

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6207-8
10 July - 29 August 1962

SIO Reference 62-23
4 October 1962

UNIVERSITY OF CALIFORNIA
CONTENTS
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 6207-8

10 July - 29 August 1962

Sponsored by

Marine Research Committee

and the

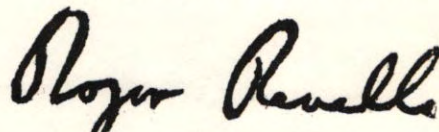
National Science Foundation

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SIO Reference 62-23

4 October 1962

Approved for distribution:



Roger Revelle, Director

UNIVERSITY OF CALIFORNIA
Scripps Institution of Oceanography
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INTRODUCTION

The data presented in this report were collected by the RV Black Douglas of the Bureau of Commercial Fisheries and the RV Paolina-T of the Scripps Institution of Oceanography on Cruise 6207-8 of the California Cooperative Oceanic Fisheries Investigations program. The first two figures in this cruise numbering system represent the year of the cruise; the last two figures, the month. (In the case of quarterly cruises the last figures are hyphenated.) The cruises preceding this one in the series are 6101-2 (Scripps Institution report, SIO Ref. 61-24), 6103/6104-5/6105 (SIO Ref. 62-15), 6107-8/6108 (SIO Ref. 62-16) and 6109/6110-11 (SIO Ref. 62-17). The data collected in the early part of 1962 will be published in the near future out of sequence.

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; 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 .

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.

* The salinity values obtained by salinometer are recorded to three decimal places, provided they meet accepted standards. The third decimal place has been offset to emphasize that the accuracy of the observations is not to one unit in that place, but that the values recorded "have a reproducibility of $\pm 0.004\%$ salinity at the 95 percent probability level, and a probable accuracy of $\pm 0.01\%$ salinity or better at the same level of probability."^{2/} The values are recorded to two decimal places when obtained by chlorinity titration, or by salinometer where only one determination

^{1/}Klein, Hans T. A new technique for processing physical oceanographic data. MS.

^{2/}Quotation from Department of Oceanography, University of Washington, Tech. Rep. No. 66, UW Ref. 60-18, October 1960.

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* This cruise only 1 run on inductive salinometer. They should be tabulated to hundredths

per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on a station. The accuracy of all samples obtained by salinometer and recorded to two decimal places is believed to be equal to or better than those obtained by manual titration.

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.

On stations where more than one cast is lowered, the various property curves may not agree perfectly. This discrepancy may be caused by changes in geographical position, real property changes with time, slight error in measurement, or a combination of these factors. Stations with overlapping casts have the following footnote: Overlapping casts; reconciliation of property curves when necessary.

FOOTNOTES

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 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.

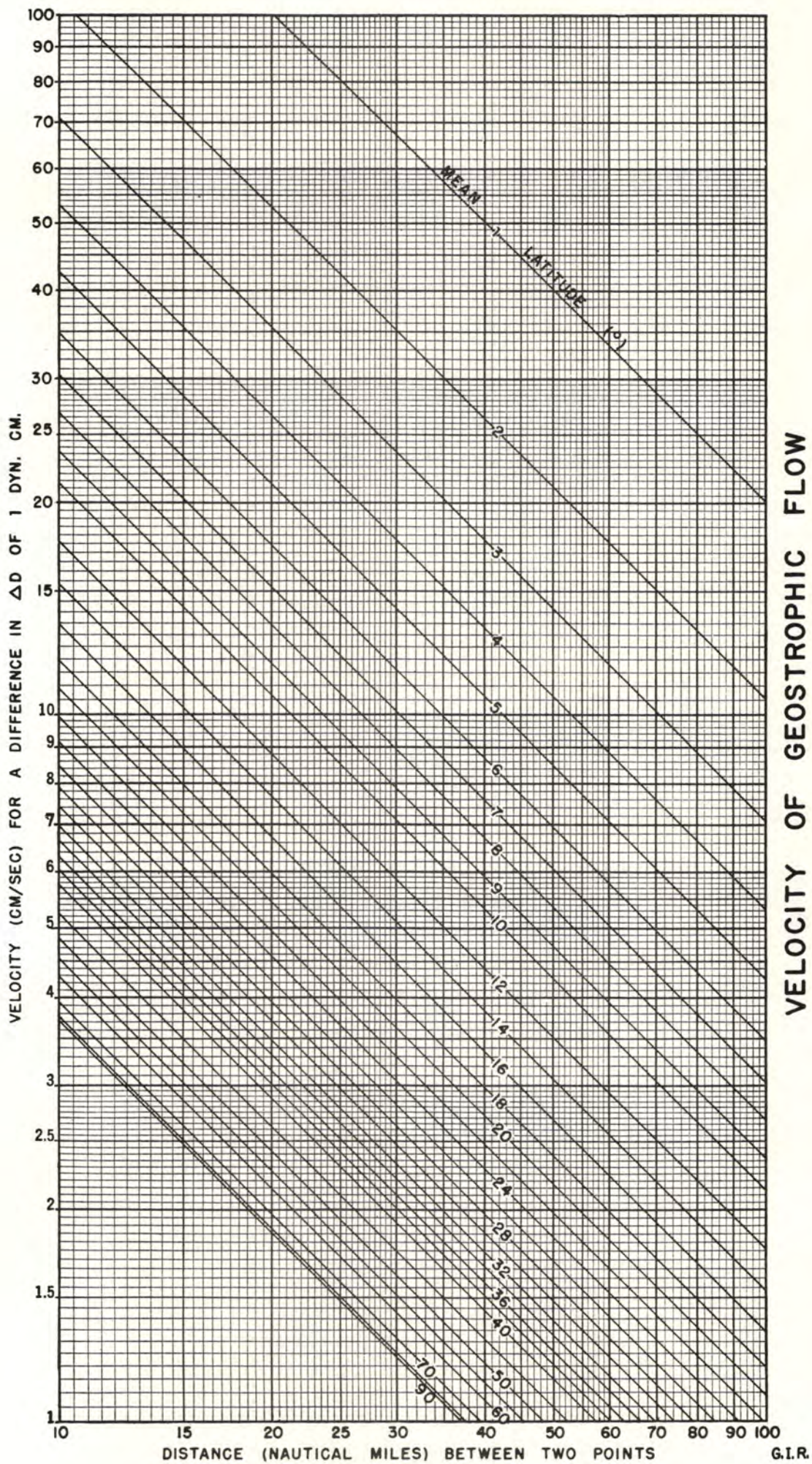
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

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.



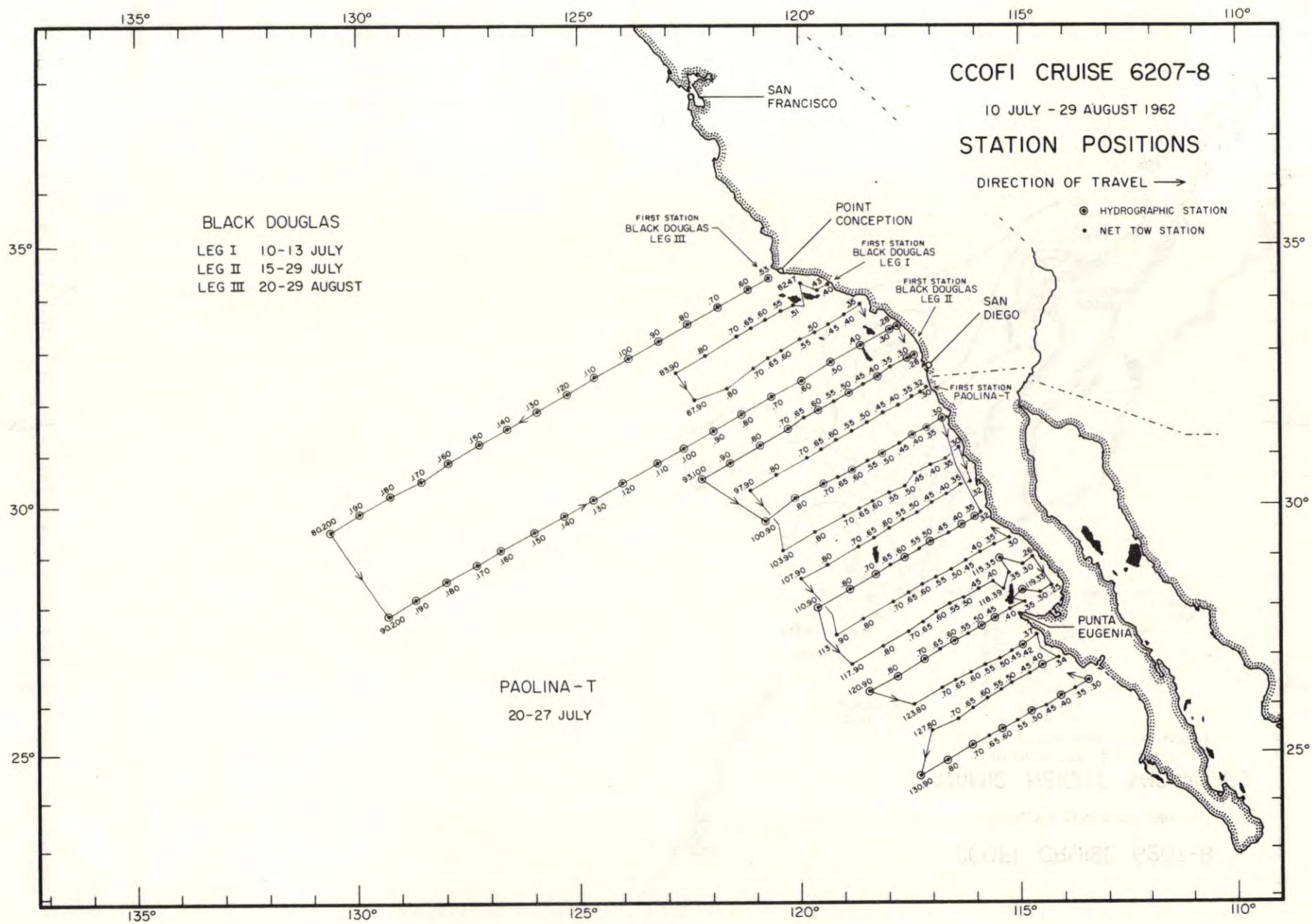


FIGURE I

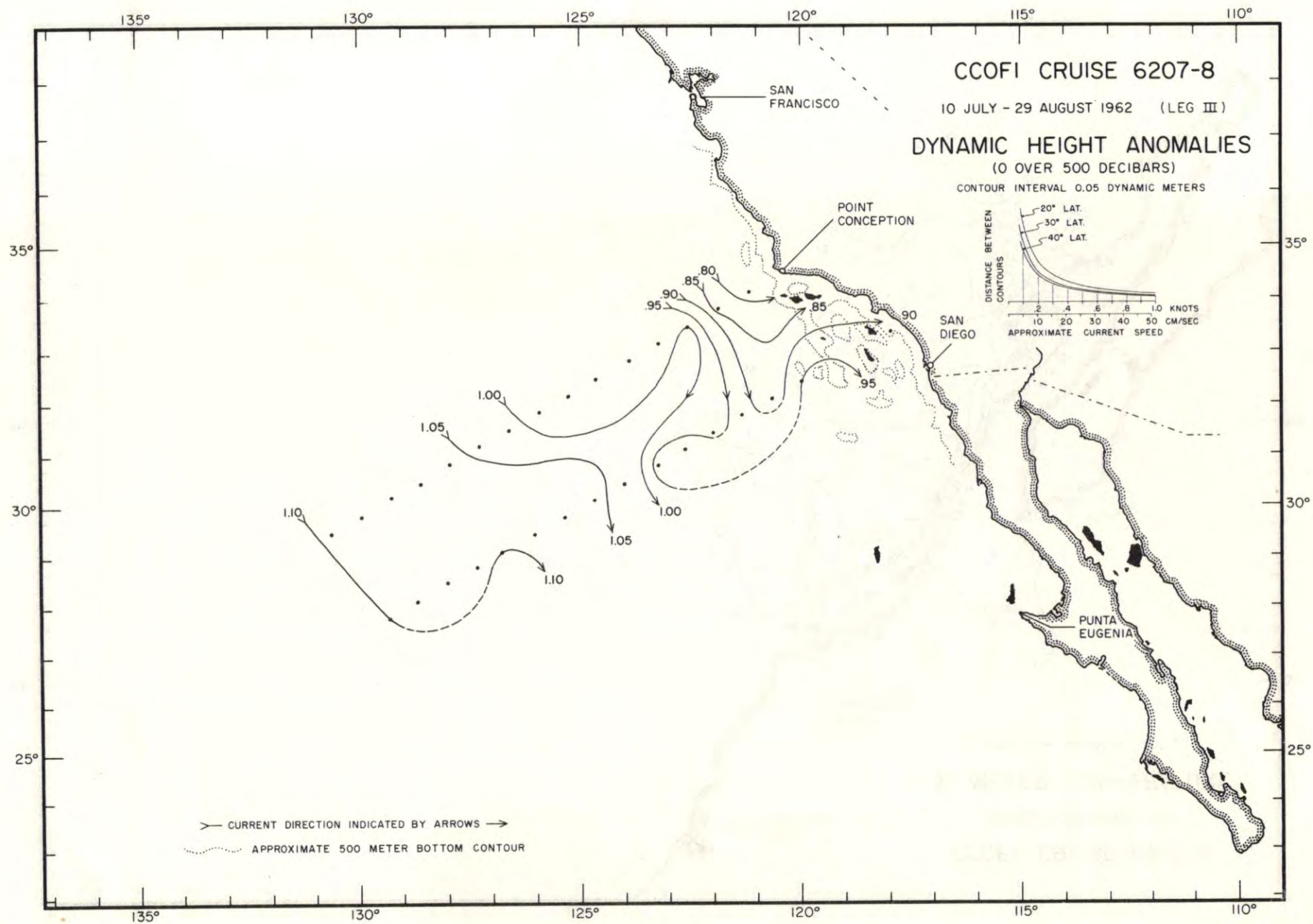


FIGURE 2B

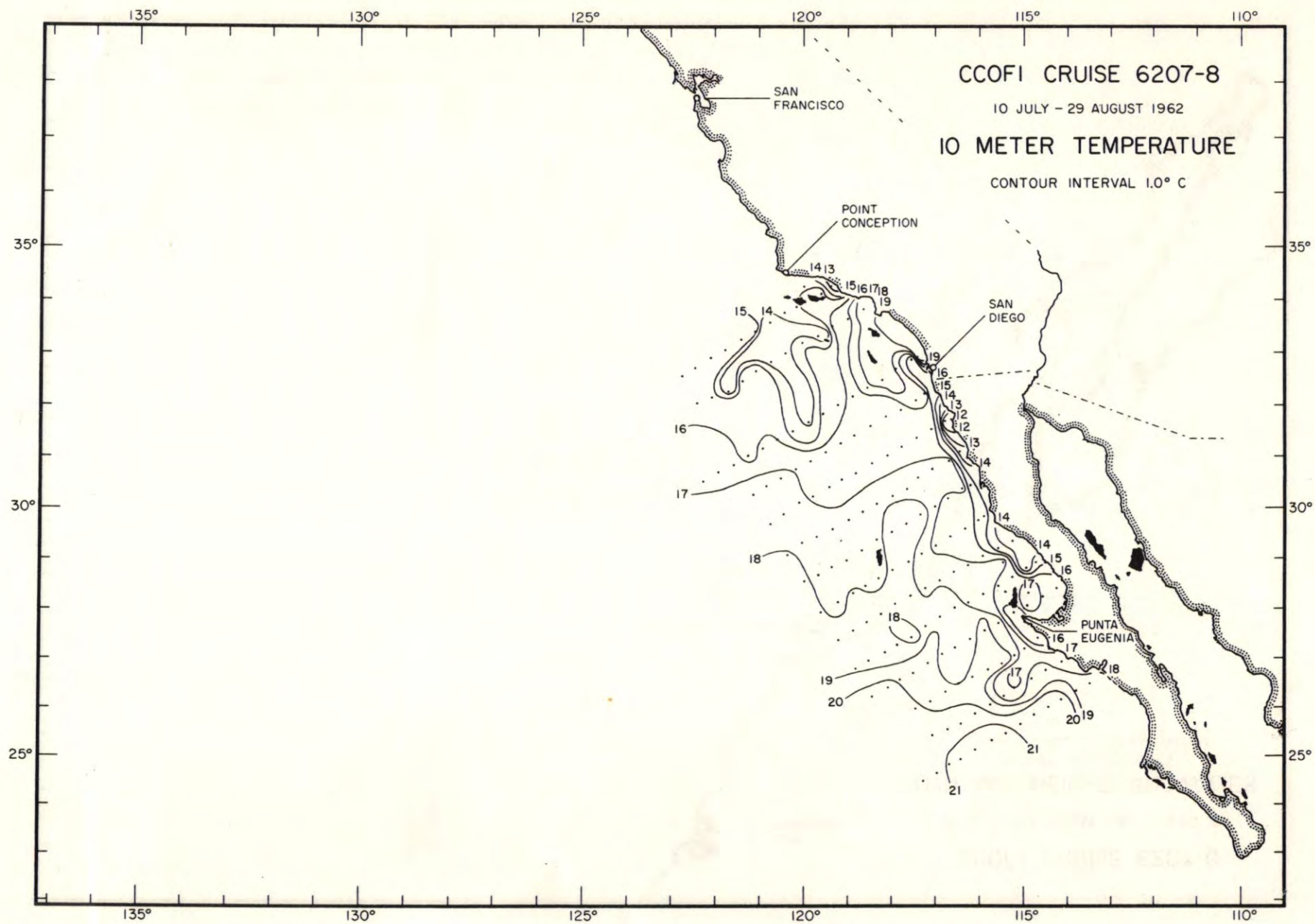


FIGURE 3A

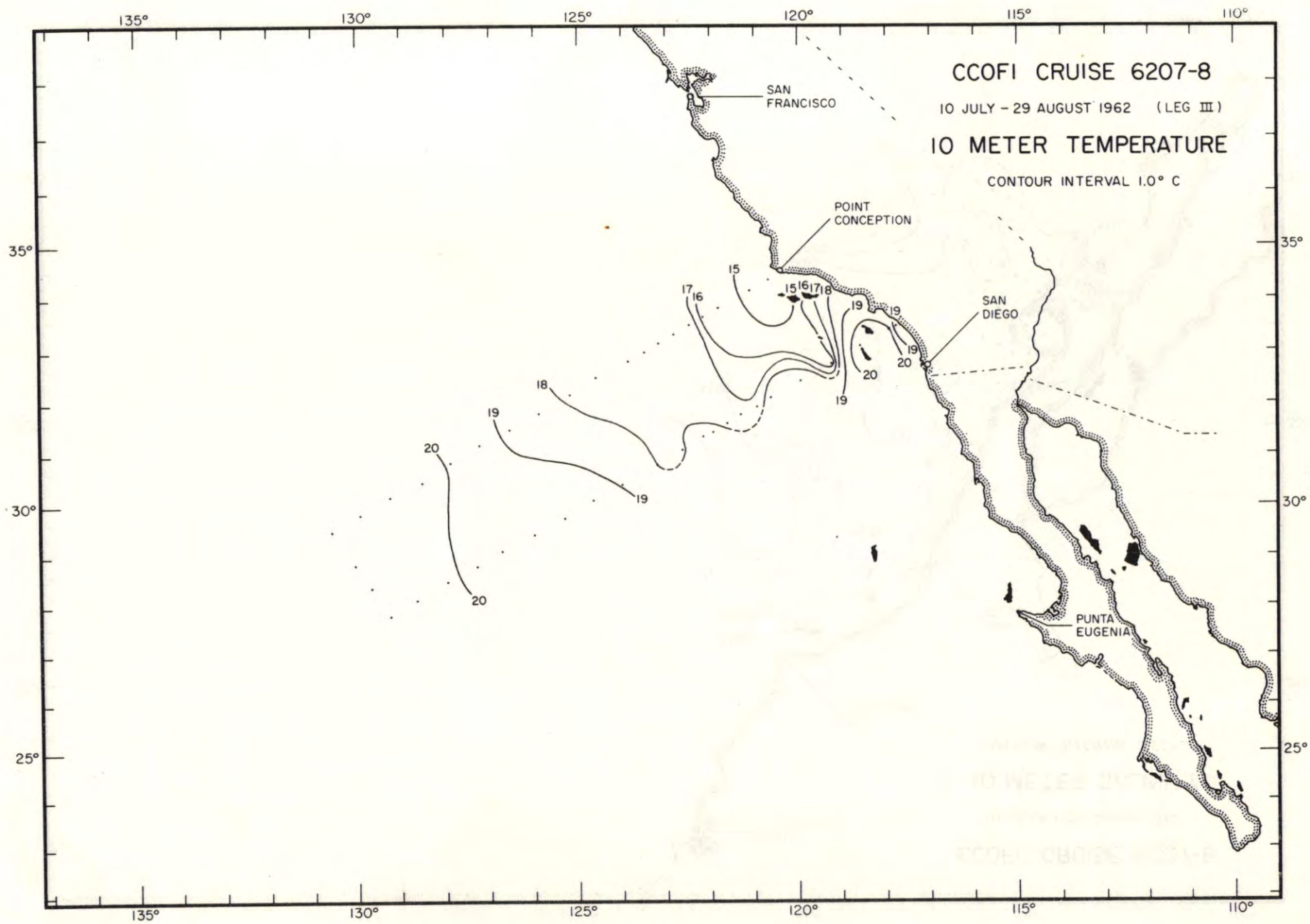


FIGURE 3B

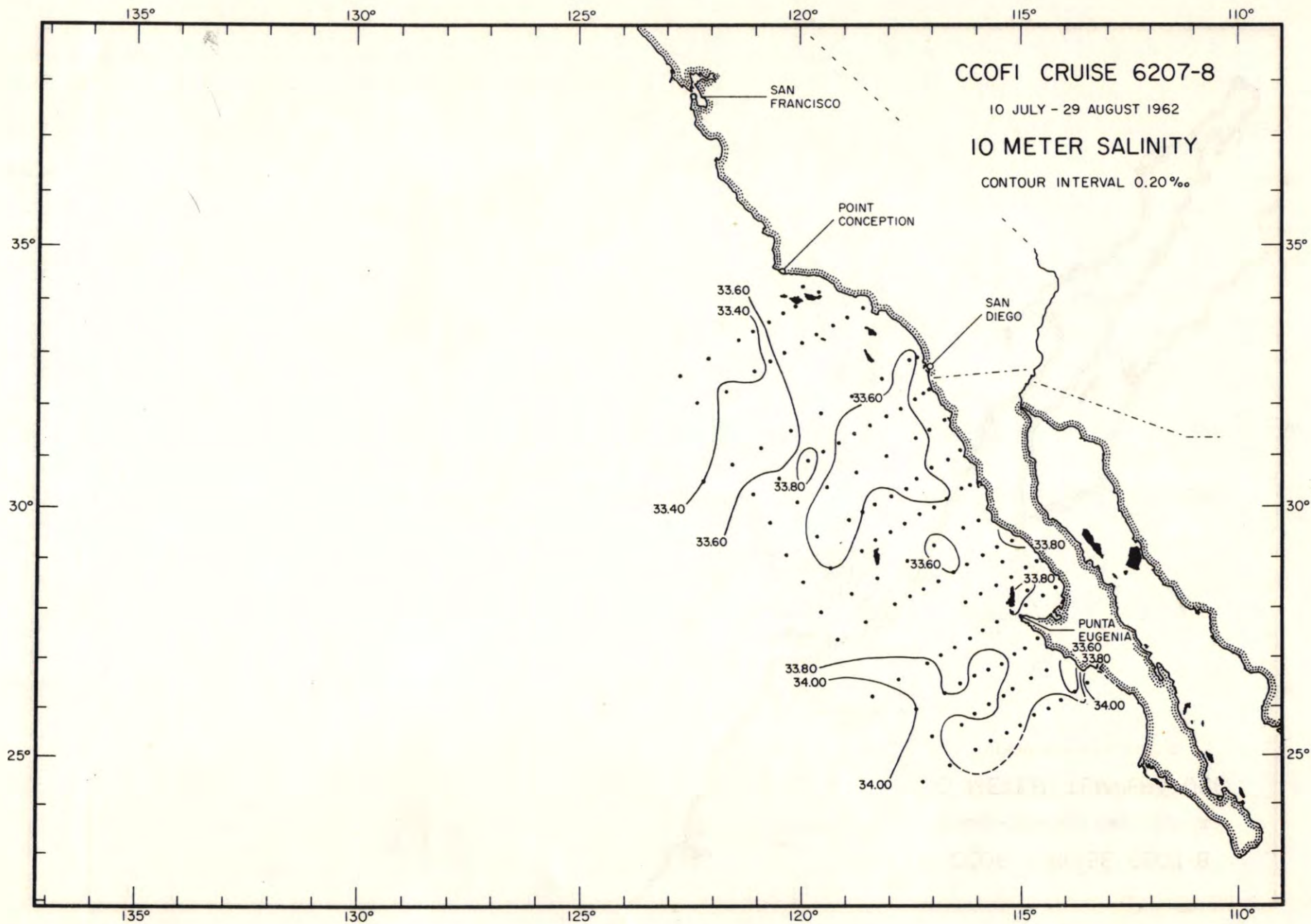


FIGURE 4A

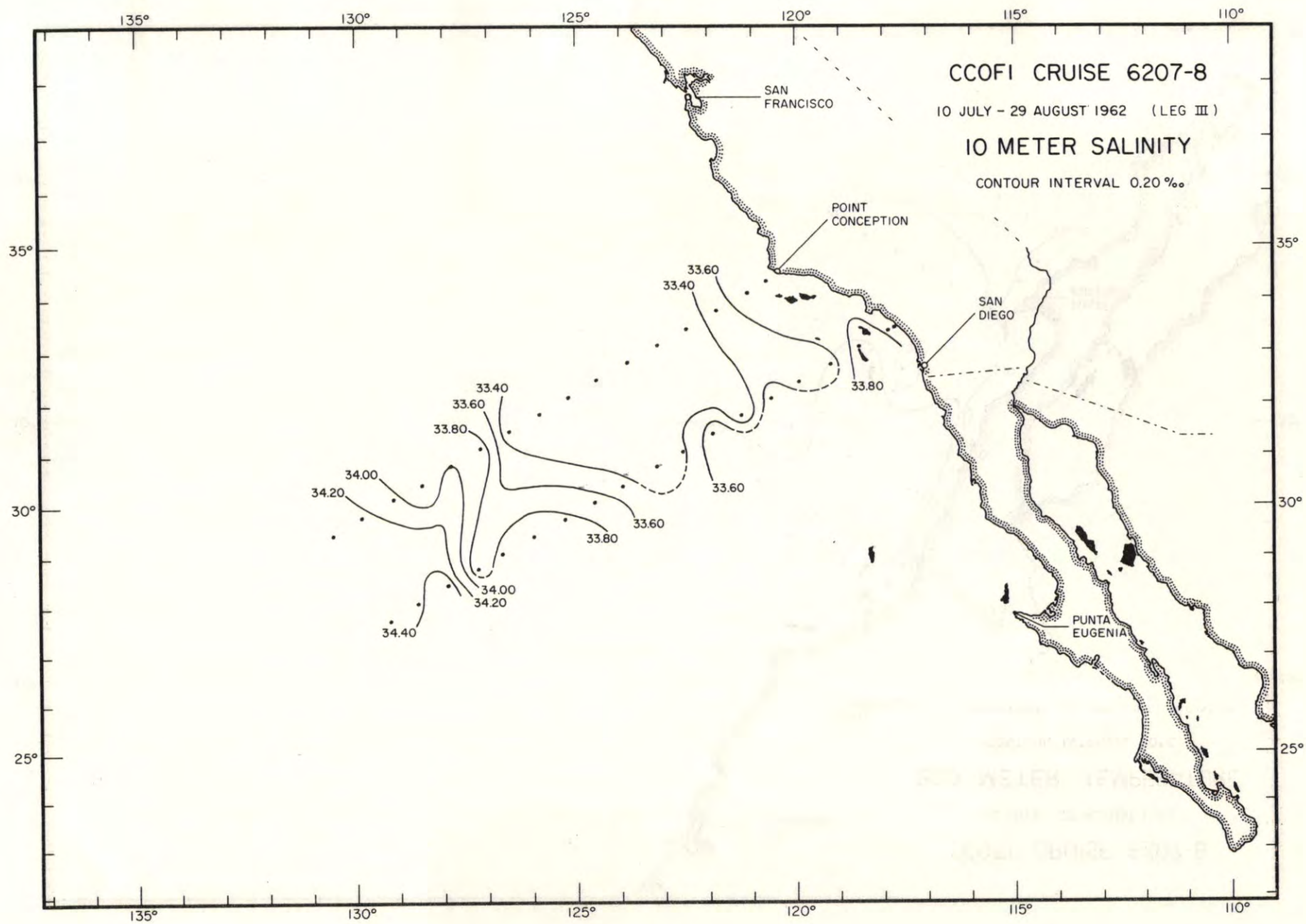


FIGURE 4B

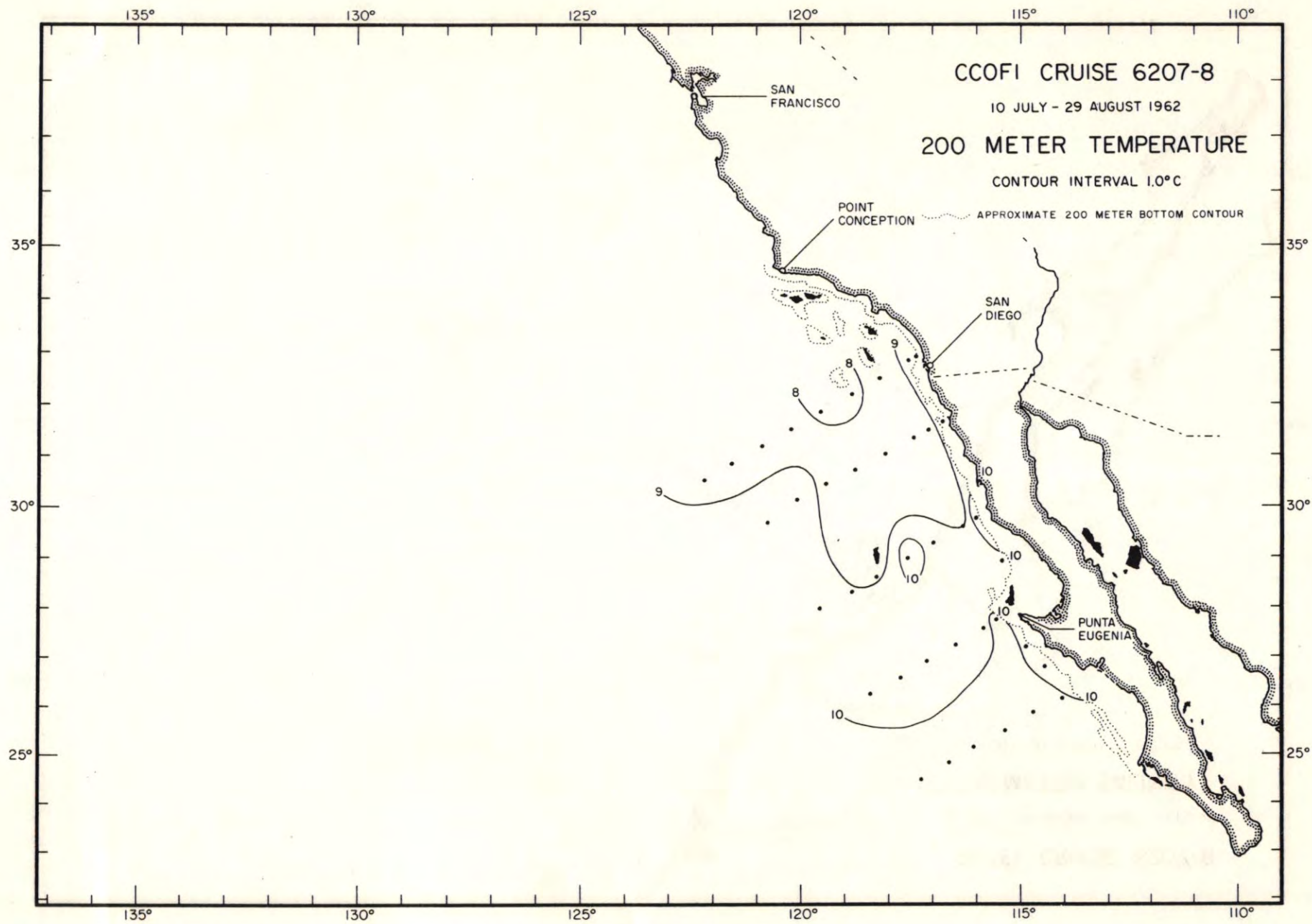


FIGURE 5A

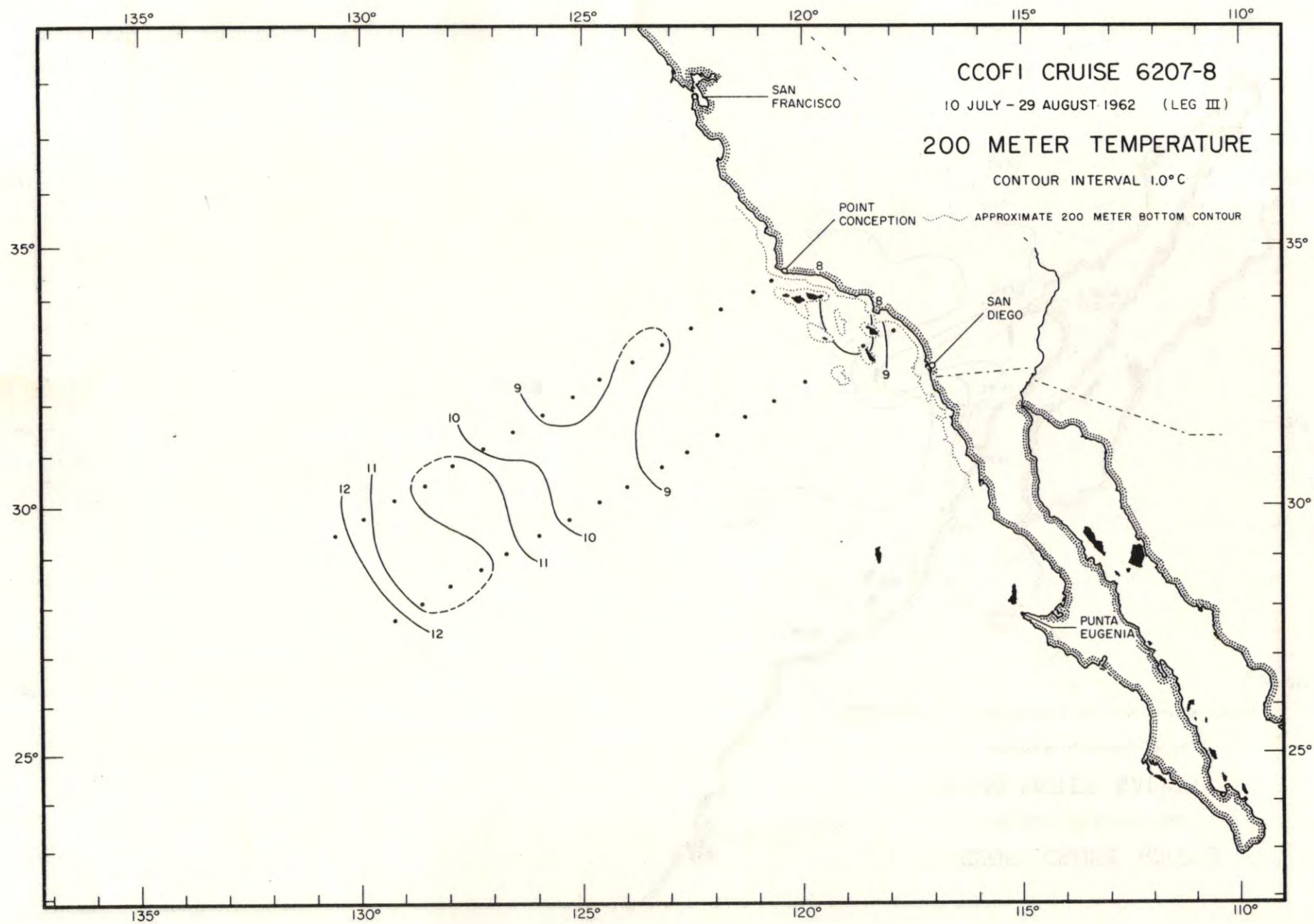


FIGURE 5B

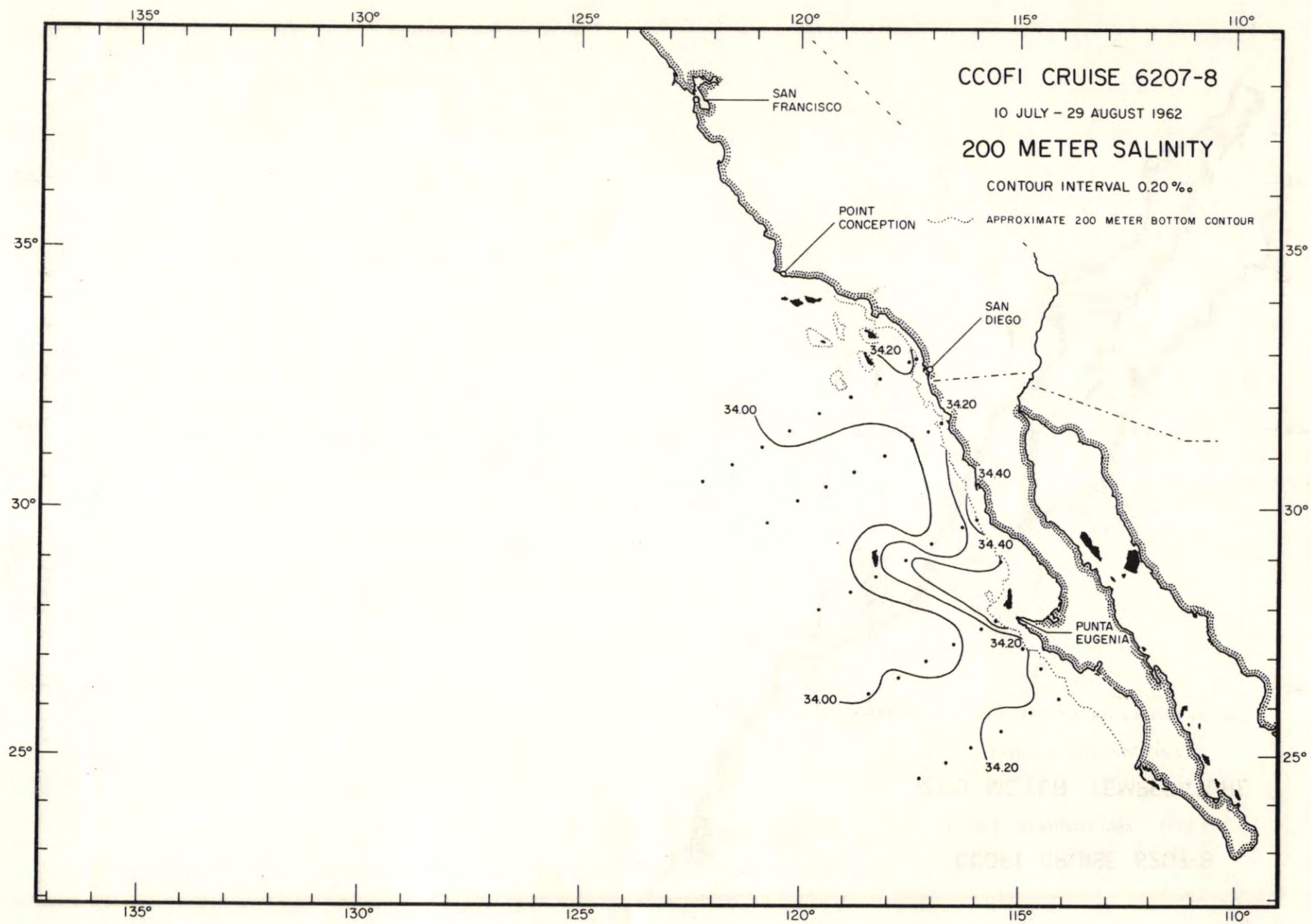


FIGURE 6A

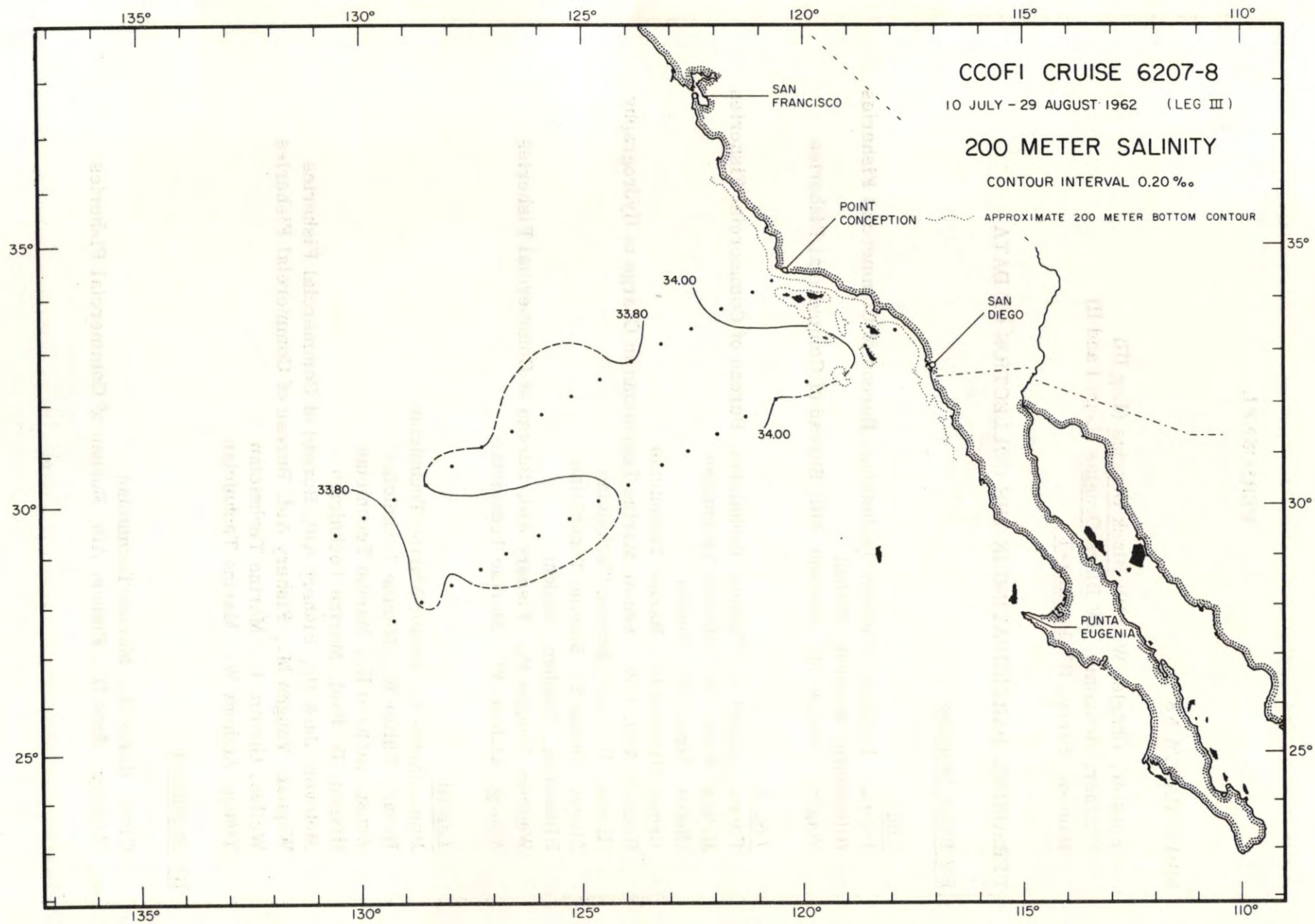


FIGURE 6B

PERSONNEL

SHIPS' CAPTAINS

Forster, Charles W., RV Black Douglas (Leg III)
Glazner, Benjamin, RV Black Douglas (Legs I and II)
Hansen, Terry, RV Paolina-T

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Black Douglas

Leg I

Farrar, Lloyd J., Fishery Technician, Bureau of Commercial Fisheries
Rittenburg, Stephen, Student
Wagner, Vaughn M., Fishery Aid, Bureau of Commercial Fisheries

Leg II

Farrar, Lloyd J., Fishery Technician, Bureau of Commercial Fisheries
Bryan, Walter R., Marine Technician
Chard, James R., Student
Ernst, Richard K., Marine Technician
Hester, Arthur W., Senior Marine Technician in Charge of Hydrography
Hixson, D. Paul, Marine Technician
Marcy, Deane S., Marine Technician
Rittenburg, Stephen, Student
Wagner, Vaughn M., Fishery Aid, Bureau of Commercial Fisheries
Young, Anthony W., Marine Technician

Leg III

Pine, James S., Senior Marine Technician
Bryan, Walter R., Marine Technician
Ernst, Richard K., Marine Technician
Hixson, D. Paul, Marine Technician
Metoyer, Jack D., Fishery Aid, Bureau of Commercial Fisheries
Wagner, Vaughn M., Fishery Aid, Bureau of Commercial Fisheries
Welles, George L., Marine Technician
Young, Anthony W., Marine Technician

RV Paolina-T

Grow, Harry S., Marine Technician
Metoyer, Jack D., Fishery Aid, Bureau of Commercial Fisheries

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
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BLACK DOUGLAS; August 20, 1962; 0949 GCT; 34°22'N, 120°41'W; sounding, 250 fm; wind, 230°, force 3;
weather, fog; sea, moderate; wire angle, 10°.

80.53

0	14.28	33.75 0	5.41	279	0	14.28	33.75	5.41	25.18	279	0.00
10	14.05	33.74 6	5.35	275	10	14.05	33.75	5.35	25.23	275	0.03
29	10.60	33.80 3	3.20	208	20	11.90	33.75	4.20	25.66	234	0.05
50	10.18	33.86 5	2.67	196	30	10.58	33.81	3.15	25.94	207	0.08
75	10.06	33.86 8	2.57	194	50	10.18	33.86	2.67	26.05	197	0.12
102	9.72	33.92 9	2.27	184	75	10.06	33.87	2.57	26.08	194	0.16
128	9.58	33.93 2	2.38	182	100	9.76	33.93	2.27	26.18	185	0.21
167	9.17	34.05 1	1.97	167	125	9.59	33.93	2.35	26.21	182	0.26
208	8.97	34.12 3	1.63	158	150	9.34	33.99	2.21	26.29	174	0.30
256	8.64	34.17 7	1.40	149	200	8.99	34.11	1.69	26.44	159	0.39
305	8.36	34.24 2	1.00	140	250	8.68	34.17	1.44	26.54	150	0.47
409	7.22	34.28	0.54	122	300	8.39	34.23	1.05	26.63	142	0.54
					400	7.34	34.28	0.58	26.83	123	0.68

BLACK DOUGLAS; August 20, 1962; 1524 GCT; 34°09'N, 121°09'W; sounding, 1250 fm; wind, 280°, force 2;
weather, overcast; sea, rough; wire angle, 09°.

80.60

0	14.67	33.75 3	6.03	287	0	14.67	33.75	6.03	25.10	287	0.00
10	14.65	33.75 6	5.98	286	10	14.65	33.76	5.98	25.11	286	0.03
30	14.32	33.75 0	5.67	280	20	14.35	33.75	5.71	25.17	281	0.06
39	11.91	33.75 7	4.06	234	30	14.32	33.75	5.67	25.17	280	0.09
53	10.60	33.75 4	3.55	211	50	10.81	33.75	3.64	25.86	215	0.13
68	10.08	33.81 6	3.12	198	75	9.88	33.85	2.89	26.10	193	0.19
92	9.45	33.91 2	2.39	181	100	9.32	33.94	2.26	26.26	177	0.23
112	9.10	33.97 8	2.09	171	125	8.84	34.02	1.90	26.40	164	0.28
131	8.73	34.02 7	1.87	162	150	8.47	34.03	2.04	26.46	158	0.32
151	8.47	34.02 6	2.04	158	200	8.13	34.11	1.50	26.58	147	0.39
179	8.32	34.07 8	1.73	152	250	7.38	34.11	1.32	26.69	136	0.47
213	7.94	34.11 5	1.43	144	300	7.06	34.15	0.96	26.76	129	0.54
242	7.45	34.10 4	1.40	138	400	6.21	34.19	0.58	26.91	115	0.66
290	7.14	34.14 6	1.02	131	500	5.67	34.28	0.35	27.05	102	0.78
344	6.69	34.16 7	0.77	123	600	(5.36)	(34.38)	(0.26)	(27.16)	(91)	(0.88)
426	6.01	34.21 1	0.51	111							
509	5.64	34.28 9	0.34	101							
593	5.38	34.36 5	0.27	93							

BLACK DOUGLAS; August 21, 1962; 0000 GCT; 33°49'N, 121°51'W; sounding, 2000+ fm; wind, 280°, force 4;
weather, overcast; sea, rough; wire angle, 15°.

80.70

0	15.86	33.47 4	5.64	332	0	15.86	33.47	5.64	24.62	333	0.00
10	15.68	33.50 5	5.66	326	10	15.68	33.50	5.66	24.69	326	0.03
21	15.52	33.48 3	5.69	324	20	15.54	33.49	5.67	24.71	324	0.07
29	15.38	33.48 9	5.68	321	30	15.33	33.49	5.67	24.76	320	0.10
38	14.23	33.41 6	5.76	303	50	11.95	33.30	5.54	25.30	268	0.16
52	11.74	33.30 0	5.49	264	75	10.83	33.47	4.94	25.64	236	0.22
67	11.06	33.40 6	5.16	245	100	9.84	33.62	4.22	25.92	209	0.28
92	10.33	33.58 5	4.45	219	125	9.19	33.78	3.69	26.15	187	0.33
110	9.38	33.66 6	3.97	198	150	8.56	33.95	2.75	26.39	165	0.37
130	9.12	33.81 4	3.56	183	200	8.11	34.11	1.56	26.58	147	0.45
149	8.58	33.94 6	2.80	166	250	7.74	34.20	0.93	26.71	135	0.52
177	8.32	34.05 0	1.94	154	300	7.48	34.26	0.58	26.79	127	0.59
239	7.78	34.18 7	1.04	136	400	6.69	34.30	0.46	26.93	113	0.72
286	7.63	34.25 7	0.66	129	500	6.16	34.32	0.35	27.02	105	0.83
340	7.05	34.27 0	0.50	120	600	(5.56)	(34.35)		(27.12)	(96)	(0.94)
420	6.60	34.30 4	0.43	112							
503	6.14	34.32 1	0.34	105							
583	5.68	34.34 6	0.28	97							

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.80

BLACK DOUGLAS; August 21, 1962; 0636 GCT; 33°28'N, 122°32'W; sounding, 2000+ fm; wind, 340°, force 3; weather, overcast; sea, rough; wire angle, 10°.

1	17.31	33.28 7	5.29	378	0	(17.31)	(33.29)	(5.30)	(24.15)	(378)	(0.00)
11	17.30	33.29 1	5.24	377	10	17.30	33.29	5.25	24.15	377	0.04
31	16.80	-	-	-	20	16.99	33.28	5.30	24.22	371	0.08
60	16.00	33.24 9	5.51	352	30	16.81	33.28	5.34	24.26	367	0.11
70	15.24	33.23	5.56	337	50	16.63	33.27	5.39	24.29	364	0.19
85	14.18	33.20 7	5.62	317	75	15.03	33.23	5.56	24.62	333	0.27
100	13.28	33.23 1	5.70	298	100	13.28	33.23	5.70	24.99	298	0.35
113	13.49	33.59 2	5.35	275	125	12.06	33.49	5.01	25.43	256	0.42
139	10.36	33.37 2	4.62	236	150	9.96	33.51	4.30	25.82	219	0.48
158	9.72	33.60 3	4.04	208	200	8.88	33.89	3.02	26.29	174	0.58
187	9.07	33.83 9	3.26	181	250	8.07	33.96	2.38	26.47	157	0.67
217	8.65	33.94 2	2.75	167	300	7.26	34.01	2.12	26.62	142	0.74
245	8.14	33.95 9	2.41	158	400	6.33	34.12	1.07	26.84	122	0.88
294	7.32	34.01 0	2.17	143	500	5.69	34.21	0.41	26.99	108	1.00
349	6.76	34.05 9	1.58	132	600	(5.28)	(34.30)	(0.24)	(27.11)	(96)	(1.11)
430	6.10	34.14 8	0.81	117							
513	5.62	34.22 3	0.37	106							
596	5.30	34.29 3	0.26	97							

80.90

BLACK DOUGLAS; August 21, 1962; 1240 GCT; 33°09'N, 123°13'W; sounding, 2000 fm; wind, 320°, force 3; weather, overcast; sea, rough; wire angle, 05°.

0	17.44	33.31 5		379	0	17.44	33.32		24.14	378	0.00
10	17.44	33.31 8		378	10	17.44	33.32		24.14	378	0.04
30	17.24	33.32 8		373	20	17.39	33.32		24.15	377	0.08
39	16.36	33.31 0		355	30	17.24	33.33		24.20	373	0.11
54	14.76	33.34 8		318	50	15.17	33.34		24.68	327	0.18
69	13.24	33.32 7		290	75	13.00	33.34		25.13	284	0.26
95	12.38	33.37 6		270	100	12.18	33.40		25.33	265	0.33
114	11.68	33.47 1		251	125	11.17	33.51		25.61	239	0.39
134	10.74	33.53 9		230	150	10.23	33.61		25.85	216	0.45
154	10.11	33.62 9		213	200	9.05	33.84		26.22	180	0.55
183	9.33	33.79 0		188	250	8.32	33.97		26.44	160	0.64
218	8.78	33.89 0		173	300	7.48	34.03		26.61	144	0.72
247	8.37	33.96 3		161	400	6.39	34.11		26.82	124	0.86
297	7.52	34.02 4		145	500	5.61	34.19		26.98	108	0.98
351	6.74	34.06 6		131	600	5.12	34.28		27.11	96	1.09
435	6.15	34.14 4		118							
520	5.45	34.20 2		106							
603	5.10	34.28 2		96							

80.100

BLACK DOUGLAS; August 21, 1962; 1918 GCT; 32°49'N, 123°53'W; sounding, 2000+ fm; wind, 340°, force 4; weather, drizzle; sea, very rough; wire angle, 15°.

1	17.54	33.30 4	5.28	382	0	(17.54)	(33.31)	(5.28)	(24.11)	(381)	(0.00)
11	17.51	33.30 2	5.20	381	10	17.52	33.30	5.20	24.11	382	0.04
30	17.27	33.29 9	5.25	376	20	17.45	33.30	5.21	24.12	380	0.08
38	15.81	33.33 4	5.59	341	30	17.27	33.30	5.25	24.17	376	0.11
53	14.75	33.34 9	5.84	318	50	14.98	33.35	5.82	24.73	323	0.18
68	13.82	33.34 9	5.85	300	75	13.46	33.35	5.73	25.04	292	0.26
93	12.64	33.37 4	5.35	275	100	12.38	33.40	5.16	25.30	269	0.33
111	11.95	33.44 9	4.86	257	125	11.33	33.51	4.57	25.58	242	0.40
130	11.11	33.52 8	4.47	237	150	10.26	33.62	3.89	25.85	216	0.45
149	10.28	33.61 9	3.90	216	200	9.23	33.80	3.36	26.16	186	0.56
177	9.66	33.72 2	3.57	199	250	8.25	33.93	2.81	26.42	162	0.65
212	9.00	33.85 6	3.21	178	300	7.49	34.01	2.25	26.59	145	0.72
239	8.46	33.90 9	2.89	167	400	6.33	34.13	0.95	26.84	121	0.86
286	7.63	33.98 1	2.55	149	500	5.84	34.23	0.43	26.99	108	0.98
340	7.05	34.08 9	1.44	134	600	(5.21)	(34.27)		(27.09)	(98)	(1.09)
420	6.11	34.14 0	0.81	118							
503	5.82	34.23 5	0.42	107							
586	5.29	34.27 0	0.33	99							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
CCOFI
6207-8

BLACK DOUGLAS; August 22, 1962; 0205 GCT; 32°30.5'N, 124°37'W; sounding, 2000+ fm; wind, 330°, force 5; weather, cloudy; sea, high; wire angle, 28°.

80.110

0	17.76	33.36 0	5.19	383	0	17.76	33.36	5.19	24.10	383	0.00
8	17.74	33.36 7	5.18	382	10	17.74	33.37	5.18	24.11	382	0.04
30	17.59	33.36 0	5.24	379	20	17.69	33.36	5.20	24.11	381	0.08
40	16.08	33.25 8	5.49	353	30	17.59	33.36	5.24	24.14	379	0.11
53	14.88	33.24 6	5.88	328	50	15.39	33.25	5.73	24.56	339	0.19
66	13.60	33.24 2	6.02	303	75	12.94	33.26	5.71	25.08	289	0.27
88	12.18	33.29 8	5.24	272	100	11.64	33.36	5.02	25.40	258	0.33
105	11.44	33.38 9	4.91	253	125	10.79	33.52	4.30	25.68	232	0.40
123	10.86	33.51 4	4.35	233	150	9.84	33.65	3.69	25.95	207	0.45
148	9.90	33.64 1	3.72	208	200	8.73	33.91	3.01	26.33	170	0.55
175	9.24	33.79 0	3.25	187	250	7.82	33.97	2.89	26.51	153	0.63
210	8.51	33.93 9	2.97	165	300	7.18	34.02	2.17	26.64	140	0.71
237	7.99	33.96 1	3.08	156	400	6.24	34.08	1.28	26.82	124	0.84
281	7.44	34.00 8	2.39	145	500	5.72	34.18	0.52	26.96	110	0.97
340	6.68	34.04 4	1.79	132	600	(5.20)	(34.27)		(27.10)	(98)	(1.08)
432	6.04	34.11 5	1.00	119							
515	5.64	34.19 8	0.46	108							
587	5.25	34.25 8	0.33	99							

BLACK DOUGLAS; August 22, 1962; 0830 GCT; 32°09'N, 125°15'W; sounding, 2400 fm; wind, 350°, force 4; weather, overcast; sea, very rough; wire angle, 18°.

80.120

1	17.80	33.32 9	5.22	386	0	(17.80)	(33.33)	(5.22)	(24.06)	(386)	(0.00)
10	17.80	33.32 2	5.23	386	10	17.80	33.32	5.23	24.06	387	0.04
33	17.22	33.32 4	5.35	373	20	17.79	33.32	5.23	24.06	386	0.08
43	16.49	33.27 4	5.43	360	30	17.45	33.32	5.31	24.14	379	0.12
57	15.26	33.31 7	5.72	331	50	15.90	33.30	5.58	24.48	346	0.19
72	14.12	33.31	5.87	308	75	13.95	33.31	5.84	24.91	305	0.27
96	12.58	33.32 6	5.44	278	100	12.34	33.34	5.32	25.26	272	0.34
115	11.52	33.42 5	4.84	251	125	11.11	33.45	4.68	25.57	242	0.41
135	10.72	33.48 6	4.51	233	150	10.15	33.59	4.13	25.85	216	0.47
163	9.71	33.68 3	3.79	202	200	8.82	33.89	3.02	26.30	173	0.56
192	8.94	33.86 3	3.11	177	250	8.18	33.97	2.54	26.46	158	0.65
230	8.44	33.96 3	2.69	162	300	7.46	34.04	2.08	26.62	143	0.73
260	8.03	33.97 6	2.47	155	400	6.27	34.08	1.28	26.81	124	0.87
308	7.34	34.04 8	2.00	141	500	5.70	34.18	0.58	26.96	110	0.99
371	6.47	34.05 7	1.55	129	600	5.13	34.26	0.35	27.10	98	1.10
469	5.89	34.15 6	0.68	114							
555	5.35	34.22 2	0.43	103							
631	5.00	34.28 0	0.29	95							

BLACK DOUGLAS; August 22, 1962; 1348 GCT; 31°49'N, 125°56'W; sounding, 2000+ fm; wind, 330°, force 4; weather, cloudy; sea, very rough; wire angle, 10°.

80.130

1	18.57	33.32 2	5.72	404	0	(18.57)	(33.32)	(5.72)	(23.87)	(405)	(0.00)
11	18.56	33.32 4	5.24	404	10	18.56	33.32	5.24	23.87	404	0.04
31	16.60	33.30 7	5.49	360	20	18.56	33.32	5.24	23.87	404	0.08
39	15.28	33.26 5	5.72	335	30	16.80	33.31	5.44	24.29	365	0.12
54	14.04	33.20 9	5.84	314	50	14.32	33.22	5.82	24.77	319	0.19
70	13.22	33.21 6	6.07	298	75	13.02	33.23	6.00	25.04	293	0.26
95	12.33	33.29 7	5.44	275	100	12.10	33.31	5.34	25.28	270	0.34
114	11.29	33.37 2	5.11	251	125	10.90	33.41	4.94	25.58	242	0.40
133	10.68	33.45 4	4.78	235	150	10.24	33.57	4.27	25.82	219	0.46
153	10.16	33.59 8	4.16	216	200	8.90	33.88	3.67	26.28	175	0.56
183	9.16	33.81 4	3.72	184	250	8.11	33.95	3.27	26.45	158	0.64
218	8.66	33.92 8	3.58	168	300	7.23	34.02	2.35	26.64	141	0.72
247	8.17	33.95 1	3.31	159	400	6.14	34.09	1.23	26.84	122	0.86
298	7.28	34.01 8	2.39	142	500	5.44	34.16	0.60	26.98	109	0.98
351	6.56	34.05 5	1.70	130	600	5.10	34.26	0.38	27.10	97	1.09
434	5.90	34.11 4	0.95	117							
518	5.34	34.17 6	0.56	106							
602	5.10	34.26 9	0.38	97							

S10

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.140

BLACK DOUGLAS; August 22, 1962; 1950 GCT; 31°29'N, 126°36.5'W; sounding, 2400 fm; wind, 340°, force 3; weather, cloudy; sea, rough; wire angle, 14°.

1	18.76	33.33 1	4.99	408	0	(18.76)	(33.33)	(4.99)	(23.83)	(408)	(0.00)
11	18.72	33.34 0	5.00	407	10	18.72	33.34	5.00	23.85	407	0.04
30	17.03	33.27 4	5.37	372	20	18.72	33.34	5.00	23.85	407	0.08
38	16.64	33.26 9	5.46	364	30	17.03	33.27	5.37	24.20	373	0.12
53	16.10	33.25 1	5.53	354	50	16.24	33.26	5.52	24.38	356	0.19
68	14.75	33.24 0	5.83	326	75	13.60	33.23	5.80	24.92	304	0.28
91	12.48	33.22 2	5.70	283	100	12.49	33.26	5.50	25.17	281	0.35
109	12.50	33.29 8	5.22	278	125	11.61	33.52	4.80	25.53	246	0.42
129	11.34	33.54 7	4.74	239	150	10.58	33.60	4.45	25.78	222	0.48
149	10.62	33.59 4	4.50	224	200	9.19	33.82	3.84	26.19	184	0.58
177	9.76	33.67 3	3.89	204	250	8.37	33.97	3.68	26.43	161	0.67
210	8.99	33.86 8	3.85	177	300	7.45	34.00	2.70	26.59	146	0.75
240	8.51	33.94 7	3.91	164	400	6.03	34.04	1.73	26.81	124	0.89
286	7.78	34.00 2	2.66	150	500	5.42	34.16	0.63	26.98	108	1.01
340	6.62	33.97 2	2.97	137	600	(4.92)	(34.26)	(0.38)	(27.12)	(95)	(1.12)
422	5.88	34.06 8	1.31	121							
505	5.39	34.17 1	0.60	107							
589	4.98	34.25 1	0.39	97							

80.150

BLACK DOUGLAS; August 23, 1962; 0140 GCT; 31°08.5'N, 127°17'W; sounding, 2000 fm; wind, 340°, force 4; weather, partly cloudy; sea, rough; wire angle, 08°.

0	19.79	33.86 5	5.15	395	0	19.79	33.87	5.15	23.98	394	0.00
10	19.74	33.85 0	5.15	394	10	19.74	33.85	5.15	23.97	394	0.04
30	18.95	33.96 1	5.33	367	20	19.60	33.88	5.19	24.03	389	0.08
39	17.78	33.83 0	5.59	349	30	18.95	33.96	5.33	24.26	367	0.12
54	15.39	33.56 0	5.92	316	50	15.52	33.56	5.91	24.77	319	0.19
69	15.14	33.75 8	5.77	296	75	15.00	33.78	5.72	25.05	292	0.26
95	14.76	33.88 8	5.59	279	100	14.69	33.91	5.53	25.22	276	0.33
114	14.38	33.94 1	5.37	267	125	13.30	33.83	5.29	25.45	254	0.40
134	12.46	33.73 1	5.24	246	150	11.46	33.65	5.14	25.66	234	0.46
154	11.29	33.65 6	5.10	230	200	9.87	33.80	4.47	26.06	196	0.57
183	10.42	33.77 4	4.71	207	250	8.73	33.92	3.95	26.34	170	0.67
219	9.30	33.83 2	4.22	185	300	7.88	33.98	3.42	26.51	153	0.75
248	8.77	33.91 7	3.99	170	400	6.43	34.02	2.01	26.75	131	0.90
297	7.92	33.97 9	3.46	154	500	5.62	34.10	1.01	26.91	115	1.02
352	7.08	33.99 7	2.75	141	600	5.20	34.22	0.40	27.06	101	1.14
435	6.06	34.04 1	1.61	125							
519	5.53	34.12 5	0.87	112							
604	5.19	34.22 7	0.37	101							

80.160

BLACK DOUGLAS; August 23, 1962; 0715 GCT; 30°49'N, 127°56.5'W; sounding, 2100 fm; wind, 310°, force 3; weather, partly cloudy; sea, moderate; wire angle, 08°.

1	19.99	33.99 5	4.99	390	0	(19.99)	(34.00)	(4.99)	(24.02)	(390)	(0.00)
11	19.99	33.99 6	4.99	390	10	19.99	34.00	4.99	24.02	390	0.04
31	19.08	33.94 6	5.23	371	20	19.99	34.00	4.99	24.02	390	0.08
40	18.76	34.05 4	5.30	356	30	19.15	33.95	5.22	24.20	373	0.12
56	17.94	34.15 7	5.44	329	50	18.21	34.13	5.38	24.57	337	0.19
70	17.51	34.18 0	5.50	317	75	17.22	34.16	5.48	24.84	312	0.27
94	16.23	34.08	5.40	296	100	16.13	34.09	5.38	25.04	293	0.35
114	15.92	34.13 2	5.34	285	125	15.37	34.09	5.30	25.21	277	0.42
134	14.88	34.05	5.27	269	150	14.10	33.99	5.03	25.41	258	0.49
153	13.96	33.97 5	4.99	256	200	11.27	33.81	4.70	25.82	219	0.61
183	12.28	33.80 7	4.91	237	250	9.20	33.91	4.20	26.25	177	0.71
217	10.38	33.81 0	4.53	204	300	8.16	33.99	3.53	26.48	156	0.79
245	9.32	33.89 7	4.27	180	400	6.67	34.01	2.23	26.71	135	0.94
295	8.26	33.98 6	3.59	158	500	5.67	34.09	1.10	26.90	116	1.08
350	7.22	33.99 9	2.94	143	600	(5.15)	(34.20)	(0.46)	(27.05)	(102)	(1.19)
432	6.34	34.02 5	1.87	129							
515	5.54	34.10 6	0.96	114							
599	5.16	34.19 5	0.49	103							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6207-8

BLACK DOUGLAS; August 23, 1962; 1405 GCT; 30°26'N, 128°32.5'W; sounding, 2000+ fm; wind, 320°, force 2; weather, cloudy; sea, rough; wire angle, 05°.

80.170

0	20.14	33.92 1	5.07	399	0	20.14	33.92	5.07	23.92	399	0.00
10	20.14	33.91 9	5.02	399	10	20.14	33.92	5.02	23.92	399	0.04
30	19.14	34.09 0	5.31	362	20	20.14	33.92	5.02	23.92	399	0.08
39	18.68	34.15 7	5.32	346	30	19.14	34.09	5.31	24.31	362	0.12
54	17.97	34.20 6	5.53	326	50	18.18	34.20	5.50	24.64	331	0.19
69	16.99	34.08 4	5.57	313	75	16.82	34.10	5.56	24.89	308	0.27
94	16.46	34.16 6	5.50	295	100	16.42	34.20	5.47	25.06	291	0.34
113	16.38	34.27 7	5.38	285	125	16.28	34.28	5.34	25.15	282	0.42
133	15.5 a)	34.18 1	5.24	273	150	14.58	34.08	5.12	25.37	261	0.49
153	14.40	34.05 9	5.11	259	200	11.43	33.80	4.87	25.78	222	0.61
182	12.54	33.87 7	5.00	236	250	9.27	33.92	4.25	26.25	178	0.71
218	10.48	33.75 2	4.70	210	300	8.38	34.00	3.86	26.45	159	0.80
246	9.38	33.90 5	4.29	181	400	6.75	34.02	2.29	26.70	135	0.95
295	8.44	33.99 7	3.93	160	500	5.76	34.12	1.00	26.91	115	1.08
350	7.50	33.99 7	3.00	146	600	5.00	34.19	0.59	27.06	101	1.20
433	6.35	34.04 9	1.84	128							
516	5.62	34.13 1	0.83	113							
600	5.00	34.19 3	0.59	101							

BLACK DOUGLAS; August 23, 1962; 1958 GCT; 30°09'N, 129°16'W; sounding, 2000+ fm; wind, 330°, force 2; weather, partly cloudy; sea, rough; wire angle, 03°.

80.180

0	20.62	34.03 0	4.94	403	0	20.62	34.03	4.94	23.88	403	0.00
10	20.38	34.01 7	4.94	398	10	20.38	34.02	4.94	23.94	398	0.04
30	19.23	-	5.20	-	20	20.20	34.02	4.97	23.98	394	0.08
39	19.16	34.11 7	5.20	361	30	19.23	34.10	5.20	24.30	364	0.12
49	18.74	34.15 5	5.34	348	50	18.70	34.17	5.36	24.48	346	0.19
64	17.84	34.26 6	5.42	319	75	17.30	34.24	5.49	24.88	308	0.27
79	17.11	34.23 1	5.49	304	100	16.50	34.22	5.37	25.05	292	0.35
99	16.52	34.21 5	5.39	292	125	15.67	34.22	5.26	25.24	274	0.42
123	15.8 b)	34.22 7	5.27	276	150	13.96	34.00	5.24	25.44	255	0.49
143	14.58	34.09 2	5.27	260	200	10.43	33.74	4.48	25.92	210	0.60
173	12.02	33.79 4	4.92	233	250	9.05	33.93	4.09	26.29	174	0.70
202	10.35	33.74 3	4.46	208	300	8.05	34.00	3.67	26.50	154	0.79
231	9.46	33.85 6	4.19	185	400	6.40	34.02	2.07	26.75	130	0.93
271	8.66	33.97 9	3.95	164	500	5.62	34.11	0.94	26.92	114	1.06
330	7.47	34.01 5	3.34	145							
404	6.36	34.01 8	2.02	130							
478	5.75	34.08 4	1.10	118							
557	5.28	34.16 9	0.65	106							

BLACK DOUGLAS; August 24, 1962; 0258 GCT; 29°48'N, 129°58'W; sounding, 2000+ fm; wind, 330°, force 3; weather, partly cloudy; sea, rough; wire angle, 12°.

80.190

0	21.28	34.23 9	5.00	405	0	21.28	34.24	5.00	23.86	405	0.00
10	20.76	34.22 7	5.00	393	10	20.76	34.23	5.00	23.99	393	0.04
30	19.80c)	34.45 9	5.27	352	20	20.73	34.23	5.01	24.00	392	0.08
39	19.54	34.47 7	5.27	344	30	19.80	34.46	5.27	24.42	352	0.12
48	19.20	34.50 9	5.40	333	50	19.12	34.51	5.41	24.64	331	0.19
64	18.47	34.50 9	5.46	316	75	17.82	34.45	5.50	24.91	305	0.27
79	17.63	34.42 1	5.50	303	100	16.98	34.42	5.36	25.09	288	0.34
98	17.00	34.41 4	5.37	289	125	16.58	34.47	5.33	25.23	275	0.41
122	16.67	34.47 3	5.34	277	150	15.32	34.27	5.28	25.36	263	0.48
142	15.77	34.34 3	5.30	267	200	11.63	33.87	4.83	25.80	220	0.60
170	14.04	34.06 8	5.17	251	250	9.60	33.92	4.47	26.20	183	0.71
200	11.63	33.87 2	4.83	220	300	8.55	34.00	3.95	26.43	161	0.79
229	10.00	33.88 1	4.61	192	400	6.74	34.02	2.25	26.70	135	0.95
269	9.26	33.96 6	4.28	174	500	5.58	34.10	1.22	26.92	115	1.08
327	7.96	34.00 8	3.64	152							
400	6.74	34.01 6	2.25	135							
473	5.80	34.06 9	1.36	120							
551	5.28	34.16 2	1.13	107							

- a) This temperature reading was slightly off scale; value listed accurate to ±0.1°C.
b) Temperature inferred from pressure thermometer and wire depth.
c) Mean value of 19.70 and 19.90°C.

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6207-8

OBSERVED		COMPUTED			INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.200

BLACK DOUGLAS; August 24, 1962; 0855 GCT; 29°28.5'N, 130°35.5'W; sounding, 2000+ fm; wind, direction missing, force 1; weather, clear; sea, moderate; wire angle, 02°.

0	21.19	34.23 9	4.94	403	0	21.19	34.24	4.94	23.88	403	0.00
10	20.80	34.23 8	4.94	393	10	20.80	34.24	4.94	23.99	393	0.04
30	19.66	34.41 6	5.16	351	20	20.80	34.24	4.94	23.99	393	0.08
39	19.46	34.43 6	5.17	345	30	19.66	34.42	5.16	24.43	351	0.12
49	19.04	34.44	5.23	334	50	18.99	34.44	5.25	24.62	333	0.19
64	18.36	34.48 3	5.36	315	75	18.07	34.51	5.34	24.90	306	0.27
79	17.96	34.51 4	5.33	303	100	17.11	34.43	5.28	25.07	290	0.34
99	17.12	34.42 7	5.29	290	125	16.81	34.46	5.17	25.16	281	0.41
124	16.82	34.45 9	5.17	281	150	16.27	34.43	5.05	25.27	271	0.48
144	16.47	34.45 5	5.09	274	200	12.33	33.91	4.79	25.70	230	0.61
173	14.62	34.17 5	4.90	255	250	9.93	33.93	4.37	26.15	187	0.72
203	12.10	33.89 3	4.77	227	300	8.53	34.00	3.95	26.43	161	0.81
233	10.50	33.89 9	4.45	199	400	6.71	34.02	2.19	26.71	134	0.96
273	9.24	33.98 1	4.22	173	500	5.81	34.11	1.02	26.90	117	1.09
332	7.83	34.00 5	3.53	150							
407	6.63	34.02 1	2.09	133							
481	5.95	34.09 3	1.16	120							
560	5.38	34.18 3	0.57	106							

90.28

BLACK DOUGLAS; August 29, 1962; 1523 GCT; 33°28.5'N, 117°46.5'W; sounding, 150 fm; wind, 160°, force 1; weather, overcast; sea, slight; wire angle, 02°.

0	20.18	33.74 3	5.71	413	0	20.18	33.74	5.71	23.78	413	0.00
10	18.80	33.69 9	6.22	383	10	18.80	33.70	6.22	24.10	382	0.04
30	13.36	33.59 4	5.61	273	20	15.70	33.62	5.99	24.77	318	0.07
49	11.90	33.58 3	4.65	246	30	13.36	33.59	5.61	25.25	273	0.10
74	10.77	33.65 3	3.98	222	50	11.87	33.58	4.62	25.53	246	0.16
99	10.24	33.77 2	3.14	204	75	10.73	33.66	3.92	25.80	220	0.22
					100	(10.23)	(33.78)	(3.11)	(25.98)	(203)	(0.27)

90.30

BLACK DOUGLAS; August 29, 1962; 1314 GCT; 33°25'N, 117°53.5'W; sounding, 300+ fm; wind, 160°, force 1; weather, overcast; sea, slight; wire angle, 05°.

0	20.46	33.79 2	5.25	417	0	20.46	33.79	5.25	23.74	417	0.00
10	20.00	33.78 9	5.32	405	10	20.00	33.79	5.32	23.86	405	0.04
30	15.16	33.66 5	6.30	303	20	19.00	33.79	5.57	24.12	381	0.08
39	13.50	33.61 7	5.50	274	30	15.16	33.66	6.30	24.92	304	0.11
49	12.63	33.60 0	5.12	258	50	12.56	33.60	5.09	25.42	257	0.17
64	11.22	33.73 2	4.46	223	75	10.64	33.62	4.26	25.79	222	0.23
80	10.52	33.60 7	4.16	221	100	10.35	33.72	3.41	25.91	210	0.29
98	10.38	33.71 3	3.44	211	125	9.70	33.82	3.02	26.10	192	0.34
123	9.72	33.81 4	3.02	193	150	9.55	33.89	2.77	26.18	184	0.38
143	9.58	33.86 8	2.85	186	200	9.56	34.10	1.78	26.34	169	0.47
172	9.52	33.98 2	2.31	177	250	9.36	34.20	1.46	26.45	158	0.56
202	9.56	34.10 9	1.75	168	300	9.00	34.28	1.03	26.57	147	0.64
231	9.52	34.16 5	1.54	164	400	7.69	34.32	0.51	26.81	125	0.78
271	9.19	34.22 4	1.39	154	500	6.74	34.32	0.31	26.94	112	0.91
329	8.82	34.30 7	0.79	142							
404	7.64	34.32 2	0.50	124							
478	6.92	34.32 0	0.35	115							
555	6.28	34.32 9	0.25	106							

90.40

BLACK DOUGLAS; August 29, 1962; 0631 GCT; 33°04.5'N, 118°35'W; sounding, 400 fm; wind, 150°, force 3; weather, fog; sea, moderate; wire angle, 00°.

0	20.88	33.85 0	5.06	423	0	20.88	33.85	5.06	23.67	423	0.00
10	20.14	33.81 8	5.38	407	10	20.14	33.82	5.38	23.85	407	0.04
30	14.12	33.67 5	5.57	282	20	16.50	33.71	5.53	24.66	329	0.08
49	11.79	33.69 8	4.71	236	30	14.12	33.68	5.57	25.16	281	0.11
74	9.96	33.81 2	2.94	197	50	11.68	33.70	4.66	25.66	234	0.16
99	9.29	33.91 9	2.62	178	75	9.91	33.82	2.92	26.07	195	0.21
123	9.02	33.95 3	2.46	172	100	9.28	33.92	2.60	26.25	178	0.26
162	8.56	34.03 5	2.34	159	125	9.00	33.96	2.44	26.32	171	0.31
202	7.93	34.04 8	1.59	149	150	8.72	34.02	2.40	26.42	162	0.35
252	7.62	34.10 2	1.59	140	200	7.94	34.05	1.60	26.56	149	0.43
					250	7.63	34.09	1.59	26.63	141	0.50

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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BLACK DOUGLAS; August 29, 1962; 0146 GCT; 32°45'N, 119°16'W; sounding, 200 fm; wind, 220°, force 4;
weather, fog; sea, moderate; wire angle, 06°.

90.50

0	16.30	33.57 8	5.69	334	0	16.30	33.58	5.69	24.61	334	0.00
10	15.64	33.57 8	5.74	320	10	15.64	33.58	5.74	24.76	320	0.03
15	15.40	33.55 6	5.71	316	20	15.36	33.59	5.70	24.83	313	0.06
20	15.36	33.58 9	5.70	313	30	14.80	33.55	5.66	24.92	304	0.10
30	14.80	33.55 4	5.66	304	50	11.62	33.39	5.05	25.43	256	0.15
49	11.65	33.39 1	5.06	256	75	(10.42)	(33.48)	(4.59)	(25.72)	(229)	(0.21)
74	10.49	33.47 1	4.61	230							

BLACK DOUGLAS; August 28, 1962; 2001 GCT; 32°25'N, 119°57.5'W; sounding, 450 fm; wind, 320°, force 1;
weather, fog; sea, moderate; wire angle, 08°.

90.60

1	18.84	33.56 7	5.15	393	0	(18.84)	(33.57)	(5.15)	(23.99)	(393)	(0.00)
11	18.27	33.57 4	5.33	379	10	18.27	33.57	5.32	24.13	379	0.04
31	18.22	33.58 3	5.34	377	20	18.24	33.58	5.33	24.15	378	0.08
40	16.66	33.55 9	5.91	343	30	18.22	33.58	5.34	24.15	377	0.11
50	16.05	33.54 7	6.11	331	50	16.05	33.55	6.11	24.64	331	0.19
65	14.64	33.53 4	5.71	302	75	14.30	33.53	5.63	25.01	296	0.26
81	13.54	33.51 4	5.46	282	100	12.62	33.53	5.22	25.35	263	0.33
100	12.62	33.53 4	5.22	263	125	10.70	33.61	4.15	25.77	224	0.40
124	10.83	33.60 5	4.20	226	150	9.64	33.77	3.76	26.07	195	0.45
144	9.75	33.75 0	3.81	198	200	8.72	33.93	3.39	26.35	169	0.54
174	9.26	33.85 6	3.54	182	250	7.87	34.00	2.74	26.53	151	0.62
204	8.65	33.93 2	3.37	168	300	7.18	34.05	2.09	26.67	138	0.70
233	8.18	33.97 9	2.90	157	400	6.24	34.22	0.91	26.93	114	0.83
273	7.47	34.02 2	2.51	144	500	5.79	34.23	0.41	26.99	107	0.95
332	6.90	34.07 5	1.63	133							
407	6.21	34.22 9	0.86	113							
481	5.89	34.22 3	0.48	109							
560	5.48	34.27 7	0.38	100							

BLACK DOUGLAS; August 28, 1962; 1358 GCT; 32°05'N, 120°38.5'W; sounding, 2000+ fm; wind, 330°, force 2;
weather, partly cloudy; sea, moderate; wire angle, 00°.

90.70

0	18.63	33.65 4	5.18	382	0	18.63	33.65	5.18	24.10	382	0.00
10	18.64	33.66 5	5.15	381	10	18.64	33.66	5.15	24.11	382	0.04
30	17.11	33.62 8	5.61	348	20	18.64	33.66	5.15	24.11	382	0.08
39	14.59	33.57 4	5.91	298	30	17.11	33.63	5.61	24.46	348	0.11
54	13.98	33.49 6	5.56	292	50	14.16	33.51	5.69	25.02	294	0.18
69	11.99	33.51 0	4.96	253	75	11.59	33.55	4.73	25.56	243	0.25
94	10.76	33.62 7	4.31	223	100	10.52	33.61	4.32	25.80	221	0.30
114	10.04	33.58 8	4.33	214	125	9.68	33.63	4.15	25.96	206	0.36
134	9.40	33.72 3	3.88	194	150	8.94	33.85	3.59	26.25	178	0.41
154	8.84	33.86 8	3.54	175	200	8.09	34.00	2.73	26.50	154	0.49
183	8.36	33.96 8	3.26	161	250	7.71	34.09	1.45	26.62	142	0.57
218	7.90	34.03 3	2.11	149	300	7.39	34.19	0.96	26.75	131	0.64
247	7.72	34.08 6	1.50	143	400	6.55	34.22	0.54	26.89	117	0.77
296	7.42	34.18 2	1.00	132	500	5.92	34.30	0.36	27.03	104	0.88
352	7.04	34.20 5	0.69	125	600	5.56	34.37	0.25	27.13	94	0.99
435	6.24	34.24 0	0.47	112							
519	5.86	34.31 4	0.32	102							
603	5.54	34.37 8	0.26	93							

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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.80

BLACK DOUGLAS; August 28, 1962; 0620 GCT; 31°45'N, 121°19.5'W; sounding, 2000+ fm; wind, 320°, force 5; weather, clear; sea, rough; wire angle, 10°.

1	17.38	33.39 6	5.50	371	0	(17.38)	(33.40)	(5.50)	(24.22)	(371)	(0.00)
11	17.38	33.38 7	5.46	372	10	17.38	33.39	5.46	24.21	372	0.04
31	16.95	33.40 0	5.59	361	20	17.38	33.39	5.46	24.21	372	0.07
40	15.64	33.40 9	5.79	332	30	17.03	33.40	5.56	24.30	363	0.11
54	13.14	33.34 5	5.72	287	50	13.60	33.35	5.76	25.02	295	0.18
69	12.40	33.43 7	5.44	266	75	12.13	33.46	5.25	25.39	260	0.25
95	11.13	33.51 9	4.55	238	100	10.88	33.54	4.45	25.68	232	0.31
113	10.34	33.59 0	4.21	219	125	9.93	33.64	3.97	25.92	209	0.36
134	9.69	33.69 1	3.87	201	150	9.33	33.79	3.96	26.14	188	0.41
154	9.25	33.81 4	3.97a)	185	200	8.51	33.99	3.77	26.43	161	0.50
183	8.77	33.94 3	3.95	169	250	7.71	33.98	3.13	26.54	151	0.58
218	8.24	33.99 7	3.52	157	300	7.00	34.03	2.42	26.68	137	0.66
247	7.76	33.97 7	3.17	152	400	6.27	34.14	1.08	26.86	120	0.79
296	7.06	34.02 2	2.50	139	500	5.76	34.26	0.38	27.02	105	0.91
351	6.39	34.05 5	1.62	128	600	5.32	34.28	0.54	27.09	98	1.02
434	6.20	34.19 5	0.73	115							
517	5.64	34.26 8	0.38	103							
601	5.32	34.28 0	0.54	98							

90.90

BLACK DOUGLAS; August 28, 1962; 0009 GCT; 31°25'N, 121°59'W; sounding, 2000+ fm; wind, 340°, force 5; weather, partly cloudy; sea, rough; wire angle, 11°.

1	18.92	33.67 6	5.13	387	0	(18.92)	(33.68)	(5.13)	(24.05)	(387)	(0.00)
11	18.91	33.66 5	5.08	388	10	18.91	33.67	5.08	24.05	387	0.04
30	18.76	33.68 8	5.11	382	20	18.83	33.69	5.11	24.08	384	0.08
39	17.44	33.44 3	5.29	369	30	18.76	33.69	5.11	24.10	382	0.12
53	15.99	33.39 8	5.52	341	50	16.31	33.41	5.47	24.48	347	0.19
68	14.32	33.32 9	6.01	311	75	13.75	33.34	5.86	24.98	299	0.27
92	12.75	33.37 5	5.42	277	100	12.39	33.40	5.21	25.29	269	0.34
112	11.84	33.45 6	4.90	255	125	10.72	33.54	4.28	25.71	229	0.40
131	10.35	33.58 0	4.07	220	150	9.78	33.67	3.87	25.97	204	0.46
151	9.76	33.66 7	3.87	204	200	8.61	33.92	3.61	26.35	168	0.55
179	9.01	33.84 4	3.71	179	250	7.71	34.00	3.07	26.55	149	0.64
213	8.37	33.95 2	3.55	162	300	7.07	34.03	2.10	26.67	138	0.71
241	7.83	33.99 0	3.23	152	400	6.08	34.14	0.92	26.88	118	0.84
289	7.20	34.01 9	2.25	141	500	5.71	34.26	0.46	27.03	104	0.96
344	6.58	34.08 0	1.46	128	600	(5.20)	(34.32)	(0.32)	(27.13)	(94)	(1.06)
425	5.92	34.17 3	0.75	113							
508	5.68	34.27 3	0.43	103							
592	5.24	34.32 0	0.32	94							

90.100

BLACK DOUGLAS; August 27, 1962; 1750 GCT; 31°05'N, 122°39'W; sounding, 2000+ fm; wind, 340°, force 4; weather, cloudy; sea, rough; wire angle, 07°.

1	17.96	33.38 7	5.29	385	0	(17.96)	(33.39)	(5.29)	(24.07)	(385)	(0.00)
11	17.93	33.39 1	5.35	384	10	17.93	33.39	5.34	24.08	384	0.04
31	16.02	33.31 7	5.81	347	20	17.92	33.39	5.37	24.08	384	0.08
40	15.13	33.27 4	5.95	331	30	16.10	33.32	5.80	24.45	349	0.11
55	13.88	33.34 2	5.82	301	50	14.69	33.33	5.93	24.77	318	0.18
70	12.42	33.31 8	5.40	275	75	12.00	33.34	5.20	25.32	266	0.25
95	11.63	33.47 4	4.87	250	100	11.50	33.50	4.76	25.54	245	0.32
114	10.78	33.53 8	4.32	230	125	10.42	33.57	4.09	25.79	222	0.38
134	10.18	33.61 7	3.92	215	150	9.71	33.70	3.60	26.01	201	0.43
154	9.60	33.73 4	3.51	197	200	8.57	33.94	2.98	26.38	166	0.52
182	8.84	33.89 9	3.00	173	250	7.85	33.98	2.77	26.52	153	0.61
218	8.33	33.95 7	2.96	161	300	7.16	34.04	1.99	26.66	139	0.68
247	7.90	33.97 9	2.82	153	400	6.14	34.15	0.90	26.89	118	0.81
296	7.22	34.02 6	2.07	141	500	5.56	34.23	0.45	27.02	105	0.93
350	6.48	34.08 5	1.35	127	600	5.07	34.33	0.27	27.16	92	1.04
433	5.96	34.18 1	0.67	113							
517	5.46	34.24 2	0.41	103							
601	5.06	34.32 9	0.27	92							

8

a) Alternate value, 4.06 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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BLACK DOUGLAS; August 27, 1962; 1225 GCT; 30°48'N, 123°13'W; sounding, 2000+ fm; wind, 340°, force 4; weather, cloudy; sea, rough; wire angle, 17°.

90.110

1	18.01	33.28 8	5.29	394	0	(18.01)	(33.29)	(5.29)	(23.98)	(394)	(0.00)
10	18.00	33.28 9	5.31	393	10	18.00	33.29	5.31	23.98	393	0.04
29	17.12	33.33 5	5.49	370	20	18.00	33.29	5.31	23.98	393	0.08
37	15.89	33.28 0	5.71	347	30	17.07	33.33	5.50	24.24	369	0.12
51	14.74a)	33.28 4	5.98	323	50	14.77	33.29	5.98	24.72	323	0.19
65	13.76	33.27 8	5.91	304	75	13.30	33.32	5.70	25.05	292	0.26
89	12.14	33.36 6	5.22	267	100	11.70	33.43	5.11	25.45	254	0.33
106	12.12	33.60 6	5.06	249	125	10.68	33.58	4.45	25.75	226	0.39
125	10.68	33.57 8	4.45	226	150	9.78	33.75	4.34	26.03	198	0.45
143	10.02	33.70 5	4.45	206	200	8.50	33.94	3.53	26.39	165	0.54
170	9.16	33.84 3	3.87	182	250	7.71	34.00	2.90	26.55	149	0.62
203	8.46	33.95 0	3.51	163	300	6.89	34.02	2.06	26.68	137	0.69
230	8.06	33.99 2	3.13	155	400	6.10	34.14	0.88	26.88	118	0.83
276	7.24	34.01 1	2.61	142	500	5.43	34.22	0.45	27.03	104	0.94
327	6.58	34.02 1	1.60	133							
407	6.06	34.15 0	0.81	117							
489	5.50	34.20 6	0.47	106							
572	5.12	34.28 6	0.32	96							

BLACK DOUGLAS; August 27, 1962; 0551 GCT; 30°24.5'N, 123°59.5'W; sounding, 2000+ fm; wind, 360°, force 4; weather, overcast; sea, rough; wire angle, 16°.

90.120

1	18.96	33.46 0	5.15	404	0	(18.96)	(33.46)	(5.15)	(23.88)	(404)	(0.00)
11	18.96	33.44 8	5.15	405	10	18.96	33.45	5.15	23.87	404	0.04
30	18.94	33.66 2b)	5.14	389	20	18.95	33.46	5.15	23.88	403	0.08
58	17.73	33.91 6	5.41	342	30	18.94	33.66	5.14	24.03	389	0.12
68	16.50	33.75 7	5.68	325	50	18.92	33.80	5.15	24.15	378	0.20
83	15.12	33.72 6	5.63	298	75	16.00	33.75	5.68	24.81	315	0.28
97	14.84	33.89 4	5.51	280	100	14.76	33.93	5.43	25.22	276	0.36
111	14.47	33.94 8	5.27	269	125	13.95	33.92	5.18	25.38	260	0.43
136	12.11	33.71 0	5.01	241	150	11.34	33.66	4.82	25.69	231	0.49
155	11.12	33.65 5	4.78	227	200	9.43	33.82	4.16	26.15	188	0.60
183	9.92	33.74 3	4.50	201	250	8.48	33.94	3.43	26.39	164	0.69
214	9.12	33.86 1	3.92	180	300	7.53	34.01	2.53	26.59	146	0.77
242	8.61	33.92 6	3.58	167	400	6.27	34.08	1.40	26.81	124	0.91
291	7.74	34.00 6	2.65	149	500	5.57	34.18	0.59	26.98	109	1.03
342	6.76	34.01 8	2.16	135	600	(5.29)	(34.23)		(27.05)	(102)	(1.14)
423	6.10	34.10 4	1.11	121							
505	5.54	34.18 0	0.59	108							
588	5.30	34.22 5	0.69	102							

BLACK DOUGLAS; August 26, 1962; 2333 GCT; 30°05'N, 124°39.5'W; sounding, 2200 fm; wind, 360°, force 2; weather, overcast; sea, rough; wire angle, 07°.

90.130

1	19.32	33.75 7	5.24	391	0	(19.32)	(33.76)	(5.24)	(24.01)	(391)	(0.00)
11	19.30	33.75 2	5.21	391	10	19.30	33.75	5.22	24.01	391	0.04
31	19.19	33.75 1	5.20	388	20	19.27	33.75	5.20	24.02	390	0.08
40	18.78	33.72 7	5.23	380	30	19.20	33.75	5.20	24.04	388	0.12
55	17.38	33.72	5.50	348	50	17.56	33.72	5.48	24.42	352	0.19
69	16.79	33.79	5.51	329	75	16.40	33.75	5.52	24.72	324	0.28
94	15.45	33.70 3	5.54	307	100	15.04	33.74	5.46	25.01	295	0.35
114	14.83	33.76 3	5.37	289	125	14.23	33.75	5.20	25.19	278	0.43
133	13.56	33.70 3	5.05	268	150	12.38	33.63	4.88	25.47	252	0.49
153	12.21	33.62	4.85	249	200	9.94	33.70	4.13	25.97	205	0.61
182	10.66	33.63 4	4.43	221	250	8.67	33.92	3.42	26.35	169	0.71
216	9.42	33.78 7	3.87	190	300	7.94	34.00	2.74	26.52	152	0.79
246	8.74	33.90 8	3.46	171	400	6.77	34.10	1.39	26.76	129	0.93
294	8.02	33.98 6	2.89	154	500	5.80	34.21	0.60	26.98	109	1.06
350	7.28	34.05 7	1.90	139	600	(5.49)	(34.27)	(0.39)	(27.06)	(101)	(1.17)
432	6.46	34.13 0	1.16	123							
515	5.71	34.22 7	0.51	107							
598	5.50	34.26 7	0.39	101							

a) Alternate value, 15.16°C, not used in interpolation.

b) The use of this value results in an unusual property structure but value was accepted in drawing the property curve.

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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.140

BLACK DOUGLAS; August 26, 1962; 1710 GCT; 29°45'N, 125°20'W; sounding, 2500 fm; wind, 020°, force 4; weather, cloudy; sea, rough; wire angle, 15°.

1	19.46	33.81 8	5.11	390	0	(19.46)	(33.82)	(5.11)	(24.02)	(390)	(0.00)
11	19.44	33.82 0	5.03	389	10	19.44	33.82	5.03	24.03	389	0.04
30	19.00	33.73 6	5.15	385	20	19.44	33.82	5.03	24.03	389	0.08
40	18.02	33.72 5	5.29	362	30	19.00	33.73	5.15	24.07	385	0.12
54	17.28	33.76 6	5.46	342	50	17.34	33.75	5.45	24.50	345	0.19
69	16.81	33.81 1	5.46	328	75	16.40	33.82	5.51	24.77	319	0.27
93	16.00	33.85 0	5.56	308	100	15.40	33.78	5.48	24.96	300	0.35
111	15.27	33.77 4	5.46	298	125	14.38	33.73	5.27	25.15	283	0.42
130	13.93	33.70 5	5.20	276	150	12.54	33.64	4.97	25.45	254	0.49
150	12.54	33.63 7	4.97	254	200	9.98	33.74	3.79	25.99	202	0.61
179	10.74	33.66 3	4.16	220	250	8.81	33.94	3.31	26.34	169	0.70
212	9.65	33.78 7	3.64	194	300	7.93	34.01	2.80	26.53	151	0.79
240	9.02	33.91 3	3.40	175	400	6.70	34.09	1.43	26.76	129	0.93
288	8.12	33.99 5	2.97	155	500	5.92	34.21	0.65	26.96	110	1.06
341	7.34	34.04 0	2.16	141	600	(5.30)	(34.25)	(0.63)	(27.07)	(100)	(1.17)
423	6.49	34.12 4	1.18	124							
507	5.88	34.22 0	0.62	109							
591	5.36	34.24 9	0.63	101							

90.150

BLACK DOUGLAS; August 26, 1962; 1057 GCT; 29°27'N, 126°00.5'W; sounding, 2000+ fm; wind, 010°, force 4; weather, partly cloudy; sea, rough; wire angle, 02°.

1	19.66	33.87 5	5.14	391	0	(19.66)	(33.88)	(5.14)	(24.02)	(390)	(0.00)
11	19.64	33.87 5	5.09	390	10	19.65	33.88	5.09	24.02	390	0.04
31	19.54	33.89 7	5.09	386	20	19.62	33.88	5.09	24.03	389	0.08
40	19.31	33.89 5	5.15	381	30	19.56	33.89	5.09	24.05	387	0.12
55	18.68	34.07 5	5.29	352	50	19.10	34.04	5.22	24.28	365	0.19
70	17.46	33.98 2	5.56	331	75	16.99	34.05	5.48	24.81	315	0.28
95	16.92	34.21 3	5.34	302	100	16.98	34.23	5.33	24.95	302	0.36
115	15.97	34.09 9	5.27	289	125	15.87	34.09	5.26	25.10	287	0.43
135	15.44	34.05 7	5.25	281	150	13.57	33.81	5.05	25.38	261	0.50
155	12.94	33.74 3	4.97	254	200	10.16	33.76	4.33	25.98	204	0.62
184	11.10	33.75 1	4.55	220	250	8.79	33.91	3.49	26.32	171	0.71
219	9.40	33.79 2	4.12	189	300	7.74	34.02	2.69	26.56	148	0.80
248	8.84	33.90 1	3.55	173	400	6.49	34.07	1.39	26.78	128	0.94
297	7.80	34.01 5	2.74	149	500	5.80	34.19	0.62	26.96	111	1.06
353	7.02	34.03 8	2.00	137	600	5.27	34.28	0.31	27.10	98	1.18
436	6.18	34.10 8	1.05	121							
520	5.70	34.21 0	0.53	108							
604	5.24	34.28 2	0.30	97							

90.160

BLACK DOUGLAS; August 26, 1962; 0432 GCT; 29°03.5'N, 126°41'W; sounding, 2000+ fm; wind, 010°, force 3; weather, partly cloudy; sea, rough; wire angle, 16°.

0	19.74	33.84 8	5.10	395	0	19.74	33.85	5.10	23.97	394	0.00
9	19.74	33.85 2	5.11	394	10	19.74	33.85	5.10	23.97	394	0.04
28	19.37	33.83 2	5.14	387	20	19.50	33.84	5.14	24.03	389	0.08
37	18.91	33.83 9	5.16	375	30	19.32	33.83	5.15	24.07	386	0.12
52	17.98	33.95 7	5.39	344	50	18.00	33.94	5.39	24.48	346	0.19
66	17.86	34.18 6	5.39	325	75	17.73	34.19	5.39	24.74	322	0.27
91	17.43	34.16 9	5.38	316	100	17.05	34.13	5.38	24.85	310	0.35
110	16.58	34.07 8	5.39	304	125	16.08	34.04	5.31	25.01	296	0.43
129	15.94	34.03 4	5.29	293	150	14.99	34.02		25.24	274	0.50
148	15.14	34.02 4	5.06	277	200	11.29	33.71		25.74	226	0.63
176	13.03	33.83 4	-	249	250	9.12	33.85	3.94	26.22	181	0.73
211	10.62	33.68 5	4.53	217	300	8.09	33.98	3.08	26.48	156	0.82
240	9.38	33.80 3	4.12	188	400	6.57	34.06	1.60	26.76	130	0.97
287	8.36	33.96 3	3.28	161	500	5.85	34.17	0.68	26.94	113	1.10
341	7.34	34.01 9	2.45	143	600	(5.20)	(34.26)		(27.09)	(98)	(1.21)
422	6.37	34.08 4	1.33	125							
505	5.82	34.17 4	0.64	112							
587	5.30	34.25 3	0.37	100							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

BLACK DOUGLAS; August 25, 1962; 2144 GCT; 28°44.5'N, 127°19'W; sounding, 2000+ fm; wind, 010°, force 2; weather, overcast; sea, rough; wire angle, 08°.

90.170

0	19.80	33.76 7	5.06	402	0	19.80	33.77	5.06	23.90	402	0.00
10	19.62	33.76 0	5.13	398	10	19.62	33.76	5.13	23.94	398	0.04
29	18.84a)	33.88 0	5.35	370	20	19.32	33.80	5.21	24.04	388	0.08
38	18.42	33.89 9	5.42	359	30	18.79	33.88	5.37	24.24	369	0.12
48	17.88	33.99 2	5.47	340	50	17.88	34.03	5.46	24.58	337	0.19
63	17.86	34.18 2	5.44	325	75	17.60	34.17	5.36	24.75	320	0.27
78	17.44	34.14 6	5.35	318	100	15.73	33.81	5.46	24.91	305	0.35
97	15.75	33.81 2	5.47	305	125	14.19	33.71	5.30	25.17	280	0.42
121	14.28	33.68 1	5.33	284	150	13.69	33.85	5.04	25.38	260	0.49
142	14.02	33.86 8	5.12	265	200	10.26	33.75	4.42	25.95	206	0.61
170	12.02	33.73 6	4.76	237	250	9.06	33.93	3.81	26.29	174	0.71
200	10.26	33.75 2	4.42	206	300	8.14	33.99	3.21	26.48	156	0.79
228	9.48	33.87 7	3.93	184	400	6.60	34.10	1.46	26.79	127	0.94
267	8.76	33.95 7	3.71	167	500	5.88	34.15	0.85	26.92	114	1.07
326	7.67	34.01 7	2.73	147							
400	6.60	34.09 8	1.46	127							
473	6.07	34.13 3	1.00	118							
551	5.48	34.21 6	0.55	105							

BLACK DOUGLAS; August 25, 1962; 1434 GCT; 28°28'N, 127°59'W; sounding, 2000+ fm; wind, 020°, force 2; weather, cloudy; sea, rough; wire angle, 03°.

90.180

0	20.20	34.40 2	5.10	366	0	20.20	34.40	5.10	24.27	366	0.00
10	20.21	34.40 8	5.04	366	10	20.21	34.41	5.04	24.28	366	0.04
30	19.97	-	5.10	-	20	20.00	34.36	5.08	24.29	364	0.07
39	19.58	34.37 6	5.25	352	30	19.97	34.35	5.10	24.29	364	0.11
49	18.72	34.33 6	5.37	334	50	18.65	34.33	5.37	24.62	333	0.18
64	17.42	34.19 8	5.44	314	75	16.99	34.17	5.35	24.90	306	0.26
79	16.86	34.16 9	5.35	303	100	16.58	34.18	5.37	25.00	296	0.34
100	16.58	34.18 0	5.37	296	125	15.96	34.20	5.13	25.16	281	0.41
124	15.97	34.19 8	5.15	282	150	14.15	34.02	4.81	25.42	257	0.48
144	14.60	34.06 5	4.88	263	200	10.88	33.81	4.50	25.89	212	0.60
173	12.54	33.87 0	4.67	237	250	9.57	33.92	3.82	26.20	182	0.70
203	10.72	33.80 5	4.47	210	300	8.39	34.00	3.21	26.45	159	0.79
233	9.94	33.88 3	3.97	191	400	6.78	34.07	1.68	26.74	132	0.94
273	9.01	33.96 3	3.62	171	500	5.73	34.15	0.77	26.94	113	1.06
332	7.77	34.02 1	2.67	148							
406	6.70	34.07 4	1.62	130							
480	5.88	34.12 6	0.91	116							
558	5.45	34.20 4	0.53	105							

BLACK DOUGLAS; August 25, 1962; 0830 GCT; 28°04.5'N, 128°38.5'W; sounding, 2000+ fm; wind, 020°, force 2; weather, clear; sea, rough; wire angle, 02°.

90.190

0	20.28	34.36 9	5.01	370	0	20.28	34.37	5.01	24.23	370	0.00
10	20.24	34.37 4	4.98	369	10	20.24	34.37	4.98	24.24	369	0.04
30	20.02	34.38 9	5.02	362	20	20.03	34.39	5.02	24.31	362	0.07
39	18.97	34.36 3	5.25	338	30	20.02	34.39	5.02	24.31	362	0.11
49	18.72	34.37 9	5.28	331	50	18.69	34.38	5.29	24.65	330	0.18
64	18.02	34.29 1	5.37	321	75	17.38	34.22	5.40	24.84	311	0.26
79	17.19	34.20 3	5.40	308	100	16.48	34.17	5.36	25.02	295	0.34
100	16.48	34.17 1	5.36	295	125	15.80	34.16	5.21	25.17	281	0.41
122	15.94	34.16 9	5.24	283	150	14.02	33.96	4.98	25.40	259	0.48
142	14.68	34.02 0	5.04	268	200	10.83	33.77	4.59	25.87	214	0.60
171	12.45	33.85	4.86	237	250	9.25	33.98	4.13	26.30	173	0.70
201	10.81	33.77 4	4.58	213	300	8.08	34.02	3.69	26.51	153	0.78
231	9.80	33.86 1	4.24	190	400	6.57	34.03	2.09	26.73	132	0.93
270	8.74	34.04 4	3.97	161	500	5.60	34.16	0.70	26.96	110	1.06
329	7.54	33.99 5	3.37	147							
403	6.54	34.03 0	2.07	131							
477	5.79	34.13 3	0.90	115							
556	5.26	34.21 9	0.47	102							

a) Alternate value, 18.58°C, not used in interpolation.

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.200

BLACK DOUGLAS; August 25, 1962; 0030 GCT; 27°44.5'N, 129°17'W; sounding, 2000+ fm; wind, 360°, force 2; weather, partly cloudy; sea, rough; wire angle, 05°.

0	21.53	34.28 9	5.00	408	0	21.53	34.29	5.00	23.83	408	0.00
10	20.41	34.25 0	5.03	382	10	20.41	34.25	5.03	24.10	382	0.04
30	20.12	34.28 5	5.07	372	20	20.26	34.26	5.04	24.15	378	0.08
39	19.55	34.54 0	5.17	340	30	20.12	34.28	5.07	24.20	373	0.12
50	19.40	34.65 7	5.16	328	50	19.40	34.66	5.16	24.68	327	0.19
64	19.30	34.72 5	5.30	320	75	18.78	34.67	5.35	24.84	312	0.27
80	18.40	34.60 6	5.36	307	100	17.73	34.60	5.26	25.05	292	0.34
100	17.73	34.59 6	5.26	292	125	17.48	34.66	5.07	25.16	282	0.41
124	17.48	34.65 7	5.09	282	150	17.19	34.71	4.94	25.27	271	0.48
143	17.42	34.74 0	4.97	274	200	12.74	33.93	4.72	25.64	236	0.61
172	15.14	34.24 2	4.91	261	250	10.12	33.93	4.42	26.12	190	0.72
202	12.59	33.92 1	4.71	234	300	8.90	33.98	3.93	26.36	168	0.82
231	10.78	33.86 5	4.56	206	400	6.90	34.05	2.04	26.71	135	0.97
271	9.56	33.96 8	4.26	179	500	5.95	34.15	0.97	26.91	115	1.10
329	8.30	33.99 0	3.47	158							
403	6.84	34.05 0	1.98	134							
477	6.12	34.12 3	1.16	119							
556	5.58	34.21 4	0.56	106							

93.28

BLACK DOUGLAS; July 15, 1962; 0213 GCT; 32°54.5'N, 117°22'W; sounding, 220 fm; wind, 240°, force 2; weather, overcast; sea, moderate; wire angle, 02°.

0	20.00	33.78 2	-	406	0	20.00	33.78		23.85	406	0.00
10	19.10	33.73 2	4.63	387	10	19.10	33.73	4.63	24.05	387	0.04
15	17.30	33.68 4	5.69	349	20	14.56	33.64	5.63	25.04	293	0.07
20	14.56	33.63 8	5.63	293	30	12.66	33.61	4.66	25.40	258	0.10
25	13.47	33.63 2	5.23	272	50	10.83	33.64	3.79	25.77	224	0.15
30	12.66	33.61 2	4.66	258	75	10.05	33.76	2.84	26.00	202	0.20
34	11.72	33.61 6	4.27	241	100	9.74	33.86	2.41	26.13	190	0.25
39	11.51	33.63 3	4.05	236	125	9.23	33.97	2.16	26.30	173	0.30
44	11.01	33.64 3	3.77	226	150	9.02	34.01	2.06	26.36	167	0.34
49	10.87	33.63 9	3.79	224	200	9.13	34.15	1.45	26.45	159	0.42
74	10.08	33.75 9	2.87	202	250	(8.92)	(34.24)	(1.02)	(26.56)	(149)	(0.50)
99	9.78	33.86 0	2.43	190							
124	9.26	33.96 3	2.18	174							
149	9.02	34.00 5	2.07	168							
173	9.18	34.10 3	1.63	163							
198	9.16	34.14 6	1.48	159							
223	8.57	34.13 1	-	152							
247	8.93	34.23 0	1.04	150							

93.30

BLACK DOUGLAS; July 15, 1962; 0431 GCT; 32°50.5'N, 117°31'W; sounding, 440 fm; wind, 240°, force 2; weather, overcast; sea, moderate; wire angle, 05°.

0	19.12	33.73 9	4.99	387	0	19.12	33.74	4.99	24.05	387	0.00
10	15.64	33.56 7	6.19	321	10	15.64	33.57	6.19	24.75	321	0.04
30	12.84	33.58 9	5.54	263	20	14.50	33.58	6.10	25.01	296	0.07
39	12.18	33.58 6	4.96	251	30	12.84	33.59	5.54	25.35	263	0.09
49	11.18	33.60 7	4.22	232	50	11.11	33.61	4.20	25.69	231	0.14
65	10.37	33.66 1	3.89	214	75	9.97	33.77	3.21	26.02	200	0.20
80	9.82	33.81 9	2.96	194	100	9.52	33.91	2.48	26.20	182	0.25
99	9.53	33.91 1	2.50	182	125	9.75	34.07	1.73	26.29	174	0.29
124	9.75	34.07 2	1.75	174	150	9.63	34.15	1.58	26.37	166	0.33
144	9.65	34.13 8	1.63	168	200	9.41	34.24	1.23	26.48	156	0.42
172	9.58	34.20 5	1.35	162	250	9.35	34.31	0.95	26.54	150	0.50
202	9.40	34.24 4	1.22	156	300	9.15	34.33	0.80	26.59	146	0.57
231	9.41	34.30 4	0.99	152	400	8.44	34.34	0.69	26.71	134	0.72
272	9.26	34.32 0	0.91	148	500	7.39	34.28	0.54	26.82	124	0.86
330	9.03	34.34 9	0.69	142							
404	8.41	34.33 5	0.69	134							
478	7.64	34.28 0	0.60	127							
556	6.77	34.32 4	0.38	112							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6207-8

BLACK DOUGLAS; July 15, 1962; 1003 GCT; 32°30'N, 118°11.5'W; sounding, 900 fm; wind, direction missing, force 1; weather, overcast; sea, moderate; wire angle, 08°.

9340

0	18.58	33.69 4	5.41	378	0	18.58	33.69	5.41	24.15	378	0.00
10	18.44	33.68 2	5.42	375	10	18.44	33.68	5.42	24.17	375	0.04
30	14.28	33.56 3	6.39	293	20	17.34	33.64	5.71	24.41	353	0.07
39	13.28	33.58 2	5.45	272	30	14.28	33.56	6.39	25.04	293	0.11
49	12.80	33.58 0	5.11	263	50	12.72	33.58	5.06	25.37	262	0.16
64	11.42	33.61 7	-	235	75	10.99	33.70	4.01	25.79	222	0.22
79	10.82	33.71 8	3.91	218	100	9.77	33.82	2.90	26.09	193	0.28
98	9.83	33.81 3	2.95	194	125	9.31	33.88	2.60	26.21	181	0.32
123	9.34	33.87 7	2.63	182	150	8.90	34.01	1.94	26.38	166	0.37
142	9.02	33.97 7	2.08	170	200	8.22	34.07	1.83	26.53	151	0.45
171	8.60	34.05 9	1.86	157	250	7.44	34.07	1.75	26.65	140	0.52
200	8.22	34.07 4	1.83	151	300	6.98	34.12	1.20	26.75	130	0.59
229	7.75	34.06 4	1.97	145	400	6.68	34.26	0.51	26.90	116	0.72
268	7.21	34.08 3	1.51	136	500	6.23	34.33	0.35	27.02	105	0.84
327	6.85	34.15 5	1.01	126							
401	6.68	34.26 0	0.51	116							
474	6.32	-	0.41	-							
552	6.10	34.36 0	0.18	101							

BLACK DOUGLAS; July 15, 1962; 1557 GCT; 32°10'N, 118°52.5'W; sounding, 750 fm; wind, 270°, force 1; weather, overcast; sea, rough; wire angle, 07°.

9350

0	16.20	33.74 6	5.47	320	0	16.20	33.75	5.47	24.76	319	0.00
10	16.18	33.74 7	5.49	319	10	16.18	33.75	5.49	24.77	319	0.03
30	12.20	33.57 5	5.36	252	20	14.80	33.67	5.47	25.01	296	0.06
39	11.52	33.68 2	4.62	232	30	12.20	33.58	5.36	25.47	252	0.09
49	11.14	33.68 5	-	226	50	11.12	33.69	4.26	25.75	225	0.14
64	10.35	33.79 6	3.28	204	75	9.76	33.84	2.95	26.11	191	0.19
78	9.60	33.84 0	2.87	189	100	9.03	33.88	3.00	26.26	177	0.24
98	9.04	33.86 8	3.01	178	125	9.00	34.01	2.00	26.36	167	0.28
122	9.02	34.00 3	2.05	168	150	8.71	34.06	1.75	26.45	159	0.32
143	8.80	34.04 8	1.80	161	200	7.94	34.08	1.85	26.58	146	0.40
171	8.42	34.09 3	1.69	152	250	7.59	34.19	1.12	26.72	133	0.47
201	7.92	34.07 5	1.86	146	300	7.34	34.25	0.70	26.80	125	0.54
230	7.66	34.14 3	1.38	138	400	6.81	34.31	0.41	26.92	114	0.66
270	7.53	34.21 5	0.93	131	500	6.18	34.34	0.37	27.03	104	0.78
328	7.16	34.27 0	0.57	122							
402	6.80	34.30 8	0.40	114							
475	6.34	34.34 0	0.31	106							
554	5.84	34.34 5	0.21	99							

BLACK DOUGLAS; July 15, 1962; 2255 GCT; 31°50'N, 119°34'W; sounding, 1200 fm; wind, 290°, force 3; weather, overcast; sea, moderate; wire angle, 07°.

9360

0	15.60	33.76 4	5.52	305	0	15.60	33.76	5.52	24.90	306	0.00
10	15.36	33.76 0	5.52	301	10	15.36	33.76	5.52	24.96	301	0.03
30	12.73	33.66 2	5.52	256	20	14.70	33.72	5.52	25.07	290	0.06
39	11.77	33.67 6	5.05	237	30	12.73	33.66	5.52	25.43	256	0.09
49	10.68	33.62 7	4.50	222	50	10.67	33.63	4.49	25.79	222	0.14
64	10.29	33.65 0	4.21	214	75	10.00	33.71	3.85	25.97	205	0.19
79	9.65	33.75 7	3.55	196	100	9.07	33.86	2.86	26.24	179	0.24
99	9.08	33.86 2	2.87	179	125	8.95	34.04	2.03	26.40	164	0.28
122	8.98	34.02 2	2.15	166	150	8.62	34.10	1.59	26.49	155	0.32
142	8.68	34.09 7	1.63	156	200	7.96	34.13	1.53	26.62	143	0.40
171	8.46	34.13 4	1.53	150	250	7.58	34.17	1.08	26.70	135	0.47
200	7.96	34.12 1	1.53	144	300	7.40	34.24	0.67	26.79	127	0.54
229	7.50	34.10 4	1.47	139	400	6.62	34.28	0.35	26.92	114	0.66
269	7.63	34.21 9	0.77	132	500	6.09	34.31	0.30	27.02	105	0.78
328	7.14	34.24 5	0.58	123							
402	6.61	34.27 9	0.34	114							
475	6.22	34.29 7	0.33	108							
554	5.82	34.32 8	0.26	100							

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

93.70

BLACK DOUGLAS; July 16, 1962; 0445 GCT; 31°30'N, 120°14'W; sounding, 2000 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 15°.

0	14.58	33.47 8	5.72	305	0	14.58	33.48	5.72	24.91	305	0.00
10	14.52	33.46 9	5.68	305	10	14.52	33.47	5.68	24.92	305	0.03
31	13.60	33.54 8	5.65	281	20	14.30	33.49	5.67	24.98	299	0.06
39	12.62	33.51 1	5.45	265	30	13.62	33.55	5.65	25.17	281	0.09
49	12.50	33.55 2	5.38	260	50	12.49	33.55	5.37	25.39	260	0.14
64	11.45	33.53 3	4.82	242	75	11.12	33.56	4.50	25.65	234	0.21
78	11.08	33.57 2	4.48	233	100	10.25	33.62	4.09	25.85	216	0.26
97	10.30	33.62 1	4.10	216	125	9.04	33.88	2.65	26.26	177	0.31
117	9.33	33.77 6	3.19	189	150	8.61	33.96	2.30	26.39	165	0.36
136	8.78	33.93 2	2.36	170	200	8.24	34.08	1.55	26.54	151	0.44
165	8.48	33.98 9	2.23	161	250	7.84	34.18	1.00	26.67	138	0.51
194	8.28	34.05 5	1.70	153	300	7.45	34.22	0.70	26.76	129	0.58
225	8.07	34.15 7	1.15	142	400	6.72	34.28	0.40	26.91	115	0.71
264	7.72	34.18 9	0.91	135	500	6.08	34.30	0.28	27.01	106	0.82
317	7.32	34.23 6	0.57	126							
391	6.78	34.27 5	0.41	116							
466	6.24	34.29 0	0.31	108							
539	5.92	34.32 5	0.22	102							

93.80

BLACK DOUGLAS; July 16, 1962; 1016 GCT; 31°10'N, 120°54.5'W; sounding, 2000+ fm; wind, 310°, force 4; weather, overcast; sea, rough; wire angle, 05°.

1	16.02	33.46 7	5.60	336	0	(16.02)	(33.47)	(5.60)	(24.59)	(336)	(0.00)
11	16.02	33.46 0	5.56	337	10	16.02	33.46	5.56	24.58	337	0.03
31	14.66	33.40 3	5.90	312	20	16.00	33.46	5.57	24.58	336	0.07
40	13.68	33.37 7	5.84	295	30	15.00	33.42	5.82	24.78	318	0.10
55	12.38	33.38 0	5.65	270	50	12.70	33.38	5.70	25.22	276	0.16
70	12.07	33.48 2	-	257	75	11.99	33.52	5.21	25.46	253	0.23
95	11.30	33.55 4	4.72	238	100	11.09	33.57	4.53	25.67	233	0.29
115	10.42	33.63 5	4.03	217	125	9.98	33.69	3.68	25.95	206	0.34
135	9.60	33.73 6	3.39	197	150	9.28	33.81	3.20	26.16	186	0.39
155	9.19	33.83 2	3.16	183	200	8.33	33.97	2.61	26.44	160	0.48
183	8.67	33.95 8	2.63	166	250	7.71	34.02	2.30	26.57	148	0.56
218	8.00	33.98 7	2.58	154	300	7.10	34.09	1.56	26.71	134	0.63
247	7.74	34.01 5	2.33	148	400	6.25	34.16	0.80	26.88	118	0.76
296	7.14	34.08 3	1.62	135	500	5.51	34.24	0.42	27.03	103	0.88
351	6.71	34.12 9	1.06	126	600	5.12	34.32	0.27	27.14	93	0.98
434	5.91	34.18 6	0.63	112							
518	5.42	34.25 4	0.39	101							
601	5.12	34.31 8	0.26	93							

93.90

BLACK DOUGLAS; July 16, 1962; 1540 GCT; 30°50'N, 121°34.5'W; sounding, ±2240 fm; wind, 320°, force 3; weather, overcast; sea, very rough; wire angle, 04°.

0	16.59	33.46 2	5.38	349	0	16.59	33.46	5.38	24.45	349	0.00
10	16.58	33.45 5	5.43	349	10	16.58	33.46	5.43	24.45	349	0.03
30	16.60	33.45 7	5.42	350	20	16.59	33.46	5.42	24.45	349	0.07
39	15.72	33.39 9	5.51	335	30	16.60	33.46	5.42	24.45	349	0.10
55	14.98	33.38 7	5.79	320	50	15.03	33.39	5.77	24.75	321	0.17
70	13.77	33.35 5	5.73	298	75	13.27	33.36	5.59	25.09	288	0.25
95	12.28	33.39 5	5.12	267	100	12.02	33.41	5.00	25.37	261	0.32
114	11.09	33.44 7	4.67	242	125	10.53	33.54	4.38	25.74	226	0.38
134	10.12	33.57 2	4.16	217	150	9.64	33.59	3.90	25.93	208	0.43
154	9.53	33.59 8	3.81	206	200	8.61	33.92	3.53	26.35	168	0.53
182	8.92	33.86 4	3.71	177	250	7.78	33.96	3.01	26.51	153	0.61
217	8.30	33.93 5	3.36	162	300	7.01	34.01	2.05	26.66	139	0.69
246	7.85	33.95 9	3.13	154	400	6.26	34.13	0.80	26.85	121	0.82
295	7.07	34.00 1	2.19	140	500	5.60	34.21	0.45	27.00	107	0.94
349	6.66	34.07 3	1.24	130	600	(5.13)	(34.29)	(0.26)	(27.12)	(95)	(1.05)
431	6.01	34.16 1	0.63	115							
514	5.52	34.21 8	0.41	105							
597	5.14	34.28 5	0.27	96							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6207-8

BLACK DOUGLAS; July 16, 1962; 2143 GCT; 30°30.5'N, 122°14'W; sounding, 2250 fm; wind, 340°, force 3; weather, overcast; sea, very rough; wire angle, 10°.

93100

0	16.45	33.40 4	5.45	350	0	16.45	33.40	5.45	24.44	350	0.00
10	16.40	33.40 2	5.49	349	10	16.40	33.40	5.49	24.45	349	0.03
30	16.36	33.40 0	5.47	348	20	16.38	33.40	5.48	24.45	349	0.07
59	15.16	33.41 3	5.48	322	30	16.36	33.40	5.47	24.46	348	0.10
69	14.62	33.36 3	5.75	314	50	16.36	33.40	5.47	24.46	348	0.17
83	13.34	33.30 4	5.71	294	75	14.13	33.33	5.74	24.89	307	0.26
97	12.81	33.44 5	5.21	273	100	12.80	33.45	5.19	25.25	273	0.33
112	11.72	33.39 6	4.86	257	125	11.44	33.45	4.67	25.51	248	0.40
137	10.50	33.51 1	4.27	228	150	9.81	33.63	3.93	25.94	208	0.45
156	9.60	33.67 8	3.83	201	200	8.68	33.89	3.33	26.32	171	0.55
185	8.98	33.84 3	3.45	179	250	7.74	33.96	2.90	26.52	153	0.63
214	8.40	33.92 2	3.22	165	300	7.02	34.00	2.20	26.65	140	0.71
243	7.87	33.95 7	3.01	155	400	6.10	34.12	0.82	26.87	119	0.84
291	7.12	33.98 9	2.30	142	500	5.59	34.21	0.68	27.00	107	0.96
344	6.58	34.05 7	1.44	130	600	(5.17)	(34.30)	(0.30)	(27.12)	(95)	(1.07)
425	5.93	34.14 5	0.67	115							
507	5.56	34.21 5	0.68	106							
591	5.20	34.28 6	0.31	96							

BLACK DOUGLAS; July 18, 1962; 2009 GCT; 31°40.5'N, 116°46.5'W; sounding, 240 fm; wind, calm; weather, partly cloudy; sea, slight; wire angle, 08°.

10030

0	15.08	33.76 2	5.83	295	0	15.08	33.76	5.83	25.02	295	0.00
3	14.05	33.75 0	5.79	275	10	11.40	33.78	4.03	25.77	223	0.03
6	13.30	33.76 2	5.45	259	20	10.29	33.84	2.85	26.02	200	0.05
9	11.81	33.77 6	4.37	231	30	10.07	33.86	2.57	26.07	195	0.07
12	10.86	33.79 8	3.58	212	50	9.90	33.90	2.35	26.13	189	0.11
30	10.07	33.86 1	2.57	195	75	9.98	33.98	2.01	26.18	185	0.15
49	9.90	33.90 2	2.36	189	100	10.00	34.02	1.81	26.21	182	0.20
74	9.98	33.97 6	2.02	185	125	9.89	34.06	1.71	26.26	177	0.24
98	10.00	34.01 9	1.82	182	150	9.90	34.12	1.53	26.30	173	0.29
122	9.89	34.05 6	1.73	177	200	9.72	34.16	1.50	26.36	167	0.38
160	9.90	34.13 3	1.48	172	250	9.50	34.28	1.01	26.49	155	0.46
200	9.72	34.16 5	1.50	167	300	(9.13)	(34.36)	(0.72)	(26.62)	(143)	(0.54)
248	9.52	34.27 7	1.03	155							
297	9.16	34.35 2	0.73	144							

BLACK DOUGLAS; July 18, 1962; 1628 GCT; 31°30.5'N, 117°07'W; sounding, 550 fm; wind, direction missing, force 1; weather, overcast; sea, moderate; wire angle, 08°.

10035

0	17.08	33.71 1	5.96	342	0	17.08	33.71	5.96	24.53	342	0.00
10	16.66	33.66 6	5.95	336	10	16.66	33.67	5.95	24.59	335	0.03
30	14.03	33.56 9	5.82	288	20	15.65	33.62	5.93	24.79	317	0.07
39	12.52	33.46 5	5.42	266	30	14.03	33.57	5.82	25.10	287	0.10
48	12.30	33.50 7	5.31	259	50	12.26	33.52	5.28	25.41	258	0.15
64	11.80	33.57 8	4.70	245	75	11.39	33.64	4.15	25.67	233	0.21
79	11.22	33.65 6	3.99	229	100	10.13	33.76	3.37	25.98	203	0.27
97	10.21	33.74 2	3.42	206	125	9.62	33.88	2.86	26.16	186	0.32
122	9.69	33.86 4	2.98	188	150	9.20	34.00	2.47	26.32	171	0.36
143	9.30	33.97 9	2.48	174	200	8.58	34.12	1.92	26.52	153	0.45
170	8.95	34.05 4	2.42	163	250	8.61	34.28	0.91	26.64	141	0.52
200	8.58	34.12 1	1.92	153	300	8.60	34.39	0.43	26.72	133	0.59
229	8.54	34.21 6	1.24	145	400	7.60	34.37	0.34	26.86	120	0.72
270	8.66	34.33 4	0.68	138	500	6.61	34.33	0.34	26.97	110	0.85
329	8.50	34.43 0	0.32	128							
402	7.58	34.36 8	0.35	120							
477	6.84	34.32 6	0.36	113							
555	6.00	34.35 1	0.27	101							

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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.40

BLACK DOUGLAS; July 18, 1962; 1254 GCT; 31°21'N, 117°27'W; sounding, 1000+ fm; wind, 320°, force 1;
weather, overcast; sea, moderate; wire angle, 02°.

1	16.18	33.47 3	5.50	339	0	(16.18)	(33.47)	(5.50)	(24.55)	(339)	(0.00)
11	16.02	33.46 8	5.62	336	10	16.03	33.47	5.61	24.59	336	0.03
31	15.36	33.44 1	5.58	324	20	15.79	33.46	5.60	24.63	332	0.07
40	14.78	33.42 1	5.81	313	30	15.40	33.44	5.58	24.70	325	0.10
50	14.48	33.50 6	5.81	301	50	14.48	33.51	5.81	24.96	301	0.16
65	12.98	33.48 2	5.36	274	75	12.11	33.48	5.13	25.41	258	0.23
80	11.74	33.48 1	5.04	251	100	10.82	33.53	4.76	25.68	232	0.29
100	10.82	33.53 2	4.76	231	125	10.24	33.64	3.70	25.87	214	0.35
125	10.24	33.64 1	3.70	214	150	9.25	33.77	3.82	26.14	189	0.40
145	9.43	33.73 6	3.86	194	200	8.65	34.00	2.60	26.41	163	0.49
174	8.80	33.92 2	3.24	171	250	8.37	34.16	1.43	26.58	147	0.57
204	8.62	34.01 8	2.49	161	300	7.96	34.21	1.00	26.68	137	0.64
233	8.40	34.09 5	1.89	152	400	7.09	34.27	0.49	26.85	121	0.78
274	8.26	34.21 3	1.07	141	500	6.24	34.28	0.38	26.97	109	0.90
332	7.60	34.20 9	0.94	132							
480	6.37a)	34.26 8	0.39	112							
406	7.03	34.27 4	0.48	120							
558	5.90	34.32 4	0.36	102							

100.50

BLACK DOUGLAS; July 18, 1962; 0721 GCT; 31°00.5'N, 118°07'W; sounding, 950 fm; wind, 320°, force 2;
weather, overcast; sea, moderate; wire angle, 06°.

0	16.74	33.50 4	5.32	349	0	16.74	33.50	5.32	24.45	349	0.00
10	16.72	33.49 9	5.38	349	10	16.72	33.50	5.38	24.45	349	0.03
30	16.60	33.49 2	5.40	347	20	16.67	33.50	5.39	24.46	348	0.07
39	16.21	33.46 9	5.51	340	30	16.60	33.49	5.40	24.47	347	0.10
49	15.04	33.45 2	5.69	317	50	15.02	33.45	5.68	24.79	316	0.17
64	14.40	33.50 4	5.63	300	75	13.87	33.54	5.56	25.11	287	0.25
79	13.76	33.53 9	5.52	284	100	13.00	33.57	5.26	25.31	268	0.32
99	13.03	33.57 4	5.28	268	125	11.38	33.55	4.66	25.60	240	0.38
123	11.50	33.55 1	4.70	242	150	10.19	33.62	4.30	25.86	215	0.44
143	10.42	33.57 6	4.47	222	200	8.98	33.85	3.57	26.24	179	0.54
172	9.56	33.76 8	3.67	194	250	8.10	33.96	2.95	26.46	158	0.62
201	8.96	33.85 7	3.56	178	300	7.48	34.04	2.12	26.62	143	0.70
230	8.42	33.93 5	3.24	164	400	6.39	34.14	0.90	26.84	121	0.84
271	7.80	33.99 5	2.61	151	500	5.97	34.25	0.40	26.99	108	0.96
330	7.18	34.06 8	1.65	137							
403	6.36	34.14 2	0.88	121							
477	6.10	34.22 8	0.48	111							
555	5.68	34.31 3	0.33	100							

100.60

BLACK DOUGLAS; July 18, 1962; 0118 GCT; 30°40.5'N, 118°47.5'W; sounding, 1500 fm; wind, 320°, force 1;
weather, overcast; sea, moderate; wire angle, 05°.

0	16.88	33.49 2	5.42	353	0	16.88	33.49	5.42	24.40	353	0.00
10	16.48	33.49 5	5.41	344	10	16.48	33.50	5.41	24.51	344	0.03
30	16.32	33.47 2	5.40	342	20	16.40	33.49	5.40	24.52	343	0.07
39	15.96	33.45 3	5.51	336	30	16.32	33.47	5.40	24.52	342	0.10
49	15.44	33.44 1	5.63	326	50	15.40	33.44	5.64	24.70	325	0.17
64	14.52	33.39 5	5.76	310	75	14.07	33.44	5.74	24.99	298	0.25
80	13.82	33.45 1	5.72	292	100	12.74	33.50	5.30	25.30	268	0.32
99	12.77	33.48 9	5.32	269	125	11.93	33.62	4.74	25.55	244	0.38
124	11.98	33.62 1	4.75	245	150	10.19	33.64	4.26	25.88	213	0.44
143	10.52	33.62 4	4.34	220	200	8.73	33.90	3.57	26.32	171	0.54
172	9.36	33.77 8	3.92	190	250	7.82	33.98	2.95	26.52	152	0.62
202	8.68	33.90 6	3.55	170	300	7.16	34.02	2.11	26.65	140	0.70
231	8.16	33.96 2	3.24	158	400	6.47	34.14	0.92	26.83	122	0.83
271	7.48	33.99 8	2.57	146	500	5.78	34.18	0.56	26.95	111	0.96
329	6.90	34.04 6	1.80	135							
404	6.42	34.13 9	0.90	122							
478	5.97	34.16 3	0.63	115							
556	5.30	34.24 6	0.38	101							

16

a) Mean value of 6.34 and 6.40°C.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
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6207-8

BLACK DOUGLAS; July 17, 1962; 1925 GCT; 30°23.5'N, 119°27'W; sounding, 2000+ fm; wind, 320°, force 1; weather, overcast; sea, rough; wire angle, 03°.

100.70

0	16.89	33.47 4	5.51	355	0	16.89	33.47	5.51	24.39	355	0.00
10	16.78	33.47 1	5.45	352	10	16.78	33.47	5.45	24.41	353	0.04
30	16.74	33.46 9	5.47	352	20	16.77	33.47	5.46	24.42	352	0.07
39	15.90	33.44 9	5.66	335	30	16.74	33.47	5.47	24.42	352	0.11
49	14.74	33.37 9	5.86	316	50	14.67	33.38	5.85	24.82	314	0.17
64	14.12	33.40 5	5.83	301	75	14.20	33.58	5.67	25.07	290	0.25
80	14.30	33.66 8	5.59	286	100	12.86	33.53	5.43	25.30	268	0.32
99	12.86	33.53 3	5.43	268	125	11.58	33.58	5.05	25.59	241	0.38
124	11.59	33.57 5	5.06	241	150	10.32	33.65	4.65	25.86	214	0.44
144	10.58	33.61 1	4.79	222	200	8.83	33.88	3.91	26.29	174	0.54
172	9.36	33.78 3	4.00	189	250	7.84	34.00	2.86	26.53	151	0.62
202	8.79	33.89 6	3.88	172	300	7.24	34.05	2.15	26.66	139	0.70
231	8.14	33.97 8	3.04	157	400	6.31	34.14	0.90	26.86	120	0.83
271	7.58	34.00 8	2.65	147	500	5.97	34.24	0.50	26.98	109	0.95
331	6.90	34.08 0	1.55	132							
405	6.28	34.14 7	0.89	119							
478	6.05	34.21 1	0.61	112							
556	5.70	34.29 8	0.31	101							

BLACK DOUGLAS; July 17, 1962; 1327 GCT; 30°06.5'N, 120°07'W; sounding, 850 fm; wind, 300°, force 2; weather, overcast; sea, rough; wire angle, 04°.

100.80

1	17.32	33.66 7	5.32	350	0	(17.32)	(33.67)	(5.32)	(24.44)	(350)	(0.00)
11	17.32	33.66 5	5.35	350	10	17.32	33.66	5.35	24.43	351	0.04
32	17.30	33.66 3	5.34	350	20	17.31	33.66	5.34	24.43	351	0.07
60	16.46	33.64 2	5.51	333	30	17.30	33.66	5.34	24.44	350	0.11
71	15.64	33.56 0	5.64	321	50	17.00	33.64	5.37	24.49	345	0.18
86	14.62	33.49 3	5.64	305	75	15.43	33.54	5.64	24.77	318	0.26
100	13.56	33.49 1	5.42	284	100	13.56	33.49	5.42	25.13	284	0.33
115	12.96	33.52 6	5.08	270	125	12.34	33.55	4.81	25.42	257	0.40
140	11.35	33.57 8	4.51	237	150	10.92	33.60	4.37	25.72	228	0.46
160	10.57	33.62 4	4.22	220	200	9.32	33.82	3.46	26.16	186	0.57
190	9.68	33.76 4	3.57a)	196	250	8.06	33.99	2.72	26.49	155	0.66
219	8.68	33.91 4	3.24	169	300	7.48	34.05	1.96	26.62	142	0.73
247	8.10	33.98 9	2.76	155	400	6.77	34.20	0.77	26.84	122	0.87
297	7.51	34.04 8	2.01	143	500	6.18	34.28	0.41	26.98	108	0.99
352	7.06	34.13 6	1.21	130	600	5.60	34.32	0.28	27.09	98	1.10
435	6.56	34.23 9	0.58	116							
518	6.06	34.28 4	0.39	107							
603	5.58	34.32 4	0.27	98							

BLACK DOUGLAS; July 17, 1962; 0806 GCT; 29°40.5'N, 120°47'W; sounding, 2100 fm; wind, 270°, force 3; weather, overcast; sea, rough; wire angle, 10°.

100.90

0	17.66	33.67 2	5.25	358	0	17.66	33.67	5.25	24.36	358	0.00
10	17.66	33.67 0	5.25	358	10	17.66	33.67	5.25	24.36	358	0.04
30	17.64	33.66 8	5.28	358	20	17.65	33.67	5.26	24.36	358	0.07
39	17.04	33.62 8	5.38	347	30	17.64	33.67	5.27	24.36	357	0.11
53	16.84	33.61 6	5.39	343	50	16.90	33.62	5.39	24.50	344	0.18
68	15.93	33.60 3	5.49	324	75	15.42	33.60	5.49	24.82	314	0.26
92	14.52	33.59 4	5.49	296	100	14.40	33.60	5.47	25.04	293	0.34
112	13.40	33.60 4	5.28	273	125	12.75	33.57	5.02	25.36	263	0.41
132	11.91	33.52 7	4.62	251	150	10.88	33.59	4.25	25.72	228	0.47
152	10.78	33.59 5	4.22	226	200	9.16	33.86	3.21	26.22	181	0.57
180	9.66	33.75 4	3.58	196	250	8.47	34.03	2.38	26.46	158	0.66
214	8.92	33.91 2	3.03	173	300	7.94	34.13	1.59	26.62	143	0.74
244	8.53	34.01 8	2.43	159	400	6.89	34.22	0.72	26.84	122	0.88
293	8.00	34.12 0	1.67	144	500	5.96	34.26	0.50	26.99	107	1.00
347	7.42	34.18 2	1.06	132	600	(5.51)	(34.33)	(0.34)	(27.11)	(97)	(1.10)
430	6.60	34.22 7	0.64	118							
514	5.85	34.26 6	0.47	105							
597	5.52	34.33 0	0.34	97							

a) Alternate value, 3.68 ml/L, not used in interpolation.

S10

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

110.35

BLACK DOUGLAS; July 19, 1962; 1215 GCT; 29°46'N, 116°00'W; sounding, 700 fm; wind, 340°, force 3; weather, overcast; sea, moderate; wire angle, 12°.

0	15.95	33.64 9	5.83	321	0	15.95	33.65	5.83	24.74	321	0.00
10	15.94	33.64 7	5.89	321	10	15.94	33.65	5.89	24.74	321	0.03
30	14.41	33.56 0	6.06	296	20	15.30	33.59	5.97	24.84	312	0.06
38	13.44	33.53 5	5.53	279	30	14.41	33.56	6.06	25.01	296	0.09
48	12.65	33.47 2	5.18	268	50	12.50	33.47	5.10	25.33	266	0.15
62	11.61	33.54 2	4.60	244	75	10.75	33.60	4.10	25.75	225	0.21
78	10.56	33.61 2	4.00	221	100	9.79	33.74	3.50	26.02	199	0.27
96	9.81	33.70 0	3.64	203	125	9.81	33.99	2.32	26.22	181	0.31
120	9.76	33.93 0	2.64	185	150	10.41	34.28	1.01	26.34	169	0.36
140	10.42	34.21 2	1.23	175	200	10.17	34.42	0.60	26.49	155	0.44
168	10.35	34.35 3	0.80	163	250	9.83	34.44	0.45	26.56	148	0.52
197	10.19	34.40 7	0.61	156	300	9.30	34.45	0.32	26.66	139	0.59
226	10.00	34.43 7	0.51	151	400	8.27	34.44	0.21	26.81	124	0.73
264	9.73	34.44 4	0.40	146	500	7.21	34.38	0.24	26.92	114	0.86
322	9.02	34.44 7	0.30	135							
394	8.34	34.43 7	0.21	126							
466	7.43	34.37 8	0.25	117							
545	6.97	34.39 2	0.22	110							

110.40

BLACK DOUGLAS; July 19, 1962; 1513 GCT; 29°36.5'N, 116°19.5'W; sounding, 1100+ fm; wind, 300°, force 2; weather, cloudy; sea, moderate; wire angle, 06°.

0	16.88	33.67 6	5.65	340	0	16.88	33.68	5.65	24.55	339	0.00
10	16.84	33.67 2	5.65	339	10	16.84	33.67	5.65	24.55	339	0.03
30	14.70	33.62 1	5.88	297	20	16.25	33.66	5.72	24.68	327	0.07
39	13.68	33.56 5	5.69	281	30	14.70	33.62	5.88	24.99	297	0.10
54	12.73	33.53 4	5.08	265	50	13.20	33.55	5.33	25.25	273	0.16
69	12.25	33.58 1	5.02	253	75	12.15	33.59		25.49	250	0.22
95	11.11	33.61 9	3.08u	230	100	11.02	33.64		25.73	227	0.28
112	9.97	33.76 4	4.06	200	125	9.37	33.82	3.47	26.16	187	0.33
133	9.16	33.84 5	3.28	182	150	8.89	33.89	3.21	26.29	174	0.38
153	8.86	33.90 2	3.20	173	200	9.00	34.16	1.48	26.48	156	0.46
182	9.00	34.09 4	1.86	161	250	8.67	34.21	1.19	26.57	147	0.54
217	9.00	34.20 3	1.25	153	300	8.92	34.40	0.44	26.68	137	0.62
245	8.66	34.19 5	1.24	148	400	7.75	34.39	0.30	26.85	121	0.75
294	8.97	34.40 2	0.44	137	500	6.61	34.36	0.27	26.99	108	0.87
349	8.22	34.38 4	0.43	128	600	5.87	34.39	0.24	27.11	96	0.98
433	7.42	34.39 4	0.25	116							
516	6.46	34.34 8	0.28	107							
600	5.87	34.38 6	0.24	97							

110.50

BLACK DOUGLAS; July 19, 1962; 2124 GCT; 29°14.5'N, 117°01'W; sounding, 1985 fm; wind, 340°, force 3; weather, cloudy; sea, moderate; wire angle, 03°.

0	17.26	33.53 0	5.32	359	0	17.26	33.53	5.32	24.35	359	0.00
10	16.92	33.52 4	5.37	352	10	16.92	33.52	5.37	24.42	352	0.04
30	16.66	33.50 7	5.47	347	20	16.90	33.52	5.38	24.42	352	0.07
39	15.94	33.47 8	5.60	334	30	16.66	33.51	5.47	24.47	347	0.11
54	14.93	33.48 5	5.67	312	50	15.21	33.49	5.66	24.78	317	0.17
69	13.45	33.45 4	5.51	285	75	13.16	33.47	5.36	25.20	278	0.25
95	12.59	33.53 9	4.95	262	100	12.55	33.55	4.89	25.38	261	0.32
114	11.46	33.56 1	4.37	240	125	10.83	33.63	3.85	25.76	224	0.38
134	10.50	33.69 9	3.45	214	150	10.16	33.77	3.00	25.99	203	0.43
154	10.08	33.77 8	2.97	201	200	9.42	34.02	2.10	26.30	173	0.53
183	9.48	33.90 7	2.59	182	250	9.06	34.18	1.51	26.49	155	0.61
217	9.38	34.10 6	1.77	166	300	8.41	34.22	1.22	26.62	143	0.69
246	9.11	34.17 3	1.52	157	400	7.49	34.27	0.70	26.80	126	0.83
295	8.46	34.21 9	1.24	143	500	6.65	34.28	0.42	26.92	114	0.95
351	8.06	34.24 3	0.95	136	600	6.07	34.36	0.25	27.06	101	1.07
433	7.16	34.27 5	0.59	121							
517	6.54	34.28 3	0.38	113							
601	6.06	34.36 1	0.24	101							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6207-8

BLACK DOUGLAS; July 20, 1962; 0248 GCT; 28°56.5'N, 117°38'W; sounding, 2000 fm; wind, 300°, force 3; weather, partly cloudy; sea, moderate; wire angle, 08°.

110.60

0	18.61	33.69	1	5.25	379	0	18.61	33.69	5.25	24.14	379	0.00
10	18.60	33.68	4	5.24	379	10	18.60	33.68	5.24	24.13	379	0.04
30	18.17	33.67	2	5.79	370	20	18.60	33.68	5.24	24.13	379	0.08
39	15.17	33.64	1	5.43	305	30	18.17	33.67	5.79	24.23	370	0.11
54	12.73	33.63	2	4.21	258	50	13.30	33.63	4.51	25.29	269	0.18
70	11.52	33.70	4	3.48	231	75	11.00	33.74	3.22	25.82	219	0.24
94	10.40	33.89	0	2.64	198	100	10.41	33.95	2.37	26.08	194	0.29
113	10.47	34.07	3	1.78	186	125	10.46	34.14	1.50	26.22	181	0.34
133	10.46	34.18	4	1.38	177	150	10.38	34.26	1.18	26.33	170	0.38
152	10.37	34.26	5	1.12	170	200	10.28	34.39	0.66	26.45	159	0.47
181	10.31	34.35	9	0.75	162	250	10.08	34.44	0.50	26.52	152	0.55
217	10.26	34.41	3	0.59	157	300	9.74	34.48	0.31	26.61	144	0.62
246	10.10	34.43	6	0.51	153	400	8.44	34.43	0.29	26.78	128	0.77
295	9.78	34.48	2	0.33	144	500	7.15	34.36	0.22	26.92	115	0.90
350	9.18	34.47	5	0.28	135	600	6.25	34.40	0.18	27.07	100	1.01
433	7.96	34.39	0	0.29	124							
518	6.96	34.35	8	0.20	112							
601	6.24	34.40	6	0.18	100							

BLACK DOUGLAS; July 20, 1962; 0831 GCT; 28°36.5'N, 118°18'W; sounding, 2000 fm; wind, 320°, force 3; weather, cloudy; sea, moderate; wire angle, 14°.

110.70

0	17.82	33.62	3	5.33	365	0	17.82	33.62	5.33	24.28	365	0.00
10	17.65	33.61	6	5.39	362	10	17.65	33.62	5.39	24.32	361	0.04
29	16.44	33.57	9	5.66	337	20	17.04	33.59	5.54	24.44	350	0.07
37	15.98	33.57	9	5.58	327	30	16.41	33.58	5.65	24.58	336	0.11
52	14.36	33.55	4	5.48	295	50	14.56	33.56	5.50	24.98	299	0.17
67	13.38	33.52	1	5.13	278	75	13.00	33.55	4.89	25.29	269	0.24
91	11.92	33.57	7	4.38	247	100	11.20	33.62	4.06	25.69	231	0.30
110	10.68	33.65	8	3.88	220	125	9.88	33.77	3.37	26.03	198	0.36
129	9.76	33.79	1	3.25	195	150	9.42	33.90	2.75	26.21	182	0.41
148	9.45	33.89	3	2.79	183	200	8.91	34.09	2.00	26.44	160	0.49
176	9.20	34.03	5	2.31	168	250	8.39	34.18	1.35	26.59	145	0.57
209	8.80	34.10	8	1.87	157	300	7.94	34.23	0.95	26.70	135	0.64
238	8.46	34.15	2	1.49	148	400	6.68	34.23	0.62	26.88	118	0.78
285	8.19	34.24	6	0.98	138	500	6.16	34.28	0.42	26.99	108	0.90
339	7.20	34.18	5	0.92	128							
420	6.58	34.24	2	0.54	116							
503	6.14	34.28	0	0.41	108							
578	5.66	34.34	0	0.26	98							

BLACK DOUGLAS; July 20, 1962; 1346 GCT; 28°18.5'N, 118°52'W; sounding, 2000+ fm; wind, 330°, force 3; weather, overcast; sea, moderate; wire angle, 07°.

110.80

0	18.03	33.68	1	5.32	366	0	18.03	33.68	5.32	24.28	366	0.00
10	18.03	33.67	7	5.28	366	10	18.03	33.68	5.28	24.28	366	0.04
30	17.62	33.64	6	5.36	359	20	18.00	33.68	5.28	24.28	365	0.07
39	16.76	33.57	7	5.52	344	30	17.62	33.65	5.36	24.35	358	0.11
54	16.22	33.55	3	5.61	334	50	16.39	33.56	5.59	24.57	337	0.18
69	15.50	33.53	3	5.55	320	75	15.17	33.52	5.53	24.81	314	0.26
95	13.56	33.45	4	5.46	287	100	13.19	33.47	5.30	25.19	278	0.34
113	12.34	33.51	0	4.75	260	125	11.79	33.55	4.45	25.52	247	0.40
133	11.43	33.56	7	4.31	239	150	10.68	33.65	3.99	25.80	220	0.46
153	10.52	33.67	2	3.90	216	200	9.04	33.92	2.82	26.29	174	0.56
181	9.44	33.85	6	3.09	185	250	8.56	34.09	1.98	26.50	155	0.65
217	8.86	33.98	6	2.62	167	300	7.84	34.14	1.45	26.64	141	0.72
246	8.62	34.07	9	2.03	156	400	6.81	34.23	0.70	26.86	120	0.86
294	7.90	34.13	5	1.52	142	500	6.37	34.29	0.37	26.97	110	0.98
349	7.40	34.21	1	0.91	129	600	5.75	34.39	0.22	27.12	95	1.09
433	6.56	34.24	5	0.58	116							
517	6.31	34.31	2	0.31	108							
601	5.74	34.38	6	0.22	95							

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6207-8

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

110.90

BLACK DOUGLAS; July 20, 1962; 2102 GCT; 27°56.5'N, 119°35'W; sounding, 2000+ fm; wind, 330°, force 2; weather, partly cloudy; sea, moderate; wire angle, 05°.

0	18.37	33.66 5	-	375	0	18.37	33.66		24.18	375	0.00
10	18.02	33.65 5	5.23	367	10	18.02	33.66	5.23	24.26	367	0.04
30	17.80	33.78 2	5.36	353	20	17.80	33.75	5.32	24.38	355	0.07
39	17.10	33.70 5	5.49	343	30	17.80	33.78	5.36	24.41	353	0.11
49	16.44	33.63 8	5.52	333	50	16.44	33.65	5.51	24.63	332	0.18
59	16.52	33.80 0	5.46	323	75	16.61	33.91	5.50	24.79	317	0.26
74	16.62	33.90 2	5.50	318	100	15.90	33.88	5.33	24.93	303	0.34
99	15.94	33.88 2	5.34	304	125	14.32	33.89	4.83	25.28	270	0.41
124	14.36	33.89 1	4.84	271	150	12.51	33.76	4.60	25.55	244	0.47
144	13.03	33.79 1	4.70	252	200	9.32	33.88	3.31	26.21	182	0.58
172	10.45	33.71 6	4.07	212	250	8.68	34.07	2.19	26.46	158	0.67
202	9.28	33.89 6	3.26	180	300	8.13	34.19	1.37	26.64	141	0.75
231	8.94	34.01 0	2.58	166	400	7.40	34.29	0.57	26.82	123	0.89
271	8.39	34.12 9	1.75	149	500	6.18	34.26	0.49	26.97	110	1.01
330	7.94	34.23 3	1.02	135							
404	7.36	34.28 9	0.56	123							
478	6.36	34.24 6	0.54	113							
555	5.94	34.33 3	0.29	101							

115.35

BLACK DOUGLAS; July 22, 1962; 2309 GCT; 28°54.5'N, 115°27'W; sounding, 580 fm; wind, 300°, force 5; weather, cloudy; sea, rough; wire angle, 21°.

1	17.38	33.62 6	5.44	355	0	(17.38)	(33.63)	(5.44)	(24.39)	(354)	(0.00)
10	17.35	33.62 1	5.53	354	10	17.35	33.62	5.53	24.39	354	0.04
29	16.62	33.58 8	5.69	340	20	17.32	33.62	5.55	24.40	354	0.07
37	14.45	33.50 8	5.90	300	30	16.38	33.58	5.73	24.59	336	0.11
51	12.62	33.51 2	5.03	265	50	12.68	33.51	5.08	25.32	266	0.17
65	12.02	33.56 2	4.49	250	75	11.64	33.62	4.09	25.61	239	0.23
90	10.91	33.68 8	3.60	221	100	10.12	33.74	3.38	25.97	205	0.29
107	9.91	33.77 7	3.25	198	125	10.17	34.04	2.05	26.19	183	0.33
126	10.18	34.06 0	1.99	182	150	10.13	34.26	1.25	26.37	166	0.38
144	10.16	34.23 4	1.32	169	200	9.92	34.40	0.63	26.52	152	0.46
170	10.00	34.34 0	0.93	158	250	9.60	34.44	0.40	26.60	144	0.54
202	9.92	34.40 1	0.62	152	300	9.29	34.46	0.34	26.67	138	0.61
229	9.84	34.42 6	0.49	149	400	8.18	34.42	0.28	26.81	124	0.75
272	9.38	34.45 0	0.36	140	500	7.35	34.36	0.27	26.89	117	0.88
321	9.20	34.45 9	0.32	137							
398	8.20	34.42 5	0.28	124							
476	7.58	34.35 9	0.28	121							
557	6.76	34.40 7	0.18	106							

119.33

BLACK DOUGLAS; July 23, 1962; 1429 GCT; 28°19'N, 114°53'W; sounding, 61 fm; wind, 310°, force 5; weather, partly cloudy; sea, rough; wire angle, 05°.

0	17.51	33.81 8	5.35	344	0	17.51	33.82	5.35	24.51	344	0.00
10	17.52	33.81 5	5.36	344	10	17.52	33.82	5.36	24.51	344	0.03
30	17.44	33.80 9	5.24	343	20	17.50	33.82	5.28	24.51	343	0.07
49	17.06	33.79 7	5.05	335	30	17.44	33.81	5.24	24.52	343	0.10
69	12.72	33.67 8	4.43	254	50	17.02	33.80	5.03	24.61	334	0.17
74	12.36	33.65 3	4.44	250	75	12.32	33.65	4.43	25.50	249	0.24
79	12.14	33.67 4	4.19	244	100	(10.65)	(33.92)	(1.23)	(26.02)	(200)	(0.30)
99	10.72	33.91 2	1.34	202							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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BLACK DOUGLAS; July 24, 1962; 0143 GCT; 27°43'N, 115°33'W; sounding, 1100+ fm; wind, 340°, force 5; weather, partly cloudy; sea, moderate; wire angle, 15°.

12045

1	18.30	33.67 6	5.30	372	0	(18.30)	(33.68)	(5.30)	(24.21)	(372)	(0.00)
11	18.29	33.66 9	5.14	373	10	18.29	33.67	5.16	24.20	373	0.04
34	16.52	33.58 3	5.55	339	20	18.29	33.67	5.15	24.20	373	0.07
43	15.92	33.55 1	5.69	328	30	16.80	33.60	5.47	24.51	344	0.11
58	14.44	33.50 0	5.68	301	50	15.42	33.53	5.69	24.77	319	0.18
73	13.04	33.49 7	4.93	274	75	13.01	33.50	4.91	25.25	273	0.25
96	11.68	34.06 0	3.17	207	100	11.65	33.69	3.13	25.66	234	0.32
116	10.08	33.78 8	2.73	200	125	10.39	33.99	2.05	26.12	190	0.37
135	10.80	34.19 8	1.42	182	150	10.91	34.31	1.01	26.27	176	0.42
163	10.92	34.38 5	0.80	170	200	10.51	34.45	0.52	26.45	158	0.50
191	10.61	34.43 8	0.55	161	250	10.27	34.56	0.23	26.58	146	0.58
228	10.32	34.49 2	0.43	152	300	9.90	34.56	0.15	26.65	140	0.65
257	10.26	34.57 3	0.20	145	400	8.88	34.52	0.15	26.78	127	0.79
304	9.85	34.56 4	0.14	139	500	7.44	34.40	0.22	26.91	116	0.92
365	9.25	34.53 8	0.14	132	600	6.58	34.42	0.20	27.04	103	1.04
460	8.10	34.48 1	0.18	119							
544	6.86	34.33 6	0.26	113							
617	6.52	34.45 8	0.17	99							

BLACK DOUGLAS; July 24, 1962; 0454 GCT; 27°33'N, 115°52.5'W; sounding, ±2200 fm; wind, 330°, force 5; weather, overcast; sea, rough; wire angle, 17°.

12050

1	19.32	33.74 4	5.06	392	0	(19.32)	(33.74)	(5.06)	(24.00)	(392)	(0.00)
10	19.30	33.74 2	5.04	391	10	19.30	33.74	5.04	24.00	392	0.04
29	17.56	33.64 9	5.40	357	20	19.30	33.74	5.04	24.00	392	0.08
38	16.55	33.58 6	5.54	339	30	17.52	33.65	5.41	24.38	356	0.12
52	15.53	33.52 7	5.84	321	50	15.63	33.53	5.82	24.72	323	0.18
67	14.70	33.50 5	5.48	306	75	14.12	33.51	5.24	25.03	294	0.26
91	12.96	33.51 2	4.86	271	100	12.32	33.52	4.65	25.40	259	0.33
110	11.74	33.54 5	4.40	246	125	11.06	33.62	3.92	25.71	229	0.39
129	10.91	33.65 9	3.72	224	150	10.49	33.82	2.98	25.97	205	0.45
148	10.52	33.81 2	3.01	206	200	9.60	34.05	2.18	26.30	173	0.54
175	9.86	33.93 2	2.73	186	250	8.99	34.21	1.46	26.52	152	0.63
207	9.54	34.07 8	2.07	170	300	8.56	34.30	0.85	26.66	139	0.70
233	9.22	34.16 2	1.75	159	400	7.78	34.36	0.36	26.82	123	0.84
279	8.70	34.26 3	1.04	144	500	6.72	34.36	0.27	26.97	109	0.96
330	8.38	34.32 8	0.64	134							
408	7.69	34.36 0	0.34	122							
487	6.86	34.36 1	0.28	111							
567	6.16	34.37 5	0.20	101							

BLACK DOUGLAS; July 24, 1962; 1050 GCT; 27°13'N, 116°30.5'W; sounding, 2100 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 10°.

12060

1	18.87	33.74 6	5.16	381	0	(18.87)	(33.75)	(5.16)	(24.12)	(380)	(0.00)
11	18.86	33.75 6	5.17	380	10	18.86	33.76	5.17	24.13	380	0.04
31	18.09	33.71 5	5.33	365	20	18.84	33.76	5.17	24.14	379	0.08
40	17.34	33.68 9	5.44	349	30	18.30	33.73	5.30	24.25	368	0.11
54	17.14	33.81 2	5.43	336	50	17.30	33.80	5.43	24.54	340	0.18
69	15.95	33.65 7	5.57	321	75	15.74	33.64	5.57	24.78	318	0.27
93	14.40	33.52 4	5.54	298	100	13.40	33.51	5.25	25.18	280	0.34
112	12.98	33.51 3	5.11	271	125	12.02	33.53	4.73	25.46	252	0.41
132	11.38	33.56 1	4.41	239	150	10.51	33.76	3.27	25.92	209	0.47
151	10.49	33.76 4	3.22	209	200	9.05	33.96	2.90	26.32	171	0.57
180	9.79	33.98 8	2.46	181	250	8.43	34.07	2.15	26.50	154	0.65
213	8.76	33.94 5	3.04	168	300	7.85	34.15	1.40	26.65	140	0.72
242	8.52	34.05 0	2.28	157	400	7.33	34.31	0.51	26.85	121	0.86
289	7.96	34.13 3	1.54	143	500	6.60	34.34	0.32	26.97	109	0.98
344	7.56	34.23 5	0.89	130	600	(5.98)	(34.40)	(0.26)	(27.10)	(97)	(1.09)
425	7.22	34.32 9	0.43	118							
508	6.53	34.33 9	0.31	108							
590	6.01	34.39 5	0.26	98							

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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

120.70

BLACK DOUGLAS; July 24, 1962; 1712 GCT; 26°53'N, 117°10'W; sounding, 2000+ fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 08°.

0	19.49	33.81	3	4.95	391	0	19.49	33.81	4.95	24.01	391	0.00
10	19.48	33.80	7	5.00	391	10	19.48	33.81	5.00	24.01	391	0.04
30	18.20	33.70	4	5.19	368	20	19.48	33.81	5.00	24.01	391	0.08
40	17.40	33.68	2	5.20	351	30	18.20	33.70	5.19	24.25	368	0.12
55	16.68	33.70	4	5.28	333	50	16.88	33.69	5.24	24.56	339	0.19
70	16.44	33.81	6	5.37	320	75	16.33	33.82	5.35	24.79	317	0.27
94	15.27	33.82	9	5.13	294	100	15.00	33.82	5.05	25.08	289	0.35
113	13.32	33.69	7	4.81	264	125	12.77	33.67	4.82	25.43	256	0.41
133	12.33	33.65	7	4.83	249	150	11.10	33.63	4.37	25.71	229	0.48
153	10.82	33.62	9	4.26	224	200	9.34	33.90	3.18	26.22	180	0.58
181	9.69	33.75	9	3.67	196	250	8.94	34.10	2.02	26.44	159	0.67
217	9.16	33.97	9	2.71	172	300	8.37	34.20	1.28	26.61	144	0.75
245	8.98	34.08	7	2.12	161	400	7.32	34.29	0.57	26.84	122	0.88
294	8.42	34.19	7	1.35	145	500	6.63	34.29	0.33	26.93	113	1.01
349	7.86	34.25	7	0.87	132	600	(5.79)	(34.35)	(0.28)	(27.09)	(98)	(1.12)
431	7.05	34.29	8	0.48	118							
514	6.53	34.28	9	0.29	112							
598	5.80	34.35	2	0.28	98							

120.80

BLACK DOUGLAS; July 24, 1962; 2344 GCT; 26°32.5'N, 117°49'W; sounding, 2000+ fm; wind, 340°, force 3; weather, cloudy; sea, rough; wire angle, 10°.

1	19.76	33.88	9	5.15	392	0	(19.76)	(33.89)	(5.15)	(24.00)	(392)	(0.00)
11	19.75	33.88	9	5.18	392	10	19.75	33.89	5.18	24.00	392	0.04
31	19.29	33.98	1	5.35	374	20	19.75	33.89	5.19	24.00	392	0.08
40	18.80	33.97	3	5.42	363	30	19.32	33.98	5.34	24.18	375	0.12
54	17.76	33.91	5	5.57	342	50	18.10	33.94	5.53	24.46	348	0.19
69	16.81	33.81	2	5.52	328	75	16.45	33.78	5.50	24.73	323	0.27
93	15.26	33.70	6	5.35	303	100	14.69	33.69	5.15	25.05	292	0.35
112	13.62	33.68	6	4.71	271	125	12.88	33.69	4.62	25.42	256	0.42
132	12.52	33.68	7	4.54	250	150	11.51	33.72	3.85	25.71	229	0.48
152	11.44	33.73	2	3.76	227	200	9.86	34.08	2.23	26.28	175	0.59
181	10.43	34.00	1	2.43	190	250	9.30	34.26	1.30	26.51	153	0.67
215	9.54	34.12	0	2.07	167	300	9.22	34.40	0.56	26.63	141	0.75
243	9.30	34.23	8	1.39	155	400	7.67	34.37	0.40	26.85	121	0.88
291	9.32	34.40	0	0.58	143	500	6.82	34.37	0.24	26.97	110	1.01
346	8.50	34.38	2	0.52	132	600	(6.06)	(34.42)	(0.27)	(27.11)	(96)	(1.12)
428	7.34	34.36	6	0.34	117							
511	6.75	34.37	4	0.22	108							
595	6.10	34.41	5	0.27	97							

120.90

BLACK DOUGLAS; July 25, 1962; 0500 GCT; 26°13'N, 118°27'W; sounding, 2000+ fm; wind, 350°, force 3; weather, cloudy; sea, rough; wire angle, 08°.

0	20.19	34.09	9	4.97	388	0	20.19	34.10	4.97	24.05	388	0.00
10	20.22	34.09	6	5.01	389	10	20.22	34.10	5.01	24.04	388	0.04
30	20.00	34.10	2	5.06	383	20	20.21	34.10	5.01	24.04	388	0.08
59	17.87	33.85	7	5.46	349	30	20.00	34.10	5.06	24.10	383	0.12
69	16.30	33.65	5	5.65	329	50	18.90	33.98	5.26	24.29	365	0.19
84	15.56	33.64	5	5.48	313	75	15.70	33.65	5.52	24.80	316	0.28
98	14.54	33.56	9	5.31	298	100	14.38	33.57	5.20	25.02	294	0.35
112	13.53	33.63	0	4.35	273	125	12.79	33.66	3.90	25.42	257	0.42
137	12.18	33.68	7	3.64	244	150	11.46	33.76	3.35	25.75	226	0.48
157	11.08	33.78	9	3.23	217	200	9.81	33.99	2.59	26.22	181	0.59
185	9.98	33.90	0	2.97	190	250	9.17	34.18	1.63	26.47	157	0.67
215	9.66	34.06	3	2.17	173	300	8.71	34.29	1.01	26.63	142	0.75
244	9.22	34.16	0	1.73	159	400	7.56	34.34	0.41	26.84	122	0.89
291	8.80	34.28	1	1.07	144	500	6.64	34.34	0.27	26.97	110	1.01
346	8.19	34.31	7	0.74	132	600	(6.02)	(34.38)	(0.22)	(27.08)	(99)	(1.12)
428	7.26	34.35	1	0.31	117							
511	6.56	34.34	0	0.26	109							
594	6.05	34.37	7	0.22	99							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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BLACK DOUGLAS; July 26, 1962; 0848 GCT; 27°10.5'N, 114°56.5'W; sounding, 1100 fm; wind, 320°, force 2; weather, partly cloudy; sea, moderate; wire angle, 32°.

123.42

0	17.54	-	-	-	0	17.54	(33.63)		(24.36)	(358)	(0.00)	
8	17.56	33.63	0	-	358	10	17.55	33.63		24.35	358	0.04
16	17.25	33.60	9	5.57	353	20	16.85	33.59	5.70	24.49	345	0.07
24	16.44	33.58	5	5.79	337	30	15.10	33.57	5.62	24.87	309	0.10
31	15.04	33.56	9	5.61	308	50	13.50	33.54	4.97	25.18	279	0.16
39	14.34	33.55	0	5.35	295	75	12.02	33.66	3.71	25.57	243	0.23
51	13.45	33.54	4	4.95	278	100	10.90	33.77	3.40	25.86	215	0.29
63	12.64	33.58	7	-	260	125	10.10	33.86	3.05	26.07	195	0.34
78	11.80	33.68	6	3.55	237	150	9.71	34.00	2.59	26.24	179	0.39
96	10.94	33.74	9	3.45	217	200	9.36	34.18	1.60	26.44	160	0.47
111	10.64	33.83	3	3.06	206	250	9.34	34.34	0.85	26.57	148	0.55
134	9.82	33.88	7	3.04	189	300	9.02	34.36	0.70	26.63	141	0.63
177	9.64	34.14	0	1.85	167	400	7.62	34.32	0.48	26.82	124	0.77
208	9.31	34.19	1	1.51	158							
254	9.34	34.34	5	0.81	147							
312	8.87	34.35	8	0.68	139							
374	7.72	34.28	5	0.62	128							
446	7.57	34.40	3	0.20	117							

BLACK DOUGLAS; July 26, 1962; 2125 GCT; 26°43.5'N, 114°29'W; sounding, 1900 fm; wind, 320°, force 2; weather, cloudy; sea, slight; wire angle, 12°.

127.40

0	18.84	33.74	2	5.39	380	0	18.84	33.74	5.39	24.12	381	0.00
10	18.38	33.73	7	5.29	370	10	18.38	33.74	5.29	24.23	370	0.04
30	14.97	33.71	9	4.66	296	20	16.80	33.72	5.01	24.60	335	0.07
38	13.18	33.69	2	4.06	262	30	14.97	33.72	4.66	25.01	295	0.10
53	12.02	33.70	3	3.71	240	50	12.07	33.70	3.73	25.59	241	0.16
68	11.38	33.77	8	3.22	223	75	11.35	33.84	3.00	25.83	218	0.22
93	10.71	33.95	1	2.06	199	100	10.69	34.02	1.72	26.09	193	0.27
112	10.67	34.12	7	1.45	185	125	10.27	34.13	1.64	26.25	178	0.31
131	10.03	34.13	1	1.72	174	150	9.67	34.14	1.67	26.36	168	0.36
150	9.67	34.13	7	1.67	168	200	9.85	34.38	0.70	26.51	153	0.44
179	9.85	34.30	5	1.04	158	250	8.75	34.30	0.84	26.63	142	0.52
214	9.85	34.41	9	0.55	150	300	8.37	34.33	0.60	26.71	134	0.59
242	8.91	34.30	2	0.87	144	400	7.78	34.41	0.25	26.86	120	0.72
291	8.39	34.32	5	0.64	135	500	6.83	34.40	0.20	26.99	108	0.84
344	8.29	34.40	5	0.35	127	600	(6.12)	(34.42)	(0.15)	(27.10)	(97)	(0.95)
426	7.50	34.40	8	0.23	116							
508	6.76	34.40	1	0.20	107							
591	6.18	34.41	9	0.15	98							

BLACK DOUGLAS; July 29, 1962; 1500 GCT; 26°29'N, 113°29'W; sounding, 44 fm; wind, 340°, force 4; weather, clear; sea, rough; wire angle, 01°.

130.30

0	18.36	34.11	8	5.64	342	0	18.36	34.12	5.64	24.53	341	0.00
10	18.29	34.11	3	5.60	340	10	18.29	34.11	5.60	24.54	341	0.03
15	16.04	34.12	7	3.70	288	20	14.44	34.12	2.36	25.43	255	0.06
20	14.44	34.12	4	2.36	255	30	12.62	34.12	0.58	25.81	220	0.09
30	12.62	34.11	6	0.58	220	50	11.82	34.24	0.08	26.05	197	0.13
49	11.83	34.23	3	0.08	197	75	(11.75)	(34.32)	(0.11)	(26.13)	(189)	(0.18)
74	11.76	34.31	1	0.11	190							

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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

130.40

BLACK DOUGLAS; July 29, 1962; 0925 GCT; 26°09'N, 114°07'W; sounding, 1100+ fm; wind, 300°, force 5; weather, partly cloudy; sea, rough; wire angle, 04°.

0	20.30	33.95 1	4.90	401	0	20.30	33.95	4.90	23.90	401	0.00
10	20.32	33.94 8	4.97	402	10	20.32	33.95	4.97	23.90	402	0.04
30	20.20	33.96 1	4.94	398	20	20.31	33.95	4.97	23.90	401	0.08
39	19.41	33.96 8	5.12	378	30	20.20	33.96	4.94	23.94	398	0.12
54	17.94	33.87 2	5.36	350	50	18.52	33.92	5.32	24.34	360	0.20
69	15.82	33.70 8	5.34	314	75	15.32	33.67	5.24	24.90	306	0.28
94	13.72	33.59 0	4.67	280	100	13.34	33.60	4.53	25.26	272	0.35
113	12.54	33.68 6	4.24	250	125	11.72	33.73	3.88	25.68	232	0.42
133	11.06	33.75 4	3.56	219	150	10.30	33.86	2.96	26.03	199	0.47
153	10.22	33.88 0	2.87	196	200	10.07	34.23	1.40	26.36	167	0.56
182	9.94	34.10 1	1.99	175	250	9.60	34.39	0.66	26.56	148	0.65
216	10.19	34.33 4	0.96	162	300	9.23	34.42	0.45	26.65	140	0.72
245	9.67	34.38 7	0.69	149	400	8.01	34.43	0.26	26.85	121	0.86
294	9.27	34.41 6	0.48	141	500	6.97	34.41	0.17	26.98	109	0.98
349	8.88	34.46 2	0.29	132	600	(6.15)	(34.43)	(0.10)	(27.10)	(97)	(1.09)
431	7.60	34.41 5	0.24	117							
515	6.86	34.41 3	0.16	107							
598	6.18	34.43 1	0.10	97							

130.50

BLACK DOUGLAS; July 29, 1962; 0325 GCT; 25°50'N, 114°44'W; sounding, 2000+ fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 06°.

0	20.28	33.82 6	5.00	410	0	20.28	33.83	5.00	23.82	409	0.00
10	20.28	33.82 2	5.06	410	10	20.28	33.82	5.06	23.81	410	0.04
30	19.82	33.83 3	5.12	398	20	20.00	33.82	5.10	23.88	403	0.08
39	19.34	33.76 4	6.09	391	30	19.82	33.83	5.12	23.94	398	0.12
54	17.00	33.63 6	7.00	345	50	17.16	33.64	7.00	24.45	349	0.20
70	15.39	33.61 4	4.93	312	75	15.24	33.61	4.84	24.87	309	0.28
95	14.14	33.57 8	4.54	289	100	13.83	33.58	4.46	25.15	283	0.35
114	12.92	33.63 9	3.96	261	125	12.22	33.78	3.20	25.62	238	0.42
133	11.72	33.90 7	2.50	219	150	11.20	34.02	2.03	26.00	202	0.48
153	11.09	34.38 3	1.98	173	200	10.32	34.22	1.22	26.31	172	0.57
182	10.37	34.13 3	1.73	180	250	9.84	34.36	0.74	26.50	154	0.65
217	10.27	34.29 5	0.72	166	300	9.45	34.43	0.44	26.62	143	0.73
245	9.89	34.35 3	0.76	155	400	8.06	34.41	0.17	26.82	124	0.87
295	9.52	34.43 4	0.49	144	500	6.97	34.40	0.13	26.97	109	1.00
349	8.64	34.40 6	0.19	132	600	(6.05)	(34.43)		(27.12)	(96)	(1.11)
431	7.74	34.41 3	0.16	119							
515	6.80	34.39 7	0.12	107							
599	6.06	34.42 5	-	96							

130.60

BLACK DOUGLAS; July 28, 1962; 2017 GCT; 25°27.5'N, 115°24'W; sounding, 2100 fm; wind, 340°, force 4; weather, cloudy; sea, moderate; wire angle, 09°.

0	21.43	33.77 0	5.02	443	0	21.43	33.77	5.02	23.46	443	0.00
10	21.18	33.76 6	4.91	437	10	21.18	33.77	4.91	23.53	437	0.04
30	20.33	33.73 5	5.14	418	20	21.00	33.76	4.94	23.57	433	0.09
39	17.74	33.65 3	5.46	361	30	20.33	33.74	5.14	23.74	417	0.13
54	17.00	33.64 3	6.12	345	50	17.20	33.65	6.00	24.45	349	0.21
69	16.18	33.62 7	5.69	328	75	15.78	33.62	5.43	24.76	320	0.29
95	14.18	33.61 7	4.66	287	100	13.70	33.62	4.48	25.20	277	0.37
113	12.75	33.63 6	4.05	258	125	12.39	33.75	3.50	25.56	243	0.43
133	12.14	33.83 6	3.06	232	150	11.31	33.98	2.25	25.95	207	0.49
152	11.25	33.99 3	2.19	205	200	10.60	34.28	1.25	26.31	173	0.59
181	10.76	34.12 9	1.70	186	250	10.72	34.56	0.27	26.50	154	0.67
215	10.58	34.37 5	0.89	165	300	9.64	34.49	0.35	26.63	141	0.75
245	10.78	34.56 2	0.26	155	400	8.60	34.51	0.14	26.82	124	0.89
293	9.73	34.48 4	0.37	143	500	7.49	34.43	0.17	26.92	114	1.01
348	9.20	34.51 9	0.14	132	600	(6.19)	(34.42)	(0.16)	(27.09)	(98)	(1.13)
429	8.25	34.49 0	0.14	120							
512	7.36	34.42 2	0.18	113							
595	6.28	34.41 7	0.16	99							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6207-8

BLACK DOUGLAS; July 28, 1962; 1313 GCT; 25°07'N, 116°06'W; sounding, 2000 fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 07°.

13070

0	21.36	33.79	4.85	440	0	21.36	33.79	4.85	23.50	440	0.00
10	21.32	33.78	4.93	439	10	21.32	33.79	4.93	23.51	439	0.04
30	18.52	33.67	5.37	377	20	20.70	33.76	5.07	23.65	425	0.09
39	18.25	33.76	5.36	365	30	18.52	33.68	5.37	24.15	377	0.13
49	17.64	33.73	5.56	353	50	17.57	33.72	5.57	24.42	352	0.20
64	16.26	33.63	5.66	329	75	15.78	33.65	5.54	24.78	318	0.28
80	15.54	33.66	5.43	311	100	14.43	33.70	4.90	25.11	286	0.36
98	14.56	33.70	4.94	288	125	12.89	33.71	4.29	25.44	255	0.43
123	13.02	33.70	4.36	258	150	11.42	33.83	3.20	25.81	220	0.49
142	11.82	33.76	3.62	231	200	10.46	34.14	1.80	26.22	181	0.59
171	10.80	34.01	2.30	196	250	9.52	34.27	1.22	26.48	156	0.68
200	10.46	34.14	1.80	180	300	9.15	34.36	0.77	26.61	143	0.76
228	9.86	34.24	1.40	163	400	8.10	34.41	0.30	26.82	124	0.90
268	9.32	34.29	1.08	151	500	6.87	34.36	0.20	26.95	111	1.02
326	9.01	34.40	0.53	138							
400	8.10	34.41	0.30	124							
472	7.16	34.35	0.24	115							
551	6.46	34.41	0.15	102							

BLACK DOUGLAS; July 28, 1962; 0753 GCT; 24°48'N, 116°41'W; sounding, 2100+ fm; wind, 310°, force 2; weather, partly cloudy; sea, moderate; wire angle, 04°.

13080

0	21.18	33.84	5.00	432	0	21.18	33.84	5.00	23.58	432	0.00
10	21.01	33.82	4.93	428	10	21.01	33.83	4.93	23.62	428	0.04
30	18.44	33.74	5.39	370	20	20.50	33.81	5.01	23.74	416	0.09
39	18.04	33.73	5.40	362	30	18.44	33.75	5.39	24.23	370	0.12
49	17.67	33.68	5.41	357	50	17.63	33.68	5.42	24.37	356	0.20
64	16.76	33.64	5.57	339	75	15.98	33.60	5.57	24.70	326	0.28
79	15.68	33.58	5.57	320	100	14.43	33.57	5.01	25.01	295	0.36
99	14.49	33.57	5.05	297	125	12.45	33.65	3.93	25.48	251	0.43
124	12.57	33.64	3.96	254	150	11.17	33.74	3.39	25.78	222	0.49
144	11.38	33.70	3.56	228	200	10.38	34.12	2.40	26.22	181	0.59
173	10.58	33.97	2.38	195	250	9.40	34.25	1.25	26.49	155	0.68
203	10.34	34.13	2.40	179	300	9.18	34.36	0.65	26.61	144	0.76
232	9.66	34.20	1.56	163	400	7.97	34.39	0.32	26.82	124	0.90
272	9.26	34.29	1.00	150	500	6.81	34.36	0.22	26.96	110	1.02
331	9.08	34.43	0.36	137							
404	7.90	34.38	0.31	123							
478	7.00	34.35	0.24	113							
557	6.43	34.39	0.18	103							

BLACK DOUGLAS; July 28, 1962; 0110 GCT; 24°29'N, 117°17.5'W; sounding, 2000 fm; wind, direction missing, force 1; weather, partly cloudy; sea, moderate; wire angle, 02°.

13090

0	21.78	33.88	4.86	444	0	21.78	33.89	4.86	23.46	444	0.00
10	20.80	33.86	4.97	420	10	20.80	33.86	4.97	23.70	420	0.04
30	19.28	34.12	5.12	363	20	20.50	33.93	5.00	23.84	408	0.08
39	19.06	34.12	5.13	358	30	19.28	34.12	5.12	24.30	364	0.12
49	18.84	34.13	5.17	352	50	18.82	34.13	5.18	24.42	352	0.20
64	17.78	33.98	5.29	338	75	17.22	33.92	5.25	24.65	330	0.28
79	17.02	33.90	5.22	326	100	15.99	33.85	5.12	24.89	308	0.36
99	16.01	33.85	5.13	308	125	13.82	33.80	4.41	25.32	266	0.43
124	13.98	33.80	4.47	269	150	11.33	33.68	3.44	25.71	229	0.50
144	11.54	33.66	3.58	234	200	10.48	34.12	1.90	26.20	182	0.60
173	10.78	33.89	2.82	204	250	10.00	34.36	0.94	26.47	157	0.69
203	10.45	34.14	1.80	180	300	9.44	34.41	0.58	26.61	144	0.77
232	10.18	34.30	1.15	163	400	7.97	34.40	0.28	26.83	123	0.91
272	9.79	34.38	0.74	151	500	6.97	34.40	0.22	26.97	109	1.03
330	9.00	34.41	0.45	137							
404	7.92	34.40	0.27	122							
478	7.16	34.39	0.24	112							
557	6.48	34.41	0.16	102							

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
82.47-B	VII-10	1500	34°15.0'	119°58.0'	300	-	1	fog	calm	14.75	33.76 9
83.40-B	10	1020	34°13.5'	119°21.5'	12	-	1	fog	calm	12.98	-
83.43-B	10	1230	34°08.0'	119°34.0'	133	-	1	fog	calm	15.62	33.72 1
83.51-B	10	1830	33°52.0'	120°07.5'	51	310°	4	fog	moderate	14.91	33.69 4
83.55-B	10	2040	33°44.0'	120°24.5'	600	300°	5	fog	rough	14.21	33.74 1
83.60-B	10	2310	33°34.0'	120°45.0'	800	300°	5	fog	rough	13.75	33.79 4
83.65-B	11	0140	33°24.0'	121°06.0'	1950	320°	4	missing	rough	15.15	33.35 0
83.70-B	11	0400	33°14.0'	121°26.0'	2100	300°	4	missing	rough	15.02	33.34 1
83.80-B	11	0840	32°53.0'	122°06.5'	2000+	300°	4	cloudy	rough	15.49	33.30 0
83.90-B	11	1310	32°33.0'	122°46.0'	2100	300°	3	cloudy	rough	15.82	33.34 4
87.35-B	13	0055	33°49.5'	118°37.5'	350	300°	4	partly cloudy	rough	18.70	33.71 6
87.40-B	12	2230	33°39.5'	118°58.5'	400	300°	4	partly cloudy	very rough	16.99	33.71 5
87.45-B	12	2000	33°30.0'	119°19.0'	900	300°	6	cloudy	very rough	16.54	33.73 3
87.50-B	12	1720	33°20.0'	119°39.0'	38	320°	8	missing	very rough	13.68	33.84 4a)
87.55-B	12	1410	33°10.0'	120°00.0'	400	320°	6	overcast	very rough	14.87	33.76 9
87.60-B	12	1135	33°00.0'	120°21.5'	420	320°	7	overcast	very rough	13.97	33.77 9
87.65-B	12	0830	32°50.0'	120°41.5'	2000+	320°	6	overcast	rough	13.04	33.45 1

a) Possible evaporation.

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

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6207-8

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Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
87.70-B	VII-12	0540	32°38.5'	121°02.0'	2100	320°	5	clear	rough	15.26	33.30 8
87.80-B	11	2335	32°16.0'	121°40.5'	2200	320°	4	cloudy	rough	13.66	33.43 8
87.90-B	11	1740	32°02.0'	122°23.0'	2000	320°	4	cloudy	moderate	15.32	33.32 8
93.35-B	15	0720	32°40.5'	117°51.5'	-	-	2	overcast	moderate	17.96	-
93.45-B	15	1235	32°20.0'	118°32.0'	860	240°	2	overcast	moderate	17.82	-
93.55-B	15	1900	32°00.0'	119°13.5'	850	320°	3	overcast	moderate	15.52	-
93.65-B	16	0155	31°40.0'	119°53.0'	2050	280°	3	overcast	rough	13.90	-
97.30-P	20	2245	32°16.0'	117°09.0'	33	320°	4	cloudy	moderate	15.17	33.70 2
97.32-P	21	0010	32°12.0'	117°15.5'	585	320°	3	cloudy	moderate	17.70	33.69 2
97.35-P	21	0300	32°05.5'	117°27.5'	630	320°	3	cloudy	moderate	17.52	33.74 5
97.40-P	21	0530	31°56.0'	117°48.0'	900	320°	4	partly cloudy	moderate	16.02	33.56 7
97.45-P	21	0845	31°46.0'	118°08.5'	800	320°	3	overcast	moderate	16.19	33.50 0
97.50-P	21	1140	31°36.0'	118°29.0'	1200	320°	4	cloudy	moderate	16.86	33.52 6
97.55-P	21	1445	31°25.5'	118°49.5'	565	320°	4	cloudy	moderate	16.60	33.50 8
97.60-P	21	1740	31°15.5'	119°10.0'	1950	320°	4	cloudy	rough	16.53	33.46 8
97.65-P	21	2040	31°05.0'	119°30.5'	2000+	320°	4	cloudy	rough	16.44	33.79 2
97.70-P	21	2345	30°55.0'	119°50.5'	1950	320°	4	cloudy	rough	16.46	33.81 0
97.80-P	22	0510	30°35.0'	120°31.0'	2110	320°	4	partly cloudy	rough	17.30	33.61 4
97.90-P	22	1050	30°16.5'	121°08.5'	2000+	320°	4	cloudy	rough	17.80	33.67 8

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
100.45-B	VII-17	0955	31°10.5'	117°46.5'	850	320°	2	overcast	moderate	16.64	-
100.55-B	18	0425	30°50.5'	118°27.5'	1200	320°	1	overcast	moderate	16.75	-
100.65-B	17	2230	30°32.5'	119°08.5'	2000	320°	1	overcast	rough	16.70	-
103.30-P	24	0545	31°06.0'	116°24.5'	33	320°	3	cloudy	rough	13.22	33.66 3
103.35-P	24	0310	30°54.0'	116°40.5'	750	320°	3	cloudy	rough	17.04	33.73 4
103.40-P	24	0015	30°45.0'	117°02.5'	1000	320°	4	cloudy	rough	17.18	33.69 4
103.45-P	23	2115	30°36.0'	117°24.0'	1100	320°	4	cloudy	rough	17.09	33.50 7
103.50-P	23	1830	30°21.0'	117°38.5'	1440	320°	4	cloudy	rough	17.06	33.51 8
103.55-P	23	1525	30°13.0'	117°59.0'	1000	320°	4	cloudy	rough	17.67	33.64 1
103.60-P	23	1235	30°04.0'	118°19.5'	1200	320°	4	cloudy	rough	17.84	33.67 6
103.65-P	23	0945	29°54.5'	118°39.5'	1900	320°	4	cloudy	rough	17.39	33.59 5
103.70-P	23	0645	29°45.5'	118°59.0'	1900	320°	4	cloudy	rough	17.36	33.57 2
103.80-P	23	0111	29°27.0'	119°40.5'	1900	320°	4	cloudy	rough	17.42	33.57 2
103.90-P	22	1950	29°04.0'	120°23.0'	2000+	320°	3	cloudy	rough	18.04	33.67 8
107.32-P	24	1515	30°27.0'	116°10.5'	48	320°	2	cloudy	slight	15.18	33.67 6
107.35-P	24	1715	30°21.5'	116°22.5'	900+	300°	4	cloudy	moderate	17.13	33.72 1a)
107.40-P	24	2000	30°11.0'	116°42.0'	1550	300°	4	cloudy	rough	16.92	33.60 0

a) Possible evaporation.

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
107.45-P	VII-24	2310	30°01.0'	117°01.0'	1250	330°	4	cloudy	rough	17.69	33.61 2
107.50-P	25	0205	29°50.5'	117°20.5'	1400	330°	4	cloudy	rough	18.69	33.72 3
107.55-P	25	0505	29°41.0'	117°40.5'	1800	330°	4	cloudy	rough	18.58	33.71 7
107.60-P	25	0755	29°31.0'	118°00.0'	1800	320°	4	cloudy	rough	18.24	33.72 1
107.65-P	25	1055	29°20.5'	118°20.5'	2000	320°	4	cloudy	rough	17.90	33.72 3
107.70-P	25	1330	29°10.0'	118°40.5'	2000	320°	4	cloudy	rough	17.87	33.67 5
107.80-P	25	1855	28°48.5'	119°21.5'	2000+	320°	4	cloudy	very rough	17.65	33.60 3
107.90-P	25	2340	28°32.5'	119°59.0'	2000	320°	4	cloudy	very rough	18.10	33.66 5
110.32-B	19	1025	29°50.0'	115°52.0'	58	340°	3	overcast	moderate	15.06	-
110.45-B	19	1755	29°26.5'	116°39.5'	826	320°	2	cloudy	moderate	16.76	-
110.55-B	20	0005	29°06.5'	117°19.0'	1934	300°	4	partly cloudy	rough	17.58	-
110.65-B	20	0545	28°46.0'	117°59.0'	2000	320°	3	cloudy	moderate	18.20	-
113.30-P	27	1730	29°20.0'	115°16.0'	40	320°	2	cloudy	moderate	13.06	33.82 5
113.35-P	27	1440	29°11.5'	115°34.0'	700	340°	2	cloudy	moderate	14.86	33.63 4
113.40-P	27	1150	29°02.0'	115°53.5'	900	320°	3	cloudy	rough	16.53	33.63 4
113.45-P	27	0905	28°52.0'	116°14.0'	2000	320°	3	cloudy	rough	17.12	33.65 9
113.50-P	27	0620	28°42.5'	116°33.5'	2100	320°	3	cloudy	rough	17.44	33.59 8
113.55-P	27	0330	28°33.0'	116°55.0'	2000	340°	4	cloudy	rough	17.96	33.64 3
113.60-P	27	0041	28°23.5'	117°14.0'	1900	340°	3	cloudy	rough	17.70	33.62 6

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
113.65-P	VII-26	2200	28°14.0'	117°34.0'	2000	360°	3	cloudy	rough	18.88	33.71 6
113.70-P	26	1905	28°04.5'	117°54.5'	1900	340°	3	cloudy	rough	18.26	33.66 7
113.80-P	26	1345	27°44.0'	118°33.5'	2000	340°	4	cloudy	rough	18.24	33.65 8
113.90-P	26	0810	27°23.0'	119°11.0'	2000	320°	4	cloudy	very rough	18.19	33.64 9
117.26-B	23	0435	28°56.0'	114°41.5'	40	270°	4	cloudy	rough	14.89	33.74 1
117.30-B	23	0230	28°48.0'	114°56.5'	55	300°	5	cloudy	rough	13.48	33.70 7
117.35-B	22	1955	28°38.0'	115°16.0'	130	300°	3	overcast	rough	16.96	33.60 8
117.40-B	22	1010	28°28.0'	115°35.5'	500	310°	4	cloudy	rough	16.92	33.59 9
117.45-B	22	0715	28°18.0'	115°55.5'	1800	320°	5	cloudy	rough	17.76	33.63 4
117.50-B	22	0435	28°08.0'	116°15.0'	2500	340°	4	partly cloudy	rough	17.77	33.61 9
117.55-B	22	0120	28°01.0'	116°35.0'	2000+	340°	5	partly cloudy	rough	18.78	-
117.60-B	21	2240	27°50.5'	116°55.0'	2000+	330°	5	cloudy	moderate	18.55	-
117.65-B	21	1900	27°39.0'	117°14.5'	1750	360°	3	cloudy	moderate	18.85	-
117.70-B	21	1622	27°28.0'	117°32.5'	±2000	020°	3	cloudy	moderate	17.85	-
117.80-B	21	1150	27°09.0'	118°09.0'	2000+	340°	5	cloudy	moderate	18.62	-
117.90-B	21	0715	26°47.5'	118°50.0'	2100	340°	3	partly cloudy	moderate	18.70	-
118.39-B	22	1215	28°18.5'	115°23.5'	140	340°	3	cloudy	rough	16.73	33.64 8
120.25-B	23	0935	28°22.5'	114°15.0'	35	290°	4	missing	rough	16.76	33.73 4
120.30-B	23	1215	28°13.0'	114°34.0'	52	300°	3	missing	rough	16.48	33.75 4

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

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Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
120.35-B	VII-23	1845	28°03.0'	114°54.0'	47	340°	3	cloudy	rough	17.08	33.75 5
120.40-B	23	2235	27°56.5'	115°14.0'	21	270°	5	partly cloudy	rough	15.82	33.79 6
120.55-B	24	0750	27°23.0'	116°12.0'	±2000	320°	4	overcast	rough	18.78	33.68 3
120.65-B	24	1340	27°03.0'	116°50.5'	2000+	320°	4	overcast	rough	18.84	33.76 3
123.37-B	26	1145	27°24.0'	114°40.0'	40	-	1	cloudy	moderate	13.50	33.63 3
123.45-B	26	0550	27°02.5'	115°11.0'	2300	320°	3	overcast	moderate	18.96	33.73 4
123.50-B	26	0305	26°52.5'	115°29.0'	2000+	330°	3	overcast	moderate	19.82	33.87 6
123.55-B	26	0100	26°45.0'	115°47.5'	2000	340°	2	overcast	moderate	19.86	33.95 5
123.60-B	25	2240	26°38.0'	116°08.0'	2000	340°	2	overcast	moderate	19.66	33.82 5
123.65-B	25	1910	26°28.5'	116°28.0'	2000	340°	3	overcast	moderate	19.00	33.73 7
123.70-B	25	1625	26°19.0'	116°47.0'	2100	330°	3	missing	rough	19.50	33.80 5
123.80-B	25	1140	25°59.0'	117°25.5'	2000+	340°	4	missing	rough	20.45	34.00 5
127.34-B	26	1735	26°55.0'	114°06.5'	41	320°	3	partly cloudy	moderate	17.35	-
127.45-B	27	0005	26°34.5'	114°48.5'	1750	320°	2	partly cloudy	moderate	18.39	33.74 1
127.50-B	27	0320	26°23.0'	115°11.5'	1800	310°	2	cloudy	slight	17.00	33.70 2
127.55-B	27	0540	26°13.5'	115°27.0'	2000	310°	2	partly cloudy	slight	17.94	33.71 7
127.60-B	27	0810	26°03.0'	115°46.0'	2000+	270°	3	partly cloudy	slight	19.56	33.83 9
127.65-B	27	1030	25°51.5'	116°05.0'	2000+	300°	3	partly cloudy	moderate	20.12	33.88 9
127.70-B	27	1315	25°39.0'	116°25.0'	2100	320°	2	partly cloudy	moderate	20.08	33.77 3

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
127.80-B	VII-27	1810	25°24.0'	117°02.5'	2000	320°	2	cloudy	rough	20.36	33.87 0
130.35-B	29	1200	26°19.0'	113°48.0'	400	340°	5	partly cloudy	rough	18.42	33.59 9a)
130.45-B	29	0600	25°58.5'	114°26.5'	2000	320°	5	partly cloudy	rough	20.17	33.81 9
130.55-B	28	2330	25°39.0'	115°04.0'	1900	340°	5	partly cloudy	moderate	20.49	33.61 9b)
130.65-B	28	1700	25°19.0'	115°42.5'	2100	330°	3	cloudy	moderate	21.10	33.77 4

a) Alternate value, 33.66 ‰.

b) Alternate value, 33.85 ‰.

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

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