OCEANOGRAPHICAL OBSERVATIONS
IN THE INDIAN OCEAN IN 1966
H.M.A.S. *DIAMANTINA*
Cruise Dm2/66

OCEANOGRAPHICAL CRUISE REPORT NO. 54

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1969

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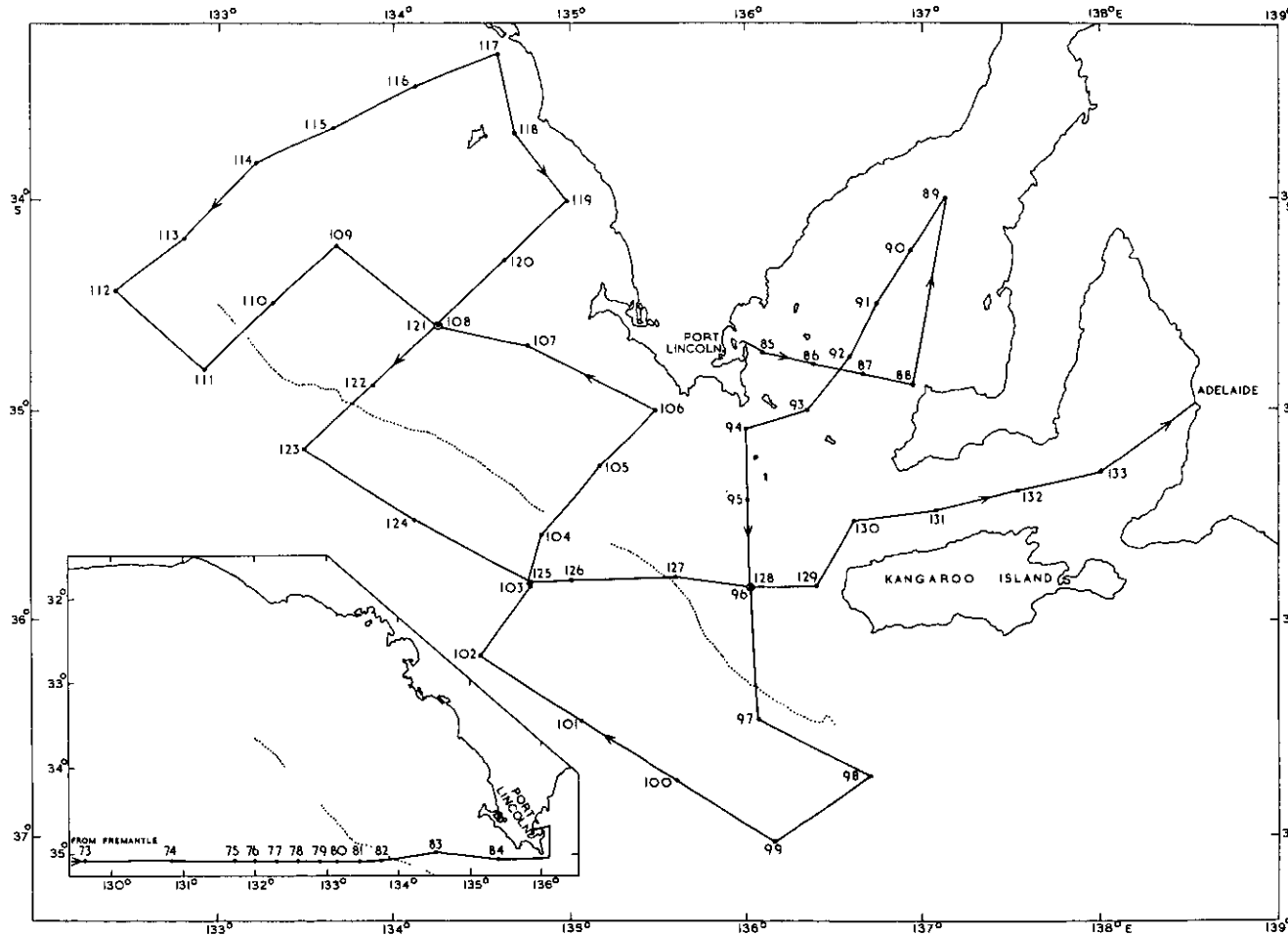

Fig. 1. Track chart Cruise Dm 2/66

OCEANOGRAPHICAL CRUISE REPORT

No. 54

Oceanographical Observations in the Indian Ocean in 1966

H.M.A.S. Diamantina

Cruise Dm2/66

April 12-April 29, 1966

I. INTRODUCTION

This report records the data collected during the second cruise in 1966 of H.M.A.S. Diamantina, Royal Australian Navy oceanographical frigate.

Objective

To examine the chemical and physical environment during the South Australian tuna season.

Itinerary

The cruise began at Fremantle on April 12 and proceeded to South Australian waters where a series of stations was worked in the South Australian gulfs and adjacent waters of the Great Australian Bight. The cruise ended at Fremantle on April 29 (Fig. 1).

Scientific Personnel

D. Vaux (Cruise Leader)
R. Bradley
A.L. Brown
F. Davies
J. Klye

Salinity, oxygen, and inorganic phosphate determinations were made in the ship's laboratory by J. Klye and F. Davies.

The data were processed under the direction of W. Hedge with computer programmes designed by A.D. Crooks. The track chart was prepared for publication by R. Breach.

II. WORK ACCOMPLISHED

Sixty-one stations were worked (Dm2/73/66-Dm2/133/66). Surface hydrology samples were collected at 61 stations, and subsurface samples at 49 stations. Bathythermograph casts were made at 37 stations.

TABLE 1

WORK DONE AT EACH STATION

Stn	Surface Hydrology	Subsurface Hydrology to Depth (m)	BT	Stn	Surface Hydrology	Subsurface Hydrology to Depth (m)	BT
73	+			104	+	1500	+
74	+			105	+	120	+
75	+			106	+	85	+
76	+			107	+	75	+
77	+			108	+	90	+
78	+			109	+	90	+
79	+			110	+	100	+
80	+			111	+	900	+
81	+			112	+	800	+
82	+			113	+	120	+
83	+			114	+	90	+
84	+			115	+	65	+
85	+	17		116	+	60	+
86	+	30		117	+	45	+
87	+	40		118	+	40	+
88	+	40		119	+	60	+
89	+	15		120	+	60	+
90	+	30		121	+	85	+
91	+	35		122	+	110	+
92	+	40		123	+	1500	+
93	+	45		124	+	1500	+
94	+	75		125	+	1500	+
95	+	100		126	+	1500	+
96	+	110		127	+	140	+
97	+	700	+	128	+	120	+
98	+	700	+	129	+	100	+
99	+	1500	+	130	+	70	+
100	+	1500	+	131	+	30	+
101	+	1500	+	132	+	20	+
102	+	1500	+	133	+	30	+
103	+	1500	+				

BT Bathythermogram

III. METHODS OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.—Water temperatures were taken with deep-sea reversing thermometers: protected thermometers with a range of -2° to 30°C, and unprotected thermometers with a range of either -2° to 30°C or -4° to 60°C. Temperatures are considered accurate to ±0.03 degC.

Bathythermograms.—A 900-ft bathythermograph was used at the stations indicated in Table 1. Slides were digitized according to the method of the U.S. National Oceanographic Data Center (1964), and the results were transferred to punched cards.

Thermometric Depth.—Depth calculations were made by the method described by Pollak (1950), and are considered accurate to ±15 m at depths greater than 1000 m, and to 1% at depths less than 1000 m.

Sigma-t.—Sigma-t values were computed from temperature and salinity values using the equations of Knudsen (La Fond 1951).

2. Chemistry

Salinity.—Salinity was measured on board with an inductive salinometer (Brown and Hamon 1961).

Dissolved Oxygen.—A version of the standard Winkler method was used to determine the amount of dissolved oxygen in the seawater samples. The version used is a modification of that described by Thompson and Robinson (1939) and differs in some respects from the revision by Jacobsen, Robinson, and Thompson (1950). Potassium iodate was used as the iodometric standard, and the reagents necessary to fix the oxygen in solution were used at different concentrations (Rochford 1963).

Saturation values were computed using the simpler of the equations given by Richards and Corwin (1956) -

$$O_2\ (\%\ \text{Satn.}) = \frac{O_2\ (\text{ml/l}) \times (33.5 + T^\circ C) \times 100}{332.4 - (1.854 \times S‰)}\ .$$

Inorganic Phosphate.—The method of Atkins (1923) was used with 1 ml molybdate reagent (300 ml 10% w/v ammonium molybdate and 100 ml 50% v/v sulphuric acid) and 0.1 ml 1% w/v stannous chloride diluted afresh from a 40% stock solution in hydrochloric

acid, which was kept under paraffin. The reagents were dispensed automatically by a piston dispenser.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25°C, analyses were carried out in batches of 10; readings were begun within 10 min of adding reagents, and completed within 10 min. At air temperatures greater than 25°C, batches of 6 were analysed, readings were begun within 5 min of adding reagents, and completed within 7 min. Each batch was compared with a distilled water blank and a 0.65 µg-atom/l standard in a Hilger Spekker absorptiometer using 4 cm cells and Ilford 608 filters. Each day a complete calibration was made using standards up to 3.25 µg-atom/l. Results are given as µg-atom/l with no correction for salt error and are precise to ±10% for values less than 0.5 µg-atom/l and ±5% for higher values. To correct for salt effects the results given should be multiplied by 1.15.

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IV. DATA

The data were processed in a C.D.C. 3600 Computer. An explanation of headings used is given at the beginning of the surface hydrology listing.

DATA

PART 1

HYDROLOGY

SURFACE SAMPLES

EXPLANATION OF HEADINGS

Parts 1 and 2	Hydrology
STATION	Gives the station identification. For example, Dm2/85/66 signifies the 85th station worked by Diamantina in 1966, on her 2nd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time, and is the time at the beginning of the first cast. The code letter for the time zone follows the time. Zone Time throughout the cruise was Central Australian Standard Time, G.M.T. +9½ hr, Code J
LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
AIR TEMP. WET DRY	Air temperatures recorded from wet and dry bulb thermometers in °C
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Navy Hydrogr. Office (1955)
ANEM. HEIGHT	Average height of the anemometer above sea level, given in metres
CLOUD TYPE AMT.	Cloud type and amount are coded using Tables 2 and 3 in U.S. Navy Hydrogr. Office (1955)
WEA.	Weather is coded using Table 1 in U.S. Navy Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Navy Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 6 in U.S. Navy Hydrogr. Office (1955)

SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Navy Hydrogr. Office (1955)
BAROM. or ATMOS. PRESSURE	Atmospheric pressure given in millibars
WIRE ANGLES CAST1 CAST2 CAST3	Wire angles are measured at the surface and expressed in degrees for each cast
CAST	Gives the cast number
DEPTH	Sampling depth given in metres
TEMP.	Sea temperatures recorded in °C
SALINITY	Given in parts per thousand
SIGMA-T	Sigma-t to 2 decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation
INORG. P	Inorganic phosphorous given in µg-atom P/l

*, ***, or a blank indicate no data available

CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.
2	73	66	4	15	0800	I 35 05 S	129 38 E	18.9	35.60									
2	74	66	4	15	1200	I 35 05 S	130 50 E	19.0	35.69									
2	75	66	4	15	1500	I 35 04 S	131 42 E	18.5	35.55									
2	76	66	4	15	1600	I 35 04 S	132 00 E	18.5	35.56									
2	77	66	4	15	1700	I 35 04 S	132 18 E	19.1	35.80									
2	78	66	4	15	1800	I 35 04 S	132 36 E	19.2	35.86									
2	79	66	4	15	1900	I 35 04 S	132 53 E	19.5	35.87									
2	80	66	4	15	2000	I 35 03 S	133 09 E	19.7	35.95									
2	81	66	4	15	2100	I 35 03 S	133 27 E	19.4	36.03									
2	82	66	4	15	2200	I 35 03 S	133 45 E	19.6	35.96									
2	83	66	4	16	0100	I 34 59 S	134 31 E	19.5	36.02									
2	84	66	4	16	0400	I 35 03 S	135 24 E	18.7	35.86									
2	85	66	4	16	1710	J 34 44 S	136 05 E	18.1	35.89	23	2	24	2	00	0	02	8	1021.9
2	86	66	4	16	1829	J 34 47 S	136 22 E	18.5	36.21	23	2	24	2	19	1	02	7	1021.1
2	87	66	4	16	1943	J 34 50 S	136 39 E	20.0	37.53	23	2	24	2	19	1	02	7	1023.1
2	88	66	4	16	2107	J 34 53 S	136 56 E	19.9	37.62	22	2	22	2	00	0	02	8	1023.4
2	89	66	4	17	0114	J 34 00 S	137 08 E	19.8	38.41	00	0	00	0	00	0	10	6	1023.4
2	90	66	4	17	0254	J 34 15 S	136 56 E	19.8	37.63	00	0	00	0	00	0	02	6	1022.4
2	91	66	4	17	0427	J 34 30 S	136 44 E	19.3	37.04	00	0	00	0	00	0	50	8	1022.5
2	92	66	4	17	0604	J 34 45 S	136 35 E	19.2	36.92	23	1	00	0	22	1	02	8	1028.0
2	93	66	4	17	0728	J 35 00 S	136 20 E	18.3	36.12	26	1	00	0	23	1	02	8	1023.2
2	94	66	4	17	0918	J 35 05 S	136 00 E	18.5	35.87	23	3	22	2	22	1	02	8	1023.5
2	95	66	4	17	1109	J 35 25 S	136 00 E	18.6	35.86	25	3	22	2	22	1	02	8	1022.7
2	96	66	4	17	1322	J 35 50 S	136 01 E	19.4	36.06	24	2	23	2	23	1	02	8	1022.6
2	97	66	4	17	1618	J 36 27 S	136 03 E	18.1	35.56	20	1	22	2	22	1	02	8	1023.5
2	98	66	4	17	1953	J 36 43 S	136 41 E	19.0	35.94	29	2	22	2	22	1	02	8	1022.6
2	99	66	4	17	2310	J 37 01 S	136 09 E	17.7	35.56	27	2	27	2	27	1	02	6	1022.8
2	100	66	4	18	0313	J 36 44 S	135 36 E	17.8	35.55	30	1	27	2	27	1	02	7	1019.1
2	101	66	4	18	0704	J 36 27 S	135 03 E	17.5	35.55	32	4	22	2	22	1	02	8	1020.5
2	102	66	4	18	1056	J 36 09 S	134 28 E	19.2	36.00	35	3	35	2	24	1	02	8	1022.2
2	103	66	4	18	1355	J 35 50 S	134 46 E	19.2	36.01	03	2	22	2	22	1	02	8	1018.7
2	104	66	4	18	1632	J 35 35 S	134 50 E	19.7	36.04	03	2	22	2	22	1	00	9	1019.2
2	105	66	4	18	2000	J 35 16 S	135 10 E	19.3	35.98	03	1	03	2	24	1	00	9	1019.1
2	106	66	4	18	2206	J 35 00 S	135 30 E	18.4	35.83	02	2	24	2	24	1	02	8	1019.1
2	107	66	4	19	0109	J 34 44 S	134 45 E	19.1	35.95	05	2	24	2	24	1	02	8	1017.8
2	108	66	4	19	0322	J 34 35 S	134 15 E	19.8	36.05	02	2	24	2	24	1	02	8	1016.4
2	109	66	4	19	0609	J 34 13 S	133 41 E	19.3	35.93	05	2	05	2	23	1	02	8	1018.1
2	110	66	4	19	0810	J 34 28 S	133 20 E	19.7	35.91	34	3	24	2	24	1	02	8	1016.2
2	111	66	4	19	1024	J 34 48 S	132 56 E	19.7	35.96	34	4	24	2	24	1	02	8	1014.9
2	112	66	4	19	1338	J 34 26 S	132 24 E	19.8	35.88	03	3	03	2	25	1	03	8	1013.2

CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.
2	113	66	4	19	1614	J 34 08	S 132 48	E 19.8	35.89	02	2	02	3	04	1	02	8	1012.3
2	114	66	4	19	1851	J 33 50	S 133 14	E 19.6	35.96	03	2	23	2	23	1	02	8	1016.4
2	115	66	4	19	2053	J 33 39	S 133 41	E 19.5	35.93	03	2	03	2	03	1	02	8	1013.6
2	116	66	4	19	2310	J 33 27	S 134 08	E 18.7	35.82	03	4	03	3	03	1	01	8	1013.8
2	117	66	4	20	0123	J 33 18	S 134 36	E 17.9	35.62	04	1	00	0	00	0	02	8	1014.2
2	118	66	4	20	0312	J 33 40	S 134 41	E 17.9	35.63	04	2	00	0	00	0	02	8	1013.3
2	119	66	4	20	0512	J 34 01	S 134 59	E 16.1	35.77	32	4	32	1	00	0	02	8	1013.5
2	120	66	4	20	0706	J 34 17	S 134 38	E 19.0	35.91	32	4	32	2	22	1	02	8	1012.4
2	121	66	4	20	0917	J 34 35	S 134 15	E 19.6	36.04	35	4	35	2	18	1	01	8	1014.7
2	122	66	4	20	1123	J 34 52	S 133 53	E 19.7	35.95	35	2	35	2	18	1	02	8	1013.1
2	123	66	4	20	1333	J 35 10	S 133 30	E 19.7	35.82	25	1	25	2	23	1	01	7	1021.1
2	124	66	4	20	1701	J 35 31	S 134 07	E 18.0	35.52	20	5	20	2	22	1	51	6	1012.9
2	125	66	4	20	2048	J 35 49	S 134 46	E 18.4	35.73	20	3	20	2	22	1	02	6	1018.1
2	126	66	4	20	2306	J 35 48	S 135 00	E 18.1	35.58	17	3	18	3	20	1	02	7	1016.6
2	127	66	4	21	0207	J 35 47	S 135 36	E 19.2	35.94	18	5	18	3	22	1	02	8	1017.6
2	128	66	4	21	0356	J 35 50	S 136 01	E 19.2	36.03	18	5	18	3	22	1	02	8	1018.0
2	129	66	4	21	0521	J 35 50	S 136 23	E 18.7	35.92	18	5	18	3	18	1	02	7	1019.1
2	130	66	4	21	0659	J 35 32	S 136 36	E 18.2	35.94	18	4	18	3	18	1	02	8	1020.5
2	131	66	4	21	0853	J 35 28	S 137 04	E 17.8	36.09	21	3	21	2	25	1	02	8	1022.3
2	132	66	4	21	1041	J 35 23	S 137 32	E 18.8	36.64	19	3	19	2	23	1	02	8	1022.1
2	133	66	4	21	1231	J 35 18	S 138 00	E 19.5	37.16	19	3	19	2	23	1	02	7	1021.7

DATA

PART 2

HYDROLOGY

DEEP STATIONS

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 85/66	16/ 4/66	1710 J	34 44 S	136 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
18	14.4	18.3	23	2	15	8	3	8	24	2	00	0	1021.9	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.05	35.890	25.96	5.37	100	0.14	***	***
1	10	17.92	35.895	25.99	5.40	100	0.13	***	***
1	17	17.90	35.960	26.05	5.29	98	0.14	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DH 2/ 86/66	16/ 4/66	1829 J	34 47 S	136 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
42	14.4	17.8	23	2	15	8	4	7	24	2	19	1	1021.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.52	36.207	26.08	5.34	101	0.11	***	***
1	10	18.46	36.220	26.11	5.34	101	0.11	***	***
1	20	18.52	36.275	26.13	5.31	100	0.12	***	***
1	30	18.55	36.286	26.14	5.29	100	0.12	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 87/66	16/ 4/66	1943 J	34 50 S	136 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	14.4	18.3	23	2	15	8	4	7	24	2	19	1	1023.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.96	37.533	26.72	5.04	98	0.09	***	***
1	10	19.96	37.552	26.74	5.03	98	0.08	***	***
1	20	19.95	37.552	26.74	5.04	98	0.09	***	***
1	30	19.97	37.557	26.74	5.01	98	0.08	***	***
1	40	19.96	37.573	26.75	4.98	97	0.10	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
01 2/ 98/66	16/ 4/66	2107 J	34 53 S	136 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	11.7	19.4	22	2	15	6	8	8	22	2	00	0	1023.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.90	37.624	26.81	5.04	98	0.06	***	***
1	10	19.86	37.624	26.82	5.03	98	0.09	***	***
1	20	19.85	37.624	26.82	5.02	98	0.08	***	***
1	30	19.88	37.629	26.82	5.01	98	0.08	***	***
1	40	19.87	37.634	26.82	4.98	97	0.10	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 89/65	17/ 4/66	0114 J	34 00 S	137 08 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
15	15.0	17.8	00	0	15	*	1	6	00	0	00	0	1023.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P.	TOTAL P	NITRATE
1	0	19.76	38.412	27.45	5.00	98	0.06	***	***
1	8	19.73	38.424	27.46	5.01	98	0.05	***	***
1	15	19.72	38.424	27.46	5.01	98	0.06	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 90/66	17/ 4/66	0254 J	34 15 S	136 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
35	15.0	17.8	00	0	15	*	2	6	00	0	00	0	1022.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.80	37.634	26.84	5.09	99	0.09	***	***
1	10	19.81	37.640	26.84	5.08	99	0.08	***	***
1	20	19.79	37.757	26.94	5.03	98	0.09	***	***
1	30	19.86	37.832	26.98	4.88	95	0.10	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 91/66	17/ 4/66	0427 J	34 30 S	136 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	14.4	17.8	00	0	15	4	6	8	00	0	00	0	1022.5	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.31	37.038	26.52	5.11	98	0.11	***	***
1	10	19.41	37.133	26.56	5.10	98	0.11	***	***
1	20	19.69	37.403	26.69	5.07	98	0.09	***	***
1	30	19.75	37.479	26.74	5.01	97	0.09	***	***
1	35	19.92	37.608	26.79	4.88	95	0.10	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 27 92/66	17/ 4/66	0604 J	34 45 S	136 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	13.3	17.2	23	1	15	4	8	8	00	0	22	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.20	36.923	26.46	5.13	98	0.10	***	***
1	10	19.27	37.007	26.50	5.11	98	0.10	***	***
1	20	19.48	37.199	26.59	5.06	98	0.10	***	***
1	30	19.56	37.249	26.61	5.01	97	0.11	***	***
1	40	19.59	37.272	26.62	4.94	96	0.22	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 93/66	17/ 4/66	0728 J	35 00 S	136 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
49	13.3	17.2	26	1	15	4	8	8	00	0	23	1	1023.2	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.32	36.118	26.06	5.37	101	0.14	***	***
1	10	18.27	36.106	26.07	5.37	101	0.11	***	***
1	20	18.47	36.222	26.11	5.32	100	0.11	***	***
1	30	19.59	37.044	26.45	4.97	96	0.14	***	***
1	40	19.62	37.085	26.47	4.93	95	0.17	***	***
1	45	19.63	37.089	26.47	4.91	95	0.19	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 94/66	17/ 4/66	0918 J	35 05 S	136 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
84	13.3	17.8	23	3	15	4	8	8	22	2	22	1	1023.5	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.48	35.871	25.84	5.33	100	0.13	***	***
1	10	18.47	35.866	25.83	5.32	100	0.12	***	***
1	20	18.42	35.859	25.84	5.32	100	0.12	***	***
1	30	18.39	35.856	25.85	5.32	100	0.12	***	***
1	40	18.37	35.852	25.85	5.32	100	0.11	***	***
1	50	18.30	35.837	25.86	5.30	99	0.13	***	***
1	75	18.08	35.795	25.88	5.20	97	0.18	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
JM 2/ 95/66	17/ 4/66	1109 J	35 25 S	136 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
104	14.4	18.3	25	3	15	4	8	8	22	2	22	1	1022.7	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.63	35.861	25.79	5.26	99	0.11	***	***
1	10	18.57	35.862	25.81	5.31	100	0.10	***	***
1	20	18.56	35.861	25.81	5.30	100	0.09	***	***
1	30	18.58	35.861	25.80	5.30	100	0.10	***	***
1	40	18.57	35.861	25.81	5.31	100	0.09	***	***
1	50	18.58	35.860	25.80	5.31	100	0.12	***	***
1	75	18.07	35.804	25.89	5.20	97	0.15	***	***
1	100	15.98	35.564	26.20	4.88	87	0.35	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 96/66	17/ 4/66	1322 J	35 50 S	136 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
124	14.4	18.3	24	2	15	4	6	8	23	2	23	1	1022.6	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.38	36.063	25.75	5.17	99	0.07	***	***
1	10	19.36	36.068	25.76	5.19	99	0.06	***	***
1	20	19.33	36.067	25.77	5.20	99	0.07	***	***
1	30	19.35	36.067	25.76	5.18	99	0.06	***	***
1	40	19.33	36.067	25.77	5.19	99	0.06	***	***
1	50	19.35	36.066	25.76	5.17	99	0.07	***	***
1	75	19.33	36.066	25.77	5.19	99	0.07	***	***
1	110	15.22	35.500	26.33	5.06	89	0.38	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 27 97/55	17/ 4/66	1618 J	36 27 S	136 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
732	15.0	18.3	20	1	15	4	9	8	22	2	22	1	1023.5	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.14	35.563	25.69	5.35	100	0.15	***	***
1	25	18.03	35.557	25.71	5.31	99	0.13	***	***
1	50	18.00	35.555	25.71	5.32	99	0.14	***	***
1	75	15.92	35.615	26.26	5.00	89	0.30	***	***
1	100	15.59	35.609	26.33	4.95	88	0.31	***	***
1	147	15.34	35.597	26.37	4.96	87	0.31	***	***
1	194	13.69	35.291	26.49	5.58	95	0.31	***	***
1	292	12.32	35.209	26.71	5.51	91	0.50	***	***
1	484	9.92	34.833	26.86	5.53	87	0.86	***	***
1	680	8.59	34.618	26.90	5.44	83	1.15	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 98/65	17/ 4/66	1953 J	36 43 S	136 41 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
732	14.4	17.2	29	2	15	4	8	8	22	2	22	1	1022.6	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.98	35.940	25.76	5.23	99	0.11	***	***
1	25	18.98	35.942	25.76	5.22	99	0.10	***	***
1	50	18.98	35.937	25.76	5.20	99	0.10	***	***
1	75	18.97	35.960	25.78	5.19	99	0.07	***	***
1	100	16.04	35.589	26.21	5.19	93	0.26	***	***
1	147	15.18	35.541	26.37	4.94	87	0.37	***	***
1	195	15.23	35.576	26.38	4.88	86	0.37	***	***
1	292	13.10	35.281	26.61	5.37	90	0.46	***	***
1	490	9.48	34.758	26.87	5.54	86	0.95	***	***
1	686	8.39	34.594	26.92	5.35	81	1.17	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 2/ 99/65	17/ 4/66	2310 J	37 01 S	136 09 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4480	13.3	17.2	27	2	15	4	8	6	27	2	27	1	1022.8	13	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.69	35.559	25.79	5.40	100	0.16	***	***
2	25	17.66	35.558	25.80	5.40	100	0.37	***	***
2	50	17.65	35.549	25.80	5.40	100	0.16	***	***
2	75	15.82	35.385	26.10	5.76	102	0.19	***	***
2	100	14.54	35.451	26.44	5.31	92	0.32	***	***
2	150	13.40	35.318	26.58	5.40	91	0.40	***	***
2	197	12.40	35.217	26.70	5.53	91	0.46	***	***
2	293	11.01	35.008	26.80	5.48	88	0.71	***	***
1	483	9.12	34.694	26.88	5.63	86	0.99	***	***
1	677	8.01	34.547	26.94	5.17	77	1.28	***	***
1	871	5.83	34.428	27.14	4.45	63	1.67	***	***
1	1064	3.96	34.409	27.34	4.26	58	1.87	***	***
1	1261	3.12	34.482	27.48	3.93	53	2.07	***	***
1	1459	2.75	34.560	27.58	3.77	50	1.96	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 100/55	18/ 4/66	0313 J	36 44 S	135 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4663	13.9	17.2	30	1	15	4	9	7	27	2	27	1	1019.1	0	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.79	35.551	25.76	5.41	100	0.18	***	***
2	25	17.76	35.548	25.77	5.44	101	0.15	***	***
2	50	17.77	35.547	25.76	5.43	100	0.15	***	***
2	73	14.78	35.433	26.37	5.53	96	0.30	***	***
2	95	14.67	35.497	26.44	5.17	90	0.39	***	***
2	142	13.08	35.259	26.59	5.65	95	0.41	***	***
2	189	12.63	35.246	26.68	5.53	92	0.48	***	***
2	283	11.19	35.043	26.79	5.51	89	0.67	***	***
1	490	9.11	34.692	26.88	5.57	86	1.05	***	***
1	687	7.82	34.537	26.96	5.07	76	1.37	***	***
1	882	5.74	34.423	27.15	4.45	63	1.73	***	***
1	1078	3.86	34.411	27.35	4.22	57	1.95	***	***
1	1279	3.09	34.488	27.49	3.92	52	2.08	***	***
1	1477	2.70	34.573	27.59	3.82	51	2.05	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 101/66	18/ 4/66	0704 J	36 27 S	135 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	13.3	17.8	32	4	15	4	8	8	22	2	22	1	1020.5	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.53	35.552	25.83	5.44	100	0.15	***	***
2	25	17.50	35.549	25.83	5.44	100	0.15	***	***
2	50	17.51	35.549	25.83	5.42	100	0.15	***	***
2	75	17.52	35.549	25.83	5.41	100	0.15	***	***
2	100	13.38	35.250	26.53	6.01	101	0.28	***	***
2	150	12.66	35.238	26.66	5.53	92	0.46	***	***
2	200	12.20	35.186	26.71	5.56	92	0.51	***	***
2	300	10.95	34.995	26.80	5.56	89	0.72	***	***
1	490	9.10	34.693	26.88	5.59	86	1.06	***	***
1	687	7.90	34.542	26.95	5.06	76	1.36	***	***
1	862	6.14	34.438	27.11	4.49	64	1.71	***	***
1	1075	3.94	34.407	27.34	4.25	58	1.98	***	***
1	1275	3.06	34.489	27.49	3.93	52	2.07	***	***
1	1474	2.69	34.574	27.59	3.83	51	2.16	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 102/65	18/ 4/66	1056 J	36 09 S	134 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3886	15.0	21.1	35	3	15	4	6	8	35	2	24	1	1022.2	13	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.21	35.996	25.75	5.22	100	0.10	***	***
1	25	19.17	35.998	25.76	5.23	100	0.10	***	***
1	50	19.12	35.992	25.77	5.21	99	0.10	***	***
1	75	18.87	35.933	25.79	5.22	99	0.10	***	***
1	100	14.43	35.302	26.35	5.77	100	0.27	***	***
1	150	13.31	35.288	26.57	5.46	92	0.41	***	***
1	195	12.65	35.212	26.64	5.54	92	0.46	***	***
1	291	12.11	35.208	26.75	5.45	90	0.58	***	***
1	481	9.75	34.819	26.87	5.47	85	0.95	***	***
1	675	8.21	34.577	26.93	5.25	79	1.25	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 103/65	18/ 4/66	1355 J	35 50 S	134 46 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2743	15.6	18.9	03	2	15	1	1	8	22	2	22	1	1018.7	10	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.21	36.008	25.76	5.23	100	0.07	***	***
2	25	19.10	35.999	25.78	5.25	100	0.08	***	***
2	50	19.08	36.007	25.79	5.23	100	0.09	***	***
2	75	19.08	36.013	25.79	5.19	99	0.11	***	***
2	100	14.93	35.331	26.26	5.85	102	0.24	***	***
2	150	13.63	35.337	26.54	5.41	92	0.41	***	***
2	197	12.85	35.221	26.61	5.50	92	0.46	***	***
2	295	12.06	35.200	26.75	5.48	90	0.57	***	***
1	492	9.76	34.822	26.87	5.46	85	0.95	***	***
1	689	8.10	34.564	26.94	5.17	78	1.33	***	***
1	883	5.01	34.438	27.13	4.45	64	1.69	***	***
1	1079	3.98	34.405	27.34	4.28	58	1.96	***	***
1	1278	3.13	34.484	27.48	3.95	53	2.07	***	***
1	1477	2.72	34.570	27.59	3.79	50	2.10	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 104/66	18/ 4/66	1632 J	35 35 S	134 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1829	16.1	18.9	03	2	15	*	0	9	22	2	22	1	1019.2	22	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.67	36.040	25.66	5.22	100	0.12	***	***
2	25	19.57	36.041	25.69	5.22	100	0.09	***	***
2	50	19.40	35.999	25.70	5.23	100	0.11	***	***
2	75	15.82	35.568	26.01	5.51	100	0.22	***	***
2	100	14.84	35.444	26.37	5.38	94	0.32	***	***
2	150	14.69	35.479	26.43	5.16	90	0.41	***	***
2	200	13.77	35.340	26.52	5.40	92	0.40	***	***
2	300	12.38	35.218	26.70	5.52	91	0.49	***	***
1	450	10.49	34.935	26.84	5.47	87	0.83	***	***
1	631	8.76	34.652	26.90	5.46	83	1.13	***	***
1	818	6.77	34.477	27.06	4.58	67	1.54	***	***
1	1011	4.24	34.400	27.31	4.33	59	1.88	***	***
1	1206	3.28	34.465	27.45	4.00	54	2.03	***	***
1	1394	2.86	34.540	27.55	3.81	51	2.14	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
TM 2/ 105/66	18/ 4/66	2000 J	35 16 S	135 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
128	15.6	18.3	03	1	15	*	0	9	03	2	24	1	1019.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.31	35.982	25.71	5.28	101	0.11	***	***
1	10	19.28	35.982	25.72	5.29	101	0.10	***	***
1	20	19.25	35.981	25.72	5.27	101	0.10	***	***
1	30	19.25	35.981	25.72	5.24	100	0.10	***	***
1	40	19.24	35.981	25.73	5.22	100	0.10	***	***
1	50	19.27	35.981	25.72	5.24	100	0.10	***	***
1	75	19.21	35.973	25.73	5.20	99	0.10	***	***
1	100	15.08	35.707	26.29	4.81	86	0.37	***	***
1	120	15.05	35.699	26.29	4.78	85	0.37	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 106/66	18/ 4/66	2206 J	35 00 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
91	16.1	18.3	02	2	15	*	0	8	24	2	24	1	1019.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.44	35.830	25.82	5.33	100	0.17	***	***
1	10	18.16	35.825	25.88	5.35	100	0.17	***	***
1	20	18.14	35.825	25.89	5.31	99	0.17	***	***
1	30	18.15	35.828	25.89	5.28	99	0.19	***	***
1	40	18.15	35.828	25.89	5.28	99	0.19	***	***
1	50	18.16	35.828	25.88	5.26	98	0.19	***	***
1	75	18.16	35.826	25.88	5.27	98	0.20	***	***
1	85	18.17	35.826	25.88	5.26	98	0.20	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 107/66	19/ 4/66	0109 J	34 44 S	134 45 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	15.6	18.9	05	2	15	*	0	8	24	2	24	1	1017.8	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.09	35.954	25.75	5.30	101	0.08	***	***
1	10	19.07	35.955	25.75	5.29	101	0.08	***	***
1	20	19.06	35.955	25.75	5.29	101	0.08	***	***
1	30	19.08	35.955	25.75	5.28	100	0.08	***	***
1	40	19.08	35.969	25.76	5.26	100	0.09	***	***
1	50	19.11	35.968	25.75	5.23	100	0.09	***	***
1	75	15.43	35.515	26.29	4.95	87	0.40	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 108/66	19/ 4/66	0322 J	34 35 S	134 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
101	16.7	18.9	02	2	15	*	0	8	24	2	24	1	1016.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.79	36.052	25.64	5.17	100	0.11	***	***
1	10	19.68	36.052	25.67	5.19	100	0.08	***	***
1	20	19.68	36.052	25.67	5.19	100	0.08	***	***
1	30	19.69	36.051	25.66	5.17	100	0.09	***	***
1	40	19.68	36.051	25.67	5.17	100	0.09	***	***
1	50	19.71	36.051	25.66	5.16	99	0.08	***	***
1	70	19.69	36.050	25.66	5.14	99	0.09	***	***
1	90	15.30	35.782	26.30	4.59	83	0.38	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 109/66	19/ 4/66	0609 J	34 13 S	133 41 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
99	17.2	17.8	05	2	15	*	0	8	05	2	23	1	1018.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.31	35.931	25.67	5.28	101	0.09	***	***
1	10	19.27	35.930	25.68	5.30	101	0.11	***	***
1	20	19.27	35.929	25.68	5.28	101	0.10	***	***
1	30	19.28	35.929	25.68	5.26	100	0.10	***	***
1	40	19.28	35.928	25.68	5.25	100	0.09	***	***
1	50	19.28	35.926	25.67	5.25	100	0.13	***	***
1	70	19.24	35.920	25.68	5.24	100	0.12	***	***
1	90	16.45	35.799	26.27	4.61	83	0.40	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 110/56	19/ 4/66	0810 J	34 28 S	133 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
117	17.2	20.0	34	3	15	3	1	8	24	2	24	1	1016.2	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.65	35.909	25.56	5.19	100	0.10	***	***
1	10	19.62	35.909	25.57	5.15	99	0.10	***	***
1	20	19.62	35.911	25.58	5.16	99	0.10	***	***
1	30	19.85	36.039	25.61	5.13	99	0.10	***	***
1	40	19.86	36.052	25.62	5.11	99	0.09	***	***
1	50	19.91	36.062	25.61	5.09	98	0.10	***	***
1	75	19.17	35.940	25.71	5.04	96	0.12	***	***
1	100	16.77	35.740	26.15	4.64	84	0.29	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 111/66	19/ 4/66	1024 J	34 48 S	132 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
947	18.3	20.6	34	4	15	3	1	8	24	2	24	1	1014.9	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.71	35.957	25.59	5.22	101	0.09	***	***
1	25	19.66	35.958	25.60	5.22	100	0.09	***	***
1	50	19.66	35.958	25.60	5.22	100	0.09	***	***
1	75	19.65	35.955	25.60	5.22	100	0.10	***	***
1	100	15.08	35.367	26.26	5.73	100	0.23	***	***
1	144	13.45	35.298	26.55	5.44	92	0.41	***	***
1	190	12.90	35.222	26.60	5.44	91	0.45	***	***
1	288	12.16	35.167	26.71	5.42	89	0.57	***	***
1	479	9.71	34.814	26.88	5.39	84	0.97	***	***
1	673	7.96	34.561	26.96	5.05	76	1.35	***	***
1	868	5.78	34.430	27.15	4.42	63	1.74	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 112/66	19/ 4/66	1338 J	34 26 S	132 24 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
814	18.3	21./	03	3	15	3	6	8	03	2	25	1	1013.2	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.78	35.881	25.51	5.23	101	0.09	***	***
1	25	19.71	35.886	25.53	5.22	100	0.09	***	***
1	50	19.58	35.903	25.58	5.20	100	0.10	***	***
1	75	18.55	35.726	25.71	5.19	98	0.15	***	***
1	100	15.51	35.426	26.20	5.57	98	0.23	***	***
1	150	13.81	35.363	26.52	5.38	92	0.34	***	***
1	197	12.99	35.225	26.59	5.47	92	0.43	***	***
1	296	12.17	35.169	26.71	5.39	89	0.57	***	***
1	495	9.45	34.774	26.89	5.40	84	1.01	***	***
1	694	7.08	34.491	27.03	4.67	68	1.53	***	***
1	790	6.16	34.440	27.11	4.48	64	1.70	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 113/66	19/ 4/66	1614 J	34 08 S	132 48 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
132	18.9	22.2	02	2	15	3	3	8	02	3	04	1	1012.3	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.83	35.886	25.50	5.18	100	0.10	***	***
1	10	19.83	35.886	25.50	5.19	100	0.12	***	***
1	20	19.68	35.864	25.52	5.18	100	0.11	***	***
1	30	19.75	35.891	25.53	5.17	100	0.12	***	***
1	40	19.78	35.918	25.54	5.16	99	0.10	***	***
1	50	19.85	35.933	25.53	5.16	100	0.11	***	***
1	75	19.76	35.973	25.58	5.02	97	0.12	***	***
1	98	17.44	35.774	26.02	4.77	88	0.27	***	***
1	115	16.98	35.792	26.14	4.49	82	0.25	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 114/66	19/ 4/66	1851 J	33 50 S	133 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
99	18.3	22.2	03	2	15	3	6	8	23	2	23	1	1016.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.61	35.959	25.61	5.32	102	0.08	***	***
1	10	19.48	35.956	25.65	5.32	102	0.08	***	***
1	20	19.32	35.942	25.68	5.32	102	0.08	***	***
1	30	19.26	35.928	25.68	5.29	101	0.10	***	***
1	40	19.19	35.916	25.69	5.31	101	0.09	***	***
1	50	19.19	35.913	25.69	5.28	101	0.09	***	***
1	70	17.38	35.827	26.07	4.87	90	0.26	***	***
1	90	15.29	35.771	26.29	4.51	81	0.43	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 115/65	19/ 4/66	2053 J	33 39 S	133 41 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
73	18.3	22.2	03	2	15	3	6	8	03	2	03	1	1013.6	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.50	35.928	25.62	5.34	102	0.07	***	***
1	10	19.46	35.928	25.63	5.37	103	0.07	***	***
1	20	19.14	35.901	25.69	5.35	102	0.08	***	***
1	30	18.84	35.863	25.74	5.32	101	0.09	***	***
1	40	18.79	35.858	25.75	5.31	100	0.09	***	***
1	50	18.76	35.852	25.75	5.31	100	0.09	***	***
1	65	15.47	35.753	26.24	4.68	84	0.38	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 116/66	19/ 4/66	2310 J	33 27 S	134 08 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
70	17.8	22.2	03	4	15	3	1	8	03	3	03	1	1013.8	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.66	35.822	25.75	5.41	102	0.09	***	***
1	10	18.55	35.818	25.78	5.38	101	0.09	***	***
1	20	18.51	35.818	25.79	5.41	102	0.09	***	***
1	30	18.50	35.815	25.79	5.37	101	0.09	***	***
1	40	18.38	35.798	25.81	5.38	101	0.10	***	***
1	50	15.01	35.447	26.33	4.92	86	0.40	***	***
1	60	14.98	35.440	26.33	4.90	86	0.40	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 117/65	20/ 4/66	0123 J	33 18 S	134 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
60	15.7	21.1	04	1	15	3	2	8	00	0	00	0	1014.2	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.94	35.619	25.78	5.51	102	0.13	***	***
1	5	17.93	35.622	25.78	5.52	102	0.14	***	***
1	15	17.92	35.620	25.79	5.53	103	0.16	***	***
1	25	17.86	35.618	25.80	5.48	102	0.15	***	***
1	35	17.83	35.618	25.80	5.48	102	0.15	***	***
1	45	16.14	35.510	26.13	4.89	88	0.32	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 118/56	20/ 4/66	0312 J	33 40 S	134 41 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
53	16.1	20.0	04	2	15	3	1	8	00	0	00	0	1013.3	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.87	35.632	25.81	5.53	103	0.13	***	***
1	10	17.73	35.630	25.84	5.75	106	0.13	***	***
1	20	17.62	35.630	25.87	5.45	101	0.18	***	***
1	30	17.60	35.626	25.87	5.40	100	0.18	***	***
1	40	15.96	35.500	26.16	4.69	84	0.41	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 119/65	20/ 4/66	0512 J	34 01 S	134 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
70	16.7	20.6	32	4	15	3	1	8	32	1	00	0	1013.5	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.13	35.766	25.84	5.40	101	0.09	***	***
1	10	18.05	35.766	25.86	5.42	101	0.07	***	***
1	20	18.05	35.765	25.86	5.42	101	0.08	***	***
1	30	17.98	35.754	25.87	5.41	101	0.08	***	***
1	40	17.97	35.753	25.87	5.40	100	0.08	***	***
1	50	17.76	35.729	25.91	5.35	99	0.11	***	***
1	60	15.41	35.489	26.28	4.49	79	0.47	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 120/65	20/ 4/66	0706 J	34 17 S	134 38 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	17.2	19.4	32	4	15	6	7	8	32	2	22	1	1012.4	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.01	35.912	25.73	5.28	100	0.08	***	***
1	10	18.99	35.915	25.74	5.31	101	0.07	***	***
1	20	18.99	35.915	25.74	5.28	100	0.06	***	***
1	30	19.00	35.915	25.74	5.29	100	0.06	***	***
1	40	18.85	35.898	25.76	5.31	101	0.07	***	***
1	50	18.56	35.852	25.80	5.34	100	0.07	***	***
1	60	18.40	35.826	25.82	5.32	100	0.08	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 121/55	20/ 4/66	0917 J	34 35 S	134 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
91	17.8	21.1	35	4	15	6	2	8	35	2	18	1	1014.7	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.58	36.037	25.68	5.22	100	0.06	***	***
1	10	19.59	36.038	25.68	5.22	100	0.06	***	***
1	20	19.57	36.039	25.69	5.22	100	0.04	***	***
1	30	19.42	36.008	25.70	5.25	101	0.04	***	***
1	40	19.36	35.996	25.71	5.25	100	0.05	***	***
1	50	19.31	35.979	25.71	5.24	100	0.05	***	***
1	60	19.24	35.964	25.71	5.24	100	0.05	***	***
1	70	19.20	35.956	25.72	5.25	100	0.05	***	***
1	85	15.30	35.775	26.29	4.65	84	0.35	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 122/66	20/ 4/66	1123 J	34 52 S	133 53 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
123	19.4	22.8	35	2	15	8	2	8	35	2	18	1	1013.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.72	35.946	25.57	5.21	100	0.07	***	***
1	20	19.59	35.949	25.61	5.18	100	0.07	***	***
1	40	19.60	35.957	25.61	5.19	100	0.07	***	***
1	50	19.57	35.946	25.62	5.19	100	0.06	***	***
1	60	19.36	35.917	25.65	5.17	99	0.07	***	***
1	70	17.74	35.664	25.86	5.23	97	0.17	***	***
1	80	16.60	35.546	26.04	5.22	94	0.24	***	***
1	100	16.18	35.589	26.18	4.99	89	0.30	***	***
1	110	16.35	35.653	26.19	4.87	88	0.30	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 123/66	20/ 4/66	1333 J	35 10 S	133 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1200	18.6	20.8	25	1	15	4	8	7	25	2	23	1	1021.1	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.70	35.818	25.48	5.24	101	0.09	***	***
1	25	19.58	35.857	25.54	5.23	100	0.09	***	***
1	50	17.99	35.728	25.85	5.14	96	0.18	***	***
1	75	16.62	35.623	26.10	4.89	88	0.30	***	***
1	100	15.21	35.585	26.17	4.97	89	0.30	***	***
1	150	15.68	35.538	26.25	5.07	90	0.31	***	***
1	197	14.62	35.445	26.42	5.28	92	0.32	***	***
1	295	12.79	35.213	26.62	5.48	91	0.41	***	***
1	493	9.79	34.813	26.86	5.48	85	0.92	***	***
1	690	8.19	34.583	26.94	5.22	79	1.21	***	***
1	888	5.63	34.420	27.16	4.45	63	1.70	***	***
1	1086	3.91	34.420	27.36	4.16	57	1.91	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
BM 2/ 124/66	20/ 4/66	1701 J	35 31 S	134 07 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1810	16.7	17.2	20	5	15	5	9	6	20	2	22	1	1012.9	10	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.98	35.516	25.69	5.40	100	0.10	***	***
2	25	17.82	35.512	25.73	5.39	100	0.09	***	***
2	50	17.83	35.525	25.73	5.39	100	0.09	***	***
2	75	17.65	35.486	25.75	5.42	100	0.09	***	***
2	100	13.83	35.178	26.38	6.04	103	0.20	***	***
2	150	12.93	35.238	26.61	5.49	92	0.34	***	***
2	200	12.46	35.207	26.68	5.53	92	0.42	***	***
2	300	11.40	35.085	26.79	5.45	88	0.61	***	***
1	485	9.24	34.724	26.88	5.56	86	0.95	***	***
1	681	7.88	34.541	26.95	5.05	75	1.24	***	***
1	873	5.21	34.410	27.21	4.41	62	1.70	***	***
1	1066	3.83	34.410	27.36	4.26	58	1.89	***	***
1	1263	2.99	34.505	27.51	3.88	52	1.94	***	***
1	1460	2.75	34.564	27.58	3.80	50	1.94	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
04 2/ 125/66	20/ 4/66	2048 J	35 49 S	134 46 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2377	14.7	16.1	20	3	15	9	8	6	20	2	22	1	1018.1	0	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.42	35.733	25.75	5.33	100	0.10	***	***
2	25	18.35	35.719	25.75	5.35	100	0.11	***	***
2	50	17.47	35.470	25.78	5.46	100	0.18	***	***
2	75	17.24	35.427	25.80	5.47	100	0.21	***	***
2	100	14.75	35.335	26.30	5.78	100	0.23	***	***
2	150	13.10	35.252	26.59	5.49	92	0.41	***	***
2	200	12.68	35.232	26.66	5.53	92	0.42	***	***
2	300	11.98	35.187	26.76	5.45	89	0.55	***	***
1	480	9.48	34.756	26.87	5.55	86	0.96	***	***
1	671	8.28	34.573	26.92	5.36	81	1.22	***	***
1	862	6.11	34.436	27.11	4.49	64	1.66	***	***
1	1053	4.33	34.401	27.30	4.29	59	1.86	***	***
1	1250	3.20	34.468	27.46	3.98	53	2.00	***	***
1	1447	2.77	34.556	27.57	3.80	50	2.01	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 126/66	20/ 4/66	2306 J	35 48 S	135 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2651	13.9	15.6	17	3	15	9	8	7	18	3	20	1	1016.6	20	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.10	35.579	25.71	5.37	100	0.17	***	***
2	25	18.09	35.571	25.70	5.38	100	0.14	***	***
2	50	18.07	35.579	25.72	5.37	100	0.20	***	***
2	75	18.15	35.653	25.75	5.35	100	0.15	***	***
2	100	14.59	35.238	26.26	6.03	104	0.22	***	***
2	150	12.95	35.222	26.59	5.61	94	0.42	***	***
2	200	12.35	35.196	26.69	5.51	91	0.45	***	***
2	300	11.26	35.061	26.79	5.51	89	0.65	***	***
1	474	9.42	34.754	26.88	5.49	85	0.95	***	***
1	665	8.25	34.579	26.93	5.29	80	1.23	***	***
1	853	5.31	34.449	27.10	4.52	65	1.59	***	***
1	1045	4.10	34.410	27.33	4.28	59	1.89	***	***
1	1245	3.16	34.476	27.47	3.96	53	1.97	***	***
1	1445	2.75	34.482	27.52	3.83	51	2.03	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
04 2/ 127/66	21/ 4/66	0207 J	35 47 S	135 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
150	12.8	16.1	18	5	15	9	9	8	18	3	22	1	1017.6	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.21	35.941	25.70	5.22	100	0.08	***	***
1	10	19.20	35.938	25.70	5.23	100	0.09	***	***
1	20	19.20	35.938	25.70	5.20	99	0.08	***	***
1	30	19.19	35.935	25.71	5.21	99	0.08	***	***
1	40	19.25	35.946	25.70	5.19	99	0.08	***	***
1	50	19.25	35.947	25.70	5.17	99	0.09	***	***
1	75	16.13	35.739	26.30	5.20	93	0.23	***	***
1	100	15.74	35.578	26.27	5.07	90	0.31	***	***
1	125	15.77	35.620	26.29	4.97	88	0.31	***	***
1	140	15.87	35.679	26.32	4.86	87	0.32	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 128/66	21/ 4/66	0356 J	35 50 S	136 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
128	12.2	16.1	18	5	15	9	8	8	18	3	22	1	1018.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.22	36.030	25.77	5.22	100	0.08	***	***
1	10	19.22	36.037	25.77	5.22	100	0.07	***	***
1	20	19.22	36.038	25.77	5.20	99	0.05	***	***
1	30	19.26	36.046	25.77	5.17	99	0.05	***	***
1	40	19.26	36.043	25.77	5.18	99	0.07	***	***
1	50	19.30	36.050	25.76	5.17	99	0.07	***	***
1	74	19.28	36.046	25.77	5.19	99	0.07	***	***
1	98	15.53	35.552	26.30	5.07	90	0.32	***	***
1	117	15.27	35.513	26.32	5.07	89	0.34	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IM 2/ 129/66	21/ 4/66	0521 J	35 50 S	136 23 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	12.2	15.0	18	5	15	9	8	7	18	3	18	1	1019.1	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.70	35.924	25.82	5.27	99	0.08	***	***
1	10	18.68	35.930	25.83	5.28	100	0.08	***	***
1	20	18.67	35.930	25.83	5.26	99	0.08	***	***
1	30	18.70	35.929	25.83	5.27	99	0.09	***	***
1	40	18.69	35.928	25.83	5.25	99	0.08	***	***
1	50	18.66	35.910	25.82	5.27	99	0.09	***	***
1	75	16.43	35.609	26.13	5.05	91	0.31	***	***
1	100	15.61	35.549	26.28	4.97	88	0.36	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
04 2/ 130/66	21/ 4/66	0659 J	35 32 S	136 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	12.8	15.6	18	4	15	5	8	8	18	3	18	1	1020.5	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.19	35.942	25.96	5.31	99	0.09	***	***
1	10	18.16	35.946	25.97	5.37	100	0.10	***	***
1	20	18.15	35.948	25.98	5.34	100	0.10	***	***
1	30	18.07	35.974	26.02	5.34	100	0.11	***	***
1	40	17.98	36.016	26.07	5.26	98	0.16	***	***
1	50	18.01	36.035	26.08	5.25	98	0.18	***	***
1	70	18.45	35.928	25.89	4.96	93	0.20	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 131/66	21/ 4/66	0853 J	35 28 S	137 04 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
37	12.8	15.6	21	3	15	5	8	8	21	2	25	1	1022.3	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.82	36.089	26.17	5.38	100	0.16	***	***
1	10	17.80	36.090	26.17	5.38	100	0.16	***	***
1	20	17.82	36.089	26.17	5.37	100	0.14	***	***
1	30	17.83	36.089	26.17	5.36	100	0.14	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 2/ 132/65	21/ 4/66	1041 J	35 23 S	137 32 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
24	12.8	15.0	19	3	15	5	8	8	19	2	23	1	1022.1	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.80	36.644	26.35	5.19	99	0.13	***	***
1	10	18.77	36.653	26.36	5.21	99	0.12	***	***
1	20	18.77	36.653	26.36	5.20	99	0.12	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
JH 2/ 133/66	21/ 4/66	1231 J	35 18 S	138 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
36	13.3	15.6	19	3	15	5	8	7	19	2	23	1	1021.7	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.47	37.160	26.57	5.16	100	0.12	***	***
1	10	19.21	37.168	26.64	5.16	99	0.12	***	***
1	20	19.22	37.179	26.65	5.14	99	0.14	***	***
1	30	19.29	37.215	26.66	5.08	98	0.14	***	***

OCEANOGRAPHICAL CRUISE REPORTS

1. Oceanographical observations in the Indian Ocean in 1959. H.M.A.S. *Diamantina* Cruises Dm1/59 and Dm2/59.
2. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm1/60.
3. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm2/60.
4. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm3/60.
5. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruises G1/60 and G2/60.
6. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruise G3/60.
7. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm1/61.
8. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G1/61.
9. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm2/61.
10. Oceanographical observations in the Indian and Pacific Oceans in 1961. H.M.A.S. *Gascoyne* Cruise G2/61.
11. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm3/61.
12. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G3/61.
13. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G1/62.
14. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm1/62.
15. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm2/62.
16. Oceanographical observations in the Pacific and Indian Oceans in 1962. H.M.A.S. *Gascoyne* Cruises G2/62 and G3/62.
17. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G4/62.
18. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm3/62.
19. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G5/62.
20. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm4/62.
21. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G1/63.
22. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G2/63.
23. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm1/63.
24. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm2/63.
25. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm3/63.
26. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G3/63.
29. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G4/63.

OCEANOGRAPHICAL CRUISE REPORTS

(*Continued*)

31. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G5/63.
32. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G1/64.
33. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm1/64.
34. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G2/64.
35. Oceanographical observations in the Indian and Pacific Oceans in 1964. H.M.A.S. *Gascoyne* Cruise G3/64.
36. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm2/64.
38. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm4/64.
39. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G4/64.
40. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm5/64.
41. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G5/64.
42. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G6/64.
43. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G2/65.
44. Oceanographical observations in the Pacific Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G3/65.
45. Oceanographical observations in the Pasific Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G4/65.
46. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G5/65.
49. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Diamantina* Cruise Dm2/65.
54. Oceanographical observations in the Indian Ocean in 1966. H.M.A.S. *Diamantina* Cruise Dm2/66.