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KANE BASIN

September 1968 and July, September 1969

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UNITED STATES COAST GUARD
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UNITED STATES COAST GUARD OCEANOGRAPHIC UNIT

REPORT No. 55 CG 373-55

OCEANOGRAPHIC OBSERVATIONS IN KANE BASIN

September 1968 and July, September 1969

Martin J. Moynihan

WASHINGTON, D.C. ⚓ AUGUST 1972

USCGC SOUTHWIND (WAGB 280)

USCGC EASTWIND (WAGB 279)

ABSTRACT

Oceanographic observations were made on three cruises to Kane Basin in 1968 and 1969. Temperature, salinity, and oxygen characteristics are described. No water with the characteristics of Baffin Bay Deep Water was found south of the 250 meter sill in Kane Basin, indirectly confirming the possibility of a pulsing of cold dense water over the sill into Baffin Bay. Volume transports through the southern entrance to Kane Basin were calculated and compared with tide and wind conditions without finding any direct correlation.

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OCEANOGRAPHIC OBSERVATIONS IN KANE BASIN

September 1968 and July, September 1969

Martin J. Moynihan¹

INTRODUCTION

Kane Basin is a part of the Nares Strait system of basins and channels separating Ellesmere Island from Greenland and connecting Baffin Bay with the Lincoln Sea and the Arctic Ocean (fig. 1). A sill at 250 meters in Kane Basin restricts the transport of water at depths greater than 250 meters between the Arctic Ocean and Baffin Bay (fig. 2).

The Coast Guard Oceanographic Unit has conducted several surveys in the Nares Strait region to investigate the flow of Arctic Water through Kane Basin. The results of the 1963 and 1966 surveys by CGC EVERGREEN and CGC EDISTO have been reported (Franceschetti et al., 1964 and Palfrey et al., 1968). The results of the 1968 and 1969 surveys (fig. 3) in

the same region will be reported here. The CGC EASTWIND occupied 27 oceanographic stations in a preliminary survey of Kane Basin in September 1968. During late July 1969 the CGC WESTWIND occupied a section between Cape Herschel, Ellesmere Island and Cape Hatherton, Greenland three times in rapid succession to monitor the flow between Kane Basin and Smith Sound. In September 1969 the CGC SOUTHWIND conducted a joint oceanographic survey of Kane Basin with the Naval Oceanographic Office to broaden the knowledge of the distribution of physical and geological parameters of the Kane Basin region.

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DATA ACQUISITION AND PROCESSING

Temperature data and water samples were collected by Nansen casts. The water samples were analyzed on board with inductive salinometers. The conductivity values obtained were converted to salinity by use of the International Oceanographic Tables published jointly by UNESCO and the National Institute of Oceanography of Great Britain (1966). Dissolved oxygen concentrations were determined on board EASTWIND and SOUTHWIND by the modified Winkler Method as described by Strickland and Parsons (1968).

The temperature data were processed at the Coast Guard Oceanographic Unit following the procedures specified in the U.S. Naval Oceanographic Office Publication No. 607 (1968). Paired protected thermometers were used on each bottle and unprotected reversing thermometers were added on the deeper bottles. Sampling depths were determined from L-Z curves

based on thermometric depths and wire angle. All calculations were performed on a PDP-5 digital computer utilizing programs described by O'Hagan (1964).

Volume transport calculations were accomplished by the solenoid method described by Kollmeyer (1967). Due to the negative temperatures found in the Kane Basin region, this method does not yield a realistic heat flow calculation. Therefore, the heat transport for each section was computed by the following equation:

$$Q_t = \rho_m \bar{V} C_p T_m$$

where

Q_t = heat transport (cal./sec.)

ρ_m = mean density of seawater

C_p = specific heat of seawater

T_m = mean temperature

$\bar{V}$ = volume transport

A mean density of 1.03 gms./cm.³ (actual densities ranged from 1.026 gms./cm.³ to 1.028 gms./cm.³) and a specific heat of 1 cal./gm./° C. were used in all computations. The mean temperature for each solenoid was referenced to -1.8° C. for the heat calculations. ($T_m = T_{\text{obs}} + 1.8^{\circ}$ C., where T_{obs} is the observed mean temperature).

The data presented in the tables of Oceanographic Data (app. A) are reproduced from computer listings from the National Ocean-

ographic Data Center (NODC Cruise Numbers 31-1281, 31-1533, and 31-1642). Anomalies of dynamic height in the listings were computed by NODC, but all discussion of dynamic heights in this text is based on computations made at the Coast Guard Oceanographic Unit. Dynamic heights in water shallower than the reference level were computed in a manner similar to that of Helland-Hansen (1934), as described in detail by Kollmeyer (1967).

DISCUSSION

The bathymetry and geology of Kane Basin were described by Uchupi (1964). The bottom topography of Kane Basin (fig. 2) consists mainly of a broad sedimentary shelf with two large troughs and a sill at 250 meters that have a controlling affect on the circulation. A western trough running parallel to Ellesmere Island is the main passage connecting northern Nares Strait to Smith Sound. The eastern trough is deeper but extends from the northern end of Humboldt Glacier southwestward to Smith Sound. Kravitz et al. (1970) reported that the floor of Kane Basin is extremely hard with an average Phleger corer penetration of only 121 cm. The results of their work were similar to those reported by Uchupi (1964), with limestone being the most ubiquitous rock type sampled and ice rafting being the main agent of transport and deposition of the most recent sediments from the Humboldt Glacier.

An important role of the circulation in Kane Basin is in formation of Baffin Bay Deep Water. Bailey (1956) noted that waters at about 250 meters depth in the Arctic Ocean have similar characteristics (-0.3° C., 34.4‰) to deep water in Baffin Bay. He stated that this water enters Baffin Bay through Kane Basin and Smith Sound either as a slow and continuous process or as a surge of heavy water that sinks to the bottom. Collin (1965) showed by density distribution that the influx of high salinity (>34.4 ‰) Arctic Ocean Water through Smith Sound is not a continuous process but probably takes place in intermittent pulses. This pulsing theory was further supported by Palfrey (1968) who showed an isopycnal wave in northern Kane Basin that sug-

gested an upwelling of heavier water over the sill, but he did not actually sample any of the characteristic type water in southern Kane Basin or Smith Sound.

Water with the characteristics of Baffin Bay Deep Water was found at stations 1, 2, 3, 8, and 12 in Kane Basin in September 1969. A comparison of this water with a station occupied in Baffin Bay during August 1969 (fig. 4) shows the distinctive T-S characteristics (-0.3° C., 34.4‰) at about 200 meters in Kane Basin and between 1,500 and 2,000 meters in Baffin Bay. This water has never been observed immediately south of the 250 meter sill in Kane Basin nor can it flow through Jones Sound and Lancaster Sound into Baffin Bay due to limiting sill depths of 175 and 180 meters respectively (Bailey, 1956). This leads to the hypothesis of its formation in pulses.

Cold water of polar origin ($<0^{\circ}$ C., <33.5 ‰), found in the upper 200 meters in Kane Basin (figs. 5-12, 15-22), makes up the major drift southward into Baffin Bay. The surface waters are of low salinity (<33.0 ‰) particularly on the eastern side near Humboldt Glacier. At 100 meters, water with a salinity maximum of 33.5‰ followed the deeper channel on the western side. The coldest water ($\sim 1.7^{\circ}$ C.) was found near the surface on the western side of Kane Basin along the coast of Ellesmere Island. Water colder than -1.5° C. was found over the deepest part of the western trough to a depth of about 75 meters in the northern part of Kane Basin and between 25 and 50 meters in the southern part. The temperature below 150 meters gradually increased with depth to the bottom.

Nearly uniform distributions of temperature and salinity were found through the center of Kane Basin in the upper 150 meters. Below 150 meters the water is slightly warmer and more saline to the north of the sill. Patches of low temperature and salinity water, caused by local ice conditions and the admixture of fresh melt-water off the ice were found at the surface (figs. 11, 12, 21, and 22).

The dissolved oxygen concentration in Kane Basin varied from super-saturated values (>9.0 ml./l.) near the surface to about 80 percent saturated (<7.0 ml./l.) below 100 meters (figs. 14, 24, 28, 32, 36, and 40). The high oxygen concentrations and low salinities of the near surface waters can be attributed to the melting of sea ice and the summer runoff from the land. Particularly high oxygen concentrations of 10.24 and 10.38 ml./l. were found at CGC SOUTHWIND stations 4 and 9 respectively, which were located near the Humboldt Glacier.

The circulation of water in Kane Basin can be interpreted from vertical sections of density (figs. 21, 23, 27, 31, 35, and 39). Southerly flow of arctic water is concentrated on the western side over the channel connecting Kennedy Channel to Smith Sound. This passage contains the major flow of water between the Arctic Ocean and Baffin Bay. A general counterclockwise circulation of the surface waters in Kane Basin is indicated by the slope of the isopycnals in the longitudinal sections (figs. 13 and 23).

The volume transport through Kane Basin relative to 350 decibars was calculated for the three CGC WESTWIND occupations of a section across Smith Sound (fig. 3). Each occupation consisted of 6 stations, and the section was occupied three times within 39 hours. The results of the calculations are presented in table 1.

TABLE 1.—VOLUME AND HEAT TRANSPORT INTO SMITH SOUND FROM KANE BASIN

Stations	Date	$\bar{T}_{obs}$ (° C.)	$\bar{V}$ ($\times 10^6$ m. ³ / sec.)	Q_1 ¹ ($\times 10^6$ cal./ sec.)
1 to 6	28–29 July 1969	−0.90	+0.369	−0.338
7 to 12	29 July 1969	−.85	+.234	−.228
13 to 18	30 July 1969	−.85	+.658	−.642
Average		−.87	+.420	−.403

¹ Referenced to -1.8° C.

Previous attempts to calculate the exchange through Kane Basin have been described by

Collin (1963 and 1965). The earliest estimate was a southward flow in August 1928 of 0.42×10^6 m.³/sec. (Kiilerich, 1939; as cited by Collin). However, Bailey (1957) found a northward volume transport of 0.42×10^6 m.³/sec. in August 1954. Collin (1965) estimated an average southward transport of 0.24×10^6 m.³/sec. based on five September sections from 1962, 1963, and 1964, but the actual transports calculated varied between 0.16 and 0.33×10^6 m.³/sec.

Several factors besides the uncertainties of the geostrophic method can cause these large variations in transports. Frictional effects of the wind and the bottom, and the effect of the tidal oscillations on the current through Kane Basin are unknown. Collin (1965) reported that tidal reversals of the surface currents may occur in Smith Sound. Day (1968) reported that direct current measurements near $78^\circ 27'N$. in Smith Sound in 1963 indicate a circulation dominated by semidiurnal tides with a net transport to the south. Muench (1971) reported that current measurements from a fixed ice camp in Kane Basin during May 1969 indicate a general southward flow with less frequent flow reversals coinciding with the diurnal tidal currents.

To examine the tidal effect on the variation of flow through Kane Basin, profiles of sea surface dynamic height from the CGC WESTWIND sections (stations 1–18) were compared with the times and heights of high and low water at the Port Foulke ($78^\circ 18'N$., $72^\circ 45'W$.) tide station (fig. 47). The Oceanographic Atlas of the Polar Seas, Part II (U.S. Naval Hydrographic Office, 1958) shows cotidal lines progressing from Baffin Bay northward into Kane Basin indicating a northward tidal current on the flood tide. Southward geostrophic flow on the eastern side was less on each succeeding section as the stations were occupied progressively later on the rising tide cycle, suggesting a possible decrease in flow due to a flood tidal current. Maximum southerly flow occurred between stations 17 and 18 which were occupied during the latter part of a falling tidal cycle on 30 July. However, no quantitative relationship between the currents and the tide was evident.

A progressive wind vector diagram (fig. 48), drawn from the surface wind observations of

CGC WESTWIND at each station, was examined to determine the effect of wind on the flow through Kane Basin. A relatively steady wind (mean 12.3 kts. from 188° T.) with velocities varying from 0 to 20 knots was indicated. This would induce a surface current transport to the northeast and could result in a reduced southerly transport or reversal of

net flow depending on the fetch and duration of the winds. However, the observed geostrophic transport of the water remained southerly throughout the period of observations. Detailed studies with moored current meters, wind recorders, and tide gages would be required to develop the relationship between the transports, tides, and winds in this region.

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FIGURE 1. Geographical Locations in the Kane Basin-Baffin Bay region.

FIGURE 2. Bottom topography of Kane Basin (Uchupi, 1964).

FIGURE 3. Positions of Coast Guard oceanographic stations in Kane Basin during 1968 and 1969.

FIGURE 4. Temperature—salinity curves representing Baffin Bay and Kane Basin water characteristics.

FIGURE 5. Horizontal profile of temperature (° C.) on the 10 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 6. Horizontal profile of salinity (‰) on the 10 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 7. Horizontal profile of temperature ($^{\circ}$ C.) on the 50 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 8. Horizontal profile of salinity (‰) on the 50 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 9. Horizontal profile of temperature (° C.) on the 100 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 10. Horizontal profile of salinity (‰) on the 100 meter surface.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 11. Vertical profile of temperature ($^{\circ}$ C.) on a longitudinal section through Kane Basin.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 12. Vertical profile of salinity (‰) on a longitudinal section through Kane Basin.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 13. Vertical profile of density (σ_t) on a longitudinal section through Kane Basin.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 14. Vertical profile of dissolved oxygen (ml./l.) on a longitudinal section through Kane Basin.
CGC EASTWIND survey 8-24 September 1968.

FIGURE 15. Horizontal profile of temperature ($^{\circ}$ C.) on the 10 meter surface.
CGC SOUTHWIND survey 6-12 September 1969.

FIGURE 16. Horizontal profile of salinity (‰) on the 10 meter surface.
CGC SOUTHWIND survey 6-12 September 1969.

FIGURE 17. Horizontal profile of temperature (° C.) on the 50 meter surface.
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FIGURE 19. Horizontal profile of temperature ($^{\circ}$ C.) on the 100 meter surface.
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FIGURE 20. Horizontal profile of salinity (‰) on the 100 meter surface.
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FIGURE 21. Vertical profile of temperature ($^{\circ}$ C.) on a longitudinal section through Kane Basin.
CGC SOUTHWIND survey 6-12 September 1969.

FIGURE 22. Vertical profile of salinity (‰) on a longitudinal section through Kane Basin.
CGC SOUTHWIND survey 6-12 September 1969.

STATION NUMBER

FIGURE 23. Vertical profile of density (σ_t) on a longitudinal section through Kane Basin.
CGC SOUTHWIND survey 6-12 September 1969.

STATION NUMBER

FIGURE 24. Vertical profile of dissolved oxygen (ml./l.) on a longitudinal section through Kane Basin.
CGC SOUTHWIND survey 6-12 September 1969.

FIGURE 25. Vertical profile of temperature ($^{\circ}$ C.). CGC SOUTHWIND stations 1 through 3, 6-9 September 1969.

FIGURE 26. Vertical profile of salinity (‰). CGC SOUTHWIND stations 1 through 3, 6-9 September 1969.

FIGURE 27. Vertical profile of density (σ_t). CGC SOUTHWIND stations 1 through 3, 6-9 September 1969.

FIGURE 28. Vertical profile of dissolved oxygen (ml./l.). CGC SOUTHWIND stations 1 through 3, 6-9 September 1969.

FIGURE 29. Vertical profile of temperature ($^{\circ}$ C.). CGC SOUTHWIND stations 4 through 8, 8-9 September 1969.

FIGURE 30. Vertical profile of salinity (‰). CGC SOUTHWIND stations 4 through 8, 8-9 September 1969.

FIGURE 31. Vertical profile of density (σ_t). CGC SOUTHWIND stations 4 through 8, 8-9 September 1969.

FIGURE 32. Vertical profile of dissolved oxygen (ml./l.). CGC SOUTHWIND stations 4 through 8, 8-9 September 1969.

FIGURE 33. Vertical profile of temperature ($^{\circ}$ C.). CGC SOUTHWIND stations 9 through 15, 10-11 September 1969.

FIGURE 34. Vertical profile of salinity (‰). CGC SOUTHWIND stations 9 through 15, 10-11 September 1969.

FIGURE 35. Vertical profile of density (σ_t). CGC SOUTHWIND stations 9 through 15, 10-11 September 1969.

FIGURE 36. Vertical profile of dissolved oxygen (ml./l.). CGC SOUTHWIND stations 9 through 15, 10-11 September 1969.

FIGURE 37. Vertical profile of temperature ($^{\circ}$ C.). CGC SOUTHWIND stations 16 through 18, 12 September 1969.

FIGURE 38. Vertical profile of salinity (‰) CGC SOUTHWIND station 16 through 18, 12 September 1969.

FIGURE 39. Vertical profile of density (σ_t). CGC SOUTHWIND stations 16 through 18, 12 September 1969.

FIGURE 40. Vertical profile of dissolved oxygen (ml./l.). CGC SOUTHWIND stations 16 through 18, 12 September 1969.

FIGURE 41. Vertical profile of temperature (° C.). CGC WESTWIND stations 1 through 6, 28-29 July 1969.

FIGURE 42. Vertical profile of salinity (‰). CGC WESTWIND stations 1 through 6, 28-29 July 1969.

FIGURE 43. Vertical profile of temperature ($^{\circ}$ C.). CGC WESTWIND stations 7 through 12, 29 July 1969.

FIGURE 45. Vertical profile of temperature ($^{\circ}$ C.). CGC WESTWIND stations 13 through 18, 30 July 1969.

FIGURE 46. Vertical profile of salinity (‰), CGC WESTWIND stations 13 through 18, 30 July 1969.

FIGURE 47. Anomaly of sea-surface dynamic height referenced to 350 decibars of CGC WESTWIND stations 1 through 18 and the height of tide at Port Foulke, Greenland tide station, 28-30 July 1969.

FIGURE 48. Progressive vector diagram of surface wind velocity at CGC WESTWIND stations 1 through 18, 28-30 July 1969.

APPENDIX A

OCEANOGRAPHIC DATA

CRUISES LISTED

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I.—CGC EASTWIND, September 1968 -----	41
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CODES UTILIZED

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.)

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

Depth to Bottom -----	Corrected or uncorrected sounding in meters.
Max. Depth of Samples ---	Depth of deepest sample to nearest multiple of one hundred meters.
Wave observations:	
DIR. -----	Rounded to nearest multiple of 10 degrees.
HGT. -----	Increments of $\frac{1}{2}$ m. Sum of 5 meters plus increments of $\frac{1}{2}$ m if 50 is added to direction.
PER. -----	If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or 2X (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.
Trans. -----	Transparency in whole meters as determined by Secchi disc.
Wind:	
Dir. -----	Rounded to nearest multiple of 10 degrees.
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 Temp. ° C. -----	Air temperature to tenths of a degree Celsius.
Vis. Code -----	Visibility according to WMO Code 4300.
No. obs. 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.
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. thermometrically) -----	Depth to nearest meter. A postscript T indicates depth was obtained thermometrically; Z indicates uncorrected "wire out" depth. Postscript Q indicates values 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 celsius.
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.
$\Sigma \Delta D$ Dyn. $M \times 10^3$ -----	Multiply entry by 10^{-3} to obtain anomaly of dynamic depth 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 hundredths.
PO ₄ -P μg -at/l. -----	Inorganic phosphate in microgram-atoms per liter entered to hundredths.
Total-P μg -at/l. -----	Total phosphorous 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 occupied by USCGC EASTWIND, 8-24 September 1968, prepared from NODC Listing No. 31-1281.

NOON DRIFT (0001)	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATION	HARDEN SQUARE		STATION (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	SEA SAMPLE BRP	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER			
					10"	1"	MONTH	DAY		HR	1/10							CRUISE NUMBER	STATION NUMBER	
					WIND		AIR TEMPERATURE °C			VIS								SPECIAL		
WATER COLOR		DIR	SPEED OR FORCE	BAROMETER (mb)	DRY BULB	WET BULB	CODE	OBSERVATIONS												
311281	EW	80134N	06817 W	907	08	09	19	001	1968	001		0240		00	0	X	X1	6	1	0001
*NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDT) SET READINGS MARKED BY ASTERISKS OTHER THEY APPEAR																				
CAST TIME DURATION or BEGINNING TIME 1/10		CAST NO	CARD TYPE	DEPTH (m)	T °C	S ° ..	SIGMA-T	SPECIFIC VOLUME ANOMALY - $\times 10^3$		S&D DTM $\times 10^3$	COMPUTED SOUND VELOCITY m / SEC	O ₂ ml/l	*AMBIENT LIGHT lum/cm ²				*MEASURED SOUND VELOCITY m/sec			
													PO ₄ - P ug at/l	TOTAL - P ug at/l	NO ₃ - N ug at/l	NO ₂ - N ug at/l	S. O ₂ - S ₂ ug at/l	pH		
001	STD		0000	-0151	3132	2521		0027684	0000	14371	931									
	OBS		0000	-0151	31320	2521				14371	931									
	STD		0010	-0130	3181	2560		0023920	0025	14390	911									
001	OBS		0010	-0130	31813	2560				14390	911									
	STD		0020	-0120	3232	2601		0020008	0047	14403	829									
	OBS		0025	-0117	32524	2618				14408	799									
001	STD		0030	-0122	3262	2625		0017755	0066	14408	788									
	STD		0050	-0131	3295	2653		0015126	0099	14412	751									
	OBS		0050	-0131	32954	2653				14412	751									
001	OBS		0074	-0114	33293	2680				14429	725									
	STD		0075	-0113	3332	2682		0012357	0133	14430	723									
	OBS		0099	-0088	33895	2727				14453	687									
001	STD		0100	-0086	3391	2729		0007894	0159	14455	686									
	STD		0125	-0041	3432	2760		0004962	0175	14485	676									
	OBS		T0148	-0014	34565	2778				14505	670									
001	STD		0150	-0013	3457	2779		0003204	0185	14506	670									
	OBS		T0196	-0001	34660	2785				14520	669									
	STD		0200	-0000	3467	2786		0002540	0199	14521	668									
001	OBS		T0229	0003	34703	2789				14528	659									

BOUN. INT. ID. NO. (CONTIN.) CRUISE NUMBER		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATION	HARDEN SQUARE 10" 1"	STATION (GMT) MONTH DAY HR 1/10	TIME YEAR	ORIGINATOR'S CRUISE NUMBER STATION NUMBER		DEPTH TO BOTTOM	SEA SAMPLE BRP	WAVE OBSERVATIONS DIR HGT PER SEA AMT		WEATHER CODE	INSTR CLOUD TYPE AMT		NODC STATION NUMBER	
311281		EW	8015 N	06859 W		907	08 09 20 025	1968	002		0320		00 0 X		X1	6 2		0002	
*NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDT) SET READINGS MARKED BY ASTERISKS OTHER THEY APPEAR																			
CAST TIME DURATION or BEGINNING TIME 1/10		CARD TYPE	DEPTH (m)	T °C	S ° ..	SIGMA-T	SPECIFIC VOLUME ANOMALY - $\times 10^3$		S&D DTM $\times 10^3$	COMPUTED SOUND VELOCITY m / SEC	O ₂ ml/l	*AMBIENT LIGHT lum/cm ²				*MEASURED SOUND VELOCITY m/sec			
												PO ₄ - P ug at/l	TOTAL - P ug at/l	NO ₃ - N ug at/l	NO ₂ - N ug at/l	S. O ₂ - S ₂ ug at/l	pH		
	STD		0000	-0173	3211	2585	0021545		0000	14372	821								
025	OBS		0000	-0173	32112	2585				14372	821								
	STD		0010	-0175	3211	2586	0021517		0021	14373	821								
025	OBS		0010	-0175	32113	2586				14373	821								
	STD		0020	-0173	3212	2586	0021481		0043	14375	822								
025	OBS		0025	-0172	32120	2586				14377	822								
	STD		0030	-0171	3217	2590	0021064		0064	14378	809								
025	OBS		0049	-0166	32452	2613				14388	764								
	STD		0050	-0166	3247	2615	0018738		0104	14389	762								
025	OBS		0073	-0152	33000	2657				14406	712								
	STD		0075	-0150	3306	2662	0014210		0145	14409	708								
025	OBS		0098	-0121	33688	2712				14435	675								
	STD		0100	-0117	3372	2714	0009273		0174	14437	674								
	STD		0125	-0080	3406	2740	0006813		0194	14464	669								
025	OBS		T0146	-0057	34262	2756				14481	666								
	STD		0150	-0055	3428	2757	0005211		0209	14482	666								
025	OBS		0196	-0035	34452	2770				14502	665								
	STD		0200	-0034	3446	2771	0003942		0232	14503	665								
	STD		0250	-0021	3454	2777	0003349		0250	14518	662								
025	OBS		T0297	-0007	34529	2783				14534	658								
	STD		0300	-0006	3463	2783	0002736		0266	14535	658								
025	OBS		T0306	-0004	34646	2784				14537	657								

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED X-RAY DATA (PDS) USE
MEASURES MARKED BY ASTERISKS WHERE THEY APPEAR

CAST NO.	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 2 10 ³	R.D. OYM M F 10 ³	COMPUTED SOUND VELOCITY m / SEC	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY			
										lum/cm ²	TOTAL - P	NO ₂ - N	NO ₃ - N	S: O ₂ - S	pH		
		STD	0000	-0173	3193	2571	0022932	0000	14369	855							
047	DBS	0000	-0173	31931	2571				14369	855							
	STD	0010	-0174	3194	2572	0022840	0022	14371	852								
047	DBS	0010	-0174	31942	2572				14371	852							
	STD	0020	-0173	3194	2571	0022885	0045	14373	855								
047	DBS	0025	-0173	31934	2571				14373	857							
	STD	0030	-0173	3194	2571	0022866	0068	14374	858								
047	STD	0050	-0174	3194	2572	0022774	0114	14377	862								
	DBS	0050	-0174	31945	2572			14377	862								
047	STD	0075	-0152	3246	2613	0018874	0166	14399	789								
	DBS	0075	-0152	32456	2613			14399	789								
047	STD	0100	-0141	3319	2672	0013228	0206	14419	703								
	DBS	0100	-0141	33193	2672			14419	703								
047	STD	0125	-0122	3359	2704	0010196	0235	14437	679								
	STD	0150	-0102	3392	2730	0007794	0258	14456	664								
047	DBS	T0151	-0101	33928	2731			14456	664								
	STD	0200	-0055	3432	2760	0004902	0290	14491	660								
047	DBS	T0201	-0054	34325	2761			14492	660								
	STD	0250	-0029	3451	2775	0003541	0311	14514	657								
047	DBS	T0276	-0024	34534	2776			14521	656								

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (OTS) USE
READING NUMBER BY ALPHABETS WHEN THEY APPEAR

CAST TIME and DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - $\alpha \times 10^3$	α & DYN $\alpha \times 10^3$	COMPUTED SOUND VELOCITY m. SEC	O_2 ml/l	AMBIENT LIGHT lum/cm ²			MEASURED SOUND VELOCITY m/sec		
										$PO_2 - P$ ug at/l	TOTAL P ug at/l	$NO_2 - N$ ug at/l	$NO_3 - N$ ug at/l	$S_2 O_3 - S_1$ ug at/l	pH
	STD	0000	-0164						861						
088	DBS	0000	-0164						861						
	STD	0010	-0169						864						
088	DBS	0010	-0169						864						
	STD	0020	-0168						859						
088	DBS	0026	-0166	32078	2583			14379	852						
	STD	0030	-0161	3213	2587	0021400		14383	840						
088	STD	0050	-0142	3245	2612	0018741		14400	785						
	DBS	0051	-0141	32472	2614			14400	782						
088	STD	0075	-0134	3302	2658	0014566		14415	726						
	DBS	0077	-0134	33065	2662			14416	722						
088	STD	0100	-0132	3349	2696	0010947		14427	677						
	DBS	0102	-0131	33526	2699			14428	674						
088	STD	0125	-0107	3377	2718	0008894		14447	670						
	STD	0150	-0078	3404	2739	0000958		14468	665						
088	DBS	T0152	-0076	34059	2740			14470	665						
	STD	0200	-0007	3459	2780	0003085		14517	655						
088	DBS	T0204	-0004	34611	2781			14519	654						
088	DBS	0249	-0005	34611	2782			14526	652						

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARSSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSR	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10	10	MONTH DAY HR 1/10	YEAR	CRUISE NUMBER STATION NUMBER	DBP	DIR HGT PER SEA SBL	TYPE AMT	TYPE AMT	
311281	EW	7945 N	07000 W	260	90	09 20 107	1968	005	0150	00 0 X	X1	6 7	0005

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS BARRED BY ASTERISKS WHEN THEY APPEAR

DT	S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE (mbs)	DRY BULB	WET BULB CODE	OBS LEVELS	OBSERVATIONS
00	500	058	-061	-061	8		

CAST TIME DURATION in minutes	CAST NO	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ³	RAD DYN M X 10 ³	COMPUTED SOUND VELOCITY m/sec	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
										PO ₄ - P ug dt/l	TOTAL - P ug dt/l	NO ₃ - N ug dt/l	NO ₂ - N ug dt/l	S:O ₂ - S ug dt/l	pH	
106		STD	0000	-0160	3157	2541	0025733	0000	14370	881						
		OBS	0000	-0160	31571	2541			14370	881						
106		STD	0010	-0105	3227	2597	0020469	0023	14408	830						
		OBS	0010	-0105	32271	2597			14408	830						
106		STD	0020	-0120	3250	2616	0018659	0042	14406	784						
		OBS	0025	-0126	32606	2624			14405	766						
106		STD	0030	-0132	3269	2632	0017139	0060	14404	758						
		STD	0050	-0138	3306	2661	0014311	0092	14410	725						
106		OBS	0050	-0138	33058	2661			14410	725						
		STD	0075	-0107	3355	2701	0010589	0123	14436	687						
106		OBS	0075	-0107	33554	2701			14436	687						
		STD	0100	-0094	3376	2717	0009001	0147	14449	651						
106		OBS	T0100	-0094	33765	2717			14449	651						
		STD	0125	-0075	3393	2730	0007779	0168	14464	644						
106		OBS	T0140	-0061	34014	2736			14474	640						

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARSSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSR	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10	10	MONTH DAY HR 1/10	YEAR	CRUISE NUMBER STATION NUMBER	DBP	DIR HGT PER SEA SBL	TYPE AMT	TYPE AMT	
311281	EW	7945 N	06903 W	259	99	09 20 128	1968	006	0104	00 0 X	X1	6 7	0006

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS BARRED BY ASTERISKS WHEN THEY APPEAR

DT	S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE (mbs)	DRY BULB	WET BULB CODE	OBS LEVELS	OBSERVATIONS
00	500	055	-052	-052	8		

CAST TIME DURATION MEASURED TIME M. 1-10 ³	CAST NO	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - X 10 ³	RAD DYN CM X 10 ³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
											PO ₄ - P ug dt/l	TOTAL - P	NO ₃ - N ug dt/l	NO ₂ - N ug dt/l	S:O ₂ - S ug dt/l	pH	
128		STD	0000	-0159	3150	2535	0026305	0000	14370	882							
		OBS	0000	-0159	31497	2535			14370	882							
128		STD	0010	-0120	3173	2553	0024573	0025	14393	884							
		OBS	0010	-0120	31731	2553			14393	884							
128		STD	0020	-0123	3226	2596	0020524	0048	14401	801							
		OBS	0026	-0125	32510	2617			14404	764							
128		STD	0030	-0127	3262	2625	0017737	0067	14406	756							
		STD	0050	-0133	3306	2661	0014294	0099	14412	722							
128		OBS	0051	-0133	33080	2663			14413	720							
		STD	0075	-0129	3341	2690	0011604	0131	14423	685							
128		OBS	0077	-0129	33428	2691			14424	683							
128		OBS	T0092	-0126	33502	2697			14429	673							

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARSSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSR	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10	10	MONTH DAY HR 1/10	YEAR	CRUISE NUMBER STATION NUMBER	DBP	DIR HGT PER SEA SBL	TYPE AMT	TYPE AMT	
311281	EW	7946 N	06758 W	259	97	09 20 144	1968	007	0115	00 0 X	X1	6 7	0007

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS BARRED BY ASTERISKS WHEN THEY APPEAR

DT	S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE (mbs)	DRY BULB	WET BULB CODE	OBS LEVELS	OBSERVATIONS
00	500	050	-065	-065	8		

CAST TIME and DURATION		CARD TYPE	DEPTH (m)	T °C	S °C	SIGMA-T	SPECIFIC VOLUME ANOMALY - $\times 10^3$	RAD DYN M $\times 10^3$	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
NUMBER	TIME										NO	PO ₄ - P ug at/l	TOTAL - P ug at/l	NO ₃ - N ug at/l	NO ₂ - N ug at/l	S:O ₂ - S ug at/l	pH
		STD	0000	-0158	3145	2531	0026695	0000	14370	922							
144		OBS	0000	-0158	31446	2531			14370	922							
		STD	0010	-0131	3164	2547	0025208	0026	14387	904							
144		OBS	0010	-0131	31645	2547			14387	904							
		STD	0020	-0117	3240	2607	0019437	0048	14406	814							
144		OBS	0025	-0112	32681	2630			14413	780							
		STD	0030	-0112	3279	2639	0016426	0066	14415	765							
		STD	0050	-0113	3312	2666	0013890	0096	14423	720							
144		OBS	0050	-0113	33122	2666			14423	720							
		STD	0075	-0129	3327	2676	0012724	0129	14421	696							
144		OBS	0075	-0129	33266	2678			14421	696							

NOB REF ID NO	SHIP	LATITUDE	LONGITUDE	DATE	MARSSEN	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH	WAVE	WEATHER	INSTR	NODC
COUNTRY	CODE	1 10	1 10	1 10	SQUARE	(GMT)			CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
NUMBER									NUMBER	BOTTOM			TYPE	NUMBER
311281	EW	7944 N	05700 W	259	97	09 20 165	1968		008	0100	00 0 X	X1	6 6	0008

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT	*S	WIND	BAROMETER	AIR TEMPERATURE	WET BULB	NUMBER	SPECIAL
WATER	TRANS	DIR	OR FORCE	(mb)	DRY BULB	CODE	OBS
COLOR	(m)					LEVELS	OBSERVATIONS
		00	500	055	-050	-050	8

CARD	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME	W & D	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
TYPE					ANOMALY - X 10 ³	DYN M	SOUND	lum/cm ²	VELOCITY m/sec
						X 10 ³	VELOCITY	PO ₂ - P	NO ₂ - N
							m/sec	ug al/l	ug al/l
								NO ₃ - N	NO ₃ - N
								ug al/l	ug al/l
								S O ₂ - S	S O ₂ - S
								ug al/l	ug al/l
									pH

165	STD	0000	-0154	3108	2501	0029544	0000	14366	937
	OBS	0000	-0154	31077	2501			14366	937
	STD	0010	-0149	3112	2504	0029244	0029	14371	954
165	OBS	0010	-0149	31116	2504			14371	954
	STD	0020	-0117	3230	2599	0020234	0054	14404	824
165	OBS	0025	-0107	32710	2632			14416	777
	STD	0030	-0111	3277	2637	0016616	0072	14415	766
	STD	0050	-0122	3301	2657	0014693	0103	14417	728
165	OBS	0050	-0122	33014	2657			14417	728
165	OBS	0074	-0129	33330	2683			14422	691
	STD	0075	-0129	3333	2683	0012264	0137	14422	689
165	OBS	T0089	-0126	33274	2678			14425	667

NOB REF ID NO	SHIP	LATITUDE	LONGITUDE	DATE	MARSSEN	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH	WAVE	WEATHER	INSTR	NODC
COUNTRY	CODE	1 10	1 10	1 10	SQUARE	(GMT)			CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
NUMBER									NUMBER	BOTTOM			TYPE	NUMBER
311281	EW	7946 N	06604 W	259	96	09 20 182	1968		009	0165	00 0 X	X1	6 7	0009

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT	*S	WIND	BAROMETER	AIR TEMPERATURE	WET BULB	NUMBER	SPECIAL
WATER	TRANS	DIR	OR FORCE	(mb)	DRY BULB	CODE	OBS
COLOR	(m)					LEVELS	OBSERVATIONS
		00	500	067	-067	-067	8

CARD	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME	W & D	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
TYPE					ANOMALY - X 10 ³	DYN M	SOUND	lum/cm ²	VELOCITY m/sec
						X 10 ³	VELOCITY	PO ₂ - P	NO ₂ - N
							m/sec	ug al/l	ug al/l
								NO ₃ - N	NO ₃ - N
								ug al/l	ug al/l
								S O ₂ - S	S O ₂ - S
								ug al/l	ug al/l
									pH

182	STD	0000	-0140	3082	2480	0031569	0000	14369	947
	OBS	0000	-0140	30818	2480			14369	947
	STD	0010	-0106	3126	2515	0028229	0029	14393	962
182	OBS	0010	-0106	31260	2515			14393	962
	STD	0020	-0106	3237	2605	0019673	0053	14410	853
182	OBS	0024	-0106	32694	2631			14416	918
	STD	0030	-0112	3281	2641	0016281	0071	14415	788
182	OBS	0049	-0120	33096	2664			14416	722
	STD	0050	-0126	3310	2665	0013983	0102	14416	721
182	OBS	0073	-0131	33255	2677			14420	699
	STD	0075	-0131	3327	2678	0012724	0135	14420	698
182	OBS	T0098	-0127	33347	2684			14427	687

NOB REF ID NO	SHIP	LATITUDE	LONGITUDE	DATE	MARSSEN	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH	WAVE	WEATHER	INSTR	NODC
COUNTRY	CODE	1 10	1 10	1 10	SQUARE	(GMT)			CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
NUMBER									NUMBER	BOTTOM			TYPE	NUMBER
311281	EW	7918 N	06741 W	259	97	09 20 221	1968		010	0190	00 0 X	X1	6 6	0010

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT	*S	WIND	BAROMETER	AIR TEMPERATURE	WET BULB	NUMBER	SPECIAL
WATER	TRANS	DIR	OR FORCE	(mb)	DRY BULB	CODE	OBS
COLOR	(m)					LEVELS	OBSERVATIONS
		00	500	083	-065	-065	8

CARD	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME	W & D	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
TYPE					ANOMALY - X 10 ³	DYN M	SOUND	lum/cm ²	VELOCITY m/sec
						X 10 ³	VELOCITY	PO ₂ - P	NO ₂ - N
							m/sec	ug al/l	ug al/l
								NO ₃ - N	NO ₃ - N
								ug al/l	ug al/l
								S O ₂ - S	S O ₂ - S
								ug al/l	ug al/l
									pH

221	STD	0000	-0148	3129	2518	0027920	0000	14372	888
	OBS	0000	-0148	31290	2518			14372	888
	STD	0010	-0128	3134	2522	0027575	0027	14384	888
221	OBS	0010	-0128	31338	2522			14384	888
	STD	0020	-0121	3208	2581	0021910	0052	14399	815
221	OBS	0025	-0119	32363	2605			14405	787
	STD	0030	-0123	3250	2616	0019624	0072	14406	775
	STD	0050	-0132	3295	2653	0015126	0106	14411	737
221	OBS	0050	-0132	32954	2653			14411	737
	STD	0075	-0126	3327	2678	0012707	0141	14423	712
221	OBS	0075	-0126	33269	2678			14423	712
	STD	0100	-0116	3348	2695	0011069	0171	14435	694
221	OBS	0100	-0116	33485	2695			14435	694
	STD	0125	-0097	3361	2705	0010161	0197	14450	679
	STD	0150	-0083	3372	2713	0009352	0221	14462	667
221	OBS	0150	-0083	33722	2713			14462	667
221	OBS	T0174	-0075	33814	2720			14471	658

WAVE OBSERVATIONS		WEATHER		INSR		NODC	
DIR	WAVE PER	SEA HT	CODE	CLOUD	TYPE	STATION	NUMBER
00	0 X		X2	6 8		0011	

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (BTS) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

CAST TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME	SEA	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
DURATION	TYPE					ANOMALY x 10 ³	DYN M	VELOCITY	lum/cm ²	VELOCITY m/sec
NO							10 ³	m/sec		
234	STD	0000	-0138	3130	2519	0027893	0000	14377	888	
	OBS	0000	-0138	31296	2519			14377	888	
	STD	0010	-0137	3135	2523	0027466	0027	14380	899	
234	OBS	0010	-0137	31350	2523			14380	899	
	STD	0020	-0122	3199	2575	0022562	0052	14398	824	
234	OBS	0025	-0118	32262	2596			14404	794	
	STD	0030	-0123	3249	2615	0018760	0073	14406	776	
234	OBS	0049	-0134	33108	2665			14412	726	
	STD	0050	-0134	3312	2666	0013833	0105	14413	725	
234	OBS	0074	-0125	33385	2687			14425	704	
	STD	0075	-0124	3339	2688	0011777	0138	14425	703	
234	OBS	T0099	-0105	33542	2699			14440	684	
	STD	0100	-0104	3355	2700	0010631	0166	14441	683	
	STD	0125	-0089	3368	2710	0009631	0191	14454	670	
234	OBS	T0148	-0079	33782	2718			14464	660	
	STD	0150	-0078	3379	2719	0008859	0214	14465	659	
234	OBS	0193	-0067	33907	2728			14480	648	

RODENT IS NO		SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DEPTH METER	WATSON SQ	STATION TIME (GMT)		YEAR	ORIGINATOR S		DEPTH TO BOTTOM	SELF SAMPLE DEP	WAVE OBSERVATIONS DIR MGT PER SEA HGT	WEATHER CODE	INSTR		NODC STATION NUMBER
QUART	CRUISE CODE						MONTH	DAY		HR	10					CRUISE NUMBER	STATION NUMBER	
31	1281	EW	7915 N	06901 W	259	99	09	21	017	1968	012	0311		00	0 X	X2	6 8	0012

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (BTS) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

CAST TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME	SEA	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
DURATION	TYPE					ANOMALY x 10 ³	DYN M	VELOCITY	lum/cm ²	VELOCITY m/sec
NO							10 ³	m/sec		
015	STD	0000	-0137	3126	2516	0028156	0000	14377	888	
	OBS	0003	-0137	31262	2516			14377	888	
	STD	0010	-0084	3141	2526	0027168	0027	14406	896	
015	OBS	0010	-0084	31406	2526			14406	896	
	STD	0020	-0103	3172	2552	0024675	0053	14403	829	
015	OBS	0025	-0111	31870	2564			14402	804	
	STD	0030	-0120	3201	2576	0022445	0077	14400	797	
	STD	0050	-0142	3249	2616	0018633	0118	14400	770	
015	OBS	0050	-0143	32423	2616			14400	770	
	STD	0075	-0141	3298	2655	0014890	0160	14412	737	
015	OBS	0075	-0141	32979	2655			14412	737	
	STD	0100	-0124	3329	2680	0012547	0194	14428	712	
015	OBS	0100	-0124	33289	2680			14428	712	
	STD	0125	-0101	3350	2696	0011007	0223	14446	694	
	STD	0150	-0084	3367	2709	0009730	0249	14460	678	
015	OBS	0150	-0084	33672	2709			14460	678	
015	OBS	T0194	-0066	33892	2726			14479	652	
	STD	0200	-0064	3392	2728	0007938	0294	14481	651	
	STD	0250	-0051	3406	2739	0006914	0331	14498	645	
019	OBS	T0285	-0046	34091	2742			14506	641	

BOOK REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
							CRUISE NUMBER	STATION NUMBER					
311281	EW	7915 N	07000 W	260	90 09 21 038	1968	013	0201	00	0 X	X7	6 8	0013

*NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE
READING: BARRED BY ASTERISKS WHERE THEY APPEAR

CAST NO.	TIME DURATION m 1/10"	CARD TYPE	DEPTH (m)	T °C	S ...	SIGMA - T	SPECIFIC VOLUME ANOMALY - $\times 10^3$	S.D. DYN M $\times 10^3$	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY M / SEC		pH
											PO ₂ - P ug at/l	TOTAL - P ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S ₂ O ₃ - S ₂ ug at/l			
038		STO	0000	-0148	3137	2525	0027267	0000	14373	885								
		OBS	0000	-0148	31374	2525			14373	885								
038		STO	0010	-0140	3142	2529	0026939	0027	14379	882								
		OBS	0010	-0140	31418	2529			14379	882								
038		STO	0020	-0127	3199	2575	0022525	0051	14395	813								
		OBS	0025	-0123	32229	2594			14401	787								
038		STO	0030	-0129	3237	2605	0019619	0072	14401	778								
		STO	0050	-0135	3286	2646	0015803	0108	14409	744								
038		OBS	0050	-0135	32864	2646			14409	744								
038		OBS	0074	-0101	33296	2679			14435	710								
		STO	0075	-0102	3331	2680	0012495	0143	14435	709								
038		OBS	0099	-0112	33534	2699			14437	692								
		STO	0100	-0110	3354	2700	0010638	0172	14438	691								
038		STO	0125	-0078	3376	2716	0009112	0197	14460	667								
		OBS	0149	-0064	33878	2725			14472	651								
038		STO	0150	-0064	3388	2725	0008216	0219	14473	650								
		OBS	T0183	-0071	33508	2728			14475	638								

BOOK REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
							CRUISE NUMBER	STATION NUMBER					
311281	EW	7915 N	07100 W	260	91 09 21 056	1968	014	0229	00	0 X	X7	7 7	0014

*NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE
READING: BARRED BY ASTERISKS WHERE THEY APPEAR

CAST NO.	TIME DURATION H:M:S	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - $\times 10^3$	S.D DYN M $\times 10^3$	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
											PO ₂ - P ug at/l	TOTAL - P ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S.O ₂ - S ug at/l	pH	
056		STO	0000	-0163	3164	2547	0025180	0000	14370	895							
		OBS	0000	-0163	31642	2547			14370	895							
056		STO	0010	-0164	3162	2546	0025306	0025	14371	904							
		OBS	0010	-0164	31624	2546			14371	904							
056		STO	0020	-0126	3203	2578	0022245	0049	14396	836							
		OBS	0025	-0114	32215	2592			14405	809							
056		STO	0030	-0120	3238	2606	0019556	0069	14406	792							
		STO	0050	-0133	3292	2650	0015370	0104	14410	740							
056		OBS	0050	-0133	32921	2650			14410	740							
		STO	0075	-0123	3330	2681	0012464	0139	14425	708							
056		OBS	0075	-0123	33302	2681			14425	708							
		STO	0100	-0118	3349	2695	0011051	0169	14434	692							
056		OBS	0100	-0118	33487	2695			14434	692							
		STO	0125	-0099	3363	2706	0010043	0195	14449	677							
056		STO	0150	-0081	3379	2718	0008876	0219	14463	665							
		OBS	T0150	-0081	33786	2718			14463	665							
056		STO	0200	-0048	3417	2748	0006057	0256	14492	647							
		OBS	T0200	-0048	34172	2748			14492	647							
056		OBS	0210	-0044	34218	2752			14497	643							

BOOK NO. & NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	MARSSEN SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER

* DATA WERE USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (BTS) USE HEADINGS BASED BY ALTERNATES WHEN THEY APPEAR

CAST NUMBER	TIME DURATION H:M	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - E 10 ³	S & D DYN M E 10 ³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	TOTAL - P ug dt/l	NO ₃ - N ug dt/l	NO ₂ - N ug dt/l	S:O ₂ - S ug dt/l	pH	MEASURED SOUND VELOCITY m/sec
075	0000	STD	0000	-0159	3146	2532	0026604	0000	14369	885							
	0000	OBS	0000	-0159	31458	2532			14369	885							
	0010	STD	0010	-0148	3174	2555	0024400	0025	14380	886							
	0010	OBS	0010	-0148	31745	2555			14380	886							
	0020	STD	0020	-0124	3210	2583	0021755	0048	14398	830							
	0025	OBS	0025	-0117	32262	2596			14405	806							
	0030	STD	0030	-0122	3244	2611	0019086	0069	14406	788							
	0050	STD	0050	-0130	3300	2656	0014764	0102	14413	735							
	0050	OBS	0050	-0130	33001	2656			14413	735							
	0075	STD	0075	-0116	3332	2682	0012357	0136	14428	706							
	0076	OBS	0076	-0115	33331	2683			14429	705							
	0100	STD	0100	-0091	3361	2704	0010238	0165	14448	680							
	0101	OBS	0101	-0090	33615	2705			14449	679							
	0125	STD	0125	-0079	3372	2713	0009391	0189	14459	669							
	T0149	OBS	T0149	-0068	33854	2723			14470	660							
	0150	STD	0150	-0068	3386	2724	0008359	0211	14471	660							
	T0192	OBS	T0192	-0045	34168	2748			14492	644							

BOOK NO. & NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	MARSSEN SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER

* DATA WERE USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (BTS) USE HEADINGS BASED BY ALTERNATES WHEN THEY APPEAR

CAST NUMBER	TIME DURATION H:M	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - E 10 ³	S & D DYN M E 10 ³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	TOTAL - P ug dt/l	NO ₃ - N ug dt/l	NO ₂ - N ug dt/l	S:O ₂ - S ug dt/l	pH	MEASURED SOUND VELOCITY m/sec
096	0000	STD	0000	-0164	3155	2540	0025851	0000	14368	875							
	0000	OBS	0000	-0164	31554	2540			14368	875							
	0010	STD	0010	-0160	3167	2550	0024944	0025	14373	888							
	0010	OBS	0010	-0160	31672	2550			14373	888							
	0020	STD	0020	-0132	3194	2571	0022924	0049	14392	861							
	0025	OBS	0025	-0123	32078	2582			14399	846							
	0030	STD	0030	-0125	3224	2595	0020661	0071	14401	822							
	0050	STD	0050	-0130	3278	2639	0016473	0108	14410	749							
	0050	OBS	0050	-0130	32779	2639			14410	749							
	0075	STD	0075	-0126	3325	2676	0012860	0144	14422	704							
	0075	OBS	0075	-0126	33249	2676			14422	704							
	0100	STD	0100	-0113	3354	2700	0010628	0174	14437	687							
	0100	OBS	0100	-0113	33544	2700			14437	687							
	0125	STD	0125	-0076	3377	2717	0009032	0198	14462	660							
	0150	STD	0150	-0050	3395	2731	0007717	0219	14440	644							
	T0152	OBS	T0152	-0049	33967	2732			14431	643							
	0200	STD	0200	-0038	3420	2750	0005919	0253	14498	644							
	T0202	OBS	T0202	-0037	34207	2751			14498	644							
	T0222	OBS	T0222	-0031	34323	2760			14506	648							

BOOK NO. & NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	MARSSEN SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER

* DATA WERE USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (BTS) USE HEADINGS BASED BY ALTERNATES WHEN THEY APPEAR

CAST NUMBER	TIME DURATION H:M	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - E 10 ³	S & D DYN M E 10 ³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	TOTAL - P ug dt/l	NO ₃ - N ug dt/l	NO ₂ - N ug dt/l	S:O ₂ - S ug dt/l	pH	MEASURED SOUND VELOCITY m/sec
128	0000	STD	0000	-0171	3202	2578	0022225	0000	14372	887							
	0000	OBS	0000	-0171	32024	2578			14372	887							
	0010	STD	0010	-0173	3205	2581	0021970	0022	14373	869							
	0010	OBS	0010	-0173	32055	2581			14373	869							
	0020	STD	0020	-0172	3207	2582	0021861	0044	14375	873							
	0025	OBS	0025	-0170	32075	2582			14377	875							
	0030	STD	0030	-0165	3217	2590	0021110	0065	14381	849							
	0050	STD	0050	-0151	3253	2619	0018343	0105	14396	771							
	0050	OBS	0050	-0151	32528	2619			14396	771							
	0075	STD	0075	-0146	3297	2654	0014943	0146	14409	729							
	0075	OBS	0075	-0146	32970	2654			14409	729							
	T0090	OBS	T0090	-0135	33354	2685			14422	691							

BOMC REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE 1/10	MARSDEN SQUARE 10° 1'	STATION (GMT)	TIME MONTH DAY HR 1/10	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					
311281	EW	7845 N	07102 W	260	81	09 21 178	1968		018		0174	00 0 X	X1	8 5	0018

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SD) USE
HEADINGS BARRED BY ASTERISKS WHERE THEY APPLY

SINK THERMISTE LOG READING (ELECTRONICALLY OBTAINED SERIAL DATA (STS) ONE IS MARKED BY ASTERISKS WHERE THEY APPEAR										DT WATER COLOR		S TRANS (m)		DIE SPEED OR FORCE		BAROMETER (mba)		AIR TEMPERATURE °C DRY BULB WET BULB		VIS CODE		NUMBER OBS LEVELS		SPECIAL OBS OBSERVATIONS	
CAST and Time DURATION 1/10		CARD TYPE		DEPTH (m)		T °C		S		SIGMA-T		SPECIFIC VOLUME ANOMALY - X 10 ³		S & D DYN M X 10 ³		COMPUTED SOUND VELOCITY M SEC		O ₂ ml/l		*AMBIENT LIGHT lum/cm ² PO ₂ - P ug at/l T deg at/l P deg at/l NO ₂ - N ug at/l NO ₃ - N ug at/l N deg at/l				*MEASURED SOUND VELOCITY m/sec S deg at/l S deg at/l pH	
			STD	0000	-0161	3144	2531					0026731	0000	14368	870										
178			OBS	0000	-0161	31441	2531							14368	870										
			STD	0010	-0142	3191	2568					0023168	0024	14385	864										
178			OBS	0010	-0142	31908	2568							14385	864										
			STD	0020	-0098	3232	2601					0020100	0046	14414	803										
178			OBS	0024	-0087	32457	2611							14421	784										
			STD	0030	-0095	3258	2621					0018129	0065	14420	774										
178			OBS	0048	-0108	32916	2649							14422	746										
			STD	0050	-0107	3296	2652					0015175	0099	14423	743										
178			OBS	0072	-0104	33305	2680							14433	714										
			STD	0075	-0105	3333	2682					0012332	0133	14433	712										
178			OBS	0096	-0107	33468	2694							14438	696										
			STD	0100	-0102	3349	2695					0011065	0162	14441	690										
			STD	0125	-0075	3364	2706					0010042	0189	14460	663										
178			OBS	T0144	-0063	33743	2714							14470	652										
			STD	0150	-0061	3378	2717					0009038	0212	14473	650										
178			OBS	0155	-0059	33802	2719							14475	649										

BOMC REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE 1/10	MARSDEN SQUARE 10° 1'	STATION (GMT)	TIME MONTH DAY HR 1/10	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					
311281	EW	7845 N	07201 W	260	82	09 21 194	1968		019		0384	00 0 X	X1	6 7	0019

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SD) USE
HEADINGS BARRED BY ASTERISKS WHERE THEY APPLY

CAST TIME DURATION 1/10"			CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - X 10 ³	R & D DYN M X 10 ³	COMPUTED SOUND VELOCITY m. SEC	O ₂ ml/l	AMBIENT LIGHT lum cm ²				MEASURED SOUND VELOCITY m sec		
CAST NO	TYPE	DEPTH (m)										T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - X 10 ³	R & D DYN M X 10 ³	COMPUTED SOUND VELOCITY m. SEC	O ₂ ml/l
			STD	0000	-0156	3127	2517	0028083	0000	14368	859							
194			OBS	0000	-0156	31267	2517			14368	859							
194			OBS	0009	-0160	31264	2517			14368	864							
			STD	0010	-0155	3131	2520	0027764	0027	14371	858							
			STD	0020	-0117	3169	2550	0024900	0054	14396	807							
194			OBS	0023	-0110	31789	2558			14401	796							
			STD	0030	-0117	3195	2571	0022853	0078	14401	793							
			OBS	0047	-0130	32357	2604			14403	779							
			STD	0050	-0133	3244	2612	0019024	0120	14404	774							
194			OBS	0070	-0140	32908	2649			14410	744							
			STD	0075	-0134	3297	2654	0014981	0162	14415	738							
194			OBS	0093	-0116	33176	2670			14429	719							
			STD	0100	-0112	3325	2676	0012849	0197	14433	712							
			STD	0125	-0096	3350	2696	0011018	0227	14448	689							
194			OBS	T0138	-0088	33604	2704			14456	679							
			STD	0150	-0079	3368	2710	0009706	0253	14463	672							
194			OBS	T0188	-0056	33869	2724			14483	653							
			STD	0200	-0054	3390	2726	0008132	0297	14486	651							
			STD	0250	-0046	3400	2734	0007376	0336	14499	644							
194			OBS	T0282	-0041	34054	2738			14508	640							
			STD	0300	-0038	3408	2740	0006758	0371	14512	638							
194			OBS	T0343	-0031	34140	2745			14524	635							

ROD#	ID	NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARSEN SQUARE	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
311281	EW		7844 N	07303 W	260	83	09 21	214	1968		020	0421	00 0 X	X1	7 7	0020

NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

CAST TIME	DURATION	CAST NO	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 2 10 ³	S & D DYN M 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	PO ₂ - P	TOTAL - P	NO ₂ - N	NO ₃ - N	S-O ₂ - S	pH
214	08S	0000	STD	0000	-0152	3186	2564	0023548	0000	14378	852						
	08S	0000	STD	0010	-0147	3190	2567	0023249	0023	14383	850						
	08S	0010	STD	0020	-0120	3252	2618	0018478	0044	14406	786						
	08S	0025	STD	0030	-0110	32765	2637			14415	762						
	08S	0030	STD	0050	-0104	3288	2646	0015748	0061	14420	750						
	08S	0050	STD	0075	-0095	3324	2675	0013043	0090	14433	717						
	08S	0075	STD	0100	-0095	33240	2675			14433	717						
	08S	0100	STD	0125	-0114	3340	2688	0011752	0121	14430	705						
	08S	0125	STD	0150	-0115	33405	2689			14430	705						
	08S	0150	STD	0101	-0093	3354	2699	0010742	0149	14446	710						
	08S	0101	STD	0125	-0092	33544	2699			14447	710						
	08S	0125	STD	0150	-0072	3370	2711	0009575	0174	14463	677						
	08S	0150	STD	0200	-0056	3383	2721	0008625	0197	14476	654						
	08S	0200	STD	0209	-0053	33864	2724			14479	649						
	08S	0209	STD	0250	-0045	3400	2734	0007372	0237	14491	643						
	08S	0250	STD	0300	-0044	34024	2736			14494	642						
	08S	0300	STD	0314	-0040	3408	2740	0006778	0272	14503	641						
	08S	0314	STD	0400	-0036	3415	2746	0006239	0305	14514	640						
	08S	0400	STD	0416	-0035	34173	2748			14517	640						
	08S	0416	STD		-0031	3431	2758	0005083	0361	14535	646						
	08S		STD		-0031	34331	2760			14538	648						

ROD#	ID	NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARSEN SQUARE	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
311281	EW		7845 N	07339 W	260	83	09 21	233	1968		021	0411	00 0 X	X2	7 8	0021

NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

CAST TIME	DURATION	CAST NO	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 2 10 ³	S & D DYN M 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	PO ₂ - P	TOTAL - P	NO ₂ - N	NO ₃ - N	S-O ₂ - S	pH
233	08S	0000	STD	0000	-0156	3175	2556	0024391	0000	14375	902						
	08S	0000	STD	0010	-0156	31746	2556			14375	902						
	08S	0010	STD	0020	-0159	3174	2555	0024409	0024	14375	909						
	08S	0020	STD	0030	-0159	31742	2555			14375	909						
	08S	0030	STD	0049	-0159	3175	2556	0024309	0048	14377	902						
	08S	0049	STD	0075	-0158	31792	2559			14378	894						
	08S	0075	STD	0100	-0154	3198	2574	0022578	0072	14384	859						
	08S	0100	STD	0125	-0141	32470	2614			14400	781						
	08S	0125	STD	0150	-0140	3249	2615	0018697	0113	14401	780						
	08S	0150	STD	0200	-0122	32883	2647			14419	751						
	08S	0200	STD	0224	-0122	3290	2648	0015517	0156	14420	749						
	08S	0224	STD	0250	-0114	33312	2681			14433	705						
	08S	0250	STD	0300	-0113	3333	2682	0012280	0191	14434	704						
	08S	0300	STD	0314	-0104	3352	2676	0010816	0219	14445	690						
	08S	0314	STD	0338	-0091	33703	2712			14457	679						
	08S	0338	STD	0400	-0090	3371	2713	0009403	0245	14458	679						
	08S	0400	STD	0419	-0048	34068	2740			14491	661						
	08S	0419	STD	0450	-0048	3407	2740	0006813	0285	14491	661						
	08S	0450	STD	0500	-0034	3426	2755	0005424	0316	14508	658						
	08S	0500	STD	0529	-0026	34387	2765			14522	656						
	08S	0529	STD	0600	-0026	3439	2765	0004497	0341	14522							
	08S	0600	STD	0638	-0022	34457	2770			14540							

DDMM YY 10 00	SHIP	LATITUDE	LONGITUDE	UNIT	MARSSEN	STATION	TIME	ORIGINATOR'S	DEPTH	WAVE	WEATHER	INSTR	NODC
COOR	CODE	1/10	1/10	1/10	SQUARE	(GMT)	YEAR	CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
1000	NUMBER				10"	1"	MONTH DAY HR 1/10	NUMBER	BOTTOM	DIR	HTG PER	SEA	NUMBER

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHEN THEY APPLY

DT	ST	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER	TRANS	DIR	SPEED	DRY BULB	WET BULB	OBS	OBSERVATIONS
COLOR	(m)	(m)	OR FORCE	(mb)	CODE	LEVELS	

36 535 158 -050 -050 8

CASE	TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME	RAD	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
DURATION	OF	TYPE					ANOMALY - x 10 ³	DTN	VELOCITY	10m, cm	VELOCITY m/sec
1/10	NO							m	m/sec	PO ₂ - P	TOTAL - P
										ug at/l	ug at/l
										NO ₂ - N	NO ₃ - N
										ug at/l	ug at/l
										S. O ₂ - S.	S. O ₂ - S.
										ug at/l	ug at/l
											pH

DDMM YY 10 00	SHIP	LATITUDE	LONGITUDE	UNIT	MARSSEN	STATION	TIME	ORIGINATOR'S	DEPTH	WAVE	WEATHER	INSTR	NODC
COOR	CODE	1/10	1/10	1/10	SQUARE	(GMT)	YEAR	CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
1000	NUMBER				10"	1"	MONTH DAY HR 1/10	NUMBER	BOTTOM	DIR	HTG PER	SEA	NUMBER

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHEN THEY APPLY

DT	ST	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER	TRANS	DIR	SPEED	DRY BULB	WET BULB	OBS	OBSERVATIONS
COLOR	(m)	(m)	OR FORCE	(mb)	CODE	LEVELS	

01 530 177 -044 -044 8

CASE	TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME	RAD	COMPUTED	AMBIENT LIGHT	MEASURED SOUND
DURATION	OF	TYPE					ANOMALY - x 10 ³	DTN	VELOCITY	10m, cm	VELOCITY m/sec
1/10	NO							m	m/sec	PO ₂ - P	TOTAL - P
										ug at/l	ug at/l
										NO ₂ - N	NO ₃ - N
										ug at/l	ug at/l
										S. O ₂ - S.	S. O ₂ - S.
										ug at/l	ug at/l
											pH

BODC REEL ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DATE 10 10	MARSDEN SQUARE 10 10	STATION (GMT) 10 10	TIME 10 10	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE
READINGS BASED ON ACTIVITIES WHERE THEY APPLY

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ⁻³	S.D. DTN M 10 ⁻³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ -P	TOTAL-P	NO ₃ -N	NO ₂ -N	S ₂ -S ₁	pH

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ⁻³	S.D. DTN M 10 ⁻³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ -P	TOTAL-P	NO ₃ -N	NO ₂ -N	S ₂ -S ₁	pH

144	STD	0000	-0134	3262	2626	0017686	0000	14398	792							
144	OBS	0000	-0134	32624	2626			14398	792							
144	OBS	0008	-0136	32615	2625			14398	797							
144	STD	0010	-0136	3261	2625	0017742	0017	14398	800							
144	OBS	0019	-0134	32615	2625			14401	804							
144	STD	0020	-0134	3262	2626	0017725	0035	14401	803							
144	STD	0030	-0133	3264	2628	0017519	0053	14403	790							
144	OBS	0039	-0133	32666	2629			14405	774							
144	STD	0050	-0117	3287	2645	0015815	0086	14417	745							
144	OBS	0061	-0108	33066	2661			14426	720							
144	STD	0075	-0112	3332	2682	0012357	0121	14430	694							
144	OBS	0083	-0113	33438	2691			14433	683							
144	STD	0100	-0103	3356	2701	0010577	0150	14442	674							
144	STD	0125	-0090	3371	2712	0009442	0175	14454	663							
144	OBS	0130	-0087	33736	2715			14457	661							
144	STD	0150	-0076	3384	2722	0008508	0197	14467	654							
144	OBS	T0178	-0063	33954	2731			14479	647							
144	STD	0200	-0059	3400	2735	0007302	0237	14485	646							
144	STD	0250	-0050	3410	2742	0006600	0272	14499	644							
144	OBS	0283	-0045	34149	2746			14507	642							
144	STD	0300	-0043	3417	2746	0006071	0303	14511	639							
144	OBS	T0366	-0035	34251	2754			14530	632							
144	STD	0400	-0035	3426	2755	0005402	0361	14533	633							
144	STD	0500	-0033	3429	2757	0005151	0413	14551	639							
144	OBS	T0501	-0033	34292	2757			14551	639							

BODC REEL ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DATE 10 10	MARSDEN SQUARE 10 10	STATION (GMT) 10 10	TIME 10 10	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE
READINGS BASED ON ACTIVITIES WHERE THEY APPLY

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ⁻³	S.D. DTN M 10 ⁻³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ -P	TOTAL-P	NO ₃ -N	NO ₂ -N	S ₂ -S ₁	pH

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ⁻³	S.D. DTN M 10 ⁻³	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ -P	TOTAL-P	NO ₃ -N	NO ₂ -N	S ₂ -S ₁	pH

175	STD	0000	-0155	3224	2596	0020594	0000	14382	801							
175	OBS	0000	-0155	32240	2596			14382	801							
175	OBS	0009	-0157	32246	2596			14383	800							
175	STD	0010	-0157	3225	2596	0020521	0020	14383	800							
175	STD	0020	-0155	3226	2597	0020404	0041	14386	793							
175	OBS	0022	-0155	32265	2598			14386	792							
175	STD	0030	-0154	3234	2603	0019825	0061	14399	784							
175	OBS	0043	-0152	32444	2612			14394	772							
175	STD	0050	-0151	3249	2616	0018605	0099	14396	771							
175	OBS	0055	-0148	32600	2624			14401	754							
175	STD	0075	-0141	3291	2650	0015387	0142	14411	723							
175	OBS	0084	-0134	33150	2669			14419	701							
175	STD	0100	-0115	3340	2688	0011719	0175	14434	686							
175	OBS	0124	-0076	33658	2709			14451	670							
175	STD	0125	-0096	3367	2710	0009701	0202	14451	670							
175	STD	0150	-0053	3376	2717	0009024	0226	14458	663							
175	OBS	T0169	-0049	33822	2722			14453	659							
175	STD	0200	-0073	3392	2729	0007875	0268	14475	655							
175	OBS	0235	-0065	34002	2735			14488	649							
175	STD	0250	-0057	3403	2737	0007089	0305	14495	642							
175	STD	0300	-0039	3411	2743	0006551	0339	14512	630							
175	OBS	T0303	-0038	34114	2743			14513	630							
175	OBS	T0384	-0037	34217	2751			14529	650							
175	STD	0400	-0036	3423	2752	0005615	0400	14532	645							
175	OBS	T0426	-0035	34252	2754			14537	632							

ROCK REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARDEN SQUARE	STATION TIME	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					
311281	EW	7816 N	07309 W	26083	0923	218	1968	026		0220	0522	X1	73	0026

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (DATE USE IS MARKED BY ASTERISKS WHERE THEY APPEAR)														DT		S D		WIND		BAROMETER		AIR TEMPERATURE °C		VIS		NUMBER		SPECIAL					
														WATER COLOR		TRANS (m)		DIR		SPEED OR FORCE		(mb)		DRY BULB		WET BULB		CODE		OBS LEVELS		OBSERVATIONS	
																		04		S20		228		-078		-078		8					
CAST NO		TIME OF DURATION H M S		CARD TYPE		DEPTH (m)		T °C		S °		SIGMA-T		SPECIFIC VOLUME ANOMALY x 10 ³		P AD DTM M x 10 ³		COMPUTED SOUND VELOCITY m/sec		O ₂ ml/l		AMBIENT LIGHT lum/cm ²				MEASURED SOUND VELOCITY m/sec							
																						PO ₄ -P µg at/l		TOTAL P µg at/l		NO ₃ -N µg at/l		NO ₂ -N µg at/l		S O ₄ -S µg at/l		pH	
				STO		0000		-0083		3250		2615		0018764		0000		14417		758													
213				ORS		0000		-0088		32500		2615						14417		758													
218				ORS		0009		-0083		32538		2618						14422		754													
				STD		0010		-0083		3254		2617		0018504		0018		14422		754													
				STD		0020		-0085		3252		2616		0018634		0037		14423		751													
213				ORS		0023		-0085		32513		2616						14423		750													
				STD		0030		-0078		3251		2615		0018673		0055		14427		748													
213				ORS		0047		-0071		32515		2615						14433		738													
				STD		0050		-0073		3253		2616		0018539		0093		14433		734													
213				ORS		0073		-0088		32604		2623						14431		704													
				STD		0075		-0090		3263		2626		0017676		0138		14431		702													
				STD		0100		-0107		3301		2655		0014765		0179		14432		677													
213				ORS		0101		-0107		33020		2657						14432		676													
				STD		0125		-0096		3339		2687		0011848		0212		14447		662													
				STD		0150		-0086		3366		2708		0009802		0239		14459		652													
213				ORS		0153		-0085		33686		2710						14461		651													
				STD		0200		-0071		3382		2721		0008608		0235		14477		647													
213				ORS		0206		-0070		33940		2722						14479		647													

ROCK REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARDEN SQUARE	STATION TIME	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					
311281	EW	7800 N	07408 W	26084	0924	002	1968	027		0690	0332	X1	74	0027

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) AND AS MARKED BY ASTERISKS WHERE THEY APPEAR																				
CAST NO		TIME OF DAY		CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY x 10 ⁻³	S&D DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec			
													PO ₄ -P µg at/l	TOTAL P µg at/l	NO ₃ -N µg at/l	NO ₂ -N µg at/l	S.O ₄ -S µg at/l	pH		
		STO	0000		-0146	3250	2616	0018619	0000	14390	789									
002		ORS	0000		-0146	32499	2616			14390	789									
002		ORS	0009		-0148	32500	2616			14391	798									
		STD	0010		-0148	3250	2616	0018593	0013	14391	798									
		STD	0020		-0147	3250	2617	0018576	0037	14393	800									
002		ORS	0023		-0146	32503	2617			14394	801									
		STD	0030		-0144	3252	2618	0018468	0055	14396	801									
002		ORS	0046		-0137	32622	2626			14404	788									
		STD	0050		-0132	3268	2631	0017200	0091	14407	778									
002		ORS	0070		-0116	32982	2655			14422	735									
		STD	0075		-0119	3307	2661	0014289	0130	14423	726									
002		ORS	0092		-0120	33301	2680			14429	701									
		STD	0100		-0115	3334	2684	0012161	0163	14432	697									
		STD	0125		-0109	3348	2694	0011130	0192	14442	687									
002		ORS	T0137		-0105	33548	2700			14447	682									
		STD	0150		-0100	3364	2707	0009903	0219	14452	678									
002		ORS	0151		-0086	33825	2722			14466	667									
		STD	0200		-0076	3390	2727	0008030	0264	14476	659									
		STD	0250		-0053	3405	2738	0006957	0301	14497	644									
002		ORS	0252		-0052	34054	2739			14498	644									
		STD	0300		-0049	3413	2745	0006335	0334	14508	645									
002		ORS	T0367		-0045	34217	2752			14522	645									
		STD	0400		-0042	3425	2754	0005447	0393	14530	643									
002		ORS	T0468		-0037	34300	2758			14544	642									
		STD	0500		-0035	3432	2759	0004969	0445	14550	642									
002		ORS	T0567		-0033	34330	2760			14566	645									

TABLE II.—Observed and interpolated oceanographic data from stations occupied by USCGC WESTWIND, 28–30 July 1969, prepared from NODC Listing No. 31–1642.

BOOK REF. NO.	SHIP CODE	SHIP NAME	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE	STATION (GMT)	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
BOOK REF. NO.	SHIP CODE	SHIP NAME	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE	STATION (GMT)	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
311642	WE		78189N	073050W	260	83	07 28	206	1969	KBS 001	0183	1 00 0 X	X1	4 6	0001
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS LISTED BY ASTERISKS WHERE THEY APPLY.															
* DT S D WIND WAVE BAROMETER AIR TEMPERATURE °C NUMBER OBS. LEVELS SPECIAL OBSERVATIONS WATER TRANS. DIR. SPEED OF FORCE (m/s) DRY BULB WET BULB CODE VIS															
24 S20 158 034 031 7 08															
CASE TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - x 10 ⁻²	SEA DYN. M. x 10 ³	COMPUTED SOUND VELOCITY m. SEC	O ₂ ml/l	AMBIENT LIGHT: μm/cm ²				MEASURED SOUND VELOCITY m. SEC	
CAST NO. 1/10	TYPE									PO ₂ - P μg at/l	TOTAL - P μg at/l	NO ₂ - N μg at/l	NO ₃ - N μg at/l	S. O ₂ - S μg at/l	pH
206	STD	0000	-0016	3243	2607	0019534	0000	14450							
	OBS	0000	-0016	32434	2607			14450							
	STD	0010	-0018	3247	2610	0019230	0019	14451							
	STD	0020	-0025	3251	2613	0018909	0038	14450							
206	OBS	0024	-0029	32524	2614			14449							
	STD	0030	-0039	3268	2628	0017518	0056	14448							
	STD	0050	-0071	3306	2659	0014493	0088	14441							
206	OBS	0050	-0071	33062	2659			14441							
	STD	0075	-0107	3321	2672	0013253	0123	14431							
206	OBS	0076	-0108	33212	2673			14431							
	STD	0100	-0116	3337	2686	0011954	0154	14433							
206	OBS	T0102	-0116	33380	2687			14433							
206	OBS	0124	-0110	33464	2693			14441							
	STD	0125	-0110	3347	2694	0011175	0183	14441							
	STD	0150	-0103	3365	2708	0009857	0210	14451							
206	OBS	T0152	-0102	33658	2709			14452							
206	OBS	T0168	-0094	33740	2715			14460							

BOOK REF. NO.	SHIP CODE	SHIP NAME	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE	STATION (GMT)	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
BOOK REF. NO.	SHIP CODE	SHIP NAME	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE	STATION (GMT)	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
311642	WE		78224N	073270W	260	83	07 28	226	1969	KBS 002	0439	1 00 0 X	X1	3 4	0002
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS LISTED BY ASTERISKS WHERE THEY APPLY.															
* DT S D WIND WAVE BAROMETER AIR TEMPERATURE °C NUMBER OBS. LEVELS SPECIAL OBSERVATIONS WATER TRANS. DIR. SPEED OF FORCE (m/s) DRY BULB WET BULB CODE VIS															
21 S20 145 028 027 7 13															
CASE TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - x 10 ⁻²	SEA DYN. M. x 10 ³	COMPUTED SOUND VELOCITY m. SEC	O ₂ ml/l	AMBIENT LIGHT: μm/cm ²				MEASURED SOUND VELOCITY m. SEC	
CAST NO. 1/10	TYPE									PO ₂ - P μg at/l	TOTAL - P μg at/l	NO ₂ - N μg at/l	NO ₃ - N μg at/l	S. O ₂ - S μg at/l	pH
226	STD	0000	-0086	3217	2588	0021291	0000	14414							
	OBS	0000	-0086	32172	2588			14414							
	STD	0010	-0098	3223	2594	0020777	0021	14410							
	STD	0020	-0105	3231	2600	0020162	0041	14410							
226	OBS	0022	-0106	32327	2601			14410							
	STD	0030	-0103	3239	2606	0019567	0061	14414							
226	OBS	0045	-0098	32566	2620			14421							
	STD	0050	-0095	3268	2630	0017320	0098	14425							
226	OBS	0067	-0091	32985	2654			14434							
	STD	0075	-0091	3306	2660	0014440	0138	14436							
226	OBS	0090	-0091	33174	2665			14440							
	STD	0100	-0095	3324	2674	0013043	0172	14441							
226	OBS	0113	-0100	33301	2680			14442							
	STD	0125	-0104	3335	2684	0012160	0203	14443							
226	OBS	0126	-0104	33349	2684			14443							
	STD	0150	-0103	3336	2685	0012057	0234	14447							
226	OBS	0160	-0101	33362	2685			14450							
226	OBS	0187	-0089	33798	2720			14466							
	STD	0200	-0084	3383	2722	0008502	0285	14471							
226	OBS	T0208	-0081	33856	2724			14474							
	STD	0250	-0057	3407	2741	0006739	0323	14495							
226	OBS	0252	-0056	34083	2741			14496							
	STD	0300	-0046	3420	2750	0005844	0355	14511							
226	OBS	0316	-0043	34227	2752			14515							
226	OBS	T0349	-0039	34274	2756			14523							

¹⁰ NOTE: WHEN USING TEMPLATE FOR READING ELECTROCHEMICALLY OBSERVED SERIAL DATA (OS) AND READINGS MARKED BY ASTERISKS WHEN THAT APPLIES

CAST TIME DURATION MIN SEC	CAST NO	CARD TYPE	DEPTH (M)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 3 10 ³	S & D DTN M 3 10 ³	COMPUTED SOUND VELOCITY M. SEC	O ₂ ml/l	*AMBIENT LIGHT lum./cm ²				*MEASURED SOUND VELOCITY m/sec			
											PO ₂ - P µg gr/l	TOTAL - P µg gr/l	NO ₂ - N µg gr/l	NO ₃ - N µg gr/l	S: O ₂ - S µg gr/l	pH		
053		STD	0000	-0123	3249	2615	0018727	0000	14401									
		OBS	0000	-0123	32492	2615			14401									
		STD	0010	-0125	3250	2616			0018666									0018
053		STD	0020	-0128	3250	2616	0018604	0037	14402									
		OBS	0025	-0130	32507	2617			14402									
		STD	0030	-0133	3261	2625			0017754									0055
053		STD	0050	-0142	3291	2650	0015423	0088	14406									
		OBS	0051	-0142	32921	2650			14406									
		STD	0075	-0143	3301	2657			0014603									0126
053		OBS	0076	-0143	33011	2658	0013933	0162	14411									
		STD	0100	-0139	3310	2665			14419									
		OBS	0102	-0138	33114	2666			14419									
053		STD	0125	-0127	3331	2681	0012396	0195	14431									
		OBS	0127	-0126	33316	2682			14432									
		STD	0150	-0121	3334	2684			0012103									0225
053		OBS	T0152	-0120	33364	2686			14440									
053		OBS	0178	-0085	33891	2727			14468									
053		STD	0200	-0078	3398	2734	0007390	0274	14476									
		OBS	T0203	-0077	33989	2735			14477									
		OBS	0228	-0073	34040	2739			14484									
053		STD	0250	-0063	3411	2744	0006465	0308	14493									
		OBS	T0254	-0061	34119	2744			14495									
		STD	0300	-0049	3422	2752			0005671									0339
053		OBS	0305	-0048	34226	2753			14511									
053		OBS	T0355	-0044	34261	2755			14521									

* NOTE WHEN USING TEMPLATE FOR READING ELECTROCHEMICALLY OBSERVED SIGNAL DATA (OTS) USE HEADINGS MARKED BY ASTERISKS WHEN THEY APPEAR

CAST NO.	TIME H: M: S	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^3$	RAD DYN $\times 10^3$	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT Lux/cm ²					MEASURED SOUND VELOCITY m/sec				
											PO ₂ - P µg wt/l	TOTAL - P µg wt/l	NO ₃ - N µg wt/l	NO ₂ - N µg wt/l	S ₂ - S ₂ µg wt/l	pH				
073		STD	0000	-0100	3269	2631	0017260	0000	14414											
		OBS	0000	-0100	32692	2631				14414										
		STD	0010	-0107	3276	2637	0016684	0017	14414											
		STD	0020	-0115	3284	2643	0016098	0033	14413											
073		OBS	0024	-0118	32865	2645			14412											
		STD	0030	-0125	3292	2650	0015439	0049	14411											
073		OBS	0049	-0137	33051	2661			14410											
		STD	0050	-0137	3306	2661	0014330	0078	14411											
073		OBS	0073	-0133	33152	2669			14417											
		STD	0075	-0133	3317	2670	0013482	0113	14418											
073		OBS	0097	-0131	33259	2677			14424											
		STD	0100	-0131	3325	2677	0012834	0146	14424											
073		OBS	0122	-0129	33246	2676			14429											
		STD	0125	-0128	3326	2677	0012738	0178	14430											
073		OBS	T0146	-0121	33398	2688			14439											
		STD	0150	-0117	3345	2692	0011329	0208	14442											
073		OBS	T0170	-0104	33644	2708			14454											
073		OBS	T0194	-0098	33779	2718			14463											
		STD	0200	-0097	3378	2718	0008846	0259	14464											
073		OBS	0218	-0093	33777	2718			14469											
073		OBS	T0241	-0088	33850	2724			14476											
		STD	0250	-0085	3389	2727	0008058	0301	14480											
073		OBS	T0287	-0067	34072	2741			14497											

DOWN HULL NO	SHIP	LATITUDE	LONGITUDE	DEPTH	MARSDEN	STATION	TIME	ORIGINATOR	DEPTH	WAVE	WEATHER	INSTR	NODC
NUMBER	CODE	1/10	1/10	1/10	SQUARE	(GMT)	YEAR	CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS DASHED BY ASTERISKS WHEN THEY APPLY

CASE	TIME	CARD	DEPTH	T °C	S	SIGMA-T	SPECIFIC VOLUME	SEA	COMPUTED	WAVE	WEATHER	INSTR	NODC
NO.	NO.	TYPE	(m)				ANOMALY - X 10 ³	DYN. M	VELOCITY	OBSERVATIONS	CODE	CLOUD	STATION
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

DOWN HULL NO	SHIP	LATITUDE	LONGITUDE	DEPTH	MARSDEN	STATION	TIME	ORIGINATOR	DEPTH	WAVE	WEATHER	INSTR	NODC
NUMBER	CODE	1/10	1/10	1/10	SQUARE	(GMT)	YEAR	CRUISE	TO	OBSERVATIONS	CODE	CLOUD	STATION
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS DASHED BY ASTERISKS WHEN THEY APPLY

CASE	TIME	CARD	DEPTH	T °C	S	SIGMA-T	SPECIFIC VOLUME	SEA	COMPUTED	WAVE	WEATHER	INSTR	NODC
NO.	NO.	TYPE	(m)				ANOMALY - X 10 ³	DYN. M	VELOCITY	OBSERVATIONS	CODE	CLOUD	STATION
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARSDEN SQUARE	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE	WEATHER	INSTR	NODC
COUNTRY CODE	CRUISE NUMBER	° E 10	° E 10	MM	10' 1"	MONTH	DAY	HR 10	CRUISE NUMBER	STATION NUMBER	DIR	DIR	TYPE	STATION NUMBER
311642	WE	78279N	073440W	260	83	07	23	157	1969	KBS 009	0540	1	00	0009

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SENSITIVITY DATA (RST) USE
 MARKED BY ASTERISK WHERE THEY APPEAR

DT'S		WIND		AIR TEMPERATURE °C		VIS		SPECIAL							
WATER COLOR	TRANS (m)	DIB	SPEED OR FORCE	BAROMETER (mb)	DRY BULB	WET BULB	ROD	NUMBER OBS LEVELS	OBSERVATIONS						
		18	S20	102	044	027	6	15							
CAST TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 3 10 ⁻³	SEA DYN. M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	MEASURED SOUND VELOCITY m/sec				
10' 10"	NO									PO ₄ - P ug at/l	TOTAL - P ug at/l	NO ₃ - N ug at/l	NO ₂ - N ug at/l	S ₂ - S _T ug at/l	pH
	STD	0000	-0080	3202	2576	0022442	0000	14414							
157	OBS	0000	-0080	32024	2576			14414							
	STD	0010	-0083	3203	2577	0022354	0022	14415							
	STD	0020	-0086	3213	2585	0021613	0044	14416							
157	OBS	0024	-0087	32191	2590			14417							
	STD	0030	-0074	3239	2605	0019600	0065	14427							
157	OBS	0048	-0058	32856	2642			14444							
	STD	0050	-0061	3289	2645	0015823	0100	14443							
157	OBS	0072	-0093	33200	2671			14437							
	STD	0075	-0097	3322	2673	0013192	0136	14436							
157	OBS	0096	-0114	33343	2684			14433							
	STD	0100	-0113	3338	2686	0011900	0168	14434							
157	OBS	0119	-0109	33504	2697			14441							
	STD	0125	-0107	3353	2699	0010716	0196	14444							
157	OBS	0143	-0099	33639	2707			14452							
	STD	0150	-0093	3371	2712	0009447	0221	14457							
157	OBS	0167	-0083	33815	2721			14466							
157	OBS	T0190	-0080	33850	2723			14471							
	STD	0200	-0077	3388	2726	0008119	0265	14475							
157	OBS	0213	-0073	33928	2730			14480							
157	OBS	T0237	-0063	34004	2735			14489							
	STD	0250	-0060	3403	2738	0007033	0303	14493							
157	OBS	0283	-0054	34101	2743			14502							
	STD	0300	-0051	3412	2744	0006397	0337	14507							
157	OBS	T0330	-0045	34170	2748			14515							
157	OBS	0376	-0037	34274	2756			14528							
	STD	0400	-0036	3428	2757	0005212	0395	14533							
	STD	0500	-0032	3433	2760	0004893	0445	14552							
157	OBS	T0508	-0032	34331	2760			14553							

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARSDEN SQUARE	STATION	TIME	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE	WEATHER	INSTR	NODC
COUNTRY CODE	CRUISE NUMBER	° E 10	° E 10	MM	10' 1"	MONTH	DAY	HR 10	CRUISE NUMBER	STATION NUMBER	DIR	DIR	TYPE	STATION NUMBER
311642	WE	78305N	074020W	260	84	07	23	180	1969	KBS 010	0494	1	00	0010

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

FORM TEMPLATE FOR BRADSHAW ELECTRONICALLY CAPTURED SERIAL DATA (BTS) USE X INDICATES BY HISTORICAL WHEN THEY APPEAR															DT DATE		TIME HOUR		WIND DIRECTION SPEED OR FORCE		BAROMETER (mb)		AIR TEMPERATURE °C DRY BULB WET BULB		VIS CODE		NUMBER OBS LEVELS		SPECIAL OBSERVATIONS				
															19		S13		101		037		032		6		15						
CAST TIME DURATION 10'		CAST NO		CARD TYPE		DEPTH (m)		T °C		S		SIGMA-T		SPECIFIC VOLUME ANOMALY - σ_t		SEA DYN. M $\times 10^3$		COMPUTED SOUND VELOCITY M SEC		O ₂ ml/l		AMBIENT LIGHT lum cm ⁻²		MEASURED SOUND VELOCITY m/sec									
																						PO ₄ - P ug at/l		TOTAL - P ug at/l		NO ₃ - N ug at/l		NO ₂ - N ug at/l		SiO ₂ - Si ug at/l		pH	
				STD		0000		-0129		3208		2582		0021880		0000		14392															
180				OBS		0000		-0129		32080		2582						14392															
				STD		0010		-0127		3208		2582		0021872		0021		14395															
				STD		0020		-0125		3208		2582		0021864		0043		14397															
180				OBS		0026		-0124		32082		2582						14399															
				STD		0030		-0137		3218		2590		0021049		0065		14395															
				STD		0050		-0172		3263		2627		0017525		0103		14388															
180				OBS		0050		-0172		32628		2627						14388															
				STD		0075		-0147		3306		2662		0014247		0143		14410															
180				OBS		0076		-0146		33074		2663						14411															
				STD		0100		-0113		3333		2682		0012298		0176		14434															
180				OBS		0101		-0112		33336		2683						14435															
				STD		0125		-0101		3354		2699		0010673		0205		14447															
190				OBS		0127		-0100		33556		2700						14448															
				STD		0150		-0092		3368		2710		0004645		0230		14457															
180				OBS		T0153		-0091		33694		2711						14458															
180				OBS		0178		-0079		33815		2721						14469															
				STD		0200		-0069		3390		2727		0008034		0275		14479															
180				OBS		T0205		-0068		33914		2728						14480															
190				OBS		0225		-0067		33957		2732						14485															
				STD		0250		-0061		3401		2736		0007212		0313		14493															
180				OBS		T0257		-0059		34028		2737						14495															
				STD		0300		-0047		3418		2749		0005409		0346		14510															
180				OBS		0309		-0045		34202		2750						14512															
190				OBS		T0359		-0041		34256		2755						14523															
				STD		0400		-0039		3427		2756		0005307		0402		14531															
180				OBS		0416		-0038		34277		2756						14534															
180				OBS		T0447		-0036		34291		2757						14541															

BORG EST ID NO		SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	WAVE DIRECTION	WASSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	RAE SAMPLE SRT	WAVE OBSERVATIONS			WEATHER CODE	INSTR CLOUD TYPE AMT		NODC STATION NUMBER	
1000FT LOOK	CRUISE NUMBER						10°	1°	MONTH DAY HR 1/10		CRUISE NUMBER	STATION NUMBER			DIR	HGT	PER		SEA	ABT		TYPE
31	1642	WE	78323N	074240W		260	84	07 29 198	1969	KBS 011		0372	1	00	0	X		X2	5 8		0011	
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR																						
							DT	S	WIND	AIR TEMPERATURE °C		VIS	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS								
							WATER COLOR	TRANS (m)	DIB	SPEED OR FORCE	BAROMETER (mb)	DRY BULB	WET BULB	CODE								
										19	513	108	032	023	6	13						
CAST Time DURATION		CARD TYPE	DEPTH (m)	1°C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY X 10 ³		840 DTM M A 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²			MEASURED SOUND VELOCITY m/sec							
MIN:SEC H:10	CAST NO						PO ₄ - P µg at/l	TOTAL P µg at/l				NO ₃ - N µg at/l	NO ₂ - N µg at/l	S ₂ O ₂ - S ₂ µg at/l	pH							
198		STD	0000	-0135	3208	2582		0021871	0000	14389												
		OBS	0000	-0135	32079	2582				14389												
		STD	0010	-0148	3221	2593		0020866	0021	14386												
198		OBS	0018	-0155	32313	2601				14386												
		STD	0020	-0155	3235	2604		0019752	0041	14387												
		STD	0030	-0153	3251	2617		0018531	0060	14392												
198		OBS	0043	-0151	32690	2632				14398												
		STD	0050	-0150	3278	2639		0016416	0095	14400												
198		OBS	0067	-0145	32966	2654				14408												
		STD	0075	-0140	3303	2659		0014501	0134	14413												
198		OBS	0092	-0132	33168	2670				14421												
		STD	0100	-0132	3324	2676		0012906	0168	14424												
198		OBS	0116	-0131	33366	2686				14429												
		STD	0125	-0123	3342	2691		0011495	0199	14435												
198		OBS	0139	-0113	33513	2698				14443												
		STD	0150	-0108	3359	2704		0010242	0226	14448												
198		OBS	0164	-0101	33699	2712				14455												
198		OBS	T0189	-0083	33923	2729				14471												
		STD	0200	-0078	3394	2730		0007723	0271	14475												
198		OBS	T0213	-0072	33950	2731				14480												
198		OBS	0238	-0064	34134	2746				14491												
		STD	0250	-0064	3414	2746		0006239	0306	14493												
198		OBS	0288	-0062	34147	2747				14500												
		STD	0300	-0061	3415	2747		0006127	0337	14503												
198		OBS	0342	-0058	34163	2748				14511												

WORK BY ID NO		SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DATE MONTH DAY HR 1/10	WASSEN SQUARE	STATION TIME		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	RAE SAMPLE SRT	WAVE OBSERVATIONS			WEATHER	INSTR	NODC STATION NUMBER					
COUNTRY LOOK	CRUISE NUMBER						ID	1"		MONTH	DAY			HR 1/10	CRUISE NUMBER	STATION NUMBER	DIR	HGT		PER	SEA	ABT	CODE	CLOUD TYPE AMT
311642	WE	78355N	074340W	260	84	07	29	217	1969	KBS 012	0274	1	00	0	X		X2	5 8	0012					
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBTAINED SERIAL DATA (SDS) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR																								
						DT	S	WIND	AIR TEMPERATURE °C			VIS	NUMBER	SPECIAL										
						WATER COLOR	TRANS (m)	DIB	SPEED OR FORCE	BAROMETER (mb)	DRY BULB	WET BULB	CODE	OBS LEVELS	OBSERVATIONS									
						19	511	118	065	047	6	10												
CASE	TIME	CARD	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - σ _t 10 ³	S & D DYN M X 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²				MEASURED SOUND VELOCITY m/sec									
NO.	DURATION or INTERVAL 1/10										TYPE	PO ₄ - P µg at/l	TOTAL - P µg at/l	NO ₃ - N µg at/l	NO ₂ - N µg at/l	S ₂ - S µg at/l	pH							
		STD	0000	-0109	3262	2625	0017749	0000	14409															
217		OBS	0000	-0109	32624	2625			14409															
		STD	0010	-0112	3264	2627	0017634	0017	14410															
		STD	0020	-0116	3265	2628	0017500	0035	14410															
217		OBS	0025	-0119	32659	2629			14409															
		STD	0030	-0124	3276	2637	0016673	0052	14409															
		STD	0050	-0138	3303	2659	0014510	0083	14410															
		OBS	0051	-0138	33041	2660			14410															
		STD	0075	-0138	3311	2665	0013924	0119	14415															
217		OBS	0077	-0139	33115	2666			14415															
		STD	0100	-0128	3326	2677	0012745	0152	14426															
217		OBS	0103	-0127	33231	2679			14427															
		STD	0125	-0122	3344	2692	0011360	0182	14436															
217		OBS	0129	-0120	33469	2694			14437															
		STD	0150	-0108	3358	2703	0010306	0209	14448															
217		OBS	T0154	-0106	33606	2705			14450															
217		OBS	0181	-0096	33743	2715			14461															
		STD	0200	-0091	3382	2721	0008579	0256	14468															
217		OBS	T0207	-0083	33832	2722			14470															
217		OBS	T0218	-0087	33843	2723			14473															

SHIP NAME	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE DD	HARDEN SQUARE 10° 1'	STATION (GMT) MONTH DAY HR 1/10	YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	SEA SAMPLE BR?	WAVE OBSERVATIONS DIR HGT PER SEA DIR	WEATHER CODE	INSTR CLOUD TYPE AMT	MODE STATION NUMBER

* NOTE: WHEN USING TEMPLATE THE FOLLOWING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) ARE
READINGS OBTAINED BY AUTOMATED SYSTEMS WHEN THEY APPEAR

WIND DIR	WIND SPEED OR FORCE	BAROMETER (mb)	AIR TEMPERATURE °C DRY BULB WET BULB	VIS CODE	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS

CASE NUMBER	TIME DURATION HR 1/10	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ³	Σ Δ DYN M Σ 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	PO ₄ - P μg dl/l	TOTAL - P μg dl/l	NO ₃ - N μg dl/l	NO ₂ - N μg dl/l	Σ O ₂ - S μg dl/l	MEASURED SOUND VELOCITY m/sec	pH
012		STD	0000	-0007	3238	2602	0020023	0000	14453									
		OBS	0000	-0007	32375	2602			14453									
		STD	0010	-0013	3237	2601	0020018	0020	14452									
		STD	0020	-0020	3237	2601	0020014	0040	14450									
012		OBS	0025	-0025	32365	2601			14449									
		STD	0030	-0029	3245	2608	0019374	0059	14449									
		STD	0050	-0055	3281	2639	0016466	0095	14445									
012		OBS	0051	-0057	32832	2640			14445									
		STD	0075	-0110	3337	2686	0011988	0131	14432									
012		OBS	0075	-0110	33369	2686			14432									
		STD	0100	-0110	3344	2692	0011405	0160	14437									
012		OBS	0101	-0110	33448	2692			14437									
		STD	0125	-0111	3355	2701	0010543	0187	14442									
012		OBS	0125	-0111	33554	2701			14442									
		STD	0150	-0095	3372	2714	0009320	0212	14456									
012		OBS	T0150	-0095	33720	2714			14456									
012		OBS	T0175	-0076	33889	2726			14471									
012		OBS	T0191	-0065	33996	2735			14481									

SHIP NAME	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE DD	HARDEN SQUARE 10° 1'	STATION (GMT) MONTH DAY HR 1/10	YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	SEA SAMPLE BR?	WAVE OBSERVATIONS DIR HGT PER SEA DIR	WEATHER CODE	INSTR CLOUD TYPE AMT	MODE STATION NUMBER

* NOTE: WHEN USING TEMPLATE THE FOLLOWING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) ARE
READINGS OBTAINED BY AUTOMATED SYSTEMS WHEN THEY APPEAR

WIND DIR	WIND SPEED OR FORCE	BAROMETER (mb)	AIR TEMPERATURE °C DRY BULB WET BULB	VIS CODE	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS

CASE NUMBER	TIME DURATION HR 1/10	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ³	Σ Δ DYN M Σ 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	PO ₄ - P μg dl/l	TOTAL - P μg dl/l	NO ₃ - N μg dl/l	NO ₂ - N μg dl/l	Σ O ₂ - S μg dl/l	MEASURED SOUND VELOCITY m/sec	pH
033		STD	0000	-0069	3209	2581	0021944	0000	14421									
		OBS	0000	-0069	32094	2581			14421									
		STD	0010	-0071	3213	2584	0021638	0021	14422									
		STD	0020	-0076	3217	2588	0021324	0043	14422									
033		OBS	0026	-0080	32192	2590			14421									
		STD	0030	-0086	3236	2603	0019858	0063	14421									
		STD	0050	-0106	3295	2652	0015220	0098	14423									
033		OBS	0051	-0107	32971	2653			14423									
		STD	0075	-0106	3316	2669	0013578	0134	14431									
033		OBS	0076	-0106	33170	2669			14431									
		STD	0100	-0111	3329	2679	0012587	0167	14434									
033		OBS	0101	-0111	33295	2680			14434									
		STD	0125	-0111	3346	2693	0011238	0197	14441									
033		OBS	0126	-0111	33470	2694			14441									
		STD	0150	-0105	3361	2705	0010127	0224	14450									
033		OBS	0151	-0105	33614	2705			14450									
033		OBS	T0176	-0096	33712	2713			14460									
		STD	0200	-0089	3378	2718	0003860	0271	14468									
033		OBS	0201	-0088	33786	2719			14469									
033		OBS	0227	-0066	33979	2733			14486									
		STD	0250	-0059	3406	2740	0006845	0310	14494									
033		OBS	T0278	-0052	34132	2745			14503									
		STD	0300	-0049	3416	2747	0006129	0343	14508									
033		OBS	0327	-0046	34186	2749			14515									
033		OBS	T0378	-0042	34222	2752			14525									
		STD	0400	-0040	3424	2753	0005557	0401	14530									
033		OBS	0442	-0037	34259	2755			14539									

BODY REF ID NO (CONT)	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DEPTH METER	WATERSIDE SQUARE	STATION (GMT)	TIME MONTH DAY HR MIN	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPLY

WATER COLOR	WIND TRANS (m)	DIB	SPEED OR FORCE	BAROMETER (mb)	AIR TEMPERATURE °C		VIS NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB		

CAST NUMBER	TIME DURATION HR MIN	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - X 10 ³	S & D DTN M X 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²				MEASURED SOUND VELOCITY m/sec			
											PO ₂ - P ug at/l	TOTAL P ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S O ₂ - S ug at/l	pH		
062		STD	0000	-0081	3208	2580	0022016	0000	14415									
		OBS	0000	-0081	32079	2580			14415									
		STD	0010	-0094	3232	2600	0020161	0021	14414									
		STD	0020	-0102	3252	2616	0018596	0040	14414									
062		OBS	0025	-0104	32602	2623			14415									
		STD	0030	-0102	3266	2628	0017504	0058	14418									
		STD	0050	-0078	3290	2647	0015646	0091	14427									
062		OBS	0050	-0078	32879	2647			14427									
		STD	0075	-0107	3325	2676	0012910	0127	14431									
062		OBS	0075	-0107	33250	2676			14431									
		STD	0100	-0105	3334	2683	0012228	0158	14438									
062		OBS	0100	-0105	33339	2683			14438									
		STD	0125	-0103	3359	2704	0010266	0186	14446									
062		OBS	0126	-0103	33600	2704			14447									
		STD	0150	-0096	3365	2708	0009861	0212	14455									
062		OBS	T0152	-0095	33655	2708			14455									
062		OBS	0177	-0083	33750	2716			14464									
		STD	0200	-0077	3384	2722	0008488	0257	14474									
062		OBS	T0203	-0076	33847	2723			14475									
062		OBS	0227	-0068	33943	2731			14484									
		STD	0250	-0061	3402	2736	0007140	0297	14493									
062		OBS	0255	-0060	34031	2737			14494									
		STD	0300	-0051	3414	2745	0006280	0330	14507									
062		OBS	0304	-0050	34145	2746			14508									
062		OBS	0355	-0041	34224	2752			14522									
		STD	0400	-0036	3427	2755	0005346	0388	14532									
062		OBS	0406	-0036	34272	2756			14534									
		STD	0500	-0034	3432	2760	0004917	0440	14551									
062		OBS	T0585	-0032	34325	2760			14566									

BODY REF ID NO (CONT)	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	DEPTH METER	WATERSIDE SQUARE	STATION (GMT)	TIME MONTH DAY HR MIN	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
									CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPLY

WATER COLOR	WIND TRANS (m)	DIB	SPEED OR FORCE	BAROMETER (mb)	AIR TEMPERATURE °C		VIS NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB		

CAST NUMBER	TIME DURATION HR MIN	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - X 10 ³	S&D DTN M X 10 ³	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
											PO ₂ - P ug at/l	TOTAL - P ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S ₂ O ₂ - S ₂ ug at/l	pH	
070		STD	0000	-0117	3204	2579	0022188	0000	14397								
		OBS	0000	-0117	32044	2579			14397								
		STD	0010	-0124	3207	2581	0021936	0022	14396								
070		STD	0020	-0131	3210	2584	0021683	0043	14395								
		OBS	0024	-0134	32115	2585			14394								
		STD	0030	-0140	3230	2600	0020143	0064	14395								
070		OBS	0043	-0153	32710	2634			14398								
		STD	0050	-0155	3273	2635	0016822	0101	14397								
		OBS	0071	-0155	32924	2651			14404								
070		STD	0075	-0150	3298	2656	0014833	0141	14407								
		OBS	0095	-0120	33234	2675			14428								
		STD	0100	-0105	3328	2678	0012670	0175	14437								
070		OBS	0119	-0072	33436	2690			14458								
		STD	0125	-0075	3348	2693	0011242	0205	14458								
		OBS	0143	-0082	33585	2702			14459								
070		STD	0150	-0086	3359	2703	0010324	0232	14458								
		OBS	0167	-0088	33662	2709			14461								
		OBS	0191	-0072	33881	2726			14476								
070		STD	0200	-0071	3393	2729	0007825	0277	14478								
		OBS	0214	-0068	33992	2734			14483								
		OBS	0239	-0054	34097	2742			14495								
070		STD	0250	-0050	3413	2745	0006312	0313	14499								
		OBS	0287	-0046	34226	2752			14509								

BOAT NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
QUANTITY	CRUISE NUMBER	1 10	1 10	10 1	10 1	MONTH DAY HR 10		CRUISE NUMBER STATION NUMBER		DIR HGT PER SEA HT		CLOUD TYPE AMT	

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPLY

*DT	S	U	D	WIND	BAROMETER	AIR TEMPERATURE °C	WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE	DRY BULB	WET BULB	VIS	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
18	S15	125	006	003	3	13									

CASE TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-t	SPECIFIC VOLUME ANOMALY - E 10 ³	S&D DYN M E 10 ³	COMPUTED SOUND VELOCITY m SEC	O ₂ ml l	AMBIENT LIGHT lum/cm ²	PO ₄ - P ug at/l	TOTAL P ug at/l	NO ₃ - N ug at/l	NO ₃ - N ug at/l	S O ₂ - S ug at/l	MEASURED SOUND VELOCITY m/sec	pH
090	STD	0000	-0110	3246	2612	0019026	0000	14406									
	OBS	0000	-0110	32458	2612			14406									
	STD	0010	-0127	3258	2622	0018023	0018	14402									
	STD	0020	-0137	3269	2631	0017173	0036	14400									
090	OBS	0025	-0140	32734	2635			14400									
	STD	0030	-0138	3277	2638	0016550	0053	14403									
	STD	0050	-0132	3290	2648	0015551	0085	14411									
090	OBS	0050	-0132	32898	2648			14411									
	STD	0075	-0135	3305	2661	0014331	0122	14415									
090	OBS	0075	-0135	33054	2661			14415									
	STD	0100	-0127	3322	2674	0013052	0156	14426									
090	OBS	0100	-0127	33222	2674			14426									
	STD	0125	-0125	3334	2684	0012108	0188	14433									
090	OBS	0125	-0125	33344	2684			14433									
090	OBS	0149	-0119	33484	2695			14441									
	STD	0150	-0118	3350	2697	0010914	0216	14442									
090	OBS	T0174	-0093	33784	2719			14462									
090	OBS	0199	-0086	33856	2724			14470									
	STD	0200	-0085	3386	2725	0008249	0264	14471									
090	OBS	0224	-0074	34004	2736			14482									
090	OBS	0249	-0066	34108	2744			14491									
	STD	0250	-0066	3411	2744	0006436	0301	14492									
090	OBS	T0298	-0059	34161	2748			14503									
	STD	0300	-0059	3416	2748	0006058	0332	14504									
090	OBS	T0307	-0058	34164	2748			14505									

BOAT NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	HARSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR	NODC STATION NUMBER
QUANTITY	CRUISE NUMBER	1 10	1 10	10 1	10 1	MONTH DAY HR 10		CRUISE NUMBER STATION NUMBER		DIR HGT PER SEA HT		CLOUD TYPE AMT	

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (EDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPLY

*DT	S	U	D	WIND	BAROMETER	AIR TEMPERATURE °C	WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE	DRY BULB	WET BULB	VIS	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
06	S15	143	011	011	5	12									

CASE TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-t	SPECIFIC VOLUME ANOMALY - E 10 ³	S&D DYN M E 10 ³	COMPUTED SOUND VELOCITY m SEC	O ₂ ml l	AMBIENT LIGHT lum/cm ²	PO ₄ - P ug at/l	TOTAL P ug at/l	NO ₃ - N ug at/l	NO ₃ - N ug at/l	S O ₂ - S ug at/l	MEASURED SOUND VELOCITY m/sec	pH
112	STD	0000	-0108	3258	2622	0018084	0000	14409									
	OBS	0000	-0108	32581	2622			14409									
	STD	0010	-0109	3260	2623	0017942	0018	14411									
	STD	0020	-0112	3262	2625	0017781	0035	14411									
112	OBS	0025	-0114	32626	2626			14411									
	STD	0030	-0119	3271	2633	0017041	0053	14411									
	STD	0050	-0133	3295	2652	0015162	0085	14411									
112	OBS	0050	-0133	32948	2652			14411									
	STD	0075	-0134	3301	2658	0014638	0122	14415									
112	OBS	0075	-0134	33014	2658			14415									
	STD	0100	-0131	3316	2669	0013529	0157	14423									
112	OBS	0100	-0131	33159	2669			14423									
	STD	0125	-0130	3322	2674	0013053	0191	14428									
112	OBS	T0125	-0130	33218	2674			14428									
112	OBS	0149	-0126	33285	2679			14435									
	STD	0150	-0126	3329	2680	0012525	0223	14435									
112	OBS	0173	-0127	33381	2687			14440									
112	OBS	0199	-0106	33589	2703			14457									
	STD	0200	-0106	3360	2704	0010209	0280	14458									
112	OBS	0223	-0100	33711	2713			14466									
112	OBS	0248	-0095	33750	2716			14473									
	STD	0250	-0095	3375	2716	0009022	0328	14473									
112	OBS	0298	-0085	33885	2726			14488									

TABLE III.—Observed and interpolated oceanographic data from stations occupied by USCGC SOUTHWIND, 6–12 September 1969, prepared from NODC Listing No. 31–1533.

NODC LISTING NO.	SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	DATE 10° 10'	MARSSEN SQUARE 10° 10'	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					
311533	1S	8015 N	06800 W	907	08 09 06	239	1969	K8S	001	0225	00	0	X	0001
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) SEE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR.														
* DT S WIND WIND DIRECTION WIND SPEED (KTS) BAROMETER (mb) AIR TEMPERATURE °C VIS NUMBER OBS LEVELS SPECIAL OBSERVATIONS														
WATER COLOR TRANS (m) DIR SPEED OR FORCE (m/s) DRY BULB WET BULB CODE														
00 S00 116 -021 -021 7														
CAST TIME DURATION IN RESURGE TIME CAST NO. CARD TYPE DEPTH (m) T °C S SIGMA-T SPECIFIC VOLUME ANOMALY x 10 ³ R & D DYN. M x 10 ³ COMPUTED SOUND VELOCITY m/sec O ₂ ml/l														
AMBIENT LIGHT: TOTAL-P PO ₂ -P NO ₃ -N NO ₂ -N S-O ₂ -S pH														
MEASURED SOUND VELOCITY m/sec														
STD 0000 -0160 3158 2542 0025670 0000 14371 847														
OBS 0000 -0160 31579 2542 14371 847														
STD 0010 -0161 3178 2558 0024110 0024 14375 844														
OBS 0010 -0161 31780 2558 14375 844														
STD 0020 -0155 3198 2575 0022560 0048 14382 833														
OBS 0026 -0153 32107 2585 14386 821														
STD 0030 -0153 3219 2591 0020993 0070 14387 800														
STD 0050 -0155 3264 2628 0017483 0108 14396 725														
OBS 0051 -0155 32664 2630 14397 723														
STD 0075 -0138 3337 2687 0011891 0145 14418 711														
OBS 0077 -0136 33416 2690 14420 710														
STD 0100 -0094 3377 2717 0009001 0171 14449 703														
OBS 0102 -0091 33795 2719 14451 702														
STD 0125 -0053 3418 2749 0005976 0190 14478 679														
STD 0150 -0024 3446 2771 0003955 0202 14499 663														
OBS 0154 -0021 34496 2773 14502 661														
STD 0200 -0005 3459 2780 0003086 0220 14518 657														
OBS 0201 -0005 34593 2780 14518 657														

NODC LISTING NO.	SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	DATE 10° 10'	MARSSEN SQUARE 10° 10'	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					
311533	1S	8015 N	06852 W	907	08 09 07	052	1969	K8S	002	0351	00	0	X	0002
* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) SEE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR.														
* DT S WIND WIND DIRECTION WIND SPEED (KTS) BAROMETER (mb) AIR TEMPERATURE °C VIS NUMBER OBS LEVELS SPECIAL OBSERVATIONS														
WATER COLOR TRANS (m) DIR SPEED OR FORCE (m/s) DRY BULB WET BULB CODE														
21 S06 119 -029 -031 2														
CAST TIME DURATION IN RESURGE TIME CAST NO. CARD TYPE DEPTH (m) T °C S SIGMA-T SPECIFIC VOLUME ANOMALY x 10 ³ R & D DYN. M x 10 ³ COMPUTED SOUND VELOCITY m/sec O ₂ ml/l														
AMBIENT LIGHT: TOTAL-P PO ₂ -P NO ₃ -N NO ₂ -N S-O ₂ -S pH														
MEASURED SOUND VELOCITY m/sec														
STD 0000 -0151 3052 2456 0033858 0000 14360 927														
OBS 0000 -0151 30518 2456 14360 927														
STD 0010 -0162 3076 2476 0031957 0032 14360 881														
OBS 0010 -0162 30761 2476 14360 881														
STD 0020 -0165 3085 2483 0031238 0064 14361 880														
OBS 0025 -0165 30962 2492 14364 880														
STD 0030 -0162 3122 2513 0028433 0094 14370 860														
STD 0050 -0151 3214 2587 0021320 0144 14391 786														
OBS 0050 -0151 32141 2587 14391 786														
STD 0075 -0143 3309 2664 0014040 0188 14412 704														
OBS 0075 -0143 33089 2664 14412 704														
STD 0100 -0126 3369 2712 0009442 0217 14433 674														
OBS 0100 -0126 33693 2712 14433 674														
STD 0125 -0098 3402 2738 0007041 0238 14455 670														
STD 0150 -0074 3425 2756 0005347 0253 14473 666														
OBS 0150 -0074 34251 2756 14473 666														
STD 0200 -0037 3443 2769 0004129 0277 14501 661														
OBS 0201 -0036 34435 2769 14502 661														
STD 0250 -0012 3457 2779 0003194 0295 14523 659														
OBS 0250 -0012 34571 2779 14523 659														
STD 0300 -0006 3463 2783 0002808 0310 14535 548														
OBS 0301 -0006 34626 2783 14535 546														
OBS 0341 0000 34656 2785 14545 657														

ROD REF ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	RELATION	MARS DEN SQUARE	STATION TIME	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE
HEADINGS SHOWN BY ASTERISKS, WHEN THEY APPEAR

*DT	*S	*D	*WIND	*BAROMETER	*AIR TEMPERATURE °C	*VIS	*NUMBER	*SPECIAL
WATER	TRANS	DIR	SPEED	(mb)	DRY BULB	WET BULB	CODE	OBS
COLOR	(m)	OR	OR					LEVELS
			FORCE					OBSERVATIONS

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - x 10 ³	SAD DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ - P	TOTAL - P	NO ₃ - N	NO ₂ - N	S: O ₂ - S	pH
		STD	0000	-0158	3086	2484	0031197	0000	14361	876						
111	08S	0000	-0158	30862	2484				14361	876						
	STD	0010	-0164	3092	2439		0030713	0031	14361	881						
111	08S	0010	-0164	3477Q	2801Q					881						
	STD	0020	-0165	3098	2494		0030249	0061	14363	870						
111	08S	0025	-0165	31011	2496				14364	860						
	STD	0030	-0162	3128	2518		0027916	0090	14370	831						
	STD	0050	-0153	3217	2590		0021048	0139	14390	770						
111	08S	0050	-0153	32175	2590				14390	770						
	STD	0075	-0149	3284	2644		0015900	0185	14406	813						
111	08S	0075	-0149	32844	2644				14406	813						
	STD	0100	-0137	3327	2678		0012679	0221	14422	080						
111	08S	0100	-0137	33266	2678				14422	680						
	STD	0125	-0130	3359	2704		0010185	0250	14434	664						
	STD	0150	-0112	3369	2728		0007970	0272	14450	654						
111	08S	0150	-0112	33889	2728				14450	654						
111	08S	T0199	-0047	34384	2765				14496	650						
	STD	0200	-0046	3439	2766		0004412	0303	14496	645						
	STD	0250	-0015	3457	2779		0003183	0322	14522	516						
111	08S	0250	-0015	34570	2779				14522	516						
	STD	0300	-0007	3458	2779		0003121	0338	14534	640						
111	08S	T0300	-0007	34584	2779				14534	640						

ROD REF ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	RELATION	MARS DEN SQUARE	STATION TIME	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
								CRUISE NUMBER	STATION NUMBER					

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE
HEADINGS SHOWN BY ASTERISKS, WHEN THEY APPEAR

*DT	*S	*D	*WIND	*BAROMETER	*AIR TEMPERATURE °C	*VIS	*NUMBER	*SPECIAL
WATER	TRANS	DIR	SPEED	(mb)	DRY BULB	WET BULB	CODE	OBS
COLOR	(m)	OR	OR					LEVELS
			FORCE					OBSERVATIONS

CAST NUMBER	TIME DURATION	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - x 10 ³	SAD DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT				MEASURED SOUND VELOCITY m/sec	
											PO ₄ - P	TOTAL - P	NO ₃ - N	NO ₂ - N	S: O ₂ - S	pH
		STD	0000	-0054	2598	2088	0009062	0000	14343	1038						
048	08S	0000	-0054	25976	2088				14343	1038						
	STD	0010	-0137	3167	2549		0025008	0047	14384	887						
048	08S	0010	-0137	31670	2549				14384	887						
	STD	0020	-0146	3201	2577		0022370	0070	14386	883						
048	08S	0026	-0149	32204	2532				14389	680						
	STD	0030	-0140	3236	2605		0019681	0091	14393	946						
	STD	0050	-0130	3295	2652		0015170	0126	14409	725						
048	08S	0052	-0135	32339	2656				14411	718						
	STD	0075	-0127	3325	2677		0012851	0161	14422	701						
048	08S	0077	-0127	33269	2678				14423	700						
	STD	0100	-0124	3345	2693		0011320	0191	14430	686						
048	08S	0103	-0123	33471	2694				14432	684						
	STD	0125	-0115	3361	2705		0010082	0218	14441	668						
	STD	0150	-0101	3374	2715		0009140	0242	14454	647						
048	08S	T0154	-0098	33757	2717				14456	643						

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARS DEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10" 1"	10" 1"	MONTH DAY HR 1/10		CRUISE NUMBER STATION NUMBER		DIR HGT PER SEA SRT		TYPE AMT	
311533	1S	79455N	06758 W	259	97	09 08 131	1969	KBS 005	0096	00 0 X	X1	5 5	0005

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT		*S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE	(mb)	DRY BULB	WET BULB	CODE	OBS LEVELS
	19	S10	133	-043	-049	7		

CARD TYPE	DEPTH (m)	°C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY x 10 ³	RAD DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	MEASURED SOUND VELOCITY m/sec
STO	0000	-0148	3115	2507	0026963	0000	14370	980	PO ₄ - P ug at/l	TOTAL - P ug at/l
OBS	0000	-0148	31154	2507			14370	980	NO ₃ - N ug at/l	NO ₃ - N ug at/l
STO	0010	-0147	3194	2571	0022696	0025	14383	818	NO ₃ - N ug at/l	NO ₃ - N ug at/l
OBS	0010	-0147	31941	2571			14383	818	SiO ₂ - Si ug at/l	SiO ₂ - Si ug at/l
STO	0020	-0151	3213	2586	0021464	0048	14386	807		pH
OBS	0025	-0151	32223	2594			14388	800		
STO	0030	-0149	3233	2603	0019880	0068	14391	794		
STO	0050	-0140	3276	2638	0015502	0105	14405	759		
OBS	0050	-0140	32764	2638			14405	759		
STO	0075	-0125	3331	2681	0012400	0141	14424	693		
OBS	0075	-0125	33310	2681			14424	693		
OBS	0090	-0125	33316	2682			14426	704		

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARS DEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10" 1"	10" 1"	MONTH DAY HR 1/10		CRUISE NUMBER STATION NUMBER		DIR HGT PER SEA SRT		TYPE AMT	
311533	1S	7944 N	06904 W	259	99	09 08 152	1969	KBS 006	0136	00 0 X	X1	5 7	0006

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT		*S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE	(mb)	DRY BULB	WET BULB	CODE	OBS LEVELS
	36	S18	120	-048	-051	7		

CARD TYPE	DEPTH (m)	°C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY x 10 ³	RAD DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	MEASURED SOUND VELOCITY m/sec
STO	0000	-0187	3136	2526	0027194	0000	14355	938	PO ₄ - P ug at/l	TOTAL - P ug at/l
OBS	0000	-0187	31376	2526			14355	938	NO ₃ - N ug at/l	NO ₃ - N ug at/l
STO	0010	-0153	3138	2526	0027220	0027	14373	944	NO ₃ - N ug at/l	NO ₃ - N ug at/l
OBS	0010	-0153	31378	2526			14373	944	SiO ₂ - Si ug at/l	SiO ₂ - Si ug at/l
STO	0020	-0143	3171	2553	0024654	0053	14384	874		pH
OBS	0025	-0142	31872	2565			14387	845		
STO	0030	-0152	3205	2580	0022071	0076	14386	821		
STO	0050	-0170	3258	2624	0017360	0116	14388	751		
OBS	0050	-0170	32585	2624			14388	751		
STO	0075	-0145	3291	2650	0015395	0158	14409	725		
OBS	0075	-0145	32911	2650			14409	725		
STO	0100	-0112	3344	2692	0011423	0191	14436	687		
OBS	0100	-0112	33441	2692			14436	687		

ROD REF ID NO	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARS DEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S	DEPTH TO BOTTOM	WAVE OBSERVATIONS	WEATHER CODE	INSTR CLOUD	NODC STATION NUMBER
COUNTRY CODE	CRUISE NUMBER	1 10	1 10	10" 1"	10" 1"	MONTH DAY HR 1/10		CRUISE NUMBER STATION NUMBER		DIR HGT PER SEA SRT		TYPE AMT	
311533	1S	7941 N	07019 W	260	03	09 08 196	1969	KBS 007	0174	00 0 X	X1	5 6	0007

* NOTE WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SDS) USE HEADINGS MARKED BY ASTERISKS WHERE THEY APPEAR

*DT		*S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL
WATER COLOR	TRANS (m)	DIR	SPEED OR FORCE	(mb)	DRY BULB	WET BULB	CODE	OBS LEVELS
	36	S15	112	-053	-061	7		

CARD TYPE	DEPTH (m)	°C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY x 10 ³	RAD DYN M x 10 ³	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²	MEASURED SOUND VELOCITY m/sec
STO	0000	-0159	3149	2535	0026359	0000	14370	923	PO ₄ - P ug at/l	TOTAL - P ug at/l
OBS	0000	-0159	31490	2535			14370	923	NO ₃ - N ug at/l	NO ₃ - N ug at/l
STO	0010	-0159	3149	2535	0026349	0026	14371	931	NO ₃ - N ug at/l	NO ₃ - N ug at/l
OBS	0010	-0159	31490	2535			14371	931	SiO ₂ - Si ug at/l	SiO ₂ - Si ug at/l
STO	0020	-0157	3190	2568	0023158	0051	14380	847		pH
OBS	0026	-0155	32108	2585			14385	809		
STO	0030	-0154	3219	2571	0020357	0073	14387	798		
STO	0050	-0145	3258	2623	0017918	0112	14400	753		
OBS	0051	-0145	32604	2625			14400	751		
STO	0075	-0133	3305	2661	0014331	0152	14417	717		
OBS	0076	-0132	33072	2662			14417	716		
STO	0100	-0105	3344	2691	0011470	0184	14439	710		
OBS	0101	-0104	33452	2692			14440	709		
STO	0125	-0078	3380	2719	0008788	0209	14461	690		
STO	0150	-0052	3415	2746	0000257	0228	14482	657		
OBS	0152	-0050	34172	2748			14484	654		

VESSEL INFO		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	BOAT TYPE	HARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	RAZ SAMPLE	WAVE OBSERVATIONS	WEATHER CODE	INSTR		MODEC STATION NUMBER			
COUNTRY CODE	CRUISE NUMBER					10"	1"	MONTH	DAY		HR	1/10					CRUISE NUMBER	STATION NUMBER		DIR	HGT	PER
31	1533	1S	7915 N	06859 W		259	98	09	10	110	1969	K8S	010	0345		00	0	X	X1	5	2	0010

*DT	*S _D	WIND		BAROMETER (mb)	AIR TEMPERATURE °C		VIS CODE	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
		DIR	SPEED OR FORCE		DRY BULB	WET BULB			
WATER COLOR	TRANS (m)								
		02	506	160	-075	-079	7		

CAST NO.	TIME OF DURATION MIN	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^3$	R.D. DTN $\times 10^3$	COMPUTED SOUND VELOCITY M/SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
												PO ₂ - P ug at/l	TOTAL ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S.O ₂ - S ug at/l	pH	
110			STD	0000	-0121	2875	2313	0047541	0000	14350	969							
			OBS	0000	-0121	28750	2313			14350	969							
			STD	0010	-0102	3179	2557	0024202	0035	14402	933							
110			OBS	0010	-0102	31786	2557			14402	933							
			STD	0020	-0125	3211	2584	0021638	0058	14398	833							
			OBS	0026	-0133	32290	2599			14398	792							
110			STD	0030	-0132	3241	2608	0019329	0079	14401	792							
			STD	0050	-0124	3290	2643	0015579	0114	14414	777							
			OBS	0051	-0124	32918	2650			14415	776							
110			STD	0075	-0114	3328	2679	0012646	0149	14428	727							
			OBS	0076	-0114	33294	2680			14429	726							
			STD	0100	-0101	3352	2698	0010839	0178	14442	713							
110			OBS	0101	-0101	33530	2698			14442	712							
			STD	0125	-0093	3365	2708	0009873	0204	14452	699							
			STD	0150	-0085	3375	2716	0009099	0228	14461	686							
110			OBS	0152	-0084	33762	2717			14462	685							
			STD	0200	-0069	3390	2727	0008034	0271	14479	665							
			OBS	T0203	-0068	33908	2728			14480	664							
110			STD	0250	-0053	3402	2736	0007182	0309	14496	642							
			OBS	T0251	-0053	34021	2736			14496	642							
			STD	0300	-0052	3408	2741	0006701	0344	14506	640							
110			OBS	T0308	-0052	34086	2741			14507	640							

SHIP (HIS NO)		SHIP CODE	LATITUDE	LONGITUDE	COLLECTION TIME	HARSHEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	RAE SAMPLE	WAVE OBSERVATIONS				WEATHER CODE	INSTR		NODE STATION NUMBER
LOWERTY TON	CRUISE NUMBER					10"	1"	MONTH	DAY		HR	MIN			CRUISE NUMBER	STATION NUMBER	DIS	HGT		PER	SEA	
311	533	1S	79142N	07007 W	260	90	09	10	135	1969	KBS	011	0272		00	0	X		X1	5	2	0011

*DT	*S ^D	WIND		BAROMETER (mb)	AIR TEMPERATURE °C		VIS CODE	NUMBER OBS LEVELS	SPECIAL OBSERVATIONS
		DIR	SPEED OR FORCE		DRY BULB	WET BULB			
		02	506	160	-075	-079	7		

CAST NO.	TIME DURATION HOURS MIN.	CAST NO.	CARD TYPE	DEPTH (M)	TEMP °C	S * ..	SIGMA-T	SPECIFIC VOLUME ANOMALY - δ 10 ⁻⁷	S.D DYN M E 10 ⁷	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec	
												PO ₄ - P ug at/l	TOTAL P atm	NO ₃ - N ug at/l	NO ₂ - N ug at/l	S ₂ O ₂ - S ₁ ug at/l	pH	
135			STD	0000	-0132	2952	2375	0041586	0000	14355	982							
			OBS	0000	-0132	29520	2375				14355	982						
			STD	0010	-0151	3202	2577	0022306	0031	14383	835							
135			OBS	0010	-0151	32017	2577			14383	835							
			STD	0020	-0158	3228	2599	0020277	0053	14384	803							
135			OBS	0026	-0160	32416	2610			14387	788							
			STD	0030	-0158	3249	2616	0018648	0072	14389	786							
135			STD	0050	-0146	3284	2644	0015983	0107	14403	766							
			OBS	0051	-0145	32854	2645				14404	765						
			STD	0075	-0131	3325	2677	0012841	0143	14420	723							
135			OBS	0076	-0130	33263	2678			14421	722							
			STD	0100	-0111	3349	2695	0011062	0173	14437	718							
135			OBS	0102	-0110	33504	2697			14438	717							
			STD	0125	-0098	3364	2707	0009935	0199	14449	701							
			STD	0150	-0085	3377	2717	0009009	0223	14461	683							
135			OBS	T0153	-0084	33779	2718			14462	681							
			STD	0200	-0062	3395	2731	0007705	0264	14483	770							
135			OBS	T0202	-0061	33952	2731			14484	774							
			STD	0250	-0056	3402	2736	0007171	0302	14495	648							
135			OBS	T0252	-0056	34019	2736			14495	638							

ROW REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WAVE DIRECTION	WATERSIDE SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	WAVE DIRECTION	WAVE PERIOD	WAVE HEIGHT	WAVE SPEED	WEATHER CODE	INSTR CLOUD TYPE	INSTR CLOUD AMT	NODC STATION NUMBER
311533	1S	7915 N	07103 W	260	91	09 10 177	1969	K85	012	0199		00	0	X		X1	5 5	0012

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (ETS) USE HEADINGS SHOWN BY ASTERISKS WHEN THEY APPEAR

CAST TIME AND DURATION	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - σ_t	S & D DYN M $\times 10^3$	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	*AMBIENT LIGHT: lum/cm ²				*MEASURED SOUND VELOCITY m/sec			
										PO ₂ - P ug at/l	TOTAL - P ug at/l	NO ₂ - N ug at/l	NO ₃ - N ug at/l	S:O ₂ - S: ug at/l	pH		
	STD	0000	-0166	3063	2465	0033013	0000	14354	962								
177	OBS	0000	-0166	30625	2465			14354	962								
	STD	0010	-0167	3069	2470	0032493	0032	14356	963								
177	OBS	0010	-0167	30691	2470			14356	963								
	STD	0020	-0160	3167	2549	0024943	0061	14375	876								
177	OBS	0025	-0156	32048	2580			14383	843								
	STD	0030	-0151	3221	2593	0020803	0084	14388	829								
	STD	0050	-0135	3278	2639	0016436	0121	14408	780								
177	OBS	0051	-0134	32807	2641			14408	778								
	STD	0075	-0120	3333	2683	0012275	0157	14426	739								
177	OBS	0076	-0119	33345	2684			14427	738								
	STD	0100	-0093	3366	2709	0009786	0185	14448	707								
177	OBS	0101	-0092	33674	2710			14449	706								
	STD	0125	-0083	3373	2714	0009300	0208	14458	690								
	STD	0150	-0060	3399	2734	0007398	0229	14476	673								
177	OBS	T0152	-0058	34020	2736			14478	672								
177	OBS	T0177	-0022	34500	2773			14505	688								

ROW REF ID NO	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WAVE DIRECTION	WATERSIDE SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S CRUISE NUMBER	STATION NUMBER	DEPTH TO BOTTOM	WAVE DIRECTION	WAVE PERIOD	WAVE HEIGHT	WAVE SPEED	WEATHER CODE	INSTR CLOUD TYPE	INSTR CLOUD AMT	NODC STATION NUMBER
311533	1S	79162N	07200 W	260	92	09 10 207	1969	K85	013	0183		00	0	X		X1	5 3	0013

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (ETS) USE HEADINGS SHOWN BY ASTERISKS WHEN THEY APPEAR

CAST NO.	TIME OF CAST	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - σ_t	T & D DYN. M $\times 10^3$	COMPUTED SOUND VELOCITY m/sec	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY m/sec				
											PO ₂ - P ug/g/l	TOTAL - P ug/g/l	NO ₂ - N ug/g/l	NO ₃ - N ug/g/l	S. O ₂ - S ug/g/l	pH				
207		STD	0000	-0166	3131	2521	0027702	0000	14364	928										
		OBS	0000	-0166	31314	2521			14364	928										
		STD	0010	-0164	3137	2526	0027229	0027	14367	955										
207		OBS	0010	-0164	31374	2526			14367	955										
		STD	0020	-0156	3176	2556	0024291	0053	14378	906										
207		OBS	0026	-0152	31978	2574			14384	878										
		STD	0030	-0149	3213	2586	0021428	0076	14388	857										
207		STD	0050	-0137	3280	2640	0016292	0113	14407	776										
		OBS	0051	-0136	32830	2643			14408	773										
207		STD	0075	-0127	3343	2691	0011469	0148	14424	734										
		OBS	0077	-0125	33470	2694			14426	731										
		STD	0100	-0082	3358	2702	0010439	0175	14452	711										
207		OBS	0102	-0079						710										
		STD	0125	-0047	3371	2710	0009638	0201	14474	706										
		STD	0150	-0023	3383	2719	0003801	0224	14491	702										
		OBS	T0153	-0021	33843	2720			14493	701										

* NOTE: WEIRD USING TEMPLATE FOR BEARING (ELECTROMAGNET OBSERVED WEIRD DATA (BT)) AND WEARINGS MARKED BY STITCHES WHICH THEY APPEAR

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[illegible]

* DO NOT WRITE USING TEMPLATE FOR READING ELECTRONICALLY CAPTURED MEDIA DATA (BTS) USE
INSTRUCTIONS PROVIDED BY ASTERISKS WHICH FONT APPLIES

CAST TIME DURATION MISSED TIME 1/10	CAST NO	CARD TYPE	DEPTH (M)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY - 3 10 ³	2.0 DYN. M S 10 ³	COMPUTED SOUND VELOCITY M. SEC	O ₂ M/L	*AMBIENT LIGHT				*MEASURED SOUND VELOCITY M/SEC	
											PO ₂ - P mg M/L	FOCAL - P mg M/L	NO ₂ - N mg M/L	NO ₃ - N mg M/L	S. O ₂ - S. mg M/L	pH
033		STD	0000	-0135	2846	2290	0049719	0000	14339	989						
		OBS	0000	-0135	28465	2290				14339	989					
		STD	0010	-0155	3077	2476	0031903	0040	14363	930						
033		OBS	0010	-0155	30769	2476			14363	930						
		STD	0020	-0156	3094	2490	0030594	0072	14367	919						
033		OBS	0026	-0157	31074	2501			14369	910						
		STD	0030	-0153	3121	2512	0028515	0101	14374	895						
		STD	0050	-0139	3190	2567	0023232	0153	14393	846						
033		OBS	0051	-0139	31931	2570			14394	845						
		STD	0075	-0138	3282	2642	0016110	0202	14411	844						
033		OBS	0077	-0137	32880	2647			14412	844						
		STD	0100	-0117	3340	2688	0011719	0237	14433	791						
033		OBS	0102	-0115	33440	2692			14435	787						
		STD	0125	-0083	3388	2726	0008108	0262	14457	745						
		STD	0150	-0066	3421	2752	0005693	0279	14476	714						
033		OBS	T0154	-0063	34248	2755			14479	710						
		STD	0200	-0043	3436	2763	0004629	0305	14497	695						
033		OBS	T0203	-0043	34370	2764			14498	694						

NOTE: WE'RE USING TEMPLATE 100. THE STAGING TELEPHONE CALLS OBSERVED MEDIA DATA (BTS) IS
READING: BARRIED BY ACTIVITIES WHICH THEY APPEAR

CASE TIME DURATION	CASE NO	CARD TYPE	DEPTH (M)	T °C	S	SIGMA - T	SPECIFIC VOLUME ANOMALY - $\sigma_t \times 10^3$	S&O DTH - $m \times 10^3$	COMPUTED SOUND VELOCITY - m/s	O ₂ ml/l	AMBIENT LIGHT lum/cm ²					MEASURED SOUND VELOCITY - m/s	
REVERSE TIME 1/10"											PO ₂ - P µg/cm ²	TOTAL P µg/cm ²	NO ₂ - N µg/cm ²	NO ₃ - N µg/cm ²	S - O ₂ - S µg/cm ²	pH	
		STD	0000	-0152	3212	2586	0021527	0000	14382	935							
009		OBS	0000	-0152	32119	2586			14382	935							
		STD	0010	-0133	3246	2613	0018928	0020	14397	841							
009		OBS	0010	-0133	32462	2613			14397	841							
		STD	0020	-0139	3269	2632	0017119	0038	14399	802							
009		OBS	0026	-0139	32821	2642			14402	785							
		STD	0030	-0133	3290	2649	0015519	0054	14407	781							
		STD	0050	-0111	3324	2675	0012978	0083	14425	759							
009		OBS	0051	-0110	33255	2676			14426	758							
		STD	0075	-0095	3348	2694	0011187	0113	14440	724							
009		OBS	0077	-0094	33495	2695			14441	722							
		STD	0100	-0087	3361	2705	0010194	0140	14450	708							
009		OBS	0102	-0086	33624	2705			14451	707							
		STD	0125	-0076	3377	2717	0009041	0164	14462	693							
009		OBS	0128	-0074	33788	2718			14463	691							

* Call this using template for reading electronically observed serial data (RTS) and readings marked by asterisks where they appear

[illegible]

NODC REF ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	MARS DEN SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	SAL SABT BRP	WAVE OBSERVATIONS			WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER
							CRUISE NUMBER	STATION NUMBER			DIR	HGT	PER	SEA		

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

USING TEMPLATE FOR READING ELECTRICALLY DOWNLOADED METAL DATA (BIS) USE REDACTED BY ASTERISKS WHERE THEY APPLY												*DT		*S		WIND		BAROMETER		AIR TEMPERATURE °C		VIS	NUMBER	SPECIAL						
												WATER	TRANS	DIR	SPEED	BAROMETER	DRY BULB	WET BULB	CODE	OBS	OBSERVATIONS									
												COLOR	(m)		OR FORCE	(mb)				LEVELS										
														00	500	040	-071	-076	7											
CAST TIME DURATION NO. 1-10												CAST NO.	CARD TYPE	DEPTH (m)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY 10 ⁻³	RHO DTM M 10 ⁻¹	COMPUTED SOUND VELOCITY M SEC	O ₂ ml/l	*AMBIENT LIGHT lum/cm ²				*MEASURED SOUND VELOCITY m/sec				
																				PO ₂ - P mg air/l	TOTAL - P mg air/l	NO ₂ - N mg air/l	NO ₃ - N mg air/l	S - O ₂ - S mg air/l	pH					
														STO	0000	-0167	3106	2500	0029671	0000	14360	920								
														OBS	0000	-0167	31058	2500			14360	920								
														STO	0010	-0169	3103	2498	0029851	0029	14360	907								
														OBS	0011	-0169	31031	2498			14360	904								
														STO	0020	-0157	3123	2514	0026335	0058	14370	855								
														OBS	0027	-0150	31417	2529			14377	824								
														STO	0030	-0149	3154	2539	0025377	0086	14380	815								
														STO	0050	-0144	3224	2535	0020561	0132	14395	766								
														OBS	0052	-0144	32302	2600			14397	762								
														STO	0075	-0141	3287	2646	0015748	0177	14410	742								
														OBS	0073	-0138	32930	2651			14413	738								
														STO	0100	-0096	3332	2682	0012366	0213	14442	698								
														OBS	0104	-0091	33382	2686			14446	693								
														STO	0125	-0089	3354	2699	0010741	0242	14452	684								
														STO	0150	-0082	3371	2712	0009443	0267	14462	677								
														OBS	T0155	-0080	33743	2715			14464	676								
														STO	0200	-0053	3401	2736	0007242	0308	14488	674								
														OBS	0204	-0052	34029	2737			14489	674								
														STO	0250	-0046	3413	2744	0006396	0343	14501									
														OBS	0251	-0046	34127	2744			14501									

NODC REF ID NO	SHIP CODE	LATITUDE 1 10	LONGITUDE 1 10	MARS DEN SQUARE	STATION (GMT)	TIME YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	SAL SABT BRP	WAVE OBSERVATIONS			WEATHER CODE	INSTR CLOUD TYPE AMT	NODC STATION NUMBER
							CRUISE NUMBER	STATION NUMBER			DIR	HGT	PER	SEA		

* NOTE: WHEN USING TEMPLATE FOR READING ELECTRONICALLY OBSERVED SERIAL DATA (SD) USE HEADINGS BARRED BY ASTERISKS WHERE THEY APPEAR

SING: TEMPLATE FOR PLADINE (ELECTRONICALLY OBSERVED SERIAL DATA (ETS)) USE * MARKED BY ASTERISKS, WHERE THEY APPLY														<table><tr><td>*DT</td><td>*S</td><td>WIND</td><td>BAROMETER</td><td>AIR TEMPERATURE °C</td><td>VIS</td><td>NUMBER</td><td>SPECIAL</td></tr><tr><td>WATER</td><td>TRANS</td><td>DIR</td><td>SPEED</td><td>DRY BULB</td><td>WET BULB</td><td>OBS</td><td>OBSERVATIONS</td></tr><tr><td>COLOR</td><td>(M)</td><td>OR</td><td>OR FORCE</td><td>(mb)</td><td>CODE</td><td>LEVELS</td><td></td></tr><tr><td></td><td></td><td>03</td><td>510</td><td>035</td><td>-050</td><td>-061</td><td>7</td></tr></table>		*DT	*S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL	WATER	TRANS	DIR	SPEED	DRY BULB	WET BULB	OBS	OBSERVATIONS	COLOR	(M)	OR	OR FORCE	(mb)	CODE	LEVELS				03	510	035	-050	-061	7
*DT	*S	WIND	BAROMETER	AIR TEMPERATURE °C	VIS	NUMBER	SPECIAL																																								
WATER	TRANS	DIR	SPEED	DRY BULB	WET BULB	OBS	OBSERVATIONS																																								
COLOR	(M)	OR	OR FORCE	(mb)	CODE	LEVELS																																									
		03	510	035	-050	-061	7																																								
CAST TIME DURATION SEC		CARD TYPE	DEPTH (M)	T °C	S	SIGMA-T	SPECIFIC VOLUME ANOMALY - 10 ⁻³	RHO DTM M 10 ⁻¹	COMPUTED SOUND VELOCITY M / SEC	O ₂ ml/l	AMBIENT LIGHT I lum/cm ²			MEASURED SOUND VELOCITY M/SEC																																	
RELEASE TIME 1-10 ⁰⁰	NO										PO ₂ - P ug dr/l	TOTAL - P ug dr/l	NO ₂ - N ug dr/l	NO ₃ - N ug dr/l	S ₂ - S ug dr/l	pH																															
		STO	0000	-0166	3113	2506	0029109	0000	14361	894																																					
231		OBS	0000	-0166	31131	2506			14361	894																																					
231		OBS	0008	-0166	31146	2507			14363	932																																					
		STO	0010	-0165	3117	2509	0028798	0029	14364	931																																					
		STO	0020	-0163	3130	2519	0027799	0057	14368	926																																					
231		OBS	0020	-0163	31299	2519			14368	926																																					
		STO	0030	-0163	3142	2529	0026846	0084	14372	918																																					
231		OBS	0040	-0161	31584	2543			14377	904																																					
		STO	0050	-0160	3187	2566	0023374	0134	14383	872																																					
		STO	0075	-0145	3252	2618	0018396	0187	14403	804																																					
231		OBS	0080	-0140	32638	2627			14408	792																																					
		STO	0100	-0105	3311	2664	0014007	0227	14434	752																																					
231		OBS	0121	-0076	33458	2632			14456	724																																					
		STO	0125	-0076	3349	2654	0011163	0259	14458	722																																					
		STO	0150	-0074	3366	2708	0009834	0285	14465	713																																					
231		OBS	T0161	-0034	33729	2714			14478	709																																					
		STO	0200	-0071	3386	2724	0008294	0330	14478	692																																					
231		OBS	0246	-0068	34001	2735			14488	681																																					
		STO	0250	-0067	3401	2736	0007172	0369	14490	681																																					
		STO	0300	-0058	3413	2745	0006301	0402	14504	684																																					
231		OBS	0332	-0052	34138	2750			14513	685																																					
		STO	0400	-0041	3427	2756	0005315	0461	14530	663																																					
231		OBS	T0422	-0037	34282	2757			14536	682																																					

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