CORRECTIONS MADE:
STATION POSITIONS #2

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 5409
(MLR 64)
15 September - 17 October 1954

and

CCOFI Cruise 5410
(MLR 65)
6-24 October 1954

SIO Reference 59-43
1 June 1959

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Sponsored by

Marine Research Committee

SIO Reference 59-43
1 June 1959

Approved for distribution:

Roger Revelle

Roger Revelle, Director

CONTENTS

INTRODUCTION

The data presented in this report were collected on the sixty-fourth and sixty-fifth consecutive cruises of the California Cooperative Oceanic Fisheries Investigations program. The R/V Paolina-T participated in the sixty-fourth cruise and the R/V Crest and R/V Horizon participated in the sixty-fifth cruise.

The data are tabulated at observed depths; the interpolated and computed values are tabulated at standard depths and are accompanied by charts of horizontal distribution. The presentation of data in this report does not constitute publication, and the interpretations herein may be subject to modification as the program continues.

STANDARD PROCEDURES

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.

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 such 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 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

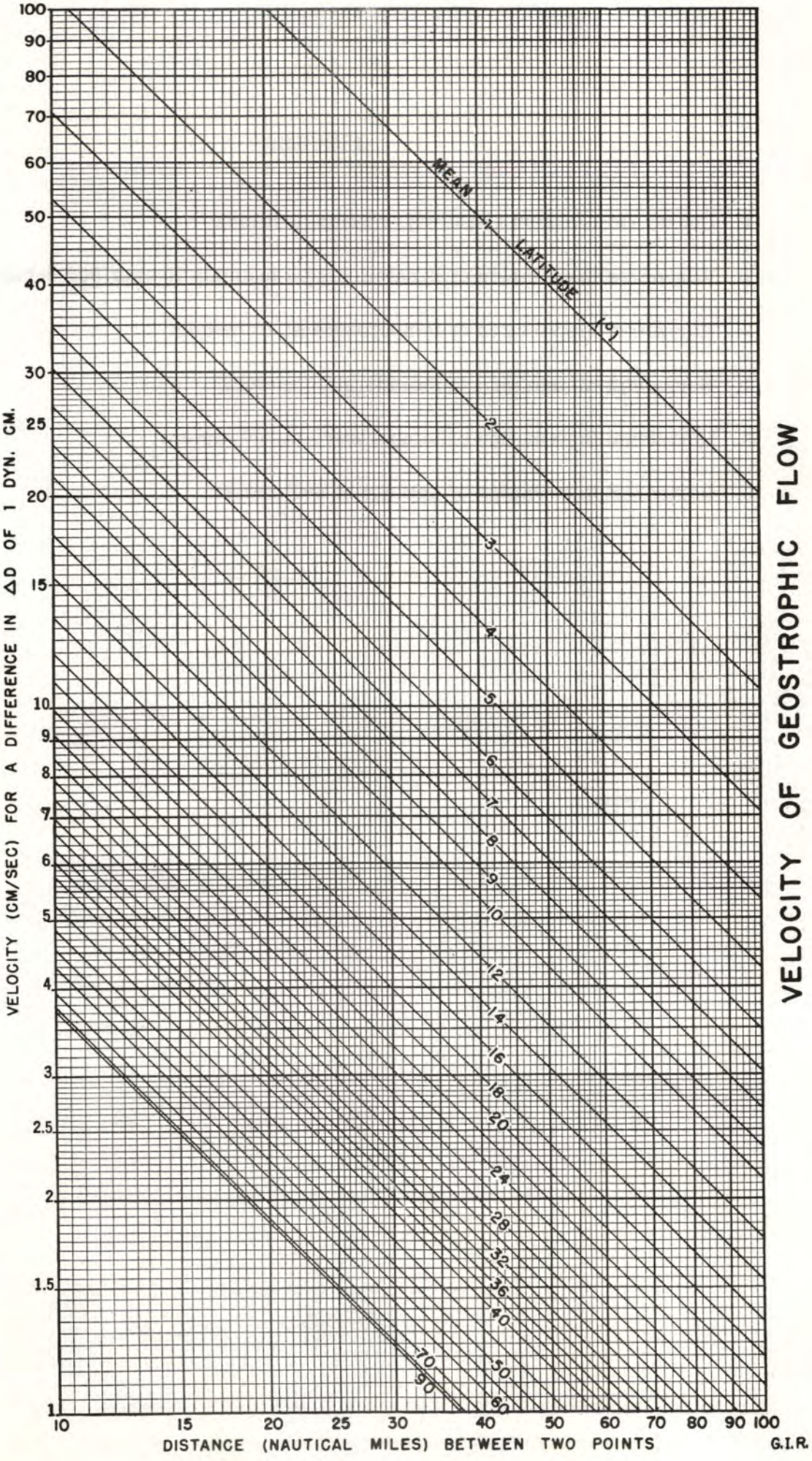
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

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 1954 volume, the first page of the Cruise 5409 data is numbered 250; the first page of the Cruise 5410 data, 257.


VELOCITY OF GEOSTROPHIC FLOW
VELOCITY (CM/SEC) FOR A DIFFERENCE IN ΔD OF 1 DYN. CM.
DISTANCE (NAUTICAL MILES) BETWEEN TWO POINTS
MEAN LATITUDE (°)
1
2
3
4
5
6
7
8
9
10
12
14
16
18
20
24
28
32
36
40
50
60
70
90
100
90
80
70
60
50
40
30
25
20
15
10
9
8
7
6
5
4
3
2.5
2
1.5
1
10
15
20
25
30
40
50
60
70
80
90
100
G.I.R.

FIGURES

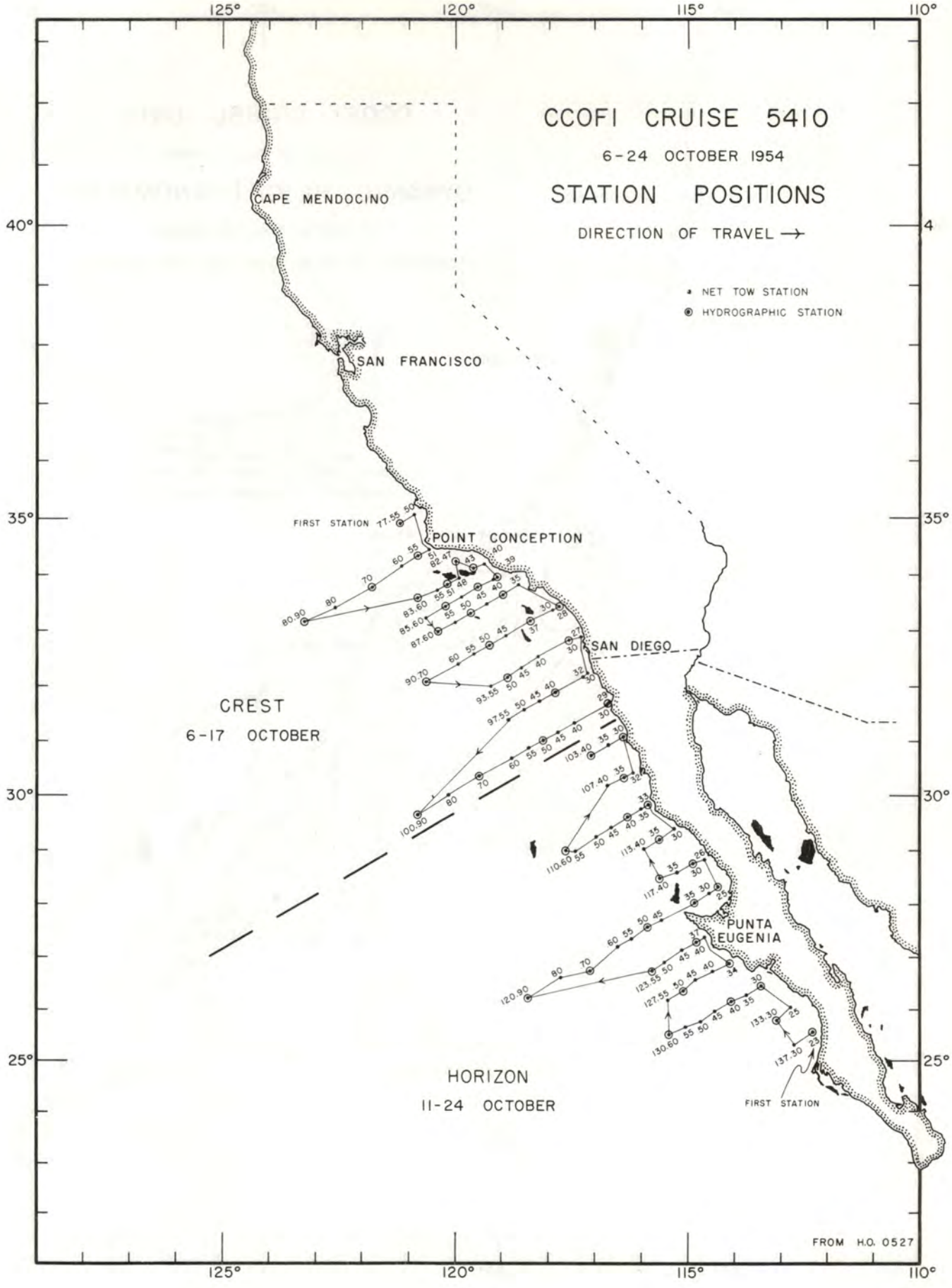

CCOFI CRUISE 5410
6-24 OCTOBER 1954
STATION POSITIONS
DIRECTION OF TRAVEL →
NET TOW STATION
HYDROGRAPHIC STATION
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
CREST
6-17 OCTOBER
HORIZON
11-24 OCTOBER
FIRST STATION
FIRST STATION
FROM H.O. 0527
125°
120°
115°
110°
40°
35°
30°
25°

FIGURE 1

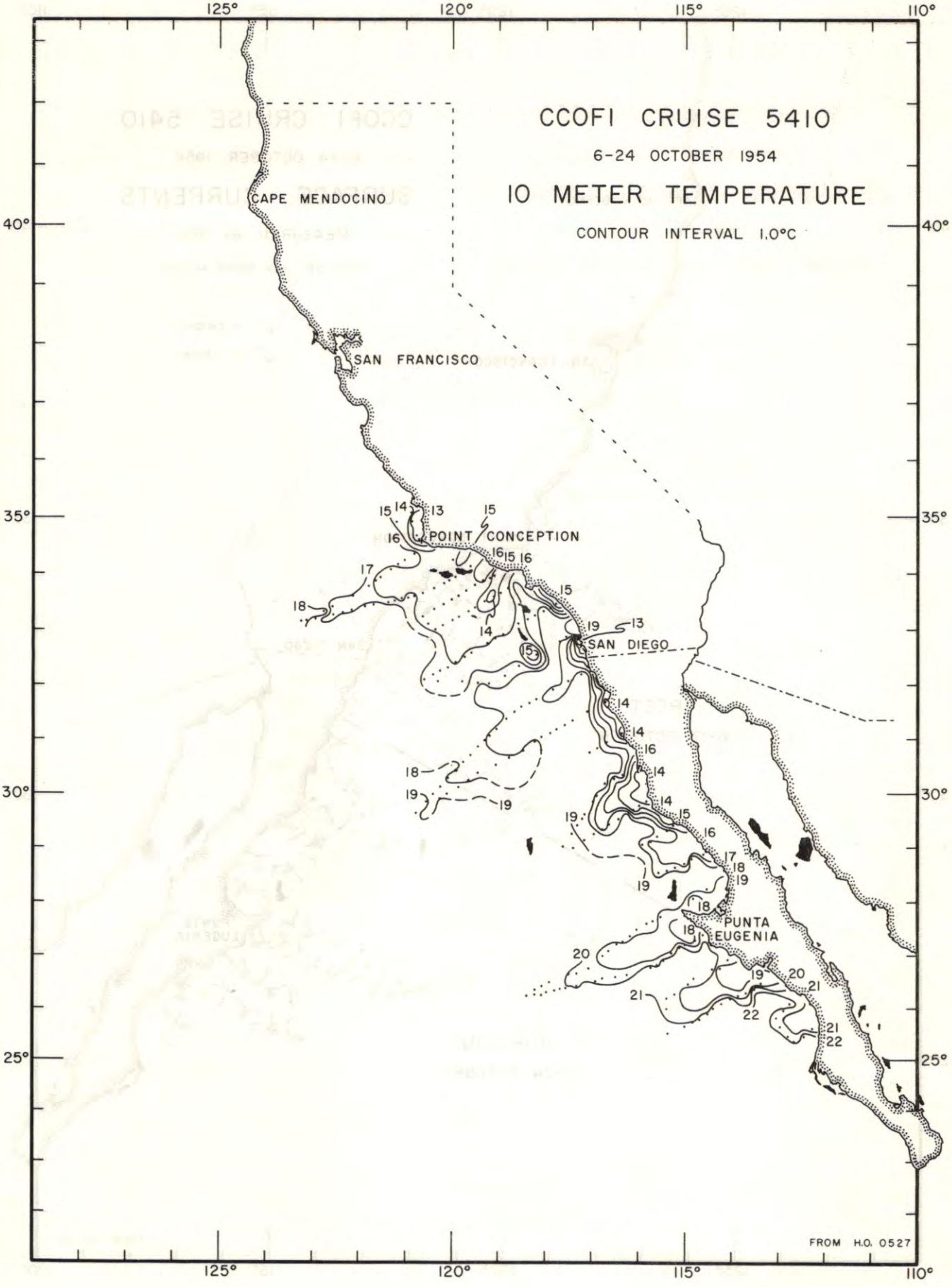

CCOFI CRUISE 5410
6-24 OCTOBER 1954
10 METER TEMPERATURE
CONTOUR INTERVAL 1.0°C
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
125°
120°
115°
110°
40°
35°
30°
25°
FROM H.O. 0527

FIGURE 4

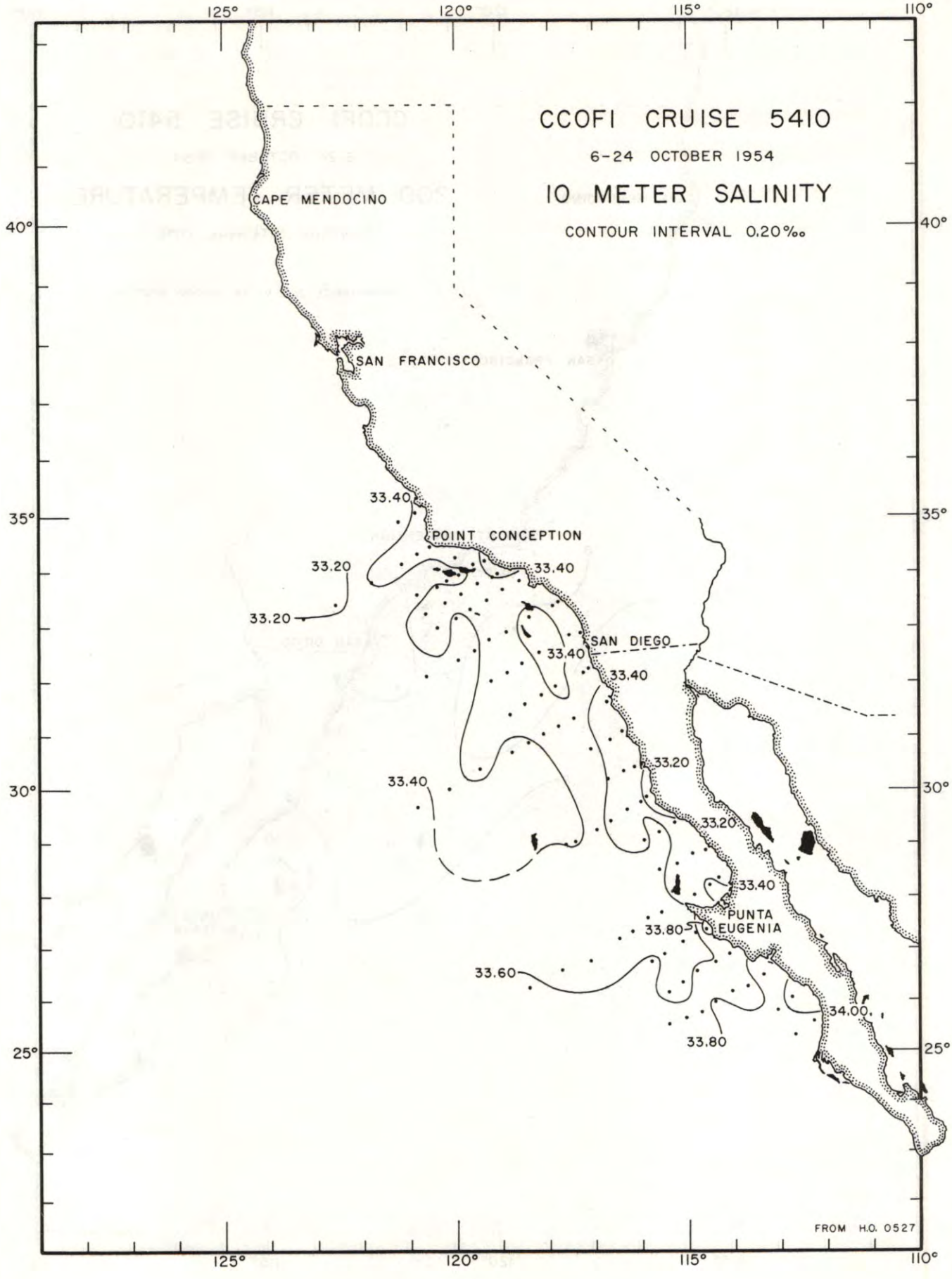

CCOFI CRUISE 5410
6-24 OCTOBER 1954
10 METER SALINITY
CONTOUR INTERVAL 0.20‰
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
33.40
33.20
33.40
33.20
33.40
33.40
33.20
33.40
33.20
33.40
33.80
33.60
34.00
33.80
125°
120°
115°
110°
40°
35°
30°
25°
FROM H.O. 0527

FIGURE 5

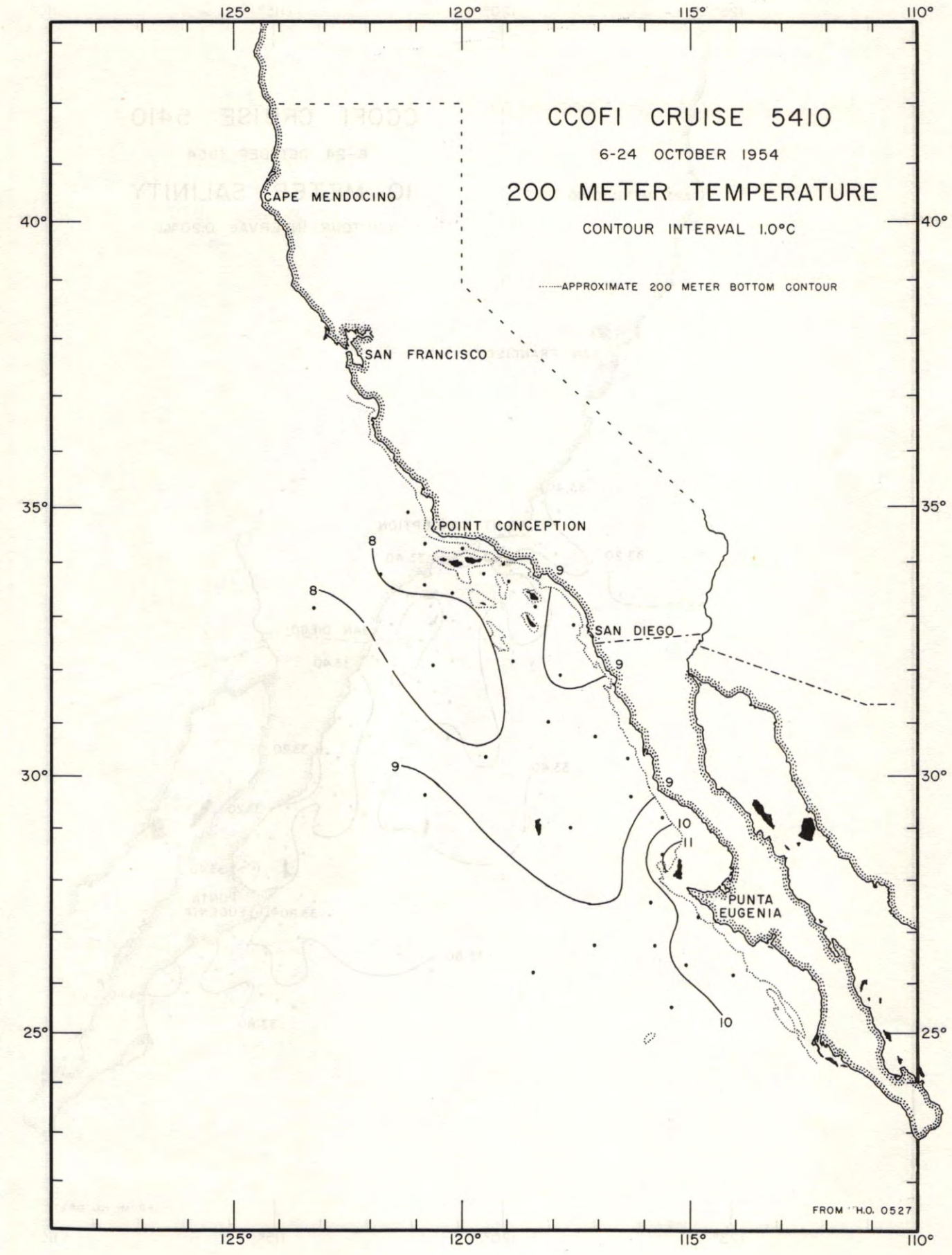

CCOFI CRUISE 5410
6-24 OCTOBER 1954
200 METER TEMPERATURE
CONTOUR INTERVAL 1.0°C
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
125°
120°
115°
110°
40°
35°
30°
25°
8
9
10
11
FROM H.O. 0527

FIGURE 6

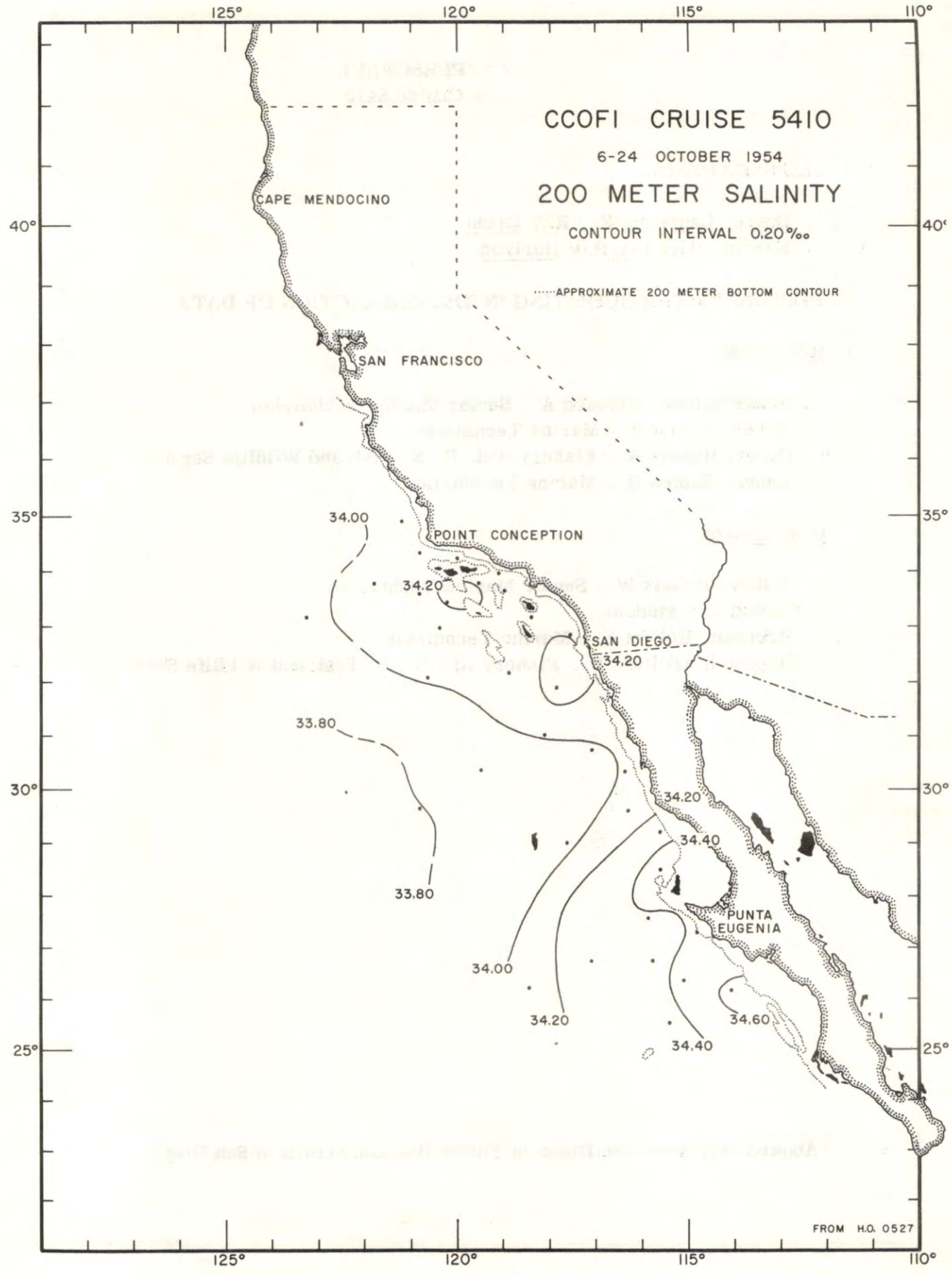

CCOFI CRUISE 5410
6-24 OCTOBER 1954
200 METER SALINITY
CONTOUR INTERVAL 0.20‰
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
34.00
34.20
34.20
33.80
33.80
34.20
34.40
34.00
34.20
34.40
34.60
125°
120°
115°
110°
40°
35°
30°
25°
FROM H.O. 0527

FIGURE 7

PERSONNEL
Cruise 5410

SHIPS' CAPTAINS

Davis, Laurence E., R/V Crest
Ferris, Noel L., R/V Horizon

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Crest

Schwartzlose, Richard A., Senior Marine Technician
Bryer, Bruce A., Marine Technician
Grom, Robert A., Fishery Aid, U. S. Fish and Wildlife Service
Lance, James R., Marine Technician

R/V Horizon

Gilkey, Robert W., Senior Marine Technician
*Batha, J., student
Brennan, Robert E., Marine Technician
Hapgood, William F., Fishery Aid, U. S. Fish and Wildlife Service

*Aboard only from San Diego to Turtle Bay and return to San Diego.

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

CREST; October 6, 1954; 2345, 2356 GCT; 34°54'N, 121°13'W; sounding, 300 fm; wind, 160°, force 2; weather, clear; sea, slight; wire angle, 07°, 09°.

0	15.3	33.30	0	15.3	33.30	24.62	333	0.00
6	14.88	33.25	10	14.76	33.24	24.69	326	0.03
			20	14.62	33.22	24.70	325	0.07
27	14.48	33.22	30	14.27	33.26	24.81	315	0.10
36	13.73	33.40	50	11.23	33.47	25.56	243	0.15
47	11.72	33.45	75	9.45	33.76	26.10	192	0.21
58	10.31	33.52	100	9.12	33.80	26.18	184	0.26
68	9.72	33.57	150	8.53	33.95	26.39	164	0.34
78	9.39	33.77	200	8.40	34.08	26.51	153	0.42
88	9.25	33.75	250	8.00	34.15	26.63	142	0.50
97	9.16	33.79	300	7.58	34.22	26.74	131	0.57
117	8.98	33.86	400	6.72	34.34	26.96	110	0.70
141	8.68	33.93	500	6.21	34.26	26.96	110	0.81
161	8.41	33.98						
200	8.40	34.08						
281	7.76	34.19						
386	6.82	34.34						
508	6.19	34.26						

SIO
CCOFI
5410

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_T	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} T_3 cm/g	dyn. m

80.55

CREST; October 8, 1954; 0020, 0040, 0059 GCT; 34°19'N, 120°48'W; sounding, 400 fm; wind, 240°, force 4; weather, clear; sea, rough; wire angle, 18°, 18°, 21°.

0	16.5	33.36	0	16.5	33.36	24.39	355	0.00
10	16.09	33.41	10	16.09	33.41	24.53	341	0.04
29	15.44	33.41	20	15.73	33.41	24.61	334	0.07
43	14.30	33.35	30	15.39	33.41	24.68	327	0.10
			50	13.33	33.21	24.96	300	0.16
53	12.81	33.17	75	10.40	33.47	25.71	229	0.23
64	11.76	33.40	100	9.51	33.70	26.04	198	0.28
			150	8.84	33.98	26.37	166	0.38
74	10.59	33.46	200	8.61	34.11	26.50	154	0.46
82	9.84	33.56	250	8.18	34.16	26.61	144	0.54
95	9.60	33.68	300	7.79	34.21	26.71	134	0.61
105	9.42	33.72	400	7.06	34.30	26.88	118	0.74
127	9.04	33.90	500	6.30	34.33	27.01	106	0.86
156	8.79	34.00	600	5.67	34.40	27.14	93	0.96
207	8.59	34.12						
270	8.01	34.17						
380	7.23	34.29						
508	6.26	34.33						
642	5.43	34.45						

80.70

CREST; October 8, 1954; 0957, 1025 GCT; 33°47'N, 121°48'W; sounding, 1900 fm; wind, 260°, force 4; weather, fog; sea, rough; wire angle, 32°, missing.

0	17.1	33.44	0	17.1	33.44	24.32	361	0.00
9	16.90	33.40	10	16.88	33.40	24.34	360	0.04
22	16.75	33.39	20	16.76	33.39	24.36	358	0.07
47	14.07	33.34	30	16.67	33.38	24.37	357	0.11
55	11.81	33.30	50	13.15	33.33	25.09	288	0.17
64	10.78	33.36	75	10.16	33.47	25.75	225	0.24
76	10.10	33.48	100	9.36	33.61	25.99	202	0.29
91	9.68	33.52	150	8.63	33.99	26.41	163	0.38
109	9.08	33.78	200	8.32	34.10	26.54	150	0.46
			250	7.91	34.20	26.68	137	0.54
137	8.71	33.94	300	7.50	34.28	26.80	126	0.60
175	8.52	34.06	400	6.67	34.33	26.96	110	0.73
232	8.04	34.16	500	5.91	34.44	27.14	93	0.84
311	7.41	34.29	600	(5.34)	(34.54)	(27.29)	(79)	(0.93)
430	6.40	34.34	700	(4.91)	(34.54)	(27.34)	(74)	(1.01)
587	5.41	34.54	800	(4.53)	(34.53)	(27.38)	(71)	(1.09)
1074	3.71	34.52	1000	3.91	34.52	27.44	65	(1.25)

80.90

CREST; October 8, 1954; 2155 GCT; 33°09'N, 123°13'W; sounding, 2350 fm; wind, 330°, force 4; weather, clear; sea, rough; wire angle, 20°.

0	18.5	33.22	0	18.5	33.22	23.81	410	0.00
10	18.18	33.20	10	18.18	33.20	23.87	404	0.04
24	17.65	33.13	20	17.76	33.15	23.94	398	0.08
53	16.57	33.04	30	17.54	33.11	23.96	396	0.12
62	14.73	33.03	50	16.90	33.05	24.06	386	0.20
71	13.66	33.04	75	13.38	33.05	24.83	313	0.29
85	12.70	33.06	100	11.84	33.05	25.13	284	0.36
104	11.53	33.05	150	9.22	33.30	25.77	223	0.49
114p	10.53	33.07	200	8.32	33.96	26.43	161	0.59
125	10.40	33.11	250	7.60	34.01	26.58	146	0.67
173p	8.72	33.49	300	6.91	34.04	26.70	135	0.74
209p	8.21	33.98	400	(6.10)	(34.11)	(26.86)	(120)	(0.87)
339p	6.56	34.06	500	(5.51)	(34.20)	(27.00)	(107)	(0.99)
647p	4.84	34.30	600	(5.02)	(34.27)	(27.12)	(95)	(1.10)

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

CREST; October 10, 1954; 0240 GCT; 34°15'N, 119°58'W; sounding, 300 fm; wind, 270°, force 1; weather, clear; sea, moderate; wire angle, 00°. 82.47

0	16.6	33.58	0	16.6	33.58	24.54	340	0.00
10	15.79	33.48	10	15.79	33.48	24.65	330	0.03
31	12.44	33.43	20	14.20	33.44	24.96	300	0.06
40	10.91	33.47	30	12.57	33.43	25.28	270	0.09
50	10.38	33.49	50	10.38	33.49	25.73	227	0.14
60	9.96	33.56	75	9.38	33.74	26.09	193	0.20
70	9.52	33.69	100	8.73	33.96	26.37	166	0.24
80	9.24	33.78	150	8.63	34.09	26.48	156	0.32
89	8.92	33.90	200	8.37	34.15	26.57	148	0.40
99	8.75	33.95	250	7.89	34.18	26.67	138	0.47
119	8.66	34.03	300	7.56	34.20	26.73	132	0.54
143	8.64	34.09	400	7.01	34.23	26.83	123	0.68
162	8.62	34.09	500	6.42	34.25	26.93	113	0.80
201	8.36	34.15						
282	7.66	34.19						
388	7.09	34.23						
509	6.39	34.25						

CREST; October 10, 1954; 0607 GCT; 34°05.5'N, 119°35.5'W; sounding, 60 fm; wind, 270°, force 3; weather, fog; sea, moderate; wire angle, 00°. 83.43

0	15.5	33.46	0	15.5	33.46	24.70	325	0.00
10	15.38	33.44	10	15.38	33.44	24.71	324	0.03
15	15.31	33.46	20	15.23	33.45	24.75	320	0.06
20	15.23	33.45	30	14.93	33.43	24.80	316	0.10
26	15.06	33.42	50	10.72	33.37	25.58	242	0.15
31	14.89	33.43	75	(9.94)	(33.53)	(25.84)	(217)	(0.21)
36	12.96	33.30						
47	10.88	33.35						
57	10.56	33.41						
72	10.03	33.51						

CREST; October 9, 1954; 2028 GCT; 33°51'N, 120°08'W; sounding, 92 fm; wind, 320°, force 4; weather, clear; sea, rough; wire angle, 05°. 83.51

0	16.2	33.36	0	16.2	33.36	24.46	348	0.00
10	15.50	33.30	10	15.50	33.30	24.57	338	0.03
15	15.02	33.26	20	14.93	33.27	24.68	327	0.07
20	14.93	33.27	30	13.76	33.29	24.94	302	0.10
26	14.82	33.28	50	10.94	33.39	25.55	244	0.15
31	13.47	33.29	75	9.80	33.56	25.88	213	0.21
36	12.03	33.32	100	9.19	33.80	26.17	185	0.26
45	11.26	33.40						
55	10.71	33.39						
64	10.15	33.48						
79	9.68	33.60						
97	9.24	33.79						
120	9.04	33.84						

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5410

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

83.60

CREST; October 9, 1954; 1403 GCT; 33°35'N, 120°47'W; sounding, 900 fm; wind, 320°, force 6; weather, clear; sea, very rough; wire angle, 30°.

0	16.3	33.32	0	16.3	33.32	24.41	353	0.00
9	16.14	33.30	10	16.12	33.30	24.43	351	0.04
27	15.98	33.39	20	16.03	33.36	24.50	344	0.07
39	14.99	33.39	30	15.78	33.39	24.58	337	0.10
51	14.46	33.36	50	14.49	33.36	24.84	312	0.17
59	13.81	33.32	75	10.16	33.43	25.72	228	0.24
67	11.51	33.22	100	9.08	33.81	26.20	183	0.29
79	9.81	33.54	150	8.68	33.97	26.38	166	0.38
87	9.45	33.67	200	8.39	34.14	26.56	148	0.46
99	9.10	33.80	250	8.18	34.21	26.65	140	0.53
121	8.90	33.92	300	7.82	34.23	26.72	133	0.60
145	8.72	33.96	400	7.08	34.28	26.86	120	0.73
191	8.42	34.12	500	6.43	34.34	27.00	107	0.85
247	8.21	34.21	600	(5.87)	(34.37)	(27.09)	(98)	(0.96)
344	7.50	34.25						
464	6.66	34.33						
590	5.93	34.37						

85.39

CREST; October 10, 1954; 1032 GCT; 33°59'N, 119°05.5'W; sounding, 350 fm; wind, calm; weather, fog; sea, slight; wire angle, 00°.

0	17.0	33.45	0	17.0	33.45	24.35	359	0.00
10	14.88	33.39	10	14.88	33.39	24.78	318	0.03
30	11.92	33.29	20	13.72	33.33	24.98	299	0.06
40	11.48	33.28	30	11.92	33.29	25.30	268	0.09
50	10.70	33.35	50	10.70	33.35	25.57	242	0.14
60	10.36	33.44	75	9.89	33.53	25.84	217	0.20
70	10.01	33.49	100	9.42	33.83	26.16	186	0.25
80	9.78	33.61	150	9.06	33.95	26.31	172	0.34
90	9.56	33.62	200	8.70	34.09	26.47	157	0.43
100	9.42	33.83	250	8.16	34.16	26.61	144	0.50
121	9.32	33.80	300	7.72	34.22	26.72	133	0.58
146	9.11	33.94	400	7.13	34.33	26.89	117	0.71
165	8.92	33.98	500	6.20	34.35	27.04	103	0.82
206	8.65	34.10						
286	7.82	34.20						
391	7.21	34.32						
513	6.10	34.35						

85.45

CREST; October 10, 1954; 1510 GCT; 33°47'N, 119°31'W; sounding, 1000 fm; wind, calm; weather, fog; sea, moderate; wire angle, 10°.

0	16.6	33.53	0	16.6	33.53	24.50	344	0.00
10	15.54	33.57	10	15.54	33.57	24.77	319	0.03
30	13.04	-	20	14.36	33.58	25.04	293	0.06
41	11.90	33.58	30	13.04	33.58	25.31	267	0.09
50	10.20	33.61	50	10.20	33.61	25.85	216	0.14
60	9.69	33.68	75	9.41	33.78	26.12	190	0.19
69	9.47	33.75	100	8.98	33.91	26.29	174	0.24
79	9.36	33.79	150	8.50	34.02	26.45	159	0.32
88	9.18	33.80	200	8.24	34.19	26.62	143	0.40
98	9.01	33.90	250	7.93	34.24	26.71	134	0.47
122	8.70	33.99	300	7.62	34.28	26.79	127	0.54
150	8.50	34.02	400	6.91	34.32	26.92	114	0.66
197	8.27	34.19	500	6.22	34.34	27.02	105	0.78
255	7.90	34.24	600	(5.60)	(34.43)	(27.17)	(91)	(0.88)
358	7.24	34.31						
476	6.41	34.33						
599	5.62	34.43						

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

CREST; October 10, 1954; 2103 GCT; 33°27'N, 120°12'W; sounding, 650 fm; wind, 310°, force 6; weather, cloudy; sea, very rough; wire angle, 20°. 85.55

0	15.5	33.46	0	15.5	33.46	24.70	325	0.00
10	15.39	33.52	10	15.39	33.52	24.77	319	0.03
29	15.20	33.55	20	15.30	33.55	24.81	315	0.06
43	12.37	33.53	30	15.16	33.55	24.84	312	0.10
57	10.76	33.55	50	11.50	33.54	25.57	242	0.15
67	9.96	33.63	75	9.71	33.69	26.00	202	0.21
77	9.64	33.70	100	9.14	33.78	26.16	186	0.26
92	9.26	33.82	150	8.60	34.10	26.50	154	0.34
101	9.13	33.78	200	8.17	34.20	26.64	141	0.42
115	8.84	33.91	250	7.93	34.27	26.73	132	0.49
143	8.68	34.10	300	7.71	34.25	26.75	130	0.56
170	8.36	34.10	400	6.88	34.24	26.86	120	0.69
227	8.06	34.28	500	6.22	34.28	26.98	109	0.81
294	7.75	34.25	600	5.69	34.34	27.09	98	0.92
408	6.82	34.24	700	(5.23)	(34.35)	(27.16)	(92)	(1.02)
543	6.00	34.32						
684	5.31	34.35						

CREST; October 11, 1954; 1440 GCT; 33°39.5'N, 118°59'W; sounding, 470 fm; wind, 140°, force 2; weather, fog; sea, slight; wire angle, 09°. 87.40

0	15.4	33.47	0	15.4	33.47	24.73	322	0.00
10	15.27	33.48	10	15.27	33.48	24.76	320	0.03
30	11.88	33.45	20	13.11	33.47	25.21	277	0.06
44	10.18	33.56	30	11.88	33.45	25.43	256	0.09
55	9.89	33.59	50	10.00	33.58	25.86	215	0.14
65	9.56	33.68	75	9.18	33.73	26.12	190	0.19
75	9.18	33.73	100	8.85	33.87	26.28	175	0.23
84	9.09	33.77	150	8.56	34.04	26.46	158	0.32
98	8.90	33.86	200	8.23	34.14	26.59	146	0.40
107	8.77	33.92	250	7.82	34.22	26.71	134	0.47
131	8.63	33.97	300	7.44	34.26	26.80	126	0.53
161	8.49	34.06	400	6.79	34.29	26.91	115	0.66
213	8.12	34.16	500	6.27	34.34	27.02	105	0.78
275	7.64	34.25	600	5.80	34.38	27.11	96	0.88
386	6.88	34.28						
515	6.20	34.35						
652	5.57	34.39						

CREST; October 11, 1954; 0911 GCT; 33°20'N, 119°40'W; sounding, 42 fm; wind, 340°, force 3; weather, fog; sea, moderate; wire angle, 05°. 87.50

0	15.5	33.51	0	15.5	33.51	24.73	322	0.00
5	15.22	33.55	10	15.17	33.50	24.80	316	0.03
10	15.17	33.50	20	13.26	33.38	25.11	286	0.06
15	13.79	33.41	30	12.88	33.33	25.14	283	0.09
20	13.26	33.38	50	10.40	33.43	25.68	232	0.14
30	12.88	33.33						
40	11.20	33.29						
51	10.33	33.44						

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OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

87.60

CREST; October 11, 1954; 0259 GCT; 33°00'N, 120°21'W; sounding, 350 fm; wind, 310°, force 5; weather, fog; sea, rough; wire angle, 32°.

0	16.1	33.48	0	16.1	33.48	24.58	337	0.00
9	15.92	33.44	10	15.91	33.44	24.59	336	0.03
26	15.90	33.45	20	15.90	33.45	24.60	335	0.07
36	14.18	33.34	30	15.53	33.42	24.66	329	0.10
44	12.64	33.35	50	11.21	33.31	25.44	255	0.16
53	10.57	33.29	75	9.03	33.51	25.97	204	0.22
60	9.59	33.35	100	8.78	33.65	26.12	190	0.27
68	9.16	33.47	150	8.12	34.03	26.52	152	0.35
76	9.01	33.51	200	7.53	34.07	26.63	142	0.43
84	8.88	33.58	250	7.06	34.08	26.71	134	0.50
99	8.79	33.64	300	6.67	34.12	26.79	127	0.57
120	8.56	33.93	400	6.19	34.24	26.95	111	0.69
135	8.35	33.96						
168	7.88	34.07						
234	7.22	34.07						
331	6.48	34.15						
447	6.02	34.29						

90.28

CREST; October 12, 1954; 2003 GCT; 33°28.5'N, 117°45.5'W; sounding, 75 fm; wind, 060°, force 1; weather, fog; sea, slight; wire angle, 00°.

0	16.7	33.38	0	16.7	33.38	24.36	358	0.00
10	14.24	33.31	10	14.24	33.31	24.85	311	0.03
15	13.12	33.32	20	12.84	33.30	25.13	284	0.06
20	12.84	33.30	30	11.79	33.31	25.34	264	0.09
25	12.27	33.32	50	10.33	33.44	25.70	230	0.14
30	11.79	33.31	75	9.75	33.75	26.04	198	0.19
35	11.32	33.36	100	9.62	33.85	26.14	188	0.24
45	10.51	33.40						
55	10.20	33.50						
66	9.84	33.68						
81	9.72	33.78						
102	9.60	33.86						
127	9.50	33.94						

90.37

CREST; October 13, 1954; 0115 GCT; 33°10.5'N, 118°23'W; sounding, 600 fm; wind, calm; weather, fog; sea, slight; wire angle, 00°.

0	17.9	33.46	0	17.9	33.46	24.14	379	0.00
10	17.15	33.39	10	17.15	33.39	24.27	366	0.04
30	11.61	33.30	20	14.30	33.34	24.86	310	0.07
40	11.00	33.38	30	11.61	33.30	25.36	262	0.10
52	10.46	33.40	50	10.53	33.40	25.63	237	0.15
61	10.23	33.46	75	9.72	33.60	25.93	208	0.21
71	9.76	33.56	100	9.47	33.81	26.13	189	0.26
81	9.67	33.65	150	9.11	34.01	26.35	168	0.35
91	9.53	33.75	200	8.77	34.13	26.49	155	0.43
101	9.46	33.81	250	8.47	34.17	26.57	148	0.51
156	9.06	34.03	300	8.22	34.23	26.66	139	0.58
205	8.72	34.14	400	7.30	34.27	26.82	124	0.72
247	8.46	34.16	500	6.55	34.32	26.97	110	0.84
265	8.50	34.22	600	5.93	34.34	27.06	101	0.95
370	7.54	34.25						
492	6.61	34.32						
618	5.82	34.34						

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

CREST; October 13, 1954; 0823 GCT; 32°44'N, 119°16'W; sounding, 100 fm; wind, 300°, force 1; weather, fog; sea, slight; wire angle, 00°. 90.50

0	16.0	33.49	0	16.0	33.49	24.61	334	0.00
10	16.00	33.48	10	16.00	33.48	24.60	335	0.03
20	15.94	33.51	20	15.94	33.51	24.64	331	0.07
30	15.56	33.48	30	15.56	33.48	24.70	325	0.10
41	14.71	33.39	50	13.38	33.43	25.14	283	0.16
51	13.12	33.43	75	(10.50)	(33.47)	(25.69)	(231)	(0.23)
61	11.74	33.39						
72	10.76	33.45						

CREST; October 13, 1954; 1842 GCT; 32°05'N, 120°38'W; sounding, 2150 fm; wind, 320°, force 4; weather, clear; sea, rough; wire angle, 25°. 90.70

0	17.0	33.35	0	17.0	33.35	24.27	366	0.00
14	16.78	33.36	10	16.82	33.36	24.32	361	0.04
42	14.82	33.20	20	16.69	33.36	24.35	359	0.07
51	13.58	33.18	30	16.54	33.33	24.36	358	0.11
60	12.83	33.18	50	13.64	33.18	24.88	308	0.18
74	12.10	33.18	75	11.72	33.18	25.25	273	0.25
91	10.76	33.25	100	10.28	33.30	25.60	240	0.31
113	9.60	33.37	150	8.67	33.69	26.17	185	0.42
138	8.84	33.58	200	7.92	34.02	26.54	150	0.51
183	8.32	33.95	250	7.59	34.10	26.65	140	0.58
206	7.87	34.04	300	7.16	34.18	26.77	128	0.65
254	7.56	34.11	400	6.55	34.27	26.93	113	0.78
349	6.82	34.23	500	6.01	34.35	27.06	101	0.89
478	6.17	34.33	600	5.45	34.42	27.18	90	0.99
645	5.22	34.44	700	5.00	34.45	27.26	82	1.08
862	4.42	34.48	800	4.63	34.47	27.32	76	1.17
1156	3.50	34.56	1000	3.98	34.52	27.43	66	1.33

CREST; October 14, 1954; 1652 GCT; 32°50'N, 117°31'W; sounding, 470 fm; wind, 090°, force 2; weather, fog; sea, slight; wire angle, 05°. 93.30

0	18.3	33.39	0	18.3	33.39	23.99	393	0.00
10	18.24	33.42	10	18.24	33.42	24.03	389	0.04
30	13.83	33.19	20	17.85	33.26	24.00	392	0.08
41	11.93	33.22	30	13.83	33.19	24.85	311	0.11
51	11.00	33.25	50	11.08	33.25	25.42	257	0.17
61	10.32	33.40	75	9.79	33.56	25.88	213	0.23
71	9.82	33.48	100	9.53	33.81	26.12	190	0.28
81	9.78	33.67	150	9.55	34.11	26.35	168	0.37
91	9.51	33.72	200	9.35	34.19	26.45	159	0.45
101	9.53	33.82	250	8.80	34.16	26.51	153	0.54
124	9.69	34.02	300	8.29	34.19	26.62	143	0.61
155	9.54	34.12	400	7.43	34.28	26.81	125	0.75
204	9.31	34.19	500	6.60	34.32	26.96	110	0.88
263	8.65	34.16	600	5.69	34.39	27.13	94	0.98
367	7.70	34.26						
486	6.73	34.31						
613	5.58	34.40						

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OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

93.50

CREST; October 14, 1954; 0624 GCT; 32°10'N, 118°53'W; sounding, 800 fm; wind, 290°, force 2; weather, overcast; sea, moderate; wire angle, 12°.

0	17.5	33.43	0	17.5	33.43	24.21	372	0.00
10	17.42	33.49	10	17.42	33.49	24.28	365	0.04
31	17.41	33.39	20	17.40	33.43	24.24	369	0.07
46	16.30	33.34	30	17.41	33.39	24.20	373	0.11
56	13.78	33.27	50	15.15	33.31	24.66	329	0.18
65	12.97	33.28	75	12.29	33.18	25.14	283	0.26
75	12.29	33.18	100	9.70	33.49	25.84	217	0.32
84	11.56	33.22	150	8.49	33.89	26.35	168	0.42
99	9.83	33.47	200	8.13	34.08	26.55	149	0.50
108	9.24	33.60	250	7.84	34.18	26.67	138	0.57
132	8.68	33.78	300	7.52	34.21	26.74	131	0.64
162	8.40	33.94	400	6.67	34.26	26.90	116	0.77
215	8.03	34.12	500	5.91	34.33	27.06	101	0.89
278	7.68	34.20	600	5.55	34.37	27.13	94	0.99
391	6.73	34.25						
519	5.82	34.34						
655	5.42	34.39						

97.40

CREST; October 15, 1954; 0436 GCT; 31°55.5'N, 117°50'W; sounding, 690 fm; wind, 300°, force 3; weather, partly cloudy; sea, moderate; wire angle, 05°.

0	18.2	33.41	0	18.2	33.41	24.03	389	0.00
10	17.93	33.39	10	17.93	33.39	24.08	384	0.04
30	16.62	33.32	20	17.49	33.35	24.15	378	0.08
40	15.06	33.32	30	16.62	33.32	24.34	360	0.11
50	12.37	33.27	50	12.37	33.27	25.20	278	0.18
61	11.39	33.24	75	10.69	33.37	25.58	242	0.24
71	10.87	33.35	100	9.79	33.62	25.93	208	0.30
81	10.46	33.40	150	9.12	33.93	26.28	175	0.40
90	10.05	33.55	200	9.11	34.23	26.52	152	0.48
99	9.81	33.61	250	8.18	34.21	26.65	140	0.56
124	9.70	33.85	300	7.72	34.25	26.75	130	0.62
153	9.12	33.94	400	7.02	34.33	26.91	115	0.75
202	9.11	34.23	500	6.05	34.35	27.05	102	0.87
261	8.01	34.21	600	5.71	34.41	27.14	93	0.97
364	7.32	34.31						
485	6.16	34.35						
612	5.66	34.42						

100.29

CREST; October 17, 1954; 0912 GCT; 31°42'N, 116°43.5'W; sounding, 50 fm; wind, 020°, force 2; weather, fog; sea, calm; wire angle, 04°.

0	13.8	33.30	0	13.8	33.30	24.94	302	0.00
5	14.00	33.30	10	13.17	33.29	25.06	291	0.03
10	13.17	33.29	20	11.14	33.21	25.38	260	0.06
15	12.61	33.30	30	10.94	33.32	25.50	249	0.08
20	11.14	33.21	50	10.32	33.44	25.70	230	0.13
25	11.08	33.31	75	(10.07)	(33.67)	(25.92)	(209)	(0.19)
30	10.94	33.32						
35	10.55	33.40						
45	10.35	33.42						
56	10.30	33.47						
71	10.16	33.63						

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

CREST; October 16, 1954; 2223 GCT; 31°02'N, 118°05'W; sounding, 900 fm; wind, 330°, force 3; weather, partly cloudy; sea, moderate; wire angle, 23°. 100.50

0	18.3	33.49	0	18.3	33.49	24.06	386	0.00
10	18.17	33.48	10	18.17	33.48	24.09	383	0.04
24	18.07	33.49	20	18.08	33.49	24.12	380	0.08
51	14.42	33.18	30	18.03	33.43	24.08	384	0.12
61	13.24	33.23	50	14.58	33.18	24.68	327	0.19
70	12.20	33.18	75	11.83	33.18	25.23	275	0.26
84	11.08	33.21	100	9.74	33.34	25.72	228	0.32
102	9.66	33.36	150	8.83	33.76	26.20	183	0.43
124	9.14	33.58	200	8.19	34.00	26.48	156	0.52
152	8.80	33.78	250	7.81	34.10	26.62	143	0.59
198	8.21	33.99	300	7.33	34.15	26.72	133	0.66
267	7.68	34.12	400	6.56	34.22	26.89	117	0.79
364	6.82	34.19	500	5.93	34.29	27.02	105	0.91
492	6.01	34.28	600	5.35	34.35	27.14	93	1.02
668	5.07	34.38	700	4.91	34.40	27.23	85	1.11
890	4.26	34.46	800	4.53	34.43	27.30	78	1.20
1191	3.52	34.53	1000	3.97	34.49	27.41	68	1.37

CREST; October 16, 1954; 1225 GCT; 30°22'N, 119°28'W; sounding, 2050 fm; wind, 310°, force 3; weather, cloudy; sea, moderate; wire angle, 07°. 100.70

0	18.0	33.49	0	18.0	33.49	24.14	379	0.00
10	17.89	33.48	10	17.89	33.48	24.16	377	0.04
26	17.48	33.48	20	17.66	33.48	24.21	372	0.08
51	14.67	33.22	30	17.02	33.45	24.34	360	0.11
61	13.51	33.12	50	14.75	33.23	24.68	327	0.18
71	12.35	33.12	75	12.08	33.13	25.14	283	0.26
81	11.71	33.15	100	10.55	33.38	25.61	239	0.32
100	10.55	33.38	150	8.97	33.74	26.16	186	0.43
124	9.45	33.51	200	8.13	33.93	26.44	160	0.52
155	8.87	33.77	250	7.68	34.04	26.59	146	0.60
204	8.09	33.94	300	7.11	34.10	26.72	133	0.67
273	7.46	34.08	400	6.12	34.16	26.90	116	0.80
377	6.23	34.13	500	5.73	34.29	27.05	102	0.91
505	5.71	34.29	600	5.18	34.33	27.15	92	1.02
689	4.80	34.37	700	4.76	34.37	27.23	85	1.12
910	4.14	34.44	800	4.44	34.41	27.29	79	1.20
1214	3.41	34.52	1000	3.90	34.47	27.40	69	1.37

CREST; October 16, 1954; 0243 GCT; 29°41'N, 120°48'W; sounding, 2180 fm; wind, 320°, force 3; weather, cloudy; sea, rough; wire angle, 05°. 100.90

0	19.1	33.50	0	19.1	33.50	23.87	404	0.00
10	19.12	33.43	10	19.12	33.43	23.81	410	0.04
25	19.16	33.48	20	19.13	33.46	23.83	408	0.08
55	17.46	33.44	30	19.14	33.48	23.85	407	0.12
65	16.03	33.33	50	18.38	33.46	24.02	390	0.20
74	15.34	33.33	75	15.30	33.33	24.64	331	0.29
89	14.55	33.36	100	14.04	33.34	24.92	304	0.37
110	13.44	33.30	150	10.56	33.28	25.54	245	0.51
134	11.48	33.21	200	9.08	33.80	26.19	184	0.62
164	9.90	33.39	250	8.30	33.95	26.43	161	0.71
217	8.79	33.86	300	7.61	34.04	26.60	145	0.79
295	7.69	34.04	400	6.21	34.10	26.84	122	0.93
403	6.18	34.10	500	5.53	34.21	27.01	106	1.05
548	5.31	34.26	600	5.11	34.31	27.14	93	1.15
742	4.68	34.42	700	4.80	34.40	27.24	84	1.25
983	3.94	34.47	800	4.50	34.43	27.30	78	1.34
1303	3.26	34.54	1000	3.89	34.47	27.40	69	1.50

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OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	$\delta_{T_3}^{-5}$	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

103.30

HORIZON; October 24, 1954; 1458 GCT; 31°05.5'N, 116°24'W; sounding, 35 fm; wind, 200°, force 2; weather, cloudy; sea, rough; wire angle, 00°.

0	14.95	33.23	0	14.95	33.23	24.64	331	0.00
10	13.86	33.24	10	13.86	33.24	24.88	308	0.03
20	12.53	33.26	20	12.53	33.26	26.16	281	0.06
30	11.31	33.27	30	11.31	33.27	25.39	260	0.09
40	11.30	33.33	50	11.32	33.39	25.44	255	0.11
51	11.32	33.40						

103.40

HORIZON; October 24, 1954; 2003 GCT; 30°45.5'N, 117°05'W; sounding, 970 fm; wind, 230°, force 3; weather, partly cloudy; sea, very rough; wire angle, 15°.

0	18.59	33.49	0	18.59	33.49	23.99	393	0.00
10	18.52	33.48	10	18.52	33.48	24.00	392	0.04
30	18.38	33.45	20	18.42	33.47	24.02	390	0.08
39	16.70	33.34	30	18.38	33.45	24.01	391	0.12
48	14.80	33.20	50	14.58	33.17	24.67	328	0.19
58	13.53	33.09	75	12.49	33.25	25.16	281	0.27
67	12.88	33.14	100	9.67	33.25	25.66	234	0.33
77	12.38	33.25	150	8.88	33.75	26.18	184	0.44
86	11.12	33.16	200	8.01	33.98	26.49	155	0.52
95	9.84	33.20	250	7.72	34.11	26.64	141	0.60
118	9.35	33.45	300	7.08	34.12	26.74	131	0.67
146	8.96	33.72	400	6.60	34.23	26.89	117	0.80
192	8.08	33.95	500	6.28	34.35	27.02	105	0.92
248	7.73	34.11	600	(5.51)	(34.37)	(27.14)	(93)	(1.02)
348	6.68	34.13						
464	6.48	34.34						
586	5.61	34.37						

107.35

HORIZON; October 24, 1954; 0808 GCT; 30°22'N, 116°23.5'W; sounding, 950 fm; wind, 320°, force 3; weather, overcast; sea, moderate; wire angle, 10°.

0	17.33	33.26	0	17.33	33.26	24.12	380	0.00
10	17.34	33.23	10	17.34	33.23	24.10	382	0.04
30	16.09	33.22	20	16.91	33.22	24.19	374	0.08
40	15.16	33.23	30	16.09	33.22	24.38	356	0.11
50	14.23	33.19	50	14.23	33.19	24.76	320	0.18
59	12.44	33.18	75	10.91	33.23	25.44	255	0.25
68	11.20	33.15	100	9.89	33.43	25.77	223	0.31
78	10.78	33.28	150	9.01	33.95	26.32	171	0.41
88	10.05	33.33	200	8.67	34.05	26.45	159	0.50
98	9.90	33.41	250	8.46	34.14	26.55	149	0.58
121	9.74	33.68	300	8.25	34.33	26.73	132	0.65
151	9.00	33.95	400	7.56	34.41	26.90	116	0.78
198	8.68	34.05	500	6.40	34.40	27.05	102	0.90
257	8.43	34.15	600	5.67	34.42	27.16	92	1.00
359	7.96	34.41						
476	6.62	34.40						
602	5.66	34.42						

110.33

HORIZON; October 23, 1954; 0635 GCT; 29°51.5'N, 115°52.5'W; sounding, 52 fm; wind, 040°, force 3; weather, overcast; sea, slight; wire angle, 08°.

0	13.92	33.18	0	13.92	33.18	24.82	314	0.00
10	13.83	33.12	10	13.83	33.12	24.79	317	0.03
20	13.25	33.18	20	13.25	33.18	24.96	300	0.06
30	12.22	-	30	12.22	33.26	25.22	276	0.09
40	11.78	33.32	50	11.65	33.36	25.40	259	0.14
50	11.65	33.36	75	11.03	33.50	25.62	238	0.21
60	11.48	33.34						
70	11.19	33.47						
80	10.89	33.53						

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

HORIZON; October 23, 1954; 1037 GCT; 29°37'N, 116°19.5'W; sounding, 1200 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 12°. 110.40

0	18.06	33.30	0	18.06	33.30	23.98	395	0.00
10	18.06	33.32	10	18.06	33.32	23.99	393	0.04
25	17.32	33.24	20	18.00	33.25	23.95	397	0.08
55	11.35	33.29	30	15.50	33.24	24.53	341	0.12
65	10.90	33.36	50	11.76	33.27	25.31	267	0.18
76	10.44	33.51	75	10.48	33.50	25.72	228	0.24
89	9.96	33.66	100	9.83	33.70	25.99	202	0.29
107	9.76	33.72	150	9.02	33.98	26.34	169	0.39
132	9.25	33.93	200	8.47	34.12	26.53	151	0.47
160	8.92	34.00	250	8.44	34.32	26.69	136	0.54
212	8.44	34.16	300	8.42	34.39	26.75	130	0.61
287	8.44	34.39	400	7.41	34.40	26.91	115	0.74
392	7.48	34.40	500	6.35	34.40	27.06	101	0.86
528	6.09	34.40	600	5.54	34.41	27.17	91	0.96
715	4.96	34.43	700	5.01	34.43	27.24	84	1.05
948	4.18	34.51	800	4.62	34.46	27.31	77	1.14
1255	3.34	34.57	1000	4.02	34.52	27.42	67	1.30

HORIZON; October 23, 1954; 2004 GCT; 29°00'N, 117°38'W; sounding, 2000 fm; wind, 270°, force 3; weather, overcast; sea, rough; wire angle, 20°. 110.60

0	19.53	33.41	0	19.53	33.41	23.69	422	0.00
10	19.48	33.40	10	19.48	33.40	23.70	421	0.04
25	19.28	33.43	20	19.33	33.43	23.76	415	0.08
48	18.06	33.25	30	19.18	33.41	23.78	413	0.12
57	16.64	33.18	50	17.80	33.22	23.98	394	0.21
66	15.66	33.20	75	14.82	33.18	24.63	332	0.30
75	14.82	33.18	100	13.21	33.29	25.05	292	0.38
93	13.74	33.31	150	9.70	33.51	25.86	215	0.50
116	11.70	33.23	200	8.60	33.96	26.39	164	0.60
143	10.02	33.41	250	8.25	34.11	26.56	148	0.68
187	8.74	33.88	300	7.83	34.18	26.68	137	0.76
249	8.28	34.11	400	6.90	34.28	26.89	117	0.89
343	7.48	34.22	500	6.21	34.37	27.05	102	1.00
461	6.45	34.35	600	5.69	34.41	27.15	92	1.11
629	5.54	34.42	700	5.20	34.49	27.27	81	1.20
837	4.58	34.55	800	4.72	34.54	27.36	73	1.29
1131	3.66	34.56	1000	4.01	34.56	27.46	63	1.44

HORIZON; October 22, 1954; 2315 GCT; 29°13'N, 115°39'W; sounding, 745 fm; wind, 330°, force 5; weather, cloudy; sea, rough; wire angle, 33°. 113.35

0	17.78	33.47	0	17.78	33.47	24.18	375	0.00
10	17.76	-	10	17.76	33.47	24.18	375	0.04
26	14.63	33.28	20	16.01	33.37	24.51	343	0.07
39	13.00	33.12	30	14.00	33.20	24.82	314	0.11
46	12.56	33.13	50	12.00	33.15	25.17	280	0.17
55	11.31	33.18	75	10.58	33.39	25.62	238	0.23
63	10.72	33.23	100	10.38	33.67	25.87	214	0.29
71	10.56	33.27	150	9.94	34.04	26.23	180	0.39
84	10.74	33.63	200	9.85	34.29	26.44	160	0.47
91	10.56	33.62	250	9.20	34.35	26.60	145	0.55
111	10.26	33.78	300	8.72	34.39	26.71	134	0.62
135	9.90	33.93	400	7.49	34.38	26.88	118	0.76
180	10.01	34.26	500	6.50	34.41	27.04	103	0.87
235	9.38	34.34						
333	8.50	34.39						
456	6.88	34.38						
589	5.94	34.52						

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OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

117.30

HORIZON; October 22, 1954; 1052 GCT; 28°48'N, 114°56.5'W; sounding, 55 fm; wind, 320°, force 4; weather, overcast; sea, slight; wire angle, 05°.

0	18.68	33.37	0	18.68	33.37	23.88	404	0.00
10	18.36	33.36	10	18.36	33.36	23.95	397	0.04
20	15.80	33.26	20	15.80	33.26	24.48	346	0.08
30	14.39	33.24	30	14.39	33.24	24.77	319	0.11
40	12.22	33.26	50	11.52	33.38	25.44	255	0.17
50	11.52	33.38	75	10.70	33.66	25.81	220	0.23
60	11.17	33.54						
70	10.81	33.62						
80	10.64	33.70						
90	10.63	33.92						

117.40

HORIZON; October 22, 1954; 1543 GCT; 28°29'N, 115°35.5'W; sounding, 560 fm; wind, 320°, force 3; weather, overcast; sea, moderate; wire angle, 24°.

0	17.80	33.35	0	17.80	33.35	24.08	384	0.00
10	17.78	33.41	10	17.78	33.41	24.13	380	0.04
28	15.49	33.38	20	16.70	33.40	24.38	356	0.08
38	13.82	33.32	30	15.34	33.37	24.66	329	0.11
47	13.02	33.32	50	12.72	33.35	25.19	279	0.17
56	12.24	33.43	75	11.77	33.56	25.53	246	0.24
65	11.78	33.41	100	11.00	33.99	26.01	201	0.29
75	11.77	33.56	150	11.45	34.53	26.35	168	0.39
78p	11.96	33.75	200	11.00	34.54	26.44	160	0.47
86p	11.49	33.85	250	10.02	34.48	26.56	148	0.55
113	10.86	34.12	300	9.26	34.49	26.70	135	0.62
137	11.46	34.48	400	7.98	34.46	26.87	119	0.76
179	11.33	34.57	500	6.76	34.45	27.04	103	0.88
229	10.38	34.48						
319	9.00	34.49						
429	7.63	34.45						
548	6.04	34.46						

120.25

HORIZON; October 22, 1954; 0426 GCT; 28°21.5'N, 114°21'W; sounding, 30 fm; wind, 320°, force 4; weather, clear; sea, slight; wire angle, 06°.

0	18.46	33.32	0	18.46	33.32	23.89	402	0.00
10	18.46	33.35	10	18.46	33.35	23.92	400	0.04
20	14.98	33.26	20	14.98	33.26	24.66	329	0.08
30	13.21	33.25	30	13.21	33.25	25.02	295	0.11
40	12.26	33.25	50	11.62	33.38	25.42	257	0.16
50	11.62	33.38						

120.35

HORIZON; October 21, 1954; 2341 GCT; 28°03'N, 114°54'W; sounding, 45 fm; wind, 360°, force 3; weather, cloudy; sea, slight; wire angle, 00°.

0	18.45	33.33	0	18.45	33.33	23.90	401	0.00
10	17.10	33.22	10	17.10	33.22	24.15	378	0.04
20	16.73	33.31	20	16.73	33.31	24.30	363	0.08
30	15.18	33.20	30	15.18	33.20	24.57	338	0.11
40	14.32	33.30	50	12.81	33.37	25.19	279	0.17
50	12.81	33.37	75	(10.78)	(33.53)	(25.69)	(231)	(0.24)
60	11.99	33.40						
71	11.14	33.48						

OBSERVED			INTERPOLATED			COMPUTED		
Z m	T °C	S ‰	Z m	T °C	S ‰	σ_t g/L	δ_{T_3} 10^{-5} cm/g	ΔD dyn. m

HORIZON, October 21, 1954; 0444 GCT; 27°33'N, 115°53'W; sounding, 2000 fm; wind, 320°, force 3; weather, clear; sea, rough; wire angle, 04°. 120.50

0	19.71	33.65	0	19.71	33.65	23.83	409	0.00
10	19.72	33.51	10	19.72	33.51	23.72	419	0.04
25	18.67	33.38	20	19.13	33.41	23.80	412	0.08
55	13.33	33.65	30	17.82	33.41	24.12	380	0.12
65	12.36	33.58	50	13.90	33.64	25.18	280	0.19
76	11.23	33.47	75	11.23	33.47	25.56	243	0.26
91	11.32	33.71	100	10.80	33.66	25.79	222	0.31
110	9.68	33.61	150	9.43	34.00	26.29	174	0.41
134	9.31	33.86	200	9.42	34.33	26.55	149	0.50
163	9.54	34.09	250	9.10	34.43	26.68	137	0.57
217	9.33	34.40	300	8.69	34.44	26.75	130	0.64
294	8.75	34.43	400	7.54	34.39	26.88	118	0.77
402	7.51	34.39	500	6.51	34.38	27.02	105	0.89
542	6.21	34.38	600	5.82	34.39	27.12	95	1.00
732	5.12	34.42	700	5.26	34.41	27.20	88	1.10
968	4.17	34.52	800	4.80	34.45	27.28	80	1.19
1277	3.42	34.55	1000	4.09	34.53	27.43	66	1.35

HORIZON; October 20, 1954; 1829 GCT; 26°46.5'N, 117°06.5'W; sounding, 2200 fm; wind, 340°, force 4; weather, overcast; sea, rough; wire angle, 21°. 120.70

0	19.51	33.51	0	19.51	33.51	23.77	414	0.00
10	19.57	33.55	10	19.57	33.55	23.79	412	0.04
22	19.54	33.54	20	19.55	33.54	23.79	413	0.08
53	17.83	33.30	30	19.30	33.46	23.79	412	0.12
62	15.75	33.40	50	18.21	33.30	23.94	398	0.20
71	13.89	33.40	75	13.50	33.40	25.07	290	0.29
85	12.83	33.38	100	11.13	33.35	25.49	250	0.36
103	10.76	33.35	150	9.62	33.93	26.20	183	0.47
127	9.48	33.59	200	9.54	34.28	26.49	155	0.56
154	9.64	33.97	250	9.09	34.38	26.64	141	0.63
203	9.52	34.29	300	8.54	34.41	26.75	130	0.70
274	8.84	34.40	400	7.56	34.42	26.90	116	0.83
374	7.82	34.42	500	6.68	34.42	27.03	104	0.95
507	6.62	34.42	600	5.97	34.50	27.18	90	1.05
686	5.46	34.57	700	5.36	34.57	27.31	77	1.14
910	4.40	34.57	800	4.83	34.57	27.38	71	1.23
1205	3.60	34.60	1000	4.11	34.58	27.46	63	1.38

HORIZON; October 20, 1954; 0843 GCT; 26°15'N, 118°27'W; sounding, 2230 fm; wind, 360°, force 6; weather, clear; sea, rough; wire angle, 22°. 120.90

0	20.59	33.67	0	20.59	33.67	23.61	429	0.00
10	20.60	33.64	10	20.60	33.64	23.59	431	0.04
24	20.50	33.64	20	20.54	33.64	23.60	430	0.09
51	17.03	33.29	30	19.88	33.60	23.75	416	0.13
60	16.34	33.29	50	17.12	33.29	24.20	373	0.21
69	15.45	33.27	75	15.03	33.26	24.65	330	0.30
83	14.51	33.25	100	13.58	33.25	24.94	302	0.38
100	13.58	33.25	150	10.44	33.58	25.79	222	0.51
124	11.91	33.28	200	9.64	34.14	26.36	167	0.61
150	10.44	33.58	250	9.32	34.30	26.54	150	0.69
198	9.67	34.14	300	8.90	34.40	26.68	137	0.76
269	9.22	34.34	400	7.62	34.43	26.90	116	0.90
368	7.98	34.43	500	6.63	34.43	27.04	103	1.01
498	6.64	34.43	600	5.95	34.48	27.17	91	1.12
676	5.51	34.51	700	5.36	34.52	27.27	81	1.21
898	4.32	34.54	800	4.78	34.53	27.35	74	1.30
1198	3.50	34.58	1000	3.95	34.56	27.46	63	1.45

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OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

123.40

HORIZON; October 19, 1954; 1022 GCT; 27°18'N, 114°52'W; sounding, 285 fm; wind, 320°, force 3; weather, fog; sea, slight; wire angle, 18°.

0	18.91	33.65	0	18.91	33.65	24.03	389	0.00
10	18.62	33.58	10	18.62	33.58	24.05	387	0.04
20	17.63	33.67	20	17.63	33.67	24.36	358	0.08
30	16.91	33.59	30	16.91	33.59	24.47	347	0.11
39	13.96	33.24	50	13.81	33.74	25.27	271	0.17
48	13.85	33.71	75	12.36	34.11	25.85	216	0.23
63	13.02	33.89	100	12.32	34.21	25.93	208	0.29
77	12.34	34.12	150	11.95	34.46	26.20	183	0.39
96	12.33	34.19	200	10.58	34.43	26.43	161	0.48
120	12.24	34.30	250	10.58	34.60	26.56	148	0.56
157	11.80	34.47	300	9.70	34.56	26.68	137	0.63
196	10.58	34.43	400	(8.00)	(34.45)	(26.86)	(120)	(0.76)
244	10.60	34.60						
318	9.36	34.54						
397	8.06	34.45						

123.55

HORIZON; October 19, 1954; 1733, 1753 GCT; 26°47'N, 115°47.5'W; sounding, 2150 fm; wind, 330°, force 3; weather, clear; sea, rough; wire angle, 12°, 16°.

0	20.48	33.79	0	20.48	33.79	23.73	418	0.00
10	20.44	33.63	10	20.44	33.63	23.62	428	0.04
30	19.83	33.49	20	20.19	33.54	23.62	428	0.08
39	19.38	33.45	30	19.83	33.49	23.68	423	0.13
49	17.04	33.29	50	16.60	33.29	24.32	361	0.21
58	14.21	33.28	75	12.22	33.31	25.26	272	0.29
68	12.88	33.30	100	10.74	33.64	25.78	222	0.35
77	12.08	33.31	150	10.05	34.12	26.28	175	0.45
87	11.59	33.43	200	9.72	34.29	26.47	157	0.53
96	11.06	33.59	250	8.94	34.33	26.62	143	0.61
120	9.99	33.82	300	8.58	34.43	26.76	129	0.68
149	10.06	34.12	400	7.89	34.51	26.93	113	0.81
197	9.74	34.29	500	6.80	34.46	27.04	103	0.92
256	8.88	34.34	600	(5.91)	(34.44)	(27.14)	(93)	(1.03)
359	8.26	34.52						
477	7.04	34.46						
598	5.96	34.44						

127.34

HORIZON; October 19, 1954; 0423 GCT; 26°56'N, 114°06'W; sounding, 47 fm; wind, 320°, force 3; weather, clear; sea, slight; wire angle, 07°.

0	20.71	33.78	0	20.71	33.78	23.67	424	0.00
10	19.50	33.69	10	19.50	33.69	23.91	401	0.04
20	18.95	33.75	20	18.95	33.75	24.10	382	0.08
30	14.96	33.23	30	14.96	33.23	24.64	331	0.12
40	13.74	33.33	50	12.81	33.54	25.32	266	0.18
50	12.81	33.54	75	(13.22)	(33.95)	(25.56)	(243)	(0.24)
60	13.16	33.89						
70	13.20	33.94						

OBSERVED			INTERPOLATED			COMPUTED		
Z	T	S	Z	T	S	σ_t	δ_{T_3}	ΔD
m	°C	‰	m	°C	‰	g/L	10^{-5} cm/g	dyn. m

HORIZON; October 18, 1954; 1957 GCT; 26°22.5'N, 115°09'W; sounding, 1850 fm; wind, 040°, force 2; weather, clear; sea, rough; wire angle, 11°. 127.50

0	20.91	33.59	0	20.91	33.59	23.47	443	0.00
10	19.96	33.59	10	19.96	33.59	23.72	419	0.04
30	16.63	33.28	20	18.84	33.49	23.93	399	0.08
40	15.12	33.35	30	16.63	33.28	24.30	363	0.12
50	14.00	33.29	50	14.00	33.29	24.89	307	0.19
60	12.93	33.35	75	11.70	33.54	25.53	246	0.26
70	11.93	33.51	100	11.14	33.99	25.98	204	0.32
80	11.62	33.57	150	10.92	34.33	26.29	174	0.41
89	11.70	33.95	200	10.48	34.52	26.51	153	0.50
99	11.17	33.99	250	9.77	34.49	26.61	144	0.57
123	11.00	34.22	300	9.30	34.50	26.70	135	0.64
152	10.92	34.34	400	8.20	34.51	26.88	118	0.78
200	10.48	34.52	500	6.72	34.46	27.05	102	0.89
258	9.67	34.49	600	(5.93)	(34.43)	(27.13)	(94)	(1.00)
358	8.76	34.52						
473	6.98	34.47						
596	5.96	34.43						

HORIZON; October 17, 1954; 2015 GCT; 26°29'N, 113°27.5'W; sounding, 37 fm; wind, 210°, force 3; weather, clear; sea, moderate; wire angle, 01°. 130.30

0	20.48	34.00	0	20.48	34.00	23.89	403	0.00
10	19.84	33.94	10	19.84	33.94	24.02	390	0.04
20	15.29	33.50	20	15.29	33.50	24.77	319	0.08
30	14.78	33.83	30	14.78	33.83	25.14	283	0.10
40	14.96	34.07	50	14.88	34.10	25.32	266	0.16
50	14.88	34.10						

HORIZON; October 18, 1954; 0110 GCT; 26°11'N, 114°03.5'W; sounding, 1150 fm; wind, 300°, force 3; weather, partly cloudy; sea, rough; wire angle, 11°. 130.40

0	22.02	33.71	0	22.02	33.71	23.25	464	0.00
10	21.44	33.69	10	21.44	33.69	23.40	450	0.05
25	18.42	33.67	20	19.76	33.68	23.84	408	0.09
49	12.71	33.39	30	16.88	33.63	24.51	343	0.13
59	11.76	33.41	50	12.58	33.39	25.25	273	0.19
68	11.48	33.58	75	11.26	33.70	25.74	226	0.25
78	11.17	33.72	100	10.80	33.88	25.96	205	0.30
97	10.83	33.84	150	11.06	34.48	26.38	166	0.40
120	10.64	34.26	200	10.88	34.61	26.51	153	0.48
149	11.04	34.48	250	10.44	34.64	26.61	144	0.56
196	10.91	34.60	300	9.64	34.62	26.74	131	0.63
264	10.30	34.64	400	8.02	34.46	26.87	119	0.76
365	8.48	34.47	500	7.04	34.44	26.99	108	0.88
491	7.12	34.44	600	6.14	34.41	27.09	98	0.99
671	5.62	34.40	700	5.44	34.40	27.17	91	1.10
892	4.42	34.52	800	4.84	34.47	27.30	78	1.19
1195	3.56	34.57	1000	4.04	34.54	27.44	65	1.35

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

130.60

HORIZON; October 18, 1954; 1204, 1237 GCT; 25°30.5'N, 115°27.5'W; sounding, 2150 fm; wind, 360°, force 3; weather, cloudy; sea, slight; wire angle, 03°, 04°.

0	21.68	33.82	0	21.68	33.82	23.43	447	0.00
10	21.40	33.78	10	21.40	33.78	23.48	442	0.04
25	20.61	33.77	20	20.94	33.78	23.60	430	0.09
50	14.83	33.42	30	20.02	33.75	23.82	409	0.13
60	13.76	33.48	50	14.83	33.42	24.81	315	0.20
70	12.47	33.65	75	12.26	33.62	25.49	250	0.27
80	12.02	33.58	100	10.06	33.57	25.85	216	0.33
99	10.08	33.57	150	9.94	34.02	26.22	181	0.43
124	9.75	33.89	200	9.14	34.27	26.54	150	0.52
153	9.94	34.03	250	8.48	34.33	26.70	135	0.59
201	9.13	34.27	300	8.06	34.39	26.81	125	0.66
271	8.28	34.35	400	7.50	34.47	26.95	111	0.78
373	7.74	34.48	500	6.32	34.37	27.04	103	0.90
500	6.32	34.37	600	5.80	34.42	27.14	93	1.00
682	5.38	34.48	700	5.32	34.49	27.26	82	1.10
			800	4.85	34.54	27.35	74	1.18
910	4.44	34.56	1000	4.12	34.56	27.45	64	1.34
1212	3.56	34.55						

133.30

HORIZON; October 17, 1954; 1332 GCT; 25°50'N, 113°07'W; sounding, 110 fm; wind, 300°, force 2; weather, clear; sea, slight; wire angle, 04°.

0	21.55	33.79	0	21.55	33.79	23.44	445	0.00
10	21.22	33.89	10	21.22	33.89	23.61	429	0.04
20	19.83	33.68	20	19.83	33.68	23.82	409	0.09
30	16.33	33.19	30	16.33	33.19	24.30	363	0.12
45	14.19	33.27	50	13.70	33.32	24.97	300	0.19
55	13.17	33.38	75	14.22	34.15	25.50	249	0.26
65	13.25	33.68	100	13.56	34.46	25.88	213	0.32
80	14.20	34.30	150	12.59	34.59	26.18	184	0.42
100	13.56	34.46						
120	13.16	34.54						
156	12.47	34.60						

137.23

HORIZON; October 17, 1954; 0552 GCT; 25°35'N, 112°19'W; sounding, 45 fm; wind, 300°, force 2; weather, clear; sea, slight; wire angle, 03°.

0	22.56	34.09	0	22.56	34.09	23.39	450	0.00
10	20.68	33.96	10	20.68	33.96	23.81	410	0.04
20	19.24	33.92	20	19.24	33.92	24.16	377	0.08
30	17.36	33.82	30	17.36	33.82	24.54	340	0.12
40	16.88	33.87	50	16.49	33.89	24.80	316	0.18
50	16.49	33.89						
60	16.08	33.91						

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	10 Meters T	10 Meters S
77.50-C	X-7	1640	35°04.0'	120°52.0'	80	130°	1	clear	moderate	14.10	33.48
80.51-C	7	2200	34°26.0'	120°33.0'	60	310°	3	clear	rough	13.99	33.42
80.60-C	8	0420	34°09.0'	121°09.0'	1180	330°	4	fog	rough	16.16	33.41
80.80-C	8	1530	33°26.0'	122°32.0'	2260	270°	4	partly cloudy	moderate	16.24	33.18
83.40-C	10	0750	34°13.5'	119°22.0'	13	calm		fog	smooth	16.02	33.37
83.48-C	9	2235	33°57.5'	119°55.0'	50	320°	3	clear	moderate	15.20	33.37
83.55-C	9	1730	33°43.5'	120°24.0'	520	330°	4	clear	very rough	15.52	33.45
85.40-C	10	1155	33°57.0'	119°10.0'	400	290°	1	fog	very rough	15.20	33.43
85.50-C	10	1740	33°37.0'	119°52.0'	246	310°	4	partly cloudy	moderate	15.46a)	33.52
85.60-C	11	0015	33°15.5'	120°36.5'	700	320°	5	cloudy	very rough	15.45	33.53
87.35-C	11	1735	33°51.5'	118°36.5'	100	150°	2	fog	slight	16.99	33.42
87.45-C	11	1120	33°30.0'	119°19.0'	900	070°	5	fog	moderate	14.64	33.52
87.55-C	11	0550	33°10.0'	120°00.5'	650	310°	5	missing	rough	15.61	33.38
90.30-C	12	2115	33°24.0'	117°54.5'	350	140°	1	fog	slight	17.71	33.43
90.45-C	13	0520	32°54.5'	118°56.0'	970	calm		fog	slight	15.99	33.46
90.55-C	13	1050	32°34.0'	119°36.5'	600	300°	1	fog	moderate	16.37	33.37
90.60-C	13	1325	32°24.0'	119°57.0'	460	010°	3	overcast	moderate	15.98	33.39

a) Alternate value, 16.81°C.

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	10 Meters T	10 Meters S
93.27-C	X-14	1830	32°56.0'	117°19.0'	40	320°	1	fog	calm	14.93	33.32
93.40-C	14	1200	32°30.5'	118°12.5'	900	310°	2	clear	moderate	14.88	33.32
93.45-C	14	0930	32°20.0'	118°33.0'	850	060°	2	clear	moderate	17.58	33.43
93.55-C	14	0300	32°00.5'	119°13.5'	980	310°	5	clear	moderate	17.84	33.46
97.30-C	14	2330	32°15.5'	117°09.0'	33	330°	3	fog	slight	18.27	33.47
97.32-C	15	0030	32°11.5'	117°17.0'	750	310°	4	fog	moderate	18.58	33.50
97.45-C	15	0700	31°45.0'	118°10.0'	850	300°	3	cloudy	moderate	18.00	33.44
97.50-C	15	0930	31°35.0'	118°30.0'	1300	310°	3	fog	moderate	18.18	33.48
97.55-C	15	1200	31°25.0'	118°51.0'	300	330°	3	fog	moderate	18.04	33.48
100.30-C	17	0810	31°40.5'	116°46.5'	245	020°	2	fog	smooth	13.94	33.24
100.40-C	17	0325	31°21.0'	117°27.0'	1080	330°	3	cloudy	moderate	18.43	33.47
100.45-C	17	0055	31°10.5'	117°47.0'	820	320°	4	partly cloudy	moderate	18.46	33.46
100.55-C	16	1955	30°52.5'	118°26.5'	1060	350°	4	cloudy	moderate	18.00	33.39
100.60-C	16	1630	30°42.0'	118°48.0'	1650	330°	2	cloudy	moderate	17.99	33.35
100.80-C	16	0735	30°01.0'	120°08.0'	2150	310°	3	cloudy	moderate	18.41	33.30
103.35-H	24	1710	30°55.5'	116°45.0'	1000	180°	3	cloudy	very rough	16.96	33.30
107.32-H	24	1000	30°26.0'	116°11.0'	230	360°	1	overcast	calm	14.64	33.23
107.40-H	24	0500	30°11.5'	116°45.0'	1450	270°	3	overcast	rough	18.27	33.40
110.35-H	23	0735	29°47.0'	116°01.0'	700	320°	4	overcast	rough	14.88	33.25

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	10 Meters T	10 Meters S
110.45-H	X-23	1345	29°26.0'	116°41.0'	1200	320°	4	cloudy	moderate	17.44	33.27
110.50-H	23	1540	29°16.5'	116°59.0'	1900	270°	3	cloudy	moderate	18.42	33.45
110.55-H	23	1810	29°00.0'	117°25.0'	2000	320°	3	cloudy	moderate	19.03a)	33.39
113.30-H	23	0200	29°25.0'	115°19.0'	30	320°	4	overcast	rough	15.27b)	33.21
113.40-H	22	2020	29°03.5'	115°58.0'	1080	320°	4	cloudy	rough	17.65	33.31
117.26-H	22	0840	28°52.5'	114°39.0'	116	320°	4	clear	slight	16.86	33.25
117.35-H	22	1310	28°36.5'	115°17.0'	120	320°	4	overcast	rough	17.70	33.30
120.30-H	22	0200	28°13.0'	114°34.0'	55	320°	4	partly cloudy	slight	19.46	33.47
120.45-H	21	0730	27°43.0'	115°33.0'	1300	320°	2	clear	moderate	18.64	33.48
120.55-H	21	0155	27°22.5'	116°13.0'	2100	360°	3	partly cloudy	rough	19.10	33.57
120.60-H	20	2340	27°13.5'	116°30.0'	2075	320°	4	partly cloudy	rough	18.88	33.47
120.80-H	20	1415	26°38.5'	117°46.5'	2200	340°	4	cloudy	rough	20.08c)	33.54
123.37-H	19	0830	27°24.0'	114°39.5'	40	320°	3	thick fog	slight	19.62	33.85
123.45-H	19	1245	27°07.5'	115°11.5'	2350	320°	3	partly cloudy	slight	20.41	33.57
123.50-H	19	1500	26°56.5'	115°30.0'	2000	320°	4	clear	slight	20.43	33.43

a) Alternate value, 19.49°C.

b) Alternate value, 15.07°C.

c) Alternate value, 20.79°C.

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	10 Meters T	10 Meters S
127.40-H	X-19	0140	26°47.5'	114°29.5'	1600	320°	4	clear	slight	20.24	33.60
127.45-H	18	2230	26°34.0'	114°54.0'	1850	320°	3	clear	slight	20.41	33.64
127.55-H	18	1730	26°12.5'	115°27.0'	2050	360°	4	partly cloudy	moderate	20.43a)	33.56
130.35-H	17	2230	26°19.5'	113°45.0'	75	320°	3	partly cloudy	slight	19.37	33.64
130.45-H	18	0430	25°59.0'	114°27.0'	2000	320°	3	clear	moderate	21.65b)	33.82
130.50-H	18	0640	25°49.0'	114°46.5'	2100	320°	3	clear	moderate	21.38	33.70
130.55-H	18	0900	25°40.5'	115°07.0'	2050	360°	3	clear	moderate	21.45c)	33.67
133.25-H	17	1600	26°05.0'	112°47.5'	45	calm		clear	slight	22.31	34.18
137.30-H	16	0920	25°20.0'	112°45.0'	170	290°	3	clear	slight	22.02	33.86

a) Alternate value, 20.95°C.

b) Alternate value, 21.07°C.

c) Alternate value, 21.18°C.

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