088			120	010		
003		OBS	0150	-0019	33778	2715					14492		096			131	012		
003		OBS	0175	-0026	33845	2721					14494		102			136	013		
003		OBS	0200	0032	34006	2731					14527		089			142	014		
003		OBS	0225	-0014	34021	2734					14510		107			121	014		
003		OBS	0250	0004	34117	2741					14524		116			148	016		
003		OBS	0272	0038	34154	2742					14544		116			148	017		
003		OBS	0297	0044	3398P	2728P							108			164	019		
003		OBS	0397	-0032	34195	2749					14533		096			130	014		
003		OBS	0497	-0016	34110	27420							109			147	016		
003		OBS	0572	-0024	34297	2757					14567		086			146	017		

REFERENCE STATION ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	1/10000 SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			OIL	HGT	PER		SEA	TYPE		AMT
311378	WE	77068N	074385W	260	74	09	10	021	1968	WE1	016		0675		14	1	2		X0	0		0016
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
					COLOR CODE	TRANS. (m)	OIL	SPEED OR FORCE	METER (mbal)	DRY BULB	WET BULB											
							14	S12	192	006	001	9	18									

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	Si O ₄ -Si μg - dl/l	pH	S C
021	OBS	0010	-0122	30853	2483				14380		071			003	003		
021	OBS	0020	-0120	31133	2505				14387		050			001	003		
021	OBS	0030	-0071	31463	2530				14416		046			001	003		
021	OBS	0049	-0113	32568	2621				14415		094			058	013		
021	OBS	0074	-0074	32995	2654				14443		074			062	009		
021	OBS	0099	-0082	33355	2684				14449		069			091	007		
021	OBS	0124	-0094	33438	2691				14448		093			092	009		
021	OBS	0149	-0082	33557	2700				14460		079			111	010		
021	OBS	0174	-0048	33642	2705				14481		114			118	011		
021	OBS	0199	-0014	33721	2710				14502		081			117	012		
021	OBS	0224	-0005	33889	2723				14512		091			120	013		
021	OBS	0249	-0034	33980	2729				14536		098			154	016		
021	OBS	0274	-0018						089					145	016		
021	OBS	0299	-0059						086					133	013		
021	OBS	0399	-0046						092					128	012		
021	OBS	0499	-0036						085					107	011		
021	OBS	0599	-0032						092					140	014		
021	OBS	0674	-0027														

REFERENCE STATION ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	1/10000 SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			OIL	HGT	PER		SEA	TYPE	
311378	WE	77072N	075000W	260	75	09	10	039	1968	WE1	017		0630		14	1	2		X0	0	0017
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
					COLOR CODE	TRANS. (m)	OIL	SPEED OR FORCE	METER (mbal)	DRY BULB	WET BULB										
							14	S12	192	006	001	9	17								

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	Si O ₄ -Si μg - dl/l	pH	S C
039	OBS	0010	-0133	31013	2496				14377		054			000	002		
039	OBS	0020	-0126	31202	2511				14385		069			004	004		
039	OBS	0030	-0118	31554	2539				14395		085			026	008		
039	OBS	0050	-0104	32105	2583				14413		095			046	012		
039	OBS	0075	-0110	32598	2623				14421		099			072	013		
039	OBS	0100	-0116	32855	2644				14426		099			066	014		
039	OBS	0125	-0112	33181	2671				14436		109			079	014		
039	OBS	0150	-0104	33353	2684				14447		090			096	013		
039	OBS	0175	-0100	33540	2699				14455		096			112	013		
039	OBS	0200	-0089	33744	2715				14467		089			116	013		
039	OBS	0225	-0072	33850	2723				14481		076			104	013		
039	OBS	0250	-0066	33969	2733				14490		083			129	013		
039	OBS	0275	-0065	34019	2737				14495		074			077	009		
039	OBS	0300	-0062	34087	2742				14501		085			124			
039	OBS	0400	-0038	34164	2747				14530		081			121	012		
039	OBS	0500	-0034	34220	2751				14549		069			089	009		
039	OBS	0600	-0036	34251	2754				14566		077			129	012		

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
					10"	1"		MO	DAY			HR	1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER	SEA	TYPE	AMT	
311378	WE	77070N	075280W		260	75 09 10	065	1968	WE1 018	0585		11	1	4		X1	7 7		0018					
					WATER		WIND		AIR TEMP. °C															
					COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		BARO-METER (mba)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
							11		508		190		-002		-006		7		17					
MESSAGE TIME HR 1/10	CAJ T NO.	RD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	SCC					
065	OBS	0010	-0137	30873	2484						14373		038			002	001							
065	OBS	0020	-0136	30861	2484						14375		049			009	002							
065	OBS	0030	-0129	30984	2493						14382		067			000	003							
065	OBS	0049	-0113	31923	2569						14406													
065	OBS	0074	-0141	32341	2603						14402		107			068	015							
065	OBS	0099	-0148	32629	2627						14407		101			069	015							
065	OBS	0124	-0149	32666	2630						14412		106			058	018							
065	OBS	0149	-0132	33101	2665						14430		103			087	015							
065	OBS	0174	-0102	33420	2690						14453		099			087	011							
065	OBS	0199	-0115	33619	2706						14453		084			086	010							
065	OBS	0224	-0068	33727	2713						14481		087			105	012							
065	OBS	0249	-0075	33907	2728						14484		087			129	013							
065	OBS	0274	-0054	34023	2736						14500		087			125	015							
065	OBS	0299	-0060	34107	2743						14502		084			112	013							
065	OBS	0399	-0040	34261	2755						14530		079			112	011							
065	OBS	0499	-0034	34287	2757						14550		065			088	010							
065	OBS	0549	-0031										085			132	015							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR./1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT	
311378	WE	77000N	074320W	260	74	09	10	097	1968	WE1 019	0594		00	0	X		X1	7 7	0019
						WATER		WIND		AIR TEMP. °C									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS				
								15	505	203	006	000	7	17					
MESSAGE TIME OF HR 1/10	CA-T NO.	CORD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	SCC		
097	OBS		0010	0004	32512	2612			14462										
097	OBS		0020	-0002	32611	2620			14462		023			004	002				
097	OBS		0030	-0003	32652	2624			14464		026			004	002				
097	OBS		0050	-0104	33381	2686			14431		077			088	010				
097	OBS		0075	-0109	33587	2703			14435		083			093	009				
097	OBS		0099	-0094	33673	2710			14447		059			076	006				
097	OBS		0124	-0048	33779	2716			14474		068			073	007				
097	OBS		0149	0022	33961	2728			14513		082			114	012				
097	OBS		0174	0032	34042	2734			14523		089			143	014				
097	OBS		0199	0033	34056	2735			14528		096			142	014				
097	OBS		0224		34123						088			164					
097	OBS		0249	0048	34221	2747			14545		092			139	016				
097	OBS		0269	-0034	3409P	2741P					078			104	012				
097	OBS		0294	-0004	34255	2753			14529		086			127	014				
097	OBS		0394	-0031	34300	2758			14534		085			137	017				
097	OBS		0494	-0030	34338	2761			14552		082			120	013				
097	OBS		0544	-0034	34323	2760			14558		076			115	012				

REFERENCE CITY CODE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WIND INDICATOR	STATION TIME GMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					STATION SQUARE			CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA		TYPE	AMT	
					10"	1"												
311378	WE	76530N	074300W		260	64 09 10	117 1968	WE1	020	0577		11	1	1		X1	7 4	0020
					WATER		WIND		BARO- METER (mbs)		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS			
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB								
							11	S07	196	018	014	7						
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ OYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma t/l$	TOTAL-P $\mu g - \sigma t/l$	NO ₂ -N $\mu g - \sigma t/l$	NO ₃ -N $\mu g - \sigma t/l$	SiO ₄ -Si $\mu g - \sigma t/l$	pH	ST C	
117	OBS	0010	0026	32174	2584				14467									
117	OBS	0020	0018	32380	2601				14468									
117	OBS	0030	-0039	32903	2645				14451									
117	OBS	0050	-0093	33491	2695				14437									
117	OBS	0075	-0100	33620	2706				14440									
117	OBS	0100	-0070	33780	2717				14460									
117	OBS	0125	-0057	33859	2723				14472									
117	OBS	0150	-0044	33954	2730				14483									
117	OBS	0175	-0034	34031	2736				14493									
117	OBS	0200	-0030	34122	2743				14500									
117	OBS	0225	-0013	34176	2747				14513									
117	OBS	0250	0004	34249	2752				14526									
117	OBS	0275	-0002	34236	2751				14527									
117	OBS	0300	0003	3418P	2746P													
117	OBS	0400	-0022	34262	2754				14539									
117	OBS	0500	-0008	34375	2763				14564									

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WIND INDICATOR	STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER										
CITY CODE	IO. NO.					10"	1"		MO	DAY			HR.1/10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT							
311378	WE	76460N	074300W		260	64	09	10	136	1968	WE1	021		0600		06	1	1		X3	5	8		0021						
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS															
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																		
									06	S06	196	017	014	7	17															
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ OYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma t/l$	TOTAL-P $\mu g - \sigma t/l$	NO ₂ -N $\mu g - \sigma t/l$	NO ₃ -N $\mu g - \sigma t/l$	SiO ₄ -Si $\mu g - \sigma t/l$	pH	ST C												
136	OBS	0010	0014	32287	2593					14463																				
136	OBS	0020	0014	32574	2617					14469																				
136	OBS	0030	-0027	32895	2644					14456																				
136	OBS	0050	-0101	33446	2692					14433																				
136	OBS	0075	-0102	33605	2704					14439																				
136	OBS	0100	-0086	33720	2713					14452																				
136	OBS	0125	-0055	33778	2717					14471																				
136	OBS	0150	-0016	33917	2726					14495																				
136	OBS	0175	-0018	33985	2732					14500																				
136	OBS	0200	-0019	34027	2735					14504																				
136	OBS	0225	-0020	34070	2739					14508																				
136	OBS	0250	-0028	34075	2739					14509																				
136	OBS	0275	-0011	34104	2741					14521																				
136	OBS	0300	-0009	34168	2746					14527																				
136	OBS	0400	-0024	34176	2747					14537																				
136	OBS	0500	-0020	34251	2753					14556																				
136	OBS	0580	0018	34295	2755					14588																				

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	WINDSPEED SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
311378		WE	76390N	074290W	260	64	09	10	157	1968	WE1	022	0567		00	0	X		X1	7	4	0022
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
		COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	DRY BULB	WET BULB															
					06	506	196	017	014	8	16											
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S C					
157	OBS		0010	0014	32406	2603			14465													
157	OBS		0020	0016	32633	2621			14471													
157	OBS		0030	0010	32613	2620			14469													
157	OBS		0050	-0090	33449	2691			14438													
157	OBS		0075	-0094	33547	2700			14442													
157	OBS		0100	-0084	33686	2710			14452													
157	OBS		0125	-0046	33814	2719			14476													
157	OBS		0150	-0022	3375P	2713P																
157	OBS		0175	0019	34002	2731			14517													
157	OBS		0200	-0002	34049	2736			14512													
157	OBS		0225	0022	34116	2740			14528													
157	OBS		0250	0044	34081	2736			14542													
157	OBS		0275	-0032	34102	2742			14511													
157	OBS		0300	-0023	34127	2743			14520													
157	OBS		0400	-0017	34211	2750			14541													
157	OBS		0500	-0026	34234	2752			14553													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	WINDSPEED SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE		AMT
311378		WE	77320N	074300W	260	74	09	10	174	1968	WE1	023	0589		00	0	X		X1	7	4	0023	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	DRY BULB		WET BULB											
									04	509	198	006	004			8	17						
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{at/l}$	TOTAL-P $\mu g - \text{at/l}$	NO ₂ -N $\mu g - \text{at/l}$	NO ₃ -N $\mu g - \text{at/l}$	SiO ₄ -Si $\mu g - \text{at/l}$	pH					
174		OBS	0010	0023	32420	2604					14469												
174		OBS	0020	0020	32500	2610					14471												
174		OBS	0030	0016	32563	2616					14471												
174		OBS	0050	-0094	33447	2691					14436												
174		OBS	0075	-0086	33651	2708					14447												
174		OBS	0100	-0080	33716	2713					14455												
174		OBS	0125	-0060	33823	2721					14470												
174		OBS	0150	-0019	33890	2724					14494												
174		OBS	0175	0022	33998	2731					14518												
174		OBS	0200	0010	3392P	2725P																	
174		OBS	0225	-0030	34054	2738					14503												
174		OBS	0250	-0038	34089	2741					14504												
174		OBS	0275	-0034	34160	2747					14511												
174		OBS	0300	-0035	3413P	2744P																	
174		OBS	0400	-0036	34231	2752					14532												
174		OBS	0500	-0032	34340	2761					14552												
174		OBS	0550	-0030	34354	2762					14562												

REFERENCE CITY NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"		MO	DAY			HR.	1/10	CRUISE NO.		STATION NUMBER	DIR.	
311378	WE	76250N	074300W	260	64	09 10	205 1968	WE1	024	0503		00	0	X		X1	7 7	0024
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS			
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB							
							11	S10	214	006	004	6	16					

MESSNGR TIME HR 1/10	CAS T NO.	C RD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma_l/l$	TOTAL-P $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	SiO ₄ -Si $\mu g - \sigma_l/l$	pH	STATION NUMBER
205	OBS	0010	-0009	31747	2551				14445								
205	OBS	0020	0018	32152	2582				14465								
205	OBS	0030	-0096	32454	2611				14418								
205	OBS	0049	-0108	32922	2649				14422								
205	OBS	0074	-0126	33181	2671				14421								
205	OBS	0099	-0114	33396	2688				14434								
205	OBS	0124	-0110	3320P	2672P												
205	OBS	0149	-0084	33626	2706				14460								
205	OBS	0174	-0084	33744	2715				14465								
205	OBS	0199	-0020	33916	2726				14502								
205	OBS	0224	0022	34013	2732				14526								
205	OBS	0249	-0062	3389P	2726P												
205	OBS	0274	-0053	33941	2730				14499								
205	OBS	0299	-0041	34142	2745				14512								
205	OBS	0399	-0024	34240	2753				14538								
205	OBS	0474	-0018	34291	2756				14553								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CITY NO.	ID. NO.					10"	1"		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER		DIR.	HGT	
311378	WE	76180N	074300W		260	64	09 10	223 1968	WE1	025	0479		10	0	2		X1	6 7	0025
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS			
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB							
								10	S03	225	023	-001	7	16					

MESSNGR TIME HR 1/10	CAS T NO.	C RD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma_l/l$	TOTAL-P $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	SiO ₄ -Si $\mu g - \sigma_l/l$	pH	STATION NUMBER
223	OBS	0010	-0091	31692	2550				14406								
223	OBS	0020	-0062	31954	2570				14425								
223	OBS	0030	-0080	32236	2593				14422								
223	OBS	0050	-0080	32912	2648				14435								
223	OBS	0075	-0119	33169	2670				14425								
223	OBS	0100	-0126	33261	2677				14427								
223	OBS	0125	-0124	33413	2690				14434								
223	OBS	0150	-0098	33605	2704				14453								
223	OBS	0175	-0064	33807	2719				14476								
223	OBS	0200	0006	33971	2729				14514								
223	OBS	0225	0021	34031	2733				14526								
223	OBS	0250	0046	34161	2743				14544								
223	OBS	0275	-0042	34153	2746				14507								
223	OBS	0300	-0046	34168	2748				14510								
223	OBS	0400	-0038	34308	2759				14532								
223	OBS	0450	-0030	34343	2761				14545								

REFERENCE CTRY- NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	CHIT INDIC	SDEN SQUARE		TATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BDTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLDUD CODES		NODC STATION NUMBER	
					10"	1"	MD	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
311378	WE	76120N	074340W		260	64	09	11	002	1968	WE1	026	0444		00	0	X		X2	7	8		0026
					WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
							10	S03	233	000	-005	7	15										
MESSENGR TIME HR 1/10	CA-T NO.	RD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	D ₂ ml/l	PD ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C					
002	OBS	0010	-0064	31884	2564					14422													
002	OBS	0020	-0016	32261	2593					14451													
002	OBS	0030	-0018	32457	2609					14454													
002	OBS	0050	-0075	33084	2661					14440													
002	OBS	0075	-0102	33388	2687					14436													
002	OBS	0100	-0096	33418	2689					14443													
002	OBS	0125	-0089	33619	2705					14453													
002	OBS	0150	-0086	33737	2715					14460													
002	OBS	0175	-0073	33848	2723					14472													
002	OBS	0200	0008	34009	2732					14516													
002	OBS	0225	0028	34064	2736					14530													
002	OBS	0250	0034	34122	2740					14538													
002	OBS	0275	0024	34155	2743					14538													
002	OBS	0300	-0010	34122	2742					14526													
002	OBS	0400	-0023	34191	2749					14537													

REFERENCE	SHIP	LATITUDE	LONGITUDE	CHIT	SDEN		TATION TIME			YEAR	ORIGINATOR'S		DEPTH	MAX.	WAVE			WEA-	CLOUD	NODC		
CTRY	CODE	NO.	1/10	1/10	INDIC	SQUARE	(GMT)	MO	DAY	HR.1/10	CRUISE	STATION	TO	DEPTH	OBSERVATIONS	THER	CODES	TYPE	AMT	STATION		
											NO.	NUMBER	BOTTOM	OF						NUMBER		
														SAMPL'S	DIR.	HGT	PER	SEA				
311378	WE	76000N	074285W		260	64	09 11 030		1968		WE1	027	0406		00	0	X		X2	7 8	0027	
					WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
								00	S00	245	-004	-022	7	15								
MESSNGR TIME HR 1/10	CA-T NO.	RD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	D ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C				
030	OBS	0010	-0039	32130	2583					14437												
030	OBS	0020	-0029	32339	2600					14446												
030	OBS	0030	-0006	32577	2618					14461												
030	OBS	0050	-0102	33154	2668					14428												
030	OBS	0075	-0114	33486	2695					14431												
030	OBS	0100	-0124	3309P	2664P																	
030	OBS	0125	-0101	33576	2702					14447												
030	OBS	0150	-0074	33747	2715					14466												
030	OBS	0175	-0029	33908	2726					14493												
030	OBS	0200	0004	33969	2729					14514												
030	OBS	0225	0038	34028	2732					14534												
030	OBS	0250	0041	34106	2738					14541												
030	OBS	0275	-0004	3390P	2724P																	
030	OBS	0300	-0011	34116	2742					14525												
030	OBS	0375	-0032	34204	2750					14529												

REFERENCE		SNIP CODE	LATITUDE " 1/10	LONGITUDE " 1/10	DEPT INDIC	P. 250EN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER	
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
311378	WE		76000N	071300W		260	61	09	11	078	1968	WF1	028		0466		00	0	X		X2	6	8	0028
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTNS	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
						09 <td>S02</td> <td>267</td> <td>-003</td> <td>+006</td> <td>7</td> <td>16</td> <th colspan="2"></th> <th colspan="2"></th>						S02	267		-003	+006	7	16						
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2107		Σ Δ σ DYN. M. x 10 ³		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P µg - ml/l	TOTAL-P µg - ml/l	NO ₂ -N µg - ml/l	NO ₃ -N µg - ml/l	SiO ₄ -Si µg - ml/l	pH						
078	OBS		0010	-0006	32720	2629					14460													
078	OBS		0020	-0025	32846	2640					14455													
078	OBS		0030	-0030	32786	2636					14453													
078	OBS		0050	-0106	33335	2683					14429													
078	OBS		0075	-0104	33492	2695					14436													
078	OBS		0100	-0092	33597	2703					14447													
078	OBS		0125	-0042	33771	2716					14477													
078	OBS		0150	-0066	33775	2717					14470													
078	OBS		0175	-0033	33899	2725					14491													
078	OBS		0200	-0004	3406P	2737P																		
078	OBS		0225	-0006	33951	2728					14513													
078	OBS		0250	-0000	34082	2739					14522													
078	OBS		0274	-0012	34212	2750					14522													
078	OBS		0299	-0017	34265	2754					14524													
078	OBS		0399	-0016	34385	2764					14543													
078	OBS		0424	-0012	34170	2746Q																		

REFERENCE		SNIP CODE	LATITUDE " 1/10	LONGITUDE " 1/10	DEPT INDIC	P. 250EN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER	
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
311378	WE		76075N	071270W		260	61	09	11	095	1968	WE1	029		0559		00	0	X		X2	6	8	0029
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTNS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB											
								13		S02	281	-006	+010	7		16								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDMALT-2107		Σ Δ σ DYN. M. x 10 ³		SOUND VELOCITY	O ₂ ml/l	PO ₂ -P µg - ml/l	TOTAL-P µg - ml/l	NO ₂ -N µg - ml/l	NO ₃ -N µg - ml/l	Si O ₄ -Si µg - ml/l	pH						
095	OBS		0010	-0002	32644	2623					14461													
095	OBS		0020	-0022	32688	2627					14454													
095	OBS		0030	-0040	33082	2660					14453													
095	OBS		0050	-0109	33518	2698					14430													
095	OBS		0075	-0103	33661	2709					14439													
095	OBS		0100	-0076	33824	2721					14458													
095	OBS		0125	-0044	33879	2724					14478													
095	OBS		0150	-0011	33970	2730					14498													
095	OBS		0175	0042	34123	2740					14529													
095	OBS		0200	0022	34088	2738					14523													
095	OBS		0225	0042	34166	2743					14538													
095	OBS		0250	0007	34265	2753					14527													
095	OBS		0275	0000	34271	2754					14528													
095	OBS		0300	-0015	3389P	2724P																		
095	OBS		0400	-0028	34331	2760					14537													
095	OBS		0500	0006	34404	2764					14570													

REFERENCE		SHIP CODE	LATITUDE ° ' 10	LONGITUDE ° ' 10	DEPTH INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					STATION NUMBER			DIR.	HGT PER		SEA	TYPE	AMT						
						10'	1"													
	311378	WE	76130N	071310W	260	61	09 11	118	1968	WE1 030	0615	00	0	X		X2	6	8	0030	
		WATER		WIND		AIR TEMP. °C		BARO- METER (mb)		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB									
						32	506	294	-004	-010	2	17								
MESSNGR TIME HR 1/10	CAS-T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	SC		
		118	OBS	0010	0006	32475	2609			14462										
		118	OBS	0020	-0011	32802	2636			14461										
		118	OBS	0030	-0022	32703	2629			14456										
		118	OBS	0050	-0108	33106	2664			14425										
		118	OBS	0075	-0105	33227	2674			14432										
		118	OBS	0100		33422														
		118	OBS	0125	-0060	33629	2705			14467										
		118	OBS	0150	-0023	33689	2708			14489										
		118	OBS	0175	-0002	33762	2713			14504										
		118	OBS	0200	0058	33872	2719			14537										
		118	OBS	0225	0070	34007	2729			14548										
		118	OBS	0250	0102	34046	2730			14567										
		118	OBS	0274	0070	34068	2734			14557										
		118	OBS	0299	0064	34088	2736			14559										
		118	OBS	0399	-0024	34177	2747			14537										
		118	OBS	0499	0011	34241	2751			14570										
		118	OBS	0549	0095	34460	2764			14620										

REFERENCE		SHIP CODE	LATITUDE ° ' 10	LONGITUDE ° ' 10	DEPTH INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1"		MO	DAY		HR	10'	1"	CRUISE NO.		STATION NUMBER	DIR.	
	311378	WE	76220N	071300W	260	61	09 11	138	1968	WE1 031	0686	00	0	X		X2	6	8	0031
		WATER		WIND		AIR TEMP. °C		BARO- METER (mb)		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB						
						13	504	300	-004	-010	2	17							
MESSNGR TIME HR 1/10	CAS-T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	SC	
138		OBS	0010	0018	32398	2602				14467									
138		OBS	0020	0008	32897	2643				14471									
138		OBS	0030	-0014	33027	2654				14464									
138		OBS	0050	-0105	33567	2702				14433									
138		OBS	0075		33707														
138		OBS	0100	-0095	33810	2721				14449									
138		OBS	0125	-0094	33878	2726				14455									
138		OBS	0150	-0027	33964	2730				14491									
138		OBS	0175	0042	34072	2736				14528									
138		OBS	0200	0078	34091	2735				14549									
138		OBS	0225		34180														
138		OBS	0250	0092	34202	2743				14565									
138		OBS	0274	0104	34249	2746				14575									
138		OBS	0299	0094	34306	2751				14575									
138		OBS	0399	0132	34499	2764				14612									
138		OBS	0499	0119	34564	2770				14623									
138		OBS	0599	0110	34542	2769				14636									

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	N INCHES	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	

311378	WE		76280N	071300W		260	61	09 11 159	1968	WE1 032	0475		00	0	X		X2	6	8	0032
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB		WET BULB												
					00 S00	298		-001		010		2		16						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DIN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma_l/l$	TOTAL-P $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	SiO ₄ -Si $\mu g - \sigma_l/l$	pH	STATION NUMBER
159		OBS	0010	0011	32188	2586			14461								
159		OBS	0020	0015	32264	2592			14465								
159		OBS	0030	-0056	32905	2646			14443								
159		OBS	0050	-0078	33224	2673			14440								
159		OBS	0075	-0058	33528	2697			14458								
159		OBS	0100	-0035	33695	2709			14475								
159		OBS	0125	-0018	3337P	2682P											
159		OBS	0150	-0009	33728	2711			14496								
159		OBS	0175	-0013	33817	2718			14499								
159		OBS	0200	0056	34045	2733			14538								
159		OBS	0225	0058	34058	2734			14544								
159		OBS	0250	0085	34222	2745			14562								
159		OBS	0275	0104	34310	2751			14576								
159		OBS	0300	0107	34345	2754			14582								
159		OBS	0400	0084	34453	2764			14590								
159		OBS	0450	0098	34461	2764			14604								

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	N INCHES	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	

311378	WE		76330N	071340W		260	61	09 11 182	1968	WE1 033	0480		00	0	X		X2	7	8	0033
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB		WET BULB												
					00 S00	300		-012		016		8		17						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DIN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \sigma_l/l$	TOTAL-P $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	NO ₃ -N $\mu g - \sigma_l/l$	SiO ₄ -Si $\mu g - \sigma_l/l$	pH	STATION NUMBER
182		OBS	0010	0000	31542	2534			14447								
182		OBS	0020	-0015	31987	2571			14447								
182		OBS	0030	-0031	32187	2587			14444								
182		OBS	0050	-0077	33241	2674			14441								
182		OBS	0075	-0097	33391	2687			14438								
182		OBS	0100	-0079	33592	2711			14455								
182		OBS	0125	-0066	33790	2718			14466								
182		OBS	0150	-0040	3365P	2706P											
182		OBS	0175	-0030	33909	2726			14493								
182		OBS	0200	0018	33982	2730			14520								
182		OBS	0225	0066	34058	2733			14547								
182		OBS	0250	-0032	33940	2729			14505								
182		OBS	0275	-0020	34109	2742			14517								
182		OBS	0300	0018	34182	2746			14539								
182		OBS	0350	0076	34433	2763			14578								
182		OBS	0400	0047	34382	2760			14572								
182		OBS	0475	0080	34338	2755			14599								

REFERENCE		SHIP CODE	LATITUDE + 1/10	LONGITUDE + 1/10	DRIFT INDIC	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				SEA- THER CODE	CLOUD CODES		NOOD STATION NUMBER			
CTRY CODE	TO. NO.					10"	1"		MO	DAY			HR.1/10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT
311378	WE	76424N	071300W	260	61	09	11	201	1968	WE1 034	0700		00	0	X		X2	7	8		0034		
		WATER COLOR CODE	TRANS- (m)	DIR.	SPEED OR FORCE	BARO- METER (mba)	AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
							DRY BULB	WET BULB				VIS. CODE											
					30	S02	302	-008	-028	8	19												
MESSAGE TIME OF NR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S CD					
	201	OBS	0010	0000	31873	2561				14451													
	201	OBS	0020	-0006	32157	2584				14454													
	201	OBS	0030	-0013	32567	2617				14458													
	201	OBS	0050	-0076	33209	2672				14441													
	201	OBS	0075	-0068	33467	2692				14453													
	201	OBS	0100	-0052	33566	2699				14466													
	201	OBS	0125	-0030	33629	2704				14481													
	201	OBS	0150	-0030	33769	2715				14487													
	201	OBS	0175	-0015	33847	2720				14499													
	201	OBS	0200	0000	33823	2718				14510													
	201	OBS	0225	0056	33912	2722				14541													
	201	OBS	0250	0080	33966	2725				14556													
	201	OBS	0275		34018																		
	201	OBS	0300	0106	34068	2731				14578													
	201	OBS	0350	0078	34341	2755				14577													
	201	OBS	0400	0026	34379	2761				14562													
	201	OBS	0500	0092	34473	2765				14610													
	201	OBS	0600	0083	34360	27560																	
	201	OBS	0650	0088	34426	2761				14633													

REFERENCE	SHIP NO.	LATITUDE ° 1/10	LONGITUDE ° 1/10	STATION INDIC	STATION TIME SQUARE		MO	DAY	HR. 1/10	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOD STATION NUMBER	
					10"	1"					CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76430N	071400W		260	61	09	11	236	1968	WE1	035	0914		00	0	X		X2	6	8	0035
				WATER COLOR CODE	WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
					DIR.	SPEED OR FORCE		DRY BULB	WET BULB													
					30	S02	300	-008	-016	6	19											
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S CD				
	236	OBS	0010	0016	31234	2509				14450												
	236	OBS	0020	0014	31585	2537				14455												
	236	OBS	0030	-0002	32025	2573				14456												
	236	OBS	0049	-0052	33092	2661				14451												
	236	OBS	0074	-0088	33384	2686				14442												
	236	OBS	0099	-0092	33655	2708				14448												
	236	OBS	0124	-0102	33804	2721				14450												
	236	OBS	0149	-0096	33874	2726				14458												
	236	OBS	0174	-0022	33940	2728				14497												
	236	OBS	0199	0042	34027	2732				14532												
	236	OBS	0224	0083	34040	2731				14554												
	236	OBS	0249	0106	34066	2731				14569												
	236	OBS	0294	0084	34317	2753				14570												
	236	OBS	0394	0070	34341	2756				14581												
	236	OBS	0494	0094	34407	2759				14609												
	236	OBS	0594	0098	34417	2760				14628												
	236	OBS	0694	0100	34471	2764				14646												
	236	OBS	0794	0104	34444	2762				14664												
	236	OBS	0844	0108	34488	2765				14675												

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OBS INCH	T-SIDE SQUARE		STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
311378	WE		76540N	071510W		260	61	09	12	018	1968	WE1 036	0923		00	0	X		X2	7 8		0036
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. mm	DIR.	SPEED OF FORCE	mmHg	DRY BULB	WET BULB										
									33	505	291	-009	-017	7	19							
MESSNGR TIME HR 1/10	CA-T NO.	CORD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SIO ₄ -Si μg - ml/l	pH	S CC				
018		OBS	0010	0010	32118	2580				14459												
018		OBS	0020	0007	32327	2597				14462												
018		OBS	0030	0004	32336	2598				14463												
018		OBS	0050	0010	32583	2617				14472												
018		OBS	0075	-0045	33202	2670				14460												
018		OBS	0100	-0099	33455	2692				14442												
018		OBS	0125	-0094	33502	2696				14449												
018		OBS	0150	-0092	33621	2705				14456												
018		OBS	0175	-0088	33846	2723				14465												
018		OBS	0200	-0034	33986	2733				14496												
018		OBS	0225	-0021	33974	2731				14506												
018		OBS	0250	-0008	33930	2727				14516												
018		OBS	0300	0056	34076	2735				14555												
018		OBS	0400	0080	34317	2753				14586												
018		OBS	0500	0082	34296	2751				14603												
018		OBS	0600	0093	34308	2752				14625												
018		OBS	0700	0096	34464	2764				14645												
018		OBS	0800	0108	34460	2763				14667												
018		OBS	0850	0111	34469	2763				14677												

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OBS INCH	T-SIDE SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT
311378	WE		77040N	072000W		260	72	09	12	035	1968	WE1 037	1061		00	0	X		X2	7 8		0037	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	mmHg	DRY BULB	WET BULB											
								33	505	288	-009	-017	7										19
MESSNGR TIME HR 1/10	CA-T NO.	CORD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SIO ₄ -Si μg - ml/l	pH	S CC					
035		OBS	0010	0006	32448	2607				14462													
035		OBS	0020	0002	32300	2595				14460													
035		OBS	0030	-0012	32516	2613				14458													
035		OBS	0050	-0096	33182	2670				14431													
035		OBS	0075	-0106	33440	2691				14435													
035		OBS	0100	-0091	33526	2698				14447													
035		OBS	0125	-0079	33702	2711				14459													
035		OBS	0150	-0016	33763	2714				14493													
035		OBS	0175		33799																		
035		OBS	0200	-0002	34064	2737				14512													
035		OBS	0250		34078																		
035		OBS	0300	0049	34188	2745				14554													
035		OBS	0400	0078	34202	2744				14584													
035		OBS	0500	0088	34256	2748				14605													
035		OBS	0600	0087	34385	2758				14623													
035		OBS	0700	0097	34422	2760				14645													
035		OBS	0800	0102	34432	2761				14664													
035		OBS	0900	0105	34430	2761				14682													
035		OBS	1000	0114	34456	2762				14703													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA
311378	WE	77070N	072300W	260	72	09	12	054	1968	WE1 038	0576		00	0	X		X2	7	8	0038	
						WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB				WET BULB	VIS. CODE					
									34	504	252				-009	-017	6	14			
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{at/l}$	TOTAL-P $\mu g - \text{at/l}$	NO ₂ -N $\mu g - \text{at/l}$	NO ₃ -N $\mu g - \text{at/l}$	SiO ₄ -Si $\mu g - \text{at/l}$	pH	S C	
054	OBS	0010	0018	32132	2581							14463									
054	OBS	0020	0010	32450	2607							14465									
054	OBS	0030	0004	32464	2608							14464									
054	OBS	0050	-0043	32533	2616							14447									
054	OBS	0075	-0107	32869	2645							14426									
054	OBS	0100	-0103	33407	2688							14440									
054	OBS	0125	-0084	33771	2717							14458									
054	OBS	0150	-0062	33861	2724							14473									
054	OBS	0175	-0020	33831	2719							14496									
054	OBS	0200	-0012	34064	2738							14508									
054	OBS	0250	0054	34244	2749							14548									
054	OBS	0300	0070	34323	2754							14565									
054	OBS	0400	0099	34377	2757							14595									
054	OBS	0500	0107	34400	2758							14616									

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE INDICATOR	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER			
CTRY CODE	ID. NO.					10"	1"	MD	DAY		HR,1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT		
311378	WE	77135N	073140W		260	73	09	12	077	1968	WE1 039	0338		00	0	X		X2	6	8		0039			
						WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE			DRY BULB	WET BULB												
									34	504	294	-011	-019	6	14										
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{at/l}$	TOTAL-P $\mu g - \text{at/l}$	NO ₂ -N $\mu g - \text{at/l}$	NO ₃ -N $\mu g - \text{at/l}$	SiO ₄ -Si $\mu g - \text{at/l}$	pH	S	C				
077	OBS	0009	0037	31681	2544							14465													
077	OBS	0019	0002	32253	2591							14459													
077	OBS	0028	0013	32132	2581							14464													
077	OBS	0046	-0016	32959	2649							14465													
077	OBS	0069	-0037	33101	2661							14461													
077	OBS	0093	-0067	33139	2666							14451													
077	OBS	0118	-0060	33386	2685							14462													
077	OBS	0143	-0062	33725	2713							14470													
077	OBS	0168	-0057	3354P	2698P																				
077	OBS	0193	-0040	33832	2720							14490													
077	OBS	0218	-0017	33846	2720							14505													
077	OBS	0243	0012	33859	2720							14523													
077	OBS	0268	0043	34036	2733							14544													
077	OBS	0297	0049	34020	2731							14551													

REFERENCE CITY NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	1/2500N SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311378	WE	77175N	073480W		260	73	09	12	100	1968	WE1	040	0373		00	0	X		X2	7	8		0040
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	(mbars)		DRY BULB	WET BULB											
								33	S09	281	-008	-016	1	12									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S C				
100		OBS	0009	-0014	31711	2548					14442												
100		OBS	0019	0038	31862	2558					14470												
100		OBS	0028		32161																		
100		OBS	0047	0026	32252	2590					14474												
100		OBS	0070	-0009	32698	2628					14468												
100		OBS	0094	-0052	33093	2661					14458												
100		OBS	0118	-0026	33110	2662					14474												
100		OBS	0137	0046	33548	2693					14516												
100		OBS	0162	-0046	33597	2702					14479												
100		OBS	0187	-0038	33674	2708					14488												
100		OBS	0247	-0034	33752	2714					14501												
100		OBS	0287	0018	34003	2731					14535												

REFERENCE CITY CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	1/2500N SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311378	WE	77250N	074180W		260	74	09	12	125	1968		WE1	041	0604		35	1	3		X2	3	8	0041
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	METER (mbars)	DRY BULB	WET BULB												
								35	513	261			7	15									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S C						
125		OBS	0010	-0138	31035	2498			14375														
125		OBS	0020	-0131	31069	2500			14380														
125		OBS	0030	-0100	31566	2540			14404														
125		OBS	0049	-0114	32180	2590			14409														
125		OBS	0074	-0124	32327	2602			14410														
125		OBS	0099	-0130	33028	2659			14421														
125		OBS	0124	-0112	33329	2682			14438														
125		OBS	0149	-0090	33435	2690			14454														
125		OBS	0174	-0054	33463	2691			14475														
125		OBS	0199	-0068	33803	2719			14478														
125		OBS	0249	-0023	34003	2733			14510														
125		OBS	0299	0046	34098	2737			14551														
125		OBS	0395	-0040	34284	2757			14530														
125		OBS	0495	-0033	34344	2761			14551														
125		OBS	0545	-0035	34395	2766			14559														

REFERENCE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPT METER	1/2 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER		
CTRY CODE	IO. NO.				10"	1"	MO	DAY	HR./1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT			
311378	WE	77340N	074310W	260	74	09	12	148	1968	WE1	042		0686		35	1	3		X2	3	B		0042	
					WATER		WIND				AIR TEMP. °C													
					COLOR		TRANS.		DIR.		SPEED OR FORCE		BARO- METER (mb)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
					CODE																			
							35		S13		261								7		16			
MESSNGR TIME HR 1/10	CAST NO.	CHAR TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ DYN. M. X 10 ³		SOUND VELOCITY		O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH				
148	OBS	0010	-0136	31087	2502							14377												
148	OBS	0020	-0114	31384	2525							14393												
148	OBS	0030	-0112	31423	2528							14396												
148	OBS	0050	-0104	31818	2560							14409												
148	OBS	0075	-0109	32127	2585							14415												
148	OBS	0100	-0117	32852	2644							14425												
148	OBS	0125	-0114	33182	2671							14435												
148	OBS	0150	-0104	33284	2679							14446												
148	OBS	0175	-0112	33482	2695							14449												
148	OBS	0200	-0082	33680	2710							14470												
148	OBS	0250	-0046	33921	2728							14498												
148	OBS	0300	0028	34181	2745							14544												
148	OBS	0397	-0031	34164	2747							14533												
148	OBS	0497	-0025	34210	2750							14553												
148	OBS	0597	-0036	34300	2758							14566												
148	OBS	0647	-0024	34431	2768							14582												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS NO.	1/2 DEGREE SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER					
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE		AMT				
311378	WE	77425N	074395W	260	74	09	12	176	1968	WE1	043	0658	36	1	0			X0	0			0043					
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB															
								36	S10	249	-021	-023	7	16													
MESSNGR TIME HR 1/10	CAST NO.	CHAR TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S C									
176	OBS	0009	-0132	31183	2509					14380																	
176	OBS	0019	-0110	31606	2543					14398																	
176	OBS	0028	-0112	31867	2564					14402																	
176	OBS	0047	-0099	32332	2601					14418																	
176	OBS	0070	-0128	32822	2642					14415																	
176	OBS	0094	-0119	32960	2653					14425																	
176	OBS	0119	-0118	33294	2680					14434																	
176	OBS	0143	-0109	33400	2688					14444																	
176	OBS	0168	-0097	33778	2718					14459																	
176	OBS	0193	-0078	33933	2730					14474																	
176	OBS	0243	-0063	34041	2738					14491																	
176	OBS	0293	-0055	34186	2750					14505																	
176	OBS	0391	-0036	34209	2751					14530																	
176	OBS	0491	-0034	34360	2763					14550																	
176	OBS	0591	-0034	34467	2771					14568																	
176	OBS	0616	-0032	34470	2772					14573																	

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR, 1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER
311378	WE	77514N	074402W	260	74	09	12	200	1968	WE1 044	0726		01	1	2		X1	7	2	0044
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
COLOR CODE	TRANS. m	DIR.	SPEED OR FORCE	DRY BULB	WET BULB															
				01	S23	245	-023	-025	7	16										
MESSNGR TIME HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-210?	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S	CL		
200		OBS	0010	-0118	31134	2505			14386											
200		OBS	0020	-0109	31889	2566			14402											
200		OBS	0030	-0117	32246	2595			14405											
200		OBS	0049	-0105	32718	2633			14421											
200		OBS	0074	-0112	33060	2661			14426											
200		OBS	0099	-0110	33401	2688			14436											
200		OBS	0124	-0106	33600	2704			14445											
200		OBS	0149	-0093	33637	2707			14456											
200		OBS	0174	-0084	33855	2724			14467											
200		OBS	0199	-0076	33985	2734			14477											
200		OBS	0249	-0068	34037	2738			14489											
200		OBS	0299	-0060	34249	2755			14504											
200		OBS	0399	-0040	34422	2768			14533											
200		OBS	0499	-0036	34433	2769			14551											
200		OBS	0599	-0034	34370	27640														
200		OBS	0674	-0035	34380	27640														

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'W PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR.1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT	
311378	WE	78010N	075300W	260	85	09	13	007	1968	WE1 045	0609		00	0	X		X1	7 5	0045
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
COLOR CODE	TRANS. m	DIR.	SPEED OR FORCE	DRY BULB	WET BULB														
				27	S27	254	-016	-022	8	16									
MESSNGR TIME HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-210?	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S	CL	
007		OBS	0010	-0115	31487	2534			14392										
007		OBS	0020	-0115	31551	2539			14395										
007		OBS	0030	-0125	31735	2554			14394										
007		OBS	0050	-0115	32496	2615			14413										
007		OBS	0075	-0126	32763	2637			14416										
007		OBS	0100	-0122	33271	2678			14429										
007		OBS	0125	-0116	33437	2691			14438										
007		OBS	0150	-0111	33601	2704			14447										
007		OBS	0175	-0108	33658	2709			14453										
007		OBS	0200		33875														
007		OBS	0225	-0072	33900	2727			14482										
007		OBS	0250	-0061	33960	2732			14492										
007		OBS	0283	-0055	33994	2734			14501										
007		OBS	0383	-0052	34243	2754			14522										
007		OBS	0483	-0044	34349	2762			14544										
007		OBS	0553	-0036	34389	2765			14560										

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER	
					10"	1"		MO	DAY			HR	1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER
311378	WE	78000N	075000W		260	85 09 13	027	1968	WE1 046	0702		26	3	2		X2	7	8		0046
					WATER		WIND		BARO- METER (mba)		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS					
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE			DRY BULB	WET BULB								
								26	S12	253	-016	-022	7	17						
MESSENGER TIME OF HR 1/10	CAST NO.	FAIR TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ O DTN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S C	
		OBS	0008	-0130	31497	2535					14385									
		OBS	0015	-0129	31671	2549					14389									
		OBS	0023	-0128	31613	2544					14390									
		OBS	0038	-0128	31657	2548					14393									
		OBS	0060	-0115	32107	2584					14409									
		OBS	0083	-0113																
		OBS	0107	-0122	33068	2662					14427									
		OBS	0131	-0114	33333	2683					14439									
		OBS	0155	-0102	33604	2704					14452									
		OBS	0180	-0095	33697	2712					14461									
		OBS	0205	-0094	33783	2719					14466									
		OBS	0230	-0088	33810	2721					14474									
		OBS	0280	-0090																
		OBS	0380	-0070	33874	2725					14508									
		OBS	0480	-0050	34155	2747					14538									
		OBS	0580	-0048	34182	2749					14556									
		OBS	0630	-0044	34276	2756					14567									

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER
					10"	1"		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
311378	WE	78016N	074290W		260	84 09 13 126	1968	WE1	047	0717		00	0	X		X4	X 8	0047
					WATER		WIND	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO- METER (mba)					DRY BULB	WET BULB			
							29	S09	275	-060	-062	4	16					
MESSAGE TIME OF HR 1/10	CAST NO.	FAIR TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ D CYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	Si O ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S C
126	OBS	0009	-0126	31880	2566					14392								
126	OBS	0017	-0124	31826	2561					14394								
126	OBS	0026	-0124	31844	2563					14396								
126	OBS	0043	-0123	31881	2566					14399								
126	OBS	0066	-0129	32741	2635					14412								
126	OBS	0089	-0128	32957	2653					14420								
126	OBS	0112	-0118	33144	2668					14431								
126	OBS	0136	-0117	33199	2672					14436								
126	OBS	0161	-0116	33432	2691					14444								
126	OBS	0186	-0094	33556	2700					14460								
126	OBS	0236	-0082	33832	2722					14478								
126	OBS	0286	-0066	33994	2735					14496								
126	OBS	0352	-0076	34087	2742					14504								
126	OBS	0452	-0062	34112	2744					14527								
126	OBS	0552	-0051	34288	2758					14551								
126	OBS	0652	-0039	34322	2760					14574								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	INDIC 1/10	SDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CITY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA		TYPE	AMT			
311378	WE		78000N	074000W		260	84	09	13	151	1968	WE1	048		0664		02	5	2		X1	6	2		0048
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB													
									02	S33	254	-026	-032	8	15										
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?	Σ Δ ρ DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ol/l	TOTAL-P μg - ol/l	NO ₂ -N μg - ol/l	NO ₃ -N μg - ol/l	SiO ₄ -Si μg - ol/l	pH	STATION NUMBER								
151	OBS		0008	-0090	31645	2546			14406																
151	OBS		0016	-0088	31657	2547			14408																
151	OBS		0024	-0090	31663	2547			14409																
151	OBS		0040	-0124	32456	2612			14406																
151	OBS		0062	-0129	32931	2651			14414																
151	OBS		0084	-0099	33064	2661			14434																
151	OBS		0107	-0118	33345	2684			14433																
151	OBS		0131	-0116	33505	2697			14440																
151	OBS		0156	-0100	3342P	2689P																			
151	OBS		0181	-0086	33625	2706			14464																
151	OBS		0231	-0068	33957	2732			14485																
151	OBS		0281	-0063	34033	2738			14497																
151	OBS		0364	-0049	34067	2740			14518																
151	OBS		0464	-0044	34124	2744			14538																
151	OBS		0564	-0040	34182	2749			14557																

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MOBIL INSTR	PERSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CITY CODE	IC. NO.						CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA			TYPE	AMT								
311378	WE	78000N	073270W		260	83	09	13	175	1968	WE1 049		0357		35	3	2		X0		0		0049		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB													
									35	S35	250	-022	-030	7	12										
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t ?		Σ Δ ρ DYN. M. X 10 ³		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ol/l	TOTAL-P μg - ol/l	NO ₂ -N μg - ol/l	NO ₃ -N μg - ol/l	SiO ₄ -Si μg - ol/l	pH	STATION NUMBER						
175	OBS		0008	-0103	31806	2559					14402														
175	OBS		0016	-0102	32078	2581					14408														
175	OBS		0025	-0102	32180	2589					14410														
175	OBS		0041	-0068	32588	2621					14435														
175	OBS		0064	-0112	33090	2663					14425														
175	OBS		0086	-0114	33358	2685					14431														
175	OBS		0134	-0090	33594	2703					14454														
175	OBS		0158	-0079	3350P	2695P																			
175	OBS		0183	-0068	33856	2724					14476														
175	OBS		0233	-0047	33971	2732					14496														
175	OBS		0283	-0040	34052	2738					14508														
175	OBS		0313	-0038	34130	2744					14515														

REFERENCE	SHIP	LATITUDE	LONGITUDE	DATE	STATION TIME	ORIGINATOR'S	DEPTH	MAR.	WAVE	WEA-	CLOUD	NODC				
CITY	CODE	1/10	1/10	MO	DAY	HR.1/10	YEAR	CRUISE	STATION	TO	DEPTH	STATION				
NO.								NO.	NUMBER	BOTTOM	OF	NUMBER				
311378	WE	78200N	073200W	260	83	09 13	1968	WE1	050	0375	33	2 2	X0	0	0050	
				WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS				
				COLOR	TRANS.	DIR.	SPEED	BARO-	DRY	WET	VIS.					
				CODE	(m)		OR FORCE	METER	BULB	BULB	CODE					
								(mba)								
						33	S25	274	-022	-030	7	05				
MESSAGE	CAST	CARD	DEPTH	T	S	SIGMA-T	SPECIFIC VOLUME	Σ Δ ρ	SOUND	O ₂	PO ₄ -P	TOTAL-P	NO ₂ -N	NO ₃ -N	SiO ₄ -Si	pH
TIME OF	NO.	TYPE	(m)	°C	‰		ANOMALY-σ _t	M. X 10 ³	VELOCITY	ml/l	μg - al/l	μg - al/l	μg - al/l	μg - al/l	μg - al/l	
HR 1/10																
198	OBS		0006	-0054												
198	OBS		0011	-0054												
198	OBS		0017	-0054												
198	OBS		0029	-0055												
198	OBS		0048	-0081												

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	1/2 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		29	525	280	-019	-022	7	13	

MESSNGR TIME HR 1/10	CAJ T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	1/10
218		OBS	0009	-0083	31568	2539			14408								
218		OBS	0019	-0073	31859	2562			14419								
218		OBS	0028	-0059	32248	2593			14432								
218		OBS	0047	-0074	32754	2635			14435								
218		OBS	0071	-0099	33175	2670			14433								
218		OBS	0095		33243												
218		OBS	0119	-0095	33549	2700			14448								
218		OBS	0144	-0091	33569	2701			14455								
218		OBS	0168	-0066	33768	2716			14473								
218		OBS	0193	-0053	33849	2722			14484								
218		OBS	0243	-0043	33864	2723			14498								
218		OBS	0318	-0032	34142	2745			14519								
218		OBS	0443	-0029	34202	2750			14542								

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	1/2 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		30	S25	284	-019	-022	8	13	

MESSNGR TIME HR 1/10	CAJ T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	1/10
228		OBS	0008	-0080	31645	2545			14410								
228		OBS	0016	-0077	31771	2555			14415								
228		OBS	0025	-0078	31738	2553			14416								
228		OBS	0041	-0064	32114	2583			14430								
228		OBS	0064	-0068	32654	2626			14439								
228		OBS	0086	-0100	33203	2672			14436								
228		OBS	0109	-0110	33380	2687			14437								
228		OBS	0134	-0102	33474	2694			14447								
228		OBS	0158	-0094	33541	2699			14455								
228		OBS	0183	-0076	33767	2717			14471								
228		OBS	0233	-0047	34029	2737			14496								
228		OBS	0283	-0039	34205	2750			14511								
228		OBS	0408	-0033	34271	2755			14535								

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	1/2 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		26	S15	285	-029	-039	8	15	

MESSNGR TIME HR 1/10	CAJ T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	1/10
025		OBS	0010	-0105	31465	2532			14397								
025		OBS	0020	-0106	31674	2549			14401								
025		OBS	0030	-0109	31799	2559			14403								
025		OBS	0050	-0132	32140	2587			14400								
025		OBS	0075	-0100	32769	2637			14428								
025		OBS	0100	-0109	33217	2673			14434								
025		OBS	0125	-0104	33521	2698			14445								
025		OBS	0150	-0094	33638	2707			14455								
025		OBS	0175	-0088	33806	2720			14465								
025		OBS	0200	-0082	33815	2721			14472								
025		OBS	0250	-0076	33866	2725			14484								
025		OBS	0300	-0045	34069	2740			14509								
025		OBS	0400	-0038	34154	2746			14530								
025		OBS	0500	-0036	34256	2754			14549								
025		OBS	0550	-0036	34319	2760			14558								

REFERENCE CSTY CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUFF INSTR	AREA/RSIDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLUD CODES		NDDC STATION NUMBER	
					10"	1"	MO	DAY	HR./1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT			
311378	WE	77580N	074340W		260	74	09	14	133	1968	WE1	054		0732		03	2	2		X1	5	4		0054
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	ND. OBS. DEPTHS	SPECIAL OBSERVATIONS									
					COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE			DRY BULB	WET BULB												
								03	520	276	-020	-040	7	16										
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	Σ C							
133	OBS		0008	-0125	31791	2558				14391														
133	OBS		0016	-0126	31769	2557				14392														
133	OBS		0025	-0132	31783	2558				14391														
133	OBS		0041	-0138	31962	2573				14393														
133	OBS		0064	-0128	32307	2600				14406														
133	OBS		0086	-0127	32560	2621				14414														
133	OBS		0109	-0126	32910	2649				14423														
133	OBS		0134	-0122	33168	2670				14433														
133	OBS		0158	-0112	33234	2675				14443														
133	OBS		0183	-0106	33458	2693				14453														
133	OBS		0233	-0087	33700	2712				14473														
133	OBS		0283	-0064	33876	2725				14495														
133	OBS		0371	-0054	34014	2736				14516														
133	OBS		0471	-0041	34371	2764				14544														
133	OBS		0571	-0036	34372	2764				14563														
133	OBS		0671	-0034	34486	2773				14582														

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OUT PORT	AREA/RSIDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311378	WE	77425N	074390W		260	74	09	14	160	1968	WE1	055		0671		01	2	3		X1	7	1	0055
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. mm	DIR.	SPEED OF FORCE	METER (mba)	DRY BULB	WET BULB											
									01	521	272	-035	-043	8	15								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	Σ C						
160	OBS	0008	-0134	31425	2529				14382														
160	OBS	0016	-0134	31441	2530				14384														
160	OBS	0025		31208																			
160	OBS	0041	-0118	32047	2579				14404														
160	OBS	0064	-0120	32391	2607				14411														
160	OBS	0086	-0130	32684	2631				14414														
160	OBS	0109	-0126	33012	2657				14425														
160	OBS	0134	-0114	33352	2684				14439														
160	OBS	0158	-0114	33480	2695				14445														
160	OBS	0183	-0124	33654	2709				14447														
160	OBS	0233	-0067	33910	2728				14485														
160	OBS	0283	0014	34044	2735				14533														
160	OBS	0383	-0041	34284	2757				14528														
160	OBS	0483	-0036	34288	2757				14547														
160	OBS	0583		34362																			

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	W/RS DEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	ID. NO.						10°	1°	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT
311378		WE	77245N	074280W		260	74	09	14	182	1968	WE1	056	0750		02	1	1		X1	3	3	0056	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbs)		DRY BULB	WET BULB											
								02	509	267		-022	-028					8	18					
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CC						
182		OBS	0009	-0136	31236	2514				14379														
182		OBS	0019	-0136	31213	2512				14380														
182		OBS	0028	-0136	31127	2505				14380														
182		OBS	0047	-0095	31737	2553				14411														
182		OBS	0071	-0119	32094	2583				14409														
182		OBS	0095	-0080	32629	2625				14439														
182		OBS	0119	-0042	32943	2649				14465														
182		OBS	0144		33259																			
182		OBS	0168	-0094	33408	2688				14455														
182		OBS	0193	-0067	33349	2683				14471														
182		OBS	0218	-0114	33552	2701				14456														
182		OBS	0243	-0080	3380P	2719P																		
182		OBS	0268	-0078	33646	2707				14482														
182		OBS	0293	-0070	33768	2716				14492														
182		OBS	0393	-0048	34116	2744				14524														
182		OBS	0484		34159																			
182		OBS	0584		34245																			
182		OBS	0684	-0038	34344	2762				14580														

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	W/RS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
						10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT					
311378	WE		77060N	074320W		260	74	09	14	215	1968	WE1	057	0682		00	0	X		X1	4	2	0057				
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbs)		DRY BULB	WET BULB														
								02	513	258		-009	-022					7	18								
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CC									
215		OBS	0010	-0100	31367	2524				14398																	
215		OBS	0020	0018	31940	2565				14462																	
215		OBS	0030	0006	32433	2606				14465																	
215		OBS	0049	0010	32628	2621				14473																	
215		OBS	0074	-0072	33141	2666				14446																	
215		OBS	0099	-0098	33363	2685				14441																	
215		OBS	0124	-0080	33420	2689				14455																	
215		OBS	0149	-0103	33617	2705				14451																	
215		OBS	0174	-0081	3375P	2715P																					
215		OBS	0199	-0076	33634	2706				14472																	
215		OBS	0224	-0070	33709	2712				14480																	
215		OBS	0249	-0062	33953	2731				14491																	
215		OBS	0268	-0060	34018	2736				14496																	
215		OBS	0293	-0065	34061	2740				14498																	
215		OBS	0393	-0048	34170	2748				14525																	
215		OBS	0493	-0042	34249	2754				14545																	
215		OBS	0593	-0034P	34255	2754P																					
215		OBS	0643	-0038	3420P	2750P																					

REFERENCE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE INDEX	A/RSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE	
311378	WE	77000N	072000W	260	72	09	18	178	1968	WF1	060	1031		03	1	2		X0	0		0060
					WATER		WIND		BARO- METER (mba)		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
					COLOR CODE	TRANS. (m)	OIR.	SPEED OR FORCE	DRY BULB	WET BULB											
							03		S07	128	005	-003	8	19							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DTN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S C		
178	OBS		0010	0000	31251	2511					14443		006			000	000				
178	OBS		0020	-0007	31849	2559					14449		013			002	001				
178	OBS		0030	-0008	32263	2593					14456		020			004	001				
178	OBS		0050	-0050	32874	2644					14449		063			048	007				
178	OBS		0075	-0084	33230	2674					14442		073			076	008				
178	OBS		0100	-0088	33360	2684					14446		073			092	008				
178	OBS		0125	-0072	33497	2695					14459		077			093	009				
178	OBS		0150	0004	33593	2699					14500		085			115	011				
178	OBS		0175	0026	33746	2710					14516		090			124	013				
178	OBS		0200	-0017	33745	2712					14501		092			120	014				
178	OBS		0250	0054	34013	2730					14545		088			132	016				
178	OBS		0300	0060	34114	2738					14558		101			141	018				
178	OBS		0400	0074	34239	2747					14582		005			153	022				
178	OBS		0500	0088	34253	2747					14605										
178	OBS		0600	0095									110			155	024				
178	OBS		0700	0104	34294	2750					14646		110			157	026				
178	OBS		0800	0106	34311	2751					14664		111			158	026				
178	OBS		0900	0106	34281	2749					14681		115			168	029				
178	OBS		1000	0113																	

REFERENCE CITY CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE INDEX	A/RSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S OBSERVATIONS		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE	
311378	WE	77080N	072080W	260	72	09	18	197	1968	WF1	061	0985		03	1	2		X0	0		0061
					WATER		WIND		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. (m)	OIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB					WET BULB						
							03	S07	122	005	-003	8	19								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DTN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S C			
197	OBS		0010	-0010	31298	2515				14439		014			004	001					
197	OBS		0020	0000	31717	2548				14451		017			002	001					
197	OBS		0030	-0010	32116	2581				14453		026			012	000					
197	OBS		0050	-0044	32896	2645				14452		042			036	003					
197	OBS		0075	-0074	33168	2668				14446		046			050	005					
197	OBS		0100	-0064	33347	2682				14457		055			071	006					
197	OBS		0125	-0048	33423	2688				14470		077			090	010					
197	OBS		0150	-0052	33538	2697				14473		068			086	008					
197	OBS		0175	-0014	33584	2699				14496		083			106	010					
197	OBS		0200	0040	33704	2706				14526		106			129	012					
197	OBS		0250	0022	33863	2720				14529		091			126	015					
197	OBS		0300	0062	33976	2727				14557		086			121	014					
197	OBS		0399	0090	34099	2735				14587		101			133	020					
197	OBS		0499	0100	34115	2736				14609		083			090	014					
197	OBS		0599	0104	34179	2740				14628		081			090	015					
197	OBS		0699	0110	34233	2744				14648		090			107	017					
197	OBS		0799	0108	34357	2755				14666		112			135	023					
197	OBS		0899	0108	34381	2756				14683		114			160	028					
197	OBS		0949	0111	34411	2759				14693		134			158	029					

REFERENCE	SHIP ID. NO.	SNIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	APPROXIMATE SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
							10°	1°	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

311378 WE 77071N 072280W 260 72 09 18 224 1968 WE1 062 0402 03 1 2 X0 0 0062

WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB			

01 508 112 006 -004 8 15

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	COND.
224		OBS	0010	-0013	30988	2490			14433		021			000	001		
224		OBS	0020	0008	32007	2571			14458		017			005	001		
224		OBS	0030	0006	32226	2589			14462		019			004	001		
224		OBS	0050	-0045	32851	2641			14451		045			040	004		
224		OBS	0074	-0082	33286	2678			14443		059			072	007		
224		OBS	0099	-0074	33449	2691			14454		077			096	010		
224		OBS	0124	-0050	33568	2700			14471		074			096	012		
224		OBS	0149	-0051	33718	2712			14476		083			115	010		
224		OBS	0174	0014	33883	2722			14513		087			121	013		
224		OBS	0199	0032	33884	2721			14525		091			133	016		
224		OBS	0224	0048	33978	2728			14538		092			131	018		
224		OBS	0249	0055	34018	2731			14546		096			135	018		
224		OBS	0271	0064	34092	2736			14554		077			130	017		
224		OBS	0296	0060	34136	2740			14557		105			158	018		
224		OBS	0371	0082	34217	2745			14581		099			148	021		

REFERENCE	SHIP ID. NO.	SNIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	APPROXIMATE SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
							10°	1°	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

311378 WE 77079N 073020W 260 73 09 19 040 1968 WE1 063 0366 00 0 X X0 0 0063

WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB			

35 517 084 001 -005 8 15

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	COND.
040		OBS	0010		31234						009			003	000		
040		OBS	0019	-0002	31883	2562			14452		011			004	001		
040		OBS	0029	-0024	32300	2596			14449		025			029	002		
040		OBS	0048	-0022	32769	2634			14460		040			053	004		
040		OBS	0073		33105						063			062	007		
040		OBS	0097	-0090	33366	2685			14445		068			082	009		
040		OBS	0122	-0046	33558	2699			14472		078			107	011		
040		OBS	0147	-0022	33723	2711			14489		084			118	013		
040		OBS	0172	0009	33803	2716			14509		085			121	014		
040		OBS	0197	0034	33889	2721			14526		081			118	015		
040		OBS	0222		33967						087			115	013		
040		OBS	0247	0071	34073	2734			14553		101			149	019		
040		OBS	0265	0072	34078	2734			14557		102			147	018		
040		OBS	0290	0068	34123	2738			14560		093			127	016		
040		OBS	0365	0075	34217	2745			14577		089			116	016		

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INDICATOR	APPROXIMATE SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10	CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA	TYPE	AMT	

		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB											
				35	S15	085	-008	-015	7	15									
MESSAGE TIME HR 1/10	CA-2 N.O.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₃ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S		
055	OBS	0010	-0014	31858	2560				14444	010				003	001				
055	OBS	0020	-0022	32556	2617				14452	024				013	001				
055	OBS	0030	-0032	32659	2625				14451	036				036	003				
055	OBS	0049	-0093	33264	2677				14434	070				067	008				
055	OBS	0074	-0106	33394	2688				14434	080				088	011				
055	OBS	0099	-0070	33611	2704				14458	087				103	011				
055	OBS	0123	-0048	33690	2709				14473	085				112	012				
055	OBS	0148	-0010	33744	2712				14495	085					012				
055	OBS	0173	0002	33809	2717				14506	093				124	014				
055	OBS	0198	0018	33912	2724				14519	096				113	014				
055	OBS	0223	0048	34050	2734				14539	075				098	012				
055	OBS	0248	0050	34063	2734				14544	094				132	016				
055	OBS	0298	0050	34077	2736				14552	075				085	012				
055	OBS	0398	-0018	34088	2740				14538	096				132	016				
055	OBS	0423	-0021	34135	2744				14541	065				080	010				

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INDICATOR	APPROXIMATE SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10	CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA	TYPE	AMT	

		WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB									
				35	S15	085	-008	-015	7	17							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C
075	OBS		0008	-0036	32435	2608			14442	023				007	001		
075	OBS		0016	-0036	32448	2609			14444	022				007	001		
075	OBS		0025	-0034	32680	2627			14449	034				021	003		
075	OBS		0041	-0099	33247	2675			14429	087				083	012		
075	OBS		0063	-0070	33415	2688			14449	073				104	009		
075	OBS		0086	-0064	33473	2692			14456	074				102	010		
075	OBS		0110	-0070	33588	2702			14459	072				108	012		
075	OBS		0135	-0048	33693	2710			14475	083				113	011		
075	OBS		0160	-0038	33749	2714			14485	059				075	009		
075	OBS		0185	-0013	33810	2717			14501	071				113	012		
075	OBS		0210	0010	33886	2722			14517	080				133	015		
075	OBS		0235	0038	33985	2729			14535	083				132	015		
075	OBS		0245	0024	33954	2727			14530	079					015		
075	OBS		0270	0042	33929	2724			14542								
075	OBS		0370	-0014	34154	2745			14536	076				117	014		
075	OBS		0470	-0042	34266	2756			14541								
075	OBS		0570	-0033	34319	2759			14563								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DOF INCHES	1/2000 SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR, 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
311378	WE	77071N	074294W	260	74	09	19	091	1968	WE1	066	0677		35	2	2		X0		0	0066	

WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	ND. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. IMI	DIR.	SPEED OF FORCE		DRY RULE	WET RULE			
		35	525	075	-008	-015	7	17	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{ml/l}$	TOTAL-P $\mu\text{g} - \text{ml/l}$	NO ₂ -N $\mu\text{g} - \text{ml/l}$	NO ₃ -N $\mu\text{g} - \text{ml/l}$	SiO ₄ -Si $\mu\text{g} - \text{ml/l}$	pH	S CTD
091	OBS	0010	-0030	32390	2604				14444		026			005	007		
091	OBS	0020		32407							014			009	003		
091	OBS	0030		32416							014			010	003		
091	OBS	0049		33115							078			077	013		
091	OBS	0074	-0102	33366	2685				14435		071			091	012		
091	OBS	0099	-0080	33481	2694				14451		064			090	011		
091	OBS	0123	-0066	33537	2698				14462		069			106	012		
091	OBS	0148	-0074	33646	2707				14464		103			115	014		
091	OBS	0173	-0074	33748	2715				14470								
091	OBS	0198	-0072	33812	2720				14476	094				110	014		
091	OBS	0223	-0063	33899	2727				14486	109				125	015		
091	OBS	0248	-0060	33951	2731				14492	080				121	014		
091	OBS	0273	-0046	33992	2734				14503	078				119	014		
091	OBS	0298	-0050	34073	2740				14506	076				126	015		
091	OBS	0398	-0038	34148	2746				14530	073				120	013		
091	OBS	0498	-0034	34246	2754				14550	086				124	014		
091	OBS	0598	-0034	34339	2761				14568	087				124	014		

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DOF INCHES	1/2000 SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.						10"	1"	MO	DAY		HR, 1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA	
	311378	WE	76065N	071275W	260	61	09	19	177	1968	WE1	067	0495	06	2	5		X4	X	8	0067	

WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. IMI	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		16	520	057	000	+004	3	17	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{ml/l}$	TOTAL-P $\mu\text{g} - \text{ml/l}$	NO ₂ -N $\mu\text{g} - \text{ml/l}$	NO ₃ -N $\mu\text{g} - \text{ml/l}$	SiO ₄ -Si $\mu\text{g} - \text{ml/l}$	pH	S CTD
177	OBS	0010	-0006	32319	2597				14455								
177	OBS	0020	0012	32471	2608				14467								
177	OBS	0030	-0018	32544	2616				14455								
177	OBS	0049	-0098	33074	2661				14429								
177	OBS	0074	-0104	33320	2681				14434								
177	OBS	0099	-0100	33438	2691				14441								
177	OBS	0124	-0045	33579	2700				14473								
177	OBS	0148	-0020	33613	2702				14489								
177	OBS	0173	0033	33742	2710				14519								
177	OBS	0198	-0002	33797	2716				14508								
177	OBS	0223	-0001	33847	2720				14513								
177	OBS	0248	-0034	33870	2723				14503								
177	OBS	0272	-0036														
177	OBS	0297	-0038	33901	2726				14509								
177	OBS	0347	-0035	33930	2728				14519								
177	OBS	0397	-0032	33971	2731				14530								
177	OBS	0447	-0027	33987	2732				14541								

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS	WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
311378	WE	76140N	071300W	260 61 09 19 192	1968	WE1	068	0567	06	1 5	X4	X 8	0068

WATER COLOR CODE	WIND SPEED OR FORCE	BARO- METER (mba)	AIR TEMP. °C	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
16	S08	158	000	-004	3	17

MESSNGR TIME HR 1/10	CA-T NO.	CARD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₂ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	Si O ₄ -Si $\mu g \cdot dl/l$	pH	S C
192		OBS	0010	0000	32256	2592			14456								
192		OBS	0020	-0011	32588	2619			14458								
192		OBS	0030	-0062	32816	2639			14439								
192		OBS	0049	-0103	33142	2667			14427								
192		OBS	0074	-0109	33306	2681			14431								
192		OBS	0099	-0095	33342	2683			14442								
192		OBS	0123	-0058	33550	2698			14466								
192		OBS	0148	-0025	33878	2723			14490								
192		OBS	0173	0000	33923	2726			14507								
192		OBS	0198	-0043	33953	2730			14491								
192		OBS	0223	-0038	33979	2732			14498								
192		OBS	0248	-0038	34036	2737			14503								
192		OBS	0270	-0020	34101	2741			14516								
192		OBS	0295	-0017	34148	2745			14522								
192		OBS	0395	-0032	34166	2747			14532								
192		OBS	0495	-0018	34212	2750			14556								
192		OBS	0525	-0014	34233	2752			14563								

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	STATION TIME (GMT)	YEAR	ORIGINATOR'S CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS	WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
311378	WE	76150N	071300W	260 61 09 19 218	1968	WE1	069	0692	00	0 X	X4	X 8	0069

WATER COLOR CODE	WIND SPEED OR FORCE	BARO- METER (mba)	AIR TEMP. °C	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
14	S10	056	-022	-026	3	17

MESSNGR TIME HR 1/10	CA-T NO.	CARD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₂ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	Si O ₄ -Si $\mu g \cdot dl/l$	pH	S C
218		OBS	0010	-0006	32348	2599			14455								
218		OBS	0019	-0006	32660	2624			14461								
218		OBS	0029	-0032	32825	2639			14453								
218		OBS	0048	-0092	33232	2674			14434								
218		OBS	0072	-0112	33439	2691			14431								
218		OBS	0097	-0082	33561	2700			14451								
218		OBS	0122	-0085	33630	2706			14455								
218		OBS	0147	-0042	33768	2715			14481								
218		OBS	0172	0044	33891	2721			14526								
218		OBS	0197	0082	33947	2723			14548								
218		OBS	0222	0082	33993	2727			14553								
218		OBS	0247	0043	34040	2733			14540								
218		OBS	0299	0002	34094	2740			14531								
218		OBS	0399	-0034	34150	2746			14532								
218		OBS	0499	-0004	34229	2751			14563								
218		OBS	0599	0117	34380	2756			14637								
218		OBS	0649	0112	34450	2762			14644								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	WIND INDICATOR	1/2 SOEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOGC STATION NUMBER	
CITY CODE	IG. NO.						MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT PER SEA	TYPE		AMT			
																				10"		1"
311378	WE	76363N	071306W	260	61	09	20	040	1968	WE1	072	0500	00	0	X		X4	X	8	0072		
				WATER COLOR CODE	WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
					TRANS. (m)	DIR.		SPEED OR FORCE	DRY BULB					WET BULB								
						03		S02	060					-022	-028	0	16					
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-310?	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C					
040		OBS	0010	-0012	30904	2483			14432													
040		OBS	0020	-0012	31163	2504			14437													
040		OBS	0030	-0016	31654	2544			14444													
040		OBS	0050	-0056	32593	2621			14442													
040		OBS	0075	-0081	33151	2667			14442													
040		OBS	0100	-0067	33361	2683			14456													
040		OBS	0125	-0056	33455	2691			14466													
040		OBS	0150	-0052	33569	2700			14474													
040		OBS	0175	-0014	33658	2705			14497													
040		OBS	0200	0022	33732	2709			14518													
040		OBS	0225	0054	33812	2714			14538													
040		OBS	0250	0077	33835	2715			14553													
040		OBS	0275	0070	33843	2716			14554													
040		OBS	0300	0017	33910	2724			14535													
040		OBS	0400	0100	34149	2738			14593													
040		OBS	0450	0094	34200	2743			14599													

REFERENCE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	WIND INDICATOR	AREA / ISOEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOGC STATION NUMBER	
					10'	1"	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
311378	WE	76472N	071300W		260	61 09 20	074	1968	WE1	073		0695		00	0	X		X1	5 1		0073
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB											
							29	S04	062	-031	-037	7	17								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-310?	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C				
074		OBS	0010	-0002	31061	2496			14439												
074		OBS	0020	-0012	31326	2517			14440												
074		OBS	0030	-0017	31529	2534			14442												
074		OBS	0050	-0041	32476	2611			14447												
074		OBS	0075	-0080	33093	2662			14442												
074		OBS	0100	-0051	33274	2676			14462												
074		OBS	0125	-0041	33448	2689			14473												
074		OBS	0150	-0038	33551	2698			14480												
074		OBS	0175	-0034	33603	2702			14487												
074		OBS	0200	0022	33705	2707			14518												
074		OBS	0225	0058	33768	2710			14539												
074		OBS	0250	0078	33842	2715			14554												
074		OBS	0300	0066	33928	2723			14558												
074		OBS	0400	0052	34203	2746			14572												
074		OBS	0500	0078	34274	2750			14601												
074		OBS	0600	0092	34308	2752			14625												
074		OBS	0650	0104	34315	2751			14638												

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	W. ROSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY -NO.	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
311378	WE	76462N	071400W	260	61	09	20	093	1968	WE1	074	0906	00	0	X			X1	2	5		0074
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB										
								32	502	065	-006	-011	7	18								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _T	Σ Δ ρ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CTC					
093	OBS	0010	-0014	30847	2479				14430													
093	OBS	0020	-0012	31413	2524				14441													
093	OBS	0030	-0004	31699	2547				14450													
093	OBS	0050	-0053	32533	2616				14442													
093	OBS	0075	-0085	33043	2658				14439													
093	OBS	0100	-0079	33128	2665				14447													
093	OBS	0125	-0052	33288	2677				14466													
093	OBS	0150	-0020	33500	2693				14488													
093	OBS	0175	-0004	33587	2699				14500													
093	OBS	0200	0058	33640	2700				14534													
093	OBS	0250	0072	33777	2710				14550													
093	OBS	0300	0046	33909	2722				14548													
093	OBS	0399	0061	34046	2732				14574													
093	OBS	0499	0084	34231	2746				14603													
093	OBS	0599	0094	34321	2753				14626													
093	OBS	0699	0095	34353	2755				14643													
093	OBS	0799	0104	34347	2754				14664													
093	OBS	0849	0107	34408	2759				14674													

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	W. ROSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY -NO.	ID. NO.						10"	1"	MO		DAY	HR. 1/10			CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA		TYPE	AMT
311378	WE	76550N	071300W	260	61	09	20	113	1968	WE1	075	0975		00	0	X		X1	6	3		0075		
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	(mba)	DRY BULB	WET BULB															
					01	502	056	-006	-016	7	18													
MESSAGE TIME HR 1/10	CAST NO.	CTRO TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _T	Σ Δ ρ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CTC							
113	OBS	0010	-0011	31011	2492				14434	000				001	001									
113	OBS	0020	-0011	31431	2526				14442	013				021	001									
113	OBS	0030	-0002	31747	2551				14452	022				012	003									
113	OBS	0050	-0064	32558	2619				14438	030				049	003									
113	OBS	0075	-0083	33031	2657				14440	043				094	008									
113	OBS	0100	-0062	33278	2677				14457	065				089	008									
113	OBS	0125	-0068	33407	2687				14460	047				059	006									
113	OBS	0150	-0058	33495	2694				14470	051				073	006									
113	OBS	0175	-0037	33729	2712				14487	072				112	012									
113	OBS	0200	-0006	33775	2714				14506	076				123	014									
113	OBS	0250	-0042	33907	2727				14500	111				127	017									
113	OBS	0300	0014	34033	2734				14536	120				141	019									
113	OBS	0400	0046	34172	2743				14569	106				145	021									
113	OBS	0500	0087	34329	2754				14606	090				154	023									
113	OBS	0600	0090	34352	2755				14624	092				155	023									
113	OBS	0700	0100	34365	2756				14646	104				154	025									
113	OBS	0800	0106	34381	2757				14665	116				163	028									
113	OBS	0900	0108	34388	2757				14683	106				166	030									

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DATE INDICATOR	M/RSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT	
311378		WE	76520N	071530W		260	61	09	20	134	1968	WE1	076	0889		00	0	X		X1	6	3		0076
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	METER	DRY BULB	WET BULB												
									01	502	056	+006	+016	7	19									
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CO ₂							
134		OBS	0010	-0002	30863	2480			14436		000			003	001									
134		OBS	0020	0003	31701	2547			14452		001			001	000									
134		OBS	0030	-0028	32398	2604			14449		018			029	002									
134		OBS	0050	-0046	32991	2653			14452		054			066	009									
134		OBS	0075	-0064	33245	2674			14451		068			079	008									
134		OBS	0100	-0062	33412	2687			14459		064			098	009									
134		OBS	0125	-0056	33507	2695			14467		066			104	010									
134		OBS	0150	-0036	33721	2711			14483		073			114	011									
134		OBS	0175	-0027	33859	2722			14494		095			125	015									
134		OBS	0200	-0006	33910	2725			14508		087			128	016									
134		OBS	0225	-0012	33995	2732			14511		086			127	015									
134		OBS	0250	0050	34048	2733			14544															
134		OBS	0275	-0007	34108	2741			14523		087			133	016									
134		OBS	0300	0002	34138	2743			14532		142			137	017									
134		OBS	0400	0071	34168	2742			14580		098			159	023									
134		OBS	0500	0088	34247	2747			14605		097			151	024									
134		OBS	0600	0093	34340	2754			14626		103			145	025									
134		OBS	0700	0108	34385	2757			14650		122			170	028									
134		OBS	0800	0110	34405	2758			14667															

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DATE INDIC	M/RSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT	
311378		WE	76425N	072300W		260	62	09	20	154	1968	WE1	077	0223		00	0	X		X1	3	2		0077
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	METER	DRY BULB	WET BULB												
									00	500	067	+006	+008	7	10									
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CO ₂							
154		OBS	0010	-0002	31952	2567			14451															
154		OBS	0020	-0012	32450	2608			14455		034			029	003									
154		OBS	0030		32770						035			037	003									
154		OBS	0049	-0034	33201	2669			14460		046			052	006									
154		OBS	0074	-0059	33407	2687			14456		057			077	008									
154		OBS	0099	-0069	33548	2699			14457		059			090	008									
154		OBS	0124	-0062	33573	2700			14465		074			111	009									
154		OBS	0149	-0063	33609	2703			14469		079			115	013									
154		OBS	0174	-0048	33699	2710			14482		084			121	014									
154		OBS	0199	-0024	33800	2717			14498		085			125	016									

REFERENCE	SHIP	LATITUDE	LONGITUDE	DUFFY	P/P ROSEN	STATION TIME	YEAR	ORIGINATOR'S	DEPTH	MAX.	WAVE	WEA-	CLOUD	NODC			
START	CODE	* 1/10	* '1/10	INDEX	SQUARE	GMTI		CRUISE	TO	DEPTH	OBSERVATIONS	THER	CODES	STATION			
DATE	NO.					1/10		NO.	BOTTOM	OF	SEA	CODE	TYPE	NUMBER			
T	311378	WE	76380N	074300W	260	64 09 20	217 1968	WE1 079	0601	00	0 X	x1	7 7	0079			
					WATER		WIND	BARO-		AIR TEMP. °C							
					COLOR	TRANS.	DIR.	SPEED	METER	DRY	WET	VIS	NO.	SPECIAL			
					CODE	IN)		OF	(mb)	BULB	BULB	CODE	OBS.	OBSERVATIONS			
								FORCE					DEPTHS				
							30	505	081	-007	-016	8	17				
MESSNGR	CA-ST	Gyro	DEPTH	T	S	SIGMA-T	SPECIFIC VOLUME	Σ Δ D	SOUND	O ₂	PO ₄ -P	TOTAL-P	NO ₃ -N	NO ₂ -N	SIO ₄ -Si	pH	S
TIME OF	NO.	TYPE	Im)	° C	%.		ANOMALY-σ _t *	OTN. M.	VELOCITY	ml/l	μg-at/l	μg-at/l	μg-at/l	μg-at/l	μg-at/l		CC
HR 1/10								x 10 ³									
	217	OBS	0010	-0017	32208	2589			14448		028				007	001	
	217	OBS	0020	0001	32288	2594			14459		022				015	006	
	217	OBS	0030	-0012	32391	2603			14456		034				025	004	
	217	OBS	0050		32719						073				055	011	
	217	OBS	0074		33067						056				063	008	
	217	OBS	0099	-0123	33323	2682			14429		091				096	016	
	217	OBS	0124	-0101	33542	2699			14446		088				108	016	
	217	OBS	0149	-0088	33725	2714			14459		080				108	013	
	217	OBS	0174	-0051	33807	2719			14482		083				111	013	
	217	OBS	0199	-0056	33881	2725			14485		083				116	014	
	217	OBS	0224	-0064	33928	2729			14486		081				119		
	217	OBS	0249	-0051	34007	2735			14497		076				113	014	
	217	OBS	0274	-0046	34045	2738			14504		079				131	014	
	217	OBS	0299	-0040	34084	2741			14511		070				099	012	
	217	OBS	0399	-0042	34181	2749			14528		076				123	014	
	217	OBS	0499	0004	34298	2756			14568		083				134	020	
	217	OBS	0559	0024	34366	2760			14588		084				150	025	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPT INDIC	4/10SDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
311378	WE	76384N	075010W		260	65	09	21	008	1968	WE1	080	0466		00	0	X		X1	2	7	0080
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	(mba)	DRY BULB	WET BULB										
									35	512	086	-017	-022	8	17							
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PD ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiD ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CC				
008	085	0010	-0064	31725	2551					14419	039				005	002						
008	085	0019	-0024	31948	2568					14443	014				007	001						
008	085	0029	-0018	32057	2576					14449	011				006	002						
008	085	0048	-0104	32274	2597					14415	076				042	012						
008	085	0072	-0120	32677	2630					14417	103				078	017						
008	085	0096	-0107	32966	2653					14431	092				086	014						
008	085	0120	-0117	33283	2679					14435	100				099	018						
008	085	0145	-0130	33524	2699					14436	095				102	015						
008	085	0170	-0099	33686	2711					14457	067				105	014						
008	085	0195	-0046	33815	2719					14488	080				113	014						
008	085	0220	-0066	33928	2729					14484	078				116	015						
008	085	0245	-0052	33990	2734					14496	085				126	015						
008	085	0266	-0052	34051	2739					14500	070				089	012						
008	085	0291	-0048	34140	2746					14507	075				119	015						
008	085	0341	-0042	34228	2752					14519	077				142	014						
008	085	0381	-0039	34286	2757					14528	072				119	014						
008	085	0421	-0034	34301	2758					14537	088				118	013						

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPT INDIC	4/10SDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER				
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT					
311378		WE	76372N	075300W		260	65	09	21	038	1968	WE1	081		0366		00	0	X		X1	X	4		0081		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. IMI	DIR.	SPEED OF FORCE	(mba)	DRY BULB	WET BULB															
									34	520	096	-027	-032					7	15								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiD ₄ -Si $\mu\text{g} - \text{at/l}$	pH									
038	085	0010	-0052	31828	2559						14426		016			038	006										
038	085	0019	-0050	31847	2561						14429		014			001	002										
038	085	0029	-0050	31844	2560						14431		013			002	002										
038	085	0048	-0077	32316	2599						14428		079			042	012										
038	085	0072	-0069	32892	2646						14444		074			041	009										
038	085	0096	-0118	33190	2671						14429		080			049	010										
038	085	0120	-0118	33371	2686						14435		084			079	014										
038	085	0145	-0130	33515	2698						14436		074			068	011										
038	085	0170	-0130	33578	2703						14441		066			060	009										
038	085	0195	-0118	33654	2709						14452																
038	085	0220	-0054	33866	2724						14489		069			102	013										
038	085	0245	-0063	33944	2730						14490		081			119	014										
038	085	0266	-0065	34019	2737						14493		062			070	011										
038	085	0291	0000	34161	2745						14529		078			134	017										
038	085	0321	-0037	34163	2747						14518		075			119	015										

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	1/25 DEGREE SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE NO.	IO. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76353N	076005W	260	66	09	21	062	1968	WE1	082	0336	02	1	1			X4	X	8		0082	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. IM	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB										
								02	516	108	-028	-034	7					15					
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	STATION NUMBER						
062	OBS	0009	-0104	31663	2548				14400	043				000	003								
062	OBS	0017	-0102	31701	2551				14402	032				002	004								
062	OBS	0026	-0086	31742	2553				14412	031				002	002								
062	OBS	0043	-0046	31884	2564				14435	012				002	002								
062	OBS	0066	-0079	32717	2632				14436	075				054	009								
062	OBS	0089	-0118	32976	2654				14425	088				071	015								
062	OBS	0113	-0134	33074	2663				14423	091				082	017								
062	OBS	0137	-0120	33242	2676				14435	089				077	015								
062	OBS	0162	-0129	33350	2685				14437	082				081	015								
062	OBS	0187	-0130	33359	2685				14441	075				088	015								
062	OBS	0212	-0097	33508	2696				14462	071				092	011								
062	OBS	0237	-0088	33617	2705				14472	070				101	012								
062	OBS	0262	-0067	33735	2714				14488	077				109	013								
062	OBS	0287	-0016	33825	2719				14517	083				102	012								
062	OBS	0312	-0032	33973	2731				14516	101				96	013								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	1/25 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE NO.	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76344N	076310W			260	66	09	21	075	1968	WE1	083	0110		02	1	0		X2	5	8	0083
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB											
								02	515	119	-028	-034	7	06									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH						
075	OBS		0039	-0146	31204	2511				14373		047				003	003						
075	OBS		0017	-0144	31213	2512				14376		047				004	002						
075	OBS		0026	-0142	31231	2514				14378		044				000	002						
075	OBS		0043	-0100	31819	2560				14409		062				019	008						
075	OBS		0066	-0118	32213	2592				14410		086				047	014						
075	OBS		0089	-0116	32556	2620				14420		085				060	016						

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	1/25 DEGREE SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
311378	WE	76320N	077000W		260	67	09	21	092	1968	WE1	084	0207		04	1	1		X1	5	4	0084
					WATER		WIND		BARO- METER		AIR TEMP. °C											
					COLOR CODE	TRANS. IM	DIR.	SPEED OR FORCE	DRY BULB		WET BULB		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
								04	510	127	-029	-038	7	10								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	STATION NUMBER					
092	OBS		0009	-0139	31216	2512			14377		051				003	003						
092	OBS		0018	-0138	31270	2517			14380		044				002	004						
092	OBS		0027	-0133	31296	2519			14384		050				005	003						
092	OBS		0045	-0098	31694	2550			14409		060				015	006						
092	OBS		0069	-0084	32425	2609			14430		076				044	011						
092	OBS		0093	-0129	32726	2634			14417		090				067	016						
092	OBS		0118	-0101	32957	2652			14437		081				070	015						
092	OBS		0143	-0119	33265	2678			14437		080				079	014						
092	OBS		0168	-0108	33437	2691			14449		073				090	013						
092	OBS		0193	-0105	33620	2706			14457		075				102	015						

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT DIRECTION	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER			
CTRY CODE	IO. NO.					10"	1"		MO	DAY			HR:1/10	CRUISE NO.	STATION NUMBER	OIL HGT PER SEA					TYPE	AMT	
311378	WE		76000N	074300W		260	64	09 21 138	1968	WE1 085	0406		33	3	4		X1	5	3	0085			
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
																				33	S30	129	-022
MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t °		Σ Δ D CYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C					
138		OBS	0010	-0028	32381	2603				14445													
138		OBS	0020	-0026	32389	2603				14448													
138		OBS	0030	-0025	32819	2638				14456													
138		OBS	0038	-0028	32874	2643				14457													
138		OBS	0060	-0116	33593	2704				14430													
138		OBS	0082	-0106	33630	2707				14438													
138		OBS	0105	-0100	33707	2713				14446													
138		OBS	0129	-0060	33819	2720				14470													
138		OBS	0154	-0008	33902	2725				14500													
138		OBS	0179	0003	33975	2730				14510													
138		OBS	0204		34012																		
138		OBS	0229	0025	34080	2737				14529													
138		OBS	0254	0051	34196	2745				14547													
138		OBS	0279	0044	34206	2746				14548													
138		OBS	0354	0008	34264	2753				14545													

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT DIRECTION	STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER				
CTRY CODE	IO. NO.					10"	1"		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER	SEA	TYPE	AMT
311378		WE	77068N	076320W		260	76	09 23 226	1968	WE1 086	0300		36	2	3		X0	0		0086			
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
						36	S15	266	-061	-067	7	12											
MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t °		Σ Δ D OTN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C				
226	OBS		0009	-0158	31650	2548					14374												
226	OBS		0018	-0158	31673	2550					14376												
226	OBS		0027	-0158	31685	2551					14377												
226	OBS		0045	-0158	31720	2553					14381												
226	OBS		0069	-0154	31855	2564					14389												
226	OBS		0093	-0109	32198	2591					14419												
226	OBS		0118	-0058	32666	2627					14453												
226	OBS		0143	-0095	32911	2648					14444												
226	OBS		0168		33092																		
226	OBS		0193		33306																		
226	OBS		0243	-0125	33550	2701					14455												
226	OBS		0293	-0080	33791	2719					14488												

Table II.—Observed and interpolated oceanographic data from stations taken by USCGC EASTWIND, 21 July-5 August 1968, prepared from NODC Listing No. 31-1318.

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	QUALITY INDIC	MARSOEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	IO. NO.						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE	
311318	EW		71290N	053200W		258	13	07	21	152	1968		001	0511	05	00	0	X		X1	3	5	0001
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
										00	500	090	133	111	8	12							
MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CODE				
		STD	0000	0677	3005	2358	0043237		0000		14716	776											
144		OBS	0000	0677	30045	2358					14716	776											
		STD	0010	0602	3090	2434	0035966		0040		14699	765											
144		OBS	0010	0602	30900	2434					14699	765											
		STD	0020	0477	3175	2515	0028243		0072		14661	823											
144		OBS	0020	0477	31751	2515					14661	823											
		STD	0030	0192	3279	2623	0017939		0095		14554	876											
144		OBS	0030	0192	32793	2623					14554	876											
		STD	0050	-0065	3320	2670	0013451		0126		14446	785											
144		OBS	0051	-0072	33211	2672					14443	781											
		STD	0075	-0078	3333	2681	0012397		0158		14446	699											
144		OBS	0076	-0078	33340	2682					14446	696											
		STD	0100	0024	3359	2698	0010859		0188		14501	616											
144		OBS	0101	0027	33598	2698					14503	613											
		STD	0125	0069	3375	2708	0009891		0214		14528	581											
		STD	0150	0104	3388	2716	0009122		0237		14549	559											
144		OBS	T0153	0107	33894	2717					14551	557											
		STD	0200	0141	3406	2728	0008018		0280		14577	546											
144		OBS	T0201	0142	34064	2729					14577	546											
		STD	0250	0180	3420	2737	0007264		0318		14604	539											
		STD	0300	0212	3433	2745	0006561		0353		14628	532											
144		OBS	T0303	0214	34342	2746					14630	531											
		STD	0400	0258	3457	2760	0005247		0412		14668	533											
152		OBS	T0400	0258	34565	2760					14668	533											
152		OBS	04800		34560						5290												

REFERENCE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INCHES	MARSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT			
311318	EW	70587N	052595W		258	02	07	22	192	1968		002	0615	02	00	0	X		X1	3	6		0002			
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB														
								00	500		121	106					089	8	04							
MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CODE							
		STD	0000	0584	3230	2546	0025254		0000		14709	899														
192		OBS	0000	0584	32300	2546					14709	899														
		STD	0010	0401	3261	2591	0021027		0023		14638	846														
		STD	0020	0246	3288	2626	0017671		0042		14577	799														
		STD	0030	0120	3311	2654	0015060		0059		14526	757														
		STD	0050	-0046	3347	2691	0011461		0085		14459	690														
192		OBS	0051	-0051	33485	2693					14457	687														
		STD	0075	0004	3361	2700	0010610		0113		14488	651														
		STD	0100	0053	3373	2708	0009951		0139		14516	619														
192		OBS	T0102	0057	33742	2708					14518	617														
		STD	0125	0095	3385	2715	0009290		0163		14541	595														
		STD	0150	0130	3396	2721	0008688		0185		14562	577														
		STD	0200	0177	3415	2733	0007602		0226		14594	561														
192		OBS	T0202	0178	34162	2734					14595	561														

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUA RE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTN TO BOTTOM	MAX. DEPTN OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT
311318	EW	70220N	050460W	258	00	07	23	228	1968	003		0823	08	00	0	X		X2	7	8		0003
				WATER		WIND		AIR TEMP. °C						SPECIAL OBSERVATIONS								
				COLOR CODE	TRANS. m	DIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS										
				00	500		00	500	176	056	039	7	15									
MESSAGE TIME HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME AND MALT-10 ³	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S CD					
		STD	0000	0175						687												
228		OBS	0000	0175	3360Q	2689Q				687												
		STD	0010	0079	3295	2644	0016024		14502	670												
228		OBS	0010	0079	32952	2644			14502	670												
		STD	0020	0088	3310	2655	0014969		14510	589												
228		OBS	0020	0088	33097	2655			14510	589												
		STD	0030	0088	3314	2658	0014626		14512	588												
228		OBS	0030	0088	33142	2658			14512	588												
228		OBS	0040	0084	33183	2662			14513	588												
		STD	0050	0096	3326	2667	0013813		14521	579												
228		OBS	0050	0096	33255	2667			14521	579												
		STD	0075	0099	3341	2679	0012623		14528	574												
228		OBS	0075	0099	33414	2679			14528	574												
		STD	0100	0055	3349	2688	0011788		14514	571												
228		OBS	T0102	0052	33498	2689			14513													
		STD	0125	0062	3362	2698	0010838		14523	567												
		STD	0150	0074	3374	2707	0009997		14534	563												
		STD	0200	0100	3396	2723	0008495		14557	556												
228		OBS	T0202	0101	33965	2724			14558	556												
		STD	0250	0128	3412	2734	0007483		14580	552												
		STD	0300	0163	3427	2744	0006622		14606	547												
228		OBS	0302	0165	34275	2744			14607	547												
		STD	0400	0257	3453	2757	0005501		14667	543												
228		OBS	T0405	0259	34535	2757			14669	542												
		STD	0500	0228	3456	2762	0005067		14672	525												
228		OBS	0503	0227	34564	2762			14672	524												
		STD	0600	0229	3456	2762	0005098		14689	519												
		STD	0700	0231	3456	2762	0005168		14706	513												
228		OBS	T0701	0231	34564	2762			14706	513												
228		OBS	T0752	0231	34568	2762			14715	525												
		STD	0800	0228					532													
228		OBS	0814	0226	3453Q	2760Q			533													

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	MARS DEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT		
311318	EW		70412N	052175W		258	02	07	24	219	1968		004	0625	06	00	0	X		X4	X 9		0004	
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		ND. OBS. DEPTHS		SPECIAL OBSERVATIONS										
		COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	DRY BULB		WET BULB																
						00	500	120	100	078	1	13												
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	± Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₂ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S CD							
		STD	0000	0376	3080	2449	0034479	0000	14602	868														
212		OBS	0000	0376	30797	2449			14602	868														
		STD	0010	0322	3234	2577	0022369	0028	14601	855														
212		OBS	0010	0322	32339	2577			14601	855														
		STD	0020	0281	3277	2615	0018778	0049	14591	886														
212		OBS	0021	0272	32809	2618			14588	889														
		STD	0030	0147	3304	2646	0015762	0066	14537	920														
212		OBS	0031	0136	33063	2649			14533	921														
		STD	0050	0101	3329	2669	0013577	0096	14523	796														
212		OBS	0058	0076	33355	2676			14514	760														
		STD	0075	-0014	3340	2684	0012127	0128	14477	726														
212		OBS	T0084	-0044	33431	2688			14465	712														
		STD	0100	-0021	3351	2694	0011249	0157	14479	702														
		STD	0125	0014	3363	2702	0010499	0184	14501	684														
212		OBS	T0138	0032	33683	2705			14512	675														
		STD	0150	0049	3373	2708	0009910	0210	14522	666														
212		OBS	0193	0109	33906	2718			14559	632														
219		OBS	T0199	0153	34050	2727			14582	618														
		STD	0200	0154	3405	2727	0008164	0255	14582	618														
		STD	0250	0206	3420	2735	0007470	0294	14616	606														
219		OBS	0299	0246	34345	2743			14643	592														
		STD	0300	0247	3435	2743	0006708	0329	14644	592														
		STD	0400	0294	3458	2758	0005464	0390	14684	558														
219		OBS	T0400	0294	34581	2758			14684	558														
219		OBS	T0498	0270	34622	2763			14690	556														
		STD	0500	0270	3462	2763	0004993	0443	14691	556														
		STD	0600	0271	3463	2764	0004989	0492	14708	561														
219		OBS	T0605	0271	34632	2764			14709	561														

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT					
311318		EW	70218N	054154W		258	04	07	25	182	1968		005	0365	03	28	7	4		X4	X	9	0005				
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB															
											30	503	155					039	034	2	12						
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CODE									
		STD	0000	0257	3273	2613	0018907		0000	14577	825																
182		OBS	0000	0257	32727	2613				14577	825																
		STD	0010	0256	3273	2613	0018895		0019	14578	825																
182		OBS	0010	0256	32728	2613				14578	825																
182		OBS	0019	0225	32773	2619				14566	855																
		STD	0020	0220	3278	2620	0018235		0037	14564	851																
182		OBS	0029	0176	32895	2633				14548	817																
		STD	0030	0168	3293	2636	0016735		0055	14545	814																
182		OBS	0038	0125	33130	2655				14530	793																
182		OBS	0048	0128	33156	2657				14533	783																
		STD	0050	0125	3318	2659	0014560		0086	14533	780																
182		OBS	0072	0093	33357	2675				14524	749																
		STD	0075	0086	3336	2676	0012955		0121	14522	746																
182		OBS	T0097	0046	33429	2684				14508	726																
		STD	0100	0050	3344	2684	0012140		0152	14511	723																
		STD	0125	0080	3357	2693	0011324		0181	14530	701																
182		OBS	0145	0080Q	33682	27020					683																
		STD	0150	0109	3372	2703	0010367		0208	14549	678																
182		OBS	0193	0156	33984	2721				14581	638																
		STD	0200	0165	3402	2724	0008494		0256	14587	634																
		STD	0250	0216	3422	2736	0007400		0295	14620	608																
182		OBS	T0289	0246	34323	2741				14641	596																
		STD	0300	0253	3434	2742	0006836		0331	14646	594																
182		OBS	T0340	0270	34393	2745				14661	590																

REFERENCE		SHIP CODE	LATITUDE " 1/10	LONGITUDE " 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT				
311318		EW	69478N	050295W		222	90	07	28	028	1968		006	0365	03	00	0	X		X0		0	0006			
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (mi)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB														
								00	500		001	068				054	8	12								
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	Si O ₄ -Si $\mu\text{g} - \text{at/l}$	pH								
		STD	0000	0313	3039	2423		0037035		0000	14569															
028		OBS	0000	0313	30391	2423					14569	1028Q														
		STD	0010	0124	3176	2546		0025326		0031	14506	670														
028		OBS	0010	0124	31764	2546					14506	670														
		STD	0020	0129	3227	2586		0021533		0055	14517	637														
028		OBS	0020	0129	32266	2586					14517	637														
		STD	0030	0126	3296	2641		0016260		0074	14527	624														
028		OBS	0030	0126	32957	2641					14527	624														
028		OBS	0040	0131	33195	2660					14534	640														
		STD	0050	0128	3337	2674		0013105		0103	14537	602														
028		OBS	0050	0128	33374	2674					14537	602														
		STD	0075	0124	3351	2686		0012050		0134	14541	553														
028		OBS	0075	0124	33510	2686					14541	553														
		STD	0100	0138	3364	2695		0011189		0163	14553	552														
028		OBS	0100	0138	33636	2695					14553	552														
		STD	0125	0161	3376	2703		0010412		0190	14569	552														
028		OBS	T0149	0183	33855	2709					14584	549														
		STD	0150	0184	3386	2709		0009830		0216	14585	549														
		STD	0200	0227	3399	2716		0009240		0263	14614	533														
028		OBS	0200	0227	33985	2716					14614	533														
		STD	0250	0232	3402	2718		0009038		0309	14624	540														
		STD	0300	0237	3403	2719		0009026		0354	14635	547														
028		OBS	T0304	0237	34033	2719					14636	547														
028		OBS	T0329	0237	34034	2719					14640	533														

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OBS INDEX	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER	
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
311318		EW	69328N	050551W		222	90	07	28	069	1968		007		0512	04	00	0	X		X0	0		0007
						WATER		WIND		AIR TEMP. °C														
						COLOR CODE		TRANS. mm	DIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB		WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
										00	S00	978	057	043	8	13								
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - at/l$	TOTAL-P $\mu g - at/l$	NO ₂ -N $\mu g - at/l$	NO ₃ -N $\mu g - at/l$	SiO ₄ -Si $\mu g - at/l$	pH	S C					
		STD	0000	0267	3070	2451		0034354		0000	14553	794												
069		OBS	0000	0267	30699	2451					14553	794												
069		OBS	0009	0145	32066	2568					14519	668												
		STD	0010	0145	3215	2575		0022513		0028	14521	671												
069		OBS	0018	0138	32680	2618					14526	688												
		STD	0020	0127	3273	2623		0017992		0049	14522	689												
069		OBS	0027	0120	32894	2636					14523	692												
		STD	0030	0153	3297	2640		0016332		0066	14539	733												
069		OBS	0036	0188	33099	2648					14557	777												
069		OBS	0046	0157	33229	2661					14547	740												
		STD	0050	0143	3326	2664		0014067		0096	14542	724												
069		OBS	0068	0099	33394	2678					14527	675												
		STD	0075	0095	3344	2682		0012401		0129	14527	673												
069		OBS	T0092	0092	33540	2690					14530	661												
		STD	0100	0107	3359	2693		0011337		0159	14538	644												
		STD	0125	0148	3374	2702		0010473		0186	14563	599												
069		OBS	0137	0146Q	33795	2707Q						583												
		STD	0150	0180	3385	2709		0009876		0212	14583	573												
069		OBS	0183	0211	33966	2716					14603	554												
		STD	0200	0214	3398	2717		0009173		0259	14608	556												
		STD	0250	0220	3402	2719		0008940		0305	14619	561												
069		OBS	T0274	0222	34033	2720					14624	562												
		STD	0300	0222	3404	2721		0008827		0349	14629	562												
069		OBS	T0368	0221	34044	2721					14640	560												
		STD	0400	0221	3405	2722		0008786		0437	14645	558												
069		OBS	0442	0221	34050	2722					14652	553												

REFERENCE CTRY CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OBS INDEX	MARSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
					WATER		WIND		BARO- METER		AIR TEMP. °C				VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mba)	DRY BULB	WET BULB	8	12															
311318	EW	69110N	051257W	222	91	07	29	194	1968		008		0335	03	00	0	X		X1	3	7		0008

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DRIFT INDICATOR	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER				
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT					
311318	EW	69125N	051497W			222	91	07	29	211	1968		009	0397	04	00	0	X		X1	3	3	0009				
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB															
									04	502	135	077	045	8	12												
MESSNGR TIME OF HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2107	Σ Δ D CTN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CTD										
		STD	0000	0858	3149	2446	0034811	0000	14806	698																	
211		OBS	0000	0858	31490	2446			14806	698																	
		STD	0010	0753	3170	2477	0031856	0033	14770	775																	
211		OBS	0010	0753	31696	2477			14770	775																	
		STD	0020	0258	3286	2624	0017900	0058	14582	980																	
211		OBS	0020	0258	32862	2624			14582	980																	
		STD	0030	0131	3319	2659	0014550	0074	14532	855																	
211		OBS	0030	0131	33186	2659			14532	855																	
211		OBS	0041	0063	33411	2681			14506	664																	
		STD	0050	0066	3350	2688	0011776	0101	14510	613																	
211		OBS	0051	0067	33504	2689			14511	608																	
		STD	0075	0097	3367	2700	0010665	0129	14531	562																	
211		OBS	0076	0098	33671	2700			14532	561																	
		STD	0100	0129	3378	2707	0010037	0155	14551	556																	
211		OBS	0102	0132	33789	2707			14553	555																	
		STD	0125	0176	3392	2715	0009309	0179	14578	553																	
		STD	0150	0215	3405	2722	0008632	0201	14601	551																	
211		OBS	T0153	0219	34061	2723			14603	551																	
		STD	0200	0267	3425	2734	0007579	0242	14635	558																	
211		OBS	0203	0270	34254	2734			14636	558																	
		STD	0250	0294	3430	2735	0007474	0279	14655	553																	
		STD	0300	0313	3435	2738	0007309	0316	14672	549																	
211		OBS	T0306	0315	34356	2738			14674	548																	
211		OBS	T0396	0334	34426	2742			14698	543																	

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DRIFT INDIC	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT				
311318	EW	69120N	052115W	222	92	07	29	230	1968		010		0410	04	00	0	X		X1	0	1		0010			
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB														
								00	500		119	095					072	8	12							
MESSNGR TIME OF HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2107	Σ Δ D CTN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₂ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -S μg - at/l	pH	S CC									
		STD	0000	0751	3152	2464	0033131	0000	14765	834																
230		OBS	0000	0751	31520	2464			14765	834																
		STD	0010	0654	3166	2487	0030879	0032	14730	903																
230		OBS	0011	0634	31707	2494			14723	911																
		STD	0020	0347	3244	2583	0021825	0058	14615	988																
230		OBS	0021	0322	32512	2591			14605	996																
		STD	0030	0156	3306	2647	0015669	0077	14542	847																
230		OBS	0031	0145	33106	2652			14537	833																
230		OBS	0041	0123	33315	2670			14532																	
		STD	0050	0061	3347	2686	0011977	0105	14508	639																
230		OBS	0051	0056	33488	2688			14506	633																
		STD	0075	0085	3362	2697	0010973	0133	14525	621																
230		OBS	0077	0087	33630	2697			14526	619																
		STD	0100	0115	3377	2707	0010021	0160	14545	577																
230		OBS	0102	0118	33786	2708			14546	574																
		STD	0125	0160	3392	2716	0009194	0184	14571	572																
		STD	0150	0199	3404	2723	0008583	0206	14594	570																
230		OBS	T0151	0200	34048	2723			14595	570																
		STD	0200	0253	3420	2731	0007835	0247	14628	548																
230		OBS	0203	0256	34209	2731			14630	547																
		STD	0250	0277	3428	2735	0007471	0285	14648	546																
		STD	0300	0294	3434	2739	0007206	0322	14664	544																
230		OBS	T0305	0296	34344	2739			14666																	
		STD	0400	0316	3437	2739	0007227	0394	14691	541																
230		OBS	T0406	0317	34376	2739			14692	541																

REFERENCE		SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR	1/10			CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
311318	EW	69128N	052400W		222	92	07	30	015	1968		011	0417	04	00	0	X		X1	0	1		0011
		CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\times 10^3$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	D ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	Si O ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S C						
MESSNGR TIME HR 1/10	CAST NO.																						
		STD	0000	0851	3142	2442	0035203	0000	14802	740													
015		OBS	0000	0851	31424	2442			14802	740													
		STD	0010	0768	3168	2474	0032204	0034	14775	808													
015		OBS	0010	0768	31676	2474			14775	808													
		STD	0020	0357	3256	2591	0021030	0060	14621	901													
015		OBS	0020	0357	32557	2591			14621	10640													
		STD	0030	0195	3309	2647	0015723	0079	14559	905													
015		OBS	0030	0195	33088	2647			14559	905													
015		OBS	0041	0094	33325	2673			14519	808													
		STD	0050	0092	3345	2683	0012308	0107	14522	726													
015		OBS	0051	0092	33460	2684			14522	719													
		STD	0075	0083	3359	2694	0011191	0136	14524	654													
015		OBS	0076	0083	33594	2695			14524	651													
		STD	0100	0092	3369	2702	0010484	0163	14533	591													
015		OBS	0101	0093	33694	2702			14534	589													
		STD	0125	0125	3383	2711	0009635	0188	14554	577													
		STD	0150	0163	3396	2719	0008919	0212	14577	564													
015		OBS	T0152	0166	33967	2719			14579	563													
		STD	0200	0250	3418	2730	0007961	0254	14626	569													
015		OBS	0202	0253	34186	2730			14628	569													
		STD	0250	0276	3426	2734	0007612	0293	14647	566													
		STD	0300	0299	3432	2737	0007395	0330	14666	564													
015		OBS	T0300	0299	34321	2737			14666	564													
		STD	0400	0342	3441	2740	0007215	0403	14702	565													
015		OBS	T0403	0343	34411	2740			14703	565													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE MO DAY HR 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BDTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.						10"	1"	MO DAY HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
311318	EW	69120N	053150W	222	93 07 30	032	1968		012		0413	04	00	0	X		X1	0	1		0012
		CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-310°	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	D ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	Si O ₄ -Si μg - dl/l	pH	S C				
MESSNGR TIME HR 1/10	CAST NO.																				
		STD	0000	0767	3139	2451	0034348	0000	14769	812											
032		OBS	0000	0767	31385	2451			14769	812											
		STD	0010	0535	3195	2524	0027376	0031	14686	755											
032		OBS	0010	0535	31946	2524			14686	10330											
032		OBS	0019	0207	32622	2609			14556	736											
		STD	0020	0201	3266	2612	0019009	0054	14554	737											
032		OBS	0029	0170	32896	2633			14545	751											
		STD	0030	0173	3291	2634	0016921	0072	14547	754											
032		OBS	0039	0181	33030	2643			14554	780											
032		OBS	0048	0155	33112	2652			14545	798											
		STD	0050	0147	3314	2654	0015005	0104	14542	793											
032		OBS	0073	0082	33354	2676			14519	731											
		STD	0075	0079	3336	2676	0012914	0139	14519	724											
032		OBS	0097	0059	33465	2686			14515	659											
		STD	0100	0062	3349	2688	0011827	0170	14517	654											
032		OBS	T0147	0089	3366	2700	0010695	0198	14535	620											
		STD	0150	0120	33799	2709			14555	596											
032		OBS	0194	0127	3382	2710	0009728	0223	14559	594											
		STD	0200	0209	34087	2726			14606	568											
032		OBS	0250	0213	3410	2726	0008259	0268	14609	567											
		STD	0250	0247	3422	2733	0007660	0308	14634	560											
032		OBS	T0293	0272	34291	2737			14653	556											
		STD	0300	0276	3430	2737	0007341	0346	14656	555											
032		OBS	T0385	0311	34363	2739			14686	553											

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER			
					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT		
311318	EW	69142N	053245W		222	93	07	30	045	1968		013		0245	02	00	0	X		X1	0	1		0013
					WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
					COLOR CODE	TRANS. mm	DIR.	SPEED OF FORCE		DRY BULB	WET BULB					7	10							
								00	500	071	072	056	7	10										
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SIO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S	CLOUD						
		STD	0000	0613	3110	2448	0034619	0000	14704	834														
045		OBS	0000	0613	31095	2448			14704	834														
		STD	0010	0456	3154	2501	0029616	0032	14647	898														
045		OBS	0011	05380	31600	2497Q			904															
		STD	0020	0326	3233	2576	0022475	0058	14604	837														
045		OBS	0022	0303	32447	2587			14596	824														
		STD	0030	0217	3270	2614	0018822	0079	14564	765														
045		OBS	0033	0197	32778	2622			14556	759														
045		OBS	0043	0182	32969	2638			14554	804														
		STD	0050	0157	3309	2650	0015450	0113	14546	785														
045		OBS	0054	0144	33156	2656			14541	774														
		STD	0075	0099	3338	2677	0012881	0148	14528	702														
045		OBS	0080	0084Q	33423	2681Q			686															
		STD	0100	0072	3356	2693	0011352	0179	14522	626														
045		OBS	T0106	0070	33602	2696			14523	613														
		STD	0125	0086	3370	2703	0010373	0206	14535	609														
		STD	0150	0114	3382	2711	0009642	0231	14553	601														
045		OBS	T0159	0126	33862	2714			14560	597														
		STD	0200	0194	3406	2725	0008412	0276	14600	573														
045		OBS	0210	0214	34106	2727			14611	565														

REFERENCE	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DRIFT INDIC	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S' MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER		
					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT			
311318	EW	69140N	054162W		222	94	08	02	210	1968		014		0265	02	00	0	X		X1	8	6		0014
					WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
					COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE		DRY BULB	WET BULB													
								26	510	894	100	072	8	09										
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T *	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S	CLOUD						
		STD	0000	0478	3265	2586	0021507	0000	14670	808														
210		OBS	0000	0478	32646	2586			14670	808														
		STD	0010	0343	3292	2621	0018161	0020	14618	832														
210		OBS	0011	0330	32951	2625			14613	834														
		STD	0020	0208	3321	2656	0014888	0036	14565	796														
210		OBS	0022	0187	33251	2660			14557	786														
		STD	0030	0128	3336	2673	0013210	0050	14533	733														
210		OBS	0032	0116	33381	2676			14528	722														
		STD	0050	0074	3351	2689	0011745	0075	14514	674														
210		OBS	0060	0065	33574	2694			14513	655														
		STD	0075	0083	3365	2699	0010733	0103	14524	639														
210		OBS	0087	0094	33705	2703			14532	629														
		STD	0100	0097					628															
		STD	0125	0104					627															
210		OBS	T0141	0108	3377Q	2707Q			626															
		STD	0150	0123					620															
210		OBS	0195	0186	34010	2721Q			590															
		STD	0200	0192					587															
210		OBS	T0249	0231	3398Q	2715Q			561															

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUFF INDIC	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE	
311318	EW		69120N	055110W		222	95	08	03	026	1968	015	0164	01	00	0	X		X1	7	7	0015
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	VIS. CODE									
								26		S01	921	050	044	7	11							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S C			
		STD	0000	0373	3268	2599		0020227		0000	14626											
026		OBS	0000	0373	32681	2599					14626											
		STD	0010	0365	3273	2604		0019798		0020	14625											
026		OBS	0010	0365	32729	2604					14625											
		STD	0020	0247	3304	2639		0016505		0038	14580											
026		OBS	0020	0247	33035	2639					14580											
		STD	0030	0200	3320	2656		0014894		0054	14563											
026		OBS	0030	0200	33202	2656					14563											
026		OBS	0040	0134	33425	2678					14538											
		STD	0050	0119	3352	2687		0011947		0081	14535											
026		OBS	0050	0119	33519	2687					14535											
026		OBS	0060	0115	33592	2693					14535											
026		OBS	0070	0118	33662	2698					14539											
		STD	0075	0105	3367	2700		0010715		0109	14535											
		STD	0100	0076	3372	2705		0010168		0135	14526											
026		OBS	T0100	0076	33719	2705					14526											
026		OBS	0124	0104	33816	2711					14544											
		STD	0125	0105	3382	2712		0009581		0160	14545											
026		OBS	T0147	0106	33848	2714					14549											

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUFF INDIC	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT
311318	EW	69095N	056070W	222	96	08	03	059	1968	016	0163	02	19	3				X2	6	8	0016		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	BARO- METER (mbars)	DRY BULB	WET BULB											
								22	S07	965	039	028	7	10									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S C				
		STD	0000	0414	3312	2630		0017279		0000	14649	731											
059		OBS	0000	0414	33123	2630					14649	731											
059		OBS	0009	0414	33130	2631					14651	740											
		STD	0010	0414	3313	2631		0017227		0017	14651	742											
		STD	0020	0397	3314	2633		0017011		0034	14646	757											
059		OBS	0020	0397	33139	2633					14646	757											
059		OBS	0029	0358	33169	2639					14631	765											
		STD	0030	0348	3318	2641		0016256		0051	14627	765											
059		OBS	0040	0262	33294	2658					14593	751											
059		OBS	0049	0209	33394	2670					14573	723											
		STD	0050	0195	3340	2672		0013363		0081	14567	719											
059		OBS	0074	-0003	33527	2694					14483	655											
		STD	0075	-0000	3353	2694		0011201		0111	14485	655											
059		OBS	0098	0045	33663	2703					14511												
		STD	0100	0046	3367	2703		0010369		0138	14512	654											
059		OBS	T0124	0063	33754	2709					14525	653											
		STD	0125	0064	3376	2709		0009785		0163	14526	652											
		STD	0150	0095	3384	2714		0009368		0187	14545	625											
059		OBS	T0158	0108	33858	2714					14552	613											

REFERENCE CITY IC. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INDEX	MARSON SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S' MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER			
					10'	1"	MO	OAT		HR	1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT
311318	EW	69070N	057040W	222	97	08 03 091	1968			017		0238	02	31	3			X1	5 7		0017		
					WATER		WIND		AIR TEMP. °C														
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
							31	S20	980	094	044	7	11										

MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME AND MALT-210 ²	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S CC
		STD	0000	0467	3306	2620	0018259	0000	14671								
091		OBS	0000	0467	33063	2620			14671								
091		OBS	0009	0465	33074	2621			14671								
		STD	0010	0465	3308	2622	0018119	0018	14672								
		STD	0020	0403	3314	2633	0017061	0036	14648								
091		OBS	0020	0403	33140	2633			14648								
		STD	0030	0226	3330	2661	0014373	0051	14576								
091		OBS	0030	0226	33296	2661			14576								
091		OBS	0040	0058	33410	2682			14504								
		STD	0050	0029	3353	2693	0011372	0077	14494								
091		OBS	0050	0029	33527	2693			14494								
091		OBS	0074	0057	33744	2708			14514								
		STD	0075	0058	3375	2709	0009828	0104	14514								
		STD	0100	0085	3383	2714	0009386	0128	14532								
091		OBS	T0100	0085	33829	2714			14532								
		STD	0125	0121	3392	2719	0008926	0151	14553								
091		OBS	T0147	0151	33997	2723			14571								
		STD	0150	0157	3401	2723	0008498	0172	14575								
091		OBS	0196	0215	34146	2730			14610								
		STD	0200	0217	3415	2730	0007914	0213	14611								
091		OBS	T0229	0217	34154	2730			14616								

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH INDEX	MARSON SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER		
CRUISE CODE	IO. NO.					10"	1"	MO	DAY	HR./1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT	
311318	EW	69035N	058300W	222	98	08	03	131	1968		018		0318	03	20	2	6		X2	6	8		0018	
						WATER		WIND		AIR TEMP. °C														
						COLOR	TRANS.	DIR.	SPEED OR FORCE	BARO- METER (mba)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
								21	S10	985	056	044	8	09										

MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME AND MALT-210 ²	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S CC
		STD	0000	0140	3226	2584	0021661	0000	14518	824							
131		OBS	0000	0140	32258	2584			14518	824							
131		OBS	0009	0139	32255	2584			14519	822							
		STD	0010	0132	3226	2585	0021605	0022	14516	825							
131		OBS	0018	0089	32291	2590			14499	842							
		STD	0020	0095	3238	2597	0020468	0043	14503	838							
		STD	0030	0122	3278	2627	0017581	0062	14522	819							
131		OBS	0043	0141	33205	2660			14539	794							
		STD	0050	0128	3329	2668	0013745	0093	14536	774							
		STD	0075	0083	3358	2694	0011265	0124	14523	716							
131		OBS	0096	0045	33794	2713			14513	681							
		STD	0100	0066	3383	2715	0009265	0150	14523	679							
		STD	0125	0176	3404	2724	0008401	0172	14580	667							
131		OBS	0146	0246	34185	2730			14616	653							
		STD	0150	0254	3420	2731	0007817	0192	14620	648							
131		OBS	0195	0326	34402	2741			14661	608							
		STD	0200	0333	3443	2742	0006825	0229	14665	605							
131		OBS	0247	0380	34615	2752			14696	590							
		STD	0250	0382	3462	2752	0005962	0261	14697	590							
131		OBS	T0299	0382	34615	2752			14705	592							

REFERENCE CTRY CODE	SHIP NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS INDIC	MARS SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
							10°	1°		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

311318	EW		69015N	059470W	222	99	08	03	171	1968	019	1518	15	15	2	2		X4	7	8	0019
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	505	979	028	022	6	15	

MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D OYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C
		STD	0000	0000	3115	2503	0029394	0000	14440								
		OBS	0000	0000	31153	2503			14440								
		STD	0010	-0011	3220	2587	0021354	0025	14451								
		OBS	0010	-0011	32197	2587			14451								
		STD	0020	-0107	3244	2610	0019152	0046	14411								
		OBS	0021	-0114	32462	2612			14408								
		STD	0030	-0148	3273	2635	0016810	0064	14397								
		OBS	0031	-0150	32759	2637			14397								
		STD	0050	-0143	3326	2678	0012739	0093	14410								
		OBS	0052	-0142	33301	2681			14412								
		STD	0075	-0124	3343	2691	0011475	0123	14426								
		STD	0100	-0079	3358	2702	0010470	0151	14453								
		OBS	0104	-0069	33608	2704			14459								
		STD	0125	0025	3379	2714	0009339	0176	14508								
		STD	0150	0106	3397	2724	0008452	0198	14552								
		OBS	0157	0123	34011	2726			14561								
		STD	0200	0153	3415	2735	0007424	0238	14583								
		OBS	T0213	0165	34195	2738			14591								
		STD	0250	0226	3433	2744	0006654	0273	14626								
		STD	0300	0280	3448	2751	0006025	0304	14660								
		OBS	T0313	0289	34505	2752			14666								
		STD	0400	0288	3462	2761	0005115	0360	14682								
		OBS	0412	0286	34625	2762			14683								
		STD	0500	0252	3463	2765	0004771	0410	14683								
		OBS	T0517	0245	34630	2766			14683								
		STD	0600	0209	3461	2767	0004570	0456	14681								
		STD	0700	0167	3458	2768	0004461	0501	14678								
		OBS	T0780	0134	34555	2769			14677								
		STD	0800	0124	3455	2769	0004344	0545	14676								
		STD	0900	0080	3451	2769	0004293	0589	14672								
		STD	1000	0045	3448	2768	0004240	0631	14673								
		OBS	1032	0035	34472	2768			14674								
		STD	1100	0021	3447	2769	0004100	0673	14679								
		STD	1200	0003	3448	2770	0003936	0713	14687								
		STD	1300	-0010	3448	2771	0003807	0752	14698								
		OBS	T1310	-0011													
		STD	1400	-0019	3448	2772	0003707	0789	14711								
		OBS	T1487	-0023	34481	2772			14724								

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"	MO	DAY	HR.1/10	CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA	TYPE	AMT	

311318	EW		68350N	059530W	222	89	08	03	221	1968		020	1298	08	16	2			X4	X	9	0020
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			

			16	S05	979	044	039	1	13
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MESSNGR TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t ?	$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - 01/l$	TOTAL-P $\mu g - 01/l$	NO ₃ -N $\mu g - 01/l$	NO ₃ -N $\mu g - 01/l$	SiO ₄ -Si $\mu g - 01/l$	pH	S C
		STD	0000	0072	3181	2552	0024695	0000	14482	851							
221		OBS	0000	0072	31810	2552			14482	851							
		STD	0010	0114	3220	2581	0021956	0023	14508	862							
221		OBS	0010	0114	32199	2581			14508	862							
		STD	0020	0129	3240	2596	0020511	0045	14519	894							
221		OBS	0021	0130	32426	2598			14520	897							
		STD	0030	-0118	3280	2640	0016352	0063	14412	834							
221		OBS	0032	-0149	32874	2647			14399	823							
221		OBS	0043	-0157	33223	2675			14402	783							
		STD	0050	-0160	3333	2684	0012159	0092	14404	760							
221		OBS	0053	-0161	33370	2687			14404	752							
		STD	0075	-0144	3350	2697	0010880	0120	14418	724							
221		OBS	0079	-0140	33526	2699			14420	720							
		STD	0100	-0109	3363	2707	0009979	0146	14440	705							
221		OBS	0106	-0099	33654	2708			14446	701							
		STD	0125	-0042	3376	2715	0009240	0170	14477	680							
		STD	0150	0025	3390	2723	0008500	0193	14514	656							
		STD	0200	0137	3413	2734	0007460	0232	14576	614							
221		OBS	T0210	0156	34167	2736			14586	607							
		STD	0250	0192	3428	2742	0006755	0268	14611	595							
		STD	0300	0225	3440	2749	0006143	0300	14635	582							
		STD	0400	0257	3456	2759	0005276	0357	14668	560							
221		OBS	0418	0258	34581	2761			14671	556							
		STD	0500	0206	3456	2764	0004872	0408	14662	547							
		STD	0600	0162	3455	2766	0004608	0455	14659	533							
221		OBS	T0627	0153	34548	2767			14660	528							
		STD	0700	0142	3455	2767	0004500	0501	14667	514							
221		OBS	0731	0134	34545	2768			14668	508							
		STD	0800	0110	3453	2768	0004375	0545	14669	497							
221		OBS	0837	0094	34518	2768			14668	491							

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUTY INDIC	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA	TYPE	AMT	

WATER		WIND		BARO- METER	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		00	500	978	039	039	1	15	

MESSENGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANDALTY-X10 ⁷	Σ Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	Si O ₄ -Si μg - at/l	pH	S CC
		STD	0000	0177	3224	2581	0022002	0000	14535								
022		OBS	0000	0177	32244	2581			14535								
		STD	0010	0174	3231	2586	0021451	0022	14536								
022		OBS	0010	0174	32314	2586			14536								
		STD	0020	0065	3235	2596	0020528	0043	14489								
022		OBS	0020	0065	32351	2596			14489								
		STD	0030	-0126	3297	2654	0015055	0061	14411								
022		OBS	0030	-0126	32966	2654			14411								
022		OBS	0040	-0160	33274	2679			14401								
		STD	0050	-0162	3336	2686	0011915	0087	14403								
022		OBS	0050	-0162	33361	2686			14403								
		STD	0075	-0151	3349	2697	0010922	0116	14414								
022		OBS	0075	-0151	33492	2697			14414								
		STD	0100	-0053	3366	2707	0009956	0142	14466								
022		OBS	0100	-0053	33661	2707			14466								
		STD	0125	0021	3383	2717	0009013	0166	14507								
		STD	0150	0086	3398	2726	0008249	0187	14543								
		STD	0200	0187	3423	2739	0007082	0226	14599								
022		OBS	T0200	0187	34229	2739			14599								
		STD	0250	0207	3434	2746	0006423	0259	14618								
		STD	0300	0220	3443	2752	0005875	0290	14633								
		STD	0400	0223	3455	2762	0005033	0345	14653								
022		OBS	0400	0223	34552	2762			14653								
		STD	0500	0181	3454	2764	0004799	0394	14651								
		STD	0600	0137	3453	2766	0004542	0441	14648								
022		OBS	T0604	0135	34530	2767			14648								
022		OBS	T0694	0094	34483	2766			14644								
		STD	0700	0092	3448	2765	0004585	0486	14644								
		STD	0800	0062	3448	2767	0004370	0531	14647								
022		OBS	0800	0062	34479	2767			14647								
030		OBS	T0899	0046	34478	2768			14656								
		STD	0900	0046	3448	2768	0004259	0574	14656								
		STD	1000	0037	3448	2769	0004184	0616	14669								
		STD	1100	0035	3448	2769	0004169	0658	14685								
030		OBS	1100	0035	34479	2769			14685								

REFERENCE CTRY CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARSOEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		TYPE	A.M.T	

311318	EW	67475N	059475W	222	79	08	04	086	1968		022	1394	13	11	2			X4	X 9		0022
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WATER		WIND		BARO- METER (mbars)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			00	500	950	033	033	1	15

MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma_t$ OYN, M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{dl/l}$	TOTAL-P $\mu g - \text{dl/l}$	NO ₂ -N $\mu g - \text{dl/l}$	NO ₃ -N $\mu g - \text{dl/l}$	Si O ₄ -Si $\mu g - \text{dl/l}$	pH	S C
		STD	0000	0156	3208	2569	0023129	0000	14523	819							
073		OBS	0000	0156	32078	2569			14523	819							
		STD	0010	0018	3229	2594	0020738	0022	14465	912							
073		OBS	0010	0018	32294	2594			14465	912							
		STD	0020	-0102	3254	2618	0018399	0042	14415	847							
073		OBS	0020	-0102	32540	2618			14415	847							
073		OBS	0029	-0141	33014	2658			14404	800							
		STD	0030	-0142	3305	2661	0014368	0058	14405	795							
073		OBS	0039	-0150	33279	2680			14406	766							
073		OBS	0049	-0159	33368	2687			14404	763							
		STD	0050	-0159	3337	2687	0011854	0084	14404	762							
073		OBS	0074	-0163	33459	2694			14408	742							
		STD	0075	-0163	3346	2695	0011136	0113	14408	740							
073		OBS	0098	-0158	33532	2700			14415	710							
		STD	0100	-0156	3354	2701	0010523	0140	14417	710							
		STD	0125	-0123	3362	2706	0009995	0166	14437	706							
073		OBS	0148	-0085	33708	2712			14460	697							
		STD	0150	-0079	3372	2713	0009379	0190	14463	695							
		STD	0200	0059	3399	2728	0008009	0233	14539	641							
073		OBS	0246	0157	34188	2738			14593	602							
		STD	0250	0159	3420	2738	0007104	0271	14595	601							
		STD	0300	0186	3431	2745	0006500	0305	14617	587							
		STD	0400	0216	3447	2756	0005588	0365	14649	563							
073		OBS	T0492	0218	34557	2762			14666	545							
		STD	0500	0214	3456	2763	0004972	0418	14665	544							
		STD	0600	0172	3455	2765	0004723	0467	14663	530							
073		OBS	T0689	0138	34537	2767			14663	518							
		STD	0700	0134	3454	2767	0004515	0513	14663	517							
		STD	0800	0102	3452	2768	0004384	0557	14665	504							
073		OBS	0886	0076	34506	2769			14668	490							
		STD	0900	0071	3450	2768	0004294	0601	14668	487							
		STD	1000	0043	3449	2769	0004150	0643	14672	464							
086		OBS	T1085	0023	34477	2769			14677	443							
		STD	1100	0020	3448	2770	0004055	0684	14678	439							
		STD	1200	0004	3448	2771	0003899	0724	14688	412							
		STD	1300	-0006	3448	2771	0003788	0762	14700	384							
086		OBS	T1345	-0009	34486	2772			14707	370							

REFERENCE CTRY CODE	IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER INDICATOR	MARS DEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
						10"	1"	MO	DAY	HR.1/10			CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311318		EW	67320N	058380W	222	78	08	04	139	1968			023		1097	10	14	3		X2	5	8		0023
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	METER (mbs)	DRY BULB	WET BULB												
									00	500	017	083	072	6	15									

MESSINGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ O OWN, M, X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S C
		STD	0000	0171	3218	2576	0022479	0000	14531								
139		OBS	0000	0171	32176	2576			14531								
		STD	0010	0156	3228	2585	0021570	0022	14528								
139		OBS	0010	0156	32283	2585			14528								
		STD	0020	-0119	3285	2644	0015987	0041	14411								
139		OBS	0020	-0119	32848	2644			14411								
		STD	0030	-0157	3320	2673	0013178	0055	14400								
139		OBS	0030	-0157	33200	2673			14400								
139		OBS	0040	-0162	33267	2679			14400								
		STD	0050	-0163	3332	2683	0012220	0081	14402								
139		OBS	0050	-0163	33321	2683			14402								
		STD	0075	-0164	3343	2692	0011386	0110	14407								
139		OBS	0075	-0164	33427	2692			14407								
		STD	0100	-0154	3352	2699	0010667	0138	14417								
139		OBS	T0100	-0154	33522	2699			14417								
		STD	0125	-0119	3362	2706	0010008	0164	14439								
		STD	0150	-0086	3371	2712	0009428	0188	14460								
		STD	0200	-0022	3390	2725	0008247	0232	14501								
139		OBS	T0201	-0021	33901	2725			14501								
		STD	0250	0037	3408	2737	0007194	0271	14538								
		STD	0300	0090	3424	2746	0006359	0305	14573								
139		OBS	0300	0090	34235	2746			14573								
139		OBS	T0398	0177	34457	2758			14631								
		STD	0400	0177	3446	2758	0005336	0363	14631								
		STD	0500	0175	3449	2760	0005131	0415	14647								
139		OBS	T0501	0175													
		STD	0600	0137	3451	2765	0004692	0465	14647								
139		OBS	0600	0137	34511	2765			14647								
		STD	0700	0110	3451	2767	0004504	0511	14652								
		STD	0800	0084	3450	2768	0004364	0555	14657								
139		OBS	T0800	0084	34503	2768			14657								
		STD	0900	0058	3449	2768	0004249	0598	14662								
		STD	1000	0033	3448	2769	0004129	0640	14667								
139		OBS	1004	0032	34481	2769			14668								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRAFT FOOT	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
311318		EW	67060N	057290W	222	77	08	04	194	1968	024	0777	08	10	3	7		X2	6	8	0024	
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
COLOR CODE		TRANS. (m)	DIR.	SPEED OR FORCE	DRY RULB	WET RULB																
				00	500	010	044	039	5	15												
MESSAGE TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PD ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CO ₂					
		STD	0000	0210	3238	2589	0021193	0000	14551	832												
	194	OBS	0000	0210	32380	2589			14551	832												
		STD	0010	0203	3238	2589	0021178	0021	14550	830												
	194	OBS	0012	0202	32375	2589			14550	829												
		STD	0020	-0015	3263	2622	0018022	0041	14456	845												
	194	OBS	0022	-0050	32688	2629			14441	846												
		STD	0030	-0087	3287	2645	0015910	0058	14428	837												
	194	OBS	0034	-0102	32978	2654			14423	826												
	194	OBS	0045	-0129	33303	2681			14417	771												
		STD	0050	-0114	3336	2685	0012057	0086	14426	772												
	194	OBS	0056	-0099	33414	2689			14434	773												
		STD	0075	-0067	3353	2697	0010909	0114	14454	791												
	194	OBS	0084	-0055	33581	2701			14462	795												
		STD	0100	-0041	3364	2705	0010167	0141	14472	792												
	194	OBS	T0112	-0028	33696	2709			14480	790												
		STD	0125	-0003	3378	2714	0009271	0165	14495	741												
		STD	0150	0041	3393	2724	0008361	0187	14522	668												
	194	OBS	T0165	0063	33998	2728			14535	638												
		STD	0200	0105	3412	2736	0007316	0226	14561	621												
	194	OBS	0217	0121	34168	2738			14572	612												
		STD	0250	0129	3424	2744	0006583	0261	14582	578												
		STD	0300	0141	3434	2751	0005928	0292	14597	545												
	194	OBS	T0319	0145	34381	2754			14603	538												
		STD	0400	0164	3453	2764	0004704	0345	14626	552												
	194	OBS	T0422	02240	34555	27620			556													
		STD	0500	0184	3456	2765	0004682	0392	14652	532												
	194	OBS	0524	0188	34562	2765			14658	528												
		STD	0600	0200	3462	2769	0004417	0438	14677	529												
	194	OBS	T0629	0205	34622	2769			14684	529												
		STD	0700	0163	3459	2769	0004351	0482	14677	516												
	194	OBS	T0763	0089	34518	2769			14653	494												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DIR. INDIC	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER					
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE	AMT			
311318		EW	66440N	056340W		222	66	08	05	001	1968		025	0168	02	00	0	X		X5	6	8		0025		
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE		TRANS. (m)	DIR.	SPEED OR FORCE	DRY RULB	WET RULB																				
				00	500	006	056	045	7	12																
MESSAGE TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	CO ₂									
		STD	0000	0347	3331	2652	0015217	0000	14623																	
	001	OBS	0000	0347	33314	2652			14623																	
		STD	0010	0334	3336	2657	0014761	0015	14620																	
	001	OBS	0010	0334	33360	2657			14620																	
		STD	0020	0307	3340	2663	0014231	0029	14611																	
	001	OBS	0021	0305	33407	2663			14610																	
		STD	0030	0297	3344	2666	0013887	0044	14608																	
	001	OBS	0031	0296	33438	2667			14608																	
	001	OBS	0041	0300	33459	2668			14612																	
		STD	0050	0294	3350	2672	0013382	0071	14611																	
	001	OBS	0052	0292	33507	2672			14611																	
	001	OBS	0062	0280	33533	2676			14608																	
	001	OBS	0072	0210	33630	2689			14580																	
		STD	0075	0189	3366	2693	0011357	0102	14572																	
	001	OBS	0082	0149	33727	2701			14556																	
		STD	0100	0116	3378	2708	0009952	0128	14545																	
	001	OBS	0103	0112	33792	2709			14544																	
		STD	0125	0103	3388	2717	0009113	0152	14545																	
	001	OBS	T0129	0102	33894	2718			14545																	
		STD	0150	0097	3393	2721	0008698	0174	14547																	
	001	OBS	T0154	0097	33936	2721			14548																	

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