UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6304
9 April - 24 May 1963

CCOFI Cruise 6306
25 - 26 June 1963

and

USCG Station November
12 May - 2 June 1963

SIO Reference 64-13
2 March 1964

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6304
9 April - 24 May 1963

and

CCOFI Cruise 6306
25 - 26 June 1963

Sponsored by

Marine Research Committee

SIO Reference 64-13
2 March 1964

Approved for distribution:

Roger Revelle, Director

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Cruise 6304

INTRODUCTION

The data presented in this report were collected by the RV Black Douglas of the Bureau of Commercial Fisheries and the RV Alexander Agassiz of the Scripps Institution of Oceanography on Cruise 6304 and by the RV Alexander Agassiz on Cruise 6306 of the California Cooperative Oceanic Fisheries Investigations program. Also included in this report are the data collected at Station November for the May-June 1963 cruise of the USCGC Minnetonka of the United States Coast Guard. The first two figures in this cruise numbering system represent the year of the cruise; the last two figures, the month. The cruises preceding this one in the series are 6210-11 and 6212 (SIO Ref. 63-25) and 6301-2 (SIO Ref. 64-2).

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/] 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 values recorded "have a reproducibility of ±0.004‰ salinity at the 95 per cent probability level, and a probable accuracy of ±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 per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on

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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.

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 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, two 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 the following notation.

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.

PERSONNEL
Cruise 6304

SHIPS' CAPTAINS

Forster, Charles W., RV Black Douglas
Miller, Frank, RV Alexander Agassiz

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Alexander Agassiz

*Anderson, Norman E., Principal Marine Technician
Brennen, Robert E., Senior Marine Technician
Crowe, Fred J., Laboratory Assistant
Ernst, Richard K., Marine Technician
Hodnett, Haley L., Senior Marine Technician
Muus, David A., Marine Technician
*Netzley, Ronald L., Marine Technician
Peters, Forrest D., Marine Technician
Pine, James S., Senior Marine Technician
*Rosendahl, Donald V., Electronics Technician
Wagner, Vaughn M., Fishery Aid

RV Black Douglas

Lawson, Jan B., Senior Marine Technician
Kimura, M., Fishery Research Biologist
Netzley, Ronald L., Marine Technician
Paloma, ~~Peter~~ Pedro A., Fishery Aid

USCGC Minnetonka (May-June 1963 cruise)

Bottom, Kenneth S., Senior Marine Technician

*Participated in part of cruise only.

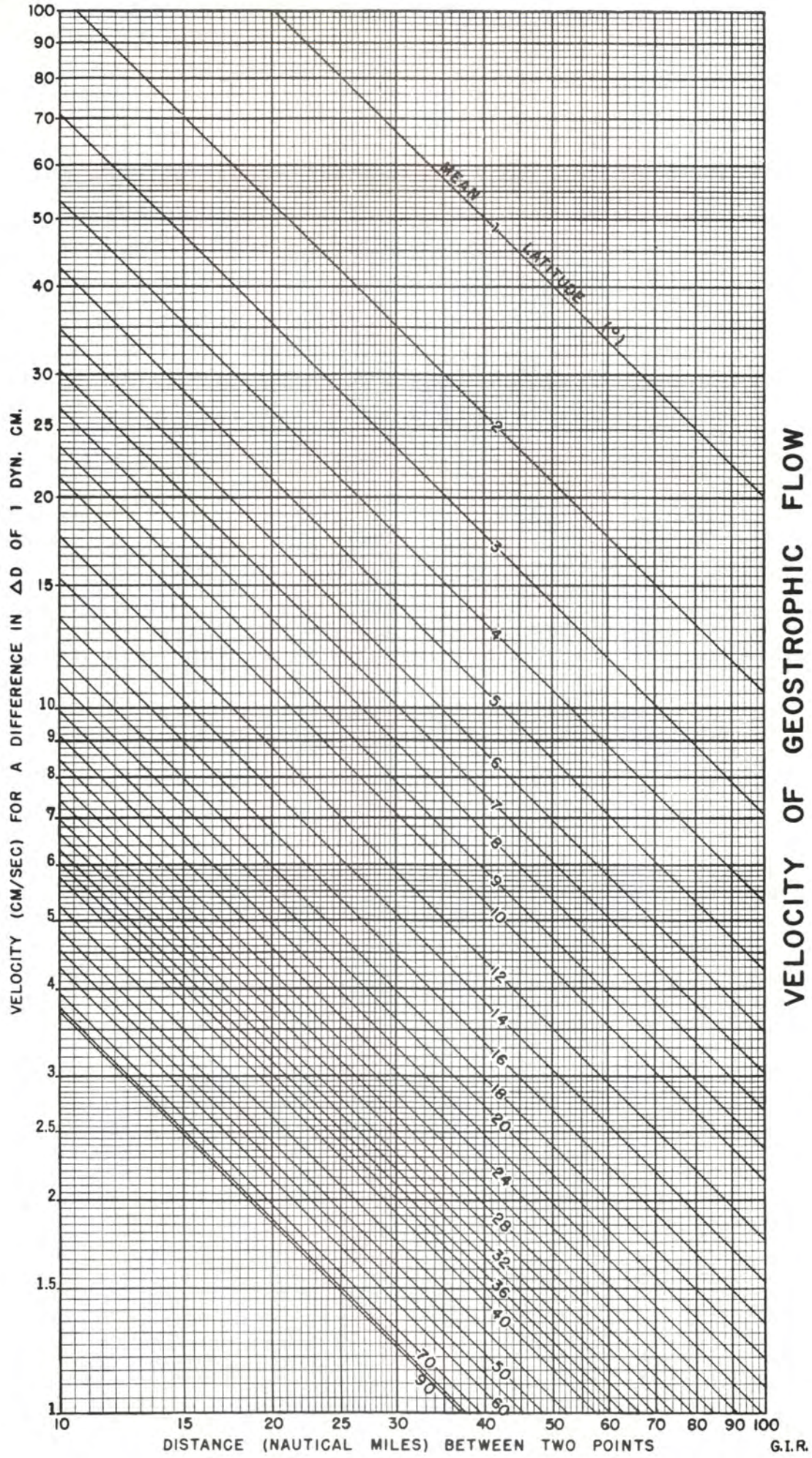
INSERT FOR CCOFI CRUISE 6304 (SIO Ref. 64-13)

The CCOFI cruise-numbering and station-numbering system has been slightly revised in order to make it more consistent with the system used by the National Oceanographic Data Center.

Cruise numbers. Hyphenated numbers indicating quarterly cruises (extending over a period of more than one month) will no longer be used. A four-digit number will appear instead, where the first two digits represent the year, and the last two digits the month in which the first data were collected.

Station numbers. Superscript numbers will not be used any longer, either for indication of the station line (before the decimal point) nor the station position along that line (after the decimal point). (Each station number represents, really, an area of about twelve by four nautical miles.) The exact position will be expressed by latitude and longitude.

VELOCITY OF GEOSTROPHIC FLOW



FIGURES
Cruise 6306

1. See insert on station position chart for CCOFI Cruise 6304

PERSONNEL
Cruise 6306

SHIP'S CAPTAIN

Miller, Frank, RV Alexander Agassiz

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Alexander Agassiz

Brennen, Robert E., Senior Marine Technician
Crandall, David E., Marine Technician
Peters, Forrest D., Marine Technician

SIO

CCOFI
6306

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

91.27 ALEXANDER AGASSIZ; June 26, 1963; 0020 GCT; 33°19'N, 117°35.5'W; sounding, 30 fm; wind, 190°, force 1; weather, clear; sea, slight; wire angle, 00°.[a)]

1	19.64	33.723	6.40	401	0	(19.64)	(33.72)	(6.40)	(23.90)	(401)	(0.00)
11	17.32	33.679	6.46	349	10	18.30	33.70	6.45	24.22	371	0.04
21	12.41	33.637	5.04	252	20	12.69	33.63	5.24	25.41	257	0.07
31	11.67	33.661	4.14	237	30	11.74	33.66	4.22	25.62	238	0.09
41	10.72	33.707	3.59	217							

91.28 ALEXANDER AGASSIZ; June 26, 1963; 0105 GCT; 33°16.5'N, 117°41'W; sounding, 420 fm; wind, 100°, force 2; weather, partly cloudy; sea, moderate; wire angle, 05°.

1	18.92	33.723	5.91	384	0	(18.92)	(33.72)	(5.91)	(24.08)	(384)	(0.00)
11	17.66	33.696	6.04	356	10	18.20	33.71	6.00	24.26	368	0.04
31	11.60	33.565	4.56	242	20	14.30	33.60	5.43	25.06	291	0.07
41	11.16	33.658	3.94	228	30	11.70	33.56	4.62	25.55	245	0.10
56	10.37	33.721	3.65	210	50	10.70	33.69	3.74	25.83	218	0.14
72	9.90	33.799	3.50	197	75	9.84	33.81	3.46	26.07	195	0.20
97	9.66	33.868	3.21	188	100	9.64	33.88	3.14	26.16	187	0.24
117	9.58	33.914	2.96	183	125	9.48	33.94	2.80	26.23	180	0.29
137	9.34	33.992	2.61	174	150	9.26	34.03	2.53	26.34	169	0.33
157	9.21	34.055	2.47	167	200	9.09	34.20	1.70	26.50	154	0.42
187	9.06	34.169	1.96	156	250	8.98	34.26	1.36	26.56	148	0.49
221	9.14	34.240	1.45	152	300	8.82	34.34	0.94	26.65	140	0.57
251	8.98	34.262	1.34	148	400	8.12	34.26	1.13	26.70	136	0.71
302	8.82	34.338	0.94	140	500	7.13	34.30	0.68	26.87	119	0.85
356	8.51	34.033u	2.52u		600	6.28	34.35	0.43	27.02	104	0.97
442	7.70	34.220	1.24	133							
527	6.88	34.333	0.47	113							
612	6.20	34.351	0.42	103							

91.31 ALEXANDER AGASSIZ; June 25, 1963; 2207 GCT; 33°11.5'N, 117°51'W; sounding, 440 fm; wind, 060°, force 3; weather, partly cloudy; sea, moderate; wire angle, 10°.

1	18.10	33.648	5.96	370	0	(18.10)	(33.65)	(5.96)	(24.24)	(370)	(0.00)
11	17.22	33.641	6.01	350	10	17.23	33.64	6.01	24.44	350	0.04
31	13.42	33.583	5.60	275	20	16.50	33.64	5.98	24.61	334	0.07
41	12.02	33.562	4.71	250	30	13.50	33.59	5.62	25.22	276	0.10
55	10.97	33.636	4.30	226	50	11.30	33.60	4.45	25.65	235	0.15
70	10.21	33.734	3.69	206	75	10.04	33.76	3.63	26.00	202	0.21
90	9.72	33.821	3.50	192	100	9.60	33.86	3.26	26.15	187	0.26
115	9.45	33.923	2.94	180	125	9.32	33.96	2.92	26.27	176	0.30
135	9.18	33.986	2.90	172	150	9.07	34.06	2.65	26.39	164	0.35
155	9.05	34.068	2.57	163	200	8.98	34.19	1.66	26.51	153	0.43
184	9.06	34.151	1.92	157	250	8.91	34.35	1.09	26.64	140	0.50
218	8.88	34.238	1.44	148	300	8.63	34.34	0.88	26.68	137	0.57
248	8.92	34.353	1.13	140	400	7.93	34.33	0.87	26.78	128	0.71
298	8.64	34.340	0.88	137	500	7.29	34.36	0.51	26.90	117	0.84
354	8.34	34.329	0.96	134	600	6.35	34.34	0.46	27.01	106	0.96
438	7.60	34.334	0.70	123							
522	7.15	34.368	0.48	114							
611	6.22	34.331	0.46	105							

a) The property curves for the stations of this cruise appear unusual but the values have been carefully verified.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ALEXANDER AGASSIZ; June 25, 1963; 1651 GCT; 33°07'N, 118°00'W; sounding, 520 fm; wind, 240°, force 2; weather, clear; sea, moderate; wire angle, 07°.

3	17.04	33.638	-	346	0	(17.04)	(33.64)		(24.48)	(346)	(0.00)
13	16.86	33.635	5.84	342	10	16.92	33.63		24.50	344	0.03
33	13.94	33.600	5.79	283	20	16.40	33.63	5.84	24.62	333	0.07
43	13.20	33.558	5.52	272	30	14.15	33.60	5.81	25.09	288	0.10
58	11.64	33.489	4.90	249	50	12.36	33.51	5.20	25.38	260	0.15
73	10.85	33.563	4.12	230	75	10.76	33.58	4.06	25.73	227	0.22
98	10.02	33.725	3.63	204	100	9.99	33.73	3.63	25.98	203	0.27
118	9.46	33.816	3.50	188	125	9.37	33.84	3.42	26.17	185	0.32
138	9.16	33.903	3.21	177	150	8.91	33.93	3.38	26.32	172	0.36
157	8.76	33.952	3.48	168	200	8.18	34.06	2.58	26.53	151	0.45
187	8.20	34.010	3.04	155	250	8.10	34.17	1.65	26.63	142	0.52
222	8.28	34.126	2.00	148	300	7.85	34.20	1.37	26.69	136	0.59
252	8.10	34.167	1.65	142	400	7.25	34.20	1.42	26.78	128	0.73
301	7.84	34.199	1.37	136	500	6.38	34.28	0.72	26.96	111	0.86
356	7.59	34.099u	2.35u		600	5.72	34.37	0.41	27.11	96	0.97
441	6.88	34.206	1.43	123							
526	6.20	34.320	0.49	106							
612	5.64	34.375	0.41	95							

USCG

STATION NOVEMBER

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

H-1 USCGC MINNETONKA; May 12, 1963; 1947 GCT; 30°00'N, 140°10'W; sounding, 2000+ fm; wind, 060°, force 1; weather, partly cloudy; sea, slight; wire angle, 07°.

0	18.68	34.993	-	286	0	18.68	34.99		25.11	286	0.00
10	18.46	34.969	5.43	282	10	18.46	34.97	5.43	25.15	282	0.03
45	18.44	-	-		20	18.45	34.97		25.16	282	0.06
75	18.41	34.949	5.35a)	282	30	18.44	34.96		25.15	282	0.08
95	18.02	34.883	5.08	278	50	18.43	34.96		25.15	282	0.14
110	17.58	34.749	5.17	278	75	18.41	34.95	5.35	25.15	282	0.21
124	17.48	34.747	5.27	275	100	17.70	34.78	5.11	25.20	278	0.28
144	17.22	34.693	5.19	273	125	17.47	34.75	5.27	25.23	275	0.35
164	16.12	34.575	5.04	257	150	17.10	34.67	5.17	25.26	272	0.42
195	12.74	34.130	4.99	222	200	12.54	34.12	4.97	25.82	219	0.55
217	11.91	34.117	4.94	207	250	10.88	34.08	4.81	26.10	192	0.65
243	11.02	34.075	4.71	195	300	10.04	34.12	5.00	26.28	175	0.75
278	10.39	34.115	5.11	181	400	8.33	34.07		26.52	153	0.92
319	9.74	34.123	4.87	170	500	6.33	34.02		26.76	130	1.07
367	8.95	34.091	4.57	160	600	5.20	34.11		26.97	110	1.19
436	7.56	-	-								
521	5.96	34.008	2.83	126							
607	5.15	34.119	3.49u	108							

H-2 USCGC MINNETONKA; May 13, 1963; 1926 GCT; 30°00.5'N, 140°01.5'W; sounding, 2000+ fm; wind, direction missing, force 1; weather, clear; sea, slight; wire angle, 00°.

1	18.83	34.931	5.09	294	0	(18.83)	(34.93)	(5.09)	(25.03)	(294)	(0.00)
10	18.36	34.895	5.11	285	10	18.36	34.90	5.11	25.12	285	0.03
40	18.22	34.876	5.21	283	20	18.24	34.88	5.15	25.14	283	0.06
66	18.22	34.872	5.24	283	30	18.22	34.88	5.20	25.14	283	0.09
86	18.22	34.899	5.18	282	50	18.22	34.88	5.23	25.14	283	0.14
100	18.10	34.861	5.18	281	75	18.24	34.88	5.21	25.14	283	0.21
115	17.62	34.761	5.33	278	100	18.10	34.86	5.18	25.16	282	0.29
134	17.38	34.774	5.24	271	125	17.44	34.77	5.28	25.25	273	0.36
154	16.85	34.627	5.22	270	150	16.99	34.66	5.22	25.27	271	0.42
178	14.68	34.341	5.04	244	200	12.79	34.16	4.99	25.80	220	0.55
202	12.64	34.146	4.99b)	218	250	10.88	34.08	4.90	26.10	192	0.66
228	11.42	34.075	4.95c)	202	300	10.02	34.12		26.28	175	0.75
258	10.69	34.080	4.88	189	400	7.98	34.04	4.02	26.54	150	0.92
293	10.12	34.122	-	176	500	6.03	34.00	2.80	26.78	127	1.06
342	9.34	34.101	4.59	165							
406	7.81	34.032	3.99	148							
481	6.28	33.986	3.09	132							
560	5.33	34.043	1.70	116							

H-3 USCGC MINNETONKA; May 14, 1963; 1859 GCT; 30°01'N, 139°58'W; sounding, 2000+ fm; wind, direction missing, force 1; weather, cloudy; sea, slight; wire angle, 04°.

1	18.71	34.978	5.16	287	0	(18.71)	(34.98)	(5.16)	(25.10)	(287)	(0.00)
11	18.36	34.932	5.29	282	10	18.39	34.94	5.28	25.15	283	0.03
41	18.28	34.954	5.24	279	20	18.31	34.94	5.28	25.17	281	0.06
65	18.40	35.035	5.16	276	30	18.29	34.95	5.26	25.18	279	0.08
85	18.40	35.055	5.08	274	50	18.32	34.99	5.21	25.20	277	0.14
100	18.40	35.068	5.16	274	75	18.40	35.05	5.10	25.23	275	0.21
114	18.21	34.983u	5.23		100	18.40	35.07	5.16	25.24	273	0.28
133	17.26	34.750	5.23	270	125	17.62	34.85	5.23	25.27	271	0.35
153	16.44	34.633	5.01	260	150	16.70	34.67	5.09	25.35	263	0.42
177	14.28	34.354	5.05	235	200	12.50	34.18	5.04	25.88	213	0.54
202	12.14	34.160	5.04	208	250	10.95	34.21	4.95	26.19	184	0.64
226	11.42	34.182	4.98	194	300	9.97	34.20	4.80	26.35	168	0.73
256	10.84	34.221	4.93	181	400	7.94	34.10	4.00	26.60	145	0.89
291	10.16	34.213	4.85	170	500	6.18	34.06	2.85	26.81	125	1.04
340	9.10	34.158	4.56	158							
404	7.86	34.093	3.97	144							
480	6.44	34.049	3.16	129							
559	5.45	34.107	1.85	113							

a) Alternate value, 4.95 ml/L, not used in interpolation.
b) Alternate value, 4.63 ml/L, not used in interpolation.
c) Mean value of 5.00 and 4.90 ml/L.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

USCGC MINNETONKA; May 15, 1963; 2035 GCT; 29°57'N, 140°04'W; sounding, 2000+ fm; wind, 140°, force 4; weather, cloudy; sea, moderate; wire angle, 23°. H-4

1	18.54	34.876	5.15	291	0	(18.54)	(34.88)	(5.15)	(25.06)	(291)	(0.00)
11	18.53	34.865	5.22	291	10	18.53	34.87	5.21	25.06	291	0.03
43	18.23	34.844	5.23	286	20	18.49	34.86	5.22	25.06	291	0.06
70	18.30	34.885	5.15	284	30	18.40	34.85	5.23	25.08	289	0.09
88	17.70	34.776	5.15	278	50	18.24	34.85	5.22	25.12	286	0.15
102	17.65	34.747	5.16	279	75	18.22	34.88	5.15	25.14	283	0.22
115	17.39	34.722	5.24	275	100	17.66	34.75	5.16	25.18	279	0.29
134	17.19	34.701	5.18	272	125	17.28	34.71	5.21	25.24	273	0.36
152	16.54	34.587	5.03	266	150	16.61	34.60	5.04	25.32	266	0.43
178	14.52	34.361	4.95	239	200	12.94	34.16	4.95	25.77	223	0.55
200	12.94	34.162	4.95	223	250	11.12	34.11	4.98	26.08	194	0.66
223	12.02	34.150	4.91	207	300	10.19	34.14	4.79	26.27	176	0.75
256	10.96	34.102	4.99	192	400	8.22	34.07	4.12	26.53	151	0.92
292	10.34	34.139	4.81	179	500	6.32	34.05	3.08	26.78	127	1.07
338	9.58	34.132	4.65	167							
403	8.15	34.070	4.10	150							
485	6.54	34.047	3.27	130							
567	5.40	34.045	2.00	117							

USCGC MINNETONKA; May 16, 1963; 1958 GCT; 30°00'N, 140°03'W; sounding, 2000+ fm; wind, 170°, force 4; weather, cloudy; sea, rough; wire angle, 16°. H-5

0	18.58	34.916	5.20a)	289	0	18.58	34.92	5.20	25.09	289	0.00
11	18.50	34.906	5.28	288	10	18.50	34.91	5.28	25.10	287	0.03
49	18.30	34.858	5.28	286	20	18.43	34.89	5.28	25.10	287	0.06
82	17.77	34.779	5.28	280	30	18.40	34.88	5.28	25.10	287	0.09
101	17.46	34.735	5.20	276	50	18.28	34.85	5.28	25.11	287	0.14
115	17.28	34.697	5.18	274	75	17.86	34.79	5.28	25.16	281	0.22
134	16.96	34.654	5.17	270	100	17.46	34.74	5.20	25.22	275	0.29
152	16.08	34.535	5.01	259	125	17.13	34.67	5.18	25.25	273	0.36
172	14.76	34.427	4.86	239	150	16.19	34.55	5.03	25.38	261	0.42
200	12.08	34.079	5.01	213	200	12.08	34.08	5.01	25.88	213	0.54
229	11.25	34.098	5.01	197	250	10.78	34.10	5.00	26.13	189	0.65
252	10.75	34.106	5.01	188	300	9.83	34.12	4.83	26.31	172	0.74
285	10.09	34.120	4.92	176	400	7.95	34.05	3.99	26.56	149	0.91
329	9.36	34.118	4.64	165	500	6.03	34.01	2.74	26.79	127	1.05
382	8.35	34.079	4.16	152	600	5.07	34.13	1.27	27.00	107	1.17
466	6.58	34.001	3.29	134							
556	5.40	34.040	1.83	117							
629	4.86	34.196	0.91	99							

USCGC MINNETONKA; May 17, 1963; 2209 GCT; 30°00'N, 140°00'W; sounding, 2000+ fm; wind, 170°, force 4; weather, partly cloudy; sea, moderate; wire angle, 13°. H-6

2	18.99	34.900	5.23	300	0	(18.99)	(34.90)	(5.23)	(24.97)	(300)	(0.00)
12	18.76	34.979	5.23	289	10	18.80	34.98	5.23	25.08	289	0.03
46	18.32	34.901	5.22	284	20	18.66	34.96	5.23	25.10	288	0.06
75	17.96	34.826	5.27	281	30	18.53	34.94	5.22	25.11	286	0.09
95	17.56	34.752	5.27	277	50	18.27	34.90	5.23	25.15	283	0.14
109	17.32	34.731	5.25	273	75	17.96	34.83	5.27	25.17	280	0.22
123	16.88	34.681	5.15	267	100	17.48	34.74	5.27	25.22	276	0.29
142	15.92	34.521	5.00	257	125	16.79	34.67	5.13	25.33	265	0.35
162	14.66	34.428	4.87	237	150	15.40	34.48	4.94	25.50	249	0.42
192	12.24	34.131	5.00	212	200	11.93	34.11	5.00	25.93	208	0.54
215	11.52	34.104	4.98	201							

a) Alternate value, 5.05 ml/L, not used in interpolation.

USCG STATION NOVEMBER	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
H-7	USCGC MINNETONKA; May 18, 1963; 1937 GCT; 29°56'N, 140°00'W; sounding, 2000+ fm; wind, 180°, force 3; weather, clear; sea, rough; wire angle, 11°.											
	1	19.26	34.920	5.30a)	305	0	(19.26)	(34.92)	(5.30)	(24.91)	(305)	(0.00)
	11	18.95	34.914	5.30	298	10	18.96	34.91	5.30	24.98	298	0.03
	40	18.41	35.002u	5.26		20	18.78	34.91	5.29	25.03	294	0.06
	65	18.23	34.902	5.30	282	30	18.60	34.91	5.28	25.07	290	0.09
	84	18.11	34.964u	5.23		50	18.34	34.91	5.28	25.14	284	0.15
	99	17.68	34.763	5.12	279	75	18.18	34.89	5.27	25.16	281	0.22
	114	17.50	34.745	5.30	276	100	17.67	34.76	5.13	25.19	279	0.29
	132	17.26	34.688	5.25	275	125	17.35	34.72	5.28	25.23	274	0.36
	152	-	34.632	5.16		150	16.88	34.65	5.19	25.29	269	0.43
	176	15.28	34.487	4.94	246	200	12.69	34.15	4.99	25.82	219	0.55
	202	12.52	34.134	5.00	217							
H-8	USCGC MINNETONKA; May 19, 1963; 1912 GCT; 29°54'N, 140°00.5'W; sounding, 2000+ fm; wind, 180°, force 1; weather, partly cloudy; sea, rough; wire angle, 03°.											
	1	19.22	34.898	5.20	306	0	(19.22)	(34.90)	(5.20)	(24.91)	(305)	(0.00)
	12	18.98	34.964	5.20	295	10	19.04	34.96	5.20	25.00	297	0.03
	42	18.40	34.873	5.25	288	20	18.79	34.95	5.22	25.06	291	0.06
	68	18.29	34.867	5.25	286	30	18.59	34.91	5.24	25.08	290	0.09
	88	17.98	34.806	5.17	283	50	18.36	34.87	5.25	25.10	287	0.15
	102	17.68	34.745	5.26	280	75	18.21	34.85	5.20	25.12	285	0.22
	117	17.48	34.716	5.29	278	100	17.73	34.75	5.25	25.17	281	0.29
	137	17.16	34.672	5.21	274	125	17.34	34.69	5.25	25.21	276	0.36
	157	16.32	34.554	5.10	263	150	16.80	34.61	5.17	25.28	270	0.43
	182	14.92	34.462	4.92	240							
H-9	USCGC MINNETONKA; May 20, 1963; 1913 GCT; 29°29'N, 139°58'W; sounding, 2000+ fm; wind, direction missing, force 1; weather, cloudy; sea, rough; wire angle, 00°.											
	1	19.57	34.913	5.12	313	0	(19.57)	(34.91)	(5.12)	(24.82)	(313)	(0.00)
	11	19.15	34.912	5.19	303	10	19.16	34.91	5.19	24.93	303	0.03
	41	18.49	34.877	5.25	290	20	19.00	34.91	5.21	24.97	299	0.06
	65	18.30	34.859	5.22	286	30	18.70	34.89	5.24	25.03	294	0.09
	85	18.12	34.829	5.17	284	50	18.42	34.87	5.23	25.09	288	0.15
	100	17.77	34.762	5.20	281	75	18.22	34.84	5.19	25.11	286	0.22
	115	17.54	34.720	5.25	279	100	17.77	34.76	5.20	25.16	281	0.29
	134	17.22	34.673	5.20	275	125	17.38	34.69	5.22	25.20	277	0.36
	154	16.71	34.608	5.08	268	150	16.92	34.63	5.12	25.27	271	0.43
	179	14.36	34.325	4.91	239	200	12.62	34.15	4.97	25.83	218	0.56
	204	12.32	34.125	4.99	214	250	10.86	34.11	4.97	26.13	189	0.66
	229	11.30	34.056	5.01	201	300	10.07	34.14	4.77	26.29	174	0.76
	259	10.70	34.128	4.94	185	400	8.02	34.05	4.05	26.55	150	0.92
	293	10.20	34.148	4.80	176							
	344	9.26	34.102	4.56	164							
	408	7.82	34.045	3.93	147							

a) Alternate value, 5.06 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED			
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m	
USCGC MINNETONKA; May 21, 1963; 1912 GCT; 29°58'N, 139°57'W; sounding, 2000+ fm; wind, 070°, force 1; weather, partly cloudy; sea, rough; wire angle, 05°.												H-10
1	20.28	34.957	5.10	328	0	(20.28)	(34.96)	(5.10)	(24.68)	(327)	(0.00)	
11	19.17	34.929	5.16	302	10	19.20	34.93	5.16	24.94	303	0.03	
41	18.60	34.961	5.24	286	20	18.95	34.94	5.21	25.01	296	0.06	
66	18.48	34.951	5.20	284	30	18.77	34.95	5.23	25.06	291	0.09	
86	18.60	35.010	5.07	282	50	18.53	34.95	5.21	25.12	285	0.15	
100	18.46	34.974	5.15	282	75	18.51	34.97	5.13	25.14	283	0.22	
115	17.69	34.768	5.27	279	100	18.46	34.97	5.15	25.15	282	0.29	
134	17.31	34.704	5.22	275	125	17.48	34.73	5.24	25.21	277	0.36	
154	16.94	34.646	5.14	270	150	17.01	34.66	5.15	25.27	271	0.43	
180	14.67	34.360	5.01	242	200	13.08	34.17	5.01	25.75	225	0.56	
203	12.86	34.153	5.01	222	250	11.12	34.11	4.99	26.08	194	0.67	
229	11.66	34.071	5.01	206	300	10.32	34.16	4.85	26.26	177	0.76	
258	10.93	34.121	4.98	190	400	8.47	34.07	4.23	26.49	155	0.93	
293	10.43	34.168	4.88	178	500	6.25	34.03	2.84	26.78	128	1.08	
342	9.56	34.130	4.69	167								
405	8.36	34.069	4.20	153								
480	6.54	34.027	3.14	132								
559	5.44	34.042	1.87	117								
USCGC MINNETONKA; May 22, 1963; 1859 GCT; 30°03'N, 140°01'W; sounding, 2000+ fm; wind, 030°, force 4; weather, partly cloudy; sea, moderate; wire angle, 08°.												H-11
1	19.82	34.991	4.93	314	0	(19.82)	(34.99)	(4.93)	(24.82)	(314)	(0.00)	
11	19.78	34.994	4.96	312	10	19.78	34.99	4.96	24.83	313	0.03	
36	18.81	34.997	5.18	288	20	19.67	35.00	4.98	24.87	309	0.06	
46	18.67	34.984	5.12	286	30	19.10	35.00	5.12	25.01	295	0.09	
61	18.60	34.972	4.96	285	50	18.65	34.98	5.10	25.11	286	0.15	
75	18.46	34.947	5.00	284	75	18.46	34.95	5.00	25.14	284	0.22	
100	18.61	35.007	5.08	283	100	18.61	35.01	5.08	25.15	283	0.29	
119	17.89	34.836	5.15	278	125	17.69	34.78	5.15	25.20	278	0.37	
139	17.33	34.719	5.14	274	150	17.00	34.67	5.12	25.28	270	0.44	
168	15.49	34.468	4.95	252	200	12.95	34.22	4.95	25.82	219	0.56	
197	13.13	34.236	4.95	221	250	11.03	34.10	4.93	26.09	193	0.67	
237	11.30	34.081	4.95	199	300	10.11	34.11	4.87	26.26	177	0.76	
267	10.74	34.136	4.90	185	400	8.39	34.09	4.18	26.52	152	0.93	
316	9.84	34.111	4.83	173	500	6.26	34.03	2.99	26.78	128	1.08	
380	8.82	34.106	4.38	157	600	5.15	34.11	1.32	26.97	109	1.20	
480	6.58	34.024	3.27	132								
570	5.36	34.072	1.70	114								
643	4.92	34.160	0.88	103								
USCGC MINNETONKA; May 23, 1963; 2018 GCT; 30°00'N, 140°00'W; sounding, 2000+ fm; wind, 030°, force 4; weather, cloudy; sea, rough; wire angle, 13°.												H-12
2	19.70	34.967	5.13	312	0	(19.70)	(34.97)	(5.13)	(24.84)	(312)	(0.00)	
12	19.63	34.952	5.21	312	10	19.64	34.95	5.20	24.84	312	0.03	
31	18.84	34.935	5.27	294	20	19.62	34.95	5.22	24.84	312	0.06	
41	18.64	34.929	5.19	289	30	18.86	34.94	5.27	25.03	294	0.09	
55	18.54	34.926	5.15	287	50	18.58	34.93	5.16	25.09	288	0.15	
70	18.38	34.902	5.19	285	75	18.31	34.89	5.21	25.13	284	0.22	
94	18.06	34.848	5.26	281	100	18.20	34.91	5.25	25.17	280	0.29	
113	17.66	34.784	5.23	277	125	17.48	34.75	5.20	25.23	275	0.36	
131	17.40	34.737	5.18	274	150	17.04	34.73	5.03	25.32	267	0.43	
151	17.00	34.731	5.02	266	200	12.94	34.16	4.90	25.77	223	0.56	
179	14.64	34.388	4.86	240	250	11.01	34.12	5.00	26.11	191	0.66	
214	12.00	34.079	4.96	212	300	10.14	34.14	4.82	26.28	175	0.76	
242	11.20	34.119	5.02	195	400	8.35	34.08	4.20	26.52	152	0.93	
291	10.28	34.140	4.86	178	500	6.47	34.01	3.13	26.73	132	1.08	
345	9.36	34.123	4.67	164	600	(5.21)	(34.08)	(1.50)	(26.94)	(112)	(1.21)	
427	7.84	34.060	3.95	146								
512	6.26	34.002	3.02	130								
595	5.26	34.078	1.57	113								

USCG STATION NOVEMBER	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
H-13	USCGC MINNETONKA; May 24, 1963; 2242 GCT; 29°59'N, 140°03'W; sounding, 2000+ fm; wind, 090°, force 4; weather, cloudy; sea, moderate; wire angle, 12°.											
	1	19.78	34.949	5.01	316	0	(19.78)	(34.95)	(5.01)	(24.80)	(316)	(0.00)
	11	19.74	34.961	5.09	314	10	19.74	34.96	5.08	24.82	314	0.03
	30	19.32	35.095	5.15	294	20	19.59	35.02	5.11	24.90	306	0.06
	40	19.00	35.036	5.11	290	30	19.32	35.10	5.15	25.03	293	0.09
	55	18.79	35.012	4.99	287	50	18.85	35.02	5.00	25.09	288	0.15
	69	18.82	35.054	5.07	285	75	18.83	35.07	5.09	25.14	284	0.22
	93	18.84	35.098	5.12	282	100	18.82	35.09	5.12	25.15	282	0.29
	113	18.32	34.948	5.11	280	125	18.03	34.90	5.10	25.21	277	0.37
	132	17.86	34.869	5.09	275	150	16.72	34.77	5.08	25.42	256	0.43
	150	16.72	34.770	5.08	256	200	14.20	34.46	4.79	25.75	226	0.56
	180	14.94	34.515	4.72	237	250	11.20	34.14	4.90	26.09	193	0.66
	214	12.52	34.211	4.89	211	300	10.30	34.12	4.93	26.23	179	0.76
	243	11.46	34.158	4.89	196							
	292	10.44	34.127	4.94	181							
	347	9.42	34.104	4.78	166							
H-14	USCGC MINNETONKA; May 25, 1963; 1936 GCT; 30°02'N, 140°01'W; sounding, 2000+ fm; wind, 090°, force 3; weather, partly cloudy; sea, moderate; wire angle, 13°.											
	1	19.89	34.994	5.09	315	0	(19.89)	(34.99)	(5.09)	(24.80)	(315)	(0.00)
	11	19.64	35.017	5.15	307	10	19.65	35.02	5.15	24.89	307	0.03
	30	18.97	35.029	5.23	290	20	19.40	35.02	5.18	24.95	301	0.06
	40	18.95	35.048	5.10	288	30	18.97	35.03	5.23	25.07	290	0.09
	50	18.82	35.048	5.07	285	50	18.82	35.05	5.07	25.12	285	0.15
	65	18.82	35.057	5.09	284	75	18.86	35.08	5.10	25.14	284	0.22
	80	18.88	35.095	5.11	283	100	18.84	35.08	5.05	25.14	283	0.29
	100	18.84	35.084	5.05	283	125	18.44	34.98	5.04	25.17	281	0.36
	122	18.52	34.997	5.05	282	150	16.85	34.75	4.92	25.38	261	0.43
	141	17.59	34.851	4.98	270	200	13.11	34.32	4.85	25.86	215	0.55
	171	14.54	34.414	4.84	236	250	11.12	34.12	4.90	26.09	193	0.66
	201	13.06	34.313	4.85	214	300	10.28	34.14	4.93	26.25	178	0.75
	232	11.49	34.117	4.85	200	400	8.54	34.08	4.26	26.49	155	0.93
	270	10.78	34.130	4.94	187	500	6.38	34.02	3.12	26.75	130	1.08
	331	9.75	34.141	4.84	169							
	406	8.44	34.074	4.24	154							
	480	6.69	34.022	3.40	134							
	560	5.57	34.037	2.10	119							
H-15	USCGC MINNETONKA; May 26, 1963; 1932 GCT; 30°01'N, 140°01.5'W; sounding, 2000+ fm; wind, 090°, force 3; weather, clear; sea, rough; wire angle, 11°.											
	2	20.02	34.968	5.00	320	0	(20.02)	(34.97)	(5.00)	(24.75)	(320)	(0.00)
	12	19.77	34.974	5.15	314	10	19.80	34.97	5.13	24.81	315	0.03
	32	19.22	35.054	5.19	294	20	19.65	34.98	5.17	24.86	310	0.06
	42	19.15	35.105	5.09	289	30	19.24	35.04	5.19	25.01	296	0.09
	51	19.18	35.129	5.06	288	50	19.18	35.13	5.06	25.09	288	0.15
	66	19.10	35.147	5.13	285	75	19.14	35.18	5.10	25.14	283	0.22
	81	19.18	35.187	5.09	284	100	19.06	35.17	5.04	25.15	282	0.30
	100	19.06	35.168	5.04	282	125	18.75	35.09	5.07	25.17	280	0.37
	124	18.78	35.099	5.07	280	150	17.36	34.84	5.05	25.32	266	0.44
	143	17.94	34.932	5.09	273	200	12.95	34.22	4.87	25.82	219	0.56
	172	14.80	34.450	4.82	239	250	11.05	34.13	4.90	26.11	191	0.66
	202	12.82	34.214	4.87	217	300	10.20	34.14	4.92	26.27	176	0.76
	232	11.54	34.129	4.87	200	400	8.40	34.06	4.24	26.50	154	0.93
	272	10.59	34.130	4.93	183	500	6.32	34.01	3.00	26.75	130	1.08
	330	9.81	34.143	4.85	170							
	404	8.30	34.054	4.21	153							
	478	6.67	34.002	3.34	135							
	556	5.52	34.051	1.88	118							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED			USCG STATION NOVEMBER
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m	

USCGC MINNETONKA; May 27, 1963; 1930 GCT; 29°57'N, 140°04'W; sounding, 2000+ fm; wind, 130°, force 2; weather, partly cloudy; sea, moderate; wire angle, 08°. H-16

1	20.34	35.027	5.10	324	0	(20.34)	(35.03)	(5.10)	(24.71)	(324)	(0.00)
11	20.03	35.021	5.14	317	10	20.06	35.02	5.14	24.78	318	0.03
30	18.82	34.906	5.27	295	20	19.80	35.00	5.17	24.83	313	0.06
40	18.59	34.884	5.16	291	30	18.82	34.91	5.27	25.02	295	0.09
50	18.46	-	5.12		50	18.46	34.87	5.12	25.08	289	0.15
65	18.32	34.867	5.22	286	75	18.29	34.88	5.23	25.13	285	0.23
80	18.28	34.888	5.23	284	100	18.08	34.86	5.13	25.16	281	0.30
100	18.08	34.863	5.13	281	125	17.20	34.71	5.17	25.26	272	0.37
123	17.29	34.721	5.17	273	150	16.10	34.57	5.09	25.41	257	0.43
141	16.62	34.611	5.14	266	200	12.62	34.22	4.86	25.88	213	0.55
171	14.70	34.456	4.87	236	250	10.93	34.13	4.88	26.13	189	0.66
200	12.62	34.216	4.86	213	300	10.22	34.14	4.82	26.26	177	0.75
230	11.24	34.123	4.87	195							
271	10.64	34.142	4.88	183							
330	9.70	34.125	4.73	169							

USCGC MINNETONKA; May 28, 1963; 1916 GCT; 29°56'N, 140°02'W; sounding, 2000+ fm; wind, 210°, force 2; weather, partly cloudy; sea, rough; wire angle, 08°. H-17

2	20.64	35.010	5.00	333	0	(20.64)	(35.01)	(5.00)	(24.62)	(333)	(0.00)
11	20.36	35.011	5.15	326	10	20.38	35.01	5.14	24.69	326	0.03
31	18.88	35.003u	5.29		20	20.00	35.00	5.21	24.78	318	0.07
41	18.56	34.882	5.25	291	30	18.89	34.89	5.29	24.98	298	0.10
56	18.53	34.921	5.22	287	50	18.54	34.91	5.23	25.09	288	0.16
71	18.14	34.829	5.29	285	75	18.09	34.83	5.32	25.14	283	0.23
95	18.06	34.849	5.33	281	100	18.00	34.84	5.32	25.17	281	0.30
114	17.56	34.729	5.28	279	125	17.28	34.69	5.26	25.23	275	0.37
134	17.02	34.652	5.22	272	150	16.43	34.60	5.08	25.36	262	0.44
153	16.28	34.584	5.06	260	200	12.85	34.24	4.90	25.85	215	0.56
181	14.16	34.474	4.82a)	224	250	11.22	34.13	4.94	26.08	194	0.66
216	12.15	34.140	4.99	210	300	10.29	34.13	4.97	26.24	178	0.76
245	11.33	34.134	4.93	196	400	8.40	34.06	4.20	26.50	154	0.93
295	10.37	34.127	4.99	180	500	6.28	34.00	3.00	26.75	130	1.08
349	9.60	34.118	4.69	168	600	5.10	34.18	1.26	27.04	103	1.21
432	7.64	34.029	3.91	146							
527	5.84	34.002	2.63	125							
602	5.07	34.187	1.23	102							

USCGC MINNETONKA; May 29, 1963; 2216 GCT; 29°59'N, 140°01'W; sounding, 2000+ fm; wind, 170°, force 4; weather, cloudy; sea, moderate; wire angle, 19°. H-18

2	21.01	35.200	5.03	329	0	(21.01)	(35.20)	(5.03)	(24.66)	(329)	(0.00)
11	20.61	35.228	5.02	316	10	20.64	35.23	5.02	24.79	317	0.03
30	18.82	34.855	5.28	299	20	20.00	35.11	5.13	24.86	310	0.06
38	18.60	34.864	5.19	293	30	18.82	34.86	5.28	24.98	299	0.09
52	18.49	34.903	5.06	288	50	18.50	34.90	5.07	25.09	288	0.15
66	18.33	34.879	5.14	286	75	18.24	34.87	5.17	25.13	284	0.23
89	18.08	34.855	5.19	281	100	17.77	34.79	5.18	25.19	279	0.30
107	17.54	34.754	5.17	276	125	16.93	34.64	5.20	25.27	271	0.37
124	16.98	34.642	5.20	272	150	15.64	34.48	5.07	25.45	254	0.43
143	16.06	34.527	5.10	260	200	11.77	34.15	4.94	25.99	202	0.55
170	13.98	34.310	4.95	232	250	10.98	34.16	4.93	26.15	188	0.65
201	11.72	34.234u	4.95		300	10.16	34.15	4.90	26.28	175	0.74
229	11.34	34.146	4.92	195	400	8.53	34.09	4.27	26.50	154	0.91
276	10.54	34.173	4.96	179	500	6.28	34.01	3.20	26.76	130	1.06
327	9.76	34.126	4.81	170							
406	8.41	34.088	4.23	152							
488	6.46	-	-								
571	5.42	34.072	1.85	115							

a) Mean value of 4.99 and 4.88 ml/L.

USCG STATION NOVEMBER	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
H-19	USCGC MINNETONKA; May 30, 1963; 1933 GCT; 30°01'N, 140°03'W; sounding, 2000+ fm; wind, 170°, force 3; weather, partly cloudy; sea, moderate; wire angle, 08°.											
	1	20.47	34.971	5.05	331	0	(20.47)	(34.97)	(5.05)	(24.63)	(332)	(0.00)
	11	20.10	34.953	5.20	323	10	20.15	34.95	5.19	24.70	325	0.03
	30	18.39	34.799	5.30	293	20	19.60	34.90	5.25	24.81	315	0.06
	39	18.26	34.808	5.23	289	30	18.39	34.80	5.30	25.04	293	0.10
	47	18.38	34.873	5.21	287	50	18.38	34.88	5.23	25.10	287	0.15
	62	18.36	34.909	5.30	284	75	18.30	34.90	5.34	25.14	283	0.23
	76	18.30	34.897	5.34	284	100	18.20	34.90	5.15	25.16	281	0.30
	94	18.26	34.903	5.15	282							
	117	17.58	34.805	5.20	273							
H-20	USCGC MINNETONKA; May 31, 1963; 1909 GCT; 30°04'N, 140°00'W; sounding, 2000+ fm; wind, 160°, force 2; weather, partly cloudy; sea, rough; wire angle, 05°.											
	1	20.76	34.957	5.07	340	0	(20.76)	(34.96)	(5.07)	(24.55)	(340)	(0.00)
	11	20.36	35.048	5.12	323	10	20.40	35.04	5.12	24.71	325	0.03
	31	18.74	34.891	5.30	294	20	19.65	34.96	5.22	24.84	312	0.07
	41	18.52	34.893	5.24	289	30	18.78	34.89	5.30	25.01	296	0.10
	50	18.38	34.869	5.17	287	50	18.38	34.87	5.17	25.10	287	0.15
	65	18.21	34.862	5.19	284	75	18.21	34.88	5.21	25.15	283	0.23
	80	18.22	34.890	5.22	282	100	17.88	34.82	5.20	25.18	279	0.30
	100	17.88	34.821	5.20	279	125	16.60	34.60	5.16	25.32	266	0.37
	123	16.78	34.631	5.16	268	150	14.82	34.34	5.02	25.52	247	0.43
	143	15.28	34.396	5.05	253	200	11.83	34.08	4.99	25.93	209	0.55
	173	13.22	34.197	4.97	226	250	10.72	34.09	5.01	26.14	189	0.65
	203	11.70	34.072	5.00	207	300	10.00	34.13	4.87	26.29	174	0.74
	232	10.96	-	5.03		400	8.19	34.06	4.10	26.53	151	0.91
	272	10.48	34.130	4.97	182	500	6.18	34.02	2.80	26.78	128	1.06
	333	9.35	34.116	4.71	165							
	406	8.07	34.056	4.06	150							
	482	6.45	34.019	3.08	131							
	562	5.41	34.056	1.89	116							
H-21	USCGC MINNETONKA; June 2, 1963; 1246 GCT; 30°38'N, 136°02'W; sounding, 2000+ fm; wind, 060°, force 6; weather, partly cloudy; sea, rough; wire angle, 25°.											
	0	19.70	34.702	4.88	332	0	19.70	34.70	4.88	24.63	332	0.00
	9	19.66	34.705	4.88	330	10	19.65	34.70	4.89	24.64	331	0.03
	32	18.70	34.694	5.27	308	20	19.50	34.70	4.94	24.68	327	0.07
	41	18.67	34.793	4.96	300	30	18.73	34.69	5.27	24.87	309	0.10
	54	18.88	34.874	4.86	299	50	18.83	34.85	4.90	24.97	300	0.16
	68	18.87	34.954	4.94	293	75	18.92	34.97	4.97	25.04	293	0.23
	91	19.09	35.056	5.01	291	100	18.97	35.04	5.02	25.08	289	0.31
	109	18.54	34.935	5.02	287	125	18.25	34.88	5.03	25.14	284	0.38
	126	18.16	34.870	5.03	282	150	17.05	34.68	5.02	25.28	270	0.45
	154	16.80	34.638	5.02	268	200	12.88	34.11	4.91	25.75	226	0.58
	180	14.27	34.268	4.95	241	250	10.72	34.01	4.83	26.07	194	0.68
	216	11.96	34.033	4.89	214	300	9.49	34.04	4.52	26.31	172	0.78
	244	10.88	34.012	4.87	197	400	7.43	34.01	3.53	26.60	145	0.94
	291	9.68	34.043	4.59	175	500	5.83	34.04	1.94	26.84	122	1.08
	350	8.48	34.051	4.09	156	600	5.11	34.18	2.63	27.03	103	1.20
	444	6.60	33.997	2.97	135							
	531	5.46	34.073	1.55	115							
	601	5.10	34.185	2.63	103							

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