

CORRECTIONS MADE :

STATION POSITIONS HS

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5805

(MLR 108)

3-22 May 1958

SIO Reference 59-28

10 December 1958

UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 5805

3-22 May 1958

Sponsored by
Marine Research Committee

SIO Reference 59-28
10 December 1958

Approved for distribution:

Roger Revelle

Roger Revelle, Director

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1. CCOFI Cruise 5805, station positions
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Robert Revelle, Director

INTRODUCTION

The data presented in this report were collected on the one hundred and eighth consecutive cruise of the California Cooperative Oceanic Fisheries Investigations program. The R/V Black Douglas of the U. S. Bureau of Commercial Fisheries, the R/V Paolina-T and the R/V Stranger of the Scripps Institution participated in this cruise.

The data are tabulated at observed depths, and the interpolated and computed values are tabulated at standard depths. They are accompanied by charts of horizontal distribution. The presentation of data in this report does not constitute publication; however, the data contained in this report have been carefully edited and no modifications should be necessary before final publication.

STANDARD PROCEDURES

Processing of the data was carried out using the method described by Klein.^{1/} Certain approximations have been introduced for the determination of the integrated pressure terms which may result in errors whose maximum values are less than 0.5 dynamic centimeter at 0 over 200 decibars, 1.0 dynamic centimeter at 0 over 500 decibars, and 2.0 dynamic centimeters at 0 over 1000 decibars. The 125-meter level was introduced into the integration to obtain greater accuracy in the determination of ΔD . The interpolated values at 125 meters are not tabulated.

To indicate degree of accuracy, temperatures are recorded in tenths of a degree when obtained by bucket thermometer, thermograph, or bathythermograph, while temperatures from reversing thermometers are recorded in hundredths of a degree. Extrapolated values and values interpolated between remote observations are entered within parentheses. A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one cast was made on a station, messenger times and wire angles are given in the order of increasing depth. A line is left blank between the observed data of each cast.

^{1/}

Klein, Hans T. A new technique for processing physical oceanographic data. MS.

FOOTNOTES

Footnotes which appear frequently are "loose bottle cap" and "possible evaporation." To avoid any confusion as to their meaning the following explanation is included.

Laboratory personnel, before titrating the salinity samples, note any possible imperfections in the sealing of the bottles as follows:

Loose bottle cap: The cap is definitely loose so that it could be moved with very little applied pressure. The salinity values obtained from these samples may be usable depending on time and/or conditions of storage.

Possible evaporation: Either the cap was sealed with less than usual pressure, the bottle edge chipped, the rubber washer cracked, or the bale broke on opening, etc.

Use of the above values in interpolation depends upon consistency with other values of salinity and other properties, and these footnotes are supplemented with "falls on property curve" or "does not fall on property curve," depending upon whether the property curve was drawn through the value or not.

In addition to standard footnotes, three special notations are used without footnotes because their meaning is always the same.

To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

p: pretrip or posttrip.

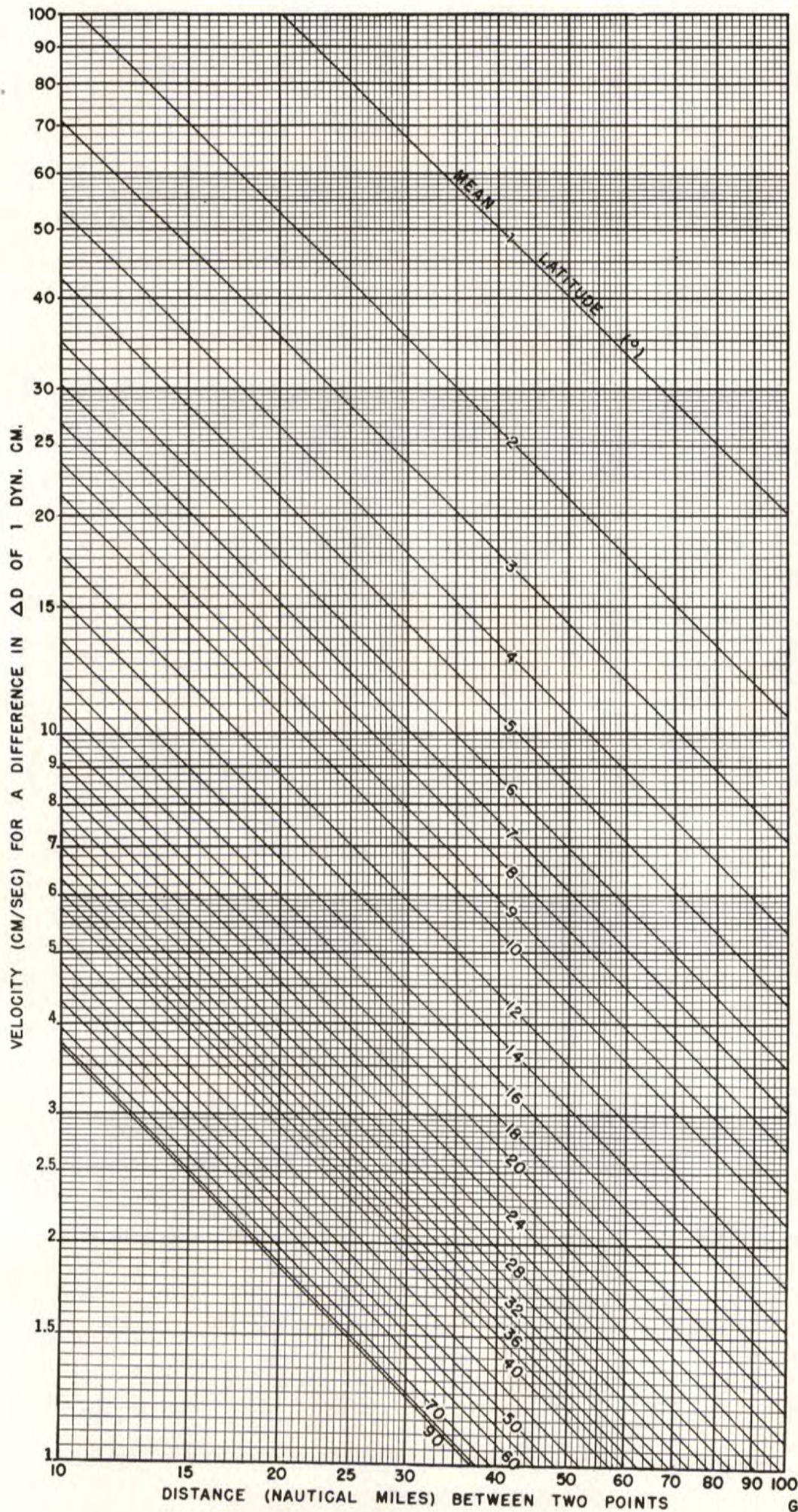
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

r: rejected value (value seems to be definitely wrong),

u: uncertain value (value may be correct; occasionally it can influence the drawing of the property curve).

FORMAT

These data are typed in the format of the University of California Press publication, "Oceanic Observations of the Pacific." So that these pages can be used as copy for the 1958 volume, the first page of the Cruise 5805 data is numbered 144.



VELOCITY OF GEOSTROPHIC FLOW

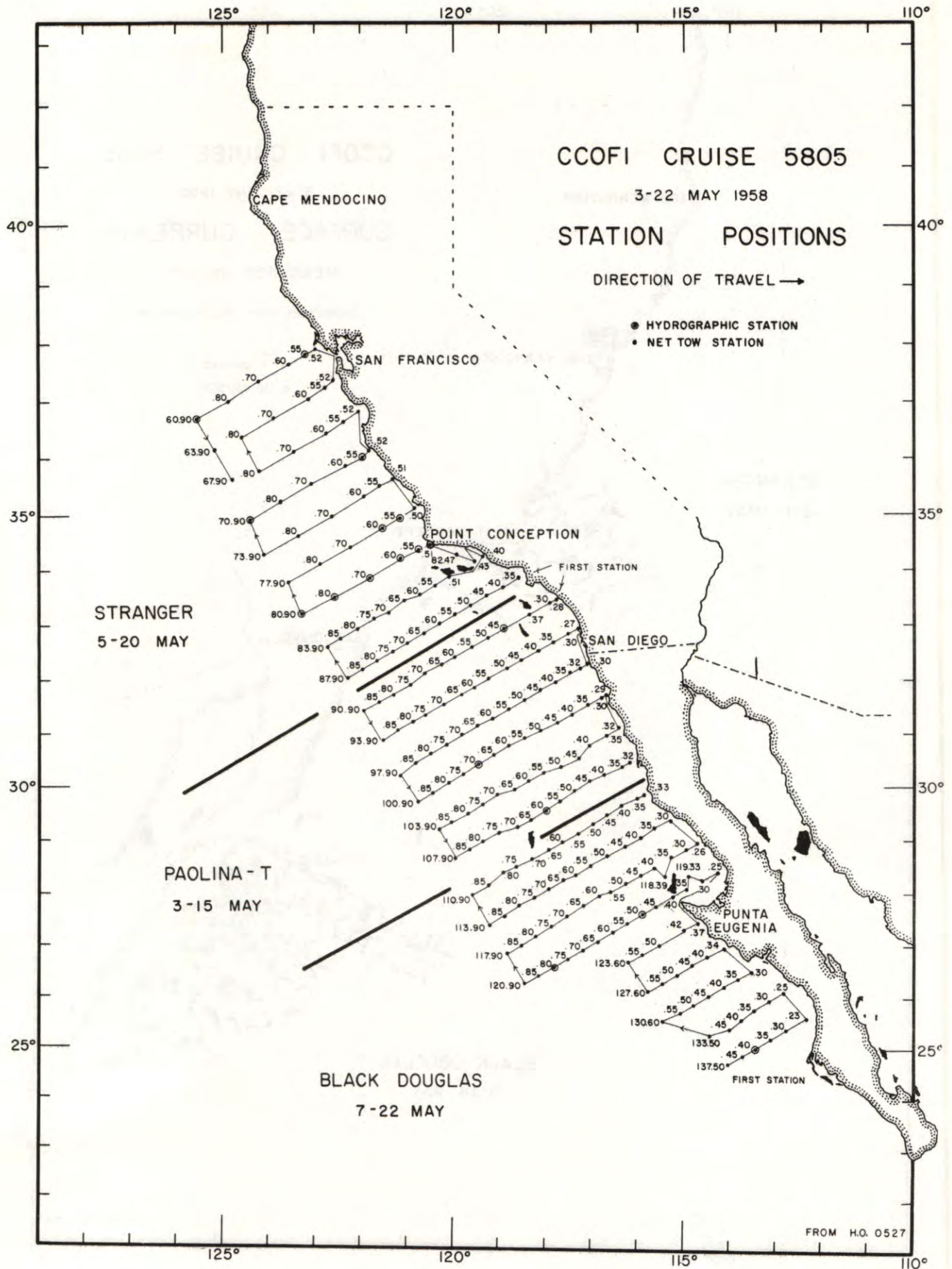


FIGURE 1

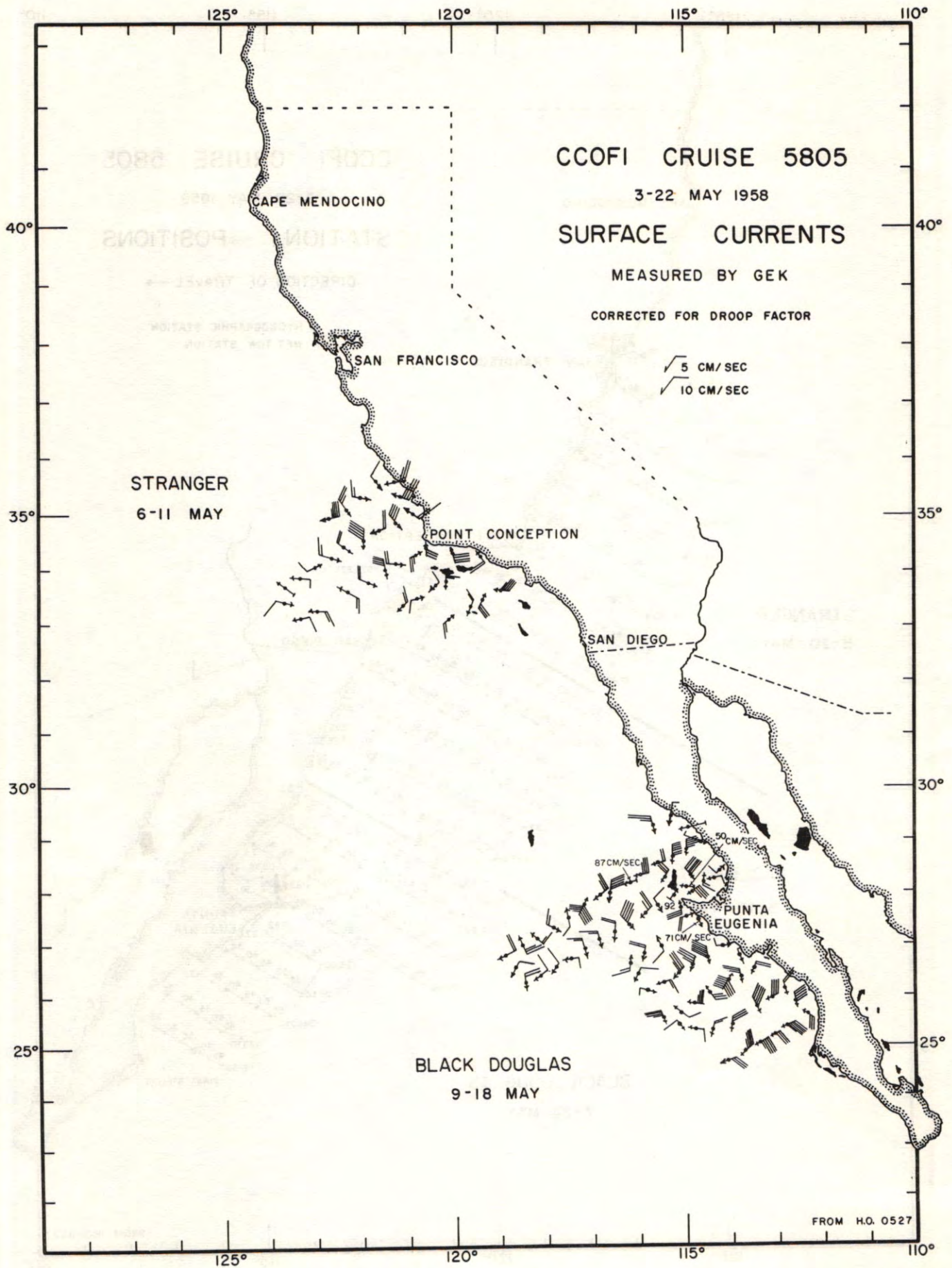


FIGURE 2

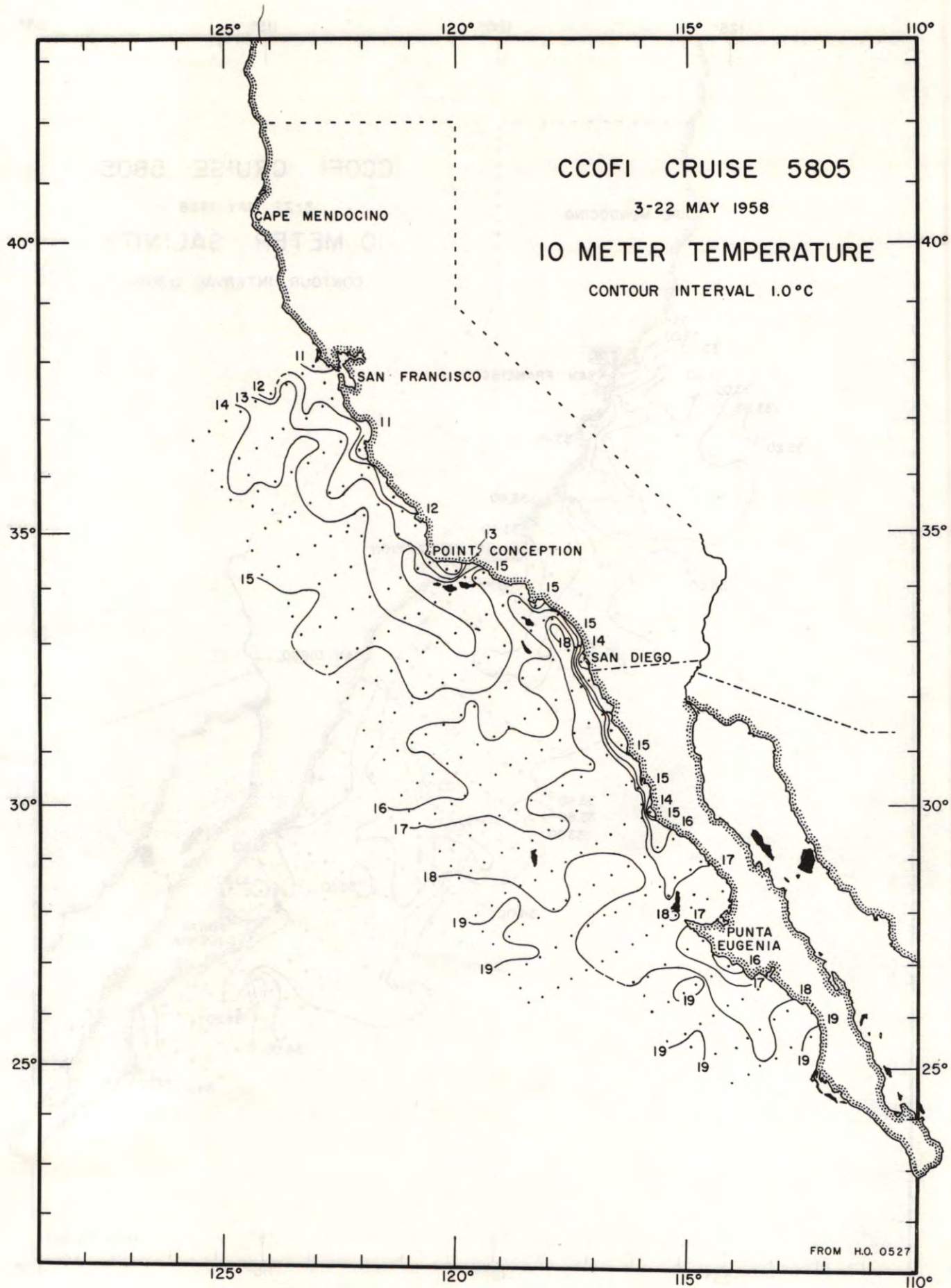


FIGURE 3

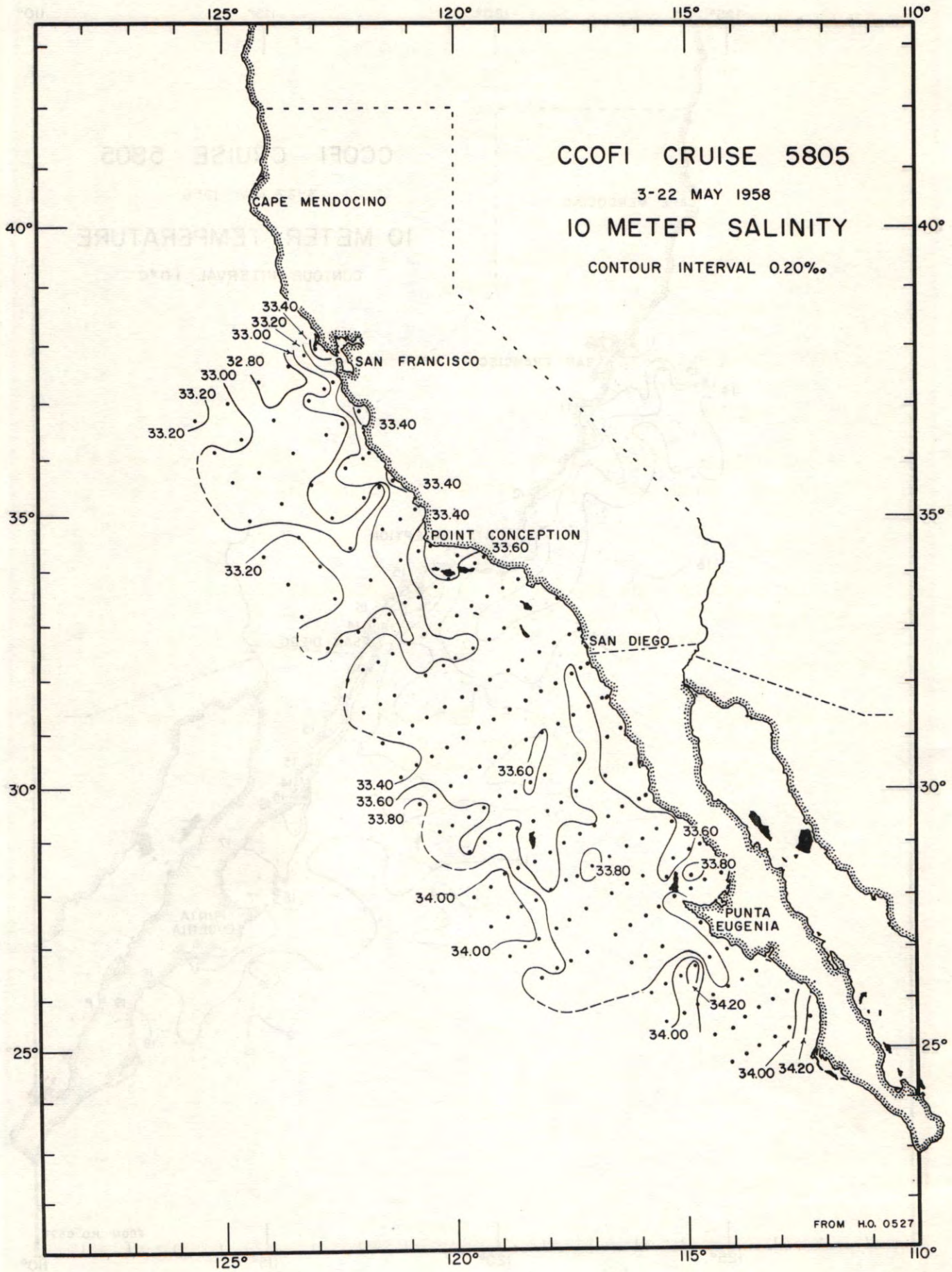


FIGURE 4

COMPUTED		EXTRACTED			CALCULATED					
DATE	TIME	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.

PERSONNEL

SHIPS' CAPTAINS

- Davis, Laurence E., R/V Paolina-T
- Forster, Charles W., R/V Black Douglas
- Smith, Charles H., R/V Stranger

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Black Douglas

- Wolf, Robert S., Fishery Research Biologist, Bureau of Commercial Fisheries
- Greenbaum, Richard H., Senior Laboratory Technician

R/V Paolina-T

- Bower, Donald R., Fishery Aid, Bureau of Commercial Fisheries
- Joyal, Norman F., Marine Technician

R/V Stranger

- Counts, Robert C., Fishery Research Biologist, Bureau of Commercial Fisheries
- Goffman, Jackson E., Marine Technician
- *Worrall, Charles G., Senior Marine Technician

*Lines 77 and 80 only.

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT	Z	T	S	O ₂	σ_t	δT	ΔD
m	°C	‰	ml/L	$10^{-5} \text{ cm}^3/\text{g}$	m	°C	‰	ml/L	g/L	$10^{-5} \text{ cm}^3/\text{g}$	dyn. m

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STRANGER; May 12, 1958; 2115 GCT; 34°53'N, 124°27.5'W; sounding, 2400 fm; wind, 350°, force 4; weather, partly cloudy; sea, very rough; wire angle, 16°.

70.90

0	14.42	32.95	5.99	340	0	14.42	32.95	5.99	24.55	340	0.00
10	14.38	32.99	-	337	10	14.38	32.99	-	24.58	337	0.03
28	13.94	33.03	6.06	325	20	14.18	33.02	6.02	24.65	330	0.07
42	13.58	33.01	6.06	320	30	13.88	33.03	6.06	24.71	324	0.10
51	13.48	33.15	5.92	308	50	13.52	33.14	5.99	24.87	309	0.16
60	12.18	33.20	5.70	280	75	11.40	33.33	5.32	25.42	256	0.23
69	11.78	33.27	5.52	267	100	10.36	33.51	4.16	25.76	225	0.30
87	10.64	33.42	4.88	237	150	9.17	33.76	3.40	26.15	188	0.40
100	10.36	33.51	4.16	225	200	8.53	34.00	2.27	26.43	161	0.49
114	9.82	33.56	4.04	213	250	7.68	34.06	2.02	26.60	145	0.56
133	9.20	33.69	3.60	194	300	7.21	34.09	1.73	26.69	136	0.64
162	9.09	33.89	2.85	177	400	6.28	34.17	1.03	26.88	118	0.77
198	8.58	33.99	2.28	162	500	5.70	34.22	0.66	27.00	107	0.89
247	7.74	34.14a)	2.04	-							
324	6.99	34.11	1.56	131							
419	6.08	34.18	0.86	115							
556	5.38	34.26	0.47	100							

STRANGER; May 11, 1958; 1020 GCT; 34°54'N, 121°11'W; sounding, 320 fm; wind, 090°, force 1; weather, cloudy; sea, smooth; wire angle, 00°.

77.55

0	12.98	33.29	7.04	288	0	12.98	33.29	7.04	25.10	288	0.00
10	12.94	33.31	-	285	10	12.94	33.31	-	25.12	285	0.03
29	11.84	33.54	7.13	249	20	12.27	33.47	7.12	25.37	262	0.06
39	11.66	33.56	6.72	244	30	11.83	33.54	7.12	25.51	248	0.08
49	11.32	33.57	6.09	237	50	11.28	33.57	6.03	25.63	237	0.13
58	10.34	33.57	4.66	220	75	10.23	33.61	4.44	25.85	216	0.19
68	10.28	33.58	4.59	219	100	9.46	33.75	3.32	26.09	193	0.24
82	10.19	33.68	4.31	210	150	8.62	34.00	2.41	26.42	162	0.33
96	9.48	33.73	3.50	195	200	8.17	34.12	1.67	26.58	146	0.41
109	9.41	33.85	2.73	185	250	7.61	34.16	1.28	26.69	136	0.48
133	9.14	33.96	2.47	173	300	7.23	34.21	1.04	26.79	127	0.55
160	8.36	34.02	2.32	156	400	6.51	34.24	0.62	26.91	115	0.67
193	8.24	34.11	1.78	148	500	(5.95)	(34.28)	(0.51)	(27.01)	(106)	(0.79)
240	7.70	34.14	1.37	138							
287	7.36	34.20	1.10	130							
385	6.61	34.23	0.67	117							
480	6.03	34.27	0.51	107							

STRANGER; May 11, 1958; 0739 GCT; 34°43'N, 122°33'W; sounding, 420 fm; wind, 090°, force 2; weather, cloudy; sea, slight; wire angle, 04°.

77.60

0	13.91	33.33	6.67	302	0	13.91	33.33	6.67	24.94	302	0.00
10	13.72	33.31	-	300	10	13.72	33.31	-	24.96	300	0.03
29	13.06	33.29	6.37	289	20	13.45	33.29	6.53	25.01	296	0.06
39	12.29	33.35	5.79	271	30	13.00	33.29	6.33	25.09	288	0.09
49	11.83	33.40	5.53	259	50	11.80	33.40	5.52	25.41	258	0.14
58	11.26	33.48	4.93	243	75	10.98	33.53	4.64	25.66	234	0.20
68	11.16	33.50	4.84	240	100	10.19	33.81	3.33	26.02	200	0.26
82	10.80	33.58	4.39	228	150	9.18	34.01	2.37	26.34	170	0.35
96	10.30	33.80	3.44	203	200	8.66	34.15	1.60	26.53	152	0.44
110	9.90	33.84	3.18	193	250	8.20	34.20	1.42	26.64	141	0.51
132	9.37	33.95	2.47	177	300	7.80	34.21	1.30	26.71	134	0.58
161	9.06	34.06	2.29	164	400	6.59	34.31	0.87	26.96	111	0.71
193	8.77	34.13	1.68	154	500	5.95	34.30	0.59	27.03	104	0.82
239	8.32	34.20	1.45	143							
313	7.65	34.21	1.27	133							
407	6.55	34.31	0.82	110							
532	5.78	34.29	0.52	102							

a) Broken bottle cap; value does not fall on property curve.

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OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT_3	Z	T	S	O ₂	σ_t	δT_3	ΔD
m	°C	‰	ml/L	10^{-5} cm/g	m	°C	‰	ml/L	g/L	10^{-5} cm/g	dyn. m

80.51 STRANGER; May 9, 1958; 1150 GCT; 34°26.5'N, 120°31.5'W; sounding, 45 fm; wind, 190°, force 3; weather, cloudy; sea, slight; wire angle, 00°.

0	13.16	33.63	5.56	266	0	13.16	33.63	5.56	25.33	266	0.00
20	12.09	33.67	4.42	244	10	12.66	33.65	4.92	25.44	255	0.03
39	10.94	33.68	4.00	222	20	12.09	33.67	4.42	25.56	244	0.05
64	10.26	33.73	3.41	208	30	11.36	33.68	4.14	25.70	230	0.07
					50	10.58	33.70	3.72	25.86	215	0.12

80.55 STRANGER; May 9, 1958; 1440 GCT; 34°19'N, 120°48.5'W; sounding, 450 fm; wind, direction missing, force 1; weather, overcast; sea, slight; wire angle, 03°.

0	13.67	33.54	6.54	283	0	13.67	33.54	6.54	25.15	283	0.00
10	13.65	33.53	-	283	10	13.65	33.53	-	25.15	283	0.03
29	12.98	33.56	6.00	268	20	13.46	33.53	6.33	25.18	279	0.06
39	11.90	33.53	5.57	250	30	12.88	33.56	5.96	25.32	266	0.08
48	10.90	33.48	4.94	237	50	10.74	33.47	4.84	25.66	234	0.13
58	10.18	33.47	4.50	225	75	9.83	33.66	3.70	25.95	206	0.19
67	10.02	33.60	3.91	214	100	9.37	33.81	2.87	26.16	187	0.24
81	9.66	33.71	3.51	199	150	8.63	33.99	2.37	26.41	163	0.33
94	9.40	33.80	2.89	188	200	7.77	34.07	1.86	26.60	145	0.40
108	9.27	33.82	2.85	185	250	7.58	34.15	1.54	26.69	136	0.48
131	8.91	33.95	2.45	170	300	7.37	34.20	1.23	26.77	129	0.54
159	8.52	34.00	2.36	160	400	6.46	34.23	0.62	26.91	116	0.67
191	7.82	34.05	1.98	147	500	5.78	34.26	0.53	27.02	104	0.78
238	7.60	34.13	1.57	138							
313	7.26	34.21	1.11	127							
407	6.40	34.23	0.60	115							
531	5.60	34.28	0.52	102							

80.60 STRANGER; May 9, 1958; 1741, 1815 GCT; 34°10'N, 121°09.5'W; sounding, 1600 fm; wind, 200°, force 4; weather, overcast; sea, moderate; wire angle, 15°, 18°.

0	13.90	33.30	6.56	305	0	13.90	33.30	6.56	24.92	305	0.00
9	13.89	33.32	-	304	10	13.88	33.32	-	24.94	303	0.03
28	12.84	33.47	6.25	272	20	13.54	33.38	6.46	25.06	291	0.06
37	11.91	33.56	5.32	248	30	12.44	33.51	5.90	25.37	262	0.09
49p	11.60	33.58	5.32	241	50	11.59	33.59	5.32	25.59	241	0.14
59p	11.56	33.64	4.94	236	75	9.69	33.66	3.77	25.98	203	0.19
					100	9.15	33.74	3.20	26.13	190	0.24
71	10.15	33.67	3.80	210	150	9.00	34.00	2.13	26.35	168	0.33
85	9.26	33.65	3.73	198	200	8.25	34.12	1.65	26.56	148	0.41
98	9.14	33.69	3.35	193	250	7.98	34.15	1.40	26.63	142	0.49
120	9.22	33.86	2.60	182	300	7.57	34.17	1.16	26.71	134	0.56
147	9.06	33.98	2.22	170	400	6.60	34.23	0.77	26.89	117	0.69
176	8.50	34.07	1.86	155	500	5.75	34.27	0.49	27.04	103	0.80
222	8.16	34.14	1.55	145							
296	7.61	34.17	1.17	135							
386	6.71	34.22	0.82	119							
507	5.66	34.28	0.48	102							

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT_{-5}^3	Z	T	S	O ₂	σ_t	δT_{-5}^3	ΔD
m	°C	‰	ml/L	10 ⁻⁵ cm/g	m	°C	‰	ml/L	g/L	10 ⁻⁵ cm/g	dyn. m

STRANGER; May 9-10, 1958; 2341, 0006, 0032 GCT; 33°48'N, 121°50'W; sounding, 2000 fm; wind, 160°, force 4; weather, cloudy; sea, moderate; wire angle, 04°, 03°, 05°.

80.70

0	14.22	33.00	6.04	333	0	14.22	33.00	6.04	24.62	333	0.00
10	14.14	33.13	-	322	10	14.14	33.13	-	24.74	322	0.03
29	13.90	33.14	6.15	316	20	14.03	33.14	6.13	24.77	319	0.06
43	13.80	33.13	6.03	314	30	13.86	33.14	6.15	24.80	316	0.10
53	13.70	33.16	6.02	311	50	13.71	33.15	6.02	24.84	312	0.16
63	13.54	33.24	6.06	302	75	13.34	33.29	6.02	25.03	294	0.24
77	13.27	33.30	5.98	292	100	12.50	33.37	5.37	25.25	273	0.31
					150	8.87	33.69	4.01	26.13	189	0.42
90	12.96	33.35	5.52	283	200	8.46	33.97	2.26	26.42	162	0.51
104	12.20	33.37	6.03u	268	250	8.22	34.13	1.57	26.58	146	0.59
					300	7.70	34.19	1.29	26.70	135	0.66
114	10.39	33.39	4.83	234	400	6.60	34.22	0.77	26.89	118	0.79
137	9.06	33.57	4.27	201	500	6.01	34.24	0.51	26.98	109	0.91
165	8.68	33.81	3.28	177							
202	8.45	33.98	2.24	161							
253	8.20	34.14	1.50	146							
332	7.26	34.20	1.15	128							
431	6.39	34.23	0.64	114							
570	5.50	34.27	0.40	101							

STRANGER; May 10, 1958; 0618 GCT; 33°28'N, 122°35.5'W; sounding, 2250 fm; wind, 140°, force 4; weather, partly cloudy; sea, rough; wire angle, 14°.

80.80

0	14.50	33.16	5.97	327	0	14.50	33.16	5.97	24.68	327	0.00
10	14.48	33.22	-	323	10	14.48	33.22	-	24.73	323	0.03
28	14.44	33.17	5.93	325	20	14.45	33.21	5.94	24.73	323	0.06
43	14.40	33.17	6.00	324	30	14.44	33.17	5.93	24.71	325	0.10
52	14.24	33.22	6.05	317	50	14.27	33.20	6.05	24.77	319	0.16
62	14.12	33.35	5.84	305	75	13.88	33.35	5.80	24.96	301	0.24
76	13.86	33.35	5.80	301	100	10.82	33.36	4.73	25.56	244	0.31
89	11.34	33.35	4.99	254	150	9.02	33.76	3.40	26.18	185	0.42
103	10.66	33.37	4.65	241	200	8.71	33.99	2.22	26.40	164	0.50
116	9.76	33.49	4.30	217	250	8.38	34.09	1.73	26.52	152	0.58
139	9.18	33.65	3.71	196	300	7.98	34.18	1.44	26.66	139	0.66
165	8.86	33.83	2.91	178	400	6.62	34.20	0.78	26.86	120	0.79
201	8.71	33.99	2.21	164	500	5.90	34.23	0.58	26.98	109	0.92
251	8.38	34.09	1.73	152							
328	7.65	34.20	1.27	134							
425	6.38	34.20	0.68	116							
561	5.48	34.27	0.55	101							

STRANGER; May 10, 1958; 1150 GCT; 33°09.5'N, 123°19.5'W; sounding, 2350 fm; wind, 150°, force 4; weather, drizzle; sea, rough; wire angle, 18°.

80.90

0	14.65	33.19	5.97	328	0	14.65	33.19	5.97	24.67	328	0.00
10	14.64	33.22	-	326	10	14.64	33.22	-	24.69	326	0.03
28	14.59	33.21	5.94	325	20	14.62	33.22	5.94	24.70	325	0.06
56	14.49	33.22	5.97	322	30	14.58	33.21	5.95	24.70	325	0.10
64	14.46	33.26	5.96	318	50	14.54	33.22	5.96	24.72	323	0.16
74	14.32	33.25	6.00	316	75	14.30	33.25	5.99	24.80	316	0.24
87	14.25	33.35	5.94	308	100	13.34	33.34	5.56	25.07	290	0.32
100	13.34	33.34	5.56	290	150	9.50	33.58	3.87	25.94	207	0.44
113	11.26	33.44	4.57	246	200	8.84	34.00	2.28	26.38	165	0.53
131	10.03	33.54	4.08	218	250	8.03	34.04	2.05	26.55	150	0.62
149	9.52	33.58	3.90	207	300	7.35	34.08	1.59	26.67	138	0.69
176	9.35	33.87	2.75	183	400	6.42	34.14	0.99	26.84	122	0.82
198	8.86	34.00	2.30	166	500	5.85	34.20	0.62	26.96	110	0.95
248	8.02	34.04	2.10	150							
325	7.02	34.10	1.40	133							
426	6.24	34.16	0.88	118							
556	5.48	34.26	0.38	101							

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OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT_{-5}^3	Z	T	S	O ₂	σ_t	δT_{-5}^3	ΔD
m	°C	‰	ml/L	10 cm ³ /g	m	°C	‰	ml/L	g/L	10 cm ³ /g	dyn. m

90.45

PAOLINA-T; May 4, 1958; 1500, 1544 GCT; 32°55'N, 118°56'W; sounding, 940 fm; wind, 270°, force 3; weather, cloudy; sea, moderate; wire angle, 09°, 10°.

0	14.62	33.57	6.05	299	0	14.62	33.57	6.05	24.97	299	0.00
10	14.60	33.55	6.18	300	10	14.60	33.55	6.18	24.96	300	0.03
29	13.34	33.77r	5.94	-	20	13.75	33.54	6.03	25.13	284	0.06
44	12.68	33.53	5.71	264	30	13.33	33.54	5.93	25.22	276	0.09
53	11.72	33.55	4.97	245	50	11.85	33.55	5.10	25.51	248	0.14
63	11.26	33.53	4.55	239	75	10.45	33.60	4.31	25.80	221	0.20
73	10.92	33.56	4.44	231	100	9.78	33.67	3.70	25.98	204	0.25
91	9.90	33.66	3.90	207	150	9.08	34.02	2.18	26.36	168	0.34
105	9.71	33.68	3.62	202	200	8.54	34.17	1.66	26.56	148	0.42
119	9.38	33.79	3.32	189	250	8.06	34.23	1.31	26.68	137	0.50
142	9.15	33.98	2.41	172	300	7.73	34.26	1.03	26.76	130	0.57
170	8.93	34.08	1.98	161	400	6.82	34.29	0.48	26.91	115	0.69
206	8.45	34.18	1.61	146	500	6.19	34.34	0.36	27.03	104	0.81
259	7.99	34.24	1.24	135							
337	7.38	34.27	0.79	124							
438	6.55	34.31	0.33	110							
578	5.68	34.38	0.53	95							

100.70

PAOLINA-T; May 10, 1958; 1007 GCT; 30°23'N, 119°29'W; sounding, 2100 fm; wind, 140°, force 3; weather, partly cloudy; sea, moderate; wire angle, 00°.

0	16.60	33.48	5.95	348	0	16.60	33.48	5.95	24.46	348	0.00
10	16.30	33.49	5.94	341	10	16.30	33.49	5.94	24.54	341	0.03
30	16.23	33.46	5.74	342	20	16.25	33.47	5.76	24.54	341	0.07
55	15.68	33.39a)	5.74	335	30	16.23	33.46	5.74	24.53	342	0.10
66	15.22	33.32	5.79	330	50	16.20	33.45	5.74	24.54	341	0.17
74	14.82	33.32	5.93	322	75	14.78	33.32	5.93	24.75	321	0.25
84	14.02	33.36	5.57	303	100	11.90	33.37	6.00	25.36	262	0.33
100	11.90	33.37	6.00	262	150	9.34	33.40	3.91	25.82	218	0.45
114	11.00	33.38	5.88	246	200	8.50	33.85	2.79	26.32	171	0.55
133	9.86	33.39	4.86	226	250	7.65	33.94	2.17	26.51	153	0.63
151	9.33	33.40	3.90	217	300	7.08	33.99	1.65	26.64	141	0.71
173	8.86	33.78	3.21	182	400	6.22	34.11	0.82	26.85	121	0.84
197	8.53	33.84	2.83	172	500	5.82	34.23	0.53	26.99	108	0.96
242	7.78	33.92	2.27	156							
317	6.92	34.01b)	1.46	138							
412	6.16	34.15b)	0.79	117							
540	5.70	34.27	0.41	103							

107.60

PAOLINA-T; May 14, 1958; 0659 GCT; 29°32'N, 118°01'W; sounding, 1820 fm; wind, 270°, force 7; weather, cloudy; sea, high; wire angle, 25°.

0	16.80	33.49	5.84	352	0	16.80	33.49	5.84	24.42	352	0.00
9	16.83	33.49c)	5.91	352	10	16.83	33.49	5.91	24.42	352	0.04
27	16.80	33.48	5.88	352	20	16.83	33.49	5.90	24.42	352	0.07
55	16.44	33.58	5.98	337	30	16.78	33.48	5.88	24.42	352	0.10
62	15.87	33.49	5.88	331	50	16.42	33.58	5.98	24.57	338	0.17
71	15.23	33.51d)	5.95	-	75	15.03	33.44	5.94	24.79	317	0.26
83	14.76	33.43	5.90	312	100	12.75	33.43	5.53	25.25	273	0.33
96	13.33	33.45	5.65	282	150	9.92	33.50	4.75	25.82	218	0.45
109	11.79	33.37	-	260							
126	10.86	33.46	4.98	237							
144	10.15	33.48	4.83	224							
169	9.24	33.73	3.70	192							

- a) Broken bottle cap; value falls on property curve.
 b) Salinity samples at 317 and 412 meters appear to have been reversed. It is assumed that they are in the order listed.
 c) Possible evaporation; value falls on property curve.
 d) Loose bottle cap; value does not fall on property curve.

OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	$10^{-5} \text{ cm}^3/\text{g}$	m	°C	‰	ml/L	g/L	$10^{-5} \text{ cm}^3/\text{g}$	dyn. m

BLACK DOUGLAS; May 15, 1958; 1141 GCT; 27°33'N, 115°52.5'W; sounding, 2100 fm; wind, 320°, force 4; weather, clear; sea, moderate; wire angle, 14°.

120,50

0	17.85	33.78	5.30	354	0	17.85	33.78	5.30	24.40	354	0.00
10	17.86	33.77	5.00	355	10	17.86	33.77	5.00	24.38	355	0.04
29	16.78	33.68	4.94	338	20	17.83	33.77	4.98	24.39	354	0.07
43	15.62	33.68	5.05	312	30	16.68	33.68	4.95	24.60	335	0.10
52	14.22	33.86	3.56	270	50	14.97	33.82	3.80	25.08	289	0.17
62	12.74	33.78	3.11	247	75	11.72	33.84	3.02	25.76	224	0.23
72	11.86	33.82	3.05	228	100	10.90	34.04	2.27	26.05	197	0.28
88	11.16	33.96	2.31	205	150	10.45	34.30	1.32	26.35	168	0.38
101	10.86	34.03	2.27	196	200	10.26	34.40	1.06	26.45	159	0.46
114	10.42	34.06	2.22	186	250	8.95	34.32	1.20	26.61	144	0.54
135	10.48	34.29	1.56	170	300	7.92	34.21	1.32	26.69	136	0.61
161	10.38	34.31	1.28	166	400	7.01	34.33	1.08	26.91	115	0.74
195	10.33	34.40	1.07	159	500	6.52	34.39	0.27	27.02	105	0.85
242	9.16	34.34	1.17	145							
317	7.58	34.18	1.33	134							
416	6.97	34.35	0.40	113							
546	6.10	34.42	0.25	97							

BLACK DOUGLAS; May 16, 1958; 0515 GCT; 26°32.5'N, 117°48.5'W; sounding, 2000 fm; wind, 320°, force 4; weather, clear; sea, moderate; wire angle, 06°.

120,80

0	18.60	33.86	5.82	366	0	18.60	33.86	5.82	24.27	366	0.00
10	18.63	33.87	5.79	366	10	18.63	33.87	5.79	24.27	366	0.04
29	18.46	33.85	5.81	364	20	18.56	33.86	5.80	24.28	365	0.07
43	18.10	33.82	5.78	358	30	18.45	33.85	5.81	24.30	363	0.11
53	17.50	33.89a)	5.96	-	50	17.70	33.82	5.87	24.46	348	0.18
62	17.26	33.83	5.93	337	75	17.10	33.83	5.98	24.62	333	0.26
72	17.16	33.83	5.98	335	100	16.10	33.78	5.80	24.82	314	0.35
89	16.88	33.84	5.90	328	150	11.20	33.61	3.72	25.68	232	0.48
102	15.98	33.78	5.80	312	200	10.21	34.06	(2.52)	26.20	182	0.59
115	15.18	33.76	5.71	297	250	9.54	34.29	(2.10)	26.49	155	0.68
136	11.79	33.53	4.96	248	300	8.95	34.32	(1.50)	26.61	144	0.76
162	11.78	33.92	3.05	219	400	7.64	34.35	0.62	26.84	122	0.89
198	10.22	34.05	2.52	184	500	6.64	34.36	0.40	26.98	108	1.02
255	9.54	34.30	-	154							
332	8.54	34.32	1.03	137							
428	7.30	34.36	0.51	117							
565	5.96	34.34	0.33	101							

BLACK DOUGLAS; May 9, 1958; 1632 GCT; 25°00'N, 113°23.5'W; sounding, 1500 fm; wind, 320°, force 4; weather, cloudy; sea, rough; wire angle, 16°.

137,40

0	18.16	33.87	5.96	355	0	18.16	33.87	5.96	24.39	355	0.00
10	18.09	33.87	5.64	353	10	18.09	33.87	5.64	24.41	353	0.04
28	18.09	33.87	5.72	353	20	18.09	33.87	5.68	24.41	353	0.07
42	17.16	33.85	5.82	333	30	18.08	33.87	5.73	24.41	353	0.10
51	16.58	33.84	5.85	321	50	16.63	33.84	5.84	24.74	322	0.17
60	15.96	33.78	5.75	311	75	15.40	33.92	4.94	25.07	290	0.25
70	15.82	33.93	5.33	298	100	13.13	34.09	3.90	25.68	232	0.32
85	13.88	33.90	3.89	261	150	11.80	34.48	0.83	26.25	178	0.42
97	13.11	33.96	3.00	241	200	11.10	34.60	0.38	26.46	158	0.50
109	11.92	33.96	2.90	219	250	10.28	34.59	0.30	26.61	144	0.58
128	12.35	34.34	1.17	199	300	9.48	34.55	0.29	26.71	134	0.66
152	11.72	34.48	0.82	177	400	8.10	34.46	0.24	26.86	120	0.79
186	11.29	34.58	0.46	162	500	6.97	34.44	0.22	27.00	107	0.90
285p	9.69	34.56	0.29	137							
382p	8.31	34.47	0.25	123							
519p	6.98	34.43	0.22	104							

a) Broken bottle cap; value does not fall on property curve.

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
60.52-S	V-16	2055	37°53.0'	123°01.0'	42	calm		haze	slight	10.94	33.48	8.90	33.85
60.60-S	17	0045	37°36.5'	123°35.0'	1700	300°	4	partly cloudy	moderate	13.14	32.77	9.52	33.54
60.70-S	17	0500	37°17.5'	124°16.0'	2200	240°	1	partly cloudy	moderate	13.73	32.78	12.01	32.97
60.80-S	17	0915	36°57.5'	124°56.0'	2360	180°	2	partly cloudy	slight	14.13	33.03	13.75	33.02
63.52-S	15	1130	37°20.0'	122°39.5'	50	320°	3	clear	slight	11.52	33.01	9.33	33.64
63.55-S	15	0930	37°12.5'	122°50.0'	200	320°	3	clear	slight	12.44	32.83	9.23	33.60
63.60-S	15	0645	37°01.0'	123°10.5'	1470	320°	3	clear	slight	12.07	33.04	10.94	33.21
63.70-S	15	0040	36°40.0'	123°55.0'	2125	340°	4	clear	rough	13.57	32.86	12.96	32.86
63.80-S	14	1835	36°19.5'	124°38.5'	2300	340°	3	partly cloudy	rough	13.84	33.03	13.52	33.06
63.90-S	17	1840	36°06.5'	125°13.0'	2500	180°	3	cloudy	moderate	14.37	32.91	13.05	32.94
67.50-S	13	2153	36°47.5'	122°04.0'	177	360°	5	partly cloudy	very rough	12.32	33.51	9.18	33.69
67.55-S	14	0030	36°35.5'	122°26.5'	1600	330°	5	clear	high	13.75	32.92	11.16	33.22
67.60-S	14	0250	36°23.0'	122°48.5'	1600	340°	5	partly cloudy	high	13.94	32.83	12.15	33.03
67.70-S	14	0730	36°04.0'	123°30.0'	2000	320°	5	partly cloudy	high	14.02	32.95	10.90	33.26
67.80-S	14	1301	35°43.0'	124°15.0'	2200	330°	4	cloudy	rough	14.28	32.86	13.92	33.03
67.90-S	17	2310	35°34.0'	124°50.0'	2450	180°	3	cloudy	moderate	14.11	32.87	13.54	33.02
70.52-S	13	1700	36°09.0'	121°50.0'	420	320°	3	clear	rough	12.32	33.31	9.83	33.62
70.60-S	13	1120	35°50.5'	122°22.0'	1900	340°	6	partly cloudy	high	12.70	33.35	10.79	33.49
70.70-S	13	0700	35°31.0'	123°05.0'	2100	350°	5	clear	high	13.81	33.02	12.63	33.04

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
70.80-S	V-13	0200	35°12.5'	123°47.0'	2250	360°	4	partly cloudy	high	14.14	32.90	12.52	32.97
73.51-S	11	2130	35°36.0'	121°20.0'	155	270°	3	partly cloudy	moderate	11.30	33.51	10.00	33.69
73.55-S	11	2340	35°27.5'	121°37.5'	600	270°	3	partly cloudy	slight	13.97	32.86	11.48	33.30
73.60-S	12	0210	35°17.0'	121°58.5'	1550	320°	4	partly cloudy	moderate	14.04	33.12	11.88	32.92
73.70-S	12	0700	34°56.5'	122°40.0'	2250	320°	4	rain	rough	14.38	33.09	11.90	33.25
73.80-S	12	1120	34°35.0'	123°24.5'	2300	320°	5	overcast	very rough	14.76	33.20	14.50	33.19
73.90-S	12	1550	34°14.0'	124°09.5'	2450	360°	5	overcast	high	14.96	33.24	14.54	33.22
77.50-S	11	1310	34 ³⁵ °05.0'	120°52.0'	80	120°	2	cloudy	slight	12.67	33.36	10.62	33.60
77.70-S	11	0225	34°23.0'	122°16.0'	2200	120°	3	cloudy	moderate	14.16	33.00	11.98	33.24
77.80-S	10	2145	34°04.5'	122°56.0'	2350	130°	3	cloudy	rough	14.96	33.22	14.77	33.24
77.90-S	10	1700	33°44.5'	123°38.5'	2300	140°	4	cloudy	very rough	15.04	33.26	14.98	33.26
82.47-S	9	0830	34°15.0'	119°58.0'	310	calm		cloudy	moderate	11.98	33.66	9.72	33.89
83.40-S	9	0020	34°14.0'	119°21.5'	10	270°	4	cloudy	slight	15.08	33.58	-	-
83.43-S	9	0540	34°08.0'	119°34.0'	131	270°	1	cloudy	slight	15.01	33.51	11.52	33.62
83.51-S	8	1855	33°51.5'	120°08.0'	174	310°	4	overcast	rough	14.67	33.60	9.66	33.84
83.55-S	8	1635	33°44.0'	120°25.5'	532	300°	3	overcast	rough	14.11	33.58	11.05	33.63
83.60-S	8	1350	33°31.0'	120°46.0'	1000	320°	4	overcast	rough	13.61	33.40	12.52	33.46
83.65-S	8	1050	33°22.5'	121°05.0'	1900	320°	4	overcast	rough	13.96	33.23	13.94	33.33
83.70-S	8	0810	33°13.0'	121°25.0'	2000	320°	3	overcast	rough	14.10	33.21	14.04	33.22

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
83.75-S	V-8	0530	33°03.5'	122°45.5'	2400	320°	5	overcast	high	14.82	33.30	14.91	33.30
83.80-S	8	0245	32°53.5'	122°06.0'	2240	320°	5	cloudy	high	14.81	33.20	15.22	-
83.85-S	8	0000	32°44.0'	122°27.5'	2000	320°	5	overcast	high	14.88	33.21	14.87	33.24
83.90-S	7	2145	32°35.0'	122°45.0'	2000	320°	5	overcast	high	14.86	33.12	14.52	33.19
87.35-S	6	0830	33°50.0'	118°37.5'	420	180°	2	cloudy	slight	15.98	33.46	11.16	33.62
87.40-S	6	1130	33°39.0'	118°58.0'	640	-	1	cloudy	slight	15.92	33.49	-	-
87.45-S	6	1420	33°30.0'	119°19.0'	900	320°	2	overcast	very rough	14.59	33.55	9.70	33.73
87.50-S	6	1810	33°20.0'	119°40.0'	40	280°	4	overcast	very rough	14.30	33.55	9.81	33.69
87.55-S	6	2035	33°10.0'	120°00.5'	500	270°	4	overcast	rough	13.34	33.55	12.30	33.57
87.60-S	7	0015	33°00.0'	120°21.5'	330	320°	5	overcast	very high	14.12	33.58	12.28	33.57
87.65-S	7	0237	32°50.0'	120°41.0'	2000	320°	6	cloudy	high	14.46	33.28	14.10	33.37
87.70-S	7	0530	32°39.0'	121°02.0'	2100	300°	5	cloudy	high	14.70	33.20	14.80	33.23
87.75-S	7	0750	32°29.0'	121°22.0'	2400	320°	5	cloudy	high	15.23	33.48	15.24	33.49
87.80-S	7	1015	32°18.5'	121°42.5'	2000	320°	5	cloudy	high	15.20	33.51	15.20	33.48
87.85-S	7	1250	32°10.0'	122°01.0'	2000	320°	4	overcast	high	15.41	33.53	15.43	33.52
87.90-S	7	1540	32°00.0'	122°20.0'	2300	320°	5	overcast	high	15.32	33.40	15.42	33.46
90.28-S	4	0345	33°28.5'	117°47.0'	200	280°	3	clear	rough	16.04	33.49	10.62	33.68

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
90.30-P	V-4	0545	33°24.5'	117°55.0'	330	330°	3	clear	rough	17.82	-	11.33	33.60
90.50-P	4	1858	32°45.0'	119°16.5'	170	330°	2	cloudy	moderate	14.58	33.49	12.96	33.50
90.55-P	4	2237	32°35.0'	119°37.0'	600	270°	3	cloudy	moderate	14.14	33.39	13.32	33.48
90.60-P	5	0149	32°23.0'	120°00.5'	650	290°	5	cloudy	moderate	14.67	33.39	13.80	33.51
90.65-P	5	0452	32°15.0'	120°17.0'	2050	320°	6	overcast	rough	14.93	33.42	13.84	33.50
90.70-P	5	0820	32°04.0'	120°38.5'	2095	270°	5	overcast	very high	14.72	33.40	14.50	33.45
90.80-P	5	1505	31°42.0'	121°19.0'	2000	320°	6	overcast	very rough	15.54	33.48	-	33.54
90.85-P	5	1825	31°32.0'	121°39.0'	2200	320°	5	cloudy	high	15.78	33.55	15.71	33.58
90.90-P	5	2126	31°22.0'	121°58.0'	2100	320°	5	cloudy	very rough	15.72	33.57	15.32	33.51
93.27-P	7	1935	32°56.0'	117°19.0'	98	180°	3	cloudy	slight	15.06	33.52	10.65	33.68
93.30-P	7	1742	32°50.0'	117°31.5'	510	200°	3	overcast	slight	17.68	33.51	11.20	33.54
93.35-P	7	1419	32°40.0'	117°52.0'	340	090°	3	overcast	moderate	16.10	33.56	12.10	33.51
93.40-P	7	1157	32°30.0'	118°12.5'	1000	320°	1	overcast	slight	16.78	33.51	12.40	33.49
93.45-P	7	0841	32°20.0'	118°33.0'	450	320°	3	overcast	moderate	16.16	33.56	12.59	33.48
93.50-P	7	0527	32°10.0'	118°53.0'	750	320°	4	overcast	rough	15.84	33.51	14.22	33.48
93.55-P	7	0217	32°00.0'	119°15.0'	850	320°	5	overcast	very rough	15.20	33.49	14.14	33.45
93.60-P	6	2305	31°50.0'	119°34.0'	1800	270°	5	overcast	very rough	16.08	33.53	15.74	33.51
93.65-P	6	1953	31°41.0'	119°53.0'	2035	270°	5	overcast	high	15.62	33.49	15.46	33.48
93.70-P	6	1655	31°30.0'	120°15.0'	2000	330°	6	overcast	high	16.01	33.49	15.04	33.51

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
93.75-P	V-6	1310	31°18.5'	120°38.0'	2100	270°	6	overcast	very rough	16.08	33.54	16.04	33.48
93.80-P	6	0928	31°10.5'	120°55.0'	2000	340°	6	cloudy	high	16.18	33.49	16.16	33.54
93.85-P	6	0546	31°01.0'	121°15.0'	2200	320°	6	cloudy	high	15.85	33.46	15.77	33.56
93.90-P	6	0220	30°50.0'	121°35.0'	2200	320°	5	overcast	very rough	15.50	33.35	15.24	33.42
97.30-P	8	0308	32°15.5'	117°08.5'	35	360°	4	cloudy	moderate	14.98	33.51	9.86	33.71
97.32-P	8	0436	32°11.5'	117°16.5'	820	220°	3	overcast	moderate	17.20	33.45	11.20	33.48
97.35-P	8	0648	32°05.0'	117°28.5'	680	130°	3	overcast	slight	17.04	33.66	13.52	-
97.40-P	8	1001	31°55.0'	117°50.0'	850	220°	4	overcast	rough	16.61	33.57	12.10	33.48
97.45-P	8	1308	31°45.5'	118°10.0'	1000	220°	1	overcast	rough	15.72	33.53	14.95	33.44
97.50-P	8	1610	31°35.0'	118°30.0'	1300	290°	3	overcast	moderate	15.88	33.55	14.22	33.51
97.55-P	8	1910	31°25.0'	118°50.0'	550	300°	3	overcast	rough	16.00	33.55	15.55	33.56
97.60-P	8	2212	31°16.0'	119°10.0'	2100	270°	4	overcast	very rough	15.77	33.54	15.82	33.53
97.65-P	9	0109	31°05.5'	119°31.0'	2230	270°	3	overcast	high	16.29	33.50	16.08	-
97.70-P	9	0404	30°55.5'	119°50.5'	2130	320°	3	overcast	rough	16.19	33.51	16.06	33.48
97.75-P	9	0709	30°45.0'	120°11.0'	2000	250°	3	overcast	slight	16.28	33.55	16.19	33.55
97.80-P	9	1007	30°35.0'	120°31.0'	2000	240°	3	overcast	moderate	15.82	33.45	15.34	33.39
97.85-P	9	1309	30°25.0'	120°51.0'	2250	320°	3	cloudy	moderate	15.48	33.39	15.42	33.36
97.90-P	9	1704	30°11.0'	121°12.0'	2020	180°	3	cloudy	moderate	15.48	33.38	15.41	33.39
100.29-P	11	1136	31°42.0'	116°43.0'	100	140°	2	cloudy	smooth	14.54	33.52	10.66	33.53

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
100.30-P	V-11	1000	31°41.0'	116°46.5'	310	calm		partly cloudy	slight	16.02	33.49	11.18	33.51
100.35-P	11	0715	31°31.0'	117°06.5'	660	calm		partly cloudy	slight	17.24	33.61	12.88	33.48
100.40-P	11	0400	31°21.0'	117°27.0'	1100	calm		partly cloudy	moderate	17.04	33.63	-	33.48
100.45-P	11	0120	31°11.0'	117°46.0'	950	180°	1	partly cloudy	slight	16.26	33.54	14.44	33.46
100.50-P	10	2235	31°02.0'	118°08.0'	950	110°	4	partly cloudy	moderate	16.69	33.60	-	33.46
100.55-P	10	1938	30°53.0'	118°28.0'	1340	120°	5	partly cloudy	slight	16.61	33.48	16.38	33.48
100.60-P	10	1630	30°45.0'	118°49.0'	1850	140°	3	cloudy	moderate	16.57	33.52	16.13	33.46
100.65-P	10	1356	30°33.0'	119°09.0'	2050	140°	3	partly cloudy	moderate	16.40	33.53	15.92	33.46
100.75-P	10	0641	30°12.0'	119°48.0'	2140	180°	3	partly cloudy	slight	15.96	33.42	16.23	33.49
100.80-P	10	0338	30°02.0'	120°07.0'	2530	180°	5	partly cloudy	high	16.32	33.58	16.26	33.57
100.85-P	10	0102	29°51.0'	120°27.0'	2550	140°	4	partly cloudy	moderate	16.54	33.63	16.66	33.71
100.90-P	9	2203	29°41.0'	120°46.0'	2000	140°	3	partly cloudy	moderate	16.96	33.82	16.92	33.78
103.30-P	11	1708	31°05.0'	116°25.0'	45	130°	5	partly cloudy	slight	14.36	33.51	10.49	33.55
103.35-P	11	1955	30°56.0'	116°43.0'	1020	130°	5	cloudy	moderate	17.27	33.58	14.01	33.47
103.40-P	11	2310	30°45.0'	117°05.0'	1040	130°	4	partly cloudy	moderate	16.71	-	-	33.41
103.45-P	12	0212	30°30.0'	117°18.0'	1200	220°	4	partly cloudy	moderate	17.22	33.56	16.64	33.54
103.55-P	12	0841	30°14.0'	118°04.0'	1650	300°	4	clear	very rough	17.18	33.57	16.67	33.58
103.60-P	12	1153	30°05.0'	118°23.0'	2035	300°	4	cloudy	moderate	17.44	33.64	17.08	33.73
103.65-P	12	1504	29°55.0'	118°43.0'	2150	320°	4	cloudy	rough	16.80	33.49	16.41	33.53

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
103.70-P	V-12	1806	29°47.5'	119°04.0'	1900	300°	3	cloudy	rough	16.94	33.58	16.90	33.71
103.75-P	12	2115	29°37.0'	119°24.0'	1940	340°	3	partly cloudy	moderate	17.10a)	33.66	16.78	33.71
103.80-P	13	0022	29°26.0'	119°43.0'	2000	340°	3	partly cloudy	moderate	17.26	33.62	16.93	33.68
103.85-P	13	0320	29°15.0'	120°04.0'	2250	340°	5	partly cloudy	rough	17.63	33.68	17.24	33.71
103.90-P	13	0550	29°10.0'	120°19.5'	2040	300°	5	partly cloudy	slight	17.48	33.68	17.46	33.79
107.32-P	15	0230	30°26.5'	116°12.0'	250	340°	5	partly cloudy	very rough	17.37	33.57	11.87	33.55
107.40-P	14	2206	30°12.5'	116°45.0'	1510	340°	4	cloudy	rough	17.40	33.57	14.28	33.48
107.45-P	14	1921	30°05.5'	117°03.5'	1200	320°	4	cloudy	very rough	17.60	33.68	14.40	33.49
107.50-P	14	1537	29°53.5'	117°23.0'	1600	320°	4	cloudy	rough	17.39	33.62	12.98	33.49
107.55-P	14	1150	29°42.5'	117°43.0'	1800	270°	6	cloudy	rough	16.88	33.51	16.34	33.48
107.65-P	14	0322	29°20.5'	118°20.0'	2000	320°	6	cloudy	very rough	17.16	33.53	15.89	33.44
107.70-P	14	0014	29°12.0'	118°40.0'	1900	270°	5	cloudy	very rough	17.40	33.60	16.82	-
107.75-P	13	2105	29°06.0'	119°01.0'	2000	340°	4	cloudy	very rough	17.58	33.68	16.96	33.64
107.80-P	13	1619	28°56.5'	119°24.5'	2000	320°	6	cloudy	very rough	17.16	33.64	16.92	33.67
107.85-P	13	1309	28°46.0'	119°42.5'	2000	040°	6	cloudy	very rough	17.37	33.57	16.98	33.62
107.90-P	13	0955	28°38.0'	119°58.0'	2000	320°	5	partly cloudy	very rough	18.31	-	17.70	33.86
110.33-B	21	2315	29°50.5'	115°52.0'	47	330°	3	overcast	slight	13.90	33.49	11.16	33.59

a) Alternate value, 17.28°C.

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
110.35-B	V-21	2145	29°46.5'	116°00.0'	700	320°	2	overcast	slight	17.40	33.59	15.00	33.53
110.40-B	21	1740	29°39.0'	116°23.0'	1150	330°	3	overcast	slight	17.76	33.66	17.90a)	33.68
110.45-B	21	1540	29°26.0'	116°39.5'	450	330°	4	overcast	moderate	17.75	33.67	16.30	33.48
110.50-B	21	1310	29°16.5'	116°59.0'	2000	330°	4	overcast	moderate	17.56	33.60	16.26	33.50
110.55-B	21	1000	29°06.0'	117°18.0'	2000	320°	5	partly cloudy	moderate	17.88	33.64	12.81	33.46
110.60-B	21	0710	28°56.5'	117°39.0'	2000	330°	4	partly cloudy	moderate	17.92	33.62	17.36	33.64
110.65-B	21	0350	28°46.5'	117°58.0'	2000	320°	4	partly cloudy	moderate	17.58	33.58	16.90	33.54
110.70-B	21	0110	28°36.5'	118°18.0'	1850	330°	4	partly cloudy	moderate	17.35	33.54	17.03	33.53
110.75-B	20	2200	28°27.5'	118°39.0'	2000	320°	4	partly cloudy	moderate	18.00	33.68	18.24	33.88
110.80-B	20	1920	28°21.0'	118°57.0'	2000	330°	4	partly cloudy	moderate	18.86	34.05	18.81	34.07
110.85-B	20	1625	28°06.0'	119°16.5'	2000	320°	4	cloudy	moderate	18.86	34.07	18.14	34.00
110.90-B	20	1330	27°56.5'	119°36.0'	2000	320°	4	cloudy	moderate	18.66	34.01	18.18	33.96
113.30-B	18	1930	29°22.5'	115°17.5'	29	280°	5	clear	moderate	16.12	33.67	11.58	33.77
113.35-B	18	2240	29°12.0'	115°39.0'	620	300°	5	clear	moderate	15.50	33.61	12.48	33.60
113.40-B	19	0200	29°01.0'	115°57.0'	950	320°	5	clear	rough	17.76	33.68	17.32	33.68
113.45-B	19	0525	28°52.0'	116°18.0'	1600	320°	5	clear	rough	18.11	33.69	17.14	33.67
113.50-B	19	0830	28°41.0'	116°39.5'	2000	320°	5	clear	rough	18.08	33.75	17.26	33.64

a) Mean value of 17.96 and 17.83°C.

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
113.55-B	V-19	1145	28°30.0'	117°02.0'	2000	320°	5	cloudy	rough	18.41	33.87	17.78	33.87
113.60-B	19	1510	28°19.0'	117°22.0'	2000	330°	5	cloudy	rough	18.24	33.78	17.26	33.73
113.65-B	19	1710	28°13.5'	117°35.5'	2000	320°	4	clear	moderate	17.82	33.68	17.14	33.73
113.70-B	19	2000	28°02.0'	117°55.5'	2000	310°	4	clear	moderate	17.50	33.58	17.50	33.73
113.75-B	19	2245	27°52.0'	118°15.0'	1900	320°	4	clear	moderate	18.52	33.90	18.03	33.83
113.80-B	20	0120	27°43.5'	118°35.0'	2000	320°	4	clear	moderate	18.96	34.02	18.61	34.02
113.85-B	20	0430	27°32.0'	118°53.0'	2000	320°	4	clear	slight	18.88	34.04	18.93	34.22
113.90-B	20	0745	27°22.0'	119°12.0'	2000	330°	4	partly cloudy	moderate	19.24	34.18	18.81	34.11
117.26-B	18	1345	28°56.0'	114°41.0'	41	280°	2	overcast	moderate	16.88	33.71	11.13	33.59
117.30-B	18	1120	28°48.0'	114°56.5'	54	320°	5	cloudy	moderate	16.34	33.59	13.12	33.55
117.35-B	18	0825	28°38.0'	115°16.0'	120	300°	4	clear	moderate	16.32	33.57	13.20	33.48
117.45-B	17	2250	28°18.0'	115°55.0'	1800	320°	4	cloudy	moderate	17.80	33.68	17.04	33.64
117.50-B	17	1820	28°07.5'	116°16.0'	2000	300°	4	partly cloudy	moderate	17.45	33.67	15.28	33.57
117.55-B	17	1515	27°57.5'	116°34.5'	2000	300°	3	partly cloudy	moderate	17.74	33.69	16.54	33.58
117.60-B	17	1220	27°55.5'	116°48.0'	2000	320°	3	partly cloudy	moderate	17.96	-	17.31	-
117.65-B	17	0910	27°43.0'	117°10.0'	2000	320°	4	cloudy	moderate	17.98	33.73	17.34	33.67
117.70-B	17	0525	27°31.0'	117°31.5'	2000	320°	5	clear	moderate	18.09	33.73	17.58	33.69

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
117.75-B	V-17	0225	27°19.0'	117°51.5'	2000	340°	4	cloudy	slight	18.46	33.75	18.34	33.95
117.80-B	16	2315	27°08.0'	118°11.5'	2000	320°	3	overcast	slight	18.92	34.00	17.82	34.00
117.85-B	16	2020	26°58.0'	118°30.5'	2000	320°	2	overcast	slight	18.82	33.96	17.91	33.85
117.90-B	16	1720	26°47.5'	118°50.0'	2000	340°	4	overcast	slight	18.53	33.89	17.86	33.78
118.39-B	18	0445	28°18.5'	115°24.0'	130	300°	3	clear	moderate	16.42	33.56	14.50	33.55
119.33-B	15	0040	28°19.0'	114°53.0'	60	320°	4	clear	moderate	17.88	33.82	15.94	33.65
120.25-B	14	1900	28°23.0'	114°14.5'	30	300°	4	cloudy	smooth	17.88	33.74	12.05	33.69
120.30-B	14	2145	28°13.0'	114°34.0'	50	300°	4	partly cloudy	slight	17.38	33.75	13.28	33.77
120.35-B	15	0320	28°03.0'	114°54.0'	45	350°	4	clear	moderate	17.56	33.78	17.18	33.78
120.40-B	15	0540	27°56.5'	115°14.0'	20	280°	5	clear	moderate	18.18	33.84	-	-
120.45-B	15	0805	27°43.0'	115°33.0'	1200	320°	3	clear	slight	17.72	33.78	14.40	33.78
120.55-B	15	1500	27°23.0'	116°12.0'	2000	320°	3	cloudy	slight	17.29	33.70	14.62	33.57
120.60-B	15	1725	27°13.0'	116°31.5'	2000	320°	4	cloudy	moderate	17.69	33.66	16.10	33.54
120.65-B	15	2020	27°02.5'	116°51.0'	2000	330°	3	cloudy	moderate	17.88	-	16.39	-
120.70-B	15	2320	26°52.0'	117°10.0'	2000	330°	3	cloudy	moderate	18.17	33.72	-	33.86
120.75-B	16	0220	26°42.5'	117°30.0'	2000	330°	3	cloudy	slight	18.39	33.78	17.39	33.82
120.85-B	16	0805	26°22.5'	118°09.0'	2000	320°	4	overcast	slight	18.42	33.73	16.90	33.65
120.90-B	16	1125	26°13.0'	118°27.5'	2100	330°	4	overcast	slight	18.66	-	17.03	33.77
123.37-B	14	0620	27°24.0'	114°39.5'	39	320°	3	clear	slight	16.46	33.86	12.60	33.58

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
123.42-B	V-13	2220	27°15.5'	115°00.0'	1000	320°	5	clear	rough	-	-	16.48	33.61
123.50-B	13	1810	26°58.0'	115°30.5'	1900	340°	4	cloudy	moderate	17.94	33.64	15.82	33.57
123.55-B	13	1420	26°46.5'	115°52.0'	2000	340°	4	cloudy	moderate	18.00	33.66	16.13	33.56
123.60-B	13	1125	26°38.0'	116°10.0'	2000	320°	4	partly cloudy	moderate	17.98	33.64	16.87	33.75
127.34-B	12	1350	26°55.5'	114°06.0'	44	290°	2	partly cloudy	smooth	15.07	33.90	12.56	34.09
127.40-B	12	1720	26°43.5'	114°29.5'	1600	320°	4	partly cloudy	slight	17.58	33.68	17.22	33.77
127.45-B	12	2010	26°33.5'	114°48.5'	1800	320°	4	partly cloudy	slight	19.36	34.31	19.07	34.26
127.50-B	12	2245	26°23.5'	115°08.0'	1800	320°	4	cloudy	moderate	19.23	34.13	19.02	34.23
127.55-B	13	0210	26°13.5'	115°27.0'	1900	320°	4	partly cloudy	moderate	18.78	33.86	17.40	33.84
127.60-B	13	0520	26°03.5'	115°46.5'	2000	320°	4	partly cloudy	moderate	18.81	33.85	17.06	33.69
130.30-B	12	0825	26°29.0'	113°29.0'	41	320°	2	clear	slight	17.36	33.93	16.86	33.93
130.35-B	12	0530	26°19.0'	113°48.5'	160	280°	4	clear	moderate	17.55	33.94	14.26	33.94
130.40-B	12	0230	26°10.5'	114°06.5'	1100	320°	3	clear	slight	17.44	33.80	15.01	33.77
130.45-B	11	2320	25°59.0'	114°25.5'	1900	320°	3	partly cloudy	slight	18.81	33.96	18.52	33.94
130.50-B	11	2020	25°49.0'	114°46.0'	1900	330°	4	partly cloudy	slight	18.90	34.00	19.29	34.39
130.55-B	11	1725	25°38.5'	115°04.0'	2000	320°	4	clear	moderate	18.90	34.02	17.12	33.73
130.60-B	11	1410	25°30.5'	115°28.5'	1900	320°	3	clear	slight	18.30	33.82	17.88	33.96
133.25-B	10	1100	26°04.5'	112°48.0'	44	320°	4	partly cloudy	moderate	18.12	33.89	14.94	33.82
133.30-B	10	1400	25°54.5'	113°07.5'	108	360°	4	cloudy	moderate	18.05	33.89	15.06	33.84

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters		50 Meters	
						Dir	Force			T	S	T	S
133.35-B	V-10	2020	25°44.5'	113°26.5'	350	320°	4	cloudy	moderate	17.66	33.86	16.70	33.77
133.40-B	10	2330	25°33.0'	113°43.5'	1300	320°	4	cloudy	moderate	18.27	33.84	17.76a)	33.86
133.45-B	11	0225	25°22.0'	114°00.0'	1900	340°	4	cloudy	moderate	18.35	33.86	17.44	33.89
133.50-B	11	0615	25°14.5'	114°24.0'	1900	320°	4	clear	moderate	18.65	33.86	18.66	34.19
137.23-B	10	0515	25°34.0'	112°18.5'	40	300°	4	partly cloudy	moderate	19.06	34.22	14.92	34.27
137.30-B	10	0130	25°20.0'	112°45.5'	180	300°	3	partly cloudy	moderate	18.52	33.91	16.53	33.95
137.35-B	9	2000	25°10.0'	113°04.5'	650	300°	4	partly cloudy	moderate	18.08	33.86	16.45	33.80
137.45-B	9	1215	24°50.0'	113°42.5'	1900	320°	4	cloudy	moderate	18.57	33.91	19.10	34.31
137.50-B	9	0910	24°40.0'	114°01.5'	1700	320°	4	overcast	moderate	18.58	33.91	17.85	34.02

a) Mean value of 17.82 and 17.69°C.

TEMPERATURE AND SALINITY AT 10 AND 50 METERS (NET-TOW STATIONS)

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