

OCEANOGRAPHICAL OBSERVATIONS
IN THE PACIFIC OCEAN IN 1962
H.M.A.S. *GASCOYNE*
Cruise G 5/62

OCEANOGRAPHICAL CRUISE REPORT
NO. 19

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1967

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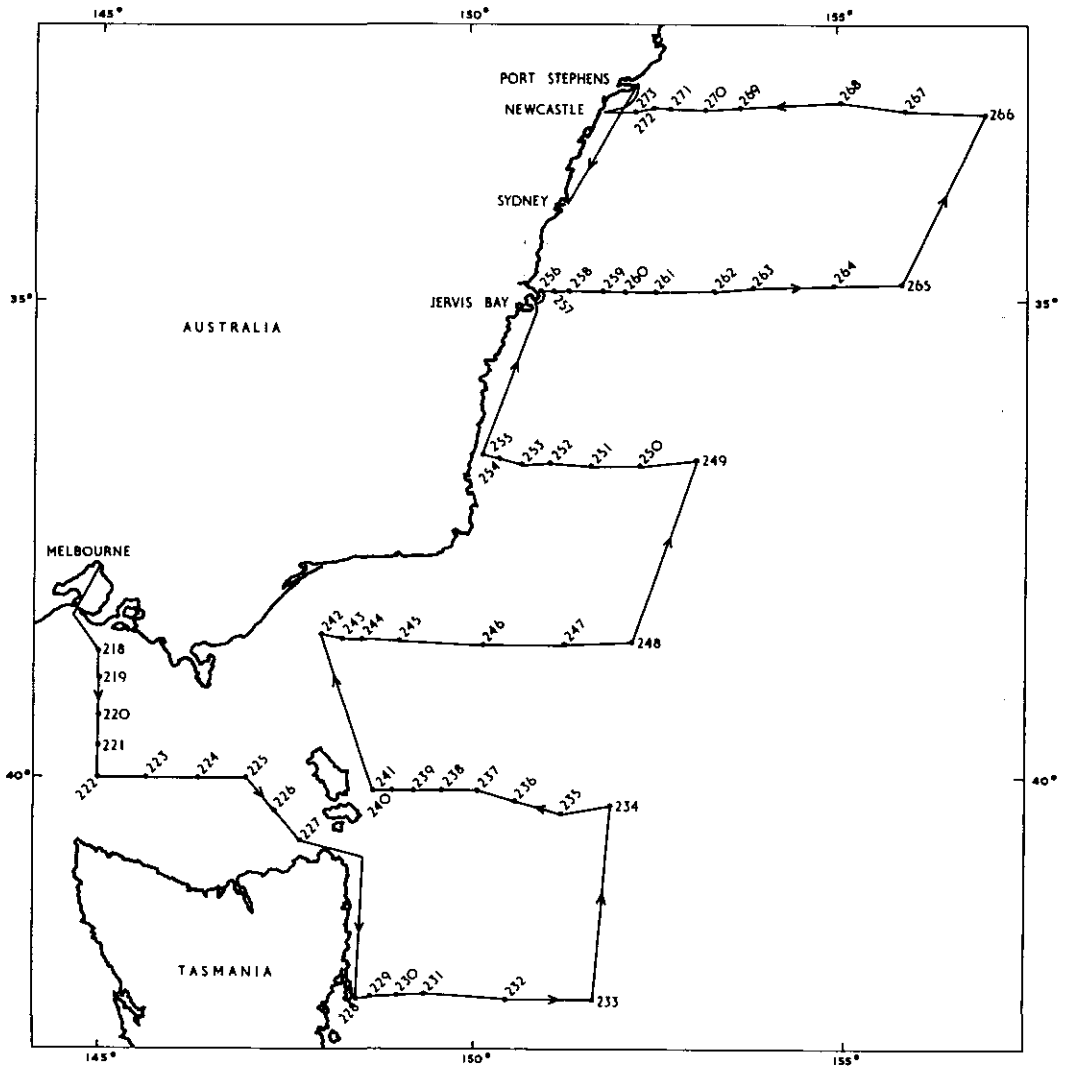
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION,

AUSTRALIA

MELBOURNE, 1967

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OCEANOGRAPHICAL CRUISE REPORT

NO. 19

Oceanographical Observations in the Pacific Ocean in 1962

H.M.A.S. GASCOYNE

Cruise G5/62

September 30 - October 10, 1962

I. INTRODUCTION

This report records the data for the fifth cruise in 1962 of H.M.A.S. Gascoyne, Royal Australian Navy oceanographical frigate, in the Pacific Ocean.

Objectives

To examine the chemical and physical environment of the fishing grounds at the beginning of the east coast tuna season, and to study the structure of the East Australian Current system off the New South Wales coast.

Itinerary

The cruise began at Melbourne on September 30, proceeded south to 40° S. across Bass Strait and Banks Strait and down the east coast of Tasmania. Six east-west sections were then run from Freycinet Peninsula to Newcastle (Fig. 1).

Scientific Personnel

D. Vaux (Cruise Leader)
R. Bradley
F. Davies
L. Olsen
J. Prothero
T. Rao, Naval Physical Laboratory, Cochin
H. Swami " " " "

Salinity, oxygen, and inorganic phosphate determinations were done in the ship's laboratory by F. Davies and J. Prothero. The data were processed under the direction of W. Hedge, with computer programmes designed by A.D. Crooks. The track chart was prepared by R. Breach. Accuracy of cruise data is the responsibility of the Cruise Leader, D. Vaux.

II. WORK ACCOMPLISHED

Surface and subsurface samples were collected at each of the fifty-six stations worked (G5/218/62 - G5/273/62)

TABLE 1

WORK DONE AT EACH STATION

Stn No.	Max. Samp. Depth (m)	Hydrology (Number of Samples Taken)		
		S‰	O ₂	Inorg. P
218	70	7	7	7
219	60	7	7	7
220	60	7	7	7
221	50	3	3	3
222	45	3	3	3
223	70	4	4	4
224	70	4	4	4
225	65	4	4	4
226	60	4	4	4
227	25	2	2	2
228	80	9	9	9
229	1100	12	12	12
230	1500	14	14	14
231	1500	14	14	14
232	1500	14	14	14
233	1500	14	14	14
234	1500	14	14	14
235	1500	14	14	14
236	1700	15	15	15
237	1500	14	14	14
238	1500	14	14	14
239	1500	14	14	14
240	700	10	10	10
241	80	4	4	4
242	65	4	4	4
243	100	5	5	5
244	800	11	11	11
245	1600	14	14	14
246	1500	14	14	14
247	1600	14	14	14
248	1500	14	14	14
249	1500	14	14	14
250	1600	14	14	14

Stn No.	Max. Samp. Depth (m)	Hydrology (Number of Samples Taken)		
		S‰	O ₂	Inorg. P
251	1500	14	14	14
252	1500	14	14	14
253	1500	14	14	14
254	1600	14	14	14
255	110	5	5	5
256	100	5	5	5
257	350	9	9	9
258	1500	14	14	14
259	1500	14	14	14
260	1500	14	14	14
261	4000	15	15	15
262	1600	14	14	14
263	1500	14	14	14
264	1500	14	14	14
265	1500	14	14	14
266	1500	14	14	14
267	1500	14	14	14
268	1500	14	14	14
269	1500	14	14	14
270	1500	14	14	14
271	800	11	11	11
272	120	6	6	6
273	100	8	8	8

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.- Water temperatures were taken with deep-sea reversing thermometers. Two protected thermometers were used at each depth, together with an unprotected thermometer on all but the upper five Nansen water bottles. Differences between corrected protected thermometer readings were generally less than 0.04 deg C, and the mean values listed in this cruise report are considered accurate to ± 0.03 deg C.

Thermometric Depth.- Depth calculations were made by the second method described by La Fond (1951), plotting thermometric depth against the difference between thermometric and wire depths. Depths are considered accurate to ± 5 m at depths less than 200 m, ± 10 m at depths between about 200 and 400 m, and about 2% at depths from 400 to 1500 m.

Sigma-t.- Values were calculated from temperature and salinity by computer using the equations of Knudsen (La Fond 1951).

2. Chemistry

Salinity.- Salinity was measured on board using 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 sea-water 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. Duplicate titrations were made on approximately every tenth sample. Saturation values were calculated by computer using the simpler of the equations given by Richards and Corwin (1956).

$$\frac{\text{O}_2 \text{ (ml/l)} \times (33.5 + T^{\circ}\text{C}) \times 100}{332.4 - (1.854 \times S\text{‰})}$$

Inorganic Phosphate.- The method of Atkins (1923) was used with 1 ml molybdate reagent (300 ml 10% ammonium molybdate and 100 ml 50% sulphuric acid) and 0.1 ml 1% stannous chloride diluted afresh from a 40% stock solution in hydrochloric acid, which was kept under paraffin. The reagents were automatically dispensed by a piston dispenser.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25° analyses were carried out in batches of 10; readings were begun within 10 minutes of adding reagents, and completed within 10 minutes. At air temperatures greater than 25° batches of 6 were analysed; readings were commenced within 5 minutes of adding reagents and completed within 7 minutes. 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 without any correction for salt error and are precise to ± 10% for values less than 0.5 µg-atom/l and ± 5% for higher values. If it is wished to correct for salt effects the results given should be multiplied by 1.15.

REFERENCES

- Atkins, W.R.G. (1923).-- The phosphate content of fresh and salt waters and its relation to the growth of algal plankton. J. Mar. Biol. Ass. U.K. 13: 119-50
- Brown, N.L., and Hamon, B.V. (1961).-- An inductive salinometer. Deep-Sea Res. 8: 65-75
- Jacobsen, J.P., Robinson, R.J., and Thompson, T.G. (1950).-- A review of the determination of dissolved oxygen in seawater by the Winkler method. Publ. Sci. Ass. Oceanogr. Phys. 11
- La Fond, E.C. (1951).-- Processing oceanographic data. U.S. Navy Hydrogr. Off. Publ. No. 614
- Richards, F.A., and Corwin, N. (1956).-- Some oceanographic applications of the solubility of oxygen in seawater. Limnol. Oceanogr. 1: 263-7
- Thompson, T.G., and Robinson, R.J. (1939).-- Notes on the determination of dissolved oxygen in sea water. J. Mar. Res. 2: 1-8
- U.S. Navy Hydrographic Office (1955).-- Instruction manual for oceanographic observations. Publ. No. 607

IV. DATA SHEETS

Data were processed in a CDC 3600 Computer. Explanation of headings is given at the beginning of hydrology subsurface listing.

DATA
PART 1
HYDROLOGY
SUBSURFACE SAMPLING

EXPLANATION OF HEADINGSParts 1 and 2Hydrology

STATION

Gives the station identification. For example, G5/218/62 signifies the 218th station worked by Gascoyne in 1962, on her 5th 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 used for the time zone (Table 2) follows the time

TABLE 2CODE FOR TIME ZONES

Exceeding	Longitude		Time Zone (hrs)	Code
	Up to but not exceeding			
07°30'E.	-	22°30'E.	-1	A
22°30'E.	-	37°30'E.	-2	B
37°30'E.	-	52°30'E.	-3	C
52°30'E.	-	67°30'E.	-4	D
67°30'E.	-	82°30'E.	-5	E
82°30'E.	-	97°30'E.	-6	F
97°30'E.	-	112°30'E.	-7	G
112°30'E.	-	127°30'E.	-8	H
127°30'E.	-	142°30'E.	-9	I
142°30'E.	-	157°30'E.	-10	K
157°30'E.	-	172°30'E.	-11	L
172°30'E.	-	180°	-12	M
180°	-	172°30'W.	+12	Y
172°30'W.	-	157°30'W.	+11	X
157°30'W.	-	142°30'W.	+10	W
142°30'W.	-	127°30'W.	+9	V
127°30'W.	-	112°30'W.	+8	U
112°30'W.	-	97°30'W.	+7	T
97°30'W.	-	82°30'W.	+6	S
82°30'W.	-	67°30'W.	+5	R
67°30'W.	-	52°30'W.	+4	Q
52°30'W.	-	37°30'W.	+3	P

Exceeding	Longitude Up to but not exceeding	Time Zone (hrs)	Code
	37°30'W. - 22°30'W.	+2	0
	22°30'W. - 07°30'W.	+1	N
	07°30'W. - 07°30'E.	0	Z

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. Hydrogr. Office (1955)
ANEM. HEIGHT	The 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. Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 8 in U.S. Hydrogr. Office (1955)
SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Hydrogr. Office (1955)
ATMOS. PRESSURE	Atmospheric pressure given in millibars
WIRE ANGLES CAST 1 CAST 2 CAST 3	Wire angles are measured at the surface and expressed in degrees for each cast. An asterisk indicates that the wire angle was not measured.

CAST	The cast number corresponding to the wire angle is shown
DEPTH	Actual sampling depth, given in metres
TEMP.	Sea temperatures recorded in °C
SALINITY	Given in parts per thousand
OXYGEN	Given in ml/l
INORG. P	Given in $\mu\text{g-atom/l}$
***	Indicates no data available

STATION G5/218/62 DATE 30/9/62 TIME 1800 K LONGITUDE 145 00 E
 WET DRY 9.4 10.6 DIR. SP. 27 1 ANEM. HEIGHT 16 CLOUD TYPE 5 7 VIS. DIR. 27 2 23 1 SWELL DIR. 38 40 S ATMOS. PRESSURE 1010.5 WIRE ANGLES CAST1 CAST2 CAST3

75 SONIC AIR TEMP. WIND DIR. SP. 27 1 ANEM. HEIGHT 16 CLOUD TYPE 5 7 VIS. DIR. 27 2 23 1 SWELL DIR. 38 40 S ATMOS. PRESSURE 1010.5 WIRE ANGLES CAST1 CAST2 CAST3
 DEPTH WET DRY 9.4 10.6 DIR. SP. 27 1 ANEM. HEIGHT 16 CLOUD TYPE 5 7 VIS. DIR. 27 2 23 1 SWELL DIR. 38 40 S ATMOS. PRESSURE 1010.5 WIRE ANGLES CAST1 CAST2 CAST3

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.12	35.652	26.89	5.77	101	0.12	***	***
1	10	13.06	35.657	26.91	5.74	100	0.12	***	***
1	20	12.98	35.658	26.92	5.77	101	0.12	***	***
1	30	12.92	35.656	26.93	5.84	102	0.12	***	***
1	40	12.91	35.658	26.94	5.80	101	0.12	***	***
1	50	12.91	35.655	26.94	5.81	101	0.12	***	***
1	70	12.89	35.654	26.94	5.74	100	0.12	***	***

STATION G5/219/62 DATE 30/9/62 TIME 1950 X LATITUDE 39 00 S LONGITUDE 145 00 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE WIRE ANGLES
 DEPTH WET DRY 10.0 27 1 16 5 7 8 27 2 24 1 1010.0 0 * * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.28	35.553	26.78	5.72	100	0.14	***	***
1	10	13.21	35.557	26.80	5.83	102	0.16	***	***
1	20	13.15	35.557	26.81	5.85	102	0.16	***	***
1	30	13.09	35.553	26.82	5.77	101	0.16	***	***
1	40	13.09	35.555	26.82	5.78	101	0.16	***	***
1	50	13.10	35.555	26.82	5.78	101	0.16	***	***
1	60	13.07	35.555	26.83	5.79	101	0.16	***	***

STATION G5/220/62 DATE 30/9/62 TIME 2200 K LATITUDE 39 20 S LONGITUDE 145 00 E

SONIC AIR TEMP. WIND DIR. SP. 1 16 5 8 7 30 2 24 1 1010.0 0 * *
 WET DRY 8.9 8.9 30 1 16 5 8 7 30 2 24 1 1010.0 0 * *
 ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3 WIRE ANGLES

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.53	35.350	26.78	6.05	104	0.15	***	***
1	10	12.50	35.357	26.79	5.97	103	0.15	***	***
1	20	12.50	35.357	26.79	5.95	103	0.12	***	***
1	30	12.38	35.356	26.81	5.97	103	0.12	***	***
1	40	12.41	35.356	26.80	5.96	103	0.12	***	***
1	50	12.40	35.355	26.80	5.97	103	0.08	***	***
1	60	12.39	35.355	26.81	5.89	101	0.09	***	***

STATION G5/221/62 DATE 1/10/62 TIME 0001 K LATITUDE 39 40 S LONGITUDE 145 00 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. SWELL DIR. AMT. DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3 WIRE ANGLES

60 11.7 13.9 33 2 16 0 8 7 30 2 24 1 1005.0 0 * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1 0 12.37 35.327 26.79 5.95 102 0.12 ***

1 25 12.32 35.333 26.80 5.90 101 0.14 ***

1 50 12.25 35.328 26.81 5.96 102 0.24 ***

STATION

G5/222/62

DATE

1/10/62

TIME

0200 K

LATITUDE

40 00 S

LONGITUDE

145 00 E

SONIC	AIR TEMP.	WIND	ANEM.	CLOUD	VIS.	SEA	SWELL	ATMOS.	WIRE ANGLES
DEPTH	WET DRY	DIR. SP.	HEIGHT	TYPE AMT.		DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3
53	9.4 10.0	32 2	16	6 8	5	31 3	24 1	1001.0	0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.32	35.313	26.79	6.02	103	0.20	***	***
1	25	12.31	35.313	26.79	5.96	102	0.20	***	***
1	45	12.32	35.314	26.79	5.96	102	0.20	***	***

STATION G5/223/62 DATE 1/10/62 TIME 0445 K LONGITUDE 145 39 E
 LATITUDE 40 00 S

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE WIRE ANGLES
 DEPTH WET DRY 77 8.9 9.4 25 2 16 8 8 6 26 3 27 1 1001.0 0 * * * *

CAST 1 0 12.09 35.539 27.01 5.98 102 0.09 ***
 1 25 12.12 35.551 27.01 5.96 102 0.09 ***
 1 50 12.12 35.555 27.02 5.96 102 0.08 ***
 1 70 12.09 35.568 27.03 5.97 102 0.08 ***

STATION G5/224/62 DATE 1/10/62 TIME 0730 K LATITUDE 40 00 S LONGITUDE 146 18 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3
 DEPTH WET DRY 26 2 16 8 4 7 26 3 27 1 1002.0 0 * * *

81 9.4 10.6 26 2 16 8 4 7 26 3 27 1 1002.0 0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.31	35.507	26.94	5.89	101	0.14	***	***
1	25	12.30	35.509	26.94	5.95	102	0.12	***	***
1	50	12.30	35.507	26.94	5.94	102	0.12	***	***
1	70	12.25	35.520	26.96	5.88	101	0.15	***	***

STATION DATE TIME LATITUDE LONGITUDE
 G5/225/62 1/10/62 1030 K 40 00 S 147 00 E

SONIC AIR TEMP. WIND ANEM. CLOUD VTS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 75 10.0 11.7 27 2 16 0 5 7 23 3 26 4 1002.0 0 * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 12.56 35.599 26.96 5.89 102 0.10 ***
 1 25 12.57 35.599 26.96 5.89 102 0.10 ***
 1 50 12.52 35.600 26.97 5.87 101 0.10 ***
 1 65 12.49 35.602 26.98 5.82 100 0.10 ***

STATION G5/226/62 DATE 1/10/62 TIME 1245 K LATITUDE 40 17 S LONGITUDE 147 22 E

SONIC AIR TEMP. WIND DIR. SP. 24 2 ANEM. HEIGHT 16 VIS. 7 CLOUD 4 TYPE 4 AMT. 6 4 SEA DIR. 24 24 SWELL DIR. 3 28 4 ATMOS. PRESSURE 1001.5 WIRE ANGLES CAST1 CAST2 CAST3

68 10.0 12.2 24 2 35.718 27.11 5.93 102 0.16 *** * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.26	35.718	27.11	5.93	102	0.16	***	***
1	25	12.24	35.721	27.12	5.99	103	0.17	***	***
1	50	12.21	35.719	27.12	5.94	102	0.18	***	***
1	60	12.18	35.720	27.13	5.99	103	0.17	***	***

STATION G5/227/62 DATE 1/10/62 TIME 1440 K LATITUDE 40 35 S LONGITUDE 147 45 E

SONIC AIR TEMP. WIND DIR. SP. 23 2 ANEM. HEIGHT 16 4 CLOUD TYPE 6 4 VIS. 7 4 SEA DIR. 23 3 SWELL DIR. 24 4 WIRE ANGLES ATMOS. PRESSURE 1001.0 CAST1 CAST2 CAST3

38 9.4 11.1 23 2 16 4 6 4 7 4 23 3 24 4 1001.0 0 * * *

CAST 1 0 11.95 35.440 26.96 5.96 102 0.25 ***

CAST 1 25 11.94 35.438 26.96 5.99 102 0.26 ***

TOTAL P NITRATE

STATION G5/228/62 DATE 2/10/62 TIME 0030 K LONGITUDE 148 30 E
 LATITUDE 42 10 S

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 99 7.8 8.9 26 2 16 6 3 7 26 3 27 4 996.3 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	11.42	35.037	26.75	6.19	104	0.35	***	***
1	10	11.41	35.033	26.75	6.18	104	0.35	***	***
1	20	11.40	35.036	26.75	6.12	103	0.33	***	***
1	30	11.37	35.031	26.75	6.13	103	0.34	***	***
1	40	11.39	35.034	26.75	6.12	103	0.33	***	***
1	50	11.39	35.036	26.75	6.13	103	0.35	***	***
1	60	11.39	35.036	26.75	6.18	104	0.35	***	***
1	70	11.44	35.040	26.75	6.15	103	0.35	***	***
1	80	11.47	35.059	26.75	6.12	103	0.35	***	***

STATION G5/229/62 DATE 2/10/62 TIME 0200 K LATITUDE 42 10 S LONGITUDE 148 44 E

SONIC AIR TEMP. WIND DIR. SP. 26 2 ANEM. HEIGHT 16 CLOUD TYPE 6 VIS. 7 SEA DIR. 26 AMT. 3 SWELL DIR. 27 AMT. 4 ATMOS. PRESSURE 996.0 WIRE ANGLES CAST1 0 CAST2 0 CAST3 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	12.53	35.304	26.74	5.69	98	0.47	***	***
2	25	12.52	35.299	26.74	5.80	100	0.47	***	***
2	50	12.51	35.315	26.75	5.77	99	0.47	***	***
2	75	12.50	35.319	26.76	5.65	97	0.52	***	***
2	110	12.51	35.313	26.75	5.77	99	0.44	***	***
2	160	12.51	35.305	26.75	5.75	99	0.44	***	***
2	205	12.13	35.232	26.76	5.54	95	0.58	***	***
1	290	11.17	35.031	26.79	5.30	89	0.69	***	***
1	490	9.18	34.693	26.87	5.29	84	1.03	***	***
1	690	7.91	34.569	26.97	4.66	72	1.32	***	***
1	890	6.18	34.477	27.14	4.28	63	1.49	***	***
1	1090	4.60	34.461	27.32	4.03	57	1.81	***	***

STATION G5/230/62 DATE 2/10/62 TIME 0415 K LATITUDE 42 09 S LONGITUDE 149 02 E

SONIC AIR TEMP. WIND ANEM. CLOUD SEA SWELL WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

2012 7.8 10.0 24 3 16 4 8 7 24 4 22 4 996.0 20 5 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	12.57	35.310	26.74	5.84	101	0.42	***	***
2	25	12.54	35.316	26.75	5.76	99	0.47	***	***
2	75	12.56	35.329	26.75	5.69	98	0.48	***	***
2	100	12.56	35.314	26.74	5.65	97	0.48	***	***
2	148	12.55	35.312	26.74	5.72	99	0.48	***	***
2	197	12.50	35.305	26.75	5.64	97	0.48	***	***
2	295	12.20	35.232	26.75	5.65	97	0.51	***	***
1	444*	10.88	34.983	26.80	5.24	87	0.80	***	***
1	630*	8.74	34.638	26.90	5.15	81	1.05	***	***
1	819*	6.99	34.533	27.07	4.43	67	1.22	***	***
1	1012*	6.00	34.458	27.15	4.20	62	1.61	***	***
1	1210*	3.65	34.533	27.47	3.66	51	1.86	***	***

* PROPERTY DOUBTFUL

STATION G5/231/62 DATE 2/10/62 TIME 0715 K LATITUDE 42 09 S LONGITUDE 149 28 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE WIRE ANGLES
 DEPTH WET DRY 3200 8.3 10.0 24 3 16 6 8 6 24 4 22 4 997.0 0 0 * * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	12.67	35.327	26.73	5.88	102	0.45	***	***
2	25	12.65	35.332	26.74	5.76	100	0.48	***	***
2	50	12.66	35.335	26.74	5.70	99	0.45	***	***
2	75	12.63	35.319	26.73	5.75	99	0.48	***	***
2	98	12.64	35.327	26.74	5.76	100	0.48	***	***
2	147	12.66	35.329	26.73	5.74	99	0.48	***	***
2	196	12.64	35.327	26.74	5.76	100	0.48	***	***
2	294	12.68	35.321	26.72	5.76	100	0.50	***	***
1	466	10.91	34.989	26.80	5.23	87	0.81	***	***
1	656	8.73	34.620	26.88	6.09	80	1.05	***	***
1	851	7.46	34.590	27.05	4.62	71	1.27	***	***
1	1046	6.11	34.534	27.19	4.37	64	1.52	***	***
1	1245	4.66	34.524	27.36	3.96	56	1.61	***	***
1	1444	3.74	34.630	27.54	4.05	56	1.61	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G5/232/62	2/10/62	1300 K	42 11 S	150 35 E

SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3					
4389	10.0	11.7	21	2	16	8	6	7	22	3	23	4	996.5	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	11.43	35.073	26.77	6.01	101	0.70	***	***
2	25	11.41	35.076	26.78	5.94	100	0.68	***	***
2	50	11.41	35.076	26.78	5.96	100	0.75	***	***
2	75	11.39	35.076	26.78	5.93	100	0.70	***	***
2	100	11.40	35.078	26.78	5.88	99	0.68	***	***
2	150	11.24	35.062	26.80	5.80	97	0.70	***	***
2	200	11.12	35.057	26.82	5.90	98	0.74	***	***
2	300	10.41	34.909	26.83	5.80	95	0.89	***	***
1	492	8.47	34.592	26.90	5.32	83	1.35	***	***
1	690	7.66	34.528	26.97	4.55	70	1.59	***	***
1	885	6.01	34.453	27.14	4.29	63	1.70	***	***
1	1085	4.43	34.416	27.30	4.26	60	2.02	***	***
1	1280	3.71	34.477	27.42	3.93	54	2.10	***	***
1	1480	3.16	34.545	27.53	3.58	49	1.99	***	***

STATION

G5/233/62

DATE

2/10/62

TIME

1915 K

LATITUDE

42 10 S

LONGITUDE

151 46 E

SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
4572	8.9 10.6	20 2	16	6 7	7	20 3	22 4	998.0	0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	12.48	35.270	26.72	5.70	98	0.53	***	***
2	25	12.44	35.271	26.73	5.74	99	0.53	***	***
2	50	12.46	35.271	26.73	5.60	96	0.53	***	***
2	75	12.44	35.276	26.74	5.69	98	0.57	***	***
2	100	12.47	35.283	26.74	5.65	97	***	***	***
2	150	12.45	35.276	26.73	5.69	98	0.57	***	***
2	200	11.70	35.152	26.78	5.70	96	0.61	***	***
2	300	11.40	35.084	26.79	5.66	95	0.70	***	***
1	500	8.53	34.596	26.90	5.39	84	1.23	***	***
1	700	7.39	34.512	27.00	4.31	66	1.40	***	***
1	900	5.82	34.442	27.16	4.06	59	1.62	***	***
1	1100	4.44	***	***	3.99	***	1.93	***	***
1	1300	3.50	34.446	27.42	3.81	52	2.18	***	***
1	1500	3.04	34.569	27.56	3.52	48	2.04	***	***

STATION

DATE

TIME

LATITUDE

LONGITUDE

G5/234/62

3/10/62

0545 K

40 15 S

151 58 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4572 7.8 10.6 21 2 16 8 4 8 21 3 22 4 1005.0 10 10 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	13.56	35.448	26.64	5.67	100	0.42	***	***
2	25	13.56	35.454	26.65	5.58	98	0.44	***	***
2	50	13.58	35.454	26.64	5.51	97	0.47	***	***
2	75	13.55	35.454	26.65	5.66	100	0.48	***	***
2	100	13.55	35.454	26.65	5.60	99	0.48	***	***
2	150	13.58	35.454	26.64	5.57	98	0.48	***	***
2	200	13.12	35.368	26.67	5.60	98	0.50	***	***
2	295	12.28	35.223	26.73	5.11	88	0.62	***	***
1	445	10.02	34.828	26.83	4.89	79	1.01	***	***
1	630	8.37	34.601	26.93	4.69	73	1.30	***	***
1	820	7.05	34.510	27.05	4.33	65	1.48	***	***
1	1010	5.69	34.458	27.19	4.18	61	1.76	***	***
1	1205	4.55	34.475	27.33	3.97	56	1.85	***	***
1	1400	3.75	34.523	27.45	3.63	50	1.93	***	***

STATION
G5/235/62

DATE
3/10/62

TIME
0930 K

LATITUDE
40 20 S

LONGITUDE
151 20 E

SONIC AIR TEMP. WIND DIR. SP. 19 2 16 8 5 8 19 3 21 4 1009.0 35 0 *
 WET DRY ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3
 WIRE ANGLES

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	13.99	35.514	26.60	5.57	99	0.40	***	***
2	25	13.89	35.499	26.61	5.59	99	0.40	***	***
2	50	13.89	35.499	26.61	5.60	100	0.40	***	***
2	72	13.81	35.496	26.63	5.45	97	0.42	***	***
2	95	13.78	35.482	26.62	5.52	98	0.43	***	***
2	143	13.79	35.484	26.62	5.62	100	0.42	***	***
2	190	13.68	35.465	26.63	5.63	100	0.45	***	***
2	290	13.18	35.368	26.66	5.51	96	0.47	***	***
1	390	12.57	35.267	26.70	5.42	94	0.61	***	***
1	545	10.68	34.926	26.79	4.86	80	0.92	***	***
1	700	8.70	34.641	26.91	4.84	76	1.18	***	***
1	875	7.50	34.537	27.00	4.40	67	1.47	***	***
1	1040	6.07	34.464	27.14	4.05	60	1.59	***	***
1	1220	4.89	34.464	27.28	4.02	57	1.82	***	***

STATION

G5/236/62

DATE

3/10/62

TIME

1230 K

LATITUDE

40 14 S

LONGITUDE

151 05 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT DIR. SP. DIR. AMT. DIR. AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4572 10.0 12.2 19 2 16 8 4 8 8 4 8 16 3 20 4 1009.0 20 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.60	35.592	26.53	5.55	100	0.49	***	***
2	25	14.61	35.593	26.53	5.50	99	0.48	***	***
2	50	14.60	35.590	26.53	5.47	99	0.48	***	***
2	75	14.57	35.586	26.54	5.50	99	0.48	***	***
2	100	14.54	35.582	26.54	5.47	99	0.48	***	***
2	150	14.50	35.582	26.55	5.51	99	0.48	***	***
2	200	14.52	35.580	26.54	5.55	100	0.50	***	***
2	295	14.53	35.568	26.53	5.50	99	0.51	***	***
2	490	12.50	***	***	5.21	***	0.73	***	***
1	643	10.15	34.841	26.82	5.01	82	1.09	***	***
1	827	8.15	34.575	26.94	4.68	73	1.27	***	***
1	1017*	6.48	***	***	***	***	***	***	***
1	1207*	5.12	34.445	27.24	4.12	59	1.90	***	***
1	1368*	4.09	34.488	27.39	3.75	53	1.95	***	***
1	1528*	3.33	34.599	27.56	3.60	49	2.10	***	***

* PROPERTY DOUBTFUL

STATION

G5/237/62

DATE

3/10/62

TIME

1600 K

LATITUDE

40 08 S

LONGITUDE

150 10 E

SONIC AIR TEMP. WIND ANEM. CLOUD SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4206 10.0 11.7 17 1 16 5 5 8 17 3 20 4 1011.0 0 0 *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 2 0 13.64 35.447 26.63 5.62 99 0.51 ***
 2 25 13.64 35.452 26.63 5.66 100 0.52 ***
 2 50 13.62 35.448 26.63 5.67 100 0.56 ***
 2 75 13.61 35.451 26.63 5.62 99 0.51 ***
 2 100 13.62 35.453 26.63 5.67 100 0.57 ***
 2 150 13.57 35.451 26.64 5.63 99 0.57 ***
 2 200 13.38 35.413 26.65 5.61 99 0.57 ***
 2 295 12.46 35.251 26.71 5.52 95 0.65 ***
 1 480 9.97 34.826 26.84 5.12 83 1.08 ***
 1 678 8.46 34.627 26.93 4.80 75 1.31 ***
 1 875 6.70 34.489 27.08 4.29 64 1.58 ***
 1 1072 5.34 34.460 27.23 4.10 59 1.79 ***
 1 1270 4.18 *** ***
 1 1465 3.46 34.544 27.50 3.64 50 1.79 ***

STATION	DATE	TIME	LATITUDE	LONGITUDE												
G5/238/62	3/10/62	1900 K	40 08 S	149 43 E												
SONIC AIR TEMP.	WIND DIR. SP.	WIND	ANEM. HEIGHT	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3					
4206	10.0	12.2	15	1	16	8	5	8	16	3	20	4	1012.0	5	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE							
2	0	13.59	35.439	26.63	5.63	99	0.45	***	***							
2	25	13.57	35.443	26.64	5.64	100	0.51	***	***							
2	50	13.58	35.439	26.63	5.66	100	0.51	***	***							
2	75	13.55	35.448	26.65	5.64	100	0.57	***	***							
2	100	13.56	35.441	26.64	5.66	100	0.55	***	***							
2	150	13.48	35.432	26.65	5.61	99	0.59	***	***							
2	200	13.33	35.397	26.65	5.55	97	0.60	***	***							
2	300	12.54	35.259	26.70	5.41	93	0.69	***	***							
1	490	9.60	34.771	26.86	4.83	78	1.17	***	***							
1	687	7.92	34.562	26.96	4.46	69	1.47	***	***							
1	883	6.32	34.481	27.12	4.25	63	1.65	***	***							
1	1080	5.04	34.459	27.26	4.08	59	1.94	***	***							
1	1275	3.88	34.502	27.42	3.69	51	1.69	***	***							
1	1470	3.29	34.544	27.52	3.65	50	1.84	***	***							

STATION

G5/239/62

DATE

3/10/62

TIME

2200 X

LATITUDE

40 08 S

LONGITUDE

149 18 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 2560 9.4 11.7 10 1 16 8 3 8 10 2 20 4 1011.3 5 15 *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 2 0 13.72 35.448 26.61 5.61 99 0.51 ***
 2 25 13.74 35.453 26.61 5.61 99 0.53 ***
 2 50 13.74 35.452 26.61 5.61 99 0.52 ***
 2 75 13.72 35.456 26.62 5.60 99 0.49 ***
 2 100 13.74 35.456 26.61 5.57 99 0.49 ***
 2 150 13.73 35.461 26.62 5.62 100 0.52 ***
 2 200 13.54 35.425 26.63 5.55 98 0.56 ***
 2 300 12.40 35.220 26.70 5.07 87 0.78 ***
 1 495 10.29 34.976 26.90 5.23 86 0.98 ***
 1 693 8.50 34.687 26.97 4.57 72 1.37 ***
 1 890 6.01 34.478 27.16 4.20 62 1.73 ***
 1 1090 4.80 34.463 27.29 4.01 57 2.12 ***
 1 1287 3.80 34.515 27.44 3.66 51 1.95 ***
 1 1485 3.18 34.571 27.55 3.57 49 1.95 ***

STATION G5/240/62 DATE 3/10/62 TIME 2345 K LATITUDE 40 08 S LONGITUDE 148 59 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

768 9.4 11.1 09 1 16 8 2 8 09 2 20 4 1011.0 25 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.97	35.462	26.57	5.62	100	0.47	***	***
1	25	13.96	35.467	26.58	5.63	100	0.41	***	***
1	50	13.68	35.439	26.61	5.61	99	0.40	***	***
1	72	13.56	35.425	26.63	5.60	99	0.42	***	***
1	91	13.16	35.342	26.64	5.27	92	0.52	***	***
1	137	13.16	35.355	26.65	5.41	95	0.52	***	***
1	183	12.77	35.322	26.71	5.50	95	0.52	***	***
1	277	12.35	35.291	26.76	5.72	98	0.47	***	***
1	472	10.44	34.934	26.84	5.15	85	0.86	***	***
1	670	8.13	34.629	26.98	4.61	72	1.17	***	***

STATION

G5/241/62

DATE

4/10/62

TIME

0116 K

LATITUDE

40 08 S

LONGITUDE

148 45 E

SONIC AIR TEMP.

DEPTH WET DRY

WIND DIR. SP.

05 1

ANEM. HEIGHT

16

CLOUD TYPE

8 2

VIS.

7

SEA DIR.

19 2

SWELL DIR.

20 1

ATMOS. PRESSURE

1010.0

WIRE ANGLES CAST1

0

CAST2

0

CAST3

*

93

10.6

05 1

16

8 2

7

19 2

20 1

1010.0

0

0

*

CAST

DEPTH

TEMP.

SALINITY

SIGMA-T

OXYGEN

OXYGEN % SAT.

INORG. P

TOTAL P

NITRATE

1

0

13.02

35.367

26.69

5.67

99

0.52

1

25

12.96

35.369

26.70

5.66

99

0.49

1

50

12.79

35.341

26.72

0.49

1

80

12.54

35.316

26.75

5.72

99

0.52

STATION	DATE	TIME	LATITUDE	LONGITUDE
G5/242/62	4/10/62	1030 K	38 30 S	148 00 E

SONIC AIR TEMP.	WIND DIR.	SP.	CLOUD TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75 12.8 13.9	05	2	6	8	7	05	3	07	4	998.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.33	35.698	27.09	5.92	102	0.18	***	***
1	25	12.31	35.704	27.09	5.92	102	0.16	***	***
1	50	12.28	35.699	27.09	5.92	102	0.20	***	***
1	65	12.25	35.704	27.11	5.89	101	0.22	***	***

STATION
G5/243/62

DATE
4/10/62

TIME
1230 K

LATITUDE
38 32 S

LONGITUDE
148 19 E

SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
113	13.3 15.6	05 2	16	5 8	7	03 2	06 1	992.0	0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.56	35.438	26.64	5.79	102	***	***	***
1	25	13.54	35.451	26.65	5.79	102	***	***	***
1	50	13.53	35.448	26.65	5.72	101	***	***	***
1	75	13.35	35.442	26.68	5.68	100	0.44	***	***
1	100	12.87	35.383	26.73	5.55	96	0.44	***	***

STATION G5/244/62 DATE 4/10/62 TIME 1400 X LATITUDE 38 33 S LONGITUDE 148 36 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE WIRE ANGLES CAST1 CAST2 CAST3

1225 12.8 15.0 05 2 16 6 8 7 03 2 04 4 990.0 0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	13.47	35.426	26.64	5.55	98	0.41	***	***
2	25	13.46	35.426	26.65	5.67	100	0.44	***	***
2	50	13.46	35.429	26.65	5.67	100	0.47	***	***
2	75	13.42	35.430	26.66	5.67	100	0.49	***	***
2	100	13.42	35.430	26.66	5.66	100	0.49	***	***
1	150	13.43	35.428	26.65	5.73	101	0.48	***	***
1	200	13.23	35.395	26.67	5.58	98	0.49	***	***
1	300	12.37	35.301	26.77	5.47	94	0.57	***	***
1	500	10.86	35.047	26.86	5.21	86	0.87	***	***
1	700	8.14	34.642	26.99	4.50	70	1.39	***	***
1	800	6.77	34.523	27.10	4.30	65	1.56	***	***

STATION

G5/245/62

DATE

4/10/62

TIME

1645 K

LATITUDE

38 34 S

LONGITUDE

149 04 E

SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
2834	12.8 13.9	06 2	16	6 8	7	06 3	06 4	989.5	18	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	13.74	35.453	26.61	5.68	101	0.41	***	***
2	25	13.73	35.461	26.62	5.74	102	0.41	***	***
2	47	13.74	35.461	26.61	5.81	103	0.39	***	***
2	70	13.74	35.462	26.62	5.71	101	0.44	***	***
2	93	13.68	35.457	26.62	5.72	101	0.45	***	***
2	140	13.45	35.378	26.61	5.48	96	0.56	***	***
2	186	13.27	35.405	26.67	5.50	96	0.56	***	***
2	280	11.92	35.132	26.72	4.80	82	0.81	***	***
1	563	8.83	34.721	26.95	4.74	75	1.26	***	***
1	753	7.04	34.517	27.05	4.30	65	1.54	***	***
1	945	5.59	34.491	27.22	4.09	60	1.69	***	***
1	1136	4.30	34.480	27.36	3.81	54	2.04	***	***
1	1328	3.40	***	***	***	***	1.70	***	***
1	1520	2.94	34.662	27.64	3.78	51	1.97	***	***

STATION

G5/246/62

DATE

4/10/62

TIME

2300 K

LATITUDE

38 36 S

LONGITUDE

150 13 E

SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
4206	13.3 14.4	26 3	16	8 8	5	22 3	20 4	989.0	10 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.41	35.465	26.48	5.55	100	0.35	***	***
2	25	14.42	35.497	26.50	5.58	100	0.41	***	***
2	50	14.42	35.494	26.50	5.61	101	0.41	***	***
2	75	14.41	35.492	26.50	5.59	100	0.47	***	***
2	100	14.40	35.493	26.50	5.46	98	0.47	***	***
2	150	14.40	35.490	26.50	5.47	98	0.49	***	***
2	200	14.22	35.466	26.52	5.41	97	0.45	***	***
2	300	12.37	35.175	26.67	4.79	82	0.80	***	***
1	490	9.40	34.730	26.86	4.85	78	1.15	***	***
1	680	7.73	34.556	26.99	4.40	68	1.37	***	***
1	865	6.19	34.472	27.13	4.30	64	1.54	***	***
1	1050	4.94	34.464	27.28	3.98	57	1.93	***	***
1	1235	3.84	34.506	27.43	3.75	52	2.00	***	***
1	1420	3.10	34.571	27.56	3.58	49	2.08	***	***

STATION 5/10/62 DATE 0500 K TIME 38 37 S LATITUDE 151 22 E LONGITUDE
 G5/247/62

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4663 12.2 15.0 26 2 16 8 1 8 27 2 01 4 991.5 15 0 *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 2 0 14.51 35.491 26.48 5.61 101 0.37 ***
 2 25 14.52 35.500 26.48 5.58 101 0.37 ***
 2 50 14.53 35.501 26.48 5.61 101 0.37 ***
 2 75 14.51 35.503 26.48 5.61 101 0.37 ***
 2 100 14.45 35.500 26.49 5.55 100 0.41 ***
 2 150 14.42 35.496 26.50 5.55 100 0.41 ***
 2 200 14.02 35.430 26.53 5.33 95 0.50 ***
 2 300 12.90 35.258 26.63 4.94 86 0.70 ***
 1 577 8.64 34.642 26.92 4.63 73 1.36 ***
 1 770 7.13 34.519 27.04 4.32 65 1.49 ***
 1 960 5.73 34.471 27.19 4.14 60 1.75 ***
 1 1153 4.54 34.474 27.33 3.92 56 1.95 ***
 1 1347 3.64 34.524 27.47 3.60 50 2.07 ***
 1 1540 3.07 34.595 27.58 3.48 47 2.15 ***

STATION G5/248/62 DATE 5/10/62 TIME 0945 X LATITUDE 38 36 S LONGITUDE 152 16 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE_ANGLES
 DEPTH WET DRY DIR. SP. DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4663 14.4 18.3 28 2 16 6 3 8 28 3 00 4 994.0 0 10 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.36	35.481	26.50	5.52	99	0.37	***	***
1	25	14.31	35.483	26.51	5.46	98	0.36	***	***
1	50	14.18	35.473	26.53	5.26	94	0.36	***	***
1	75	14.17	35.473	26.53	5.46	98	0.37	***	***
1	100	14.12	35.470	26.54	5.41	97	0.39	***	***
1	150	13.92	35.440	26.56	5.30	94	0.36	***	***
1	200	13.62	35.397	26.59	5.27	93	0.48	***	***
1	300	12.49	35.223	26.69	4.82	83	0.67	***	***
2	490	9.66	34.794	26.87	4.81	77	0.93	***	***
2	685	7.80	34.572	26.99	4.41	68	1.42	***	***
2	882	6.12	34.469	27.14	4.08	60	1.51	***	***
2	1080	4.94	34.465	27.28	3.94	56	1.81	***	***
2	1278	3.86	34.505	27.43	3.53	49	1.81	***	***
2	1476	3.19	34.566	27.54	3.54	48	1.82	***	***

STATION G5/249/62 DATE 5/10/62 TIME 2100 X LATITUDE 36 40 S LONGITUDE 153 08 E

SONIC AIR TEMP. WIND DIR. SP. 30 2 ANEM. HEIGHT 16 CLOUD TYPE AMT. * 0 VIS. 8 SEA DIR. AMT. 30 2 SWELL DIR. AMT. 35 4 ATMOS. PRESSURE 1001.0 WIRE ANGLES CAST1 CAST2 CAST3

DEPTH 14.4 16.7 30 2 16 0 8 30 2 35 4 1001.0 12 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.04	35.525	26.38	5.58	102	0.32	***	***
1	25	14.94	35.529	26.41	5.62	102	0.34	***	***
1	50	14.74	35.546	26.47	5.70	103	0.36	***	***
1	75	14.61	35.512	26.47	5.58	101	0.34	***	***
1	100	14.39	35.499	26.51	5.61	101	0.41	***	***
1	150	14.18	35.472	26.53	5.36	96	0.44	***	***
1	200	13.80	35.400	26.56	5.24	93	0.56	***	***
1	300	12.27	35.184	26.70	4.89	84	0.75	***	***
2	460	9.22	34.721	26.88	4.84	77	1.17	***	***
2	646	7.65	34.569	27.01	4.37	67	1.50	***	***
2	835	6.21	34.480	27.14	4.17	62	1.53	***	***
2	1023	5.01	34.469	27.27	4.02	58	1.85	***	***
2	1220	3.94	34.513	27.43	3.53	49	1.66	***	***
2	1416	3.24	34.565	27.54	3.07	42	1.74	***	***

STATION G5/250/62 DATE 6/10/62 TIME 0230 K LATITUDE 36 42 S LONGITUDE 152 24 E

SONIC AIR TEMP. WIND DIR. SP. 36 1 ANEM. HEIGHT 16 VIS. SEA DIR. AMT. 00 2 SWELL DIR. AMT. 22 4 ATMOS. PRESSURE 1001.5 WIRE ANGLES CAST1 CAST2 CAST3

DEPTH WET DRY 15.0 17.8 36 1 16 * 0 7 00 2 22 4 1001.5 25 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.33	35.514	26.08	5.34	100	0.26	***	***
1	25	16.30	35.499	26.08	5.33	100	0.26	***	***
1	50	16.40	35.574	26.11	5.05	95	0.34	***	***
1	75	15.68	35.486	26.21	4.68	86	0.49	***	***
1	100	14.99	35.428	26.32	4.67	85	0.55	***	***
1	150	14.66	35.483	26.44	5.22	94	0.47	***	***
1	200	13.22	35.236	26.55	4.44	78	0.72	***	***
1	300	11.76	35.062	26.70	4.46	75	0.83	***	***
2	508	9.41	34.798	26.91	4.85	78	1.06	***	***
2	686	7.40	34.547	27.03	4.31	66	1.50	***	***
2	874	6.08	34.473	27.15	4.20	62	1.62	***	***
2	1062	4.86	34.473	27.30	3.94	56	1.95	***	***
2	1252	3.87	34.517	27.44	3.64	51	1.97	***	***
2	1440	3.22	34.566	27.54	3.46	47	2.08	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
G5/251/62	6/10/62	0530 K	36 42 S	151 43 E					
SONIC AIR TEMP.	ANEM.	VIS.	SEA	SWELL	ATMOS.	WIRE ANGLES			
DEPTH WET DRY	HEIGHT	CLOUD TYPE	DIR. SP.	DIR. AMT.	DIR. AMT.	PRESSURE CAST1 CAST2 CAST3			
4846 16.7 17.8	01 2 16	* 0	8 01 2 00 1	999.0	10 0	*			
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.77	35.507	26.43	5.52	100	0.39	***	***
2	25	14.71	35.511	26.45	5.53	100	0.40	***	***
2	50	14.68	35.508	26.45	5.61	101	0.40	***	***
2	75	14.64	35.507	26.46	5.59	101	0.40	***	***
2	100	14.36	***	***	5.32	***	0.47	***	***
2	150	13.44	35.302	26.55	4.85	85	0.73	***	***
2	200	12.88	35.250	26.63	5.03	87	0.78	***	***
2	290	11.27	34.997	26.74	4.55	76	0.97	***	***
1	450	8.79	***	***	4.68	***	***	***	***
1	630	7.50	34.568	27.03	4.37	67	1.53	***	***
1	822	6.00	34.471	27.16	4.18	61	1.72	***	***
1	1015	4.92	34.523	27.33	4.00	57	1.83	***	***
1	1210	3.96	34.512	27.42	3.65	51	1.89	***	***
1	1408	3.28	34.558	27.53	3.54	49	2.06	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G5/252/62	6/10/62	0900 K	36 41 S	151 07 E

SONIC	AIR TEMP.	WIND	ANEM.	CLOUD	VIS.	SEA	SWELL	ATMOS.	WIRE ANGLES							
DEPTH	WET	DRY	DIR.	SP.	DIR.	DIR.	DIR.	AMT.	CAST1	CAST2	CAST3					
4801	15.6	17.8	01	2	16	*	0	7	35	2	35	1	995.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.78	35.520	26.44	5.67	103	0.35	***	***
2	25	14.76	35.527	26.45	5.61	102	0.35	***	***
2	50	14.75	35.523	26.45	5.69	103	0.35	***	***
2	75	14.71	35.526	26.46	5.58	101	0.35	***	***
2	100	14.71	35.524	26.46	5.58	101	0.37	***	***
2	150	14.70	35.520	26.46	5.55	100	0.37	***	***
2	200	14.39	35.465	26.48	5.37	96	0.45	***	***
2	300	12.06	35.115	26.68	4.64	79	0.81	***	***
1	476	9.05	34.685	26.88	4.94	78	1.07	***	***
1	672	7.46	34.544	27.02	4.43	68	1.47	***	***
1	868	5.88	34.465	27.17	4.18	61	1.66	***	***
1	1063	4.66	34.466	27.31	3.95	56	1.89	***	***
1	1260	3.70	34.520	27.46	3.52	49	1.92	***	***
1	1457	3.16	34.569	27.55	3.52	48	2.03	***	***

STATION G5/253/62 DATE 6/10/62 TIME 1140 K LATITUDE 36 42 S LONGITUDE 150 47 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4663 15.6 18.3 31. 2 16 5 2 7 34 2 01 1 995.0 23 19 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	15.13	35.518	26.36	5.83	106	0.25	***	***
2	25	15.10	35.524	26.37	5.76	105	0.27	***	***
2	50	15.08	35.518	26.37	5.76	105	0.27	***	***
2	75	14.94	35.524	26.41	5.52	100	0.39	***	***
2	100	14.70	35.499	26.44	5.41	98	0.40	***	***
2	150	14.35	35.448	26.48	5.19	93	0.48	***	***
2	200	13.67	35.352	26.55	5.02	89	0.58	***	***
2	300	13.16	35.425	26.71	5.61	98	0.45	***	***
1	477	11.75	35.286	26.88	5.29	90	0.65	***	***
1	667	8.83	34.787	27.00	4.86	77	1.18	***	***
1	858	6.14	34.472	27.14	4.21	62	1.61	***	***
1	1048	4.93	34.466	27.28	4.08	58	1.84	***	***
1	1245	3.85	34.556	27.47	3.74	52	1.97	***	***
1	1443	3.22	34.672	27.62	3.84	53	1.87	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE							
G5/254/62	6/10/62	1410 K	36 39 S	150 28 E							
SONIC AIR TEMP.	WIND DIR. SP.	WIND	ANEM. HEIGHT	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
DEPTH WET DRY	*** **	*** **	*** **	*** **	*** **	*** **	*** **	*** **	*** **	*** **	*** **
2103	*** **	*** **	16	*	*	*	*	*	33	28	*
CASST.	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
2	0	15.35	35.468	26.27	5.91	108	0.25	***	***		
2	23	15.27	35.472	26.29	5.85	107	0.23	***	***		
2	45	14.94	35.505	26.39	5.66	103	0.25	***	***		
2	67	14.69	35.512	26.45	5.61	101	0.36	***	***		
2	90	14.65	35.513	26.46	5.59	101	0.40	***	***		
2	180	13.92	35.395	26.53	5.15	92	0.53	***	***		
2	275	11.93	35.100	26.70	4.63	79	0.82	***	***		
1	940	5.69	34.470	27.19	4.08	60	1.73	***	***		
1	1127	4.52	34.485	27.34	3.89	55	1.94	***	***		
1	1324	3.53	34.536	27.49	3.55	49	2.07	***	***		
1	1520	2.95	34.592	27.59	3.56	48	2.04	***	***		

STATION G5/255/62 DATE 6/10/62 TIME 1620 K LATITUDE 36 38 S LONGITUDE 150 13 E

SONIC AIR TEMP. WIND DIR. SP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3
 128 14.4 16.7 32 2 16 * 0 * 8 32 4 * * 995.0 0 * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.47 35.414 26.43 5.64 101 0.34 ***
 1 25 14.46 35.422 26.43 5.62 101 0.34 ***
 1 50 13.48 35.347 26.58 5.23 92 0.51 ***
 1 75 12.84 35.296 26.67 5.23 91 0.59 ***
 1 110 12.32 35.200 26.70 4.94 85 0.70 ***

STATION

G5/256/62

DATE

7/10/62

TIME

0300 K

LATITUDE

34 50 S

LONGITUDE

150 57 E

SONIC AIR TEMP.

WIND

ANEM.

CLOUD

VIS.

SEA

SWELL

ATMOS.

WIRE ANGLES

DEPTH WET DRY

DIR. SP.

HEIGHT

TYPE AMT.

DIR.

DIR. AMT.

PRESSURE

CAST1 CAST2 CAST3

110 12.8 14.4 26 2 16 * 0 8 26 3 * * 1006.0 0 * * *

CAST

DEPTH

TEMP.

SALINITY

SIGMA-T

OXYGEN

OXYGEN % SAT.

INORG. P

TOTAL P

NITRATE

1	0	16.68	35.477	25.97	5.34	100	0.28	***	***
1	25	16.69	35.483	25.98	5.25	99	0.28	***	***
1	50	14.66	35.380	26.36	4.45	80	0.68	***	***
1	75	13.62	35.303	26.52	4.55	80	0.74	***	***
1	100	12.82	35.295	26.68	4.89	85	0.65	***	***

STATION

G5/257/62

DATE

7/10/62

TIME

0415 K

LATITUDE

34 51 S

LONGITUDE

151 11 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

384 13.3 14.4 27 2 16 * * 7 26 3 * * 1007.0 0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.98	35.554	25.96	5.52	105	0.25	***	***
1	25	16.97	35.561	25.97	5.43	103	0.25	***	***
1	50	16.92	35.569	25.99	5.45	103	0.25	***	***
1	75	16.63	35.605	26.08	5.34	100	0.28	***	***
1	100	15.87	35.528	26.20	4.92	91	0.39	***	***
1	150	14.39	35.398	26.43	4.89	88	0.55	***	***
1	200	12.89	35.296	26.66	4.85	84	0.68	***	***
1	300	12.72	35.330	26.72	5.11	88	0.68	***	***
1	350	12.74	35.374	26.75	5.34	93	0.59	***	***

STATION

G5/258/62

DATE

7/10/62

TIME

0545 K

LATITUDE

34 51 S

LONGITUDE

151 26 E

SONIC AIR TEMP. WIND DIR. SP. WIND DIR. SP. ANEM. HEIGHT TYPE AMT. CLOUD VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3

DEPTH WET DRY 14.4 15.6 27 2 16 * * * 7 26 3 * * * 1009.0 0 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

2	0	18.60	35.560	25.57	5.31	104	0.35	***	***
2	25	18.57	35.563	25.58	5.28	103	0.31	***	***
2	50	17.67	35.548	25.79	5.34	103	0.32	***	***
2	75	17.05	35.581	25.97	5.40	102	0.35	***	***
2	100	16.63	35.545	26.04	5.22	98	0.47	***	***
2	150	15.61	35.494	26.23	4.90	90	0.59	***	***
2	200	13.94	35.245	26.41	4.31	77	0.90	***	***
2	295	12.56	35.152	26.62	4.51	78	0.99	***	***
1	490	9.45	34.745	26.86	4.61	74	1.25	***	***
1	690	7.61	34.559	27.01	4.43	68	1.69	***	***
1	890	6.05	34.468	27.15	4.26	63	1.82	***	***
1	1090	4.81	34.475	27.30	4.02	57	2.09	***	***
1	1290	3.87	34.516	27.44	3.72	52	1.91	***	***
1	1490	3.21	34.570	27.54	3.57	49	2.03	***	***

STATION

G5/259/62

DATE

7/10/62

TIME

0830 K

LATITUDE

34 52 S

LONGITUDE

151 51 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4846 15.6 16.7 26 2 26 2 16 * 0 8 29 3 26 1 1010.5 0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.29	35.643	25.96	5.35	102	0.36	***	***
2	25	17.27	35.663	25.98	5.32	101	0.35	***	***
2	50	17.26	35.663	25.98	5.31	101	0.35	***	***
2	75	17.25	35.660	25.98	5.37	102	0.36	***	***
2	100	17.22	35.658	25.98	5.29	101	0.43	***	***
2	150	17.12	35.647	26.00	5.29	101	0.45	***	***
2	200	17.14	35.638	25.99	5.22	99	0.40	***	***
1	296	15.24	35.400	26.24	4.35	79	0.69	***	***
1	493	11.13	35.007	26.78	4.79	80	0.94	***	***
1	690	8.29	34.621	26.95	4.49	70	1.49	***	***
1	887	6.43	34.499	27.12	4.19	62	1.58	***	***
1	1086	5.10	34.473	27.27	4.06	58	1.87	***	***
1	1285	4.06	34.507	27.41	3.72	52	2.15	***	***
1	1485	3.33	34.563	27.53	3.52	48	2.18	***	***

STATION G5/260/62 DATE 7/10/62 TIME 1115 K LATITUDE 34 53 S LONGITUDE 152 09 E

SONIC AIR TEMP. WIND DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT. VIS. SEA DIR. AMT. SWELL DIR. AMT. ATMOS. PRESSURE CAST1 CAST2 CAST3 WIRE ANGLES

DEPTH WET DRY 15.0 16.7 27 2 16 1 2 8 22 3 26 1 1010.5 0 0 *

CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.38	35.649	25.94	5.39	103	0.40	***	***
2	25	17.35	35.663	25.96	5.37	103	0.41	***	***
2	50	17.33	35.664	25.96	5.30	101	0.36	***	***
2	75	17.30	35.665	25.97	5.32	101	0.36	***	***
2	95	17.30	35.662	25.97	5.25	100	0.36	***	***
2	142	17.26	35.657	25.97	5.20	99	0.36	***	***
2	190	17.23	35.662	25.98	5.20	99	0.40	***	***
2	290	17.14	35.666	26.01	5.08	97	0.47	***	***
1	495	12.89	35.186	26.58	4.45	77	0.93	***	***
1	693	9.17	34.706	26.88	4.65	74	1.32	***	***
1	990	7.15	34.524	27.04	4.27	65	1.61	***	***
1	1090	5.57	34.463	27.20	4.09	60	1.92	***	***
1	1290	4.23	34.493	27.38	3.80	53	1.79	***	***
1	1490	3.47	34.543	27.50	3.57	49	2.10	***	***

STATION

G5/261/62

DATE

7/10/62

TIME

1400 K

LATITUDE

34 53 S

LONGITUDE

152 39 E

SONIC AIR TEMP.

4846 17.2 18.3

WIND DIR. SP.

26 2

ANEM. HEIGHT

16

CLOUD TYPE

5

AMT.

1

VIS.

7

SEA DIR. AMT.

28 2

SWELL DIR. AMT.

27 4

ATMOS. PRESSURE

1008.0

WIRE ANGLES CAST1

5

CAST2

0

CAST3

*

CAST

2

DEPTH

0

TEMP.

17.61

SALINITY

35.636

SIGMA-T

25.87

OXYGEN

5.34

OXYGEN % SAT.

102

INORG. P

0.34

TOTAL P

NITRATE

STATION	DATE	TIME	LATITUDE	LONGITUDE
G5/262/62	7/10/62	1845 K	34 52 S	153 19 E

SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4755	17.2 18.9	31 1	16	*	0	9	30 2	22 4	1011.0	15	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.29	35.632	25.95	5.43	104	0.33	***	***
2	25	17.27	35.648	25.96	5.41	103	0.33	***	***
2	50	17.19	35.650	25.99	5.26	100	0.34	***	***
2	74	17.15	35.650	25.99	5.27	100	0.35	***	***
2	97	17.13	35.649	26.00	5.26	100	0.35	***	***
2	145	17.16	35.648	25.99	5.28	100	0.51	***	***
2	194	17.16	35.650	25.99	5.13	98	0.41	***	***
2	292	16.12	35.544	26.16	5.00	93	0.45	***	***
1	526	11.50	35.019	26.72	4.51	76	1.05	***	***
1	703	8.60	34.640	26.92	4.46	70	1.56	***	***
1	993	6.71	34.497	27.08	4.24	64	1.66	***	***
1	1083	5.50	34.459	27.21	4.08	59	2.00	***	***
1	1274	4.28	34.485	27.37	3.84	54	1.81	***	***
1	1464	3.51	34.557	27.51	3.54	49	1.91	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G5/263/62	7/10/62	2200 K	34 49 S	153 56 E

SONIC AIR TEMP.	WIND DIR. SP.	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
4846 15.6 17.2	30 2	* 0	8	30 2	22 4	1013.0	10 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.70	35.613	26.07	5.48	103	0.34	***	***
2	25	16.70	35.627	26.08	5.44	103	0.36	***	***
2	50	16.69	35.627	26.09	5.40	102	0.35	***	***
2	75	16.63	35.629	26.10	5.40	102	0.34	***	***
2	100	16.743	35.601	26.13	5.37	101	0.36	***	***
2	150	15.62	35.500	26.24	***	***	0.47	***	***
2	200	14.98	35.476	26.36	5.11	93	0.52	***	***
2	300	13.48	35.278	26.53	4.56	80	0.74	***	***
1	450	11.06	34.993	26.78	4.72	79	0.99	***	***
1	636	8.52	34.629	26.92	4.60	72	1.37	***	***
1	827	6.79	34.503	27.08	4.27	64	1.56	***	***
1	1018	5.40	34.464	27.23	4.09	59	1.92	***	***
1	1213	4.20	34.491	27.38	3.80	53	1.95	***	***
1	1407	3.55	34.545	27.49	3.59	50	2.07	***	***

STATION

G5/264/62

DATE
8/10/62TIME
0300 KLATITUDE
34 44 SLONGITUDE
155 00 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4892 15.6 16.7 27 1 16 * * 8 26 2 25 1 1012.0 13 15 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.76	35.540	26.00	5.53	104	0.34	***	***
2	25	16.66	35.553	26.04	5.56	105	0.32	***	***
2	50	16.49	35.546	26.07	5.44	102	0.35	***	***
2	75	15.95	35.576	26.22	5.50	102	0.40	***	***
2	100	15.90	35.571	26.23	5.38	100	0.40	***	***
2	150	15.69	35.543	26.25	5.20	96	0.45	***	***
2	200	14.86	35.445	26.36	4.97	90	0.57	***	***
2	300	12.38	35.138	26.64	4.52	78	0.91	***	***
1	483	8.97	34.688	26.90	4.48	71	1.39	***	***
1	682	7.49	34.549	27.01	4.34	66	1.66	***	***
1	881	5.77	34.466	27.18	4.15	61	1.82	***	***
1	1080	4.67	34.479	27.32	3.90	55	2.04	***	***
1	1279	3.76	34.520	27.45	3.66	51	2.14	***	***
1	1478	3.11	34.583	27.56	3.49	48	2.22	***	***

STATION

G5/265/62

DATE

8/10/62

TIME

0745 K

LATITUDE

34 43 S

LONGITUDE

155 58 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4572 15.0 16.1 32 1 16 * 0 9 32 2 23 1 1015.0 0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.24	35.555	26.14	5.59	104	0.35	***	***
2	25	16.08	35.561	26.18	5.51	103	0.50	***	***
2	50	15.98	35.561	26.20	5.56	103	0.35	***	***
2	75	15.82	35.551	26.23	5.45	101	0.43	***	***
2	100	15.61	35.539	26.27	5.36	99	0.43	***	***
2	150	14.93	35.443	26.35	4.89	89	0.61	***	***
2	200	14.34	35.383	26.43	4.89	88	0.70	***	***
2	300	12.35	35.131	26.64	4.56	78	0.91	***	***
1	496	9.28	34.720	26.87	4.39	70	1.37	***	***
1	694	7.45	34.540	27.01	4.36	67	1.67	***	***
1	892	5.81	34.467	27.18	4.17	61	1.87	***	***
1	1090	4.70	34.477	27.32	3.92	56	2.03	***	***
1	1290	3.78	34.520	27.45	4.20	58	2.14	***	***
1	1490	3.14	34.574	27.55	3.53	48	2.16	***	***

STATION G5/266/62 DATE 8/10/62 TIME 1800 K LATITUDE 32 58 S LONGITUDE 156 59 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 3931 14.4 16.7 * 1 16 * 0 9 * * 21 1 1015.0 0 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.49	35.631	25.90	5.47	105	0.28	***	***
2	25	17.46	35.643	25.91	5.39	103	0.27	***	***
2	50	17.14	35.645	25.99	5.30	101	0.27	***	***
2	75	16.79	35.625	26.05	5.36	101	0.27	***	***
2	98	16.59	35.596	26.09	5.44	102	0.25	***	***
2	146	15.98	35.555	26.20	5.40	100	0.27	***	***
2	194	15.81	35.528	26.22	5.14	95	0.36	***	***
2	291	9.73	34.806	26.87	4.45	72	1.27	***	***
1	485	7.35	34.551	27.04	4.37	67	1.58	***	***
1	680	6.12*	34.475	27.14	4.27	63	1.75	***	***
1	876	5.18	34.470	27.26	4.04	58	1.87	***	***
1	1070	4.73	34.481	27.32	3.92	56	2.00	***	***
1	1268	4.03	34.606	27.49	3.83	54	1.83	***	***
1	1466	3.31	34.564	27.53	3.49	48	2.16	***	***

* PROPERTY DOUBTFUL

STATION G5/267/62 DATE 8/10/62 TIME 2345 K LATITUDE 32 52 S LONGITUDE 155 58 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4297 16.7 19.4 * 1 16 * 0 8 * 0 21 1 1016.0 15 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.68	35.581	25.31	5.12	102	0.18	***	***
2	25	19.58	35.589	25.34	5.02	100	0.18	***	***
2	50	18.77	35.653	25.60	4.31	85	0.42	***	***
2	75	17.40	35.625	25.92	4.75	91	0.44	***	***
2	100	17.11	35.650	26.00	5.32	101	0.33	***	***
2	150	16.82	35.619	26.05	5.05	95	0.37	***	***
2	200	15.95	35.525	26.18	4.94	92	0.40	***	***
2	300	14.53	35.480	26.46	5.37	97	0.47	***	***
1	340	14.23	35.462	26.51	5.40	97	0.50	***	***
1	470	11.04	34.979	26.77	4.72	79	0.93	***	***
1	655	8.53	34.618	26.91	4.43	69	1.35	***	***
1	831	6.96	34.494	27.05	4.30	65	1.67	***	***
1	1032	5.44	34.700	27.41	4.47	65	1.18	***	***
1	1233	4.30	34.521	27.40	3.73	53	2.08	***	***

STATION G5/268/62 DATE 9/10/62 TIME 0550 K LATITUDE 32 47 S LONGITUDE 155 02 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4755 15.6 18.9 35 1 16 * 0 9 35 2 33 1 1015.0 13 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	20.11	35.584	25.20	5.07	102	0.30	***	***
2	25	20.03	35.583	25.22	5.06	102	0.26	***	***
2	50	20.01	35.587	25.22	5.06	102	0.28	***	***
2	75	20.02	35.588	25.22	5.04	101	0.24	***	***
2	100	20.00	35.586	25.23	5.03	101	0.30	***	***
2	150	19.41	35.624	25.41	4.83	96	0.44	***	***
2	200	19.20	35.632	25.47	4.93	98	0.37	***	***
2	300	18.73	35.678	25.63	4.37	86	0.51	***	***
1	490	14.25	35.260	26.35	4.21	75	0.91	***	***
1	685	9.91	34.781	26.82	4.38	71	1.48	***	***
1	881	7.43	34.542	27.02	4.39	67	1.60	***	***
1	1080	5.88	34.468	27.17	4.23	62	1.97	***	***
1	1278	4.53	34.686	27.50	4.05	57	1.77	***	***
1	1476	3.75	34.639	27.55	3.80	53	2.25	***	***

STATION G5/269/62 DATE 9/10/62 TIME 1230 K LATITUDE 32 51 S LONGITUDE 153 46 E

SONIC AIR TEMP. WIND ANEM. CLOUD VTS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4755 18.3 22.2 35 2 16 * * 8 34 3 32 1 1012.0 0 0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.40	35.551	24.82	5.03	104	0.19	***	***
2	25	21.31	35.555	24.85	4.99	103	0.11	***	***
2	50	21.09	35.559	24.91	4.93	101	0.15	***	***
2	75	20.39	35.584	25.12	4.79	97	0.26	***	***
2	98	19.89	35.627	25.29	4.75	95	0.27	***	***
2	147	19.18	35.627	25.47	4.92	97	0.33	***	***
2	196	18.62	35.661	25.64	4.27	84	0.43	***	***
2	292	16.76	35.496	25.97	4.16	78	0.59	***	***
1	490	12.26	35.027	26.58	4.22	72	0.98	***	***
1	690	8.67	34.656	26.92	4.50	71	1.42	***	***
1	890	6.62	34.501	27.10	4.37	65	1.62	***	***
1	1090	5.16	34.470	27.26	4.08	59	1.91	***	***
1	1290	4.04	34.511	27.41	3.80	53	1.99	***	***
1	1490	3.37	34.563	27.52	3.57	49	2.17	***	***

STATION G5/270/62 DATE 9/10/62 TIME 1600 K LATITUDE 32 54 S LONGITUDE 153 14 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 4572 *** ** 02 2 16 * * 8 01 3 16 1 * 35 5 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.62	35.536	24.75	5.07	105	0.14	***	***
2	23	21.56	35.541	24.77	5.05	104	0.14	***	***
2	46	21.49	35.539	24.79	5.03	104	0.15	***	***
2	69	20.54	35.615	25.11	4.14	84	0.44	***	***
2	92	19.88	35.524	25.21	4.45	89	0.44	***	***
2	137	18.75	35.673	25.62	4.23	83	0.48	***	***
2	183	18.23	35.640	25.72	4.27	83	0.48	***	***
2	275	14.65	35.263	26.27	4.09	74	0.69	***	***
1	410	11.34	35.001	26.73	4.50	75	0.98	***	***
1	573	8.54	34.641	26.93	4.50	71	1.54	***	***
1	737	7.02	34.517	27.06	4.36	66	1.51	***	***
1	905	5.81	34.469	27.18	4.22	62	1.66	***	***
1	1078	4.76	***	***	4.30	***	***	***	***
1	1268	3.93	34.559	27.46	3.81	53	1.97	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
G5/271/62	9/10/62	1845 K	32	54 S	152	46 E

SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
841	19.4 21.1	35 1	16	6 4	7	35 2	32 1	1007.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.40	35.581	25.38	4.32	86	0.23	***	***
1	25	19.22	35.585	25.43	4.38	87	0.23	***	***
1	50	18.54	***	***	4.45	***	***	***	***
1	72	17.87	35.599	25.78	4.66	90	***	***	***
1	95	17.14	35.537	25.91	5.14	98	0.42	***	***
1	143	16.27	35.484	26.08	5.27	98	0.55	***	***
1	190	14.97	35.358	26.27	4.69	85	0.68	***	***
1	270	12.95	35.191	26.57	4.53	79	0.70	***	***
1	353	11.08	34.974	26.76	4.44	74	0.89	***	***
1	513	9.16	34.717	26.89	***	***	1.25	***	***
1	673	7.71	34.588	27.01	4.38	67	1.50	***	***

STATION G5/272/62 DATE 9/10/62 TIME 2030 X LATITUDE 32 55 S LONGITUDE 152 31 E

SONIC AIR TEMP. WIND DIR. SP. 35 2 ANEM. HEIGHT 16 CLOUD TYPE AMT. 8 8 VIS. 7 SEA DIR. AMT. 35 2 SWELL DIR. AMT. 32 1 ATMOS. PRESSURE 1007.0 WIRE ANGLES CAST1 CAST2 CAST3

137 18.9 21.1 35 2 16 8 8 7 35 2 32 1 1007.0 0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.32	35.551	25.11	5.26	106	0.16	***	***
1	25	20.03	35.567	25.20	4.96	100	0.27	***	***
1	50	17.42	35.482	25.80	4.06	78	0.57	***	***
1	75	16.00	35.396	26.07	4.10	76	0.67	***	***
1	100	15.78	35.370	26.10	4.07	75	0.70	***	***
1	120	15.62	35.376	26.14	4.15	76	0.70	***	***

STATION

G5/273/62

DATE

9/10/62

TIME

2200 K

LATITUDE

32 57 S

LONGITUDE

152 14 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

128 13.9 17.2 24 3 16 8 8 5 24 3 32 1 1010.0 0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.50	35.506	25.55	5.74	112	0.22	***	***
1	9	18.47	35.508	25.56	5.73	112	0.25	***	***
1	16	18.43	35.552	25.60	5.75	112	0.27	***	***
1	23	18.31	35.512	25.61	5.74	112	0.25	***	***
1	35	17.25	35.470	25.83	4.21	80	0.56	***	***
1	38	16.80	35.474	25.94	4.10	77	0.66	***	***
1	58	16.59	35.437	25.96	4.09	77	0.74	***	***
1	77	16.52	35.448	25.99	4.09	77	0.72	***	***

DATA
PART 2
HYDROLOGY
SURFACE SAMPLING

VESSEL	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	VISIBILITY	BAROMETER	SAMPLING	METHOD	
		NUMBER										DIR.	DIR.	DIR.					
20	5	218	62	9	30	1800	K	38 40 S	145 00 E	13.1	35.65	27	1	27	2	23	1	8	1010.5
20	5	219	62	9	30	1950	K	39 00 S	145 00 E	13.3	35.55	27	1	27	2	24	1	8	1010.0
20	5	220	62	9	30	2200	K	39 20 S	145 00 E	12.5	35.35	30	1	30	2	24	1	7	1010.0
20	5	221	62	10	1	0001	K	39 40 S	145 00 E	12.4	35.33	33	2	30	2	24	1	7	1005.0
20	5	222	62	10	1	0200	K	40 00 S	145 00 E	12.3	35.31	32	2	31	3	24	1	5	1001.0
20	5	223	62	10	1	0445	K	40 00 S	145 39 E	12.1	35.54	25	2	26	3	27	1	6	1001.0
20	5	224	62	10	1	0730	K	40 00 S	146 18 E	12.3	35.51	26	2	26	3	27	1	7	1002.0
20	5	225	62	10	1	1030	K	40 00 S	147 00 E	12.6	35.60	27	2	23	3	25	4	7	1002.0
20	5	226	62	10	1	1245	K	40 17 S	147 22 E	12.3	35.72	24	2	24	3	28	4	7	1001.5
20	5	227	62	10	1	1440	K	40 35 S	147 45 E	12.0	35.44	23	2	23	3	24	4	7	1001.0
20	5	228	62	10	2	0030	K	42 10 S	148 30 E	11.4	35.04	26	2	26	3	27	4	7	996.3
20	5	229	62	10	2	0200	K	42 10 S	148 44 E	12.5	35.30	26	2	26	3	27	4	7	996.0
20	5	230	62	10	2	0415	K	42 09 S	149 02 E	12.6	35.31	24	3	24	4	22	4	7	996.0
20	5	231	62	10	2	0715	K	42 09 S	149 28 E	12.7	35.33	24	3	24	4	22	4	7	997.0
20	5	232	62	10	2	1300	K	42 11 S	150 35 E	11.4	35.07	21	2	22	3	23	4	7	996.5
20	5	233	62	10	2	1915	K	42 10 S	151 46 E	12.5	35.27	20	2	20	3	22	4	7	998.0
20	5	234	62	10	3	0545	K	40 15 S	151 58 E	13.6	35.45	21	2	21	3	22	4	8	1005.0
20	5	235	62	10	3	0930	K	40 20 S	151 20 E	14.0	35.51	19	2	19	3	21	4	8	1009.0
20	5	236	62	10	3	1230	K	40 14 S	151 05 E	14.6	35.59	19	2	16	3	20	4	8	1009.0
20	5	237	62	10	3	1600	K	40 08 S	150 10 E	13.6	35.45	17	1	17	3	20	4	8	1011.0
20	5	238	62	10	3	1900	K	40 08 S	149 43 E	13.6	35.44	15	1	16	3	20	4	8	1012.0
20	5	239	62	10	3	2200	K	40 08 S	149 18 E	13.7	35.45	10	1	10	2	20	4	8	1011.3
20	5	240	62	10	3	2345	K	40 08 S	148 59 E	14.0	35.46	09	1	09	2	20	4	8	1011.0
20	5	241	62	10	4	0116	K	40 08 S	148 45 E	13.0	35.37	05	1	19	2	20	1	7	1010.0
20	5	242	62	10	4	1030	K	38 30 S	148 00 E	12.3	35.70	05	2	05	3	07	4	7	998.0
20	5	243	62	10	4	1230	K	38 32 S	148 19 E	13.6	35.44	05	2	03	2	06	1	7	992.0
20	5	244	62	10	4	1400	K	38 33 S	148 36 E	13.5	35.43	05	2	03	2	04	4	7	990.0
20	5	245	62	10	4	1645	K	38 34 S	149 04 E	13.7	35.45	06	2	06	3	06	4	7	989.5
20	5	246	62	10	4	2300	K	38 36 S	150 13 E	14.4	35.46	26	3	22	3	20	4	5	989.0
20	5	247	62	10	5	0500	K	38 37 S	151 22 E	14.5	35.49	26	2	27	2	01	4	8	991.5
20	5	248	62	10	5	0945	K	38 36 S	152 16 E	14.4	35.48	28	2	28	3	00	4	8	994.0
20	5	249	62	10	5	2100	K	36 40 S	153 08 E	15.0	35.52	30	2	30	2	35	4	8	1001.0
20	5	250	62	10	6	0230	K	36 42 S	152 24 E	16.3	35.51	36	1	00	2	22	4	7	1001.5
20	5	251	62	10	6	0530	K	36 42 S	151 43 E	14.8	35.51	01	2	01	2	00	1	8	999.0
20	5	252	62	10	6	0900	K	36 41 S	151 07 E	14.8	35.52	01	2	35	2	35	1	7	995.0
20	5	253	62	10	6	1140	K	36 42 S	150 47 E	15.1	35.52	31	2	34	2	01	1	7	995.0
20	5	254	62	10	6	1410	K	36 39 S	150 28 E	15.4	35.47								
20	5	255	62	10	6	1620	K	36 38 S	150 13 E	14.5	35.41	32	2	32	4	8	8	995.0	
20	5	256	62	10	7	0300	K	34 50 S	150 57 E	16.7	35.48	26	2	26	3	8	1006.0		
20	5	257	62	10	7	0415	K	34 51 S	151 11 E	17.0	35.55	27	2	26	3	7	1007.0		

VESEL	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	VISIBILITY	BAROMETER	SAMPLING	METHOD				
		NUMBER										DIR.	DIR.	DIR.								
												SP.	AMT.	AMT.								
20	5	258	62	10	7	0545	K	34	51 S	151	26 E	18.6	35.56	27	2	26	3	26	1	7	1009.0	1
20	5	259	62	10	7	0830	X	34	52 S	151	51 E	17.3	35.64	26	2	29	3	26	1	8	1010.5	1
20	5	260	62	10	7	1115	K	34	53 S	152	09 E	17.4	35.65	27	2	22	3	26	1	8	1010.5	1
20	5	261	62	10	7	1400	K	34	53 S	152	39 E	17.6	35.64	26	2	28	2	27	4	7	1008.0	1
20	5	262	62	10	7	1845	K	34	52 S	153	19 E	17.3	35.63	31	1	30	2	22	4	9	1011.0	1
20	5	263	62	10	7	2200	K	34	49 S	153	56 E	16.7	35.61	30	2	30	2	22	4	8	1013.0	1
20	5	264	62	10	8	0300	K	34	44 S	155	00 E	16.8	35.54	27	1	26	2	25	1	8	1012.0	1
20	5	265	62	10	8	0745	K	34	43 S	155	58 E	16.2	35.55	32	1	32	2	23	1	9	1015.0	1
20	5	266	62	10	8	1800	K	32	58 S	156	59 E	17.5	35.63	1	1	32	2	21	1	9	1015.0	1
20	5	267	62	10	8	2345	K	32	52 S	155	58 E	19.7	35.58	1	1	35	2	21	1	8	1016.0	1
20	5	268	62	10	9	0550	K	32	47 S	155	02 E	20.1	35.58	35	1	35	2	33	1	9	1015.0	1
20	5	269	62	10	9	1230	K	32	51 S	153	46 E	21.4	35.55	35	2	34	3	32	1	8	1012.0	1
20	5	270	62	10	9	1600	K	32	54 S	153	14 E	21.6	35.54	02	2	01	3	16	1	8	1007.0	1
20	5	271	62	10	9	1845	K	32	54 S	152	46 E	19.4	35.58	35	1	35	2	32	1	7	1007.0	1
20	5	272	62	10	9	2030	K	32	55 S	152	31 E	20.3	35.55	35	2	35	2	32	1	7	1007.0	1
20	5	273	62	10	9	2200	K	32	57 S	152	14 E	18.5	35.51	24	3	24	3	32	1	5	1010.0	1

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.
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.
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.