

# OCEANOGRAPHICAL STATION LIST

VOLUME 59

INVESTIGATIONS BY F.R.V. *DERWENT HUNTER*  
ON THE EASTERN AUSTRALIAN TUNA GROUNDS IN 1962

DIVISION OF FISHERIES AND OCEANOGRAPHY  
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL  
RESEARCH ORGANIZATION, AUSTRALIA 1968

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AUSTRALIA

MELBOURNE, 1968

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When citing this station list, abbreviate as follows:  
CSIRO Aust. Oceanogr. Stn List 59.

# OCEANOGRAPHICAL STATION LIST

## VOLUME 59

### Investigations by F.R.V. Derwent Hunter on the Eastern Australian Tuna Grounds in 1962

#### I. INTRODUCTION

This report records the data collected during the 1962 cruises of F.R.V. Derwent Hunter (DHL/62-DH6/62).

These cruises were planned to investigate hydrological conditions on the tuna grounds, and to carry out tuna fishing tests. In addition, Cruise DH2/62 was planned to supplement observations on the East Australian Current being made by H.M.A.S. Gascoyne.

Cruise DHL/62 was the tenth and last of a series of hydrological surveys of the tuna grounds. Data from the first nine surveys are given in CSIRO Aust. (1968).

Track charts and station positions are given in Figures 1-6, and a description of the Derwent Hunter in CSIRO Aust. (1965).

#### II. WORK ACCOMPLISHED

Table 1 gives details of time, scientific personnel, number of stations worked, and numbers of tuna trolled on each of the six cruises.

Longline catch details are given in Table 2 (p. 72). The long-lining gear used is described by Davies (1961).

#### III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

##### 1. Physics

Temperature.—Water temperatures were taken with deep-sea reversing thermometers. Thermometers graduated to 0.1 degC were used, two to each Nansen water-bottle, and the temperatures obtained are considered accurate to  $\pm 0.05$  degC. Three unprotected thermometers were used on each deep cast.

Bathythermographs.—900-ft bathythermographs were used, and slides were digitized according to the method of the U.S. National Oceanographic Data Centre (1964). The results were transferred to punched cards and computer listings are held at Cronulla.

TABLE 1

## DETAILS OF CRUISES AND WORK DONE

Cruise	Date	Scientific Personnel	Number of Stations Occupied	BT		Hydrology	Zoo-plankton	Longline	Trolling Catch	
				1	2				1	2
DH1/62	Jan. 4-18	L. Olsen B. Moorhead	105	25	105	35		2	3	5
DH2/62	Jan. 23-Feb. 5	L. Olsen K. Johnson	107	31	107	20	3	1		
DH3/62	Feb. 19-27	L. Olsen K. Johnson	80	15	80	2	5	2		
DH4/62	Apr. 12-18	L. Olsen	37	10	37	2		4		
DH5/62	Apr. 27-May 10	L. Olsen	79	16	79	4	6	3		1
DH6/62	May 14-23	L. Olsen	65	14	65	2	2	2		1

## BT Bathythermographs

Hydrology 1 Number of stations at which surface samples were collected

2 Number of stations at which subsurface samples were collected

Longline Number of times a longline was used

Trolling 1 Yellowfin tuna

Catch 2 Albacore

3 Striped tuna

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  $\pm 5$  m at depths less than 200 m,  $\pm 10$  m at depths between 200 and 400 m, and within about 2% at depths from 400 to 1500 m.

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

## 2. Chemistry

Salinity.—A chlorinity-temperature meter of the conductivity type (Hamon 1956) was used at Cronulla to estimate chlorinity, which was subsequently converted to salinity by the relation -

$$\text{Salinity} = 0.03 + 1.805 \times \text{Chlorinity}$$

Salinities are considered accurate to about  $\pm 0.05\%$ .

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 (Rochford 1963). Duplicate titrations were made on approximately every tenth sample. Saturation values, given in ml/l, were computed, using the simpler of the equations given by Richards and Corwin (1956) -

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

## 3. Zooplankton Biomass

Sampling consisted of double-oblique tows in the upper 200 m with a Clarke-Bumpus Sampler. Samples were weighed at Cronulla using the method of Tranter (1962).

## REFERENCES

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#### IV. TRACK CHARTS



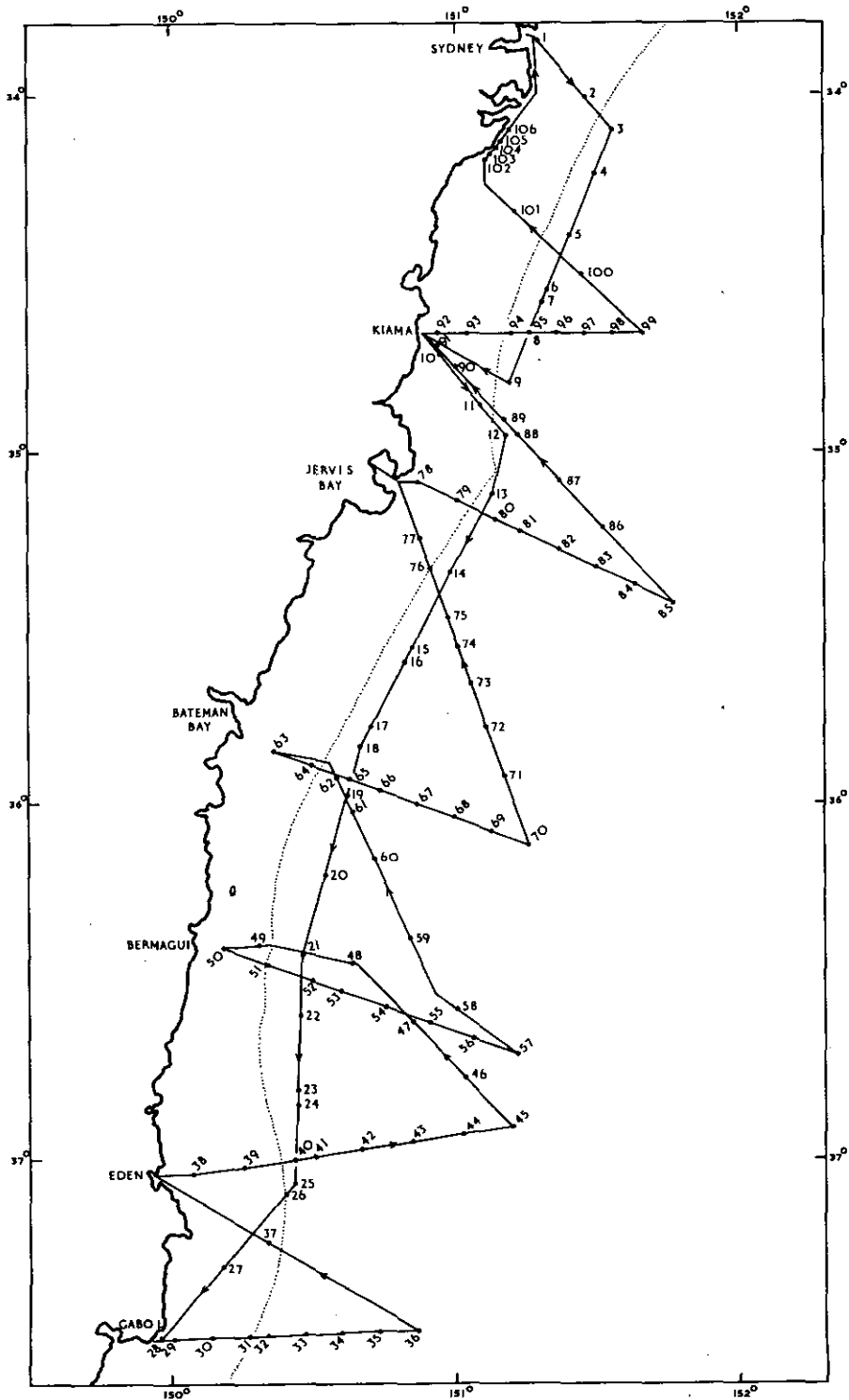


Fig. 1.-Track chart Cruise D.H. 1/62

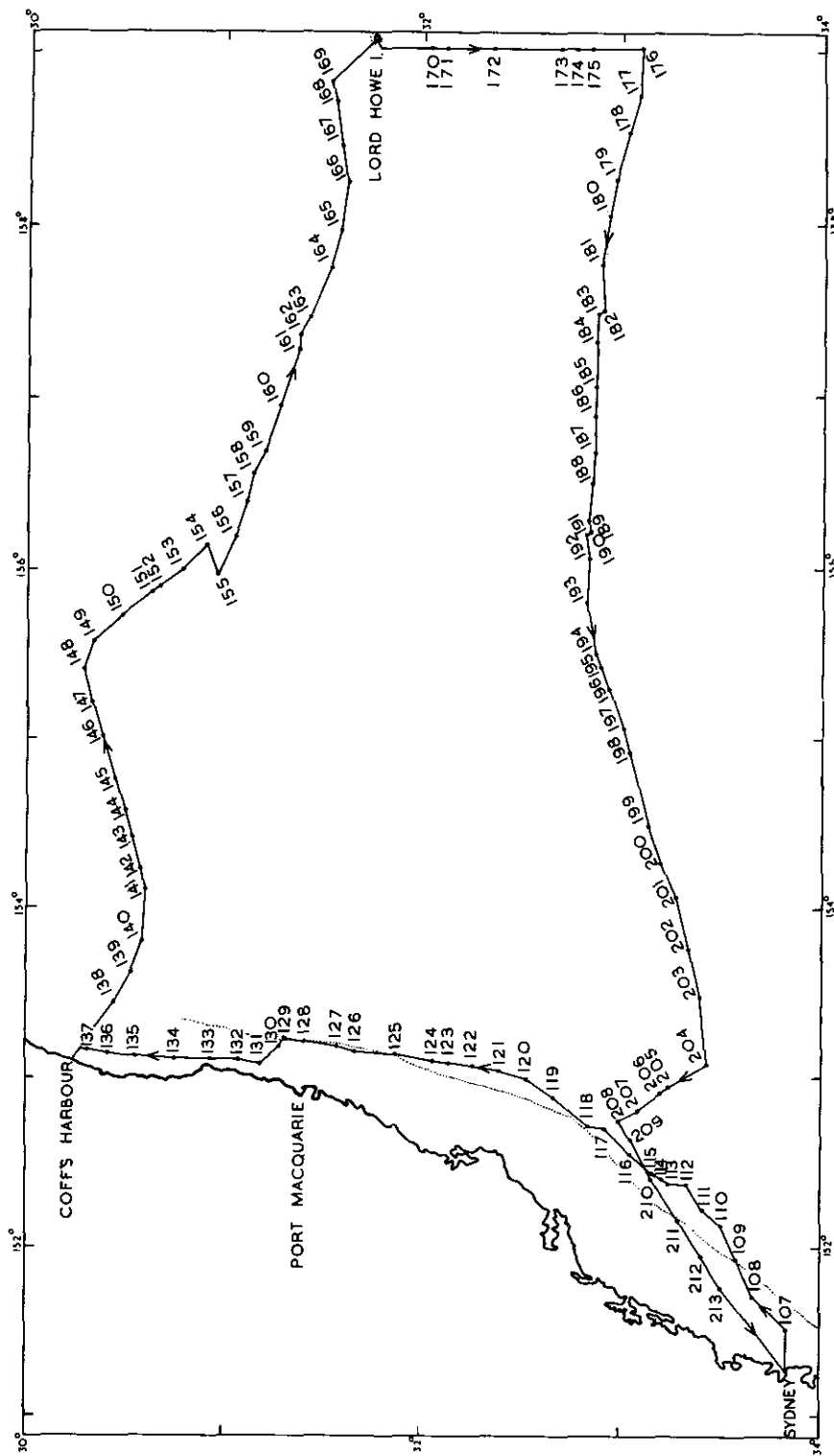


Fig. 2.-Track chart Cruise D.H. 2/62

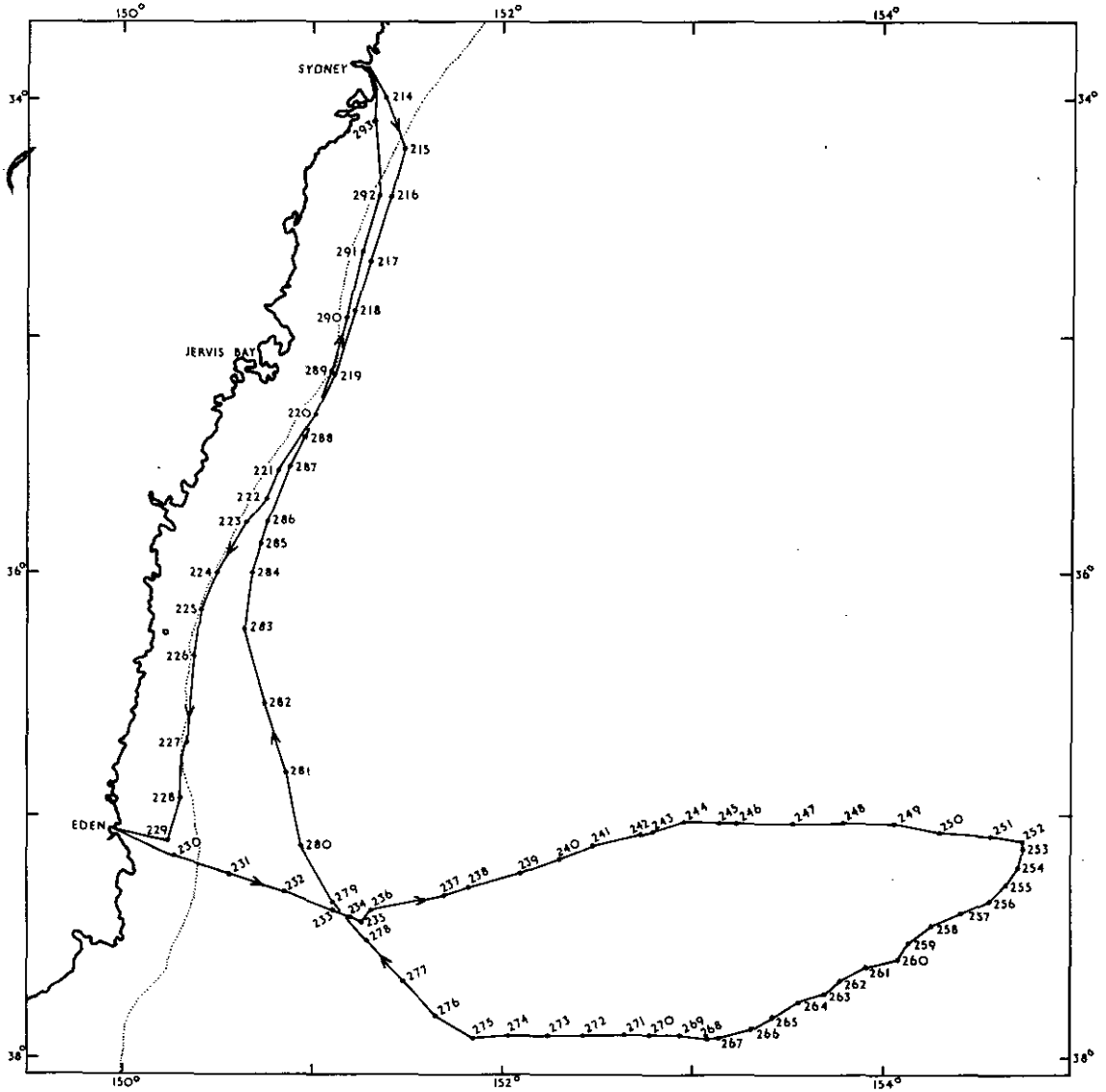


Fig. 3- Track chart Cruise D.H. 3/62

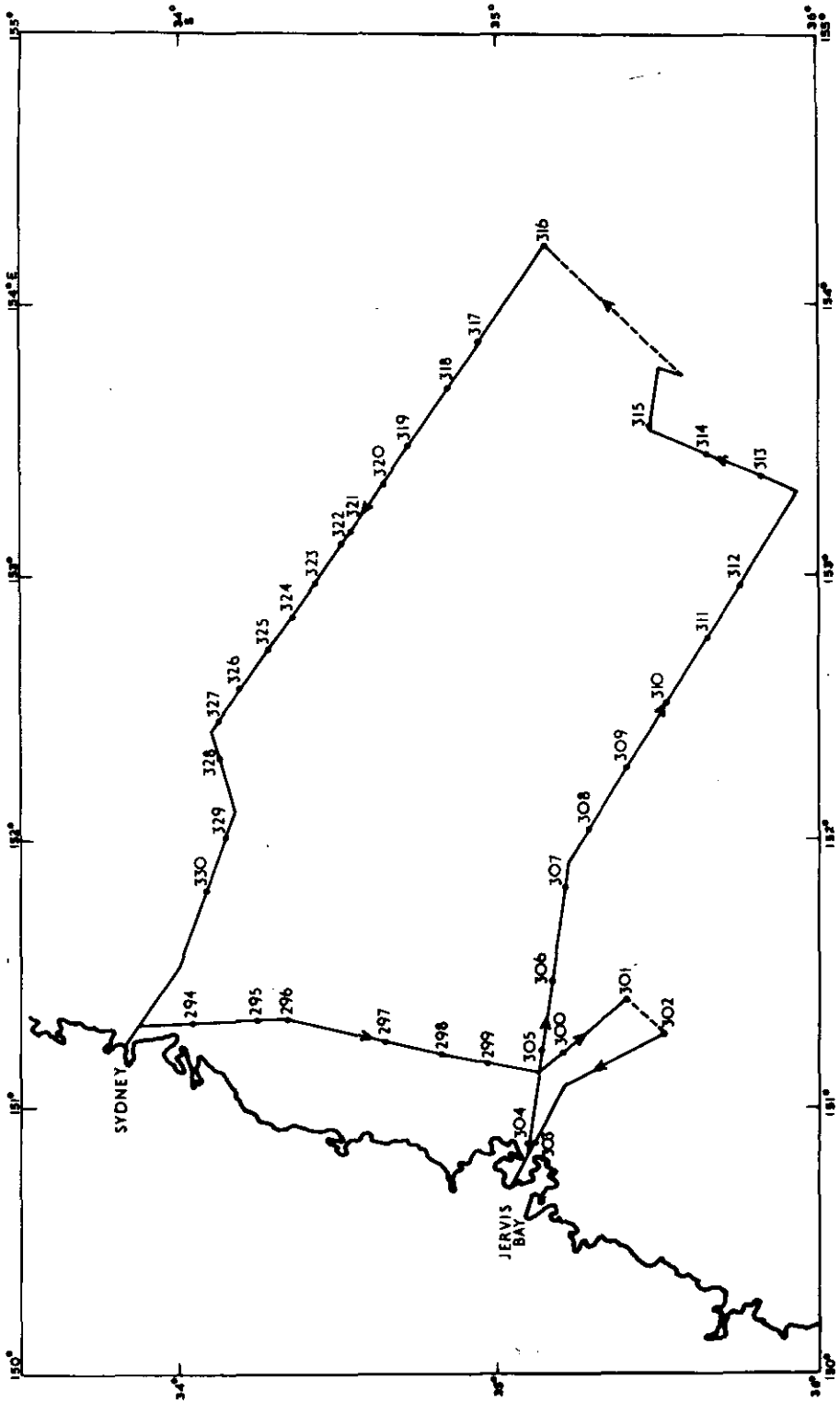


Fig. 4-Track chart Cruise D.H. 4/62

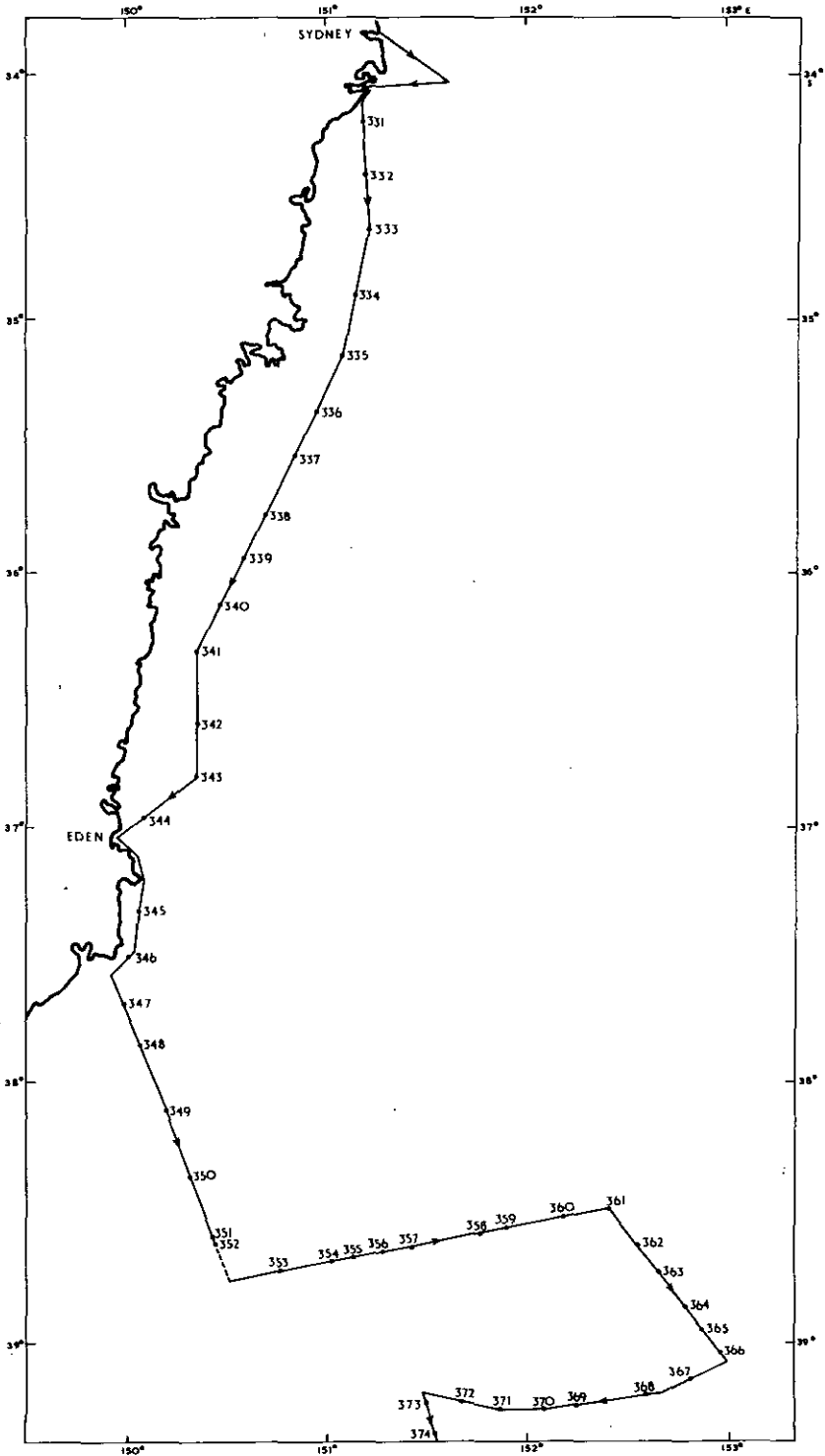


Fig.5(a)-Track chart Cruise D.H. 5/62  
Stations 331-374

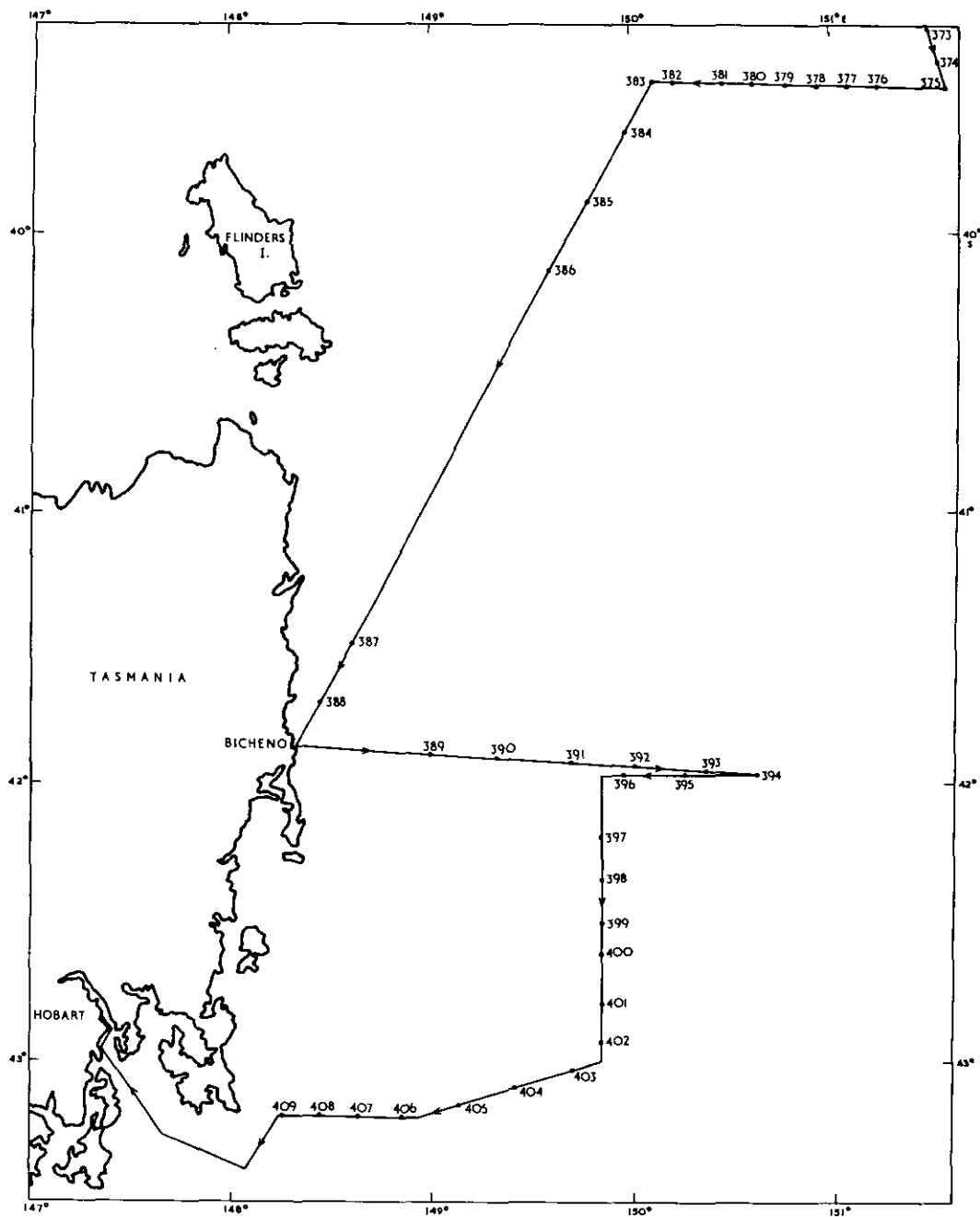


Fig. 5.(b) Track chart Cruise D.H. 5/62  
Stations 373-409

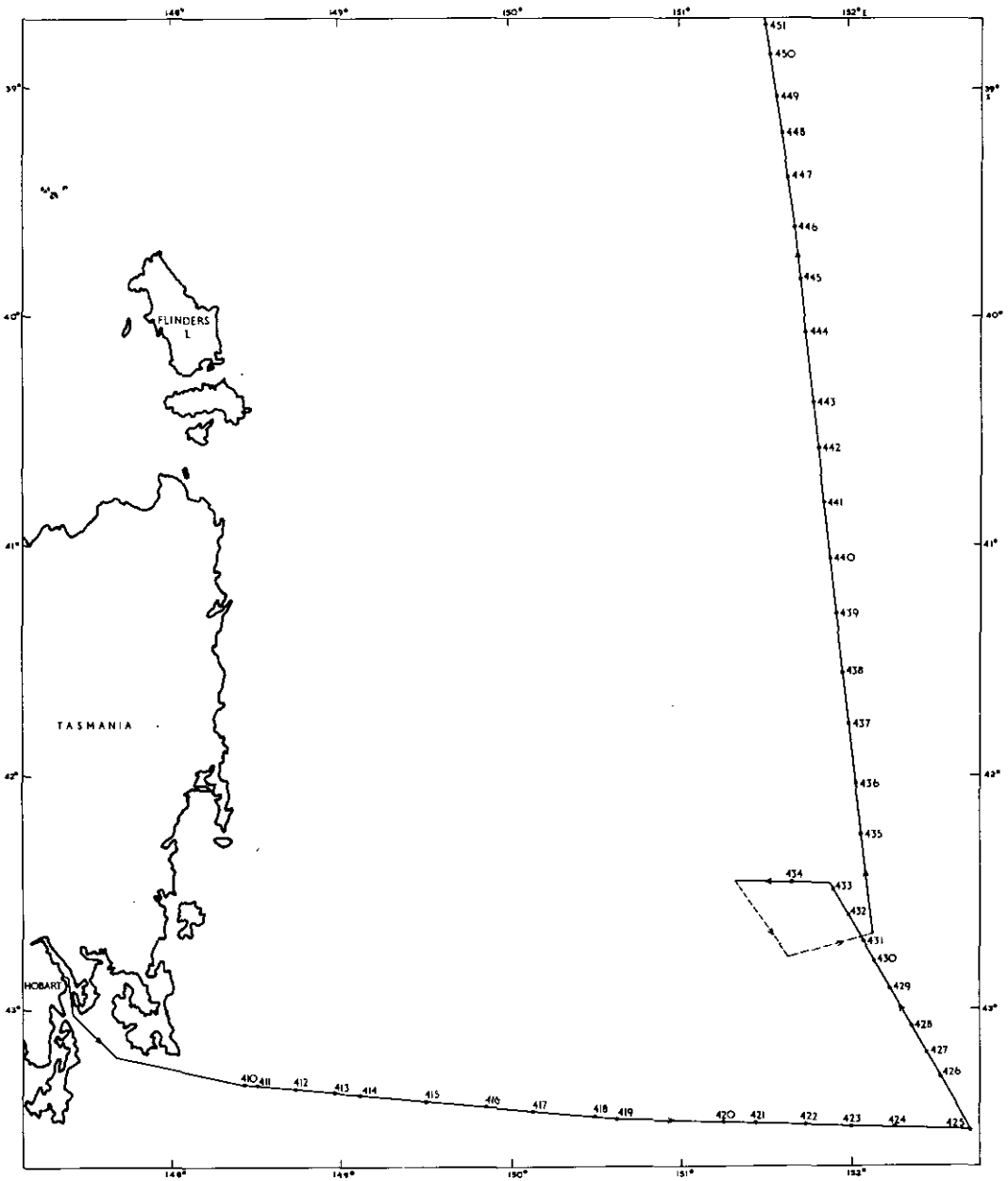


Fig. 6 (a).-Track chart Cruise D.H. 6/62  
Stations 410-451

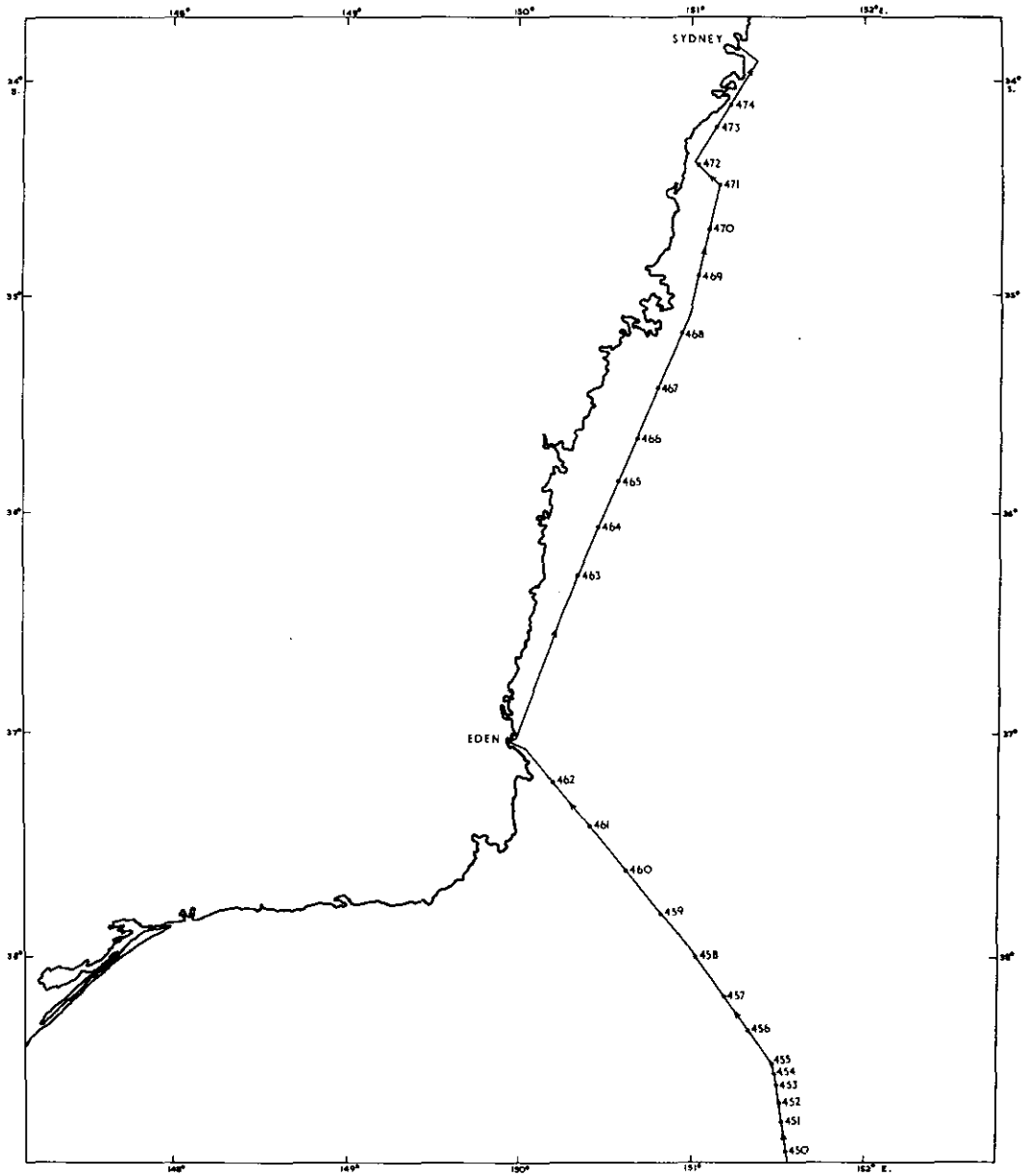


Fig. 6(b).- Track chart Cruise D.H. 6/62  
Stations 450 - 474



## V. DATA SHEETS

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

DATA  
PART 1  
HYDROLOGY  
SURFACE SAMPLES

## EXPLANATION OF HEADINGS

Parts 1 and 2Hydrology

STATION	Gives the station identification. For example, DHL/1/62 signifies the 1st station worked by <u>Derwent Hunter</u> in 1962, on her 1st 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. Zone Time in all cases was Eastern Australian Standard Time, GMT +10 hr, Code K
LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Hydrogr. Office (1955)
WEA.	Weather is coded using Table 1 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)
BAROM. or ATMOS. PRESSURE	Atmospheric pressure given in millibars
WIRE ANTLES CAST 1 CAST 2 CAST 3	Wire angles are measured at the surface and expressed in degrees for each cast
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
SIGMA-T	Sigma-t to two decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation

\*, \*\*\*, and a blank indicate no data available



VESSEL		CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	HEA.	VIS.	BAROM.	SAMPLING		
		NUMBER											DN, AMT.	DN, AMT.	DN, AMT.				METHOD		
10	1	10	1643	K	37	00	S	150	29	E	20.8	35.61	14	2	14	2	09	2	09	2	1011.0
10	1	10	1915	K	36	59	S	150	40	E	20.7	35.59	16	3	16	3	09	1	09	1	1010.0
10	1	10	2080	K	36	57	S	150	50	E	20.7	35.66	18	1	18	1	14	2	14	2	1011.0
10	1	10	2310	K	36	56	S	151	00	E	21.1	35.70	18	1	18	1	14	2	14	2	1011.0
10	1	10	0020	K	36	54	S	151	10	E	20.8	35.61	18	1	18	1	14	2	14	2	1011.0
10	1	10	1300	K	36	47	S	151	01	E	21.2	35.66	16	0	16	0	09	2	09	2	1014.0
10	1	10	1518	K	36	37	S	150	49	E	21.2	35.68	06	1	06	1	09	2	09	2	1012.0
10	1	10	1655	K	36	27	S	150	37	E	21.1	35.62	06	1	06	1	09	2	09	2	1012.0
10	1	10	1900	K	36	24	S	150	18	E	21.1	35.59	06	1	06	1	09	1	09	1	1013.0
10	1	10	1950	K	36	25	S	150	09	E	20.5	35.59	06	1	06	1	09	1	09	1	1013.0
10	1	10	2125	K	36	28	S	150	19	E	21.2	35.55	12	1	12	1	09	2	09	2	1015.0
10	1	10	2310	K	36	30	S	150	28	E	21.0	35.61	12	1	12	1	09	2	09	2	1015.0
10	1	10	0305	K	36	31	S	150	33	E	21.1	35.52	12	1	12	1	09	2	09	2	1015.0
10	1	10	0300	K	36	34	S	150	42	E	20.6	35.52	12	1	12	1	09	1	09	1	1013.0
10	1	10	0423	K	36	37	S	150	52	E	21.4	35.61	12	1	12	1	09	1	09	1	1013.0
10	1	10	0653	K	36	39	S	151	01	E	21.2	35.59	12	2	12	1	09	1	09	1	1014.0
10	1	10	0825	K	36	41	S	151	10	E	21.2	35.62	16	2	16	2	11	2	11	2	1016.0
10	1	10	1108	K	36	35	S	150	00	E	21.3	35.61	18	2	18	2	18	2	18	2	1016.0
10	1	10	1300	K	36	23	S	150	48	E	21.0	35.41	18	2	18	2	18	2	18	2	1016.0
10	1	10	1500	K	36	09	S	150	40	E	20.9	35.43	11	1	11	1	11	2	11	2	1015.0
10	1	10	1618	K	36	00	S	150	35	E	21.4	35.55	11	1	11	1	11	2	11	2	1015.0
10	1	10	1700	K	35	56	S	150	33	E	21.2	35.53	20	1	20	1	09	1	09	1	1017.0
10	1	10	1900	K	35	50	S	150	18	E	21.4	35.55	20	1	20	1	09	1	09	1	1016.0
10	1	10	2035	K	35	52	S	150	26	E	21.1	35.53	14	1	14	1	12	2	12	2	1019.0
10	1	10	2215	K	35	55	S	150	34	E	21.1	35.52	14	1	14	1	12	2	12	2	1019.0
10	1	10	2345	K	35	56	S	150	36	E	20.6	35.44	14	1	14	1	12	2	12	2	1019.0
10	1	10	0250	K	35	58	S	150	47	E	20.8	35.01	00	0	00	0	12	1	12	1	1019.0
10	1	10	0415	K	36	01	S	150	55	E	21.2	35.59	00	0	00	0	12	1	12	1	1019.0
10	1	10	0640	K	36	03	S	151	04	E	21.1	35.70	09	1	09	1	12	2	12	2	1020.0
10	1	10	0810	K	36	05	S	151	11	E	21.5	35.70	11	1	11	1	12	2	12	2	1022.0
10	1	10	1700	K	35	56	S	151	08	E	21.7	35.73	09	2	09	2	12	2	12	2	1019.0
10	1	10	1900	K	35	47	S	151	05	E	21.7	35.70	05	2	05	2	12	2	12	2	1019.0
10	1	10	2100	K	35	40	S	151	03	E	21.3	35.70	04	2	04	2	12	2	12	2	1021.0
10	1	10	2300	K	35	33	S	151	01	E	21.5	35.97	04	2	04	2	04	1	04	1	1021.0
10	1	10	0100	K	35	28	S	150	58	E	21.5	35.77	04	3	04	2	04	1	04	1	1021.0
10	1	10	0300	K	35	22	S	150	57	E	21.2	35.71	04	3	04	2	04	1	04	1	1019.0
10	1	10	0500	K	35	15	S	150	55	E	21.1	35.50	02	1	02	1	04	1	04	1	1020.0
10	1	10	0750	K	35	07	S	150	52	E	21.1	35.50	01	3	01	2	01	1	01	1	1020.0
10	1	10	0950	K	35	11	S	151	00	E	22.2	35.43	01	3	01	2	01	1	01	1	1020.0
10	1	10	1150	K	35	14	S	151	09	E	21.9	35.70	02	3	02	2	02	1	02	1	1019.0

VESSEL	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING
		NUMBER										DN.	AMT.	DN.	AMT.			METHOD
10	1	81	62	1	15	1310	K 35	16 S 151	13 E 21.9	35.71	02	3	02	2	02	8	1019.0	1
10	1	82	62	1	15	1555	K 35	19 S 151	22 E 22.1	35.81	02	3	02	2	02	8	1019.0	1
10	1	83	62	1	15	1728	K 35	22 S 151	30 E 21.9	35.71	02	3	02	2	02	8	1019.0	1
10	1	84	62	1	15	2018	K 35	25 S 151	38 E 21.8	35.75	02	3	02	2	02	8	1023.0	1
10	1	85	62	1	15	2200	K 35	29 S 151	47 E 21.7	35.71	01	2	01	2	02	8	1023.0	1
10	1	86	62	1	16	0300	K 35	13 S 151	29 E 21.7	35.71	01	2	01	2	02	8	1022.0	1
10	1	87	62	1	16	0500	K 35	05 S 151	21 E 21.7	35.73	02	1	02	1	02	8	1022.0	1
10	1	88	62	1	16	0600	K 35	00 S 151	14 E 21.8	35.71	02	1	02	1	02	8	1022.0	1
10	1	89	62	1	16	0700	K 34	55 S 151	09 E 22.1	35.66	02	1	02	1	02	8	1022.0	1
10	1	90	62	1	16	0900	K 34	46 S 150	59 E 22.0	35.43	00	2	00	1	02	8	1023.0	1
10	1	91	62	1	16	1100	K 34	43 S 150	59 E 22.3	35.37	04	3	04	4	1	8	1023.0	1
10	1	92	62	1	16	1400	K 34	40 S 150	55 E 21.9	35.34	04	3	04	4	2	8	1021.0	1
10	1	93	62	1	16	1550	K 34	40 S 151	02 E 22.5	35.26	04	3	04	4	2	8	1021.0	1
10	1	94	62	1	16	1945	K 34	40 S 151	11 E 22.3	35.68	04	3	04	4	2	8	1020.0	1
10	1	95	62	1	16	2057	K 34	40 S 151	15 E 22.0	35.70	05	3	05	4	1	8	1022.0	1
10	1	96	62	1	16	2304	K 34	40 S 151	21 E 22.0	35.70	04	2	04	2	05	8	1022.0	1
10	1	97	62	1	17	0045	K 34	40 S 151	27 E 22.0	35.71	04	2	04	2	05	8	1021.0	1
10	1	98	62	1	17	0340	K 34	40 S 151	34 E 22.1	35.70	04	2	04	2	05	8	1020.0	1
10	1	99	62	1	17	0520	K 34	40 S 151	40 E 21.7	35.70	02	3	02	3	05	8	1019.0	1
10	1	100	62	1	17	0900	K 34	30 S 151	26 E 22.0	35.68	02	3	02	3	02	8	1018.0	1
10	1	101	62	1	17	1100	K 34	20 S 151	13 E 22.2	34.78	02	3	02	3	02	8	1018.0	1
10	1	102	62	1	17	1300	K 34	11 S 151	07 E 21.1	35.59	02	3	02	3	02	8	1018.0	1
10	1	103	62	1	17	1500	K 34	10 S 151	08 E 21.4	35.41	04	3	04	3	04	8	1016.0	1
10	1	104	62	1	17	1700	K 34	09 S 151	09 E 21.9	35.34	02	4	02	3	04	8	1014.0	1
10	1	105	62	1	17	1900	K 34	08 S 151	11 E 21.6	35.44	02	4	02	3	04	8	1014.0	1
10	1	106	62	1	17	2100	K 34	06 S 151	10 E 21.2	35.50	02	4	02	3	04	8	1014.0	1
10	2	107	62	1	23	1900	K 33	45 S 151	31 E 22.3	35.37	09	1	09	1	09	8	1028.0	1
10	2	108	62	1	23	2100	K 33	40 S 151	43 E 22.1	35.62	09	1	09	1	09	8	1027.0	1
10	2	109	62	1	23	2300	K 33	35 S 151	56 E 22.2	35.50	09	1	09	1	09	8	1027.0	1
10	2	110	62	1	24	0100	K 33	30 S 152	08 E 21.9	35.50	09	1	09	1	09	8	1027.0	1
10	2	111	62	1	24	0300	K 33	25 S 152	13 E 22.3	35.44	05	1	05	1	09	8	1025.0	1
10	2	112	62	1	24	0500	K 33	20 S 152	16 E 21.9	35.57	05	4	05	2	05	8	1026.0	1
10	2	113	62	1	24	0700	K 33	15 S 152	22 E 22.3	35.46	05	4	05	2	05	8	1026.0	1
10	2	114	62	1	24	0900	K 33	13 S 152	24 E 22.3	35.46	05	1	05	2	05	8	1026.0	1
10	2	115	62	1	24	0900	K 33	10 S 152	26 E 22.3	35.48	05	1	05	2	05	8	1026.0	1
10	2	116	62	1	24	1100	K 33	03 S 152	33 E 22.8	35.30	04	2	04	2	05	8	1025.0	1
10	2	117	62	1	24	1300	K 32	56 S 152	39 E 23.7	35.19	04	2	04	2	05	8	1024.0	1
10	2	118	62	1	24	1420	K 32	51 S 152	43 E 24.3	35.28	05	4	05	2	05	8	1024.0	1
10	2	119	62	1	24	1700	K 32	40 S 152	53 E 25.1	35.32	08	4	08	2	05	8	1023.0	1
10	2	120	62	1	24	1900	K 32	32 S 153	00 E 23.9	35.17	08	4	08	2	05	8	1023.0	1

VESSEL	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING	
NUMBER											DN, AMT.	DN, AMT.	DN, AMT.	DN, AMT.				METHOD	
10	2	121	62	1	24	2100	K 32	24 S 153	02 E 24.7	35.28	08	3	08	3	07	1	8	1024.0	1
10	2	122	62	1	24	2300	K 32	14 S 153	04 E 26.4	35.25	04	2	04	3	07	1	8	1023.0	1
10	2	123	62	1	24	2400	K 32	09 S 153	05 E 25.6	35.25	04	2	04	3	07	1	8	1023.0	1
10	2	124	62	1	25	0100	K 32	04 S 153	06 E 26.6	35.28	04	2	04	3	07	1	8	1023.0	1
10	2	125	62	1	25	0300	K 31	53 S 153	08 E 25.6	35.34	05	3	05	3	08	1	8	1021.0	1
10	2	126	62	1	25	0445	K 31	45 S 153	09 E 25.5	35.34	05	3	05	3	08	1	8	1021.0	1
10	2	127	62	1	25	0700	K 31	35 S 153	11 E 25.5	35.30	05	3	05	2	05	2	8	1021.0	1
10	2	128	62	1	25	0900	K 31	25 S 153	13 E 26.2	35.30	04	3	04	3	04	2	8	1021.0	1
10	2	129	62	1	25	1020	K 31	19 S 153	14 E 26.5	35.28	04	3	04	3	04	2	8	1021.0	1
10	2	130	62	1	25	1100	K 31	18 S 153	11 E 26.8	35.19	04	1	04	1	07	2	8	1021.0	1
10	2	131	62	1	25	1300	K 31	12 S 153	05 E 26.6	35.26	04	1	04	1	07	2	8	1021.0	1
10	2	132	62	1	25	1500	K 31	05 S 153	06 E 24.4	35.44	36	4	36	2	05	1	8	1019.0	1
10	2	133	62	1	25	1700	K 30	56 S 153	06 E 24.6	35.28	05	2	05	1	07	2	8	1020.0	1
10	2	134	62	1	25	1900	K 30	45 S 153	07 E 24.7	35.28	05	2	05	1	07	2	8	1020.0	1
10	2	135	62	1	25	2100	K 30	33 S 153	08 E 24.1	35.05	03	1	03	1	07	2	8	1020.0	1
10	2	136	62	1	25	2300	K 30	25 S 153	09 E 24.5	35.23	03	1	03	1	08	2	8	1019.0	1
10	2	137	62	1	26	0100	K 30	19 S 153	10 E 24.6	34.47	33	1	33	1	08	2	8	1019.0	1
10	2	138	62	1	27	0350	K 30	27 S 153	27 E 26.8	35.17	20	3	20	3	18	2	8	1017.0	1
10	2	139	62	1	27	0735	K 30	32 S 153	38 E 24.9	35.39	18	2	18	2	18	2	8	1017.0	1
10	2	140	62	1	27	1100	K 30	36 S 153	48 E 24.9	35.37	18	2	18	2	18	2	8	1017.0	1
10	2	141	62	1	27	1320	K 30	36 S 154	07 E 24.9	35.39	18	2	18	2	18	2	8	1017.0	1
10	2	142	62	1	27	1700	K 30	35 S 154	14 E 24.9	35.44	16	3	16	3	18	2	8	1017.0	1
10	2	143	62	1	27	1900	K 30	32 S 154	25 E 24.5	35.37	16	3	16	3	18	2	8	1017.0	1
10	2	144	62	1	27	2100	K 30	30 S 154	35 E 24.9	35.28	12	2	12	2	12	2	8	1018.0	1
10	2	145	62	1	27	2236	K 30	27 S 154	46 E 24.5	35.34	10	2	10	2	12	2	8	1018.0	1
10	2	146	62	1	28	0300	K 30	23 S 155	01 E 24.7	35.34	05	1	05	1	18	2	8	1017.0	1
10	2	147	62	1	28	0500	K 30	20 S 155	13 E 25.6	35.28	09	1	09	1	09	2	8	1017.0	1
10	2	148	62	1	28	0636	K 30	17 S 155	25 E 25.5	35.28	09	1	09	1	09	2	8	1017.0	1
10	2	149	62	1	28	1100	K 30	20 S 155	35 E 25.6	35.37	06	1	06	1	06	2	8	1018.0	1
10	2	150	62	1	28	1300	K 30	29 S 155	44 E 25.4	35.39	06	1	06	1	06	2	8	1018.0	1
10	2	151	62	1	28	1500	K 30	38 S 155	52 E 25.3	35.32	05	1	05	1	06	2	8	1018.0	1
10	2	152	62	1	28	1521	K 30	40 S 155	54 E 25.6	35.12	05	1	05	1	06	2	8	1018.0	1
10	2	153	62	1	28	1700	K 30	47 S 156	00 E 25.4	35.53	05	1	05	1	05	2	8	1018.0	1
10	2	154	62	1	28	1900	K 30	55 S 156	08 E 25.1	35.59	05	1	05	1	05	2	8	1018.0	1
10	2	155	62	1	29	0548	K 30	58 S 155	50 E 24.3	35.48	07	1	07	1	09	2	8	1018.0	1
10	2	156	62	1	29	1500	K 31	03 S 156	11 E 24.9	35.99	05	1	05	1	09	2	8	1016.0	1
10	2	157	62	1	29	1700	K 31	07 S 156	27 E 24.7	35.48	05	1	05	1	09	2	8	1016.0	1
10	2	158	62	1	29	1740	K 31	09 S 156	33 E 24.8	35.57	05	1	05	1	09	2	8	1016.0	1
10	2	159	62	1	29	1900	K 31	12 S 156	41 E 24.7	35.44	05	1	05	1	09	2	8	1016.0	1
10	2	160	62	1	29	2115	K 31	17 S 156	57 E 24.4	35.53	05	2	05	2	09	2	8	1017.0	1



VESSEL- CHUISE STATION YR. MTH. DAY TIME & LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT, SEA SWELL DN, AMT. MEA. VIS. BAROM. SAMPLING METHOD

10	2	161	62	1	30	0300	K 31	23 S	157	17 E	24.9	35.37	05	2	05	2	09	1	8	1016.0	1
10	2	162	62	1	30	0350	K 31	24 S	157	22 E	24.8	35.37	05	2	05	2	09	1	8	1016.0	1
10	2	163	62	1	30	0500	K 31	26 S	157	28 E	25.0	35.37	05	2	05	1	09	1	8	1016.0	1
10	2	164	62	1	30	0700	K 31	32 S	157	45 E	25.1	35.28	05	2	05	1	09	1	8	1016.0	1
10	2	165	62	1	30	0858	K 31	35 S	157	58 E	24.8	35.43	05	1	05	1	09	1	8	1016.0	1
10	2	166	62	1	30	1300	K 31	37 S	158	15 E	25.6	35.39	05	2	05	2	07	1	8	1016.0	1
10	2	167	62	1	30	1435	K 31	35 S	158	27 E	25.6	35.39	05	1	05	1	07	1	8	1016.0	1
10	2	168	62	1	30	1700	K 31	33 S	158	43 E	25.6	35.39	03	2	03	2	07	2	8	1015.0	1
10	2	169	62	1	30	1800	K 31	32 S	158	50 E	25.3	35.39	03	2	03	2	07	2	8	1015.0	1
10	2	170	62	2	1	1000	K 32	02 S	159	01 E	24.9	35.35	02	2	02	2	05	2	8	1014.0	1
10	2	171	62	2	1	1100	K 32	07 S	159	01 E	25.2	35.37	02	2	02	2	05	2	8	1014.0	1
10	2	172	62	2	1	1300	K 32	21 S	159	01 E	24.4	35.41	02	2	02	2	05	2	8	1014.0	1
10	2	173	62	2	1	1325	K 32	21 S	159	01 E	24.7	35.41	02	2	02	2	05	2	8	1014.0	1
10	2	174	62	2	1	1808	K 32	46 S	159	01 E	25.6	35.34	02	4	02	3	05	2	8	1011.0	1
10	2	175	62	2	1	1900	K 32	51 S	159	01 E	25.6	35.39	02	4	02	3	05	2	8	1011.0	1
10	2	176	62	2	1	2117	K 33	06 S	159	01 E	25.1	35.39	02	3	02	3	05	2	8	1012.0	1
10	2	177	62	2	2	0100	K 33	04 S	158	45 E	24.8	35.39	02	3	02	3	05	2	8	1011.0	1
10	2	178	62	2	2	0250	K 33	02 S	158	32 E	23.9	35.30	02	3	02	3	05	2	8	1011.0	1
10	2	179	62	2	2	0500	K 32	59 S	158	16 E	23.8	35.19	02	1	02	1	05	1	8	1009.0	1
10	2	180	62	2	2	0652	K 32	57 S	158	03 E	23.6	35.50	02	1	02	1	05	1	8	1009.0	1
10	2	181	62	2	2	1100	K 32	54 S	157	46 E	23.5	35.14	30	3	30	3	00	2	8	1009.0	1
10	2	182	62	2	2	1300	K 32	55 S	157	30 E	25.0	35.37	30	3	30	3	00	2	8	1009.0	1
10	2	183	62	2	2	1323	K 32	55 S	157	29 E	24.9	35.39	30	3	30	3	00	2	8	1008.0	1
10	2	184	62	2	2	1500	K 32	57 S	157	19 E	24.8	35.39	32	2	30	2	00	2	8	1008.0	1
10	2	185	62	2	2	1723	K 32	52 S	157	03 E	25.0	35.39	26	1	26	1	00	1	8	1009.0	1
10	2	186	62	2	2	2100	K 32	52 S	156	93 E	24.8	35.39	26	0	26	1	00	1	8	1010.0	1
10	2	187	62	2	2	2307	K 32	52 S	156	40 E	24.5	35.43	18	3	18	3	18	3	8	1010.0	1
10	2	188	62	2	3	0100	K 32	51 S	156	30 E	24.4	35.43	18	3	18	3	18	3	8	1010.0	1
10	2	189	62	2	3	0300	K 32	51 S	156	17 E	24.4	35.37	18	3	18	3	18	3	8	1011.0	1
10	2	190	62	2	3	0500	K 32	50 S	156	12 E	24.4	35.37	18	3	18	4	18	3	8	1013.0	1
10	2	191	62	2	3	0550	K 32	51 S	156	13 E	24.4	35.39	18	3	18	4	18	3	8	1013.0	1
10	2	192	62	2	3	0900	K 32	51 S	156	04 E	24.5	35.37	18	3	18	3	18	2	8	1015.0	1
10	2	193	62	2	3	1100	K 32	50 S	155	49 E	24.5	35.44	16	1	16	1	18	2	8	1016.0	1
10	2	194	62	2	3	1300	K 32	53 S	155	31 E	25.1	35.34	16	1	16	1	18	2	8	1016.0	1
10	2	195	62	2	3	1345	K 32	55 S	155	26 E	25.0	35.39	16	2	16	2	18	2	8	1014.0	1
10	2	196	62	2	3	1500	K 32	57 S	155	18 E	24.8	35.39	05	2	05	2	18	2	8	1014.0	1
10	2	197	62	2	3	1700	K 33	01 S	155	04 E	24.4	35.37	05	2	05	2	18	2	8	1016.0	1
10	2	198	62	2	3	1740	K 33	03 S	154	56 E	24.5	35.34	05	2	05	2	18	2	8	1016.0	1
10	2	199	62	2	3	2300	K 33	09 S	154	30 E	25.1	35.30	05	3	05	2	18	2	8	1017.0	1
10	2	200	62	2	4	0053	K 33	13 S	154	16 E	25.1	35.37	05	3	05	2	18	2	8	1017.0	1

VESSE-	CRUISE	STATION	YR.	MTH.	DAY	TIME	∠	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING				
	NUMBER										DN. AMT.	DN. AMT.	DN. AMT.	DN. AMT.				METHOD				
10	2	201	62	2	4	0300	K 33	17 S	154	04 E	25.0	35.37	2	02	2	02	2	18	1	8	1016.0	1
10	2	202	62	2	4	0445	K 33	21 S	153	46 E	24.9	35.44	2	02	2	02	2	05	2	8	1017.0	1
10	2	203	62	2	4	0900	K 33	24 S	153	29 E	24.9	35.34	06	2	06	2	14	2	8	8	1018.0	1
10	2	204	62	2	4	1107	K 33	26 S	153	05 E	25.8	35.34	06	2	06	2	11	2	8	8	1018.0	1
10	2	205	62	2	4	1500	K 33	15 S	152	57 E	26.7	35.25	05	2	05	2	07	1	8	8	1014.0	1
10	2	206	62	2	4	1600	K 33	13 S	152	55 E	26.1	35.37	05	2	05	2	07	1	8	8	1014.0	1
10	2	207	62	2	4	1740	K 33	06 S	152	49 E	26.9	35.21	05	2	05	2	07	1	8	8	1018.0	1
10	2	208	62	2	4	1910	K 33	00 S	152	45 E	28.1	35.17	05	2	05	2	07	1	8	8	1018.0	1
10	2	209	62	2	4	2100	K 33	03 S	152	38 E	28.9	35.44	05	0	05	2	07	1	8	8	1021.0	1
10	2	210	62	2	4	2300	K 33	10 S	152	25 E	23.4	35.46	00	0	00	0	18	2	8	8	1021.0	1
10	2	211	62	2	5	0100	K 33	18 S	152	10 E	23.2	35.48	00	0	00	0	18	2	8	8	1021.0	1
10	2	212	62	2	5	0300	K 33	25 S	151	57 E	23.3	35.44	00	0	00	0	16	1	8	8	1020.0	1
10	2	213	62	2	5	0500	K 33	31 S	151	45 E	23.3	35.35	05	1	05	1	16	1	8	8	1023.0	1
10	3	214	62	2	19	1100	K 34	12 S	151	23 E	21.4	33.84	09	2	09	2	09	2	8	8	1016.0	1
10	3	215	62	2	19	1300	K 34	10 S	151	29 E	21.9	33.84	09	2	09	2	09	2	8	8	1016.0	1
10	3	216	62	2	19	1500	K 34	24 S	151	24 E	21.7	35.48	09	3	09	2	09	2	8	8	1015.0	1
10	3	217	62	2	19	1710	K 34	41 S	151	17 E	22.2	35.53	08	2	09	2	09	2	8	8	1015.0	1
10	3	218	62	2	19	1900	K 34	53 S	151	13 E	21.8	35.48	08	2	09	2	09	2	8	8	1015.0	1
10	3	219	62	2	19	2135	K 35	09 S	151	06 E	21.8	35.46	07	2	07	2	07	2	8	8	1017.0	1
10	3	220	62	2	19	2300	K 35	18 S	151	00 E	21.9	35.44	07	2	07	2	07	2	8	8	1016.0	1
10	3	221	62	2	20	0100	K 35	33 S	150	49 E	21.8	35.48	07	2	07	2	07	2	8	8	1016.0	1
10	3	222	62	2	20	0145	K 35	39 S	150	45 E	21.7	35.52	07	2	07	2	07	2	8	8	1016.0	1
10	3	223	62	2	20	0300	K 35	46 S	150	39 E	21.7	35.52	07	2	07	2	09	2	8	8	1016.0	1
10	3	224	62	2	20	0500	K 36	01 S	150	29 E	21.7	35.52	36	3	36	3	09	2	7	7	1012.0	1
10	3	225	62	2	20	0616	K 36	08 S	150	24 E	21.7	35.52	36	3	36	3	09	2	7	7	1012.0	1
10	3	226	62	2	20	0900	K 36	20 S	150	22 E	21.7	35.52	04	2	04	2	05	2	6	6	1012.0	1
10	3	227	62	2	20	1038	K 36	42 S	150	21 E	21.7	35.52	36	3	36	3	02	2	7	7	1009.0	1
10	3	228	62	2	20	1300	K 36	56 S	150	09 E	21.2	35.46	36	3	36	3	02	2	7	7	1009.0	1
10	3	229	62	2	21	2000	K 37	06 S	150	13 E	21.1	35.50	04	2	04	2	06	2	8	8	1012.0	1
10	3	230	62	2	21	2300	K 37	10 S	150	17 E	21.6	35.44	04	1	04	1	06	2	8	8	1012.0	1
10	3	231	62	2	22	0100	K 37	15 S	150	33 E	21.6	35.48	04	2	04	2	06	2	8	8	1012.0	1
10	3	232	62	2	22	0300	K 37	19 S	151	51 E	21.6	35.53	04	2	04	2	06	2	8	8	1012.0	1
10	3	233	62	2	22	0500	K 37	23 S	151	06 E	21.6	35.53	23	1	23	1	06	1	8	8	1011.0	1
10	3	234	62	2	22	0600	K 37	25 S	151	12 E	21.4	35.50	23	1	23	1	06	1	8	8	1011.0	1
10	3	235	62	2	22	1300	K 37	26 S	151	16 E	21.6	35.57	21	2	21	2	02	1	8	8	1012.0	1
10	3	236	62	2	22	1700	K 37	23 S	151	29 E	21.6	35.57	21	2	21	2	21	2	8	8	1013.0	1
10	3	237	62	2	22	1900	K 37	20 S	151	43 E	21.4	35.57	21	2	21	2	21	2	8	8	1013.0	1
10	3	238	62	2	22	2000	K 37	18 S	151	49 E	21.2	35.53	21	3	21	3	21	2	8	8	1016.0	1
10	3	239	62	2	22	2300	K 37	14 S	152	05 E	21.6	35.50	21	3	21	2	12	2	8	8	1016.0	1
10	3	240	62	2	23	0100	K 37	11 S	152	18 E	21.7	35.46	21	3	21	2	12	2	8	8	1016.0	1

VESSEL	CRUISE NUMBER	STATION NUMBER	YR.	MTH.	DAY	TIME	LONGITUDE	TEMP.	SALINITY	WIND DN.	SEA DN.	SWELL DN.	WEA.	VIS.	BAROM.	SAMPLING METHOD
10	3	241	62	2	23	0300	K 37	08 S 152	29 E 21.7	35.39	21	3	21	8	1015.0	1
10	3	242	62	2	23	0500	K 37	05 S 152	43 E 21.7	35.37	18	3	18	8	1016.0	1
10	3	243	62	2	23	0900	K 37	04 S 152	48 E 21.6	35.35	17	3	18	8	1016.0	1
10	3	244	62	2	23	1500	K 37	02 S 152	57 E 21.7	35.62	22	17	2	8	1017.0	1
10	3	245	62	2	23	1700	K 37	02 S 153	08 E 21.7	35.55	16	2	16	8	1018.0	1
10	3	246	62	2	23	1900	K 37	02 S 153	23 E 21.4	35.53	16	2	21	8	1018.0	1
10	3	247	62	2	23	2000	K 37	02 S 153	31 E 21.2	35.53	15	3	18	8	1020.0	1
10	3	248	62	2	23	2300	K 37	02 S 153	47 E 21.1	35.48	15	3	15	8	1020.0	1
10	3	249	62	2	24	0100	K 37	02 S 154	02 E 21.0	35.61	15	3	15	8	1020.0	1
10	3	250	62	2	24	0300	K 37	04 S 154	17 E 21.0	35.75	16	3	16	8	1018.0	1
10	3	251	62	2	24	0500	K 37	05 S 154	33 E 21.1	35.93	16	7	16	8	1018.0	1
10	3	252	62	2	24	0700	K 37	07 S 154	44 E 21.1	35.70	16	7	16	8	1018.0	1
10	3	253	62	2	24	0900	K 37	08 S 154	44 E 21.1	35.57	15	6	15	8	1019.0	1
10	3	254	62	2	24	1100	K 37	13 S 154	43 E 21.0	35.62	15	5	15	8	1018.0	1
10	3	255	62	2	24	1300	K 37	17 S 154	40 E 21.1	35.57	15	5	15	8	1018.0	1
10	3	256	62	2	24	1500	K 37	21 S 154	33 E 21.0	35.55	15	5	15	8	1018.0	1
10	3	257	62	2	24	1700	K 37	24 S 154	25 E 20.9	35.48	14	5	14	8	1017.0	1
10	3	258	62	2	24	1900	K 37	27 S 154	17 E 20.8	35.59	14	5	14	8	1017.0	1
10	3	259	62	2	24	2100	K 37	31 S 154	09 E 20.6	35.57	15	5	15	8	1017.0	1
10	3	260	62	2	24	2300	K 37	34 S 154	03 E 20.4	35.57	16	5	16	8	1016.0	1
10	3	261	62	2	25	0100	K 37	37 S 153	56 E 20.4	35.57	16	5	16	8	1016.0	1
10	3	262	62	2	25	0300	K 37	40 S 153	48 E 20.6	35.53	16	5	16	8	1014.0	1
10	3	263	62	2	25	0500	K 37	43 S 153	42 E 20.1	35.55	17	5	17	8	1015.0	1
10	3	264	62	2	25	0700	K 37	47 S 153	33 E 20.1	35.53	17	5	17	8	1015.0	1
10	3	265	62	2	25	0900	K 37	50 S 153	26 E 20.3	35.53	18	6	18	8	1017.0	1
10	3	266	62	2	25	1100	K 37	52 S 153	20 E 20.3	35.53	18	6	18	8	1017.0	1
10	3	267	62	2	25	1300	K 37	54 S 153	09 E 20.4	35.55	18	6	18	8	1017.0	1
10	3	268	62	2	25	1500	K 37	54 S 153	05 E 20.4	35.55	18	5	18	8	1016.0	1
10	3	269	62	2	25	1700	K 37	54 S 152	58 E 20.3	35.55	18	4	18	8	1017.0	1
10	3	270	62	2	25	1900	K 37	54 S 152	47 E 20.2	35.55	18	4	18	8	1017.0	1
10	3	271	62	2	25	2000	K 37	54 S 152	40 E 20.1	35.55	18	3	18	8	1019.0	1
10	3	272	62	2	25	2300	K 37	54 S 152	26 E 20.0	35.53	18	2	18	8	1019.0	1
10	3	273	62	2	26	0100	K 37	54 S 152	15 E 20.1	35.53	18	2	18	8	1019.0	1
10	3	274	62	2	26	0300	K 37	54 S 152	02 E 20.6	35.53	18	4	18	8	1018.0	1
10	3	275	62	2	26	0500	K 37	54 S 151	51 E 20.5	35.53	18	5	18	8	1018.0	1
10	3	276	62	2	26	0700	K 37	50 S 151	40 E 20.2	35.59	18	5	18	8	1018.0	1
10	3	277	62	2	26	0900	K 37	41 S 151	29 E 21.1	35.52	22	5	22	8	1018.0	1
10	3	278	62	2	26	1100	K 37	31 S 151	18 E 21.1	35.52	22	6	22	8	1021.0	1
10	3	279	62	2	26	1300	K 37	21 S 151	06 E 21.2	35.53	22	6	24	8	1021.0	1
10	3	280	62	2	26	1500	K 37	08 S 150	56 E 21.1	35.62	22	6	22	8	1021.0	1

VESSE - CRUISE STATION YR. MTH. DAY TIME Z LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT, SEA SWELL DN, AMT, MEA. VIS. BAROM. SAMPLING METHOD

10	3	281	2	26	1700	K	36	50	S	150	51	E	21.2	35.50	22	6	22	4	22	4	8	1023.0	1
10	3	282	2	26	1900	K	36	32	S	150	45	E	21.4	35.43	22	6	22	4	22	4	8	1025.0	1
10	3	283	2	26	2100	K	36	14	S	150	39	E	21.3	35.50	22	5	22	4	22	4	8	1025.0	1
10	3	284	2	26	2300	K	36	00	S	150	40	E	21.6	35.48	22	2	22	3	22	2	8	1025.0	1
10	3	285	2	26	2400	K	35	53	S	150	43	E	21.5	35.46	22	2	22	3	22	2	8	1025.0	1
10	3	286	2	27	0100	K	35	48	S	150	46	E	21.6	35.46	22	2	22	3	22	2	8	1025.0	1
10	3	287	2	27	0300	K	35	33	S	150	52	E	22.2	35.37	18	2	18	2	22	2	8	1025.0	1
10	3	288	2	27	0420	K	35	25	S	150	57	E	22.3	35.37	18	2	18	2	22	2	8	1025.0	1
10	3	289	2	27	0700	K	35	08	S	151	05	E	21.8	35.39	19	3	19	2	20	2	8	1024.0	1
10	3	290	2	27	0840	K	34	55	S	151	10	E	21.1	35.34	18	3	18	2	18	2	8	1025.0	1
10	3	291	2	27	1100	K	34	37	S	151	15	E	21.3	35.46	18	3	18	3	18	2	8	1025.0	1
10	3	292	2	27	1248	K	34	24	S	151	20	E	21.4	35.48	18	3	18	3	18	2	8	1025.0	1
10	3	293	2	27	1500	K	34	05	S	151	19	E	21.7	35.44	18	1	18	1	18	2	8	1025.0	1
10	4	294	2	12	1500	K	34	15	S	151	19	E	21.1	35.55	18	2	18	2	16	3	8	1022.0	1
10	4	295	2	12	1700	K	34	02	S	151	20	E	21.1	35.53	17	1	16	2	16	3	8	1022.0	1
10	4	296	2	12	1810	K	34	21	S	151	20	E	21.2	35.53	17	1	16	2	16	3	8	1024.0	1
10	4	297	2	12	2100	K	34	39	S	151	15	E	21.3	35.64	17	1	17	2	17	2	8	1024.0	1
10	4	298	2	12	2250	K	34	51	S	151	12	E	21.4	35.43	18	1	18	2	18	2	8	1024.0	1
10	4	299	2	13	0100	K	34	58	S	151	11	E	21.4	35.61	18	1	18	2	18	2	8	1024.0	1
10	4	300	2	13	0300	K	35	13	S	151	13	E	22.0	35.57	18	1	18	2	18	2	8	1023.0	1
10	4	301	2	13	0500	K	35	25	S	151	24	E	21.1	35.57	25	1	18	1	18	2	8	1021.0	1
10	4	302	2	13	1210	K	35	31	S	151	17	E	21.3	35.57	18	1	18	1	18	2	8	1018.0	1
10	4	303	2	13	1700	K	35	09	S	150	55	E	21.6	35.55	18	1	18	1	18	2	8	1020.0	1
10	4	304	2	15	1100	K	35	07	S	150	55	E	21.0	35.53	20	4	20	3	18	5	8	1032.0	1
10	4	305	2	15	1300	K	35	09	S	151	14	E	21.2	35.57	20	4	20	3	18	5	8	1032.0	1
10	4	306	2	15	1425	K	35	11	S	151	30	E	21.6	35.57	20	5	20	3	18	5	8	1030.0	1
10	4	307	2	15	1700	K	35	13	S	151	51	E	21.6	35.62	18	5	18	3	18	5	8	1030.0	1
10	4	308	2	15	1900	K	35	18	S	152	03	E	21.6	35.71	18	5	18	3	18	5	8	1030.0	1
10	4	309	2	15	2100	K	35	26	S	152	17	E	21.6	35.55	18	4	18	3	18	5	8	1028.0	1
10	4	310	2	16	0100	K	35	32	S	152	31	E	21.7	35.48	18	4	18	3	18	5	8	1028.0	1
10	4	311	2	16	0100	K	35	41	S	152	47	E	21.7	35.55	18	4	18	3	18	5	8	1028.0	1
10	4	312	2	16	0300	K	35	46	S	152	58	E	21.5	35.55	18	5	18	3	18	5	8	1026.0	1
10	4	313	2	16	1300	K	35	52	S	153	22	E	21.4	35.55	17	4	17	3	18	5	8	1026.0	1
10	4	314	2	16	1500	K	35	41	S	153	27	E	21.4	35.34	19	3	19	3	18	4	8	1025.0	1
10	4	315	2	16	1700	K	35	29	S	153	33	E	22.6	35.46	21	4	21	3	18	4	8	1025.0	1
10	4	316	2	17	0800	K	35	08	S	154	13	E	22.2	35.44	17	2	17	2	18	2	8	1025.0	1
10	4	317	2	17	1715	K	34	51	S	153	42	E	22.5	35.55	16	3	16	2	18	2	8	1025.0	1
10	4	318	2	17	1900	K	34	51	S	153	51	E	22.6	35.55	18	2	18	2	18	2	8	1025.0	1
10	4	319	2	17	2130	K	34	43	S	153	28	E	22.9	35.50	18	2	18	2	18	2	8	1025.0	1
10	4	320	2	17	2300	K	34	38	S	153	21	E	22.9	35.50	18	2	18	2	18	2	8	1026.0	1

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VESSE- CHUISE STATION YR. MTH. DAY TIME & LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SWELL MEA. VIS. BAROM. SAMPLING METHOD

10	4	321	62	4	18	0100	K	34	32	S	153	10	E	22.4	35.52	16	2	16	2	18	2	8	1025.0
10	4	322	62	4	18	0140	K	34	30	S	153	06	E	22.5	35.53	16	2	16	2	18	2	8	1025.0
10	4	323	62	4	18	0300	K	34	26	S	152	59	E	22.6	35.53	16	2	16	2	18	2	8	1025.0
10	4	324	62	4	18	0500	K	34	20	S	152	49	E	22.8	35.53	18	2	18	2	18	2	8	1026.0
10	4	325	62	4	18	0555	K	34	16	S	152	43	E	22.4	35.53	18	2	18	2	18	2	8	1026.0
10	4	326	62	4	18	0700	K	34	13	S	152	37	E	22.5	35.53	18	2	18	2	18	2	8	1026.0
10	4	327	62	4	18	0900	K	34	08	S	152	28	E	23.2	35.50	16	1	16	1	18	2	7	1028.0
10	4	328	62	4	18	1045	K	34	08	S	152	18	E	22.1	35.46	16	1	16	1	18	2	7	1028.0
10	4	329	62	4	18	1300	K	34	09	S	152	01	E	22.4	35.41	36	1	36	1	18	1	8	1027.0
10	4	330	62	4	18	1500	K	34	03	S	151	49	E	21.6	35.52	18	1	18	1	18	2	8	1025.0
10	5	331	62	4	27	1900	K	34	12	S	151	11	E	23.7	35.37	20	1	20	1	13	2	8	1025.0
10	5	332	62	4	27	2100	K	34	25	S	151	12	E	23.3	35.41	18	1	18	1	13	2	8	1025.0
10	5	333	62	4	27	2240	K	34	38	S	151	13	E	21.3	35.35	00	0	00	0	13	2	8	1024.0
10	5	334	62	4	28	0100	K	34	54	S	151	09	E	21.4	35.44	00	0	00	0	13	2	8	1024.0
10	5	335	62	4	28	0225	K	35	09	S	151	05	E	21.5	35.37	00	0	00	0	13	2	8	1023.0
10	5	336	62	4	28	0500	K	35	22	S	150	57	E	21.6	35.35	00	0	00	0	13	2	8	1023.0
10	5	337	62	4	28	0640	K	35	32	S	150	51	E	21.4	35.44	25	1	25	1	13	2	8	1022.0
10	5	338	62	4	28	0900	K	35	46	S	150	42	E	20.9	35.53	36	2	36	1	13	2	8	1022.0
10	5	339	62	4	28	1052	K	35	56	S	150	36	E	21.9	35.43	36	2	36	1	09	2	8	1020.0
10	5	340	62	4	28	1300	K	36	09	S	150	28	E	21.6	35.38	36	2	36	1	09	2	8	1020.0
10	5	341	62	4	28	1435	K	36	19	S	150	22	E	22.0	35.48	36	2	36	2	09	2	8	1020.0
10	5	342	62	4	28	1700	K	36	36	S	150	22	E	21.8	35.59	05	2	04	2	09	2	8	1018.0
10	5	343	62	4	28	1840	K	36	49	S	150	22	E	21.8	35.52	05	2	04	2	09	2	8	1018.0
10	5	344	62	4	28	2100	K	36	59	S	150	05	E	19.4	36.17	23	1	23	1	09	2	8	1019.0
10	5	345	62	4	29	1300	K	37	20	S	150	04	E	20.0	35.33	25	2	25	1	09	2	8	1014.0
10	5	346	62	4	29	1500	K	37	31	S	150	03	E	17.8	35.33	23	4	24	3	09	2	6	1013.0
10	5	347	62	4	29	2100	K	37	40	S	149	59	E	17.5	35.46	23	6	23	4	23	4	8	1012.0
10	5	348	62	4	30	2300	K	37	51	S	150	04	E	18.9	35.59	27	2	27	2	23	2	8	1014.0
10	5	349	62	5	1	0107	K	38	06	S	150	12	E	18.9	35.59	27	2	27	2	23	2	8	1014.0
10	5	350	62	5	1	0300	K	38	21	S	150	19	E	18.4	35.70	27	3	27	3	23	2	8	1012.0
10	5	351	62	5	1	0500	K	38	36	S	150	27	E	18.6	35.66	23	4	23	4	23	2	8	1012.0
10	5	352	62	5	1	0620	K	38	44	S	150	30	E	19.2	35.59	23	4	23	4	23	2	8	1012.0
10	5	353	62	5	1	1500	K	38	42	S	150	46	E	20.0	35.43	05	2	05	1	24	2	8	1011.0
10	5	354	62	5	1	1700	K	38	40	S	151	01	E	20.0	35.52	09	1	09	1	23	1	8	1011.0
10	5	355	62	5	1	1800	K	38	39	S	151	08	E	20.0	35.61	09	1	09	1	23	1	8	1011.0
10	5	356	62	5	1	1900	K	38	37	S	151	16	E	20.3	35.66	09	1	09	1	23	1	8	1010.0
10	5	357	62	5	1	2005	K	38	36	S	151	25	E	20.2	35.66	09	1	09	1	23	1	8	1010.0
10	5	358	62	5	1	2330	K	38	33	S	151	46	E	20.2	35.71	09	1	09	1	23	2	7	1010.0
10	5	359	62	5	2	0100	K	38	31	S	151	54	E	18.3	35.61	09	1	09	1	23	2	7	1010.0
10	5	360	62	5	2	0300	K	38	29	S	152	10	E	18.4	35.61	09	3	09	2	23	2	7	1011.0

VESSE-	CRUISE	STATION	YR.	MTH.	DAY	TIME	∠	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING
		NUMBER									DN, AMT,	DN, AMT,	DN, AMT,				METHOD
10	5	361	62	5	2	0625	K 38	27 S 152	24 E 18.2	35.61	01	01	2	27	2	1008.0	1
10	5	362	62	5	2	1500	K 38	35 S 152	23 E 18.4	34.94	17	17	2	16	2	1008.0	1
10	5	363	62	5	2	1715	K 38	42 S 152	39 E 18.0		17	17	3	17	2	1008.0	1
10	5	364	62	5	2	2100	K 38	51 S 152	47 E 17.8	35.57	17	17	4	17	4	1008.0	1
10	5	365	62	5	2	0100	K 38	55 S 152	52 E 18.4	35.62	18	18	4	18	4	1008.0	1
10	5	366	62	5	3	0500	K 39	01 S 152	57 E 18.5	35.57	17	17	4	17	4	1011.0	1
10	5	367	62	5	3	0900	K 39	07 S 152	48 E 18.4	35.61	21	21	4	16	4	1014.0	1
10	5	368	62	5	3	1300	K 39	11 S 152	35 E 18.4		21	21	4	18	5	1014.0	1
10	5	369	62	5	3	1700	K 39	13 S 152	14 E 18.6	35.62	20	20	4	18	4	1018.0	1
10	5	370	62	5	3	1900	K 39	14 S 152	14 E 18.3	35.59	20	20	4	18	4	1018.0	1
10	5	371	62	5	3	2100	K 39	14 S 151	51 E 17.8	35.55	21	21	4	20	4	1020.0	1
10	5	372	62	5	3	2300	K 39	12 S 151	40 E 19.0		21	21	3	20	3	1020.0	1
10	5	373	62	5	4	0100	K 39	10 S 151	29 E 19.6	35.64	21	21	3	20	3	1020.0	1
10	5	374	62	5	4	0300	K 39	17 S 151	32 E 17.8	35.70	23	23	3	20	3	1020.0	1
10	5	375	62	5	4	0835	K 39	24 S 151	35 E 17.9	35.55	22	22	1	22	2	1020.0	1
10	5	376	62	5	4	1700	K 39	24 S 151	14 E 18.4	35.66	25	25	3	25	3	1020.0	1
10	5	377	62	5	4	1900	K 39	24 S 151	05 E 19.5	35.70	25	25	3	25	3	1020.0	1
10	5	378	62	5	4	2100	K 39	24 S 150	56 E 19.8	35.61	27	27	4	27	3	1021.0	1
10	5	379	62	5	4	2300	K 39	23 S 150	47 E 19.7	35.64	27	27	4	27	3	1021.0	1
10	5	380	62	5	5	0100	K 39	23 S 150	38 E 19.8	35.61	27	27	4	27	3	1021.0	1
10	5	381	62	5	5	0300	K 39	23 S 150	28 E 19.2	35.61	27	27	4	27	3	1020.0	1
10	5	382	62	5	5	0500	K 39	22 S 150	13 E 19.7	35.62	27	27	3	27	3	1021.0	1
10	5	383	62	5	5	0815	K 39	22 S 150	07 E 18.6	35.64	27	27	3	27	3	1021.0	1
10	5	384	62	5	5	1500	K 39	34 S 149	59 E 16.7	35.62	27	27	2	23	2	1018.0	1
10	5	385	62	5	5	1650	K 39	49 S 149	48 E 18.2		27	27	3	27	3	1013.0	1
10	5	386	62	5	5	1900	K 40	05 S 149	36 E 17.8	35.66	27	27	3	27	3	1013.0	1
10	5	387	62	5	6	1100	K 41	28 S 148	36 E 15.8	35.55	26	26	1	26	0	1012.0	1
10	5	388	62	5	6	1300	K 41	41 S 148	25 E 15.6	35.48	26	26	1	26	0	1012.0	1
10	5	389	62	5	7	2000	K 41	55 S 149	00 E 16.6	35.48	30	30	3	30	2	1012.0	1
10	5	390	62	5	8	2100	K 41	56 S 149	21 E 16.2		30	30	3	30	2	1011.0	1
10	5	391	62	5	8	0100	K 41	58 S 149	42 E 16.1		30	30	3	30	2	1011.0	1
10	5	392	62	5	8	0300	K 41	59 S 150	00 E 16.1	35.55	30	30	3	30	3	1011.0	1
10	5	393	62	5	8	0500	K 41	59 S 150	22 E 14.4	35.53	30	30	3	30	3	1009.0	1
10	5	394	62	5	8	0830	K 41	59 S 150	37 E 16.0	35.53	27	27	3	27	3	1011.0	1
10	5	395	62	5	8	1300	K 41	59 S 150	15 E 15.7	35.53	22	22	3	25	3	1013.0	1
10	5	396	62	5	8	1700	K 41	59 S 149	57 E 16.1	35.62	23	23	4	22	3	1017.0	1
10	5	397	62	5	8	1900	K 42	12 S 149	51 E 16.3	35.62	23	23	4	22	3	1017.0	1
10	5	398	62	5	8	2100	K 42	21 S 149	51 E 16.6	35.62	23	23	4	23	3	1017.0	1
10	5	399	62	5	8	2300	K 42	30 S 149	51 E 16.4	35.61	23	23	4	23	5	1017.0	1
10	5	400	62	5	9	0100	K 42	37 S 149	51 E 16.6	35.61	23	23	4	23	5	1017.0	1

VESSEL CRUISE STATION YR. MTH. DAY TIME Z LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA DN. AMT. SWELL DN. AMT. WEA. VIS. BAROM. SAMPLING METHOD

10	5	401	62	5	9	0300	K 42	47 S	149	51 E	16.4	35.61	23	6	23	4	23	4	8	1017.0	1
10	5	402	62	5	9	0500	K 42	56 S	149	51 E	16.0	35.52	22	6	23	4	23	4	8	1019.0	1
10	5	403	62	5	9	0700	K 43	02 S	149	42 E	15.9	35.57	22	6	23	4	23	4	8	1019.0	1
10	5	404	62	5	9	0900	K 43	06 S	149	25 E	13.9	35.17	19	6	19	4	19	5	8	1023.0	1
10	5	405	62	5	9	1100	K 43	10 S	149	08 E	13.9	35.14	19	7	19	4	19	5	8	1024.0	1
10	5	406	62	5	9	1300	K 43	12 S	148	51 E	12.8	35.05	19	7	19	4	19	5	8	1024.0	1
10	5	407	62	5	9	1500	K 43	12 S	148	38 E	13.8	35.21	19	6	19	4	19	4	8	1024.0	1
10	5	408	62	5	9	1700	K 43	12 S	148	27 E	13.8	35.25	20	4	20	4	19	4	8	1027.0	1
10	5	409	62	5	9	1900	K 43	12 S	148	15 E	13.7	35.21	20	4	20	4	19	4	8	1027.0	1
10	6	410	62	5	15	0840	K 43	20 S	148	25 E	13.9	35.28	01	2	01	2	03	2	8	1019.0	1
10	6	411	62	5	15	1500	K 43	20 S	148	30 E	14.0	35.21	01	2	01	2	03	2	8	1012.0	1
10	6	412	62	5	15	1700	K 43	21 S	148	44 E	13.9	35.25	01	2	01	2	03	2	8	1012.0	1
10	6	413	62	5	15	1900	K 43	22 S	148	57 E	12.3	35.30	03	2	03	2	03	2	8	1013.0	1
10	6	414	62	5	15	2000	K 43	23 S	149	05 E	14.1	35.12	35	2	35	2	35	2	8	1014.0	1
10	6	415	62	5	15	2300	K 43	24 S	149	30 E	14.2	35.2	35	2	35	2	35	2	8	1013.0	1
10	6	416	62	5	16	0100	K 43	25 S	149	49 E	15.1	35.39	35	2	35	2	35	2	8	1013.0	1
10	6	417	62	5	16	0300	K 43	26 S	150	08 E	15.6	35.53	36	3	36	2	36	2	8	1012.0	1
10	6	418	62	5	16	0500	K 43	28 S	150	30 E	15.7	35.50	36	1	36	1	36	1	8	1012.0	1
10	6	419	62	5	16	0845	K 43	28 S	150	38 E	15.5	35.52	36	1	36	1	36	1	8	1014.0	1
10	6	420	62	5	16	1900	K 43	29 S	151	16 E	14.0	35.46	32	3	34	2	34	2	8	1008.0	1
10	6	421	62	5	16	2000	K 43	30 S	151	26 E	14.6	35.46	32	3	34	2	34	2	8	1007.0	1
10	6	422	62	5	16	2300	K 43	30 S	151	44 E	14.6	35.43	32	3	32	2	34	2	8	1006.0	1
10	6	423	62	5	17	0100	K 43	30 S	152	00 E	15.2	35.43	32	3	32	2	34	2	8	1006.0	1
10	6	424	62	5	17	0300	K 43	31 S	152	16 E	15.3	35.43	32	3	32	2	34	2	8	1008.0	1
10	6	425	62	5	17	0700	K 43	31 S	152	38 E	15.2	35.43	27	4	27	3	34	2	8	1008.0	1
10	6	426	62	5	17	1700	K 43	18 S	152	31 E	14.7	35.57	20	4	20	3	27	2	8	1006.0	1
10	6	427	62	5	17	1900	K 43	11 S	152	26 E	14.7	35.55	20	4	20	3	27	2	8	1006.0	1
10	6	428	62	5	17	2040	K 43	05 S	152	21 E	14.3	35.55	24	3	24	2	26	3	8	1009.0	1
10	6	429	62	5	17	2300	K 42	56 S	152	14 E	14.6	35.55	24	3	24	2	26	4	8	1010.0	1
10	6	430	62	5	18	0100	K 42	48 S	152	09 E	14.5	35.57	24	3	24	2	26	4	8	1010.0	1
10	6	431	62	5	18	0300	K 42	43 S	152	05 E	14.7	35.57	28	1	28	1	26	3	8	1009.0	1
10	6	432	62	5	18	0500	K 42	36 S	151	59 E	15.0	35.61	27	4	27	2	26	3	8	1009.0	1
10	6	433	62	5	18	0700	K 42	28 S	151	54 E	15.0	35.59	33	6	33	4	33	3	8	1007.0	1
10	6	434	62	5	18	0900	K 42	27 S	151	39 E	14.9	35.59	22	6	22	4	22	5	8	1020.0	1
10	6	435	62	5	19	1300	K 42	16 S	152	04 E	14.5	35.55	22	5	22	3	22	3	8	1022.0	1
10	6	436	62	5	19	1500	K 42	03 S	152	02 E	14.7	35.59	24	4	24	3	23	3	8	1024.0	1
10	6	437	62	5	19	1700	K 41	48 S	152	00 E	15.0	35.59	28	3	28	3	23	2	8	1026.0	1
10	6	438	62	5	19	1900	K 41	33 S	151	58 E	14.7	35.61	28	3	28	3	23	2	8	1026.0	1
10	6	439	62	5	19	2100	K 41	18 S	151	56 E	15.0	35.61	26	3	26	3	23	2	8	1026.0	1
10	6	440	62	5	19	2300	K 41	04 S	151	54 E	15.2	35.62	27	3	27	2	23	2	8	1028.0	1

VESSEL	CRUISE STATION NUMBER	YR.	MTH.	DAY	TIME	LONGITUDE	TEMP.	SALINITY	WIND DN, AMT.	SEA DN, AMT.	SWELL DN, AMT.	WEA.	VIS.	BARDM.	SAMPLING METHOD
10	6	441	62	5	20	0100 K 40	49 S 151	35.57	3	27	2	2	8	1028.0	1
10	6	442	62	5	20	0500 K 40	34 S 151	35.61	27	29	1	29	8	1028.0	1
10	6	443	62	5	20	0700 K 40	21 S 151	35.61	27	29	1	29	8	1028.0	1
10	6	444	62	5	20	0700 K 40	05 S 151	35.66	27	29	1	29	8	1028.0	1
10	6	445	62	5	20	0900 K 39	52 S 151	35.61	1	32	1	26	8	1031.0	1
10	6	446	62	5	20	1100 K 39	37 S 151	35.57	32	1	26	2	8	1030.0	1
10	6	447	62	5	20	1300 K 39	25 S 151	35.62	32	1	26	2	8	1030.0	1
10	6	448	62	5	20	1500 K 39	13 S 151	35.79	36	1	18	1	8	1028.0	1
10	6	449	62	5	20	1700 K 39	03 S 151	35.88	01	2	01	1	8	1028.0	1
10	6	450	62	5	20	1900 K 38	52 S 151	35.79	01	2	01	1	8	1028.0	1
10	6	451	62	5	20	2100 K 38	44 S 151	35.79	02	3	02	3	8	1028.0	1
10	6	452	62	5	20	2300 K 38	39 S 151	35.71	02	3	02	3	8	1027.0	1
10	6	453	62	5	21	0100 K 38	34 S 151	35.71	02	3	02	3	8	1027.0	1
10	6	454	62	5	21	0300 K 38	31 S 151	35.71	02	4	02	3	8	1027.0	1
10	6	455	62	5	21	0500 K 38	28 S 151	35.75	02	4	02	3	8	1024.0	1
10	6	456	62	5	21	0700 K 38	20 S 151	35.71	02	4	02	3	8	1024.0	1
10	6	457	62	5	21	0900 K 38	10 S 151	35.68	02	5	02	3	7	1021.0	1
10	6	458	62	5	21	1100 K 37	59 S 151	35.71	02	6	02	3	7	1021.0	1
10	6	459	62	5	21	1300 K 37	49 S 150	35.61	02	6	02	3	7	1021.0	1
10	6	460	62	5	21	1500 K 37	38 S 150	35.61	02	6	02	3	7	1017.0	1
10	6	461	62	5	21	1700 K 37	27 S 150	35.61	02	6	02	4	7	1016.0	1
10	6	462	62	5	21	1900 K 37	15 S 150	35.70	02	6	02	4	7	1016.0	1
10	6	463	62	5	22	1900 K 36	17 S 150	35.70	32	3	32	2	8	1010.0	1
10	6	464	62	5	22	2100 K 36	05 S 150	35.68	32	4	32	2	8	1012.0	1
10	6	465	62	5	22	2300 K 35	53 S 150	35.68	30	5	30	2	8	1012.0	1
10	6	466	62	5	23	0100 K 35	39 S 150	35.68	30	5	30	2	8	1012.0	1
10	6	467	62	5	23	0300 K 35	25 S 150	35.64	28	3	28	3	8	1013.0	1
10	6	468	62	5	23	0500 K 35	12 S 150	35.66	28	2	28	1	8	1013.0	1
10	6	469	62	5	23	0700 K 34	57 S 151	35.44	28	2	28	1	8	1013.0	1
10	6	470	62	5	23	0900 K 34	42 S 151	35.39	33	2	33	1	8	1014.0	1
10	6	471	62	5	23	1100 K 34	29 S 151	35.35	34	2	34	2	8	1012.0	1
10	6	472	62	5	23	1300 K 34	22 S 151	35.35	34	2	34	2	8	1012.0	1
10	6	473	62	5	23	1500 K 34	15 S 151	35.35	29	2	29	1	8	1009.0	1
10	6	474	62	5	23	1700 K 34	07 S 151	35.35	32	3	32	2	7	1009.0	1



DATA  
PART 2  
HYDROLOGY  
SUBSURFACE SAMPLES

STATION DATE TIME LATITUDE LONGITUDE  
 EH 1/ 29/62 R/ 1/62 0816 K 37 34 S 149 58 E

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

82 \*\*\* \*\* 03 2 \* \* \* \* 8 03 2 03 1 1018.0 10 5 \*

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

1 0 16.64 35.320 25.86 \*\*\* \*\*\* \*\*\*

1 25 16.64 35.340 25.88 \*\*\* \*\*\* \*\*\*

2 50 14.30 35.320 26.39 \*\*\* \*\*\* \*\*\*

2 75 13.99 35.350 26.48 \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 EH 1/ 30/62 R/ 1/62 1020 K 37 34 S 150 06 E

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

128 \*\*\* \*\* 03 2 \* \* \* \* 8 03 2 03 1 1018.0 5 5 \*

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

1 0 19.82 35.530 25.23 \*\*\* \*\*\* \*\*\*

1 25 19.62 35.530 25.28 \*\*\* \*\*\* \*\*\*

1 50 16.49 35.480 26.02 \*\*\* \*\*\* \*\*\*

1 75 13.72 35.390 26.56 \*\*\* \*\*\* \*\*\*

2 100 12.72 35.230 26.65 \*\*\* \*\*\* \*\*\*

STATION	DATE	TIME	LATITUDE	LONGITUDE
CH 1/ 31/62	R/ 1/62	1230 K	37 34 S	150 14 E
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	WIRE ANGLES
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE AMT.	CAS1 CAS2 CAS3
369 *** 03 3	*	*	*	5 5 *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN
1 0	20.20	35.520	25.12	***
1 25	20.02	35.520	25.17	***
1 50	16.17*	35.370	26.01	***
1 75	15.19	35.460	26.30	***
1 100	13.40	35.390	26.55	***
1 148	12.47	35.230	26.70	***
1 197	12.05	35.170	26.73	***
2 282	10.14	34.880	26.85	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
CH 1/ 32/62	R/ 1/62	1402 K	37 34 S	150 17 E
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	WIRE ANGLES
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE AMT.	CAS1 CAS2 CAS3
*** 03 2	*	*	*	35 15 *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN
2 0	20.24	35.520	25.11	***
2 24	20.10	35.550	25.17	***
2 47	17.19*	35.620	25.96	***
2 71	15.56	35.480	26.23	***
2 94	14.05	35.410	26.51	***
2 141	12.78	35.260	26.66	***
1 151	12.35	35.190	26.69	***
1 226	11.24	35.030	26.77	***
1 377	9.13	34.720	26.90	***
1 531	7.76	34.610	27.02	***
1 768	6.59	34.600	27.18	***

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	20.24	35.520	25.11	***	***	***	***	***
2	24	20.10	35.550	25.17	***	***	***	***	***
2	47	17.19*	35.620	25.96	88	***	***	***	***
2	71	15.56	35.480	26.23	***	***	***	***	***
2	94	14.05	35.410	26.51	83	***	***	***	***
2	141	12.78	35.260	26.66	***	***	***	***	***
1	151	12.35	35.190	26.69	79	***	***	***	***
1	226	11.24	35.030	26.77	77	***	***	***	***
1	377	9.13	34.720	26.90	71	***	***	***	***
1	531	7.76	34.610	27.02	67	***	***	***	***
1	768	6.59	34.600	27.18	***	***	***	***	***

\* PROPERTY DOUBTFUL

+

\* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE  
 LH 1/ 34/62 8/ 1/62 1900 K 37 33 S 150 33 E

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

\*\*\* \*\*\* 07 2 \* \* \* \* 8 07 2 06 1 1017.0 30 20 \*

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

2	0	20.66	35.660	25.11	***	***	***	***	***	***	***
2	23	20.66	35.640	25.09	***	***	***	***	***	***	***
2	46	17.91	35.640	25.80	4.50	87	***	***	***	***	***
2	68	15.90	35.550	26.21	***	***	***	***	***	***	***
2	91	15.06	35.520	26.38	4.36	79	***	***	***	***	***
2	136	14.37	35.430	26.46	***	***	***	***	***	***	***
1	164	13.68	35.370	26.56	4.65	82	***	***	***	***	***
1	246	11.73	35.120	26.75	4.53	77	***	***	***	***	***
1	410	8.77	34.740	26.97	4.29	68	***	***	***	***	***
1	574	7.33	34.600	27.08	4.19	64	***	***	***	***	***
1	846	5.40	34.540	27.29	4.18	61	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 BH 1/ 36/62 9/ 1/62 0015 K 37 32 S 150 49 E

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

\*\*\* \*\*\* 09 3 \* \* \* \* 8 09 3 09 1 1016.0 25 15 \*

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

2	0	20.73	35.660	25.09	***	***	***	***	***	***	***
2	25	20.70	35.660	25.10	***	***	***	***	***	***	***
2	50	19.78	35.640	25.33	4.69	94	***	***	***	***	***
2	73	16.52	35.570	26.08	***	***	***	***	***	***	***
2	97	15.15	35.500	26.34	4.57	83	***	***	***	***	***
2	145	14.09	35.440	26.53	***	***	***	***	***	***	***
1	187	13.65	35.390	26.58	4.69	83	***	***	***	***	***
1	260	11.82	35.190	26.79	4.62	78	***	***	***	***	***
1	467	8.58	34.670	26.95	4.41	69	***	***	***	***	***
1	653	7.05	***	***	4.19	***	***	***	***	***	***
1	946	5.09	34.490	27.28	4.21	61	***	***	***	***	***

STATION CH 1/ 38/62 DATE 10/ 1/62 TIME 1218 K LATITUDE 37 04 S LONGITUDE 150 03 E

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

71 \*\*\* 14 2 \* \* \* 8 14 2 09 2 1010.0 0 \* \* \*

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

1	0	21.05	35.480	24.86	***	***	***	***	***	***
1	10	20.57	35.460	24.98	5.00	101	***	***	***	***
1	20	20.06	35.440	25.10	5.17	104	***	***	***	***
1	30	18.45	***	***	5.04	***	***	***	***	***
1	40	16.82	35.480	25.94	4.69	89	***	***	***	***
1	50	15.64	35.440	26.19	4.40	81	***	***	***	***

STATION CH 1/ 39/62 DATE 10/ 1/62 TIME 1355 K LATITUDE 37 03 S LONGITUDE 150 13 E

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

108 \*\*\* 14 2 \* \* \* 8 14 2 09 2 1011.0 0 \* \* \*

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

1	0	20.74	35.430	24.91	***	***	***	***	***	***
1	25	20.41	35.460	25.02	***	***	***	***	***	***
1	50	16.09	35.480	26.11	***	***	***	***	***	***
1	75	13.75	35.370	26.54	***	***	***	***	***	***
1	100	12.97	35.300	26.65	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE		
CH 1/ 40/62	10/ 1/62	1540 K	37 01 S	150 24 E		
SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM. CLOUD TYPE AMT, VIS. DIR, AMT, SWELL DIR, AMT, ATMOS. PRESSURE CAST1 CAST2 CAST3						
DEPTH MET DRY *** 14 2	* * * *	8 14 2	09 2	1011.0 0 * *		
CST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE						
1 0	20.75	35.550	25.00	***	***	***
1 25	20.59	35.420	25.09	***	***	***
1 50	17.45	35.480	25.79	***	***	***
1 75	15.14	35.480	26.33	***	***	***
1 100	13.23	35.340	26.63	***	***	***
1 150	11.27	35.080	26.81	***	***	***
1 200	10.42	34.940	26.85	***	***	***
1 300	9.88	34.870	26.89	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE		
CH 1/ 41/62	10/ 1/62	1643 K	37 00 S	150 29 E		
SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM. CLOUD TYPE AMT, VIS. DIR, AMT, SWELL DIR, AMT, ATMOS. PRESSURE CAST1 CAST2 CAST3						
DEPTH MET DRY *** 14 2	* * * *	8 14 2	09 2	1011.0 20 5 *		
CST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE						
2 0	20.82	35.610	25.02	***	***	***
2 25	20.71	35.620	25.06	***	***	***
2 50	17.95	35.550	25.72	98	5.06	***
2 75	15.83	35.530	26.21	***	***	***
2 100	13.73	35.340	26.52	80	4.53	***
2 150	12.35	35.210	26.70	***	***	***
2 195	11.11	35.030	26.80	75	4.49	***
1 292	9.61	34.830	26.91	72	4.48	***
1 407	8.87	34.720	26.94	71	4.49	***
1 681	6.71	34.560	27.13	63	4.19	***
1 868*	4.74	34.540	27.36	58	4.06	***

\* PROPERTY DOURTFILL \* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE  
 DH 1/ 43/62 10/ 1/62 2040 K 36 57 S 150 50 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\*\* 18 1 \* \* \* \* 8 18 1 14 2 1012.0 15 0 \* \*

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE  
 2 0 20.73 35.660 25.09 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 25 20.59 35.640 25.11 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 50 17.84 35.460 25.68 5.32 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 75 15.15 35.460 26.31 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 100 13.87 35.410 26.55 4.73 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 150 12.60 35.260 26.69 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 191 11.06 35.030 26.81 4.53 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 287 9.62 34.830 26.90 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 478 7.85 34.650 27.04 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 669 6.58 34.540 27.14 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 956 5.10 34.540 27.32 4.01 \*\*\* \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 DH 1/ 45/62 11/ 1/62 0020 K 36 54 S 151 10 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\*\* 18 1 \* \* \* \* 8 18 1 14 2 1011.0 15 0 \* \*

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE  
 2 0 20.83 35.610 25.02 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 25 20.76 35.640 25.06 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 50 19.53 35.700 25.44 100 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 75 18.45 35.700 25.71 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 100 16.98 35.620 26.01 4.42 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 150 13.80 35.370 26.53 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 180 12.89 35.260 26.64 80 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 285 10.56 34.960 26.84 4.45 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 476 9.09 34.650 27.01 4.35 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 665 6.23 34.540 27.18 4.14 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 951 3.80 34.540 27.46 3.80 \*\*\* \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 DH 1/ 50/62 11/ 1/62 1950 K 36 25 S 150 09 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 DEPTH WFT DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3  
 64 \*\*\* \*\* 06 1 \* \* \* 8 06 1 09 1 1013.0 0 \* \*

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE  
 1 0 20.49 35.390 24.95 \*\*\* \*\*\* \*\*\*  
 1 25 18.16 35.530 25.66 \*\*\* \*\*\* \*\*\*  
 1 50 13.93 35.370 26.50 \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 DH 1/ 51/62 11/ 1/62 2125 K 36 28 S 150 19 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 DEPTH WFT DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\*\* \*\* 12 1 \* \* \* 8 12 1 09 2 1015.0 0 \* \*

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE  
 1 0 21.16 35.550 24.89 \*\*\* \*\*\* \*\*\*  
 1 25 20.69 35.590 25.05 \*\*\* \*\*\* \*\*\*  
 1 50 17.67 35.660 25.88 \*\*\* \*\*\* \*\*\*  
 1 75 15.16 35.530 26.36 \*\*\* \*\*\* \*\*\*  
 1 100 14.05 35.430 26.53 \*\*\* \*\*\* \*\*\*  
 1 150 12.64 35.260 26.68 \*\*\* \*\*\* \*\*\*



STATION DATE TIME LATITUDE LONGITUDE  
 CH 1/ 52/62 11/ 1/62 2310 K 36 30 S 150 28 E

SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM, CLOUD VIS, SEA SWELL ATMOS, WIRE ANGLES  
 DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\*\* 12 1 \* \* \* \* 8 12 1 09 2 1015.0 0 \* \* \* \*  
 CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN X SAT, INORG, P TOTAL P NITRATE  
 1 0 20.95 35.610 24.99 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 25 20.83 35.610 25.02 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 50 18.87 35.640 25.56 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 75 16.64 35.570 26.01 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 100 15.35 35.500 26.30 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 150 13.38 35.350 26.60 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 200 12.34 35.210 26.70 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 300 10.67 34.970 26.83 \*\*\* \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 CH 1/ 53/62 12/ 1/62 0035 K 36 31 S 150 33 E

SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM, CLOUD VIS, SEA SWELL ATMOS, WIRE ANGLES  
 DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\*\* 12 1 \* \* \* \* 8 12 1 09 2 1015.0 25 10 \* \* \* \*  
 CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN X SAT, INORG, P TOTAL P NITRATE  
 2 0 21.07 35.590 24.94 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 25 20.63 35.620 25.08 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 50 18.22 35.460\* 25.59 102 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 74 16.31 35.610 26.16 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 98 15.44 35.520 26.29 84 \*\*\* \*\*\* \*\*\* \*\*\*  
 2 148 13.80 35.430 26.58 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 196 12.98 35.300 26.65 81 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 293 10.46 34.940 26.84 73 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 490 8.15 34.560 26.93 65 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 686 6.70 34.560 27.13 63 \*\*\* \*\*\* \*\*\* \*\*\*  
 1 985 4.62 34.340 27.38 56 \*\*\* \*\*\* \*\*\* \*\*\*

\* PROPERTY DOUBTFUL \* PROPERTY INTERPOLATED

STATION CH 1/ 55/62 DATE 12/ 1/62 TIME 0423 K LATITUDE 36 37 S LONGITUDE 150 52 E

SONIC AIR TEMP, WIND ANEM. CLOUD WIRE ANGLS  
 DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, SEA DIR, AMT, PRESSURE CAST1 CAST2 CAST3

\*\*\* \*\*\* 12 1 \* \* \* 8 12 1 09 1 1013.0 15 0 \* \*

CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INDRG, P	TOTAL P	NITRATE
2	0	21.38	35.610	24.87	***	***	***	***	***
2	25	19.79	35.620	25.31	***	***	***	***	***
2	50	18.24	35.710	25.77	4.45	86	***	***	***
2	75	17.65	35.680	25.90	***	***	***	***	***
2	100	15.76	35.530	26.23	4.41	82	***	***	***
2	150	13.64	35.390	26.58	***	***	***	***	***
2	196	12.26	35.210	26.72	4.51	77	***	***	***
1	293	10.41	34.940	26.85	4.62	76	***	***	***
1	490	7.97	34.630	27.01	4.33	67	***	***	***
1	684	6.50	34.540	27.15	4.20	63	***	***	***
1	980	4.65	34.540	27.17	4.13	59	***	***	***

STATION CH 1/ 57/62 DATE 12/ 1/62 TIME 0823 K LATITUDE 36 41 S LONGITUDE 151 10 E

SONIC AIR TEMP, WIND ANEM. CLOUD WIRE ANGLS  
 DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, SEA DIR, AMT, PRESSURE CAST1 CAST2 CAST3

\*\*\* \*\*\* 16 2 \* \* \* 8 16 2 11 2 1016.0 15 0 \* \*

CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INDRG, P	TOTAL P	NITRATE
2	0	21.22	35.620	24.92	***	***	***	***	***
2	25	21.05	35.640	24.99	***	***	***	***	***
2	50	20.46	35.730	25.21	5.09	103	***	***	***
2	75	19.10	35.810	25.63	***	***	***	***	***
2	100	18.68	35.790	25.72	4.45	87	***	***	***
2	150	17.23	35.710	26.02	***	***	***	***	***
1	164	16.34	35.590	26.14	4.48	84	***	***	***
1	246	13.56	35.340	26.56	4.45	78	***	***	***
1	410	10.00	34.880	26.88	4.38	71	***	***	***
1	573	8.18	34.650	26.99	4.38	68	***	***	***
1	819	5.99	34.540	27.121	4.25	63	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 CH 1/ 63/62 12/ 1/62 1900 K 35 50 S 150 18 E

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

88 \*\*\* \*\* 20 1 \* \* \* 8 20 1 09 1 1016.0 0 \* \*

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

1 0 21.44 35.550 24.81 \*\*\* \*\* \*\* \*\* \*\*

1 25 20.47 35.640 25.14 \*\*\* \*\* \*\* \*\* \*

1 50 16.73 35.550 26.02 \*\*\* \*\* \*\* \*\* \*

STATION DATE TIME LATITUDE LONGITUDE  
 CH 1/ 64/62 12/ 1/62 2035 K 35 52 S 150 26 E

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

\*\*\* \*\* 14 1 \* \* \* 8 14 1 12 2 1019.0 0 \* \*

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

1 0 21.10 35.530 24.89 \*\*\* \*\* \*\* \*\* \*

1 25 18.62 35.550 25.56 \*\*\* \*\* \*\* \*\* \*

1 50 17.92 35.680 25.83 \*\*\* \*\* \*\* \*\* \*

1 75 15.56 35.500 26.25 \*\*\* \*\* \*\* \*\* \*

1 100 13.87 35.390 26.53 \*\*\* \*\* \*\* \*\* \*

STATION	DATE	TIME	LATITUDE	LONGITUDE							
EH 1/	65/62	2215 K	35 55 S	150 34 E							
SONIC AIR TEMP.	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	SEA DIR.	SEA DIR.	AMT. PRESSURE	ATMOS. PRESSURE	WIRE ANGLS		
DEPTH	DRY	DRY	SP.	HT	AMT.	DIR.	DIR.	AMT.	CASI1 CASI2 CASI3		
***	***	***	14	1	*	*	*	*	0	*	*
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
1	0	21.13	35.520	24.87	***	***	***	***	***		
1	23	18.26	35.680	25.75	***	***	***	***	***		
1	47	16.13	35.590	26.19	***	***	***	***	***		
1	70	15.00	35.500	26.37	***	***	***	***	***		
1	93	13.78	35.390	26.55	***	***	***	***	***		
1	187	11.33	35.070	26.79	***	***	***	***	***		
1	280	10.13	34.970	26.93	***	***	***	***	***		

STATION	DATE	TIME	LATITUDE	LONGITUDE							
EH 1/	66/62	2345 K	35 56 S	150 38 E							
SONIC AIR TEMP.	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	SEA DIR.	SEA DIR.	AMT. PRESSURE	ATMOS. PRESSURE	WIRE ANGLS		
DEPTH	DRY	DRY	SP.	HT	AMT.	DIR.	DIR.	AMT.	CASI1 CASI2 CASI3		
***	***	***	14	1	*	*	*	*	10	5	15
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
2	0	20.57	35.440	24.97	***	***	***	***	***		
2	25	18.74	35.820	25.73	***	***	***	***	***		
2	50	15.85	35.530	26.21	4.59	85	***	***	***		
2	75	14.53	35.440	26.43	***	***	***	***	***		
2	100	13.98	35.410	26.53	4.68	83	***	***	***		
2	150	13.25	35.340	26.62	***	***	***	***	***		
1	197	12.38	35.210	26.70	4.72	81	***	***	***		
1	295	10.34	34.920	26.85	4.49	74	***	***	***		
1	490	8.45	34.690	26.98	4.40	69	***	***	***		
3	670	7.29	34.630	27.11	4.44	68	***	***	***		
3	970	5.10	34.520	27.30	3.91	56	***	***	***		

STATION	DATE	TIME	LATITUDE	LONGITUDE										
DH 1/ 68/62	13/ 1/62	0415 K	36 01 S	150 55 E										
SONIC AIR TEMP.	WIND DIR.	SP. WIND	ANEM. HEIGHT	CLOUD TYPE	AMT.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	CAST3	
***	***	00	0	*	*	8	00	0	12	1	1019.0	35	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE					
2	0	21.23	35.590	24.90	***	***	***	***	***					
2	25	21.17	35.700	25.00	***	***	***	***	***					
2	50	21.01	35.710	25.05	5.01	103	***	***	***					
2	75	19.13	35.700	25.54	***	***	***	***	***					
2	100	18.05	35.700	25.81	4.67	90	***	***	***					
1	130*	16.99	35.680	26.06	4.55	86	***	***	***					
2	150*	16.64	35.610	26.09	***	***	***	***	***					
1	176*	14.24	35.350	26.43	4.49	80	***	***	***					
1	266*	10.54	34.970	26.85	4.35	72	***	***	***					
1	358*	9.92	34.970	26.88	4.39	71	***	***	***					
1	476*	8.53	34.870	27.11	4.59	72	***	***	***					

STATION	DATE	TIME	LATITUDE	LONGITUDE										
DH 1/ 70/62	13/ 1/62	0910 K	36 05 S	151 11 E										
SONIC AIR TEMP.	WIND DIR.	SP. WIND	ANEM. HEIGHT	CLOUD TYPE	AMT.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	CAST3	
***	***	11	1	*	*	8	11	1	12	2	1022.0	15	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE					
2	0	21.53	35.700	24.90	***	***	***	***	***					
2	25	21.28	35.700	24.97	***	***	***	***	***					
2	50	20.65	35.730	25.16	5.34	109	***	***	***					
2	75	19.22	35.790	25.59	***	***	***	***	***					
2	100	18.06	35.810	25.64	4.72	93	***	***	***					
2	150	18.31	35.730	25.77	***	***	***	***	***					
1	197	17.44	35.700	25.96	4.52	86	***	***	***					
1	295	15.81	35.530	26.22	***	***	***	***	***					
1	492	12.04	35.100	26.68	4.50	77	***	***	***					
1	688	8.26	34.650	26.98	4.27	67	***	***	***					
1	984	5.68	34.510	27.23	4.04	59	***	***	***					

\* PROPERTY DOUBTFUL + PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE  
 LH 1/ 79/62 15/ 1/62 0950 K 35 11 S 151 00 E

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

\*\*\* \*\*\* 01 3 \* \* \* \* 8 01 2 01 1 1020.0 10 \* \*

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

1 0 27.24 35.430 24.50 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 25 21.35 35.700 24.95 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 50 20.74 35.730 25.14 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 73 19.29 35.900 25.65 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 97 18.94 35.810 25.67 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 146 17.51 35.680 25.93 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 195 15.75 35.500 26.21 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 292 13.27 35.350 26.63 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 LH 1/ 80/62 15/ 1/62 1150 K 35 14 S 151 09 E

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

\*\*\* \*\*\* 02 3 \* \* \* \* 8 02 2 02 1 1019.0 5 \* \*

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

1 0 21.87 35.700 24.81 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 25 21.15 35.700 25.00 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 50 19.91 35.770 25.39 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 75 19.11 35.790 25.61 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 100 18.83 35.790 25.69 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 150 17.98 35.770 25.80 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 200 17.41 35.730 25.99 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

1 300 15.35 35.520 26.31 \*\*\* \*\*\* \*\*\* \*\*\* \*\*\*

STATION	DATE	TIME	LATITUDE		LONGITUDE				
CH 1/	15/ 1/62	1310 K	35 16 S	151 13 E					
SONIC AIR TEMP, WIND	ANEM. CLOUD	VIS. SEA	SWELL	ATMOS.	WIRE ANGLES				
DEPTH NET DRY DIR. SP.	HEIGHT TYPE AMT.	DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3				
*** ** 02 3	* * *	8 02 2	02 1	1019.0	35 *	*			
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.94	35.710	24.79	***	***	***	***	***
2	25	21.08	35.700	25.02	***	***	***	***	***
2	50	19.54	35.790	25.50	4.89	97	***	***	***
2	75	19.04	35.810	25.65	***	***	***	***	***
2	100	18.73	35.790	25.71	4.41	87	***	***	***
2	150	17.61	35.790	25.99	***	***	***	***	***
1	165*	17.51	35.700	25.95	4.38	84	***	***	***
1	235*	17.10	35.700	26.04	4.52	86	***	***	***
1	370*	13.93	35.390	26.52	4.52	80	***	***	***
1	511*	10.75	34.960	26.81	4.18	69	***	***	***
1	734*	7.50	34.600	27.05	4.18	64	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE				
CH 1/	63/62	1728 K	35 22 S	151 30 E					
SONIC AIR TEMP, WIND	ANEM. CLOUD	VIS. SEA	SWELL	ATMOS.	WIRE ANGLES				
DEPTH NET DRY DIR. SP.	HEIGHT TYPE AMT.	DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3				
*** ** 02 3	* * *	8 02 2	02 1	1019.0	10 0	*			
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.89	35.710	24.81	***	***	***	***	***
2	25	21.87	35.710	24.81	***	***	***	***	***
2	50	20.97	35.710	25.06	5.10	104	***	***	***
2	75	19.45	35.810	25.54	***	***	***	***	***
2	100	19.10	35.790	25.62	4.59	91	***	***	***
2	150	18.54	35.770	25.75	***	***	***	***	***
1	180	18.03	35.710	25.83	4.38	85	***	***	***
1	265	17.41	35.730	25.99	4.79	92	***	***	***
1	440	14.27	35.390	26.45	4.46	80	***	***	***
1	610	10.46	34.820	26.83	4.44	73	***	***	***
1	875	6.72	34.540	27.12	4.29	64	***	***	***

\* PROPERTY DOUTIFUL \* PROPERTY INTERPOLATED

STATION CH 1/ 85/62 DATE 15/ 1/62 TIME 2200 K LATITUDE 35 29 S LONGITUDE 151 47 E

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

\*\*\* \*\*\* 01 2 \* \* \* \* 8 01 2 02 2 1023.0 15 0 \* \*

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

2	0	21.73	35.710	24.85	***	***	***	***	***	***	***
2	25	21.39	35.780	24.94	***	***	***	***	***	***	***
2	50	20.68	35.770	25.19	5.10	104	***	***	***	***	***
2	75	19.37	35.730	25.50	***	***	***	***	***	***	***
2	100	19.11	35.790	25.62	4.63	92	***	***	***	***	***
2	150	18.55	35.790	25.76	***	***	***	***	***	***	***
2	195	17.65	35.710	25.92	4.55	87	***	***	***	***	***
1	290	17.56	35.790	26.00	4.86	93	***	***	***	***	***
1	483	14.06	35.370	26.48	4.50	80	***	***	***	***	***
1	670	10.11	34.880	26.86	4.44	72	***	***	***	***	***
1	960	6.49	34.540	27.15	4.24	63	***	***	***	***	***

STATION CH 1/ 92/62 DATE 16/ 1/62 TIME 1400 K LATITUDE 34 40 S LONGITUDE 150 55 E

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

\*\*\* \*\*\* 04 3 \* \* \* \* 8 04 3 04 2 1021.0 10 \* \*

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

1	0	21.88	35.340	24.53	***	***	***	***	***	***	***
1	25	14.82	35.610	25.55	***	***	***	***	***	***	***
1	50	15.43	35.530	26.26	***	***	***	***	***	***	***



STATION	DATE	TIME	LATITUDE	LONGITUDE
CH 1/ 93/62	16/ 1/62	1950 K	34 40 S	151 02 E
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3				
110 *** ** 04 3	* * *	8 04 3	04 2	15 * *
CAST DEPTH	SALINITY	OXYGEN	OXYGEN % SAT,	INORG. P
1 0	35,260	***	***	***
1 25	35,460	***	***	***
1 50	35,680	***	***	***
1 75	35,680	***	***	***
1 100	35,520	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
CH 1/ 94/62	16/ 1/62	1945 K	34 40 S	151 11 E
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES DEPTH MET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3				
201 *** ** 04 3	* * *	8 04 3	04 2	25 * *
CAST DEPTH	SALINITY	OXYGEN	OXYGEN % SAT,	INORG. P
1 0	35,680	***	***	***
1 23	35,700	***	***	***
1 46	35,700	***	***	***
1 70	35,790	***	***	***
1 92	35,810	***	***	***
1 137	35,680	***	***	***
1 180	35,500	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
CH 1/ 95/62	16/ 1/62	2057 K	34 40 S	151 15 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
320 ***	*** 05 3	*	* * *	A 05 3	05 1	1022.0	25 * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0 22.03	35.700	24.76	***	***	***	***
1	22 21.26	35.680	24.96	***	***	***	***
1	43 20.77	35.710	25.12	5.09	104	***	***
1	63 19.53	35.790	25.51	***	***	***	***
1	85 19.02	35.790	25.64	4.63	91	***	***
1	125 18.21	35.730	25.80	***	***	***	***
1	165 17.40	35.700	25.97	4.55	87	***	***
1	245 14.85	35.460	26.38	4.66	84	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
CH 1/ 97/62	17/ 1/62	0045 K	34 40 S	151 27 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
***	*** 04 2	*	* * *	B 04 2	05 1	1022.0	45 20 *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
2	0 21.95	35.710	24.79	***	***	***	***
2	25 21.14	35.700	25.01	***	***	***	***
2	49 19.38	35.810	25.56	4.80	95	***	***
2	73 19.05	35.810	25.65	***	***	***	***
2	97 18.86	35.790	25.68	4.55	90	***	***
2	145 17.52	35.700	25.94	***	***	***	***
1	340* 15.14	35.460	26.31	4.56	83	***	***
1	475 10.90	34.970	26.79	4.31	72	***	***
1	730 7.34	34.740	27.19	4.32	66	***	***

\* PROPERTY DOURTFUL \* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE					
LH 1/	99/62	0520 K	34 40 S	151 40 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	*** ** 02 3	* * *	* * *	8 02 3	05 1	1020.0	25 15 *	*	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INARG. P	TOTAL P	NITRATE
2	0	21.71	35.700	24.85	***	***	***	***	***
2	25	21.55	35.700	24.90	***	***	***	***	***
2	50	20.99	35.750	25.09	5.23	107	***	***	***
2	73	19.15	35.810	25.62	***	***	***	***	***
2	97	18.94	35.810	25.67	4.83	95	***	***	***
2	145	18.07	35.750	25.85	***	***	***	***	***
1	175	17.51	35.700	25.95	4.49	86	***	***	***
1	245	15.98	35.530	26.18	4.56	R5	***	***	***
1	435	12.64	35.190	26.63	4.50	78	***	***	***
1	600	9.04	34.720	26.91	4.52	72	***	***	***
1	950	5.50	34.520	27.26	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
LH 2/	138/62	0330 K	30 27 S	153 27 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	*** ** 20 3	* * *	* * *	8 20 3	18 2	1018.0	40 0 *	*	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INARG. P	TOTAL P	NITRATE
2	0	26.80	35.170	22.93	***	***	***	***	***
2	23	26.78	35.160	22.93	***	***	***	***	***
2	45	24.24	35.390	23.89	4.50	97	***	***	***
2	68	22.45	35.590	24.56	***	***	***	***	***
2	90	21.87	35.640	24.76	3.67	76	***	***	***
2	135	18.73	35.550	25.53	***	***	***	***	***
2	180	15.23	35.390	26.24	4.27	78	***	***	***
1	170	15.99	35.410	26.08	4.25	79	***	***	***
1	280	10.93	34.870	26.71	4.11	68	***	***	***
1	500	9.37	34.720	26.86	4.20	67	***	***	***
1	610	7.86	34.580	26.99	4.20	65	***	***	***
1	775	6.52	34.510	27.12	4.12	61	***	***	***
1	955	5.31	34.490	27.26	3.92	57	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
LH 2/ 139/62	27/ 1/62	0735 K	30 32 S	153 38 E				
SONIC AIR TEMP, WIND ANEM. CLOUD WIRE ANGLES DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT.	1R 2 * * *	R 18 2	SWELL DIR, AMT. PRESSURE	CASTI CAST2 CAST3				
*** **	*** **	*** **	1017.0	* * *				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
2	24.71	35.390	23.75	***	***	***	***	***
2	24.63	35.460	23.82	***	***	***	***	***
2	24.49	35.410*	23.83	4.75	103	***	***	***
2	22.64	35.610	24.52	***	***	***	***	***
2	100	35.680	25.01	4.54	93	***	***	***
2	150	35.730	25.41	***	***	***	***	***
2	200	35.730	25.63	4.47	88	***	***	***
1	295	35.460	26.04	4.20	78	***	***	***
1	490	34.880	26.74	4.10	68	***	***	***
1	685	34.630	26.93	4.20	66	***	***	***
1	880	34.470	27.13	4.31	64	***	***	***
1	1070	34.670	27.34	3.84	54	***	***	***
1	1270	34.510	27.46	3.65	50	***	***	***
1	1460	34.560	27.53	3.38	46	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
LH 2/ 141/62	27/ 1/62	1320 K	30 36 S	154 07 E				
SONIC AIR TEMP, WIND ANEM. CLOUD WIRE ANGLES DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT.	1R 2 * * *	R 18 2	SWELL DIR, AMT. PRESSURE	CASTI CAST2 CAST3				
*** **	*** **	*** **	1017.0	* * *				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
2	24.89	35.390	23.69	***	***	***	***	***
2	24.34	35.430	23.89	***	***	***	***	***
2	21.14	35.550	24.33	4.68	99	***	***	***
2	21.67	35.700	24.89	***	***	***	***	***
2	100	35.730	25.11	4.35	89	***	***	***
2	150	35.730	25.45	***	***	***	***	***
2	200	35.750	25.58	4.51	89	***	***	***
1	290	35.680	25.75	4.34	84	***	***	***
1	485	35.160	26.55	4.31	75	***	***	***
1	680	34.670	26.87	4.29	68	***	***	***
1	870	34.490	27.09	4.23	63	***	***	***
1	1060	34.450	27.24	3.95	57	***	***	***
1	1255	34.510	27.41	3.68	52	***	***	***
1	1450	34.560	27.52	3.41	47	***	***	***

PROPERTY INTERPOLATED

\*

PROPERTY DOURTEU

STATION LH 2/ 145/62 DATE 27/ 1/62 TIME 2236 K LATITUDE 30 27 S LONGITUDE 154 46 E

SONIC AIR TEMP, WIND DIR, SP, ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES	DEPTH MET DRY	DIR, SP, HEIGHT	TYPE AMT.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
*** ** 10 2 * * *	0	24.50	23.77	35.340	23.77	**	**	***	**	***
2	25	24.15	23.93	35.410	23.93	**	**	***	**	***
2	50	23.64	24.13	35.480	24.13	4.82	103	***	***	***
2	75	22.47	24.57	35.610	24.57	**	**	***	***	***
2	100	21.32	24.94	35.680	24.94	4.60	95	***	***	***
2	150	19.83	25.38	35.730	25.38	**	**	***	***	***
2	200	19.22	25.95	35.750	25.95	4.48	89	***	***	***
1	295	17.85	25.82	35.640	25.82	4.23	82	***	***	***
1	495	12.44	26.60	35.100	26.60	4.20	72	***	***	***
1	690	8.63	26.94	34.670	26.94	4.26	67	***	***	***
1	885	6.97	27.10	34.490	27.10	4.16	62	***	***	***
1	1080	5.17	27.26	34.470	27.26	3.92	56	***	***	***
1	1280	4.16	27.39	34.490	27.39	3.64	51	***	***	***
1	1470	3.47	27.50	34.540	27.50	3.43	47	***	***	***

STATION LH 2/ 148/62 DATE 28/ 1/62 TIME 0636 K LATITUDE 30 17 S LONGITUDE 155 25 E

SONIC AIR TEMP, WIND DIR, SP, ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES	DEPTH MET DRY	DIR, SP, HEIGHT	TYPE AMT.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
*** ** 09 1 * * *	0	25.52	23.41	35.280	23.41	**	**	***	**	***
2	25	24.81	23.66	35.320	23.66	**	**	***	**	***
2	50	23.44	24.23	35.530	24.23	4.64	99	***	**	***
2	75	21.55	24.88	35.680	24.88	**	**	***	**	***
2	100	20.50	25.51	35.750	25.51	3.55	93	***	**	***
2	150	19.21	25.69	35.680	25.69	4.34	85	***	**	***
2	200	18.55	25.98	35.700	25.98	4.17	79	***	**	***
1	278	16.75	26.66	35.500	26.66	4.17	71	***	**	***
1	464	11.84	26.98	35.030	26.98	4.29	67	***	**	***
1	650	8.24	27.25	34.650	27.25	4.33	61	***	**	***
1	834	6.53	27.40	34.470	27.40	4.33	57	***	**	***
1	1021	5.19	27.54	34.510	27.54	4.33	51	***	**	***
1	1216	4.14	27.54	34.510	27.54	4.33	48	***	**	***
1	1395	3.35	27.54	34.580	27.54	4.37	48	***	**	***

STATION LH 2/ 155/62 DATE 29/ 1/62 TIME 0548 K LATTITUDE 30 58 S LONGITUDE 155 58 E

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

\*\*\* \*\*\* 07 1 \* \* \* \* R 07 1 09 2 1018.0 15 5 \* \*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24.71	35.480	23.93	***	***	***	***	***
2	25	23.91	35.520	24.08	***	***	***	***	***
2	50	22.59	35.500*	24.45	5.02	106	***	***	***
2	75	18.94	35.640	25.154	***	***	***	***	***
2	100	17.56	35.660	25.90	4.29	82	***	***	***
2	150	15.64	35.410	26.16	***	***	***	***	***
1	275	11.88	35.050	26.67	4.40	75	***	***	***
1	460	9.11	34.690	26.88	4.46	71	***	***	***
1	655	7.26	34.520	27.02	4.26	65	***	***	***

STATION LH 2/ 160/62 DATE 29/ 1/62 TIME 2115 K LATTITUDE 31 17 S LONGITUDE 156 57 E

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

\*\*\* \*\*\* 05 2 \* \* \* \* R 05 2 09 2 1017.0 15 10 5

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24.43	35.530	23.93	***	***	***	***	***
2	25	23.68	35.480	24.12	***	***	***	***	***
2	50	22.63	35.570	24.49	5.08	107	***	***	***
2	75	19.68	35.680	25.38	***	***	***	***	***
2	100	17.99	35.620	25.77	4.26	82	***	***	***
2	150	16.69	35.570	26.04	***	***	***	***	***
2	200	15.44	35.440	26.23	4.52	83	***	***	***
1	270	13.56	35.190	26.44	4.20	74	***	***	***
1	450	10.22	34.850	26.82	4.40	72	***	***	***
1	630	8.06	34.600	26.97	4.26	66	***	***	***
3	810	6.47	34.510	27.15	4.17	62	***	***	***
3	980	5.16	34.490	27.27	3.92	56	***	***	***
3	1170	4.05	34.510	27.41	3.54	50	***	***	***
3	1350	3.39	34.560	27.52	3.38	46	***	***	***

\* PROPERTY DUBTFUL \* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE  
 LH 2/ 165/62 30/ 1/62 0858 K 31 35 S 157 58 E

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

\*\*\* \*\* 05 1 \* \* \* \* 8 05 1 09 1 1016.0 10 5 \*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	TOTAL P	NITRATE
2	0	24.75	35.430	23.76	***	***	***	***
2	25	24.63	35.430	23.80	***	***	***	***
2	50	24.44	35.480	23.89	104	***	***	***
2	75	23.36	35.530	24.25	***	***	***	***
2	100	21.55	35.680	24.88	4.48	93	***	***
2	150	19.80	35.730	25.39	***	***	***	***
2	200	18.96	35.750	25.62	4.57	90	***	***
1	285	17.44	35.590	25.88	4.26	81	***	***
1	475	12.43	35.160	26.65	4.72	81	***	***
1	665	9.05	34.690	26.89	4.17	66	***	***
1	855	6.99	34.490	27.04	4.19	63	***	***
1	1045	5.61	34.470	27.20	4.06	59	***	***
1	1235	4.35	34.510	27.38	3.75	53	***	***
1	1425	3.58	34.540	27.48	3.53	49	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 LH 2/ 169/62 30/ 1/62 1800 K 31 32 S 158 50 E

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

\*\*\* \*\* 03 2 \* \* \* \* 8 03 2 07 2 1015.0 \* \* \*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	TOTAL P	NITRATE
2	0	25.26	35.390	23.58	***	***	***	***
2	25	25.17	35.390	23.60	***	***	***	***
2	50	24.28	35.410	23.89	104	***	***	***
2	75	22.52	35.590	24.54	***	***	***	***
2	100	21.51	35.660	24.87	4.23	87	***	***
2	150	20.11	35.750	25.32	***	***	***	***
2	200	19.04	35.750	25.60	4.51	89	***	***
1	290	17.10	35.570	25.95	4.23	80	***	***
1	485	12.48	35.100	26.55	4.50	78	***	***
1	680	8.62	34.670	26.94	4.40	69	***	***
1	875	6.70	34.490	27.08	4.23	63	***	***
1	1065	5.51	34.470	27.22	4.03	59	***	***
1	1260	4.25	34.510	27.39	3.69	52	***	***
1	1455	3.49	34.560	27.51	3.50	48	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
CH 2/ 173/62	1/ 2/62	1325 K	32 21 S		159 01 E	
SONIC AIR TEMP, WIND, ANEM, CLOUD	WIND, SP, HEIGHT	SEA DIR, AMT, PRESSURE	ATMOS. DIR, AMT, PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH NET DRY	DIR, SP, HEIGHT	SEA DIR, AMT, PRESSURE	ATMOS. DIR, AMT, PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
*** ** 02 2	* * * * *	8 02 2	05 2	1014.0	10 5 *	*
CAST DEPTH	TEMP, SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P NITRATE
2 0	24.68 35.410	23.77	***	***	***	***
2 25	24.42 35.390	23.83	***	***	***	***
2 50	24.29 35.390	23.87	4.66	101	***	***
2 75	22.12 35.680	24.72	***	***	***	***
2 100	20.24 35.700	25.25	4.34	88	***	***
2 150	19.09 35.790	25.62	***	***	***	***
2 200	17.31 35.590	25.91	4.17	80	***	***
1 290	13.69 35.370	26.55	4.48	79	***	***
1 480	9.72 34.780	26.85	4.23	68	***	***
1 675	7.69 34.540	26.98	4.26	65	***	***
1 865	6.01 34.470	27.15	4.09	60	***	***
1 1082	4.75 34.430	27.27	3.84	55	***	***
1 1250	3.95 34.520	27.43	3.53	49	***	***
1 1440	3.18 34.560	27.54	3.44	47	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
CH 2/ 176/62	1/ 2/62	2117 K	33 06 S		159 01 E	
SONIC AIR TEMP, WIND, ANEM, CLOUD	WIND, SP, HEIGHT	SEA DIR, AMT, PRESSURE	ATMOS. DIR, AMT, PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH NET DRY	DIR, SP, HEIGHT	SEA DIR, AMT, PRESSURE	ATMOS. DIR, AMT, PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
*** ** 02 3	* * * * *	8 02 3	05 2	1012.0	40 15 *	*
CAST DEPTH	TEMP, SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P NITRATE
2 0	25.13 35.390	23.62	***	***	***	***
2 25	22.74 35.350	24.29	***	***	***	***
2 50	19.66 35.550	25.29	5.16	103	***	***
2 73	16.98 35.520	25.93	***	***	***	***
2 97	15.74 35.390	26.13	4.18	77	***	***
2 145	13.97 35.300	26.44	***	***	***	***
2 194	13.03 35.210	26.57	4.42	77	***	***
1 170	13.53 35.250	26.50	4.29	76	***	***
1 340	9.98 34.630	26.84	4.24	69	***	***
1 510	*** 34.560	***	4.22	***	***	***
1 680	6.13 34.450	27.12	4.15	61	***	***
1 930	4.85 34.470	27.29	3.67	52	***	***



STATION DATE TIME LATITUDE LONGITUDE  
 DH 2/ 180/62 2/ 2/62 0652 K 32 57 S 158 03 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 DEPTH NET DRY DIR, SP. DIR, SP. HEIGHT TYPE AMT. VIS, DIR, AMT. DIR, AMT. PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\* 02 1 \* \* \* \* R 02 1 05 1 1009.0 5 0 \*

CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INCRG. P	TOTAL P	NITRATE
2	0	23.55	35.500	24.17	***	***	***	***	***
2	25	22.04	35.440	24.56	***	***	***	***	***
2	50	19.52	35.480	25.53	3.98	78	***	***	***
2	75	16.14	35.390	26.03	***	***	***	***	***
2	100	14.21	35.210	26.32	4.06	73	***	***	***
2	150	12.63	35.050	26.52	***	***	***	***	***
2	200	11.23	34.920	26.69	4.16	70	***	***	***
1	298	9.68	34.740	26.82	4.18	67	***	***	***
1	495	7.42	34.560	26.98	4.29	66	***	***	***
1	695	6.35	34.490	27.13	4.18	62	***	***	***
1	890	4.96	34.470	27.28	3.98	57	***	***	***
1	1090	3.92	34.490	27.41	3.67	51	***	***	***
1	1290	3.24	34.540	27.52	3.44	47	***	***	***
1	1490	2.78	34.580	27.59	3.44	47	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 DH 2/ 185/62 2/ 2/62 1723 K 32 52 S 157 03 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES  
 DEPTH NET DRY DIR, SP. DIR, SP. HEIGHT TYPE AMT. VIS, DIR, AMT. DIR, AMT. PRESSURE CAST1 CAST2 CAST3  
 \*\*\* \*\* 26 1 \* \* \* \* R 26 1 00 1 1009.0 10 5 \*

CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INCRG. P	TOTAL P	NITRATE
2	0	25.03	35.390	23.65	***	***	***	***	***
2	25	24.40	35.390	23.84	***	***	***	***	***
2	50	23.45	35.500	24.20	4.91	105	***	***	***
2	75	22.11	35.640	24.69	***	***	***	***	***
2	100	21.18	35.680	24.98	4.15	85	***	***	***
2	150	19.69	35.710	25.40	***	***	***	***	***
2	200	19.09	35.730	25.57	4.41	87	***	***	***
1	290	17.55	35.570	25.84	4.17	80	***	***	***
1	480	12.91	35.140	26.54	4.37	76	***	***	***
1	675	8.80	34.650	26.90	4.77	75	***	***	***
1	865	7.01	***	***	4.21	***	***	***	***
1	1060	5.50	34.470	27.22	3.99	58	***	***	***
1	1250	4.18	34.490	27.38	3.64	51	***	***	***
1	1440	3.46	34.540	27.50	3.44	47	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
CH 2/ 191/62	3/ 2/62	0550 K	32 51 S	156 13 E			
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA DIR. AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
*** ** 18 3	* * *	* * *	* * *	8 18 4	18 3	1013.0	30 15 10
CST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
2 0	24.40	35.390	23.84	***	***	***	***
2 25	24.42	35.390	23.83	***	***	***	***
2 50	23.82	35.460	24.06	4.68	101	***	***
2 75	22.40	35.590	24.52	***	***	***	***
3 100	21.99	35.660	24.74	4.95	103	***	***
3 148	20.16	35.750	25.31	***	***	***	***
3 197	19.34	35.770	25.54	4.57	91	***	***
1 172	19.92	35.770	25.39	4.43	89	***	***
1 345	17.85	35.620	25.80	4.22	81	***	***
1 515	14.13	35.250	26.37	4.15	74	***	***
1 680	9.98	34.780	26.80	4.27	69	***	***
1 855	7.68	34.560	27.00	4.22	65	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
CH 2/ 198/62	3/ 2/62	1740 K	33 03 S	154 56 E			
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA DIR. AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
*** ** 05 2	* * *	* * *	* * *	8 05 2	18 2	1016.0	20 20 15
CST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
3 0	24.53	35.340	23.76	***	***	***	***
3 25	24.48	35.390	23.81	***	***	***	***
3 50	24.17	35.390	23.91	4.72	102	***	***
3 75	22.76	35.620	24.49	***	***	***	***
3 98	21.32	35.700	24.96	4.55	94	***	***
3 145	20.25	35.730	25.27	***	***	***	***
3 195	19.45	35.730	25.48	4.57	91	***	***
1 280	19.00	35.710	25.58	4.51	89	***	***
1 470	16.27	35.440	26.04	4.26	80	***	***
1 660	12.45	35.100	26.60	4.23	73	***	***
1 840	8.74	34.670	26.92	4.30	68	***	***
2 1015	6.71	34.490	27.08	4.17	62	***	***
2 1210	5.46	34.470	27.22	3.99	58	***	***
2 1405	4.32	34.470	27.35	3.92	55	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 EH 2 / 202/62 4 / 2/62 0445 K 33 21 S 153 46 E

SONIC ATR TEMP, WIND DIR, SP, WIND SP, ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR, APT, VIS.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
*** ** 02 2 . * * *	* * *	8 02 2	05 2	1017.0	20 5 *			
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	24.91	35.440	23.72	***	***	***	***	***
2	24.93	***	***	***	***	***	***	***
2	24.32	35.430	23.89	4.75	103	***	***	***
2	21.78	35.590	24.46	***	***	***	***	***
2	21.59	35.710	24.89	4.44	92	***	***	***
2	20.10	35.730	25.31	***	***	***	***	***
2	19.22	35.730	25.54	4.46	88	***	***	***
1	18.73	35.710	25.65	4.39	86	***	***	***
1	15.76	35.460	26.17	4.43	82	***	***	***
1	13.03	35.160	26.53	4.30	75	***	***	***
1	9.49	34.740	26.85	4.35	70	***	***	***
1	7.31	34.510	27.01	4.24	64	***	***	***
1	5.70	34.510	27.22	4.07	59	***	***	***
1	4.70	34.540	27.37	3.88	55	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 EH 2 / 204/62 4 / 2/62 1107 K 33 26 S 153 05 E

SONIC ATR TEMP, WIND DIR, SP, WIND SP, ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR, APT, VIS.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
*** ** 06 2 * * *	* * *	8 06 2	11 2	1018.0	20 5 *			
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	25.75	35.340	23.39	***	***	***	***	***
2	25.03	35.390	23.65	***	***	***	***	***
2	25.06	35.440	23.68	4.74	104	***	***	***
2	22.21	35.620	24.65	***	***	***	***	***
2	20.59	35.710	25.16	4.47	91	***	***	***
2	19.22	35.730	25.54	***	***	***	***	***
2	18.10	35.640	25.75	4.20	81	***	***	***
1	13.42	35.190	26.47	4.15	73	***	***	***
1	10.20	34.810	26.79	4.16	68	***	***	***
1	8.46	34.630	26.93	4.23	66	***	***	***
1	7.59	34.520	26.98	4.21	64	***	***	***
1	6.66	34.470	27.07	4.20	63	***	***	***
1	5.96	34.520	27.20	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
CH 2/ 206/62	4/ 2/62	1600 K	33 13 S	152 55 E					
SONIC AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. APT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3	
DEPTH MET	05 2	*** * *	* * *	8 05 2	07 1	1014.0	40	* * *	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INDRG. P	TOTAL P	NITRATE
1	0	26.14	35.170	23.29	***	***	***	***	***
1	20	25.21	35.100	23.52	***	***	***	***	***
1	40	24.03	35.350	23.92	5.02	108	***	***	***
1	60	21.65	35.480	24.70	***	***	***	***	***
1	80	19.70	35.480	25.22	4.39	88	***	***	***
1	120	17.63	35.440	25.72	***	***	***	***	***
1	160	16.20	35.350	25.99	3.86	72	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
CH 2/ 207/62	4/ 2/62	1740 K	33 06 S	152 49 E					
SONIC AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. APT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3	
DEPTH MET	05 2	*** * *	* * *	8 05 2	07 1	1018.0	35	* * *	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INDRG. P	TOTAL P	NITRATE
1	0	22.90	35.210	24.14	***	***	***	***	***
1	21	22.47	35.260	24.30	***	***	***	***	***
1	41	19.08	35.460	25.62	3.82	74	***	***	***
1	61	17.73	35.460	25.71	***	***	***	***	***
1	82	17.46	35.460	25.77	3.81	73	***	***	***
1	123	16.10	35.460	26.10	***	***	***	***	***
1	165	15.20	35.410	26.26	4.29	78	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 CH 2/ 208/62 4/ 2/62 1910 K 33 00 S 152 45 E

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

\*\*\* \*\*\* 05 2 \* \* \* \* 8 05 2 07 1 1018.0 25 \* \* \*

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

1	0	23.14	35.170	24.04	***	***	***	***	***
1	23	18.45	35.520	25.58	***	***	***	***	***
1	45	18.26	35.710	4.22	82	***	***	***	***
1	68	17.62	35.660	25.89	***	***	***	***	***
1	91	17.23	35.660	4.58	87	***	***	***	***
1	136	15.35	35.460	26.27	***	***	***	***	***
1	189	13.71	35.350	26.54	83	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 CH 3/ 234/62 22/ 2/62 0600 K 37 25 S 151 12 E

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

\*\*\* \*\*\* 23 1 \* \* \* \* 8 23 1 06 1 1011.0 0 0 \* \*

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

2	0	21.43	35.500	24.77	***	***	***	***	***
2	25	21.40	35.480	24.77	***	***	***	***	***
2	50	18.55	35.550	25.57	93	***	***	***	***
2	75	18.48	35.460	25.96	***	***	***	***	***
2	100	15.77	35.440	26.16	82	***	***	***	***
2	150	14.65	35.340	26.33	***	***	***	***	***
1	200	13.91	35.300	26.46	83	***	***	***	***
1	300	12.49	35.160	26.64	83	***	***	***	***
1	500	8.70	34.630	26.90	72	***	***	***	***
1	700	6.82	34.490	27.06	63	***	***	***	***
1	1000	5.03	34.450	27.26	56	***	***	***	***

STATION LH 3/ 243/62 DATE 23/ 2/62 TIME 0900 K LATITUDE 37 04 S LONGITUDE 152 48 E

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

\*\*\* \*\*\* 18 3 \* \* \* \* 8 18 3 18 2 1016.0 10 5 \*

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

2	0	21.62	35.350	24.61	***	***	***	***	***
2	25	21.59	35.350	24.62	***	***	***	***	***
2	50	20.11	35.570	25.19	4.55	92	***	***	***
2	75	18.73	35.610	25.57	***	***	***	***	***
2	100	17.72	35.620	25.83	4.10	79	***	***	***
2	150	15.76	35.440	26.16	***	***	***	***	***
1	170	15.38	35.390	26.20	4.27	78	***	***	***
1	255	13.71	35.300	26.50	4.51	80	***	***	***
1	420	11.00	34.920	26.73	4.14	69	***	***	***
1	590	8.47	34.630	26.93	4.21	66	***	***	***
1	850	6.21	34.470	27.13	4.01	59	***	***	***

STATION LH 4/ 302/62 DATE 13/ 4/62 TIME 1210 K LATITUDE 35 31 S LONGITUDE 151 17 E

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

\*\*\* \*\*\* 18 1 \* \* \* \* 8 18 1 18 2 1018.0 0 0 \*

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

2	0	21.28	35.570	24.87	***	***	***	***	***
2	25	21.09	35.570	24.92	***	***	***	***	***
2	50	20.81	35.590	25.01	5.02	102	***	***	***
2	75	19.67	35.550	25.44	***	***	***	***	***
2	100	18.72	35.500	25.98	4.27	80	***	***	***
2	150	14.87	35.390	26.32	4.41	80	***	***	***
1	198	14.00	35.350	26.48	4.66	83	***	***	***
1	295	12.33	35.210	26.71	4.94	85	***	***	***
1	495	9.18	34.720	26.89	4.63	74	***	***	***
1	690	7.33	34.560	27.05	***	***	***	***	***
1	990	5.17	34.490	27.27	4.10	59	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 CH 4/ 316/62 17/ 4/62 0900 K 35 08 S 154 13 E

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

\*\*\* \*\*\* 17 2 \* \* \* \* 8 17 2 18 2 1025.0 20 5 \*

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

2 0 22.16 35.440 24.53 \*\*\* \*\*\* \*\*\* \*\*\*

2 25 22.00 35.440 24.57 \*\*\* \*\*\* \*\*\* \*\*\*

2 50 21.35 35.500 24.80 102 \*\*\* \*\*\* \*\*\* \*\*\*

2 75 21.14 35.520 24.87 \*\*\* \*\*\* \*\*\* \*\*\*

2 100 21.09 35.550 24.91 102 \*\*\* \*\*\* \*\*\* \*\*\*

1 140 17.10 35.410 25.82 77 \*\*\* \*\*\* \*\*\* \*\*\*

1 210 14.57 35.410 26.40 83 \*\*\* \*\*\* \*\*\* \*\*\*

1 350 11.35 34.970 26.71 \*\*\* \*\*\* \*\*\* \*\*\*

1 495 9.66 34.780 26.86 \*\*\* \*\*\* \*\*\* \*\*\*

1 725 7.35 34.540 27.03 \*\*\* \*\*\* \*\*\* \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 CH 5/ 382/62 1/ 5/62 0620 K 38 44 S 150 30 E

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

\*\*\* \*\*\* 23 4 \* \* \* \* 8 23 4 23 2 1012.0 0 0 \*

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

2 0 19.21 35.590 25.44 \*\*\* \*\*\* \*\*\* \*\*\*

2 25 19.25 35.610 25.44 \*\*\* \*\*\* \*\*\* \*\*\*

2 50 19.20 35.580 25.43 100 \*\*\* \*\*\* \*\*\* \*\*\*

2 75 18.30 35.570 \*\*\* 25.65 \*\*\* \*\*\* \*\*\* \*\*\*

2 100 17.24 35.550 25.90 92 \*\*\* \*\*\* \*\*\* \*\*\*

2 150 13.18 35.340 26.64 79 \*\*\* \*\*\* \*\*\* \*\*\*

1 200 11.97 35.160 26.74 \*\*\* \*\*\* \*\*\* \*\*\*

1 297 9.10 34.790 26.96 78 \*\*\* \*\*\* \*\*\* \*\*\*

1 495 7.36 34.760 27.20 75 \*\*\* \*\*\* \*\*\* \*\*\*

1 695 5.68 34.520 27.24 67 \*\*\* \*\*\* \*\*\* \*\*\*

1 990 3.99 \*\*\* 27.24 61 \*\*\* \*\*\* \*\*\* \*\*\*

3.86 \*\*\*

STATION DATE TIME LATITUDE LONGITUDE  
 LH 5/ 361762 2/ 5/62 0625 K 38 27 S 152 24 E

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

CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.23	35.610	25.70	***	***	***	***	***
2	25	19.24	35.610	25.70	***	***	***	***	***
2	50	19.18	35.590	25.70	5.23	101	***	***	***
2	75	17.29	35.590	25.92	***	***	***	***	***
2	100	15.36	***	***	***	***	***	***	***
2	150	13.73	34.700*	26.03	4.61	81	***	***	***
1	197	12.13	34.540	26.23	4.05	69	***	***	***
1	295	11.03	34.560	26.45	4.29	71	***	***	***
1	490	8.71	34.670	26.93	4.94	78	***	***	***
1	690	7.06	34.920	27.37	4.84	73	***	***	***
1	985	5.04	35.230	27.87	4.64	67	***	***	***

STATION DATE TIME LATITUDE LONGITUDE  
 LH 5/ 375/62 4/ 5/62 0935 K 39 24 S 151 35 E

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

CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.89	35.550	25.74	***	***	***	***	***
2	25	17.91	35.550	25.73	***	***	***	***	***
2	50	17.67	***	***	5.28	***	***	***	***
2	75	17.28	35.500	25.85	***	***	***	***	***
2	100	15.11	35.440	26.31	4.99	91	***	***	***
2	150	13.25	35.300	26.59	4.48	78	***	***	***
1	185	12.97	35.300	26.65	4.65	81	***	***	***
1	275	11.61	35.120	26.78	4.76	80	***	***	***
1	455	8.97	34.720	26.92	4.81	76	***	***	***
1	650	7.71	34.630	27.05	***	***	***	***	***
1	920	5.65	34.510	27.23	4.14	60	***	***	***

\* PROPERTY DOUBTFUL \* PROPERTY INTERPOLATED





STATION	DATE	TIME	LATITUDE	LONGITUDE					
UH 6/ 419/62	16/ 5/62	0845 K	43 28 S	150 38 E					
SONIC AIR TEMP.	WIND DIR. SP.	WIND DIR. SP.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES			
DEPTH MET	DRY	WIND DIR. SP.	WIND DIR. SP.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES		
***	***	36 1	*	*	*	1012.0	0 0 *		
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CKYGFN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	15.53	35.520	26.27	***	***	***	***	***
2	25	15.52	35.520	26.27	***	***	***	***	***
2	50	15.36	35.480	26.28	***	***	***	***	***
2	75	14.58	35.390	26.38	***	***	***	***	***
2	100	14.44	35.350	26.38	***	***	***	***	***
2	150	***	35.350	***	***	***	***	***	***
1	195	12.81	35.280	26.67	***	***	***	***	***
1	290	11.50	35.120	26.80	***	***	***	***	***
1	485	9.00	34.740	26.93	***	***	***	***	***
1	685	7.56	34.580	27.03	***	***	***	***	***
1	975	5.34	34.510	27.27	***	***	***	***	***

DATA

PART 3

ZOOPLANKTON BIOMASS

DOUBLE-OBLIQUE TOWS 0-200-0 m : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	VOLUME FILTERED (m <sup>3</sup> )	BIOMASS* (mg/m <sup>3</sup> )
DH2/148/62 30° 17' S. 155° 25' E.	28/1/62	0818	15.4	21(1.0)
DH2/155/62 30° 58' S. 155° 58' E.	29/1/62	1237	13.6	30(0.4)
DH2/185/62 32° 52' S. 157° 03' E.	2/2/62	1902	16.4	54(0.4)
DH3/234/62 37° 25' S. 151° 49' E.	22/2/62	1043	10.5	5(1.0)
DH3/238/62 37° 18' S. 151° 49' E.	22/2/62	2107	16.8	77
DH3/243/62 37° 04' S. 152° 48' E.	23/2/62	1008	11.1	41(0.5)
DH3/247/62 37° 02' S. 153° 31' E.	23/2/62	2010	20.7	44(0.3)
DH3/248/62 37° 54' S. 152° 40' E.	25/2/62	2004	16.7	60

\* Including salps ( ) Salps - No./m<sup>3</sup>

DOUBLE-OBLIQUE TOWS 0-200-0 m : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	VOLUME FILTERED (m <sup>3</sup> )	BIOMASS* (mg/m <sup>3</sup> )
DH5/352/62 38° 44' S. 150° 30' E.	1/5/62	0925	13.9	46
DH5/361/62 38° 27' S. 152° 24' E.	2/5/62	0940	19.0	25
DH5/375/62 39° 24' S. 151° 35' E.	4/5/62	0945	14.7	18
DH5/383/62 41° 55' S. 149° 00' E.	5/5/62	2020	25.4	70
DH6/410/62 43° 20' S. 148° 25' E.	15/5/62	0940	16.6	16
DH6/414/62 43° 23' S. 149° 05' E.	15/5/62	2010	19.1	213
DH6/419/62 43° 28' S. 150° 38' E.	16/5/62	1000	16.3	21

\* Including salps

DATA  
PART 4  
LONGLINING

TABLE 2

## LONGLINE CATCH DETAILS

Cruise	Stn No.	No. of Units on Longline	Southern Bluefin Tuna	Other Tunas	Sharks
DH1/62	45	32		1 Yellowfin 2 Albacore	
	70	32			
DH2/62	155	32			2
DH3/62	234	32			
	243	32			2
DH4/62	302	32		1 Yellowfin	
	316	32			
DH5/62	352	30			1
	361	30		1 Albacore	
	375	30	1		
	383	30	1		
DH6/62	410	32			
	419	32	3		
	425	32	3		3

## OCEANOGRAPHICAL STATION LISTS

1. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1938-39
2. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1940-42
3. Hydrological and planktological observations by F.R.V. *Warreen* in south-western Australian waters, 1947-50
4. Onshore hydrological investigations in eastern Australia, 1942-50
5. Estuarine hydrological investigations in eastern Australia, 1940-50. Queensland: Nerang and Coomera Rivers, Moreton Bay and Brisbane River, Logan River, Dunwich Oyster Lease; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Tilligerry Creek, Hawkesbury River
6. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Middle Harbour and Port Jackson, Georges River-Botany Bay
7. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Port Hacking, Lake Illawarra, Shoalhaven River, Jervis Bay, Clyde River, Moruya River, Tuross River, Wagonga Inlet; Victoria: Port Phillip; Tasmania: Tamar River, Derwent River, Huon River, D'Entrecasteaux Channel, Pittwater, Lake Dobson (freshwater), Penna Dam (freshwater)
8. Hydrological investigations in south-western Australia, 1944-50
9. Records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1942-50. Queensland: Logan River; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Hawkesbury River, Georges River, Port Hacking, Clyde River, Tuross River; Tasmania: Tamar River, Derwent River
10. Records of twenty-four hourly hydrological observations at Shell Point, Georges River, New South Wales, 1942-50
11. Analyses of bottom deposits in eastern Australia, 1946-50
12. Estuarine hydrological investigations in eastern and south-western Australia, 1951
13. Analysis of bottom deposits in eastern and south-western Australia, 1951 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1951
14. Onshore hydrological investigations in eastern and south-western Australia, 1951
15. Estuarine hydrological investigations in eastern and south-western Australia, 1952
16. Analysis of bottom deposits in eastern and south-western Australia, 1952 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1952
17. Onshore hydrological investigations in eastern and south-western Australia, 1952
18. Onshore hydrological investigations in eastern and south-western Australia, 1953
19. Onshore planktological investigations in eastern Australia, 1945-54
20. Surface sampling in the Tasman Sea, 1953
21. Estuarine hydrological investigations in eastern and south-western Australia, 1953
22. Further onshore planktological investigations in eastern Australia, 1945-54
23. Planktological investigations made by F.R.V. *Derwent Hunter* in eastern Australian waters, 1952-54
24. Onshore hydrological investigations in eastern and south-western Australia, 1954
25. Surface sampling in the Tasman Sea, 1954
26. Estuarine hydrological investigations in eastern and south-western Australia, 1954
27. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1955
28. Surface sampling in the Tasman and Coral Seas, 1955
29. Estuarine hydrological investigations in eastern and south-western Australia, 1955
30. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1956
31. Surface sampling in the Tasman and Coral Seas and the south-eastern Indian Ocean, 1956
32. Estuarine hydrological investigations in eastern and south-western Australia, 1956
33. Coastal hydrological investigations in eastern and south-western Australia, 1957
34. Coastal hydrological investigations at Port Hacking, New South Wales, 1957
35. Coastal hydrological investigations at Eden, New South Wales, 1957



## OCEANOGRAPHICAL STATION LISTS

(Continued)

36. Surface sampling in the Tasman and Coral Seas, 1957
37. Hydrological investigations from F.R.V. *Derwent Hunter*, 1957
38. Coastal hydrological investigations in the New South Wales tuna fishing area, 1958
39. Surface sampling in the Coral and Tasman Seas, 1958
40. Coastal hydrological investigations in south-eastern Australia, 1958
41. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1958
42. Coastal investigations at Port Hacking, New South Wales, 1958
43. Oceanic investigations in eastern Australia, H.M.A. Ships *Queenborough*, *Quickmatch*, and *Warrego*, 1958
44. Oceanic observations in Antarctic waters, M.V. *Magga Dan*, 1959
45. Coastal hydrological investigations in eastern Australia, 1959
46. Coastal hydrological investigations in the New South Wales tuna fishing area, 1959
47. Coastal investigations at Port Hacking, New South Wales, 1959
48. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1959
49. Coastal hydrological sampling Rottneest Island, W.A., and Port Moresby, Papua, during the I.G.Y. (1957-58), and surface sampling in the Tasman and Coral Seas, 1959
50. Surface sampling in the Coral and Tasman Seas, 1960
51. Coastal hydrological investigations in eastern Australia, 1960
52. Coastal investigations at Port Hacking, New South Wales, 1960
53. Coastal hydrological investigations in the New South Wales tuna fishing area, 1960
54. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1961
55. Investigations by F.R.V. *Weerutta* on the South Australian tuna grounds in 1961
56. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1961
57. Investigations by F.V. *Estelle Star* in Western Australian waters in 1961
58. Temperature observations from Australian tuna fishing vessels in 1961
59. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1962