OCEANOGRAPHICAL STATION LIST

VOLUME 64

INVESTIGATIONS BY F.R.V. *INVESTIGATOR* ON THE SOUTH AUSTRALIAN TUNA GROUNDS IN 1963

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

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MELBOURNE, 1968

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When citing this station list, abbreviate as follows:
CSIRO Aust. Oceanogr. Stn List 64.

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VOLUME 64

Investigations by F.R.V. Investigator on the South Australian Tuna Grounds in 1963

I. INTRODUCTION

This report records the data collected during the 1963 cruises of F.R.V. Investigator (In1/63-In10/63).

These cruises were planned to investigate hydrological conditions on the tuna grounds. In addition, eight southern bluefin tuna were trolled on Cruise In2/63. Track Charts and station positions are shown in Figures 1-10.

The hydrological sampling programme was carried out by Messrs R. Bradley and L. Olsen, except during cruises In4/63, In7/63, and In9/63 when the work was carried out by Mr Olsen alone.

A full description of F.R.V. Investigator appears in CSIRO Aust. 1968.

II. WORK ACCOMPLISHED

Table 1 gives details of cruise dates and number of stations worked.

TABLE 1

DETAILS OF CRUISES AND WORK DONE

Cruise	Dates	Number of Stations Occupied	BT	Hydrology 1	Hydrology 2
In1/63	Jan. 10-21	28	22	28	20
In2/63	Jan. 25-30	13	5	13	3
In3/63	Feb. 11-27	38	38	38	31
In4/63	Apr. 10-13	15	15	15	15
In5/63	Apr. 17-20	14	14	14	14
In6/63	May 9-11	14	14	14	14
In7/63	May 13-16	20	20	20	0
In8/63	May 18-21	16	15	16	15

TABLE 1 (Cont.)

Cruise	Dates	Number of Stations Occupied	BT	Hydrology 1	Hydrology 2
In9/63	June 12–13	8	8	8	6
In10/63	Dec. 3–5	14	14	14	14

BT Bathythermographs

Hydrology 1 Number of stations at which surface samples were collected
2 Number of stations at which subsurface samples were collected

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.—Water temperatures were taken with deep-sea reversing thermometers. Up to six Nansen water-bottles were used on each cast, each bottle being fitted with two protected thermometers. In addition, four of the water-bottles were fitted with an unprotected thermometer. The temperatures obtained are considered accurate to $\pm$ 0.03 degC.

Bathythermographs.—A 450-ft or a 900-ft bathythermograph was used, depending on the depth of the water. Slides were digitized by the U.S. National Oceanographic Data Centre according to their own method (U.S.N.O.D.C. 1964), and from their punched cards computer listings were produced. The listings are held at Cronulla.

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 about 3%.

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

2. Chemistry

Samples were analysed for salinity and dissolved oxygen at Port Lincoln, South Australia.

Salinity.—A chlorinity-temperature meter of the conductivity type (Hamon 1956) was used 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 seawater samples. The version used is a modification of that described by Thompson and Robinson (1939) and differs in some respects from the revision by Jacobsen, Robinson, and Thompson (1950). Potassium iodate was used as the iodometric standard, and the reagents necessary to fix the oxygen in solution were used at different concentrations (Rochford 1963). Duplicate titrations were made on approximately every tenth sample. Saturation values, given as ml/l, were computed, using the simpler of the equations given by Richards and Corwin (1956) -

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

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IV. TRACK CHARTS

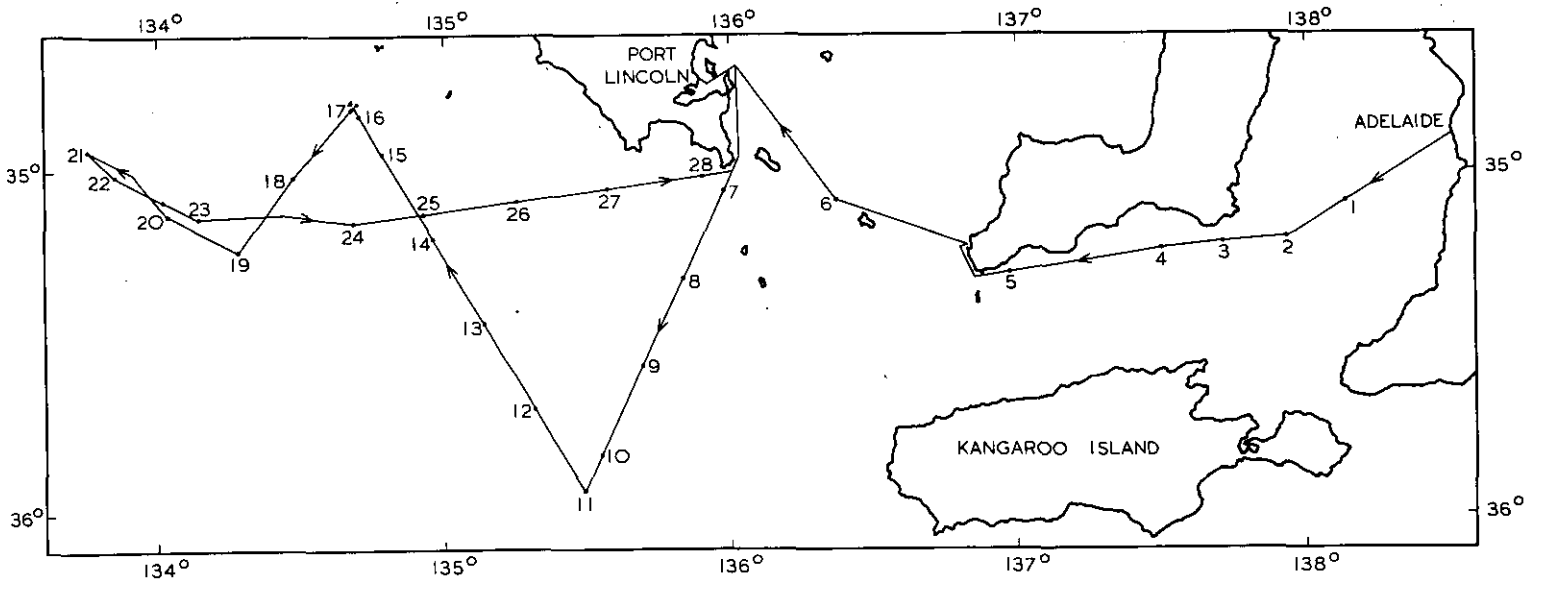

Fig. 1:- Track chart Cruise In 1/63

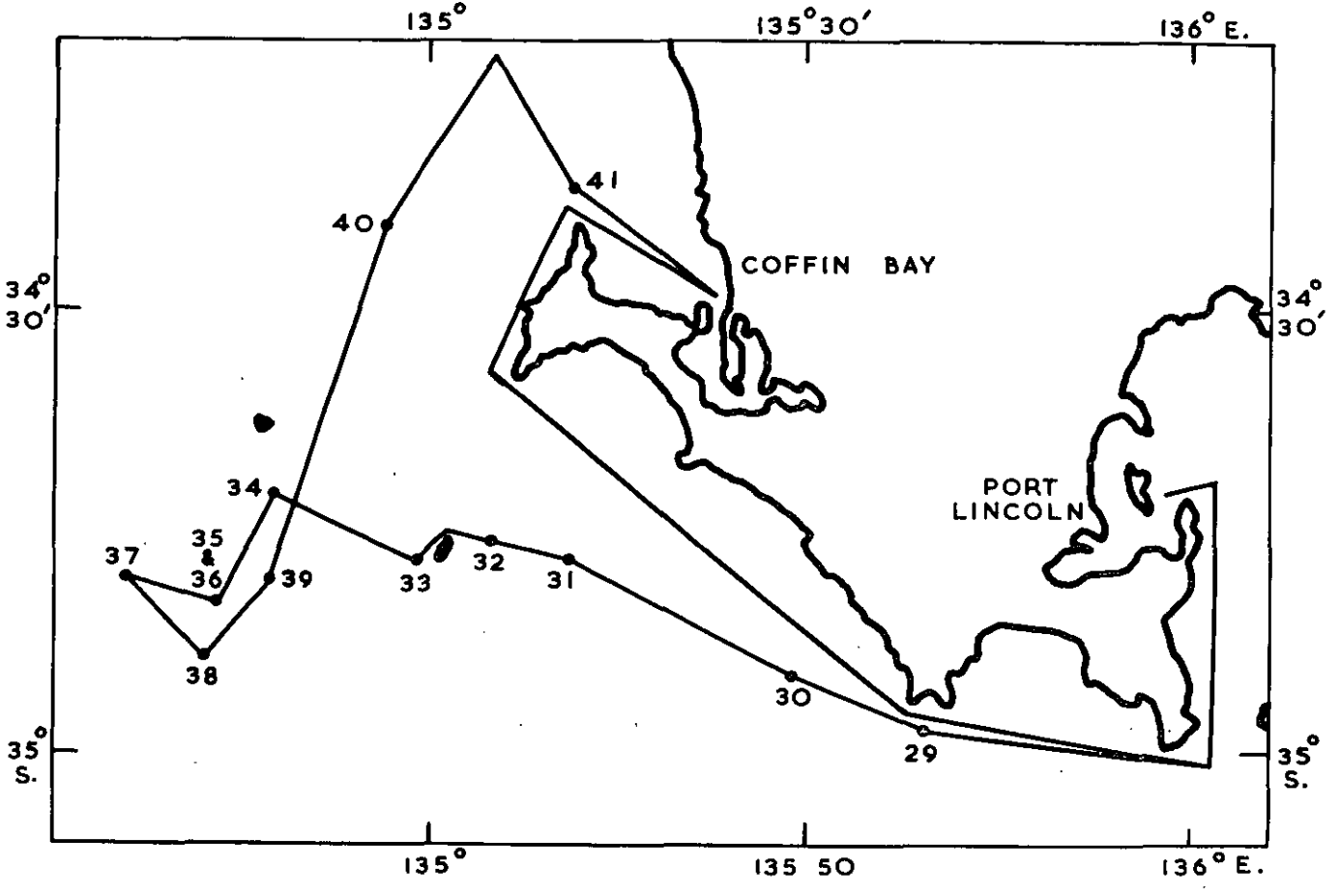

Fig. 2:- Track chart Cruise In 2/63

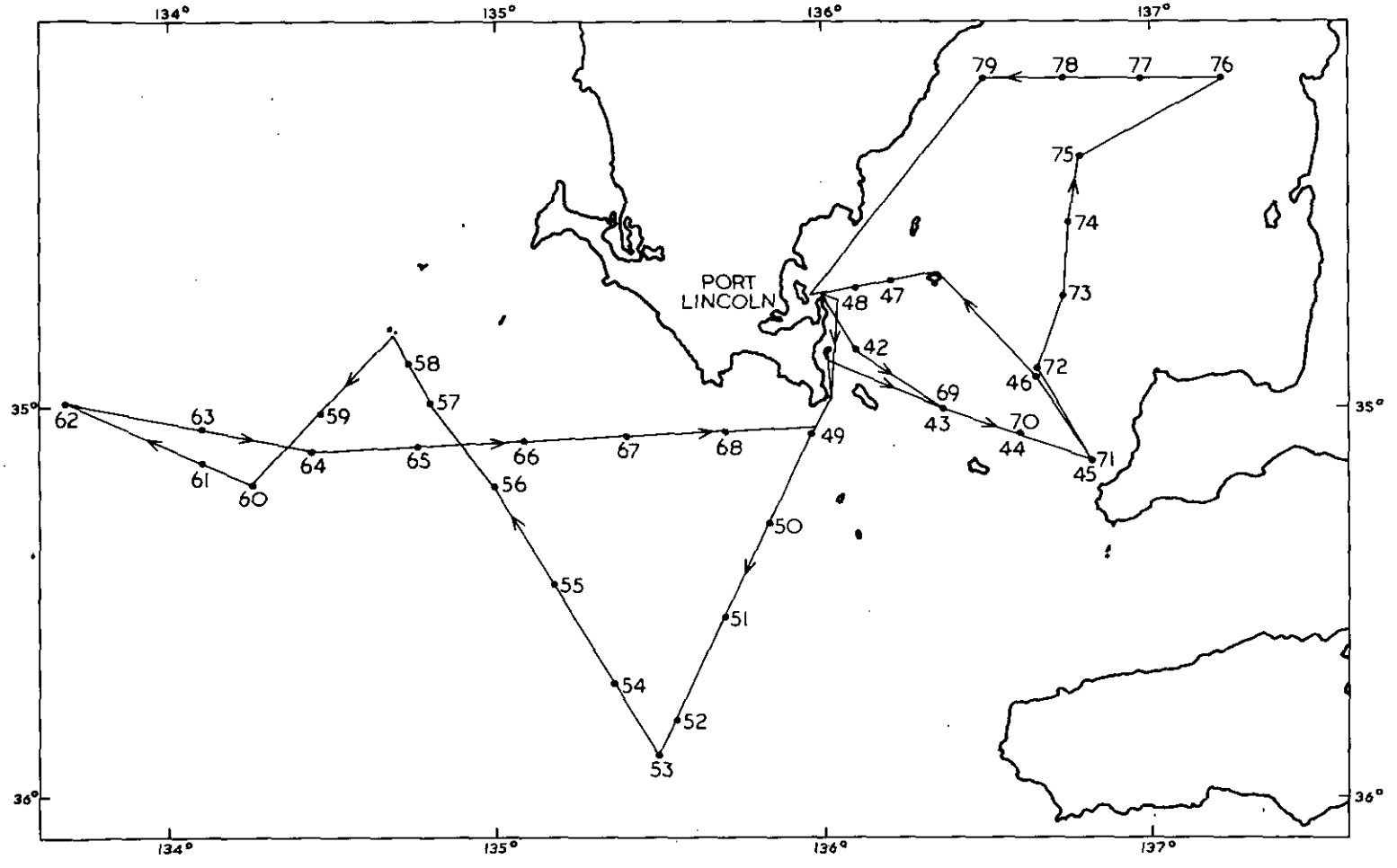

Fig. 3:- Track chart Cruise In 3/63

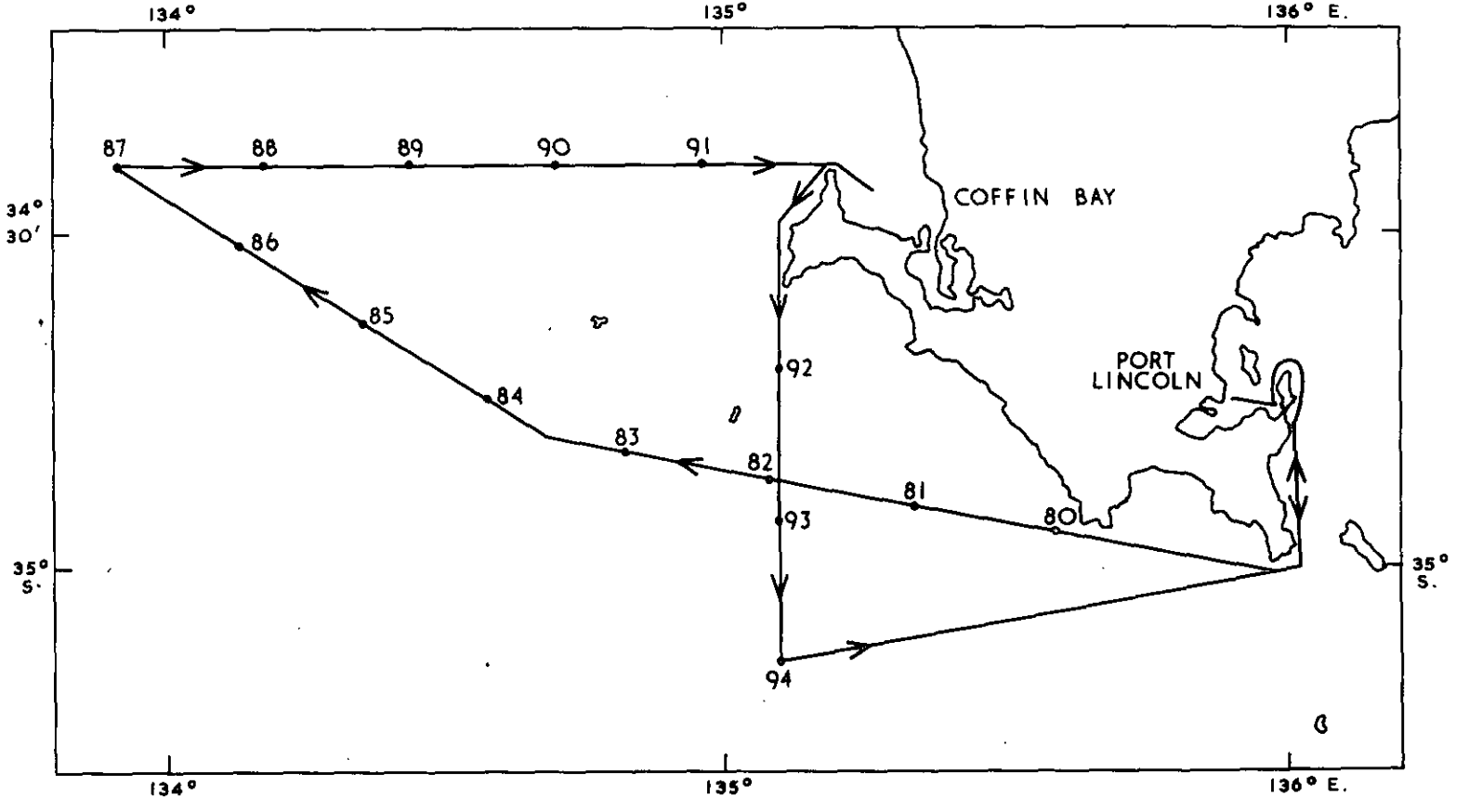

Fig. 4:- Track chart Cruise In 4/63

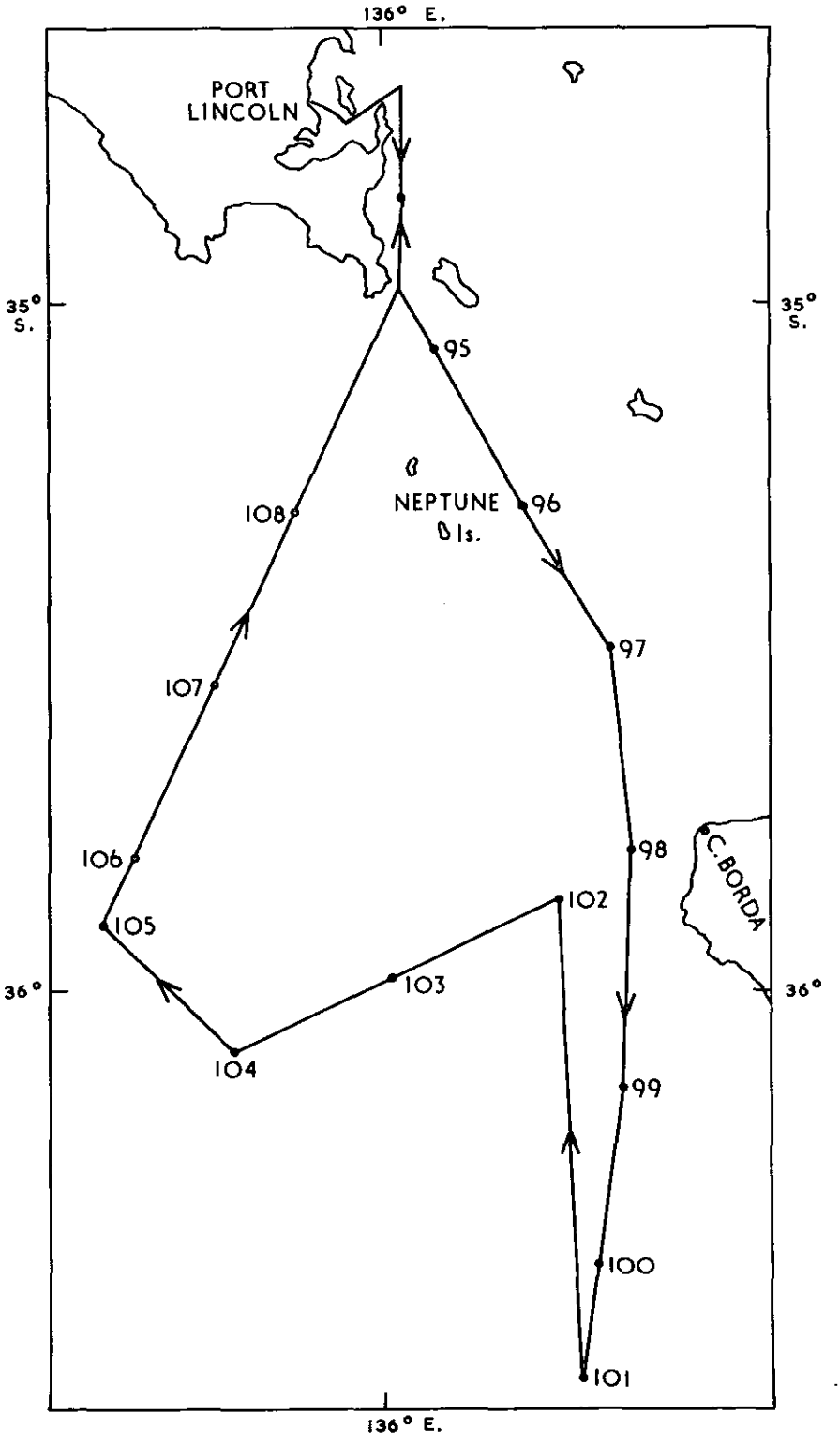

Fig. 5:- Track chart Cruise In 5/63

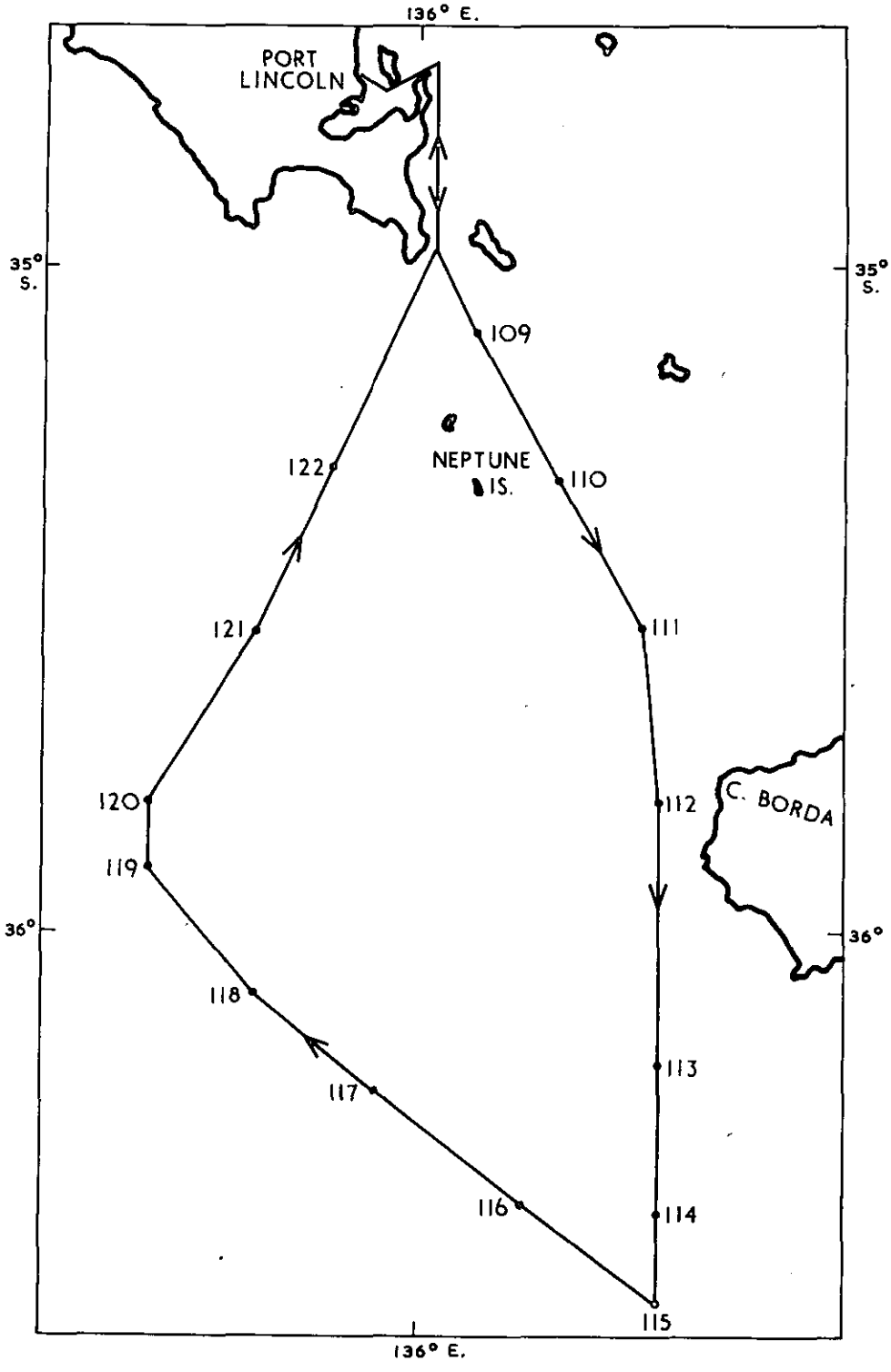

Fig. 6:- Track chart Cruise In 6/63

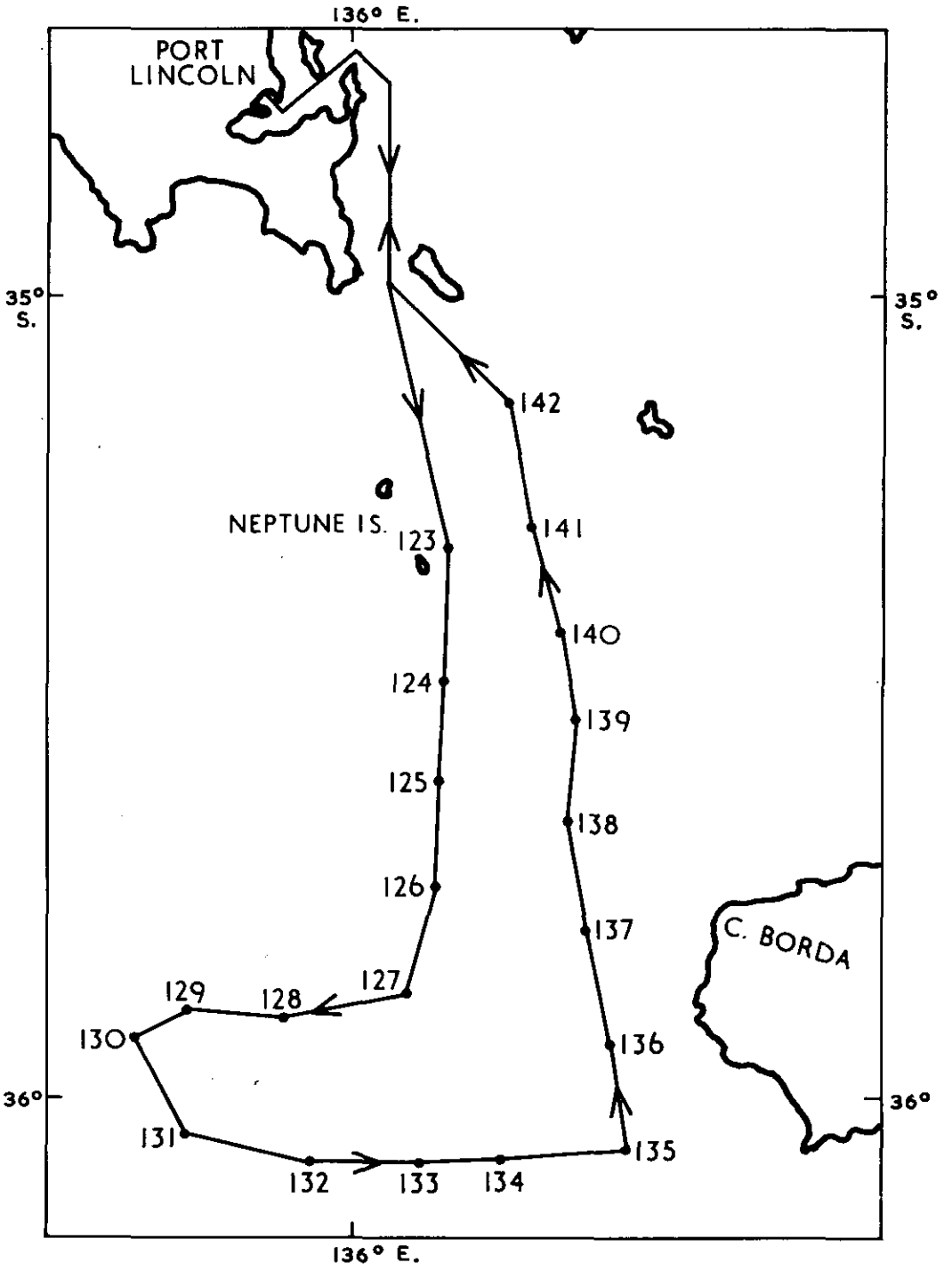

Fig. 7:- Track chart Cruise In 7/63

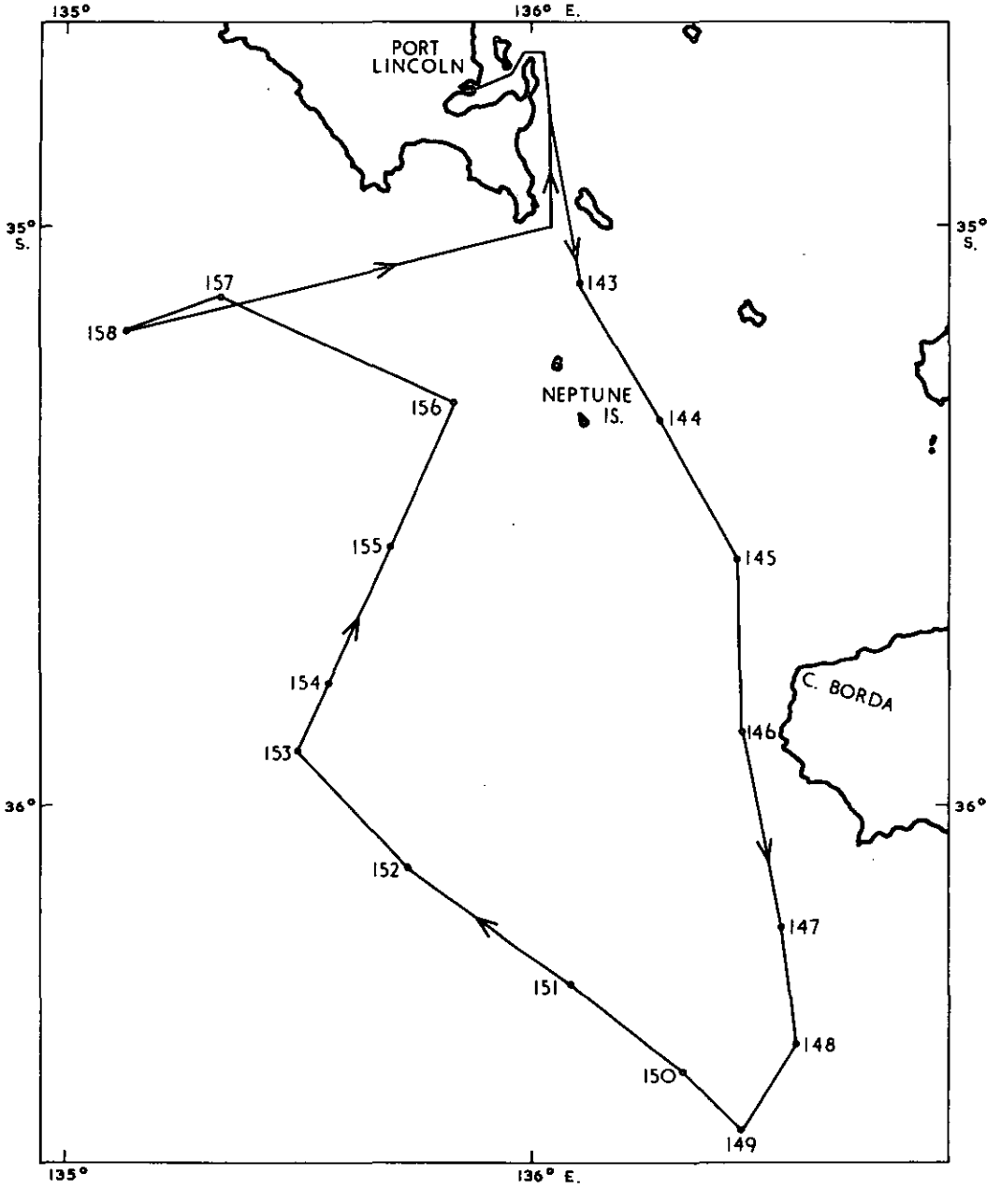

Fig. 8:- Track chart Cruise In 8/63

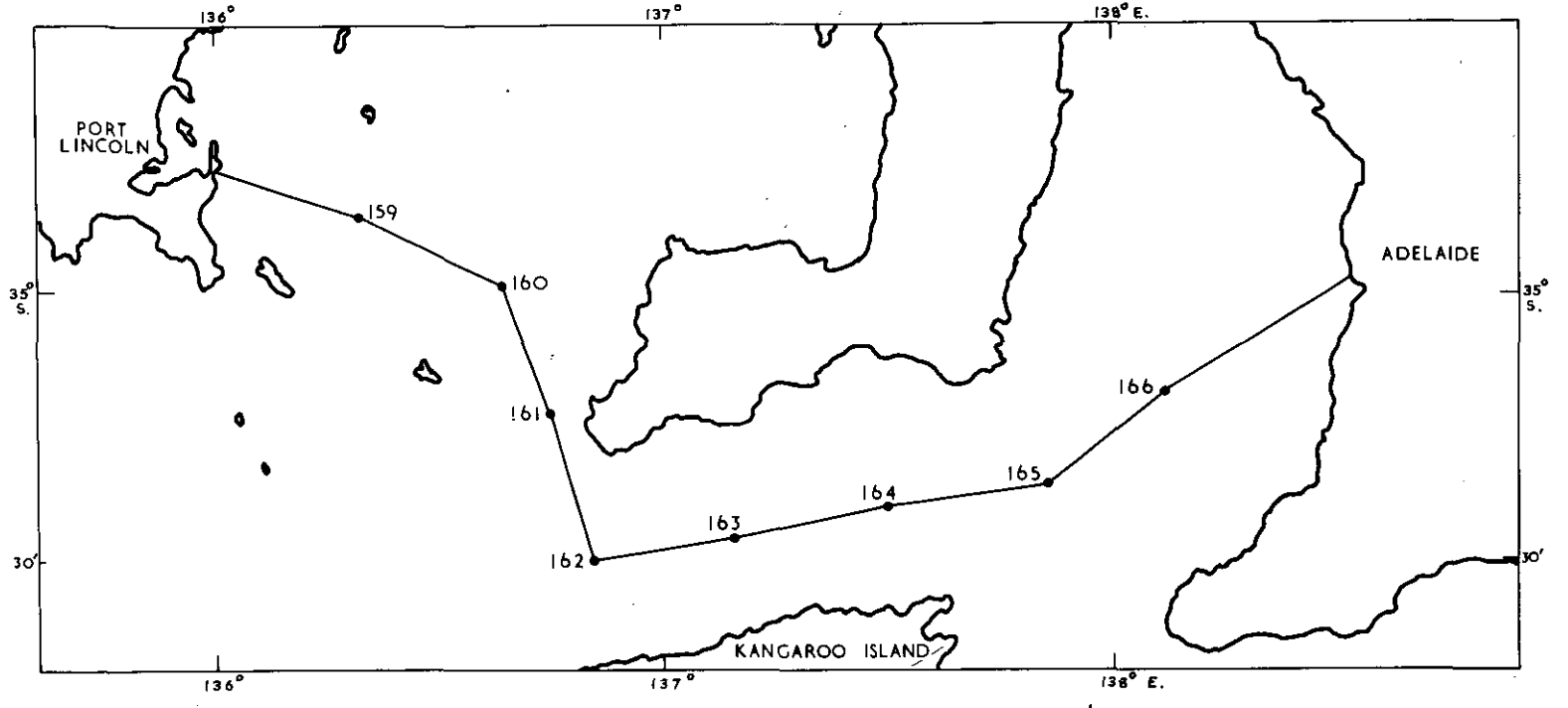

Fig. 9:- Track chart Cruise In 9/63

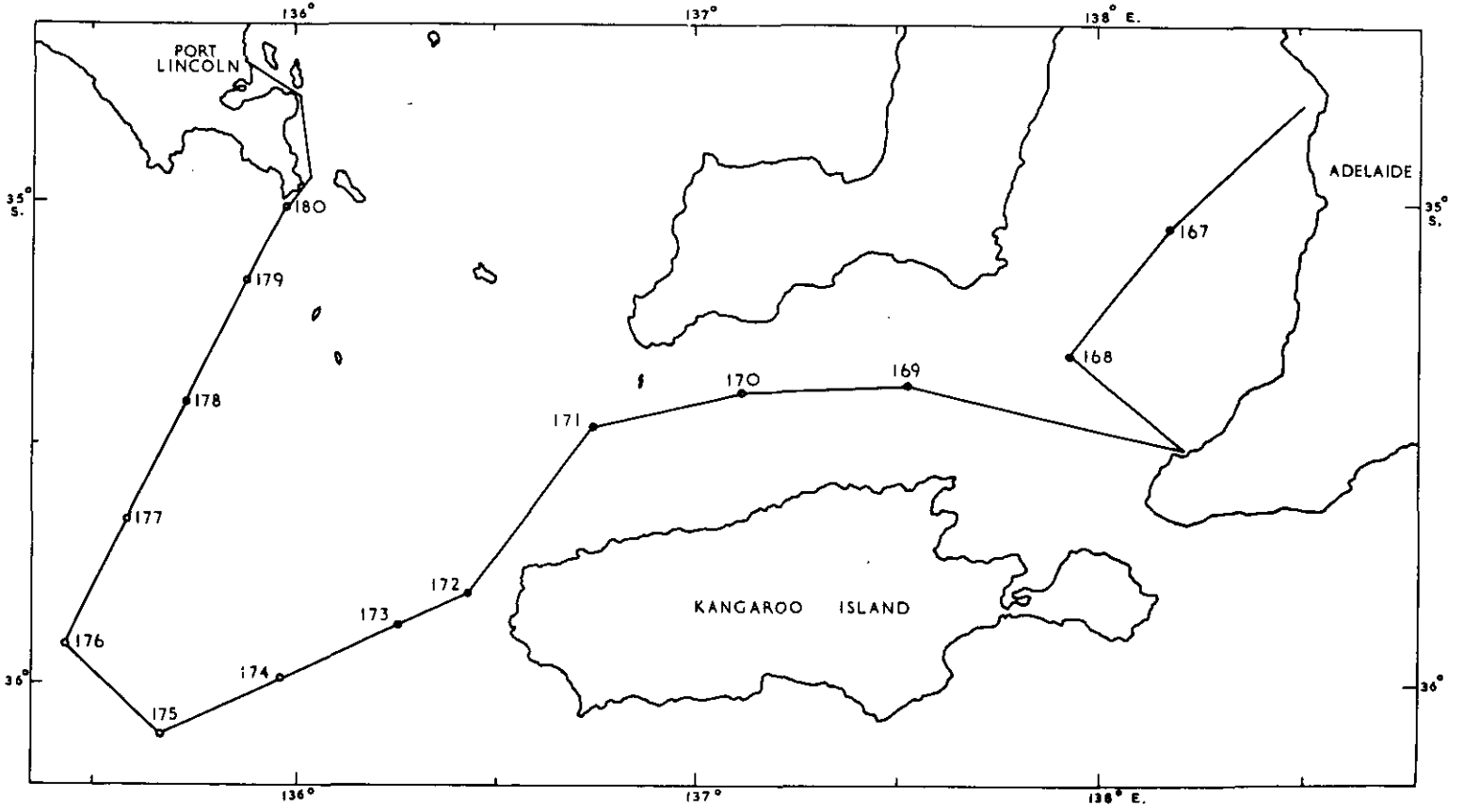

Fig. 10:-Track chart Cruise In 10/63

V. DATA SHEETS

The 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 2	Hydrology
STATION	Gives the station identification. For example, In1/6/63 signifies the 6th station worked by Investigator in 1963, 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 Central Australian Standard Time, GMT $+9\frac{1}{2}$ hr, Code J
LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
AIR TEMP. WET DRY	Air temperatures recorded from wet and dry bulb thermometers in °C
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Navy Hydrogr. Office (1955)
CLOUD TYPE AMT.	Cloud type and amount are coded using Tables 2 and 3 in U.S. Navy Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Navy Hydrogr. Office (1955)
WEA.	Weather is coded using Table 1 in U.S. Navy Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 8 in U.S. Navy Hydrogr. Office (1955)
SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Navy Hydrogr. Office (1955)

BAROM. or ATMOS. PRESSURE	Atmospheric pressure given in millibars
WIRE ANGLES CAST 1 CAST 2 CAST 3	Wire angles are measured at the surface and expressed in degrees for each cast
CAST	Gives the cast number
DEPTH	Sampling depth given in metres
SALINITY	Given in parts per thousand
SIGMA-T	Sigma-t to 2 decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation

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

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
76	1	1	63	1	10	1010 J	35 06 S	138 08 E	21.8	37,11	21	1	21	0	99	0	01	8	1018.0	1
76	1	2	63	1	10	1200 J	35 12 S	137 56 E	21.9	36,82	23	1	23	0	99	0	01	8	1019.0	1
76	1	3	63	1	10	1330 J	35 13 S	137 43 E	21.8	36,74	99	1	99	1	99	0	01	8	1018.0	1
76	1	4	63	1	10	1500 J	35 14 S	137 30 E	20.6		14	2	14	1	99	0	01	8	1017.0	1
76	1	5	63	1	10	1825 J	35 18 S	136 58 E	21.3	36,81	11	3	11	1	99	0	01	8	1016.0	1
76	1	6	63	1	11	0838 J	35 05 S	136 22 E	20.1	36,72	00	1	00	1	23	1	00	8	1018.0	1
76	1	7	63	1	17	1137 J	35 03 S	134 59 E	18.1	36,22	19	3	99	3	18	4	02	8	1016.0	1
76	1	8	63	1	18	1850 J	35 18 S	135 50 E	17.8	35,91	23	3	23	3	20	1	01	8	1018.0	1
76	1	9	63	1	18	2134 J	35 33 S	135 42 E	17.7	35,90	99	1	99	2	20	1			1019.0	1
76	1	10	63	1	19	0051 J	35 48 S	135 33 E	17.3	35,53	00	1	99	1	20	1			1020.0	1
76	1	11	63	1	19	0226 J	35 54 S	135 30 E	17.1	35,52	18	2	20	2	21	1			1020.0	1
76	1	12	63	1	19	0550 J	35 42 S	135 18 E	17.5	35,62	99	1	99	1	19	1	02	8	1022.0	1
76	1	13	63	1	19	0847 J	35 28 S	135 11 E	17.4	35,57	16	1	16	1	19	1	01	7	1023.0	1
76	1	14	63	1	19	1158 J	35 07 S	135 01 E	18.0	35,73	10	1	99	1	19	1	01	7	1023.0	1
76	1	15	63	1	19	1409 J	34 58 S	134 51 E	18.8	35,90	16	1	99	1	19	1	01	8	1023.0	1
76	1	16	63	1	19	1521 J	34 50 S	134 43 E	18.5	35,84	16	2	16	1	19	1	01	8	1022.0	1
76	1	17	63	1	19	1730 J	34 49 S	134 41 E	18.5								01	8	1022.0	1
76	1	18	63	1	19	2017 J	35 01 S	134 30 E	17.9	35,66	12	2	12	2	19	1			1023.0	1
76	1	19	63	1	19	2304 J	35 13 S	134 17 E	18.3	35,75	13	2	13	2	18	1			1023.0	1
76	1	20	63	1	20	0230 J	35 09 S	134 02 E	17.9	35,57	10	2	12	2	18	1			1021.0	1
76	1	21	63	1	20	0549 J	34 58 S	133 44 E	18.5	35,81	99	1	05	2	18	1	00	7	1021.0	1
76	1	22	63	1	20	0730 J	35 03 S	133 50 E	18.4		05	1	05	2	18	1	00	7	1021.0	1
76	1	23	63	1	20	1005 J	35 12 S	134 07 E	18.4		05	3	05	3	18	1	00	7	1022.0	1
76	1	24	63	1	20	1435 J	35 11 S	134 42 E	18.3	35,75	05	2	05	3	18	1	00	8	1019.0	1
76	1	25	63	1	20	1608 J	35 09 S	134 55 E	18.5	35,79	10	2	05	3	18	1	00	8	1018.0	1
76	1	26	63	1	20	1850 J	35 06 S	135 14 E	18.5	35,88	06	2	05	2	18	1	00	8	1017.0	1
76	1	27	63	1	20	2114 J	35 04 S	135 33 E	18.1	35,90	99	1	99	1	18	1	00		1017.0	1
76	1	28	63	1	21	0025 J	35 01 S	135 54 E	18.2	36,18	05	3	05	2	20	1	00		1016.0	1
76	2	29	63	1	25	0925 J	34 58 S	135 39 E	19.0	36,29	14	1	14	2	21	2	01	7	1017.0	1
76	2	30	63	1	25	1040 J	34 55 S	135 29 E	18.0	36,15	17	1	17	2	21	2	01	7	1017.0	1
76	2	31	63	1	25	1230 J	34 47 S	135 11 E	18.2	36,17	17	1	17	2	21	2	01	7	1016.0	1
76	2	32	63	1	25	1345 J	34 46 S	135 05 E	17.0	35,90	17	2	17	2	21	2	01	7	1015.0	1
76	2	33	63	1	25	1545 J	34 47 S	134 59 E	17.9	36,04	17	2	17	2	21	2	01	7	1013.0	1
76	2	34	63	1	25	1700 J	34 43 S	134 48 E	18.5	36,11	18	2	18	2	22	2	01	7	1013.0	1
76	2	35	63	1	25	1900 J	34 50 S	134 43 E	18.0	35,73	14	1	18	2	22	2	01	7	1013.0	1
76	2	36	63	1	26	0815 J	34 50 S	134 43 E	18.4	35,91	99	1	99	1	22	2	00	7	1012.0	1
76	2	37	63	1	26	1014 J	34 49 S	134 36 E	17.7	35,71	99	1	99	1	22	2	00	7	1011.0	1
76	2	38	63	1	26	1145 J	34 54 S	134 42 E	18.7	35,82	99	1	99	1	22	2	00	7	1011.0	1
76	2	39	63	1	26	1304 J	34 49 S	134 49 E	18.8	36,02	10	1	10	1	22	2	00	7	1010.0	1
76	2	40	63	1	26	1645 J	34 25 S	134 57 E	19.0	35,90	16	2	16	1	22	2	01	7	1009.0	1

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	Z	LATITUDE			LONGITUDE			TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
76	2	41	63	1	26	1910	J	34	22	S	135	11	E	18.3	35,93	17	3	17	2	22	2	01	7	1009.0	1
76	3	42	63	2	12	0557	J	34	51	S	136	06	E	20.0	36,95	18	2	99	2	00	0	00	5	1008.0	1
76	3	43	63	2	12	0848	J	35	00	S	136	22	E	18.2	36,09	18	2	18	1	17	2	00	5	1008.0	1
76	3	44	63	2	12	1140	J	35	04	S	136	36	E	18.3	35,97	18	2	18	1	17	2	00	5	1007.0	1
76	3	45	63	2	12	1338	J	35	09	S	136	49	E	18.8	36,02	18	2	18	1	17	2	00	7	1006.0	1
76	3	46	63	2	12	1630	J	34	55	S	136	39	E	20.4	36,82	21	4	21	4	22	1	01	6	1005.0	1
76	3	47	63	2	15	1130	J	34	40	S	136	13	E	19.9	36,89	15	2	18	1	18	1	03	8	1024.0	1
76	3	48	63	2	15	1216	J	34	42	S	136	06	E	19.9	36,97	15	2	18	1	18	1	03	8	1024.0	1
76	3	49	63	2	22	1130	J	35	04	S	135	58	E	18.1	36,33	15	3	15	3	22	4	03	8	1022.0	1
76	3	50	63	2	22	1415	J	35	18	S	135	50	E	18.5	36,17	15	3	15	3	22	4	02	8	1021.0	1
76	3	51	63	2	22	1705	J	35	32	S	135	42	E	17.9	35,95	17	3	16	3	22	4	01	8	1021.0	1
76	3	52	63	2	22	2037	J	35	48	S	135	33	E	17.7	35,71	14	3	14	3	22	4		9	1023.0	1
76	3	53	63	2	22	2237	J	35	54	S	135	30	E	17.8	35,62	14	3	14	3	22	4		9	1023.0	1
76	3	54	63	2	23	0208	J	35	41	S	135	20	E	17.9	35,62	11	3	13	3	22	4		9	1021.0	1
76	3	55	63	2	23	0455	J	35	27	S	135	10	E	17.8	35,70	09	3	11	3	22	4		9	1021.0	1
76	3	56	63	2	23	0750	J	35	13	S	134	59	E	17.7	35,73	13	2	11	3	21	3	02	8	1023.0	1
76	3	57	63	2	23	1038	J	34	59	S	134	48	E	17.8	35,71	07	2	10	2	21	2	01	8	1023.0	1
76	3	58	63	2	23	1228	J	34	53	S	134	44	E	18.0	35,81	10	2	10	2	21	2	01	8	1022.0	1
76	3	59	63	2	23	1650	J	35	01	S	134	28	E	18.3	35,71	16	4	16	3	21	2	03	7	1023.0	1
76	3	60	63	2	23	1953	J	35	12	S	134	15	E	18.8	35,90	15	4	15	3	21	2	02	7	1024.0	1
76	3	61	63	2	23	2202	J	35	09	S	134	06	E	18.8	35,88	12	4	12	3	21	2	02	6	1024.0	1
76	3	62	63	2	24	0240	J	34	59	S	133	41	E	18.7	35,86	10	4	11	4	21	2	02	6	1024.0	1
76	3	63	63	2	24	0601	J	35	03	S	134	06	E	18.4	35,82	10	3	99	3	21	2	02	8	1024.0	1
76	3	64	63	2	24	0931	J	35	08	S	134	26	E	18.1	35,71	11	4	11	4	99	1	02	8	1026.0	1
76	3	65	63	2	24	1235	J	35	06	S	134	46	E	17.9	35,66	12	3	99	4	99	1	02	8	1026.0	1
76	3	66	63	2	24	1535	J	35	05	S	135	05	E	18.0	35,86	14	3	99	3	99	1	00	8	1025.0	1
76	3	67	63	2	24	1752	J	35	04	S	135	24	E	17.7	35,99	12	3	14	3	20	1	01	8	1024.0	1
76	3	68	63	2	24	1943	J	35	02	S	135	42	E	17.7	36,11	13	3	99	4	20	1	01	7	1025.0	1
76	3	69	63	2	26	0316	J	35	00	S	136	22	E	20.0		99	1	99	1	99	1	00	7	1013.0	1
76	3	70	63	2	26	0517	J	35	04	S	136	36	E	19.3	36,13	99	0	99	1	99	0	01	7	1013.0	1
76	3	71	63	2	26	0720	J	35	08	S	136	48	E	18.3	35,99	99	0	99	1	24	2	03	6	1015.0	1
76	3	72	63	2	26	1026	J	34	54	S	136	39	E	20.5		23	3	23	1	24	2	03	6	1017.0	1
76	3	73	63	2	26	1234	J	34	43	S	136	44	E	21.7		06	2	06	1	24	2	03	6	1014.0	1
76	3	74	63	2	26	1443	J	34	31	S	136	45	E	21.6		05	2	06	1	20	1	02	6	1013.0	1
76	3	75	63	2	26	1655	J	34	21	S	136	53	E	22.0		36	1	36	1	20	1	02	6	1013.0	1
76	3	76	63	2	26	1958	J	34	09	S	137	13	E	21.2		36	1	36	1	20	1	02	7	1014.0	1
76	3	77	63	2	26	2200	J	34	09	S	136	58	E	21.6		36	1	36	1	20	1	02	7	1014.0	1
76	3	78	63	2	27	0003	J	34	09	S	136	44	E	21.9		03	2	03	1	99		02	7	1013.0	1
76	3	79	63	2	27	0153	J	34	09	S	136	29	E	21.4		00	0	00	0	00	0	02	7	1012.0	1
76	4	80	63	4	10	1945	J	34	57	S	135	33	E	17.8	35,82	15	2	99	2	21	3	01	3	1024.0	1

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
76	4	81	63	4	10	2230	J 34 55 S	135 17 E	17.7	35.86	18	2	99	3	22	3	03	3	1024.0	1
76	4	82	63	4	11	0033	J 34 52 S	135 02 E	18.1	35.90	16	1	99	3	22	3	02	6	1025.0	1
76	4	83	63	4	11	0238	J 34 50 S	134 47 E	18.3	35.88	00	0	99	3	22	2	01	6	1025.0	1
76	4	84	63	4	11	0400	J 34 47 S	134 36 E	18.3	35.91	00	0	99	3	21	2	01	6	1024.0	1
76	4	85	63	4	11	0635	J 34 39 S	134 22 E	18.2	35.88	00	0	99	3	21	2	01	8	1024.0	2
76	4	86	63	4	11	0925	J 34 33 S	134 08 E	18.3	35.97	04	1	99	3	21	2	03	7	1025.0	1
76	4	87	63	4	11	1154	J 34 26 S	133 55 E	18.2	36.00	01	1	99	2	22	2	03	8	1024.0	2
76	4	88	63	4	11	1433	J 34 26 S	134 10 E	18.3	35.95	36	1	99	1	22	2	02	8	1022.0	1
76	4	89	63	4	11	1700	J 34 26 S	134 26 E	18.5	35.93	00	1	00	0	22	2	02	8	1021.0	1
76	4	90	63	4	11	1942	J 34 26 S	134 42 E	17.9	35.88	09	3	09	2	22	3	02	1	1021.0	1
76	4	91	63	4	11	2220	J 34 26 S	134 58 E	17.4	35.81	11	2	10	2	22	2	02	3	1021.0	1
76	4	92	63	4	12	1035	J 34 42 S	135 03 E	17.4	35.82	31	2	99	2	22	5	02	7	1018.0	1
76	4	93	63	4	12	1315	J 34 58 S	135 03 E	18.4	35.84	21	2	99	2	22	5	01	7	1019.0	1
76	4	94	63	4	12	1548	J 35 14 S	135 03 E	18.3	35.91	23	3	23	2	22	5	03	5	1020.0	1
76	5	95	63	4	17	1650	J 35 04 S	136 05 E	16.9	35.84	14	1	14	0	22	1	01	7	1025.0	1
76	5	96	63	4	17	1928	J 35 18 S	136 15 E	17.2	35.95	18	1	16	0	22	1	01		1025.0	1
76	5	97	63	4	17	2210	J 35 31 S	136 25 E	17.3	35.82	09	3	09	3	22	1	01	2	1026.0	1
76	5	98	63	4	18	0130	J 35 47 S	136 27 E	16.9	35.77	09	5	09	4	22	2	01	2	1025.0	1
76	5	99	63	4	18	0513	J 36 08 S	136 26 E	17.1		06	5	08	5	22	3	01	2	1025.0	1
76	5	100	63	4	18	0811	J 36 23 S	136 23 E	17.5	35.79	09	4	09	4	21	2	01	6	1025.0	1
76	5	101	63	4	18	1147	J 36 33 S	136 22 E	18.1	35.88	08	4	09	4	20	3	01	6	1024.0	1
76	5	102	63	4	18	1906	J 35 52 S	136 19 E	17.6	35.82	36	1		1	22	1	01	7	1023.0	1
76	5	103	63	4	18	2144	J 35 58 S	136 01 E	17.8	35.82	05	1	05	1	22	1	01	2	1022.0	1
76	5	104	63	4	19	0025	J 36 05 S	135 44 E	18.2	35.97	04	3	04	3	22	2	01	1	1020.0	2
76	5	105	63	4	19	0352	J 35 54 S	135 30 E	16.6	35.50	36	5	36	4	22	2	03	1	1017.0	1
76	5	106	63	4	19	0623	J 35 48 S	135 34 E	18.3	35.97	36	4	36	4	22	2	03	2	1016.0	1
76	5	107	63	4	19	0957	J 35 33 S	135 42 E	17.6	35.91	33	4	35	4	22	1	03	2	1016.0	1
76	5	108	63	4	19	1300	J 35 18 S	135 50 E	17.3	35.99	34	4	34	4	23	1	03	3	1015.0	1
76	6	109	63	5	9	2143	J 35 06 S	136 06 E	16.7	35.99	14	1	14		23	2	00	4	1022.0	1
76	6	110	63	5	10	0116	J 35 19 S	136 16 E	17.0	35.93	14	1	14		23	2	00	4	1022.0	1
76	6	111	63	5	10	0346	J 35 32 S	136 25 E	17.1	35.93	14	1	14	1	22	2	00	4	1022.0	1
76	6	112	63	5	10	0626	J 35 48 S	136 27 E	16.5	35.91	13	2	14	1	22	2	00	6	1022.0	1
76	6	113	63	5	10	0954	J 36 11 S	136 27 E	17.2	35.97	11	1	12	2	21	2	00	5	1022.5	1
76	6	114	63	5	10	1203	J 36 25 S	136 27 E	17.6	35.99	12	1	12	2	21	2	00	5	1022.0	1
76	6	115	63	5	10	1323	J 36 33 S	136 27 E	17.6	35.97	09	2	10	2	21	2	02	5	1020.0	1
76	6	116	63	5	10	1633	J 36 24 S	136 12 E	17.3	35.91	09	2	09	2	21	2	02	4	1020.0	1
76	6	117	63	5	10	1920	J 36 13 S	135 56 E	17.8	35.97	13	2	13	2	21	2	02	3	1020.0	1
76	6	118	63	5	10	2149	J 36 05 S	135 42 E	16.6	35.71	13	3	13	3	22	2	02	2	1020.0	1
76	6	119	63	5	11	0103	J 35 54 S	135 30 E	16.1	35.52	11	2	13	3	22	2	01	2	1019.0	1
76	6	120	63	5	11	0300	J 35 48 S	135 30 E	17.7	36.00	09	2	12	3	22	2	01	3	1018.0	1

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
76	6	121	63	5	11	0543	J 35	33 S 135	42 E 17.5	36.00	09	1	10	2	22	1	01	3	1018.0	1
76	6	122	63	5	11	0839	J 35	18 S 135	50 E 17.0	35.93	08	1	09	1	22	1	02	5	1018.0	1
76	7	123	63	5	14	1130	J 35	19 S 136	09 E 17.4		00	0	00	0	22	1	45	6	1016.0	1
76	7	124	63	5	14	1310	J 35	28 S 136	09 E 17.5		02	1	02		22	1	45	6	1014.0	1
76	7	125	63	5	14	1430	J 35	36 S 136	08 E 17.5		36	1	36	1	20	1	03	6	1014.0	1
76	7	126	63	5	14	1645	J 35	44 S 136	07 E 17.6		36	1	36	1	19	1	03	5	1013.0	1
76	7	127	63	5	14	1900	J 35	52 S 136	05 E 17.2		00	0	36	1	18	1	03	5	1014.0	1
76	7	128	63	5	15	0745	J 35	54 S 135	54 E 17.5		04	2	05	2	20	1	03	6	1014.0	1
76	7	129	63	5	15	0900	J 35	53 S 135	45 E 17.8		04	2	04	2	20	1	03	7	1015.0	1
76	7	130	63	5	15	1015	J 35	56 S 135	40 E 17.2		00	1	00	1	20	1	01	7	1014.0	1
76	7	131	63	5	15	1145	J 36	03 S 135	45 E 17.0		05	1	08	1	20	1	02	6	1014.0	1
76	7	132	63	5	15	1305	J 36	05 S 135	56 E 17.8		00	0	08	1	19	1	02	6	1014.0	1
76	7	133	63	5	15	1430	J 36	05 S 136	06 E 17.8		11	1	11	1	18	1	02	8	1014.0	1
76	7	134	63	5	15	1530	J 36	05 S 136	14 E 17.9		11	1	11	1	18	1	02	7	1014.0	1
76	7	135	63	5	15	1630	J 36	04 S 136	26 E 17.4		13	1	12	1	16	1	02	7	1015.0	1
76	7	136	63	5	15	1730	J 35	56 S 136	24 E 17.2		13	1	12	1	00	0	02	5	1015.0	1
76	7	137	63	5	15	1845	J 35	47 S 136	22 E 16.9		18	2	18	1	00	0	02	2	1016.0	1
76	7	138	63	5	15	2000	J 35	39 S 136	20 E 17.0		14	2	14	2	00	0	02	2	1016.0	1
76	7	139	63	5	15	2145	J 35	32 S 136	21 E 17.4		14	1	14	1	00	0	02	3	1017.0	1
76	7	140	63	5	15	2230	J 35	25 S 136	19 E 16.9		04	1	09	1	00	0	02	3	1017.0	1
76	7	141	63	5	15	2345	J 35	17 S 136	17 E 17.3		05	1	05	1	00	0	02	4	1017.0	1
76	7	142	63	5	16	0100	J 35	08 S 136	15 E 17.2		05	3	05	2	00	0	02	4	1017.0	1
76	8	143	63	5	18	1729	J 35	06 S 136	06 E 16.8	35.91	11	1	11	2	16	2	03	6	1023.0	1
76	8	144	63	5	18	2047	J 35	20 S 136	17 E 17.4	35.97	13	3	13	2	21	1	01	4	1024.0	1
76	8	145	63	5	18	2339	J 35	34 S 136	27 E 17.0	35.90	18	3	99	2	20	1	01	5	1023.0	1
76	8	146	63	5	19	0228	J 35	52 S 136	27 E 16.8	35.90	19	3	99	2	20	1	02	4	1022.0	1
76	8	147	63	5	19	0511	J 36	12 S 136	32 E 17.0	35.91	19	3	19	3	20	1	02	5	1021.0	1
76	8	148	63	5	19	0805	J 36	24 S 136	34 E 17.1	35.93	15	2	99	3	20	1	51	4	1022.0	1
76	8	149	63	5	19	1017	J 36	33 S 136	27 E 17.0	35.88	21	2	99	3	20	1	51	5	1022.0	1
76	8	150	63	5	19	1245	J 36	27 S 136	19 E 17.3	35.86	23	2	99	2	20	1	51	6	1020.0	1
76	8	151	63	5	19	1445	J 36	18 S 136	05 E 16.9	35.90	18	3	99	2	00	1	01	6	1020.0	1
76	8	152	63	5	19	1804	J 36	06 S 135	44 E 16.4	35.61	18	1	99	1	18	1	01	6	1020.0	1
76	8	153	63	5	19	2117	J 35	54 S 135	30 E 16.3	35.62	24	1	99	1	00	0	01	3	1020.0	1
76	8	154	63	5	19	2321	J 35	47 S 135	34 E 17.6	35.73	32	1	00	0	00		01	3	1020.0	1
76	8	155	63	5	20	0202	J 35	33 S 135	42 E 17.6	36.04	32	1	00		00		01	6	1018.0	1
76	8	156	63	5	20	0443	J 35	18 S 135	50 E 17.1	35.99	35	1	00		20	1	01	6	1017.0	1
76	8	157	63	5	20	1037	J 35	07 S 135	20 E 17.4	35.91	35	4	35	3	22	1	01	7	1016.0	1
76	8	158	63	5	20	1235	J 35	11 S 135	08 E 17.4	35.95	33	5	34	4	22	1	03	6	1012.0	1
76	9	159	63	6	12	1426	J 34	51 S 136	19 E 16.3	35.94	04	2	04	2	16	1	01	8	1026.0	1
76	9	160	63	6	12	1658	J 34	59 S 136	38 E 16.3	35.92	04	2	04	2	18	1	01	7	1025.0	1

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	Z	LATITUDE			LONGITUDE			TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
/6	9	161	63	6	12	1930	J	35	14	S	136	44	E	16.2	36.10	01	1	01	1	22	1	01	2	1026.0	1
/6	9	162	63	6	12	2215	J	35	30	S	136	50	E	16.3	35.98	07	2	07	2	24	3	01	2	1028.0	1
/6	9	163	63	6	13	0045	J	35	27	S	137	10	E	16.0		01	3	01	2	22	2	00	4	1028.0	1
/6	9	164	63	6	13	0337	J	35	24	S	137	30	E	15.7	36.17	04	4	04	3	99		00	4	1027.0	1
/6	9	165	63	6	13	0620	J	35	21	S	137	51	E	15.7		04	4	06	3	99		00	4	1027.0	1
/6	9	166	63	6	13	0918	J	35	11	S	138	07	E	15.7	36.61	01	4	04	3	99		01	8	1029.0	1
/6	10	167	63	12	3	1101	J	35	03	S	138	10	E	18.3	36.55	16	1	00	0	00	0	00	8	1022.0	1
/6	10	168	63	12	3	1354	J	35	19	S	137	54	E	18.3	36.45	14	3	14	2	14	1	00	8	1020.0	1
/6	10	169	63	12	4	0022	J	35	23	S	137	30	E	17.6	36.44	13	3	13	2	25	1	00		1016.0	1
/6	10	170	63	12	4	0316	J	35	27	S	137	06	E	17.7	36.40	09	2	13	2	24	1	00	7	1015.0	1
/6	10	171	63	12	4	0620	J	35	32	S	136	43	E	17.1		04	2	08	2	24	1	00	8	1013.0	1
/6	10	172	63	12	4	0918	J	35	48	S	136	25	E	16.3	35.84	05	3	06	3	20	1	00	8	1013.0	1
/6	10	173	63	12	4	1102	J	35	53	S	136	15	E	16.8	35.91	01	3	04	3	21	1	00	8	1012.0	1
/6	10	174	63	12	4	1336	J	35	59	S	135	57	E	16.8	35.75	01	3	01	3	21	1	00	7	1010.0	1
/6	10	175	63	12	4	1618	J	36	06	S	135	39	E	17.1	35.62	02	1	01	2	21	1	00	7	1009.0	1
/6	10	176	63	12	4	1938	J	35	55	S	135	25	E	17.4	35.64	31	2	99	2	21	2	00	7	1008.0	1
/6	10	177	63	12	4	2244	J	35	41	S	135	35	E	17.2	35.73	27	1	99	2	21	2	01	4	1010.0	1
/6	10	178	63	12	5	0133	J	35	27	S	135	43	E	17.3	35.84	18	4	02	4	21	2	01	6	1010.0	1
/6	10	179	63	12	5	0414	J	35	13	S	135	51	E	16.8	35.90	18	5	18	4	99	1	02	6	1011.0	1
/6	10	180	63	12	5	0524	J	35	03	S	135	59	E	17.1	36.02	18	4	18	4	18	1	02	7	1012.0	1

DATA

PART 2

HYDROLOGY

SUBSURFACE SAMPLES

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 6/63	11/ 1/63	0838 J	35 05 S	136 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
55	20.2	22.0	00	1	*	0	0	8	00	1	23	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.10	36.720	26.07	5.21	106	***	***	***
1	25	18.64	36.560	26.32	5.24	103	***	***	***
1	50	18.60	36.560	26.33	5.22	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 7/63	17/ 1/63	1137 J	35 03 S	134 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
62	13.3	15.7	19	3	*	9	7	8	99	3	18	4	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.09	36.220	26.20	5.29	103	***	***	***
1	25	17.82	36.220	26.27	5.41	105	***	***	***
1	50	16.31	35.990	26.45	5.26	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 8/63	18/ 1/63	1850 J	35 18 S	135 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	15,5	17,8	23	3	*	8	1	8	23	3	20	1	1018,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,79	35,910	26,04	5,48	106	***	***	***
1	24	17,58	35,910	26,09	5,54	106	***	***	***
1	48	14,48	35,530	26,51	5,78	104	***	***	***
1	72	13,64	35,390	26,58	5,36	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 9/63	18/ 1/63	2134 J	35 33 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
100	15,4	17,1	99	1	*	*	*	*	99	2	20	1	1019,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,71	35,900	26,05	5,41	104	***	***	***
1	25	17,20	35,810	26,11	5,65	108	***	***	***
1	50	14,51	35,710	26,19	5,55	104	***	***	***
1	75	13,54	35,390	26,60	5,41	95	***	***	***
1	90	13,20	35,320	26,62	5,38	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 10/63	19/ 1/63	0051 J	35 48 S	135 33 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
161	16.6	17.3	00	1	*	*	*	*	99	1	20	1	1020.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.32	35.530	25.86	5.44	104	***	***	***
1	25	17.02	35.530	25.93	5.50	104	***	***	***
1	50	16.46	***	***	5.68	***	***	***	***
1	75	14.00	35.280	26.42	6.10	109	***	***	***
1	100	13.51	35.280	26.52	5.77	102	***	***	***
1	125	13.52	35.280	26.52	5.52	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 11/63	19/ 1/63	0226 J	35 54 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15.7	16.7	18	2	*	*	*	*	20	2	21	1	1020.0	5	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.10	35.520	25.91	5.47	104	***	***	***
2	25	16.98	35.520	25.93	5.48	104	***	***	***
2	50	16.17	35.460	26.08	5.71	106	***	***	***
2	75	14.47	35.410	26.42	***	***	***	***	***
2	100	13.96	35.410	26.53	5.70	101	***	***	***
1	150	13.75	35.430	26.59	5.47	97	***	***	***
1	200	13.07	35.350	26.67	5.57	97	***	***	***
1	300	11.74	35.140	26.77	5.58	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 12/63	19/ 1/63	0550 J	35 42 S	135 18 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
***	15.2	16.6	99	1	*	7	7	8	99	1	19	1	1022.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.53	35.620	25.88	5.48	105	***	***	***
1	25	17.43	35.620	25.90	5.51	105	***	***	***
1	50	16.90	35.590	26.01	5.63	107	***	***	***
1	75	15.07	35.520	26.38	5.68	103	***	***	***
1	100	14.47	35.460	26.46	5.60	101	***	***	***
2	150	13.89	35.460	26.58	5.44	97	***	***	***
2	200	13.30	35.370	26.64	5.51	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 13/63	19/ 1/63	0847 J	35 28 S	135 11 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
104	15.6	17.0	16	1	*	7	3	7	16	1	19	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.40	35.570	25.87	5.57	106	***	***	***
1	25	17.13	35.620	25.98	5.51	105	***	***	***
1	50	16.41	35.700	26.21	5.63	106	***	***	***
1	75	14.65	35.460	26.42	5.80	105	***	***	***
1	90	14.31	35.460	26.49	5.74	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 14/63	19/ 1/63	1158 J	35 07 S	135 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
91	16.4	18.1	10	1	*	7	1	7	99	1	19	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.00	35.730	25.85	5.45	105	***	***	***
1	25	17.58	35.820	26.02	5.43	104	***	***	***
1	50	16.17	35.730	26.29	5.63	105	***	***	***
1	75	14.41	35.480	26.49	5.60	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 15/63	19/ 1/63	1409 J	34 58 S	134 51 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
85	16.7	19.4	16	1	*	7	1	8	99	1	19	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.84	35.900	25.77	5.42	107	***	***	***
1	25	17.81	35.900	26.03	5.52	107	***	***	***
1	50	15.53	35.550	26.30	5.76	106	***	***	***
1	75	***	35.530	***	5.73	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 16/63	19/ 1/63	1521 J	34 50 S	134 43 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	16,5	18,3	16	2	*	7	1	8	16	1	19	1	1022,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,54	35,840	25,80	5,42	106	***	***	***
1	25	17,39	35,810	26,08	5,50	105	***	***	***
1	50	15,77	35,640	26,31	5,76	107	***	***	***
1	75	14,52	35,550	26,52	5,47	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 18/63	19/ 1/63	2017 J	35 01 S	134 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	16,4	17,8	12	2	*	*	*	*	12	2	19	1	1023,0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,90	35,660	25,82	5,50	106	***	***	***
1	25	17,42	35,660	25,94	5,48	105	***	***	***
1	50	16,48	35,530	26,06	5,51	103	***	***	***
1	75	14,56	35,370	26,37	5,97	108	***	***	***
1	100	14,55	35,520	26,49	5,32	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 19/63	19/ 1/63	2304 J	35 13 S	134 17 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15,3	17,8	13	2	*	*	*	*	13	2	18	1	1023,0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18,34	35,750	25,78	5,50	107	***	***	***
2	25	17,98	35,750	25,87	5,44	105	***	***	***
2	50	15,99	35,520	26,17	5,70	106	***	***	***
2	75	14,39	35,410	26,44	5,90	106	***	***	***
2	100	14,16	35,390	26,47	5,52	99	***	***	***
1	150	13,88	35,390	26,53	5,44	97	***	***	***
1	200	13,08	35,320	26,64	5,55	97	***	***	***
1	300	11,35	35,050	26,77	5,44	91	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 20/63	20/ 1/63	0230 J	35 09 S	134 02 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	16,1	17,8	10	2	*	0	0	*	12	2	18	1	1021,0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17,88	35,570	25,76	5,42	105	***	***	***
2	25	17,30	35,550	25,88	5,49	105	***	***	***
2	50	15,61	35,480	26,22	5,82	107	***	***	***
2	75	14,76	35,500	26,43	5,82	105	***	***	***
2	100	14,06	35,370	26,48	5,79	103	***	***	***
2	150	13,73	35,370	26,55	5,46	97	***	***	***
2	200	12,95	35,320	26,67	5,61	98	***	***	***
2	300	11,03	35,080	26,85	5,44	91	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 21/63	20/ 1/63	0549 J	34 58 S	133 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
146	16.7	18.3	99	1	*	0	0	7	05	2	18	1	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.50	35.810	25.78	5.33	104	***	***	***
1	25	18.28	35.810	25.84	5.35	104	***	***	***
1	50	18.18	35.810	25.87	5.35	104	***	***	***
1	75	16.60	35.680	26.15	5.59	105	***	***	***
1	100	15.14	35.500	26.34	5.67	103	***	***	***
1	125	14.44	35.480	26.48	5.58	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 24/63	20/ 1/63	1435 J	35 11 S	134 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
105	17.8	19.0	05	2	*	0	0	8	05	3	18	1	1019.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.26	35.750	25.80	5.48	107	***	***	***
1	25	17.49	35.730	25.97	5.50	105	***	***	***
1	50	16.25	35.660	26.21	5.73	107	***	***	***
1	75	14.84	35.440	26.36	5.86	106	***	***	***
1	90	14.30	35.430	26.47	5.71	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 25/63	20/ 1/63	1608 J	35 09 S	134 55 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
101	18.2	19.4	10	2	*	0	0	8	05	3	18	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.45	35.790	25.78	5.50	107	***	***	***
1	25	17.68	35.810	25.99	5.50	106	***	***	***
1	50	15.89	35.640	26.28	5.74	106	***	***	***
1	75	14.91	35.500	26.39	5.76	105	***	***	***
1	90	14.22	35.500	26.55	5.46	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 26/63	20/ 1/63	1850 J	35 06 S	135 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
85	15.6	17.2	06	2	*	0	0	8	05	2	18	1	1017.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.47	35.880	25.84	***	***	***	***	***
1	25	17.65	35.880	26.05	***	***	***	***	***
1	50	16.04	35.750	26.33	***	***	***	***	***
1	75	14.30	35.480	26.51	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 27/63	20/ 1/63	2114 J	35 04 S	135 33 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
73	18.1	19.7	99	1	*	0	0	*	99	1	18	1	1017.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.14	35.900	25.94	***	***	***	***	***
1	25	17.77	35.900	26.04	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 1/ 28/63	21/ 1/63	0025 J	35 01 S	135 54 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
70	18.1	21.7	05	3	*	0	0	*	05	2	20	1	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.18	36.180	26.15	***	***	***	***	***
1	25	17.27	36.130	26.33	***	***	***	***	***
1	50	15.65	35.860	26.51	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 2/ 37/63	26/ 1/63	1014 J	34 49 S	134 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
88	***	***	99	1	*	0	0	7	99	1	22	2	1011.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.72	35.710	25.90	5.50	106	***	***	***
1	25	17.37	35.710	25.99	5.51	105	***	***	***
1	50	16.09	35.680	26.27	5.61	104	***	***	***
1	75	14.48	35.500	26.49	5.57	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 2/ 38/63	26/ 1/63	1145 J	34 54 S	134 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
88	***	***	99	1	*	0	0	7	99	1	22	2	1011.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.67	35.820	25.75	5.38	106	***	***	***
1	25	17.48	35.790	26.02	5.42	104	***	***	***
1	50	16.34	35.680	26.21	5.63	105	***	***	***
1	75	14.32	35.480	26.51	5.55	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 2/ 39/63	26/ 1/63	1304 J	34 49 S	134 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
73	19,5	20,8	10	1	*	0	0	7	10	1	22	2	1010,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,75	36,020	25,88	5,38	106	***	***	***
1	25	17,63	35,950	26,11	5.49	106	***	***	***
1	50	14,99	35,620	26,47	5.57	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 42/63	12/ 2/63	0557 J	34 51 S	136 06 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
20	15,9	16,4	18	2	*	*	0	5	99	2	00	0	1008,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20,03	36,952	26,26	4,92	100	***	***	***
1	15	20,02	36,997	26,30	4,87	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 43/63	12/ 2/63	0848 J	35 00 S	136 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
50	18,4	19,1	18	2	*	*	0	5	18	1	17	2	1008,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,23	36,090	26,07	5,26	102	***	***	***
1	10	18,13	36,090	26,09	5,12	100	***	***	***
1	20	17,88	36,090	26,15	5,12	99	***	***	***
1	30	17,89	36,150*	26,20	5,16	100	***	***	***
1	40	17,86	36,080	26,15	5,15	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 44/63	12/ 2/63	1140 J	35 04 S	136 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	18,9	19,7	18	2	*	*	0	5	18	1	17	2	1007,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,30	35,970	25,96	5,27	103	***	***	***
1	10	17,57	35,990	26,15	5,29	102	***	***	***
1	20	17,19	35,990	26,25	5,23	100	***	***	***
1	30	15,53	35,770	26,46	5,12	94	***	***	***
1	35	15,46	35,730	26,45	5,23	96	***	***	***

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 45/63	12/ 2/63	1338 J	35 09 S	136 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	19,5	20,4	18	2	*	*	0	7	18	1	17	2	1006,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,75	36,020	25,88	5,23	103	***	***	***
1	10	18,11	36,020	26,04	5,23	102	***	***	***
1	20	17,64	36,020	26,16	5,33	103	***	***	***
1	30	16,13	35,820	26,36	5,29	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 46/63	12/ 2/63	1630 J	34 55 S	136 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	19,4	20,4	21	4	*	1	1	6	21	4	22	1	1005,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20,41	36,815	26,05	5,05	103	***	***	***
1	10	20,29	36,965	26,20	5,03	103	***	***	***
1	20	19,98	36,910	26,24	5,16	105	***	***	***
1	30	20,02	36,956	26,27	5,00	101	***	***	***
1	40	20,01	36,957	26,27	4,99	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 49/63	22/ 2/63	1130 J	35 04 S	135 58 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
73	14,5	16,8	15	3	*	7	4	8	15	3	22	4	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,07	36,330	26,29	5,34	104	***	***	***
1	25	16,64	36,040	26,42	5,54	105	***	***	***
1	50	14,22	35,550	26,58	5,15	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 50/63	22/ 2/63	1415 J	35 18 S	135 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	15,4	17,4	15	3	*	9	4	8	15	3	22	4	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,46	36,170	26,07	5,32	104	***	***	***
1	25	17,61	36,020	26,17	5,57	107	***	***	***
1	50	13,76	35,480	26,63	***	***	***	***	***
1	70	13,49	35,390	26,61	5,49	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 51/63	22/ 2/63	1705 J	35 32 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
130	15,1	17,6	17	3	*	9	1	8	16	3	22	4	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,89	35,950	26,04	5,41	105	***	***	***
1	25	17,67	35,930	26,08	5,41	104	***	***	***
1	50	15,23	35,640	26,43	5,61	103	***	***	***
1	75	13,43	35,410	26,64	5,45	96	***	***	***
1	100	13,32	35,500	26,73	5,46	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 52/63	22/ 2/63	2037 J	35 48 S	135 33 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
160	13,9	16,4	14	3	*	*	9	9	14	3	22	4	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,73	35,710	25,90	5,38	104	***	***	***
1	25	17,69	35,770	25,96	5,34	103	***	***	***
1	50	17,77	35,840	25,99	5,26	101	***	***	***
1	75	14,91	35,430	26,34	5,61	102	***	***	***
1	100	13,97	35,430	26,54	5,58	99	***	***	***
1	130	13,78	35,390	26,55	5,46	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 53/63	22/ 2/63	2237 J	35 54 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	13,9	16,5	14	3	*	*	9	9	14	3	22	4	1023,0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17,84	35,620	25,80	5,33	103	***	***	***
2	25	17,80	35,640	25,83	5,40	104	***	***	***
2	50	17,43	35,640	25,92	5,47	105	***	***	***
2	75	14,61	35,370	26,36	6,05	109	***	***	***
2	100	13,67	35,320	26,52	5,47	97	***	***	***
2	150	13,26	35,340	26,62	5,70	100	***	***	***
1	200	13,08	35,370	26,68	5,41	94	***	***	***
1	300	11,16	35,050	26,80	5,51	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 54/63	23/ 2/63	0208 J	35 41 S	135 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
165	14,0	16,4	11	3	*	*	9	9	13	3	22	4	1021,0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,85	35,620	25,80	5,37	104	***	***	***
1	25	17,85	35,730	25,89	5,41	104	***	***	***
1	50	17,51	35,590	25,86	5,80	111	***	***	***
1	75	14,50	35,370	26,38	5,81	105	***	***	***
1	100	13,87	35,370	26,52	5,46	97	***	***	***
1	150	13,47	35,340	26,58	5,45	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 55/63	23/ 2/63	0455 J	35 27 S	135 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
120	13,9	16,3	09	3	*	*	9	9	11	3	22	4	1021,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,83	35,700	25,87	5,32	103	***	***	***
1	25	17,79	35,700	25,88	5,38	104	***	***	***
1	50	17,45	35,660	25,93	5,43	104	***	***	***
1	75	14,85	35,640	26,52	5,76	105	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 56/63	23/ 2/63	0750 J	35 13 S	134 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	15,0	17,3	13	2	*	8	6	8	11	3	21	3	1023,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,73	35,730	25,91	5,46	105	***	***	***
1	25	17,71	35,750	25,94	5,41	104	***	***	***
1	50	17,48	35,860	26,08	5,41	104	***	***	***
1	75	16,51	35,770	26,24	5,58	105	***	***	***
1	100	14,01	35,430	26,54	5,57	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 57/63	23/ 2/63	1038 J	34 59 S	134 48 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	16,0	17,9	07	2	*	8	4	8	10	2	21	2	1023,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,81	35,710	25,88	5,38	104	***	***	***
1	25	17,75	35,730	25,91	5,34	103	***	***	***
1	50	17,60	35,820	26,02	5,41	104	***	***	***
1	75	14,69	35,410	26,37	5,87	106	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 58/63	23/ 2/63	1228 J	34 53 S	134 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	15,4	17,5	10	2	*	8	1	8	10	2	21	2	1022,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,97	35,810	25,92	5,34	103	***	***	***
1	25	17,67	35,820	26,00	***	***	***	***	***
1	50	17,20	35,820	26,11	5,49	105	***	***	***
1	75	14,39	35,460	26,48	5,48	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 59/63	23/ 2/63	1650 J	35 01 S	134 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	15.6	17.9	16	4	*	9	6	7	16	3	21	2	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.26	35.710	25.77	5.41	105	***	***	***
1	25	17.84	35.730	25.89	5.32	103	***	***	***
1	50	17.75	35.750	25.93	5.45	105	***	***	***
1	75	16.57	35.640	26.12	5.58	105	***	***	***
1	100	15.06	35.550	26.40	5.44	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 60/63	23/ 2/63	1953 J	35 12 S	134 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	14.8	17.7	15	4	*	*	7	7	15	3	21	2	1024.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.82	35.900	25.77	5.23	103	***	***	***
2	25	18.73	35.880	25.78	5.19	102	***	***	***
2	50	18.63	35.840	25.77	5.23	103	***	***	***
2	75	15.27	35.350	26.20	5.84	107	***	***	***
2	100	14.80	35.480	26.40	5.56	101	***	***	***
2	150	13.38	35.340	26.60	5.47	96	***	***	***
1	200	12.99	35.340	26.68	5.35	93	***	***	***
1	300	11.53	35.120	26.79	5.44	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 61/63	23/ 2/63	2202 J	35 09 S	134 06 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15.0	17.7	12	4	*	*	9	6	12	3	21	2	1024.0	5	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.84	35.880	25.75	5.17	102	***	***	***
2	25	18.69	35.880	25.79	5.22	102	***	***	***
2	50	18.71	***	***	5.26	***	***	***	***
2	75	15.49	35.440	26.22	5.76	106	***	***	***
2	100	14.05	35.370	26.48	5.73	102	***	***	***
2	150	13.04	35.260	26.60	5.41	94	***	***	***
1	200	12.94	35.300	26.65	5.39	94	***	***	***
1	300	11.30	35.070	26.79	5.42	91	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 64/63	24/ 2/63	0931 J	35 08 S	134 26 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
120	15.5	17.7	11	4	*	4	4	8	11	4	99	1	1026.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.13	35.710	25.80	5.33	103	***	***	***
1	25	18.05	35.710	25.82	5.27	102	***	***	***
1	50	18.12	35.730	25.82	5.23	101	***	***	***
1	75	16.91	35.640	26.04	5.49	104	***	***	***
1	100	14.73	35.520	26.45	5.45	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 66/63	24/ 2/63	1535 J	35 05 S	135 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
105	15.4	17.8	14	3	*	*	0	8	99	3	99	1	1025.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.98	35.860	25.95	5.32	103	***	***	***
2	25	17.63	35.860	26.04	5.38	103	***	***	***
1	50	15.12	35.530	26.37	5.61	102	***	***	***
1	75	13.46	35.340	26.58	5.38	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 69/63	26/ 2/63	0316 J	35 00 S	136 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
42	20.0	20.9	99	1	*	*	0	7	99	1	99	1	1013.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.00	***	***	5.14	***	***	***	***
1	25	17.99	36.200	26.21	5.25	102	***	***	***
1	35	18.04	36.200	26.20	5.23	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 70/63	26/ 2/63	0517 J	35 04 S	136 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	19.6	20.6	99	0	*	2	2	7	99	1	99	0	1013.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.29	36.130	25.83	5.32	106	***	***	***
1	25	16.89	35.990	26.32	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 71/63	26/ 2/63	0720 J	35 08 S	136 48 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	18.4	20.2	99	0	*	9	7	6	99	1	24	2	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.34	35.990	25.96	5.34	104	***	***	***
1	10	17.61	35.990	26.14	5.41	104	***	***	***
1	20	16.36	35.820	26.31	5.21	98	***	***	***
1	30	16.23	35.810	26.34	5.07	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 72/63	26/ 2/63	1026 J	34 54 S	136 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
50	18.8	21.5	23	3	*	9	8	6	23	1	24	2	1017.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.46	***	***	5.04	***	***	***	***
1	10	19.79	***	***	5.02	***	***	***	***
1	20	19.87	***	***	5.00	***	***	***	***
1	30	20.06	***	***	4.91	***	***	***	***
1	40	20.04	***	***	4.97	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 73/63	26/ 2/63	1234 J	34 43 S	136 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	20.4	22.7	06	2	*	9	8	6	06	1	24	2	1014.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.71	***	***	4.87	***	***	***	***
1	10	21.01	***	***	4.85	***	***	***	***
1	20	21.03	***	***	4.89	***	***	***	***
1	30	21.06	***	***	4.86	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 74/63	26/ 2/63	1443 J	34 31 S	136 45 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
35	20,7	23,5	05	2	*	9	3	6	06	1	20	1	1013,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21,59	***	***	4,91	***	***	***	***
1	10	21,76	***	***	4,91	***	***	***	***
1	20	20,76	***	***	4,90	***	***	***	***
1	30	20,76	***	***	4,91	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 75/63	26/ 2/63	1655 J	34 21 S	136 53 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
30	21,3	23,9	36	1	*	9	4	6	36	1	20	1	1013,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	22,04	***	***	4,97	***	***	***	***
1	10	21,27	***	***	4,92	***	***	***	***
1	20	21,10	***	***	4,92	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 76/63	26/ 2/63	1958 J	34 09 S	137 13 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
20	21.0	23.8	36	1	*	*	9	7	36	1	20	1	1014.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.20	***	***	4.94	***	***	***	***
1	15	21.21	***	***	4.91	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 77/63	26/ 2/63	2200 J	34 09 S	136 58 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
20	21.2	24.1	36	1	*	*	9	7	36	1	20	1	1014.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.59	***	***	4.84	***	***	***	***
1	15	21.65	***	***	4.68	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 78/63	27/ 2/63	0003 J	34 09 S	136 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
18	21.2	24.2	03	2	*	*	9	7	03	1	99	*	1013.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.92	***	***	4.95	***	***	***	***
1	10	21.38	***	***	4.92	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 3/ 79/63	27/ 2/63	0153 J	34 09 S	136 29 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
18	21.1	23.8	00	0	*	*	9	7	00	0	00	0	1012.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.38	***	***	4.92	***	***	***	***
1	15	21.27	***	***	4.86	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 80/63	10/ 4/63	1945 J	34 57 S	135 33 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	14,2	17,8	15	2	*	8	6	3	99	2	21	3	1024,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,82	35,820	25,96	5,36	103	***	***	***
1	25	17,82	35,820	25,96	5,49	106	***	***	***
1	50	16,81	35,750	26,15	5,17	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 81/63	10/ 4/63	2230 J	34 55 S	135 17 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	14,4	16,1	18	2	*	3	2	3	99	3	22	3	1024,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,65	35,860	26,03	5,31	102	***	***	***
1	25	17,65	35,860	26,03	5,38	103	***	***	***
1	50	17,11	35,810	26,13	5,18	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 82/63	11/ 4/63	0033 J	34 52 S	135 02 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	14,5	17,2	16	1	*	8	1	6	99	3	22	3	1025,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,13	35,900	25,95	5,27	102	***	***	***
1	25	18,15	35,900	25,94	5,28	103	***	***	***
1	50	17,93	***	***	5,28	***	***	***	***
1	75	17,13	35,810	26,12	5,24	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 83/63	11/ 4/63	0238 J	34 50 S	134 47 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
68	13.3	17,2	00	0	*	0	0	6	99	3	22	2	1025,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18,28	35,880	25,89	5,18	101	***	***	***
1	25	18,32	35,880	25,88	5,31	103	***	***	***
1	50	18,29	35,880	25,89	5,20	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 84/63	11/ 4/63	0400 J	34 47 S	134 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	13.3	17.2	00	0	*	0	0	6	99	3	21	2	1024.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.27	35.910	25.92	***	***	***	***	***
1	25	18.30	35.910	25.91	5.28	103	***	***	***
1	50	18.33	35.900	25.90	5.26	103	***	***	***
1	75	18.25	35.900	25.92	5.29	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 85/63	11/ 4/63	0635 J	34 39 S	134 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	12.8	16.9	00	0	*	6	3	8	99	3	21	2	1024.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.18	35.980*	25.92	***	***	***	***	***
1	25	18.20	35.770	25.83	5.20	101	***	***	***
1	50	18.22	35.770	25.82	5.29	103	***	***	***
1	75	17.81	***	***	***	***	***	***	***

* PROPERTY DOUBTFUL
\+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 86/63	11/ 4/63	0925 J	34 33 S	134 08 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	14.2	17.2	04	1	*	6	3	7	99	3	21	2	1025.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.33	35.970	25.95	5.26	103	***	***	***
1	25	18.19	35.900	25.93	5.24	102	***	***	***
1	50	17.60	35.710	25.93	5.28	101	***	***	***
1	75	16.49	35.930	26.37	4.62	87	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 87/63	11/ 4/63	1154 J	34 26 S	133 55 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
90	14.2	17.2	01	1	*	3	2	8	99	2	22	2	1024.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.22	36.000*	26.00	5.29	103	***	***	***
1	25	18.18	35.790	25.85	5.28	103	***	***	***
1	50	18.18	35.770	25.83	5.29	103	***	***	***
1	75	16.83	35.770	26.16	4.97	94	***	***	***
1	85	16.62	35.710	26.17	4.48	84	***	***	***

* PROPERTY DOUBTFUL
\+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 88/63	11/ 4/63	1433 J	34 26 S	134 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	14.4	17.8	36	1	*	2	5	8	99	1	22	2	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.30	35.950	25.94	5.39	105	***	***	***
1	25	18.02	35.880	25.96	5.41	105	***	***	***
1	50	17.87	***	***	5.39	***	***	***	***
1	75	17.60	35.860	26.05	5.39	104	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 89/63	11/ 4/63	1700 J	34 26 S	134 26 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
71	13.6	16.9	00	1	*	2	6	8	00	0	22	2	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.52	35.930	25.87	5.37	105	***	***	***
1	25	17.71	35.930	26.07	5.46	105	***	***	***
1	50	17.26	35.900	26.16	5.48	105	***	***	***
1	70	16.04	35.530	26.16	5.21	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 90/63	11/ 4/63	1942 J	34 26 S	134 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
66	13.9	17.2	09	3	*	*	*	1	09	2	22	3	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.92	35.880	25.98	5.37	104	***	***	***
1	25	17.82	35.880	26.01	5.31	102	***	***	***
1	50	17.40	35.880	26.11	5.38	103	***	***	***
1	70	16.02	35.810	26.38	5.15	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 91/63	11/ 4/63	2220 J	34 26 S	134 58 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
50	14.4	16.4	11	2	*	*	*	3	10	2	22	2	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.42	35.810	26.05	5.43	104	***	***	***
1	25	16.85	35.810	26.19	5.53	105	***	***	***
1	50	15.53	35.700	26.41	4.72	87	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 92/63	12/ 4/63	1035 J	34 42 S	135 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
50	16.1	17.8	31	2	*	4	7	7	99	2	22	5	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.37	35.820	26.07	5.45	104	***	***	***
1	25	17.38	35.820	26.07	5.43	104	***	***	***
1	50	17.37	35.820	26.07	5.47	105	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 93/63	12/ 4/63	1315 J	34 58 S	135 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	16.4	18.3	21	2	*	4	6	7	99	2	22	5	1019.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.39	35.840	25.84	5.37	105	***	***	***
1	25	18.27	35.840	25.87	5.38	105	***	***	***
1	50	18.16	35.840	25.89	5.40	105	***	***	***
1	75	17.88	35.840	25.96	5.32	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 4/ 94/63	12/ 4/63	1548 J	35 14 S	135 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	15.0	17.8	23	3	*	6	8	5	23	2	22	5	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.34	35.910	25.90	***	***	***	***	***
1	25	18.27	35.910	25.92	5.40	105	***	***	***
1	50	18.22	35.880	25.91	5.39	105	***	***	***
1	75	17.12	35.770	26.09	5.31	101	***	***	***
1	100	16.37	35.770	26.27	4.76	89	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 95/63	17/ 4/63	1650 J	35 04 S	136 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	14.4	16.7	14	1	*	2	2	7	14	0	22	1	1025.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.91	35.840	26.20	5.57	106	***	***	***
1	25	16.47	35.810	26.28	5.58	105	***	***	***
1	50	16.63	35.810	26.24	5.30	100	***	***	***
1	60	16.61	35.880	26.30	5.29	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 96/63	17/ 4/63	1928 J	35 18 S	136 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	14.2	16.7	18	1	*	*	*	*	16	0	22	1	1025.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.17	35.950	26.22	5.44	104	***	***	***
1	25	17.03	36.000	26.29	5.41	103	***	***	***
1	50	17.20	36.000	26.25	5.16	98	***	***	***
1	60	17.21	36.000	26.25	5.11	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 97/63	17/ 4/63	2210 J	35 31 S	136 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
81	14.4	16.7	09	3	*	*	*	2	09	3	22	1	1026.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.28	35.820	26.09	5.44	104	***	***	***
1	25	16.95	35.820	26.17	5.47	104	***	***	***
1	50	16.43	35.770	26.26	5.40	101	***	***	***
1	75	14.85	35.530	26.43	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 98/63	18/ 4/63	0130 J	35 47 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
85	13,9	15,3	09	5	*	*	*	2	09	4	22	2	1025,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16,93	35,770	26,14	5,53	105	***	***	***
1	25	16,95	35,770	26,14	5,44	103	***	***	***
1	50	16,73	35,620*	26,07	5,39	102	***	***	***
1	75	15,08	35,620	26,45	4,97	91	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 99/63	18/ 4/63	0513 J	36 08 S	136 26 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	14,4	15,8	06	5	*	*	*	2	08	5	22	3	1025,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,06	***	***	5,38	***	***	***	***
1	25	17,07	35,750	26,09	***	***	***	***	***
1	50	16,83	35,750	26,15	5,43	103	***	***	***
1	75	16,04	35,700	26,29	5,39	100	***	***	***
1	90	15,10	35,570	26,41	5,10	93	***	***	***

* PROPERTY DOUBTFUL
\+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 100/63	18/ 4/63	0811 J	36 23 S	136 23 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	15.0	16.7	09	4	*	*	*	6	09	4	21	2	1025.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.52	35.790	26.01	5.27	101	***	***	***
1	25	17.52	35.790	26.01	5.32	102	***	***	***
1	50	17.52	35.790	26.01	5.32	102	***	***	***
1	75	17.16	35.790	26.10	5.39	103	***	***	***
1	100	16.92	***	***	5.38	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 101/63	18/ 4/63	1147 J	36 33 S	136 22 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15.0	17.2	08	4	*	*	*	6	09	4	20	3	1024.0	0	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.12	35.880	25.93	5.29	103	***	***	***
2	25	18.10	35.880	25.94	5.27	102	***	***	***
2	50	18.10	35.880	25.94	5.31	103	***	***	***
2	75	17.99	35.880	25.97	5.32	103	***	***	***
2	100	17.92	35.880	25.98	5.31	103	***	***	***
2	150	14.00	35.410	26.52	5.44	97	***	***	***
2	200	12.80	35.300	26.68	5.41	94	***	***	***
2	300	11.75	35.140	26.76	5.45	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 102/63	18/ 4/63	1906 J	35 52 S	136 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
130	15.0	17.2	36	1	*	*	*	7	*	1	22	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.62	35.820	26.01	5.31	102	***	***	***
1	25	17.34	35.820	26.08	5.41	103	***	***	***
1	50	16.91	35.820	26.18	5.43	103	***	***	***
1	75	16.26	35.750	26.28	5.34	100	***	***	***
1	100	14.90	35.680	26.54	5.14	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 103/63	18/ 4/63	2144 J	35 58 S	136 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
135	15.6	17.6	05	1	*	*	*	2	05	1	22	1	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.77	35.820	25.97	5.33	103	***	***	***
1	25	17.54	35.820	26.03	5.37	103	***	***	***
1	50	17.52	35.820	26.03	5.35	103	***	***	***
1	75	17.50	35.820	26.04	5.39	103	***	***	***
1	100	16.89	35.790	26.16	5.33	101	***	***	***
1	125	15.67	35.790	26.45	4.95	91	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 104/63	19/ 4/63	0025 J	36 05 S	135 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
300	16.1	17.9	04	3	*	*	*	1	04	3	22	2	1020.0	10	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.16	35.970*	25.99	5.23	102	***	***	***
2	25	18.20	35.880	25.91	5.24	102	***	***	***
2	50	17.90	35.840	25.96	5.32	103	***	***	***
2	75	16.61	35.520	26.02	5.49	103	***	***	***
1	100	16.00	35.370	26.05	5.55	103	***	***	***
2	150	13.31	35.350	26.62	5.44	95	***	***	***
2	200	12.61	35.250	26.68	5.45	94	***	***	***
1	300	10.99	35.010	26.80	5.55	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 105/63	19/ 4/63	0352 J	35 54 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	16.1	18.3	36	5	*	2	3	1	36	4	22	2	1017.0	0	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.55	35.500	26.02	5.51	103	***	***	***
2	25	16.58	35.500	26.02	5.50	103	***	***	***
2	50	16.57	35.500	26.02	5.50	103	***	***	***
2	75	16.50	35.500	26.03	5.47	103	***	***	***
2	100	16.21	35.500	26.10	5.53	103	***	***	***
2	150	13.23	35.320	26.61	5.55	97	***	***	***
2	200	13.07	35.320	26.65	5.51	96	***	***	***
2	300	11.23	35.100	26.83	5.44	91	***	***	***

* PROPERTY DOUBTFUL
\+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 106/63	19/ 4/63	0623 J	35 48 S	135 34 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	16.1	18.9	36	4	*	2	4	2	36	4	22	2	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.33	35.970	25.95	5.26	103	***	***	***
1	25	18.34	35.970	25.95	5.22	102	***	***	***
1	50	18.34	35.970	25.95	5.25	102	***	***	***
1	75	18.28	35.970	25.96	5.23	102	***	***	***
1	100	15.79	35.700	26.35	5.03	93	***	***	***
1	150	15.62	35.610	26.32	5.03	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 107/63	19/ 4/63	0957 J	35 33 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
130	16.1	17.2	33	4	*	3	4	2	35	4	22	1	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.60	35.910	26.08	5.33	102	***	***	***
1	25	17.58	35.910	26.09	5.35	103	***	***	***
1	50	17.44	35.910	26.12	5.35	103	***	***	***
1	75	17.07	35.840	26.16	5.26	100	***	***	***
1	100	15.88	35.750	26.37	5.06	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 5/ 108/63	19/ 4/63	1300 J	35 18 S	135 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
105	15.8	17.2	34	4	*	3	5	3	34	4	23	1	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.25	35.990	26.23	5.44	104	***	***	***
1	25	17.04	35.970	26.27	5.48	104	***	***	***
1	50	17.00	35.970	26.28	5.32	101	***	***	***
1	75	15.06	35.700	26.52	4.83	88	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 109/63	9/ 5/63	2143 J	35 06 S	136 06 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	15.6	16.9	14	1	*	4	1	4	14	*	23	2	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.72	35.990	26.36	5.29	100	***	***	***
1	25	16.72	35.990	26.36	5.37	102	***	***	***
1	50	16.71	35.990	26.36	5.37	101	***	***	***
1	60	16.68	35.990	26.37	5.35	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 110/63	10/ 5/63	0116 J	35 19 S	136 16 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	15,6	16,9	14	1	*	0	0	4	14	*	23	2	1022,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16,95	35,930	26,26	5,33	101	***	***	***
1	25	16,90	35,930	26,27	5,35	101	***	***	***
1	50	16,82	35,910	26,27	5,27	100	***	***	***
1	60	16,82	35,880	26,25	5,26	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 111/63	10/ 5/63	0346 J	35 32 S	136 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	15,0	16,7	14	1	*	0	0	4	14	1	22	2	1022,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,10	35,930	26,22	5,41	103	***	***	***
1	25	16,72	35,930	26,31	5,35	101	***	***	***
1	50	16,57	35,930	26,35	5,41	102	***	***	***
1	70	16,56	36,040	26,43	3,99	75	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 112/63	10/ 5/63	0626 J	35 48 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	13,9	16,1	13	2	*	4	1	6	14	1	22	2	1022,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16,52	35,910	26,34	5,48	103	***	***	***
1	25	16,50	35,910	26,35	5,51	104	***	***	***
1	50	16,41	35,910	26,37	5,31	100	***	***	***
1	75	16,50	35,990	26,41	5,24	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 113/63	10/ 5/63	0954 J	36 11 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	15,8	17,8	11	1	*	2	1	5	12	2	21	2	1022,5	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17,23	35,970	26,22	5,31	101	***	***	***
1	25	17,19	35,970	26,23	5,33	102	***	***	***
1	50	17,21	35,970	26,23	5,34	102	***	***	***
1	75	17,12	35,970	26,25	5,29	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 114/63	10/ 5/63	1203 J	36 25 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
155	15.6	17.8	12	1	*	2	3	5	12	2	21	2	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.59	35.990	26.15	5.30	102	***	***	***
1	25	17.48	35.990	26.17	5.27	101	***	***	***
1	50	17.49	35.970	26.16	5.29	102	***	***	***
1	75	17.38	35.910	26.14	5.28	101	***	***	***
1	100	16.89	35.910	26.26	5.25	100	***	***	***
1	150	16.66	35.910	26.31	5.18	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 115/63	10/ 5/63	1323 J	36 33 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	16.1	17.8	09	2	*	3	5	5	10	2	21	2	1020.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.58	35.970	26.14	5.33	102	***	***	***
2	25	17.39	35.970	26.18	5.35	102	***	***	***
2	50	17.32	35.970	26.20	5.33	102	***	***	***
2	75	17.17	35.900	26.18	5.36	102	***	***	***
2	100	16.98	35.880	26.21	5.31	101	***	***	***
2	150	16.48	35.840	26.30	5.10	96	***	***	***
1	200	16.33	35.840	26.33	5.07	95	***	***	***
1	300	11.28	35.120	26.84	4.07	68	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 116/63	10/ 5/63	1633 J	36 24 S	136 12 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
123	16.1	16.9	09	2	*	3	6	4	09	2	21	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.31	35.910	26.15	5.40	103	***	***	***
1	25	17.04	35.840	26.17	5.43	103	***	***	***
1	50	17.31*	35.840*	26.10	5.31	101	***	***	***
1	75	17.08	35.840	26.16	5.36	102	***	***	***
1	100	16.37	35.770	26.27	5.00	94	***	***	***
1	120	15.69	35.620	26.31	5.03	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 117/63	10/ 5/63	1920 J	36 13 S	135 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
97	16.1	16.7	13	2	*	3	7	3	13	2	21	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.78	35.970	26.09	5.33	103	***	***	***
1	25	17.75	35.970	26.09	5.29	102	***	***	***
1	50	16.50	35.660	26.16	5.43	102	***	***	***
1	75	16.26	35.590	26.16	5.49	103	***	***	***
1	90	15.79	35.590	26.27	5.35	99	***	***	***

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 118/63	10/ 5/63	2149 J	36 05 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15.6	16.7	13	3	*	3	7	2	13	3	22	2	1020.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.63	35.710	26.16	5.44	102	***	***	***
2	25	16.69	35.710	26.15	5.50	104	***	*** *	***
2	50	16.39	35.620	26.15	5.48	103	***	***	***
2	75	16.25	35.620	26.18	5.42	101	***	***	***
2	100	16.09	35.570	26.18	5.54	103	***	***	***
2	150	13.22*	35.530*	26.78	5.52	97	***	***	***
1	200	12.63	35.260	26.69	5.48	95	***	***	***
1	300	11.52	35.170	26.83	5.53	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 119/63	11/ 5/63	0103 J	35 54 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	15.6	16.1	11	2	*	2	3	2	13	3	22	2	1019.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.09	35.520	26.14	***	***	***	***	***
1	25	16.00	35.520	26.17	5.61	104	***	***	***
1	50	15.99	35.520	26.17	5.58	104	***	***	***
1	75	15.28	35.430	26.26	5.73	105	***	***	***
1	100	14.12	35.430	26.51	5.68	101	***	***	***
1	150	12.94	35.300	26.65	5.44	95	***	***	***
1	200	12.80	35.300	26.68	5.42	94	***	***	***
1	300	10.92	35.070	26.86	5.52	92	***	***	***

* PROPERTY DOUBTFUL

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 120/63	11/ 5/63	0300 J	35 48 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
119	15.8	16.9	09	2	*	2	3	3	12	3	22	2	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.74	36.000	26.12	5.32	103	***	***	***
1	25	17.74	36.000	26.12	5.32	103	***	***	***
1	50	17.27	35.860	26.13	5.37	103	***	***	***
1	75	16.36	35.640	26.17	5.51	103	***	***	***
1	100	16.51	35.640	26.14	5.17	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 121/63	11/ 5/63	0543 J	35 33 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	16.1	17.5	09	1	*	2	4	3	10	2	22	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.51	36.000	26.18	5.25	101	***	***	***
1	25	17.51	36.000	26.18	5.28	101	***	***	***
1	50	17.52	36.000	26.17	5.27	101	***	***	***
1	75	17.44	35.990	26.18	5.25	101	***	***	***
1	90	17.32	35.950	26.18	5.49	105	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 122/63	11/ 5/63	0839 J	35 18 S	135 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
73	16.7	17.5	08	1	*	3	7	5	09	1	22	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.97	35.930	26.25	5.31	101	***	***	***
1	25	16.94	35.930	26.26	5.35	102	***	***	***
1	50	16.92	35.930	26.26	5.31	101	***	***	***
1	70	16.85	35.930	26.28	5.21	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 6/ 143/63	18/ 5/63	1729 J	35 06 S	136 06 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
68	10.0	11.4	11	1	*	9	8	6	11	2	16	2	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.76	35.910	26.28	5.24	99	***	***	***
1	25	16.80	35.950	26.31	5.37	102	***	***	***
1	50	16.80	35.900	26.27	5.39	102	***	***	***
1	60	16.79	35.900	26.27	5.37	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 144/63	18/ 5/63	2047 J	35 20 S	136 17 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	11.4	14.7	13	3	*	9	3	4	13	2	21	1	1024.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.35	35.970	26.19	5.26	101	***	***	***
1	25	17.36	35.970	26.19	5.27	101	***	***	***
1	50	17.00	35.910	26.23	5.24	100	***	***	***
1	70	16.64	35.840	26.26	5.11	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 145/63	18/ 5/63	2339 J	35 34 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	12.5	15.0	18	3	*	8	2	5	99	2	20	1	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.97	35.900	26.23	5.34	101	***	***	***
1	25	16.93	35.900	26.24	5.34	101	***	***	***
1	50	16.85	35.900	26.26	5.34	101	***	***	***
1	70	16.74	36.060	26.41	5.26	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 146/63	19/ 5/63	0228 J	35 52 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	12.2	14.4	19	3	*	9	7	4	99	2	20	1	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.77	35.900	26.28	5.47	103	***	***	***
1	25	16.66	35.900	26.30	5.46	103	***	***	***
1	50	16.46	35.900	26.35	5.23	98	***	***	***
1	70	16.89	36.180	26.46	5.21	99	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 147/63	19/ 5/63	0511 J	36 12 S	136 32 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
77	12.5	15.0	19	3	*	9	7	5	19	3	20	1	1021.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.99	35.910	26.23	5.40	103	***	***	***
1	25	17.00	35.910	26.23	5.38	102	***	***	***
1	50	16.74	35.910	26.29	5.20	98	***	***	***
1	70	16.68	36.080	26.44	5.19	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 148/63	19/ 5/63	0805 J	36 24 S	136 34 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
101	13.1	13.9	15	2	*	9	8	4	99	3	20	1	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.05	35.930	26.23	5.39	103	***	***	***
1	25	17.04	35.930	26.24	5.41	103	***	***	***
1	50	17.04	35.930	26.23	5.38	102	***	***	***
1	75	17.00	35.910	26.23	5.37	102	***	***	***
1	90	17.05*	35.880*	26.20	5.32	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 149/63	19/ 5/63	1017 J	36 33 S	136 27 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	14.2	15.0	21	2	*	9	8	5	99	3	20	1	1022.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.98	35.880	26.21	5.48	104	***	***	***
2	25	16.95	35.880	26.22	5.43	103	***	***	***
2	50	16.98	35.880	26.21	5.44	103	***	***	***
2	75	17.04	35.880	26.20	5.36	102	***	***	***
2	100	17.03	35.880	26.20	5.30	101	***	***	***
2	150	15.89	35.730	26.35	5.02	93	***	***	***
1	200	15.38	35.640	26.40	4.75	87	***	***	***
1	300	12.31	35.170	26.68	5.40	93	***	***	***

* PROPERTY DOUBTFUL
\+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 151/63	19/ 5/63	1445 J	36 18 S	136 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
165	13.3	15.0	18	3	*	9	6	6	99	2	00	1	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.92	35.900	26.24	5.38	102	***	***	***
1	25	16.86	35.900	26.26	5.41	102	***	***	***
1	50	16.84	35.900	26.26	5.35	101	***	***	***
1	75	16.69	35.900	26.30	5.26	99	***	***	***
1	100	16.58	35.900	26.32	5.24	99	***	***	***
1	150	16.92	***	***	5.07	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 152/63	19/ 5/63	1804 J	36 06 S	135 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	12.8	15.6	18	1	*	9	4	6	99	1	18	1	1020.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.35	35.610	26.15	5.51	103	***	***	***
2	25	16.34	35.620	26.16	5.56	104	***	***	***
2	50	16.21	35.610	26.19	5.54	103	***	***	***
2	75	16.12	35.610	26.21	5.55	103	***	***	***
2	100	15.19	35.500	26.33	5.49	100	***	***	***
2	150	13.38	35.410	26.65	5.44	96	***	***	***
1	200	12.81	35.320	26.70	5.44	94	***	***	***
1	300	11.58	35.100	26.77	5.55	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 153/63	19/ 5/63	2117 J	35 54 S	135 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	11.7	14.4	24	1	*	2	1	3	99	1	00	0	1020.0	0	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.29	35.620	26.18	5.50	103	***	***	***
2	25	16.28	35.620	26.18	5.51	103	***	***	***
2	50	16.30	35.620	26.17	5.55	104	***	***	***
2	75	16.22	35.610	26.18	5.46	102	***	***	***
2	100	14.27	35.440	26.49	5.70	102	***	***	***
2	150	13.28	35.370	26.64	5.44	95	***	***	***
1	200	12.60	35.430	26.82	5.52	95	***	***	***
1	300	10.95	35.080	26.87	5.57	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 154/63	19/ 5/63	2321 J	35 47 S	135 34 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
128	10.8	14.2	32	1	*	2	3	3	00	0	00	*	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.64	35.730	25.94	5.38	103	***	***	***
1	25	17.66	35.730	25.93	5.37	103	***	***	***
1	50	17.69	35.730	25.92	5.31	102	***	***	***
1	75	16.38	35.430	26.01	5.48	102	***	***	***
1	100	16.26	35.430	26.04	5.47	102	***	***	***
1	120	15.88	35.300	26.02	5.54	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 155/63	20/ 5/63	0202 J	35 33 S	135 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	10.8	14.2	32	1	*	2	4	6	00	*	00	*	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.55	36.040	26.20	5.31	102	***	***	***
1	25	17.57	35.990	26.15	5.31	102	***	***	***
1	50	17.63	35.990	26.14	5.24	101	***	***	***
1	75	17.47	35.990	26.18	5.24	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 156/63	20/ 5/63	0443 J	35 18 S	135 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	10.6	14.4	35	1	*	2	6	6	00	*	20	1	1017.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.11	35.990	26.26	5.41	103	***	***	***
1	25	17.05	35.990	26.28	5.30	101	***	***	***
1	50	17.00	35.990	26.29	5.40	103	***	***	***
1	75	16.92	35.990	26.31	5.37	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 157/63	20/ 5/63	1037 J	35 07 S	135 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
86	13.3	15.6	35	4	*	2	8	7	35	3	22	1	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.38	35.910	26.14	5.29	101	***	***	***
1	25	17.39	35.910	26.14	5.26	101	***	***	***
1	50	17.40	35.910	26.13	5.28	101	***	***	***
1	75	17.39	35.910	26.14	5.29	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 8/ 158/63	20/ 5/63	1235 J	35 11 S	135 08 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
91	14.4	16.4	33	5	*	6	8	6	34	4	22	1	1012.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.40	35.950	26.16	5.27	101	***	***	***
1	25	17.43	35.950	26.16	5.31	102	***	***	***
1	50	17.43	35.950	26.16	5.29	101	***	***	***
1	75	17.41	35.930	26.15	5.28	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 159/63	12/ 6/63	1426 J	34 51 S	136 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
119	15,0	16,9	04	2	*	4	3	8	04	2	16	1	1026,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16,28	35,940	26,42	5,63	105	***	***	***
1	20	16,20	36,070	26,54	5,59	105	***	***	***
1	30	16,20	36,820	27,12	5,55	104	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 160/63	12/ 6/63	1658 J	34 59 S	136 38 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
46	15,0	16,7	04	2	*	4	2	7	04	2	18	1	1025,0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16,33	35,920	26,40	5,61	105	***	***	***
1	25	16,26	37,384	27,54	5,33	101	***	***	***
1	40	16,24	37,406	27,56	5,27	100	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 161/63	12/ 6/63	1930 J	35 14 S	136 44 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
42	14.7	16.7	01	1	*	*	9	2	01	1	22	1	1026.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.23	36.100	26.56	5.62	105	***	***	***
1	25	16.10	***	***	5.36	***	***	***	***
1	35	16.05	37.360	27.57	5.35	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 162/63	12/ 6/63	2215 J	35 30 S	136 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
60	14.7	16.7	07	2	*	*	9	2	07	2	24	3	1028.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.34	35.980	26.44	***	***	***	***	***
1	25	16.16	36.300	26.73	5.28	99	***	***	***
1	40	16.11	36.770	27.10	5.20	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 164/63	13/ 6/63	0337 J	35 24 S	137 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
35	13.6	15.6	04	4	*	*	9	4	04	3	99	*	1027.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.68	36.170	26.74	5.54	103	***	***	***
1	10	15.71	***	***	5.53	***	***	***	***
1	20	15.70	36.170	26.73	5.55	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN 9/ 166/63	13/ 6/63	0918 J	35 11 S	138 07 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	14.2	16.1	01	4	*	2	2	8	04	3	99	*	1029.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.72	36.610	27.07	5.50	102	***	***	***
1	10	15.71	36.590	27.05	5.53	103	***	***	***
1	20	15.89	***	***	5.38	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 167/63	3/12/63	1101 J	35 03 S	138 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	***	***	16	1	*	2	6	8	00	0	00	0	1022.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.30	36.550	26.40	5.34	105	***	***	***
1	10	17.65	36.530	26.55	5.32	103	***	***	***
1	20	17.41	36.490	26.53	5.30	102	***	***	***
1	35	17.59	36.510	26.55	5.26	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 168/63	3/12/63	1354 J	35 19 S	137 54 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
40	***	***	14	3	*	2	6	8	14	2	14	1	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.27	36.450	26.33	5.41	106	***	***	***
1	10	17.35	36.450	26.56	***	***	***	***	***
1	20	17.30	36.380	26.52	***	***	***	***	***
1	35	17.24	***	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 169/63	4/12/63	0022 J	35 23 S	137 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
39	***	***	13	3	*	*	*	*	13	2	25	1	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.61	36.440	26.49	5.34	103	***	***	***
1	25	17.47	36.400	26.49	5.38	104	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 170/63	4/12/63	0316 J	35 27 S	137 06 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
45	***	***	09	2	*	*	*	7	13	2	24	1	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.70	36.400	26.43	5.35	103	***	***	***
1	10	17.71	36.400	26.43	5.45	105	***	***	***
1	35	17.42	36.400	26.50	5.32	102	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 171/63	4/12/63	0620 J	35 32 S	136 43 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
64	***	***	04	2	*	2	3	8	08	2	24	1	1013.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.08	***	***	5.50	***	***	***	***
1	25	16.87	36.260	26.53	5.49	104	***	***	***
1	50	15.73	36.170	26.73	5.22	97	***	***	***
1	60	15.70	36.150	26.72	5.21	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 172/63	4/12/63	0918 J	35 48 S	136 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
106	***	***	05	3	*	2	3	8	06	3	20	1	1013.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.34	35.840	26.33	5.56	104	***	***	***
1	25	16.26	35.820	26.34	5.55	104	***	***	***
1	50	15.94	35.910	26.48	5.50	102	***	***	***
1	75	15.16	35.860	26.62	5.41	99	***	***	***
1	100	15.41	36.060	26.71	5.21	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 173/63	4/12/63	1102 J	35 53 S	136 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
130	***	***	01	3	*	2	1	8	04	3	21	1	1012.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.77	35.910	26.29	5.49	104	***	***	***
1	25	16.20	35.810	26.34	5.55	104	***	***	***
1	50	15.81	35.910	26.51	5.63	104	***	***	***
1	75	15.32	35.910	26.62	5.50	101	***	***	***
1	110	15.05	35.930	26.70	5.17	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 174/63	4/12/63	1336 J	35 59 S	135 57 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
140	***	***	01	3	*	4	1	7	01	3	21	1	1010.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.76	35.750	26.16	5.55	105	***	***	***
1	25	16.07	35.930	26.46	5.58	104	***	***	***
1	50	15.69	35.770	26.43	5.63	104	***	***	***
1	75	14.78	35.730	26.60	5.56	101	***	***	***
1	100	14.10	35.710	26.73	5.18	93	***	***	***
1	120	13.91	35.730	26.79	5.24	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 175/63	4/12/63	1618 J	36 06 S	135 39 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	02	1	*	4	1	7	01	2	21	1	1009.0	0	0	0

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
3	0	17.09	35.620	25.99	5.54	105	***	***	***
3	25	14.07	35.590	26.20	5.55	103	***	***	***
2	50	15.30	35.730	26.48	5.69	104	***	***	***
2	75	13.90	35.520	26.63	5.66	101	***	***	***
2	100	13.49	35.440	26.65	5.57	98	***	***	***
2	150	13.24	35.390	26.66	5.49	96	***	***	***
1	200	12.48	35.300	26.75	5.49	95	***	***	***
1	300	11.02	35.100	26.87	5.41	90	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 176/63	4/12/63	1938 J	35 55 S	135 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	31	2	*	7	3	7	99	2	21	2	1008.0	10	0	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.36	35.640	25.94	5.51	105	***	***	***
2	25	16.30	35.590	26.15	5.39	101	***	***	***
2	50	15.03	35.820	26.62	5.73	105	***	***	***
2	75	13.47	35.430	26.65	5.66	100	***	***	***
2	100	13.17	35.390	26.68	5.57	97	***	***	***
2	150	12.97	35.430	26.75	5.49	96	***	***	***
1	192	12.65	35.350	26.75	5.49	95	***	***	***
1	290	10.73	***	***	5.29	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 177/63	4/12/63	2244 J	35 41 S	135 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
124	***	***	27	1	*	7	5	4	99	2	21	2	1010.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.19	35.730	26.05	5.17	98	***	***	***
1	25	16.27	35.710	26.25	5.28	99	***	***	***
1	50	15.53	35.640	26.37	5.39	99	***	***	***
1	75	14.09	35.590	26.64	5.38	96	***	***	***
1	110	13.72	35.590	26.72	5.07	90	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 178/63	5/12/63	0133 J	35 27 S	135 43 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
100	***	***	18	4	*	9	2	6	02	4	21	2	1010.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.27	35.840	26.11	5.22	100	***	***	***
1	25	16.50	35.880	26.33	5.29	99	***	***	***
1	50	15.76	35.790	26.43	5.38	100	***	***	***
1	80	15.04	35.900	26.67	5.02	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 179/63	5/12/63	0414 J	35 13 S	135 51 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	***	***	18	5	*	9	8	6	18	4	99	1	1011.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.81	35.900	26.27	5.26	100	***	***	***
1	25	16.59	36.170	26.53	5.29	100	***	***	***
1	50	16.17	36.000	26.49	5.16	96	***	***	***
1	70	15.67	36.000	26.61	5.01	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
IN10/ 180/63	5/12/63	0524 J	35 03 S	135 59 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
70	***	***	18	4	*	8	7	7	18	4	18	1	1012.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.06	36.020	26.30	5.26	100	***	***	***
1	20	16.76	36.150	26.47	5.22	99	***	***	***
1	40	16.28	36.060	26.51	5.15	97	***	***	***
1	60	16.09	36.000	26.51	5.06	94	***	***	***

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 plantological obskervations 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 Rottnest 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
60. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1962
61. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1962
62. Investigations by F.V. *Estelle Star* in Western Australian waters in 1962
63. Temperature and salinity observations from Australian tuna fishing vessels in 1962
64. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1963